

March 13, 2019

Mr. Michael Belveg
New York State Department of Environmental Conservation
Region 7
615 Erie Boulevard West
Syracuse, New York 13204-2400

RE: Mathews Avenue Site – Emerging Contaminants Sampling Letter Report

Dear Mr. Belveg:

This report presents the sampling and analysis of groundwater for emerging contaminants completed pursuant to your letter request submitted to Honeywell International Inc. (Honeywell) dated March 13, 2018. In your letter, the NYSDEC requested sampling of existing groundwater monitoring wells for the emerging contaminants 1,4-dioxane and per- and -polyfluoroalkyl substances (PFAS).

Sampling and analysis were completed on September 24, 2018 and October 1, 2018 in accordance with the Work Plan submitted to NYSDEC on July 20, 2018 and approved by NYSDEC on July 27, 2018 and *Collection of Groundwater Samples for Perfluorooctanoic Acid (PFOA) and Perfluorinated Compounds (PFCs) from Monitoring Wells Sample Protocol, Revision 1.2.* (NYSDEC, 2016) and *Groundwater Sampling for Emerging Contaminants* (NYSDEC, 2018). **Table 1-1** below provides the monitoring well sample locations (**Figure 1**), as well as any changes to the proposed sample locations and the reason for the change.

Table 1-1 Sample Location Summary			
Location ID	Site	Sample Date	Sampling Notes
LCP-PZ-06BS	LCP (downgradient)	10/01/2018	Replaced MA-MA-06S2 (Well destroyed; DEC direction)
MA-MW-03S	Mathews Avenue	09/24/2018	
MA-MW-08S	Mathews Avenue	09/24/2018	

Sample coolers were delivered to the TestAmerica (TA) Service Center in Syracuse, New York. The PFAS samples were shipped to the TA facility in Sacramento, California for Modified USEPA Method 537, and the 1,4-dioxane samples were shipped to the TA facility in Buffalo, New York for SW8270 SIM analyses.

TA provided a New York State Category B data deliverable reports (**Attachment A**). Final validated analytical results are presented in the attached **Table 1** and the Data Usability Summary Report (DUSR) completed in conformance with NYSDEC standards (**Attachment B**). The low-flow groundwater sampling logs are provided in **Attachment C**.

Mr. Michael Belveg
March 13, 2019
Page 2

Please contact Tom Conklin of OBG, Part of Ramboll (315-956-6408 and Tom.Conklin@obg.com) or me if you have any questions regarding this report.

Sincerely,

A handwritten signature in blue ink, appearing to read "Stephen Miller".

Stephen Miller, P.E.
Syracuse Remediation Program Manager

Attachment (1 copy, electronic copy [ec])

Cc: Tom Biel – NYSDEC Region 7 (ec)
Harry Warner – NYSDEC Region 7 (ec)
Dick Jones – NYSDOH (ec)
John McAuliffe – Honeywell (ec)
Shane Blauvelt – Honeywell (ec)
Chris Calkins – OBG, Part of Ramboll (ec)
Tom Conklin – OBG, Part of Ramboll (ec)



Table

Table 1
Honeywell
Mathews Ave Property
2018 Site Characterization - Groundwater, Equipment Blank, and Field Reagent Blank
PFAS and 1,4-Dioxane Data

Parameter Name (PFAS by Method E537)	NYS Drinking Water Standard	Field Sample ID Location Sample Date Site Location Sample Purpose Units	EC-0006-05 LCP-PZ-06BS 10/01/2018 LCP Regular sample	EC-0004-03 MA-MW-03S 09/24/2018 Mathews Ave Regular sample	EC-0004-02 MA-MW-08S 09/24/2018 Mathews Ave Regular sample	EC-0004-07 EC-EB-brass barb-0004 09/24/2018 Mathews Ave Equipment Blank	EC-0006-07 EC-EB-water level probe-0006 10/01/2018 LCP Equipment Blank	EC-0004-01 EC-FRB-0004 09/24/2018 Mathews Ave Field Reagent Blank	EC-0006-04 EC-FRB-0006 10/01/2018 LCP Field Reagent Blank
6:2 Fluorotelomer sulfonate (6:2 FTS)	NC	ng/L	20U	17U	180U	17U	19U	17U	19U
8:2 Fluorotelomer sulfonate (8:2 FTS)	NC	ng/L	20U	17U	180U	17U	19U	17U	19U
EtFOSAA	NC	ng/L	20U	17U	180U	17U	19U	17U	19U
MeFOSAA	NC	ng/L	20U	17U	180U	17U	19U	17U	19U
Perfluorobutanesulfonate (PFBS)	NC	ng/L	0.81J	2U#	18U	1.7U	1.9U	1.7U	1.9U
Perfluorobutanoic acid (PFBA)	NC	ng/L	4.7U	4.6	60U#	1.7U	1.9U	2U#	1.9JN
Perfluorodecanesulfonic acid (PFDS)	NC	ng/L	2.0U	1.7U	18U	1.7U	1.9U	1.7U	1.9U
Perfluorodecanoic acid (PFDA)	NC	ng/L	2.0U	2U#	18U	1.7U	1.9U	1.7U	1.9U
Perfluorododecanoic acid (PFDoA)	NC	ng/L	2.0U	1.7U	18U	1.7U	1.9U	1.7U	1.9U
Perfluoroheptanesulfonic acid (PFHpS)	NC	ng/L	2.0U	2U#	18U	1.7U	1.9U	1.7U	1.9U
Perfluoroheptanoic acid (PFHpA)	NC	ng/L	2U#	2U#	20U#	1.7U	1.9U	1.7U	1.9U
Perfluorohexanesulfonate (PFHxS)	NC	ng/L	2U	1.7U	20U#	0.21J	0.28J	0.24J	0.31J
Perfluorohexanoic acid (PFHxA)	NC	ng/L	1.0JN	2U#	20U#	1.7U	1.9U	1.7U	1.9U
Perfluorononanoic acid (PFNA)	NC	ng/L	2.0U	2U#	18U	1.7U	1.9U	1.7U	1.9U
Perfluoro-octanesulfonate (PFOS)	70	ng/L	1.6JN	18JN	[76JN]	1.7U	1.9U	1.7U	1.9U
Perfluorooctanoic acid (PFOA)	70	ng/L	1.0JN	3.1U#	[150JN]	1.7U	1.9U	1.7U	1.9U
Perfluoropentanoic acid (PFPeA)	NC	ng/L	4U#	4U#	20U#	1.7U	1.9U	1.7U	1.9U
Perfluorotetradecanoic acid (PFTeA)	NC	ng/L	2.0U	1.7U	18UJ	1.7U	1.9U	0.26J	1.9U
Perfluorotridecanoic acid (PFTriA)	NC	ng/L	2.0U	1.7U	18U	1.7U	1.9U	1.7U	1.9U
Perfluoroundecanoic acid (PFUnA)	NC	ng/L	2.0U	1.7U	18U	1.7U	1.9U	1.7U	1.9U
PFOSA	NC	ng/L	2.0U	1.7U	18U	1.7U	1.9U	1.7U	1.9U
1,4-DIOXANE by Method SW8270SIM	NC	µg/L	0.2U	0.15J	30	0.19U	0.17J	---	---

NOTES:

J = Approximate value since the result is less than the RL and greater than or equal to the MDL; U = Analyte not detected; UJ = Analyte not detected; approximate value.

U# = Analyte validated to not detected due to 3:1 signal-to-noise ratio excursion; JN = Indicates the target analyte has been "tentatively identified" and is the estimated concentration.

--- = Parameter not analyzed for

NA = Analyte not analyzed for; NC = No applicable criteria

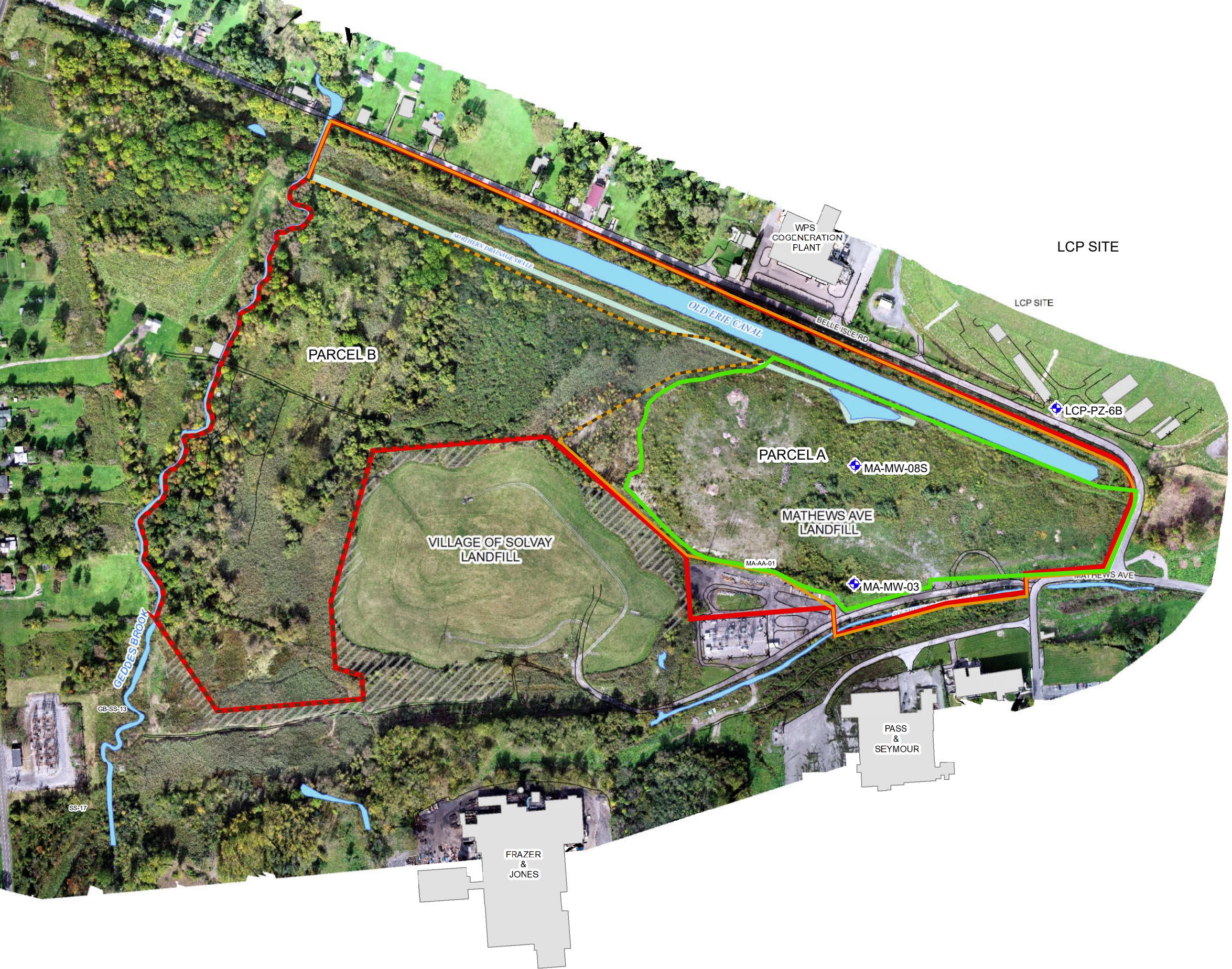
[] = Result exceeds NYS Drinking Water Standard.



Figure

2/1/2019 10:27:03 AM

I:\Honeywell.1163\STD\GIS\Mathews\save\MXD\MA_EC_SAMPLING LOCS.mxd.mxd



LEGEND

- SAMPLING MONITORING WELL
- MATHEWS AVENUE PARCEL B BOUNDARY
- MATHEWS AVENUE PARCEL A BOUNDARY
- MATHEWS AVENUE LANDFILL
- MATHEWS AVENUE SITE BOUNDARY
- DRAINAGE SWALE

HONEYWELL INTERNATIONAL INC.
MATHEWS AVENUE SITE
GEDDES AND CAMILLUS, NY

MONITORING WELL
SAMPLING LOCATIONS



1163.70005
JANUARY 2019



Attachments

Attachment A
NYS Category B
Deliverable Reports
(on CD)

ANALYTICAL REPORT

Job Number: 480-142290-1

Job Description: Portfolio - Emerging Contaminates

For:

O'Brien & Gere Inc of North America
333 West Washington St.
PO BOX 4873
East Syracuse, NY 13221
Attention: Charles Sharpe



Approved for release.
Rebecca M Jones
Project Management Assistant I
10/24/2018 1:48 PM

Designee for
John R Schove, Project Manager II
10 Hazelwood Drive, Amherst, NY, 14228-2298
(716)504-9838
john.schove@testamericainc.com
10/24/2018

The test results in this report meet all NELAP requirements for analytes for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who has signed this report. TestAmerica Buffalo NELAC
Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

TestAmerica Laboratories, Inc.

TestAmerica Buffalo 10 Hazelwood Drive, Amherst, NY 14228-2298
Tel (716) 691-2600 Fax (716) 691-7991 www.testamericainc.com



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Job Narrative
480-142290-1

Comments

No additional comments.

Receipt

The samples were received on 9/25/2018 1:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6° C.

GC/MS Semi VOA

Method(s) 8270D SIM ID: The following samples were diluted due to the nature of the sample matrix: EC-0004-05 (480-142290-5) and EC-0004-06 (480-142290-6). Elevated reporting limits (RLs) are provided.

Method(s) 8270D SIM ID: The following sample was diluted to bring the concentration of target analytes within the calibration range: EC-0004-02 (480-142290-2). Elevated reporting limits (RLs) are provided.

Method(s) 8270D SIM ID: The following sample was diluted due to the nature of the sample matrix: EC-0004-04 (480-142290-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the following samples: EC-0004-04 (480-142290-4) and EC-0004-06 (480-142290-6). Re-analysis was performed with concurring results. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C4 PFBA: EC-0004-04 (480-142290-4). Re-analysis was performed with concurring results. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recoveries associated with the following sample are below the method recommended limit for 13C4 PFBA and 13C5-PFPeA: EC-0004-05 (480-142290-5). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

Method(s) 537 (modified): The following sample has chromatographic interferences that could adversely impact the identification and quantitation of target analytes: Perfluorobutanoic acid (PFBA) and Perfluorohexanesulfonic acid (PFHxS). These interferences could cause false positive and high biased results: EC-0004-05 (480-142290-5).

Method(s) 537 (modified): Results for sample EC-0004-02 (480-142290-2) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the following sample: EC-0004-03 (480-142290-3). Re-analysis was performed with concurring results. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for several analytes in the following sample: EC-0004-02 (480-142290-2). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 13C4 PFBA and 13C2 PFTeDA: EC-0004-02 (480-142290-2). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample. All detection limits are below the lower calibration.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method(s) 3510C: Due to the matrix, the initial volume(s) used for the following sample deviated from the standard procedure: EC-0004-02 (480-142290-2). The reporting limits (RLs) have been adjusted proportionately.

Method(s) 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 320-249876.

Method(s) 3535: The following sample: EC-0004-02 (480-142290-2) in preparation batch 320-249876 was observed to be a brown color prior to extraction.

Method(s) 3535: The following samples: EC-0004-03 (480-142290-3), EC-0004-04 (480-142290-4), EC-0004-05 (480-142290-5) and

EC-0004-06 (480-142290-6) in preparation batch 320-249876 were observed to be a yellow color prior to extraction.

Method(s) 3535: The following samples: EC-0004-05 (480-142290-5) in preparation batch 320-249876 were observed to contain sediment prior to extraction.

Method(s) 3535: The following sample had non-settleable particulate matter which plugged the SPE extraction disk. The amount of sample remaining plus the weight of the bottle are recorded in the "notes" field of the prep batch. The "tare weight" recorded is the weight of the emptied bottle: EC-0004-05 (480-142290-5). The reporting limits (RLs) have been adjusted proportionately.

Method(s) 3535: The following samples: EC-0004-02 (480-142290-2), EC-0004-03 (480-142290-3), EC-0004-04 (480-142290-4), EC-0004-05 (480-142290-5) and EC-0004-06 (480-142290-6) in preparation batch 320-249876 were observed to be a yellow color after they were brought to final volume.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-142290-1	EC-0004-01	Water	09/24/18 09:00	09/25/18 01:00
480-142290-2	EC-0004-02	Water	09/24/18 10:20	09/25/18 01:00
480-142290-3	EC-0004-03	Water	09/24/18 10:20	09/25/18 01:00
480-142290-4	EC-0004-04	Water	09/24/18 12:25	09/25/18 01:00
480-142290-5	EC-0004-05	Water	09/24/18 14:10	09/25/18 01:00
480-142290-6	EC-0004-06	Water	09/24/18 13:45	09/25/18 01:00
480-142290-7	EC-0004-07	Water	09/24/18 15:10	09/25/18 01:00

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-01

Lab Sample ID: 480-142290-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.36	J B	1.7	0.30	ng/L	1			537 (modified)	Total/NA
Perfluorotetradecanoic acid (PFTeA)	0.26	J	1.7	0.25	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.24	J	1.7	0.15	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0004-02

Lab Sample ID: 480-142290-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	30		10	5.0	ug/L	5			8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	60	B	18	3.1	ng/L	10			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	17	J	18	4.3	ng/L	10			537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	10	J	18	5.1	ng/L	10			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	3.9	J	18	2.2	ng/L	10			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	150		18	7.5	ng/L	10			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	6.9	J	18	1.5	ng/L	10			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	76		18	4.8	ng/L	10			537 (modified)	Total/NA

Client Sample ID: EC-0004-03

Lab Sample ID: 480-142290-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	0.15	J	0.19	0.096	ug/L	1			8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	4.6	B	1.7	0.30	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.4	J	1.7	0.42	ng/L	1			537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.1	J	1.7	0.50	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.5	J	1.7	0.22	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.1		1.7	0.73	ng/L	1			537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.1	J	1.7	0.23	ng/L	1			537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.42	J	1.7	0.27	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.63	J	1.7	0.17	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.0	J	1.7	0.15	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.34	J	1.7	0.16	ng/L	1			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	18		1.7	0.47	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0004-04

Lab Sample ID: 480-142290-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	2.4		1.7	0.42	ng/L	1			537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.70	J	1.7	0.50	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.7	0.22	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.3		1.7	0.74	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.54	J	1.7	0.17	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0004-05

Lab Sample ID: 480-142290-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	23	B CI	1.8	0.32	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.9	CI	1.8	0.16	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0004-06

Lab Sample ID: 480-142290-6

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-06 (Continued)

Lab Sample ID: 480-142290-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	30	B	1.8	0.31	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	7.5		1.8	0.44	ng/L	1			537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	5.5		1.8	0.52	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.5		1.8	0.22	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	3.6		1.8	0.76	ng/L	1			537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.72	J	1.8	0.24	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.2	J	1.8	0.18	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	5.7		1.8	0.15	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0004-07

Lab Sample ID: 480-142290-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.21	J	1.7	0.15	ng/L	1			537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Method Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-01

Lab Sample ID: 480-142290-1

Date Collected: 09/24/18 09:00

Matrix: Water

Date Received: 09/25/18 01:00

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.36	J B	1.7	0.30	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluoropentanoic acid (PFPeA)	1.7	U	1.7	0.42	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorohexanoic acid (PFHxA)	1.7	U	1.7	0.50	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluoroheptanoic acid (PFHpA)	1.7	U	1.7	0.21	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorooctanoic acid (PFOA)	1.7	U	1.7	0.73	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorononanoic acid (PFNA)	1.7	U	1.7	0.23	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorodecanoic acid (PFDA)	1.7	U	1.7	0.27	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	0.95	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorododecanoic acid (PFDoA)	1.7	U	1.7	0.47	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorotridecanoic acid (PFTriA)	1.7	U	1.7	1.1	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorotetradecanoic acid (PFTeA)	0.26	J	1.7	0.25	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorobutanesulfonic acid (PFBS)	1.7	U	1.7	0.17	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorohexanesulfonic acid (PFHxS)	0.24	J	1.7	0.15	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.7	U	1.7	0.16	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorooctanesulfonic acid (PFOS)	1.7	U	1.7	0.46	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorodecanesulfonic acid (PFDS)	1.7	U	1.7	0.27	ng/L		10/05/18 07:49	10/10/18 09:14	1
Perfluorooctanesulfonamide (FOSA)	1.7	U	1.7	0.30	ng/L		10/05/18 07:49	10/10/18 09:14	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17	U	17	2.7	ng/L		10/05/18 07:49	10/10/18 09:14	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17	U	17	1.6	ng/L		10/05/18 07:49	10/10/18 09:14	1
6:2 FTS	17	U	17	1.7	ng/L		10/05/18 07:49	10/10/18 09:14	1
8:2 FTS	17	U	17	1.7	ng/L		10/05/18 07:49	10/10/18 09:14	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	103		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C5 PFPeA	104		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C2 PFHxA	103		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C4 PFHpA	108		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C4 PFOA	107		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C5 PFNA	109		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C2 PFDA	101		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C2 PFUnA	98		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C2 PFDoA	95		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C2 PFTeDA	98		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C3 PFBS	108		25 - 150				10/05/18 07:49	10/10/18 09:14	1
18O2 PFHxS	111		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C4 PFOS	110		25 - 150				10/05/18 07:49	10/10/18 09:14	1
13C8 FOSA	99		25 - 150				10/05/18 07:49	10/10/18 09:14	1
d3-NMeFOSAA	99		25 - 150				10/05/18 07:49	10/10/18 09:14	1
d5-NEtFOSAA	110		25 - 150				10/05/18 07:49	10/10/18 09:14	1
M2-6:2 FTS	109		25 - 150				10/05/18 07:49	10/10/18 09:14	1
M2-8:2 FTS	95		25 - 150				10/05/18 07:49	10/10/18 09:14	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-02

Lab Sample ID: 480-142290-2

Date Collected: 09/24/18 10:20

Matrix: Water

Date Received: 09/25/18 01:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	30		10	5.0	ug/L		09/27/18 08:08	10/04/18 15:53	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	25		15 - 110				09/27/18 08:08	10/04/18 15:53	5

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	60	B	18	3.1	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluoropentanoic acid (PFPeA)	17	J	18	4.3	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorohexanoic acid (PFHxA)	10	J	18	5.1	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluoroheptanoic acid (PFHpA)	3.9	J	18	2.2	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorooctanoic acid (PFOA)	150		18	7.5	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorononanoic acid (PFNA)	18	U	18	2.4	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorodecanoic acid (PFDA)	18	U	18	2.7	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluoroundecanoic acid (PFUnA)	18	U	18	9.7	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorododecanoic acid (PFDoA)	18	U	18	4.9	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorotridecanoic acid (PFTriA)	18	U	18	11	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorotetradecanoic acid (PFTeA)	18	U	18	2.6	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorobutanesulfonic acid (PFBS)	18	U	18	1.8	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorohexanesulfonic acid (PFHxS)	6.9	J	18	1.5	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluoroheptanesulfonic Acid (PFHpS)	18	U	18	1.7	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorooctanesulfonic acid (PFOS)	76		18	4.8	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorodecanesulfonic acid (PFDS)	18	U	18	2.8	ng/L		10/05/18 07:49	10/18/18 21:03	10
Perfluorooctanesulfonamide (FOSA)	18	U	18	3.1	ng/L		10/05/18 07:49	10/18/18 21:03	10
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	180	U	180	27	ng/L		10/05/18 07:49	10/18/18 21:03	10
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	180	U	180	17	ng/L		10/05/18 07:49	10/18/18 21:03	10
6:2 FTS	180	U	180	18	ng/L		10/05/18 07:49	10/18/18 21:03	10
8:2 FTS	180	U	180	18	ng/L		10/05/18 07:49	10/18/18 21:03	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	23	*	25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C5 PFPeA	67		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C2 PFHxA	81		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C4 PFHpA	88		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C4 PFOA	96		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C5 PFNA	109		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C2 PFDA	115		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C2 PFUnA	118		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C2 PFDoA	73		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C2 PFTeDA	12	*	25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C3 PFBS	128		25 - 150				10/05/18 07:49	10/18/18 21:03	10
18O2 PFHxS	95		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C4 PFOS	102		25 - 150				10/05/18 07:49	10/18/18 21:03	10
13C8 FOSA	100		25 - 150				10/05/18 07:49	10/18/18 21:03	10
d3-NMeFOSAA	199	*	25 - 150				10/05/18 07:49	10/18/18 21:03	10
d5-NEtFOSAA	148		25 - 150				10/05/18 07:49	10/18/18 21:03	10
M2-6:2 FTS	374	*	25 - 150				10/05/18 07:49	10/18/18 21:03	10

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-02

Date Collected: 09/24/18 10:20

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-2

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-8:2 FTS	401	*	25 - 150	10/05/18 07:49	10/18/18 21:03	10

Client Sample ID: EC-0004-03

Date Collected: 09/24/18 10:20

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-3

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.15	J	0.19	0.096	ug/L		09/27/18 08:08	10/04/18 16:17	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	23		15 - 110				09/27/18 08:08	10/04/18 16:17	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.6	B	1.7	0.30	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluoropentanoic acid (PFPeA)	1.4	J	1.7	0.42	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorohexanoic acid (PFHxA)	1.1	J	1.7	0.50	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluoroheptanoic acid (PFHpA)	1.5	J	1.7	0.22	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorooctanoic acid (PFOA)	3.1		1.7	0.73	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorononanoic acid (PFNA)	1.1	J	1.7	0.23	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorodecanoic acid (PFDA)	0.42	J	1.7	0.27	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	0.95	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorododecanoic acid (PFDoA)	1.7	U	1.7	0.47	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorotridecanoic acid (PFTriA)	1.7	U	1.7	1.1	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorotetradecanoic acid (PFTeA)	1.7	U	1.7	0.25	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorobutanesulfonic acid (PFBS)	0.63	J	1.7	0.17	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorohexanesulfonic acid (PFHxS)	1.0	J	1.7	0.15	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	0.34	J	1.7	0.16	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorooctanesulfonic acid (PFOS)	18		1.7	0.47	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorodecanesulfonic acid (PFDS)	1.7	U	1.7	0.28	ng/L		10/05/18 07:49	10/11/18 23:44	1
Perfluorooctanesulfonamide (FOSA)	1.7	U	1.7	0.30	ng/L		10/05/18 07:49	10/11/18 23:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17	U	17	2.7	ng/L		10/05/18 07:49	10/11/18 23:44	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17	U	17	1.6	ng/L		10/05/18 07:49	10/11/18 23:44	1
6:2 FTS	17	U	17	1.7	ng/L		10/05/18 07:49	10/11/18 23:44	1
8:2 FTS	17	U	17	1.7	ng/L		10/05/18 07:49	10/11/18 23:44	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	53		25 - 150				10/05/18 07:49	10/11/18 23:44	1
13C5 PFPeA	72		25 - 150				10/05/18 07:49	10/11/18 23:44	1
13C2 PFHxA	86		25 - 150				10/05/18 07:49	10/11/18 23:44	1
13C4 PFHpA	98		25 - 150				10/05/18 07:49	10/11/18 23:44	1
13C4 PFOA	108		25 - 150				10/05/18 07:49	10/11/18 23:44	1
13C5 PFNA	111		25 - 150				10/05/18 07:49	10/11/18 23:44	1
13C2 PFDA	103		25 - 150				10/05/18 07:49	10/11/18 23:44	1
13C2 PFUnA	109		25 - 150				10/05/18 07:49	10/11/18 23:44	1
13C2 PFDoA	101		25 - 150				10/05/18 07:49	10/11/18 23:44	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-03

Date Collected: 09/24/18 10:20

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-3

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
¹³ C2 PFTeDA	82		25 - 150	10/05/18 07:49	10/11/18 23:44	1
¹³ C3 PFBS	92		25 - 150	10/05/18 07:49	10/11/18 23:44	1
¹⁸ O2 PFHxS	97		25 - 150	10/05/18 07:49	10/11/18 23:44	1
¹³ C4 PFOS	106		25 - 150	10/05/18 07:49	10/11/18 23:44	1
¹³ C8 FOSA	108		25 - 150	10/05/18 07:49	10/11/18 23:44	1
d3-NMeFOSAA	132		25 - 150	10/05/18 07:49	10/11/18 23:44	1
d5-NEtFOSAA	137		25 - 150	10/05/18 07:49	10/11/18 23:44	1
M2-6:2 FTS	271 *		25 - 150	10/05/18 07:49	10/11/18 23:44	1
M2-8:2 FTS	209 *		25 - 150	10/05/18 07:49	10/11/18 23:44	1

Client Sample ID: EC-0004-04

Date Collected: 09/24/18 12:25

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-4

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	19	U	19	9.6	ug/L		09/27/18 08:08	10/05/18 16:46	100
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	24		15 - 110				09/27/18 08:08	10/05/18 16:46	100

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.7	U	1.7	0.30	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluoropentanoic acid (PFPeA)	2.4		1.7	0.42	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorohexanoic acid (PFHxA)	0.70	J	1.7	0.50	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluoroheptanoic acid (PFHpA)	1.1	J	1.7	0.22	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorooctanoic acid (PFOA)	3.3		1.7	0.74	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorononanoic acid (PFNA)	1.7	U	1.7	0.23	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorodecanoic acid (PFDA)	1.7	U	1.7	0.27	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	0.95	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorododecanoic acid (PFDoA)	1.7	U	1.7	0.48	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorotridecanoic acid (PFTriA)	1.7	U	1.7	1.1	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorotetradecanoic acid (PFTeA)	1.7	U	1.7	0.25	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorobutanesulfonic acid (PFBS)	0.54	J	1.7	0.17	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorohexanesulfonic acid (PFHxS)	1.7	U	1.7	0.15	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.7	U	1.7	0.16	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorooctanesulfonic acid (PFOS)	1.7	U	1.7	0.47	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorodecanesulfonic acid (PFDS)	1.7	U	1.7	0.28	ng/L		10/05/18 07:49	10/10/18 09:37	1
Perfluorooctanesulfonamide (FOSA)	1.7	U	1.7	0.30	ng/L		10/05/18 07:49	10/10/18 09:37	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17	U	17	2.7	ng/L		10/05/18 07:49	10/10/18 09:37	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17	U	17	1.6	ng/L		10/05/18 07:49	10/10/18 09:37	1
6:2 FTS	17	U	17	1.7	ng/L		10/05/18 07:49	10/10/18 09:37	1
8:2 FTS	17	U	17	1.7	ng/L		10/05/18 07:49	10/10/18 09:37	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	5	*	25 - 150				10/05/18 07:49	10/10/18 09:37	1
13C5 PFPeA	33		25 - 150				10/05/18 07:49	10/10/18 09:37	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-04

Lab Sample ID: 480-142290-4

Date Collected: 09/24/18 12:25

Matrix: Water

Date Received: 09/25/18 01:00

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	72		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C4 PFHpA	96		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C4 PFOA	99		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C5 PFNA	106		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C2 PFDA	103		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C2 PFUnA	104		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C2 PFDoA	107		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C2 PFTeDA	71		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C3 PFBS	87		25 - 150	10/05/18 07:49	10/10/18 09:37	1
18O2 PFHxS	103		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C4 PFOS	99		25 - 150	10/05/18 07:49	10/10/18 09:37	1
13C8 FOSA	108		25 - 150	10/05/18 07:49	10/10/18 09:37	1
d3-NMeFOSAA	121		25 - 150	10/05/18 07:49	10/10/18 09:37	1
d5-NEtFOSAA	132		25 - 150	10/05/18 07:49	10/10/18 09:37	1
M2-6:2 FTS	261 *		25 - 150	10/05/18 07:49	10/10/18 09:37	1
M2-8:2 FTS	191 *		25 - 150	10/05/18 07:49	10/10/18 09:37	1

Client Sample ID: EC-0004-05

Lab Sample ID: 480-142290-5

Date Collected: 09/24/18 14:10

Matrix: Water

Date Received: 09/25/18 01:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	9.6	U	9.6	4.8	ug/L	—	09/27/18 08:08	10/04/18 17:04	50
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	30		15 - 110				09/27/18 08:08	10/04/18 17:04	50

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	23	B CI	1.8	0.32	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluoropentanoic acid (PFPeA)	1.8	U	1.8	0.45	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorohexanoic acid (PFHxA)	1.8	U	1.8	0.53	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluoroheptanoic acid (PFHpA)	1.8	U	1.8	0.23	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorooctanoic acid (PFOA)	1.8	U	1.8	0.78	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorononanoic acid (PFNA)	1.8	U	1.8	0.25	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorodecanoic acid (PFDA)	1.8	U	1.8	0.28	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluoroundecanoic acid (PFUnA)	1.8	U	1.8	1.0	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorododecanoic acid (PFDoA)	1.8	U	1.8	0.50	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorotridecanoic acid (PFTriA)	1.8	U	1.8	1.2	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorotetradecanoic acid (PFTeA)	1.8	U	1.8	0.26	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U	1.8	0.18	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorohexanesulfonic acid (PFHxS)	2.9	CI	1.8	0.16	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.8	U	1.8	0.17	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorooctanesulfonic acid (PFOS)	1.8	U	1.8	0.49	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorodecanesulfonic acid (PFDS)	1.8	U	1.8	0.29	ng/L		10/05/18 07:49	10/10/18 09:44	1
Perfluorooctanesulfonamide (FOSA)	1.8	U	1.8	0.32	ng/L		10/05/18 07:49	10/10/18 09:44	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18	U	18	2.8	ng/L		10/05/18 07:49	10/10/18 09:44	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-05

Date Collected: 09/24/18 14:10

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	18	U	18	1.7	ng/L		10/05/18 07:49	10/10/18 09:44	1
6:2 FTS	18	U	18	1.8	ng/L		10/05/18 07:49	10/10/18 09:44	1
8:2 FTS	18	U	18	1.8	ng/L		10/05/18 07:49	10/10/18 09:44	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	8	*	25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C5 PFPeA	20	*	25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C2 PFHxA	28		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C4 PFHpA	42		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C4 PFOA	46		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C5 PFNA	56		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C2 PFDA	58		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C2 PFUnA	58		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C2 PFDoA	55		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C2 PFTeDA	39		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C3 PFBS	37		25 - 150				10/05/18 07:49	10/10/18 09:44	1
18O2 PFHxS	51		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C4 PFOS	63		25 - 150				10/05/18 07:49	10/10/18 09:44	1
13C8 FOSA	57		25 - 150				10/05/18 07:49	10/10/18 09:44	1
d3-NMeFOSAA	71		25 - 150				10/05/18 07:49	10/10/18 09:44	1
d5-NEtFOSAA	74		25 - 150				10/05/18 07:49	10/10/18 09:44	1
M2-6:2 FTS	96		25 - 150				10/05/18 07:49	10/10/18 09:44	1
M2-8:2 FTS	146		25 - 150				10/05/18 07:49	10/10/18 09:44	1

Client Sample ID: EC-0004-06

Date Collected: 09/24/18 13:45

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-6

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.9	U	1.9	0.96	ug/L		09/27/18 08:08	10/04/18 17:28	10
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	16		15 - 110				09/27/18 08:08	10/04/18 17:28	10

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	30	B	1.8	0.31	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluoropentanoic acid (PFPeA)	7.5		1.8	0.44	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorohexanoic acid (PFHxA)	5.5		1.8	0.52	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluoroheptanoic acid (PFHpA)	2.5		1.8	0.22	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorooctanoic acid (PFOA)	3.6		1.8	0.76	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorononanoic acid (PFNA)	0.72	J	1.8	0.24	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorodecanoic acid (PFDA)	1.8	U	1.8	0.28	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluoroundecanoic acid (PFUnA)	1.8	U	1.8	0.99	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorododecanoic acid (PFDoA)	1.8	U	1.8	0.49	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorotridecanoic acid (PFTriA)	1.8	U	1.8	1.2	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorotetradecanoic acid (PFTeA)	1.8	U	1.8	0.26	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorobutanesulfonic acid (PFBS)	1.2	J	1.8	0.18	ng/L		10/05/18 07:49	10/10/18 09:52	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-06

Lab Sample ID: 480-142290-6

Date Collected: 09/24/18 13:45

Matrix: Water

Date Received: 09/25/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanesulfonic acid (PFHxS)	5.7		1.8	0.15	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.8	U	1.8	0.17	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorooctanesulfonic acid (PFOS)	1.8	U	1.8	0.48	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorodecanesulfonic acid (PFDS)	1.8	U	1.8	0.29	ng/L		10/05/18 07:49	10/10/18 09:52	1
Perfluorooctanesulfonamide (FOSA)	1.8	U	1.8	0.31	ng/L		10/05/18 07:49	10/10/18 09:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18	U	18	2.8	ng/L		10/05/18 07:49	10/10/18 09:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18	U	18	1.7	ng/L		10/05/18 07:49	10/10/18 09:52	1
6:2 FTS	18	U	18	1.8	ng/L		10/05/18 07:49	10/10/18 09:52	1
8:2 FTS	18	U	18	1.8	ng/L		10/05/18 07:49	10/10/18 09:52	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	47		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C5 PFPeA	89		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C2 PFHxA	94		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C4 PFHpA	107		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C4 PFOA	109		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C5 PFNA	110		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C2 PFDA	110		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C2 PFUnA	105		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C2 PFDoA	100		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C2 PFTeDA	72		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C3 PFBS	106		25 - 150	10/05/18 07:49	10/10/18 09:52	1
18O2 PFHxS	110		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C4 PFOS	104		25 - 150	10/05/18 07:49	10/10/18 09:52	1
13C8 FOSA	117		25 - 150	10/05/18 07:49	10/10/18 09:52	1
d3-NMeFOSAA	131		25 - 150	10/05/18 07:49	10/10/18 09:52	1
d5-NEtFOSAA	141		25 - 150	10/05/18 07:49	10/10/18 09:52	1
M2-6:2 FTS	280	*	25 - 150	10/05/18 07:49	10/10/18 09:52	1
M2-8:2 FTS	209	*	25 - 150	10/05/18 07:49	10/10/18 09:52	1

Client Sample ID: EC-0004-07

Lab Sample ID: 480-142290-7

Date Collected: 09/24/18 15:10

Matrix: Water

Date Received: 09/25/18 01:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.19	U	0.19	0.095	ug/L		09/27/18 08:08	10/04/18 17:52	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	33		15 - 110				09/27/18 08:08	10/04/18 17:52	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.7	U	1.7	0.31	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluoropentanoic acid (PFPeA)	1.7	U	1.7	0.43	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorohexanoic acid (PFHxA)	1.7	U	1.7	0.51	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluoroheptanoic acid (PFHpA)	1.7	U	1.7	0.22	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorooctanoic acid (PFOA)	1.7	U	1.7	0.74	ng/L		10/05/18 07:49	10/10/18 09:59	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-07

Lab Sample ID: 480-142290-7

Date Collected: 09/24/18 15:10

Matrix: Water

Date Received: 09/25/18 01:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorononanoic acid (PFNA)	1.7	U	1.7	0.24	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorodecanoic acid (PFDA)	1.7	U	1.7	0.27	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	0.96	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorododecanoic acid (PFDoA)	1.7	U	1.7	0.48	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorotridecanoic acid (PFTriA)	1.7	U	1.7	1.1	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorotetradecanoic acid (PFTeA)	1.7	U	1.7	0.25	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorobutanesulfonic acid (PFBS)	1.7	U	1.7	0.17	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorohexanesulfonic acid (PFHxS)	0.21	J	1.7	0.15	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.7	U	1.7	0.17	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorooctanesulfonic acid (PFOS)	1.7	U	1.7	0.47	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorodecanesulfonic acid (PFDS)	1.7	U	1.7	0.28	ng/L		10/05/18 07:49	10/10/18 09:59	1
Perfluorooctanesulfonamide (FOSA)	1.7	U	1.7	0.31	ng/L		10/05/18 07:49	10/10/18 09:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17	U	17	2.7	ng/L		10/05/18 07:49	10/10/18 09:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17	U	17	1.7	ng/L		10/05/18 07:49	10/10/18 09:59	1
6:2 FTS	17	U	17	1.7	ng/L		10/05/18 07:49	10/10/18 09:59	1
8:2 FTS	17	U	17	1.7	ng/L		10/05/18 07:49	10/10/18 09:59	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	99		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C5 PFPeA	101		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C2 PFHxA	102		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C4 PFHpA	99		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C4 PFOA	98		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C5 PFNA	106		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C2 PFDA	105		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C2 PFUnA	92		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C2 PFDoA	101		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C2 PFTeDA	105		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C3 PFBS	101		25 - 150	10/05/18 07:49	10/10/18 09:59	1
18O2 PFHxS	97		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C4 PFOS	106		25 - 150	10/05/18 07:49	10/10/18 09:59	1
13C8 FOSA	98		25 - 150	10/05/18 07:49	10/10/18 09:59	1
d3-NMeFOSAA	110		25 - 150	10/05/18 07:49	10/10/18 09:59	1
d5-NEtFOSAA	104		25 - 150	10/05/18 07:49	10/10/18 09:59	1
M2-6:2 FTS	110		25 - 150	10/05/18 07:49	10/10/18 09:59	1
M2-8:2 FTS	92		25 - 150	10/05/18 07:49	10/10/18 09:59	1

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-110)
480-142290-2	EC-0004-02	25
480-142290-3	EC-0004-03	23
480-142290-4	EC-0004-04	24
480-142290-5	EC-0004-05	30
480-142290-6	EC-0004-06	16
480-142290-7	EC-0004-07	33
LCS 480-436470/2-A	Lab Control Sample	32
MB 480-436470/1-A	Method Blank	37

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
480-142290-1	EC-0004-01	103	104	103	108	107	109	101	98
480-142290-2	EC-0004-02	23 *	67	81	88	96	109	115	118
480-142290-3	EC-0004-03	53	72	86	98	108	111	103	109
480-142290-4	EC-0004-04	5 *	33	72	96	99	106	103	104
480-142290-5	EC-0004-05	8 *	20 *	28	42	46	56	58	58
480-142290-6	EC-0004-06	47	89	94	107	109	110	110	105
480-142290-7	EC-0004-07	99	101	102	99	98	106	105	92
LCS 320-249876/2-A	Lab Control Sample	99	96	102	100	101	100	98	96
MB 320-249876/1-A	Method Blank	92	95	93	98	97	104	96	85

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	3C3-PFB: (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS: (25-150)	-NEtFOS/ (25-150)
480-142290-1	EC-0004-01	95	98	108	111	110	99	99	110
480-142290-2	EC-0004-02	73	12 *	128	95	102	100	199 *	148
480-142290-3	EC-0004-03	101	82	92	97	106	108	132	137
480-142290-4	EC-0004-04	107	71	87	103	99	108	121	132
480-142290-5	EC-0004-05	55	39	37	51	63	57	71	74
480-142290-6	EC-0004-06	100	72	106	110	104	117	131	141
480-142290-7	EC-0004-07	101	105	101	97	106	98	110	104
LCS 320-249876/2-A	Lab Control Sample	97	99	100	94	100	92	94	100
MB 320-249876/1-A	Method Blank	102	97	103	91	87	91	97	94

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
480-142290-1	EC-0004-01	109	95
480-142290-2	EC-0004-02	374 *	401 *
480-142290-3	EC-0004-03	271 *	209 *
480-142290-4	EC-0004-04	261 *	191 *
480-142290-5	EC-0004-05	96	146
480-142290-6	EC-0004-06	280 *	209 *
480-142290-7	EC-0004-07	110	92

TestAmerica Buffalo

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)	
		M262FTS (25-150)	M282FTS (25-150)
LCS 320-249876/2-A	Lab Control Sample	105	101
MB 320-249876/1-A	Method Blank	87	78

Surrogate Legend

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

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-436470/1-A
Matrix: Water
Analysis Batch: 437485

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436470

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.20	0.10	ug/L		09/27/18 08:08	10/04/18 13:56	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	37		15 - 110				09/27/18 08:08	10/04/18 13:56	1

Lab Sample ID: LCS 480-436470/2-A
Matrix: Water
Analysis Batch: 437485

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436470

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	1.00	1.11		ug/L		111	40 - 140
Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	32		15 - 110				

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-249876/1-A
Matrix: Water
Analysis Batch: 251153

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 249876

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.399	J	2.0	0.35	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluoropentanoic acid (PFPeA)	2.0	U	2.0	0.49	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorohexanoic acid (PFHxA)	2.0	U	2.0	0.58	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluoroheptanoic acid (PFHpA)	2.0	U	2.0	0.25	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorooctanoic acid (PFOA)	2.0	U	2.0	0.85	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorononanoic acid (PFNA)	2.0	U	2.0	0.27	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorodecanoic acid (PFDA)	2.0	U	2.0	0.31	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluoroundecanoic acid (PFUnA)	2.0	U	2.0	1.1	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorododecanoic acid (PFDoA)	2.0	U	2.0	0.55	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorotridecanoic acid (PFTriA)	2.0	U	2.0	1.3	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorotetradecanoic acid (PFTeA)	2.0	U	2.0	0.29	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.0	0.20	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorohexanesulfonic acid (PFHxS)	2.0	U	2.0	0.17	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.0	U	2.0	0.19	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorooctanesulfonic acid (PFOS)	2.0	U	2.0	0.54	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorodecanesulfonic acid (PFDS)	2.0	U	2.0	0.32	ng/L		10/05/18 07:49	10/10/18 08:52	1
Perfluorooctanesulfonamide (FOSA)	2.0	U	2.0	0.35	ng/L		10/05/18 07:49	10/10/18 08:52	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20	U	20	3.1	ng/L		10/05/18 07:49	10/10/18 08:52	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20	U	20	1.9	ng/L		10/05/18 07:49	10/10/18 08:52	1
6:2 FTS	20	U	20	2.0	ng/L		10/05/18 07:49	10/10/18 08:52	1
8:2 FTS	20	U	20	2.0	ng/L		10/05/18 07:49	10/10/18 08:52	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	92		25 - 150				10/05/18 07:49	10/10/18 08:52	1

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

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

Lab Sample ID: MB 320-249876/1-A

Matrix: Water

Analysis Batch: 251153

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 249876

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	95		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C2 PFHxA	93		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C4 PFHpA	98		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C4 PFOA	97		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C5 PFNA	104		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C2 PFDA	96		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C2 PFUnA	85		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C2 PFDoA	102		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C2 PFTeDA	97		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C3 PFBS	103		25 - 150	10/05/18 07:49	10/10/18 08:52	1
18O2 PFHxS	91		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C4 PFOS	87		25 - 150	10/05/18 07:49	10/10/18 08:52	1
13C8 FOSA	91		25 - 150	10/05/18 07:49	10/10/18 08:52	1
d3-NMeFOSAA	97		25 - 150	10/05/18 07:49	10/10/18 08:52	1
d5-NEtFOSAA	94		25 - 150	10/05/18 07:49	10/10/18 08:52	1
M2-6:2 FTS	87		25 - 150	10/05/18 07:49	10/10/18 08:52	1
M2-8:2 FTS	78		25 - 150	10/05/18 07:49	10/10/18 08:52	1

Lab Sample ID: LCS 320-249876/2-A

Matrix: Water

Analysis Batch: 253242

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 249876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	38.0		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	39.8		ng/L		100	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	37.4		ng/L		94	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	34.6		ng/L		86	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	37.0		ng/L		92	64 - 124
Perfluorononanoic acid (PFNA)	40.0	39.9		ng/L		100	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	36.7		ng/L		92	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.2		ng/L		96	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	36.5		ng/L		91	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	37.1		ng/L		93	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	35.6		ng/L		89	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	30.5		ng/L		86	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.5		ng/L		92	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	34.9		ng/L		92	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	32.4		ng/L		87	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.7		ng/L		93	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	36.8		ng/L		92	70 - 130

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

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

Lab Sample ID: LCS 320-249876/2-A

Matrix: Water

Analysis Batch: 253242

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 249876

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	38.7		ng/L		97	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.4		ng/L		94	65 - 125
6:2 FTS	37.9	41.4		ng/L		109	66 - 126
8:2 FTS	38.3	36.9		ng/L		96	67 - 127

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	99		25 - 150
13C5 PFPeA	96		25 - 150
13C2 PFHxA	102		25 - 150
13C4 PFHpA	100		25 - 150
13C4 PFOA	101		25 - 150
13C5 PFNA	100		25 - 150
13C2 PFDA	98		25 - 150
13C2 PFUnA	96		25 - 150
13C2 PFDoA	97		25 - 150
13C2 PFTeDA	99		25 - 150
13C3 PFBS	100		25 - 150
18O2 PFHxS	94		25 - 150
13C4 PFOS	100		25 - 150
13C8 FOSA	92		25 - 150
d3-NMeFOSAA	94		25 - 150
d5-NEtFOSAA	100		25 - 150
M2-6:2 FTS	105		25 - 150
M2-8:2 FTS	101		25 - 150

Definitions/Glossary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

LCMS

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	Isotope Dilution analyte is outside acceptance limits.
CI	The peak identified by the data system exhibited chromatographic interference that could not be resolved. There is reason to suspect there may be a high bias.

Glossary

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

QC Association Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

GC/MS Semi VOA

Prep Batch: 436470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142290-2	EC-0004-02	Total/NA	Water	3510C	
480-142290-3	EC-0004-03	Total/NA	Water	3510C	
480-142290-4	EC-0004-04	Total/NA	Water	3510C	
480-142290-5	EC-0004-05	Total/NA	Water	3510C	
480-142290-6	EC-0004-06	Total/NA	Water	3510C	
480-142290-7	EC-0004-07	Total/NA	Water	3510C	
MB 480-436470/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-436470/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 437485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142290-2	EC-0004-02	Total/NA	Water	8270D SIM ID	436470
480-142290-3	EC-0004-03	Total/NA	Water	8270D SIM ID	436470
480-142290-5	EC-0004-05	Total/NA	Water	8270D SIM ID	436470
480-142290-6	EC-0004-06	Total/NA	Water	8270D SIM ID	436470
480-142290-7	EC-0004-07	Total/NA	Water	8270D SIM ID	436470
MB 480-436470/1-A	Method Blank	Total/NA	Water	8270D SIM ID	436470
LCS 480-436470/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	436470

Analysis Batch: 437915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142290-4	EC-0004-04	Total/NA	Water	8270D SIM ID	436470

LCMS

Prep Batch: 249876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142290-1	EC-0004-01	Total/NA	Water	3535	
480-142290-2	EC-0004-02	Total/NA	Water	3535	
480-142290-3	EC-0004-03	Total/NA	Water	3535	
480-142290-4	EC-0004-04	Total/NA	Water	3535	
480-142290-5	EC-0004-05	Total/NA	Water	3535	
480-142290-6	EC-0004-06	Total/NA	Water	3535	
480-142290-7	EC-0004-07	Total/NA	Water	3535	
MB 320-249876/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-249876/2-A	Lab Control Sample	Total/NA	Water	3535	

Analysis Batch: 251153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142290-1	EC-0004-01	Total/NA	Water	537 (modified)	249876
480-142290-4	EC-0004-04	Total/NA	Water	537 (modified)	249876
480-142290-5	EC-0004-05	Total/NA	Water	537 (modified)	249876
480-142290-6	EC-0004-06	Total/NA	Water	537 (modified)	249876
480-142290-7	EC-0004-07	Total/NA	Water	537 (modified)	249876
MB 320-249876/1-A	Method Blank	Total/NA	Water	537 (modified)	249876

Analysis Batch: 251568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142290-3	EC-0004-03	Total/NA	Water	537 (modified)	249876

QC Association Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

LCMS (Continued)

Analysis Batch: 253242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142290-2	EC-0004-02	Total/NA	Water	537 (modified)	249876
LCS 320-249876/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	249876

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-01

Date Collected: 09/24/18 09:00

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			249876	10/05/18 07:49	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	251153	10/10/18 09:14	CBW	TAL SAC

Client Sample ID: EC-0004-02

Date Collected: 09/24/18 10:20

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436470	09/27/18 08:08	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		5	437485	10/04/18 15:53	DMR	TAL BUF
Total/NA	Prep	3535			249876	10/05/18 07:49	SK	TAL SAC
Total/NA	Analysis	537 (modified)		10	253242	10/18/18 21:03	S1M	TAL SAC

Client Sample ID: EC-0004-03

Date Collected: 09/24/18 10:20

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436470	09/27/18 08:08	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	437485	10/04/18 16:17	DMR	TAL BUF
Total/NA	Prep	3535			249876	10/05/18 07:49	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	251568	10/11/18 23:44	CBW	TAL SAC

Client Sample ID: EC-0004-04

Date Collected: 09/24/18 12:25

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436470	09/27/18 08:08	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		100	437915	10/05/18 16:46	DMR	TAL BUF
Total/NA	Prep	3535			249876	10/05/18 07:49	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	251153	10/10/18 09:37	CBW	TAL SAC

Client Sample ID: EC-0004-05

Date Collected: 09/24/18 14:10

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436470	09/27/18 08:08	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		50	437485	10/04/18 17:04	DMR	TAL BUF
Total/NA	Prep	3535			249876	10/05/18 07:49	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	251153	10/10/18 09:44	CBW	TAL SAC

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Client Sample ID: EC-0004-06

Date Collected: 09/24/18 13:45

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436470	09/27/18 08:08	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		10	437485	10/04/18 17:28	DMR	TAL BUF
Total/NA	Prep	3535			249876	10/05/18 07:49	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	251153	10/10/18 09:52	CBW	TAL SAC

Client Sample ID: EC-0004-07

Date Collected: 09/24/18 15:10

Date Received: 09/25/18 01:00

Lab Sample ID: 480-142290-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436470	09/27/18 08:08	JMP	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	437485	10/04/18 17:52	DMR	TAL BUF
Total/NA	Prep	3535			249876	10/05/18 07:49	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	251153	10/10/18 09:59	CBW	TAL SAC

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

Accreditation/Certification Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Portfolio - Emerging Contaminates

TestAmerica Job ID: 480-142290-1

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
ANAB	DoD ELAP		L2468	01-20-21
Arizona	State Program	9	AZ0708	08-11-19
Arkansas DEQ	State Program	6	88-0691	06-17-19
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-19
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-19
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-19
Kansas	NELAP	7	E-10375	10-31-18 *
Louisiana	NELAP	6	30612	06-30-19
Maine	State Program	1	CA0004	04-14-20
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-19
New Hampshire	NELAP	1	2997	04-18-19
New Jersey	NELAP	2	CA005	06-30-19
New York	NELAP	2	11666	03-31-19
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-19
Texas	NELAP	6	T104704399	05-31-19
US Fish & Wildlife	Federal		LE148388-0	07-31-19
USDA	Federal		P330-18-00239	01-17-21
USEPA UCMR	Federal	1	CA00044	12-31-20
Utah	NELAP	8	CA00044	02-28-19
Vermont	State Program	1	VT-4040	04-30-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-19
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

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

TestAmerica Buffalo

Method 8270D

SIM-ID

Semivolatile Organic Compounds
(GC/MS SIM / Isotope Dilution) by
Method 8270D

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Buffalo

Job No.: 480-142290-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): RXI-5Sil MS ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	DXE #
EC-0004-02	480-142290-2	25
EC-0004-03	480-142290-3	23
EC-0004-04	480-142290-4	24
EC-0004-05	480-142290-5	30
EC-0004-06	480-142290-6	16
EC-0004-07	480-142290-7	33
	MB 480-436470/1-A	37
	LCS 480-436470/2-A	32

DXE = 1,4-Dioxane-d8

QC LIMITS
15-110

Column to be used to flag recovery values

FORM II 8270D SIM ID

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: U3312001.D
Lab ID: LCS 480-436470/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	1.11	111	40-140	
1,4-Dioxane-d8	10.0	3.15	32	15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Lab File ID: U3312000.D Lab Sample ID: MB 480-436470/1-A
Matrix: Water Date Extracted: 09/27/2018 08:08
Instrument ID: HP5973U Date Analyzed: 10/04/2018 13:56
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-436470/2-A	U3312001.D	10/04/2018 14:19
EC-0004-02	480-142290-2	U3312005.D	10/04/2018 15:53
EC-0004-03	480-142290-3	U3312006.D	10/04/2018 16:17
EC-0004-05	480-142290-5	U3312008.D	10/04/2018 17:04
EC-0004-06	480-142290-6	U3312009.D	10/04/2018 17:28
EC-0004-07	480-142290-7	U3312010.D	10/04/2018 17:52
EC-0004-04	480-142290-4	U3312061.D	10/05/2018 16:46

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Lab File ID: U3311895.D DFTPP Injection Date: 10/02/2018
Instrument ID: HP5973U DFTPP Injection Time: 10:28
Analysis Batch No.: 437263

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	28.6
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	33.0
70	Less than 2% of mass 69	0.1 (0.4) 1
127	10-80% of Base Peak	45.0
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	7.4
275	10-60% of Base Peak	35.8
365	Greater than 1% of mass 198	5.3
441	present but less than 24% of mass 442	19.2 (13.4) 2
442	Greater than 50% of mass 198	142.9
443	15-24% of mass 442	31.0 (21.7) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-437263/4	U3311897.D	10/02/2018	11:24
	IC 480-437263/5	U3311898.D	10/02/2018	11:48
	ICIS 480-437263/6	U3311899.D	10/02/2018	12:11
	IC 480-437263/7	U3311900.D	10/02/2018	12:35
	IC 480-437263/8	U3311901.D	10/02/2018	12:58
	IC 480-437263/9	U3311902.D	10/02/2018	13:22

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Lab File ID: U3311994.D DFTPP Injection Date: 10/04/2018
Instrument ID: HP5973U DFTPP Injection Time: 11:25
Analysis Batch No.: 437485

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	31.3
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	35.5
70	Less than 2% of mass 69	0.2 (0.6) 1
127	10-80% of Base Peak	49.4
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	7.7
275	10-60% of Base Peak	34.4
365	Greater than 1% of mass 198	5.8
441	present but less than 24% of mass 442	4.5 (3.2) 2
442	Greater than 50% of mass 198	140.1
443	15-24% of mass 442	33.0 (23.6) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-437485/3	U3311995.D	10/04/2018	11:55
	MB 480-436470/1-A	U3312000.D	10/04/2018	13:56
	LCS 480-436470/2-A	U3312001.D	10/04/2018	14:19
EC-0004-02	480-142290-2	U3312005.D	10/04/2018	15:53
EC-0004-03	480-142290-3	U3312006.D	10/04/2018	16:17
EC-0004-05	480-142290-5	U3312008.D	10/04/2018	17:04
EC-0004-06	480-142290-6	U3312009.D	10/04/2018	17:28
EC-0004-07	480-142290-7	U3312010.D	10/04/2018	17:52

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Lab File ID: U3312051.D DFTPP Injection Date: 10/05/2018
Instrument ID: HP5973U DFTPP Injection Time: 12:17
Analysis Batch No.: 437915

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	42.1
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	41.6
70	Less than 2% of mass 69	0.2 (0.4) 1
127	10-80% of Base Peak	50.3
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	7.2
275	10-60% of Base Peak	26.1
365	Greater than 1% of mass 198	3.2
441	present but less than 24% of mass 442	12.2 (17.0) 2
442	Greater than 50% of mass 198	71.6
443	15-24% of mass 442	14.0 (19.5) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-437915/3	U3312052.D	10/05/2018	13:16
	IC 480-437915/4	U3312053.D	10/05/2018	13:39
	ICIS 480-437915/5	U3312054.D	10/05/2018	14:03
	IC 480-437915/6	U3312055.D	10/05/2018	14:26
	IC 480-437915/7	U3312056.D	10/05/2018	14:49
	IC 480-437915/8	U3312057.D	10/05/2018	15:13
	CCVIS 480-437915/10	U3312059.D	10/05/2018	16:00
EC-0004-04	480-142290-4	U3312061.D	10/05/2018	16:46

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: ICIS 480-437263/6 Date Analyzed: 10/02/2018 12:11
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
 Lab File ID (Standard): U3311899.D Heated Purge: (Y/N) N
 Calibration ID: 34978

	DCBd4					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	1401904	6.02				
UPPER LIMIT	2803808	6.52				
LOWER LIMIT	700952	5.52				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVIS 480-437485/3		1561558	5.98			

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: CCVIS 480-437485/3 Date Analyzed: 10/04/2018 11:55
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm)
 Lab File ID (Standard): U3311995.D Heated Purge: (Y/N) N
 Calibration ID: 34978

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		1561558	5.98				
UPPER LIMIT		3123116	6.48				
LOWER LIMIT		780779	5.48				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-436470/1-A		1545056	5.98				
LCS 480-436470/2-A		1434143	5.98				
480-142290-2	EC-0004-02	1118263	5.98				
480-142290-3	EC-0004-03	1090372	5.98				
480-142290-5	EC-0004-05	1093752	5.98				
480-142290-6	EC-0004-06	1132202	5.98				
480-142290-7	EC-0004-07	1138079	5.98				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: ICIS 480-437915/5 Date Analyzed: 10/05/2018 14:03
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
 Lab File ID (Standard): U3312054.D Heated Purge: (Y/N) N
 Calibration ID: 35015

	DCBd4					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	650120	5.98				
UPPER LIMIT	1300240	6.48				
LOWER LIMIT	325060	5.48				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVIS 480-437915/10		682341 5.98				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: CCVIS 480-437915/10 Date Analyzed: 10/05/2018 16:00
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
 Lab File ID (Standard): U3312059.D Heated Purge: (Y/N) N
 Calibration ID: 35015

	DCBd4					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	682341	5.98				
UPPER LIMIT	1364682	6.48				
LOWER LIMIT	341171	5.48				
LAB SAMPLE ID	CLIENT SAMPLE ID					
480-142290-4	EC-0004-04		689449	6.00		

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Client Sample ID: EC-0004-02 Lab Sample ID: 480-142290-2
Matrix: Water Lab File ID: U3312005.D
Analysis Method: 8270D SIM ID Date Collected: 09/24/2018 10:20
Extract. Method: 3510C Date Extracted: 09/27/2018 08:08
Sample wt/vol: 100 (mL) Date Analyzed: 10/04/2018 15:53
Con. Extract Vol.: 1 (mL) Dilution Factor: 5
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 437485 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	30		10	5.0

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	25		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312005.D
 Lims ID: 480-142290-C-2-A
 Client ID: EC-0004-02
 Sample Type: Client
 Inject. Date: 04-Oct-2018 15:53:30 ALS Bottle#: 44 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 5.0000
 Sample Info: 480-0075162-013
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:39 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 20:11:31

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.834	2.805	0.029	99	65543	0.4906	24.5	
3 1,4-Dioxane	88	2.874	2.850	0.024	97	22682	0.5920		
* 2 1,4-Dichlorobenzene-d4	152	5.979	5.975	0.004	95	1118263	4.00		

Reagents:

MB_LLIS_WRK_00154 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312005.D

Injection Date: 04-Oct-2018 15:53:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142290-C-2-A

Lab Sample ID: 480-142290-2

Worklist Smp#: 13

Client ID: EC-0004-02

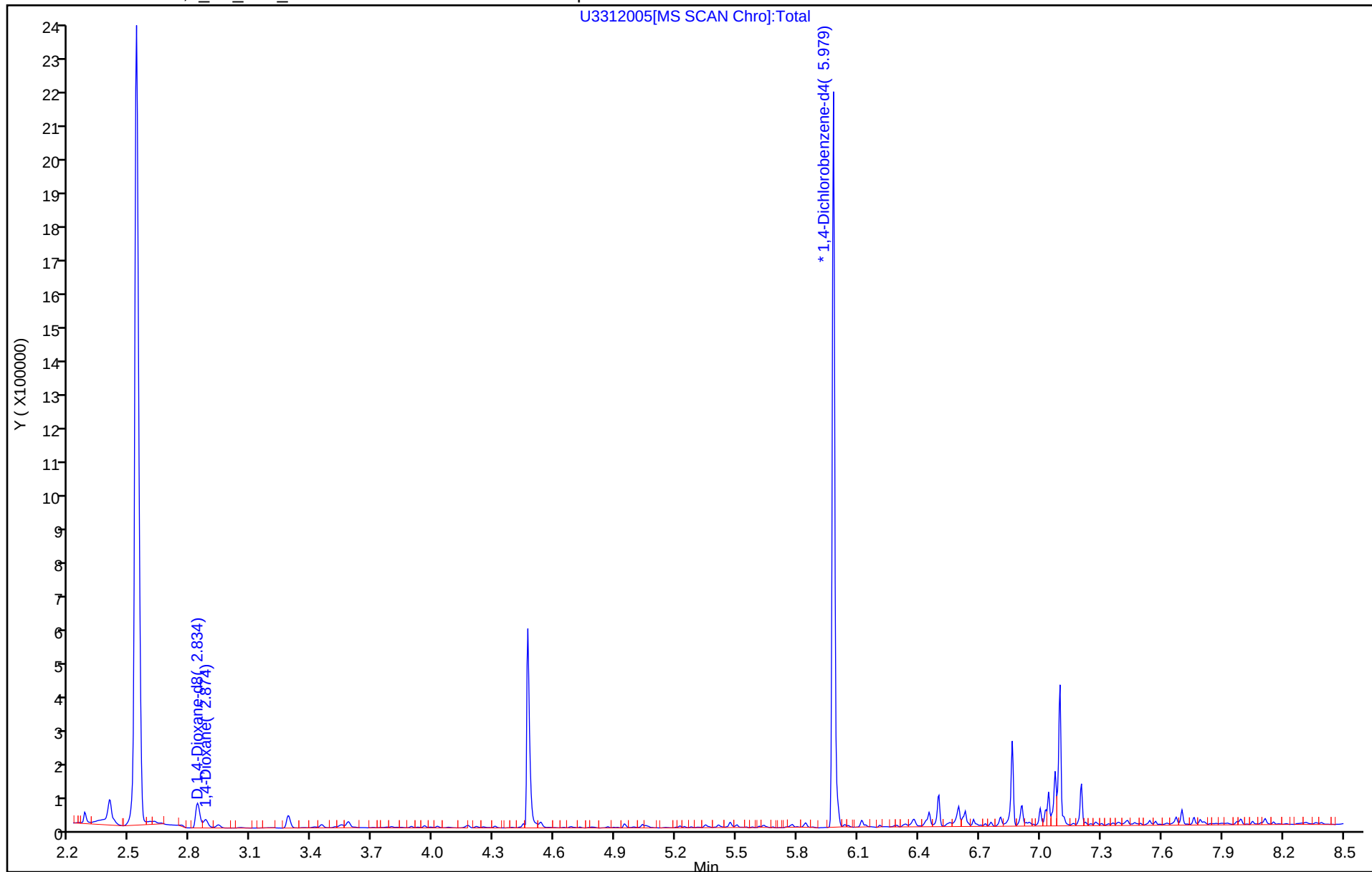
Injection Vol: 1.0 ul

Dil. Factor: 5.0000

ALS Bottle#: 44

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312005.D

Injection Date: 04-Oct-2018 15:53:30

Instrument ID: HP5973U

Lims ID: 480-142290-C-2-A

Lab Sample ID: 480-142290-2

Client ID: EC-0004-02

Operator ID: DR

ALS Bottle#: 44

Worklist Smp#: 13

Injection Vol: 1.0 ul

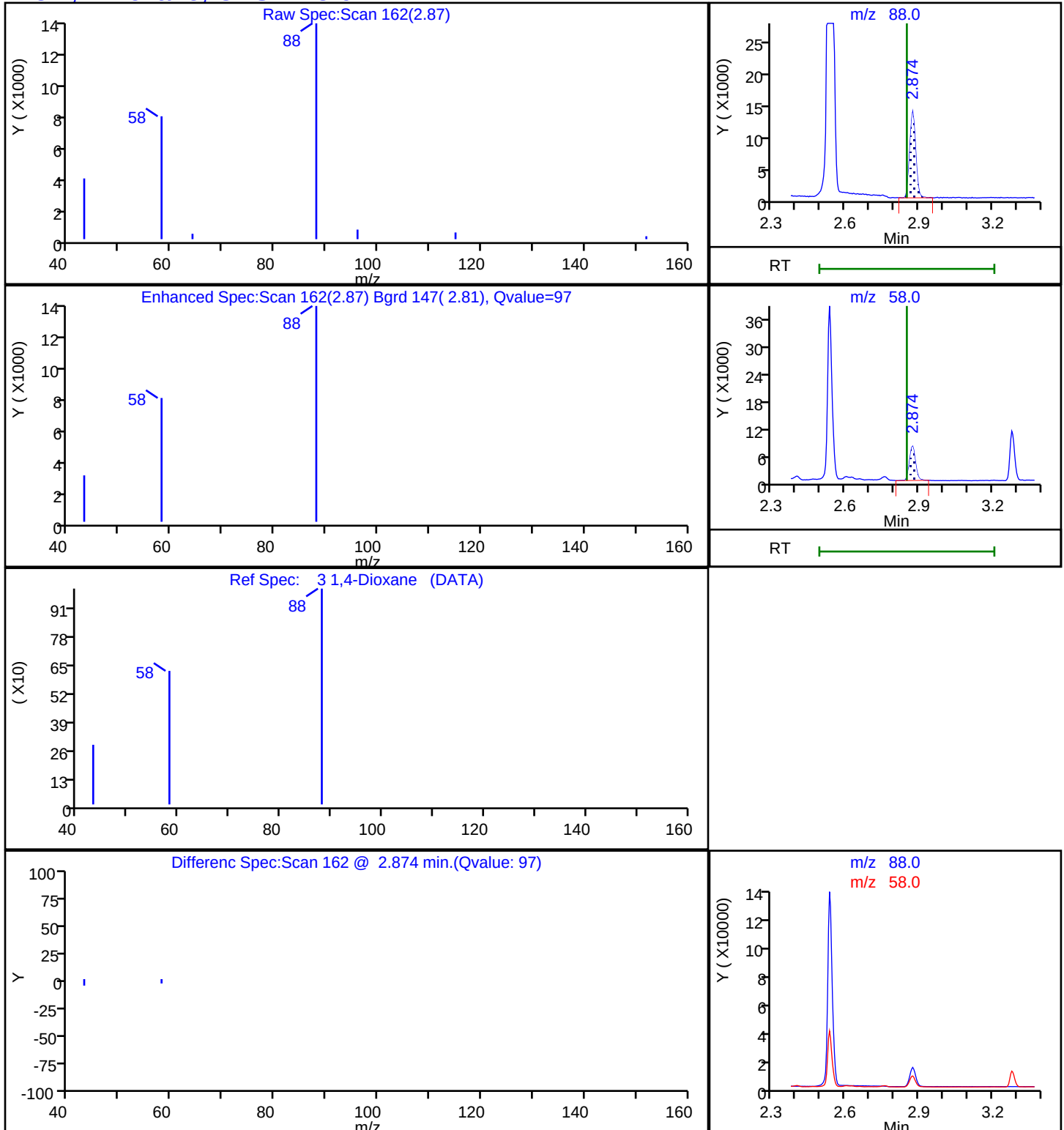
Dil. Factor: 5.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312005.D

Injection Date: 04-Oct-2018 15:53:30

Instrument ID: HP5973U

Lims ID: 480-142290-C-2-A

Lab Sample ID: 480-142290-2

Client ID: EC-0004-02

Operator ID: DR

ALS Bottle#: 44

Worklist Smp#: 13

Injection Vol: 1.0 ul

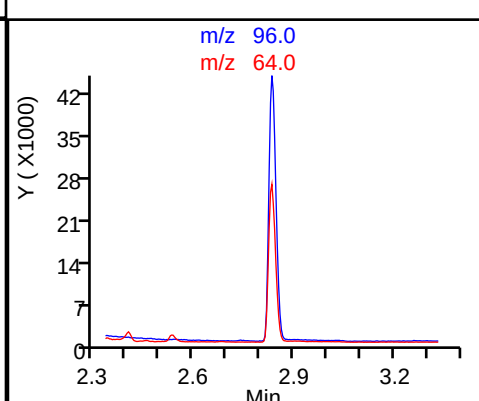
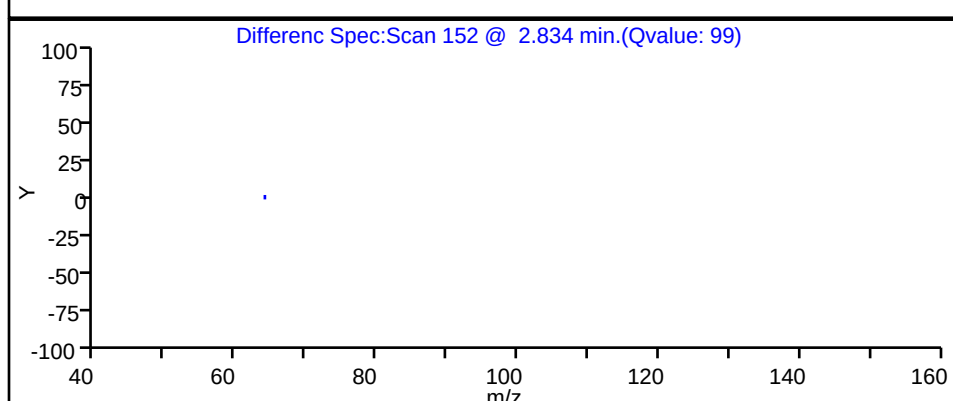
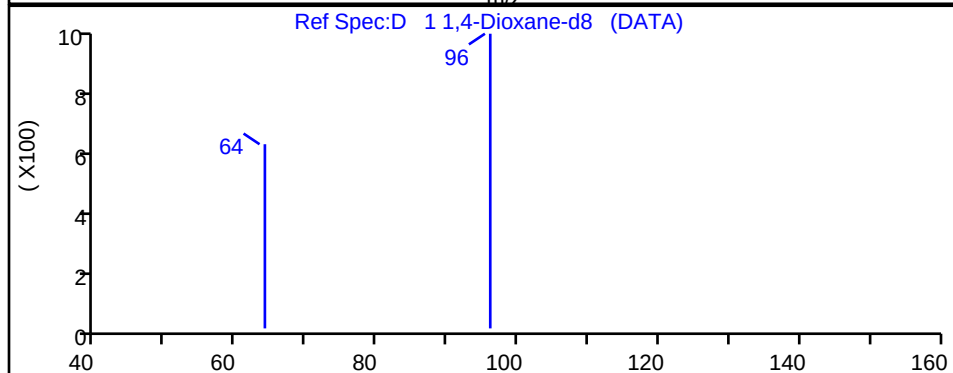
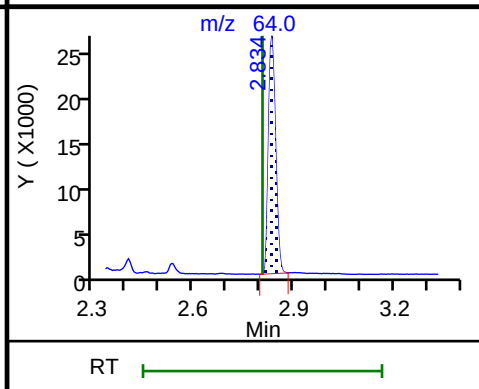
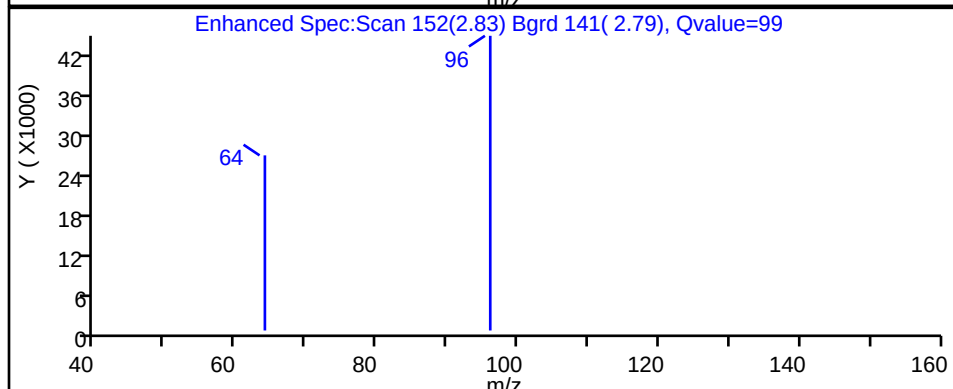
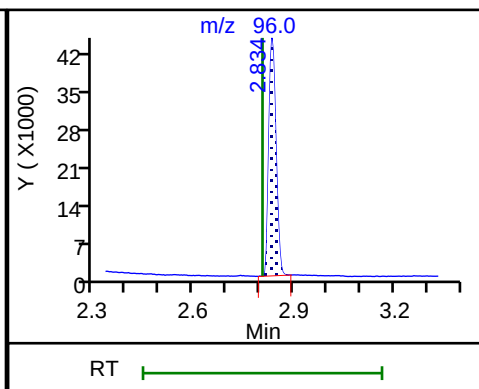
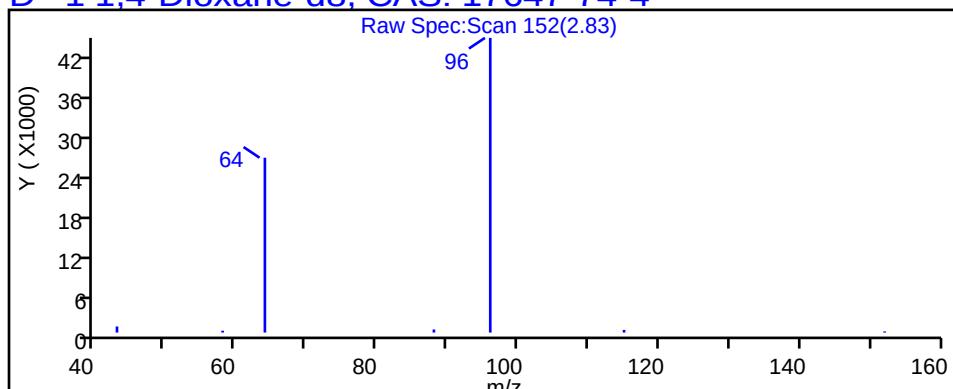
Dil. Factor: 5.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Client Sample ID: EC-0004-03 Lab Sample ID: 480-142290-3
Matrix: Water Lab File ID: U3312006.D
Analysis Method: 8270D SIM ID Date Collected: 09/24/2018 10:20
Extract. Method: 3510C Date Extracted: 09/27/2018 08:08
Sample wt/vol: 1040 (mL) Date Analyzed: 10/04/2018 16:17
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 437485 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.15	J	0.19	0.096

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	23		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312006.D
 Lims ID: 480-142290-D-3-A
 Client ID: EC-0004-03
 Sample Type: Client
 Inject. Date: 04-Oct-2018 16:17:30 ALS Bottle#: 45 Worklist Smp#: 14
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075162-014
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:39 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 20:11:34

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.875	2.805	0.069	100	302045	2.32	23.2	
3 1,4-Dioxane	88	2.923	2.850	0.073	99	4392	0.1530		
* 2 1,4-Dichlorobenzene-d4	152	5.979	5.975	0.004	94	1090372	4.00		

Reagents:

MB_LLIS_WRK_00154 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312006.D

Injection Date: 04-Oct-2018 16:17:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142290-D-3-A

Lab Sample ID: 480-142290-3

Worklist Smp#: 14

Client ID: EC-0004-03

Injection Vol: 1.0 ul

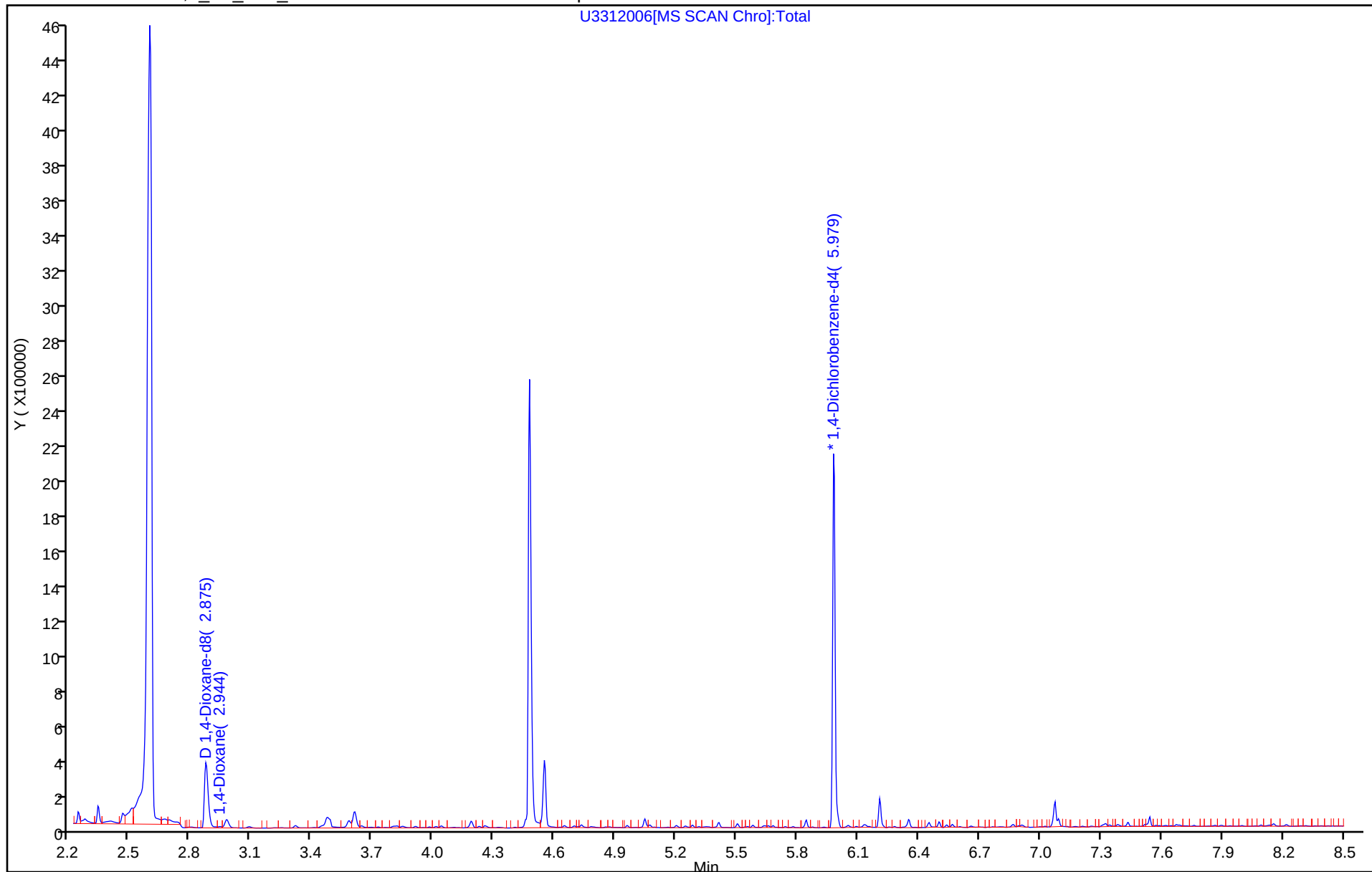
Dil. Factor: 1.0000

ALS Bottle#: 45

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312006[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312006.D

Injection Date: 04-Oct-2018 16:17:30

Instrument ID: HP5973U

Lims ID: 480-142290-D-3-A

Lab Sample ID: 480-142290-3

Client ID: EC-0004-03

Operator ID: DR

ALS Bottle#: 45

Worklist Smp#: 14

Injection Vol: 1.0 ul

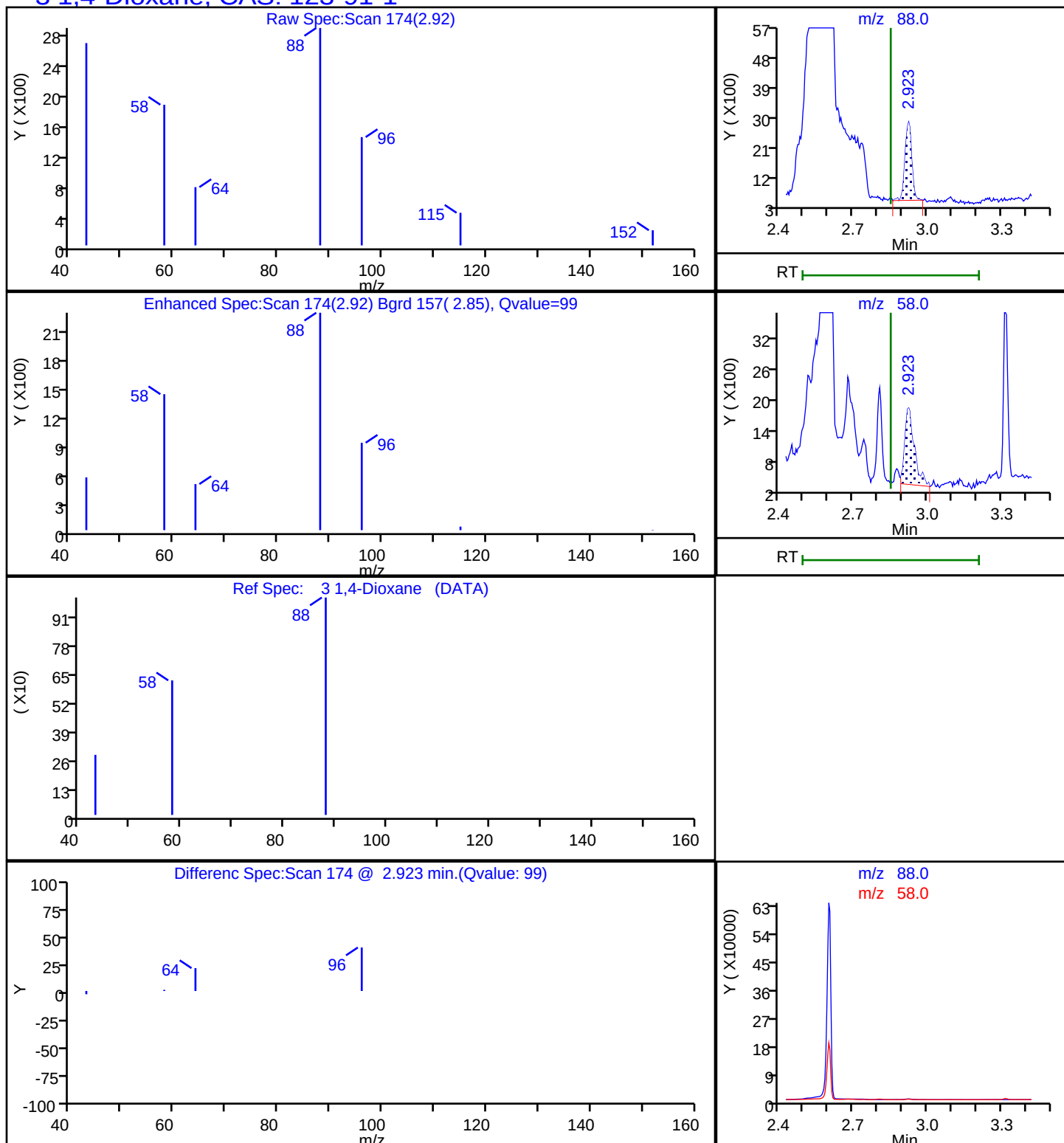
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312006.D

Injection Date: 04-Oct-2018 16:17:30

Instrument ID: HP5973U

Lims ID: 480-142290-D-3-A

Lab Sample ID: 480-142290-3

Client ID: EC-0004-03

Operator ID: DR

ALS Bottle#: 45

Worklist Smp#: 14

Injection Vol: 1.0 ul

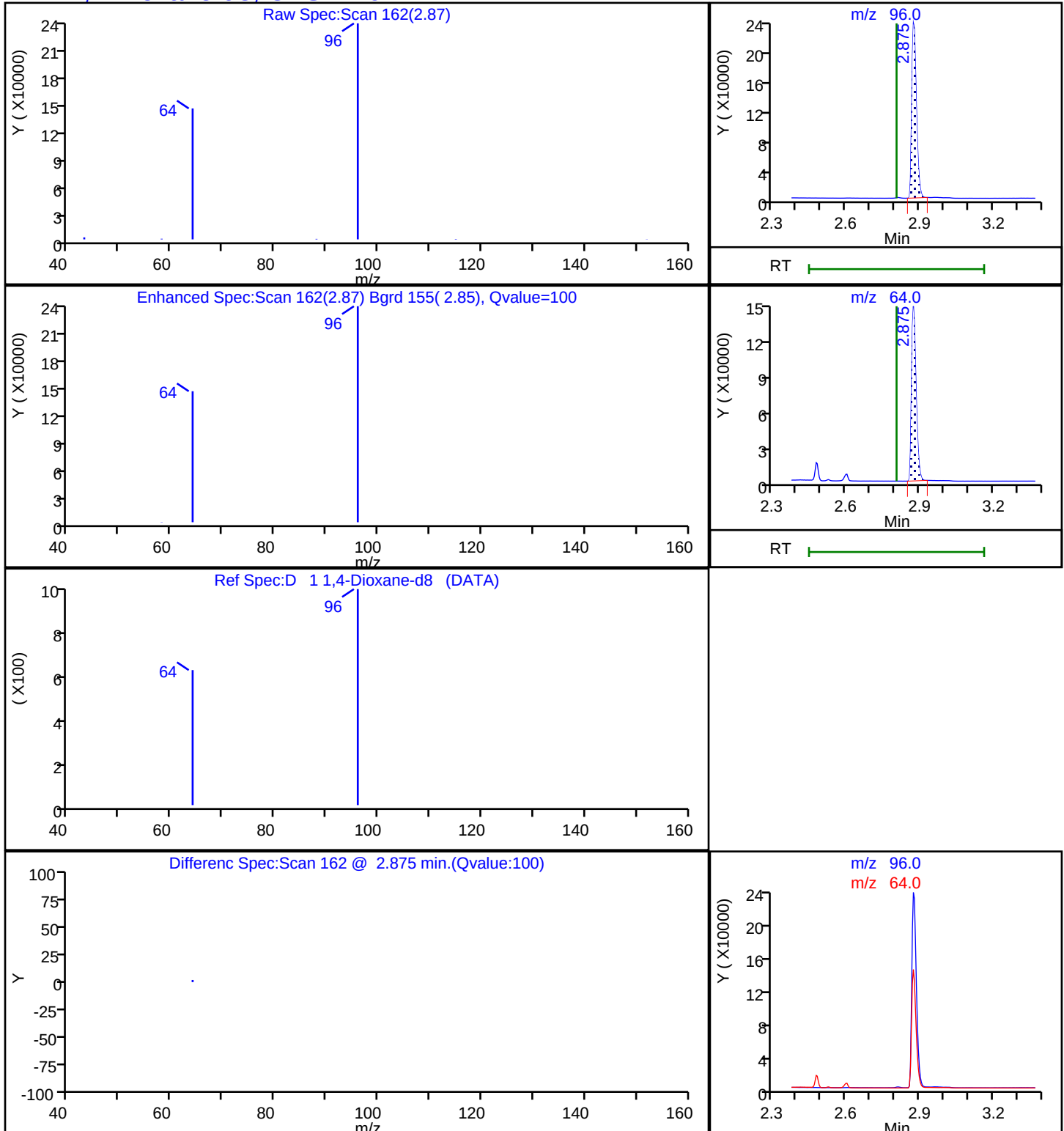
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
 SDG No.: _____
 Client Sample ID: EC-0004-04 Lab Sample ID: 480-142290-4
 Matrix: Water Lab File ID: U3312061.D
 Analysis Method: 8270D SIM ID Date Collected: 09/24/2018 12:25
 Extract. Method: 3510C Date Extracted: 09/27/2018 08:08
 Sample wt/vol: 1040 (mL) Date Analyzed: 10/05/2018 16:46
 Con. Extract Vol.: 1 (mL) Dilution Factor: 100
 Injection Volume: 2 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 437915 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	19	U	19	9.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	24		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312061.D
 Lims ID: 480-142290-C-4-A
 Client ID: EC-0004-04
 Sample Type: Client
 Inject. Date: 05-Oct-2018 16:46:30 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 2.0 ul Dil. Factor: 100.0000
 Sample Info: 480-0075235-012
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 10:40:33 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 10:39:52

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.830	2.801	0.029	97	2041	0.0240	24.0	
3 1,4-Dioxane	88		2.854				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.996	5.975	0.021	97	689449	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312061.D

Injection Date: 05-Oct-2018 16:46:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142290-C-4-A

Lab Sample ID: 480-142290-4

Worklist Smp#: 12

Client ID: EC-0004-04

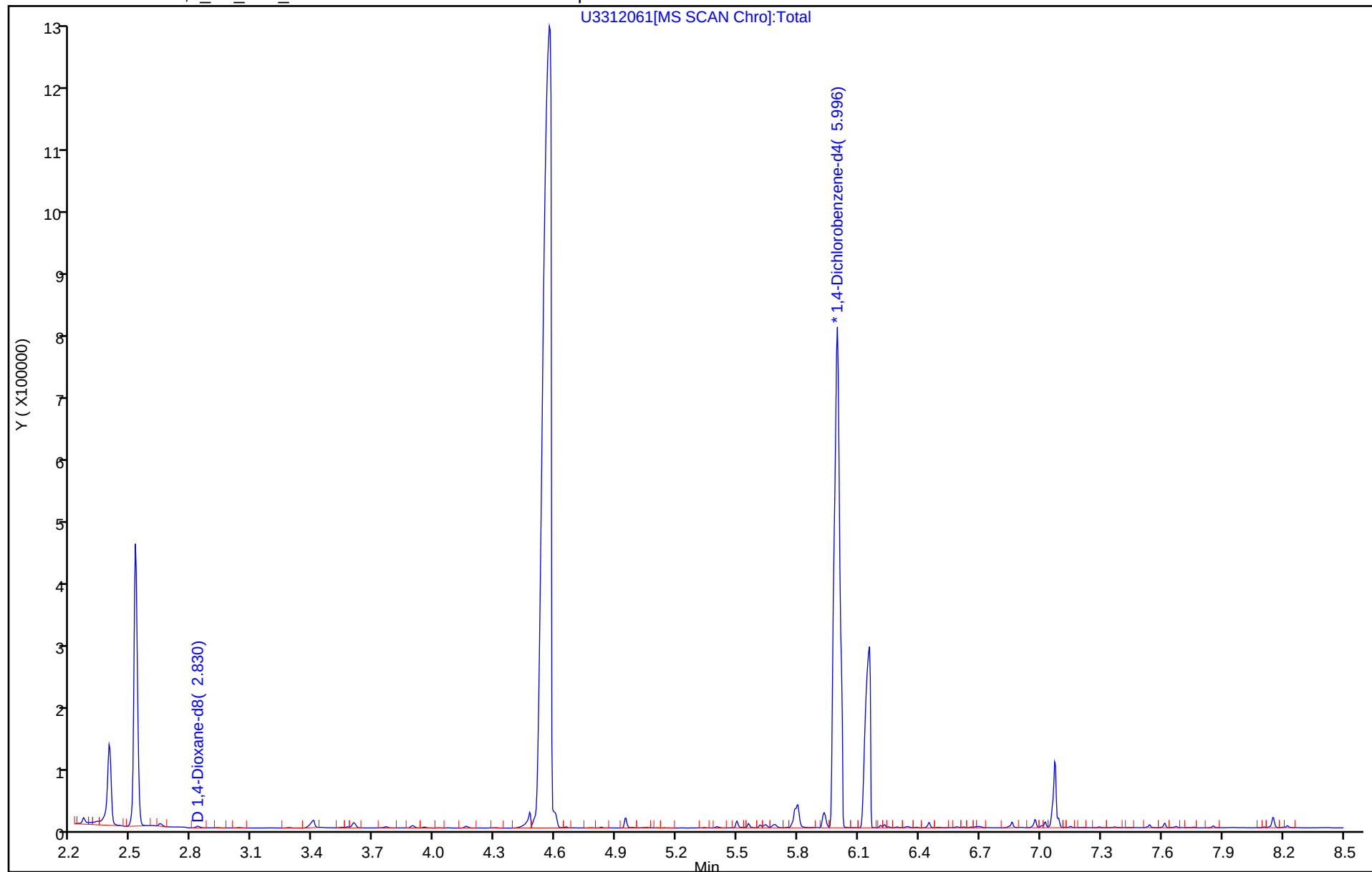
Injection Vol: 2.0 ul

Dil. Factor: 100.0000

ALS Bottle#: 12

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312061.D

Injection Date: 05-Oct-2018 16:46:30

Instrument ID: HP5973U

Lims ID: 480-142290-C-4-A

Lab Sample ID: 480-142290-4

Client ID: EC-0004-04

Operator ID: DR

ALS Bottle#: 12

Worklist Smp#: 12

Injection Vol: 2.0 ul

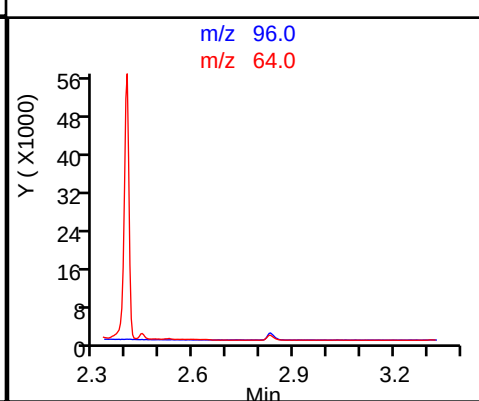
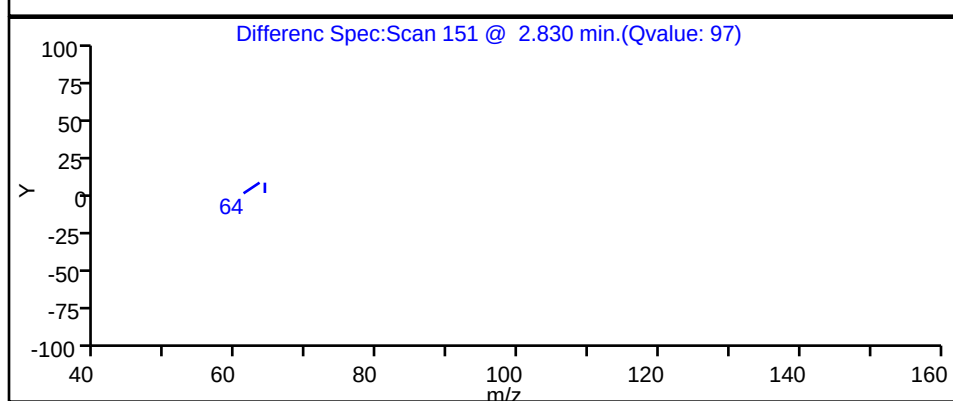
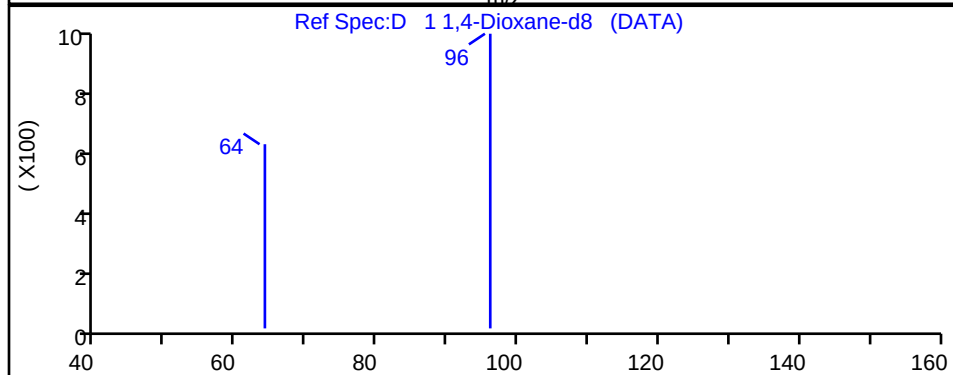
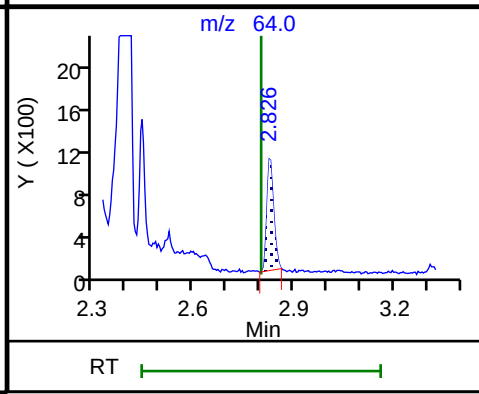
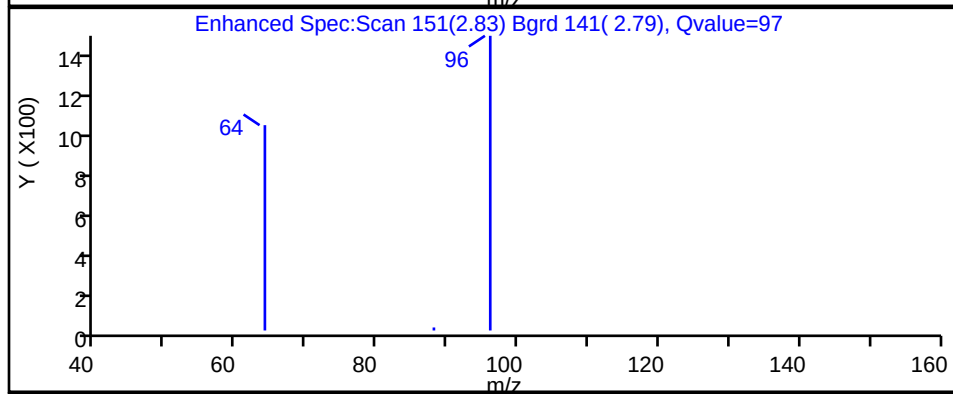
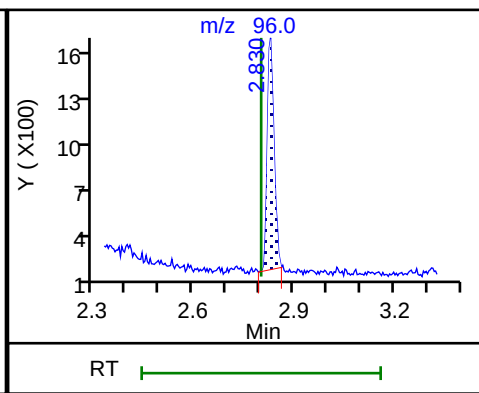
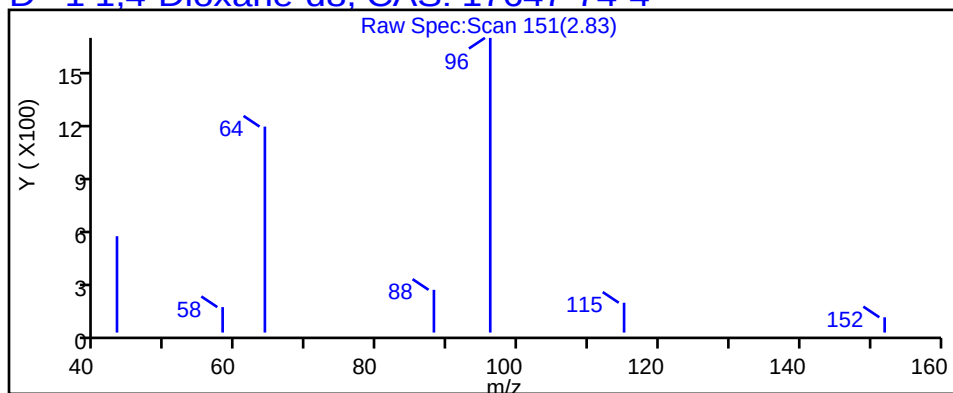
Dil. Factor: 100.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312061.D

Injection Date: 05-Oct-2018 16:46:30

Instrument ID: HP5973U

Lims ID: 480-142290-C-4-A

Lab Sample ID: 480-142290-4

Client ID: EC-0004-04

Operator ID: DR

ALS Bottle#: 12 Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 100.0000

Method: 1,4_Dx_SIM_HP5973U

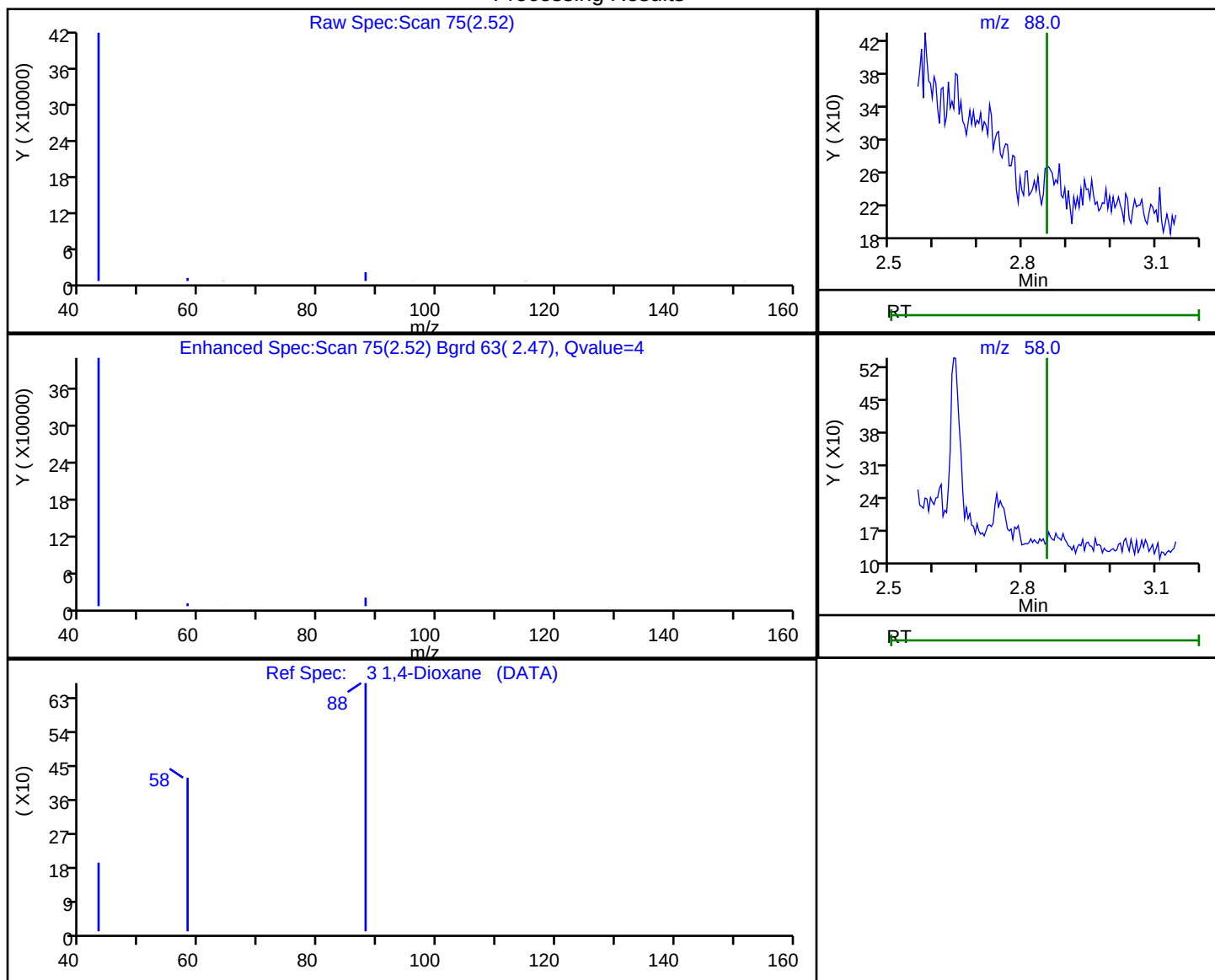
Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
2.52	88.00	17681	0.796884
2.52	58.00	5757	

Reviewer: richardsd, 09-Oct-2018 10:39:47

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Client Sample ID: EC-0004-05 Lab Sample ID: 480-142290-5
Matrix: Water Lab File ID: U3312008.D
Analysis Method: 8270D SIM ID Date Collected: 09/24/2018 14:10
Extract. Method: 3510C Date Extracted: 09/27/2018 08:08
Sample wt/vol: 1040 (mL) Date Analyzed: 10/04/2018 17:04
Con. Extract Vol.: 1 (mL) Dilution Factor: 50
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 437485 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	9.6	U	9.6	4.8

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	30		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312008.D
 Lims ID: 480-142290-C-5-A
 Client ID: EC-0004-05
 Sample Type: Client
 Inject. Date: 04-Oct-2018 17:04:30 ALS Bottle#: 47 Worklist Smp#: 16
 Injection Vol: 1.0 ul Dil. Factor: 50.0000
 Sample Info: 480-0075162-016
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:39 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 20:13:14

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.826	2.805	0.021	99	7794	0.0596	29.8	
3 1,4-Dioxane	88		2.850				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.979	5.975	0.004	96	1093752	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312008.D

Injection Date: 04-Oct-2018 17:04:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142290-C-5-A

Lab Sample ID: 480-142290-5

Worklist Smp#: 16

Client ID: EC-0004-05

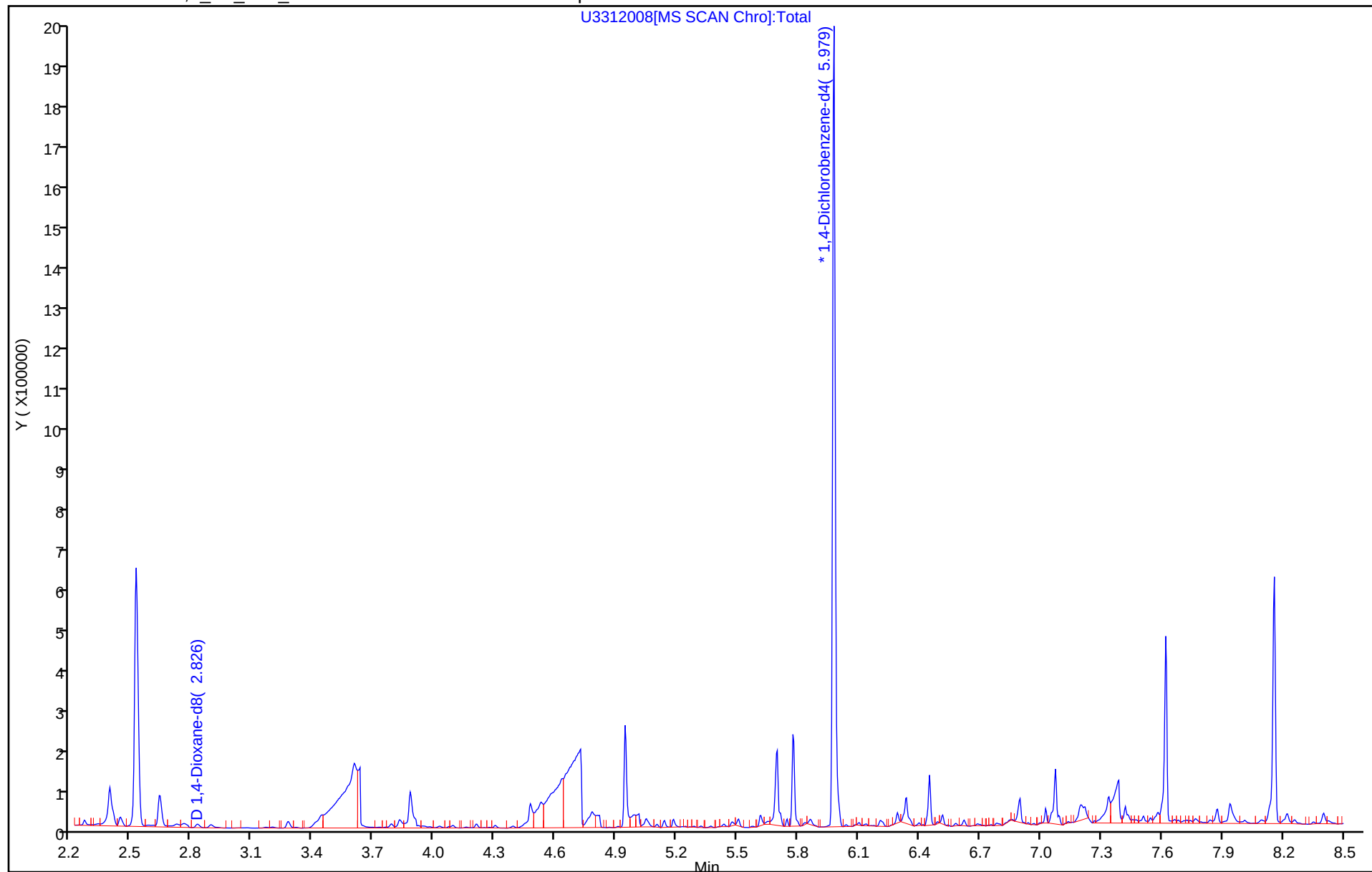
Injection Vol: 1.0 ul

Dil. Factor: 50.0000

ALS Bottle#: 47

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312008.D

Injection Date: 04-Oct-2018 17:04:30

Instrument ID: HP5973U

Lims ID: 480-142290-C-5-A

Lab Sample ID: 480-142290-5

Client ID: EC-0004-05

Operator ID: DR

ALS Bottle#: 47

Worklist Smp#: 16

Injection Vol: 1.0 ul

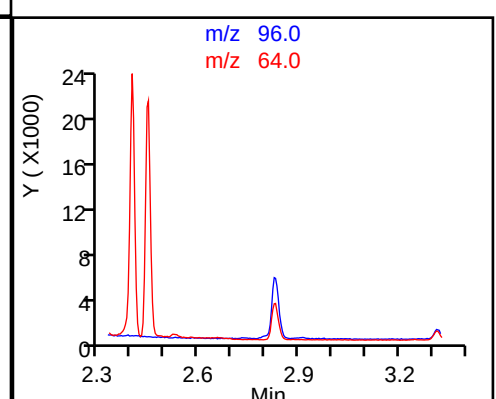
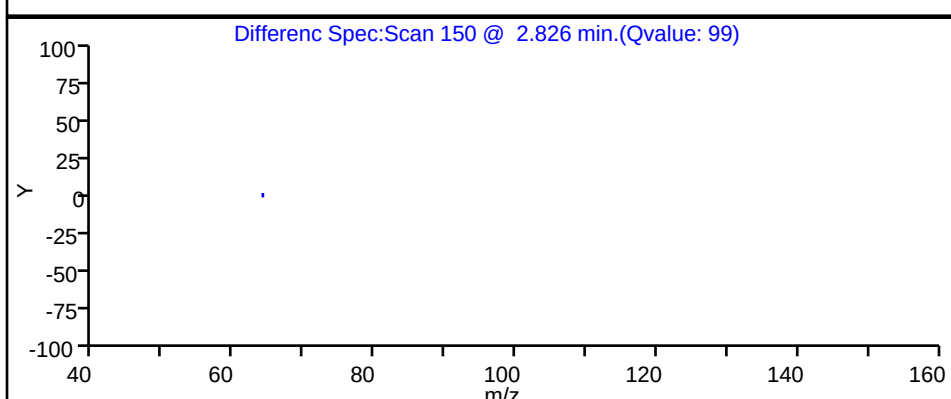
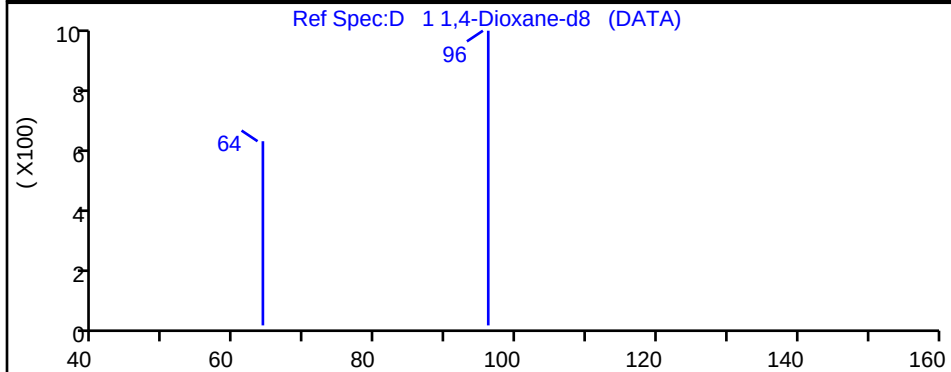
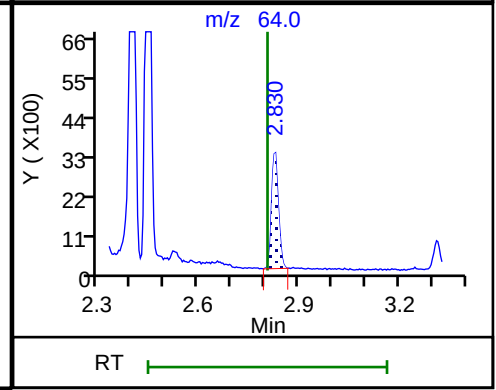
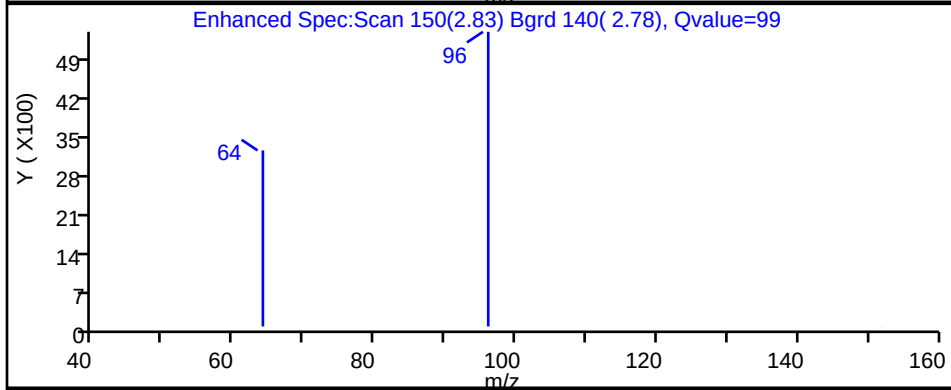
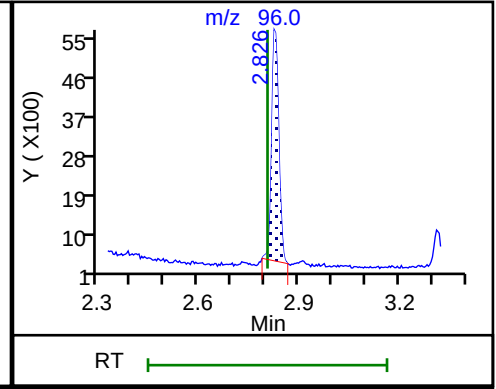
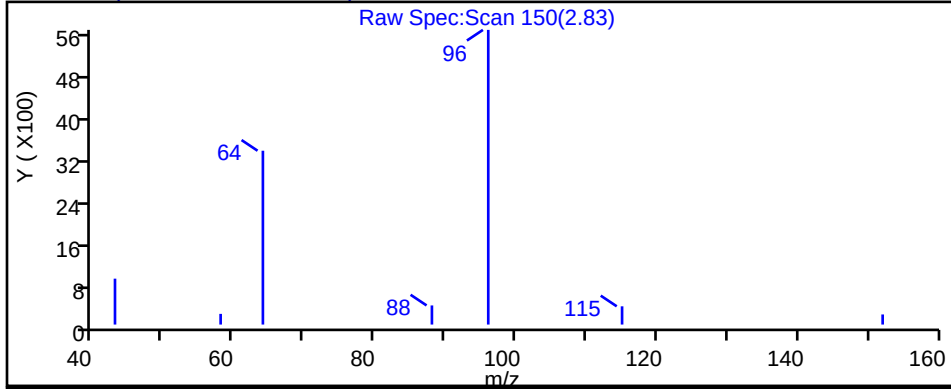
Dil. Factor: 50.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312008.D

Injection Date: 04-Oct-2018 17:04:30

Instrument ID: HP5973U

Lims ID: 480-142290-C-5-A

Lab Sample ID: 480-142290-5

Client ID: EC-0004-05

Operator ID: DR

ALS Bottle#: 47 Worklist Smp#: 16

Injection Vol: 1.0 ul

Dil. Factor: 50.0000

Method: 1,4_Dx_SIM_HP5973U

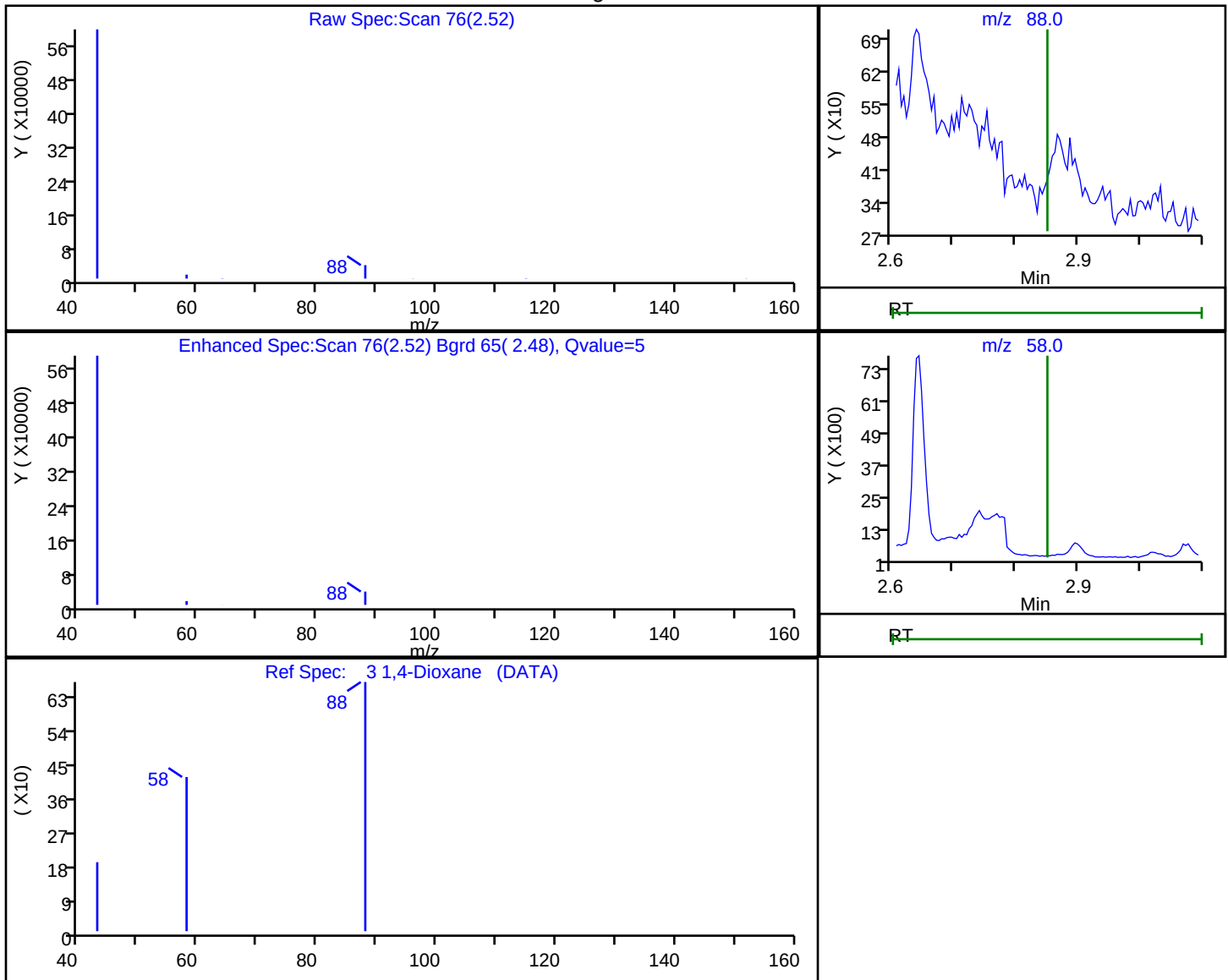
Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
2.52	88.00	38775	0.835247
2.52	58.00	10967	

Reviewer: richardsd, 04-Oct-2018 20:13:12

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
 SDG No.: _____
 Client Sample ID: EC-0004-06 Lab Sample ID: 480-142290-6
 Matrix: Water Lab File ID: U3312009.D
 Analysis Method: 8270D SIM ID Date Collected: 09/24/2018 13:45
 Extract. Method: 3510C Date Extracted: 09/27/2018 08:08
 Sample wt/vol: 1040 (mL) Date Analyzed: 10/04/2018 17:28
 Con. Extract Vol.: 1 (mL) Dilution Factor: 10
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 437485 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.9	U	1.9	0.96

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	16		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312009.D
 Lims ID: 480-142290-D-6-A
 Client ID: EC-0004-06
 Sample Type: Client
 Inject. Date: 04-Oct-2018 17:28:30 ALS Bottle#: 48 Worklist Smp#: 17
 Injection Vol: 1.0 ul Dil. Factor: 10.0000
 Sample Info: 480-0075162-017
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:39 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 20:13:32

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.826	2.805	0.021	97	21643	0.1600	16.0	
3 1,4-Dioxane	88		2.850				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.979	5.975	0.004	95	1132202	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312009.D

Injection Date: 04-Oct-2018 17:28:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142290-D-6-A

Lab Sample ID: 480-142290-6

Worklist Smp#: 17

Client ID: EC-0004-06

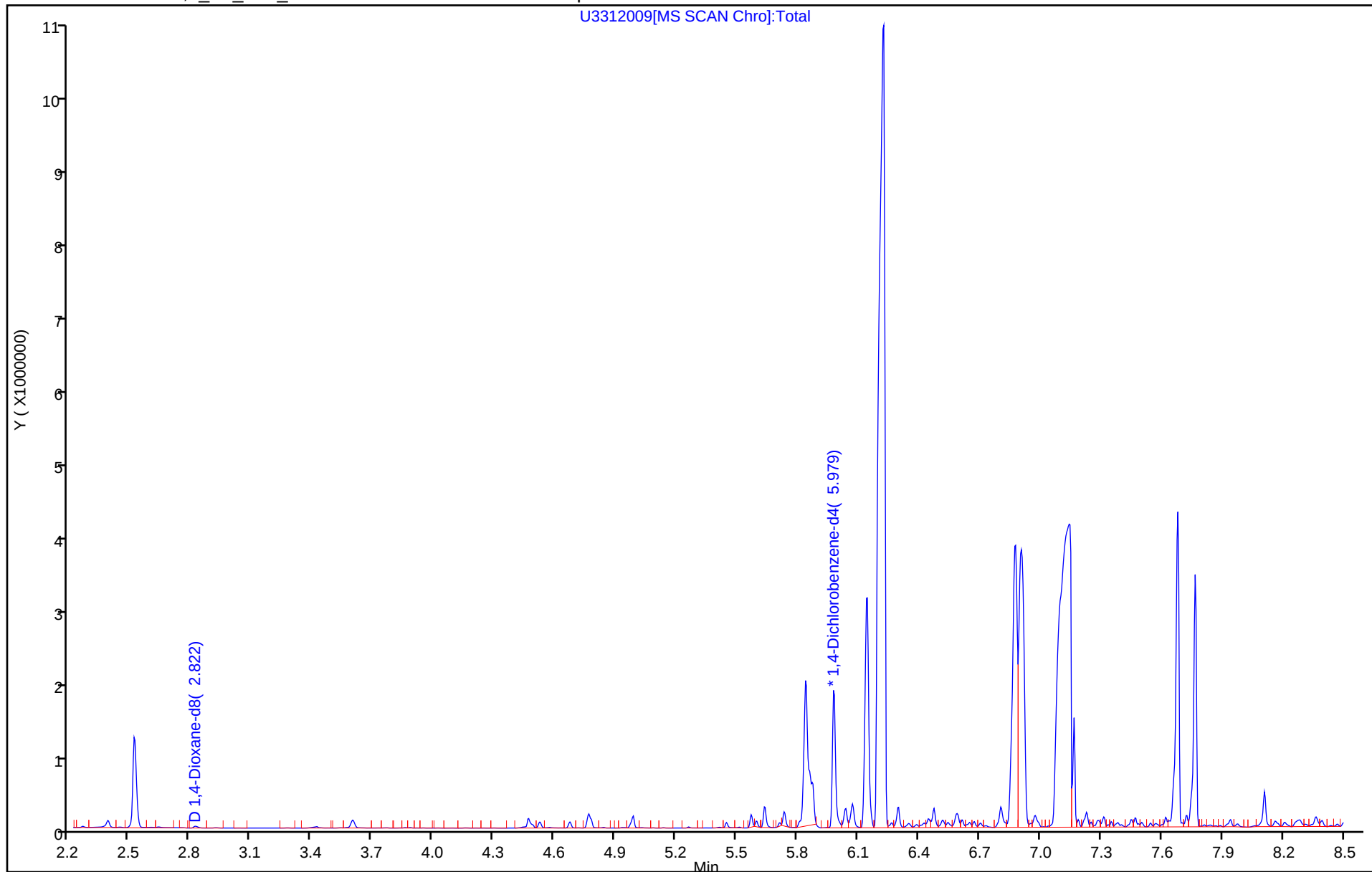
Injection Vol: 1.0 ul

Dil. Factor: 10.0000

ALS Bottle#: 48

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312009.D

Injection Date: 04-Oct-2018 17:28:30

Instrument ID: HP5973U

Lims ID: 480-142290-D-6-A

Lab Sample ID: 480-142290-6

Client ID: EC-0004-06

Operator ID: DR

ALS Bottle#: 48

Worklist Smp#: 17

Injection Vol: 1.0 ul

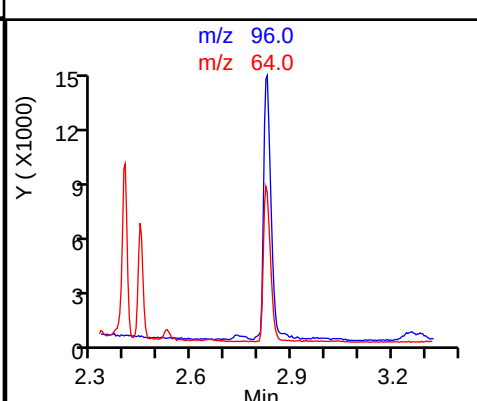
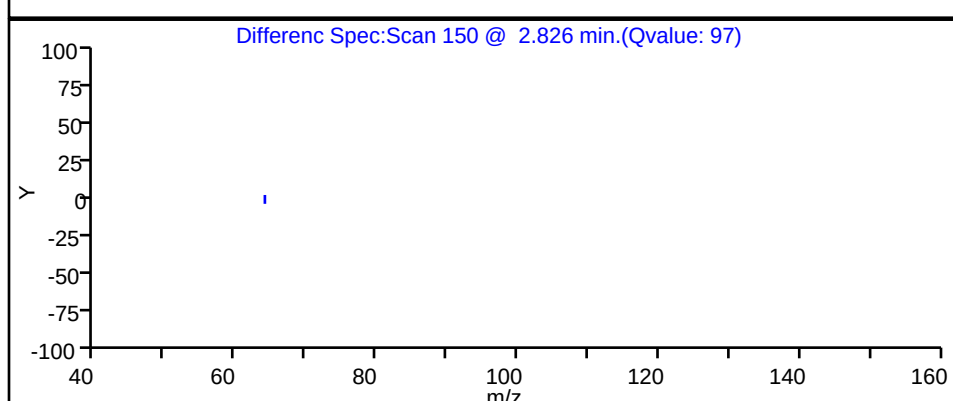
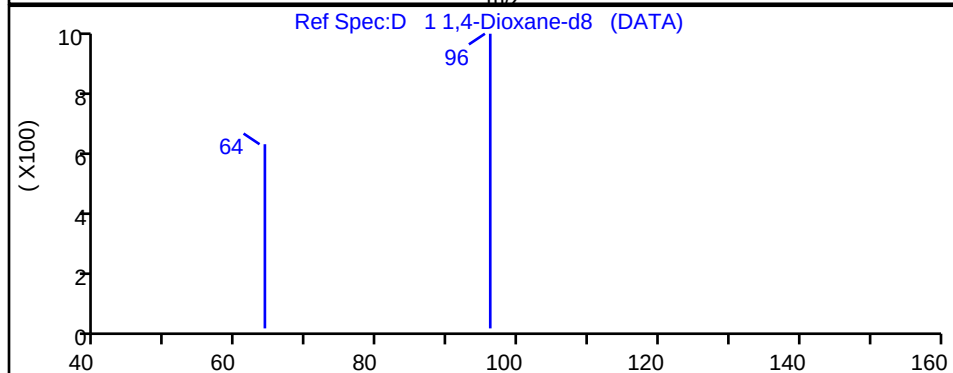
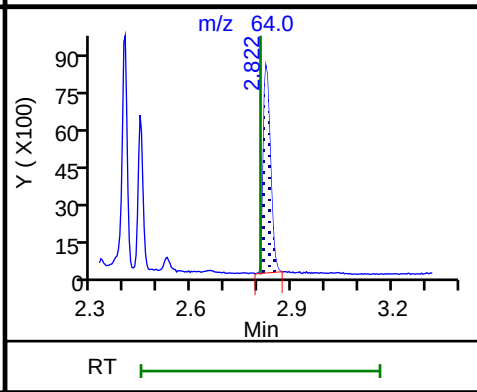
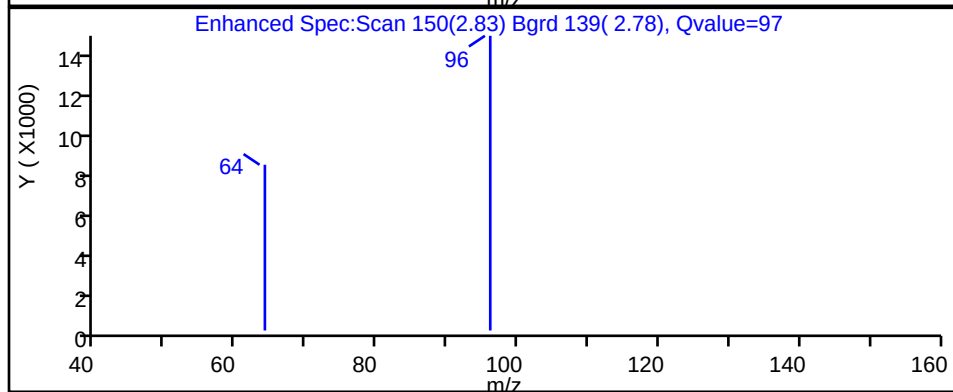
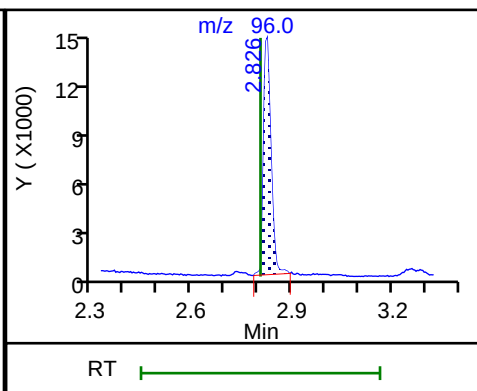
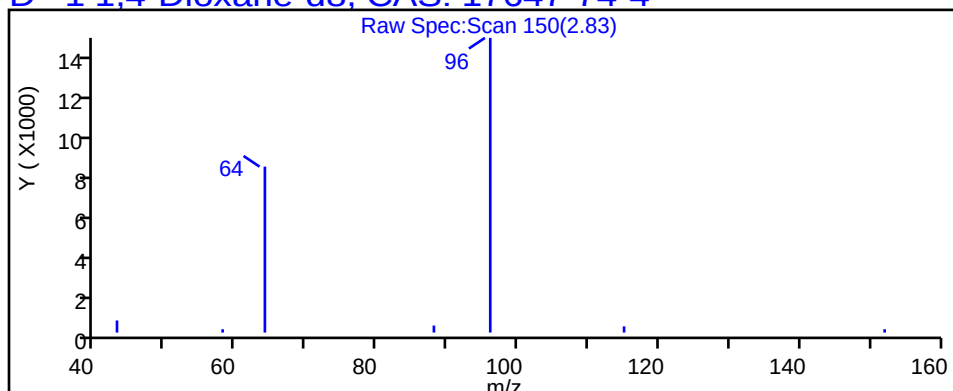
Dil. Factor: 10.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\\Buffalo\\ChromData\\HP5973U\\20181003-75162.b\\U3312009.D

Injection Date: 04-Oct-2018 17:28:30

Instrument ID: HP5973U

Lims ID: 480-142290-D-6-A

Lab Sample ID: 480-142290-6

Client ID: EC-0004-06

Operator ID: DR

ALS Bottle#: 48 Worklist Smp#: 17

Injection Vol: 1.0 ul

Dil. Factor: 10.0000

Method: 1,4_Dx_SIM_HP5973U

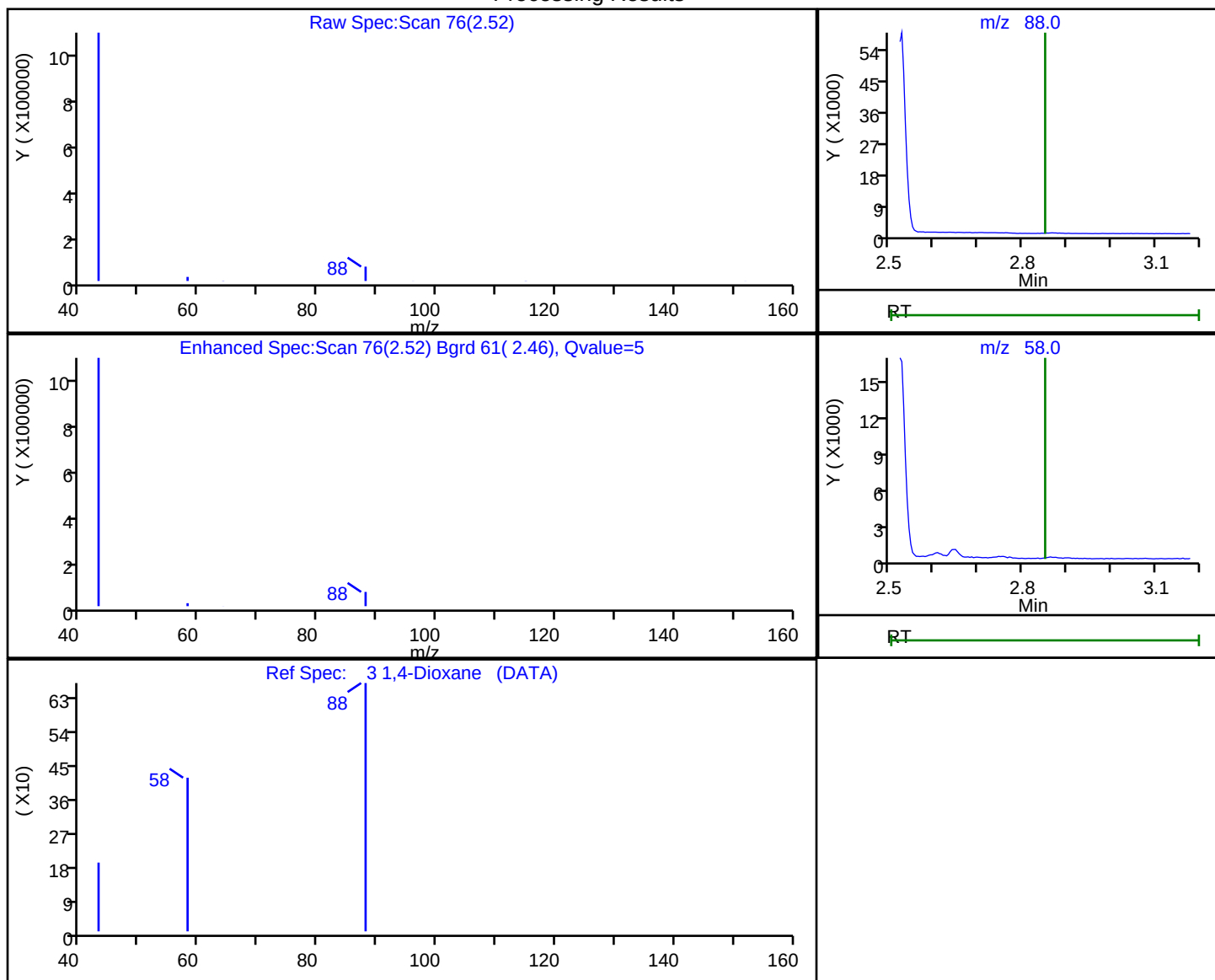
Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
2.52	88.00	71494	2.689018
2.52	58.00	20407	

Reviewer: richardsd, 04-Oct-2018 20:13:30

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Client Sample ID: EC-0004-07 Lab Sample ID: 480-142290-7
Matrix: Water Lab File ID: U3312010.D
Analysis Method: 8270D SIM ID Date Collected: 09/24/2018 15:10
Extract. Method: 3510C Date Extracted: 09/27/2018 08:08
Sample wt/vol: 1050 (mL) Date Analyzed: 10/04/2018 17:52
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 437485 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.19	U	0.19	0.095

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	33		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312010.D
 Lims ID: 480-142290-D-7-A
 Client ID: EC-0004-07
 Sample Type: Client
 Inject. Date: 04-Oct-2018 17:52:30 ALS Bottle#: 49 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075162-018
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:39 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 20:13:41

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.899	2.805	0.094	98	443119	3.26	32.6	
3 1,4-Dioxane	88	2.944	2.850	0.094	87	3026	0.0910		a
* 2 1,4-Dichlorobenzene-d4	152	5.984	5.975	0.009	95	1138079	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312010.D

Injection Date: 04-Oct-2018 17:52:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142290-D-7-A

Lab Sample ID: 480-142290-7

Worklist Smp#: 18

Client ID: EC-0004-07

Injection Vol: 1.0 ul

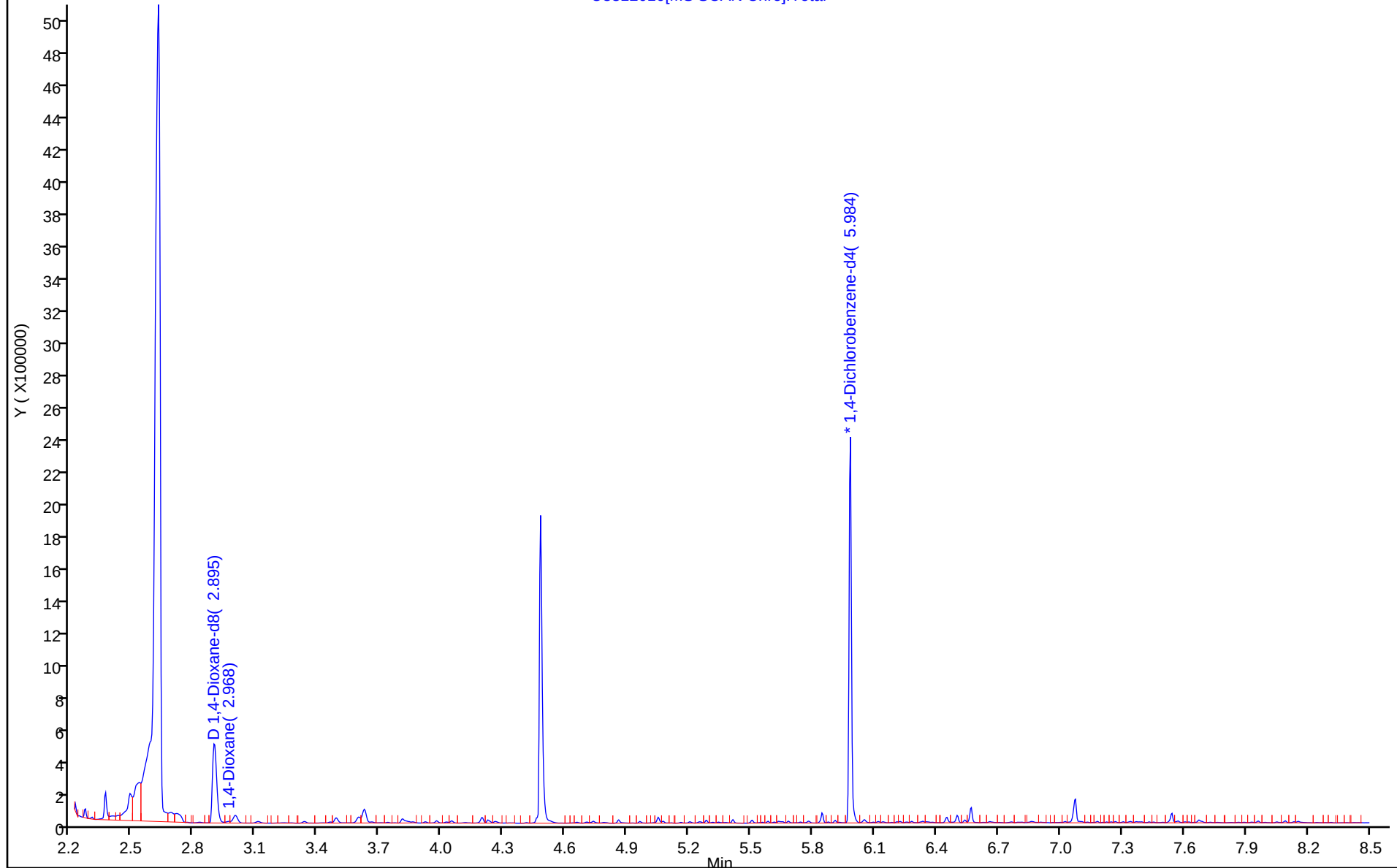
Dil. Factor: 1.0000

ALS Bottle#: 49

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312010[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312010.D

Injection Date: 04-Oct-2018 17:52:30

Instrument ID: HP5973U

Lims ID: 480-142290-D-7-A

Lab Sample ID: 480-142290-7

Client ID: EC-0004-07

Operator ID: DR

ALS Bottle#: 49

Worklist Smp#: 18

Injection Vol: 1.0 ul

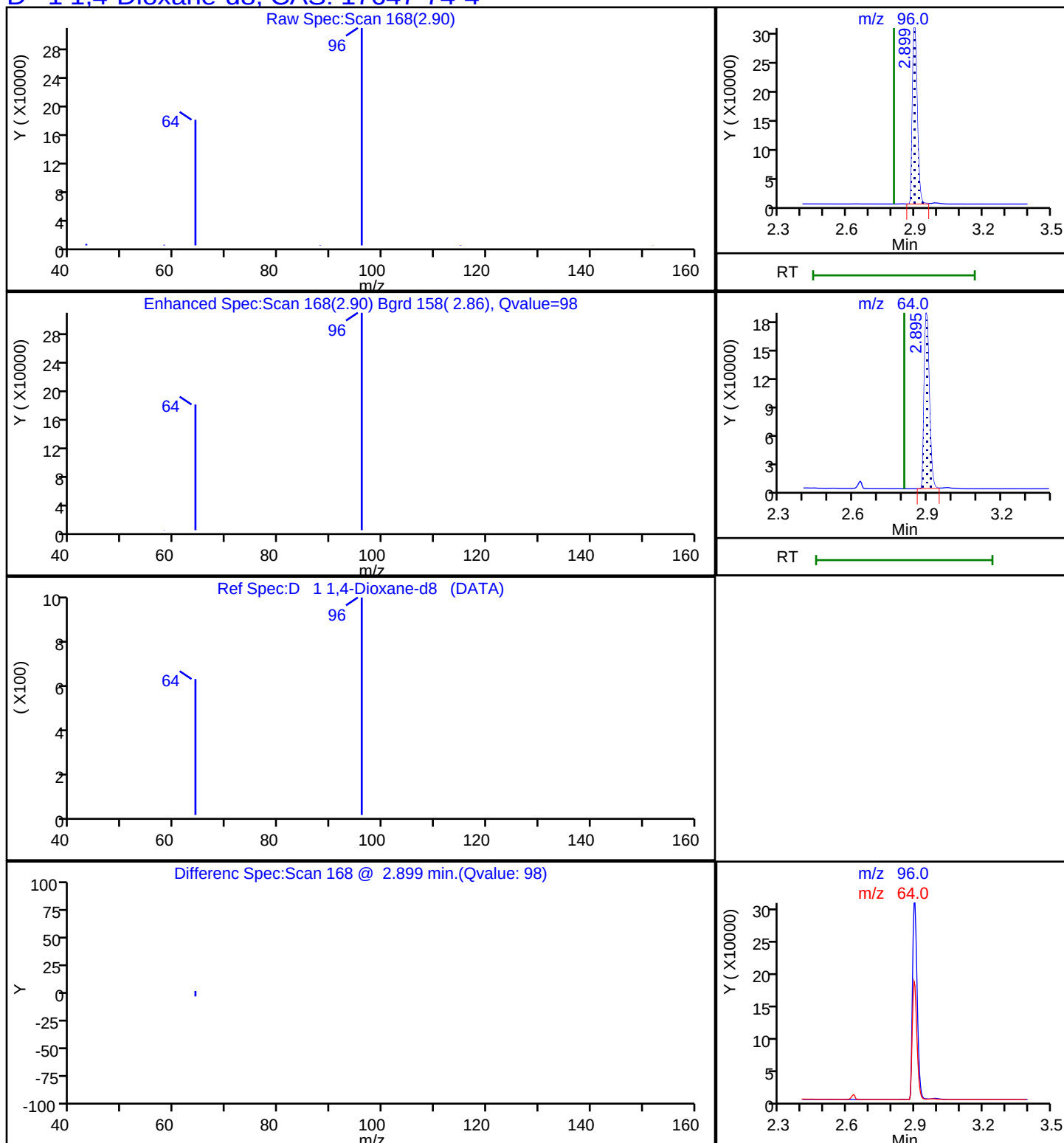
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312010.D

Injection Date: 04-Oct-2018 17:52:30

Instrument ID: HP5973U

Lims ID: 480-142290-D-7-A

Lab Sample ID: 480-142290-7

Client ID: EC-0004-07

Operator ID: DR

ALS Bottle#: 49 Worklist Smp#: 18

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

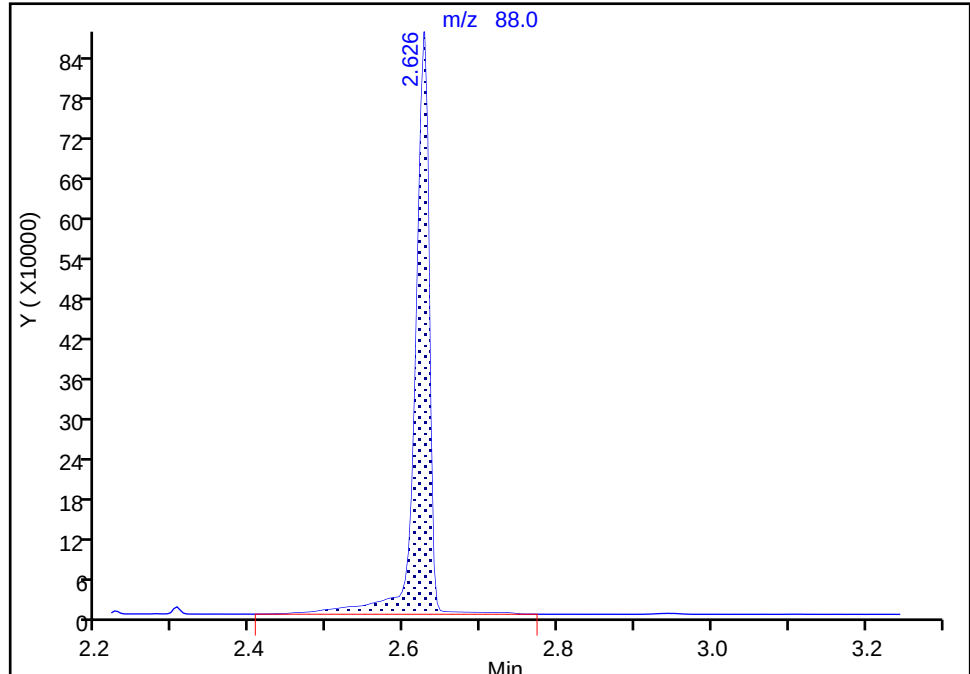
Detector: MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Signal: 1

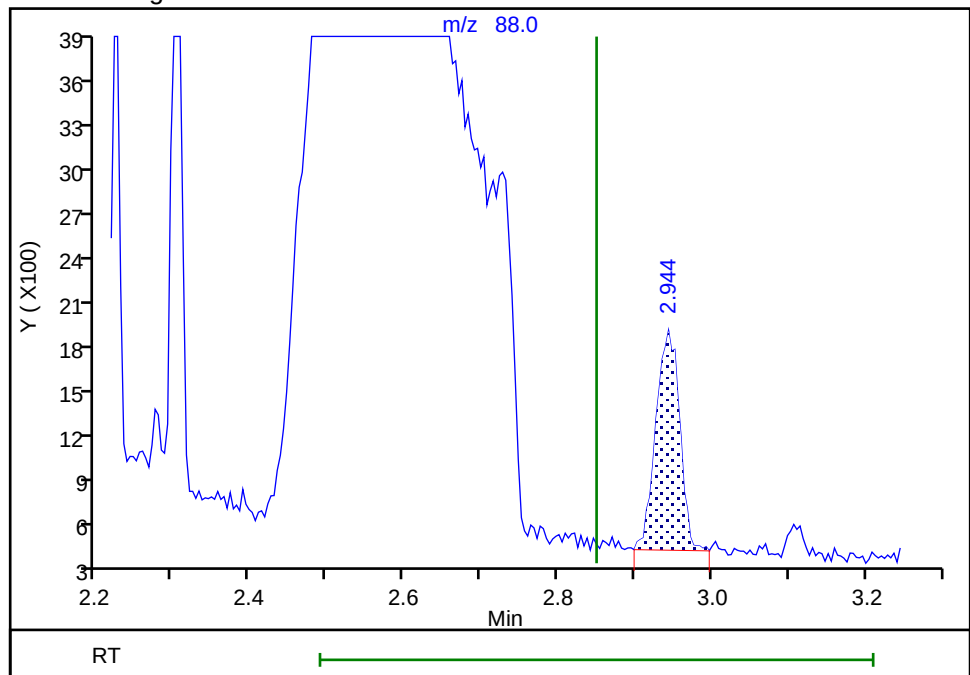
RT: 2.63
Area: 1096995
Amount: 19.917338
Amount Units: ng/ul

Processing Integration Results



RT: 2.94
Area: 3026
Amount: 0.091029
Amount Units: ng/ul

Manual Integration Results



Reviewer: richardsd, 04-Oct-2018 20:13:39

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1 Analy Batch No.: 437263

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/02/2018 11:24 Calibration End Date: 10/02/2018 13:22 Calibration ID: 34978

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-437263/4	U3311897.D
Level 2	ICIS 480-437263/6	U3311899.D
Level 3	IC 480-437263/7	U3311900.D
Level 4	IC 480-437263/8	U3311901.D
Level 5	IC 480-437263/9	U3311902.D
Level 6	IC 480-437263/5	U3311898.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	1.0312 1.1218	1.1329	1.1836	1.2249	1.2248	L2ID	-0.045	1.2452			0.0100				0.9990		0.9900
1,4-Dioxane-d8	0.4721 0.4887	0.4648	0.4838	0.4811	0.4770	Ave		0.4779			0.0100	1.8		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1 Analy Batch No.: 437263

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/02/2018 11:24 Calibration End Date: 10/02/2018 13:22 Calibration ID: 34978

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-437263/4	U3311897.D
Level 2	ICIS 480-437263/6	U3311899.D
Level 3	IC 480-437263/7	U3311900.D
Level 4	IC 480-437263/8	U3311901.D
Level 5	IC 480-437263/9	U3311902.D
Level 6	IC 480-437263/5	U3311898.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
1,4-Dioxane		L2ID	47880 94226	110740	214413	289812	306135	0.200 0.400	0.600	0.800	1.00	1.20
1,4-Dioxane-d8	DCBd 4	Ave	464321 839968	977455	1811555	2365974	2499373	2.00 4.00	6.00	8.00	10.0	12.0

Curve Type Legend:

Ave = Average ISTD
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311897.D
 Lims ID: IC - 0.2
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 02-Oct-2018 11:24:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - 0.2
 Operator ID: MKP Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 03-Oct-2018 11:46:27 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK052

First Level Reviewer: pagem

Date: 02-Oct-2018 12:17:41

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.883	2.874	0.009	100	464321	2.00	1.98	
3 1,4-Dioxane	88	2.927	2.919	0.008	98	47880	0.2000	0.2018	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	95	1967228	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00053

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311897.D

Injection Date: 02-Oct-2018 11:24:30

Instrument ID: HP5973U

Operator ID: MKP

Lims ID: IC - 0.2

Worklist Smp#: 4

Client ID:

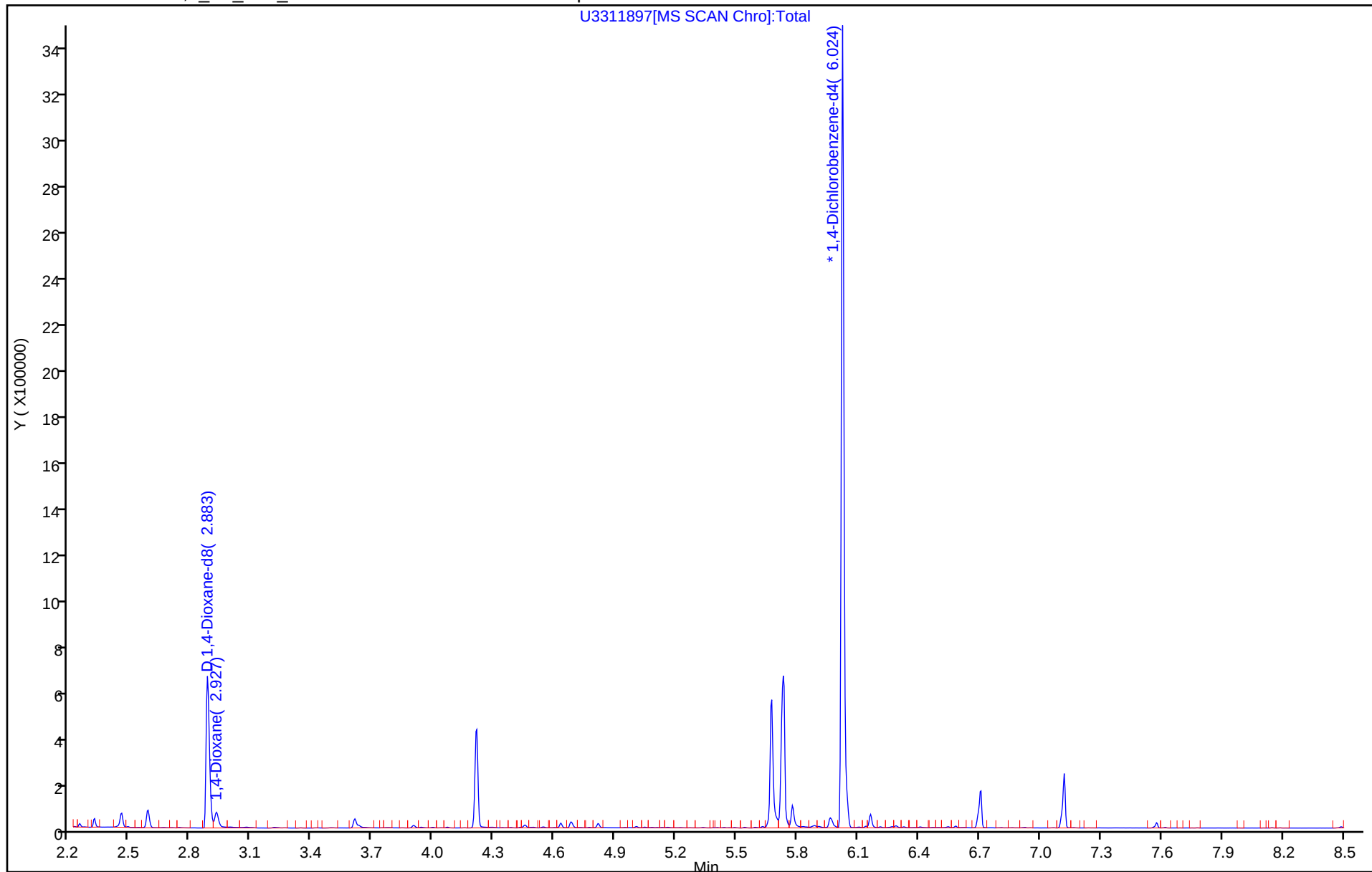
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311898.D
 Lims ID: IC - 0.4
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 02-Oct-2018 11:48:30 ALS Bottle#: 4 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - 0.4
 Operator ID: MKP Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 03-Oct-2018 11:46:29 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK052

First Level Reviewer: pagem

Date: 02-Oct-2018 12:31:34

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.883	2.874	0.009	100	839968	4.00	4.09	
3 1,4-Dioxane	88	2.923	2.919	0.004	99	94226	0.4000	0.3965	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	97	1718726	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00054

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311898.D

Injection Date: 02-Oct-2018 11:48:30

Instrument ID: HP5973U

Operator ID: MKP

Lims ID: IC - 0.4

Worklist Smp#: 5

Client ID:

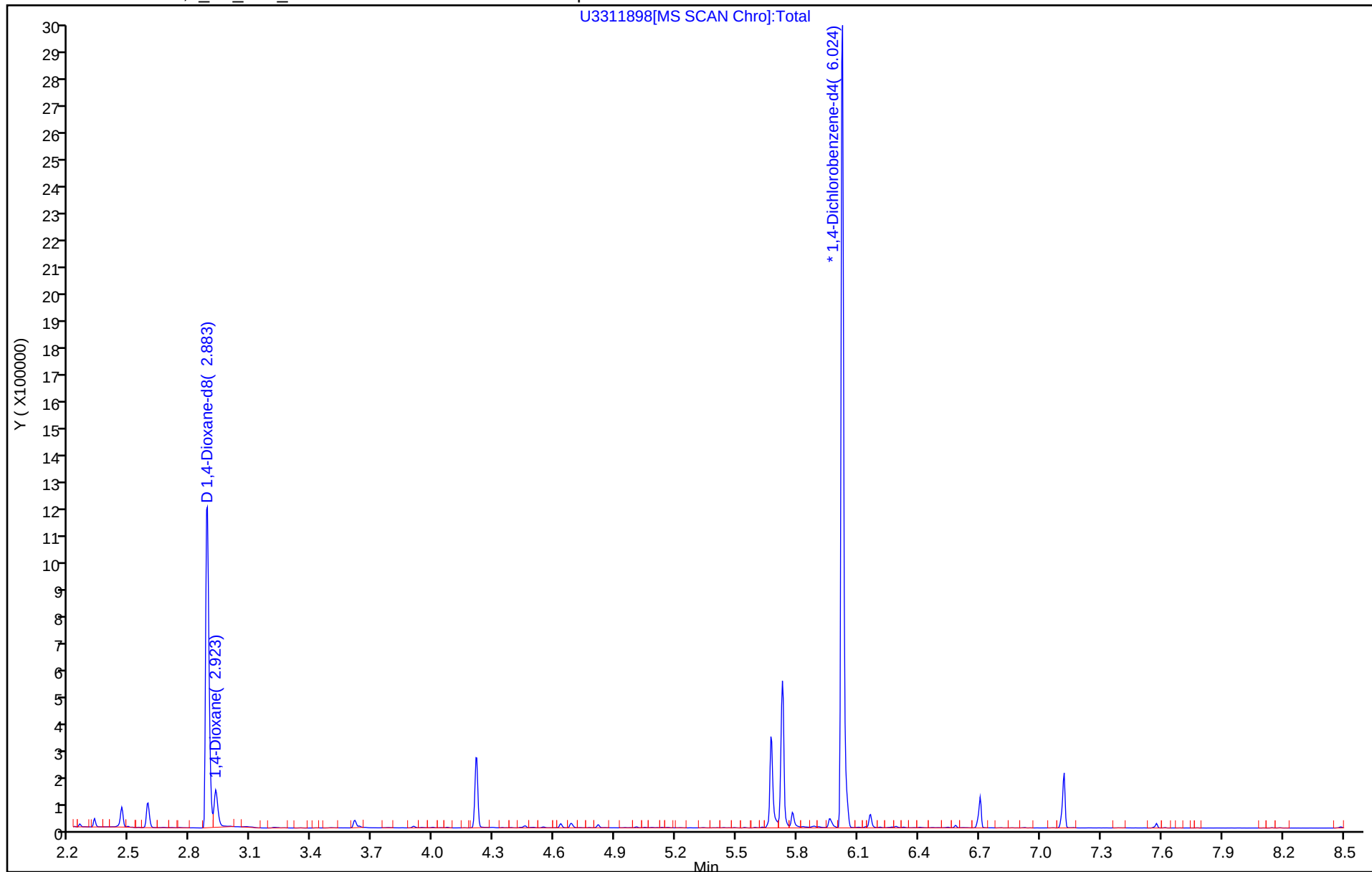
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311899.D
 Lims ID: ICIS
 Client ID:
 Sample Type: ICIS Calib Level: 3
 Inject. Date: 02-Oct-2018 12:11:30 ALS Bottle#: 5 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - 0.6
 Operator ID: MKP Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 03-Oct-2018 11:46:33 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK052

First Level Reviewer: pagem

Date: 02-Oct-2018 12:31:41

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.875	2.875	0.000	100	977455	6.00	5.84	
3 1,4-Dioxane	88	2.915	2.915	0.000	99	110740	0.6000	0.5821	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	97	1401904	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311899.D

Injection Date: 02-Oct-2018 12:11:30

Instrument ID: HP5973U

Operator ID: MKP

Lims ID: ICIS

Worklist Smp#: 6

Client ID:

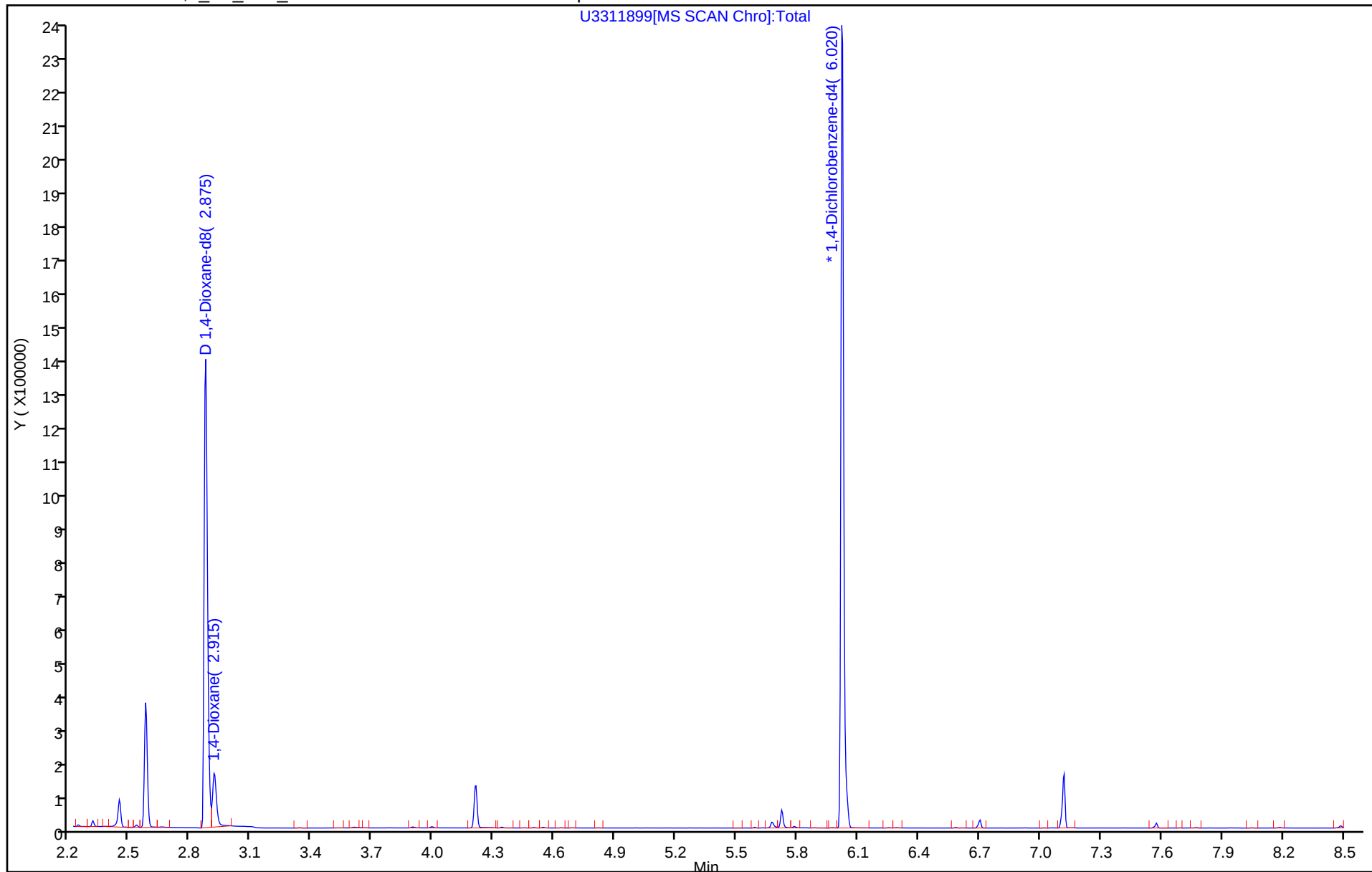
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311900.D
 Lims ID: IC - 0.8
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 02-Oct-2018 12:35:30 ALS Bottle#: 6 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - 0.8
 Operator ID: MKP Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 03-Oct-2018 11:46:35 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK052

First Level Reviewer: pagem

Date: 02-Oct-2018 13:39:51

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.883	2.875	0.008	99	1811555	8.00	8.10	
3 1,4-Dioxane	88	2.923	2.915	0.008	98	214413	0.8000	0.7966	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	96	1872384	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00056

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311900.D

Injection Date: 02-Oct-2018 12:35:30

Instrument ID: HP5973U

Operator ID: MKP

Lims ID: IC - 0.8

Worklist Smp#: 7

Client ID:

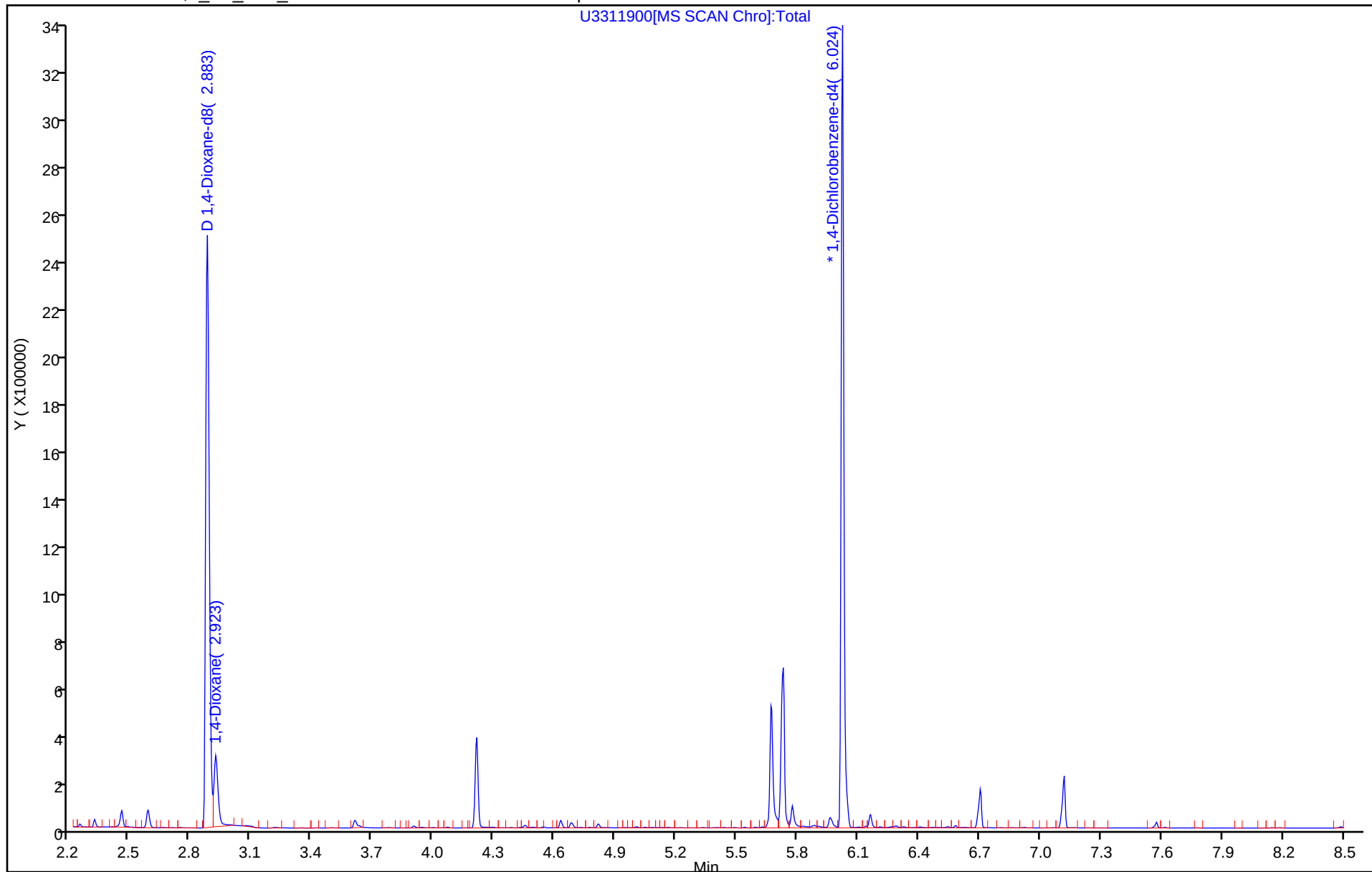
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311901.D
 Lims ID: IC - 1.0
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 02-Oct-2018 12:58:30 ALS Bottle#: 7 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - 1.0
 Operator ID: MKP Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 03-Oct-2018 11:46:37 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK052

First Level Reviewer: pagem

Date: 02-Oct-2018 13:39:55

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.879	2.875	0.004	98	2365974	10.0	10.1	
3 1,4-Dioxane	88	2.919	2.915	0.004	99	289812	1.00	1.02	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	96	1967226	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00057

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311901.D

Injection Date: 02-Oct-2018 12:58:30

Instrument ID: HP5973U

Operator ID: MKP

Lims ID: IC - 1.0

Worklist Smp#: 8

Client ID:

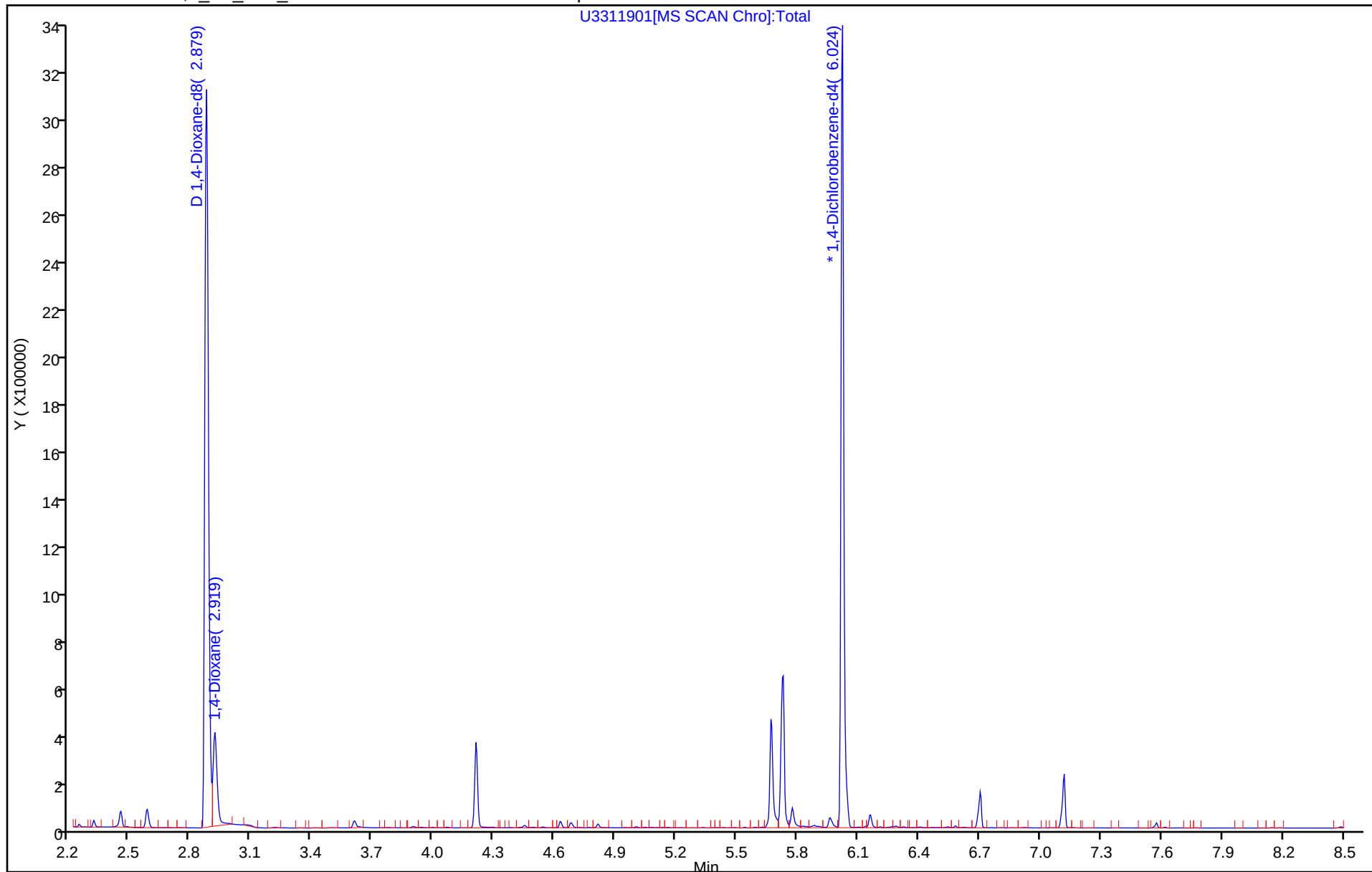
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 7

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Lims ID: IC - 1.2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 02-Oct-2018 13:22:30 ALS Bottle#: 8 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - 1.2
 Operator ID: MKP Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 03-Oct-2018 11:46:40 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK052

First Level Reviewer: pagem

Date: 02-Oct-2018 13:41:47

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.875	2.875	0.000	97	2499373	12.0	12.0	
3 1,4-Dioxane	88	2.915	2.915	0.000	99	306135	1.20	1.22	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	96	1746535	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00058

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D

Injection Date: 02-Oct-2018 13:22:30

Instrument ID: HP5973U

Operator ID: MKP

Lims ID: IC - 1.2

Worklist Smp#: 9

Client ID:

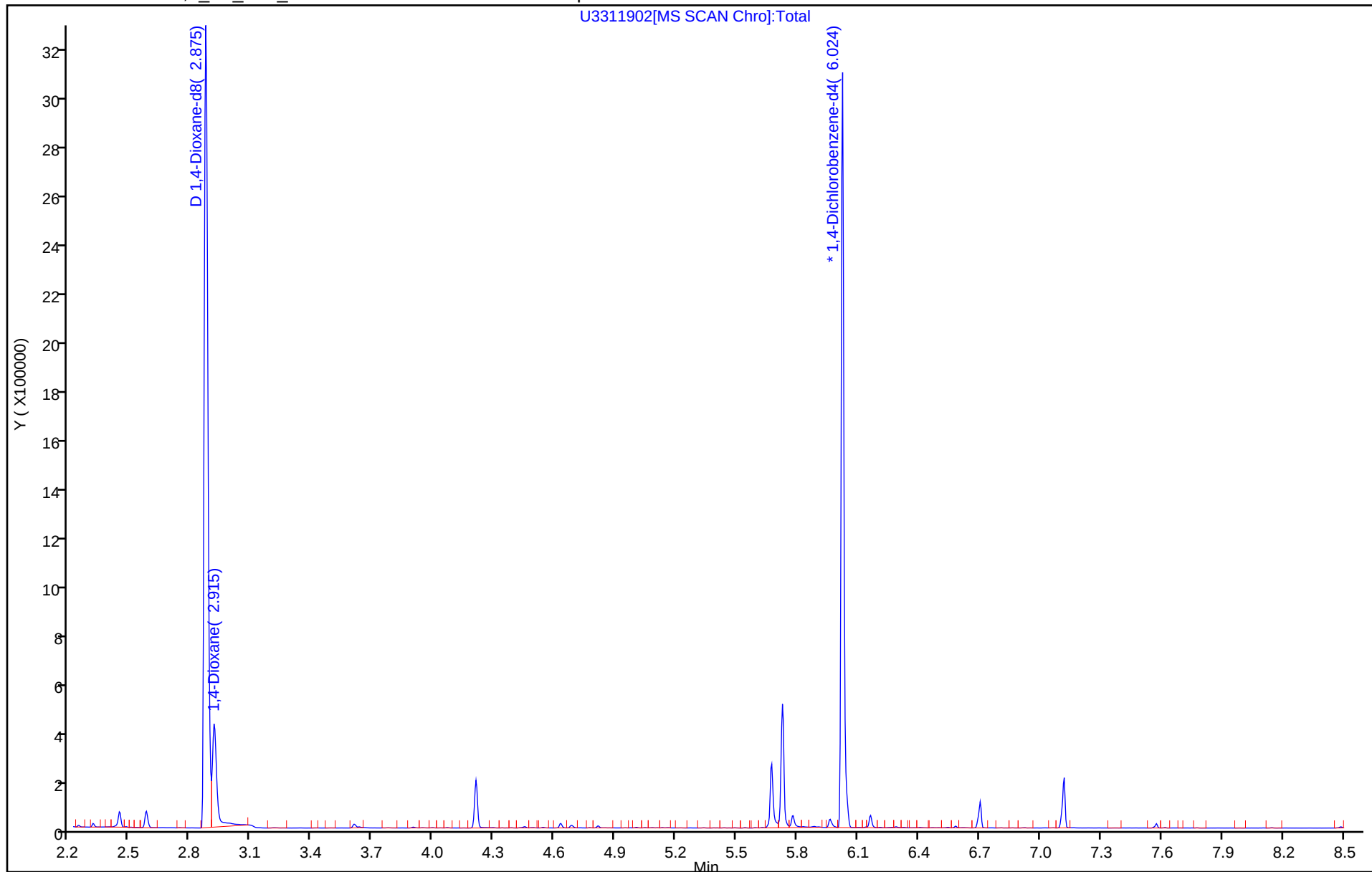
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1 Analy Batch No.: 437915

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2018 13:16 Calibration End Date: 10/05/2018 15:13 Calibration ID: 35015

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-437915/3	U3312052.D
Level 2	ICIS 480-437915/5	U3312054.D
Level 3	IC 480-437915/6	U3312055.D
Level 4	IC 480-437915/7	U3312056.D
Level 5	IC 480-437915/8	U3312057.D
Level 6	IC 480-437915/4	U3312053.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	0.9713 1.0439	1.0753	1.0815	1.1079	1.0948	L2ID	-0.031	1.1264			0.0100				1.0000		0.9900
1,4-Dioxane-d8	0.4886 0.4931	0.4712	0.5087	0.5033	0.5008	Ave		0.4943			0.0100	2.7		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1 Analy Batch No.: 437915

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2018 13:16 Calibration End Date: 10/05/2018 15:13 Calibration ID: 35015

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-437915/3	U3312052.D
Level 2	ICIS 480-437915/5	U3312054.D
Level 3	IC 480-437915/6	U3312055.D
Level 4	IC 480-437915/7	U3312056.D
Level 5	IC 480-437915/8	U3312057.D
Level 6	IC 480-437915/4	U3312053.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
1,4-Dioxane		L2ID	20183 38654	49416	103320	119064	125930	0.200 0.400	0.600	0.800	1.00	1.20
1,4-Dioxane-d8	DCBd 4	Ave	207798 370292	459551	955318	1074696	1150253	2.00 4.00	6.00	8.00	10.0	12.0

Curve Type Legend:

Ave = Average ISTD
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312052.D
 Lims ID: IC SIM 0.2
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 05-Oct-2018 13:16:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:41 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 14:10:22

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.809	2.801	0.008	96	207798	2.00	1.98	
3 1,4-Dioxane	88	2.850	2.846	0.004	91	20183	0.2000	0.2003	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	97	850524	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00053

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312052.D

Injection Date: 05-Oct-2018 13:16:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.2

Worklist Smp#: 3

Client ID:

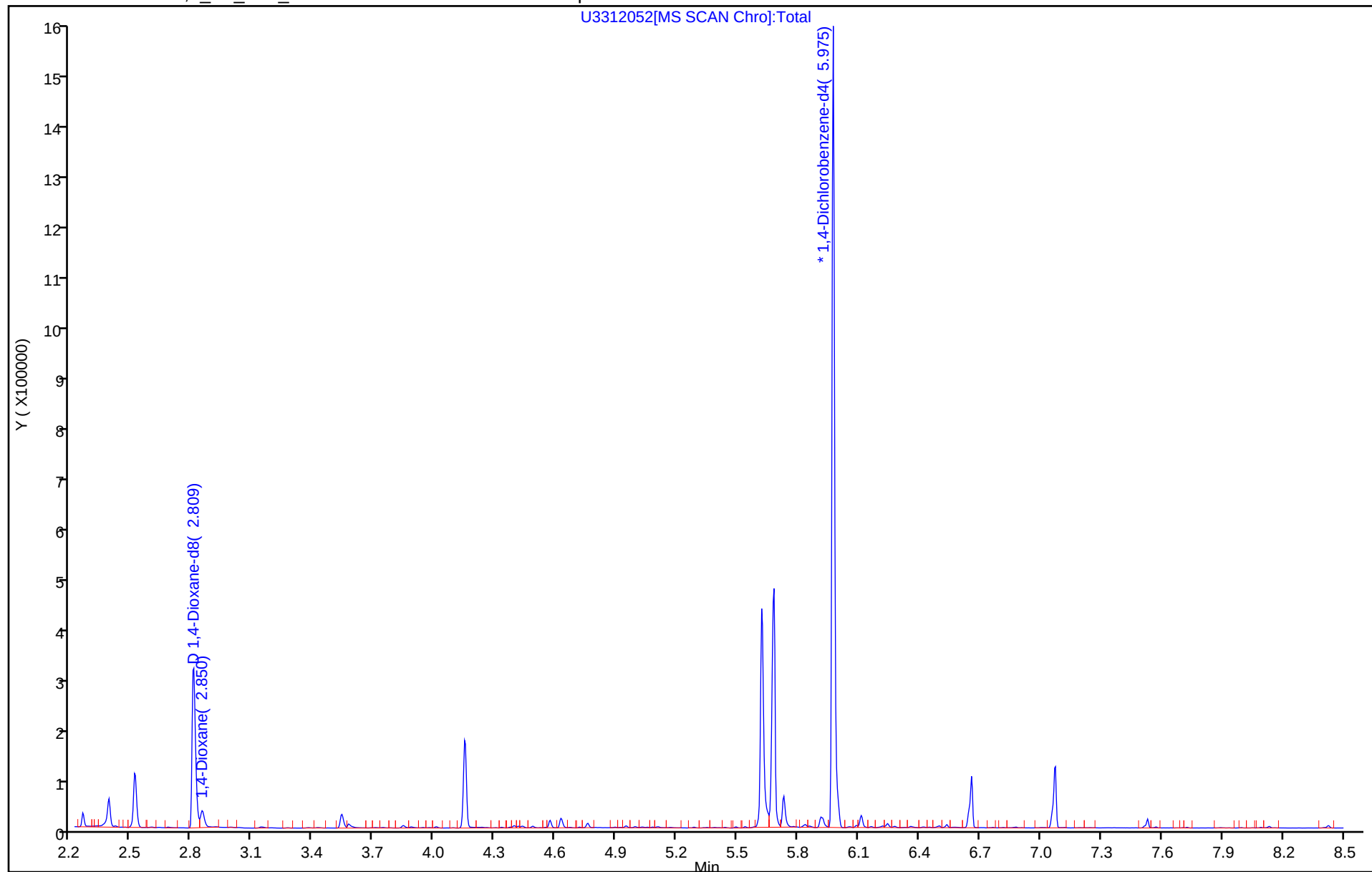
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312053.D
 Lims ID: IC SIM 0.4
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 05-Oct-2018 13:39:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-004
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:43 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 14:10:46

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.809	2.801	0.008	95	370292	4.00	3.99	
3 1,4-Dioxane	88	2.850	2.846	0.004	90	38654	0.4000	0.3985	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	98	751003	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00054
 MB_LLIS_WRK_00154

Amount Added: 1.00
 Amount Added: 20.00

Units: mL
 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312053.D

Injection Date: 05-Oct-2018 13:39:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.4

Worklist Smp#: 4

Client ID:

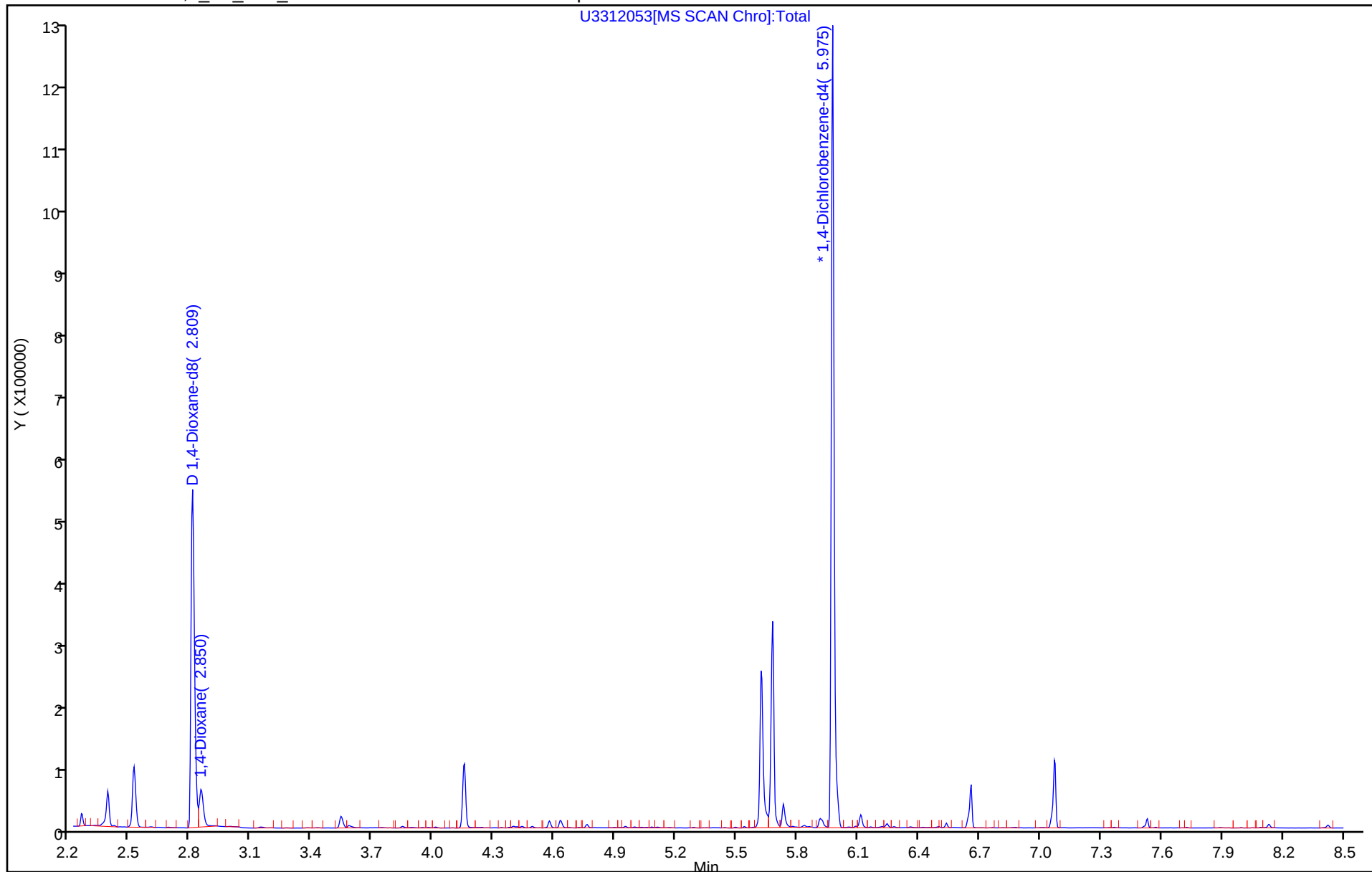
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312054.D
 Lims ID: ICIS SIM 0.6
 Client ID:
 Sample Type: ICIS Calib Level: 3
 Inject. Date: 05-Oct-2018 14:03:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-005
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:44 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 16:38:46

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.801	2.801	0.000	94	459551	6.00	5.72	
3 1,4-Dioxane	88	2.846	2.846	0.000	92	49416	0.6000	0.6006	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	98	650120	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312054.D

Injection Date: 05-Oct-2018 14:03:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: ICIS SIM 0.6

Worklist Smp#: 5

Client ID:

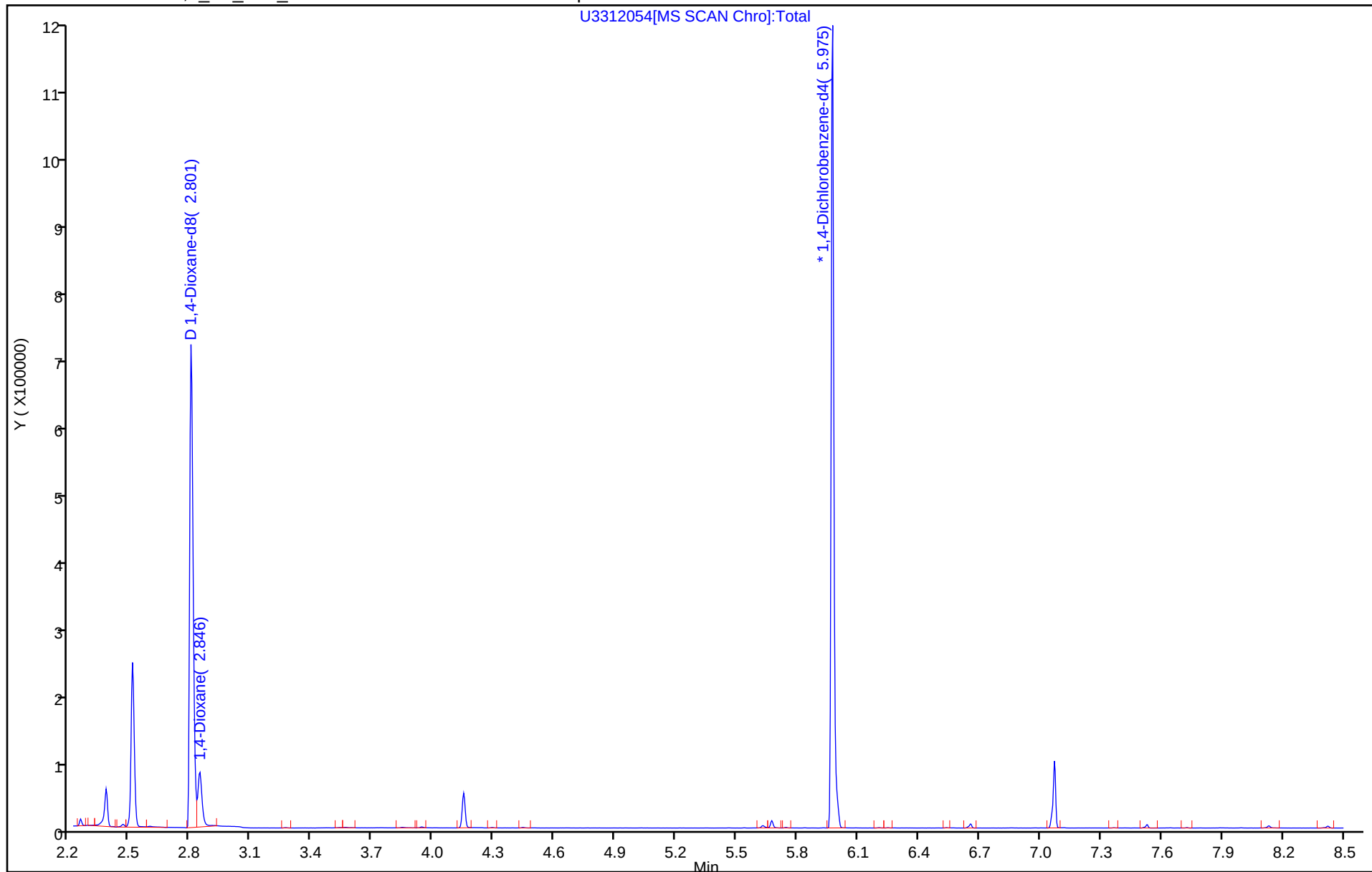
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312055.D
 Lims ID: IC SIM 0.8
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 05-Oct-2018 14:26:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-006
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:45 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 16:38:49

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.809	2.801	0.008	95	955318	8.00	8.23	
3 1,4-Dioxane	88	2.850	2.846	0.004	92	103320	0.8000	0.7959	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	97	939021	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00056

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312055.D

Injection Date: 05-Oct-2018 14:26:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.8

Worklist Smp#: 6

Client ID:

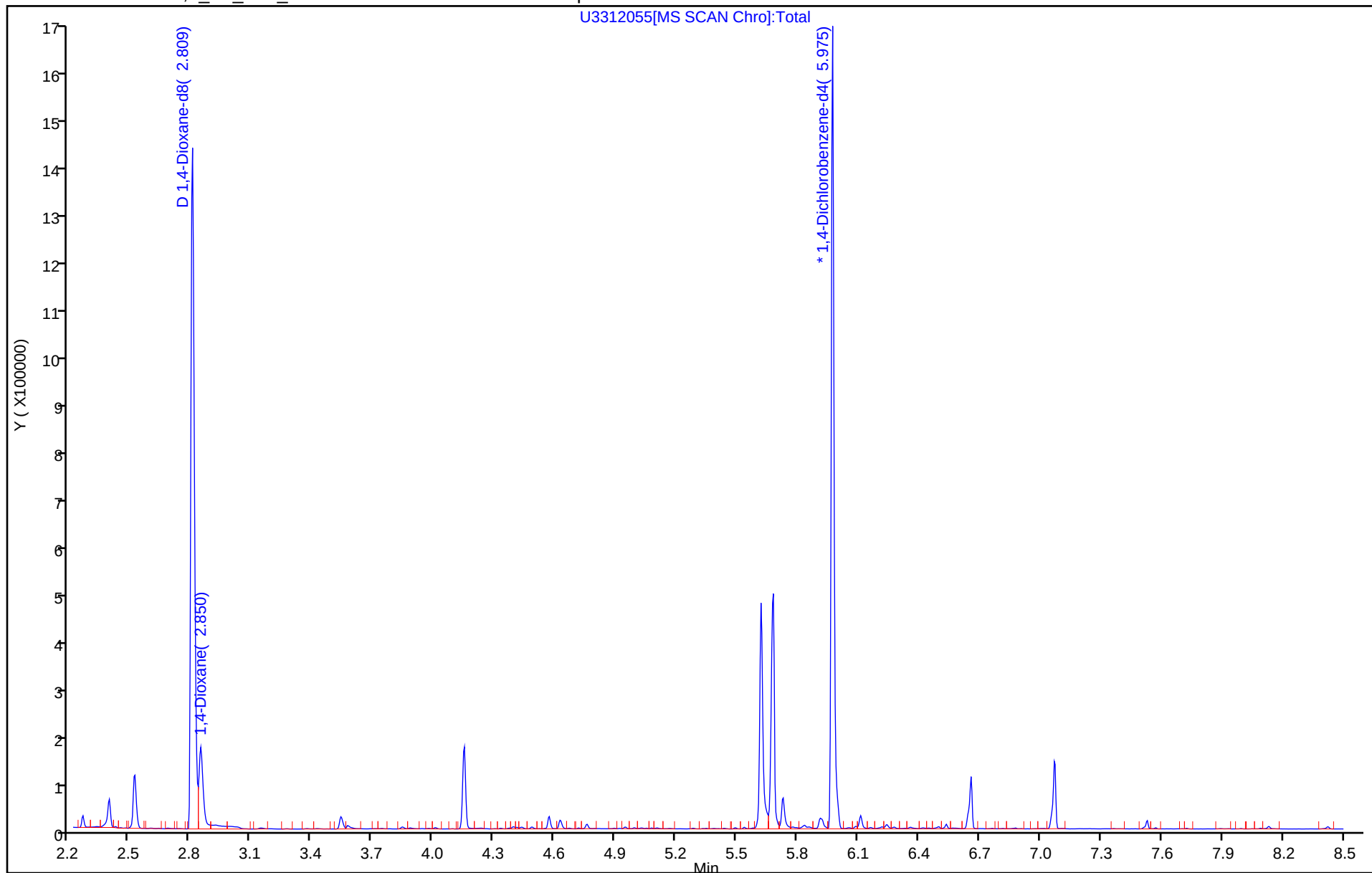
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312056.D
 Lims ID: IC SIM 1.0
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 05-Oct-2018 14:49:30 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-007
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:46 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 16:38:52

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.805	2.801	0.004	93	1074696	10.0	10.2	
3 1,4-Dioxane	88	2.846	2.846	0.000	90	119064	1.00	1.01	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	97	854136	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00057

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312056.D

Injection Date: 05-Oct-2018 14:49:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 1.0

Worklist Smp#: 7

Client ID:

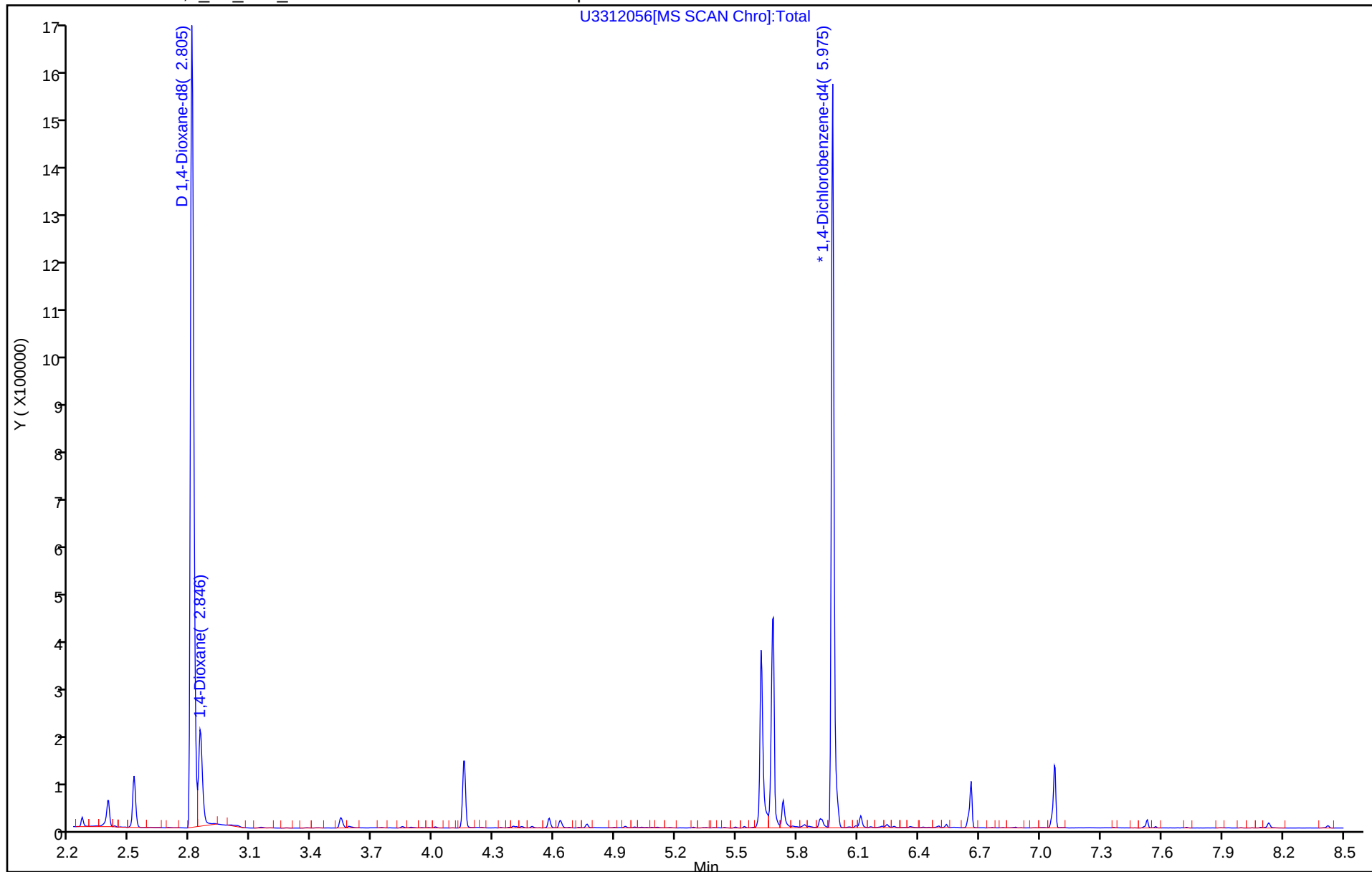
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 7

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Lims ID: IC SIM 1.2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 05-Oct-2018 15:13:30 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-008
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:46 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 16:39:22

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.805	2.801	0.004	94	1150253	12.0	12.2	
3 1,4-Dioxane	88	2.846	2.846	0.000	91	125930	1.20	1.19	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	98	765619	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00058

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D

Injection Date: 05-Oct-2018 15:13:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 1.2

Worklist Smp#: 8

Client ID:

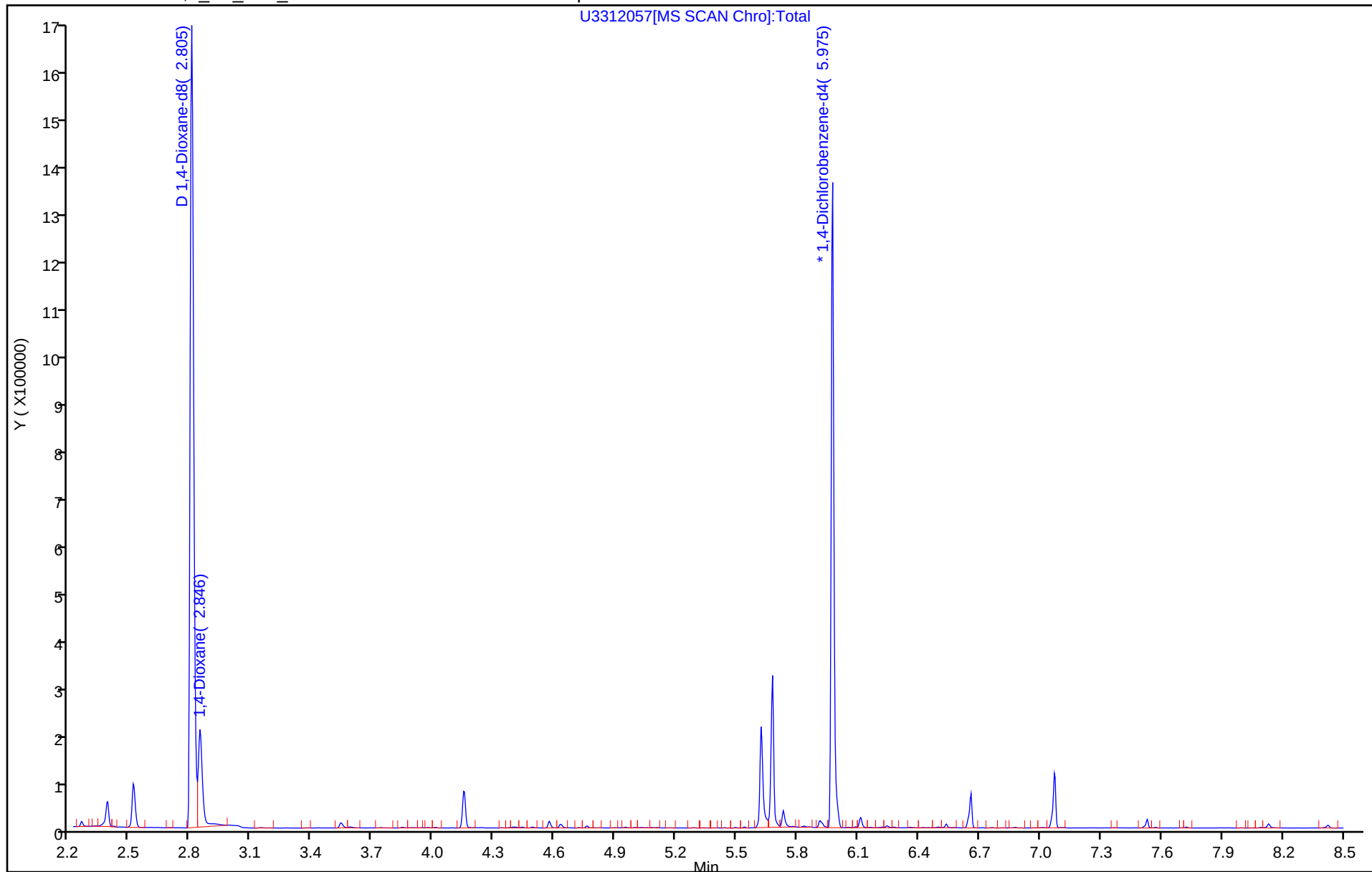
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Lab Sample ID: CCVIS 480-437485/3 Calibration Date: 10/04/2018 11:55
Instrument ID: HP5973U Calib Start Date: 10/02/2018 11:24
GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 10/02/2018 13:22
Lab File ID: U3311995.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		1.172	0.0100	601	600	0.2	20.0
1,4-Dioxane-d8	Ave	0.4779	0.4793	0.0100	6020	6000	0.3	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3311995.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 04-Oct-2018 11:55:30 ALS Bottle#: 34 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075162-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:39 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 12:54:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.809	2.805	0.004	99	1122730	6.00	6.02	
3 1,4-Dioxane	88	2.850	2.850	0.000	99	131621	0.6000	0.6011	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	94	1561558	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3311995.D

Injection Date: 04-Oct-2018 11:55:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: CCVIS

Worklist Smp#: 3

Client ID:

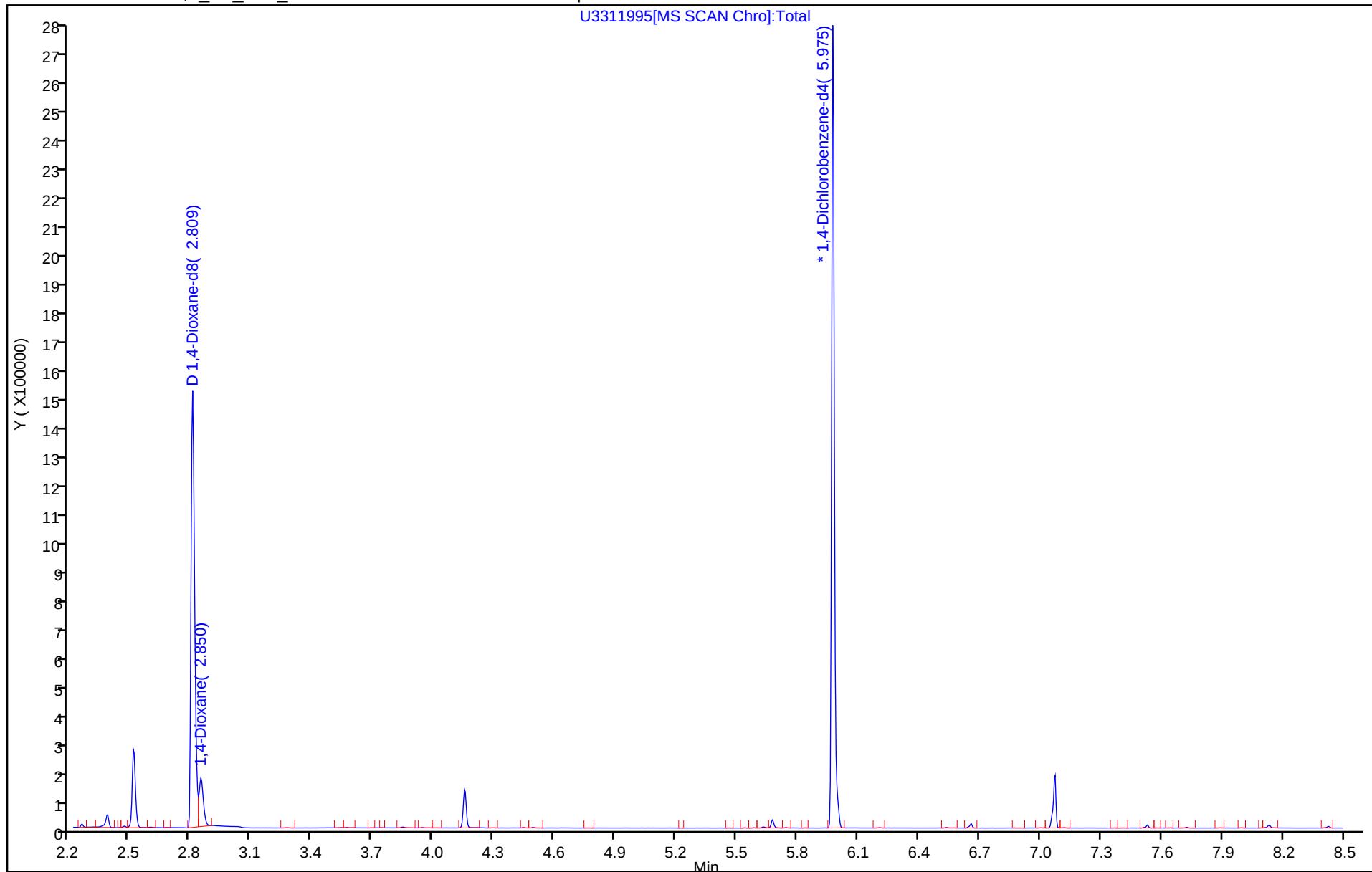
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 34

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Lab Sample ID: CCVIS 480-437915/10 Calibration Date: 10/05/2018 16:00
Instrument ID: HP5973U Calib Start Date: 10/05/2018 13:16
GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 10/05/2018 15:13
Lab File ID: U3312059.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		1.067	0.0100	596	600	-0.6	20.0
1,4-Dioxane-d8	Ave	0.4943	0.4759	0.0100	5780	6000	-3.7	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312059.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 05-Oct-2018 16:00:30 ALS Bottle#: 10 Worklist Smp#: 10
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-010
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 10:40:33 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 10:39:17

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.809	2.801	0.008	94	487104	6.00	5.78	
3 1,4-Dioxane	88	2.854	2.854	0.000	93	51977	0.6000	0.5962	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	98	682341	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312059.D

Injection Date: 05-Oct-2018 16:00:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: CCVIS

Worklist Smp#: 10

Client ID:

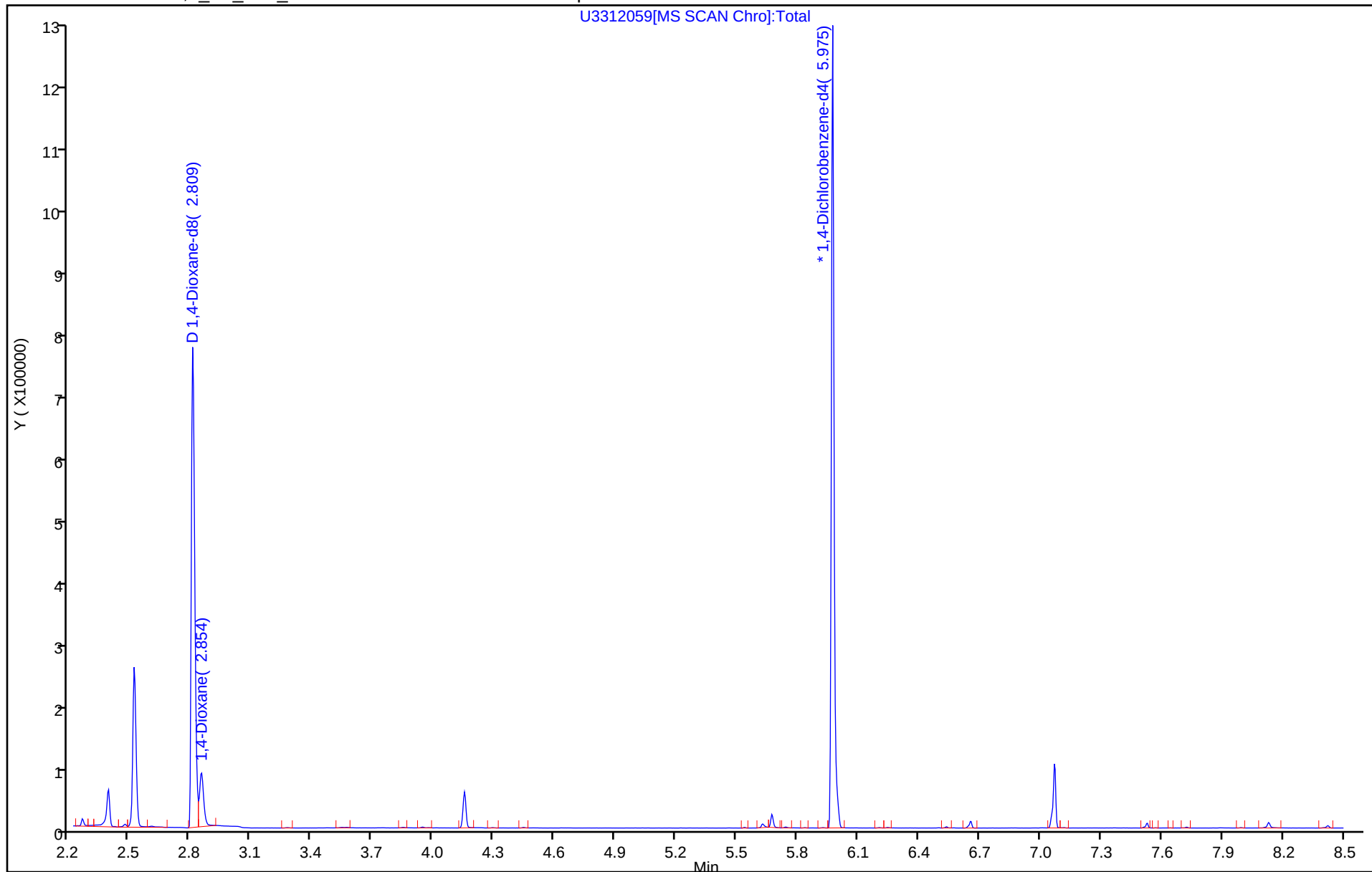
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 10

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311895.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 02-Oct-2018 10:28:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: DFTPP
 Operator ID: MKP Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 14:06:27 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	11.104	11.104	0.000	0	3190			NR
5 4,4'-DDD	235	11.403	11.403	0.000	95	9889			NR
6 4,4'-DDT	235	11.697	11.697	0.000	97	2233061	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MB_DFTPP_WRK_00341

Amount Added: 1.00

Units: mL

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311895.D

Injection Date: 02-Oct-2018 10:28:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: MKP

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul

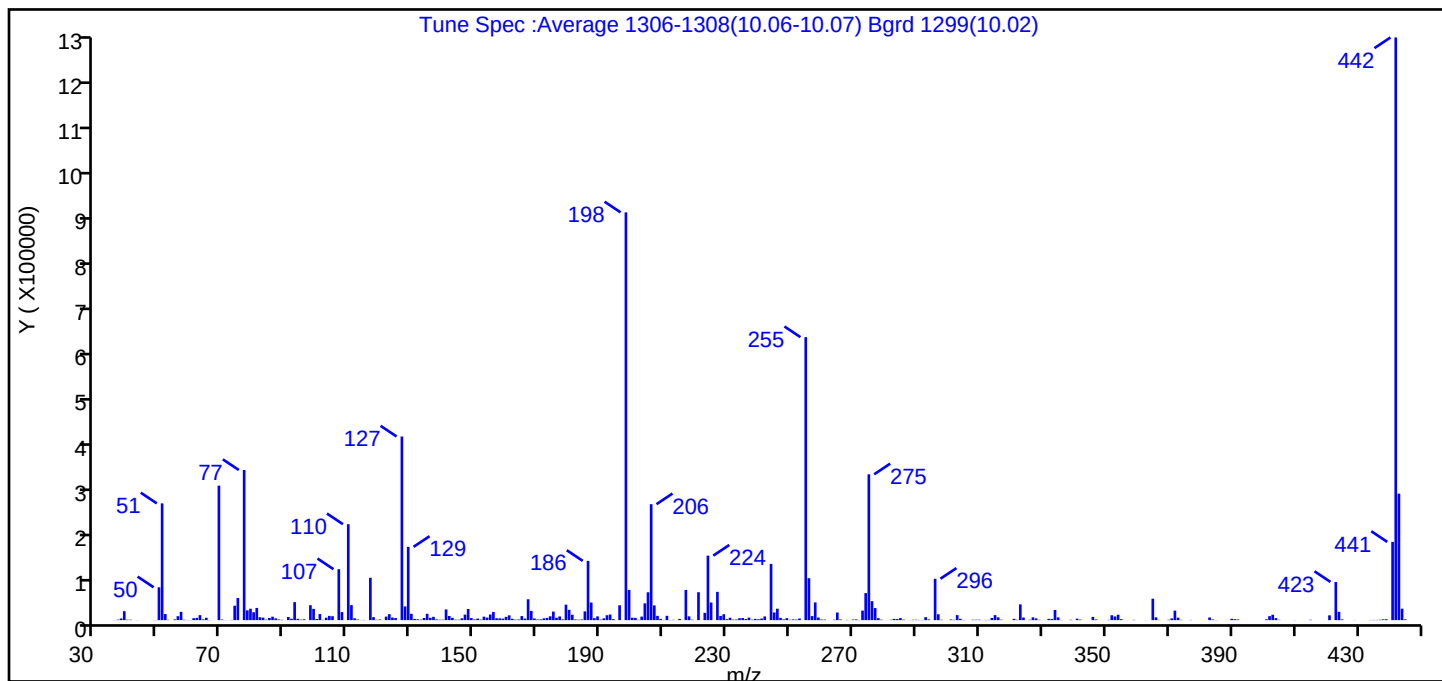
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (70.0)
51	10-80% of the base peak	28.6
68	<2% of mass 69	0.0 (0.0)
69	Present	33.0
70	<2% of mass 69	0.1 (0.4)
127	10-80% of the base peak	45.0
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.4
275	10-60% of the base peak	35.8
365	>1% of mass 198	5.3
441	present but <24% of mass 442	19.2 (13.4)
442	base peak, or >50% of 198	142.9
443	15-24% of mass 442	31.0 (21.7)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311895.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 02-Oct-2018 10:28:30
Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1299(10.02)
Base Peak: 442.00
Minimum % Base Peak: 0
Number of Points: 312

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	272	129.00	154368	209.00	2659	302.00	771
37.00	976	130.00	13351	210.00	430	303.00	10571
38.00	3522	131.00	2678	211.00	9142	304.00	2768
39.00	18912	132.00	1733	212.00	325	305.00	372
40.00	905	133.00	999	213.00	616	308.00	859
41.00	893	134.00	4477	215.00	2508	309.00	881
43.00	262	135.00	13358	217.00	63688	310.00	899
44.00	67	136.00	4847	218.00	7962	311.00	172
45.00	110	137.00	6992	219.00	945	312.00	435
48.00	208	138.00	1563	221.00	58824	313.00	498
49.00	362	139.00	873	223.00	15336	314.00	4721
50.00	69184	140.00	905	224.00	135872	315.00	10573
51.00	245952	141.00	22616	225.00	37096	316.00	5870
52.00	13004	142.00	8709	227.00	59576	317.00	926
53.00	609	143.00	4888	228.00	8926	321.00	2810
55.00	1618	144.00	1001	229.00	12491	322.00	744
56.00	8304	145.00	840	230.00	1959	323.00	33240
57.00	17536	146.00	3851	231.00	5100	324.00	5486
58.00	794	147.00	11734	232.00	1006	326.00	894
59.00	420	148.00	23496	233.00	1266	327.00	5908
60.00	217	149.00	4387	234.00	4059	328.00	3667
61.00	4149	150.00	1454	235.00	4434	329.00	640
62.00	4846	151.00	3244	236.00	2318	332.00	2659
63.00	10534	152.00	1090	237.00	5297	333.00	2539
64.00	1601	153.00	7328	238.00	1011	334.00	21392
65.00	4935	154.00	5322	239.00	2698	335.00	5902
66.00	359	155.00	11889	240.00	1863	336.00	460
69.00	283328	156.00	17232	241.00	3409	339.00	769
70.00	1236	157.00	4018	242.00	7793	341.00	3109
71.00	230	158.00	3848	244.00	118480	342.00	1045
73.00	504	159.00	3213	245.00	16204	346.00	6915
74.00	30352	160.00	6929	246.00	24136	347.00	1567
75.00	46608	161.00	10117	247.00	4753	351.00	644

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311895.D\1_4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 02-Oct-2018 10:28:30

Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1299(10.02)

Base Peak: 442.00

Minimum % Base Peak: 0

Number of Points: 312

m/z	Y	m/z	Y	m/z	Y	m/z	Y
77.00	316224	162.00	2842	248.00	1500	352.00	10344
78.00	20608	163.00	1022	249.00	4221	353.00	7763
79.00	24048	164.00	1296	250.00	746	354.00	11448
80.00	16672	165.00	8496	251.00	1515	355.00	2039
81.00	25720	166.00	3263	252.00	1155	357.00	181
82.00	6037	167.00	44008	253.00	3464	359.00	641
83.00	5301	168.00	19416	255.00	596096	363.00	169
84.00	976	169.00	3549	256.00	88344	365.00	45176
85.00	4631	170.00	1382	257.00	8538	366.00	5937
86.00	7225	171.00	1584	258.00	37312	367.00	463
87.00	3722	172.00	3815	259.00	5584	370.00	888
88.00	1392	173.00	4777	260.00	1253	371.00	3644
89.00	671	174.00	8090	261.00	1082	372.00	20032
91.00	6666	175.00	18016	264.00	843	373.00	5253
92.00	2914	176.00	5075	265.00	16066	374.00	583
93.00	37992	177.00	7806	266.00	1303	377.00	477
94.00	2743	178.00	1555	268.00	508	383.00	5668
95.00	978	179.00	32624	269.00	184	384.00	1308
96.00	1776	180.00	21680	270.00	1272	385.00	342
98.00	31480	181.00	11379	271.00	1538	390.00	2815
99.00	23736	182.00	1486	272.00	307	391.00	2019
100.00	2415	183.00	920	273.00	20096	392.00	1445
101.00	12878	184.00	1372	274.00	56952	401.00	1661
102.00	655	185.00	18448	275.00	307200	402.00	8432
103.00	5171	186.00	124840	276.00	40016	403.00	11357
104.00	8992	187.00	37048	277.00	25464	404.00	4267
105.00	8264	188.00	4148	278.00	4182	405.00	726
107.00	107328	189.00	7933	279.00	897	410.00	228
108.00	16912	190.00	1141	281.00	174	415.00	816
110.00	202112	191.00	3912	282.00	830	421.00	10139
111.00	31680	192.00	10369	283.00	2765	423.00	80424
112.00	3917	193.00	11922	284.00	2269	424.00	17584
113.00	1269	194.00	2064	285.00	4405	425.00	1577
114.00	229	196.00	31296	286.00	1076	429.00	174

Report Date: 02-Oct-2018 14:06:27

Chrom Revision: 2.3 19-Jul-2018 15:14:50

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311895.D\1,4_Dx_SIM_HP5973U.rsltspe

Injection Date: 02-Oct-2018 10:28:30

Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1299(10.02)

Base Peak: 442.00

Minimum % Base Peak: 0

Number of Points: 312

m/z	Y	m/z	Y	m/z	Y	m/z	Y
115.00	428	198.00	858880	288.00	168	434.00	409
117.00	89160	199.00	63696	289.00	797	435.00	494
118.00	6330	200.00	5139	290.00	814	436.00	577
119.00	668	201.00	4856	291.00	399	437.00	862
120.00	1417	202.00	666	292.00	446	438.00	1647
122.00	7435	203.00	7447	293.00	6258	439.00	1996
123.00	12630	204.00	35384	294.00	1564	441.00	164800
124.00	5473	205.00	58720	296.00	87192	442.00	1227264
125.00	4529	206.00	244224	297.00	12389	443.00	266368
127.00	386816	207.00	30992	298.00	850	444.00	24184
128.00	28904	208.00	9006	301.00	1351	445.00	1632

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311895.D

Injection Date: 02-Oct-2018 10:28:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: MKP

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =

$$\left(\frac{\text{Area Breakdown Cpnds}}{\text{Total Area Breakdown Cpnds}} \right) * 100$$

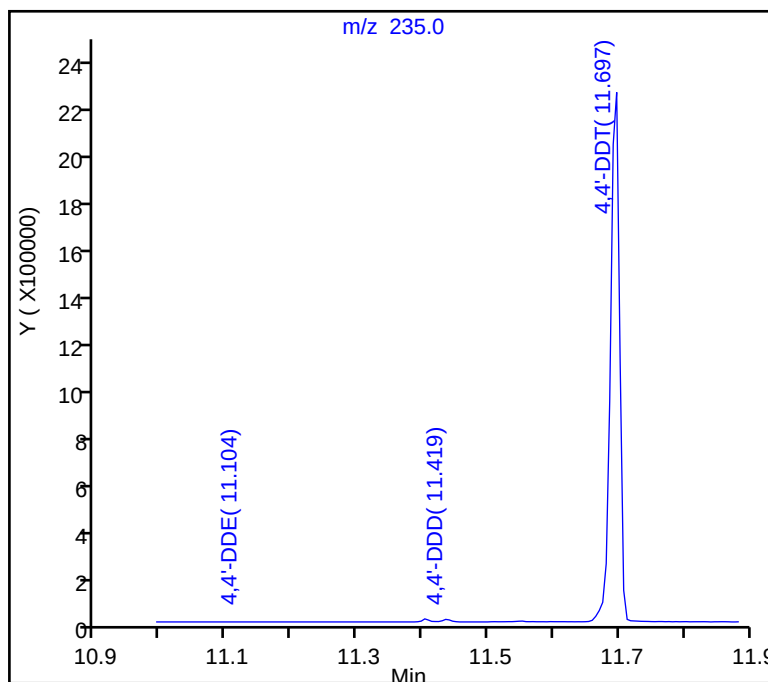
6 4,4'-DDT, Area = 2233061

5 4,4'-DDD, Area = 9889

7 4,4'-DDE, Area = 3190

%Breakdown: 0.58%, Max Limit: 20.00%

Passed



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3311994.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 04-Oct-2018 11:25:30 ALS Bottle#: 33 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075162-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:37 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 11:54:58

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	11.061	11.061	0.000	0	10351			NR
5 4,4'-DDD	235	11.360	11.360	0.000	96	181152			NR
6 4,4'-DDT	235	11.649	11.649	0.000	94	2308100	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MB_DFTPP_WRK_00341

Amount Added: 1.00

Units: mL

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3311994.D

Injection Date: 04-Oct-2018 11:25:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 33 Worklist Smp#: 2

Injection Vol: 1.0 ul

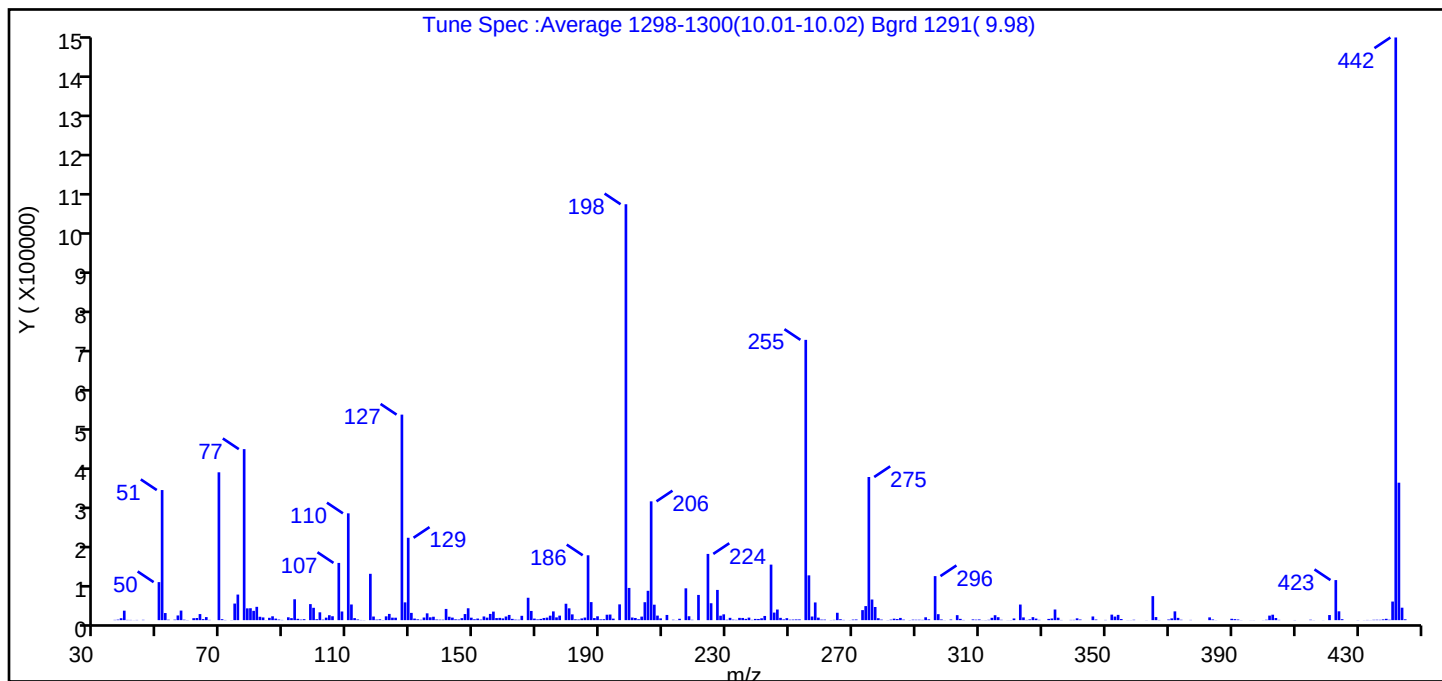
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (71.4)
51	10-80% of the base peak	31.3
68	<2% of mass 69	0.0 (0.0)
69	Present	35.5
70	<2% of mass 69	0.2 (0.6)
127	10-80% of the base peak	49.4
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.7
275	10-60% of the base peak	34.4
365	>1% of mass 198	5.8
441	present but <24% of mass 442	4.5 (3.2)
442	base peak, or >50% of 198	140.1
443	15-24% of mass 442	33.0 (23.6)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3311994.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 04-Oct-2018 11:25:30
Spectrum: Tune Spec :Average 1298-1300(10.01-10.02) Bgrd 1291(9.98)
Base Peak: 442.00
Minimum % Base Peak: 0
Number of Points: 320

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	688	133.00	1037	221.00	63784	315.00	12452
37.00	1333	134.00	6668	224.00	167552	316.00	7417
38.00	4833	135.00	17224	225.00	42776	317.00	924
39.00	23976	136.00	7193	227.00	76456	319.00	188
40.00	648	137.00	8604	228.00	11213	320.00	349
41.00	581	138.00	1655	229.00	14688	321.00	4204
42.00	197	139.00	1198	230.00	991	323.00	39464
43.00	537	140.00	1119	231.00	5859	324.00	6920
45.00	808	141.00	28368	232.00	1261	325.00	575
50.00	96168	142.00	8566	233.00	718	326.00	1883
51.00	329088	143.00	6436	234.00	5750	327.00	7585
52.00	17960	144.00	2123	235.00	5562	328.00	3902
53.00	1098	145.00	1552	236.00	3246	329.00	714
55.00	1240	146.00	5049	237.00	6401	332.00	3138
56.00	11856	147.00	15387	238.00	765	333.00	4205
57.00	24192	148.00	30056	239.00	3138	334.00	26928
58.00	1177	149.00	6208	240.00	2980	335.00	6134
59.00	393	150.00	2230	241.00	4687	336.00	468
61.00	4912	151.00	3983	242.00	10600	339.00	632
62.00	5400	152.00	1485	244.00	140480	340.00	709
63.00	15345	153.00	9333	245.00	19136	341.00	4590
64.00	2595	154.00	6358	246.00	26880	342.00	1566
65.00	7687	155.00	15736	247.00	5803	346.00	9302
66.00	617	156.00	21616	248.00	1820	347.00	1635
69.00	374016	157.00	5236	249.00	4997	350.00	582
70.00	2403	158.00	5720	250.00	1117	352.00	13937
71.00	465	159.00	4426	251.00	1452	353.00	9058
73.00	356	160.00	9232	252.00	1779	354.00	13331
74.00	41936	161.00	13184	253.00	1853	355.00	2806
75.00	64704	162.00	3246	255.00	709056	357.00	208
77.00	432640	163.00	1340	256.00	113320	358.00	233
78.00	29800	164.00	1031	257.00	9169	359.00	973
79.00	30120	165.00	10951	258.00	44776	363.00	238

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3311994.D\1_4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 04-Oct-2018 11:25:30

Spectrum: Tune Spec :Average 1298-1300(10.01-10.02) Bgrd 1291(9.98)

Base Peak: 442.00

Minimum % Base Peak: 0

Number of Points: 320

m/z	Y	m/z	Y	m/z	Y	m/z	Y
80.00	23544	167.00	56640	259.00	6341	365.00	60760
81.00	33680	168.00	23280	260.00	1369	366.00	7799
82.00	8510	169.00	3893	261.00	1349	367.00	466
83.00	6860	170.00	1883	263.00	390	370.00	1610
84.00	239	171.00	3147	264.00	778	371.00	4427
85.00	5908	172.00	5503	265.00	18664	372.00	22208
86.00	9724	173.00	6431	266.00	2246	373.00	5767
87.00	3901	174.00	11293	267.00	595	374.00	974
88.00	1519	175.00	22136	268.00	45	377.00	607
89.00	556	176.00	6985	269.00	220	383.00	6995
91.00	7206	177.00	11432	270.00	1368	384.00	1752
92.00	5078	179.00	41504	271.00	1676	385.00	234
93.00	52840	180.00	29896	273.00	25384	390.00	3447
94.00	3363	181.00	14607	274.00	35544	391.00	2566
95.00	1342	182.00	2097	275.00	362112	392.00	1637
96.00	2418	183.00	1544	276.00	52176	393.00	279
98.00	40568	184.00	4356	277.00	33280	396.00	173
99.00	31224	185.00	6501	278.00	4878	397.00	225
100.00	2375	186.00	164096	279.00	1366	400.00	236
101.00	19840	187.00	45640	281.00	300	401.00	1008
102.00	1293	188.00	5259	282.00	1325	402.00	11451
103.00	6320	189.00	9739	283.00	3724	403.00	13753
104.00	12474	190.00	1931	284.00	2780	404.00	5348
105.00	9851	191.00	2369	285.00	5629	405.00	700
107.00	144768	192.00	13746	286.00	1291	410.00	383
108.00	21896	193.00	14194	288.00	351	415.00	1063
110.00	270208	194.00	3784	289.00	1227	416.00	230
111.00	39624	196.00	39928	290.00	1021	419.00	191
112.00	5094	198.00	1052160	291.00	1068	421.00	12881
113.00	1756	199.00	81480	292.00	740	423.00	101344
114.00	439	200.00	6622	293.00	7230	424.00	22336
115.00	324	201.00	5487	294.00	2022	425.00	2432
117.00	117232	202.00	2292	296.00	111408	430.00	348
118.00	9156	203.00	8920	297.00	15110	432.00	240

Report Date: 04-Oct-2018 20:15:38

Chrom Revision: 2.3 19-Jul-2018 15:14:50

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3311994.D\1,4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 04-Oct-2018 11:25:30

Spectrum: Tune Spec :Average 1298-1300(10.01-10.02) Bgrd 1291(9.98)

Base Peak: 442.00

Minimum % Base Peak: 0

Number of Points: 320

m/z	Y	m/z	Y	m/z	Y	m/z	Y
119.00	1404	204.00	45352	298.00	1704	433.00	524
120.00	2147	205.00	74208	299.00	207	434.00	254
121.00	411	206.00	300544	301.00	1575	435.00	880
122.00	9621	207.00	39104	303.00	12616	436.00	1018
123.00	15784	208.00	11488	304.00	3216	437.00	802
124.00	6273	209.00	4465	305.00	498	438.00	1923
125.00	6153	211.00	13146	308.00	1840	439.00	3364
127.00	519936	213.00	1018	309.00	1236	440.00	1016
128.00	44976	214.00	225	310.00	1755	441.00	47040
129.00	208384	215.00	3466	311.00	220	442.00	1474048
130.00	18368	217.00	80504	312.00	363	443.00	347712
131.00	3954	218.00	9875	313.00	868	444.00	31488
132.00	2065	219.00	885	314.00	5908	445.00	2087

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3311994.D

Injection Date: 04-Oct-2018 11:25:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 33 Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =

$$\left(\frac{\text{Area Breakdown Cpnds}}{\text{Total Area Breakdown Cpnds}} \right) * 100$$

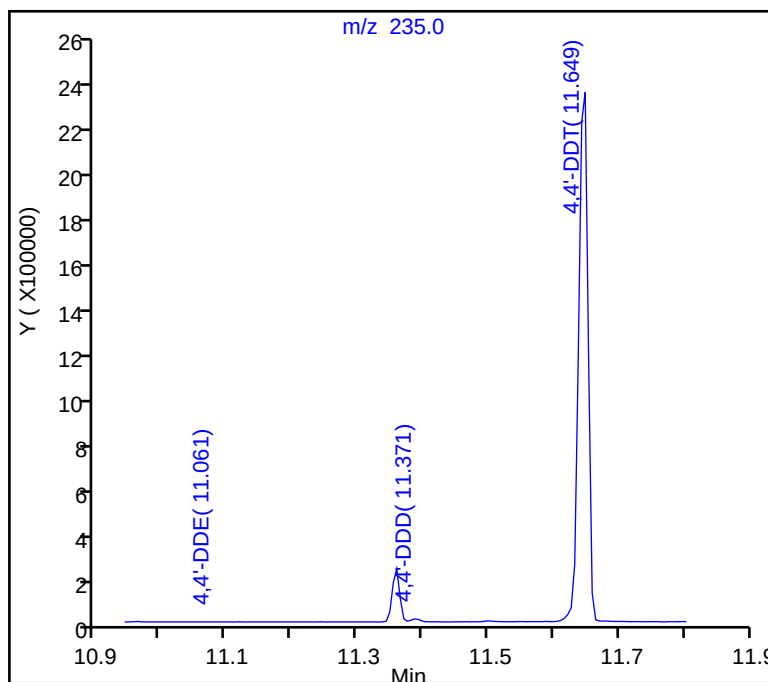
6 4,4'-DDT, Area = 2308100

5 4,4'-DDD, Area = 181152

7 4,4'-DDE, Area = 10351

%Breakdown: 7.66%, Max Limit: 20.00%

Passed



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 05-Oct-2018 12:17:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: DFTPP
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Oct-2018 16:39:47 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0314

First Level Reviewer: richardsd

Date: 05-Oct-2018 12:50:21

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 2 1,4-Dichlorobenzene-d4	152		5.975				4.00	ND	
4 DFTPP									
7 4,4'-DDE	246	11.061	11.061	0.000	0	5972			NR
5 4,4'-DDD	235	11.355	11.355	0.000	96	21391			NR
6 4,4'-DDT	235	11.643	11.643	0.000	97	1185656	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MB_DFTPP_WRK_00341

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00153

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D

Injection Date: 05-Oct-2018 12:17:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 2.0 ul

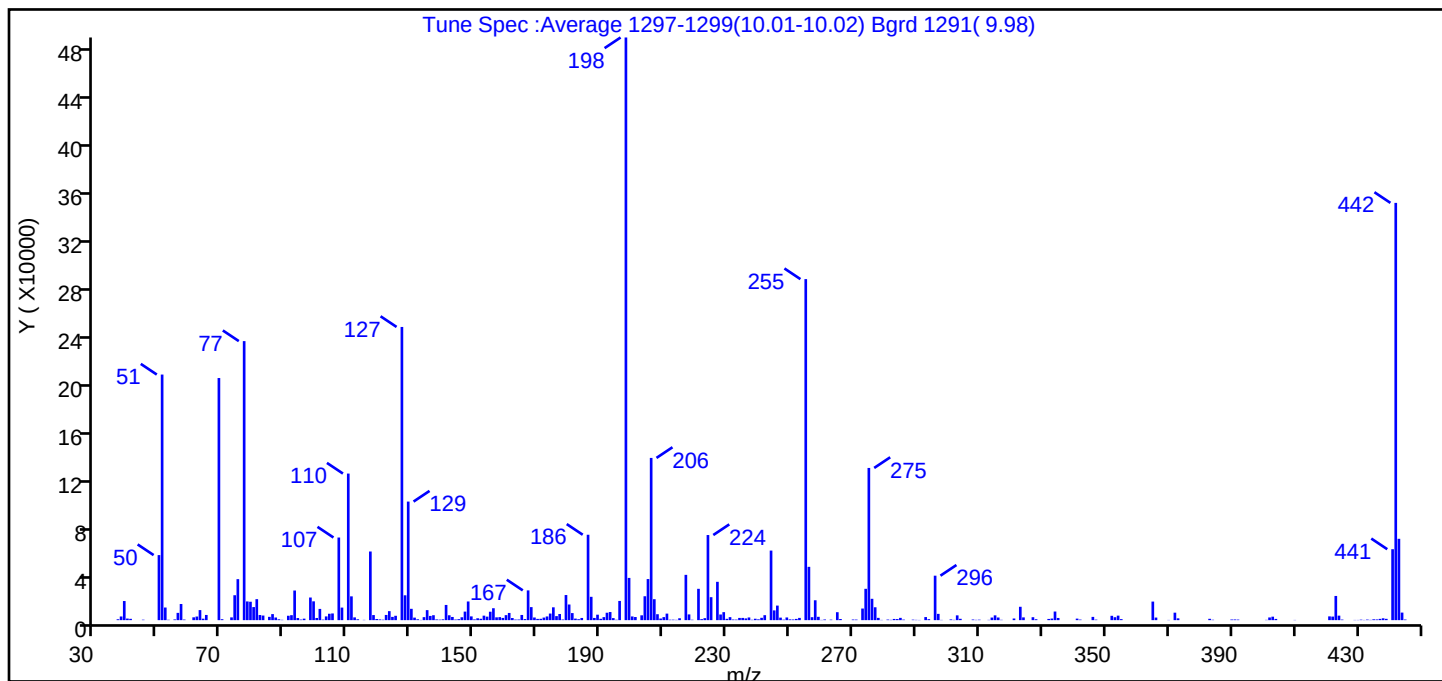
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (139.6)
51	10-80% of the base peak	42.1
68	<2% of mass 69	0.0 (0.0)
69	Present	41.6
70	<2% of mass 69	0.2 (0.4)
127	10-80% of the base peak	50.3
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.2
275	10-60% of the base peak	26.1
365	>1% of mass 198	3.2
441	present but <24% of mass 442	12.2 (17.0)
442	base peak, or >50% of 198	71.6
443	15-24% of mass 442	14.0 (19.5)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 05-Oct-2018 12:17:30
Spectrum: Tune Spec :Average 1297-1299(10.01-10.02) Bgrd 1291(9.98)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 285

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	741	132.00	711	207.00	17320	294.00	806
38.00	3024	133.00	185	208.00	4897	296.00	36760
39.00	15801	134.00	2479	209.00	1330	297.00	5190
40.00	1316	135.00	8278	210.00	2503	298.00	196
41.00	1093	136.00	3494	211.00	5402	301.00	606
44.00	19	137.00	4074	212.00	361	302.00	239
45.00	364	138.00	601	213.00	396	303.00	3958
50.00	53784	139.00	414	214.00	247	304.00	1106
51.00	203072	140.00	667	215.00	1560	308.00	517
52.00	10437	141.00	12565	217.00	37448	309.00	249
53.00	304	142.00	4039	218.00	4736	310.00	385
55.00	591	143.00	2626	219.00	331	313.00	224
56.00	6009	144.00	509	221.00	25904	314.00	2139
57.00	13346	145.00	805	222.00	826	315.00	3959
58.00	484	146.00	2378	223.00	1644	316.00	2184
61.00	2335	147.00	7062	224.00	70376	317.00	265
62.00	2983	148.00	15441	225.00	18984	321.00	1354
63.00	8307	149.00	3101	227.00	31688	323.00	11045
64.00	1204	150.00	618	228.00	4668	324.00	2277
65.00	4286	151.00	1553	229.00	6609	327.00	2424
69.00	200192	152.00	1146	230.00	1090	328.00	754
70.00	774	153.00	3710	231.00	2483	332.00	999
73.00	2284	154.00	2901	232.00	511	333.00	1315
74.00	20600	155.00	6966	233.00	439	334.00	7127
75.00	33896	156.00	9850	234.00	1832	335.00	1807
77.00	230720	157.00	2319	235.00	1842	341.00	1250
78.00	15468	158.00	2490	236.00	1431	342.00	450
79.00	15214	159.00	1839	237.00	2218	346.00	2691
80.00	10798	160.00	4134	238.00	310	347.00	445
81.00	17360	161.00	5948	239.00	1161	352.00	3589
82.00	4230	162.00	1754	240.00	670	353.00	2412
83.00	3798	163.00	476	241.00	1925	354.00	3724
85.00	2719	164.00	519	242.00	4099	355.00	851

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D\1,4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 05-Oct-2018 12:17:30

Spectrum: Tune Spec :Average 1297-1299(10.01-10.02) Bgrd 1291(9.98)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 285

m/z	Y	m/z	Y	m/z	Y	m/z	Y
86.00	4996	165.00	4282	244.00	57520	365.00	15349
87.00	2178	166.00	890	245.00	8061	366.00	2136
88.00	700	167.00	24608	246.00	12033	370.00	175
89.00	262	168.00	10773	247.00	2079	372.00	6178
91.00	3633	169.00	2189	248.00	381	373.00	1490
92.00	4093	170.00	1050	249.00	2215	383.00	1106
93.00	24496	171.00	1120	250.00	643	384.00	308
94.00	1738	172.00	2128	251.00	556	390.00	517
95.00	475	173.00	3052	252.00	1020	391.00	557
96.00	1232	174.00	5451	253.00	1858	392.00	463
98.00	18712	175.00	10611	255.00	281984	401.00	230
99.00	15556	176.00	3325	256.00	44072	402.00	2219
100.00	1787	177.00	5076	257.00	2446	403.00	2863
101.00	9289	178.00	515	258.00	16432	404.00	1003
102.00	436	179.00	20760	259.00	2750	410.00	173
103.00	3082	180.00	12933	260.00	187	421.00	3118
104.00	5289	181.00	5835	261.00	548	422.00	2942
105.00	5532	182.00	1271	263.00	416	423.00	20000
107.00	68320	183.00	782	265.00	6564	424.00	3722
108.00	10383	184.00	1807	266.00	933	425.00	465
110.00	121200	186.00	70608	270.00	508	429.00	172
111.00	19672	187.00	19288	271.00	460	430.00	174
112.00	2279	188.00	1821	273.00	9600	431.00	395
113.00	717	189.00	4508	274.00	25904	432.00	167
115.00	217	190.00	1114	275.00	125848	433.00	465
117.00	56760	191.00	2486	276.00	17648	434.00	213
118.00	4194	192.00	6130	277.00	10642	435.00	690
119.00	925	193.00	6711	278.00	1882	436.00	580
120.00	589	194.00	1684	279.00	190	437.00	1050
121.00	377	195.00	323	281.00	479	438.00	1531
122.00	4294	196.00	15873	282.00	253	439.00	1081
123.00	7438	198.00	481792	283.00	986	441.00	58648
124.00	2687	199.00	34920	284.00	899	442.00	345024
125.00	3606	200.00	3047	285.00	1885	443.00	67264

Report Date: 05-Oct-2018 16:39:48

Chrom Revision: 2.3 19-Jul-2018 15:14:50

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D\1,4_Dx_SIM_HP5973U.rslt\spe

Injection Date: 05-Oct-2018 12:17:30

Spectrum: Tune Spec :Average 1297-1299(10.01-10.02) Bgrd 1291(9.98)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 285

m/z	Y	m/z	Y	m/z	Y	m/z	Y
127.00	242432	201.00	2579	286.00	438	444.00	6250
128.00	20544	203.00	3988	289.00	407	445.00	506
129.00	98040	204.00	19760	290.00	239		
130.00	9367	205.00	33976	291.00	169		
131.00	2089	206.00	134144	293.00	2545		

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D

Injection Date: 05-Oct-2018 12:17:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =

$$\left(\frac{\text{Area Breakdown Cpnds}}{\text{Total Area Breakdown Cpnds}} \right) * 100$$

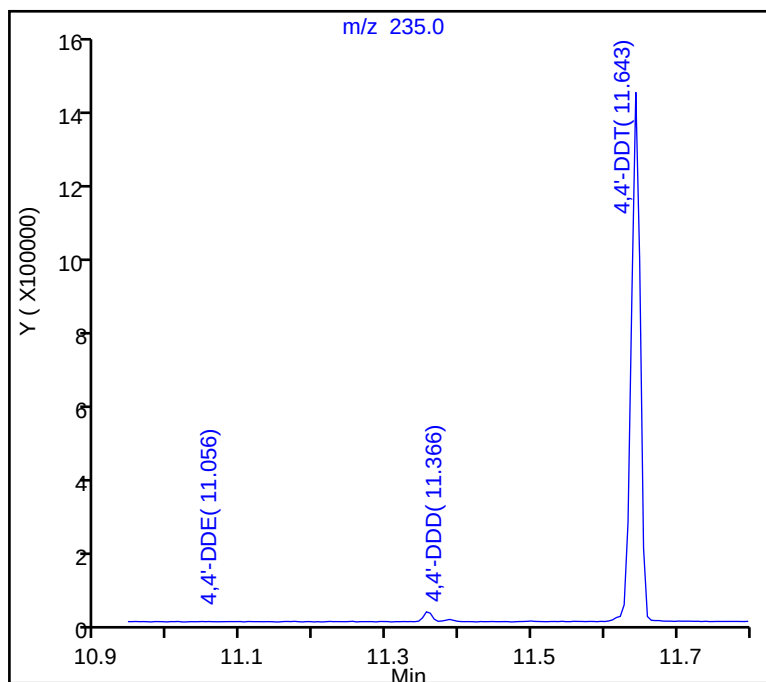
6 4,4'-DDT, Area = 1185656

5 4,4'-DDD, Area = 21391

7 4,4'-DDE, Area = 5972

%Breakdown: 2.26%, Max Limit: 20.00%

Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 480-436470/1-A
 Matrix: Water Lab File ID: U3312000.D
 Analysis Method: 8270D SIM ID Date Collected: _____
 Extract. Method: 3510C Date Extracted: 09/27/2018 08:08
 Sample wt/vol: 1000 (mL) Date Analyzed: 10/04/2018 13:56
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 437485 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.20	U	0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	37		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312000.D
 Lims ID: MB 480-436470/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 04-Oct-2018 13:56:30 ALS Bottle#: 39 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075162-008
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:39 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 20:11:01

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.903	2.805	0.098	100	681428	10.0	3.69	
3 1,4-Dioxane	88	2.952	2.850	0.102	88	2133		0.0613	a
* 2 1,4-Dichlorobenzene-d4	152	5.984	5.975	0.009	95	1545056	4.00	4.00	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312000.D

Injection Date: 04-Oct-2018 13:56:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: MB 480-436470/1-A

Worklist Smp#: 8

Client ID:

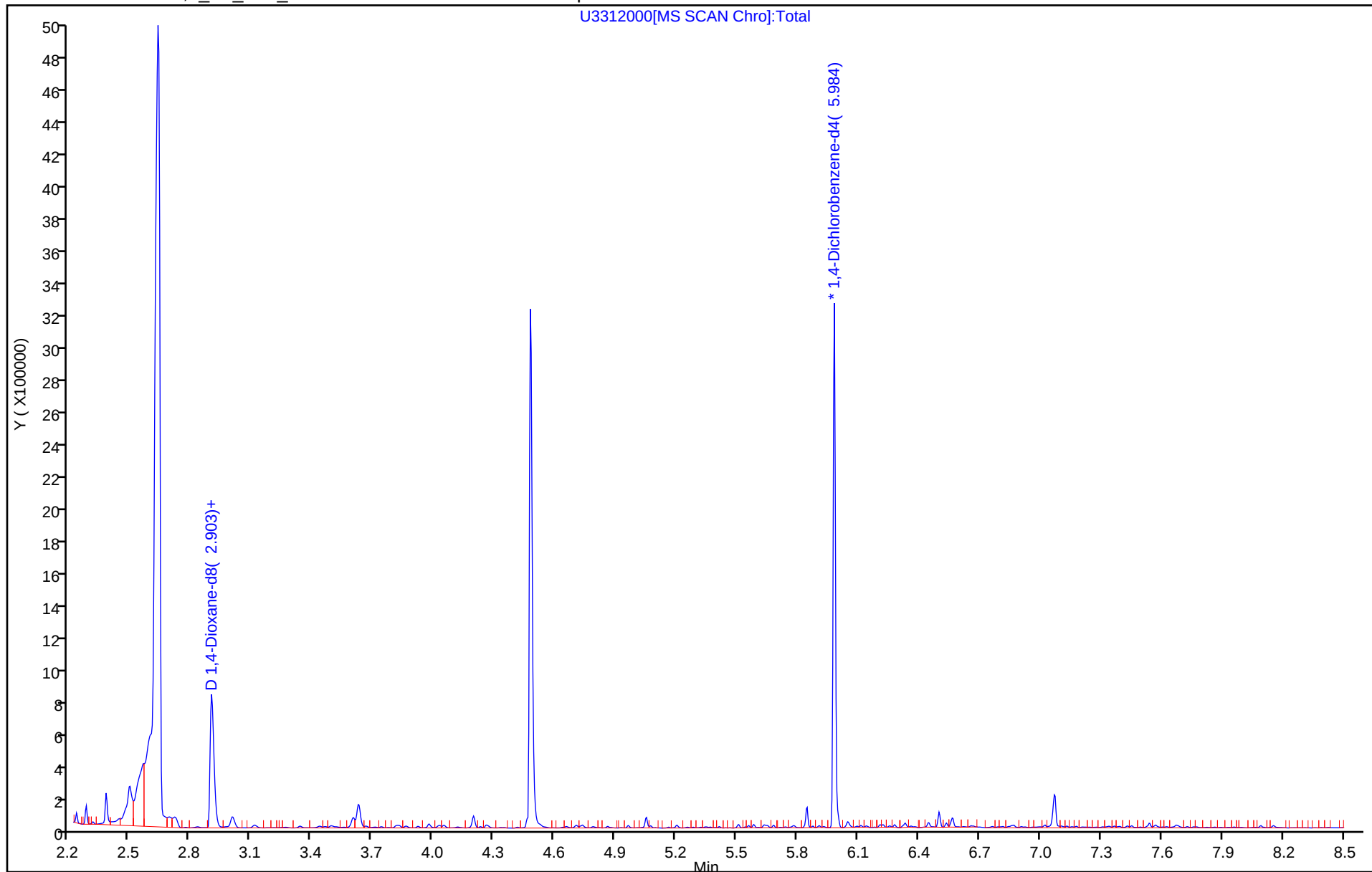
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 39

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312000.D

Injection Date: 04-Oct-2018 13:56:30

Instrument ID: HP5973U

Lims ID: MB 480-436470/1-A

Client ID:

Operator ID: DR

ALS Bottle#: 39

Worklist Smp#: 8

Injection Vol: 1.0 ul

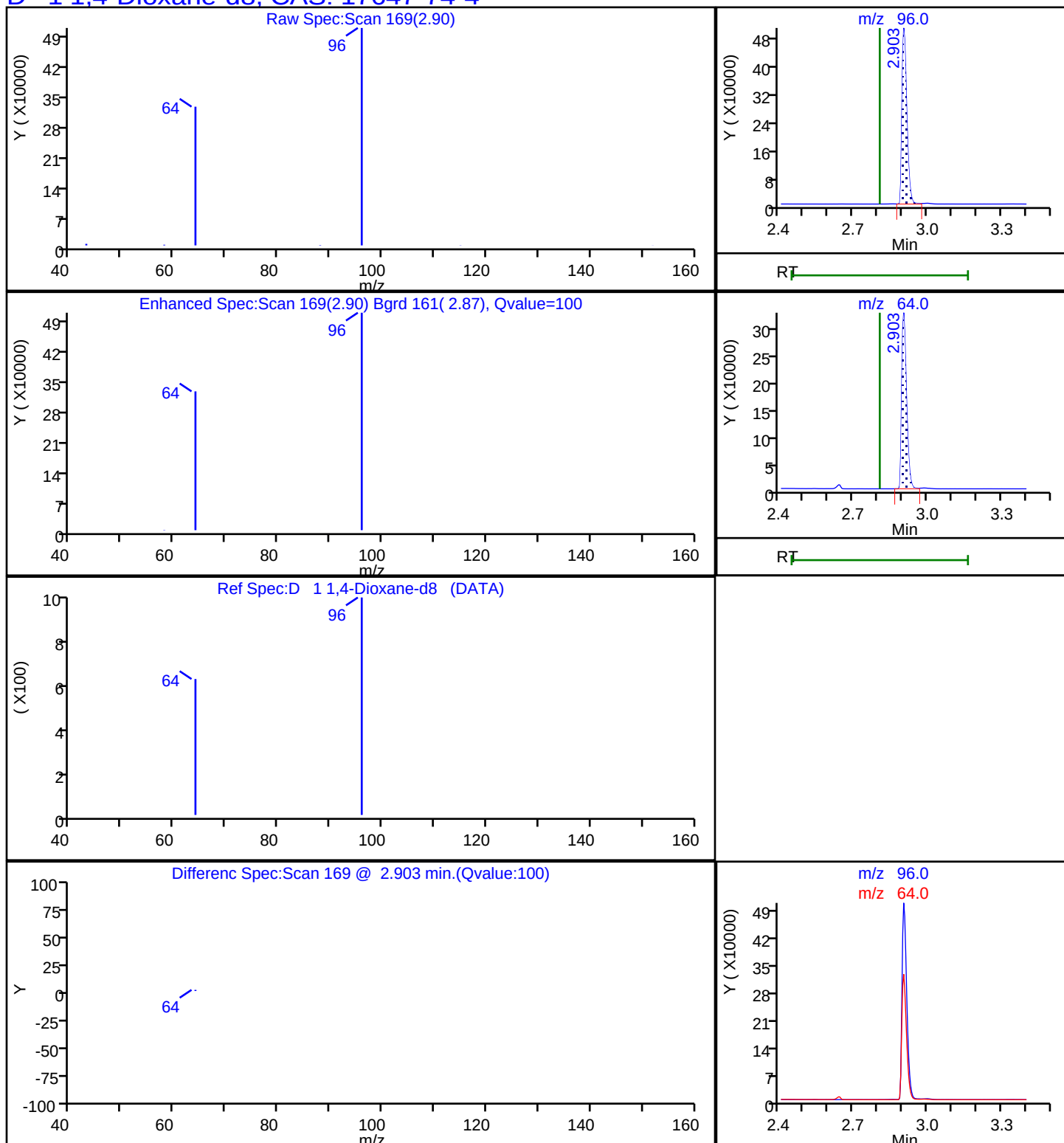
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector: MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312000.D

Injection Date: 04-Oct-2018 13:56:30

Instrument ID: HP5973U

Lims ID: MB 480-436470/1-A

Client ID:

Operator ID: DR

ALS Bottle#:

39

Worklist Smp#: 8

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

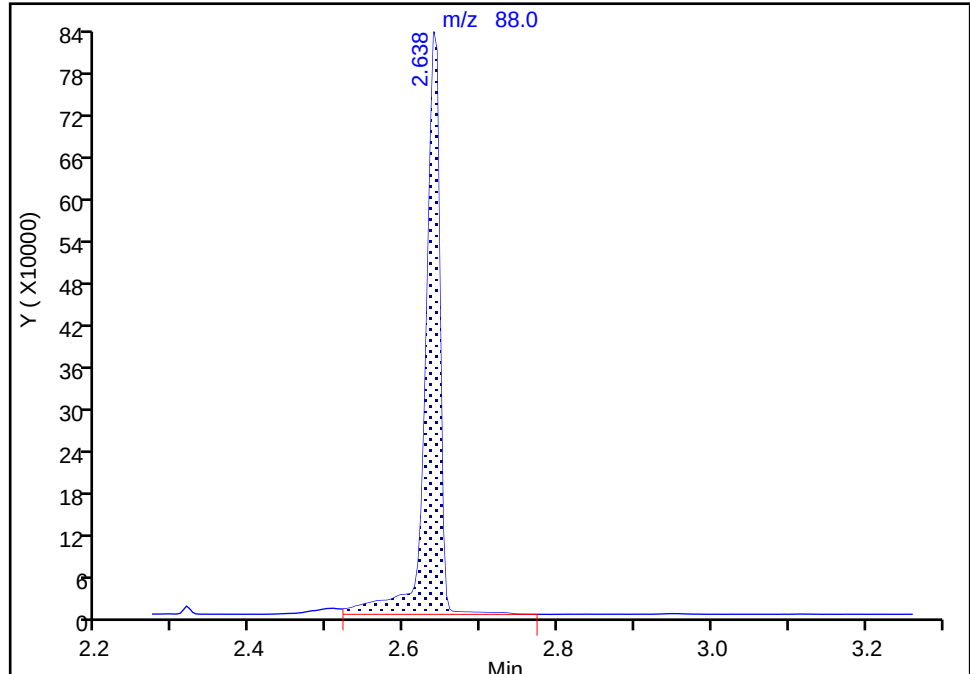
Detector: MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Signal: 1

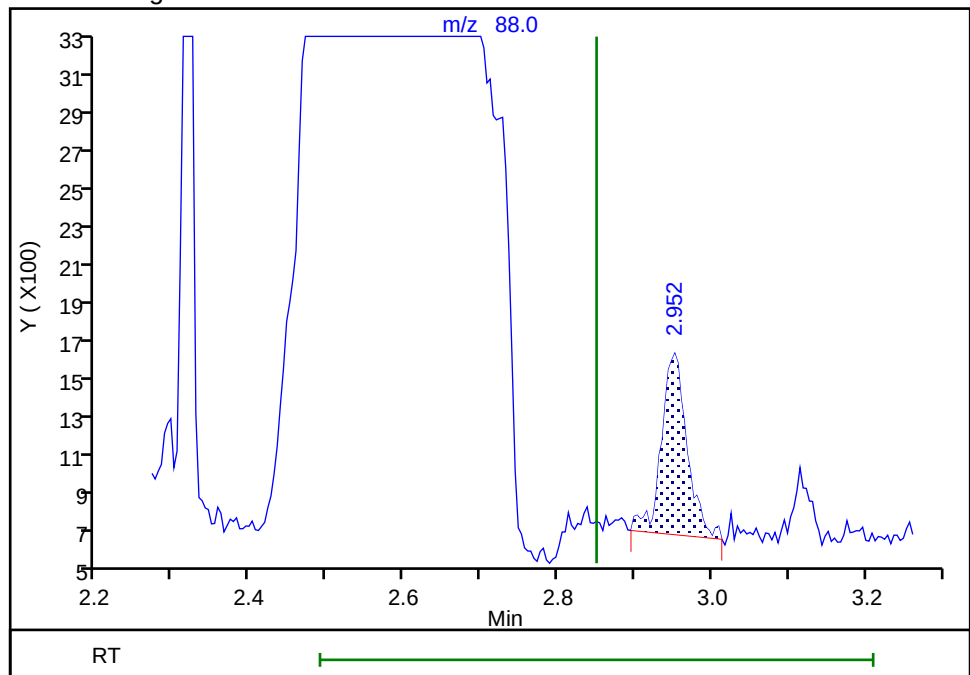
RT: 2.64
Area: 1082324
Amount: 12.791601
Amount Units: ng/ul

Processing Integration Results



RT: 2.95
Area: 2133
Amount: 0.061326
Amount Units: ng/ul

Manual Integration Results



Reviewer: richardsd, 04-Oct-2018 20:10:59

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCS 480-436470/2-A
Matrix: Water Lab File ID: U3312001.D
Analysis Method: 8270D SIM ID Date Collected: _____
Extract. Method: 3510C Date Extracted: 09/27/2018 08:08
Sample wt/vol: 1000 (mL) Date Analyzed: 10/04/2018 14:19
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 437485 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.11		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	32		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312001.D
 Lims ID: LCS 480-436470/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 04-Oct-2018 14:19:30 ALS Bottle#: 40 Worklist Smp#: 9
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075162-009
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 04-Oct-2018 20:15:39 Calib Date: 02-Oct-2018 13:22:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181002-75123.b\U3311902.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0315

First Level Reviewer: richardsd

Date: 04-Oct-2018 20:11:04

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.952	2.805	0.147	100	540548	10.0	3.15	
3 1,4-Dioxane	88	2.993	2.850	0.143	98	72087	1.00	1.11	
* 2 1,4-Dichlorobenzene-d4	152	5.984	5.975	0.009	93	1434143	4.00	4.00	

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181003-75162.b\U3312001.D

Injection Date: 04-Oct-2018 14:19:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: LCS 480-436470/2-A

Worklist Smp#: 9

Client ID:

Injection Vol: 1.0 ul

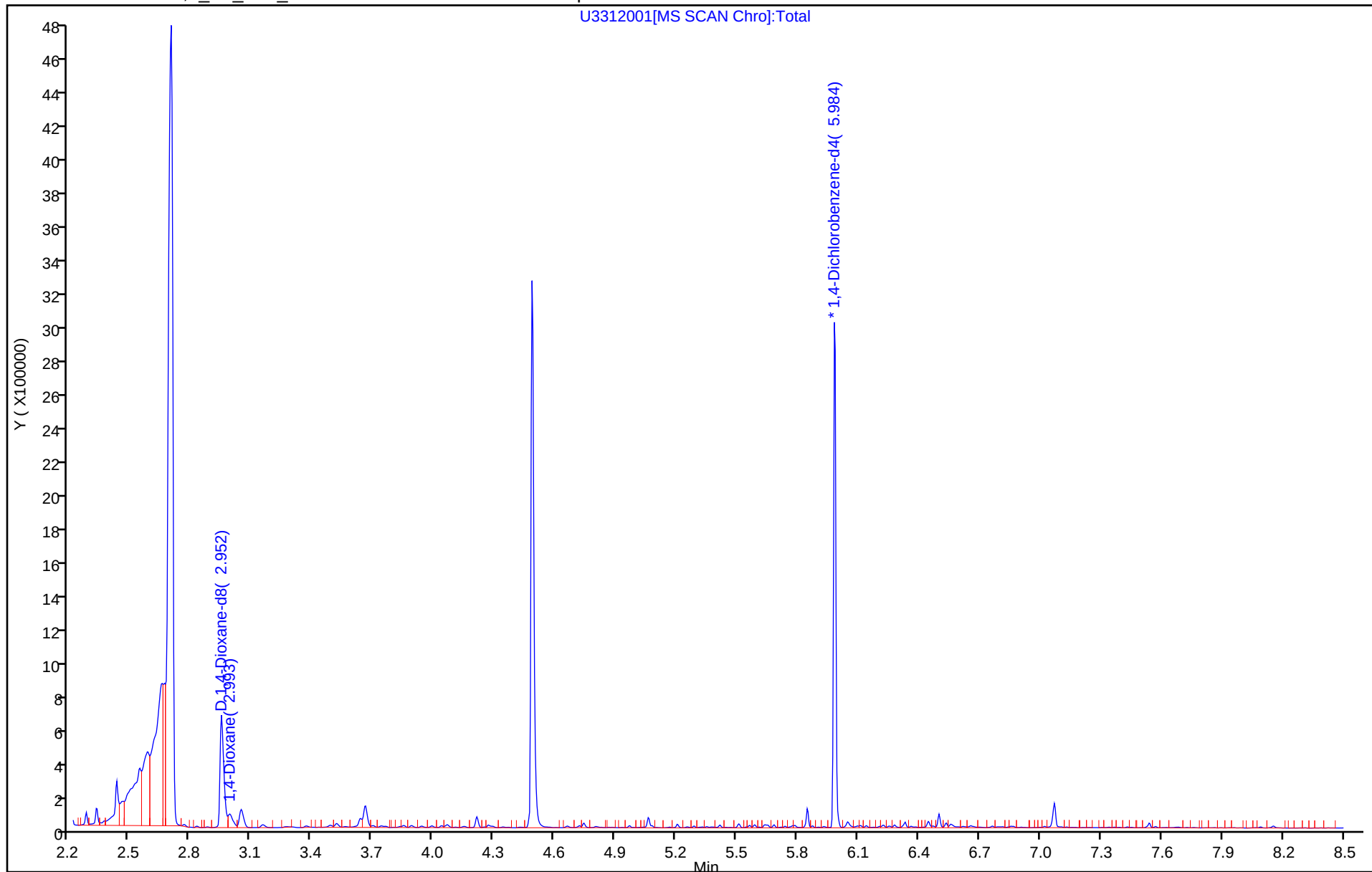
Dil. Factor: 1.0000

ALS Bottle#: 40

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312001[MS SCAN Chro]:Total



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-142290-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 10/02/2018 10:28Analysis Batch Number: 437263End Date: 10/02/2018 22:27

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-437263/2		10/02/2018 10:28	1	U3311895.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437263/4		10/02/2018 11:24	1	U3311897.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437263/5		10/02/2018 11:48	1	U3311898.D	RXI-5Sil MS(0.5 0.25 (mm))
ICIS 480-437263/6		10/02/2018 12:11	1	U3311899.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437263/7		10/02/2018 12:35	1	U3311900.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437263/8		10/02/2018 12:58	1	U3311901.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437263/9		10/02/2018 13:22	1	U3311902.D	RXI-5Sil MS(0.5 0.25 (mm))
ICV 480-437263/10		10/02/2018 13:45	1		RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-437263/11		10/02/2018 14:09	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 14:32	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 14:56	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 15:20	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 15:43	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 16:07	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 16:31	10		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 16:55	20		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 17:19	2		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 17:43	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 18:07	10		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 18:31	10		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 18:55	20		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 19:19	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 19:42	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 20:06	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 20:29	10		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 20:53	10		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 21:16	10		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 21:40	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 22:03	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/02/2018 22:27	5		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-142290-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 10/04/2018 11:25Analysis Batch Number: 437485End Date: 10/04/2018 19:27

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-437485/2		10/04/2018 11:25	1	U3311994.D	RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-437485/3		10/04/2018 11:55	1	U3311995.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 12:22	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 12:46	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 13:09	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 13:32	1		RXI-5Sil MS(0.5 0.25 (mm))
MB 480-436470/1-A		10/04/2018 13:56	1	U3312000.D	RXI-5Sil MS(0.5 0.25 (mm))
LCS 480-436470/2-A		10/04/2018 14:19	1	U3312001.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 14:43	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 15:06	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 15:30	5		RXI-5Sil MS(0.5 0.25 (mm))
480-142290-2		10/04/2018 15:53	5	U3312005.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142290-3		10/04/2018 16:17	1	U3312006.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 16:40	10		RXI-5Sil MS(0.5 0.25 (mm))
480-142290-5		10/04/2018 17:04	50	U3312008.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142290-6		10/04/2018 17:28	10	U3312009.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142290-7		10/04/2018 17:52	1	U3312010.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 18:16	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 18:40	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 19:03	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/04/2018 19:27	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-142290-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 10/05/2018 12:17Analysis Batch Number: 437915End Date: 10/05/2018 17:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-437915/2		10/05/2018 12:17	1	U3312051.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/3		10/05/2018 13:16	1	U3312052.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/4		10/05/2018 13:39	1	U3312053.D	RXI-5Sil MS(0.5 0.25 (mm))
ICIS 480-437915/5		10/05/2018 14:03	1	U3312054.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/6		10/05/2018 14:26	1	U3312055.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/7		10/05/2018 14:49	1	U3312056.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/8		10/05/2018 15:13	1	U3312057.D	RXI-5Sil MS(0.5 0.25 (mm))
ICV 480-437915/9		10/05/2018 15:36	1		RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-437915/10		10/05/2018 16:00	1	U3312059.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/05/2018 16:23	5		RXI-5Sil MS(0.5 0.25 (mm))
480-142290-4		10/05/2018 16:46	100	U3312061.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/05/2018 17:10	5		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1

SDG No.: _____

Batch Number: 436470 Batch Start Date: 09/27/18 08:07 Batch Analyst: Pollock, Jacob MBatch Method: 3510C Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	OP_SIM LCS 00004	OP_SimSurr 00010
MB 480-436470/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU		1 mL
LCS 480-436470/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-142290-C-2	EC-0004-02	3510C, 8270D SIM ID	T	100 mL	1 mL	9 SU	<2 SU		1 mL
480-142290-D-3	EC-0004-03	3510C, 8270D SIM ID	T	1040 mL	1 mL	7 SU	<2 SU		1 mL
480-142290-C-4	EC-0004-04	3510C, 8270D SIM ID	T	1040 mL	1 mL	11 SU	<2 SU		1 mL
480-142290-C-5	EC-0004-05	3510C, 8270D SIM ID	T	1040 mL	1 mL	11 SU	<2 SU		1 mL
480-142290-D-6	EC-0004-06	3510C, 8270D SIM ID	T	1040 mL	1 mL	8 SU	<2 SU		1 mL
480-142290-D-7	EC-0004-07	3510C, 8270D SIM ID	T	1050 mL	1 mL	6 SU	<2 SU		1 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	AnalysisComment					
MB 480-436470/1		3510C, 8270D SIM ID							
LCS 480-436470/2		3510C, 8270D SIM ID							
480-142290-C-2	EC-0004-02	3510C, 8270D SIM ID	T	Contains a little sediment, dark brown color					
480-142290-D-3	EC-0004-03	3510C, 8270D SIM ID	T	Contains a little sediment					
480-142290-C-4	EC-0004-04	3510C, 8270D SIM ID	T	Contains a little sediment					
480-142290-C-5	EC-0004-05	3510C, 8270D SIM ID	T	Contains a little sediment					
480-142290-D-6	EC-0004-06	3510C, 8270D SIM ID	T	Contains a little sediment					
480-142290-D-7	EC-0004-07	3510C, 8270D SIM ID	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM ID

Page 1 of 2

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142290-1

SDG No.: _____

Batch Number: 436470 Batch Start Date: 09/27/18 08:07 Batch Analyst: Pollock, Jacob MBatch Method: 3510C Batch End Date: _____

Batch Notes	
Acid Used for pH Adjustment ID	4885760
Analyst ID - Concentration	JP
Analyst ID - Extraction	JP
Method/Fraction	3510C/8270D_SIM_MS_ID
Na2SO4 ID	4849346
Prep Solvent ID	4885555
Prep Solvent Volume Used	360 mL
Analyst ID - Spike Analyst	JP
Analyst ID - Spike Witness Analyst	JP
Sufficient Volume for Batch QC	Yes
Vial Lot Number	1709111094

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Method PFC IDA

Fluorinated Hydrocarbons by Method
PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
EC-0004-01	480-142290-1	103	104	108	103	108	111	109	107
EC-0004-02	480-142290-2	23 *	67	128	81	88	95	374 *	96
EC-0004-03	480-142290-3	53	72	92	86	98	97	271 *	108
EC-0004-04	480-142290-4	5 *	33	87	72	96	103	261 *	99
EC-0004-05	480-142290-5	8 *	20 *	37	28	42	51	96	46
EC-0004-06	480-142290-6	47	89	106	94	107	110	280 *	109
EC-0004-07	480-142290-7	99	101	101	102	99	97	110	98
	MB 320-249876/1-A	92	95	103	93	98	91	87	97
	LCS 320-249876/2-A	99	96	100	102	100	94	105	101

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

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	M282FTS #	PFOSA #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
EC-0004-01	480-142290-1	109	110	95	99	101	99	110	98
EC-0004-02	480-142290-2	109	102	401 *	100	115	199 *	148	118
EC-0004-03	480-142290-3	111	106	209 *	108	103	132	137	109
EC-0004-04	480-142290-4	106	99	191 *	108	103	121	132	104
EC-0004-05	480-142290-5	56	63	146	57	58	71	74	58
EC-0004-06	480-142290-6	110	104	209 *	117	110	131	141	105
EC-0004-07	480-142290-7	106	106	92	98	105	110	104	92
	MB 320-249876/1-A	104	87	78	91	96	97	94	85
	LCS 320-249876/2-A	100	100	101	92	98	94	100	96

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

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFD _o A #	PFTDA #
EC-0004-01	480-142290-1	95	98
EC-0004-02	480-142290-2	73	12 *
EC-0004-03	480-142290-3	101	82
EC-0004-04	480-142290-4	107	71
EC-0004-05	480-142290-5	55	39
EC-0004-06	480-142290-6	100	72
EC-0004-07	480-142290-7	101	105
	MB 320-249876/1-A	102	97
	LCS 320-249876/2-A	97	99

PFD_oA = 13C2 PFD_oA
 PFTDA = 13C2 PFTeDA

QC LIMITS
25-150
 25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.17LLAAA_033.d
 Lab ID: LCS 320-249876/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	38.0	95	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	39.8	100	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	37.4	94	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	34.6	86	66-126	
Perfluorooctanoic acid (PFOA)	40.0	37.0	92	64-124	
Perfluorononanoic acid (PFNA)	40.0	39.9	100	68-128	
Perfluorodecanoic acid (PFDA)	40.0	36.7	92	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	38.2	96	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	36.5	91	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	37.1	93	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	35.6	89	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	30.5	86	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.5	92	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	34.9	92	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	32.4	87	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	35.7	93	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	36.8	92	70-130	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	38.7	97	67-127	
N-ethylperfluorooctanesulfonam idoacetic acid (NEtFOSAA)	40.0	37.4	94	65-125	
6:2 FTS	37.9	41.4	109	66-126	
8:2 FTS	38.3	36.9	96	67-127	
13C4 PFBA	100	99.2	99	25-150	
13C5 PFPeA	100	95.6	96	25-150	
13C2 PFHxA	100	102	102	25-150	
13C4 PFHpA	100	99.6	100	25-150	
13C4 PFOA	100	101	101	25-150	
13C5 PFNA	100	99.7	100	25-150	
13C2 PFDA	100	98.1	98	25-150	
13C2 PFUnA	100	96.1	96	25-150	
13C2 PFDoA	100	97.0	97	25-150	
13C2 PFTeDA	100	99.5	99	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.17LLAAA_033.d
 Lab ID: LCS 320-249876/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C3 PFBS	93.0	93.0	100	25-150	
18O2 PFHxS	94.6	89.3	94	25-150	
13C4 PFOS	95.6	95.2	100	25-150	
13C8 FOSA	100	91.9	92	25-150	
d3-NMeFOSAA	100	93.6	94	25-150	
d5-NEtFOSAA	100	100	100	25-150	
M2-6:2 FTS	95.0	100	105	25-150	
M2-8:2 FTS	95.8	96.3	101	25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab File ID: 2018.10.09LLC_007.d Lab Sample ID: MB 320-249876/1-A
 Matrix: Water Date Extracted: 10/05/2018 07:49
 Instrument ID: A9_NC Date Analyzed: 10/10/2018 08:52
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
EC-0004-01	480-142290-1	2018.10.09L LC 010.d	10/10/2018 09:14
EC-0004-04	480-142290-4	2018.10.09L LC 013.d	10/10/2018 09:37
EC-0004-05	480-142290-5	2018.10.09L LC 014.d	10/10/2018 09:44
EC-0004-06	480-142290-6	2018.10.09L LC 015.d	10/10/2018 09:52
EC-0004-07	480-142290-7	2018.10.09L LC 016.d	10/10/2018 09:59
EC-0004-03	480-142290-3	2018.10.11L LAAX 046.d	10/11/2018 23:44
	LCS 320-249876/2-A	2018.10.17L LAAA 033.d	10/18/2018 20:55
EC-0004-02	480-142290-2	2018.10.17L LAAA 034.d	10/18/2018 21:03

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: IC 320-253035/5 Date Analyzed: 10/17/2018 20:17
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.10.17ICAL_008. Heated Purge: (Y/N) N
 Calibration ID: 41698

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	2615878	2.65				
UPPER LIMIT	3923817	2.85				
LOWER LIMIT	1307939	2.45				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-253035/9		2679864	2.66			
ICV 320-253035/10		2643540	2.66			
CCV 320-253219/3 CCVIS		2562354	2.66			

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: CCV 320-253219/3 Date Analyzed: 10/18/2018 15:13
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.10.17LLAAA_006 Heated Purge: (Y/N) N
 Calibration ID: 41698

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		2562354	2.66				
UPPER LIMIT		3843531	2.86				
LOWER LIMIT		1281177	2.46				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-253219/1		2434187	2.65				
CCVL 320-253219/2		2547668	2.66				
CCV 320-253242/1		2506718	2.65				
LCS 320-249876/2-A		2769482	2.66				
480-142290-2	EC-0004-02	271397*	2.64				
CCV 320-253242/5		1627904	2.66				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: IC 320-251474/5 Date Analyzed: 10/11/2018 16:16
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.10.11LLICALA_0 Heated Purge: (Y/N) N
 Calibration ID: 41590

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		7418877	2.77				
UPPER LIMIT		11128316	2.97				
LOWER LIMIT		3709439	2.57				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-251474/9		7450196	2.77				
ICV 320-251474/10		6687999	2.77				
CCV 320-251568/1		6783390	2.75				
480-142290-3	EC-0004-03	6948036	2.75				
CCV 320-251568/12		6786287	2.75				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: IC 320-251040/5 Date Analyzed: 10/08/2018 15:56
 Instrument ID: A9_NC GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.10.08LLICAL_00 Heated Purge: (Y/N) N
 Calibration ID: 41560

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	7276086	2.80				
UPPER LIMIT	10914129	3.00				
LOWER LIMIT	3638043	2.60				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-251040/9		7572846	2.80			
ICV 320-251040/10		7292323	2.80			
CCV 320-251153/3 CCVIS		7024517	2.73			

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Sample No.: CCV 320-251153/3 Date Analyzed: 10/10/2018 08:44
 Instrument ID: A9_NC GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.10.09LLC_006.d Heated Purge: (Y/N) N
 Calibration ID: 41560

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		7024517	2.73				
UPPER LIMIT		10536776	2.93				
LOWER LIMIT		3512259	2.53				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-251153/1		7363935	2.73				
CCVL 320-251153/2		7579898	2.74				
MB 320-249876/1-A		3633527	2.75				
480-142290-1	EC-0004-01	6740412	2.75				
480-142290-4	EC-0004-04	5479976	2.75				
480-142290-5	EC-0004-05	4704574	2.73				
480-142290-6	EC-0004-06	6409088	2.75				
480-142290-7	EC-0004-07	7079022	2.75				
CCV 320-251153/14		6254977	2.75				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-01</u>	Lab Sample ID: <u>480-142290-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_010.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 09:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>291(mL)</u>	Date Analyzed: <u>10/10/2018 09:14</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.36	J B	1.7	0.30
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.7	U	1.7	0.42
307-24-4	Perfluorohexanoic acid (PFHxA)	1.7	U	1.7	0.50
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.7	U	1.7	0.21
335-67-1	Perfluorooctanoic acid (PFOA)	1.7	U	1.7	0.73
375-95-1	Perfluorononanoic acid (PFNA)	1.7	U	1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	1.7	U	1.7	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	0.95
307-55-1	Perfluorododecanoic acid (PFDoA)	1.7	U	1.7	0.47
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.7	U	1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	0.26	J	1.7	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.7	U	1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.24	J	1.7	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.7	U	1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.7	U	1.7	0.46
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.7	U	1.7	0.27
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.7	U	1.7	0.30
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17	U	17	2.7
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17	U	17	1.6
27619-97-2	6:2 FTS	17	U	17	1.7
39108-34-4	8:2 FTS	17	U	17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-01</u>	Lab Sample ID: <u>480-142290-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_010.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 09:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>291(mL)</u>	Date Analyzed: <u>10/10/2018 09:14</u>
Con. Extract Vol.: <u>10.00(mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20(uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1(mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	103		25-150
STL01893	13C5 PFPeA	104		25-150
STL00993	13C2 PFHxA	103		25-150
STL01892	13C4 PFHpA	108		25-150
STL00990	13C4 PFOA	107		25-150
STL00995	13C5 PFNA	109		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	98		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2 PFTeDA	98		25-150
STL02337	13C3 PFBS	108		25-150
STL00994	18O2 PFHxS	111		25-150
STL00991	13C4 PFOS	110		25-150
STL01056	13C8 FOSA	99		25-150
STL02118	d3-NMeFOSAA	99		25-150
STL02117	d5-NEtFOSAA	110		25-150
STL02279	M2-6:2 FTS	109		25-150
STL02280	M2-8:2 FTS	95		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_010.d
 Lims ID: 480-142290-A-1-A
 Client ID: EC-0004-01
 Sample Type: Client
 Inject. Date: 10-Oct-2018 09:14:44 ALS Bottle#: 4 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142290-a-1-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:07:59 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:27:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.484	1.484	0.0	0.539	6354619	2.58		103	7420	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.484	1.489	-0.005	1.000	23854	0.0104			1.0	
D 3 13C5 PFPeA										
267.90 > 223.00	1.772	1.764	0.008	0.644	5705855	2.60		104	11018	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.772	-0.008	0.995	10978	0.004737			1.3	
D 47 13C3 PFBS										
301.90 > 83.00	1.806	1.806	0.0	0.656	75461	2.51		108	525	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.058	0.0	0.748	6078433	2.57		103	7816	
D 9 13C4 PFHpA										
367.00 > 322.00	2.387	2.373	0.014	0.868	7826364	2.70		108	8217	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.413	2.399	0.014	1.000	17277	0.006997			21.3	
399.00 > 99.00	2.413	2.399	0.014	1.000	3942		4.38(1.90-5.70)		9.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.413	2.400	0.013	0.877	4734079	2.63		111	3901	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.719	2.703	0.016	0.988	829137	2.60		109	1548	
* 62 13C2 PFOA										
415.00 > 370.00	2.750	2.734	0.016		6740412	2.50			13095	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.750	2.734	0.016	1.000	20995	0.006754			1.4	M
413.00 > 169.00	2.750	2.734	0.016	1.000	8959		2.34(1.36-4.08)		23.4	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.735	0.015	1.000	7235448	2.66		107	10896	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.099	0.018	1.133	4977526	2.63		110	3615	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.099	0.018	1.133	6830330	2.73		109	6906	
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.117	0.0	1.000	6345	0.002286			0.7	
463.00 > 169.00	3.117	3.117	0.0	1.000	1319		4.81(2.68-8.03)		3.5	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.465	3.449	0.016	1.260	95814	2.29		95.4	953	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.449	0.016	1.260	6727925	2.52		101	3950	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.449	0.016	1.260	2520395	2.47		98.8	3570	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.613	0.014	1.319	2736216	2.49		99.5	4705	
D 30 13C2 PFUnA										
565.00 > 520.00	3.792	3.776	0.016	1.379	5771210	2.46		98.5	4640	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.792	3.776	0.016	1.379	2552271	2.76		110	3020	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.792	3.791	0.001	1.000	12929	0.006055			3.1	M
563.00 > 169.00	3.792	3.791	0.001	1.000	1534		8.43(5.24-15.72)		5.4	
D 36 13C2 PFDaA										
615.00 > 570.00	4.089	4.073	0.016	1.487	6337558	2.39		95.4	5419	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.669	4939929	2.46		98.5	9832	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.591	4.591	0.0	1.000	2348	0.007461			5.7	
713.00 > 219.00	4.591	4.591	0.0	1.000	1549		1.52(0.70-2.09)		7.1	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_010.d

Injection Date: 10-Oct-2018 09:14:44

Instrument ID: A9_NC

Lims ID: 480-142290-A-1-A

Lab Sample ID: 320-142290-1

Client ID: EC-0004-01

Operator ID: A9\Administrator

ALS Bottle#: 4

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

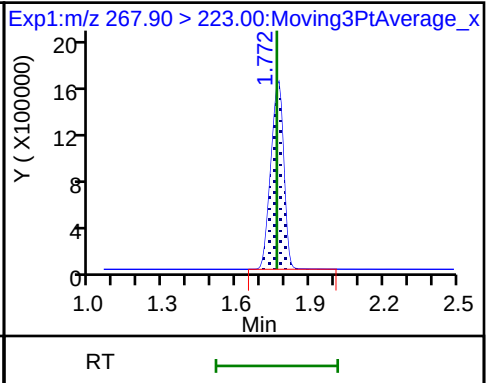
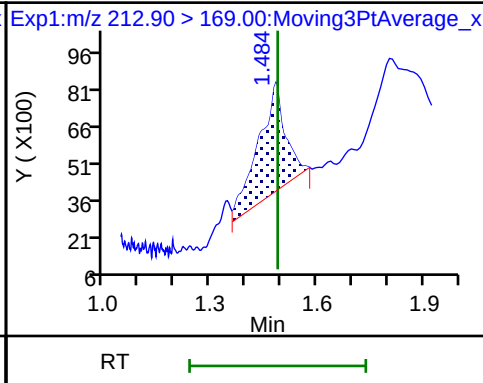
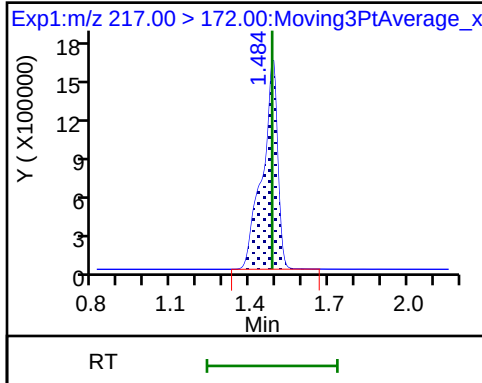
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

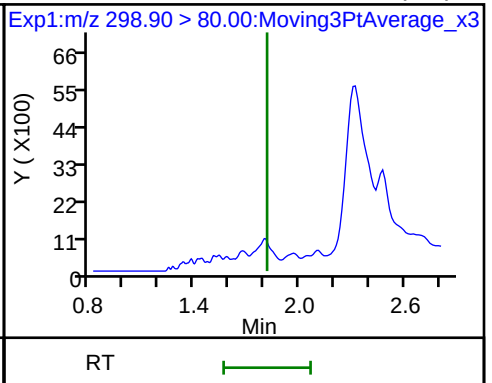
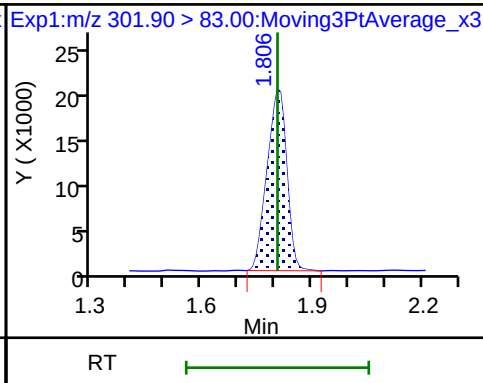
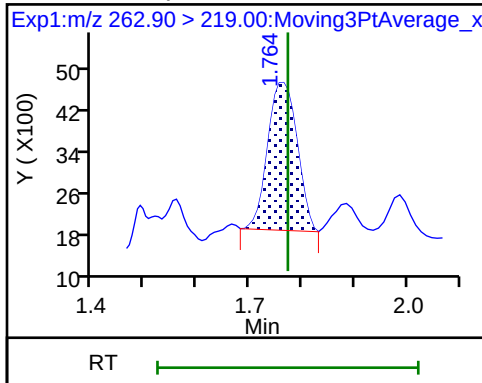
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

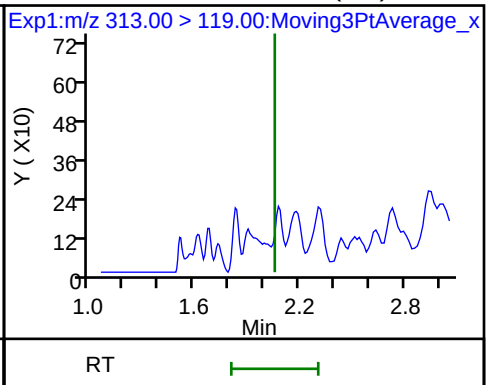
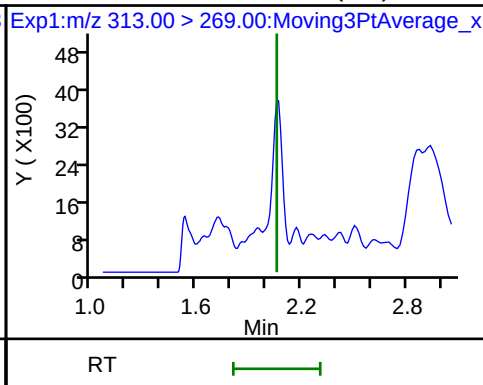
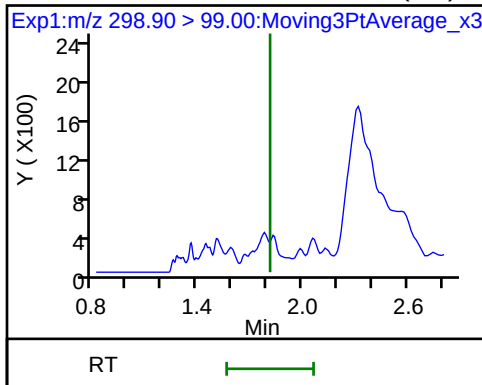
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

6 Perfluorohexanoic acid (ND)

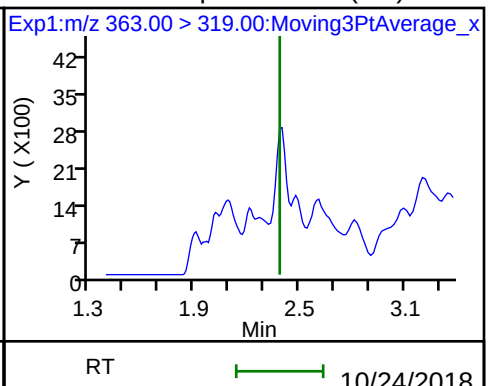
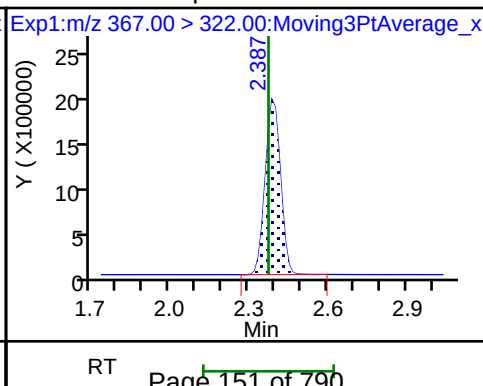
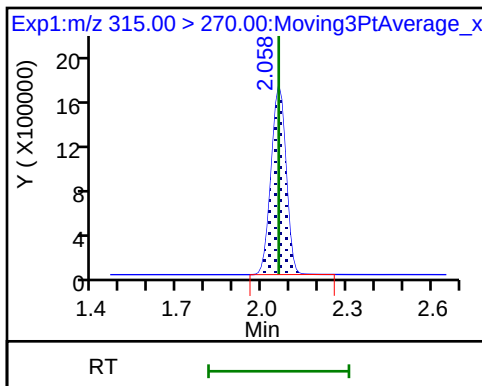
6 Perfluorohexanoic acid (ND)

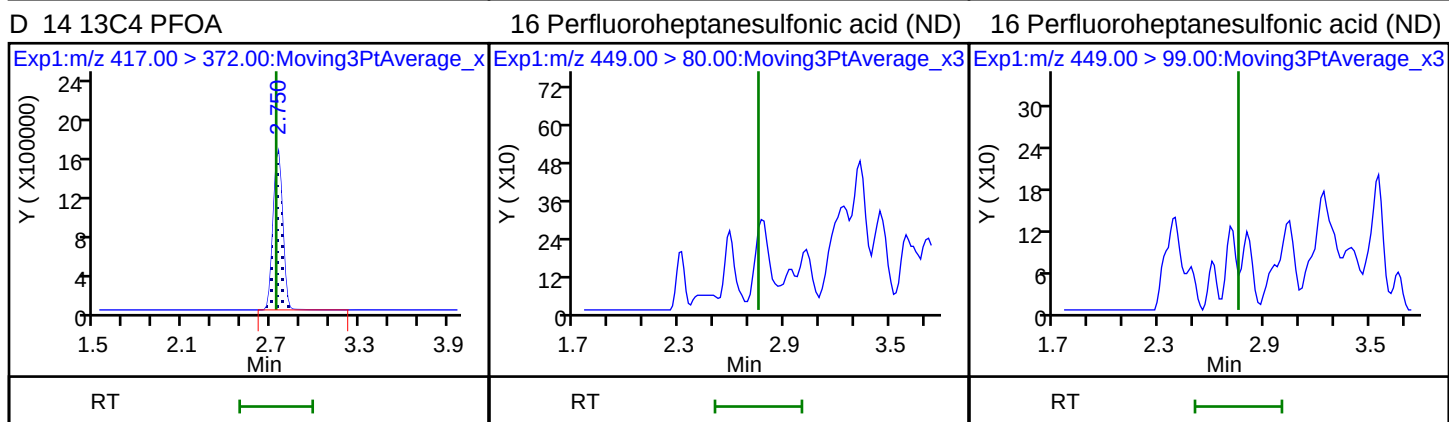
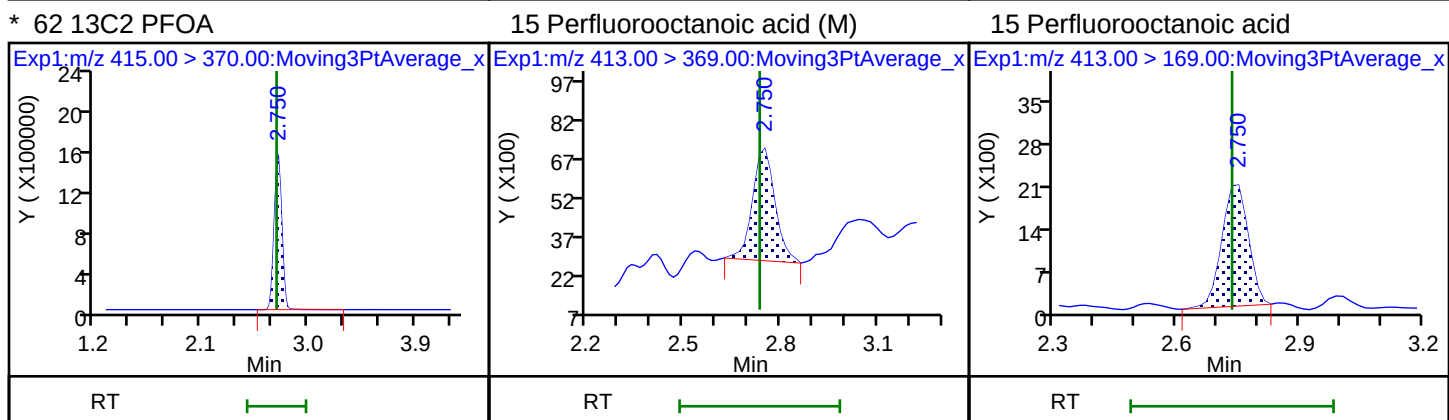
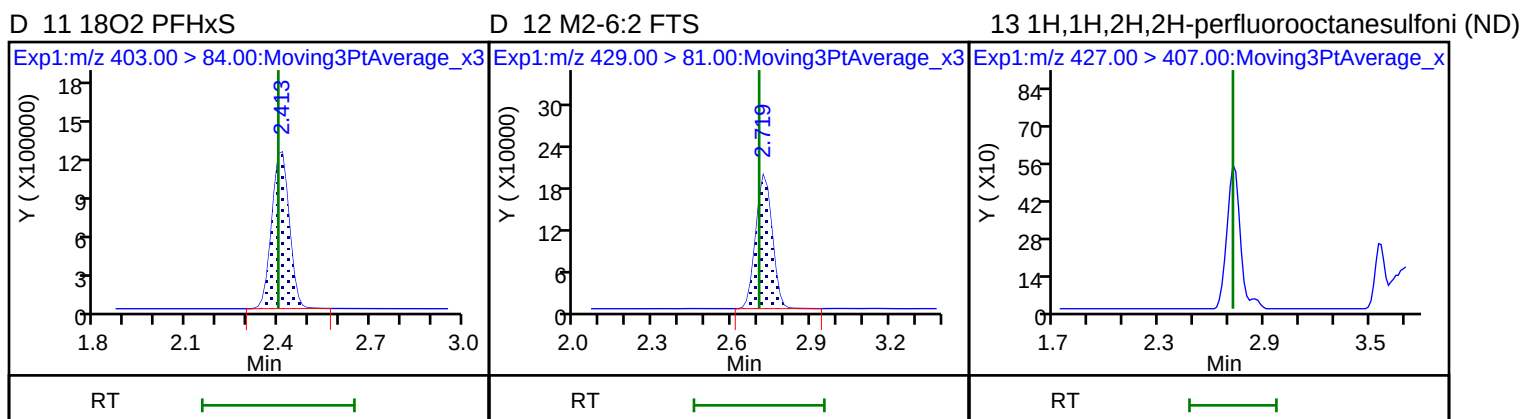
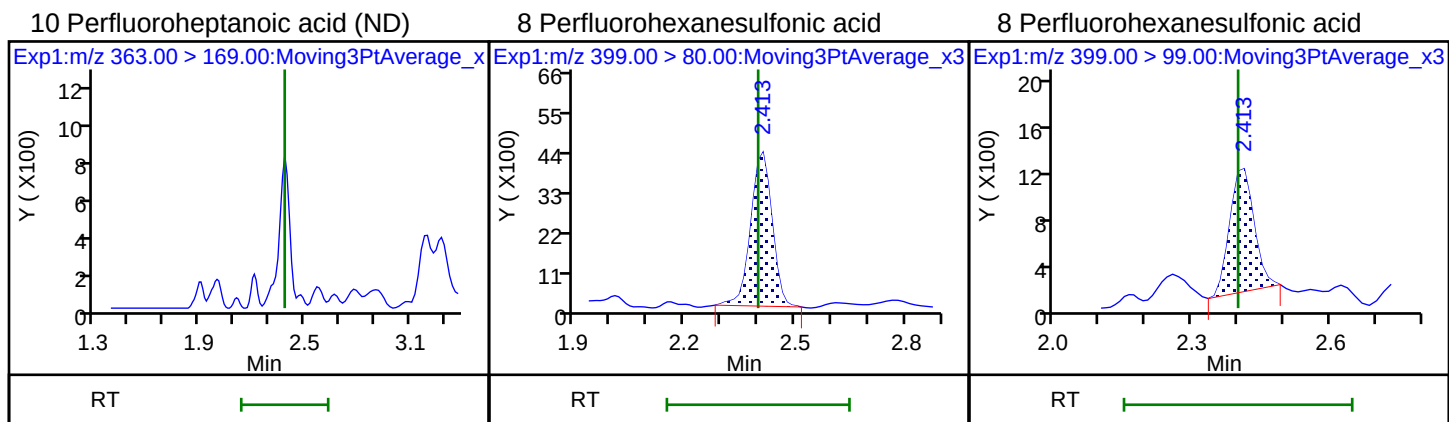


D 7 13C2 PFHxA

D 9 13C4 PFHpA

10 Perfluoroheptanoic acid (ND)

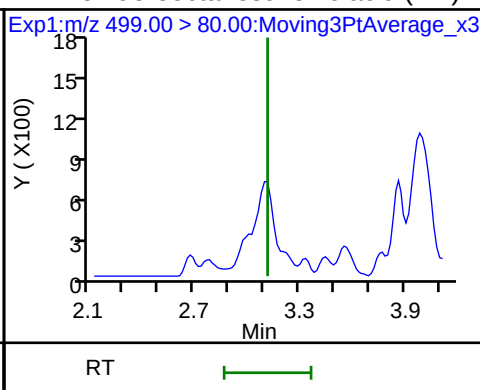
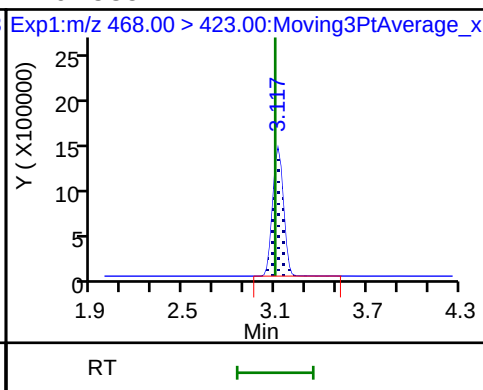
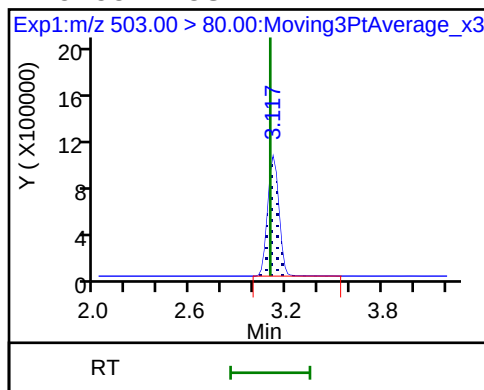




D 18 13C4 PFOS

D 19 13C5 PFNA

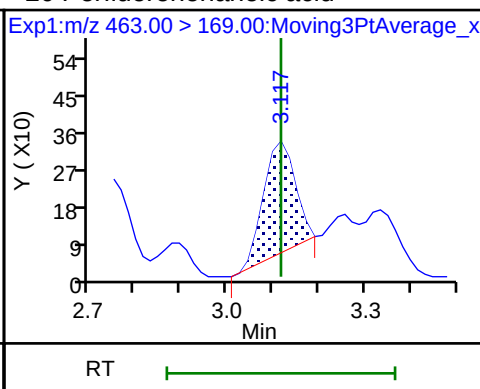
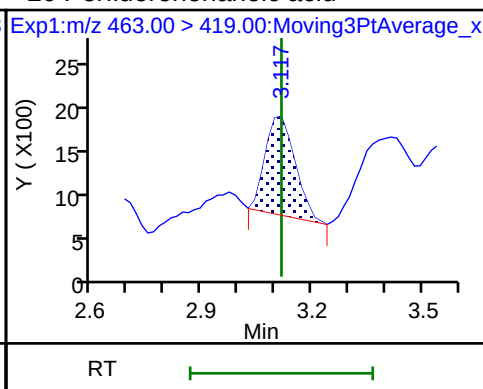
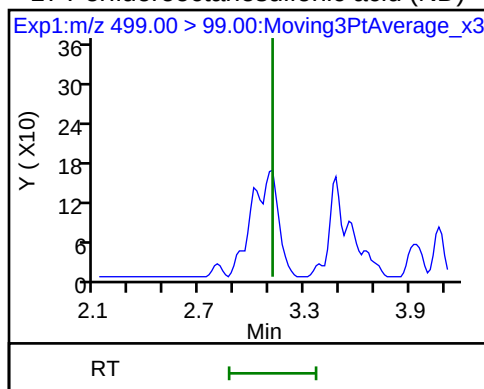
17 Perfluorooctanesulfonic acid (ND)



17 Perfluorooctanesulfonic acid (ND)

20 Perfluorononanoic acid

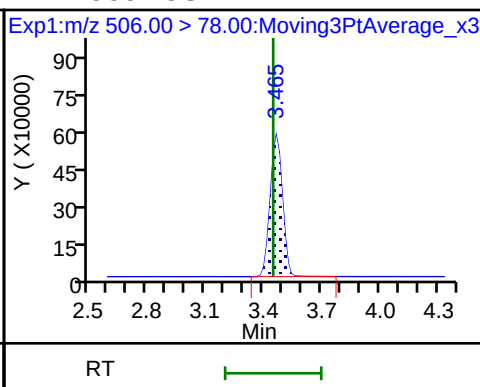
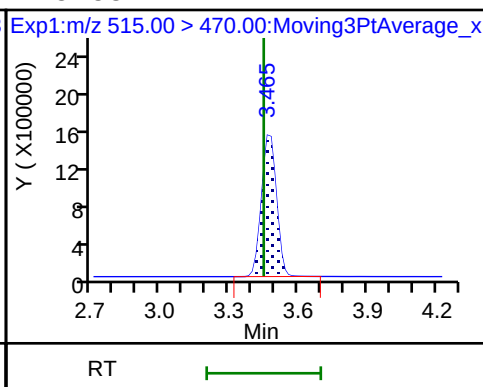
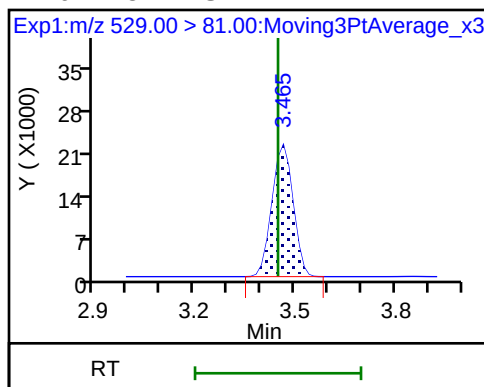
20 Perfluorononanoic acid



D 26 M2-8:2 FTS

D 23 13C2 PFDA

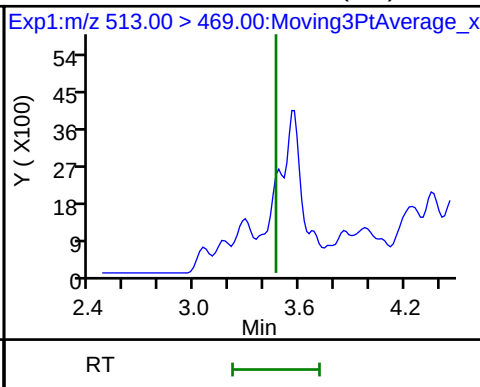
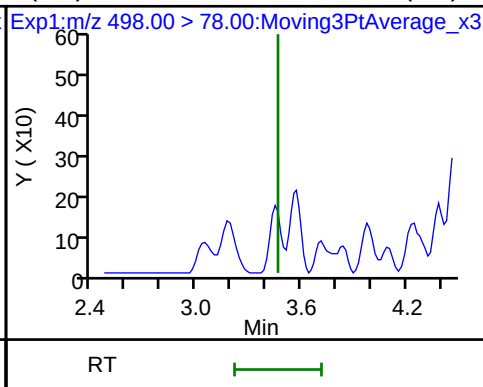
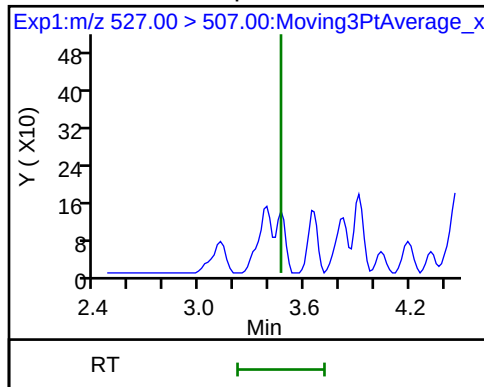
D 21 13C8 FOSA

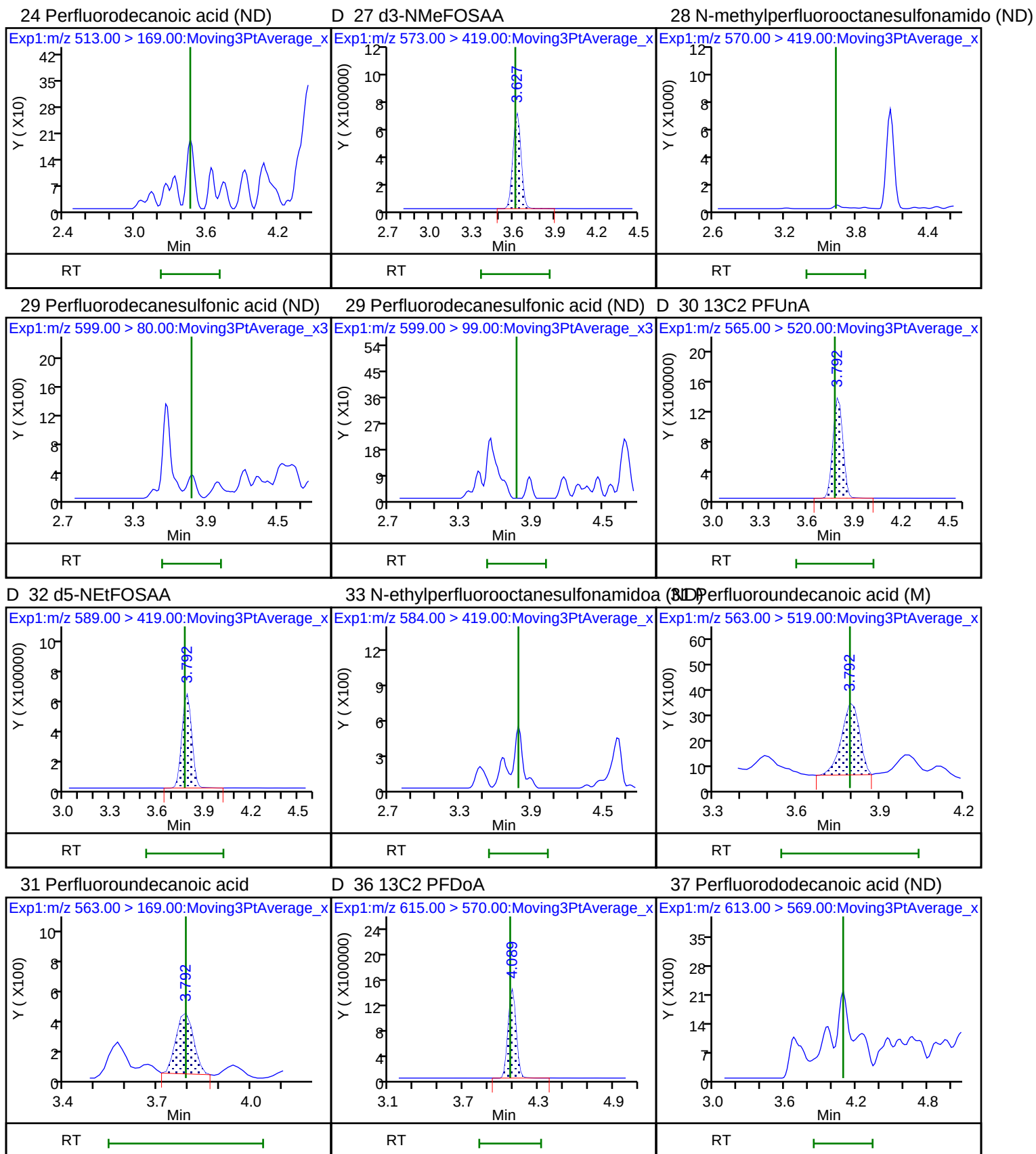


25 1H,1H,2H,2H-perfluorodecanesulfonamide (ND)

22 Perfluorooctanesulfonamide (ND)

24 Perfluorodecanoic acid (ND)

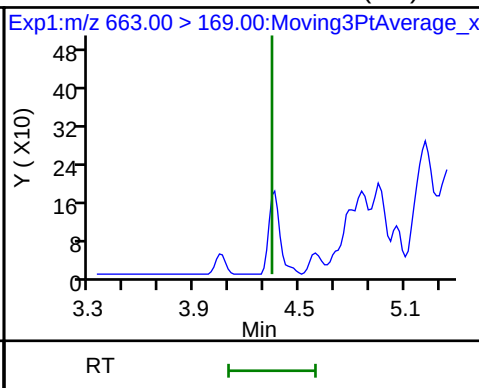
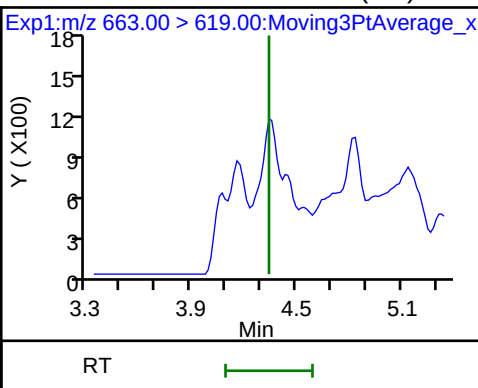
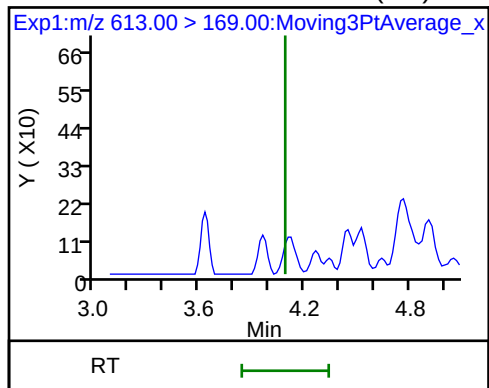




37 Perfluorododecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

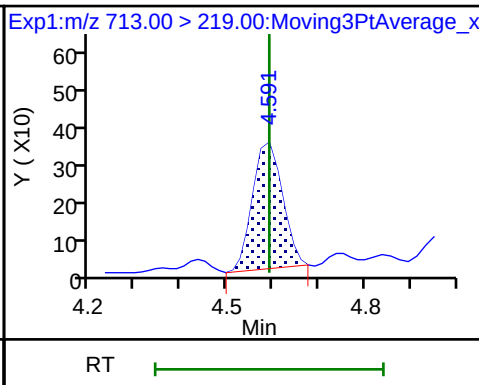
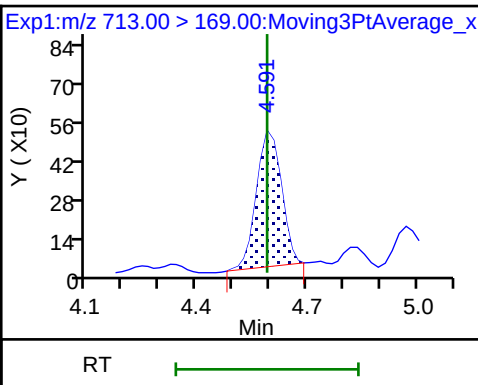
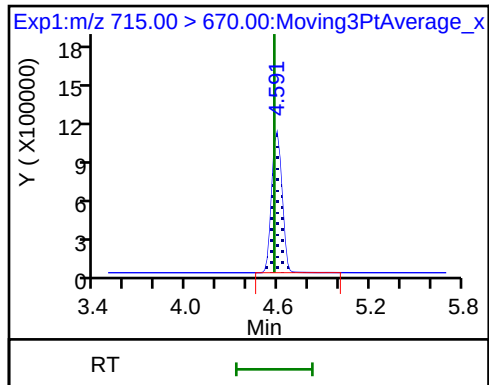
41 Perfluorotridecanoic acid (ND)



D 43 13C2 PFTeDA

42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid



TestAmerica Sacramento

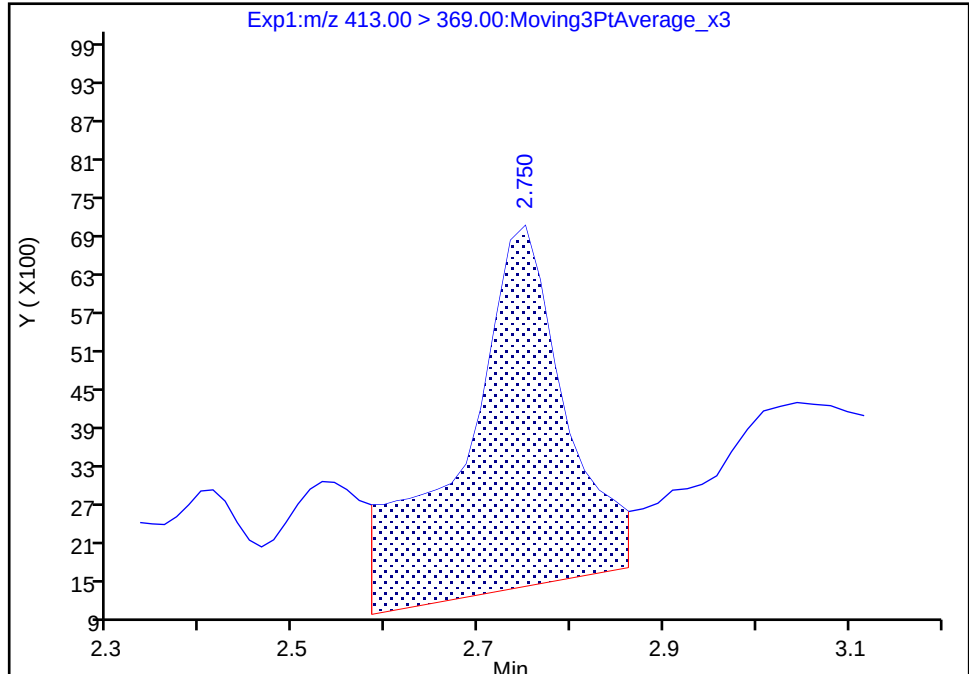
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Injection Date:	10-Oct-2018 09:14:44	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-1-A	Lab Sample ID:	320-142290-1		
Client ID:	EC-0004-01				
Operator ID:	A9\Administrator	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

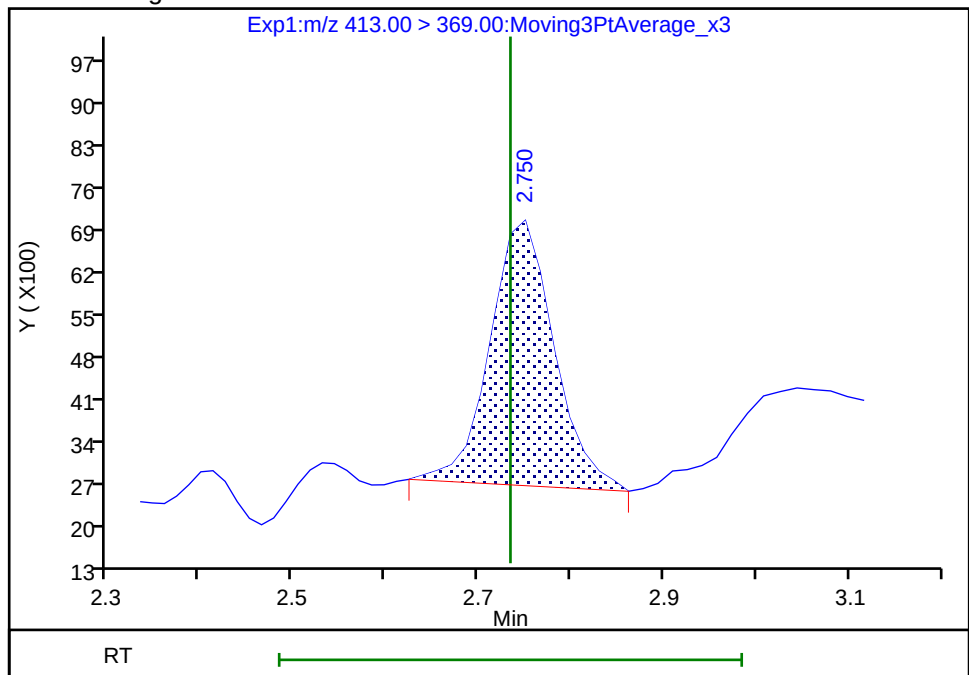
RT: 2.75
Area: 43369
Amount: 0.013952
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 20995
Amount: 0.006754
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:26:45
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

TestAmerica Sacramento

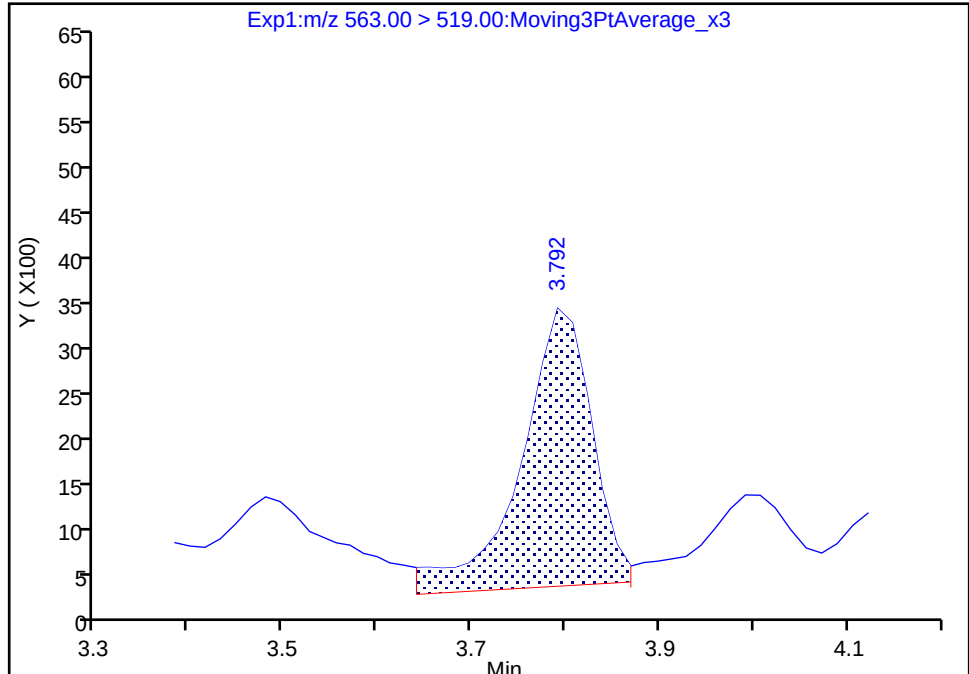
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Injection Date:	10-Oct-2018 09:14:44	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-1-A	Lab Sample ID:	320-142290-1		
Client ID:	EC-0004-01				
Operator ID:	A9\Administrator	ALS Bottle#:	4	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

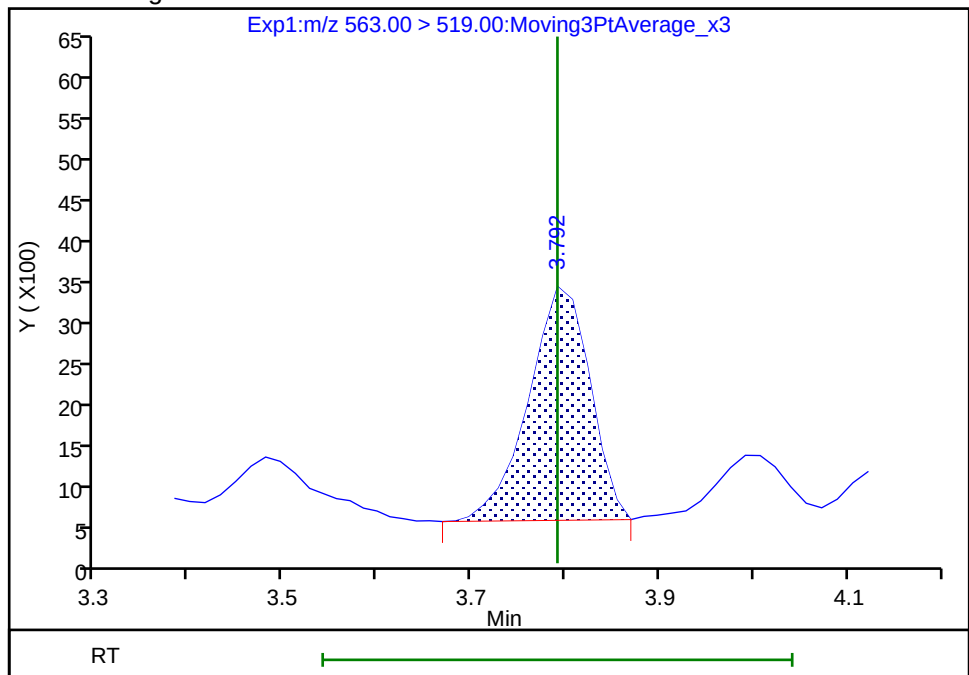
RT: 3.79
Area: 16095
Amount: 0.007538
Amount Units: ng/ml

Processing Integration Results



RT: 3.79
Area: 12929
Amount: 0.006055
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:27:05
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-02</u>	Lab Sample ID: <u>480-142290-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.17LLAAA_034.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 10:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>283.2 (mL)</u>	Date Analyzed: <u>10/18/2018 21:03</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>10</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>253242</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	60	B	18	3.1
2706-90-3	Perfluoropentanoic acid (PFPeA)	17	J	18	4.3
307-24-4	Perfluorohexanoic acid (PFHxA)	10	J	18	5.1
375-85-9	Perfluoroheptanoic acid (PFHpA)	3.9	J	18	2.2
335-67-1	Perfluorooctanoic acid (PFOA)	150		18	7.5
375-95-1	Perfluorononanoic acid (PFNA)	18	U	18	2.4
335-76-2	Perfluorodecanoic acid (PFDA)	18	U	18	2.7
2058-94-8	Perfluoroundecanoic acid (PFUnA)	18	U	18	9.7
307-55-1	Perfluorododecanoic acid (PFDoA)	18	U	18	4.9
72629-94-8	Perfluorotridecanoic acid (PFTriA)	18	U	18	11
376-06-7	Perfluorotetradecanoic acid (PFTeA)	18	U	18	2.6
375-73-5	Perfluorobutanesulfonic acid (PFBS)	18	U	18	1.8
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	6.9	J	18	1.5
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	18	U	18	1.7
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	76		18	4.8
335-77-3	Perfluorodecanesulfonic acid (PFDS)	18	U	18	2.8
754-91-6	Perfluorooctanesulfonamide (FOSA)	18	U	18	3.1
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	180	U	180	27
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	180	U	180	17
27619-97-2	6:2 FTS	180	U	180	18
39108-34-4	8:2 FTS	180	U	180	18

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-02</u>	Lab Sample ID: <u>480-142290-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.17LLAAA_034.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 10:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>283.2 (mL)</u>	Date Analyzed: <u>10/18/2018 21:03</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>10</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>253242</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	23	*	25-150
STL01893	13C5 PFPeA	67		25-150
STL00993	13C2 PFHxA	81		25-150
STL01892	13C4 PFHpA	88		25-150
STL00990	13C4 PFOA	96		25-150
STL00995	13C5 PFNA	109		25-150
STL00996	13C2 PFDA	115		25-150
STL00997	13C2 PFUnA	118		25-150
STL00998	13C2 PFDoA	73		25-150
STL02116	13C2 PFTeDA	12	*	25-150
STL02337	13C3 PFBS	128		25-150
STL00994	18O2 PFHxS	95		25-150
STL00991	13C4 PFOS	102		25-150
STL01056	13C8 FOSA	100		25-150
STL02118	d3-NMeFOSAA	199	*	25-150
STL02117	d5-NEtFOSAA	148		25-150
STL02279	M2-6:2 FTS	374	*	25-150
STL02280	M2-8:2 FTS	401	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
 Lims ID: 480-142290-A-2-A
 Client ID: EC-0004-02
 Sample Type: Client
 Inject. Date: 18-Oct-2018 21:03:05 ALS Bottle#: 18 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 10.0000
 Sample Info: 480-142290-a-2-a 10X
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Oct-2018 07:34:29 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17ICAL_011.d

Column 1 : Det: EXP1
 Process Host: XAWRK013

First Level Reviewer: mongkols

Date: 22-Oct-2018 07:34:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA

217.00 > 172.00 1.431 1.431 0.0 0.541 96651 0.0569 22.8 153

2 Perfluorobutanoic acid

212.90 > 169.00 1.441 1.434 0.007 1.007 59080 0.1701 1.9 M

D 3 13C5 PFPeA

267.90 > 223.00 1.694 1.695 -0.001 0.641 184280 0.1669 66.8 148

4 Perfluoropentanoic acid

262.90 > 219.00 1.686 1.700 -0.014 0.995 38387 0.0472 0.3 M

5 Perfluorobutanesulfonic acid

298.90 > 80.00 1.742 1.732 0.010 1.000 4646 0.001980 0.1 RM

298.90 > 99.00 1.742 1.732 0.010 1.000 7954 0.58(1.25-3.74) 1.1 M

D 47 13C3 PFBS

301.90 > 83.00 1.742 1.736 0.006 0.659 6777 0.2984 128 9.0

D 7 13C2 PFHxA

315.00 > 270.00 1.975 1.976 -0.001 0.747 242728 0.2022 80.9 327

6 Perfluorohexanoic acid

313.00 > 269.00 1.964 1.980 -0.016 0.995 28466 0.0289 0.2 M

313.00 > 119.00 1.964 1.980 -0.016 0.995 2877 9.89(5.03-15.10) 1.2 M

D 9 13C4 PFHpA

367.00 > 322.00 2.299 2.300 -0.001 0.870 243642 0.2211 88.4 729

10 Perfluoroheptanoic acid

363.00 > 319.00 2.299 2.303 -0.004 1.000 12288 0.0109 0.3 RM

363.00 > 169.00 2.288 2.303 -0.015 0.995 3476 3.54(1.13-3.40) 2.1 M

8 Perfluorohexanesulfonic acid

399.00 > 80.00 2.310 2.314 -0.004 1.000 28360 0.0197 0.5 M

399.00 > 99.00 2.299 2.314 -0.015 0.995 8900 3.19(1.50-4.49) 0.7 M

D 11 18O2 PFHxS

403.00 > 84.00 2.310 2.323 -0.013 0.874 308795 0.2254 95.3 785

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2 FTS										M
429.00 > 81.00	2.627	2.629	-0.001	0.994	188568	0.8893		374	12.3	M
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.619	2.630	-0.011	0.997	39428	0.0301			63.3	
D 14 13C4 PFOA										
417.00 > 372.00	2.643	2.652	-0.009	1.000	256353	0.2392		95.7	984	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.652	2.653	-0.001	1.003	499603	0.4259			12.5	M
413.00 > 169.00	2.643	2.653	-0.010	1.000	306123		1.63(0.84-2.52)		165	M
* 62 13C2 PFOA										
415.00 > 370.00	2.643	2.653	-0.010		271397	0.2500			693	
D 19 13C5 PFNA										
468.00 > 423.00	3.022	3.025	-0.003	1.143	246207	0.2730		109	714	
D 18 13C4 PFOS										M
503.00 > 80.00	3.022	3.025	-0.003	1.143	211761	0.2435		102	17.6	M
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.022	3.025	-0.003	1.000	221109	0.2142			9.0	M
499.00 > 99.00	3.022	3.025	-0.003	1.000	42689		5.18(2.31-6.93)		8.8	M
D 21 13C8 FOSA										
506.00 > 78.00	3.362	3.373	-0.011	1.272	312920	0.2493		99.7	737	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.377	3.374	0.003	1.002	2014	0.001910			15.6	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.370	3.380	-0.010	1.275	209612	0.9601		401	40.1	
D 23 13C2 PFDA										
515.00 > 470.00	3.384	3.388	-0.004	1.280	222663	0.2872		115	1486	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.537	3.548	-0.011	1.338	195244	0.4975		199	528	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.707	3.713	-0.006	1.402	149319	0.3708		148	304	
D 30 13C2 PFUnA										
565.00 > 520.00	3.716	3.722	-0.006	1.406	178029	0.2938		118	991	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.716	3.722	-0.006	1.002	15339	0.0306			54.3	
D 36 13C2 PFDaA										
615.00 > 570.00	4.012	4.018	-0.006	1.518	118427	0.1815		72.6	554	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.523	4.522	0.001	1.711	24433	0.0289		11.6	150	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d

Injection Date: 18-Oct-2018 21:03:05

Instrument ID: A8_N

Lims ID: 480-142290-A-2-A

Lab Sample ID: 320-142290-2

Client ID: EC-0004-02

Operator ID: SACINSTLCMS01

ALS Bottle#: 18

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

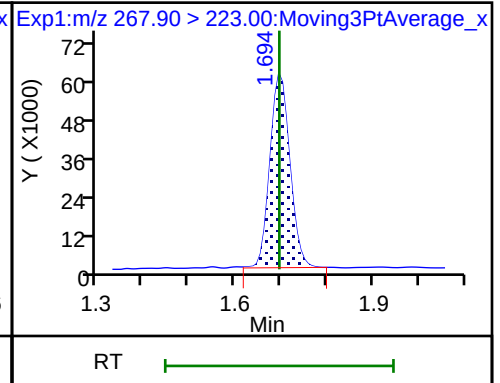
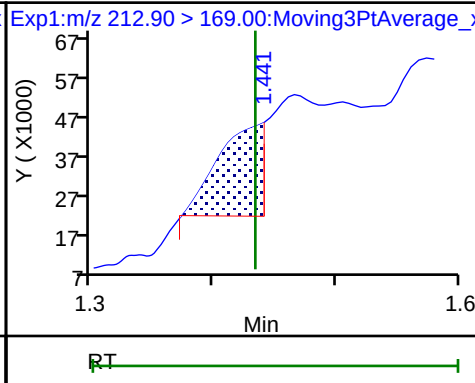
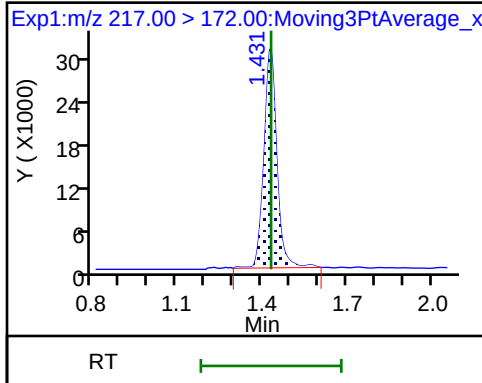
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

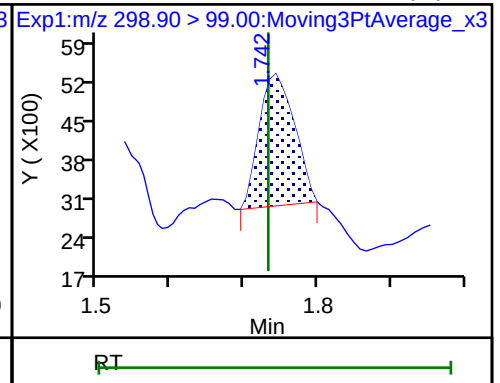
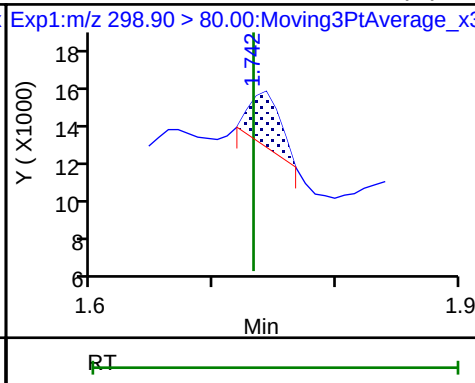
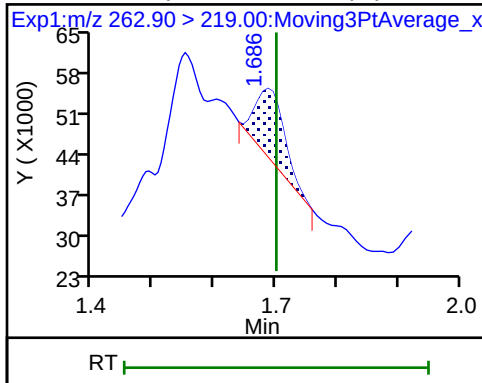
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

5 Perfluorobutanesulfonic acid (M)

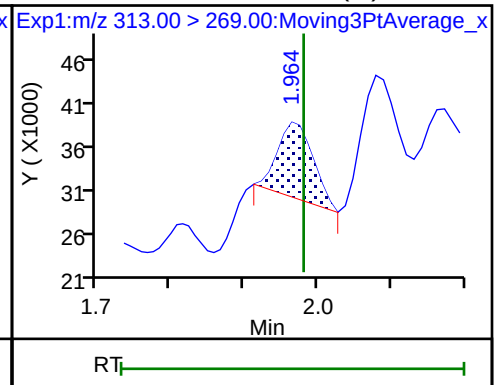
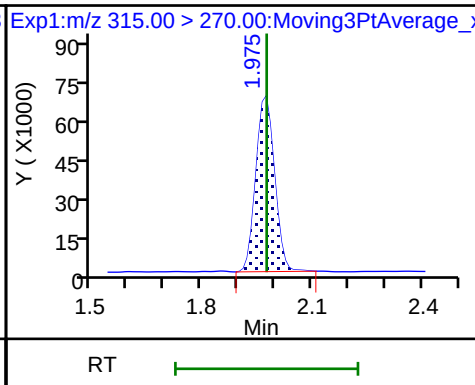
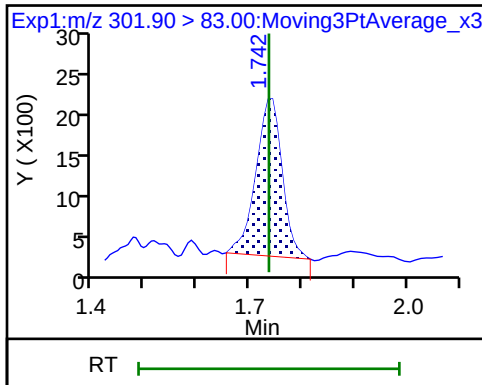
5 Perfluorobutanesulfonic acid (M)



D 47 13C3 PFBS

D 7 13C2 PFHxA

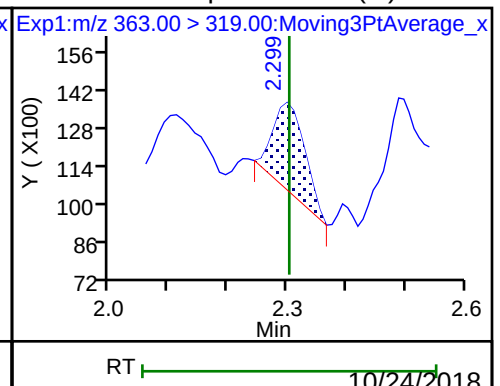
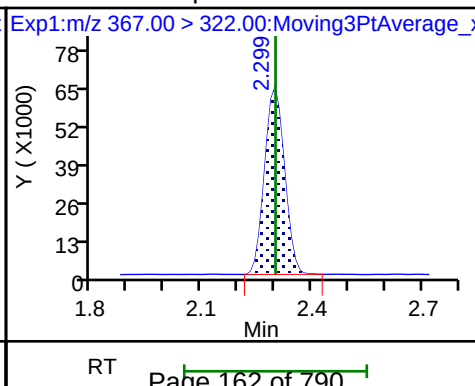
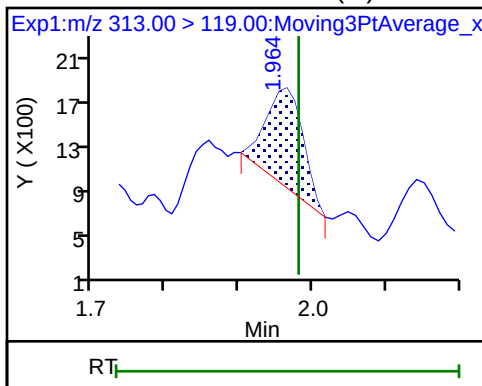
6 Perfluorohexanoic acid (M)

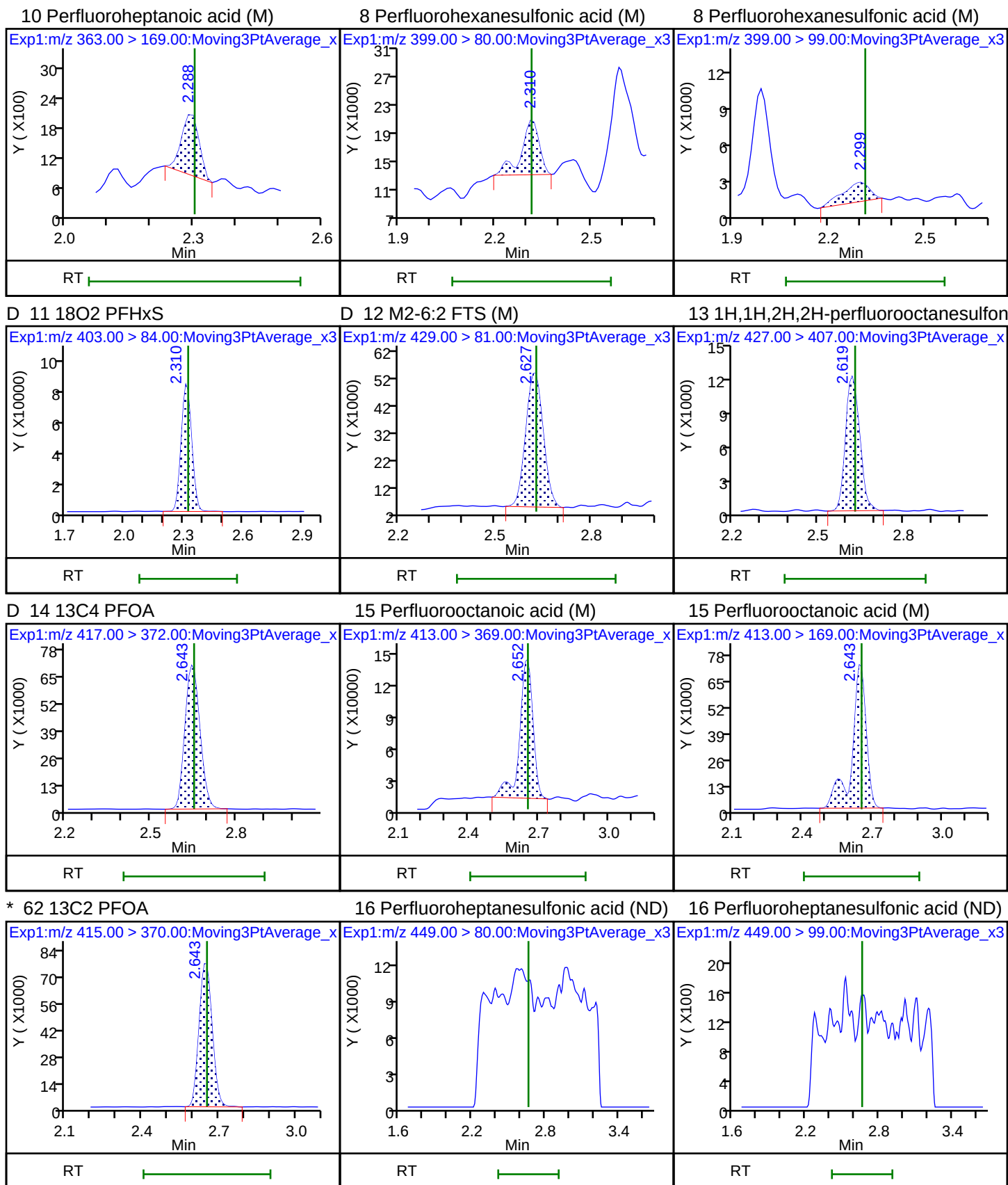


6 Perfluorohexanoic acid (M)

D 9 13C4 PFHpA

10 Perfluoroheptanoic acid (M)

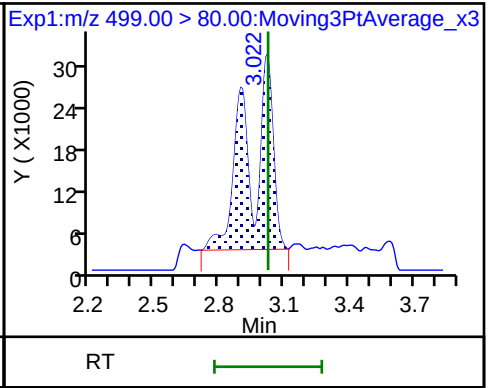
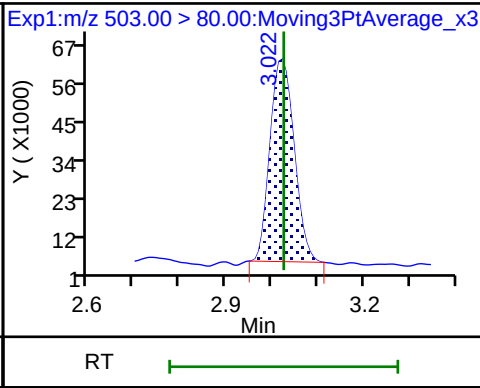
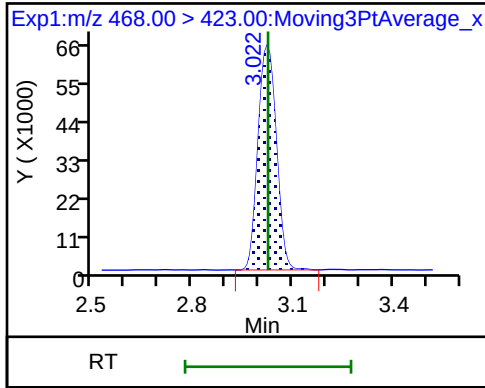




D 19 13C5 PFNA

D 18 13C4 PFOS (M)

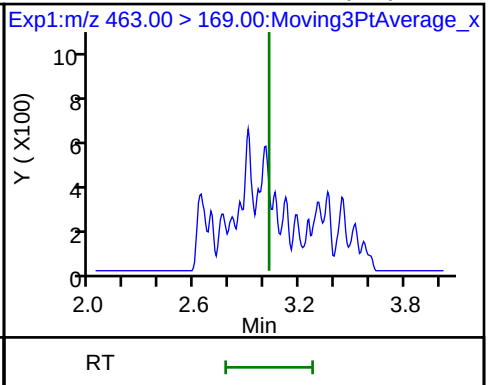
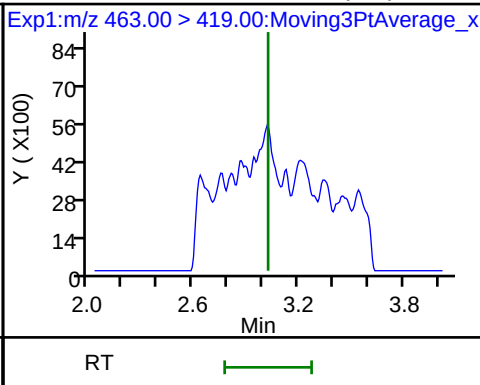
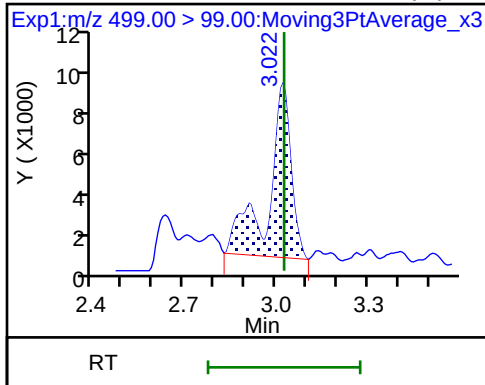
17 Perfluorooctanesulfonic acid (M)



17 Perfluorooctanesulfonic acid (M)

20 Perfluorononanoic acid (ND)

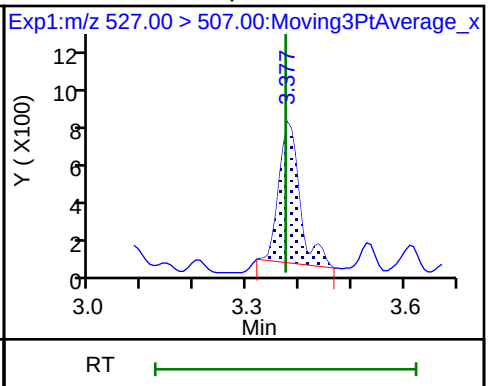
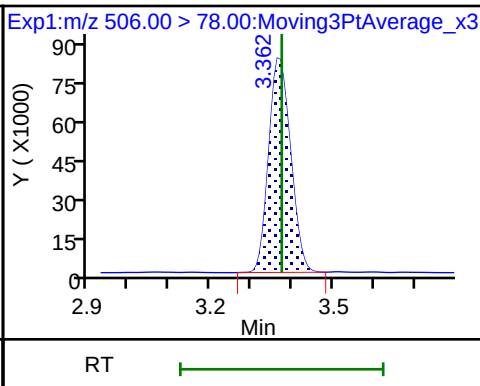
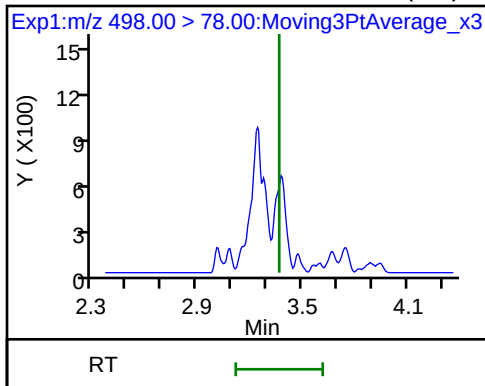
20 Perfluorononanoic acid (ND)



22 Perfluorooctanesulfonamide (ND)

D 21 13C8 FOSA

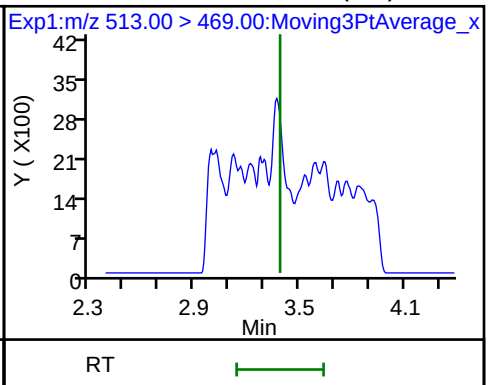
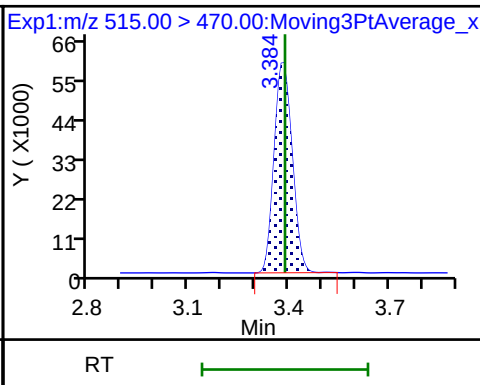
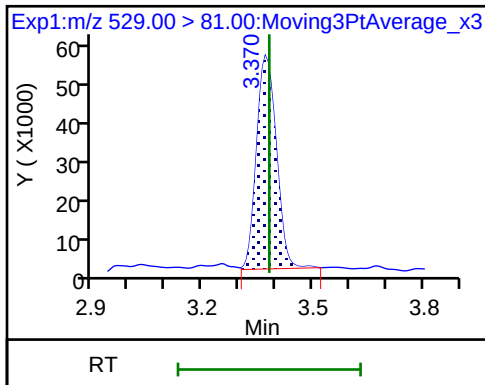
25 1H,1H,2H,2H-perfluorodecanesulfoni

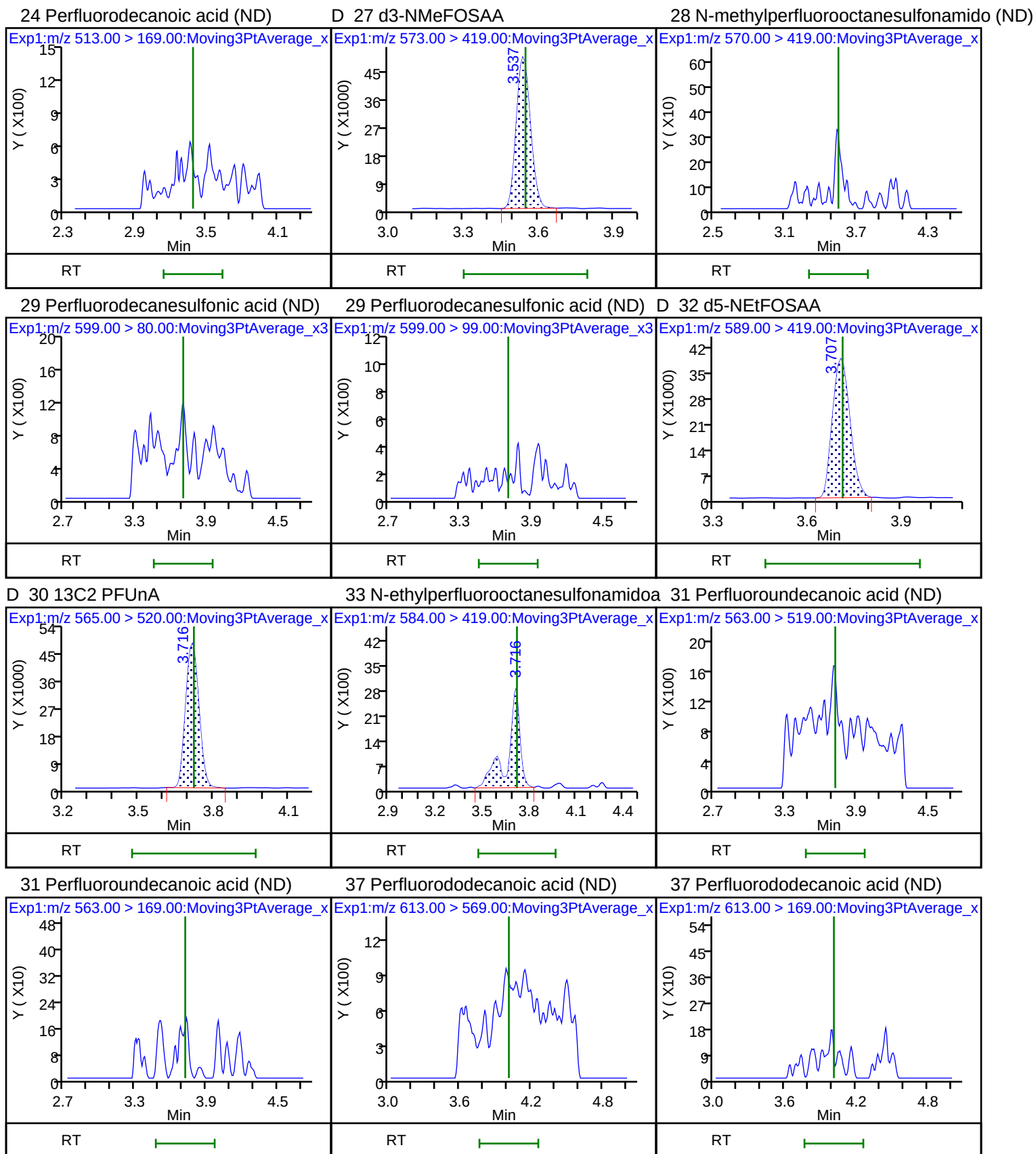


D 26 M2-8:2 FTS

D 23 13C2 PFDA

24 Perfluorodecanoic acid (ND)

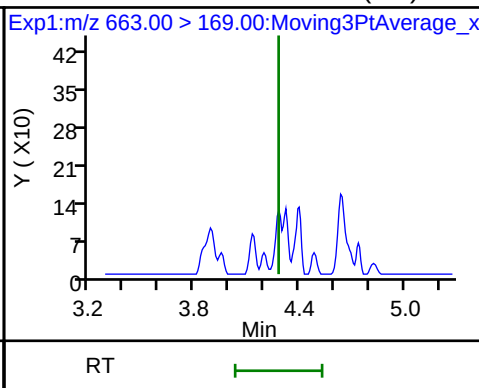
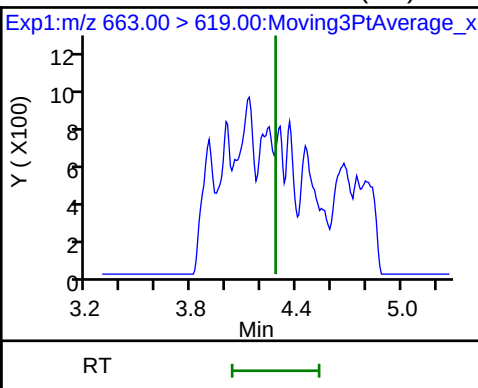
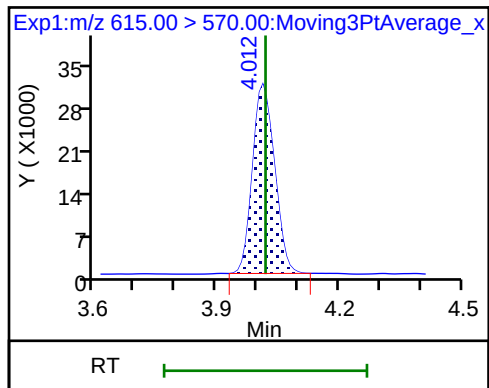




D 36 13C2 PFDaA

41 Perfluorotridecanoic acid (ND)

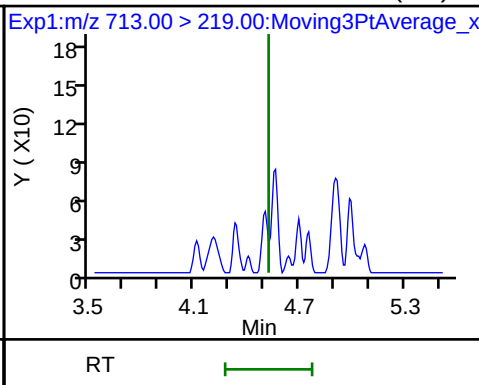
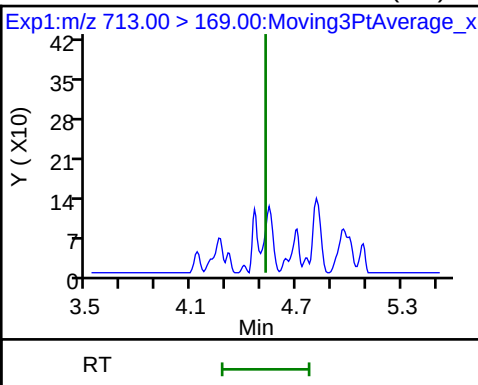
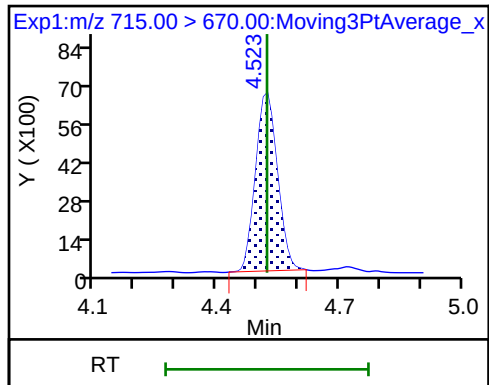
41 Perfluorotridecanoic acid (ND)



D 43 13C2 PFTeDA

42 Perfluorotetradecanoic acid (ND)

42 Perfluorotetradecanoic acid (ND)



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d

Injection Date: 18-Oct-2018 21:03:05

Instrument ID: A8_N

Lims ID: 480-142290-A-2-A

Lab Sample ID: 320-142290-2

Client ID: EC-0004-02

Operator ID: SACINSTLCMS01

ALS Bottle#: 18 Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

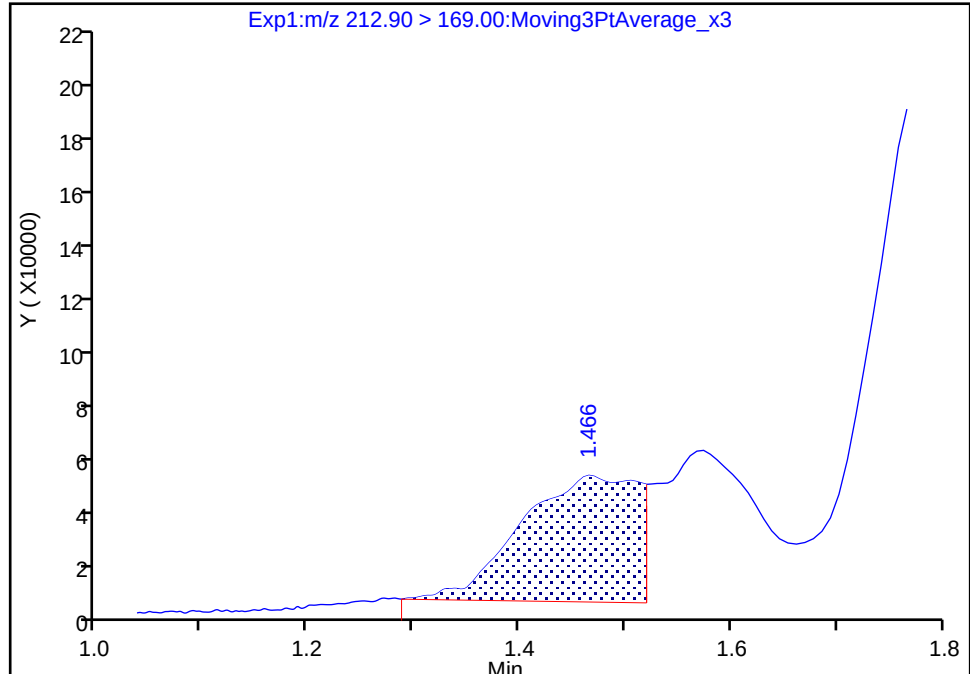
Detector: EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

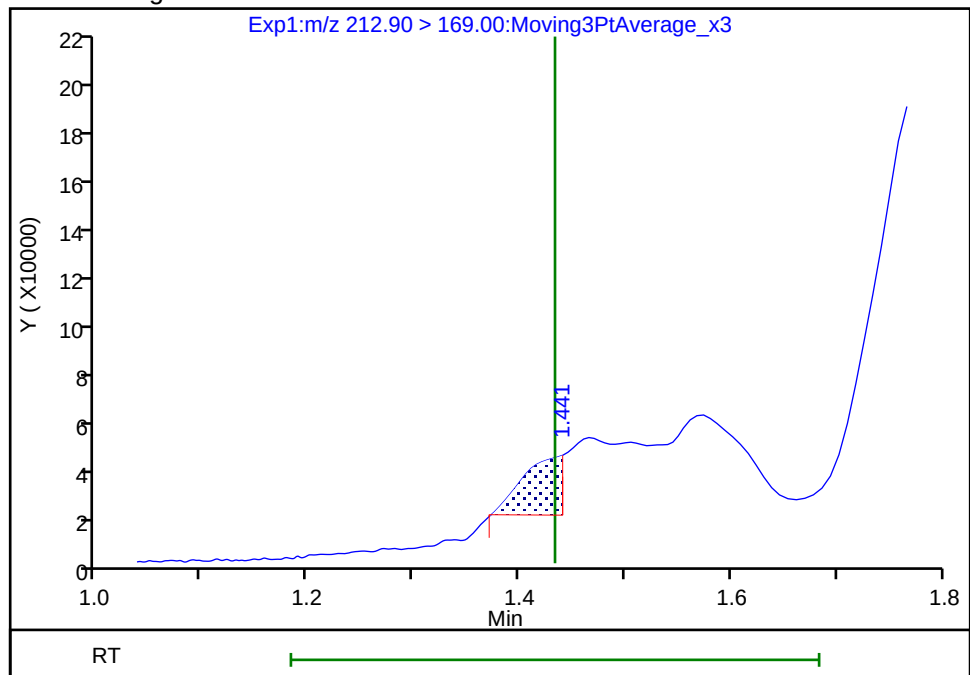
RT: 1.47
Area: 345205
Amount: 0.993722
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 59080
Amount: 0.170070
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:32:12

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d

Injection Date: 18-Oct-2018 21:03:05

Instrument ID: A8_N

Lims ID: 480-142290-A-2-A

Lab Sample ID: 320-142290-2

Client ID: EC-0004-02

Operator ID: SACINSTLCMS01

ALS Bottle#: 18 Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

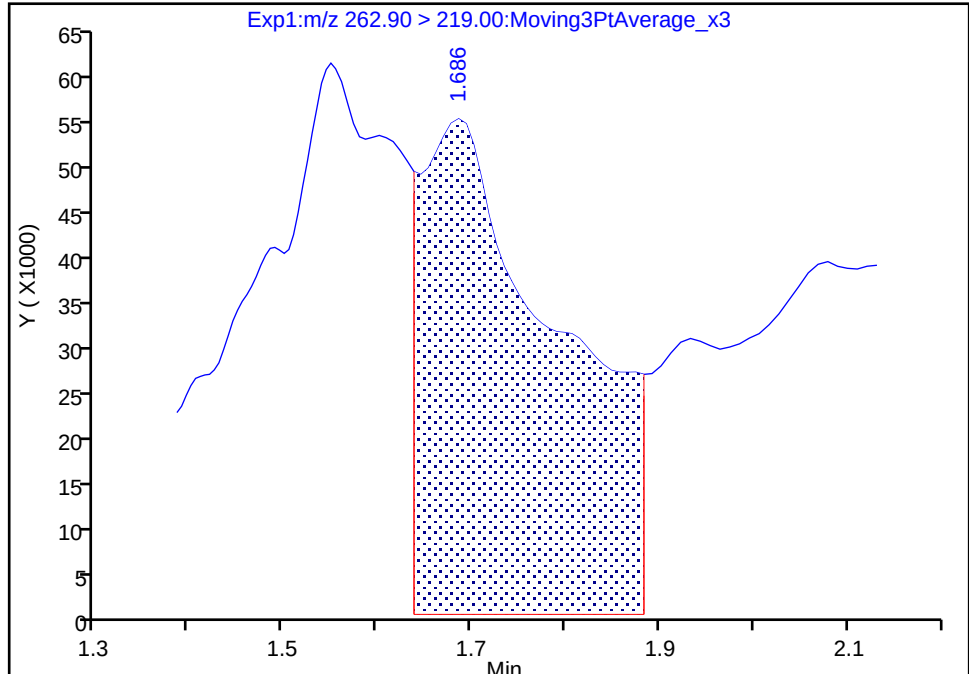
Detector: EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

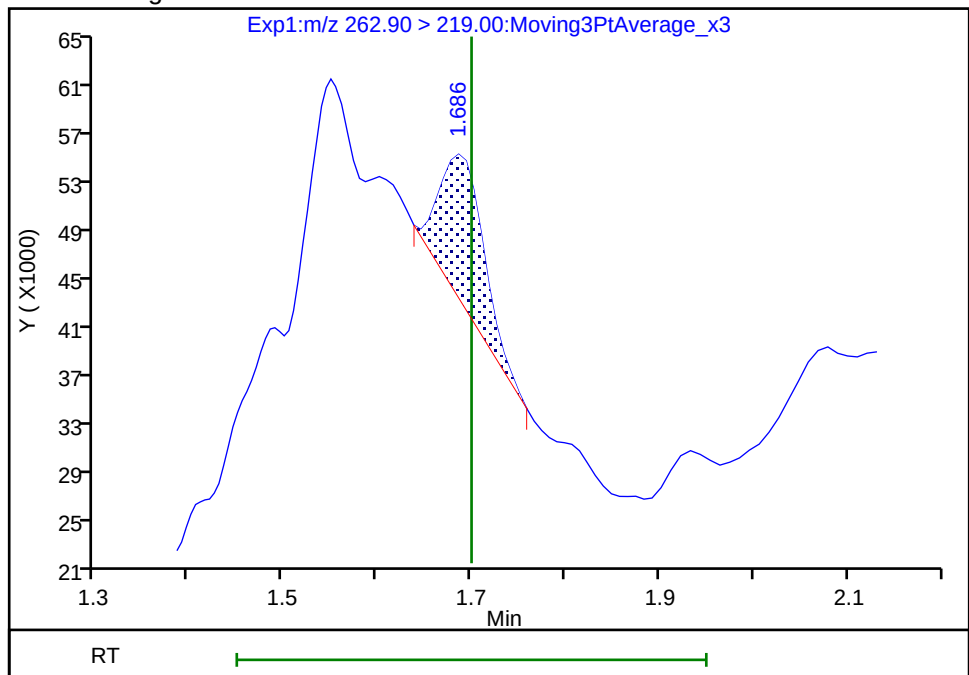
RT: 1.69
Area: 555855
Amount: 0.683226
Amount Units: ng/ml

Processing Integration Results



RT: 1.69
Area: 38387
Amount: 0.047183
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:31:42

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

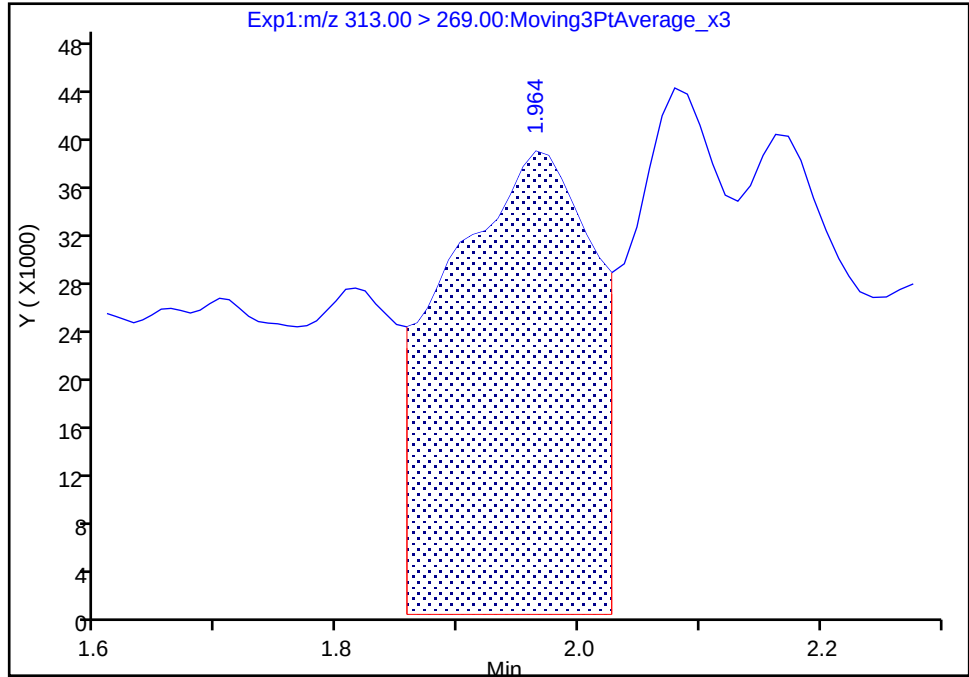
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Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

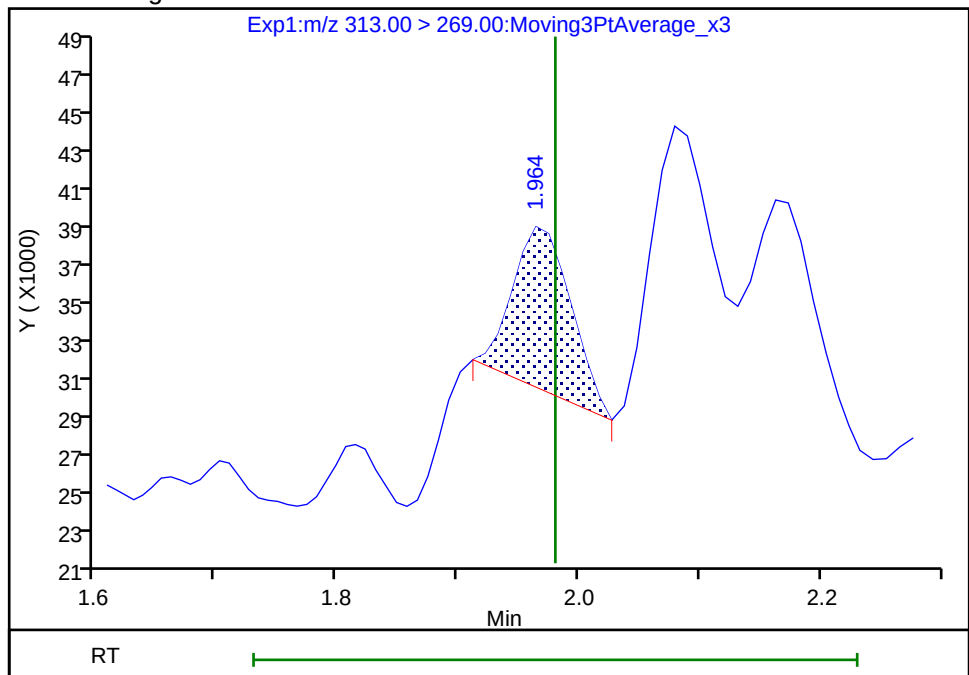
RT: 1.96
Area: 327863
Amount: 0.333165
Amount Units: ng/ml

Processing Integration Results



RT: 1.96
Area: 28466
Amount: 0.028926
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:32:44

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

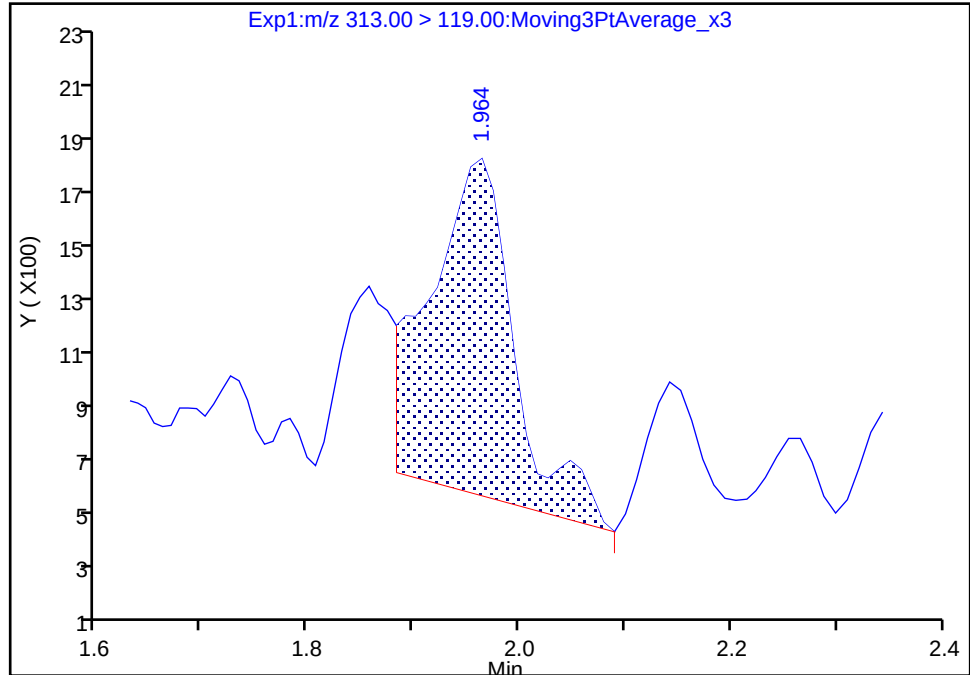
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Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

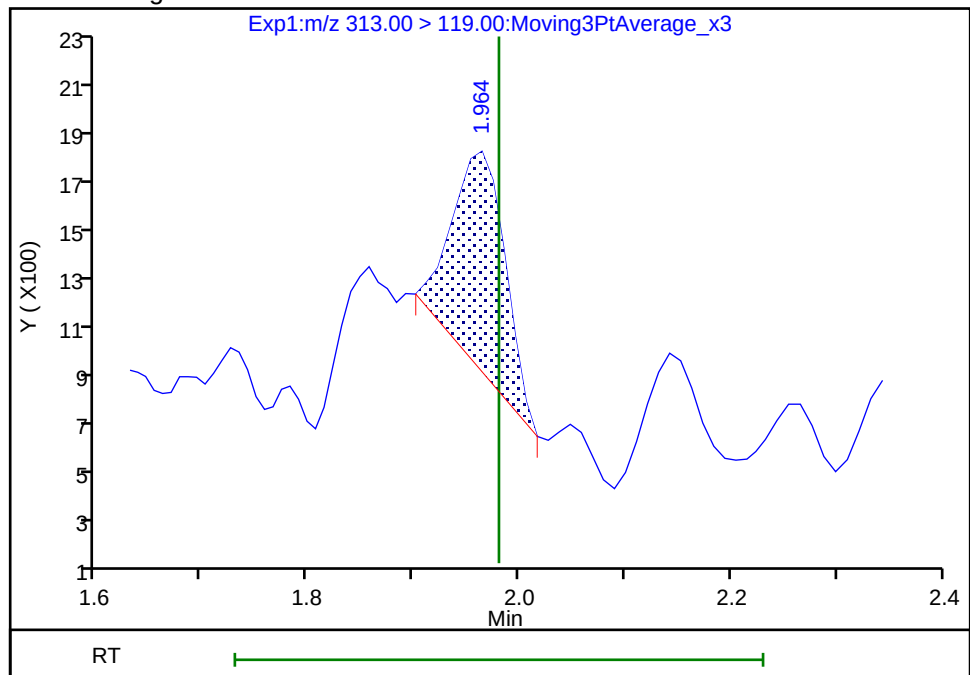
RT: 1.96
Area: 6374
Amount: 0.333165
Amount Units: ng/ml

Processing Integration Results



RT: 1.96
Area: 2877
Amount: 0.028926
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:32:48

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

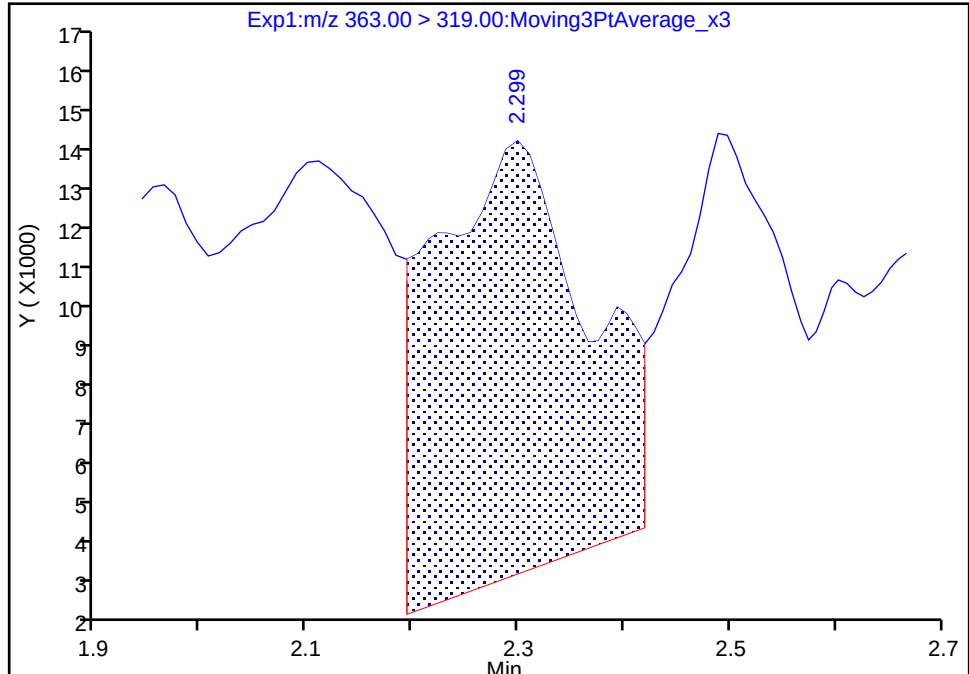
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

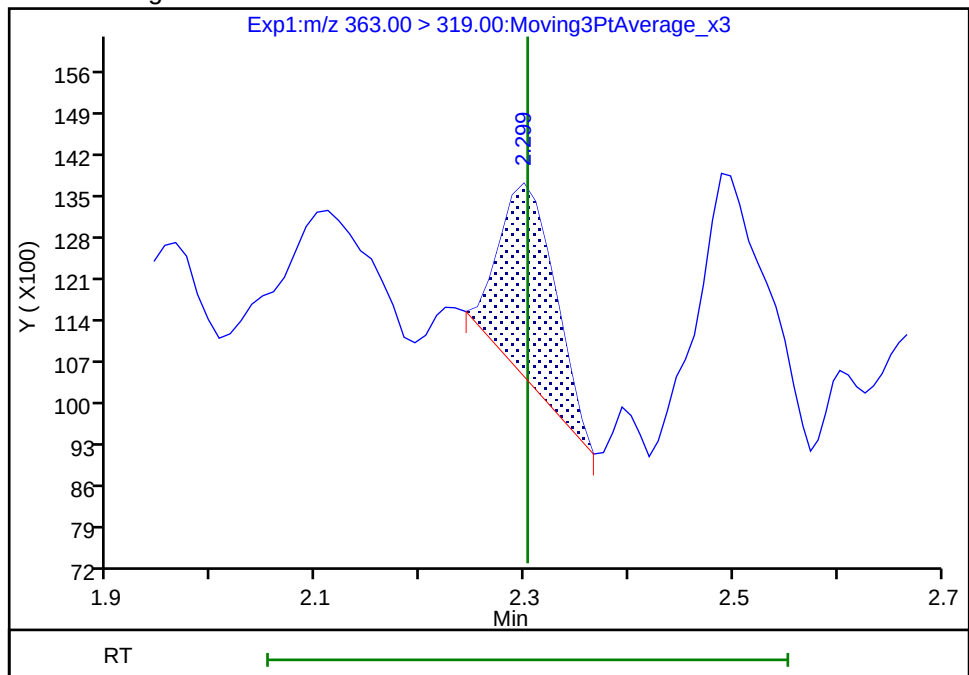
RT: 2.30
Area: 99728
Amount: 0.088651
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 12288
Amount: 0.010923
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:32:54

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

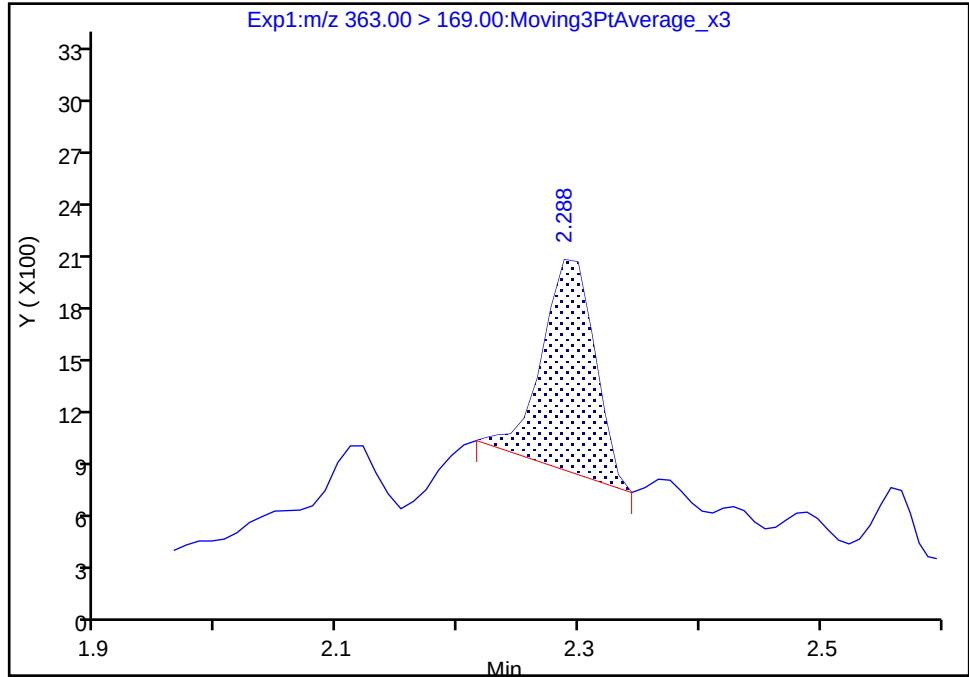
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

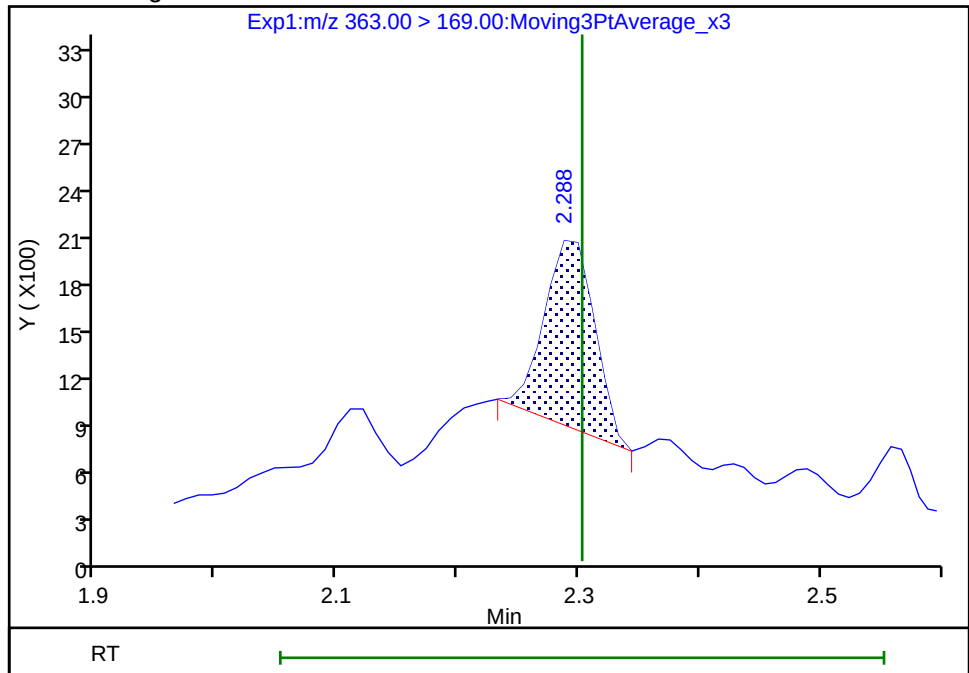
RT: 2.29
Area: 3759
Amount: 0.088651
Amount Units: ng/ml

Processing Integration Results



RT: 2.29
Area: 3476
Amount: 0.010923
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:32:57

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

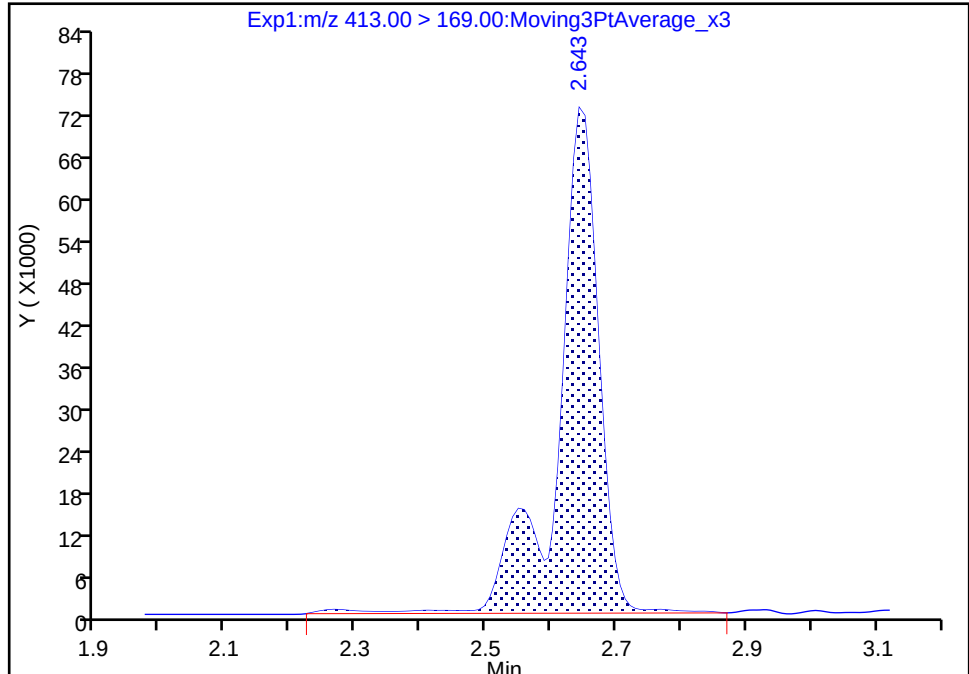
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d				
Injection Date:	18-Oct-2018 21:03:05	Instrument ID:	A8_N		
Lims ID:	480-142290-A-2-A	Lab Sample ID:	320-142290-2		
Client ID:	EC-0004-02				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	18	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	10.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

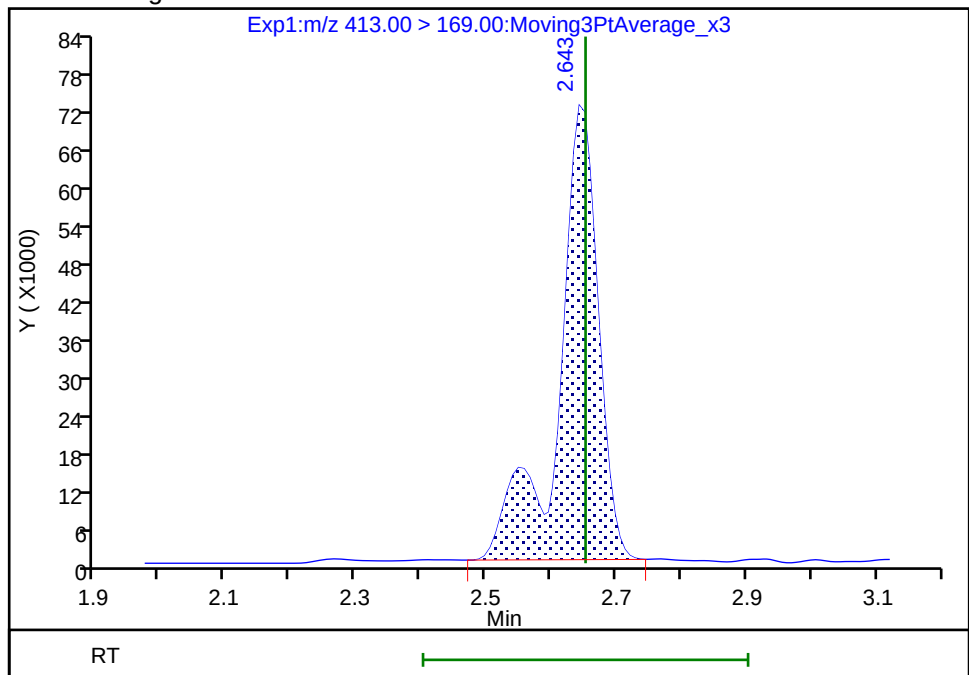
RT: 2.64
Area: 319856
Amount: 0.622147
Amount Units: ng/ml

Processing Integration Results



RT: 2.64
Area: 306123
Amount: 0.425882
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:33:12

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

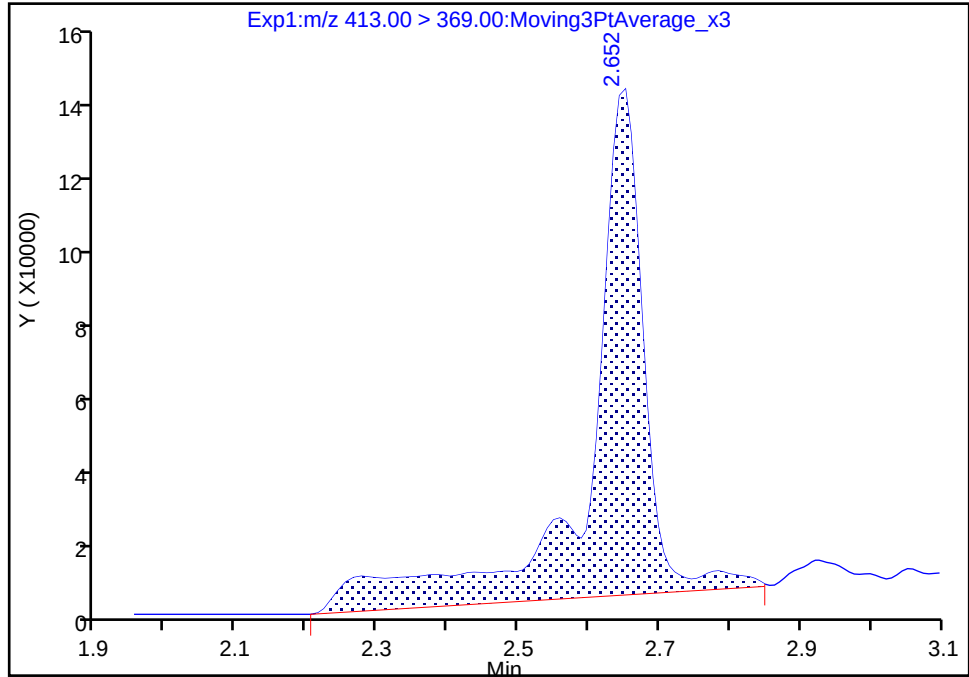
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

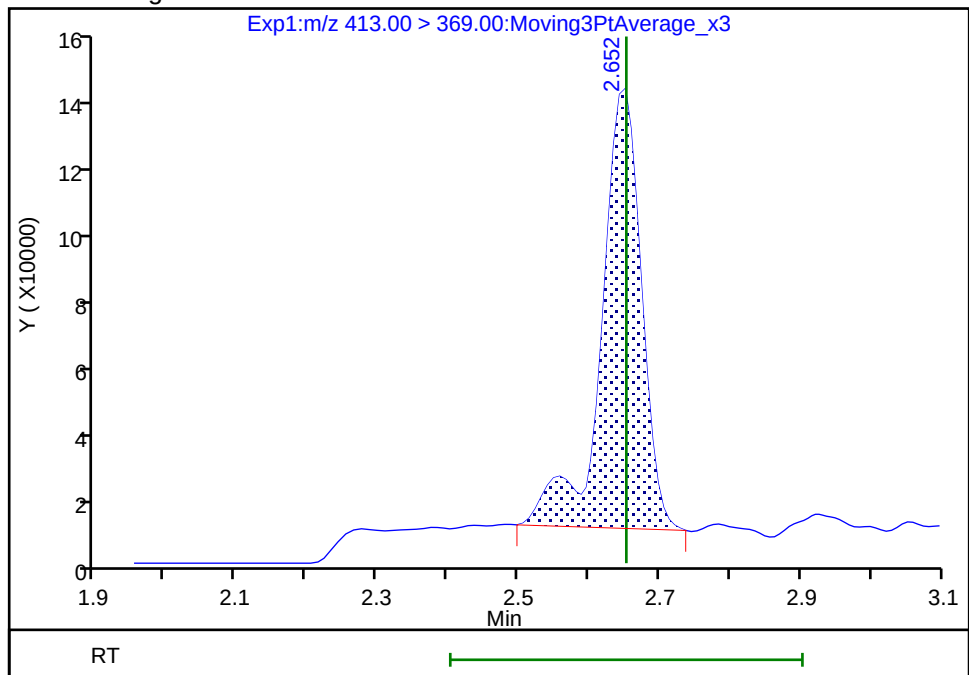
RT: 2.65
Area: 729842
Amount: 0.622147
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 499603
Amount: 0.425882
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:33:15

Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d

Injection Date: 18-Oct-2018 21:03:05

Instrument ID: A8_N

Lims ID: 480-142290-A-2-A

Lab Sample ID: 320-142290-2

Client ID: EC-0004-02

Operator ID: SACINSTLCMS01

ALS Bottle#: 18 Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

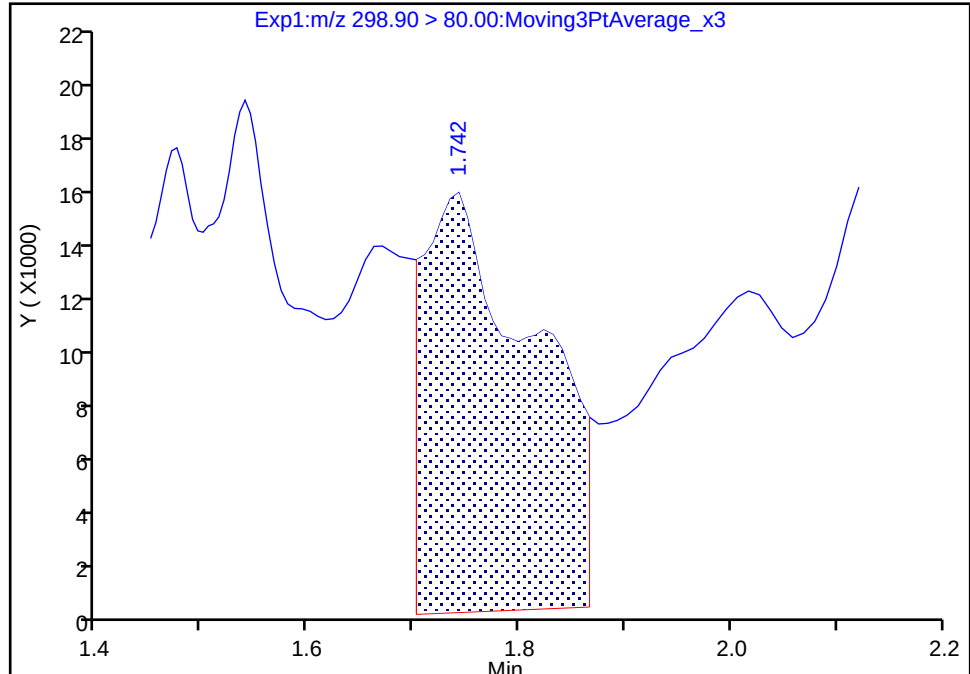
Detector: EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

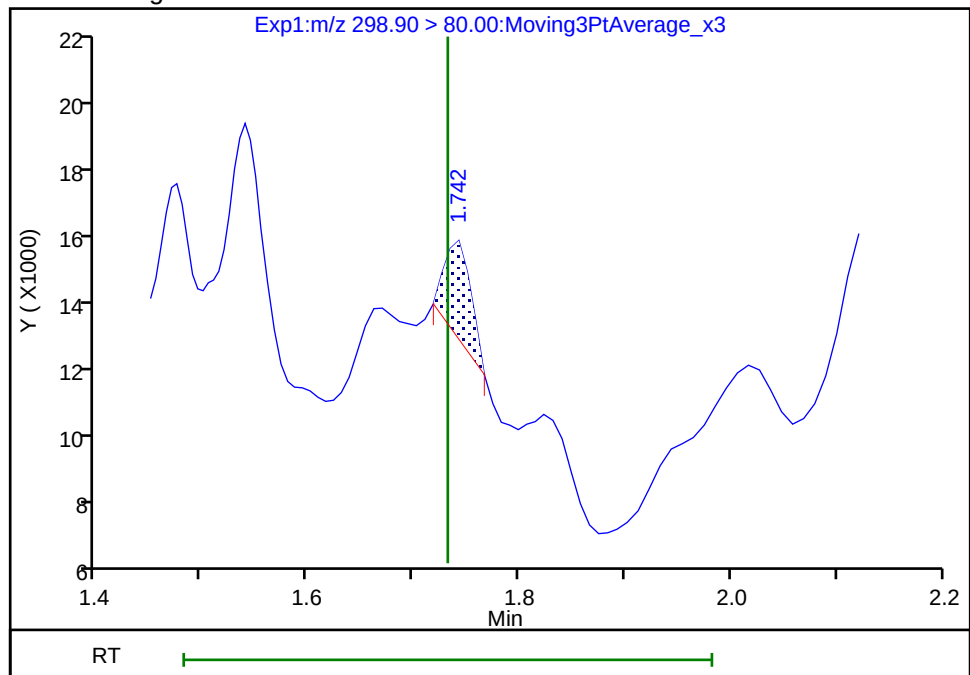
RT: 1.74
Area: 108610
Amount: 0.046279
Amount Units: ng/ml

Processing Integration Results



RT: 1.74
Area: 4646
Amount: 0.001980
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:32:36

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

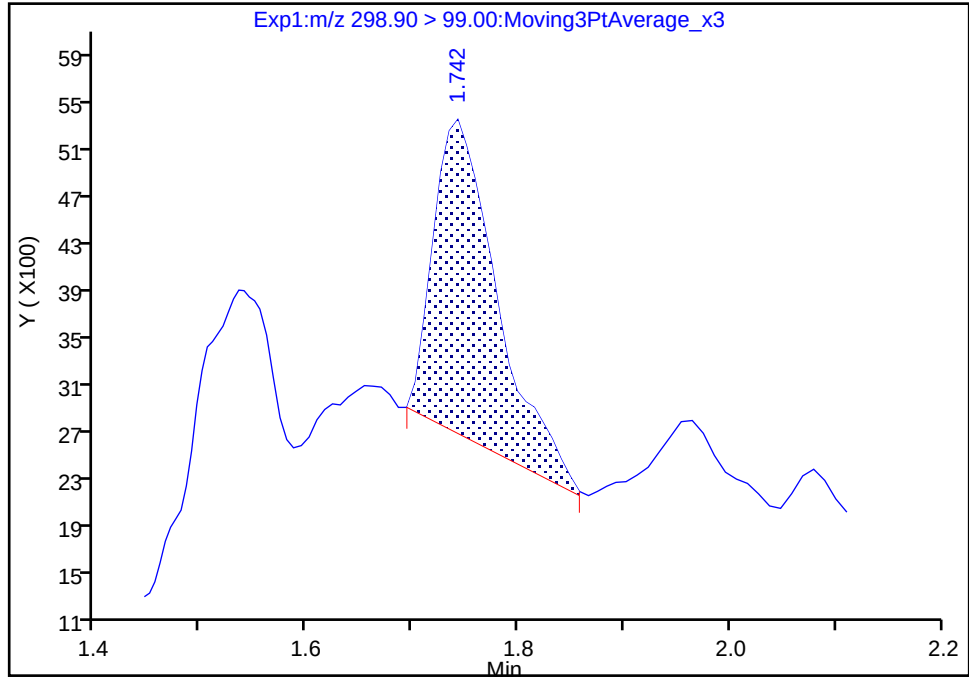
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

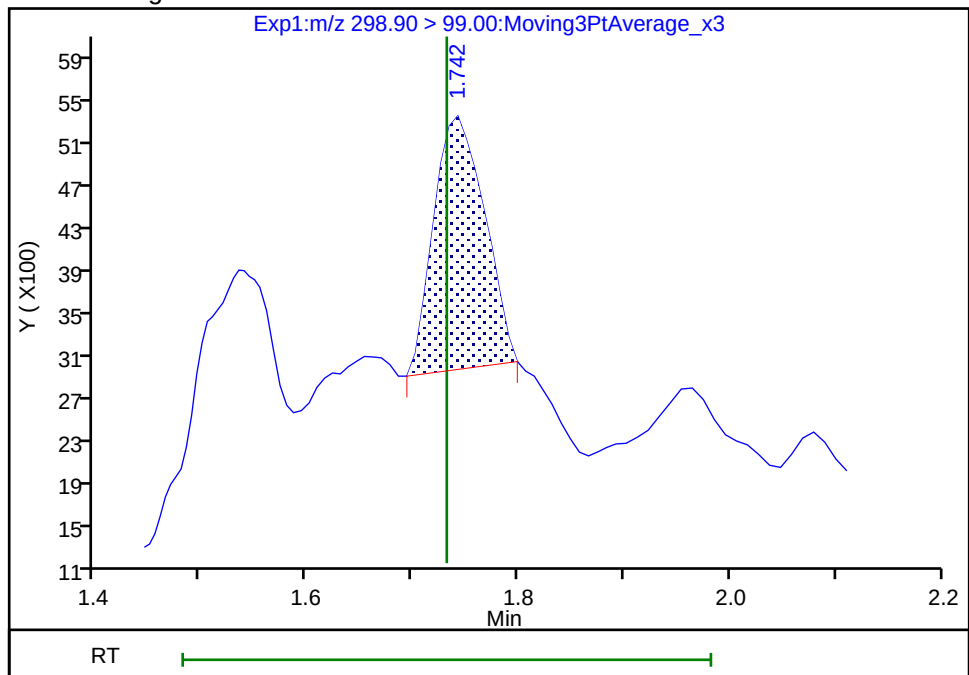
RT: 1.74
Area: 11211
Amount: 0.046279
Amount Units: ng/ml

Processing Integration Results



RT: 1.74
Area: 7954
Amount: 0.001980
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:32:38

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

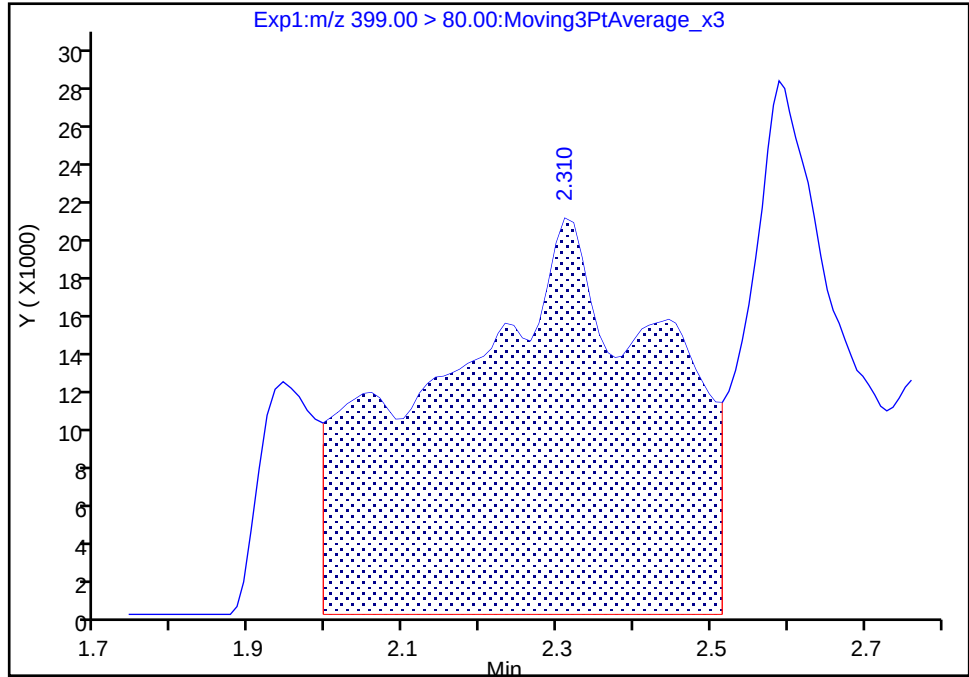
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

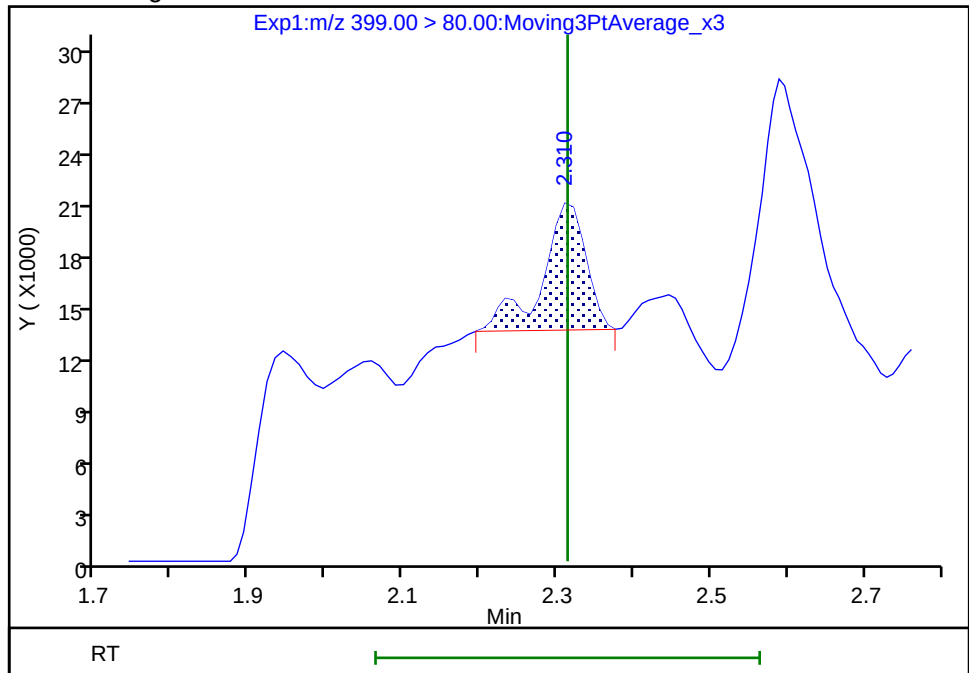
RT: 2.31
Area: 420950
Amount: 0.292129
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 28360
Amount: 0.019681
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:34:24
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

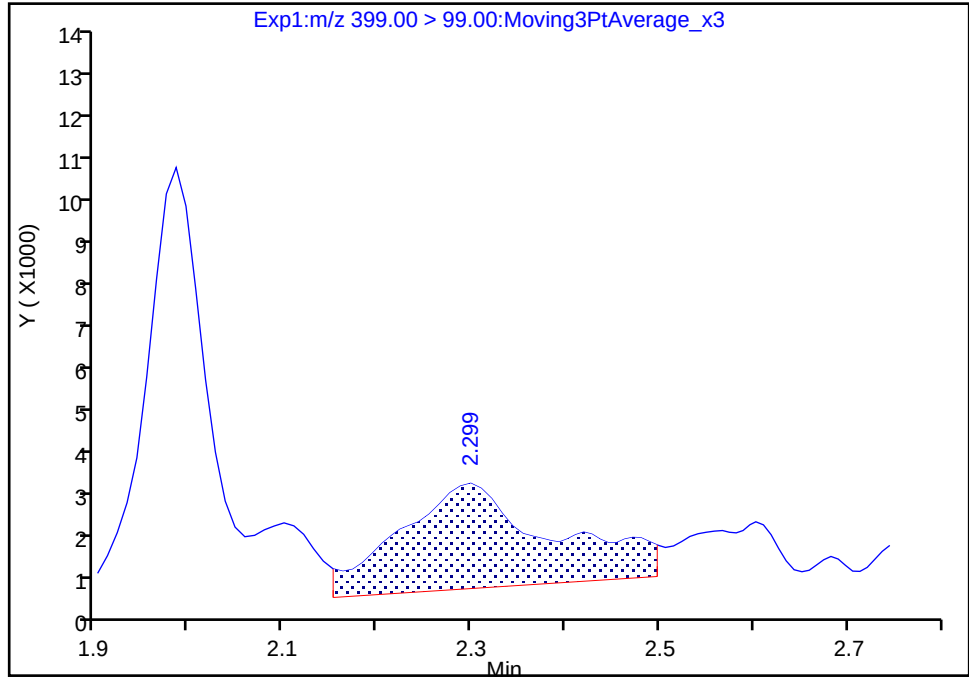
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

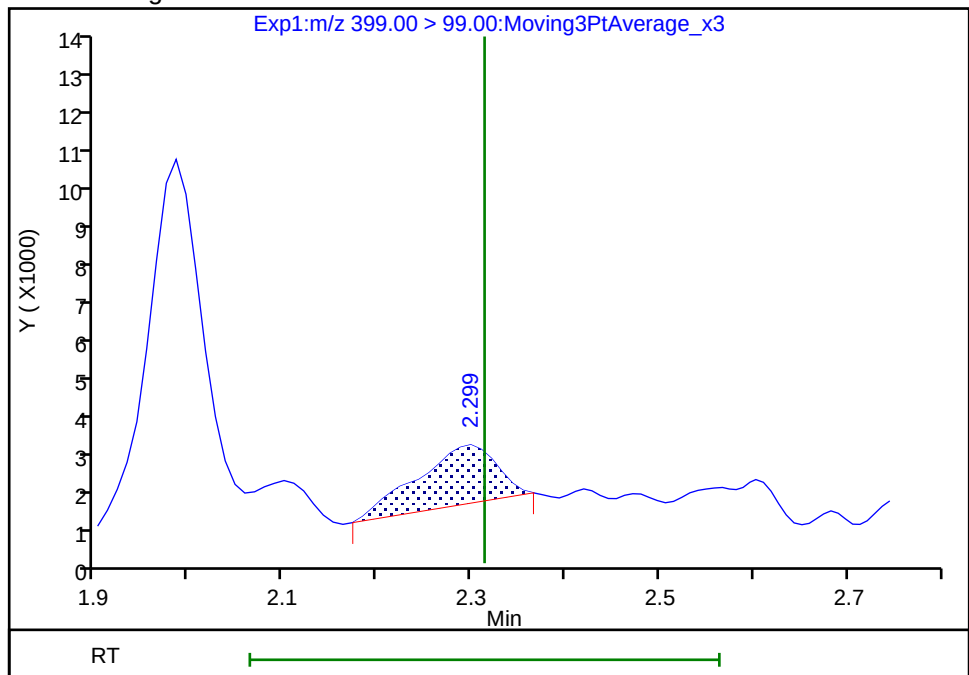
RT: 2.30
Area: 27264
Amount: 0.292129
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 8900
Amount: 0.019681
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:34:27

Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d

Injection Date: 18-Oct-2018 21:03:05

Instrument ID: A8_N

Lims ID: 480-142290-A-2-A

Lab Sample ID: 320-142290-2

Client ID: EC-0004-02

Operator ID: SACINSTLCMS01

ALS Bottle#: 18 Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

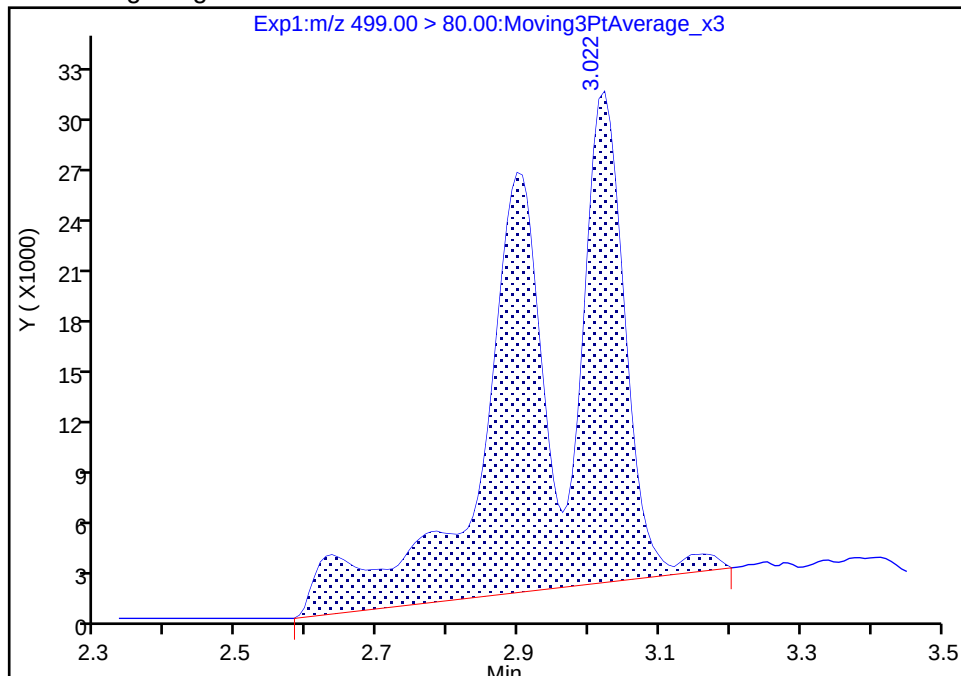
Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

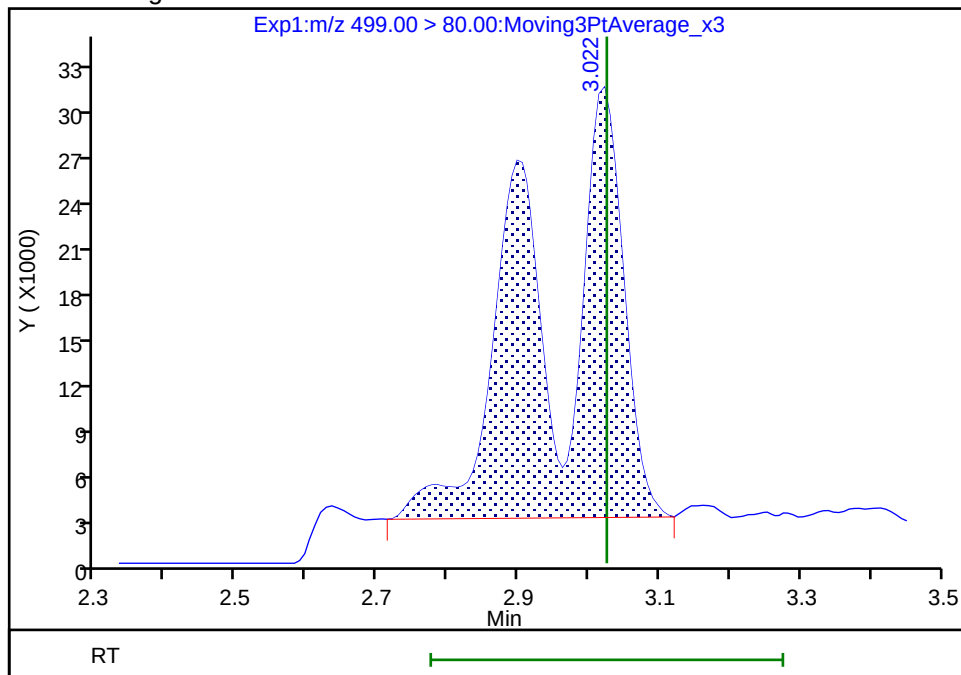
RT: 3.02
Area: 275838
Amount: 0.267270
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 221109
Amount: 0.214241
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:33:23

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

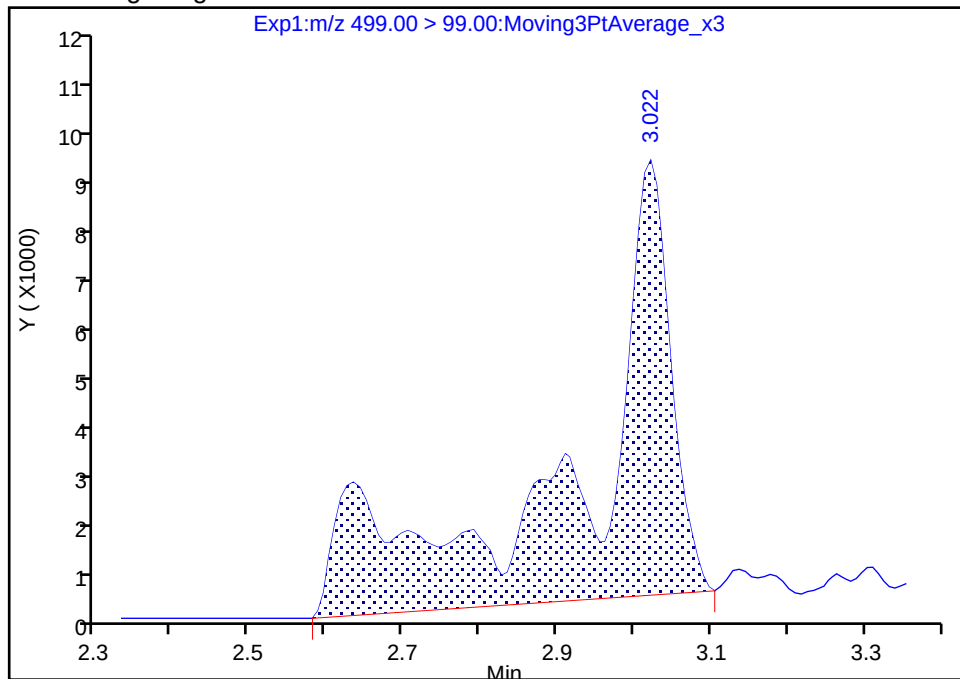
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

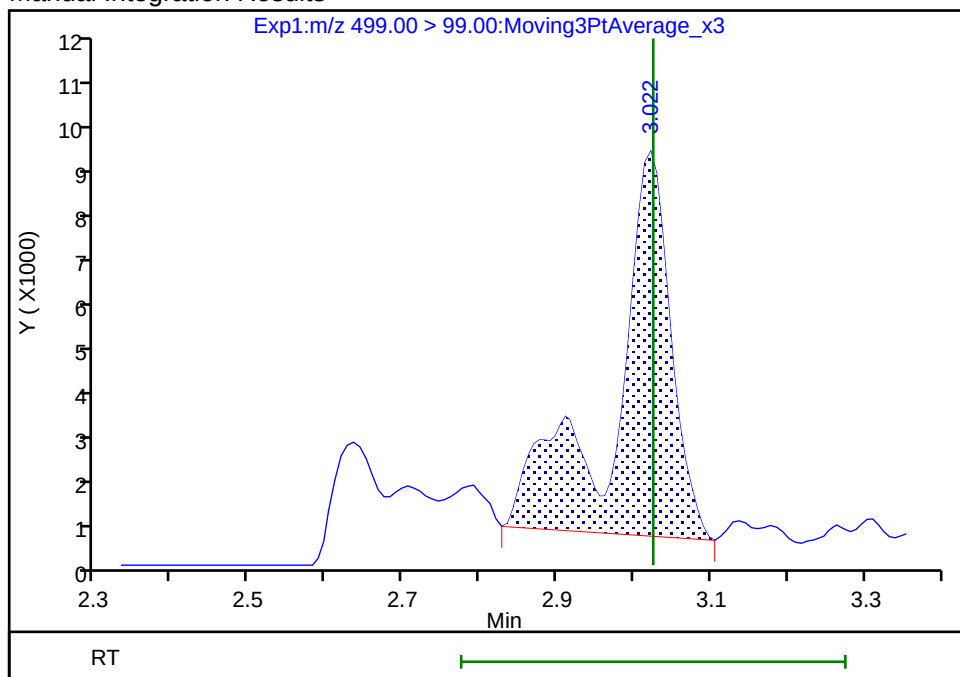
RT: 3.02
Area: 69307
Amount: 0.267270
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 42689
Amount: 0.214241
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:33:27

Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d

Injection Date: 18-Oct-2018 21:03:05

Instrument ID: A8_N

Lims ID: 480-142290-A-2-A

Lab Sample ID: 320-142290-2

Client ID: EC-0004-02

Operator ID: SACINSTLCMS01

ALS Bottle#: 18 Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 10.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

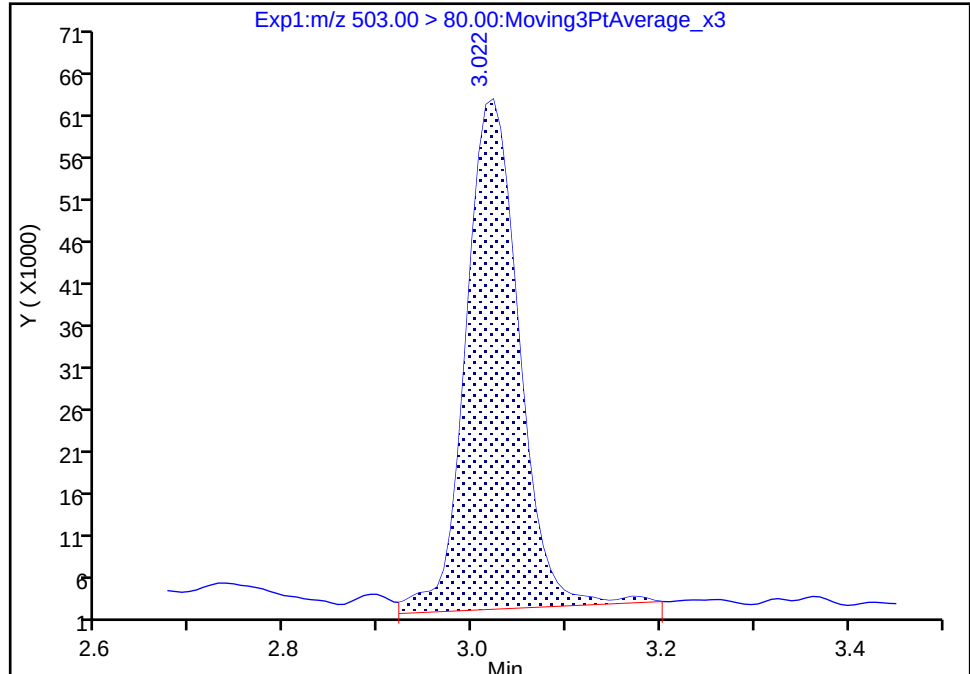
Detector: EXP1

D 18 13C4 PFOS, CAS: STL00991

Signal: 1

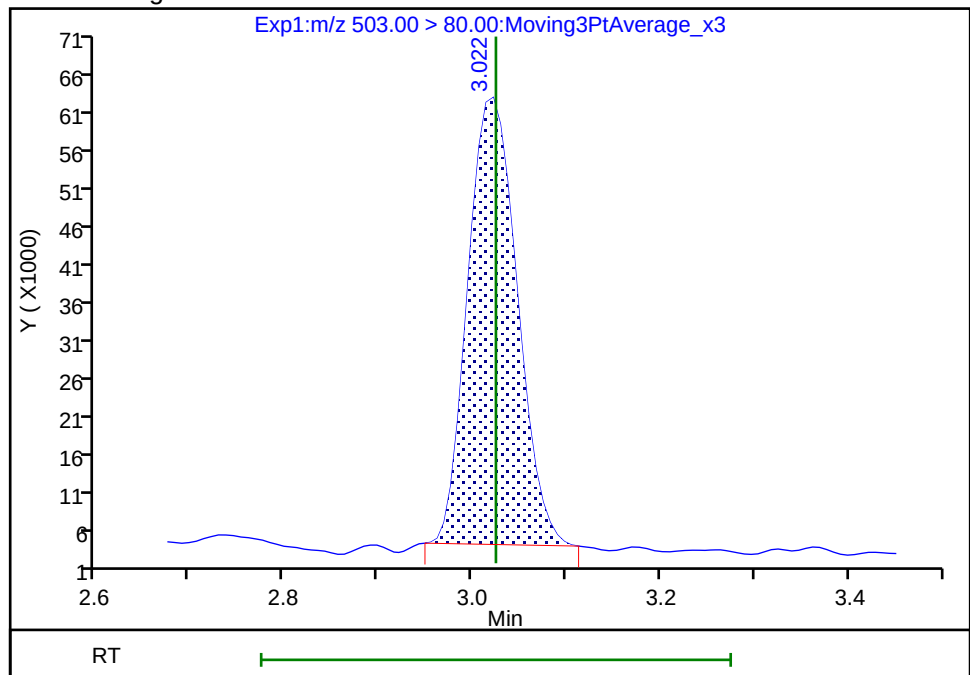
RT: 3.02
Area: 235508
Amount: 0.270766
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 211761
Amount: 0.243464
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:31:17

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

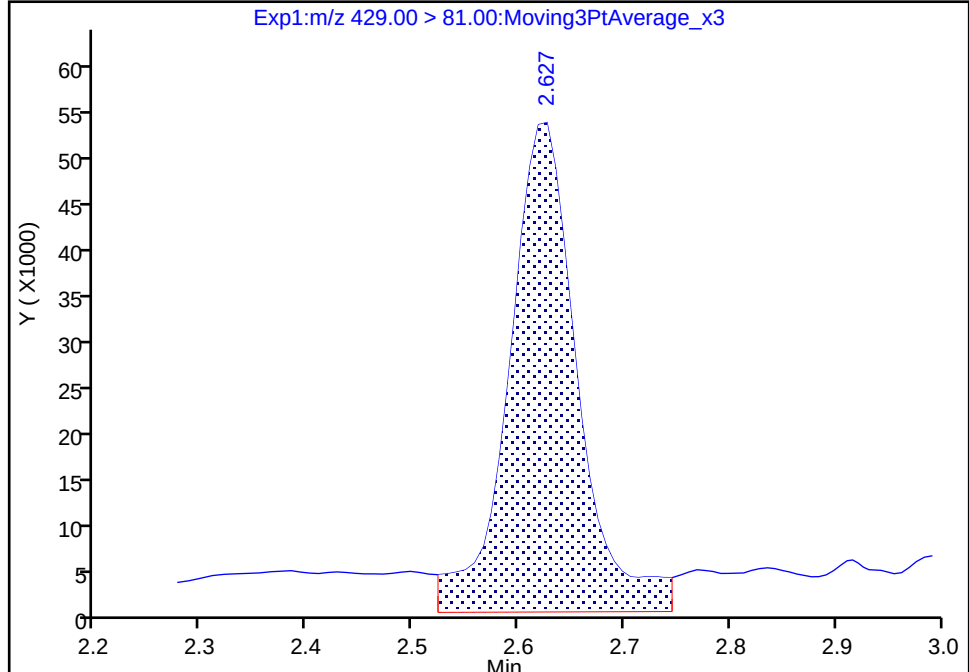
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_034.d
Injection Date: 18-Oct-2018 21:03:05 Instrument ID: A8_N
Lims ID: 480-142290-A-2-A Lab Sample ID: 320-142290-2
Client ID: EC-0004-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 10.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

D 12 M2-6:2 FTS, CAS: STL02279

Signal: 1

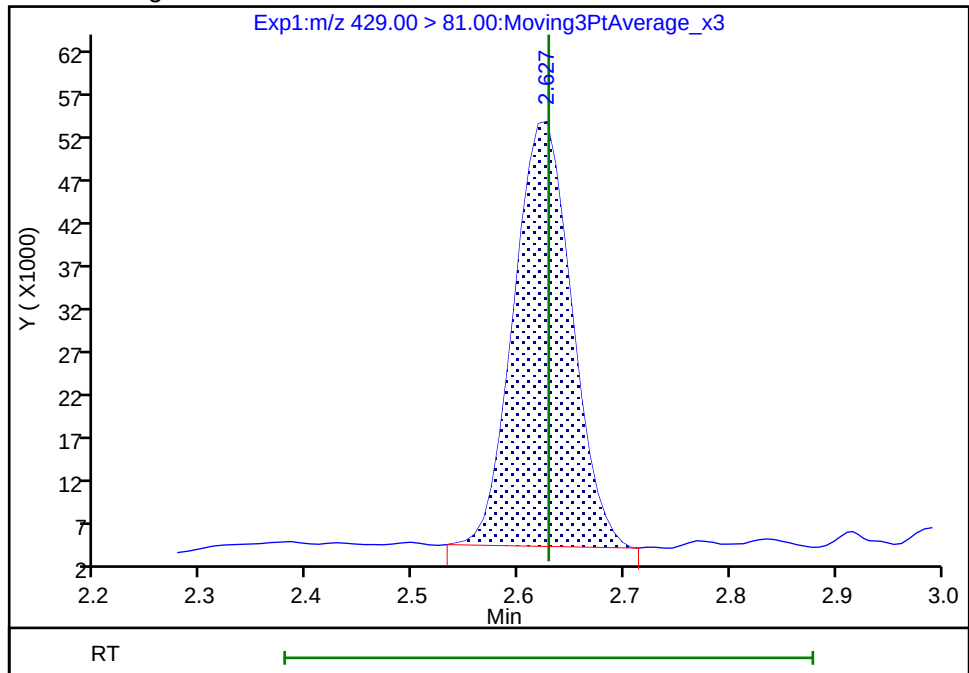
RT: 2.63
Area: 240841
Amount: 1.135870
Amount Units: ng/ml

Processing Integration Results



RT: 2.63
Area: 188568
Amount: 0.889336
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:31:09

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-03</u>	Lab Sample ID: <u>480-142290-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.11LLAAX_046.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 10:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>290 (mL)</u>	Date Analyzed: <u>10/11/2018 23:44</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251568</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	4.6	B	1.7	0.30
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.4	J	1.7	0.42
307-24-4	Perfluorohexanoic acid (PFHxA)	1.1	J	1.7	0.50
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.5	J	1.7	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	3.1		1.7	0.73
375-95-1	Perfluorononanoic acid (PFNA)	1.1	J	1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	0.42	J	1.7	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	0.95
307-55-1	Perfluorododecanoic acid (PFDoA)	1.7	U	1.7	0.47
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.7	U	1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.7	U	1.7	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.63	J	1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.0	J	1.7	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.34	J	1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	18		1.7	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.7	U	1.7	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.7	U	1.7	0.30
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17	U	17	2.7
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17	U	17	1.6
27619-97-2	6:2 FTS	17	U	17	1.7
39108-34-4	8:2 FTS	17	U	17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-03</u>	Lab Sample ID: <u>480-142290-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.11LLAAX_046.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 10:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>290 (mL)</u>	Date Analyzed: <u>10/11/2018 23:44</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251568</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	53		25-150
STL01893	13C5 PFPeA	72		25-150
STL00993	13C2 PFHxA	86		25-150
STL01892	13C4 PFHpA	98		25-150
STL00990	13C4 PFOA	108		25-150
STL00995	13C5 PFNA	111		25-150
STL00996	13C2 PFDA	103		25-150
STL00997	13C2 PFUnA	109		25-150
STL00998	13C2 PFDoA	101		25-150
STL02116	13C2 PFTeDA	82		25-150
STL02337	13C3 PFBS	92		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	106		25-150
STL01056	13C8 FOSA	108		25-150
STL02118	d3-NMeFOSAA	132		25-150
STL02117	d5-NEtFOSAA	137		25-150
STL02279	M2-6:2 FTS	271	*	25-150
STL02280	M2-8:2 FTS	209	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_046.d
 Lims ID: 480-142290-A-3-A
 Client ID: EC-0004-03
 Sample Type: Client
 Inject. Date: 11-Oct-2018 23:44:18 ALS Bottle#: 33 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142290-a-3-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 16-Oct-2018 08:49:24 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK008

First Level Reviewer: westendorfc

Date: 16-Oct-2018 08:40:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.489	1.494	-0.005	0.541	3247163	1.31		52.5	8151	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.489	1.494	-0.005	1.000	161494	0.1338			4.4	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.772	1.772	0.0	0.644	4041876	1.81		72.4	1179	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.772	1.772	0.0	1.000	65511	0.0401			0.3	M
D 47 13C3 PFBS										
301.90 > 83.00	1.814	1.814	0.0	0.659	66194	2.13		91.7	56.5	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.814	1.814	0.0	1.000	55214	0.0182			0.6	M
298.90 > 99.00	1.814	1.814	0.0	1.000	35786		1.54(1.35-4.05)		2.0	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.058	0.010	0.752	5190792	2.15		86.2	2999	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.058	2.058	0.0	0.995	56937	0.0307			0.2	M
313.00 > 119.00	2.058	2.058	0.0	0.995	4727		12.05(6.96-20.87)		1.2	M
D 9 13C4 PFHpA										
367.00 > 322.00	2.399	2.386	0.013	0.872	7053008	2.46		98.4	6255	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.399	2.386	0.013	1.000	130661	0.0436			0.5	
363.00 > 169.00	2.399	2.386	0.013	1.000	21783		6.00(2.17-6.52)		12.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.413	2.399	0.013	0.877	4197355	2.29		96.7	11532	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.413	2.399	0.013	1.000	64734	0.0289			1.2	M
399.00 > 99.00	2.413	2.399	0.013	1.000	23120		2.80(1.90-5.70)		5.2	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2 FTS										
429.00 > 81.00	2.718	2.718	0.0	0.988	1887018	6.44		271	168	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.718	0.016	1.006	10639	0.005999			6.6	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.750	0.0	1.000	7308623	2.69		108	9546	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.750	2.750	0.0	0.882	21054	0.0099			0.7	M
449.00 > 99.00	2.750	2.750	0.0	0.882	5216		4.04(1.84-5.53)		3.4	M
* 62 13C2 PFOA										
415.00 > 370.00	2.750	2.750	0.0		6948036	2.50			7514	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	286724	0.0898			1.9	M
413.00 > 169.00	2.750	2.750	0.0	1.000	131884		2.17(1.36-4.08)		88.2	M
D 18 13C4 PFOS										
503.00 > 80.00	3.116	3.116	0.0	1.133	4746681	2.54		106	383	
D 19 13C5 PFNA										
468.00 > 423.00	3.116	3.116	0.0	1.133	6867458	2.77		111	6010	
20 Perfluorononanoic acid										
463.00 > 419.00	3.116	3.117	-0.001	1.000	92250	0.0332			1.7	M
463.00 > 169.00	3.116	3.117	-0.001	1.000	18353		5.03(2.68-8.03)		16.4	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.116	3.117	-0.001	1.000	1114783	0.5179			53.2	M
499.00 > 99.00	3.116	3.117	-0.001	1.000	264542		4.21(2.04-6.12)		329	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.465	0.0	1.260	2653560	2.70		108	6470	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.465	3.465	0.0	1.260	183716	5.01		209	344	
D 23 13C2 PFDA										
515.00 > 470.00	3.480	3.465	0.015	1.265	6670186	2.56		103	8031	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.480	3.465	0.015	1.004	1363	0.001185			9.9	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	12041	0.003821			10.9	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.480	3.480	0.0	1.000	36705	0.0121			2.0	RM
513.00 > 169.00	3.480	3.480	0.0	1.000	1620		22.66(7.12-21.35)		1.5	RM
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.627	0.0	1.319	3509153	3.30		132	5079	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.627	3.627	0.0	1.000	9464	0.006773			3.6	
D 30 13C2 PFUnA										
565.00 > 520.00	3.807	3.791	0.016	1.384	5984429	2.73		109	10561	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.791	0.0	1.379	2957473	3.43		137	3900	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.807	3.791	0.016	1.004	11120	0.0101			17.0	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDaA										
615.00 > 570.00	4.089	4.089	0.0	1.487	6693787	2.52		101	8437	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.609	4.591	0.018	1.676	3916385	2.05		82.1	7671	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_046.d

Injection Date: 11-Oct-2018 23:44:18

Instrument ID: A9

Lims ID: 480-142290-A-3-A

Lab Sample ID: 320-142290-3

Client ID: EC-0004-03

Operator ID: A9\Administrator

ALS Bottle#: 33

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

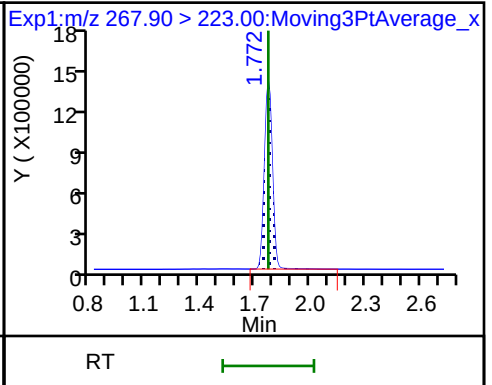
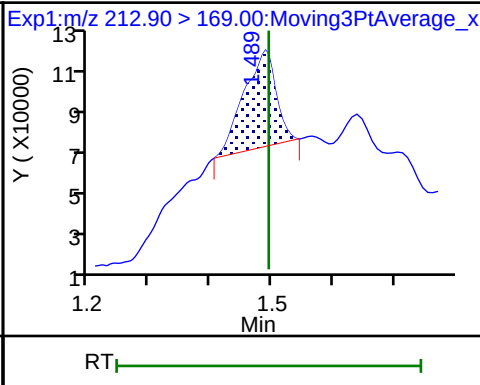
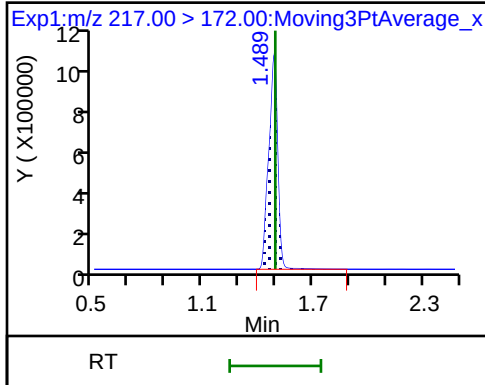
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

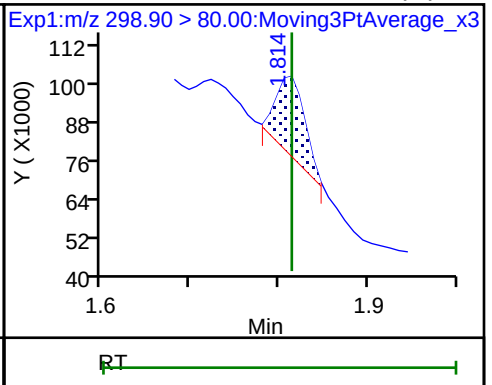
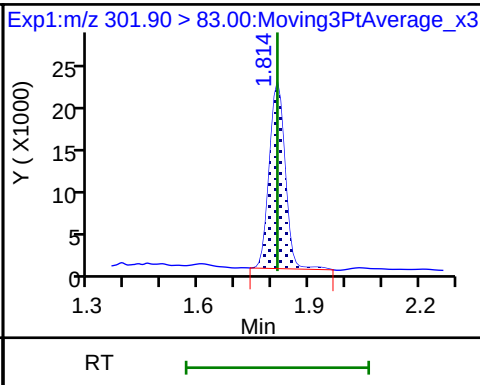
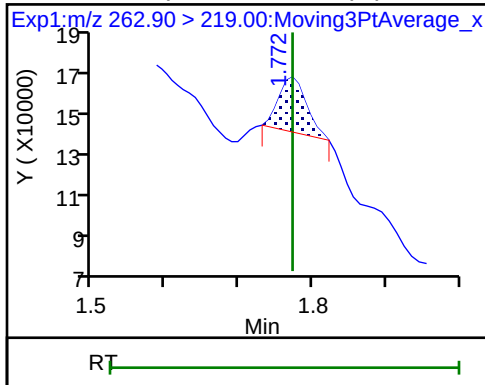
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3 PFBS

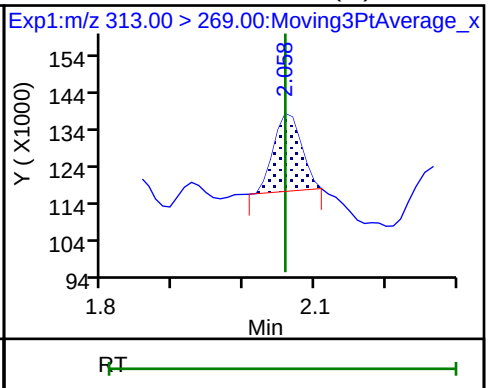
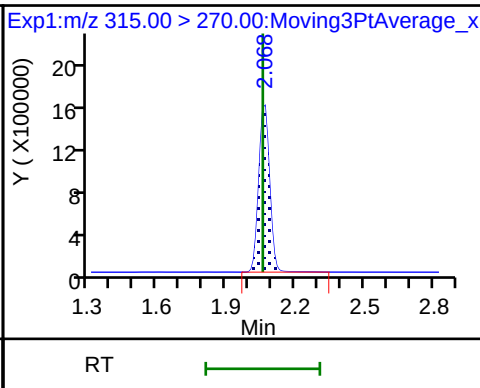
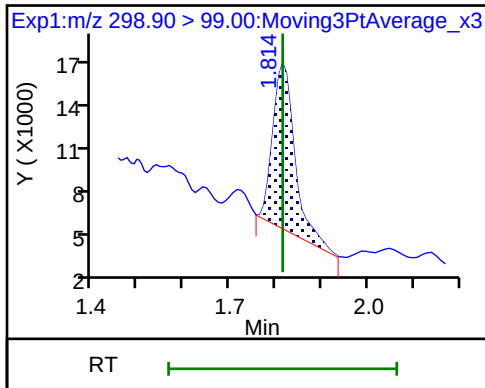
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid

D 7 13C2 PFHxA

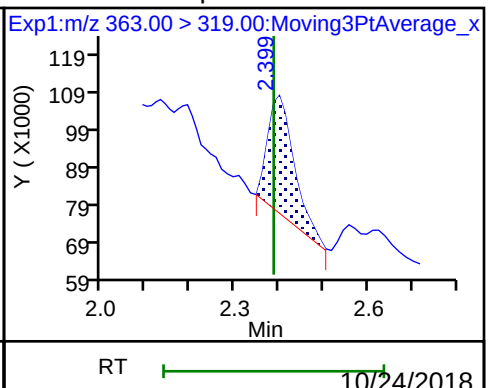
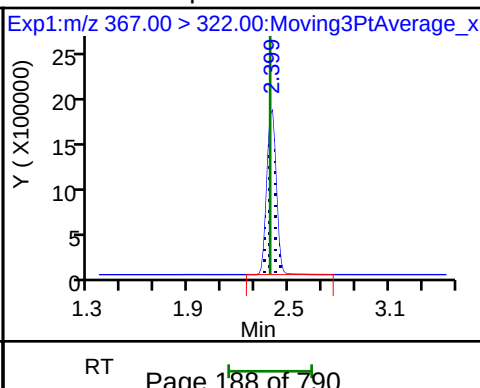
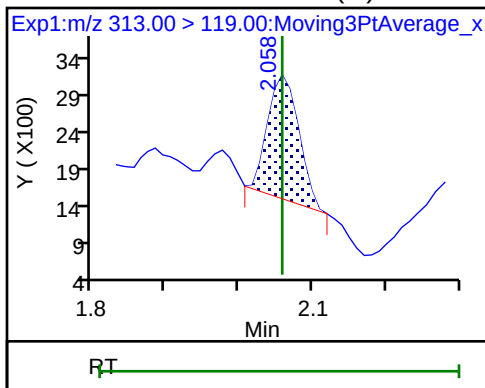
6 Perfluorohexanoic acid (M)

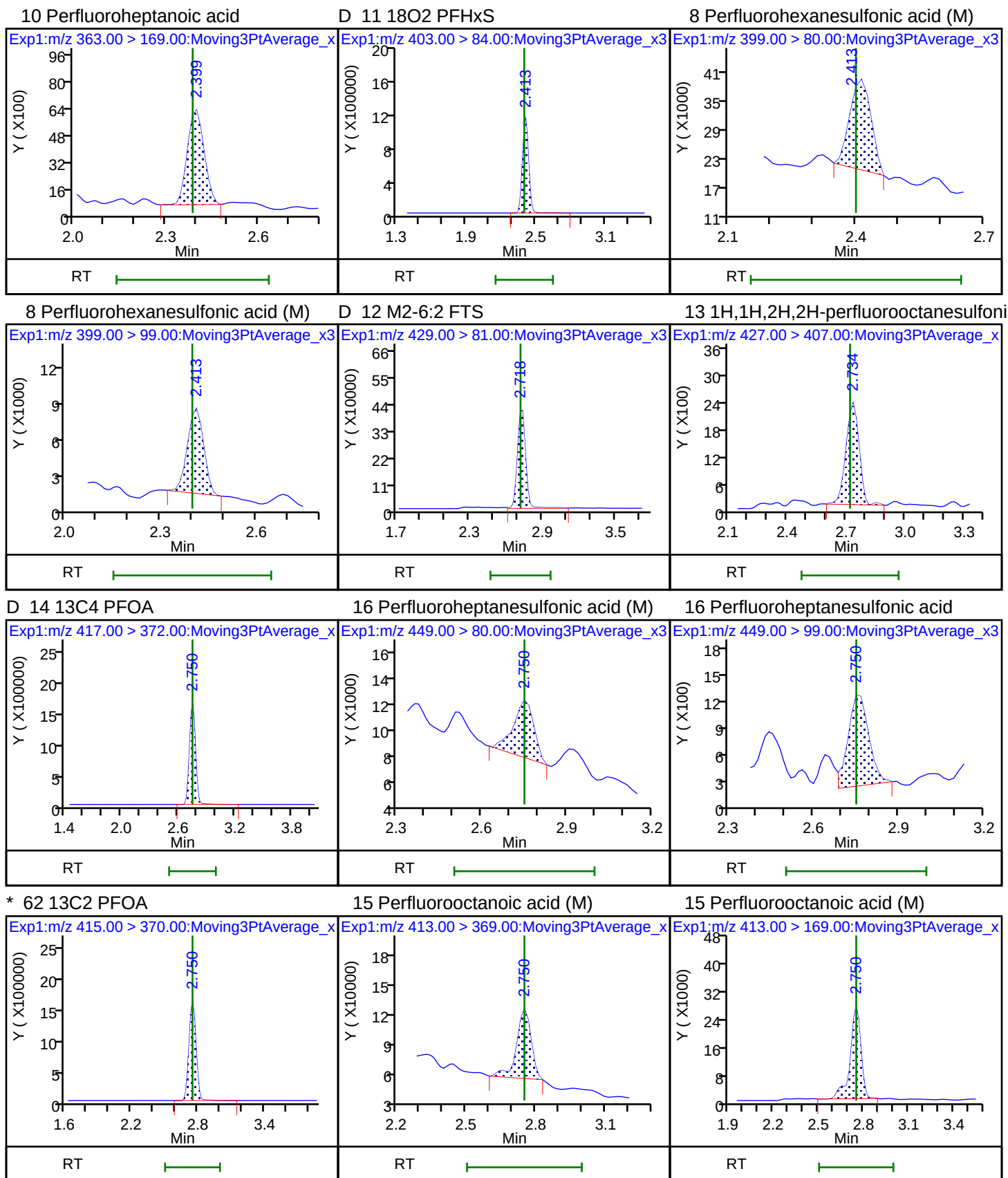


6 Perfluorohexanoic acid (M)

D 9 13C4 PFHpA

10 Perfluoroheptanoic acid

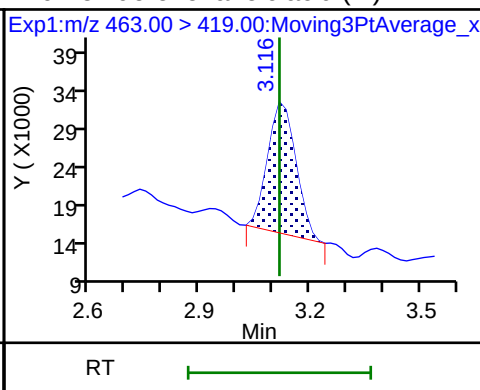
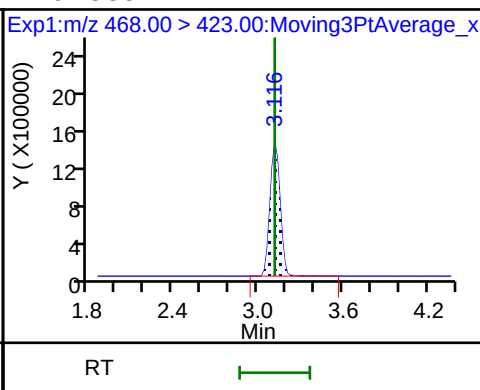
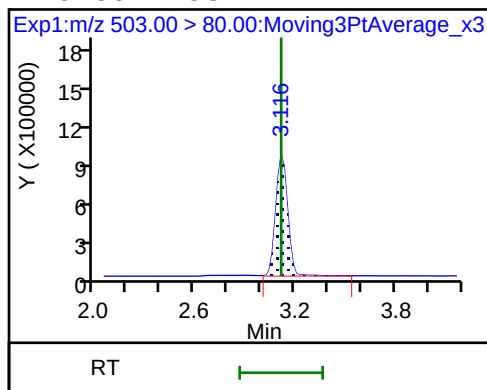




D 18 13C4 PFOS

D 19 13C5 PFNA

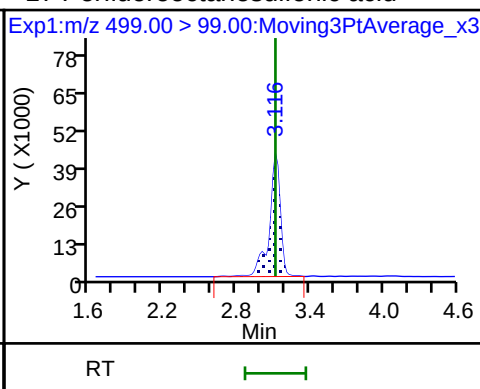
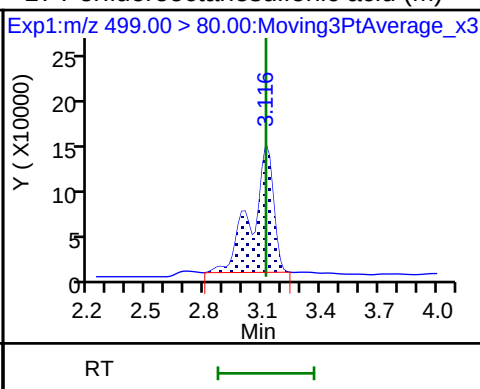
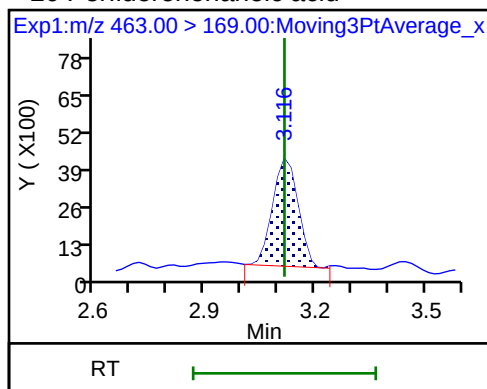
20 Perfluorononanoic acid (M)



20 Perfluorononanoic acid

17 Perfluorooctanesulfonic acid (M)

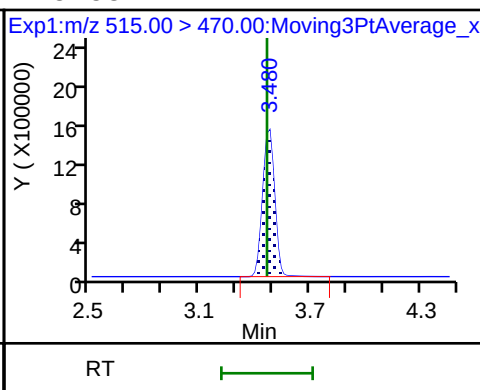
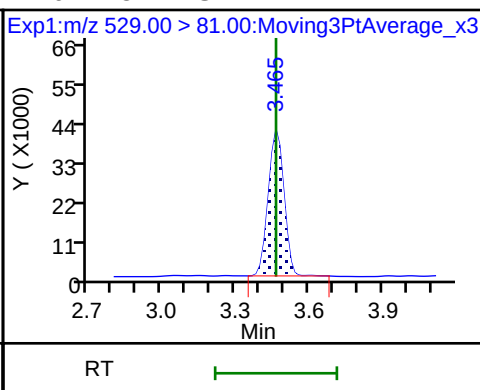
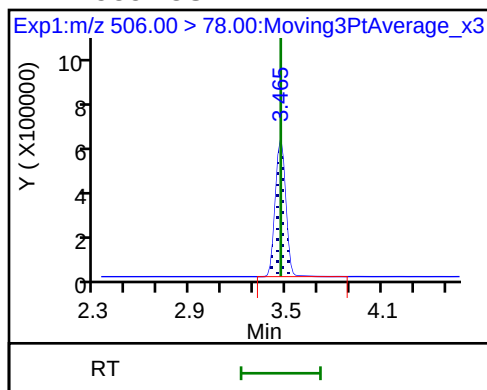
17 Perfluorooctanesulfonic acid



D 21 13C8 FOSA

D 26 M2-8:2 FTS

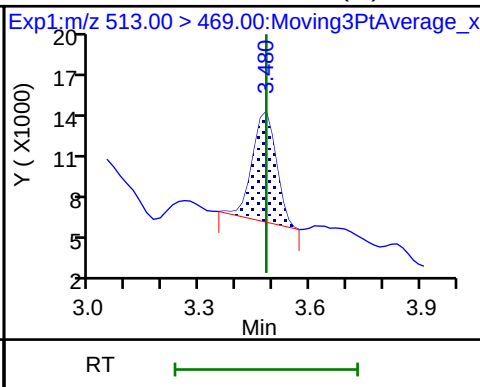
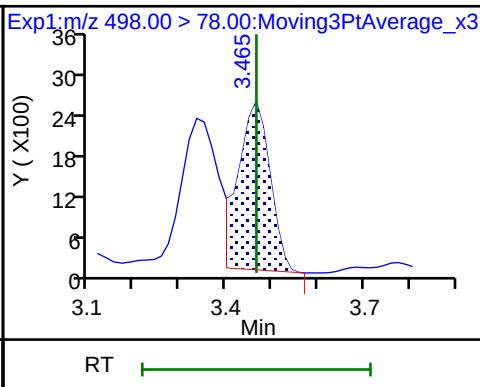
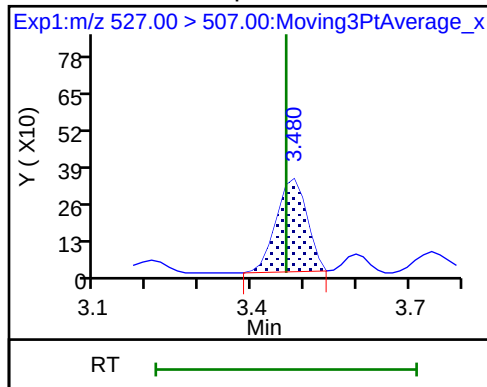
D 23 13C2 PFDA

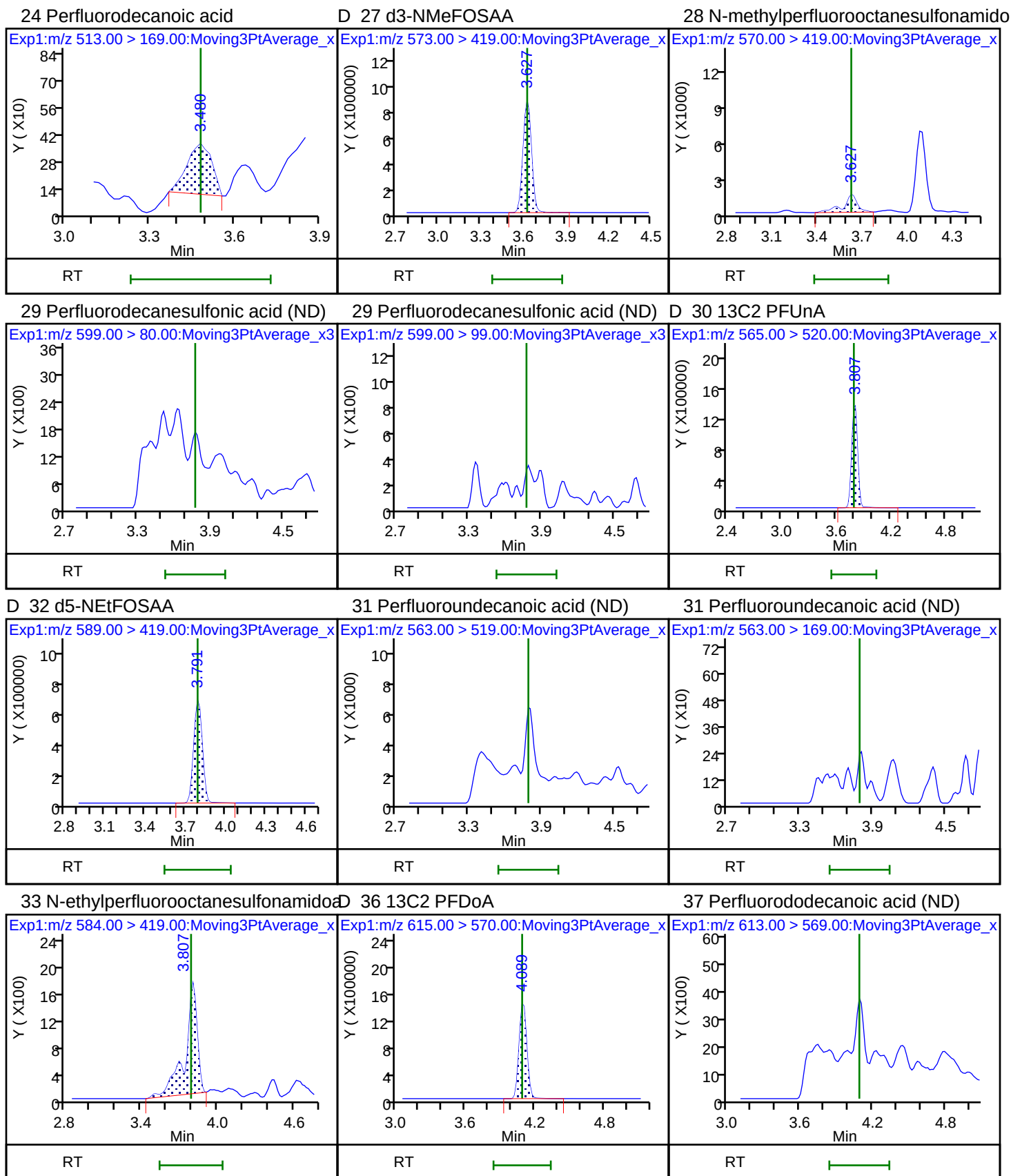


25 1H,1H,2H,2H-perfluorodecanesulfoni

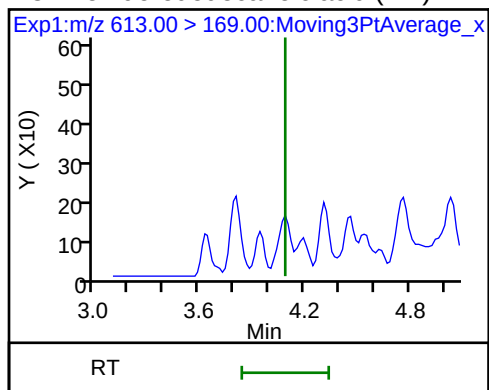
22 Perfluorooctanesulfonamide

24 Perfluorodecanoic acid (M)

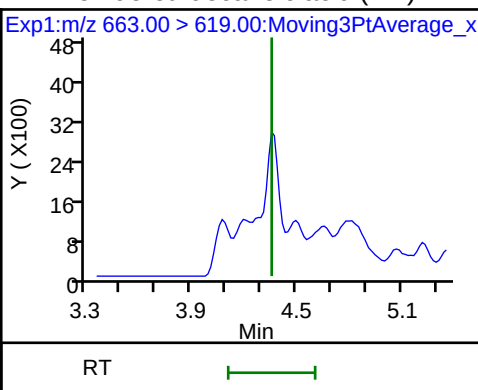




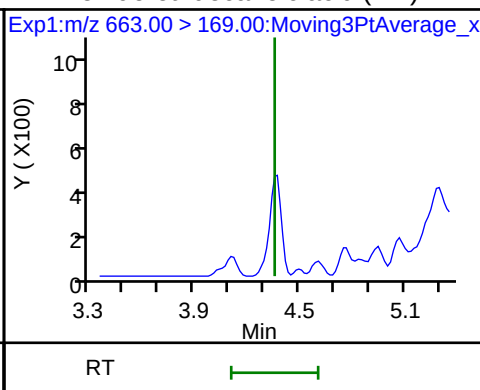
37 Perfluorododecanoic acid (ND)



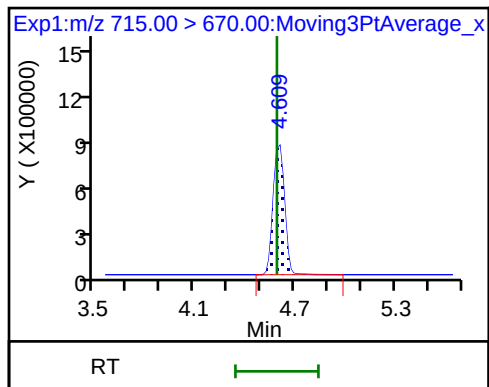
41 Perfluorotridecanoic acid (ND)



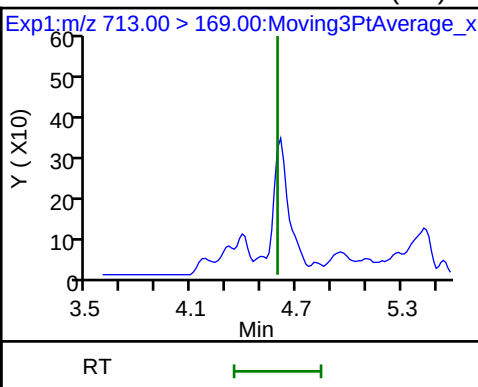
41 Perfluorotridecanoic acid (ND)



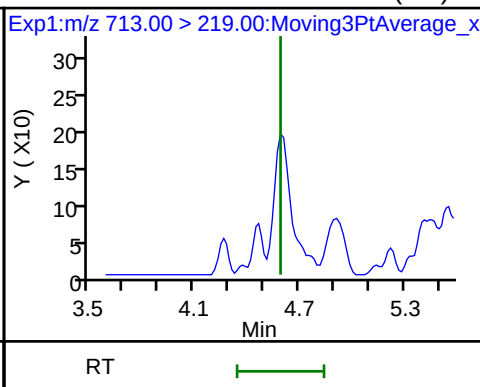
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



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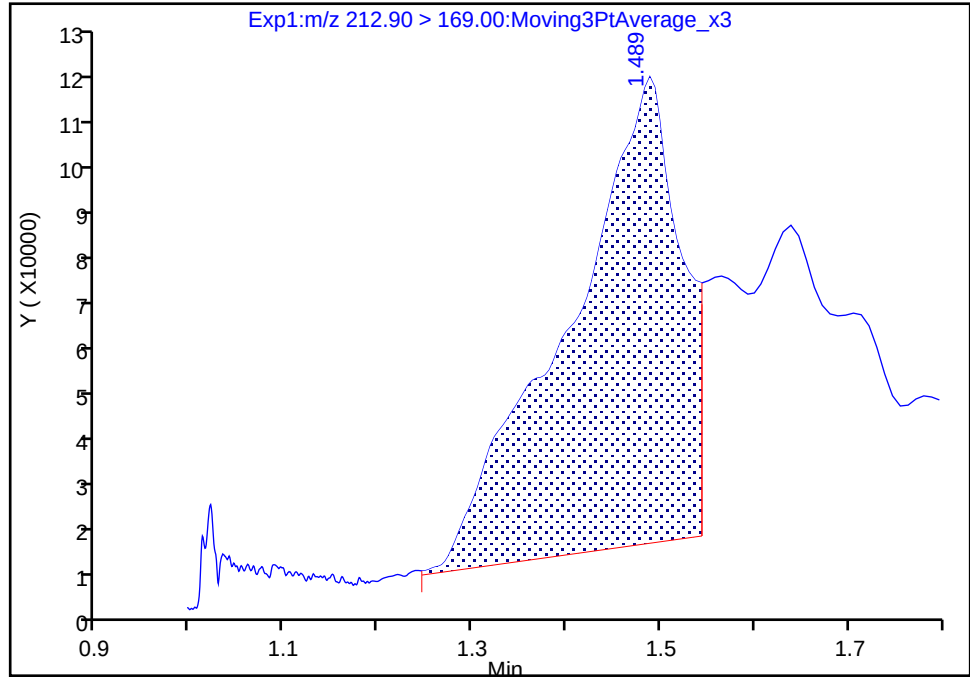
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Injection Date:	11-Oct-2018 23:44:18	Instrument ID:	A9		
Lims ID:	480-142290-A-3-A	Lab Sample ID:	320-142290-3		
Client ID:	EC-0004-03				
Operator ID:	A9\Administrator	ALS Bottle#:	33	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

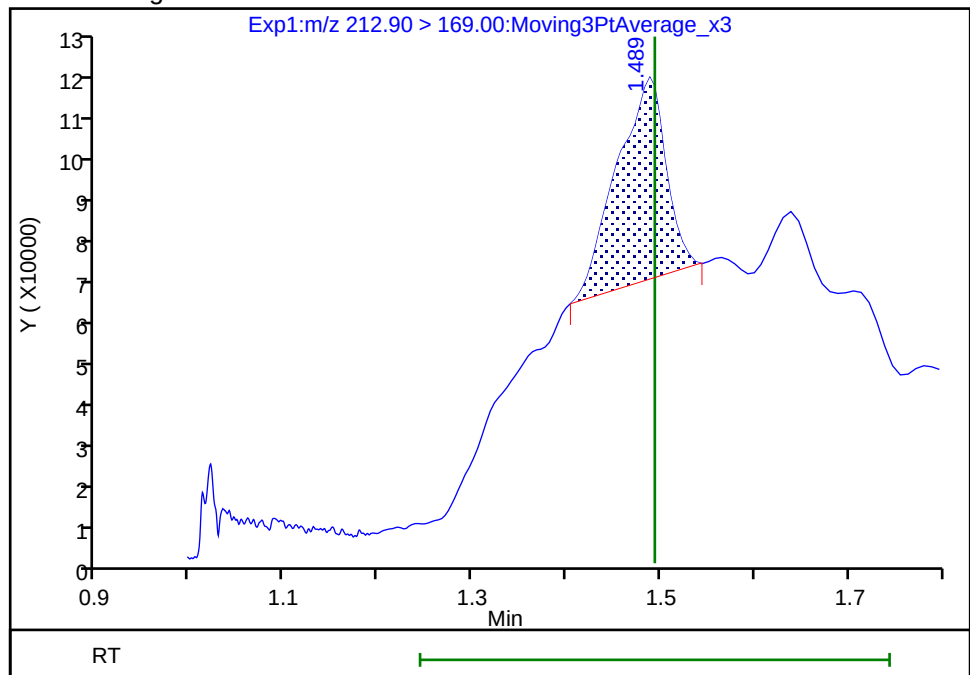
RT: 1.49
Area: 774510
Amount: 0.641826
Amount Units: ng/ml

Processing Integration Results



RT: 1.49
Area: 161494
Amount: 0.133828
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:38:43

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

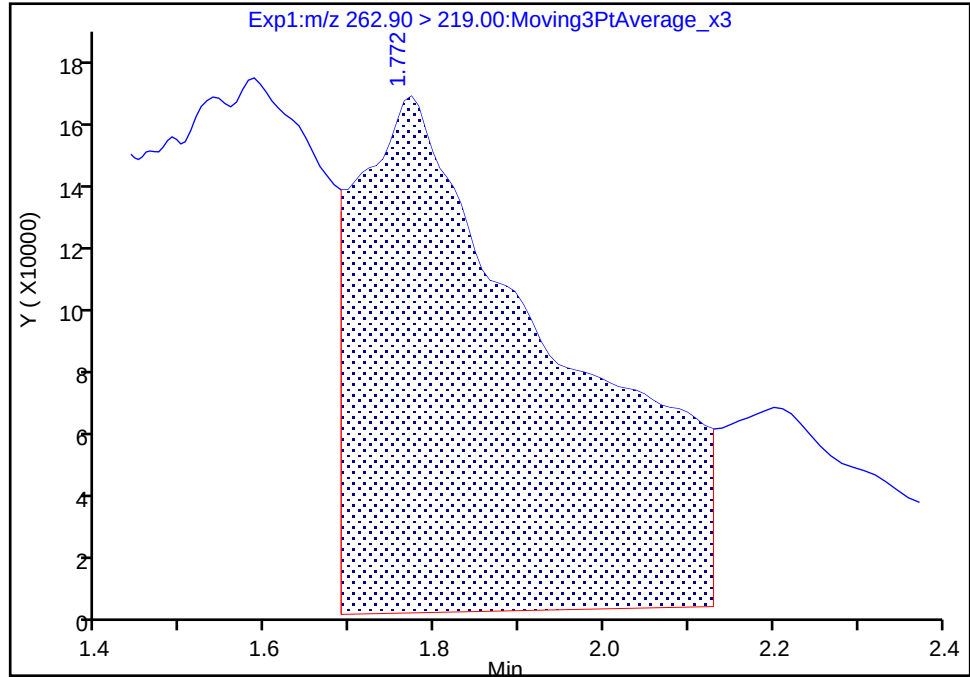
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Injection Date: 11-Oct-2018 23:44:18 Instrument ID: A9
Lims ID: 480-142290-A-3-A Lab Sample ID: 320-142290-3
Client ID: EC-0004-03
Operator ID: A9\Administrator ALS Bottle#: 33 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

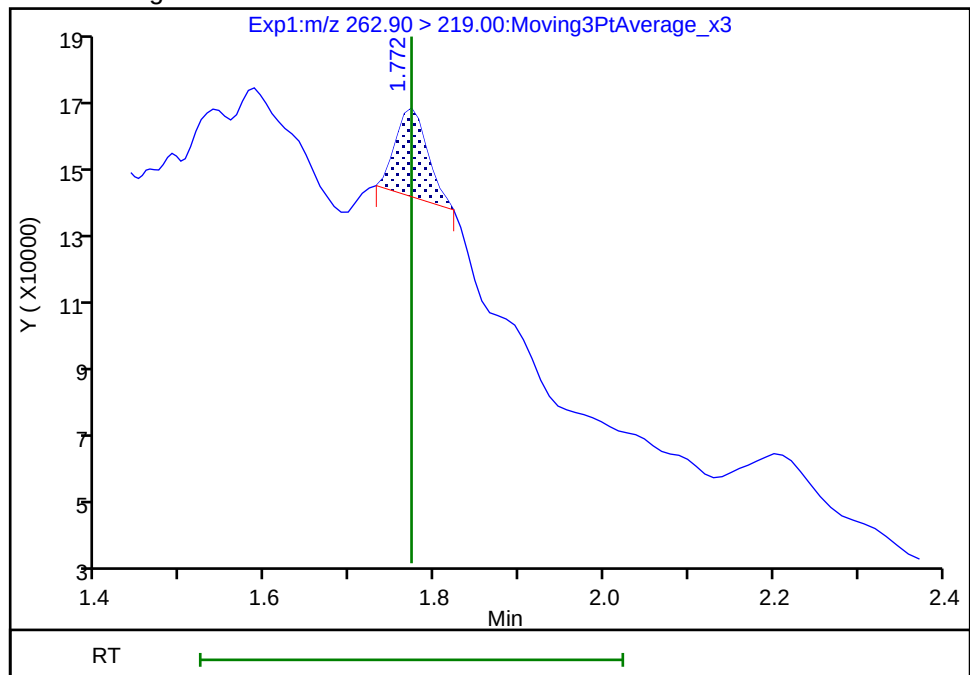
RT: 1.77
Area: 2667869
Amount: 1.631548
Amount Units: ng/ml

Processing Integration Results



RT: 1.77
Area: 65511
Amount: 0.040064
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:38:52

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

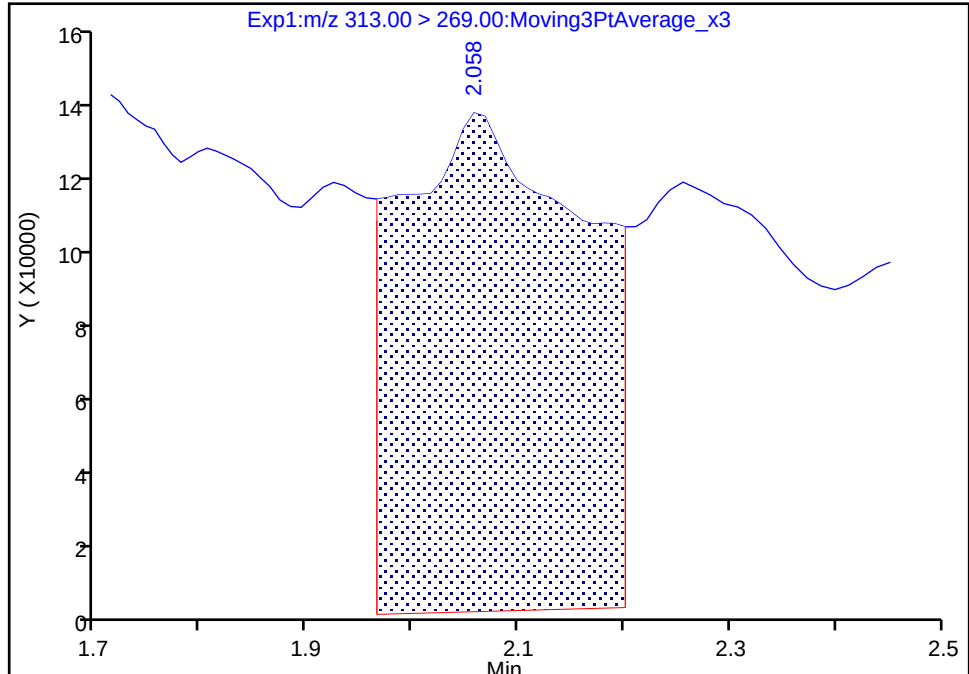
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Injection Date: 11-Oct-2018 23:44:18 Instrument ID: A9
Lims ID: 480-142290-A-3-A Lab Sample ID: 320-142290-3
Client ID: EC-0004-03
Operator ID: A9\Administrator ALS Bottle#: 33 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

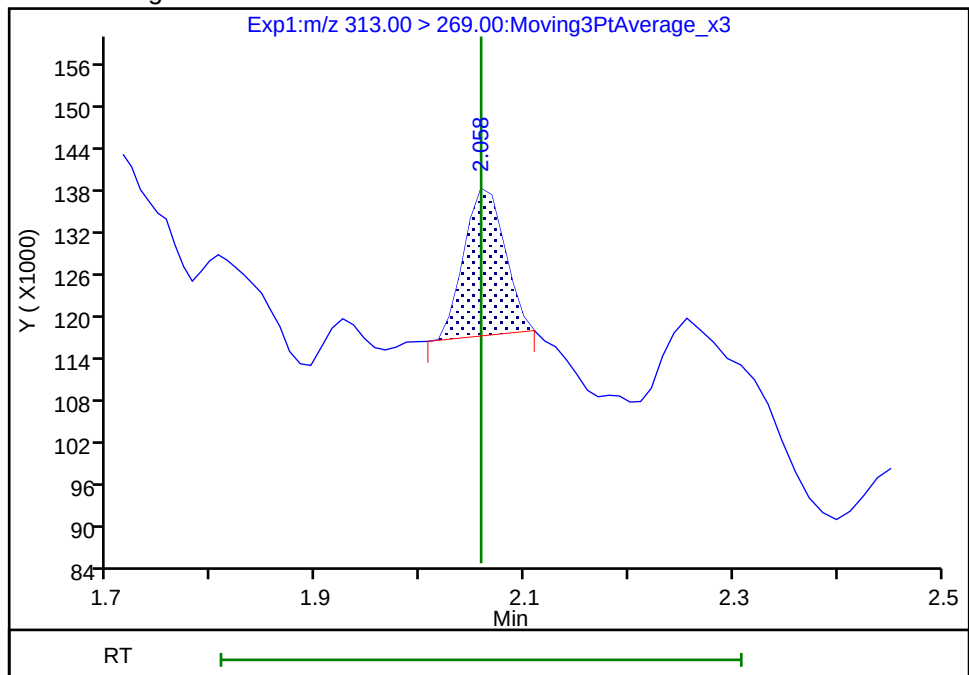
RT: 2.06
Area: 1604319
Amount: 0.864808
Amount Units: ng/ml

Processing Integration Results



RT: 2.06
Area: 56937
Amount: 0.030692
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:39:33

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

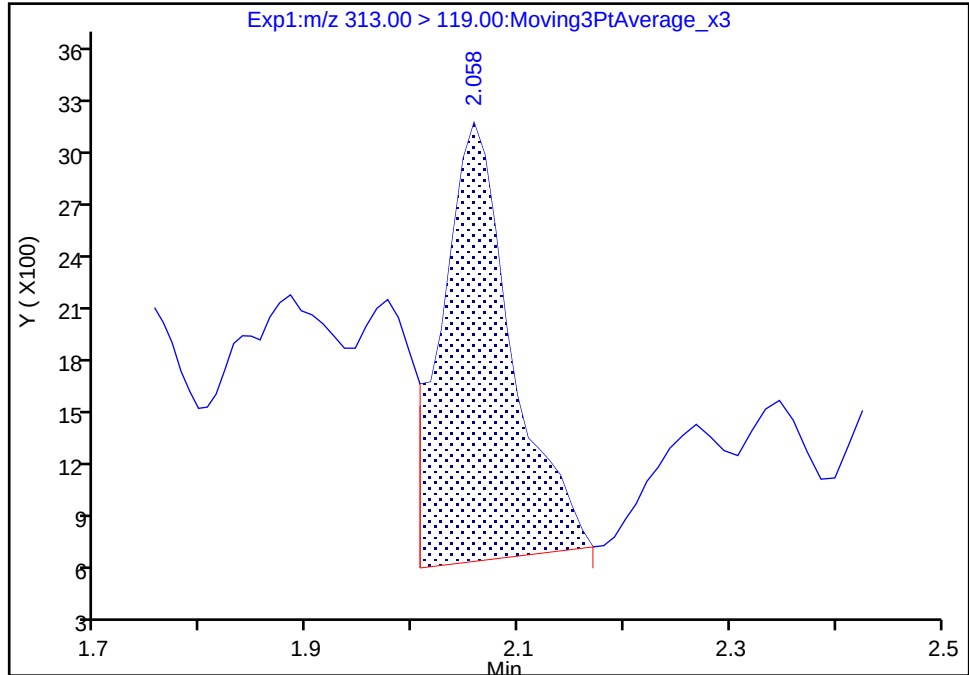
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Injection Date: 11-Oct-2018 23:44:18 Instrument ID: A9
Lims ID: 480-142290-A-3-A Lab Sample ID: 320-142290-3
Client ID: EC-0004-03
Operator ID: A9\Administrator ALS Bottle#: 33 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

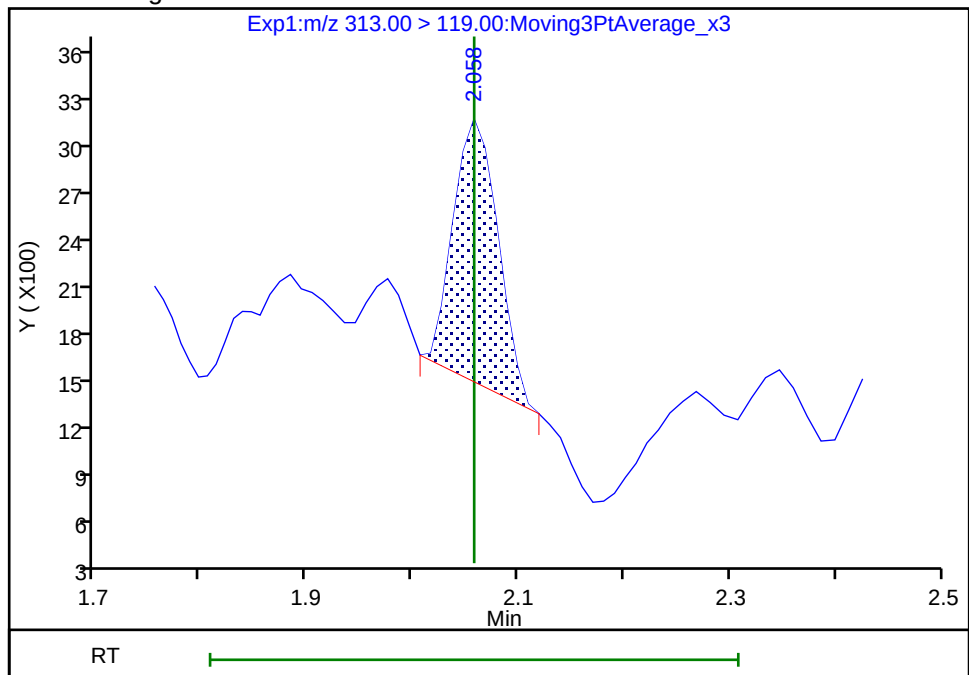
RT: 2.06
Area: 11089
Amount: 0.864808
Amount Units: ng/ml

Processing Integration Results



RT: 2.06
Area: 4727
Amount: 0.030692
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:39:39

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

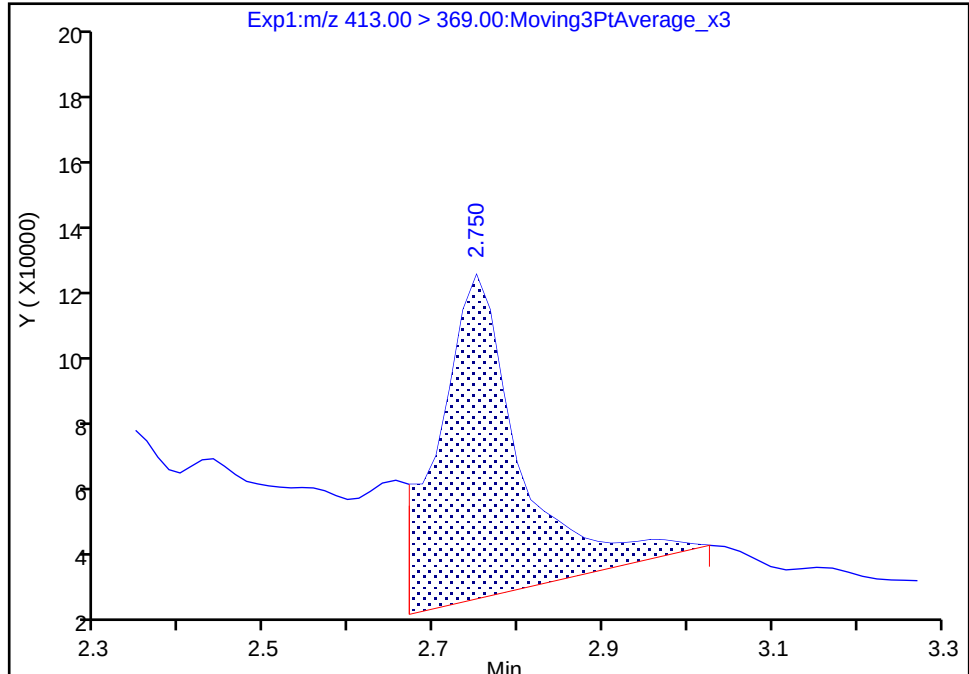
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Injection Date: 11-Oct-2018 23:44:18 Instrument ID: A9
Lims ID: 480-142290-A-3-A Lab Sample ID: 320-142290-3
Client ID: EC-0004-03
Operator ID: A9\Administrator ALS Bottle#: 33 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

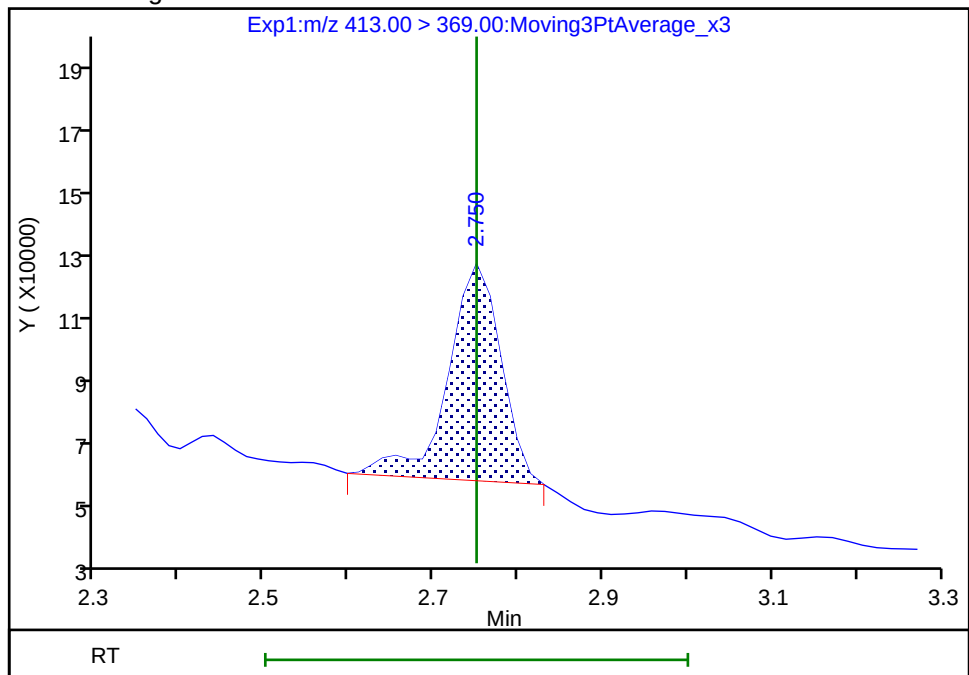
RT: 2.75
Area: 608234
Amount: 0.190429
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 286724
Amount: 0.089769
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:40:09

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

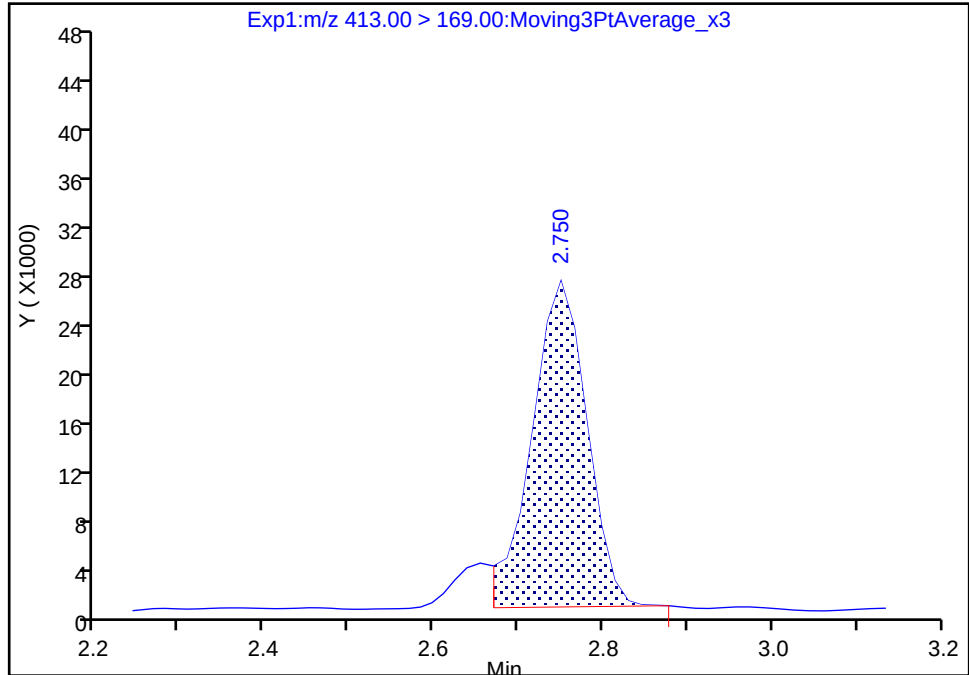
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Injection Date:	11-Oct-2018 23:44:18	Instrument ID:	A9		
Lims ID:	480-142290-A-3-A	Lab Sample ID:	320-142290-3		
Client ID:	EC-0004-03				
Operator ID:	A9\Administrator	ALS Bottle#:	33	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

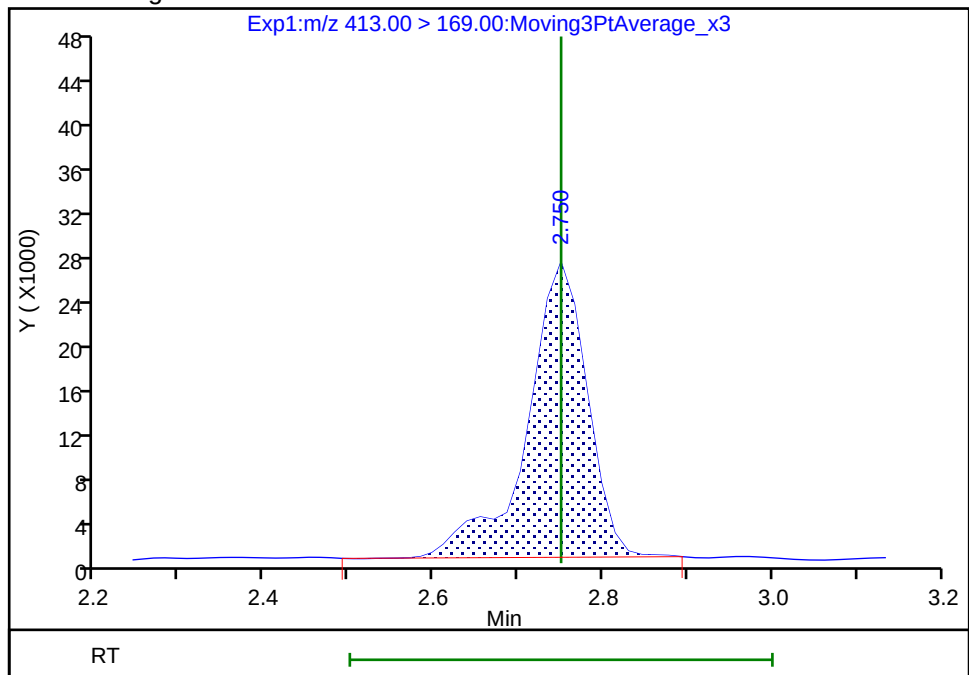
RT: 2.75
Area: 119386
Amount: 0.190429
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 131884
Amount: 0.089769
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:40:11

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

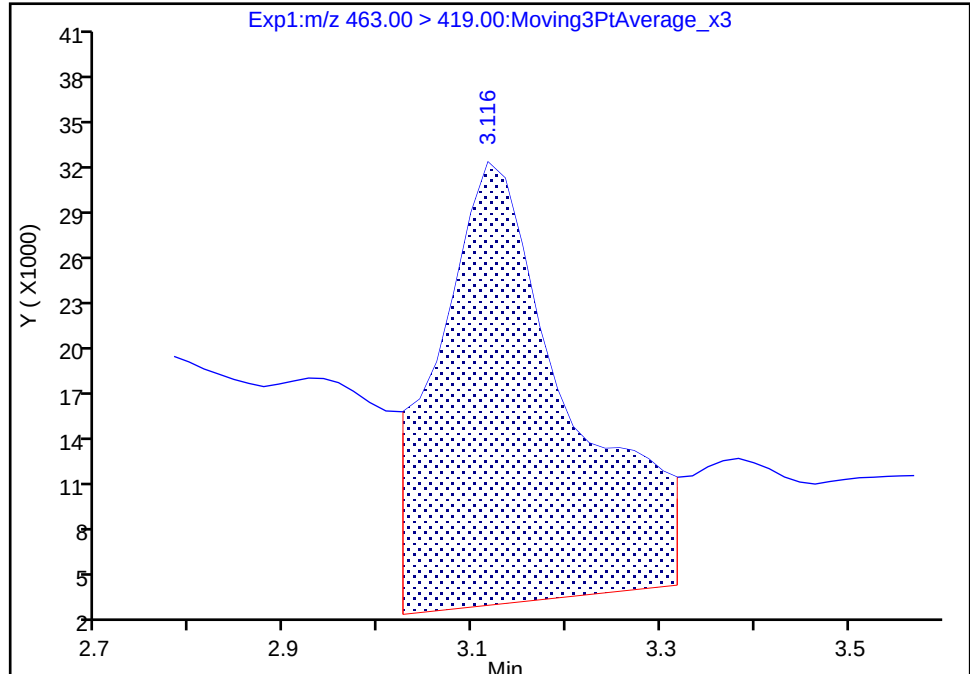
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_046.d				
Injection Date:	11-Oct-2018 23:44:18	Instrument ID:	A9		
Lims ID:	480-142290-A-3-A	Lab Sample ID:	320-142290-3		
Client ID:	EC-0004-03				
Operator ID:	A9\Administrator	ALS Bottle#:	33	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

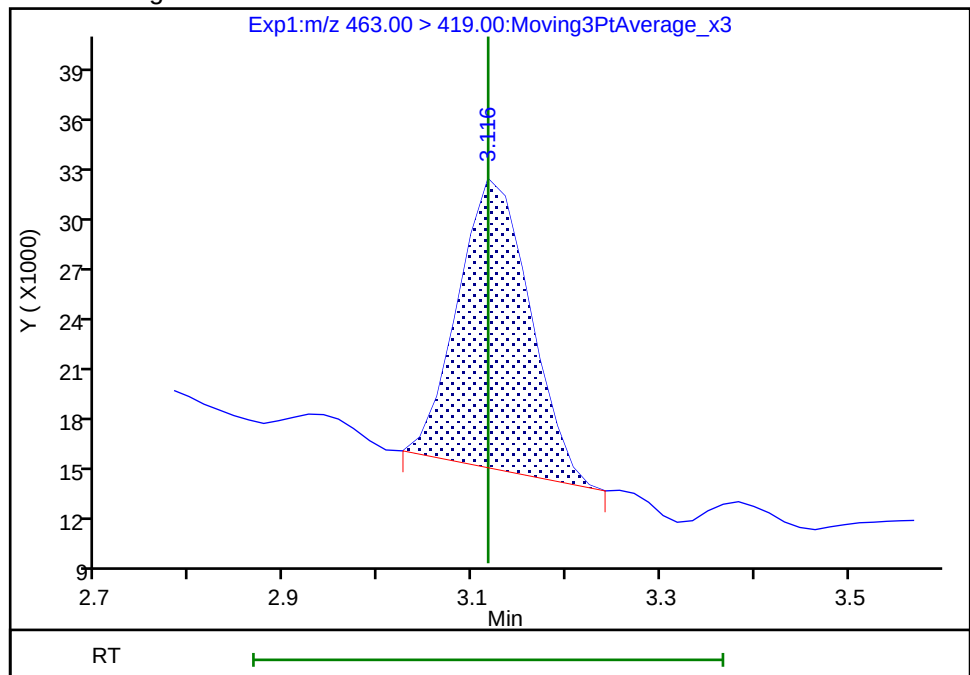
RT: 3.12
Area: 277485
Amount: 0.100003
Amount Units: ng/ml

Processing Integration Results



RT: 3.12
Area: 92250
Amount: 0.033246
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:40:24

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

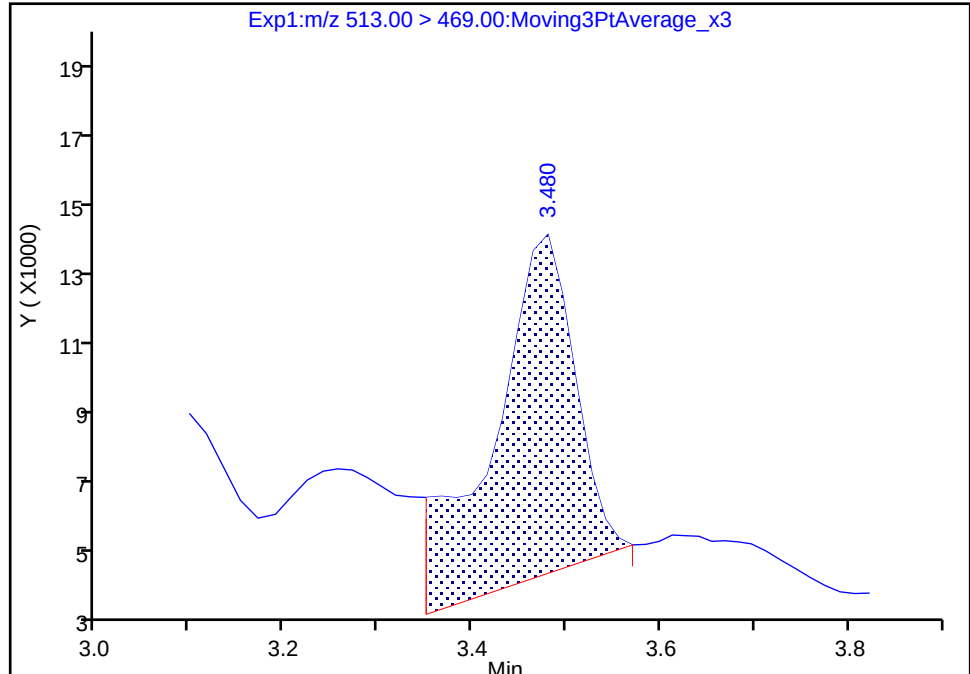
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_046.d				
Injection Date:	11-Oct-2018 23:44:18	Instrument ID:	A9		
Lims ID:	480-142290-A-3-A	Lab Sample ID:	320-142290-3		
Client ID:	EC-0004-03				
Operator ID:	A9\Administrator	ALS Bottle#:	33	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

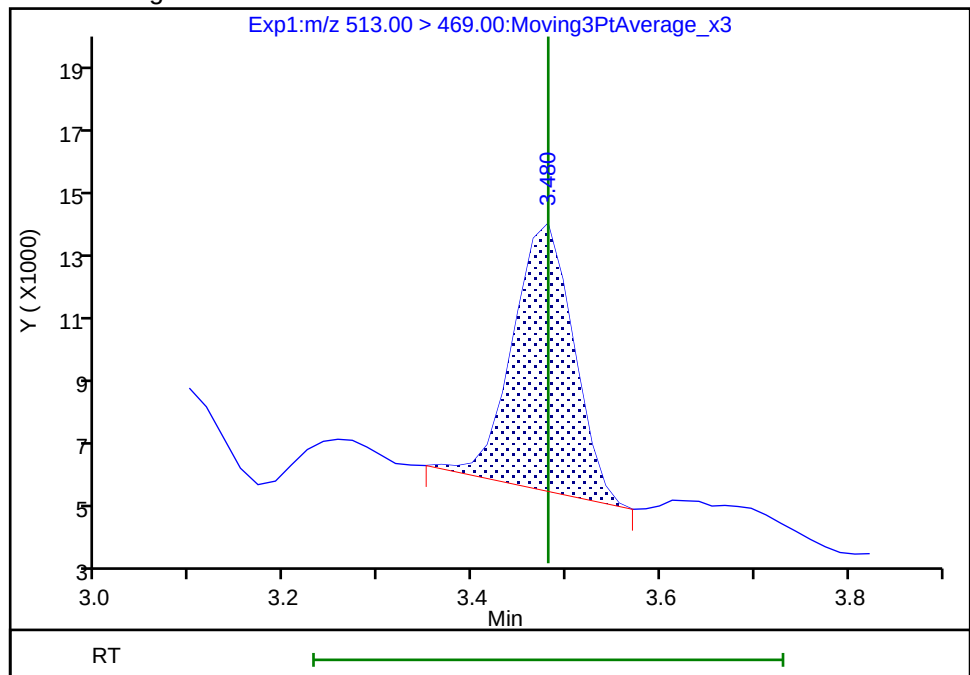
RT: 3.48
Area: 58439
Amount: 0.019285
Amount Units: ng/ml

Processing Integration Results



RT: 3.48
Area: 36705
Amount: 0.012113
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:40:30
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

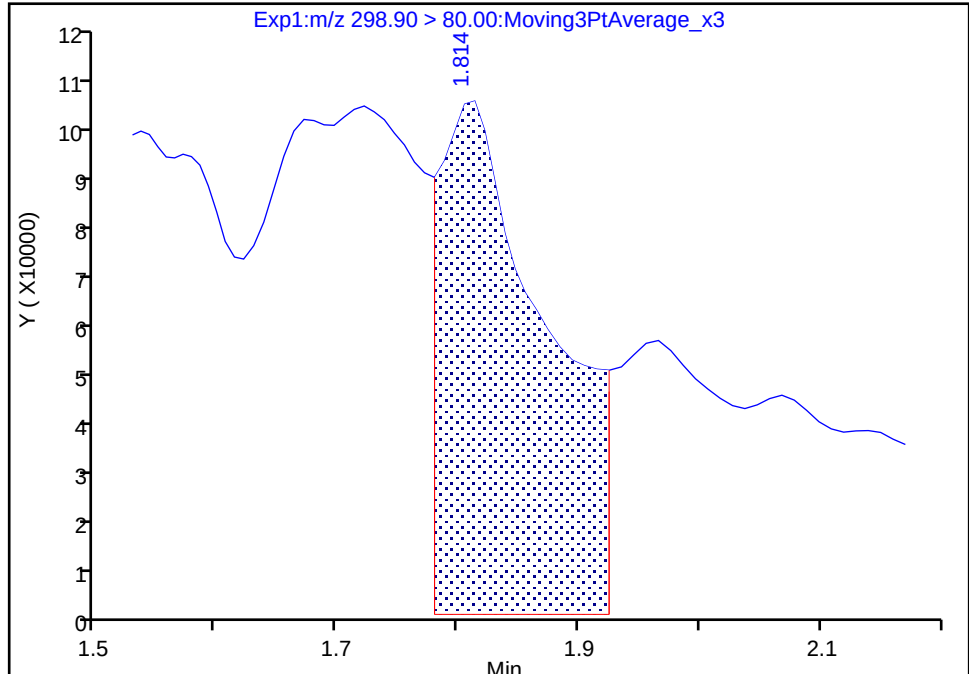
Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_046.d
Injection Date: 11-Oct-2018 23:44:18 Instrument ID: A9
Lims ID: 480-142290-A-3-A Lab Sample ID: 320-142290-3
Client ID: EC-0004-03
Operator ID: A9\Administrator ALS Bottle#: 33 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

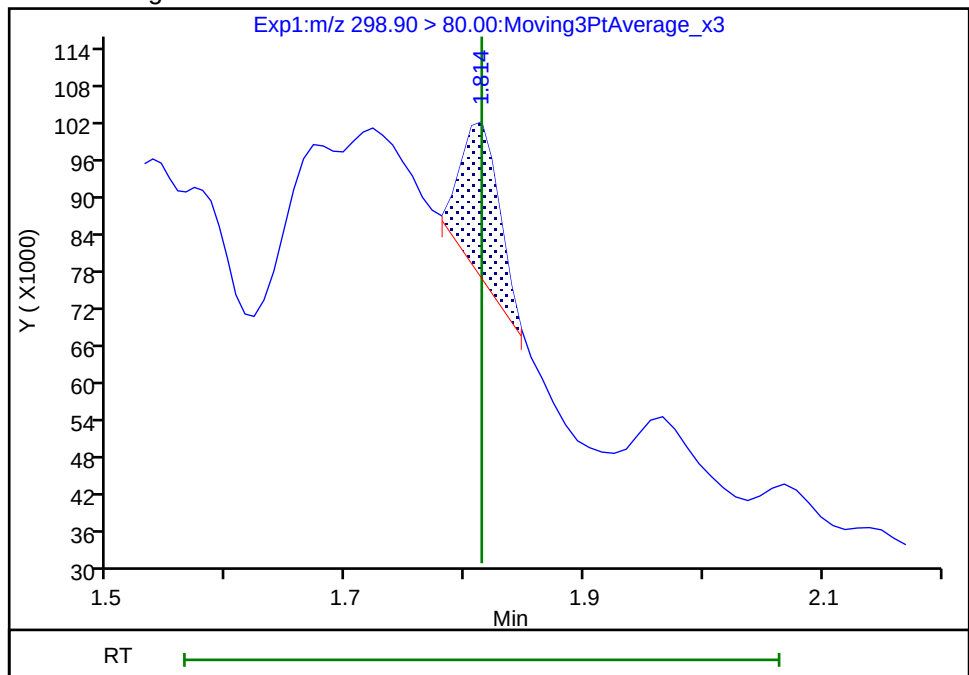
RT: 1.81
Area: 616634
Amount: 0.203157
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 55214
Amount: 0.018191
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:39:20

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

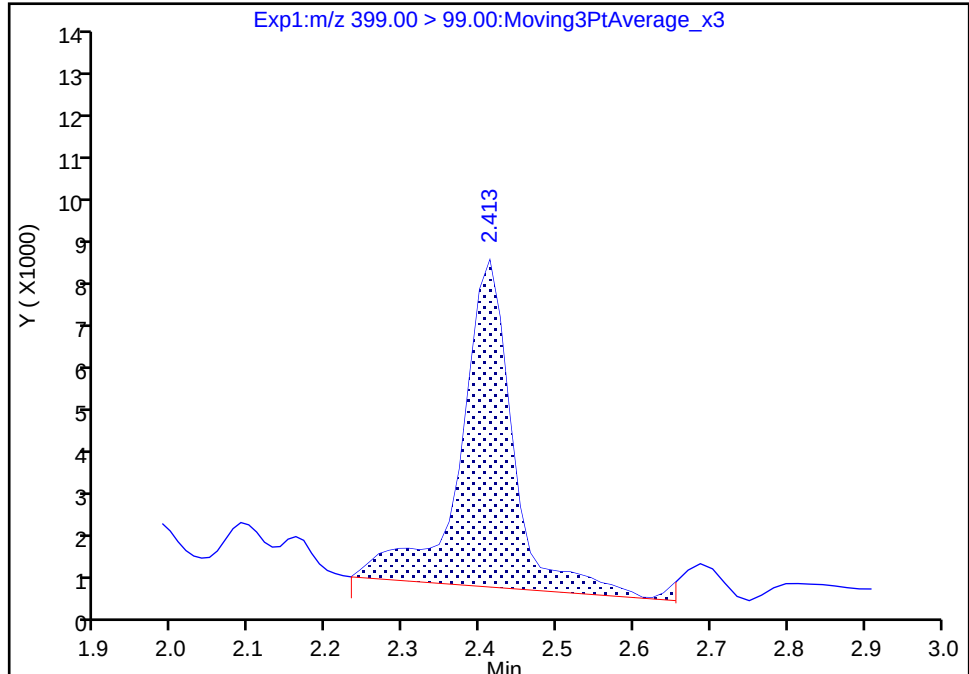
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Injection Date: 11-Oct-2018 23:44:18 Instrument ID: A9
Lims ID: 480-142290-A-3-A Lab Sample ID: 320-142290-3
Client ID: EC-0004-03
Operator ID: A9\Administrator ALS Bottle#: 33 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

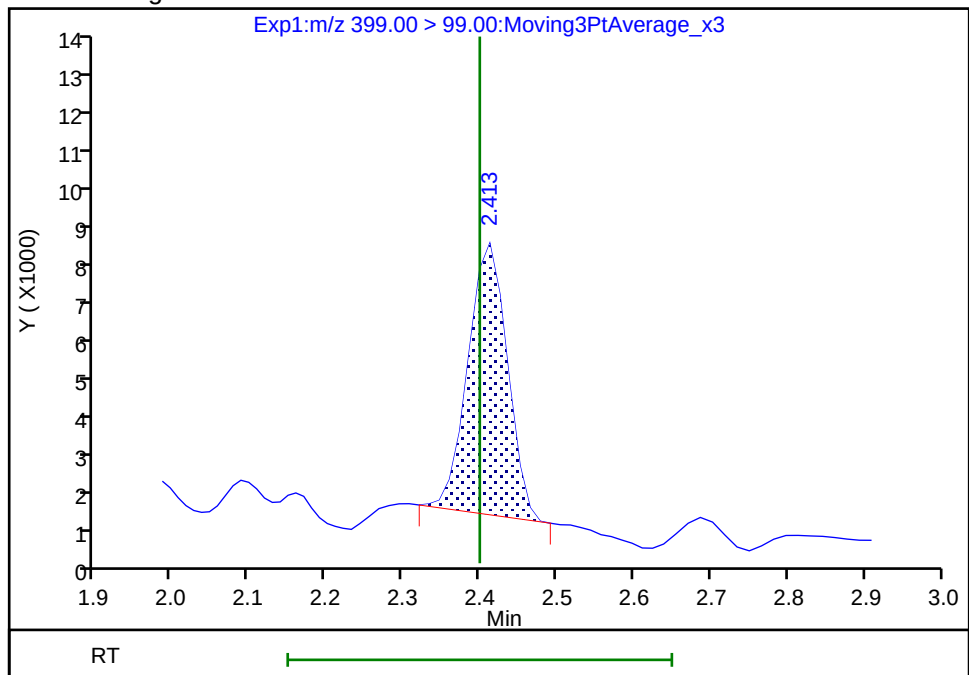
RT: 2.41
Area: 34232
Amount: 0.117483
Amount Units: ng/ml

Processing Integration Results



RT: 2.41
Area: 23120
Amount: 0.028943
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:39:46
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

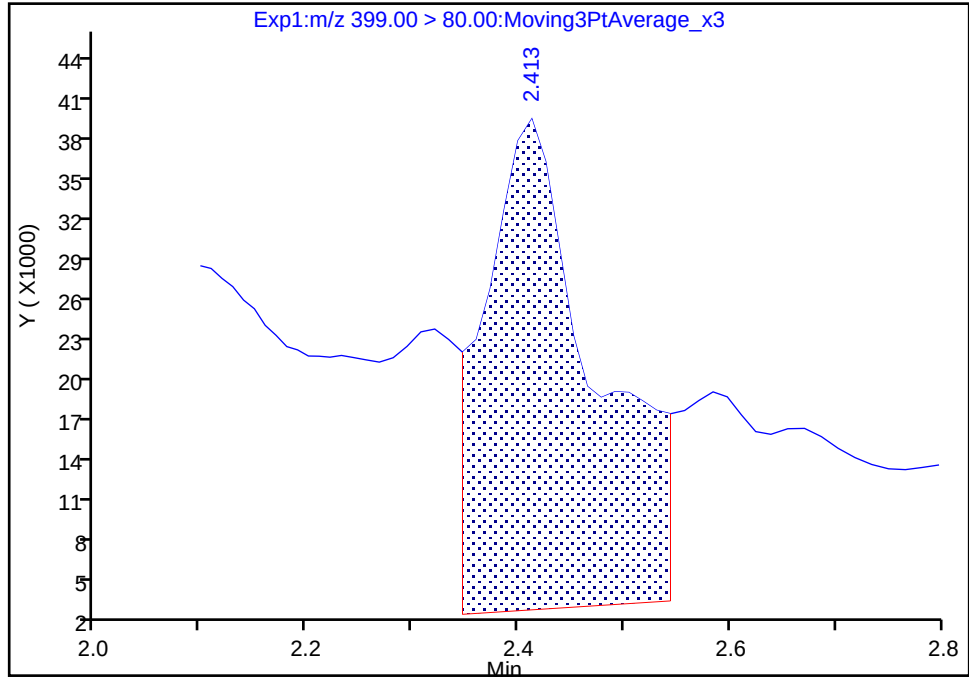
Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_046.d
Injection Date: 11-Oct-2018 23:44:18 Instrument ID: A9
Lims ID: 480-142290-A-3-A Lab Sample ID: 320-142290-3
Client ID: EC-0004-03
Operator ID: A9\Administrator ALS Bottle#: 33 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

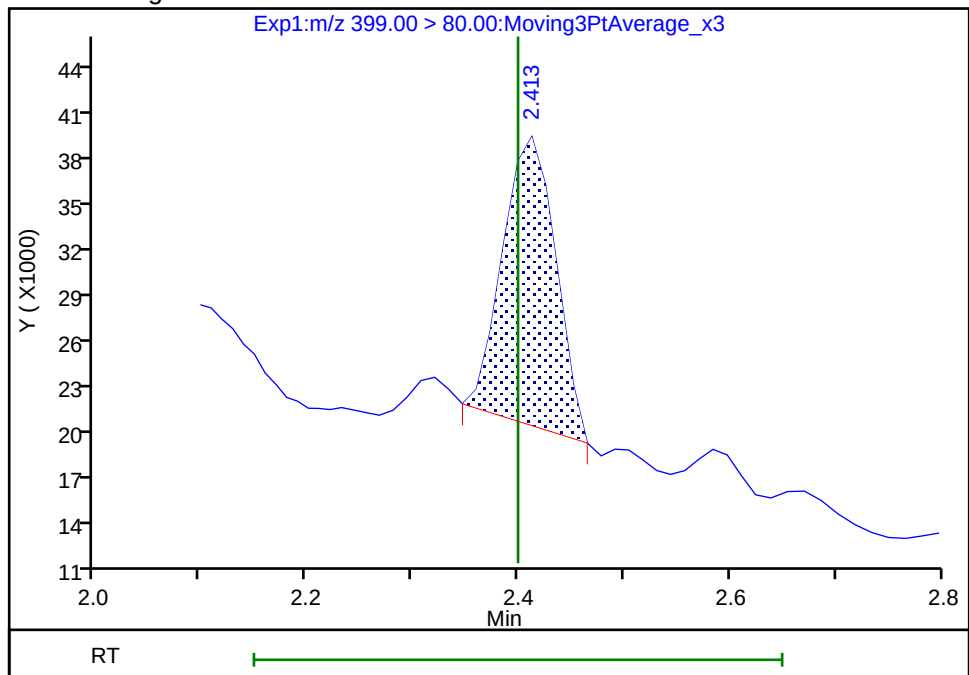
RT: 2.41
Area: 262763
Amount: 0.117483
Amount Units: ng/ml

Processing Integration Results



RT: 2.41
Area: 64734
Amount: 0.028943
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:39:49

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_046.d

Injection Date: 11-Oct-2018 23:44:18

Instrument ID: A9

Lims ID: 480-142290-A-3-A

Lab Sample ID: 320-142290-3

Client ID: EC-0004-03

Operator ID: A9\Administrator

ALS Bottle#: 33 Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

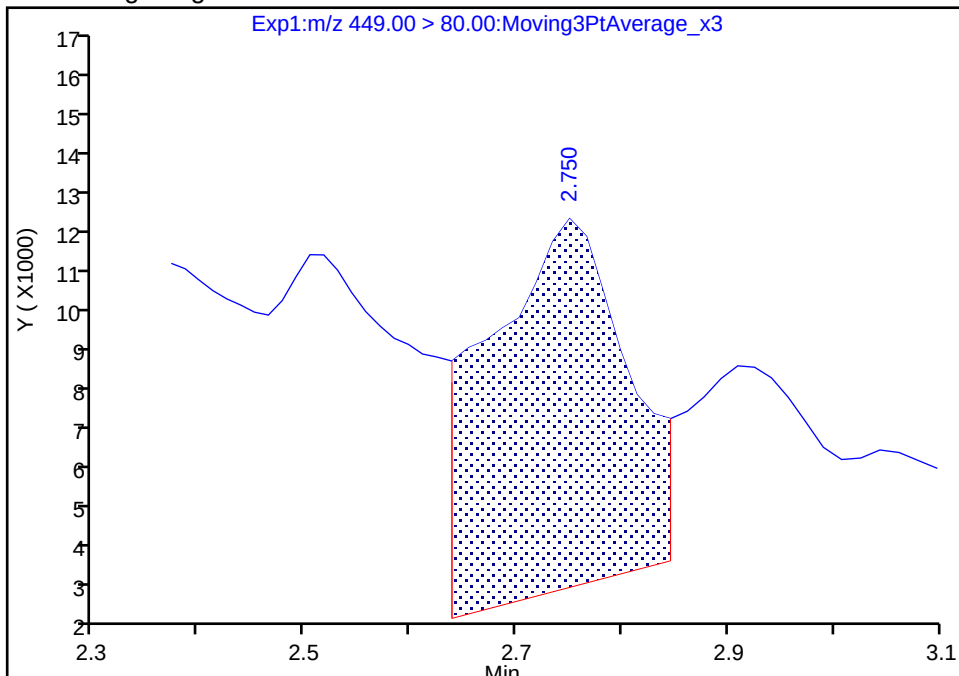
Detector EXP1

16 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

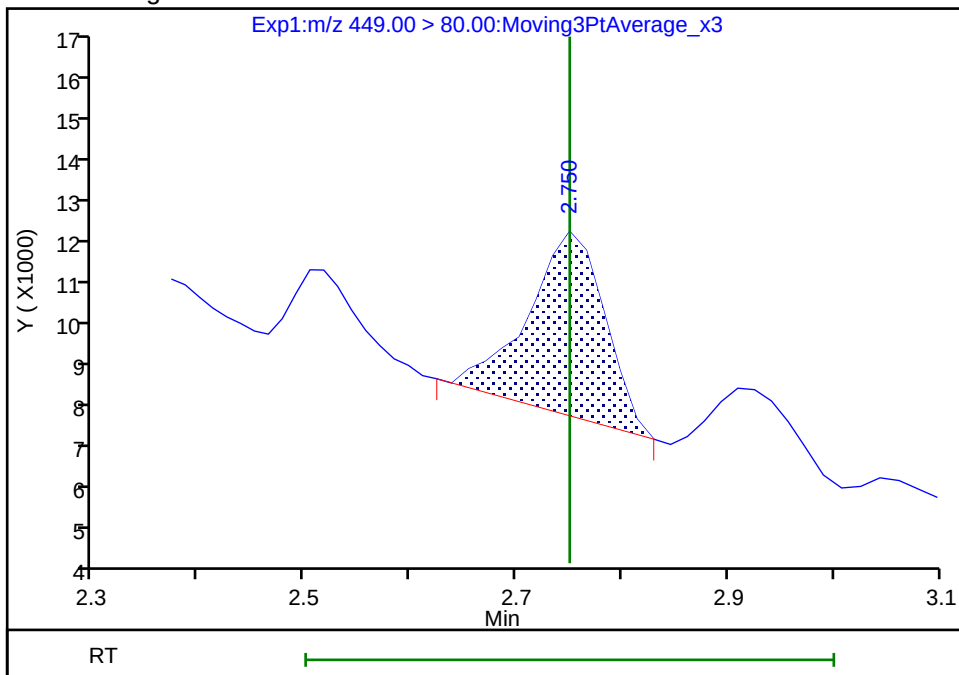
RT: 2.75
Area: 81044
Amount: 0.038181
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 21054
Amount: 0.009919
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:39:59

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

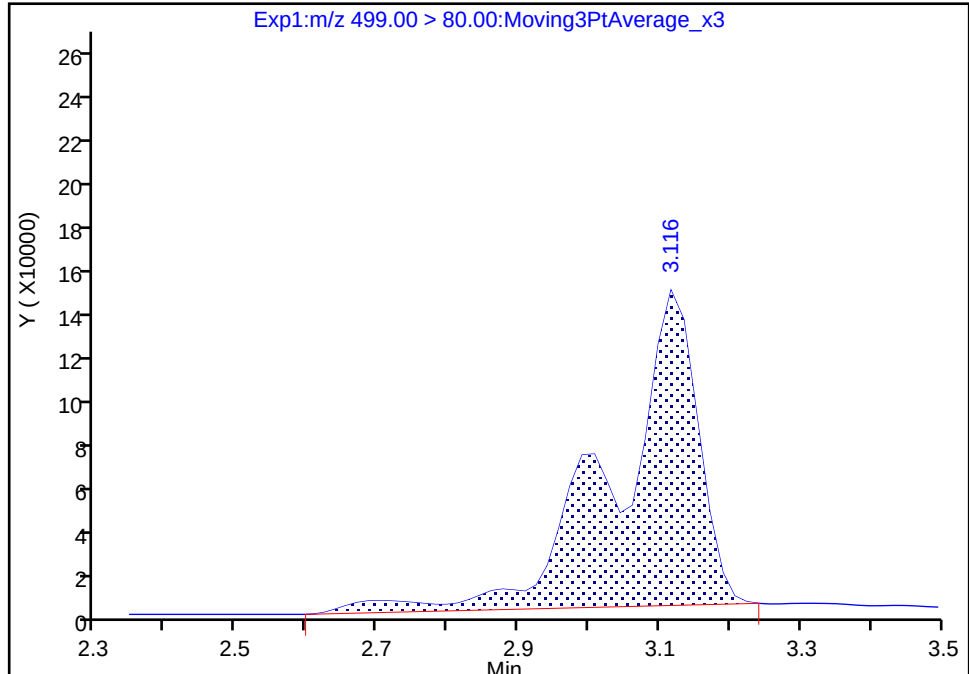
Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_046.d
Injection Date: 11-Oct-2018 23:44:18 Instrument ID: A9
Lims ID: 480-142290-A-3-A Lab Sample ID: 320-142290-3
Client ID: EC-0004-03
Operator ID: A9\Administrator ALS Bottle#: 33 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

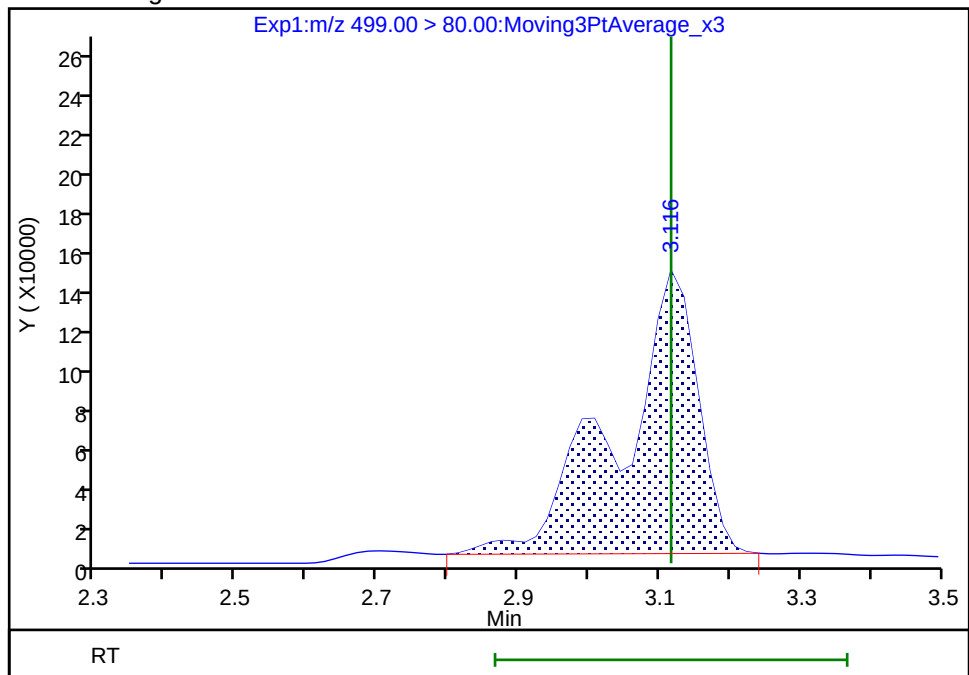
RT: 3.12
Area: 1195840
Amount: 0.555517
Amount Units: ng/ml

Processing Integration Results



RT: 3.12
Area: 1114783
Amount: 0.517863
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 16-Oct-2018 08:40:18

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-04</u>	Lab Sample ID: <u>480-142290-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_013.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>288.5 (mL)</u>	Date Analyzed: <u>10/10/2018 09:37</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.7	U	1.7	0.30
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.4		1.7	0.42
307-24-4	Perfluorohexanoic acid (PFHxA)	0.70	J	1.7	0.50
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.1	J	1.7	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	3.3		1.7	0.74
375-95-1	Perfluorononanoic acid (PFNA)	1.7	U	1.7	0.23
335-76-2	Perfluorodecanoic acid (PFDA)	1.7	U	1.7	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	0.95
307-55-1	Perfluorododecanoic acid (PFDoA)	1.7	U	1.7	0.48
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.7	U	1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.7	U	1.7	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.54	J	1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.7	U	1.7	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.7	U	1.7	0.16
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.7	U	1.7	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.7	U	1.7	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.7	U	1.7	0.30
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17	U	17	2.7
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17	U	17	1.6
27619-97-2	6:2 FTS	17	U	17	1.7
39108-34-4	8:2 FTS	17	U	17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-04</u>	Lab Sample ID: <u>480-142290-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_013.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>288.5 (mL)</u>	Date Analyzed: <u>10/10/2018 09:37</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	5	*	25-150
STL01893	13C5 PFPeA	33		25-150
STL00993	13C2 PFHxA	72		25-150
STL01892	13C4 PFHpA	96		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	106		25-150
STL00996	13C2 PFDA	103		25-150
STL00997	13C2 PFUnA	104		25-150
STL00998	13C2 PFDoA	107		25-150
STL02116	13C2 PFTeDA	71		25-150
STL02337	13C3 PFBS	87		25-150
STL00994	18O2 PFHxS	103		25-150
STL00991	13C4 PFOS	99		25-150
STL01056	13C8 FOSA	108		25-150
STL02118	d3-NMeFOSAA	121		25-150
STL02117	d5-NEtFOSAA	132		25-150
STL02279	M2-6:2 FTS	261	*	25-150
STL02280	M2-8:2 FTS	191	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d
 Lims ID: 480-142290-A-4-A
 Client ID: EC-0004-04
 Sample Type: Client
 Inject. Date: 10-Oct-2018 09:37:21 ALS Bottle#: 7 Worklist Smp#: 10
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142290-a-4-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:07:59 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:32:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.483	1.484	-0.001	0.539	226424	0.1131	4.5	535	
D 3 13C5 PFPeA	267.90 > 223.00	1.772	1.764	0.008	0.644	1477380	0.8284	33.1	1093	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.764	1.772	-0.008	0.995	42121	0.0702		0.6		M
D 47 13C3 PFBS	301.90 > 83.00	1.813	1.806	0.007	0.659	49382	2.02	87.0	57.9	
5 Perfluorobutanesulfonic acid										RM
298.90 > 80.00	1.805	1.814	-0.009	0.995	35356	0.0156		0.7		RM
298.90 > 99.00	1.822	1.814	0.008	1.005	31699		1.12(1.35-4.05)	1.9		M
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.058	2.058	0.0	0.995	25036	0.0202		0.3		M
313.00 > 119.00	2.068	2.058	0.010	1.000	3086		8.11(6.96-20.87)	1.3		
D 7 13C2 PFHxA	315.00 > 270.00	2.068	2.058	0.010	0.752	3454060	1.79	71.8	3311	
D 9 13C4 PFHpA	367.00 > 322.00	2.399	2.373	0.026	0.872	5671960	2.41	96.2	8572	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.399	2.386	0.013	1.000	78354	0.0320		1.2		M
363.00 > 169.00	2.386	2.386	0.0	0.995	12920		6.06(2.17-6.52)	10.1		M
D 11 18O2 PFHxS	403.00 > 84.00	2.412	2.400	0.012	0.877	3555525	2.43	103	5246	
D 12 M2-6:2 FTS	429.00 > 81.00	2.718	2.703	0.015	0.988	1610405	6.21	261	238	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.718	0.016	1.006	4254	0.002920		6.3		
* 62 13C2 PFOA	415.00 > 370.00	2.750	2.734	0.016	5479976	2.50		6460		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.750	2.734	0.016	1.000	220745	0.0945			1.9	M
413.00 > 169.00	2.750	2.734	0.016	1.000	67740		3.26(1.36-4.08)		30.5	M
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.735	0.015	1.000	5439279	2.46		98.5	8451	
D 18 13C4 PFOS										
503.00 > 80.00	3.116	3.099	0.017	1.133	3660432	2.38		99.4	566	
D 19 13C5 PFNA										
468.00 > 423.00	3.116	3.099	0.017	1.133	5363003	2.64		106	4899	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.465	3.449	0.016	1.260	155899	4.58		191	194	
D 23 13C2 PFDA										
515.00 > 470.00	3.480	3.449	0.031	1.265	5590924	2.58		103	6998	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.449	0.016	1.260	2236670	2.70		108	4218	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.613	0.014	1.319	2711932	3.03		121	4672	
D 30 13C2 PFUnA										
565.00 > 520.00	3.807	3.776	0.031	1.384	4943084	2.59		104	5850	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.776	0.015	1.379	2492352	3.31		132	2929	
D 36 13C2 PFDoA										
615.00 > 570.00	4.089	4.073	0.016	1.487	5786449	2.68		107	8471	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.669	2892402	1.77		70.9	5642	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d

Injection Date: 10-Oct-2018 09:37:21

Instrument ID: A9_NC

Lims ID: 480-142290-A-4-A

Lab Sample ID: 320-142290-4

Client ID: EC-0004-04

Operator ID: A9\Administrator

ALS Bottle#: 7

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

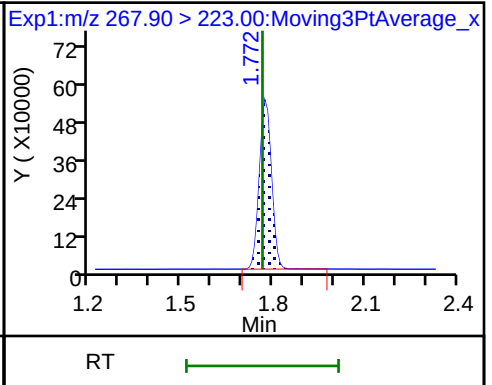
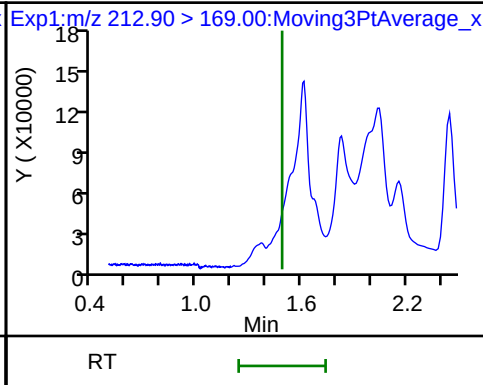
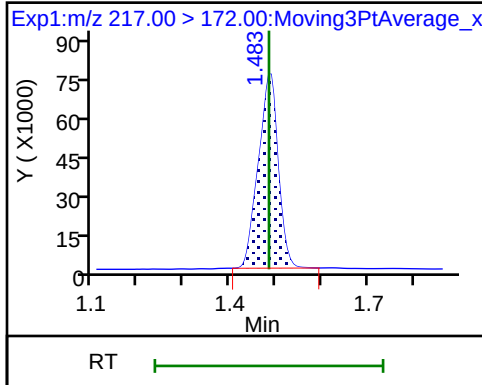
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (ND)

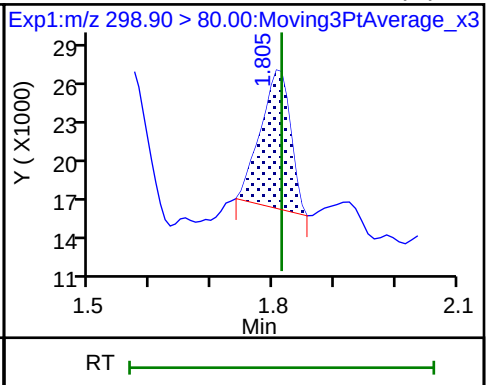
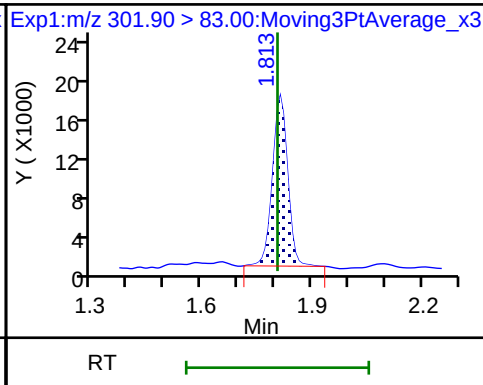
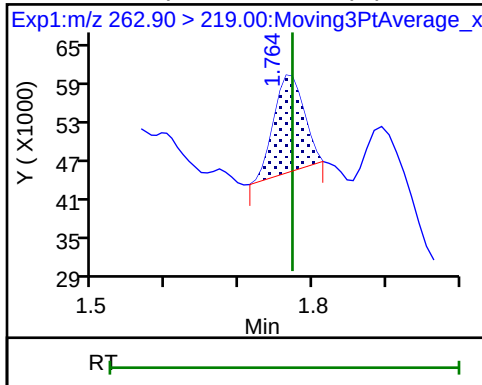
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3 PFBS

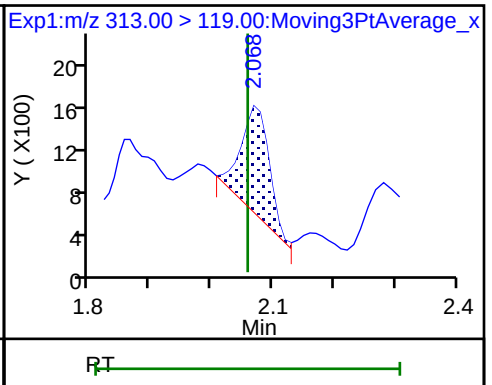
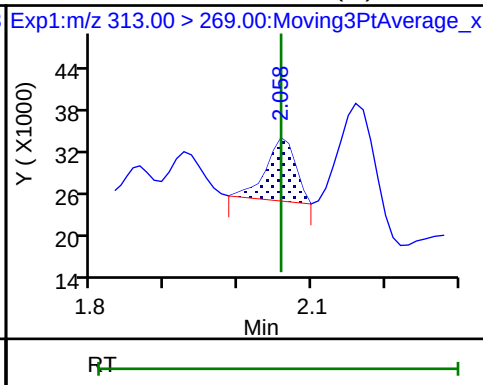
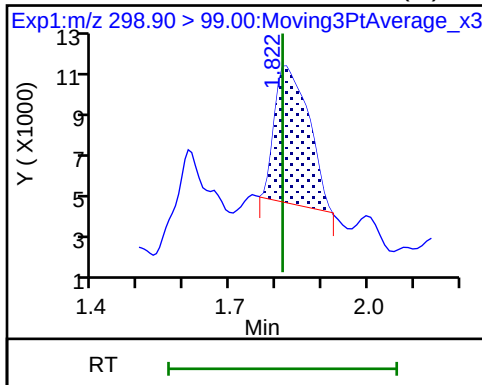
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid (M)

6 Perfluorohexanoic acid (M)

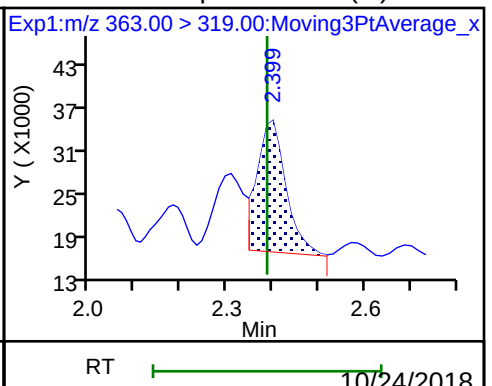
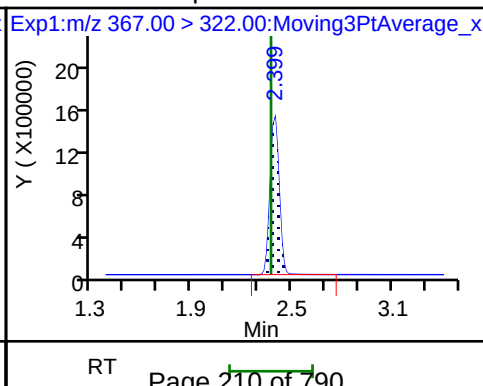
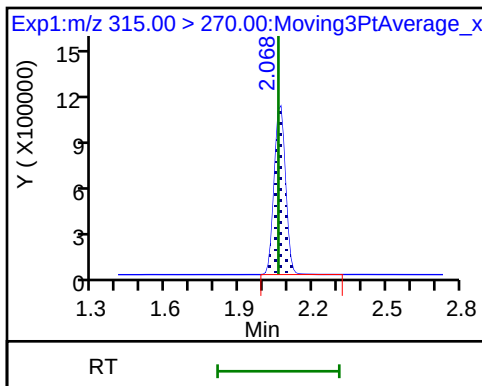
6 Perfluorohexanoic acid

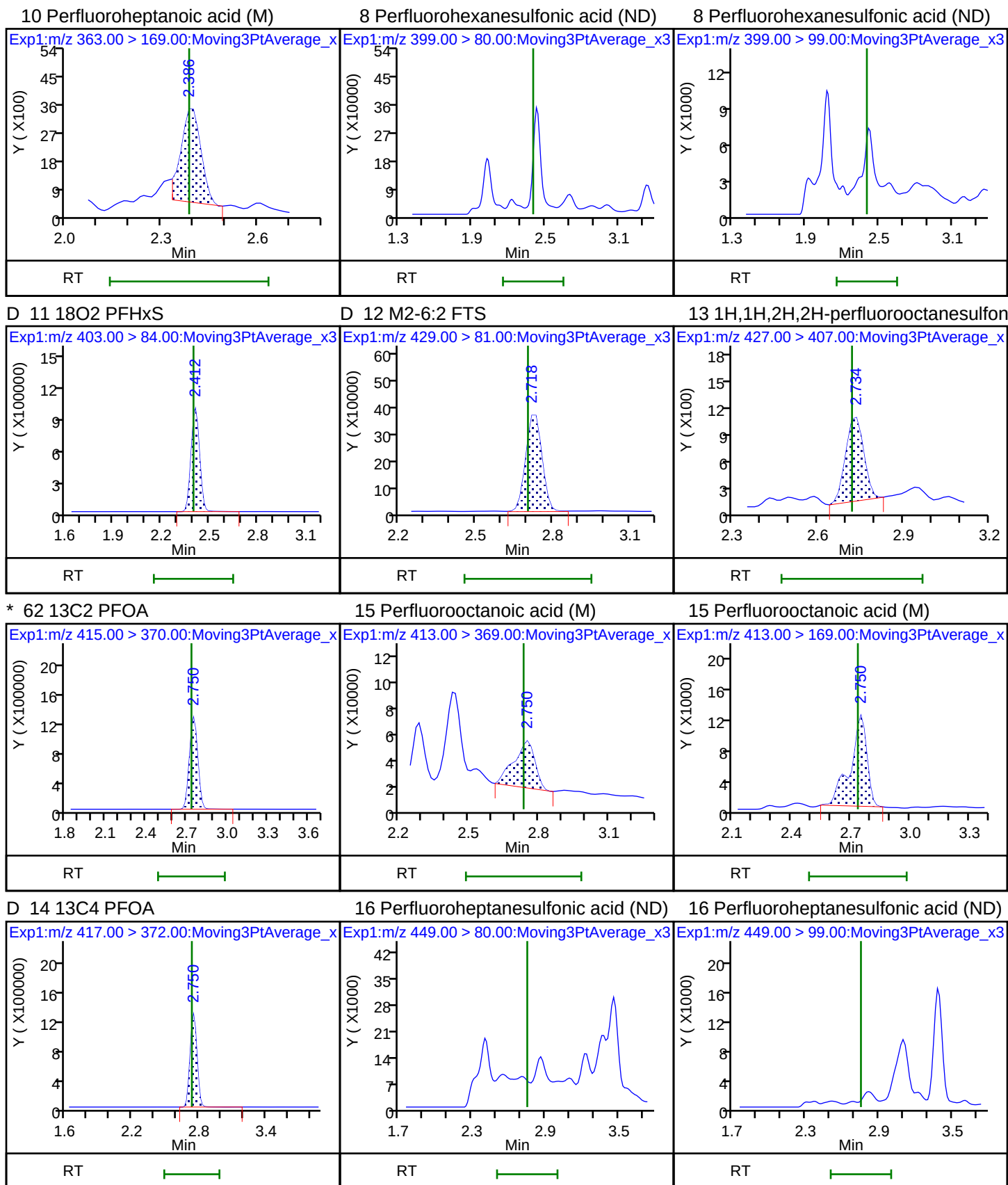


D 7 13C2 PFHxA

D 9 13C4 PFHpA

10 Perfluoroheptanoic acid (M)

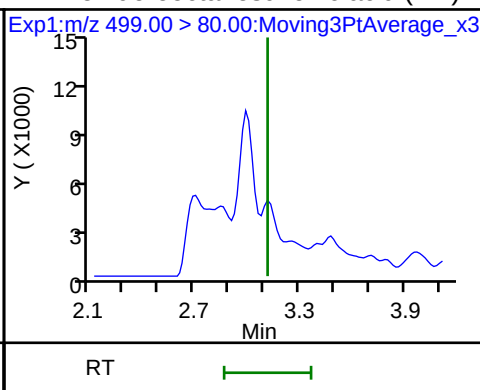
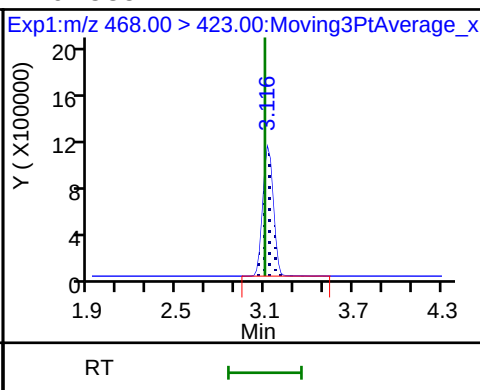
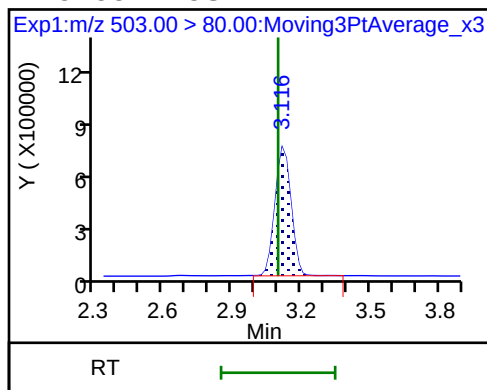




D 18 13C4 PFOS

D 19 13C5 PFNA

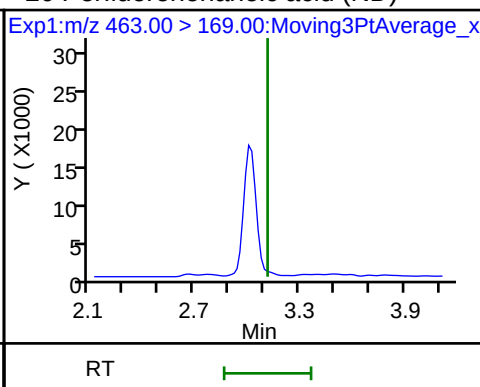
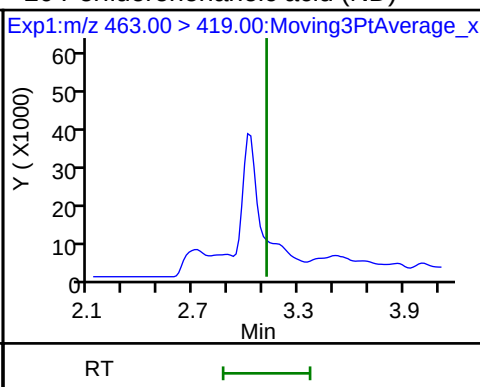
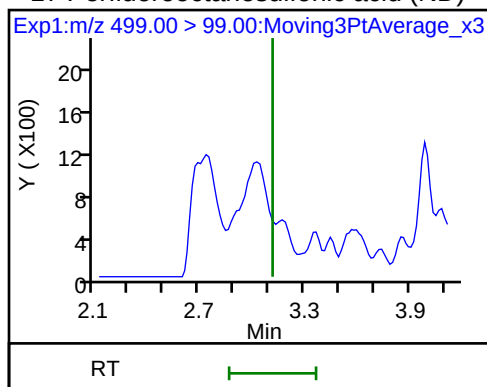
17 Perfluorooctanesulfonic acid (ND)



17 Perfluorooctanesulfonic acid (ND)

20 Perfluorononanoic acid (ND)

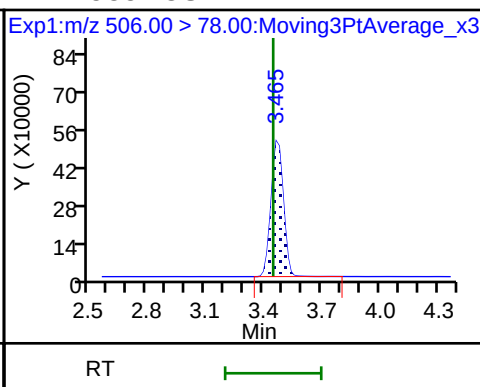
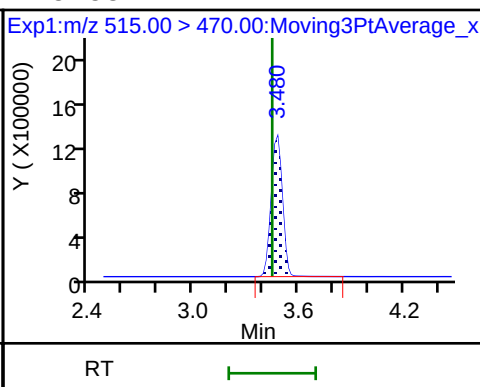
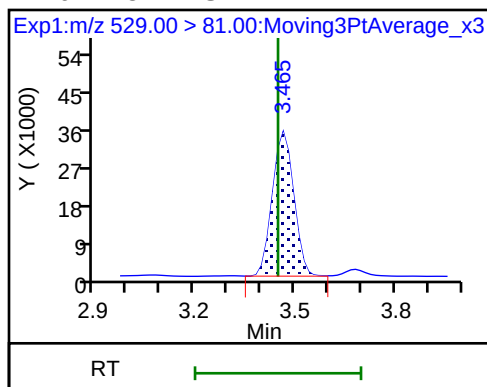
20 Perfluorononanoic acid (ND)



D 26 M2-8:2 FTS

D 23 13C2 PFDA

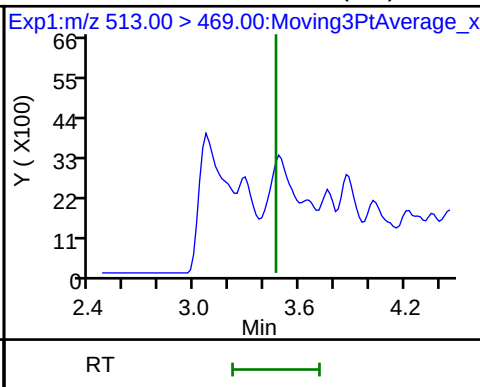
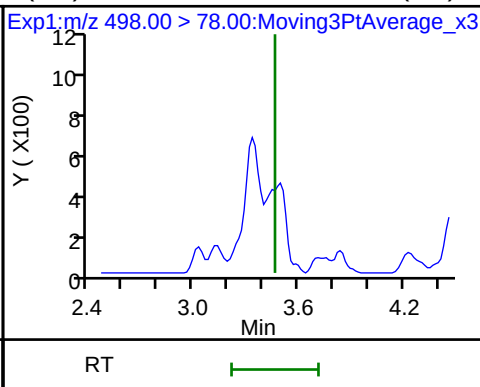
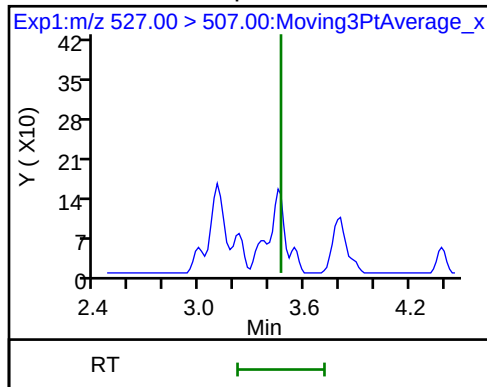
D 21 13C8 FOSA

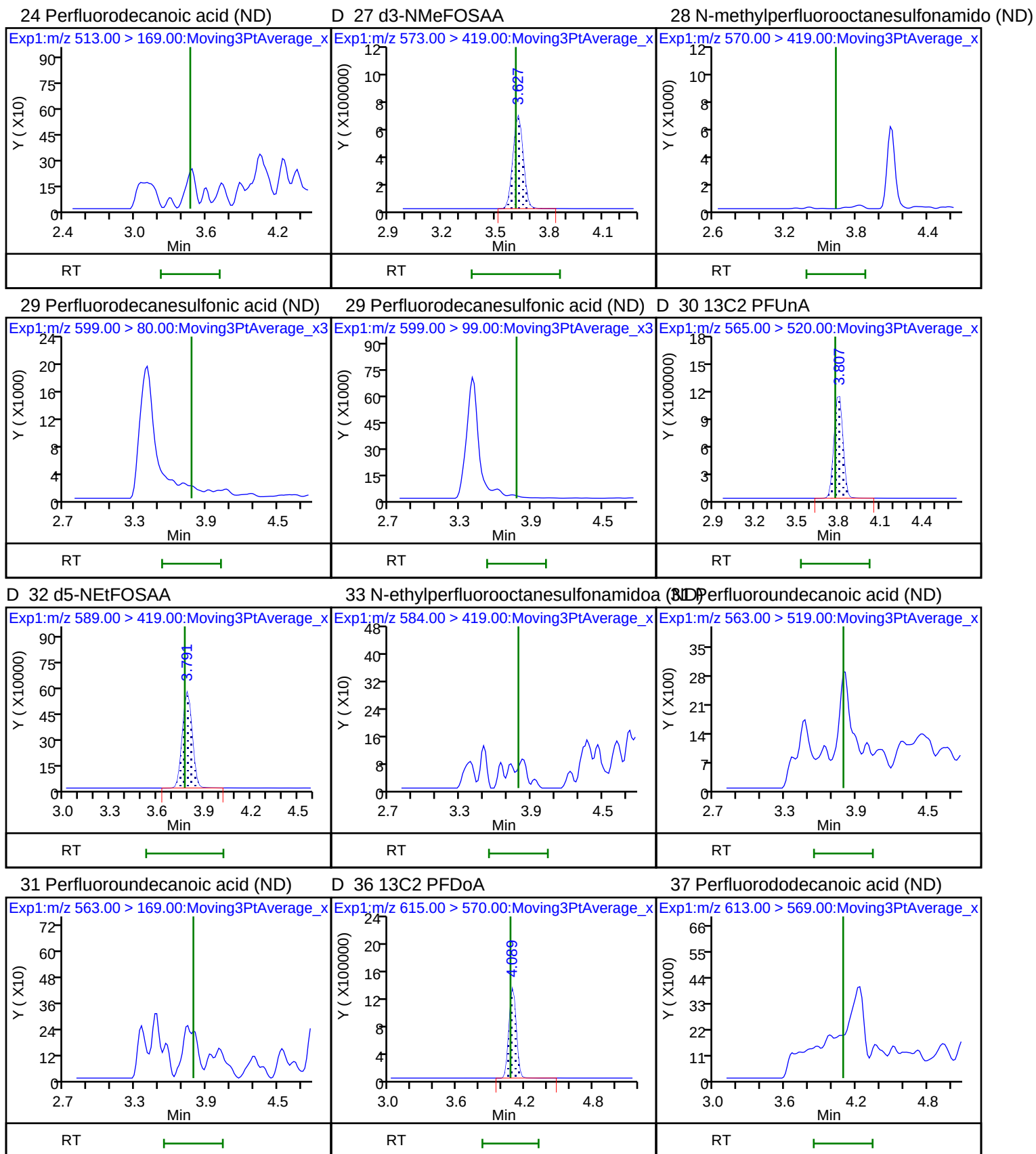


25 1H,1H,2H,2H-perfluorodecanesulfonamide (ND)

22 Perfluorooctanesulfonamide (ND)

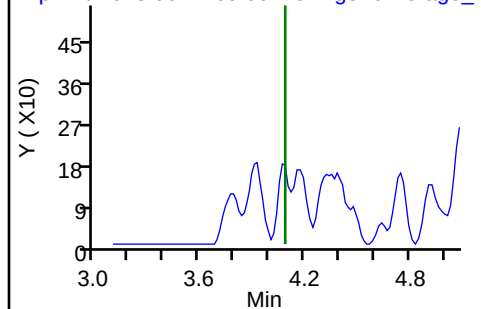
24 Perfluorodecanoic acid (ND)





37 Perfluorododecanoic acid (ND)

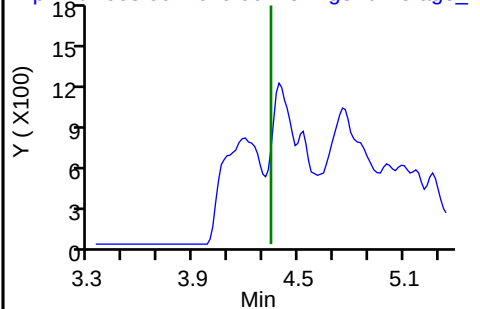
Exp1:m/z 613.00 > 169.00:Moving3PtAverage_x



RT

41 Perfluorotridecanoic acid (ND)

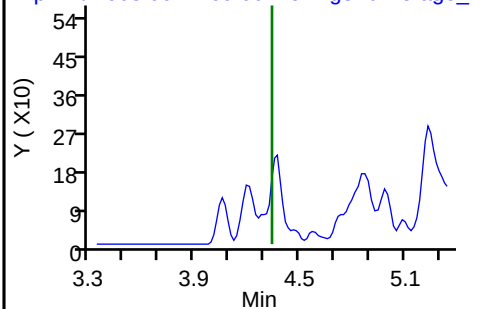
Exp1:m/z 663.00 > 619.00:Moving3PtAverage_x



RT

41 Perfluorotridecanoic acid (ND)

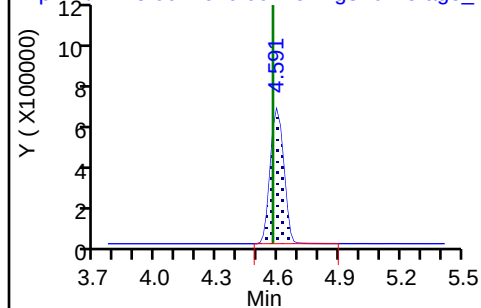
Exp1:m/z 663.00 > 169.00:Moving3PtAverage_x



RT

D 43 13C2 PFTeDA

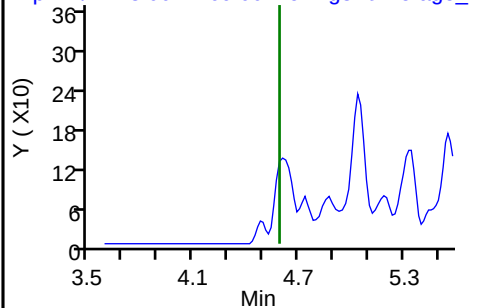
Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x



RT

42 Perfluorotetradecanoic acid (ND)

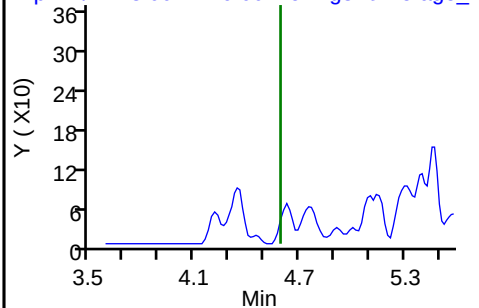
Exp1:m/z 713.00 > 169.00:Moving3PtAverage_x



RT

42 Perfluorotetradecanoic acid (ND)

Exp1:m/z 713.00 > 219.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

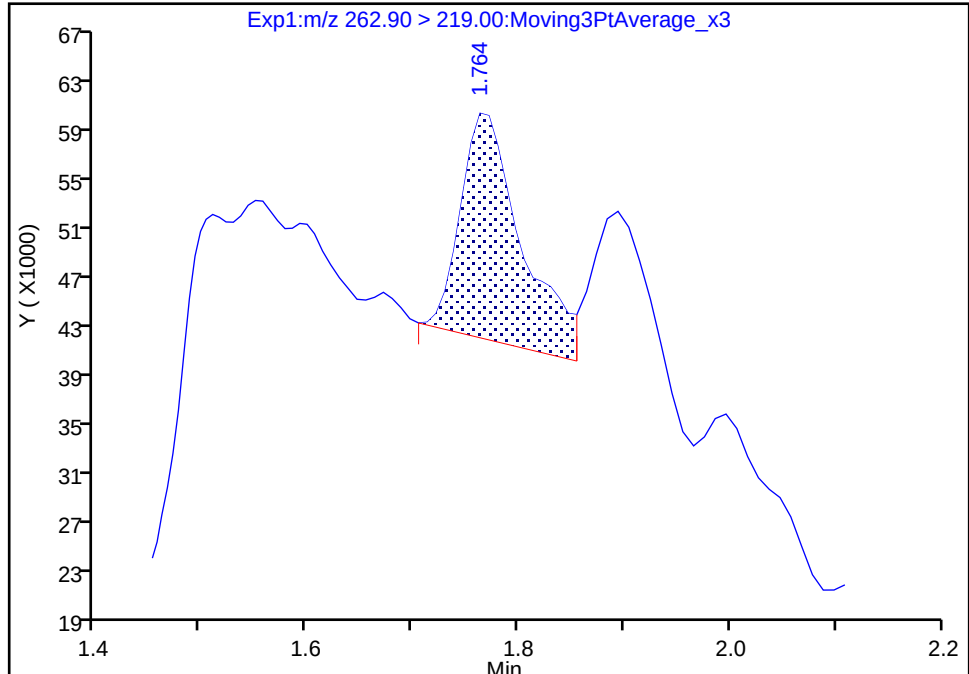
Data File:	\\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d				
Injection Date:	10-Oct-2018 09:37:21	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-4-A	Lab Sample ID:	320-142290-4		
Client ID:	EC-0004-04				
Operator ID:	A9\Administrator	ALS Bottle#:	7	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

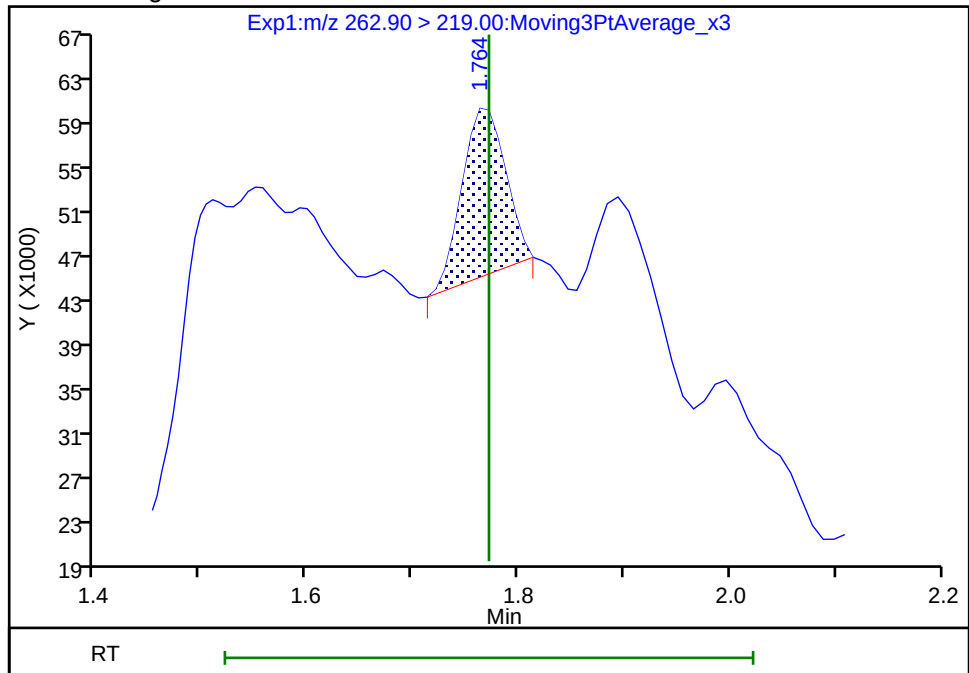
RT: 1.76
Area: 72278
Amount: 0.120448
Amount Units: ng/ml

Processing Integration Results



RT: 1.76
Area: 42121
Amount: 0.070193
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:30:42
Audit Action: Manually Integrated

Audit Reason: Baseline
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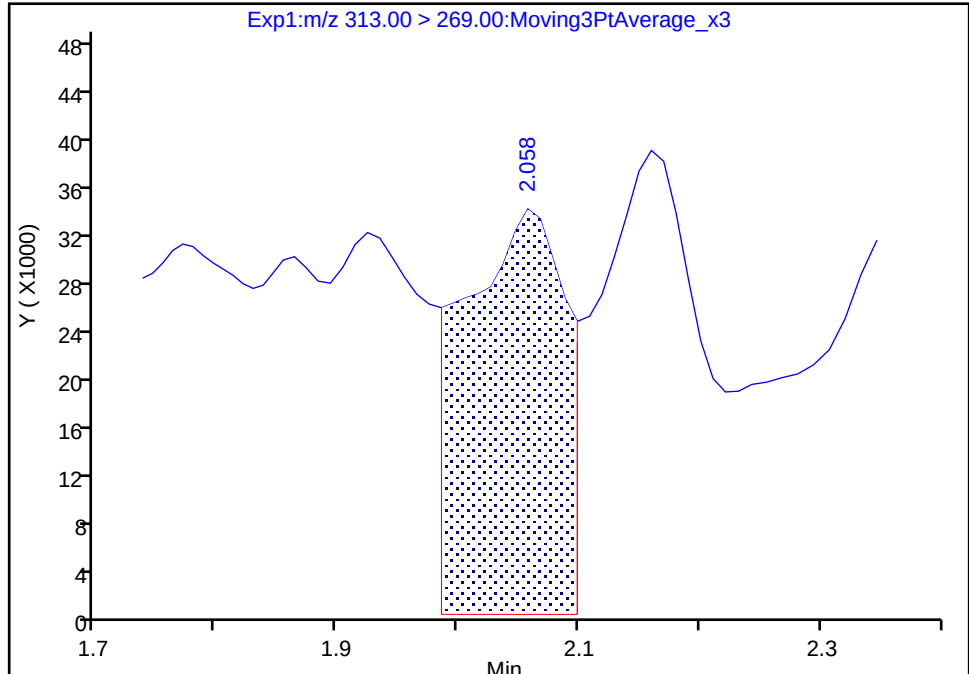
Data File:	\\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d				
Injection Date:	10-Oct-2018 09:37:21	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-4-A	Lab Sample ID:	320-142290-4		
Client ID:	EC-0004-04				
Operator ID:	A9\Administrator	ALS Bottle#:	7	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

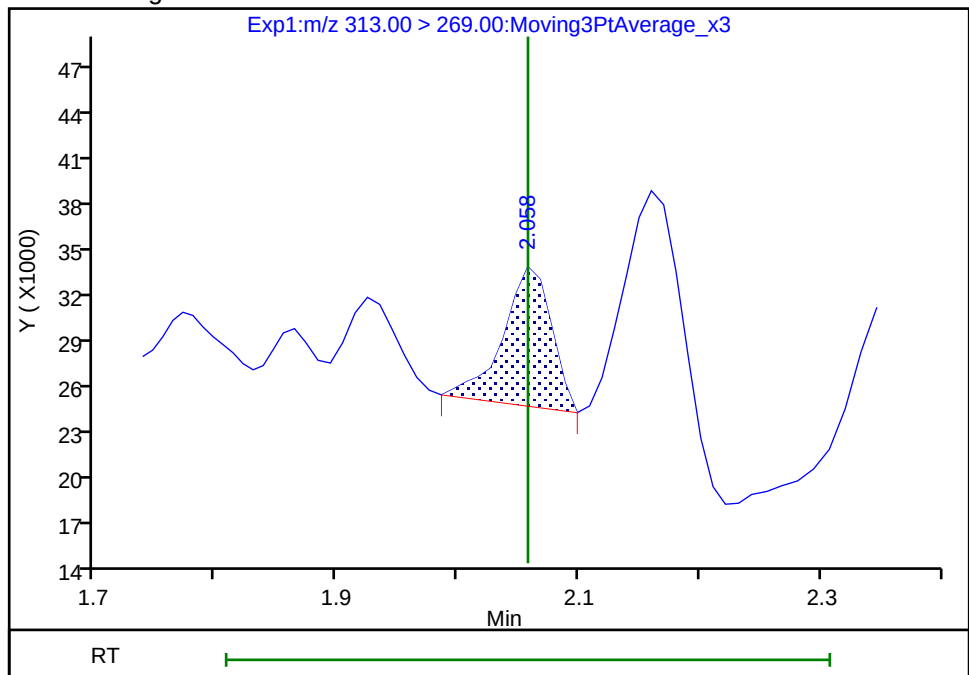
RT: 2.06
Area: 194949
Amount: 0.157624
Amount Units: ng/ml

Processing Integration Results



RT: 2.06
Area: 25036
Amount: 0.020243
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:31:10
Audit Action: Manually Integrated

Audit Reason: Baseline
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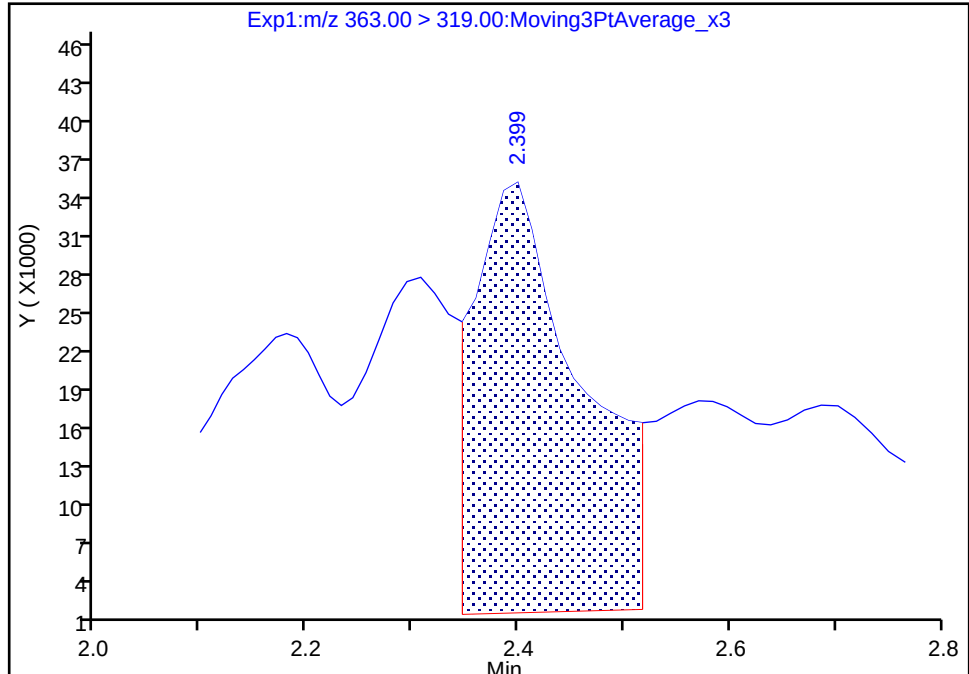
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d
Injection Date: 10-Oct-2018 09:37:21 Instrument ID: A9_NC
Lims ID: 480-142290-A-4-A Lab Sample ID: 320-142290-4
Client ID: EC-0004-04
Operator ID: A9\Administrator ALS Bottle#: 7 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

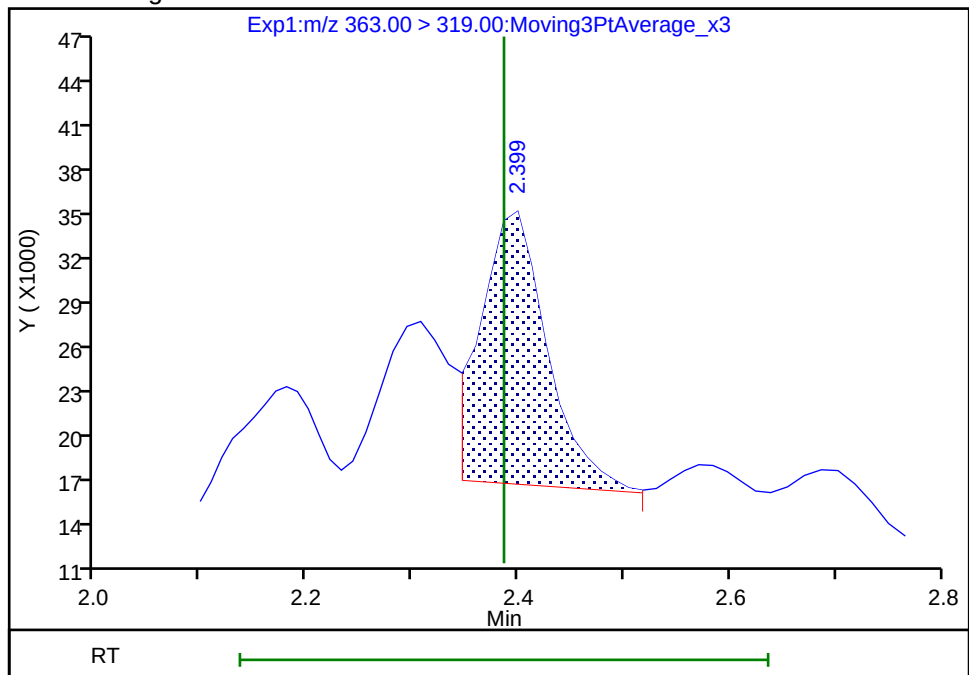
RT: 2.40
Area: 230888
Amount: 0.094157
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 78354
Amount: 0.031953
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:31:16
Audit Action: Manually Integrated

Audit Reason: Baseline
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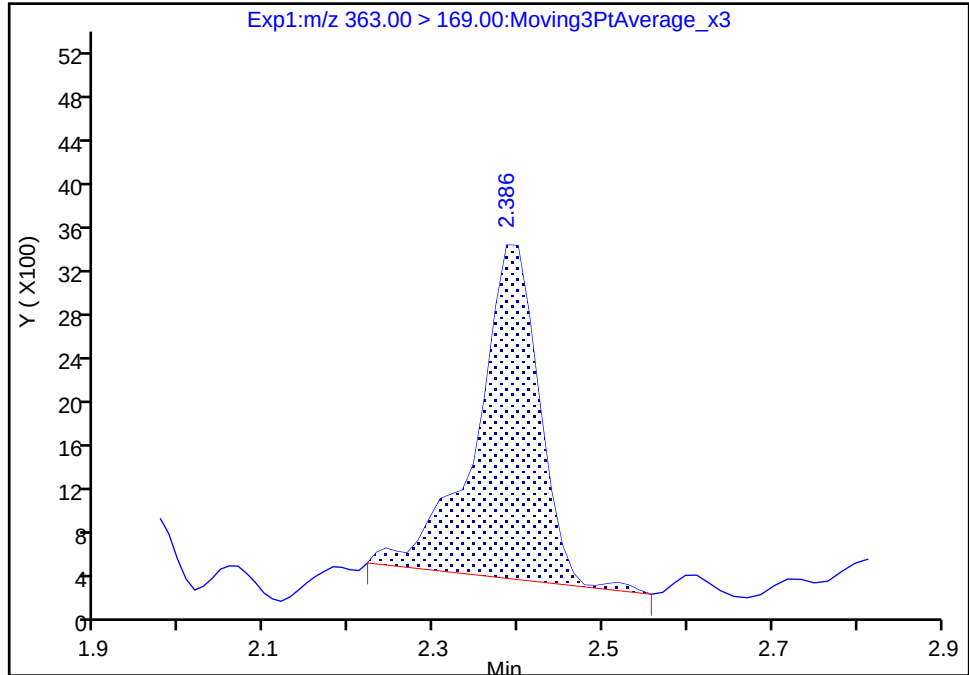
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d
Injection Date: 10-Oct-2018 09:37:21 Instrument ID: A9_NC
Lims ID: 480-142290-A-4-A Lab Sample ID: 320-142290-4
Client ID: EC-0004-04
Operator ID: A9\Administrator ALS Bottle#: 7 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

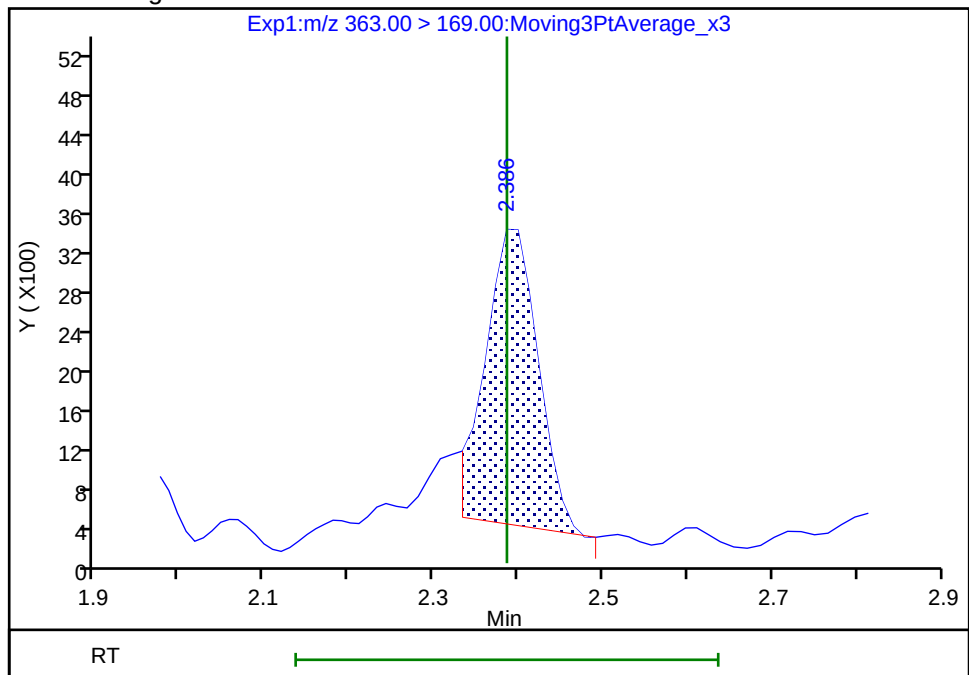
RT: 2.39
Area: 15973
Amount: 0.094157
Amount Units: ng/ml

Processing Integration Results



RT: 2.39
Area: 12920
Amount: 0.031953
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:31:24

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

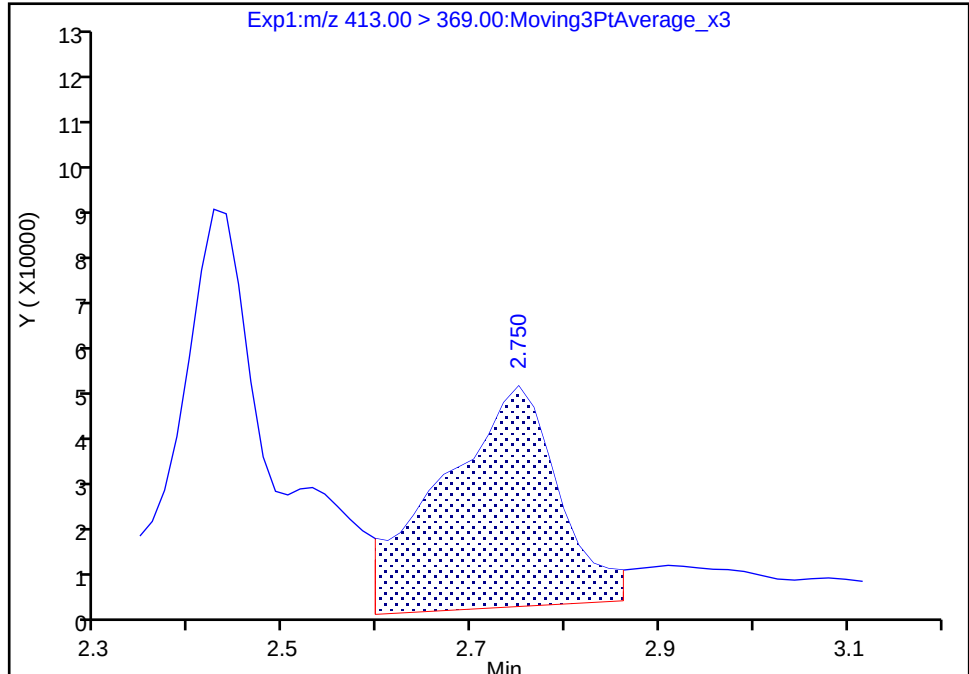
Data File:	\\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d				
Injection Date:	10-Oct-2018 09:37:21	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-4-A	Lab Sample ID:	320-142290-4		
Client ID:	EC-0004-04				
Operator ID:	A9\Administrator	ALS Bottle#:	7	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

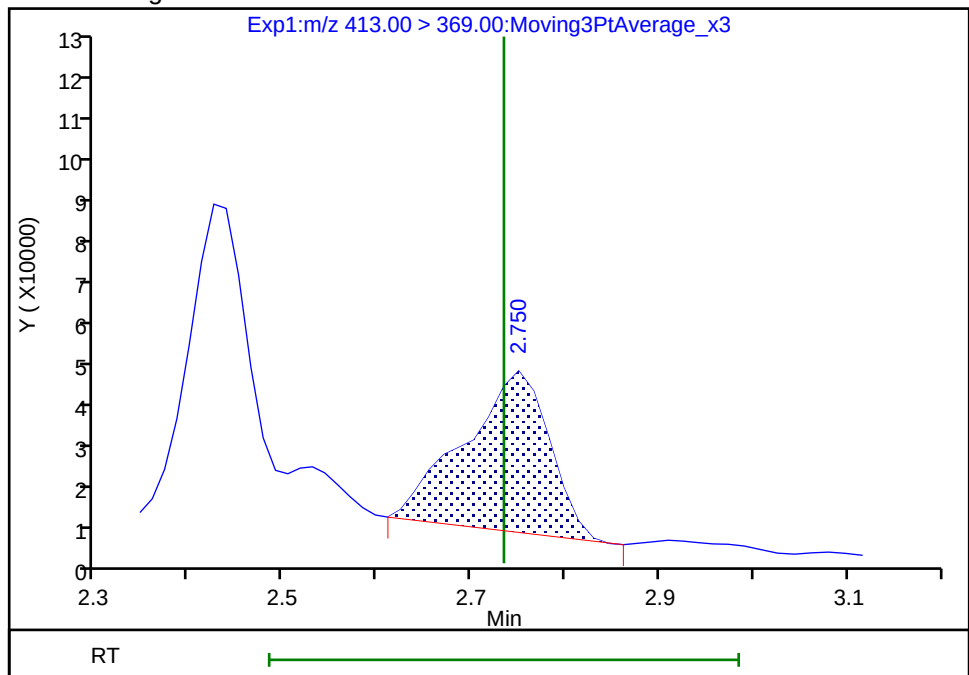
RT: 2.75
Area: 394601
Amount: 0.168864
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 220745
Amount: 0.094465
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:31:49
Audit Action: Manually Integrated

Audit Reason: Baseline
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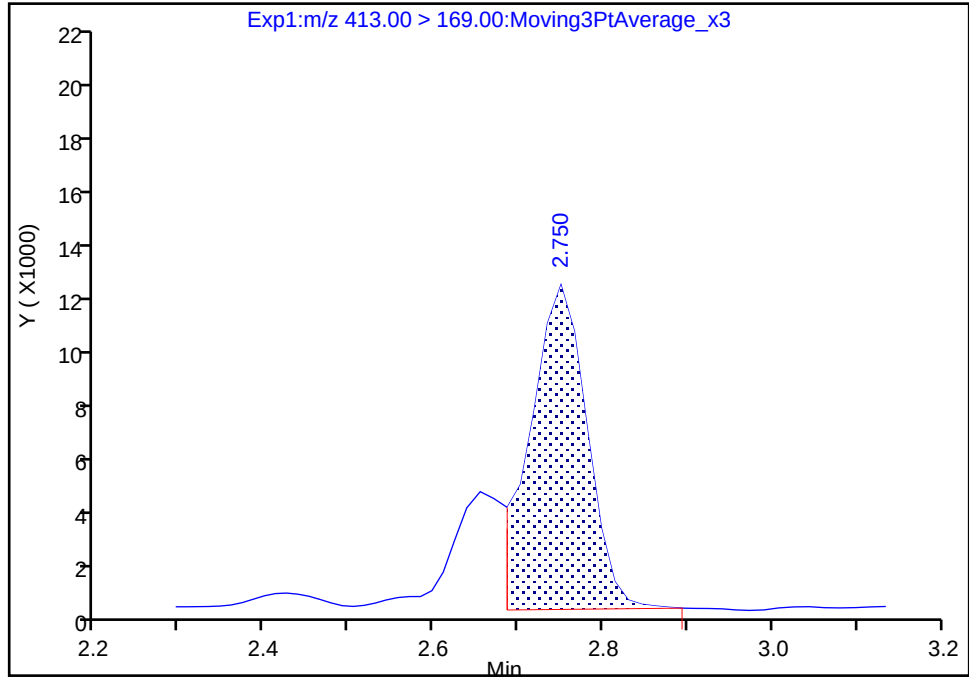
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d
Injection Date: 10-Oct-2018 09:37:21 Instrument ID: A9_NC
Lims ID: 480-142290-A-4-A Lab Sample ID: 320-142290-4
Client ID: EC-0004-04
Operator ID: A9\Administrator ALS Bottle#: 7 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

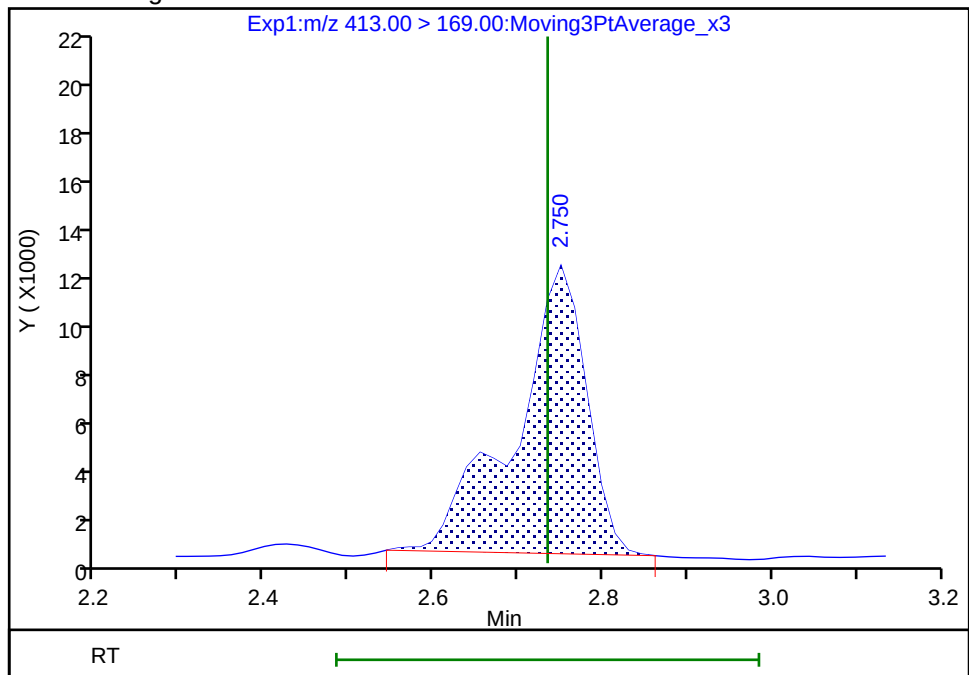
RT: 2.75
Area: 54193
Amount: 0.168864
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 67740
Amount: 0.094465
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:31:51

Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

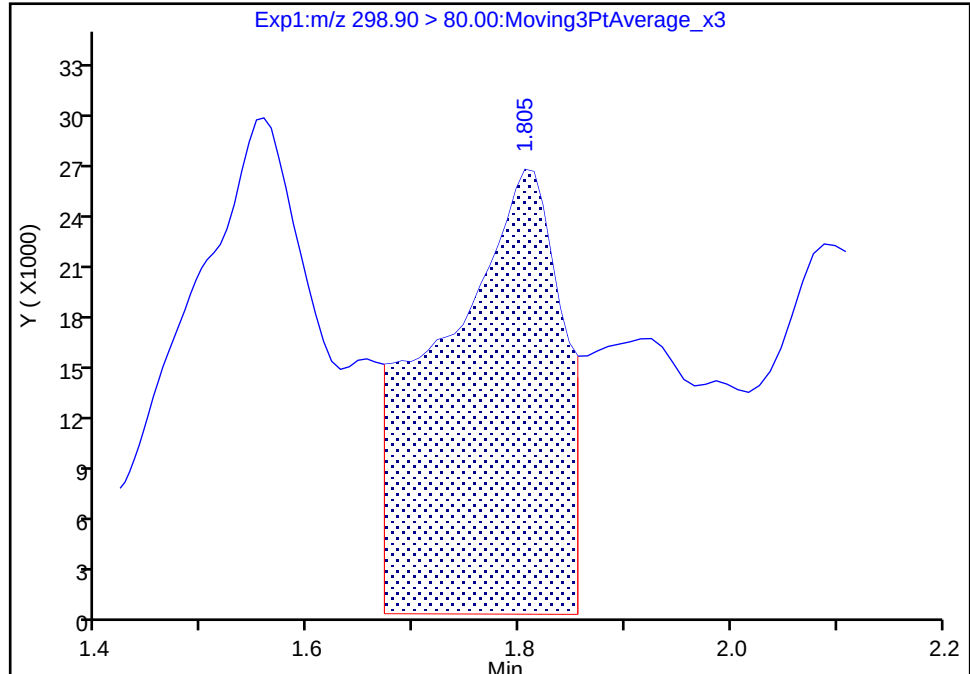
Data File:	\\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d				
Injection Date:	10-Oct-2018 09:37:21	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-4-A	Lab Sample ID:	320-142290-4		
Client ID:	EC-0004-04				
Operator ID:	A9\Administrator	ALS Bottle#:	7	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

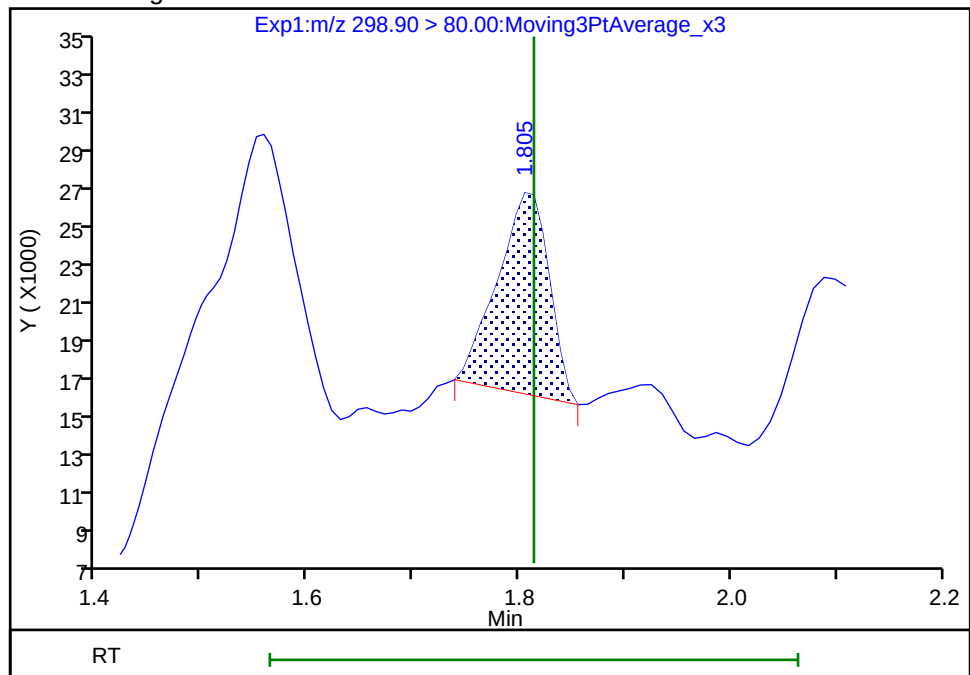
RT: 1.81
Area: 207971
Amount: 0.091536
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 35356
Amount: 0.015562
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:30:49

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

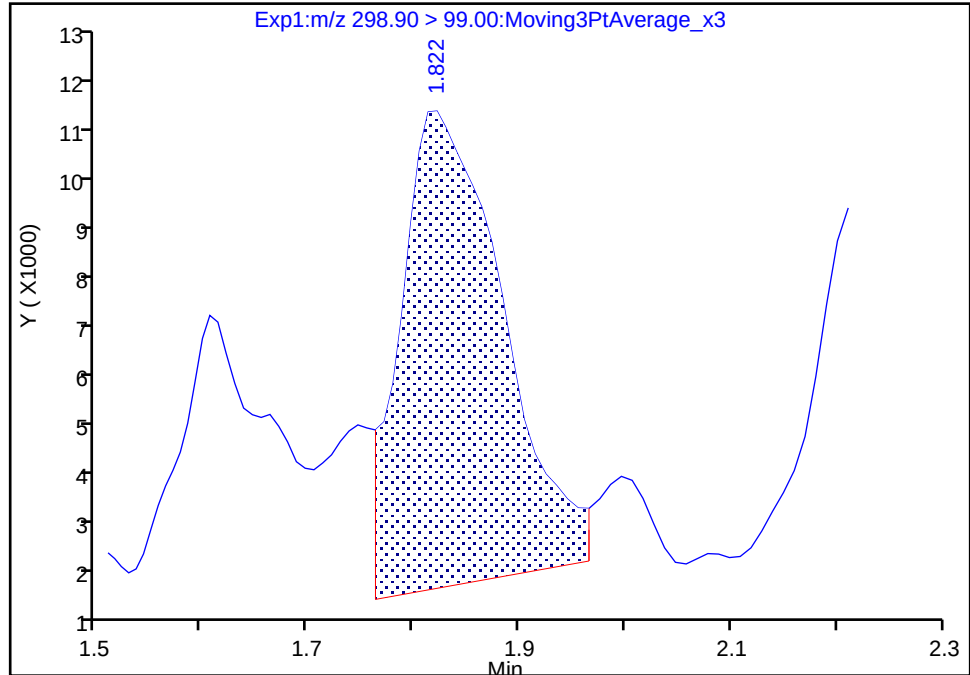
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_013.d
Injection Date: 10-Oct-2018 09:37:21 Instrument ID: A9_NC
Lims ID: 480-142290-A-4-A Lab Sample ID: 320-142290-4
Client ID: EC-0004-04
Operator ID: A9\Administrator ALS Bottle#: 7 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

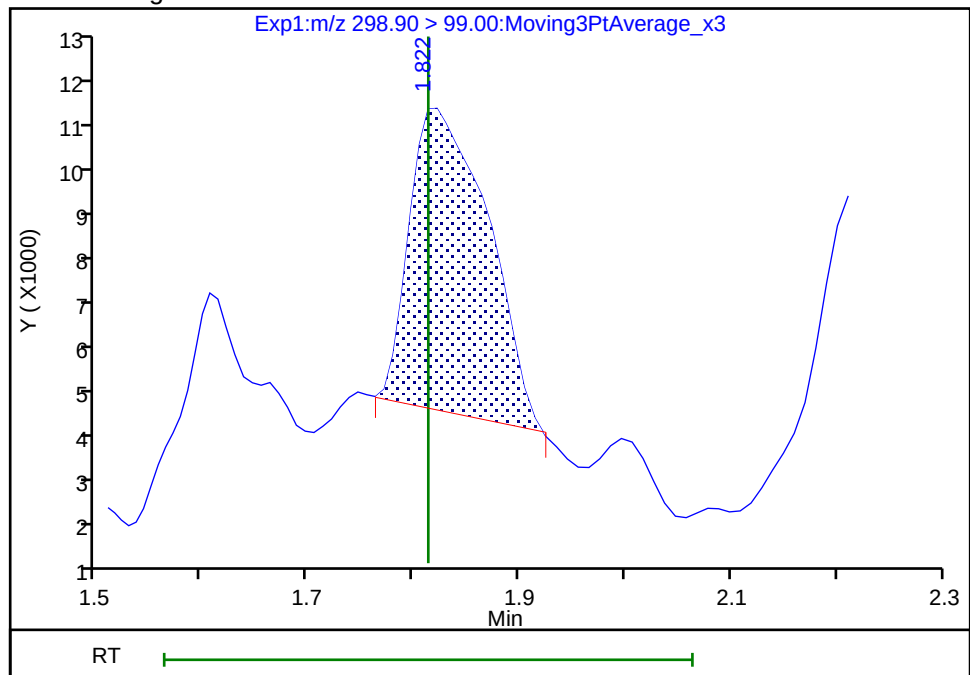
RT: 1.82
Area: 58569
Amount: 0.091536
Amount Units: ng/ml

Processing Integration Results



RT: 1.82
Area: 31699
Amount: 0.015562
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:30:54

Audit Action: Manually Integrated

Audit Reason: Baseline

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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-05</u>	Lab Sample ID: <u>480-142290-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_014.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 14:10</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>273.9 (mL)</u>	Date Analyzed: <u>10/10/2018 09:44</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	23	B CI	1.8	0.32
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.8	U	1.8	0.45
307-24-4	Perfluorohexanoic acid (PFHxA)	1.8	U	1.8	0.53
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.8	U	1.8	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U	1.8	0.78
375-95-1	Perfluorononanoic acid (PFNA)	1.8	U	1.8	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	1.8	U	1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.8	U	1.8	1.0
307-55-1	Perfluorododecanoic acid (PFDoA)	1.8	U	1.8	0.50
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.8	U	1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.8	U	1.8	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.9	CI	1.8	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.8	U	1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.8	U	1.8	0.49
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.8	U	1.8	0.29
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.8	U	1.8	0.32
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18	U	18	2.8
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18	U	18	1.7
27619-97-2	6:2 FTS	18	U	18	1.8
39108-34-4	8:2 FTS	18	U	18	1.8

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-05</u>	Lab Sample ID: <u>480-142290-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_014.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 14:10</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>273.9 (mL)</u>	Date Analyzed: <u>10/10/2018 09:44</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	8	*	25-150
STL01893	13C5 PFPeA	20	*	25-150
STL00993	13C2 PFHxA	28		25-150
STL01892	13C4 PFHpA	42		25-150
STL00990	13C4 PFOA	46		25-150
STL00995	13C5 PFNA	56		25-150
STL00996	13C2 PFDA	58		25-150
STL00997	13C2 PFUnA	58		25-150
STL00998	13C2 PFDoA	55		25-150
STL02116	13C2 PFTeDA	39		25-150
STL02337	13C3 PFBS	37		25-150
STL00994	18O2 PFHxS	51		25-150
STL00991	13C4 PFOS	63		25-150
STL01056	13C8 FOSA	57		25-150
STL02118	d3-NMeFOSAA	71		25-150
STL02117	d5-NEtFOSAA	74		25-150
STL02279	M2-6:2 FTS	96		25-150
STL02280	M2-8:2 FTS	146		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_014.d
 Lims ID: 480-142290-A-5-A
 Client ID: EC-0004-05
 Sample Type: Client
 Inject. Date: 10-Oct-2018 09:44:52 ALS Bottle#: 8 Worklist Smp#: 11
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142290-a-5-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:07:59 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:35:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										M
217.00 > 172.00	1.483	1.484	-0.001	0.542	324734	0.1890		7.6	324	M
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.499	1.489	0.010	1.011	74559	0.6373			2.4	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.763	1.764	-0.001	0.645	780136	0.5095		20.4	291	
D 47 13C3 PFBS										
301.90 > 83.00	1.805	1.806	-0.001	0.660	17934	0.8559		36.8	3.1	
D 7 13C2 PFHxA										
315.00 > 270.00	2.047	2.058	-0.011	0.749	1164010	0.7045		28.2	919	
D 9 13C4 PFHpA										
367.00 > 322.00	2.386	2.373	0.013	0.873	2147397	1.06		42.4	3630	
8 Perfluorohexanesulfonic acid										RM
399.00 > 80.00	2.386	2.399	-0.013	0.995	63521	0.0800			0.3	RM
399.00 > 99.00	2.399	2.399	0.0	1.000	5934		10.70(1.90-5.70)		0.3	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.399	2.400	-0.001	0.878	1521906	1.21		51.1	2372	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.718	2.703	0.015	0.994	507330	2.28		95.9	33.9	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.702	2.718	-0.016	0.994	2082	0.004536			2.2	
* 62 13C2 PFOA										
415.00 > 370.00	2.734	2.734	0.0		4704574	2.50			6925	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.735	-0.001	1.000	2198248	1.16		46.4	3975	
D 18 13C4 PFOS										
503.00 > 80.00	3.116	3.099	0.017	1.140	1980518	1.50		62.7	162	
D 19 13C5 PFNA										
468.00 > 423.00	3.116	3.099	0.017	1.140	2434229	1.39		55.8	1861	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2 FTS										
529.00 > 81.00	3.464	3.449	0.015	1.267	102301	3.50		146	170	
D 23 13C2 PFDA										
515.00 > 470.00	3.464	3.449	0.015	1.267	2679354	1.44		57.5	4768	
D 21 13C8 FOSA										
506.00 > 78.00	3.464	3.449	0.015	1.267	1018996	1.43		57.2	2429	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.464	3.465	-0.001	1.000	3575	0.002954			7.4	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.613	0.014	1.327	1363293	1.78		71.0	2873	
D 30 13C2 PFUnA										
565.00 > 520.00	3.791	3.776	0.015	1.387	2363192	1.44		57.8	3969	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.776	0.015	1.387	1200557	1.86		74.3	1678	
D 36 13C2 PFDaA										
615.00 > 570.00	4.089	4.073	0.016	1.496	2537871	1.37		54.7	6544	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.679	1369097	0.9778		39.1	3795	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_014.d

Injection Date: 10-Oct-2018 09:44:52

Instrument ID: A9_NC

Lims ID: 480-142290-A-5-A

Lab Sample ID: 320-142290-5

Client ID: EC-0004-05

Operator ID: A9\Administrator

ALS Bottle#: 8

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

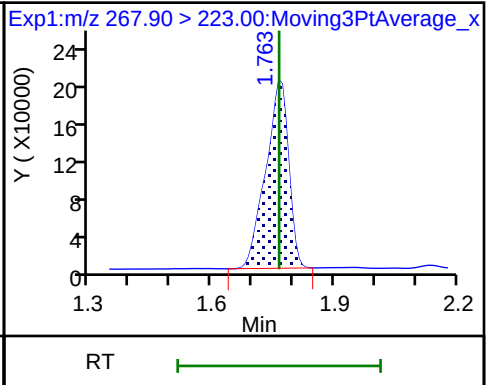
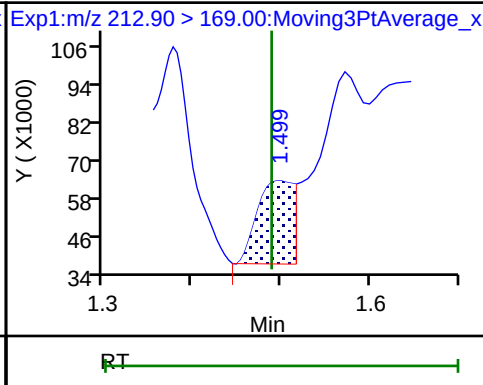
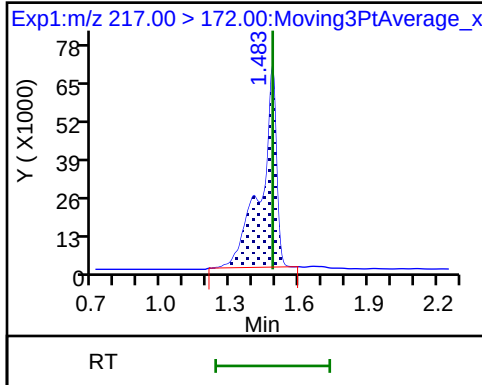
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA (M)

2 Perfluorobutanoic acid (M)

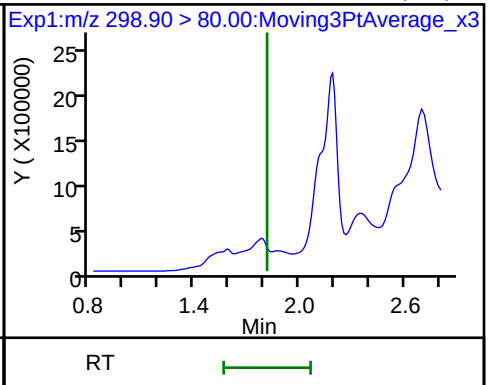
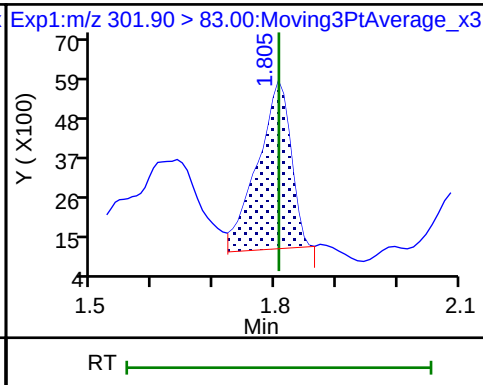
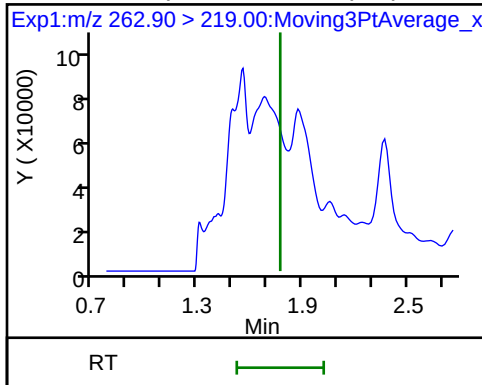
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (ND)

D 47 13C3 PFBS

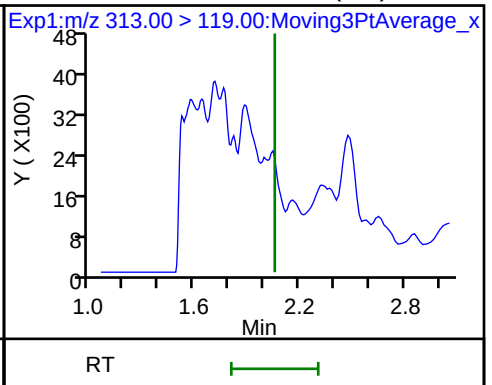
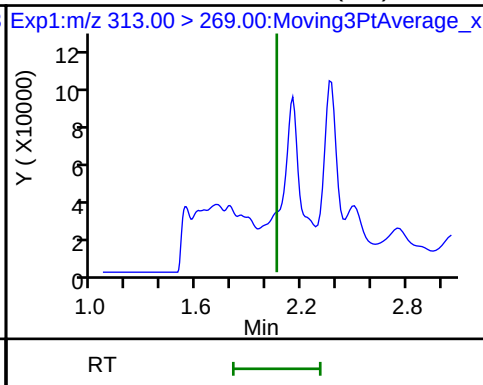
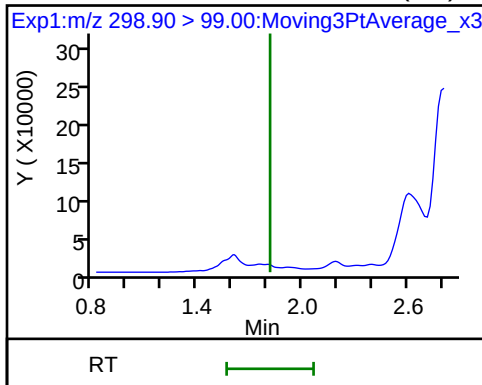
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

6 Perfluorohexanoic acid (ND)

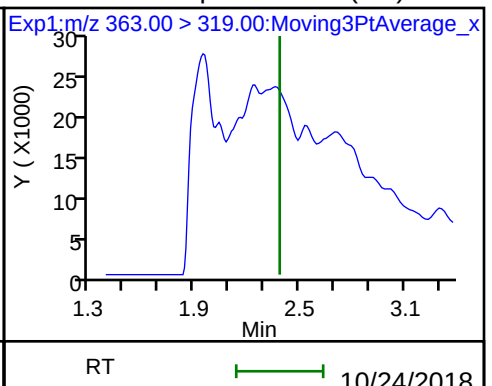
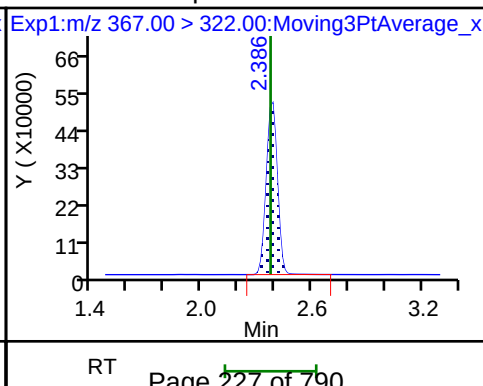
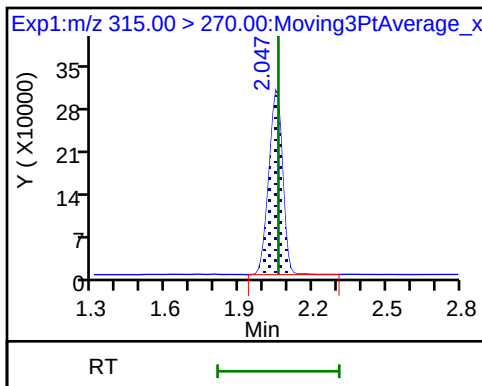
6 Perfluorohexanoic acid (ND)

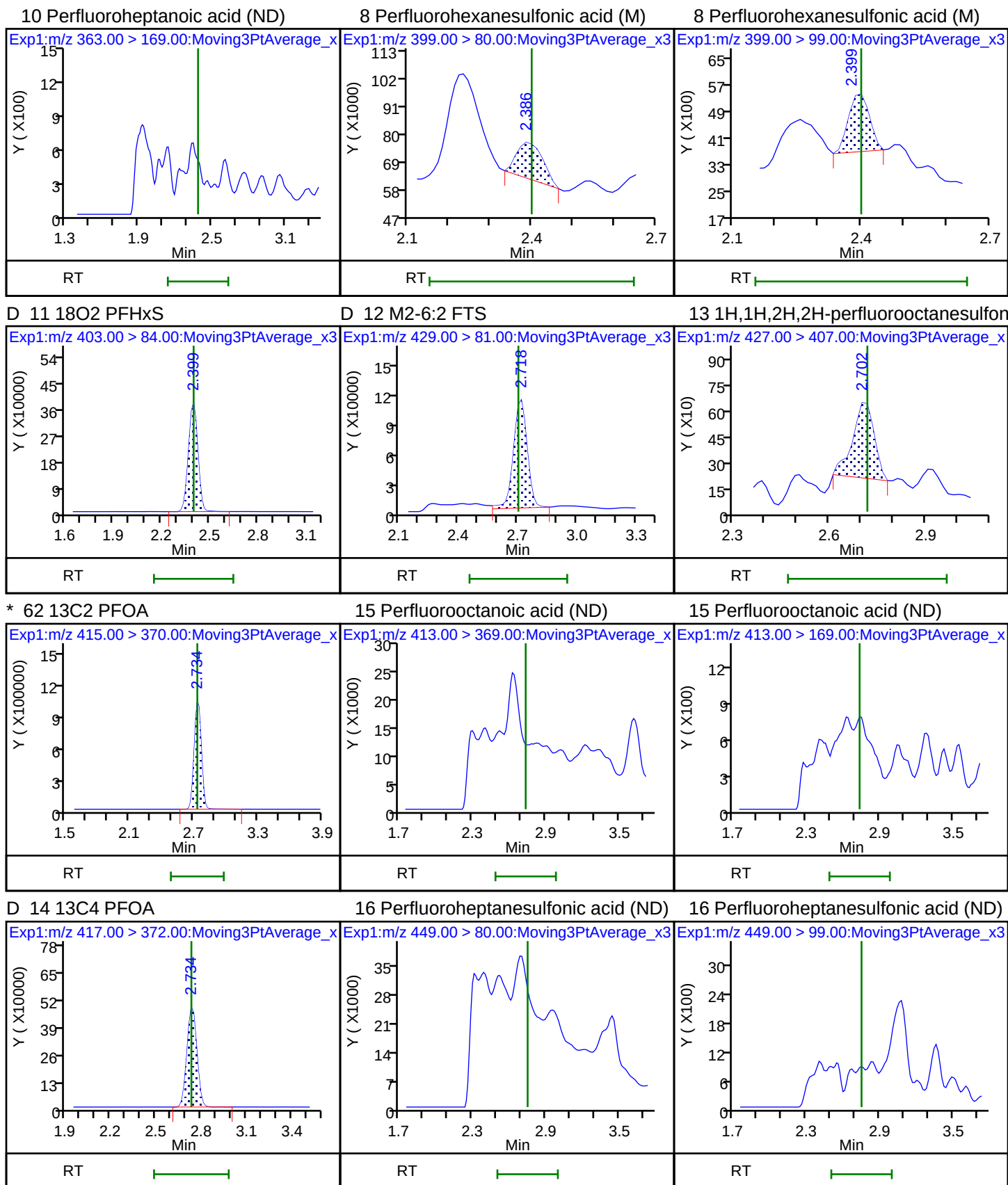


D 7 13C2 PFHxA

D 9 13C4 PFHpA

10 Perfluoroheptanoic acid (ND)

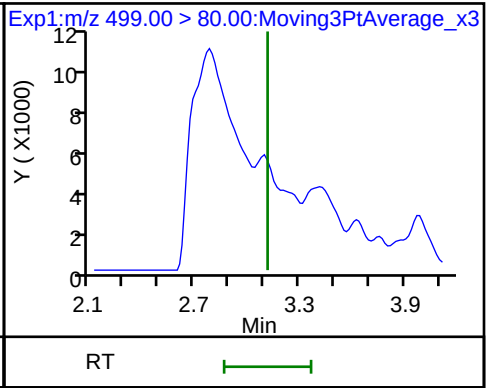
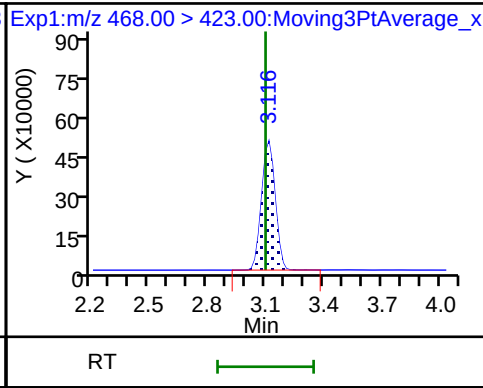
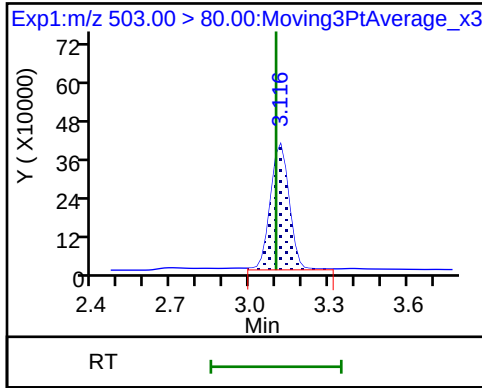




D 18 13C4 PFOS

D 19 13C5 PFNA

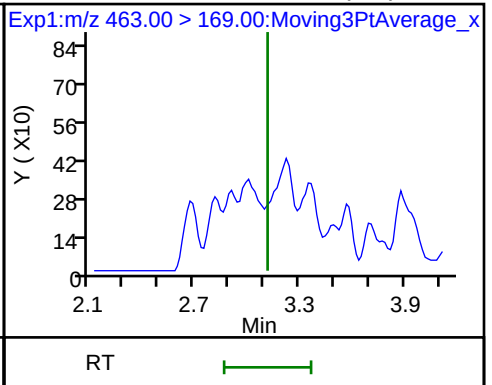
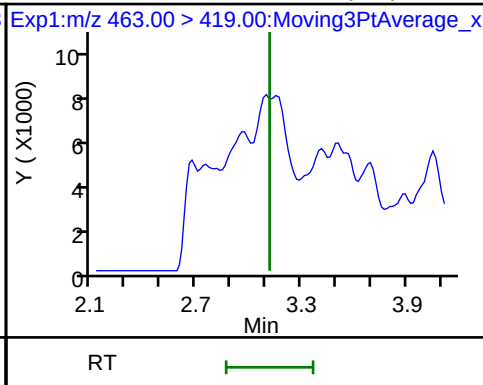
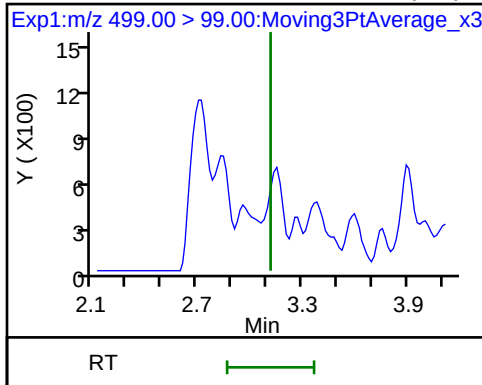
17 Perfluorooctanesulfonic acid (ND)



17 Perfluorooctanesulfonic acid (ND)

20 Perfluorononanoic acid (ND)

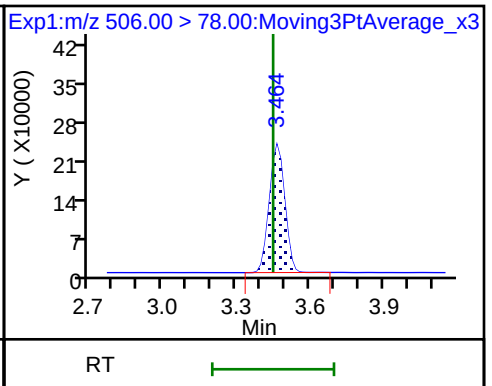
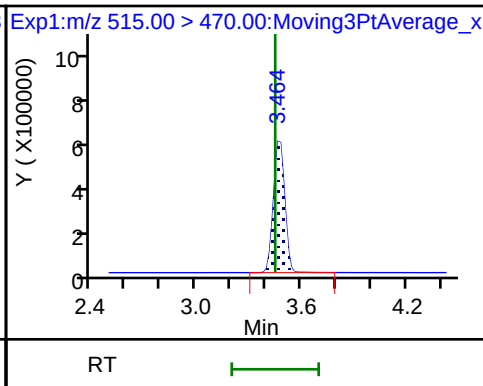
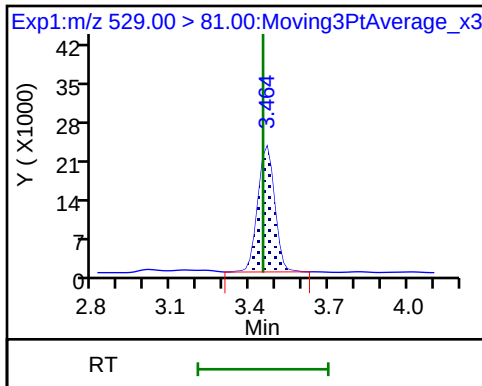
20 Perfluorononanoic acid (ND)



D 26 M2-8:2 FTS

D 23 13C2 PFDA

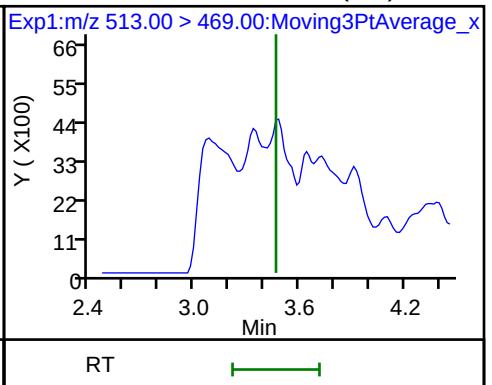
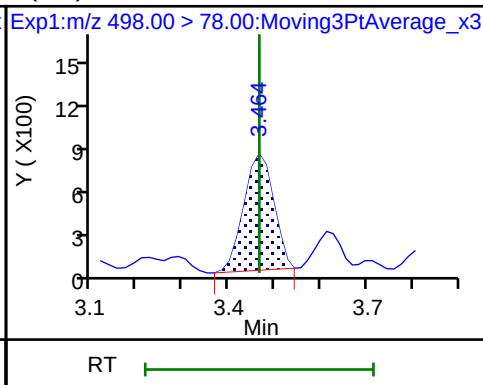
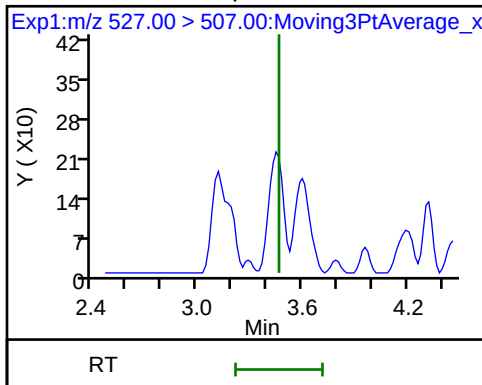
D 21 13C8 FOSA

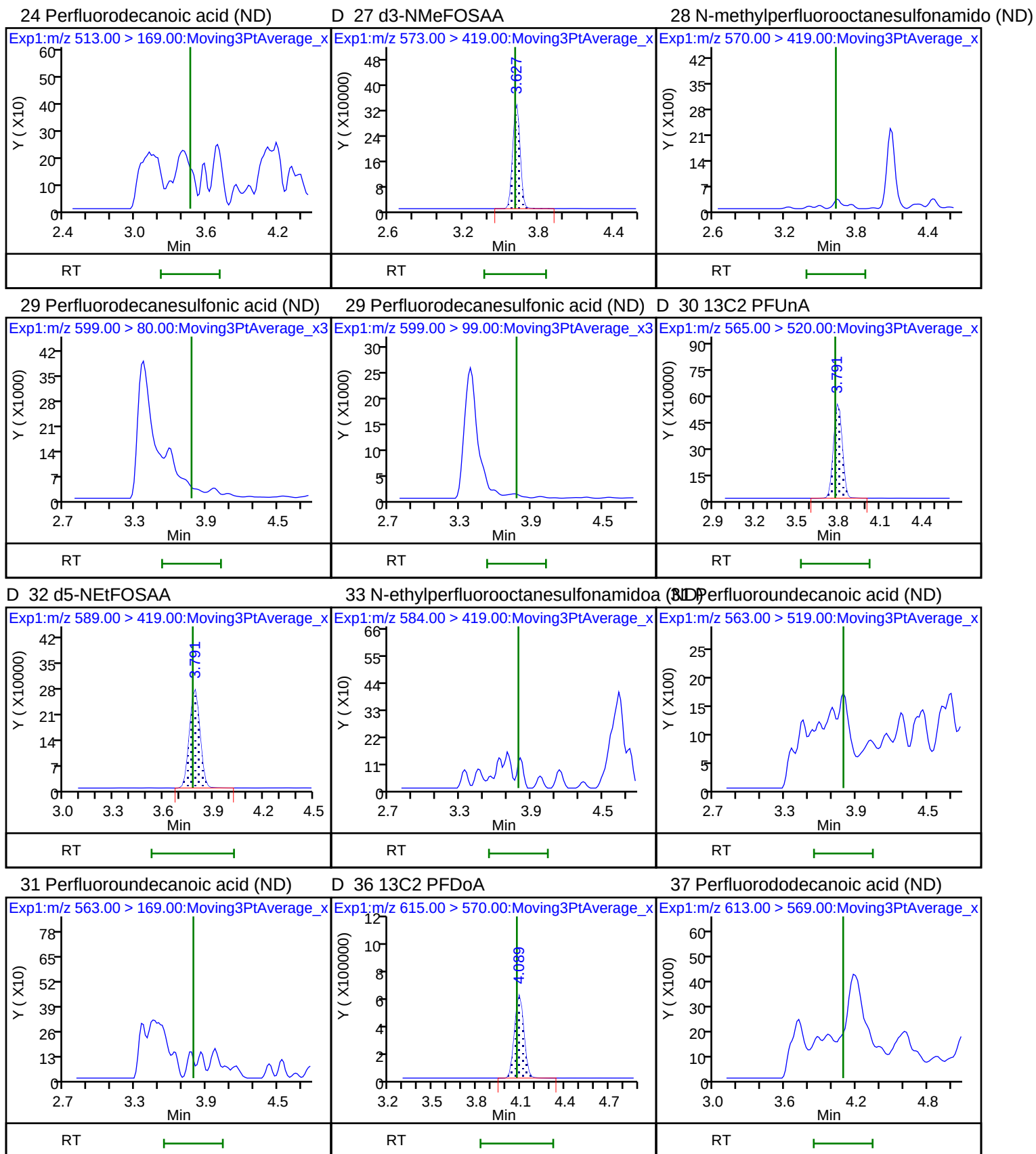


25 1H,1H,2H,2H-perfluorodecanesulfonamide (ND)

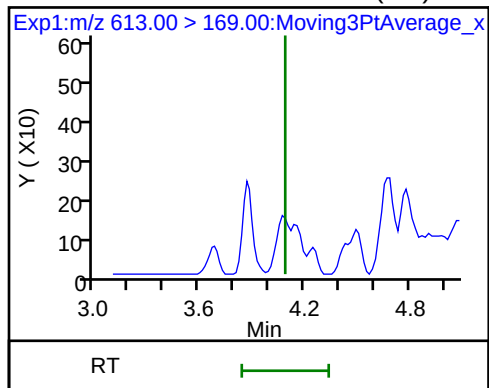
22 Perfluorooctanesulfonamide

24 Perfluorodecanoic acid (ND)

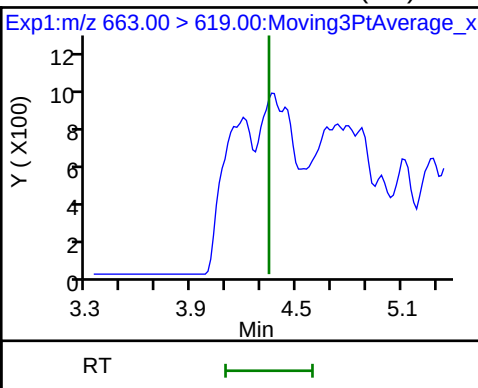




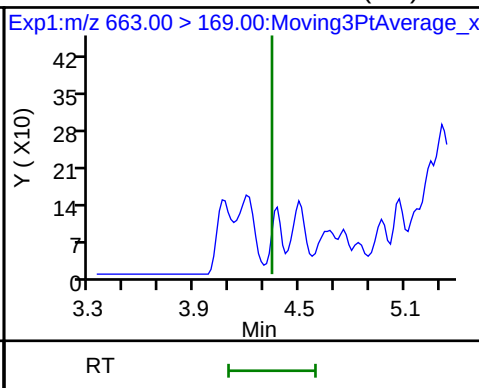
37 Perfluorododecanoic acid (ND)



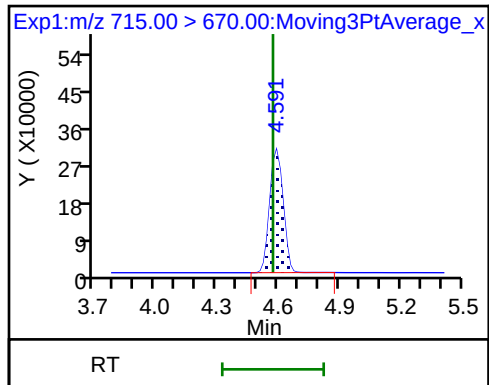
41 Perfluorotridecanoic acid (ND)



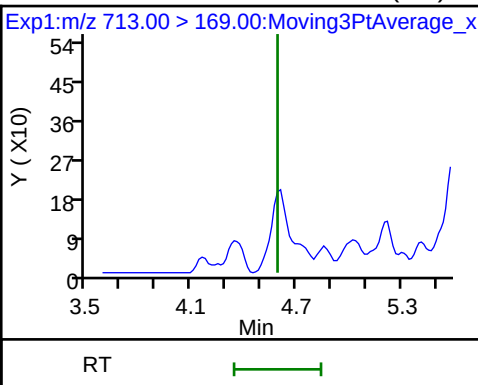
41 Perfluorotridecanoic acid (ND)



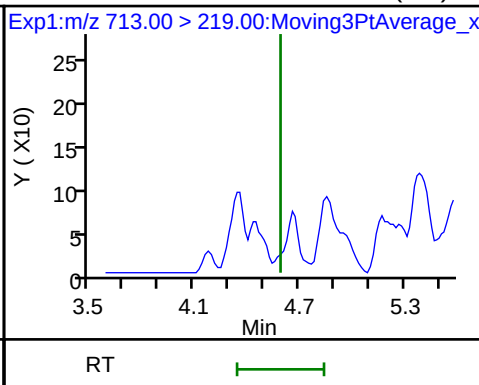
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



TestAmerica Sacramento

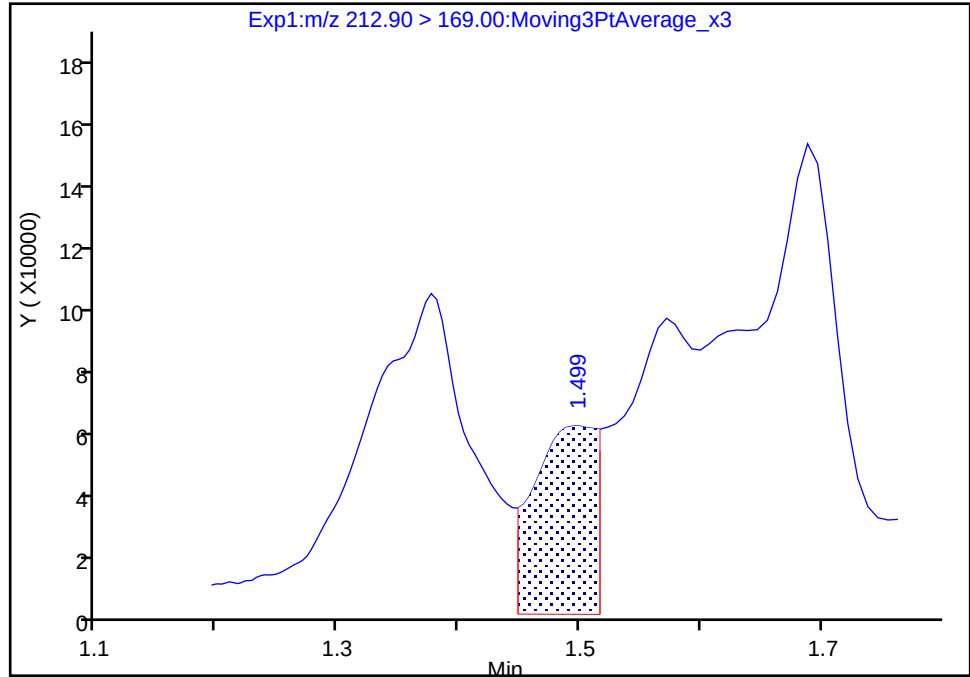
Data File:	\\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_014.d				
Injection Date:	10-Oct-2018 09:44:52	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-5-A	Lab Sample ID:	320-142290-5		
Client ID:	EC-0004-05				
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

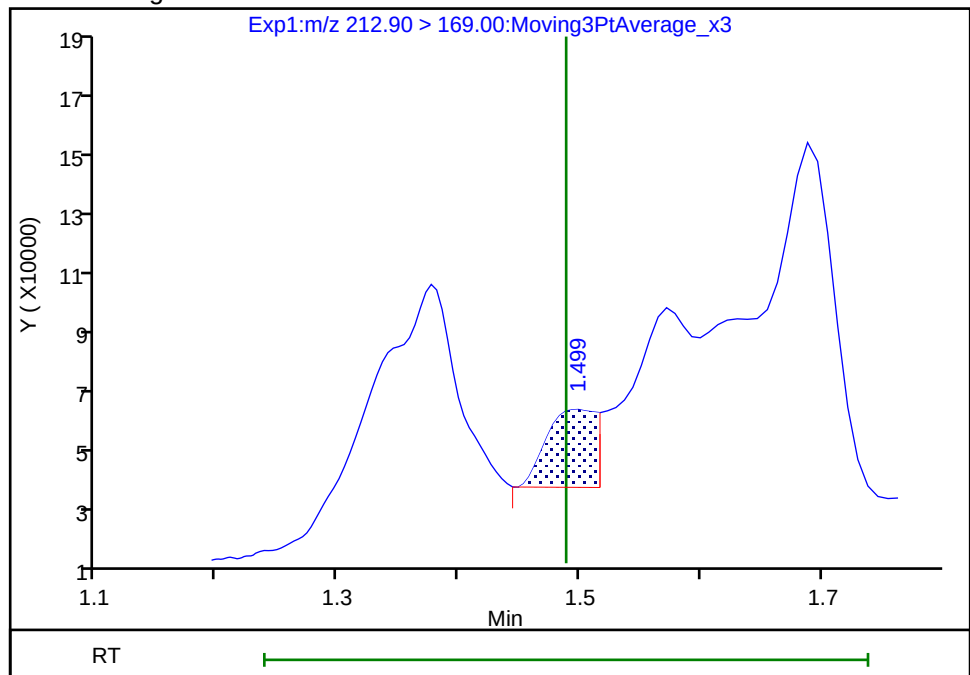
RT: 1.50
Area: 213048
Amount: 1.821076
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 74559
Amount: 0.637310
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:33:04
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

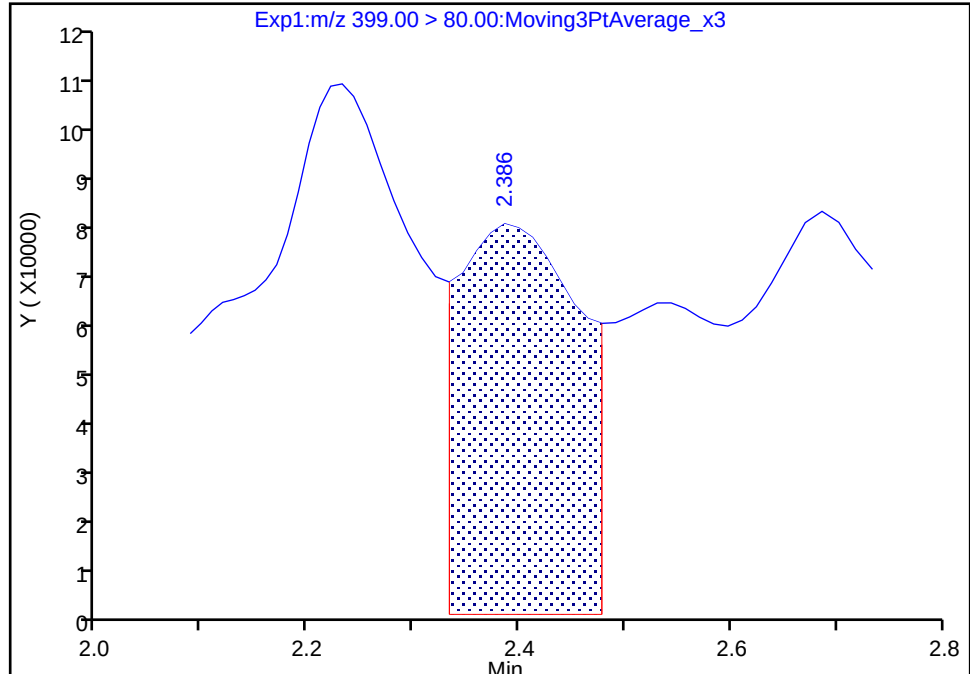
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Injection Date:	10-Oct-2018 09:44:52	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-5-A	Lab Sample ID:	320-142290-5		
Client ID:	EC-0004-05				
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

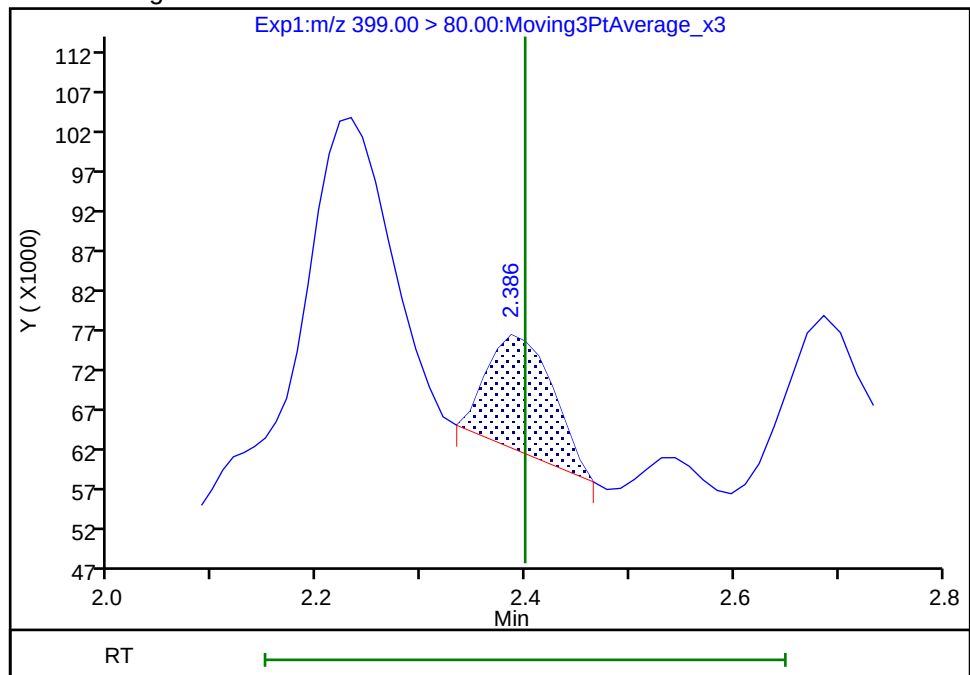
RT: 2.39
Area: 589264
Amount: 0.742361
Amount Units: ng/ml

Processing Integration Results



RT: 2.39
Area: 63521
Amount: 0.080024
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:35:17

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

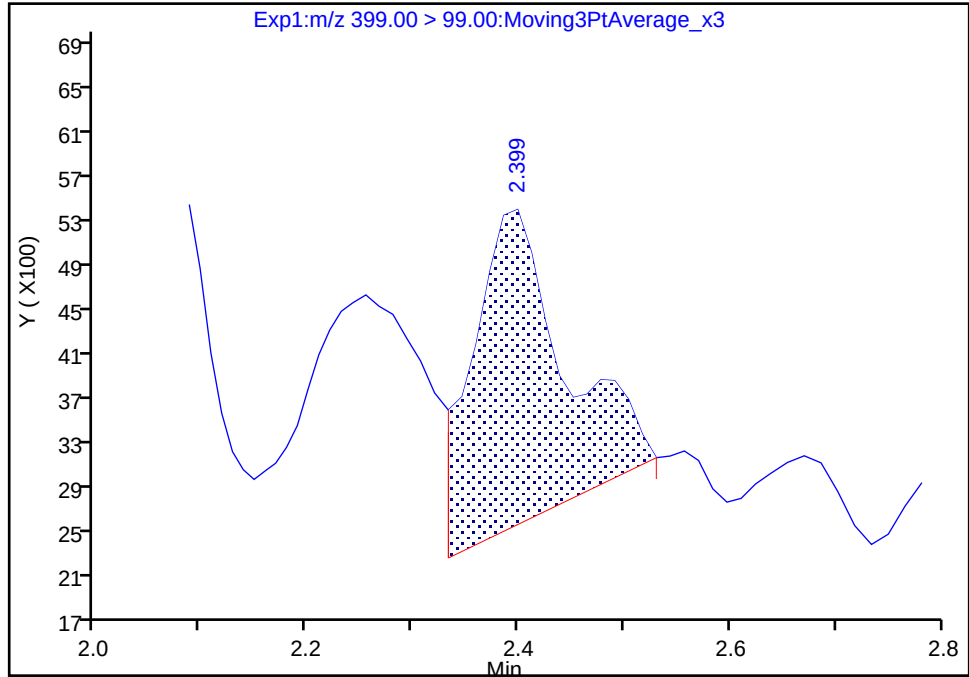
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Injection Date: 10-Oct-2018 09:44:52 Instrument ID: A9_NC
Lims ID: 480-142290-A-5-A Lab Sample ID: 320-142290-5
Client ID: EC-0004-05
Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

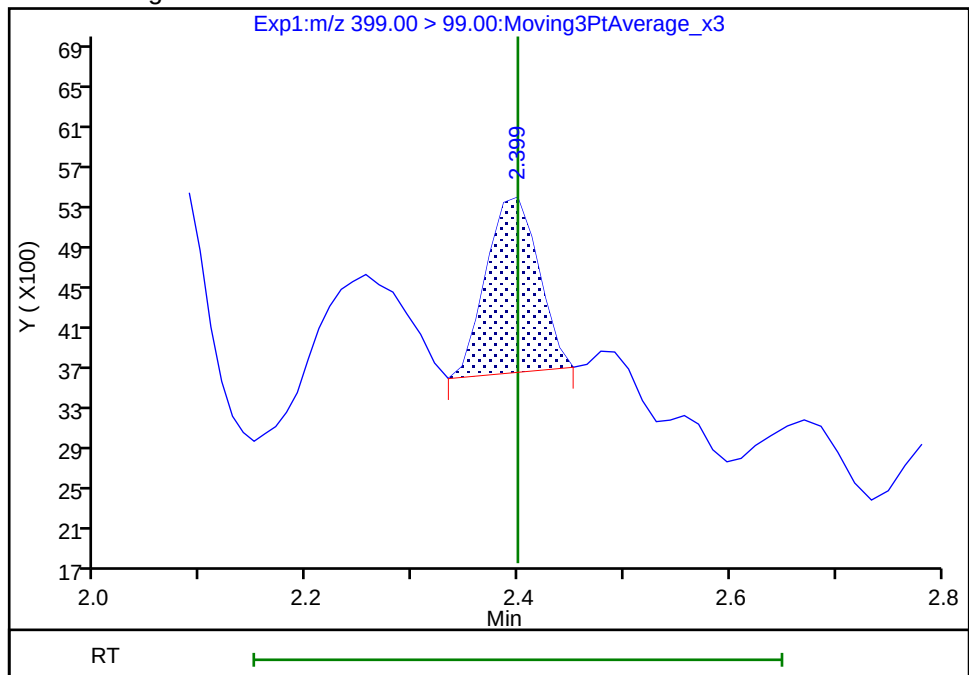
RT: 2.40
Area: 16953
Amount: 0.742361
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 5934
Amount: 0.080024
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:35:23

Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

TestAmerica Sacramento

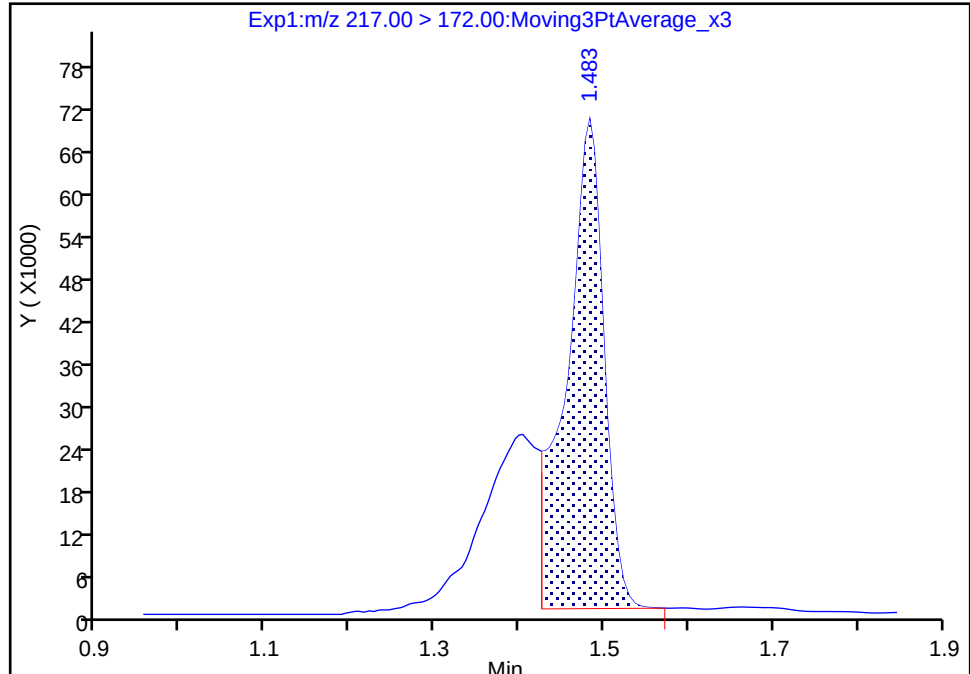
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Lims ID:	480-142290-A-5-A	Lab Sample ID:	320-142290-5		
Client ID:	EC-0004-05				
Operator ID:	A9\Administrator	ALS Bottle#:	8	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

D 1 13C4 PFBA, CAS: STL00992

Signal: 1

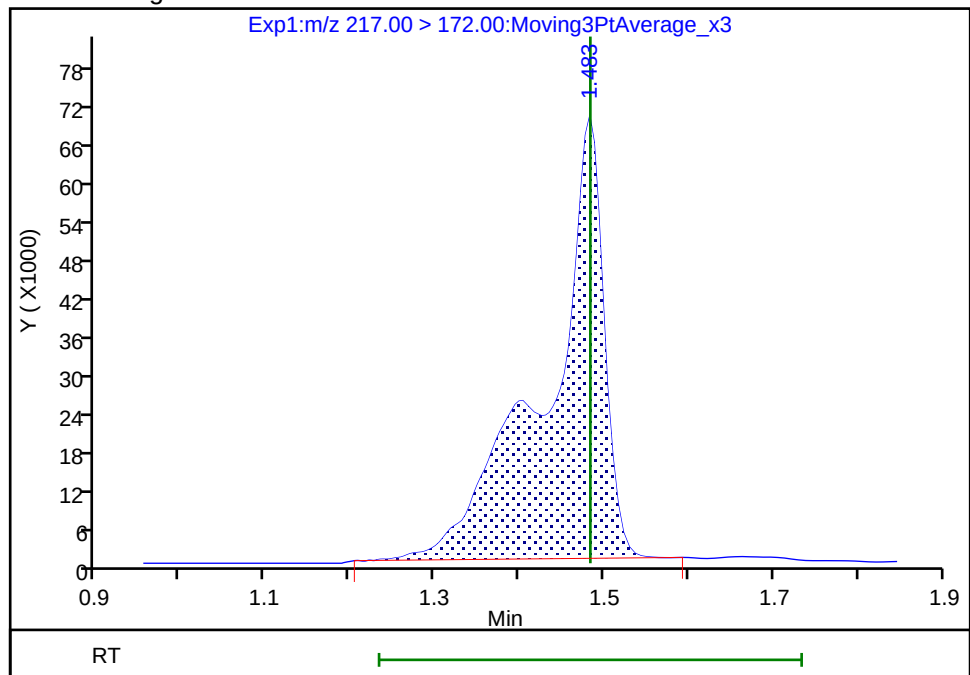
RT: 1.48
Area: 209861
Amount: 0.122155
Amount Units: ng/ml

Processing Integration Results



RT: 1.48
Area: 324734
Amount: 0.189019
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:32:54

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-06</u>	Lab Sample ID: <u>480-142290-6</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_015.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 13:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>278.8 (mL)</u>	Date Analyzed: <u>10/10/2018 09:52</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	30	B	1.8	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	7.5		1.8	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	5.5		1.8	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.5		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	3.6		1.8	0.76
375-95-1	Perfluorononanoic acid (PFNA)	0.72	J	1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.8	U	1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.8	U	1.8	0.99
307-55-1	Perfluorododecanoic acid (PFDoA)	1.8	U	1.8	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.8	U	1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.8	U	1.8	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.2	J	1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	5.7		1.8	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.8	U	1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.8	U	1.8	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.8	U	1.8	0.29
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.8	U	1.8	0.31
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	18	U	18	2.8
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	18	U	18	1.7
27619-97-2	6:2 FTS	18	U	18	1.8
39108-34-4	8:2 FTS	18	U	18	1.8

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-06</u>	Lab Sample ID: <u>480-142290-6</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_015.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 13:45</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>278.8 (mL)</u>	Date Analyzed: <u>10/10/2018 09:52</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	47		25-150
STL01893	13C5 PFPeA	89		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4 PFHpA	107		25-150
STL00990	13C4 PFOA	109		25-150
STL00995	13C5 PFNA	110		25-150
STL00996	13C2 PFDA	110		25-150
STL00997	13C2 PFUnA	105		25-150
STL00998	13C2 PFDoA	100		25-150
STL02116	13C2 PFTeDA	72		25-150
STL02337	13C3 PFBS	106		25-150
STL00994	18O2 PFHxS	110		25-150
STL00991	13C4 PFOS	104		25-150
STL01056	13C8 FOSA	117		25-150
STL02118	d3-NMeFOSAA	131		25-150
STL02117	d5-NEtFOSAA	141		25-150
STL02279	M2-6:2 FTS	280	*	25-150
STL02280	M2-8:2 FTS	209	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d
 Lims ID: 480-142290-A-6-A
 Client ID: EC-0004-06
 Sample Type: Client
 Inject. Date: 10-Oct-2018 09:52:23 ALS Bottle#: 9 Worklist Smp#: 12
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142290-a-6-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:07:59 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:39:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.483	1.484	-0.001	0.539	2769172	1.18		47.3	2183	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.483	1.489	-0.006	1.000	848183	0.8502			16.3	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.772	1.764	0.008	0.644	4665902	2.24		89.5	1898	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	396741	0.2093			2.1	
D 47 13C3 PFBS										
301.90 > 83.00	1.813	1.806	0.007	0.659	70431	2.47		106	78.6	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.805	1.814	-0.009	0.995	107020	0.0330			1.1	M
298.90 > 99.00	1.813	1.814	-0.001	1.000	27711		3.86(1.35-4.05)		2.6	M
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.068	2.058	0.010	1.005	292222	0.1537			1.8	M
313.00 > 119.00	2.068	2.058	0.010	1.005	18077		16.17(6.96-20.87)		4.4	
D 7 13C2 PFHxA										
315.00 > 270.00	2.057	2.058	-0.001	0.748	5310859	2.36		94.4	4043	
D 9 13C4 PFHpA										
367.00 > 322.00	2.399	2.373	0.026	0.872	7406307	2.69		107	7703	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.386	2.386	0.0	0.995	224323	0.0701			2.2	M
363.00 > 169.00	2.399	2.386	0.013	1.000	51517		4.35(2.17-6.52)		25.3	M
8 Perfluorohexanesulfonic acid										RM
399.00 > 80.00	2.425	2.399	0.026	1.005	372521	0.1601			3.7	RM
399.00 > 99.00	2.412	2.399	0.013	1.000	13931		26.74(1.90-5.70)		2.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.412	2.400	0.012	0.877	4460760	2.60		110	6795	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2 FTS										
429.00 > 81.00	2.718	2.703	0.015	0.988	2020712	6.66		280	325	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.718	2.718	0.0	1.000	34750	0.0190			47.6	
* 62 13C2 PFOA										
415.00 > 370.00	2.750	2.734	0.016		6409088	2.50			8448	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.734	0.016	1.000	303814	0.1000			4.7	M
413.00 > 169.00	2.750	2.734	0.016	1.000	136579		2.22(1.36-4.08)		56.1	M
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.735	0.015	1.000	7068471	2.74		109	11880	
D 18 13C4 PFOS										
503.00 > 80.00	3.116	3.099	0.017	1.133	4475508	2.48		104	809	
D 19 13C5 PFNA										
468.00 > 423.00	3.116	3.099	0.017	1.133	6552670	2.76		110	3939	
20 Perfluorononanoic acid										
463.00 > 419.00	3.116	3.117	-0.001	1.000	53557	0.0201			2.4	M
463.00 > 169.00	3.116	3.117	-0.001	1.000	7668		6.98(2.68-8.03)		8.3	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.464	3.449	0.015	1.260	199322	5.00		209	449	
D 23 13C2 PFDA										
515.00 > 470.00	3.480	3.449	0.031	1.266	6960908	2.74		110	4231	
D 21 13C8 FOSA										
506.00 > 78.00	3.464	3.449	0.015	1.260	2838221	2.92		117	5912	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.464	3.465	-0.001	1.000	2327	0.000690			6.9	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.613	0.014	1.319	3435757	3.28		131	2788	
D 30 13C2 PFUnA										
565.00 > 520.00	3.791	3.776	0.015	1.379	5862377	2.63		105	7958	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.776	0.015	1.379	3098605	3.52		141	3360	
D 36 13C2 PFDoA										
615.00 > 570.00	4.089	4.073	0.016	1.487	6340517	2.51		100	7964	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.669	3451152	1.81		72.4	6734	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d

Injection Date: 10-Oct-2018 09:52:23

Instrument ID: A9_NC

Lims ID: 480-142290-A-6-A

Lab Sample ID: 320-142290-6

Client ID: EC-0004-06

Operator ID: A9\Administrator

ALS Bottle#: 9

Worklist Smp#: 12

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

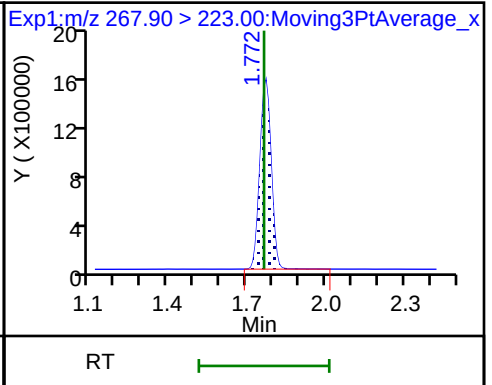
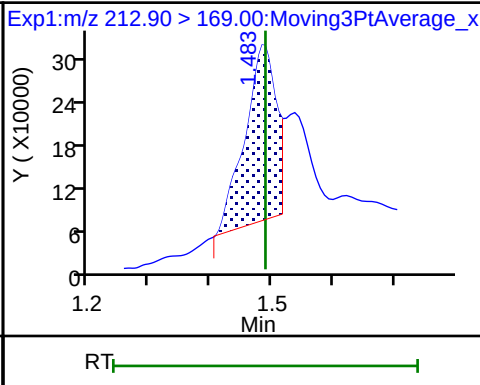
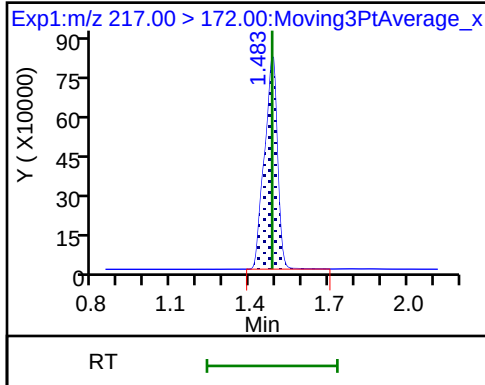
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

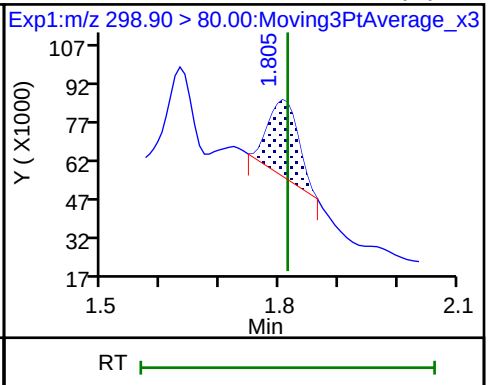
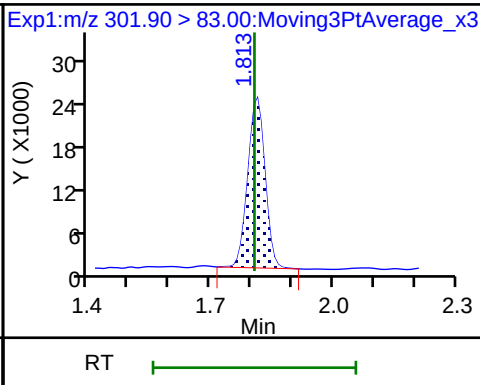
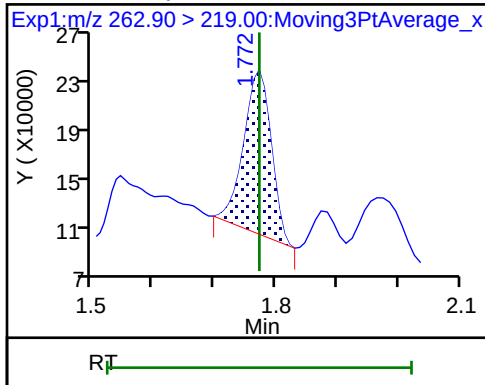
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

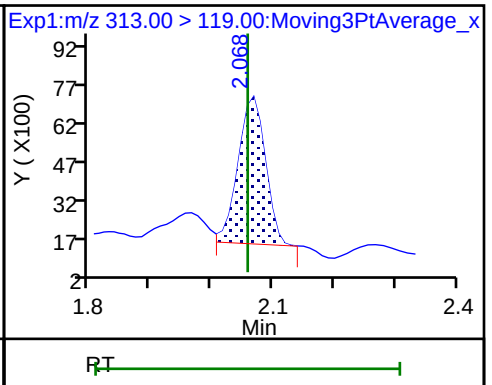
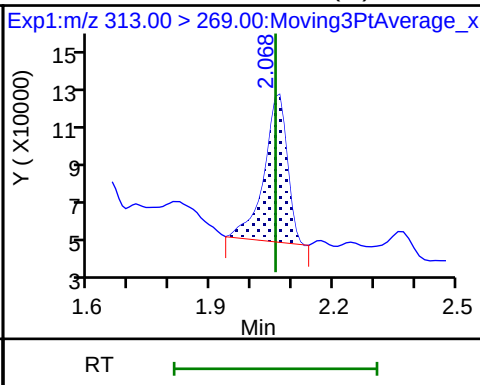
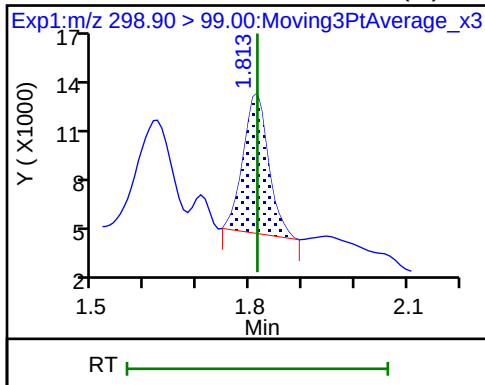
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid (M)

6 Perfluorohexanoic acid (M)

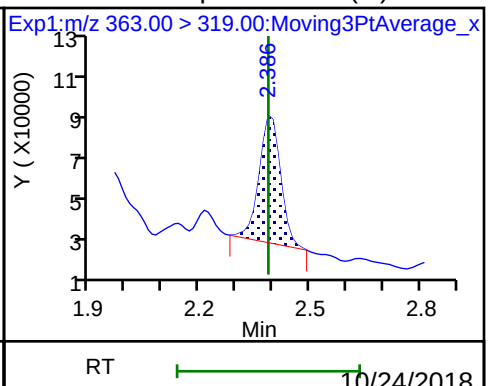
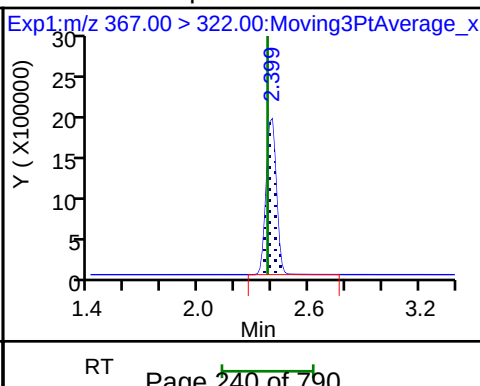
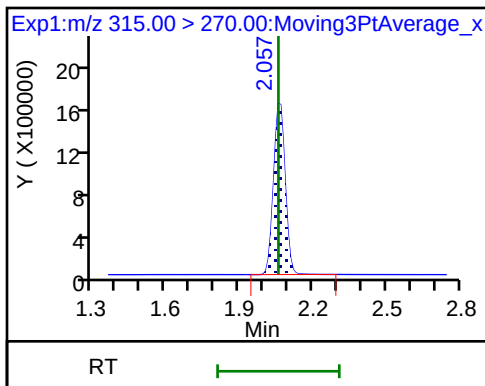
6 Perfluorohexanoic acid

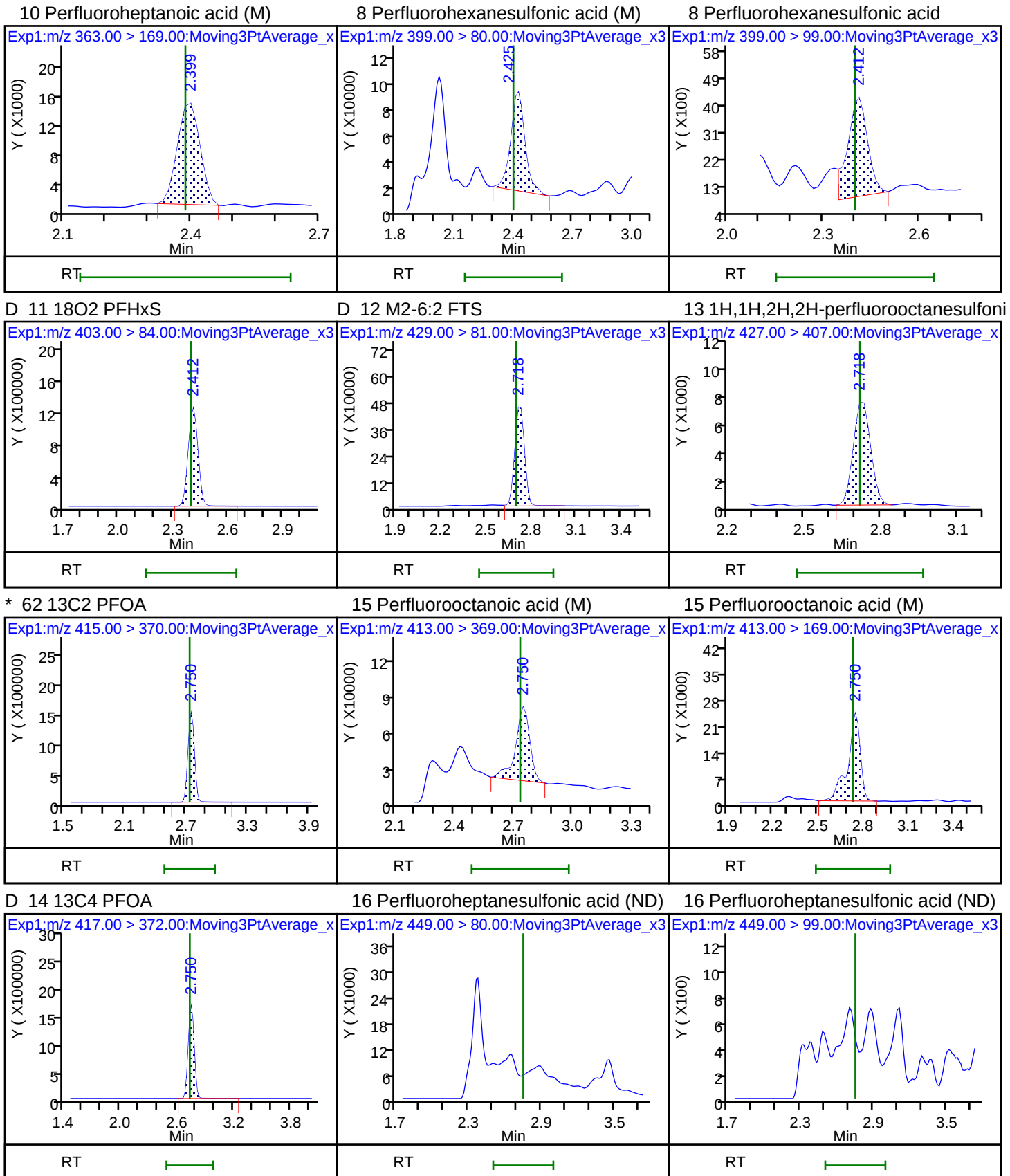


D 7 13C2 PFHxA

D 9 13C4 PFHpA

10 Perfluoroheptanoic acid (M)

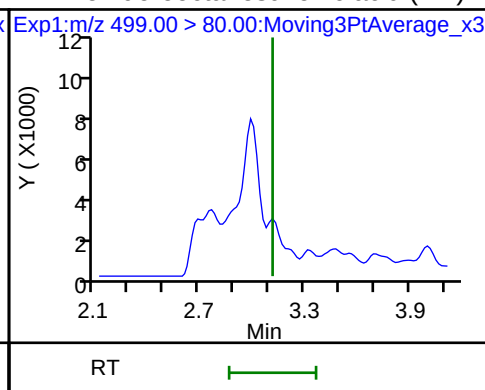
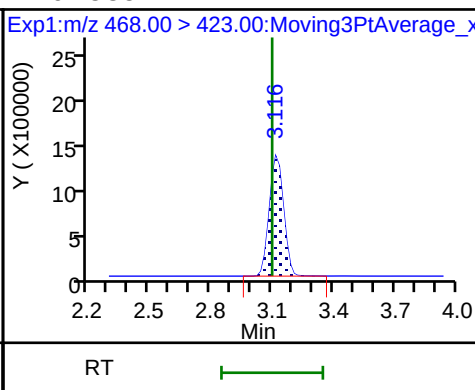
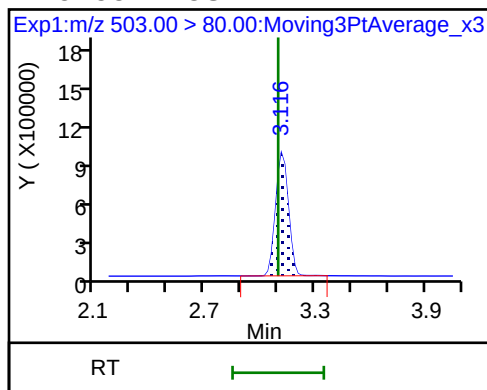




D 18 13C4 PFOS

D 19 13C5 PFNA

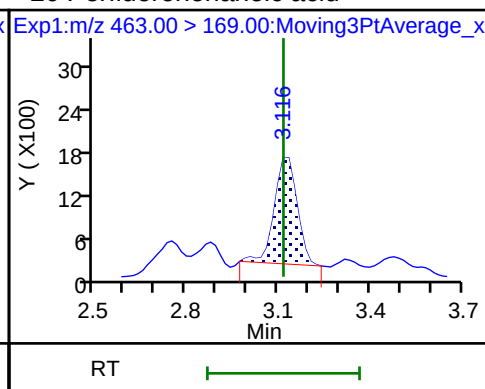
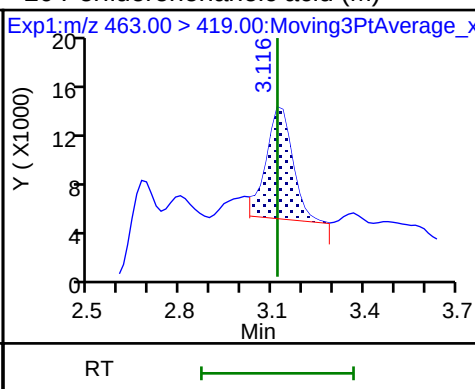
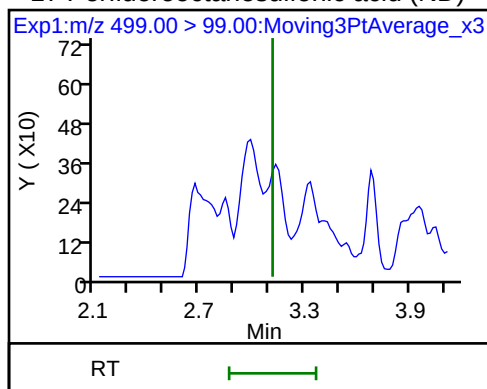
17 Perfluorooctanesulfonic acid (ND)



17 Perfluorooctanesulfonic acid (ND)

20 Perfluorononanoic acid (M)

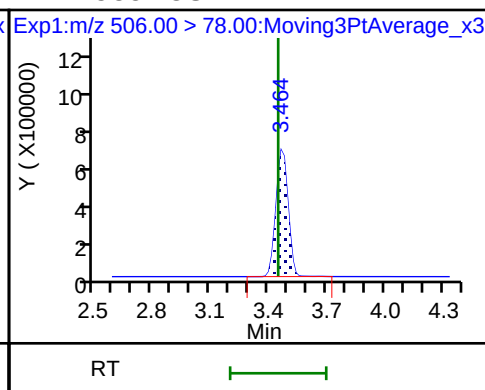
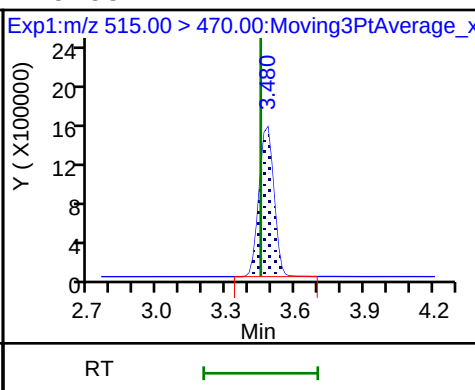
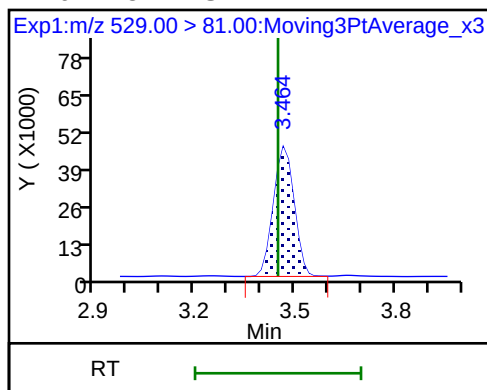
20 Perfluorononanoic acid



D 26 M2-8:2 FTS

D 23 13C2 PFDA

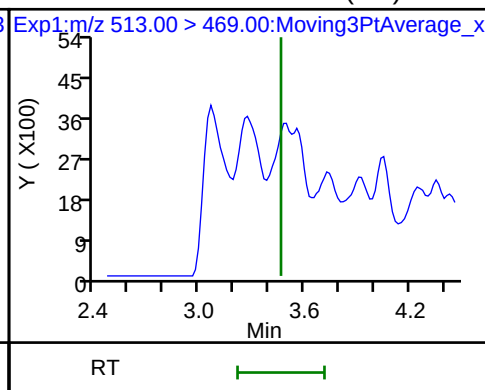
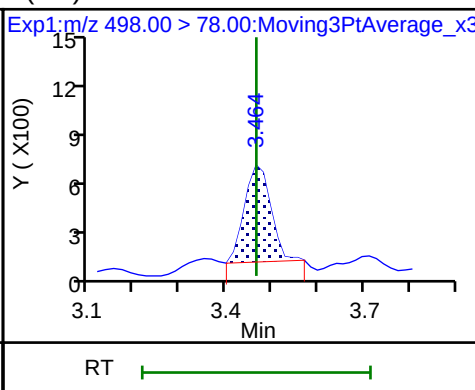
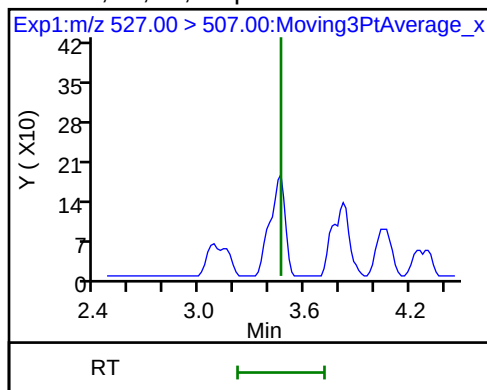
D 21 13C8 FOSA

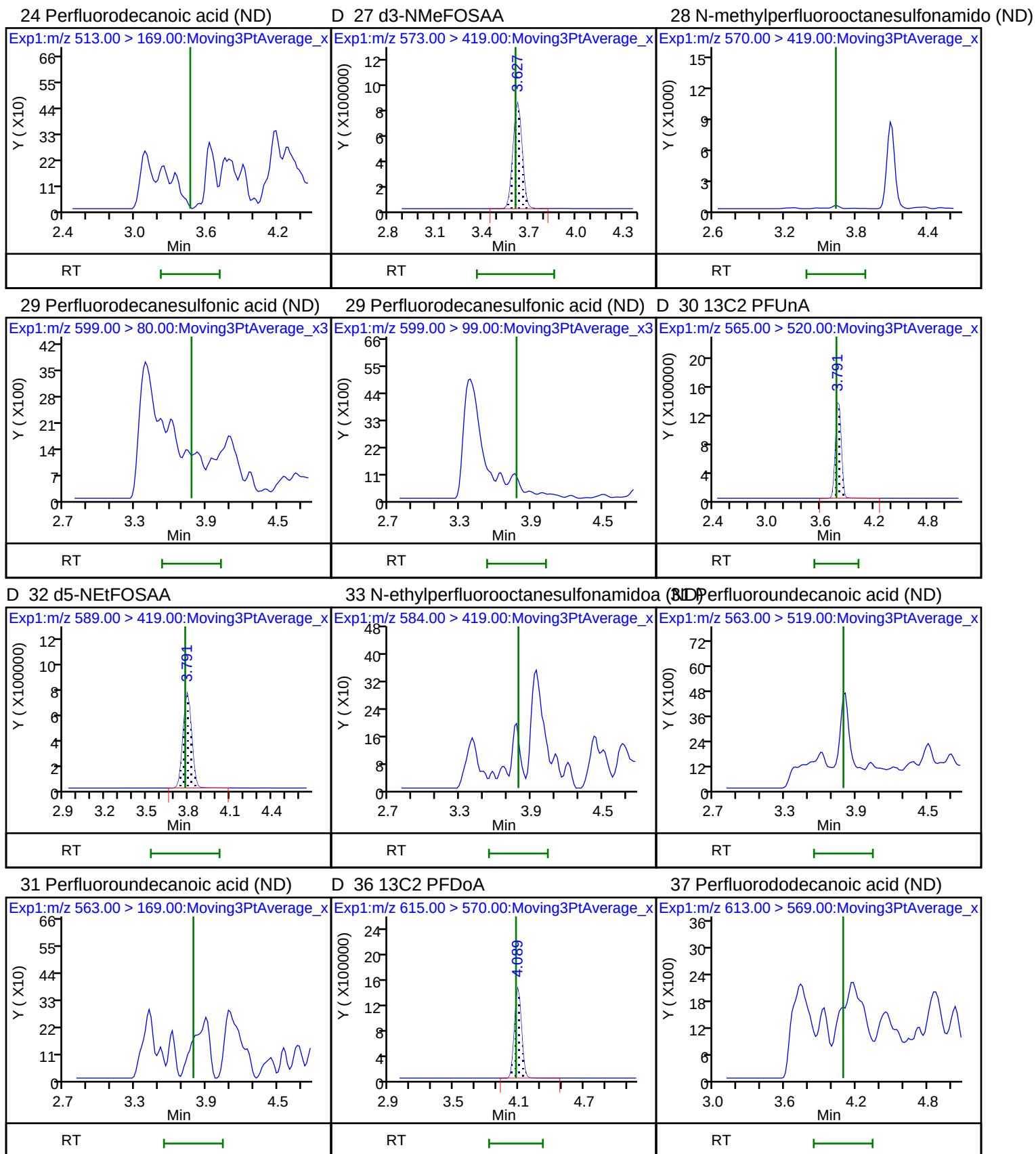


25 1H,1H,2H,2H-perfluorodecanesulfonic acid (ND)

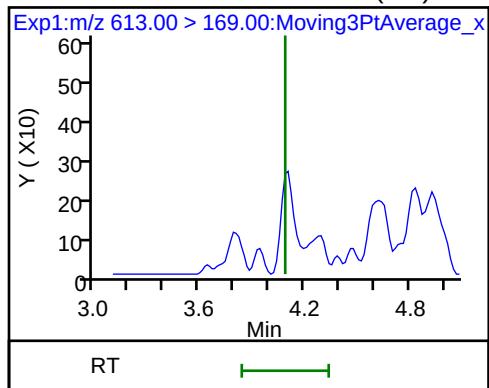
22 Perfluorooctanesulfonamide

24 Perfluorodecanoic acid (ND)

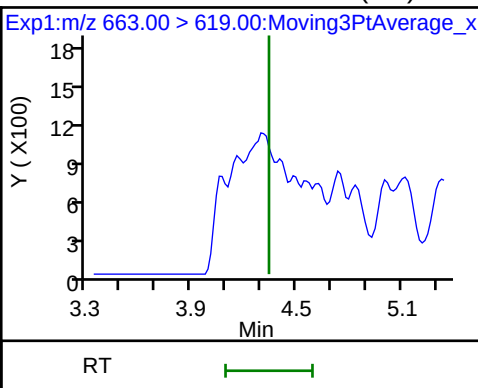




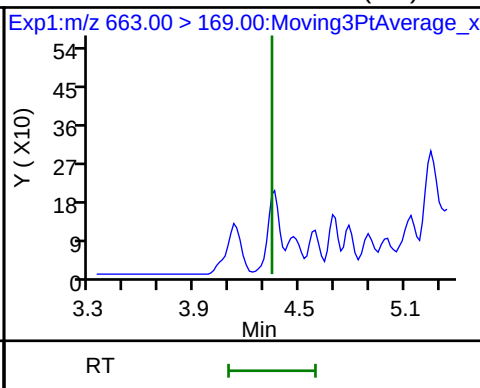
37 Perfluorododecanoic acid (ND)



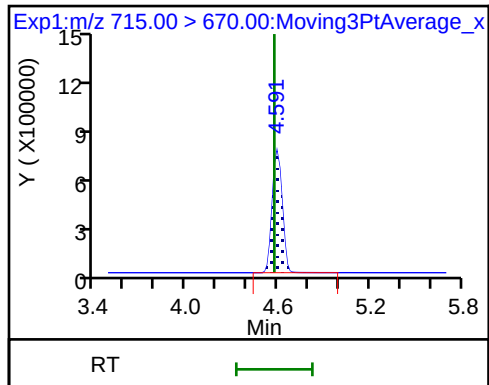
41 Perfluorotridecanoic acid (ND)



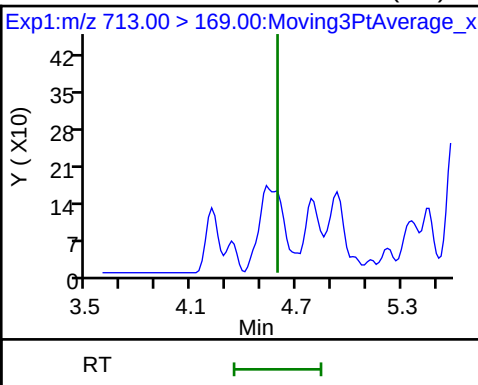
41 Perfluorotridecanoic acid (ND)



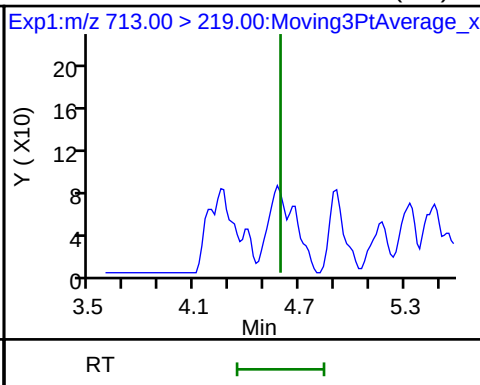
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



TestAmerica Sacramento

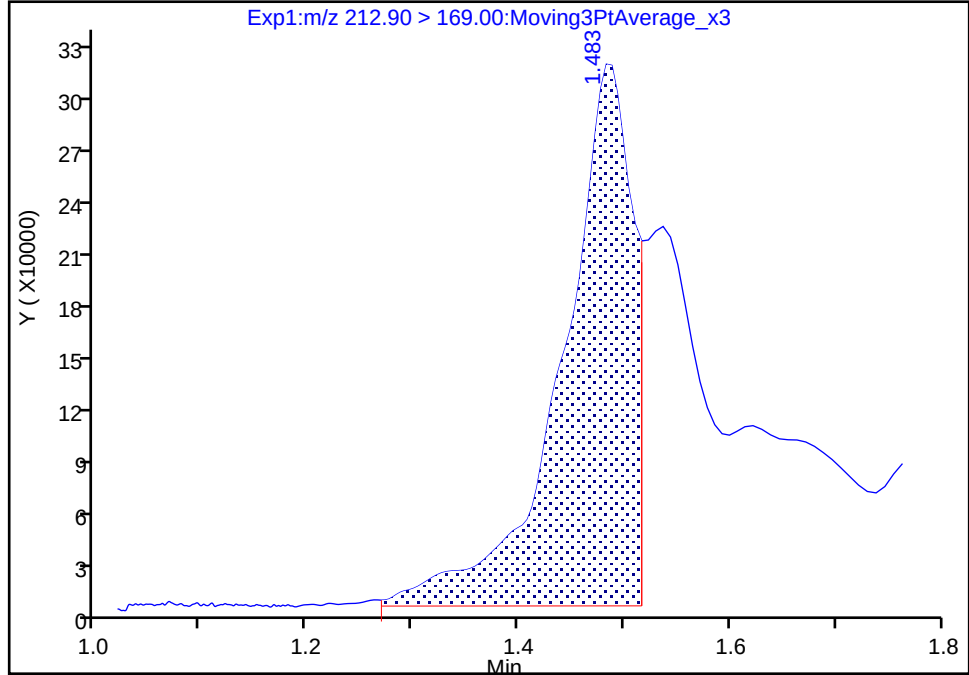
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d
Injection Date: 10-Oct-2018 09:52:23 Instrument ID: A9_NC
Lims ID: 480-142290-A-6-A Lab Sample ID: 320-142290-6
Client ID: EC-0004-06
Operator ID: A9\Administrator ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

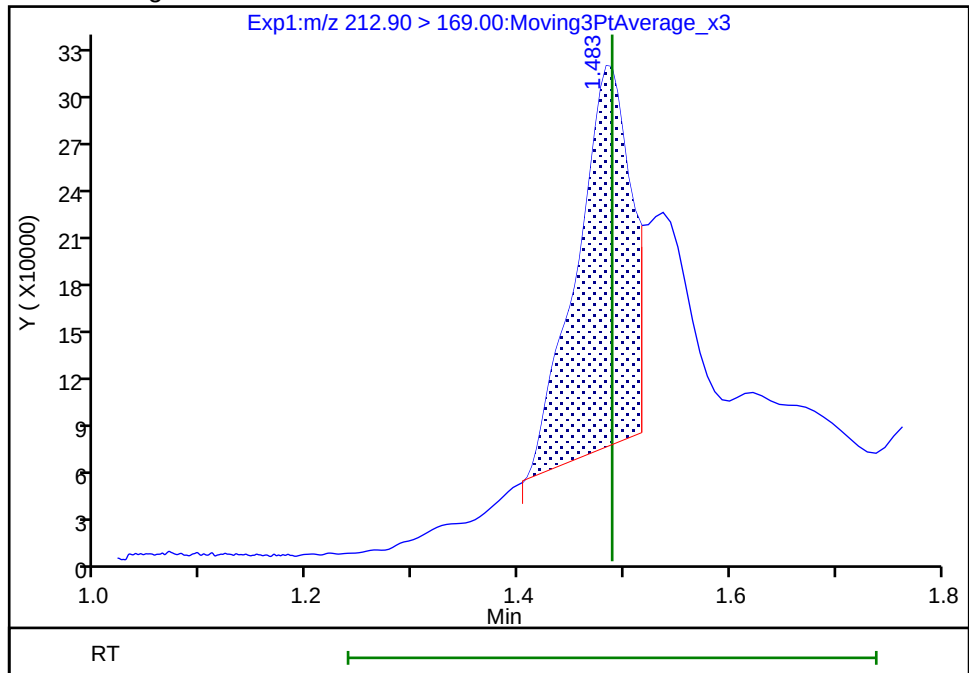
RT: 1.48
Area: 1436232
Amount: 1.439637
Amount Units: ng/ml

Processing Integration Results



RT: 1.48
Area: 848183
Amount: 0.850194
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:36:33

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

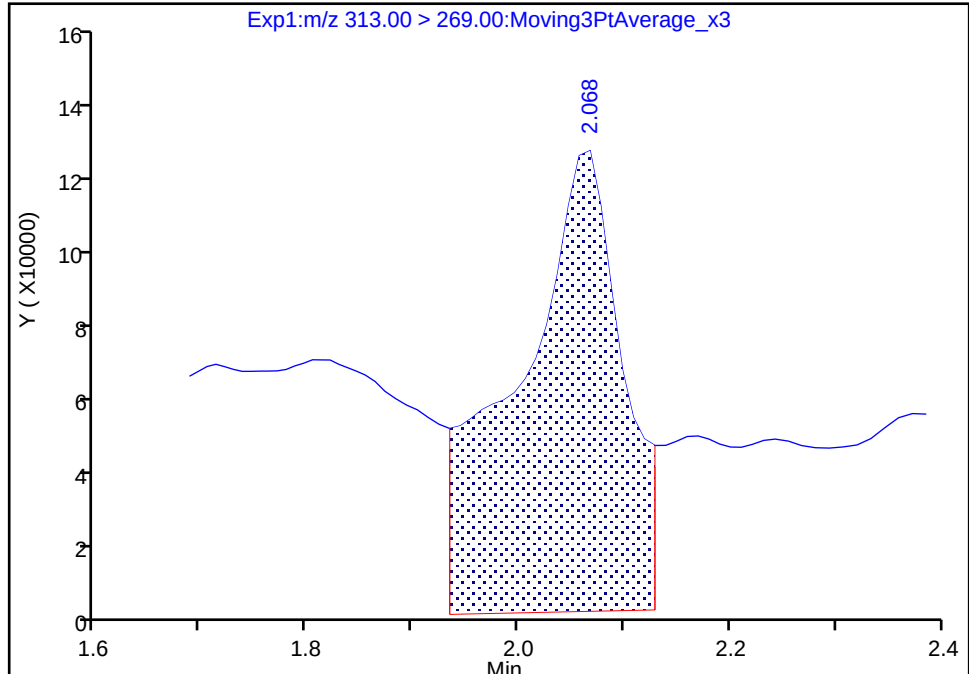
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Injection Date:	10-Oct-2018 09:52:23	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-6-A	Lab Sample ID:	320-142290-6		
Client ID:	EC-0004-06				
Operator ID:	A9\Administrator	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

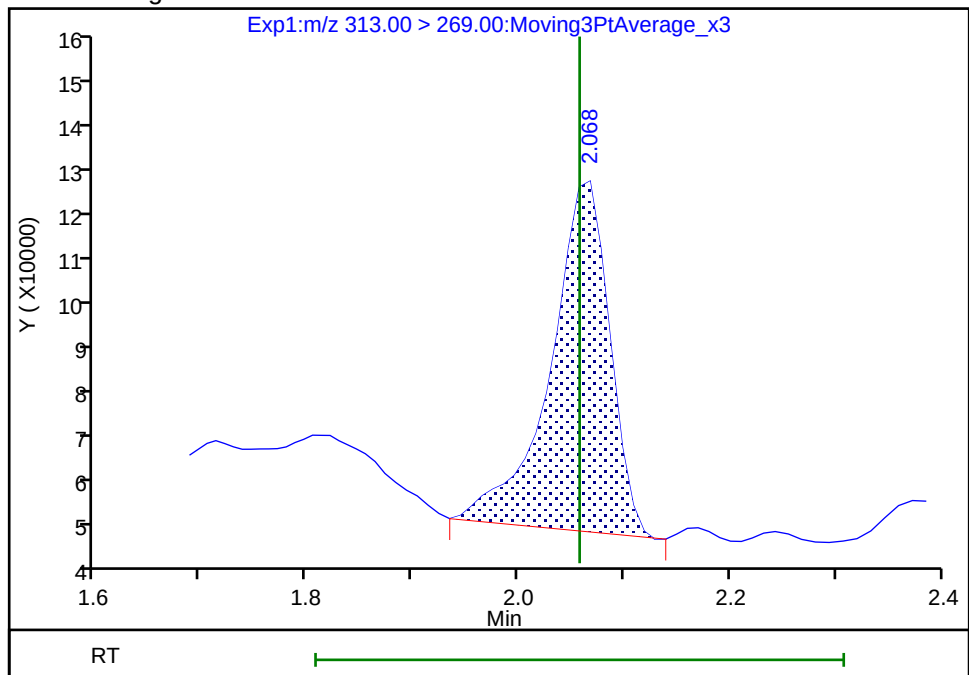
RT: 2.07
Area: 824184
Amount: 0.433402
Amount Units: ng/ml

Processing Integration Results



RT: 2.07
Area: 292222
Amount: 0.153667
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:37:11
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 246 of 790

10/24/2018

TestAmerica Sacramento

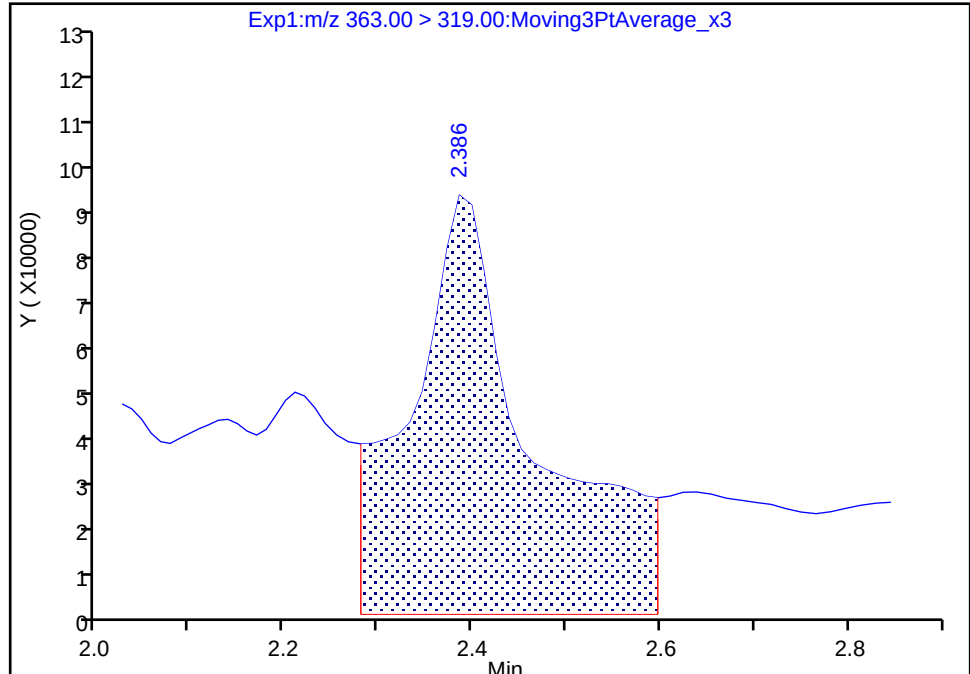
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Injection Date:	10-Oct-2018 09:52:23	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-6-A	Lab Sample ID:	320-142290-6		
Client ID:	EC-0004-06				
Operator ID:	A9\Administrator	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

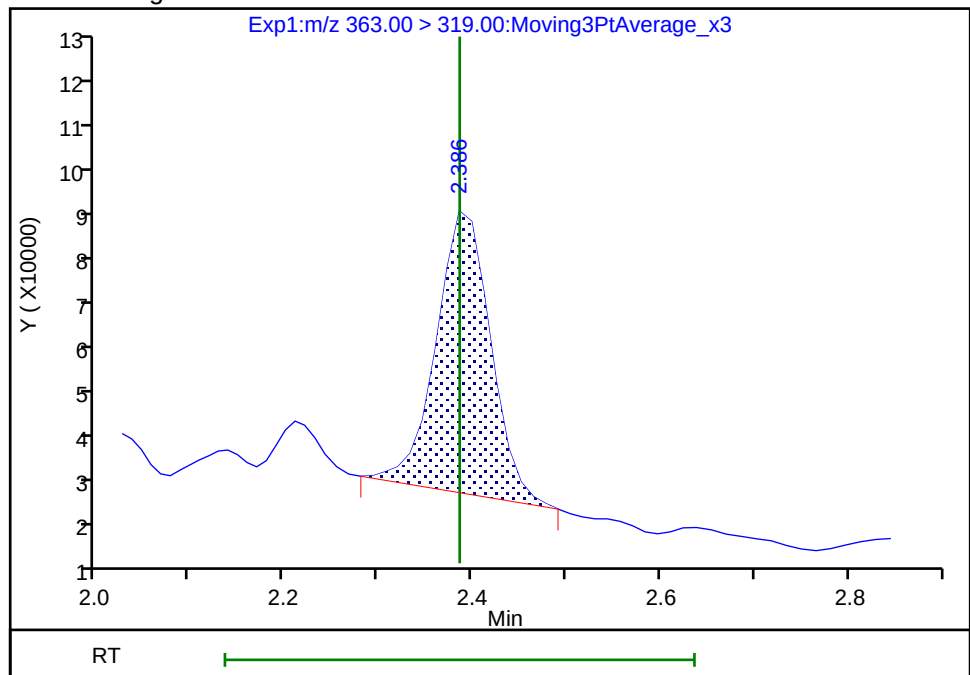
RT: 2.39
Area: 807666
Amount: 0.252240
Amount Units: ng/ml

Processing Integration Results



RT: 2.39
Area: 224323
Amount: 0.070058
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:37:20

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

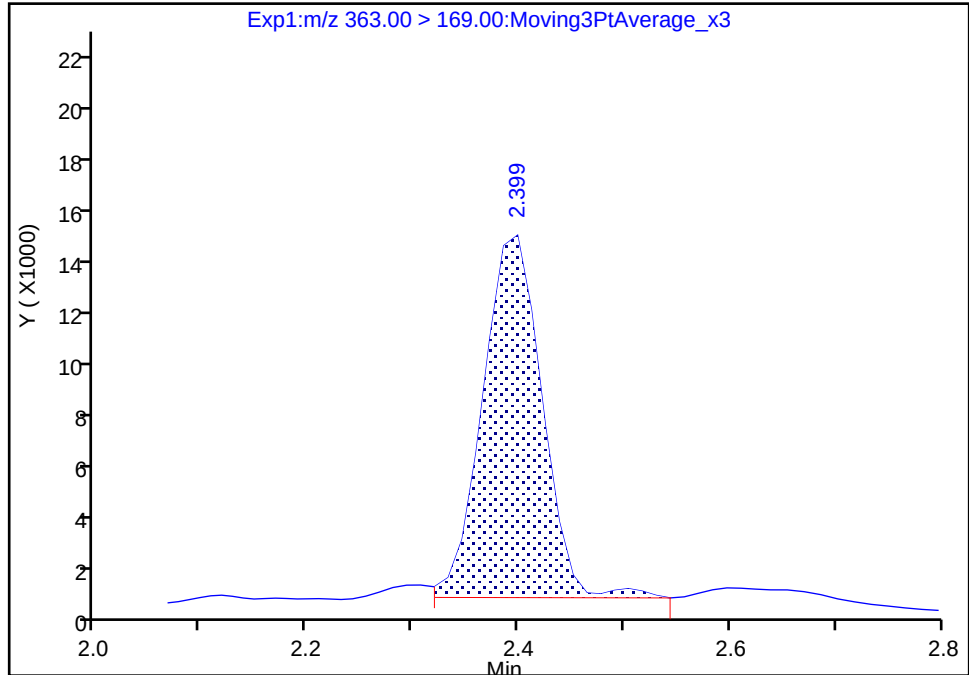
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d
Injection Date: 10-Oct-2018 09:52:23 Instrument ID: A9_NC
Lims ID: 480-142290-A-6-A Lab Sample ID: 320-142290-6
Client ID: EC-0004-06
Operator ID: A9\Administrator ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

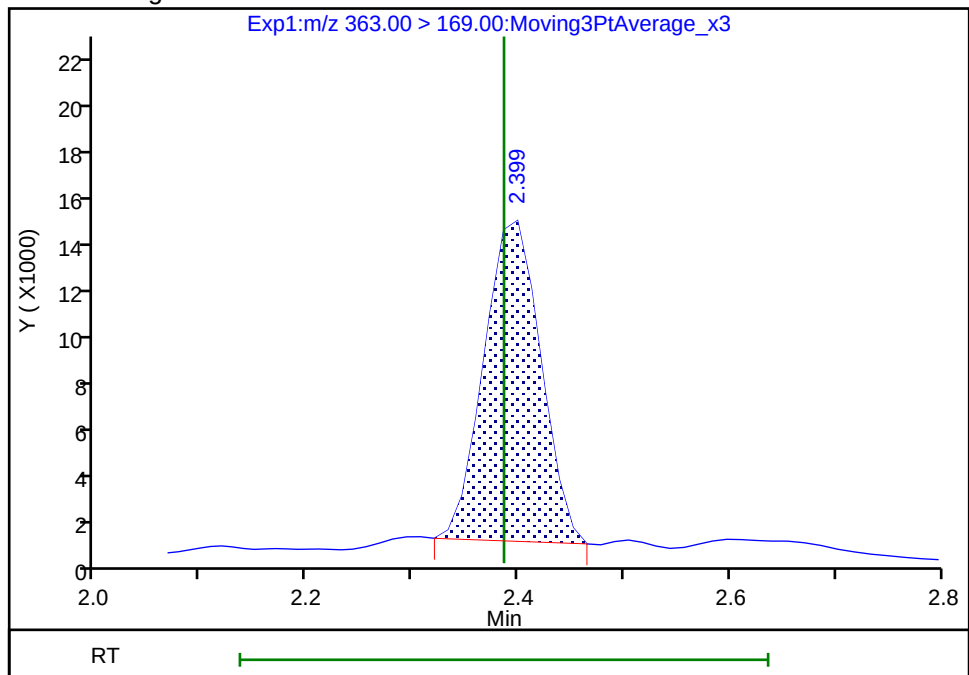
RT: 2.40
Area: 55099
Amount: 0.252240
Amount Units: ng/ml

Processing Integration Results



RT: 2.40
Area: 51517
Amount: 0.070058
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:37:44

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

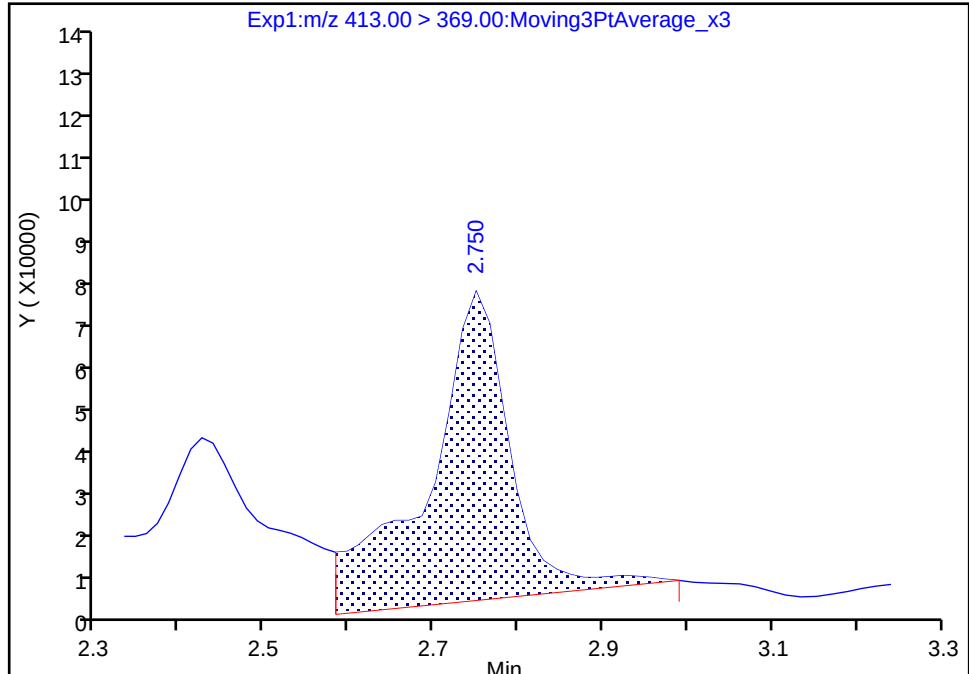
Data File:	\\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d				
Injection Date:	10-Oct-2018 09:52:23	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-6-A	Lab Sample ID:	320-142290-6		
Client ID:	EC-0004-06				
Operator ID:	A9\Administrator	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

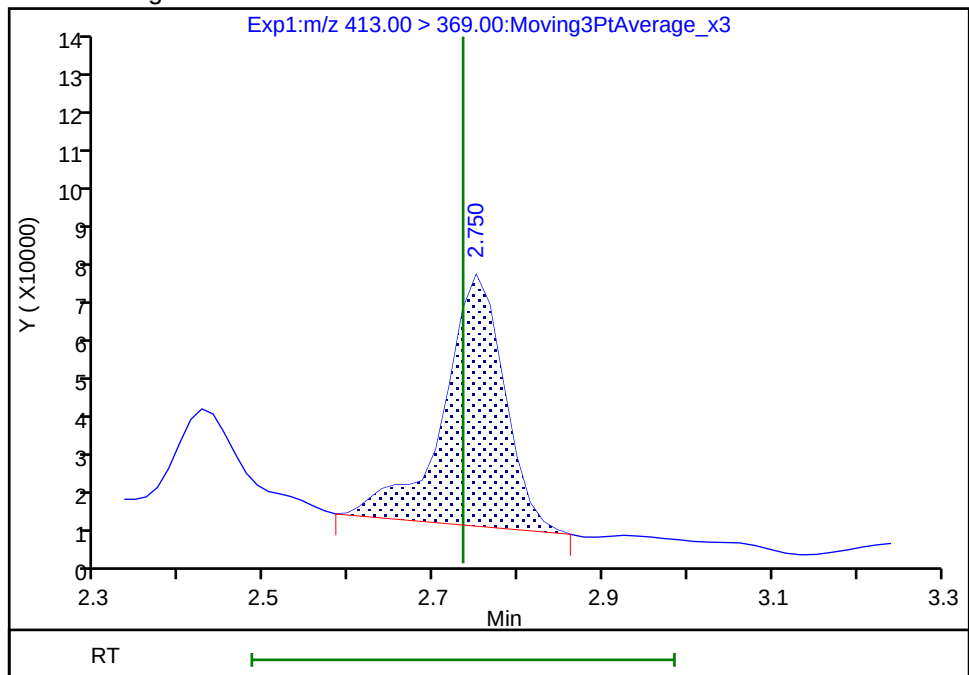
RT: 2.75
Area: 462313
Amount: 0.152240
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 303814
Amount: 0.100046
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:38:06

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

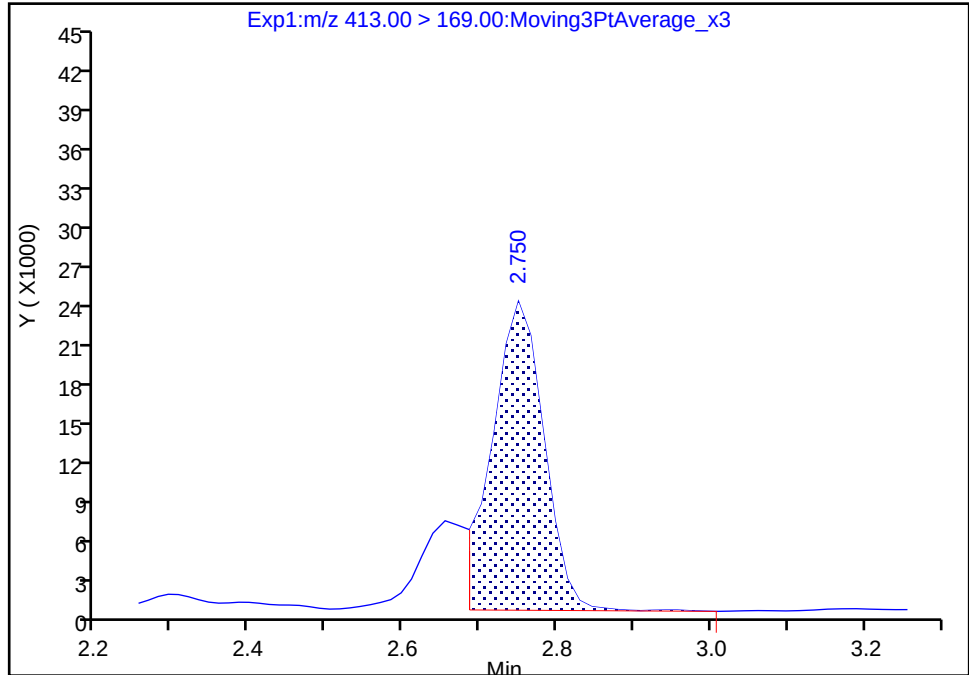
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d
Injection Date: 10-Oct-2018 09:52:23 Instrument ID: A9_NC
Lims ID: 480-142290-A-6-A Lab Sample ID: 320-142290-6
Client ID: EC-0004-06
Operator ID: A9\Administrator ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

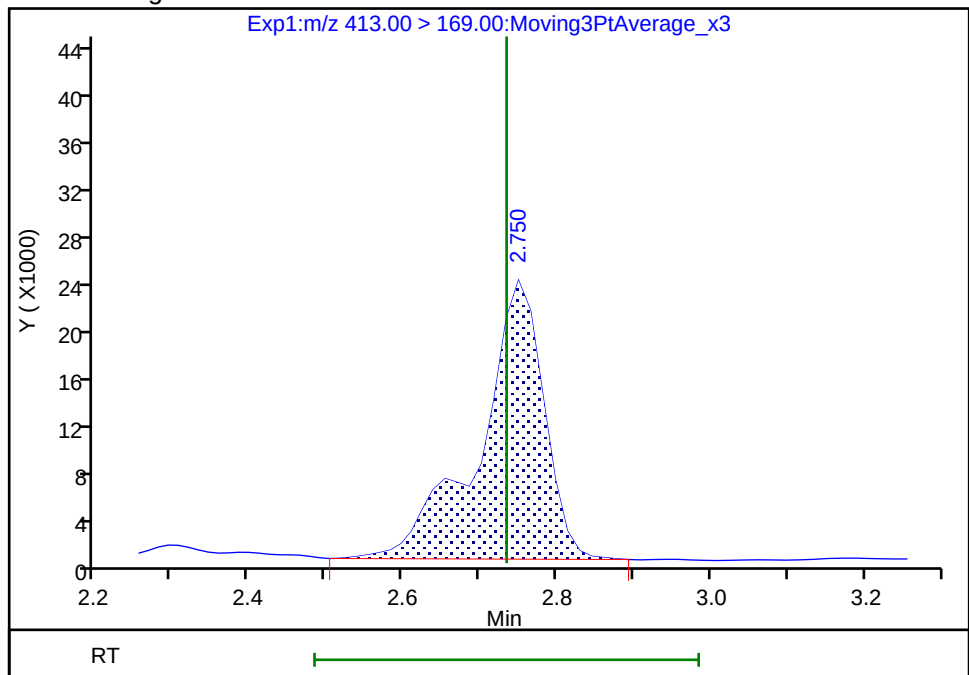
RT: 2.75
Area: 108746
Amount: 0.152240
Amount Units: ng/ml

Processing Integration Results



RT: 2.75
Area: 136579
Amount: 0.100046
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:38:50

Audit Action: Manually Integrated

Audit Reason: Isomers
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TestAmerica Sacramento

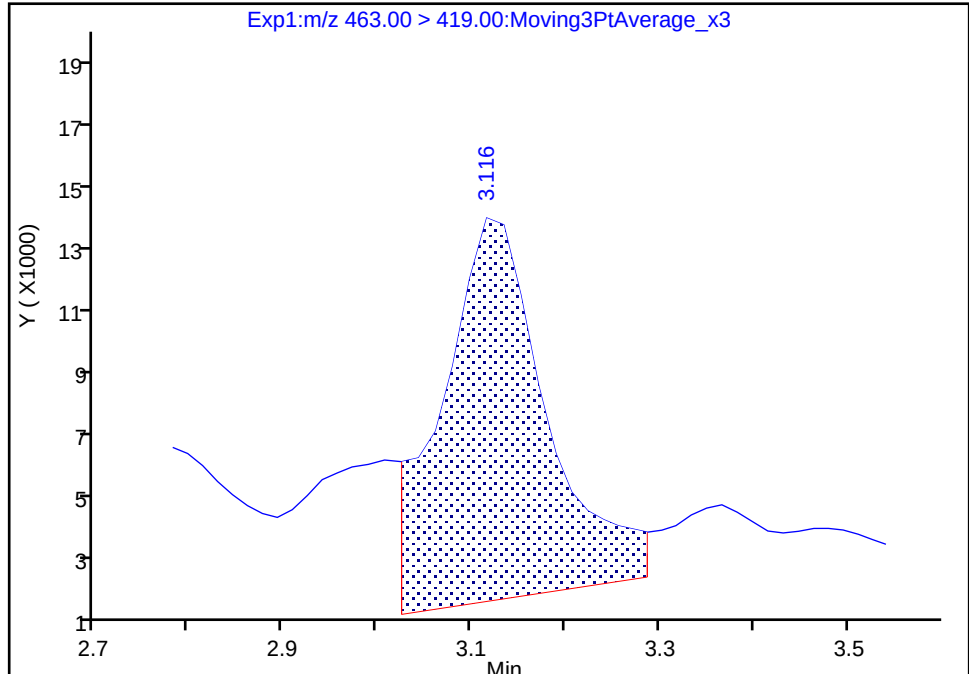
Data File:	\\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d				
Injection Date:	10-Oct-2018 09:52:23	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-6-A	Lab Sample ID:	320-142290-6		
Client ID:	EC-0004-06				
Operator ID:	A9\Administrator	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

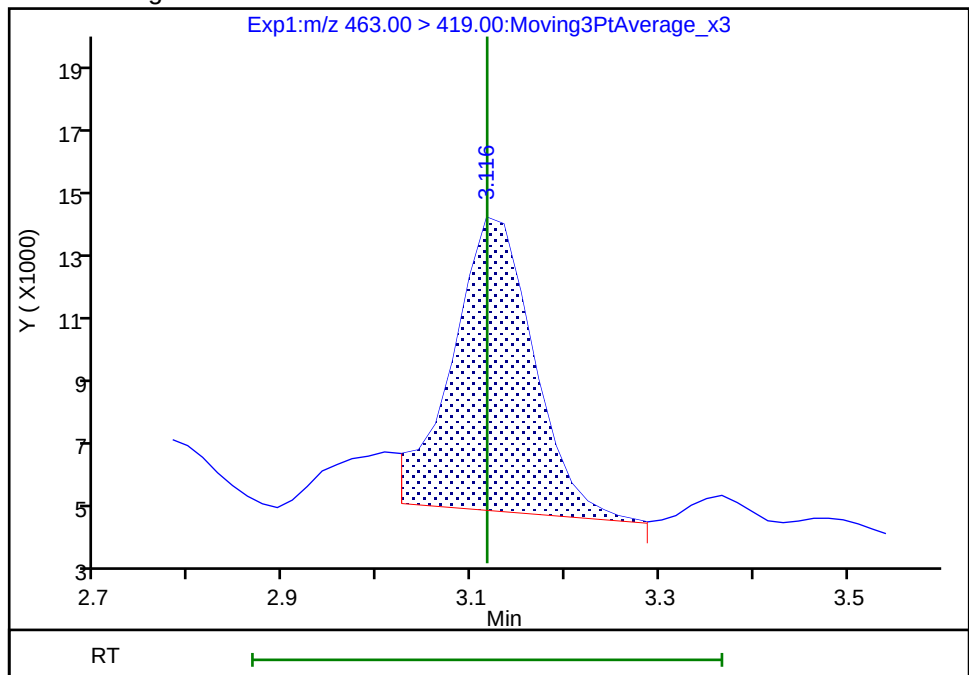
RT: 3.12
Area: 86985
Amount: 0.032668
Amount Units: ng/ml

Processing Integration Results



RT: 3.12
Area: 53557
Amount: 0.020114
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:39:22

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

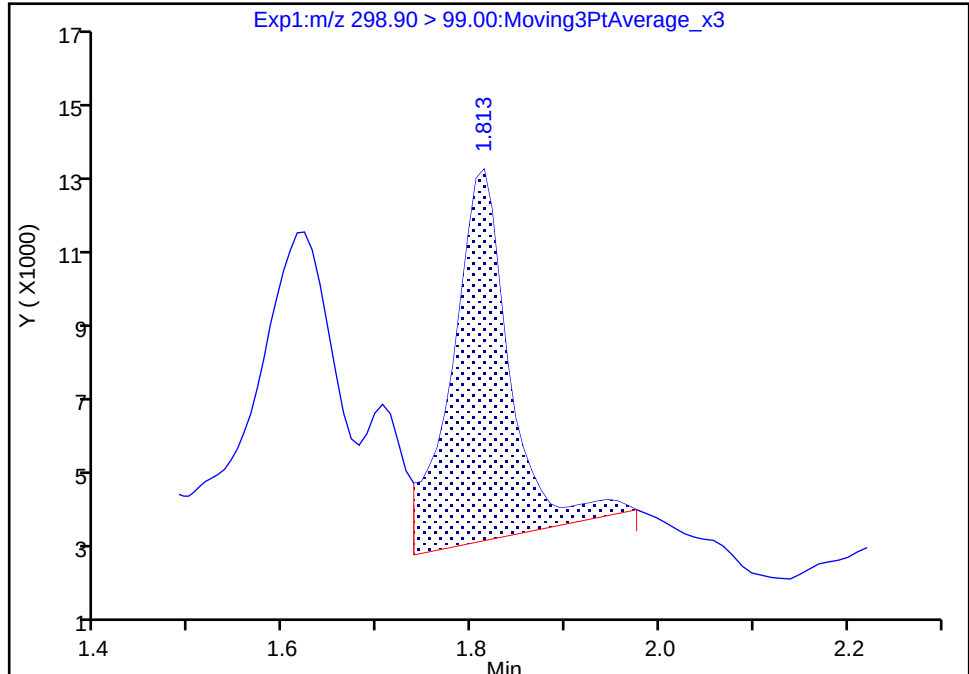
Data File:	\\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d				
Injection Date:	10-Oct-2018 09:52:23	Instrument ID:	A9_NC		
Lims ID:	480-142290-A-6-A	Lab Sample ID:	320-142290-6		
Client ID:	EC-0004-06				
Operator ID:	A9\Administrator	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9_NC	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

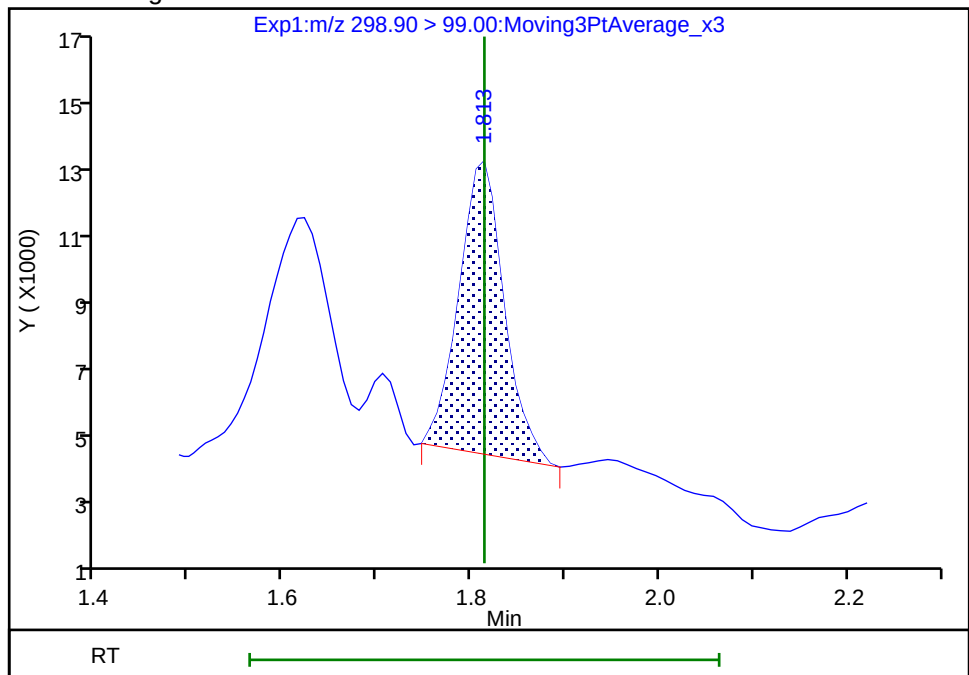
RT: 1.81
Area: 40425
Amount: 0.241774
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 27711
Amount: 0.033026
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:36:58

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

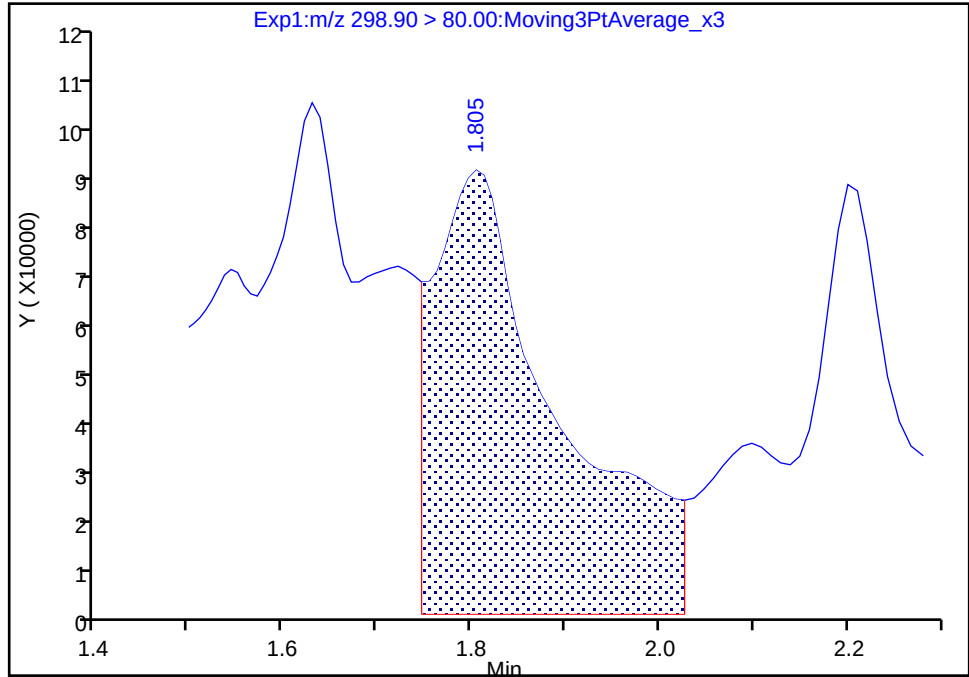
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d
Injection Date: 10-Oct-2018 09:52:23 Instrument ID: A9_NC
Lims ID: 480-142290-A-6-A Lab Sample ID: 320-142290-6
Client ID: EC-0004-06
Operator ID: A9\Administrator ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

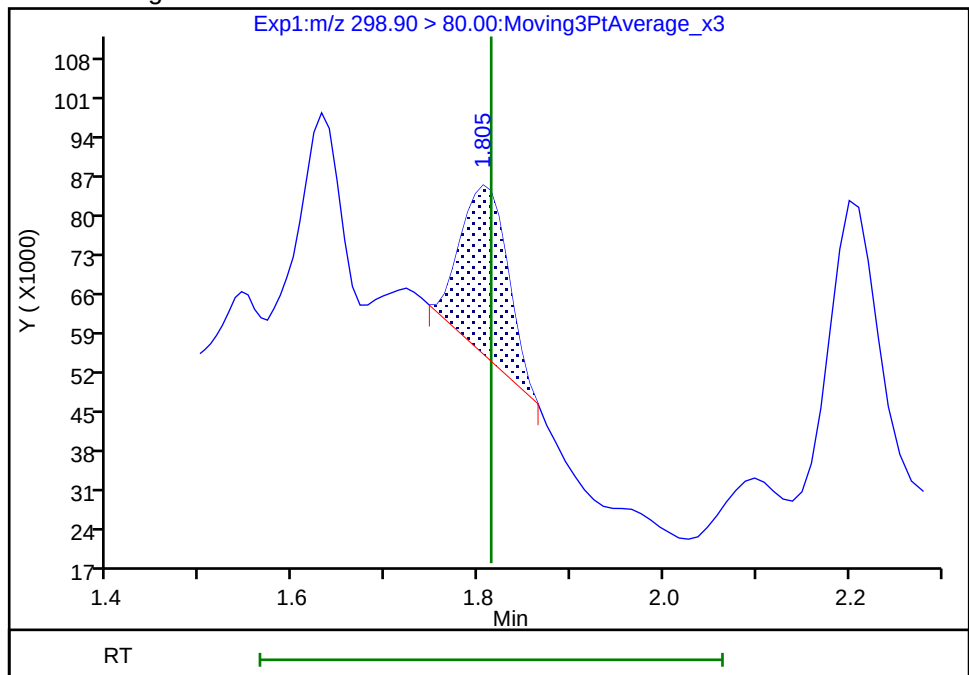
RT: 1.80
Area: 783459
Amount: 0.241774
Amount Units: ng/ml

Processing Integration Results



RT: 1.80
Area: 107020
Amount: 0.033026
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:37:02

Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

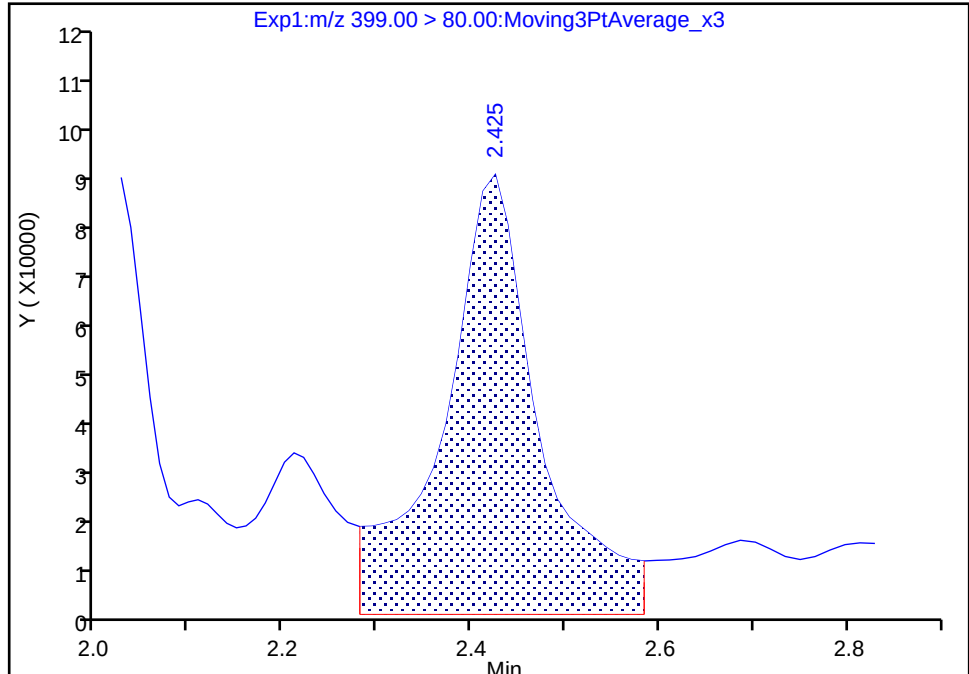
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_015.d
Injection Date: 10-Oct-2018 09:52:23 Instrument ID: A9_NC
Lims ID: 480-142290-A-6-A Lab Sample ID: 320-142290-6
Client ID: EC-0004-06
Operator ID: A9\Administrator ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

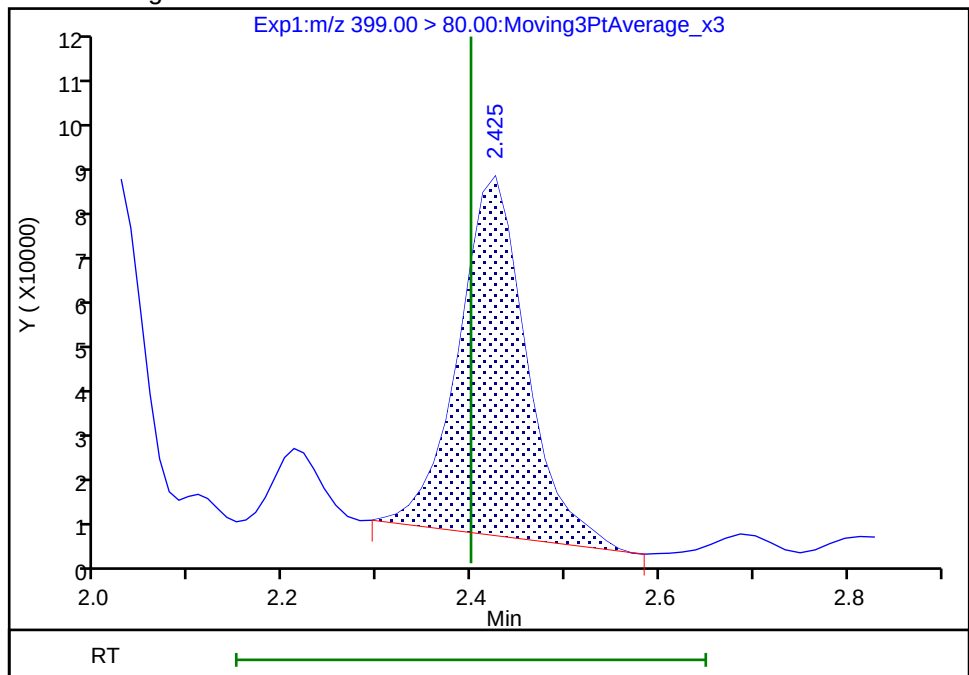
RT: 2.43
Area: 634701
Amount: 0.272806
Amount Units: ng/ml

Processing Integration Results



RT: 2.43
Area: 372521
Amount: 0.160116
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:37:53

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-07</u>	Lab Sample ID: <u>480-142290-7</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_016.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 15:10</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>286.1 (mL)</u>	Date Analyzed: <u>10/10/2018 09:59</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.7	U	1.7	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.7	U	1.7	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	1.7	U	1.7	0.51
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.7	U	1.7	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	1.7	U	1.7	0.74
375-95-1	Perfluorononanoic acid (PFNA)	1.7	U	1.7	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	1.7	U	1.7	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.7	U	1.7	0.96
307-55-1	Perfluorododecanoic acid (PFDoA)	1.7	U	1.7	0.48
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.7	U	1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.7	U	1.7	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.7	U	1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.21	J	1.7	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.7	U	1.7	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.7	U	1.7	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.7	U	1.7	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.7	U	1.7	0.31
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	17	U	17	2.7
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	17	U	17	1.7
27619-97-2	6:2 FTS	17	U	17	1.7
39108-34-4	8:2 FTS	17	U	17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0004-07</u>	Lab Sample ID: <u>480-142290-7</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_016.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/24/2018 15:10</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>286.1 (mL)</u>	Date Analyzed: <u>10/10/2018 09:59</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	99		25-150
STL01893	13C5 PFPeA	101		25-150
STL00993	13C2 PFHxA	102		25-150
STL01892	13C4 PFHpA	99		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	106		25-150
STL00996	13C2 PFDA	105		25-150
STL00997	13C2 PFUnA	92		25-150
STL00998	13C2 PFDoA	101		25-150
STL02116	13C2 PFTeDA	105		25-150
STL02337	13C3 PFBS	101		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	106		25-150
STL01056	13C8 FOSA	98		25-150
STL02118	d3-NMeFOSAA	110		25-150
STL02117	d5-NEtFOSAA	104		25-150
STL02279	M2-6:2 FTS	110		25-150
STL02280	M2-8:2 FTS	92		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_016.d
 Lims ID: 480-142290-A-7-A
 Client ID: EC-0004-07
 Sample Type: Client
 Inject. Date: 10-Oct-2018 09:59:52 ALS Bottle#: 10 Worklist Smp#: 13
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142290-a-7-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:07:59 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:40:43

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.484	1.484	0.0	0.539	6407661	2.48		99.1	12542	
D 3 13C5 PFPeA										
267.90 > 223.00	1.764	1.764	0.0	0.641	5790447	2.51		101	10291	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.764	1.772	-0.008	1.000	11087	0.004714			1.0	
D 47 13C3 PFBS										
301.90 > 83.00	1.805	1.806	-0.001	0.656	73707	2.34		101	583	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.058	0.0	0.748	6309706	2.54		102	13266	
D 9 13C4 PFHpA										
367.00 > 322.00	2.386	2.373	0.013	0.868	7518819	2.47		98.7	8563	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.386	2.386	0.0	1.000	7206	0.002217			1.4	
363.00 > 169.00	2.386	2.386	0.0	1.000	1157		6.23(2.17-6.52)		4.0	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.399	0.001	1.000	13516	0.005944			14.4	
399.00 > 99.00	2.413	2.399	0.014	1.005	3412		3.96(1.90-5.70)		5.5	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.872	4360082	2.30		97.3	10121	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.719	2.703	0.016	0.988	878011	2.62		110	1165	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.718	0.001	1.000	3562	0.004484			6.8	
* 62 13C2 PFOA										
415.00 > 370.00	2.750	2.734	0.016		7079022	2.50			13598	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	0.994	17269	0.005772			1.7	
413.00 > 169.00	2.750	2.734	0.016	1.000	7640		2.26(1.36-4.08)		14.4	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.735	0.015	1.000	6964257	2.44		97.7	6983	
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.099	0.018	1.133	5050034	2.54		106	2248	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.099	0.018	1.133	6964212	2.65		106	8930	
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.117	0.0	1.000	4275	0.001511			0.4	M
463.00 > 169.00	3.117	3.117	0.0	1.000	1352		3.16(2.68-8.03)		6.7	M
D 26 M2-8:2 FTS										
529.00 > 81.00	3.465	3.449	0.016	1.260	97371	2.21		92.4	503	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.449	0.016	1.260	7365944	2.63		105	9272	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.449	0.016	1.260	2637131	2.46		98.4	3601	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	4259	0.001360			10.0	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.613	0.014	1.319	3182910	2.75		110	6702	
D 30 13C2 PFUnA										
565.00 > 520.00	3.791	3.776	0.015	1.379	5669283	2.30		92.1	8237	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.776	0.015	1.379	2526808	2.60		104	3296	
D 36 13C2 PFDoA										
615.00 > 570.00	4.089	4.073	0.016	1.487	7060983	2.53		101	8219	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.669	5512993	2.62		105	8558	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_016.d

Injection Date: 10-Oct-2018 09:59:52

Instrument ID: A9_NC

Lims ID: 480-142290-A-7-A

Lab Sample ID: 320-142290-7

Client ID: EC-0004-07

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 13

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

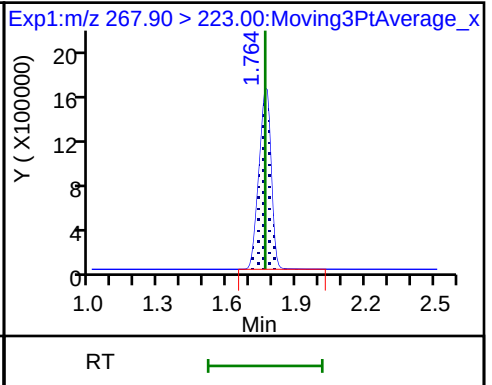
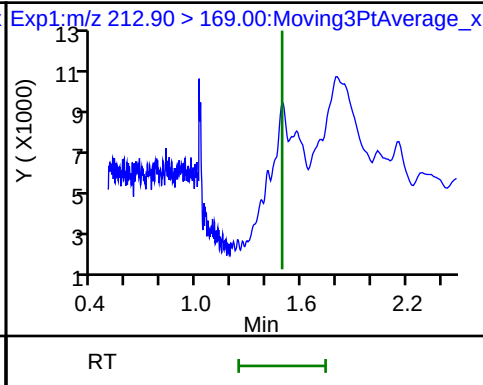
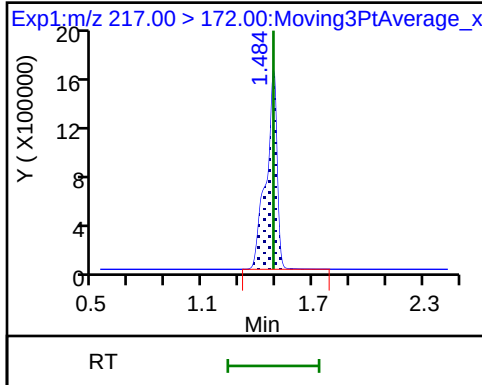
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (ND)

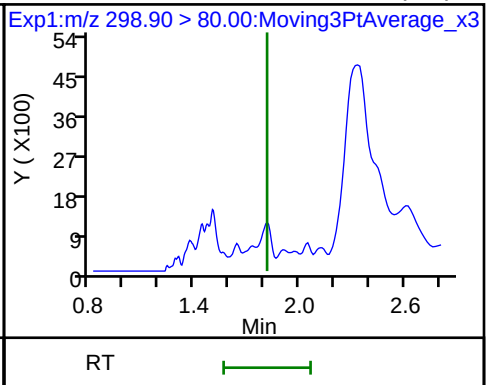
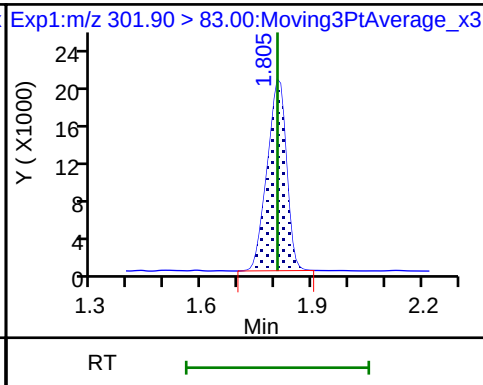
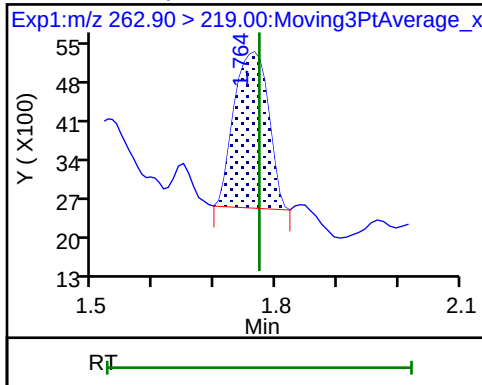
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

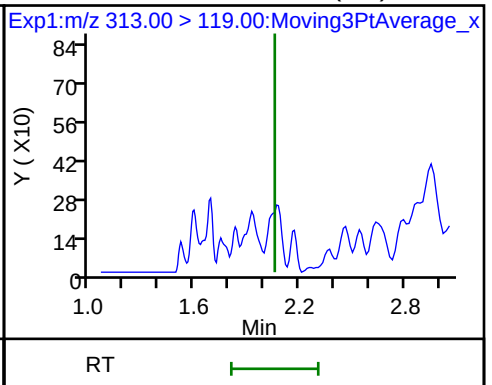
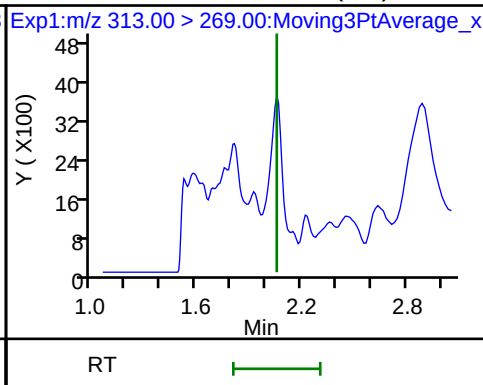
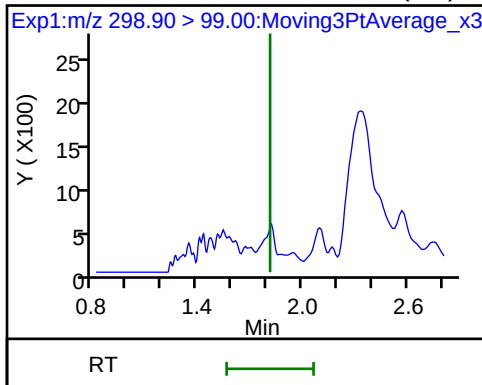
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

6 Perfluorohexanoic acid (ND)

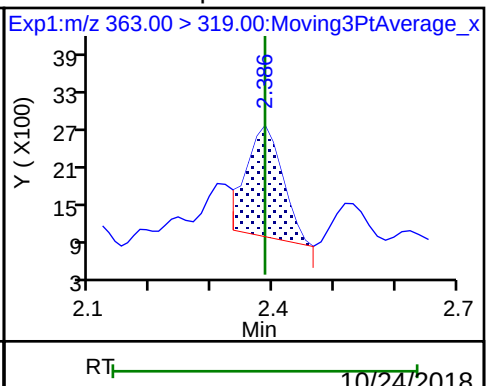
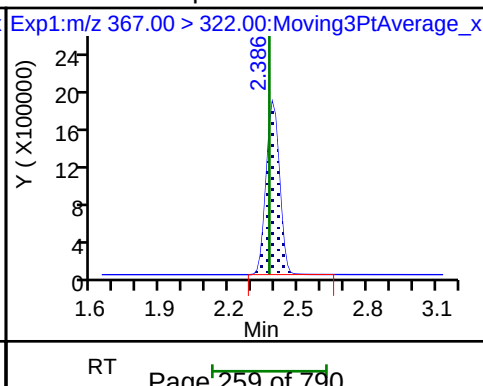
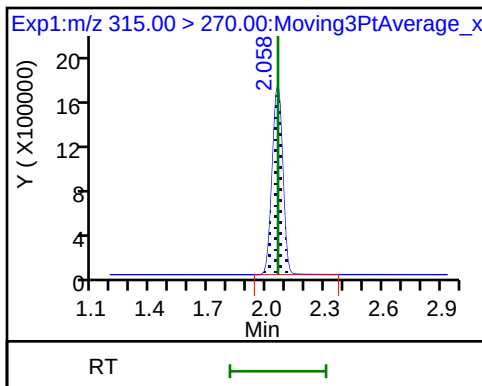
6 Perfluorohexanoic acid (ND)

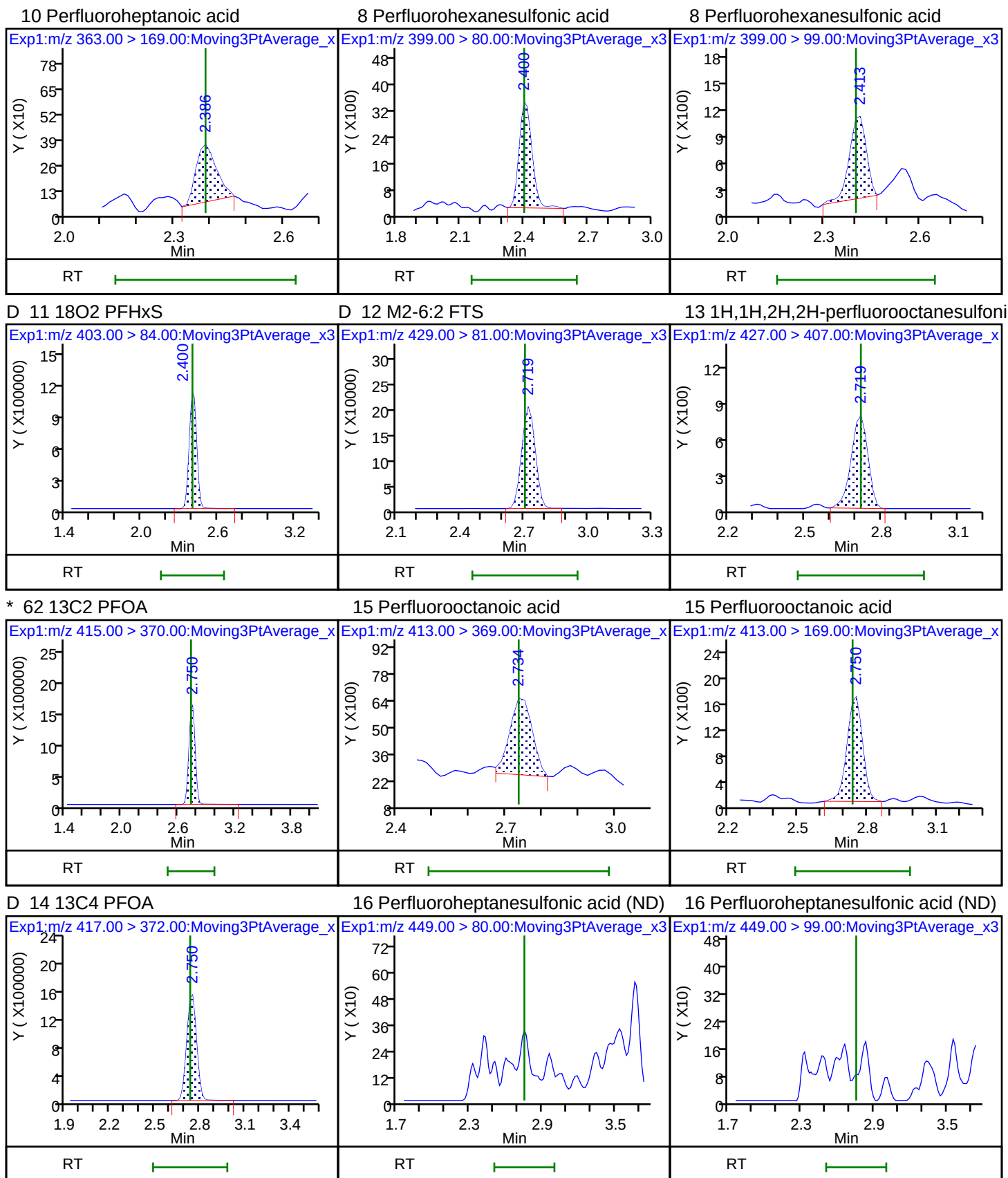


D 7 13C2 PFHxA

D 9 13C4 PFHpA

10 Perfluoroheptanoic acid

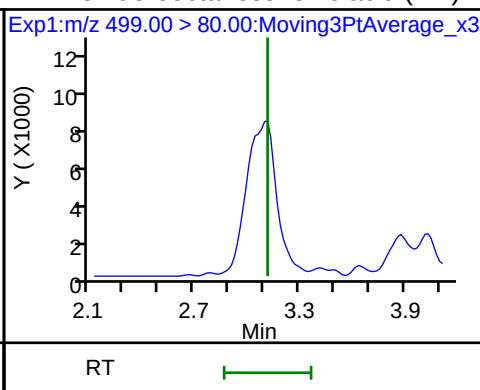
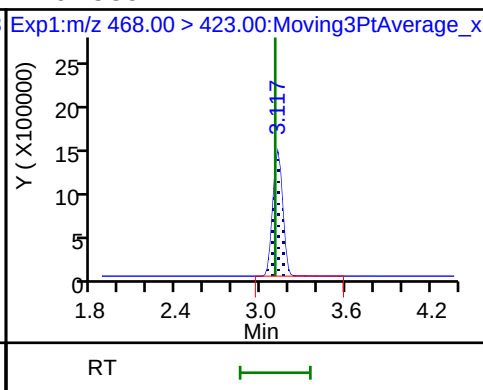
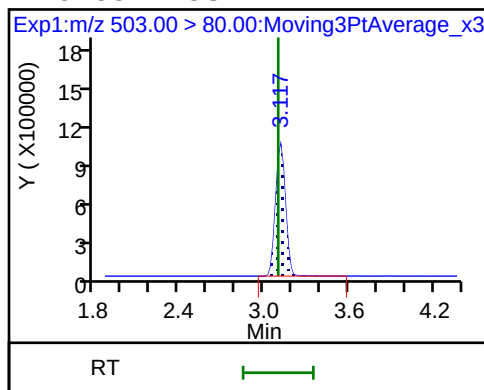




D 18 13C4 PFOS

D 19 13C5 PFNA

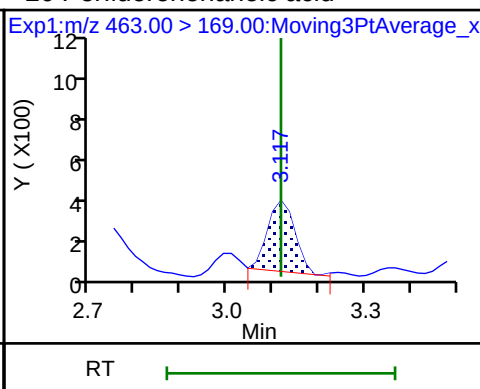
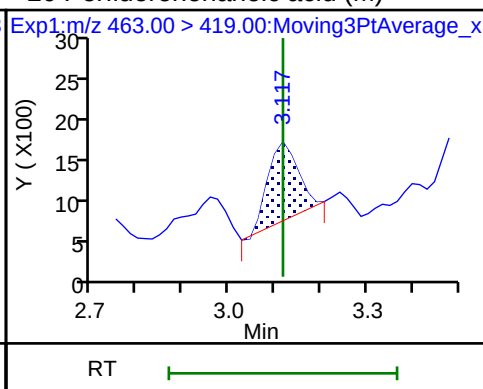
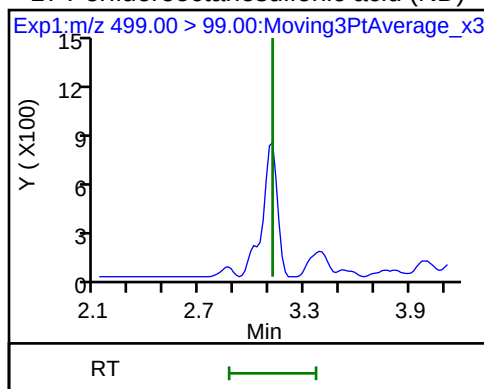
17 Perfluorooctanesulfonic acid (ND)



17 Perfluorooctanesulfonic acid (ND)

20 Perfluorononanoic acid (M)

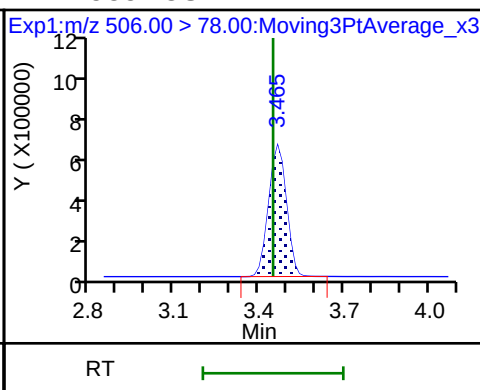
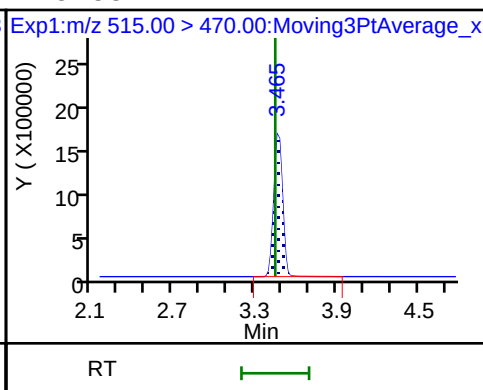
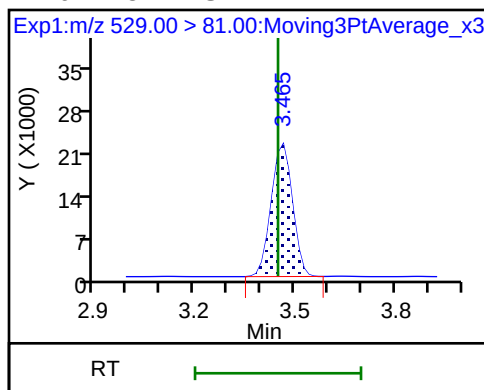
20 Perfluorononanoic acid



D 26 M2-8:2 FTS

D 23 13C2 PFDA

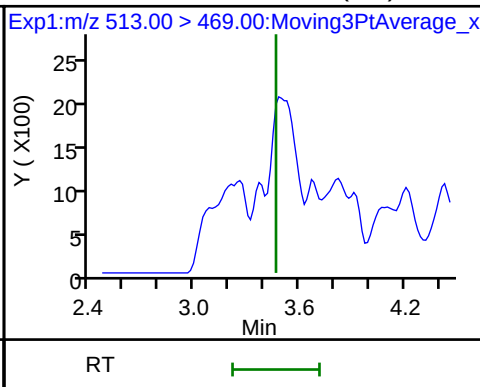
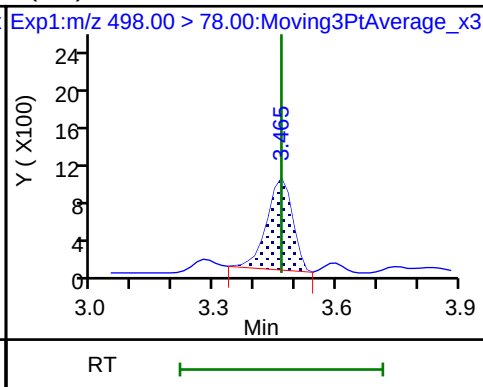
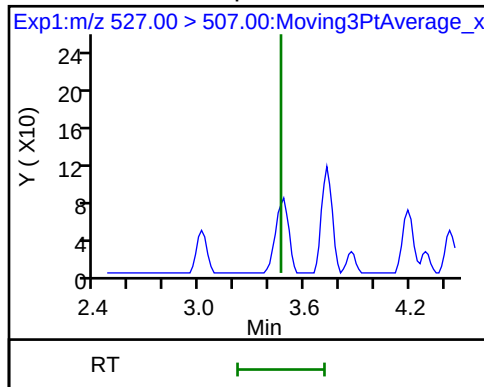
D 21 13C8 FOSA

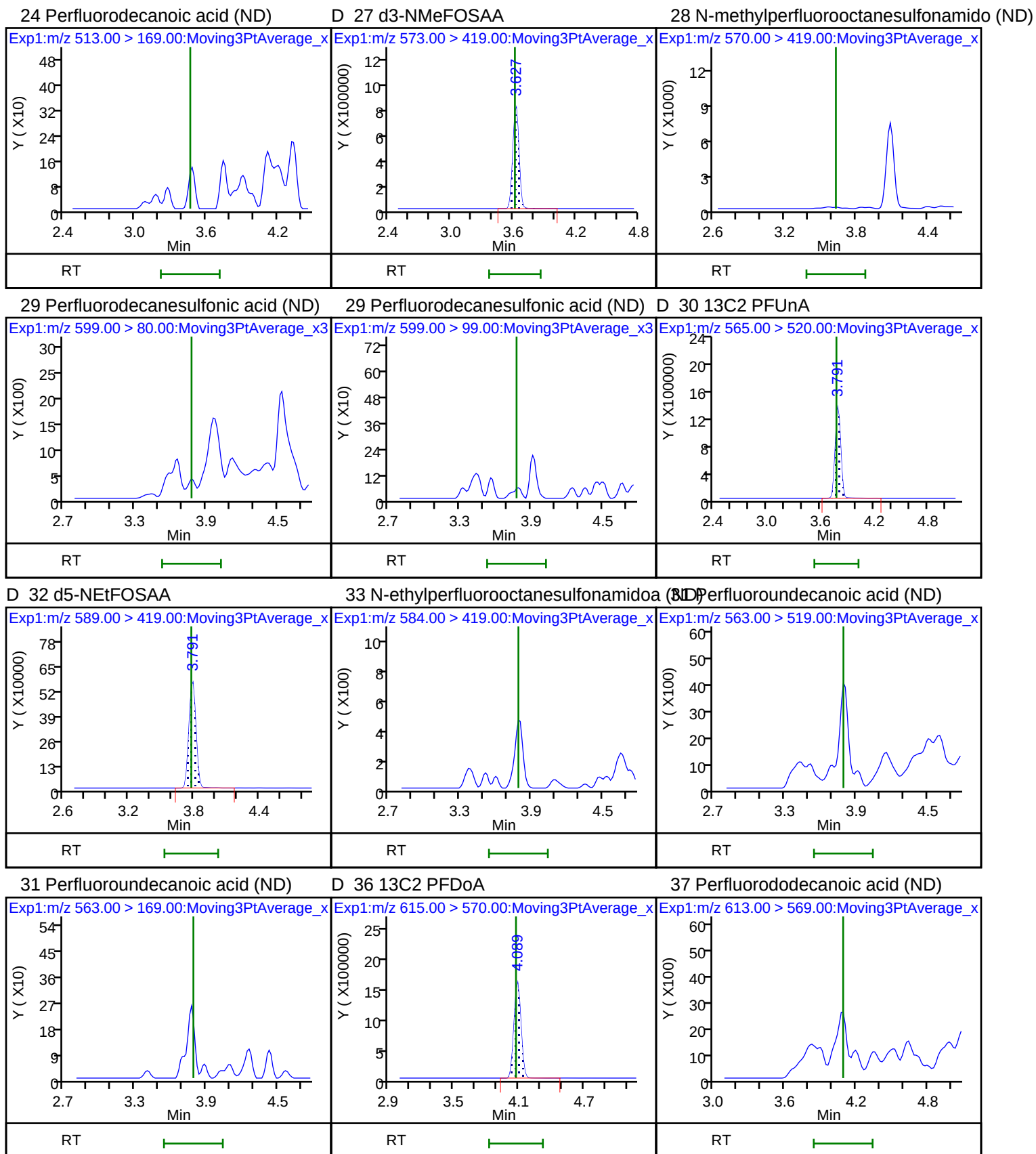


25 1H,1H,2H,2H-perfluorodecanesulfonamide (ND)

22 Perfluorooctanesulfonamide

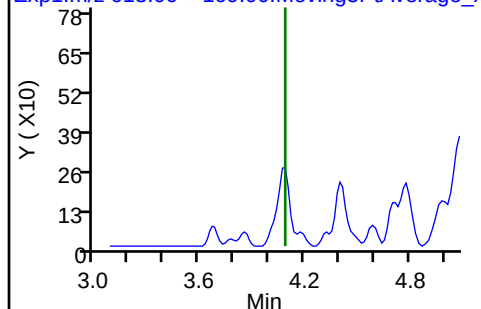
24 Perfluorodecanoic acid (ND)





37 Perfluorododecanoic acid (ND)

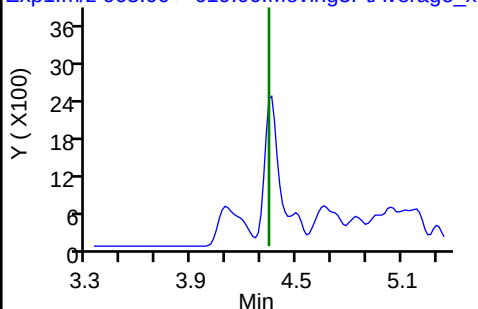
Exp1:m/z 613.00 > 169.00:Moving3PtAverage_x



RT

41 Perfluorotridecanoic acid (ND)

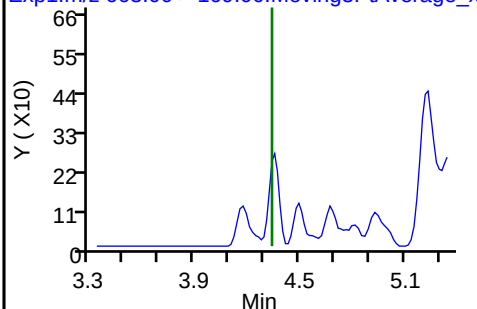
Exp1:m/z 663.00 > 619.00:Moving3PtAverage_x



RT

41 Perfluorotridecanoic acid (ND)

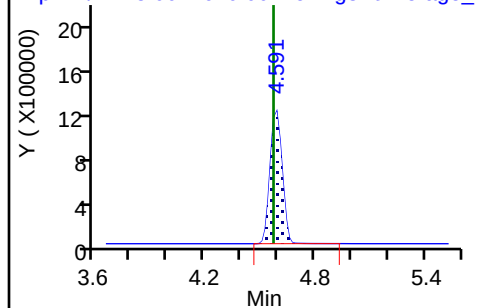
Exp1:m/z 663.00 > 169.00:Moving3PtAverage_x



RT

D 43 13C2 PFTeDA

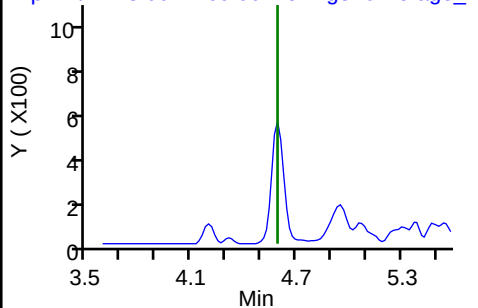
Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x



RT

42 Perfluorotetradecanoic acid (ND)

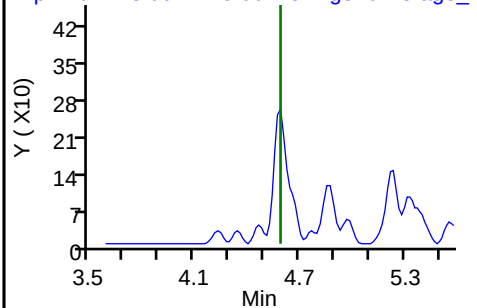
Exp1:m/z 713.00 > 169.00:Moving3PtAverage_x



RT

42 Perfluorotetradecanoic acid (ND)

Exp1:m/z 713.00 > 219.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

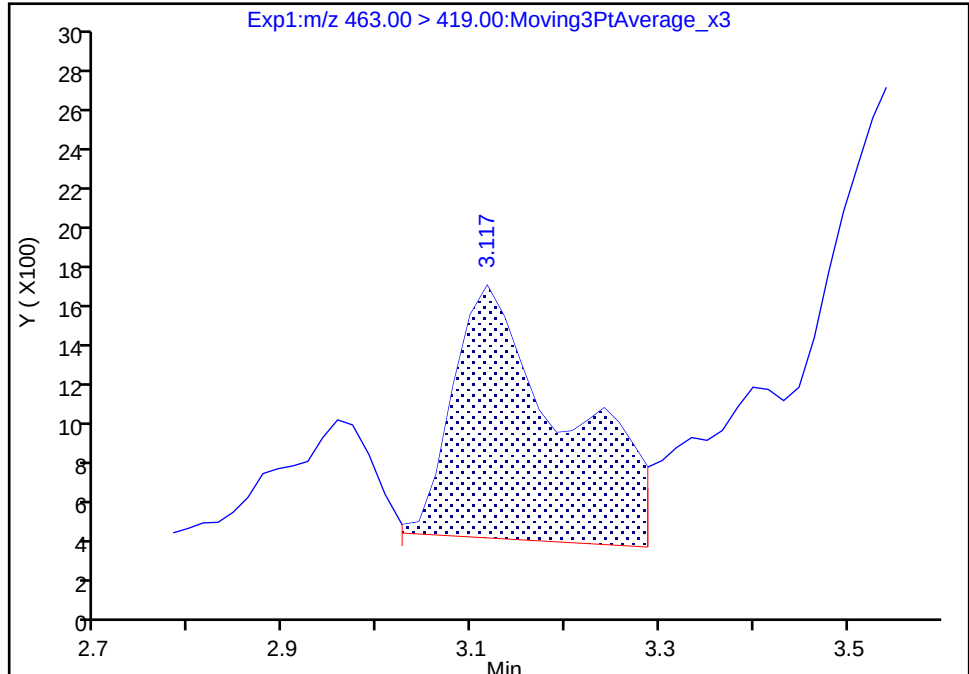
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_016.d
Injection Date: 10-Oct-2018 09:59:52 Instrument ID: A9_NC
Lims ID: 480-142290-A-7-A Lab Sample ID: 320-142290-7
Client ID: EC-0004-07
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

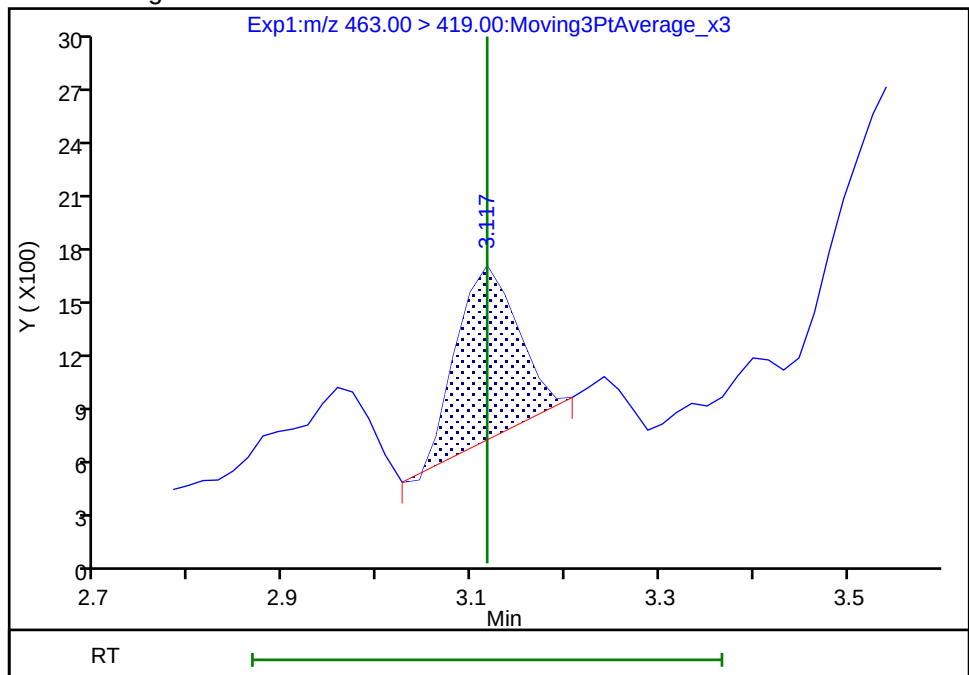
RT: 3.12
Area: 10265
Amount: 0.003627
Amount Units: ng/ml

Processing Integration Results



RT: 3.12
Area: 4275
Amount: 0.001511
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:40:37
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 253035

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 19:55 Calibration End Date: 10/17/2018 20:40 Calibration ID: 41698

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-253035/2	2018.10.17ICAL_005.d
Level 2	IC 320-253035/3	2018.10.17ICAL_006.d
Level 3	IC 320-253035/4	2018.10.17ICAL_007.d
Level 4	IC 320-253035/5	2018.10.17ICAL_008.d
Level 5	IC 320-253035/6	2018.10.17ICAL_009.d
Level 6	IC 320-253035/7	2018.10.17ICAL_010.d
Level 7	IC 320-253035/8	2018.10.17ICAL_011.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8532 0.9370	0.8715 0.9325	0.9097	0.8735	0.9125	AveID		0.8986				3.6		35.0			
Perfluoropentanoic acid (PFPeA)	1.2571 1.1263	1.0760 1.0551	1.0545	1.0882	1.0688	AveID		1.1037				6.5		35.0			
Perfluorobutanesulfonic acid (PFBS)	82.921 78.406	82.022 70.903	81.934	86.271	81.138	AveID		80.513				6.0		50.0			
4:2 FTS	16.254 14.747	16.182 14.287	15.722	14.026	14.639	AveID		15.122				6.1		50.0			
Perfluorohexanoic acid (PFHxA)	1.0700 1.0514	1.0531 0.9792	0.9687	0.9622	1.0105	AveID		1.0136				4.4		35.0			
Perfluoropentanesulfonic acid (PFPeS)	64.390 67.666	66.510 65.047	72.052	67.913	67.380	AveID		67.280				3.7		50.0			
HFPO-DA (GenX)	2.6093 3.1383	2.9094 3.0313	2.7451	2.9424	3.1135	AveID		2.9270				6.6		35.0			
Perfluoroheptanoic acid (PFHpA)	1.2190 1.1639	1.1085 1.2376	1.1327	1.1379	1.0805	AveID		1.1543				4.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3855 1.0678	1.1795 1.0193	1.0120	1.0092	1.0519	AveID		1.1036				12.5		35.0			
DONA	3.9670 4.0574	4.1210 3.7103	4.1753	4.1661	4.1244	AveID		4.0459				4.1		50.0			
6:2 FTS	2.0908 1.5600	1.8930 1.4636	1.5906	1.4710	1.4900	AveID		1.6513				14.8		35.0			
Perfluorooctanoic acid (PFOA)	1.3120 1.0987	1.1679 1.0828	1.0864	1.1206	1.1398	AveID		1.1440				7.0		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.2277 1.3333	1.2610 1.3824	1.2899	1.2950	1.4274	AveID		1.3167				5.3		50.0			
Perfluorononanoic acid (PFNA)	0.8142 1.0718	1.0475 1.0393	0.9943	1.0095	1.0448	AveID		1.0030				8.7		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 253035
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/17/2018 19:55 Calibration End Date: 10/17/2018 20:40 Calibration ID: 41698

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorooctanesulfonic acid (PFOS)	1.2382 1.1425	1.1971 1.1941	1.1142	1.1458	1.1219	AveID		1.1648				3.9		35.0			
F-53B Major	1.7934 2.0611	1.9289 2.0634	1.8942	1.8879	2.0724	AveID		1.9573				5.6		50.0			
Perfluorooctanesulfonamide (FOSA)	1.0122 1.0423	1.0585 0.9904	0.9528	0.9755	0.9825	AveID		1.0020				3.8		35.0			
8:2 FTS	1.0582 1.2728	1.1783 1.2349	1.2934	1.1871	1.2072	AveID		1.2046				6.4		35.0			
Perfluorononanesulfonic acid (PFNS)	0.6834 0.8028	0.8519 0.8139	0.8314	0.7989	0.8312	AveID		0.8019				6.9		50.0			
Perfluorodecanoic acid (PFDA)	0.9999 0.9822	1.0167 1.0413	1.0367	1.0196	1.0262	AveID		1.0175				2.0		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.0077 0.9444	1.0466 0.9456	0.9454	0.9341	0.9100	AveID		0.9620				4.9		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.6877 0.6394	0.5533 0.6774	0.6335	0.6072	0.6405	AveID		0.6341				7.1		50.0			
Perfluoroundecanoic acid (PFUnA)	0.9999 0.9076	0.8108 0.8861	0.8643	0.8990	0.8828	AveID		0.8929				6.4		35.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.8471 0.8821	0.7962 0.8460	0.8188	0.8262	0.8496	AveID		0.8380				3.3		35.0			
F-53B Minor	2.8495 2.9614	2.7735 2.8686	2.8638	2.9517	2.9942	AveID		2.8947				2.7		50.0			
Perfluorododecanoic acid (PFDoA)	1.1995 1.1022	1.1409 1.0678	1.0608	1.0410	1.1260	AveID		1.1055				5.0		35.0			
10:2 FTS	0.8921 0.9099	0.9397 0.8834	0.9386	0.8448	0.9155	AveID		0.9034				3.7		50.0			
Perfluorododecanesulfonic acid (PFDoS)	0.2983 0.2997	0.3414 0.3011	0.2730	0.2958	0.3056	AveID		0.3021				6.7		50.0			
Perfluorotridecanoic acid (PFTriA)	1.1200 1.0721	1.1334 1.0309	1.1052	1.0584	1.1432	AveID		1.0947				3.8		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2806 0.2618	0.2741 0.2692	0.2696	0.2603	0.2635	AveID		0.2684				2.7		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++ 0.8820	1.3199 0.8841	0.9332	0.9166	0.8975	L2ID	0.0218	0.8790							1.0000		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	1.1786 1.0813	1.1608 1.0834	1.1044	1.1540	1.0960	AveID		1.1226				3.6		50.0			
13C4 PFBA	1.5337 1.5831	1.5598 1.5930	1.5351	1.5974	1.5518	Ave		1.5648				1.7		50.0			
13C5 PFPeA	0.9948 1.0123	1.0431 1.0346	1.0033	1.0131	1.0185	Ave		1.0171				1.7		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 253035
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/17/2018 19:55 Calibration End Date: 10/17/2018 20:40 Calibration ID: 41698

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C3 PFBS	0.0210 0.0211	0.0208 0.0222	0.0198	0.0211	0.0205	Ave		0.0209				3.6		50.0			
M2-4:2 FTS	0.1354 0.1409	0.1381 0.1446	0.1348	0.1376	0.1331	Ave		0.1378				2.9		50.0			
13C2 PFHxA	1.1235 1.1028	1.1321 1.1305	1.1119	1.1092	1.0289	Ave		1.1056				3.2		50.0			
13C3 HFPO-DA	0.0878 0.0837	0.0845 0.0862	0.0874	0.0831	0.0790	Ave		0.0845				3.6		50.0			
13C4 PFHpA	1.0390 0.9987	1.0689 0.9870	1.0088	1.0131	0.9916	Ave		1.0153				2.9		50.0			
18O2 PFHxS	1.2617 1.2192	1.2998 1.2995	1.2526	1.2961	1.2052	Ave		1.2620				3.1		50.0			
M2-6:2 FTS	0.1950 0.1884	0.1987 0.2011	0.1848	0.2008	0.1983	Ave		0.1953				3.3		50.0			
13C8 PFOA	1.6576 1.5569	1.6209 1.6038	1.5492	1.7104	1.5644	Ave		1.6090				3.7		50.0			
13C4 PFOA	0.9905 0.9928	1.0012 1.0024	0.9814	0.9926	0.9505	Ave		0.9873				1.8		50.0			
13C8 PFOS	0.4301 0.4215	0.4330 0.4356	0.4212	0.4365	0.4113	Ave		0.4270				2.2		50.0			
13C4 PFOS	0.7897 0.8034	0.8355 0.8042	0.7945	0.8132	0.7680	Ave		0.8012				2.6		50.0			
13C5 PFNA	0.8301 0.8217	0.8364 0.8610	0.8124	0.8483	0.8053	Ave		0.8307				2.4		50.0			
13C8 FOSA	1.1710 1.1202	1.1786 1.1667	1.1482	1.1770	1.1323	Ave		1.1563				2.0		50.0			
M2-8:2 FTS	0.2037 0.1997	0.2074 0.2092	0.1888	0.2055	0.1936	Ave		0.2011				3.7		50.0			
13C2 PFDA	0.6965 0.7285	0.7338 0.7143	0.6962	0.7187	0.7116	Ave		0.7142				2.0		50.0			
d3-NMeFOSAA	0.3583 0.3753	0.3616 0.3741	0.3518	0.3603	0.3493	Ave		0.3615				2.8		50.0			
d5-NEtFOSAA	0.3711 0.3624	0.3826 0.3845	0.3632	0.3809	0.3519	Ave		0.3709				3.3		50.0			
13C2 PFUnA	0.5435 0.5638	0.5796 0.5685	0.5521	0.5702	0.5298	Ave		0.5582				3.1		50.0			
13C2 PFDoA	0.5971 0.6070	0.6160 0.6159	0.6010	0.6121	0.5593	Ave		0.6012				3.3		50.0			
13C2 PFTeDA	0.7865 0.7891	0.8004 0.7612	0.7755	0.7812	0.7533	Ave		0.7782				2.1		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 253035
 SDG No.: _____
 Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N
 Calibration Start Date: 10/17/2018 19:55 Calibration End Date: 10/17/2018 20:40 Calibration ID: 41698

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
13C2 PFHxDA	1.4325 1.4440	1.4111 1.4214	1.4571	1.3698	1.3149	Ave		1.4073				3.5		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 253035

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 19:55 Calibration End Date: 10/17/2018 20:40 Calibration ID: 41698

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-253035/2	2018.10.17ICAL_005.d
Level 2	IC 320-253035/3	2018.10.17ICAL_006.d
Level 3	IC 320-253035/4	2018.10.17ICAL_007.d
Level 4	IC 320-253035/5	2018.10.17ICAL_008.d
Level 5	IC 320-253035/6	2018.10.17ICAL_009.d
Level 6	IC 320-253035/7	2018.10.17ICAL_010.d
Level 7	IC 320-253035/8	2018.10.17ICAL_011.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	35275 8359813	71607 15590404	379541	1459934	3782098	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	33711 6425299	59129 11456035	287548	1153584	2907693	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	41410 8248713	79303 14636215	388854	1685869	3925103	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	8576 1639266	16530 3116037	78834	289583	748223	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	32404 6534076	62804 11618005	292704	1116786	2777107	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	34120 7553751	68233 14247637	362841	1408183	3458651	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	6177 1480994	12945 2742054	65240	255822	656775	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	34143 6550369	62413 12819430	310546	1206231	2861821	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	42879 6676661	73494 12650025	313496	1245510	3081601	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	79544 17303901	170850 29498532	849264	3339488	7970634	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	10421 1569936	18785 2928892	75745	293005	748216	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	35063 6153646	61656 11403743	290058	1164962	2896759	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	24879 5746515	52832 11107369	265153	1049056	2787749	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorononanoic acid (PFNA)		AveID	18218 4963300	46150 9390789	219518	896013	2247469	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	24458 4799925	48892 9352654	223258	904763	2135957	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 253035

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 19:55 Calibration End Date: 10/17/2018 20:40 Calibration ID: 41698

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	35578 8696541	79121 16230705	381193	1497234	3962548	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	31952 6579818	65716 12126916	297317	1201424	2971543	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	5566 1372213	12332 2597223	63577	244571	597967	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorononanesulfonic acid (PFNS)		AveID	13965 3488988	35994 6594617	172338	652603	1637026	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	18774 4032551	39300 7806316	196167	766690	1950567	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	9734 1997664	19937 3712723	90390	352126	849180	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	14111 2790429	23474 5511083	131859	498075	1266618	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	14650 2883662	24753 5286821	129683	536387	1249244	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	8473 1801762	16049 3413588	80826	329325	798635	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	57138 12629382	114986 22806669	582505	2366026	5786480	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	19306 3770136	37024 6901929	173272	666776	1682095	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	4722 987104	9896 1869619	46428	175147	456329	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	6147 1313465	14546 2459777	57059	243639	606829	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	18026 3667128	36781 6662887	180522	677867	1707746	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	5950 1164140	11557 2150932	56813	212736	530205	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	++++ 7177476	98106 13188598	369528	1313765	3152249	++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	45510 8799100	86287 16162572	437321	1654032	3849535	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	4134327 4460851	4108259 4179625	4172045	4178599	4144976	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	2681692 2852376	2747530 2714527	2726766	2650106	2720613	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	52538 55340	50858 54292	49929	51396	50893	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	340844 370769	339798 354472	342160	336212	332173	2.34 2.34	2.34 2.34	2.34	2.34	2.34

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 253035

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/17/2018 19:55 Calibration End Date: 10/17/2018 20:40 Calibration ID: 41698

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C2 PFHxA	13PF OA	Ave	3028542 3107396	2981908 2966276	3021720	2901537	2748296	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	236730 235953	222466 226148	237657	217359	210945	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	2800801 2813960	2815254 2589646	2741646	2650025	2648583	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	3217325 3249926	3238608 3225442	3220249	3207369	3045455	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	499476 504242	497220 501332	477201	499033	503222	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C8 PFOA	13PF OA	Ave	4374447 4294834	4179608 4119638	4121875	4380335	4091045	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C4 PFOA	13PF OA	Ave	2669881 2797583	2636990 2630179	2667180	2596403	2538964	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOS	13PF OA	Ave	1108471 1135390	1090209 1092741	1094272	1091663	1050356	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C4 PFOS	13PF OA	Ave	2034964 2164058	2103718 2017148	2064266	2033727	1961272	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	2237589 2315388	2202878 2258961	2207720	2218957	2151165	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	3156595 3156364	3104260 3061161	3120406	3078841	3024467	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	526005 539041	523280 525781	491564	515065	495331	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	1877620 2052842	1932808 1874211	1892135	1879926	1900744	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	965946 1057611	952491 981554	956094	942373	933151	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1000213 1021255	1007807 1008796	987075	996478	939990	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	1465141 1588696	1526518 1491542	1500465	1491670	1415081	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	1609439 1710233	1622557 1615868	1633431	1601215	1493866	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	2120170 2223388	2108213 1997261	2107663	2043528	2012130	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	3861343 4068899	3716547 3729434	3959905	3583299	3512403	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 253035
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/17/2018 19:55 Calibration End Date: 10/17/2018 20:40 Calibration ID: 41698

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 17-Oct-2018 19:55:39 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 1
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 09:13:55 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: hannigana

Date: 18-Oct-2018 08:26:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.430	-0.002	0.538	4134327	2.45		98.0	8684	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.433	1.432	0.001	1.003	35275	0.0237		95.0	2.7	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.701	-0.001	1.000	33711	0.0285		114	5.2	
D 3 13C5 PFPeA										
267.90 > 223.00	1.700	1.701	-0.001	0.641	2681692	2.45		97.8	9418	
D 47 13C3 PFBS										
301.90 > 83.00	1.732	1.733	-0.001	0.653	52538	2.33		100	422	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.739	0.001	1.005	41410	0.0228		103	11.7	
298.90 > 99.00	1.732	1.739	-0.007	1.000	16485		2.51(1.25-3.74)	103	9.9	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.939	1.941	-0.002	0.731	340844	2.29		98.2	527	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.949	1.943	0.006	1.125	8576	0.0251		107	94.0	
D 7 13C2 PFHxA										
315.00 > 270.00	1.970	1.974	-0.004	0.743	3028542	2.54		102	8816	
6 Perfluorohexanoic acid										RM
313.00 > 269.00	1.980	1.977	0.003	1.005	32404	0.0264		106	10.7	RM
313.00 > 119.00	1.980	1.977	0.003	1.005	1829		17.72(5.03-15.10)	106	5.3	M
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.001	2.001	0.0	1.156	34120	0.0224		95.7	148	
349.00 > 99.00	2.001	2.001	0.0	1.156	11988		2.85(1.36-4.07)	95.7	39.4	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.074	2.074	0.0	0.782	236730	2.60		104	906	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	2.074	2.074	0.0	1.000	6177	0.0223		89.1	7.7	M
D 9 13C4 PFHpA										
367.00 > 322.00	2.303	2.302	0.001	0.868	2800801	2.56		102	5873	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.303	2.305	-0.002	1.000	34143	0.0264		106	9.3	M
363.00 > 169.00	2.303	2.305	-0.002	1.000	13024		2.62(1.13-3.40)	106	11.2	M
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.314	2.319	-0.005	1.000	42879	0.0286		126	68.3	
399.00 > 99.00	2.314	2.319	-0.005	1.000	15592		2.75(1.50-4.49)	126	39.9	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.314	2.319	-0.005	0.872	3217325	2.36		100.0	3811	
77 DONA										
377.00 > 251.00	2.347	2.346	0.001	0.776	79544	0.0231		98.0	165	
377.00 > 85.00	2.347	2.346	0.001	0.776	44575		1.78(0.85-2.54)	98.0	304	
13 1H,1H,2H,2H-perfluorooctanesulfoni										M
427.00 > 407.00	2.622	2.627	-0.005	0.997	10421	0.0300		127	50.2	M
D 12 M2-6:2 FTS										
429.00 > 81.00	2.630	2.628	0.002	0.991	499476	2.37		99.9	1936	
D 73 13C8 PFOA										
421.00 > 376.00	2.637	2.643	-0.006	0.994	4374447	2.52		103	8677	
* 62 13C2 PFOA										
415.00 > 370.00	2.653	2.654	-0.001		2695618	2.50			6254	
D 14 13C4 PFOA										
417.00 > 372.00	2.653	2.655	-0.002	1.000	2669881	2.51		100	6386	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.645	2.656	-0.011	0.997	35063	0.0287		115	3.8	M
413.00 > 169.00	2.645	2.656	-0.011	0.997	20426		1.72(0.84-2.52)	115	27.2	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.660	2.664	-0.004	0.879	24879	0.0222		93.2	117	
449.00 > 99.00	2.660	2.664	-0.004	0.879	7090		3.51(1.94-5.82)	93.2	55.7	
D 72 13C8 PFOS										
507.00 > 99.00	3.025	3.024	0.001	1.140	1108471	2.41		101	4409	
D 18 13C4 PFOS										
503.00 > 80.00	3.025	3.025	0.0	1.140	2034964	2.36		98.6	2719	
D 19 13C5 PFNA										
468.00 > 423.00	3.025	3.027	-0.002	1.140	2237589	2.50		99.9	7893	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.025	3.029	-0.004	1.000	24458	0.0247		106	31.0	M
499.00 > 99.00	3.025	3.029	-0.004	1.000	6926		3.53(2.31-6.93)	106	24.5	M
20 Perfluorononanoic acid										RM
463.00 > 419.00	3.025	3.029	-0.004	1.000	18218	0.0203		81.2	8.4	RM
463.00 > 169.00	3.025	3.029	-0.004	1.000	2864		6.36(1.90-5.69)	81.2	11.8	M
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.237	3.242	-0.005	1.070	35578	0.0213		91.6	142	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.371	-0.005	1.269	3156595	2.53		101	4199	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.366	3.372	-0.006	1.000	31952	0.0253		101	284	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.373	3.376	-0.003	1.272	526005	2.43		101	1874	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.366	3.378	-0.012	0.998	5566	0.0210		87.8	34.6	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.373	3.378	-0.005	1.115	13965	0.0205		85.2	76.5	
549.00 > 99.00	3.373	3.378	-0.005	1.115	6386		2.19(1.33-3.97)	85.2	37.7	
D 23 13C2 PFDA										
515.00 > 470.00	3.381	3.386	-0.005	1.274	1877620	2.44		97.5	4362	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.381	3.388	-0.007	1.000	18774	0.0246		98.3	18.8	
513.00 > 169.00	3.388	3.388	0.0	1.002	3540		5.30(2.36-7.09)	98.3	16.4	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.541	3.544	-0.003	1.335	965946	2.48		99.1	1590	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.541	3.548	-0.007	1.000	9734	0.0262		105	13.5	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.696	3.704	-0.008	1.222	14111	0.0261		108	75.1	
599.00 > 99.00	3.696	3.704	-0.008	1.222	5038		2.80(1.39-4.16)	108	39.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.705	3.711	-0.006	1.397	1000213	2.50		100	1298	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.713	3.719	-0.006	1.000	14650	0.0280		112	14.7	
563.00 > 169.00	3.713	3.719	-0.006	1.000	4277		3.43(2.12-6.36)	112	25.2	
D 30 13C2 PFUnA										
565.00 > 520.00	3.713	3.719	-0.006	1.400	1465141	2.43		97.4	3250	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.722	3.720	0.002	1.005	8473	0.0253		101	31.9	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.875	3.879	-0.004	1.281	57138	0.0232		98.4	211	
35 MeFOSA										
512.00 > 169.00	3.885	3.888	-0.003		9088	NC			57.3	
37 Perfluorododecanoic acid										RM
613.00 > 569.00	4.002	4.013	-0.011	0.998	19306	0.0271		109	16.2	RM
613.00 > 169.00	4.010	4.013	-0.003	1.000	2496		7.73(2.13-6.40)	109	15.1	M
D 36 13C2 PFDaA										
615.00 > 570.00	4.010	4.015	-0.005	1.512	1609439	2.48		99.3	4458	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.002	4.015	-0.013	1.186	4722	0.0238		98.7	69.0	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.252	4.255	-0.003	1.406	6147	0.0239		98.7	31.3	
699.00 > 99.00	4.252	4.255	-0.003	1.406	11232		0.55(0.00-0.00)	98.7	90.9	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.279	0.001	1.067	18026	0.0256		102	15.4	
663.00 > 169.00	4.280	4.279	0.001	1.067	5660		3.18(1.25-3.76)	102	29.5	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.513	4.518	-0.006	1.000	5950	0.0261		105	52.7	
713.00 > 219.00	4.513	4.518	-0.006	1.000	3916		1.52(0.71-2.13)	105	56.8	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.513	4.519	-0.007	1.701	2120170	2.53		101	5038	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.935	4.934	0.001	1.860	3861343	2.54		102	4467	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.935	4.938	-0.003	1.000	69980	0.0268		107	12.7	
813.00 > 169.00	4.935	4.938	-0.003	1.000	13625		5.14(2.86-8.58)	107	126	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.279	5.286	-0.007	1.070	45510	0.0262		105	7.2	
913.00 > 169.00	5.279	5.286	-0.007	1.070	5980		7.61(3.83-11.48)	105	61.7	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

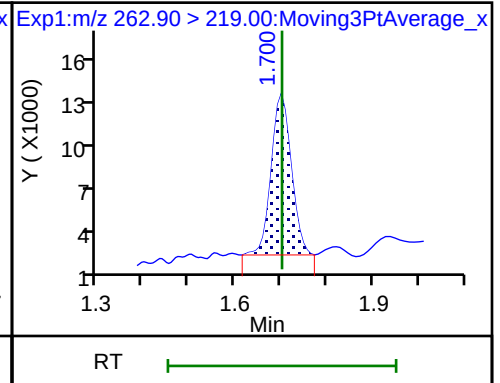
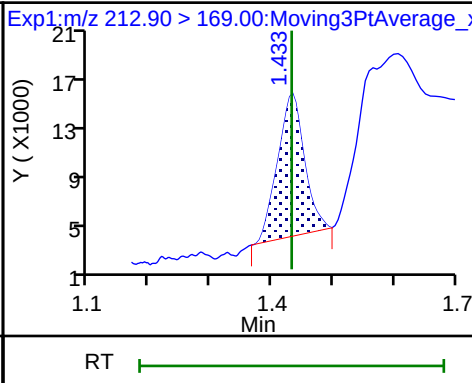
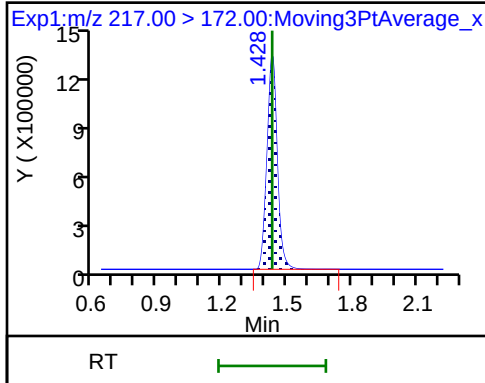
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

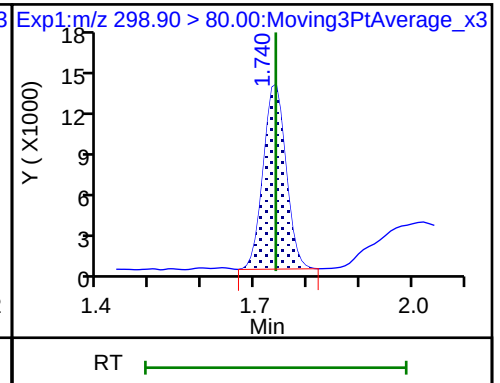
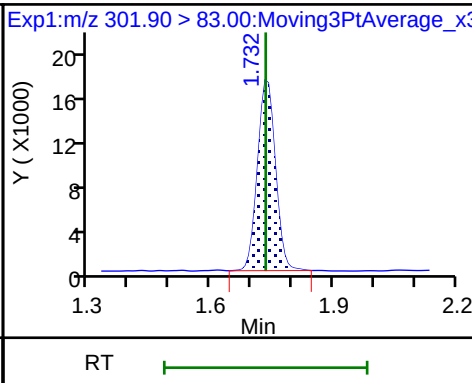
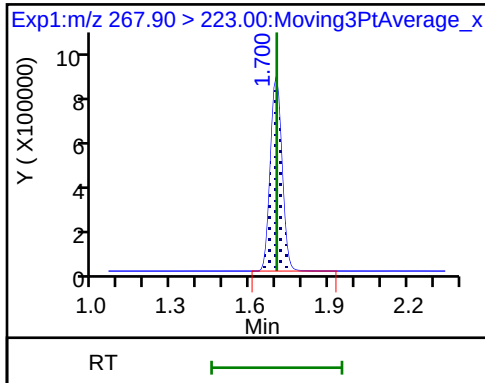
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

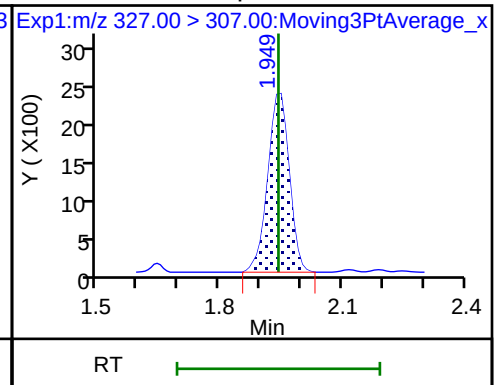
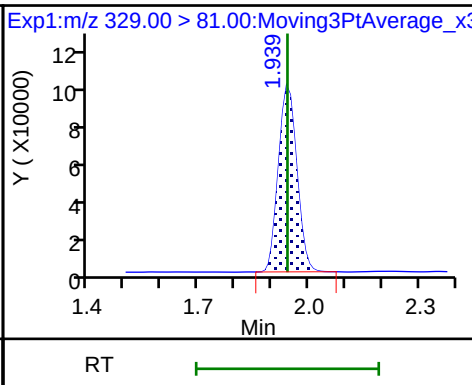
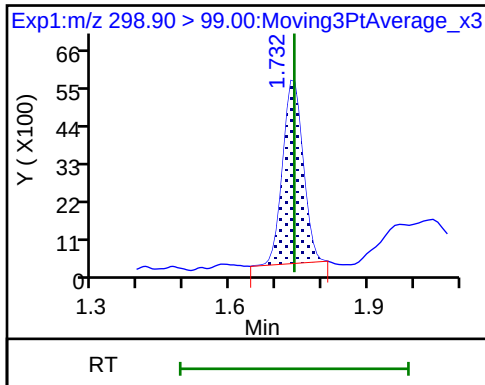
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

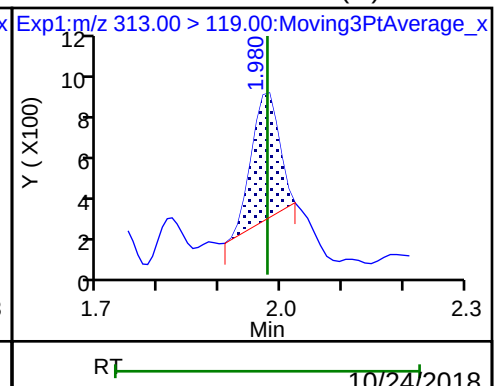
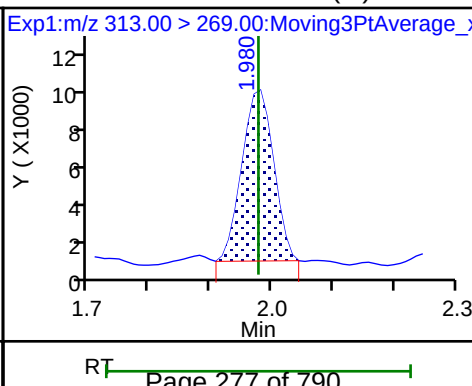
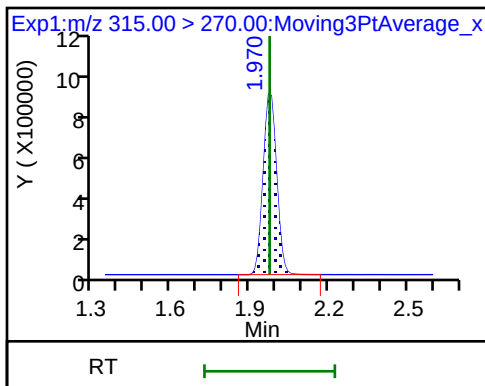
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

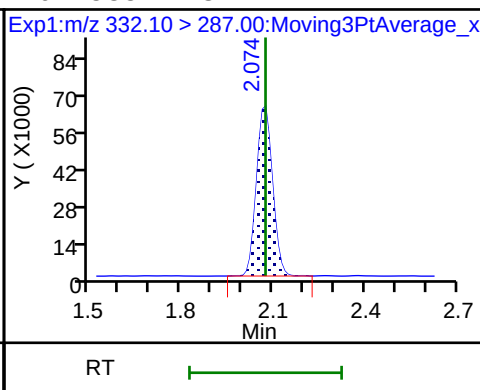
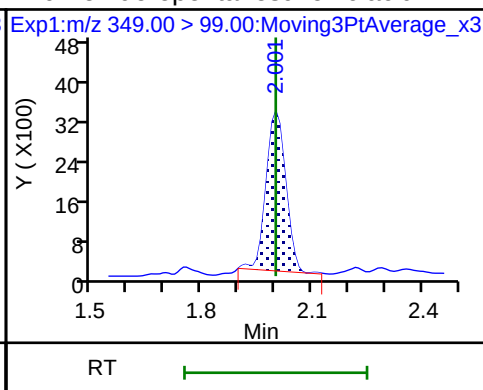
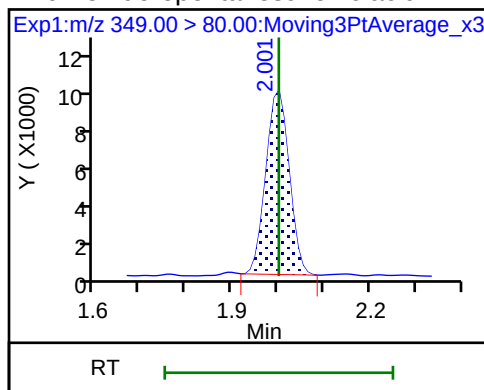
6 Perfluorohexanoic acid (M)



70 Perfluoropentanesulfonic acid

70 Perfluoropentanesulfonic acid

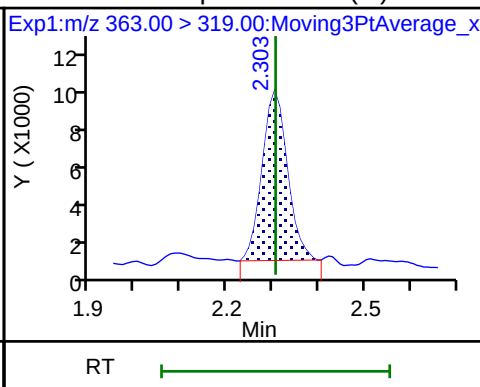
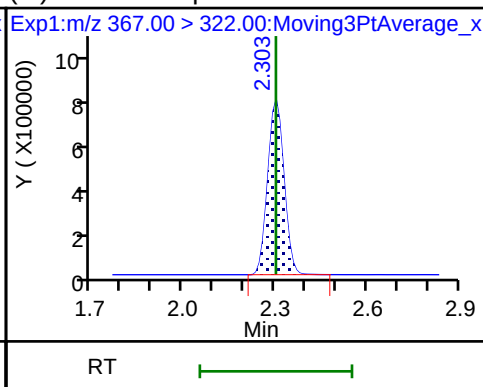
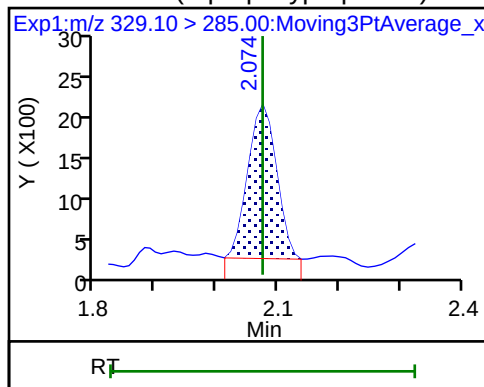
D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid (M)

D M) 9 13C4 PFHpA

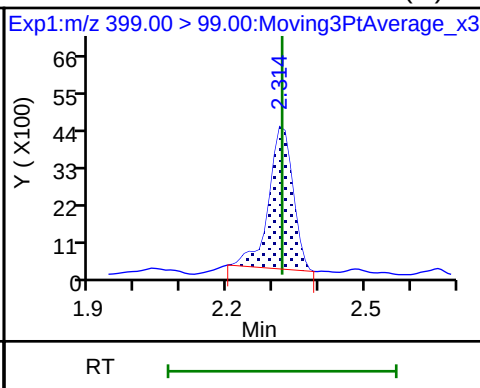
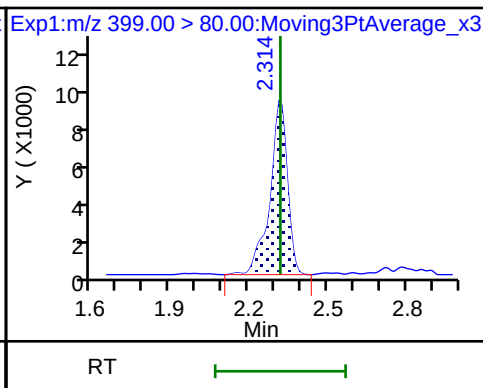
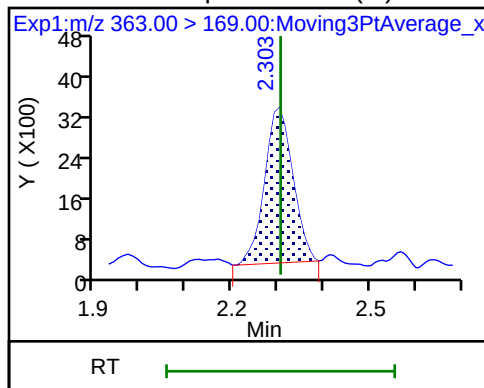
10 Perfluoroheptanoic acid (M)



10 Perfluoroheptanoic acid (M)

8 Perfluorohexanesulfonic acid

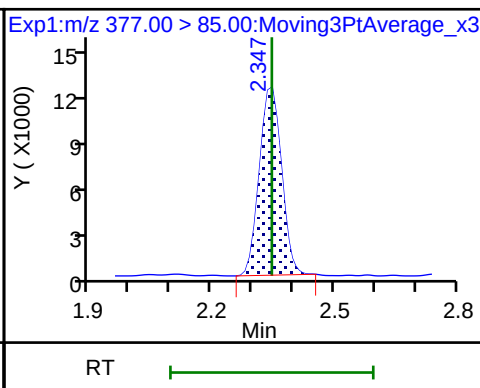
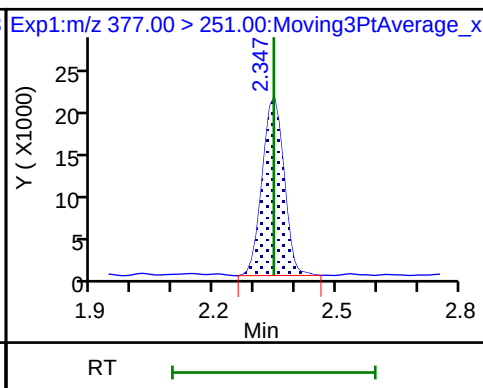
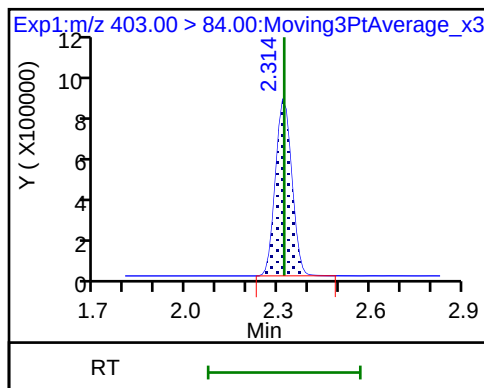
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

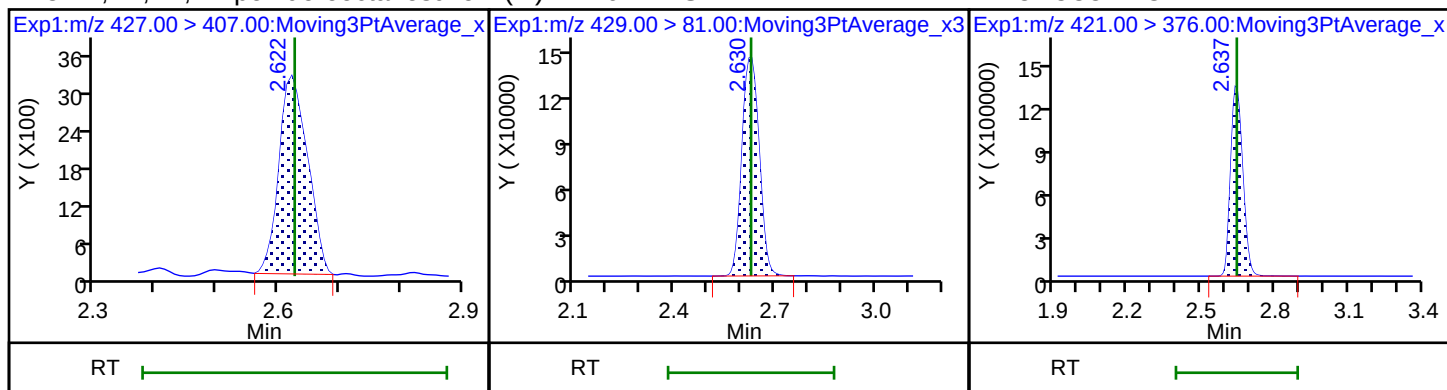
77 DONA

77 DONA



13 1H,1H,2H,2H-perfluorooctanesulfonate (M) M2-6:2 FTS

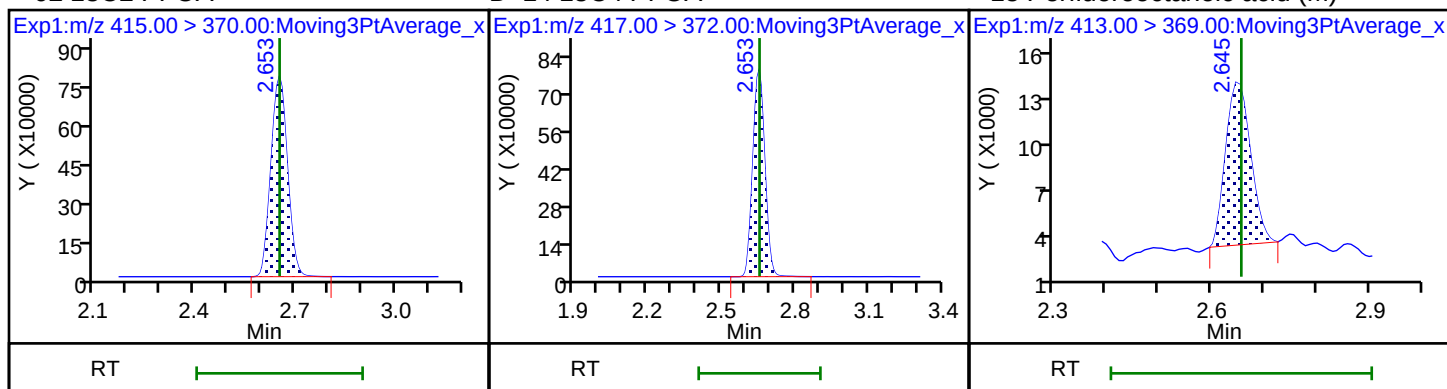
D 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

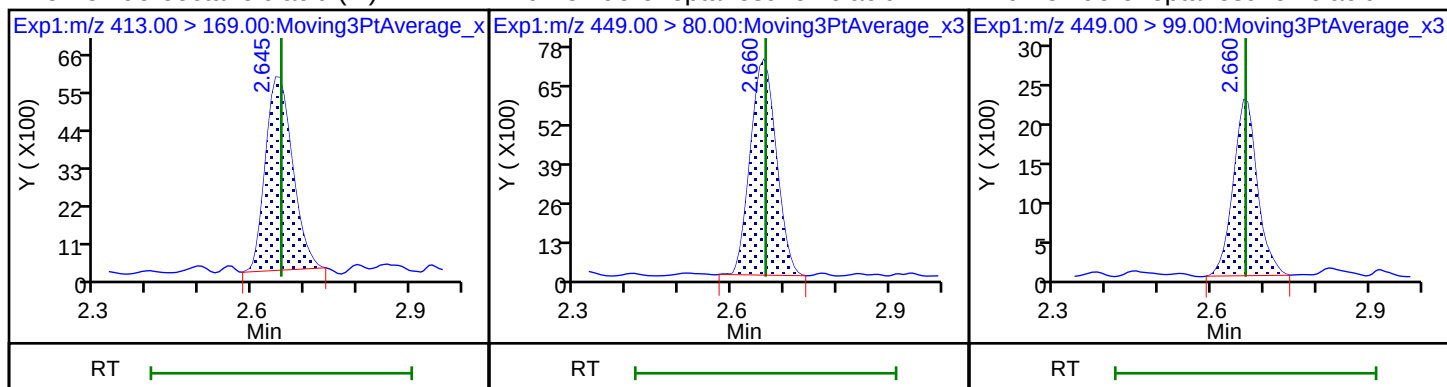
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid (M)

16 Perfluoroheptanesulfonic acid

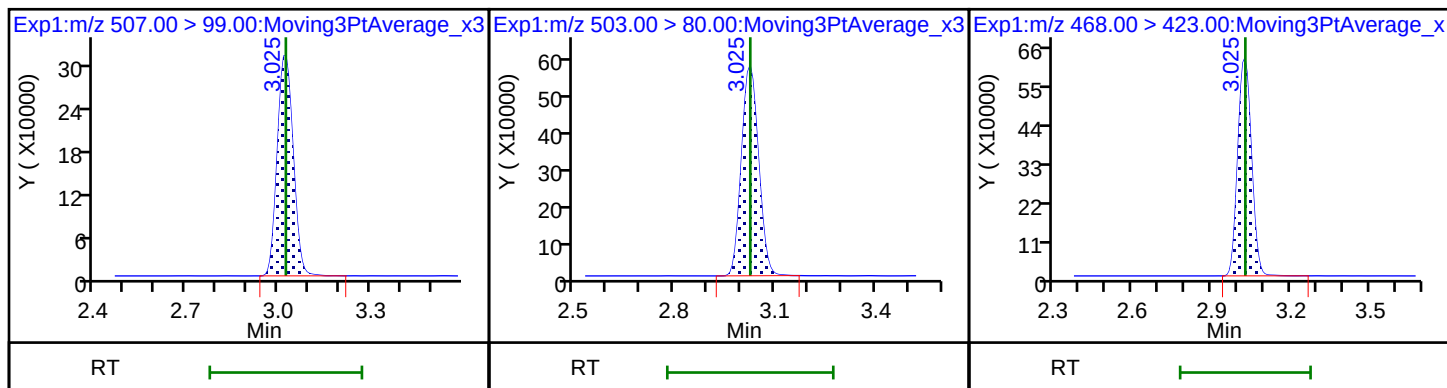
16 Perfluoroheptanesulfonic acid



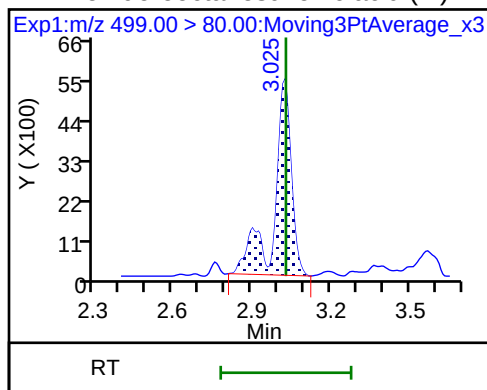
D 72 13C8 PFOS

D 18 13C4 PFOS

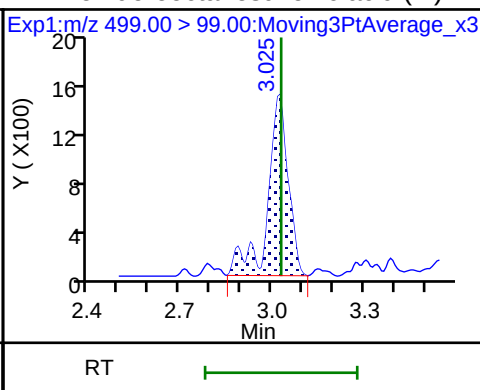
D 19 13C5 PFNA



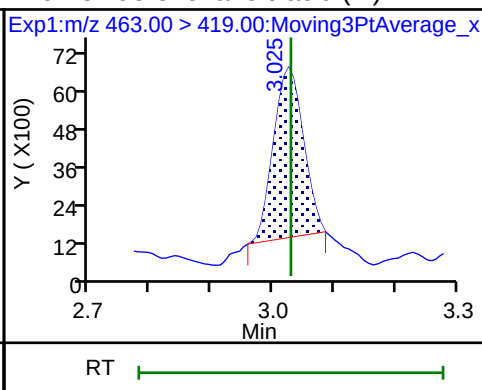
17 Perfluorooctanesulfonic acid (M)



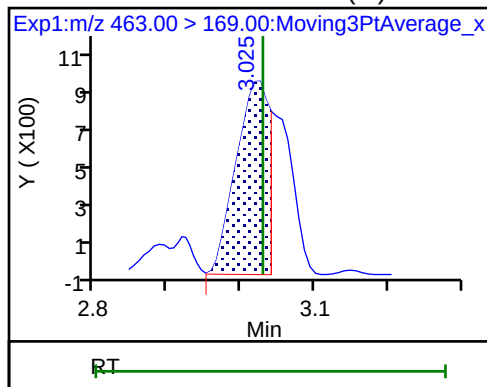
17 Perfluorooctanesulfonic acid (M)



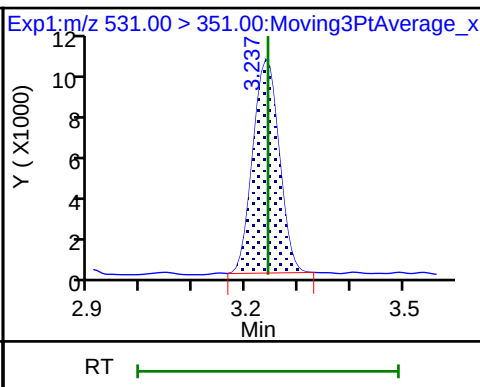
20 Perfluorononanoic acid (M)



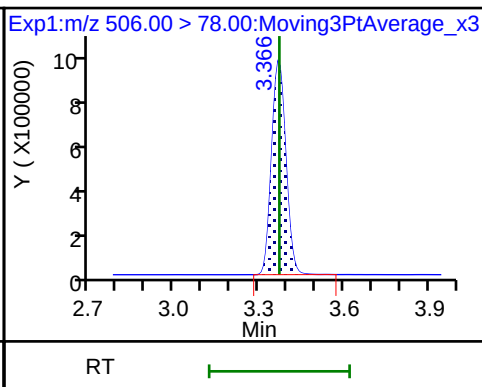
20 Perfluorononanoic acid (M)



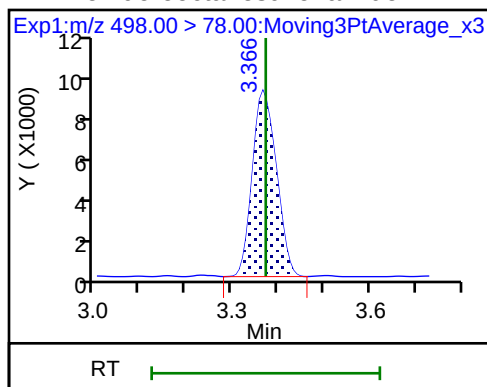
69 9-Chlorohexadecafluoro-3-oxanonane



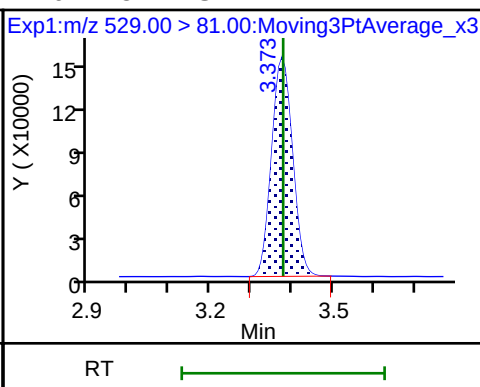
21 13C8 FOSA



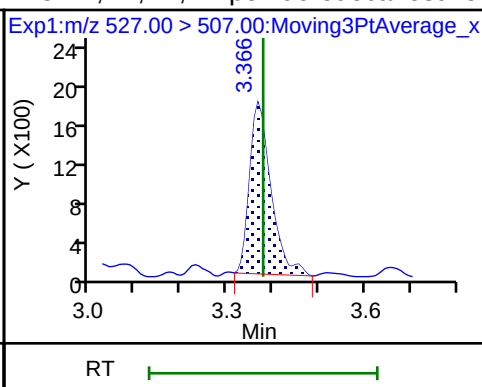
22 Perfluorooctanesulfonamide



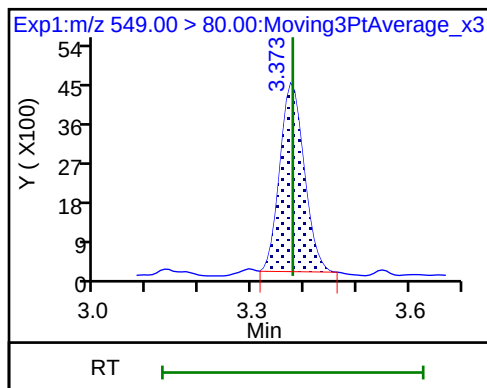
D 26 M2-8:2 FTS



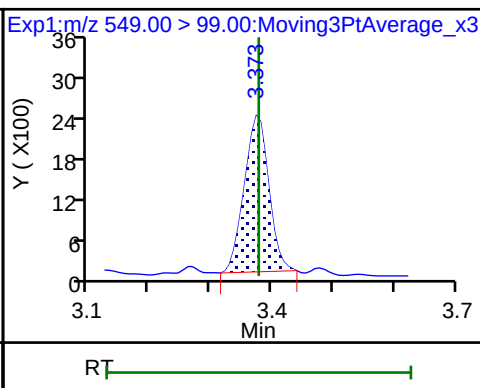
25 1H,1H,2H,2H-perfluorodecanesulfoni



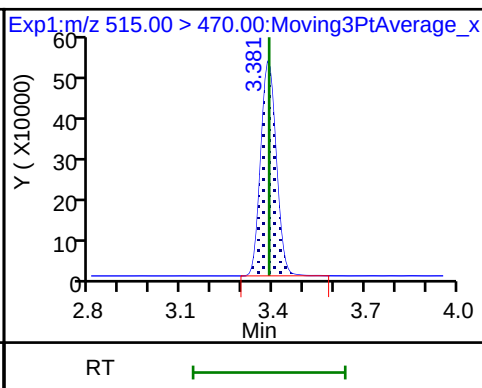
68 Perfluorononanesulfonic acid

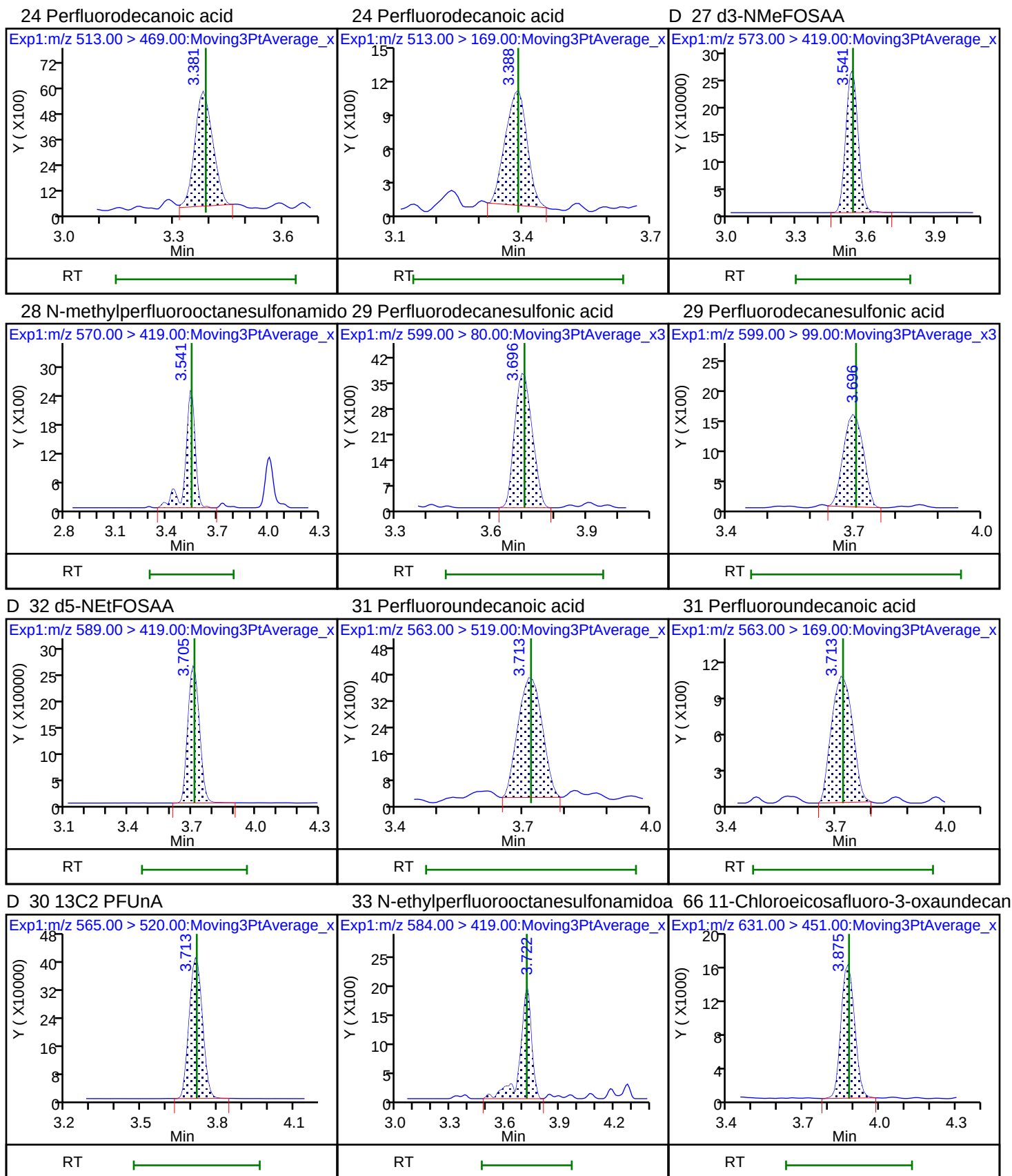


68 Perfluorononanesulfonic acid



D 23 13C2 PFDA

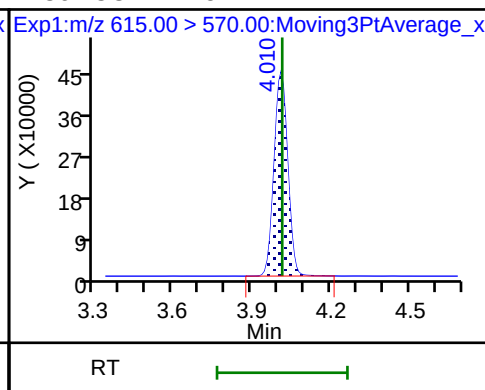
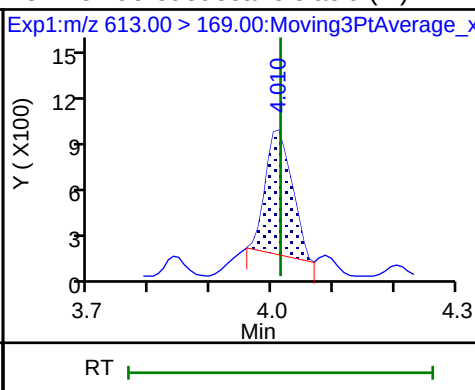
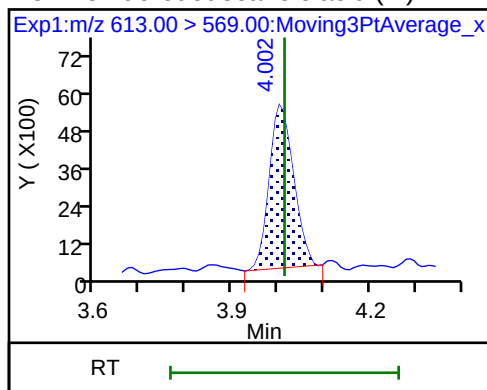




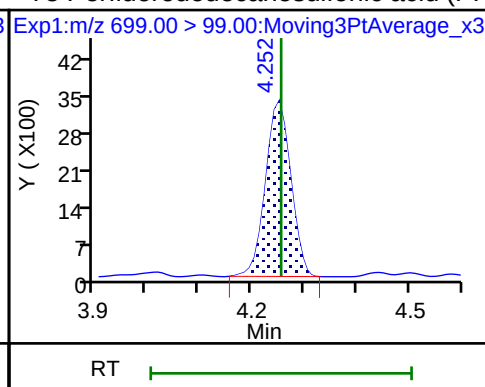
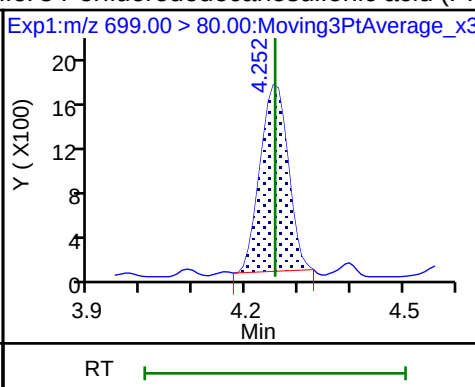
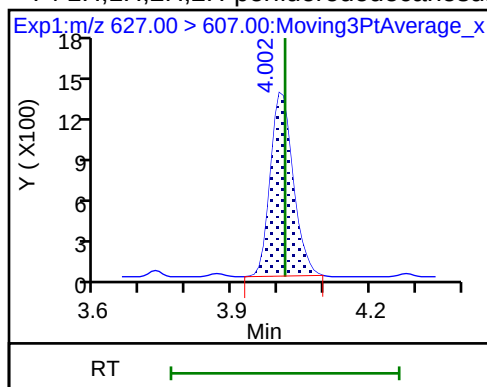
37 Perfluorododecanoic acid (M)

37 Perfluorododecanoic acid (M)

D 36 13C2 PFDa



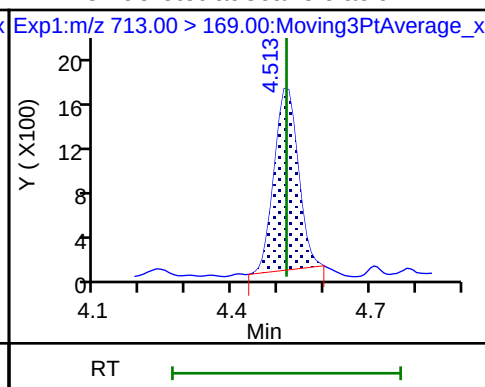
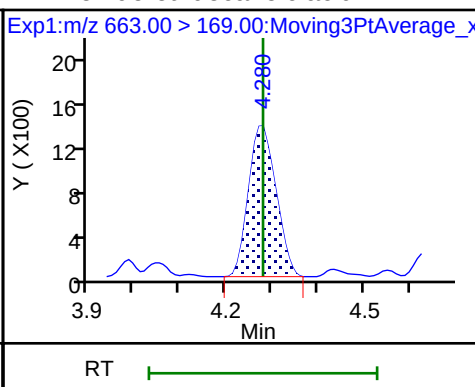
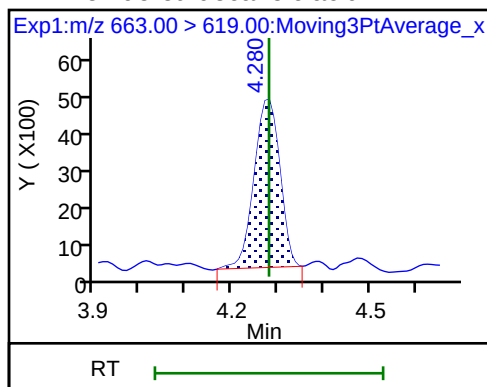
74 1H,1H,2H,2H-perfluorododecanesulfonate75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

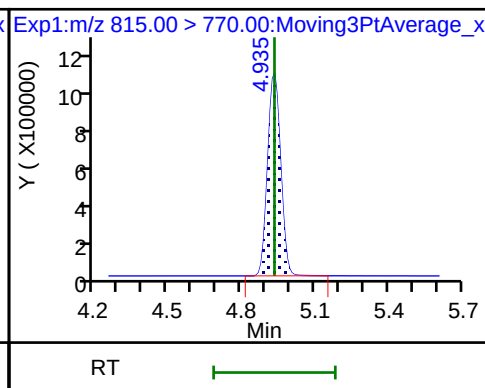
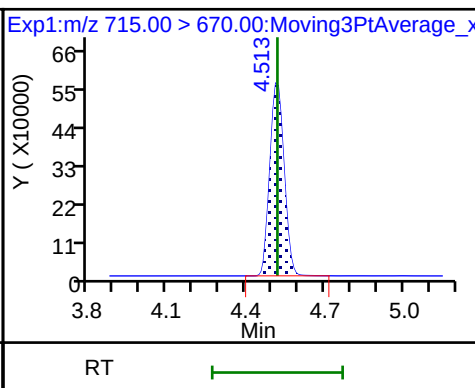
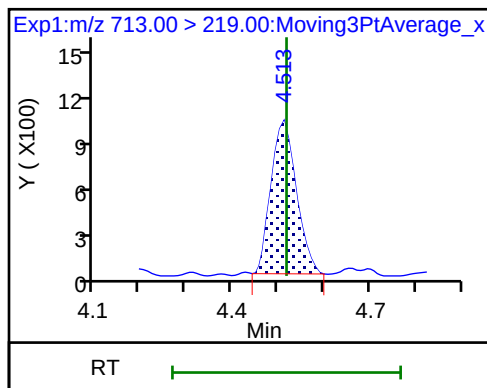
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

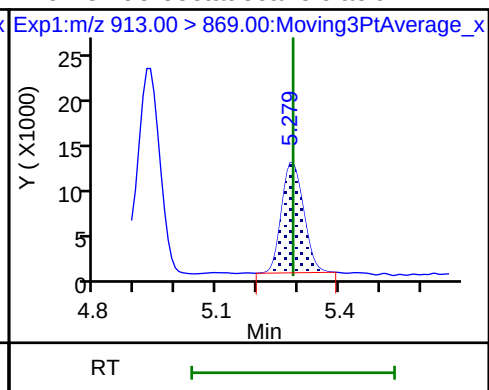
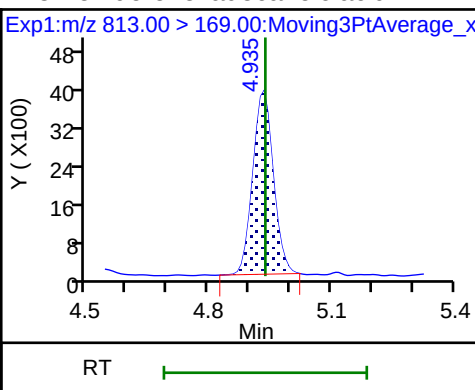
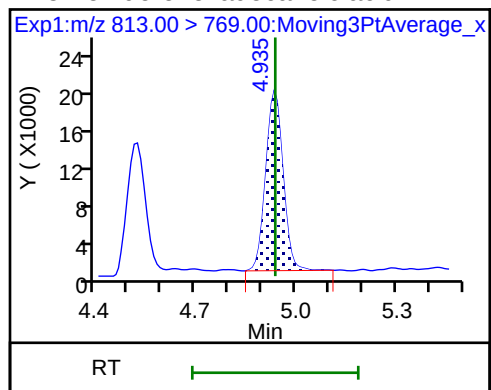
D 44 13C2 PFHxDA



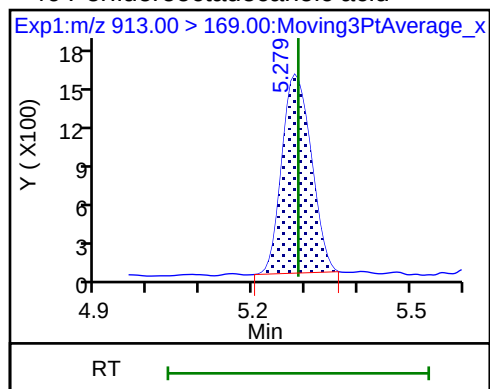
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10 Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

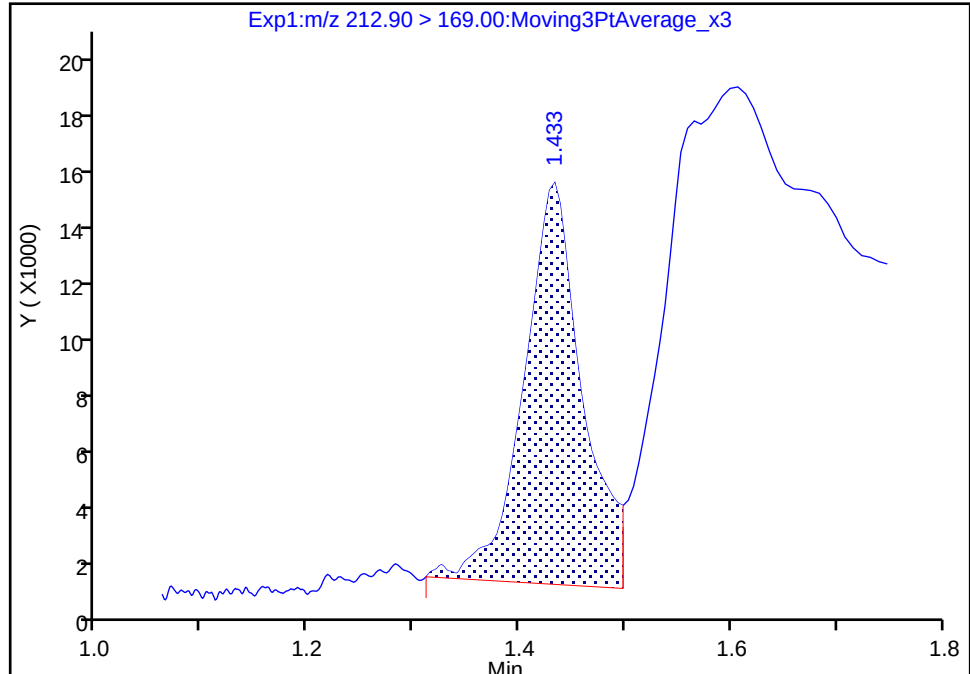
Detector: EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

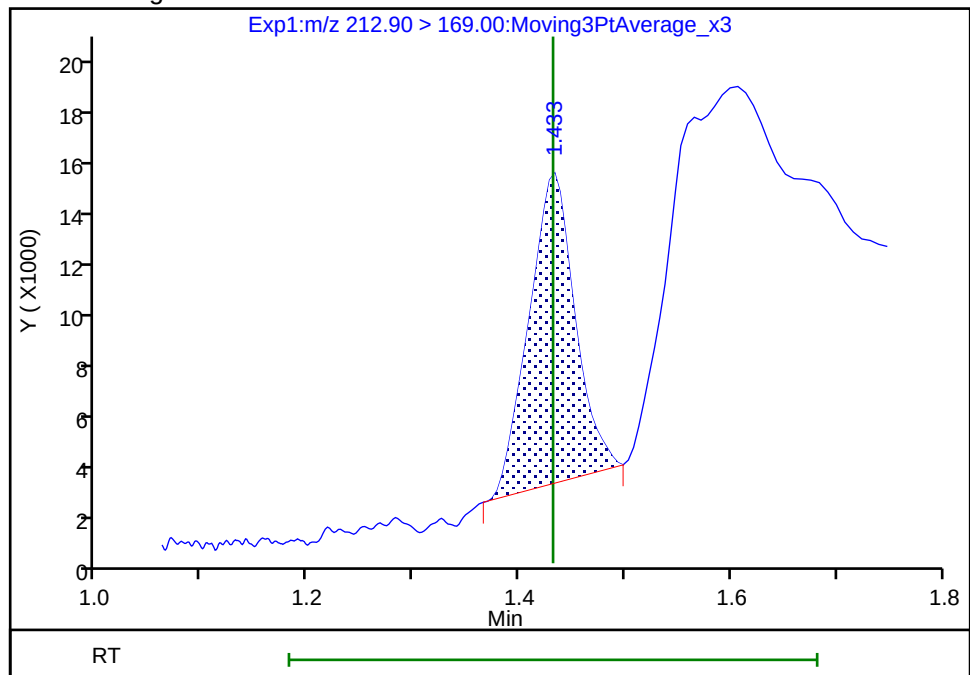
RT: 1.43
Area: 52464
Amount: 0.031553
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 35275
Amount: 0.023739
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:20:13

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

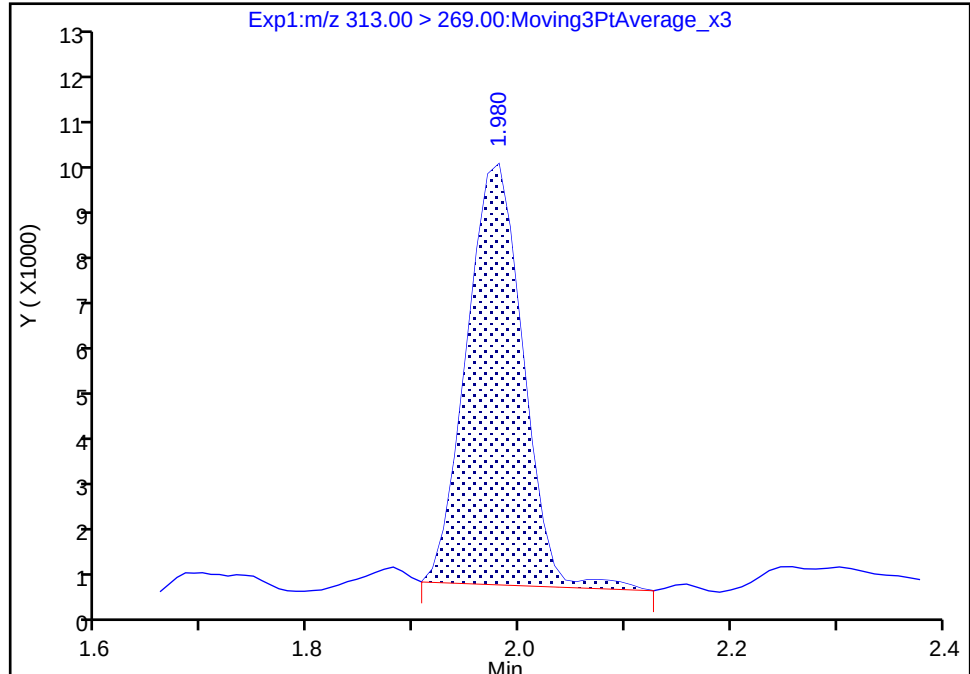
Detector: EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

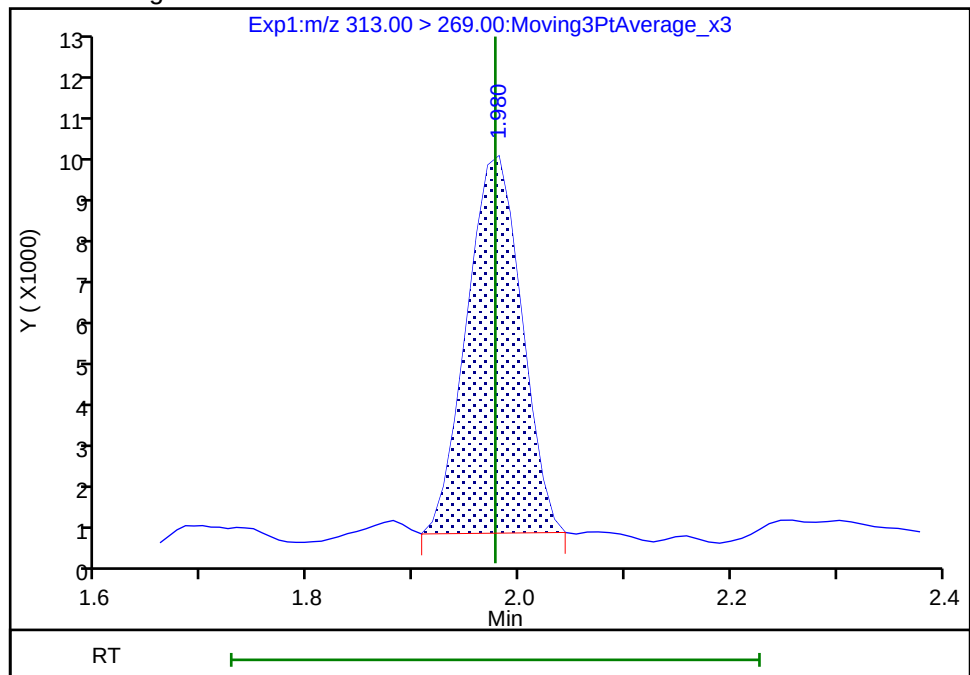
RT: 1.98
Area: 33695
Amount: 0.027278
Amount Units: ng/ml

Processing Integration Results



RT: 1.98
Area: 32404
Amount: 0.026391
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:20:30

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor:

1.0000

Method: A8_N

Limit Group:

LC PFC ICAL

Column:

Detector

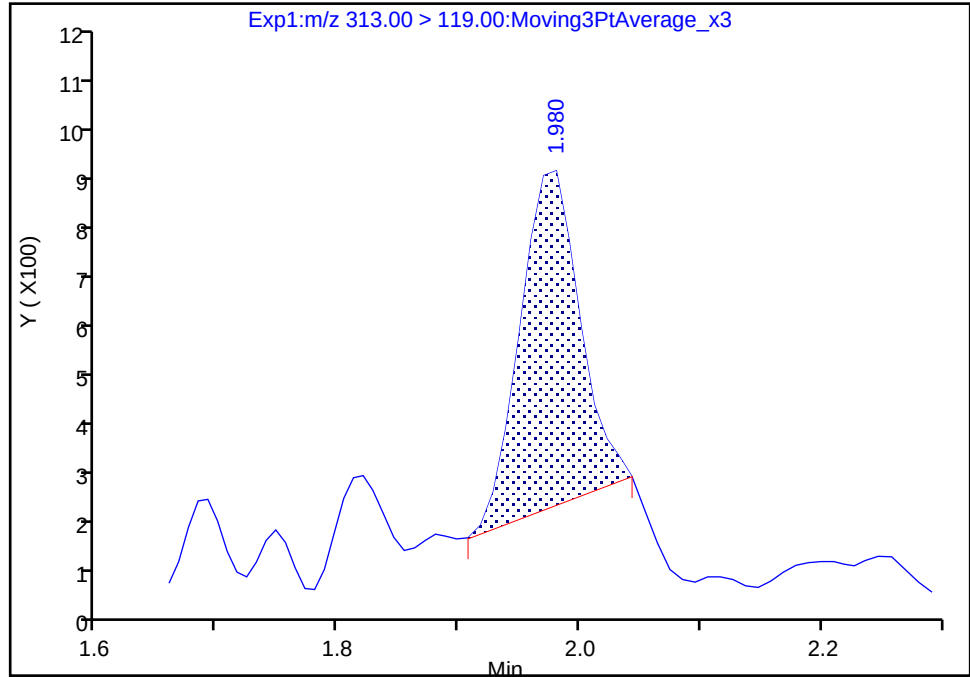
EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

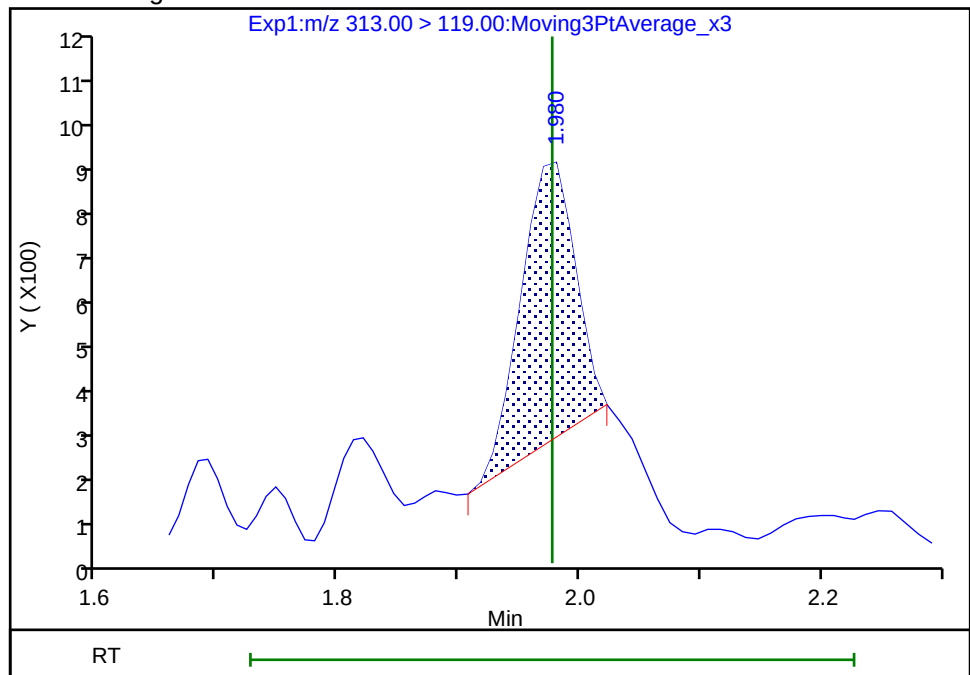
RT: 1.98
Area: 2205
Amount: 0.027278
Amount Units: ng/ml

Processing Integration Results



RT: 1.98
Area: 1829
Amount: 0.026391
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:20:34

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

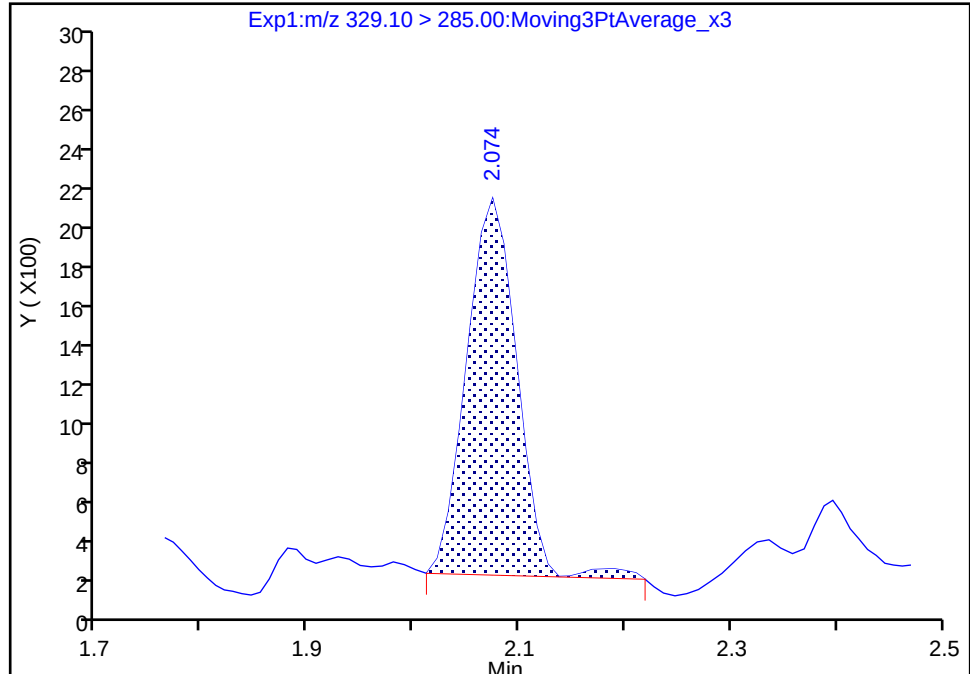
Detector: EXP1

67 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

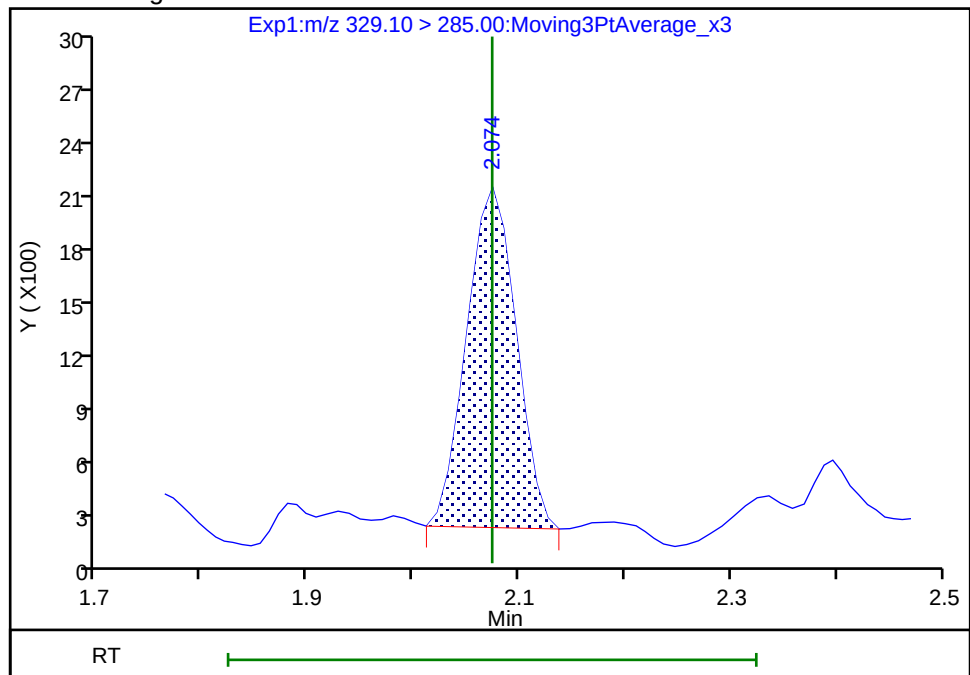
RT: 2.07
Area: 6331
Amount: 0.022769
Amount Units: ng/ml

Processing Integration Results



RT: 2.07
Area: 6177
Amount: 0.022286
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:20:48

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

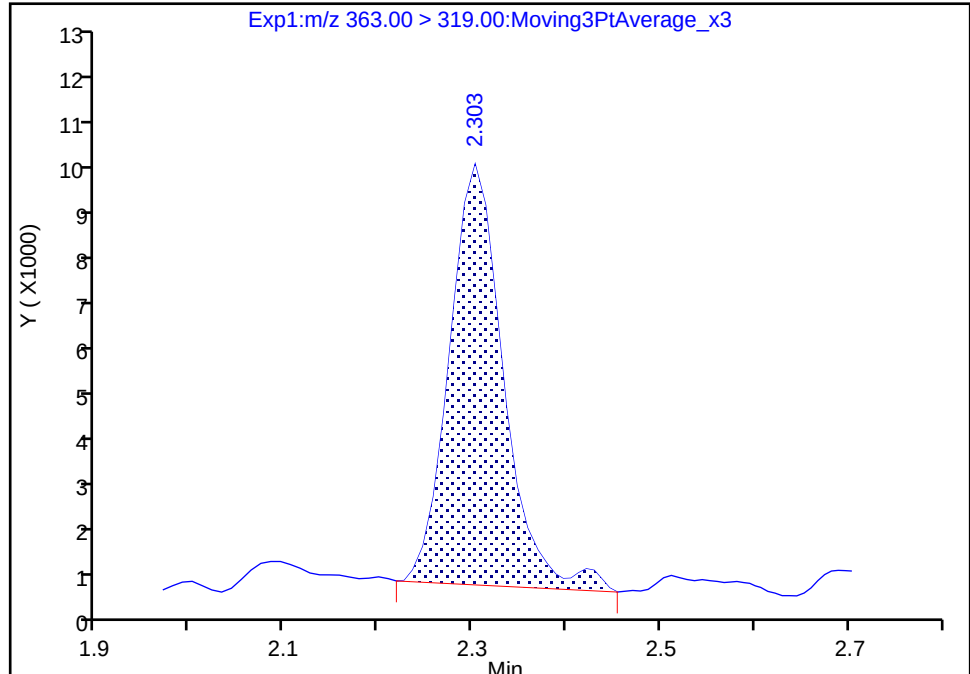
Detector: EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

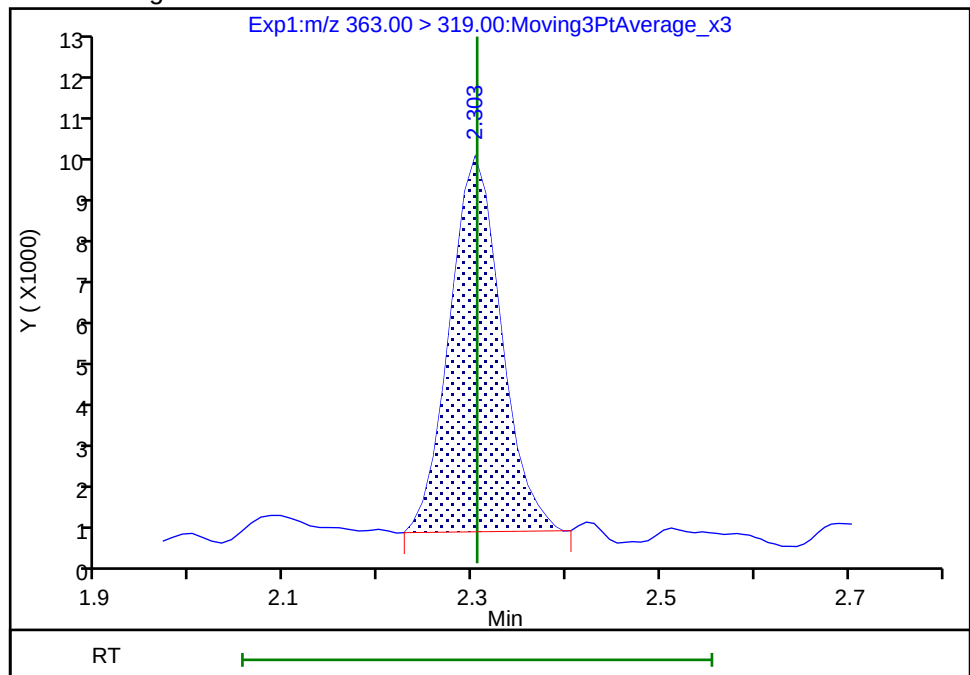
RT: 2.30
Area: 36414
Amount: 0.027878
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 34143
Amount: 0.026402
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:20:57

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor:

1.0000

Method: A8_N

Limit Group:

LC PFC ICAL

Column:

Detector

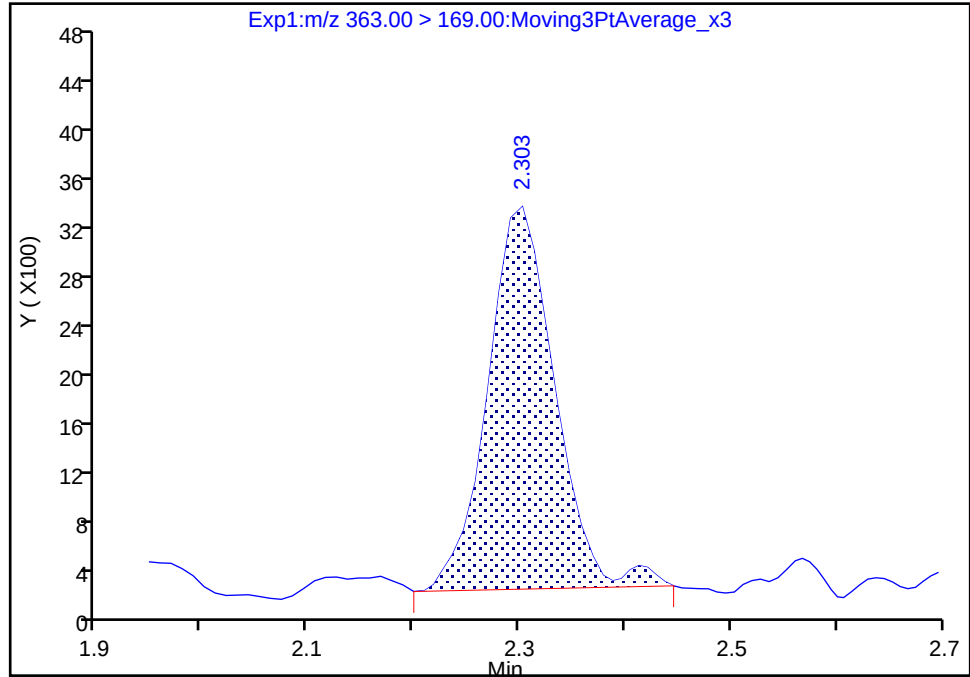
EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

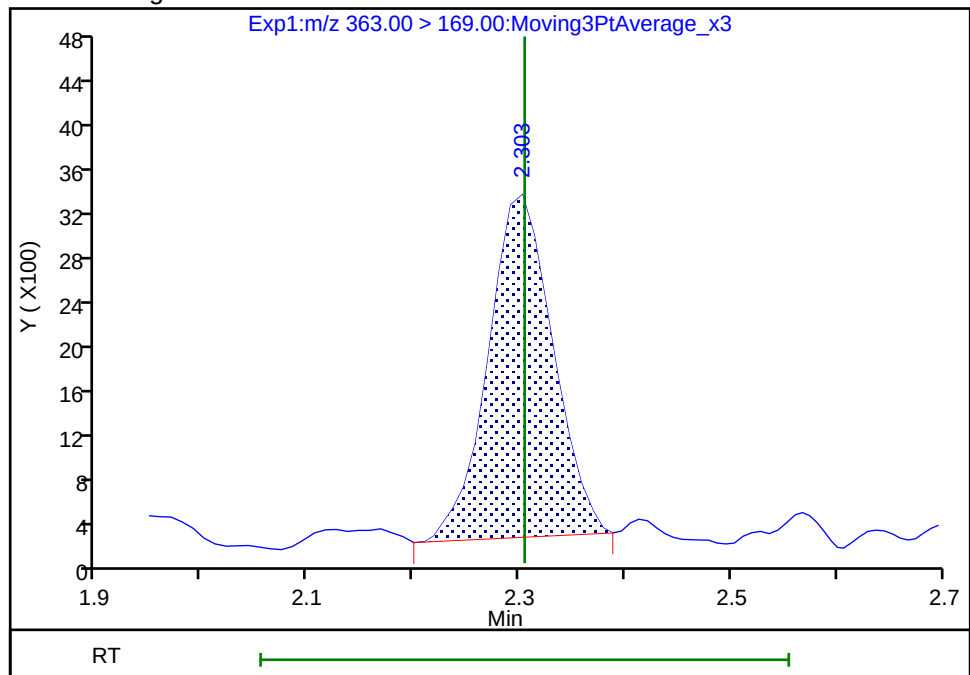
RT: 2.30
Area: 13645
Amount: 0.027878
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 13024
Amount: 0.026402
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:21:02

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

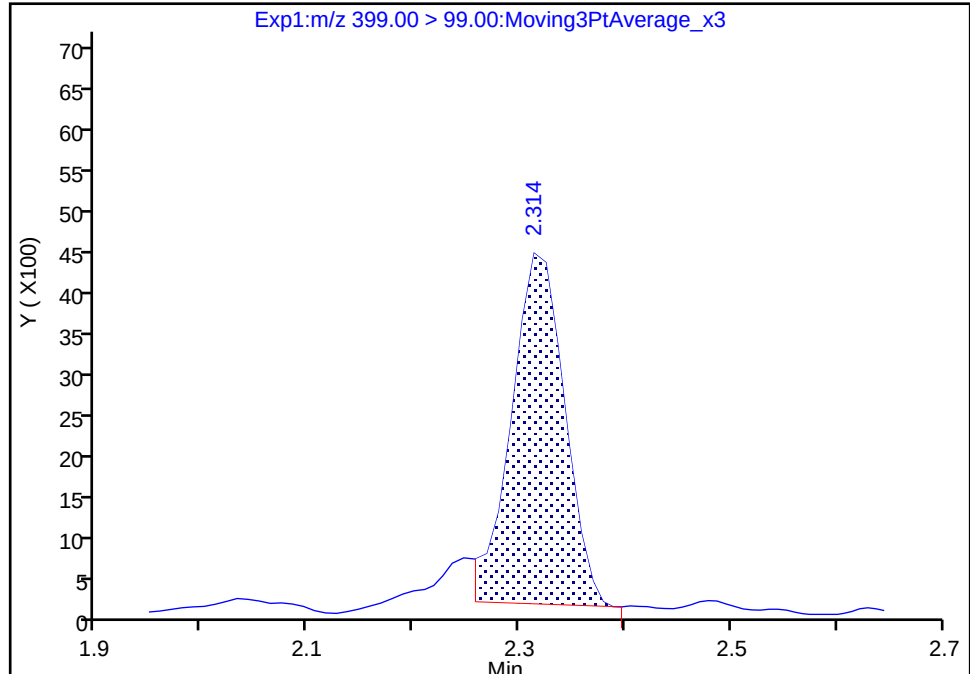
Detector: EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

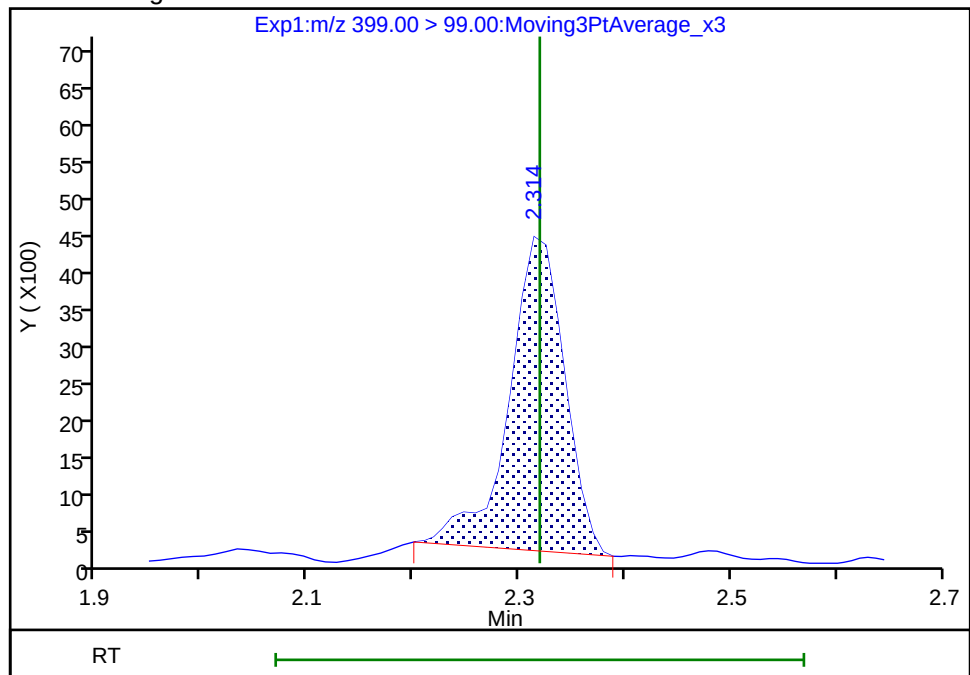
RT: 2.31
Area: 15033
Amount: 0.028560
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 15592
Amount: 0.028560
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:21:16

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

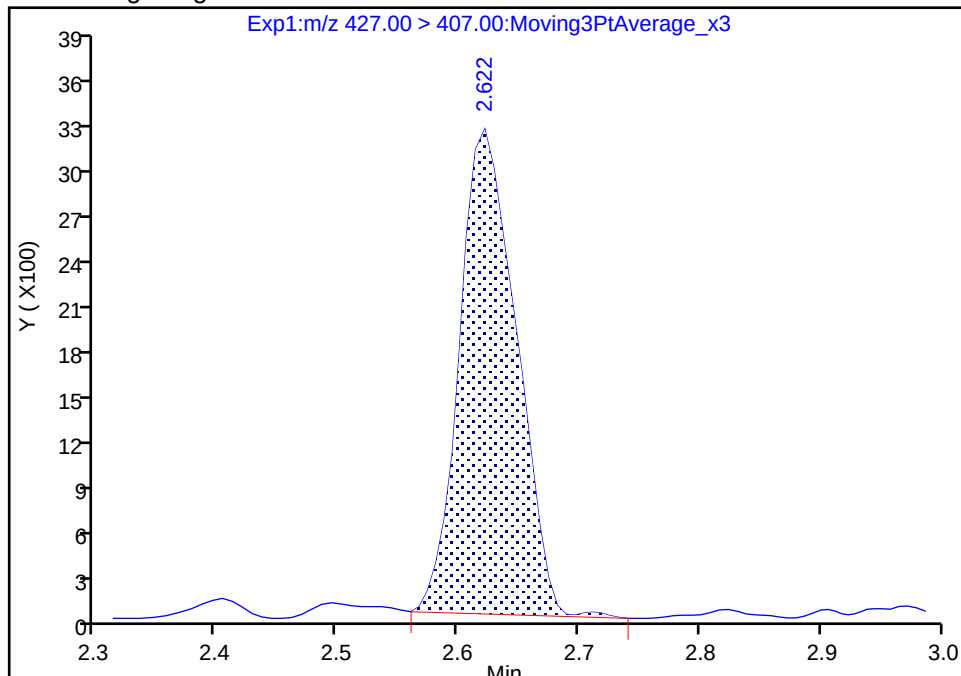
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d
Injection Date: 17-Oct-2018 19:55:39 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

13 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

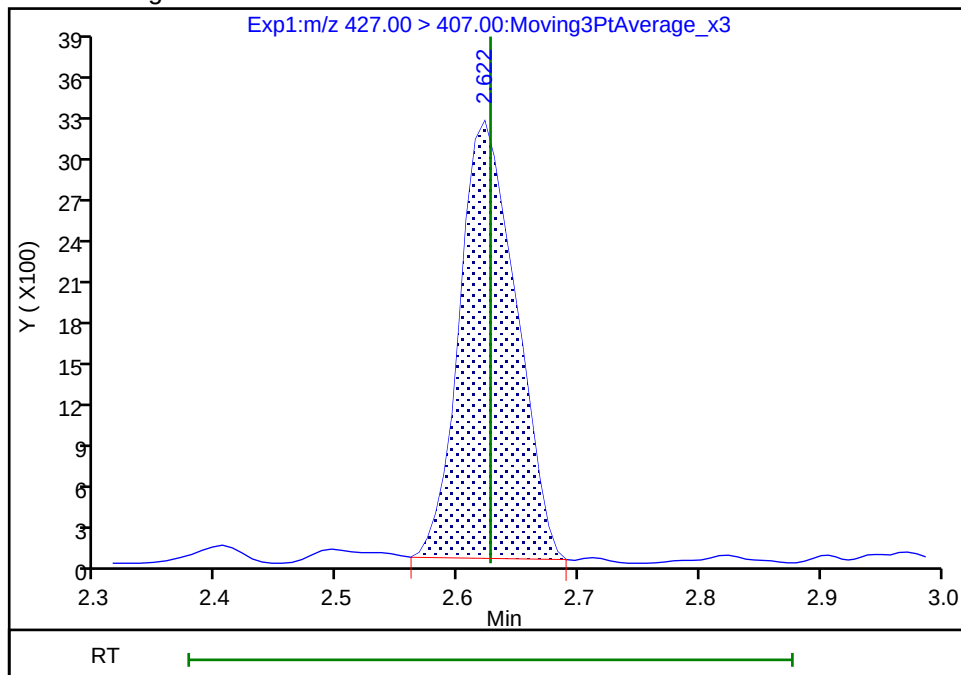
RT: 2.62
Area: 10531
Amount: 0.030267
Amount Units: ng/ml

Processing Integration Results



RT: 2.62
Area: 10421
Amount: 0.030008
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:21:33

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

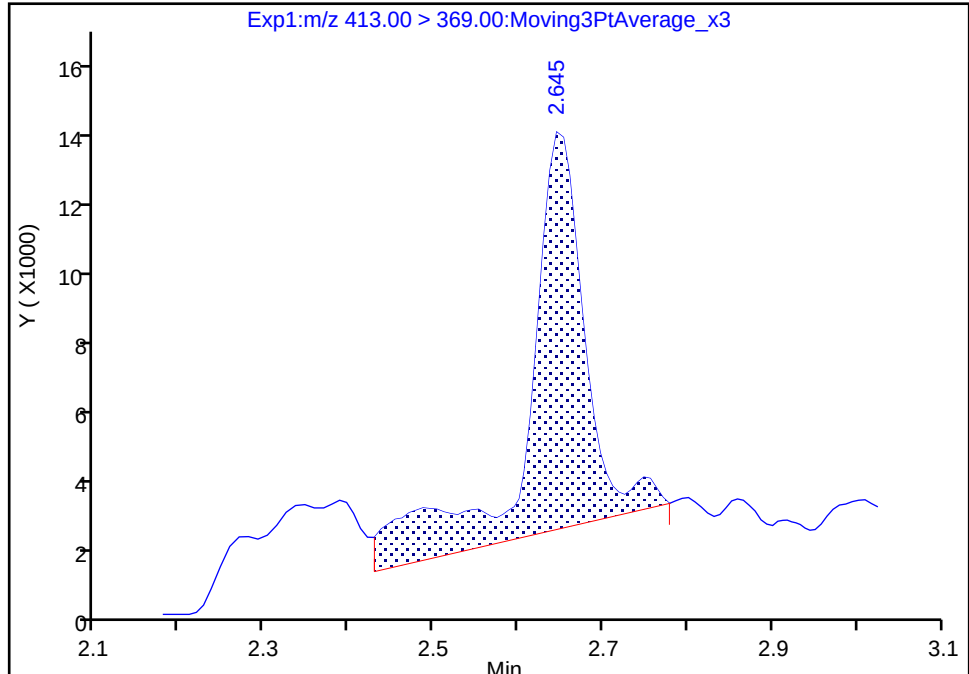
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d
Injection Date: 17-Oct-2018 19:55:39 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

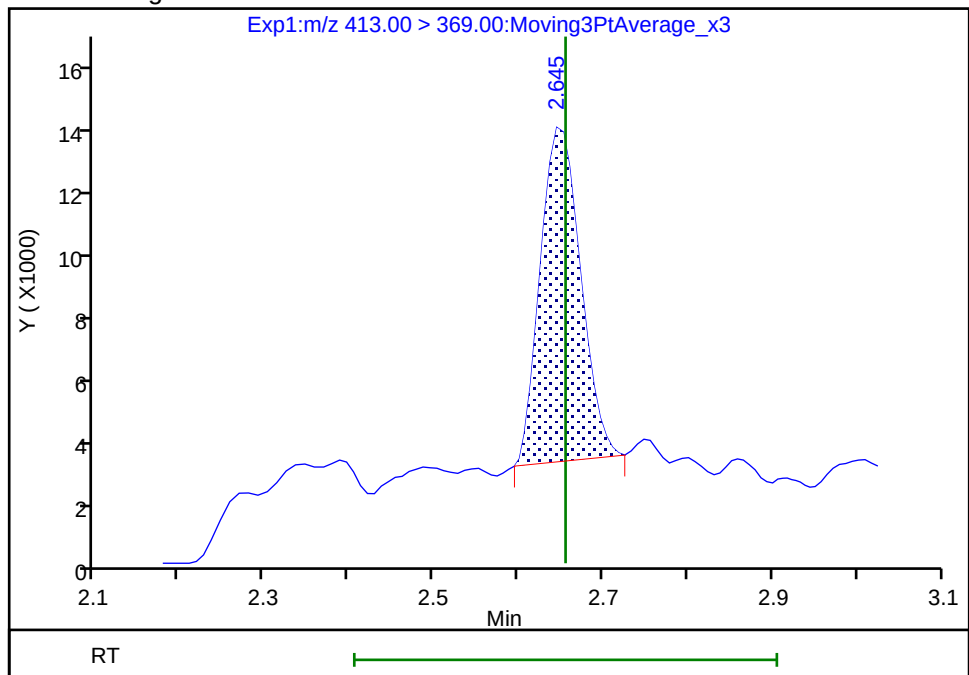
RT: 2.65
Area: 54398
Amount: 0.039274
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 35063
Amount: 0.028699
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:21:49
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

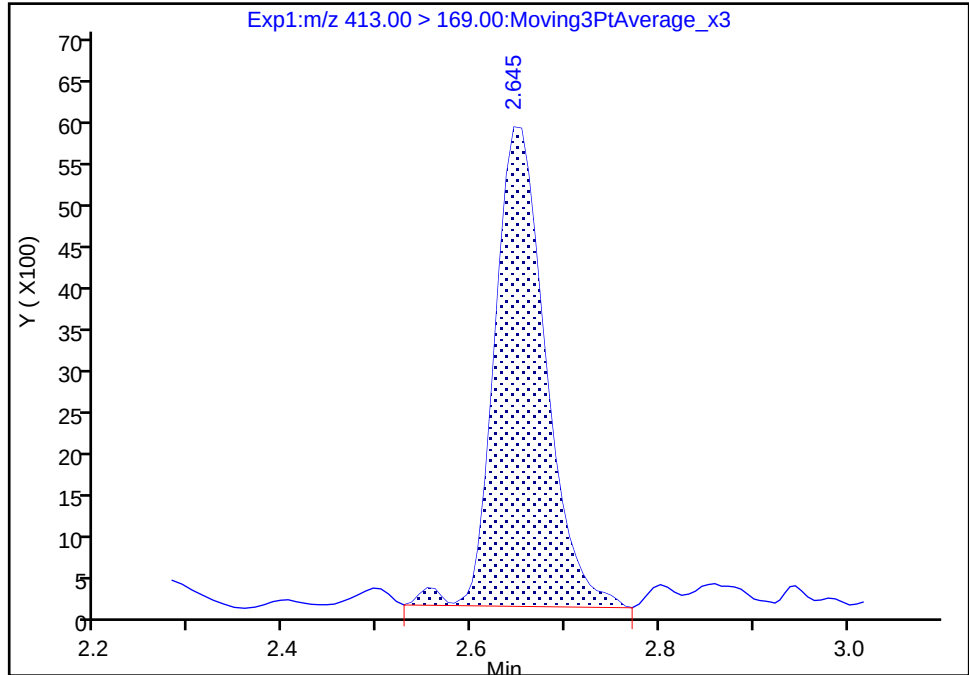
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d
Injection Date: 17-Oct-2018 19:55:39 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

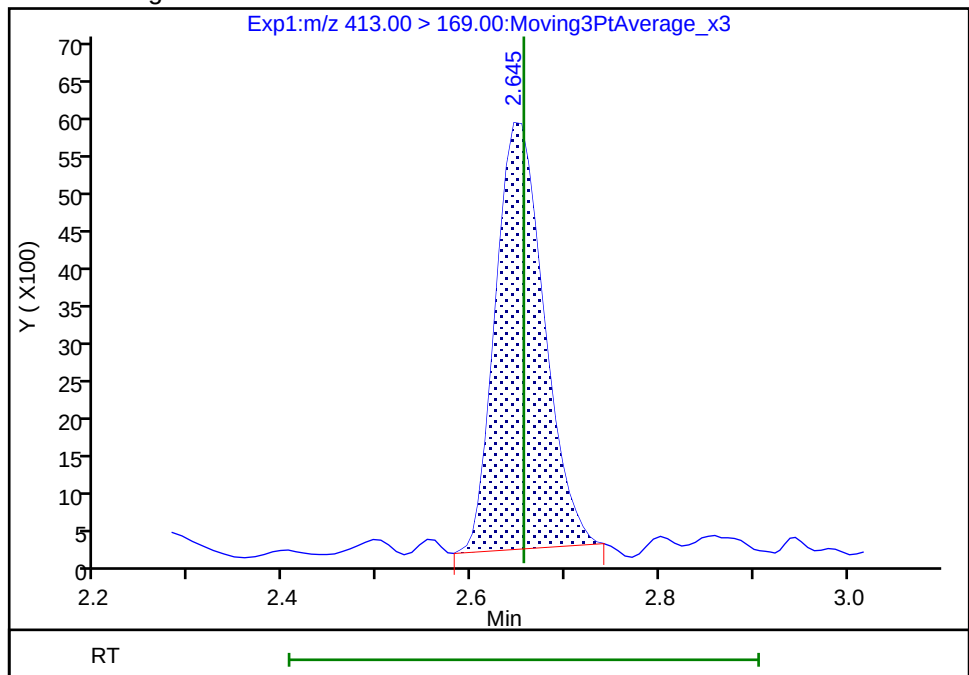
RT: 2.65
Area: 21888
Amount: 0.039274
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 20426
Amount: 0.028699
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:21:53

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

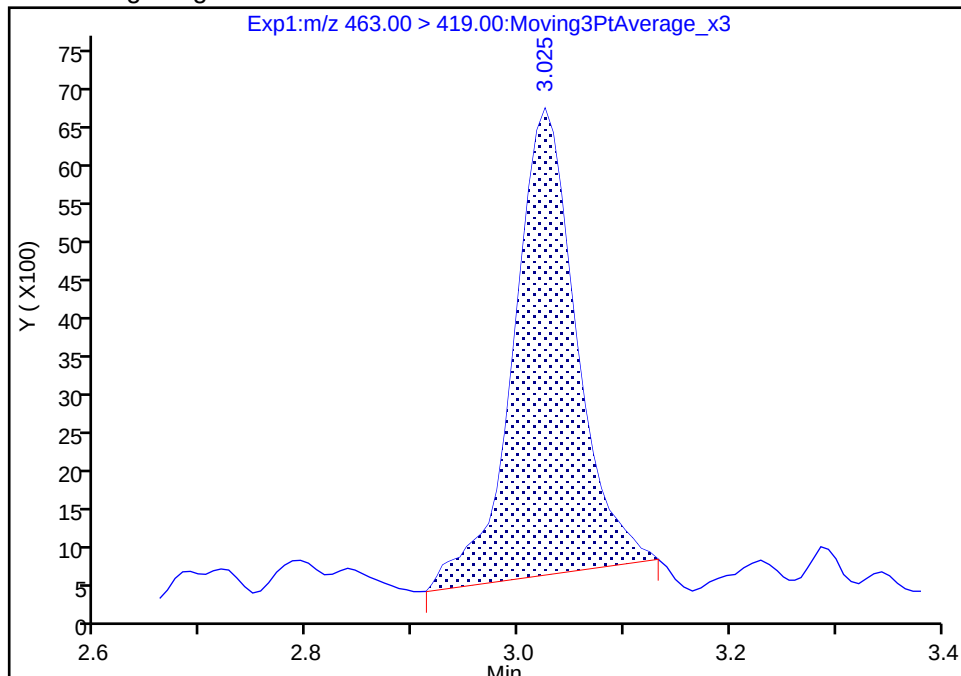
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d
Injection Date: 17-Oct-2018 19:55:39 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

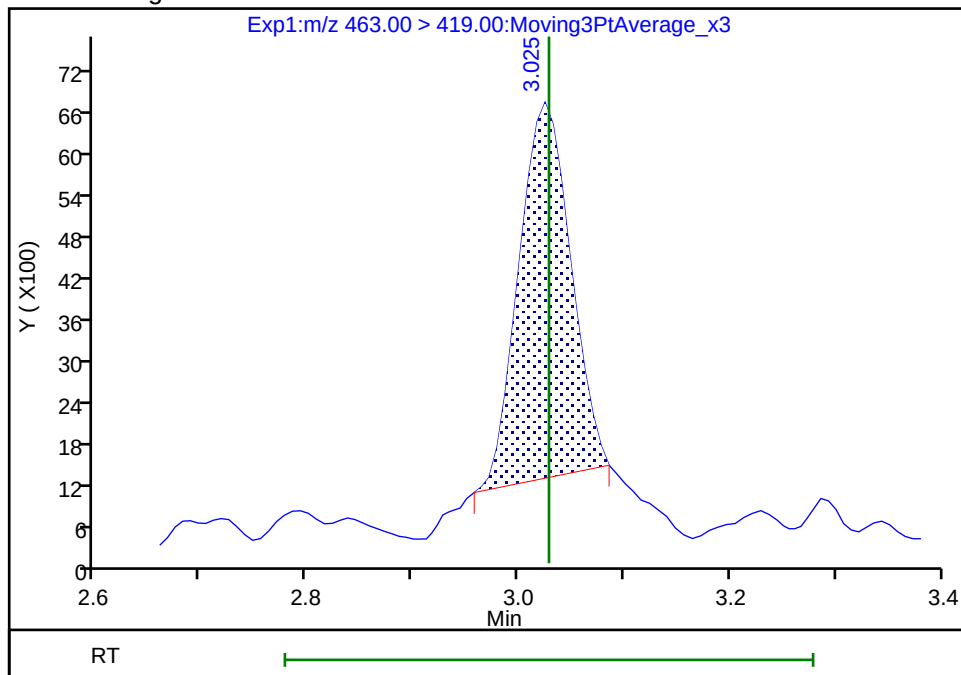
RT: 3.03
Area: 25008
Amount: 0.026489
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 18218
Amount: 0.020293
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:22:14
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor:

1.0000

Method: A8_N

Limit Group:

LC PFC ICAL

Column:

Detector

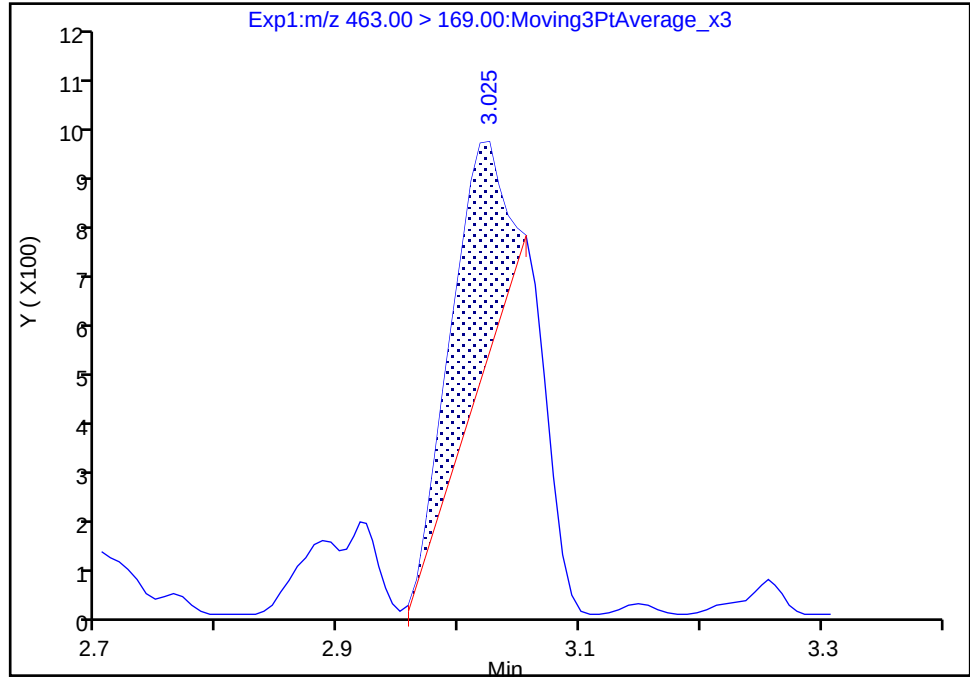
EXP1

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

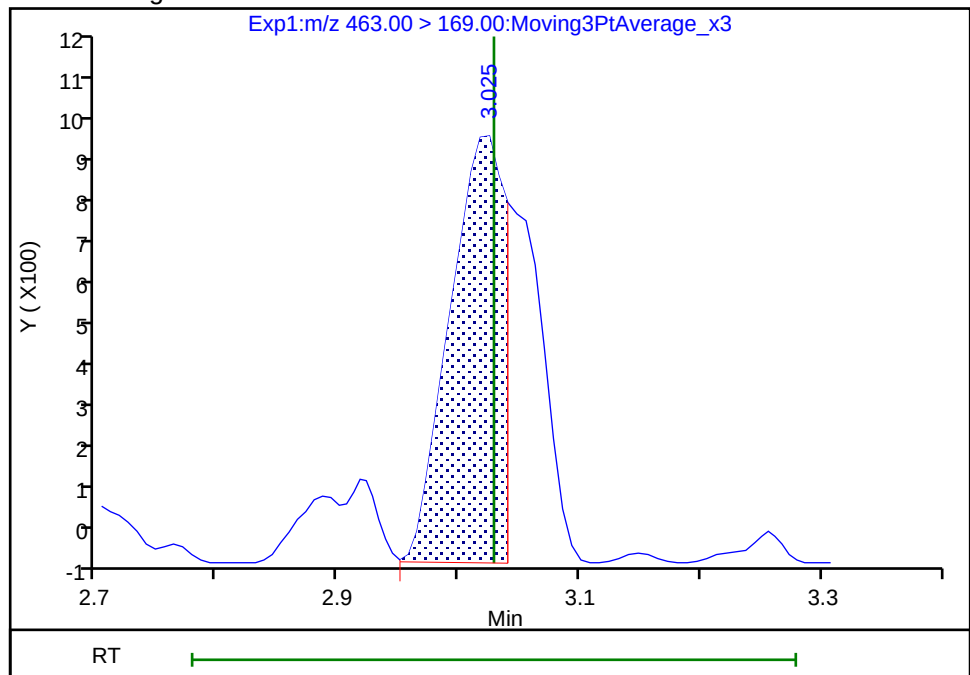
RT: 3.03
Area: 1350
Amount: 0.026489
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 2864
Amount: 0.020293
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:22:23

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

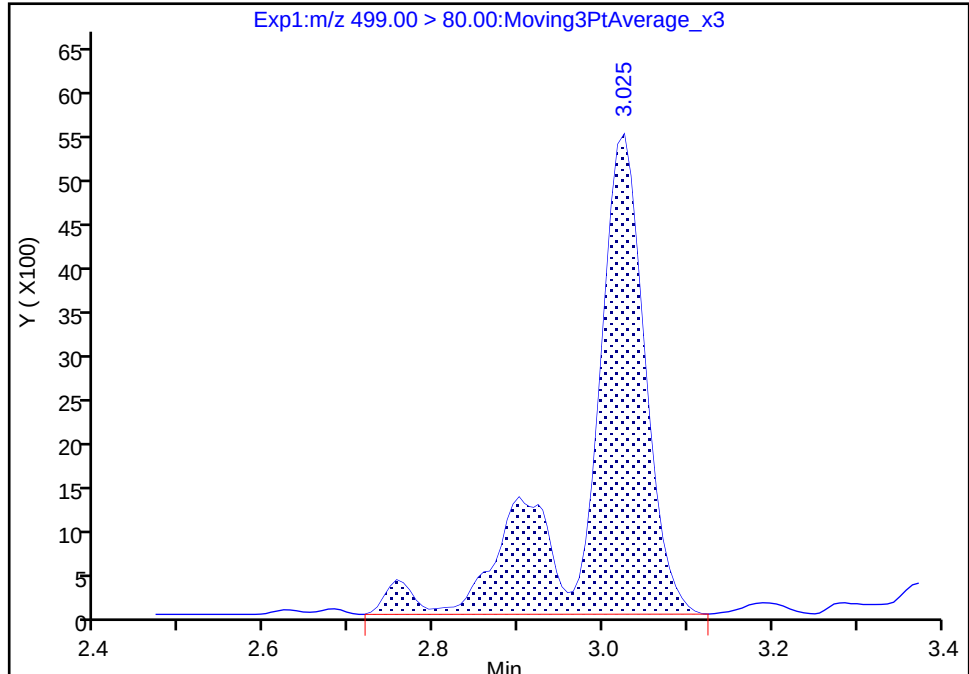
Detector: EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

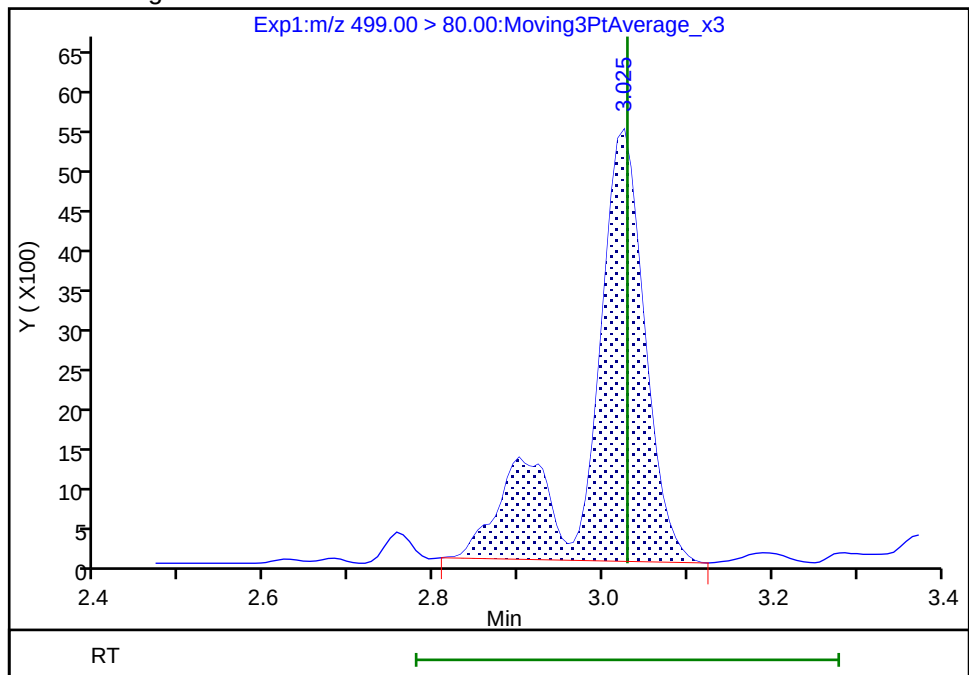
RT: 3.03
Area: 26031
Amount: 0.025993
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 24458
Amount: 0.024661
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:31:16

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor:

1.0000

Method: A8_N

Limit Group:

LC PFC ICAL

Column:

Detector

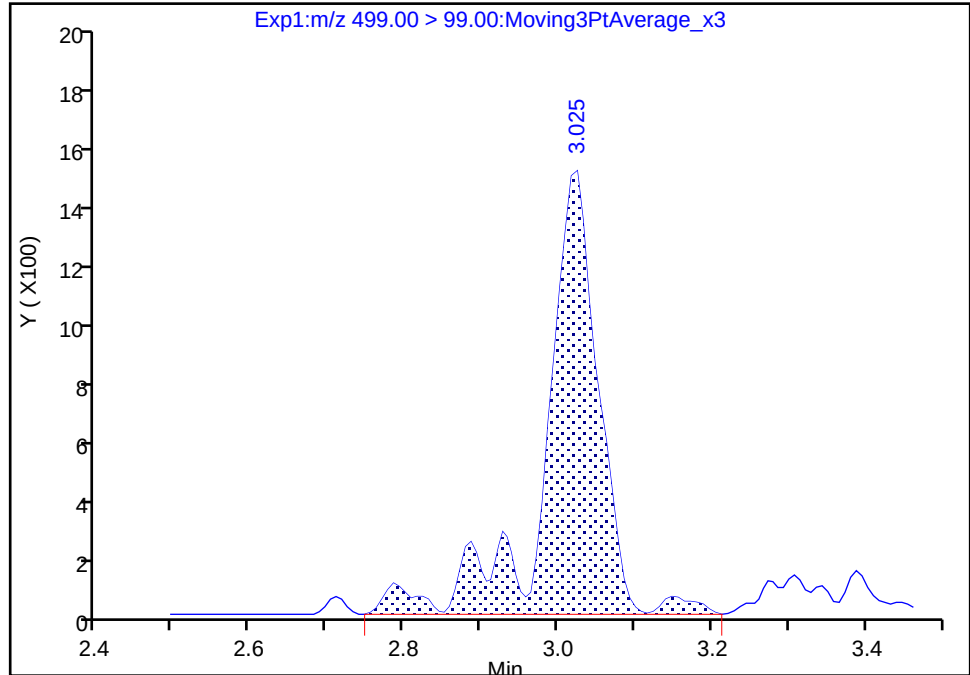
EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

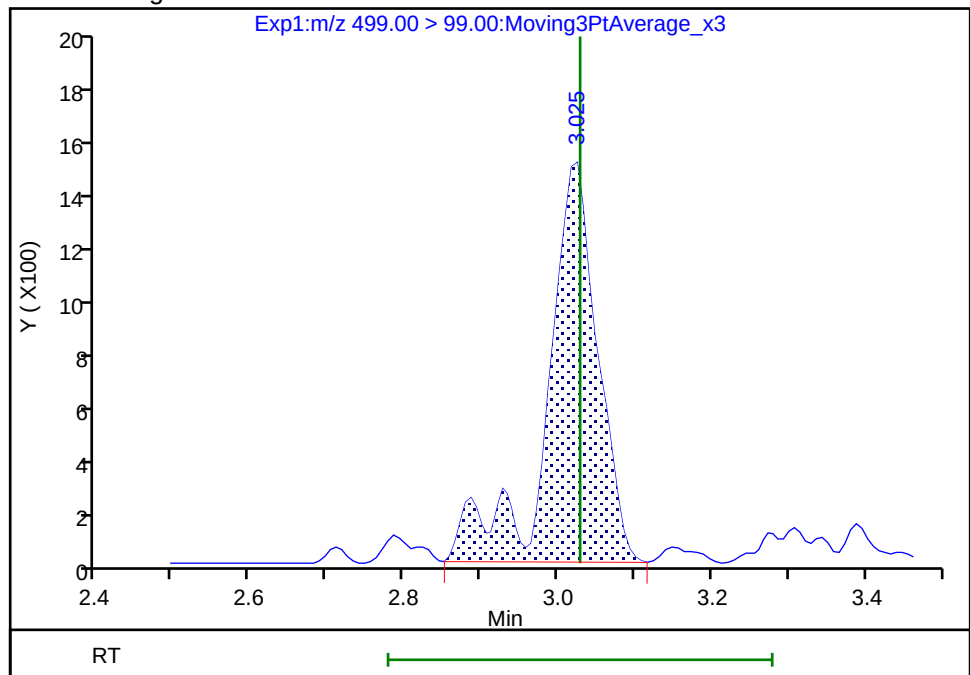
RT: 3.03
Area: 7507
Amount: 0.025993
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 6926
Amount: 0.024661
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:31:19

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

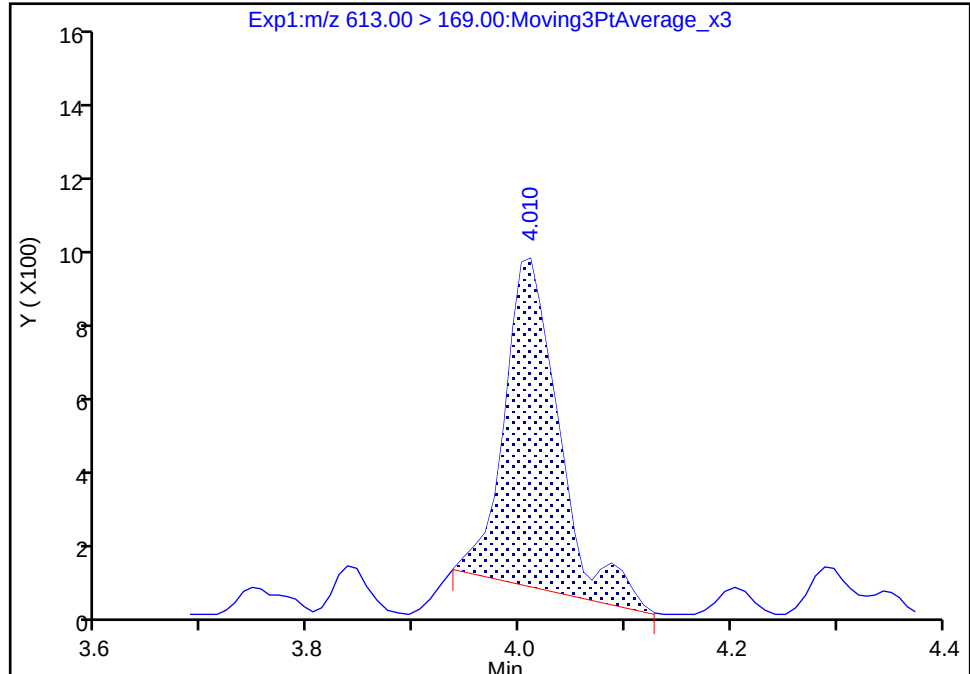
Detector: EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 2

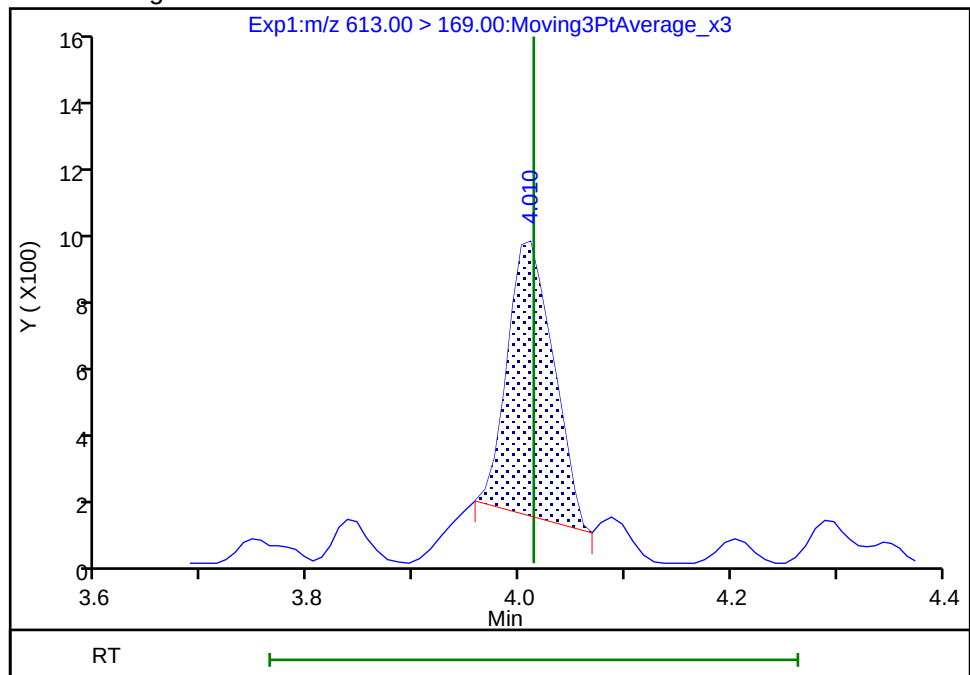
RT: 4.01
Area: 3228
Amount: 0.028871
Amount Units: ng/ml

Processing Integration Results



RT: 4.01
Area: 2496
Amount: 0.027127
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:26:14

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_005.d

Injection Date: 17-Oct-2018 19:55:39

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

Detector

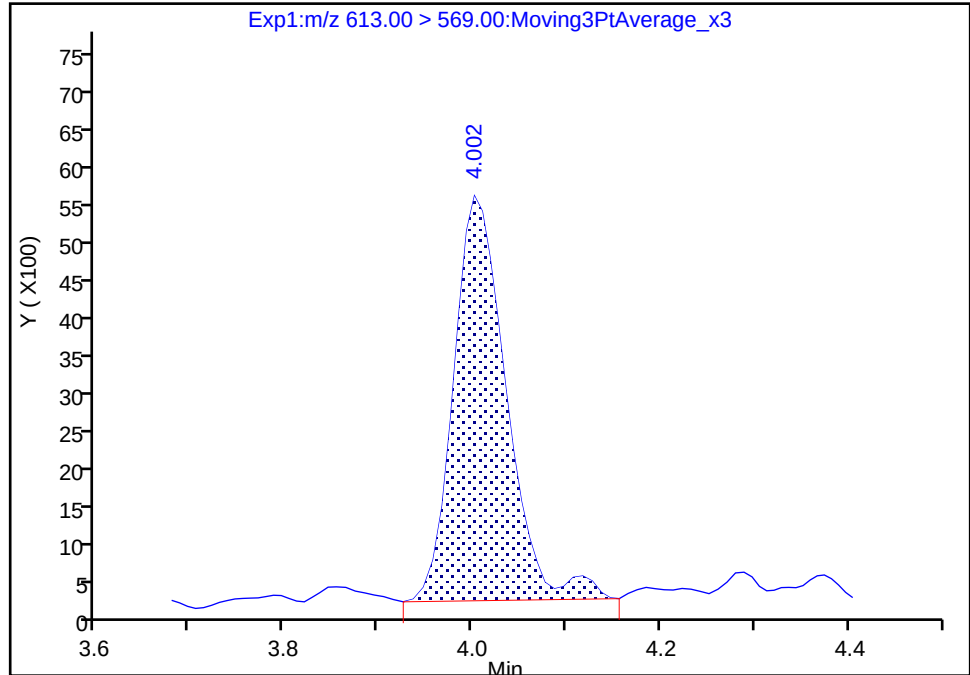
EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

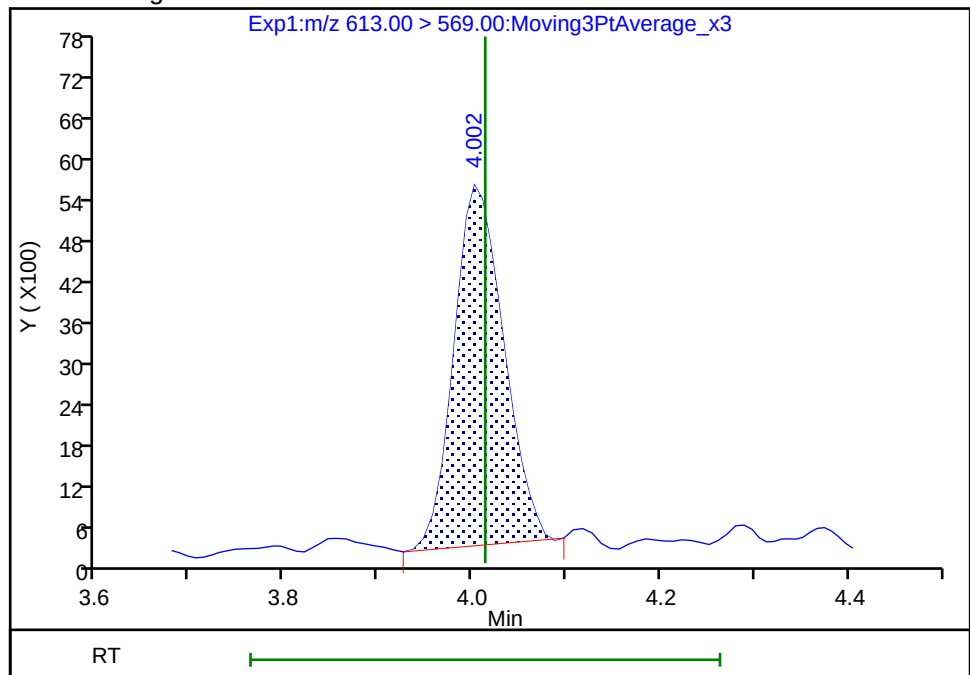
RT: 4.00
Area: 20792
Amount: 0.028871
Amount Units: ng/ml

Processing Integration Results



RT: 4.00
Area: 19306
Amount: 0.027127
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:26:17

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 17-Oct-2018 20:03:02 ALS Bottle#: 11 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 09:14:03 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: hannigana

Date: 18-Oct-2018 08:30:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.433	1.430	0.003	0.540	4108259	2.49		99.7	9847	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.438	1.432	0.006	1.003	71607	0.0485		97.0	5.3	M
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.708	1.701	0.007	1.000	59129	0.0487		97.5	9.1	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.708	1.701	0.007	0.643	2747530	2.56		103	9712	
D 47 13C3 PFBS										
301.90 > 83.00	1.740	1.733	0.007	0.655	50858	2.31		99.2	474	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.739	0.001	1.000	79303	0.0450		102	21.8	
298.90 > 99.00	1.740	1.739	0.001	1.000	33403		2.37(1.25-3.74)	102	20.6	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.949	1.941	0.008	0.734	339798	2.34		100	477	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.949	1.943	0.006	1.120	16530	0.0500		107	320	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.974	0.007	0.746	2981908	2.56		102	7090	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.977	0.004	1.000	62804	0.0519		104	18.8	
313.00 > 119.00	1.981	1.977	0.004	1.000	4685		13.41(5.03-15.10)	104	13.4	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.001	2.001	0.0	1.150	68233	0.0464		98.9	231	
349.00 > 99.00	2.001	2.001	0.0	1.150	29458		2.32(1.36-4.07)	98.9	119	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.075	2.074	0.001	0.781	222466	2.50		99.9	995	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.075	2.074	0.001	1.000	12945	0.0497		99.4	16.9	
D 9 13C4 PFHpA										
367.00 > 322.00	2.303	2.302	0.001	0.867	2815254	2.63		105	4701	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.305	0.009	1.005	62413	0.0480		96.0	15.7	
363.00 > 169.00	2.314	2.305	0.009	1.005	26971		2.31(1.13-3.40)	96.0	29.4	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.325	2.319	0.006	1.000	73494	0.0486		107	125	
399.00 > 99.00	2.325	2.319	0.006	1.000	25858		2.84(1.50-4.49)	107	42.6	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.325	2.319	0.006	0.876	3238608	2.44		103	5548	
77 DONA										
377.00 > 251.00	2.347	2.346	0.001	0.775	170850	0.0480		102	434	
377.00 > 85.00	2.347	2.346	0.001	0.775	93274		1.83(0.85-2.54)	102	465	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.632	2.627	0.005	1.000	18785	0.0543		115	72.9	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.632	2.628	0.004	0.991	497220	2.42		102	1872	
D 73 13C8 PFOA										
421.00 > 376.00	2.655	2.643	0.012	1.000	4179608	2.47		101	9820	
* 62 13C2 PFOA										
415.00 > 370.00	2.655	2.654	0.001		2633885	2.50			4063	
D 14 13C4 PFOA										
417.00 > 372.00	2.655	2.655	0.0	1.000	2636990	2.54		101	5037	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.662	2.656	0.006	1.003	61656	0.0511		102	6.3	M
413.00 > 169.00	2.655	2.656	-0.001	1.000	37720		1.63(0.84-2.52)	102	58.6	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.670	2.664	0.006	0.882	52832	0.0456		95.8	264	
449.00 > 99.00	2.670	2.664	0.006	0.882	14421		3.66(1.94-5.82)	95.8	65.3	
D 72 13C8 PFOS										
507.00 > 99.00	3.028	3.024	0.004	1.140	1090209	2.42		101	2604	
D 18 13C4 PFOS										
503.00 > 80.00	3.028	3.025	0.003	1.140	2103718	2.49		104	4262	
D 19 13C5 PFNA										
468.00 > 423.00	3.028	3.027	0.001	1.140	2202878	2.52		101	5451	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.035	3.029	0.006	1.003	48892	0.0477		103	61.6	M
499.00 > 99.00	3.035	3.029	0.006	1.003	11103		4.40(2.31-6.93)	103	47.4	M
20 Perfluorononanoic acid										M
463.00 > 419.00	3.035	3.029	0.006	1.003	46150	0.0522		104	19.3	M
463.00 > 169.00	3.035	3.029	0.006	1.003	11920		3.87(1.90-5.69)	104	69.5	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.246	3.242	0.004	1.072	79121	0.0459		98.5	313	
D 21 13C8 FOSA										
506.00 > 78.00	3.374	3.371	0.003	1.271	3104260	2.55		102	3949	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.382	3.372	0.010	1.002	65716	0.0528		106	561	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.382	3.376	0.006	1.274	523280	2.47		103	1583	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.389	3.378	0.011	1.002	12332	0.0469		97.8	64.8	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.382	3.378	0.004	1.117	35994	0.0510		106	205	
549.00 > 99.00	3.382	3.378	0.004	1.117	11797		3.05(1.33-3.97)	106	95.7	
D 23 13C2 PFDA										
515.00 > 470.00	3.389	3.386	0.003	1.276	1932808	2.57		103	6150	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.397	3.388	0.008	1.002	39300	0.0500		99.9	43.7	
513.00 > 169.00	3.389	3.388	0.001	1.000	8442		4.66(2.36-7.09)	99.9	39.2	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.550	3.544	0.006	1.337	952491	2.50		100	1698	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.550	3.548	0.002	1.000	19937	0.0544		109	14.2	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.706	3.704	0.002	1.224	23474	0.0421		87.3	149	
599.00 > 99.00	3.715	3.704	0.011	1.227	8834		2.66(1.39-4.16)	87.3	68.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.715	3.711	0.004	1.399	1007807	2.58		103	1462	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.723	3.719	0.004	1.000	24753	0.0454		90.8	25.8	M
563.00 > 169.00	3.715	3.719	-0.004	0.998	8408		2.94(2.12-6.36)	90.8	46.2	
D 30 13C2 PFUnA										
565.00 > 520.00	3.723	3.719	0.004	1.402	1526518	2.60		104	6648	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.715	3.720	-0.005	1.000	16049	0.0475		95.0	74.6	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.887	3.879	0.007	1.284	114986	0.0451		95.8	588	
35 MeFOSA										
512.00 > 169.00	3.887	3.888	-0.002		19803	NC			162	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.020	4.013	0.007	1.000	37024	0.0516		103	28.2	
613.00 > 169.00	4.020	4.013	0.007	1.000	9232		4.01(2.13-6.40)	103	81.3	
D 36 13C2 PFDaA										
615.00 > 570.00	4.020	4.015	0.005	1.514	1622557	2.56		102	3793	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.020	4.015	0.005	1.189	9896	0.0501		104	81.7	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.253	4.255	-0.002	1.405	14546	0.0547		113	99.1	
699.00 > 99.00	4.253	4.255	-0.002	1.405	17133		0.85(0.00-0.00)	113	111	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.279	0.002	1.065	36781	0.0518		104	31.3	
663.00 > 169.00	4.281	4.279	0.002	1.065	11333		3.25(1.25-3.76)	104	75.6	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.513	4.518	-0.005	0.998	11557	0.0511		102	129	
713.00 > 219.00	4.513	4.518	-0.005	0.998	7653		1.51(0.71-2.13)	102	111	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.523	4.519	0.004	1.703	2108213	2.57		103	4249	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.935	4.934	0.001	1.859	3716547	2.51		100	3873	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.935	4.938	-0.003	1.000	98106	0.0503		101	17.1	
813.00 > 169.00	4.935	4.938	-0.003	1.000	17963		5.46(2.86-8.58)	101	154	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.287	5.286	0.001	1.071	86287	0.0517		103	14.1	
913.00 > 169.00	5.287	5.286	0.001	1.071	11136		7.75(3.83-11.48)	103	121	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d

Injection Date: 17-Oct-2018 20:03:02

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 11

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

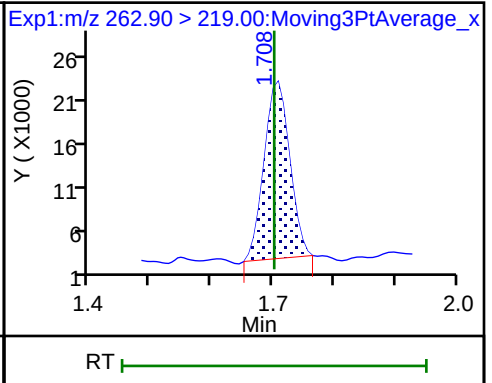
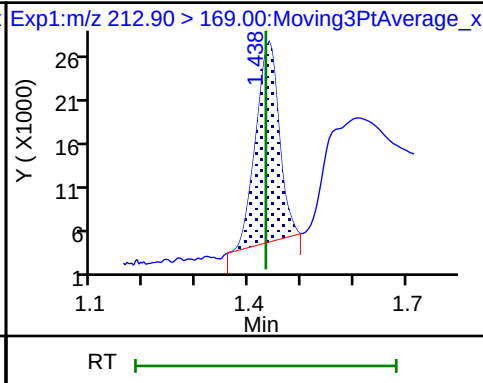
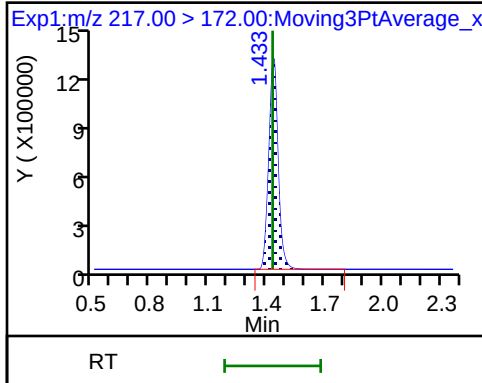
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

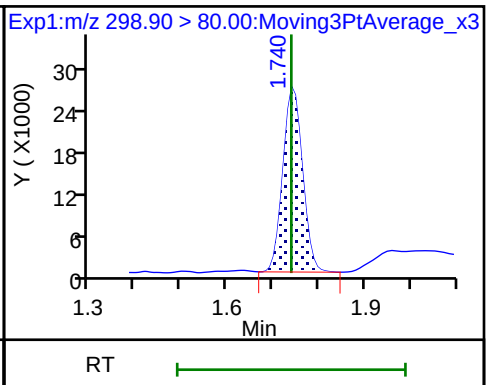
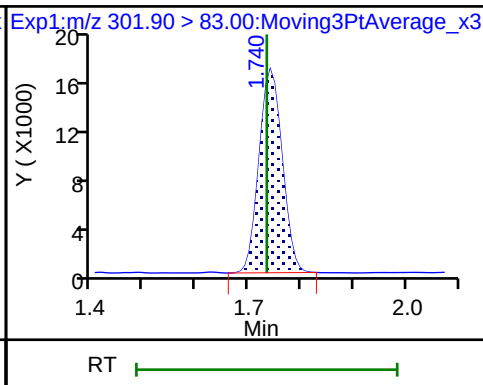
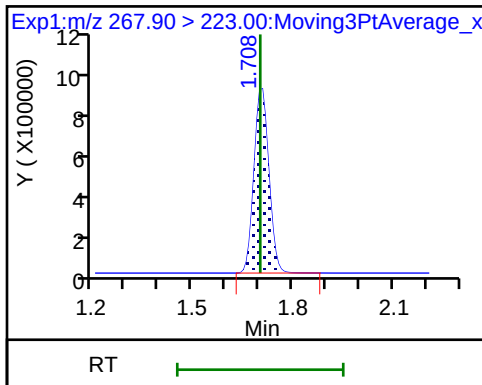
4 Perfluoropentanoic acid (M)



D 3 13C5 PFPeA

D 47 13C3 PFBS

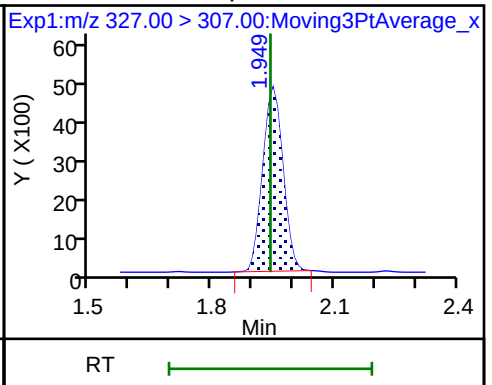
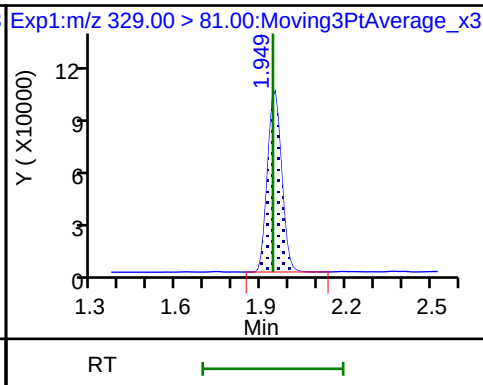
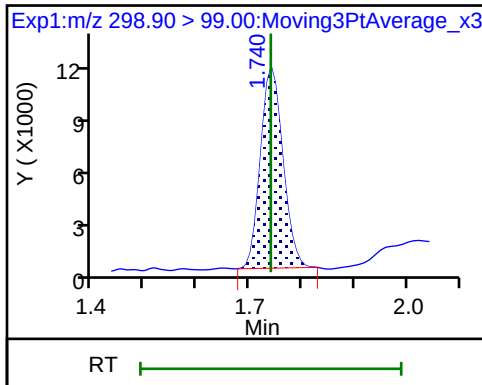
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

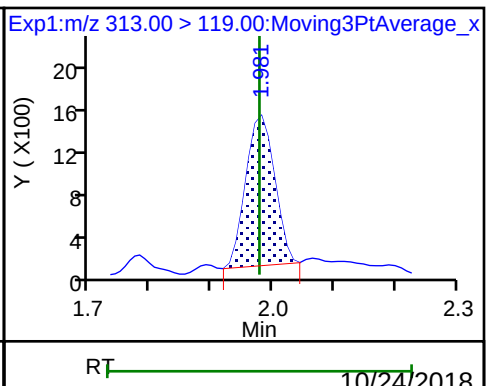
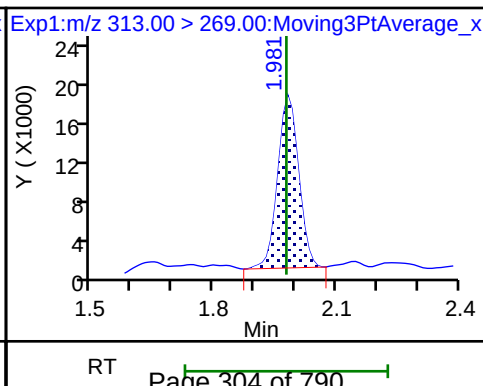
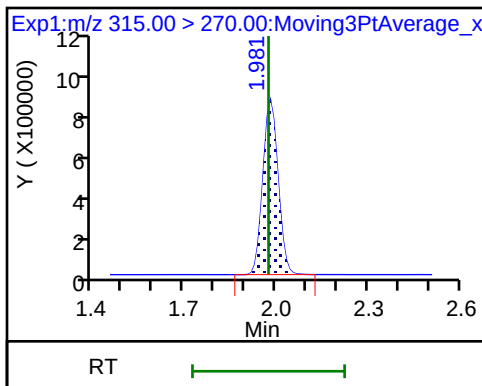
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

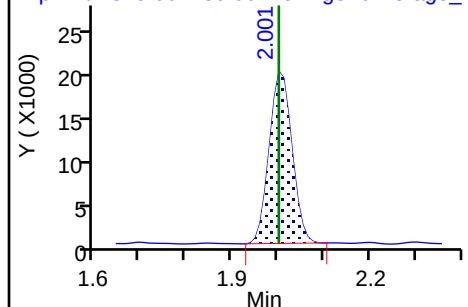


70 Perfluoropentanesulfonic acid

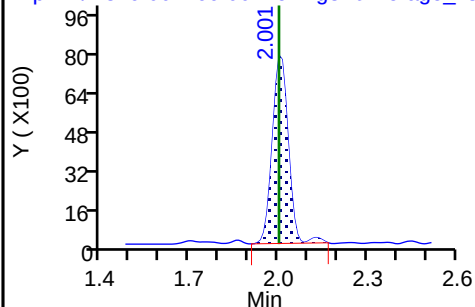
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA

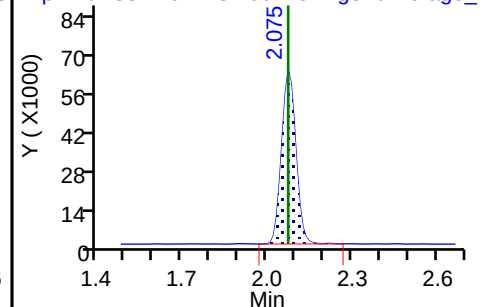
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Exp1:m/z 349.00 > 99.00:Moving3PtAverage_x3



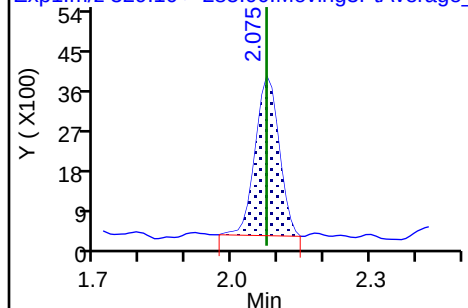
Exp1:m/z 332.10 > 287.00:Moving3PtAverage_x3



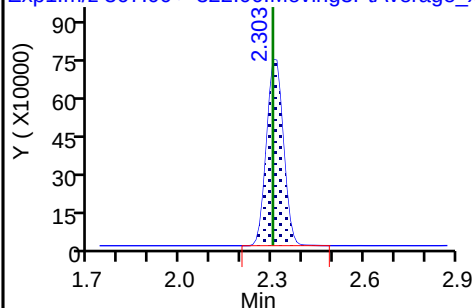
67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

10 Perfluoroheptanoic acid

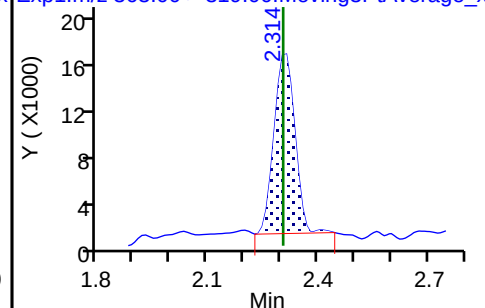
Exp1:m/z 329.10 > 285.00:Moving3PtAverage_x3



Exp1:m/z 367.00 > 322.00:Moving3PtAverage_x3



Exp1:m/z 363.00 > 319.00:Moving3PtAverage_x3

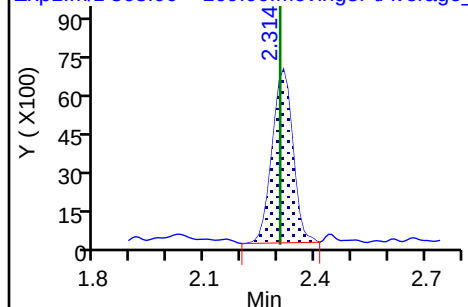


10 Perfluoroheptanoic acid

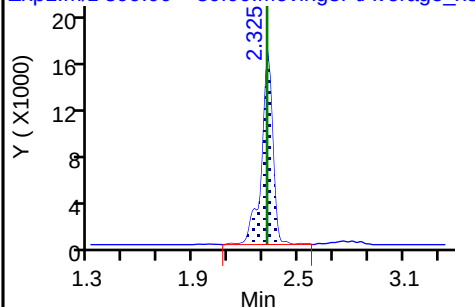
8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid (M)

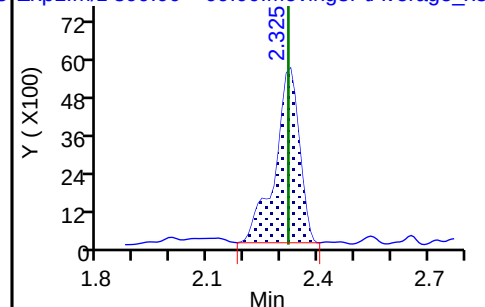
Exp1:m/z 363.00 > 169.00:Moving3PtAverage_x3



Exp1:m/z 399.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 399.00 > 99.00:Moving3PtAverage_x3

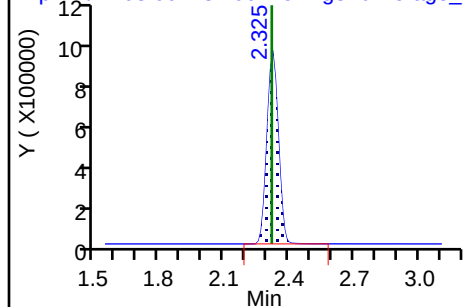


D 11 18O2 PFHxS

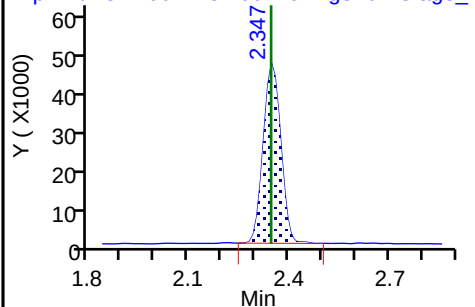
77 DONA

77 DONA

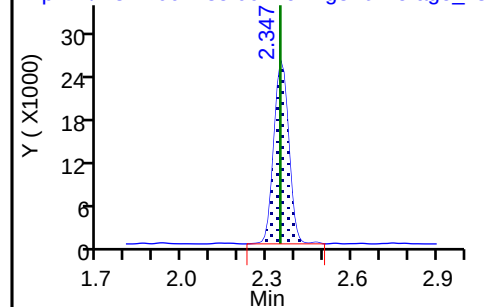
Exp1:m/z 403.00 > 84.00:Moving3PtAverage_x3



Exp1:m/z 377.00 > 251.00:Moving3PtAverage_x3

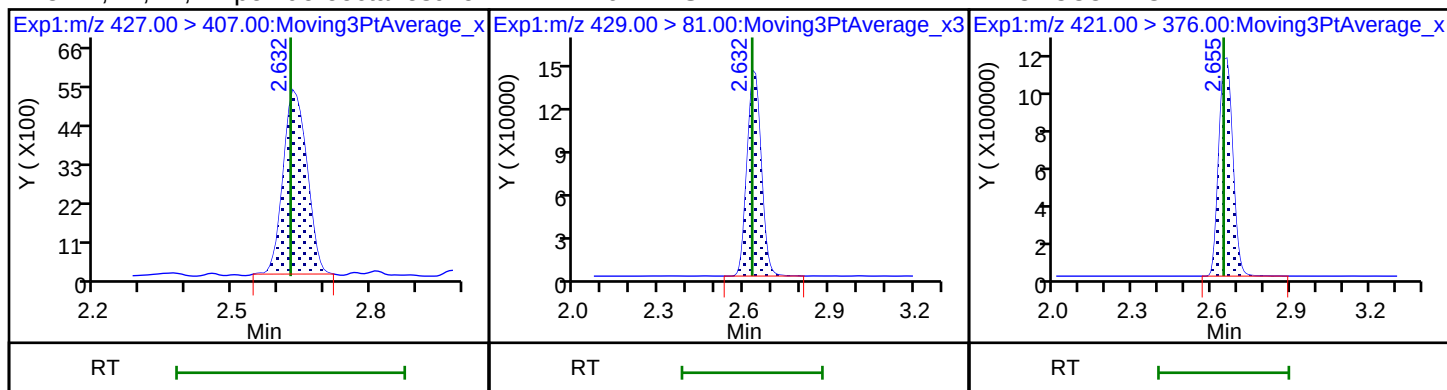


Exp1:m/z 377.00 > 85.00:Moving3PtAverage_x3



13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

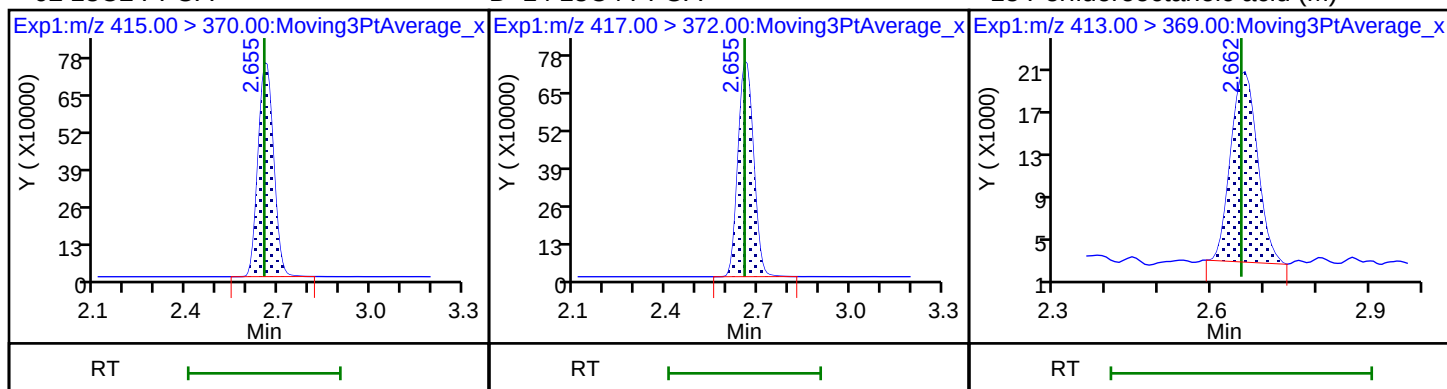
D 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

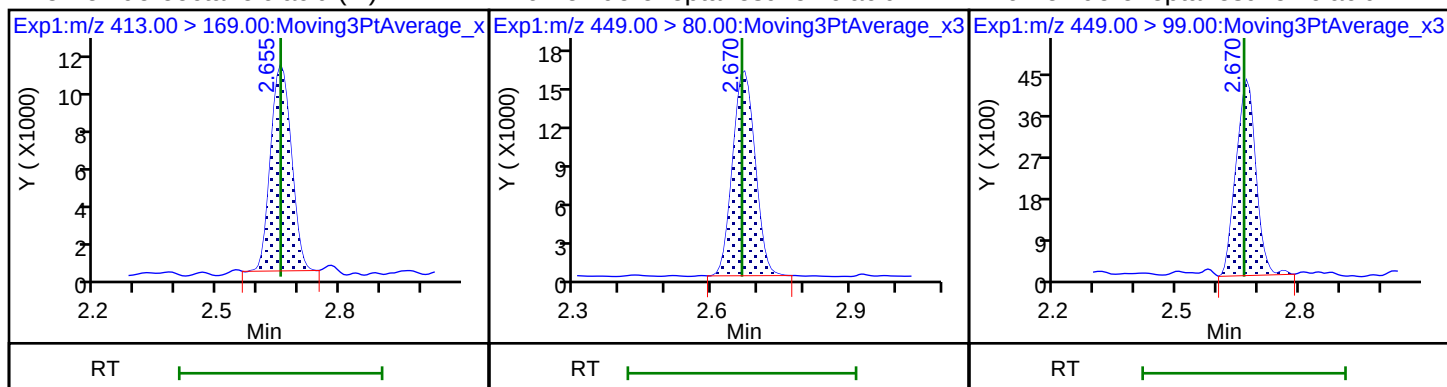
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid (M)

16 Perfluoroheptanesulfonic acid

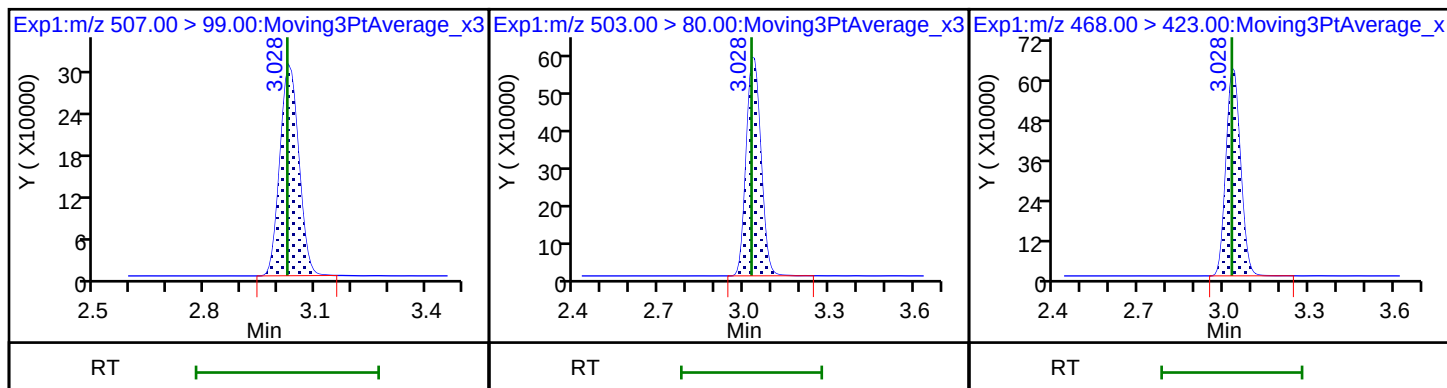
16 Perfluoroheptanesulfonic acid



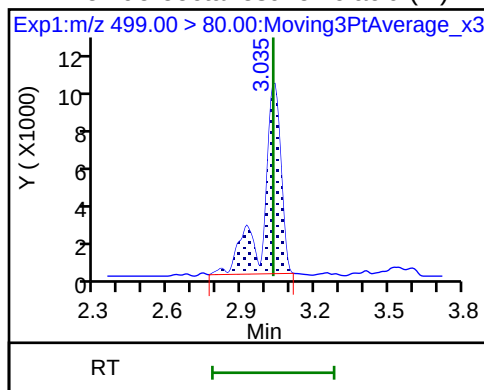
D 72 13C8 PFOS

D 18 13C4 PFOS

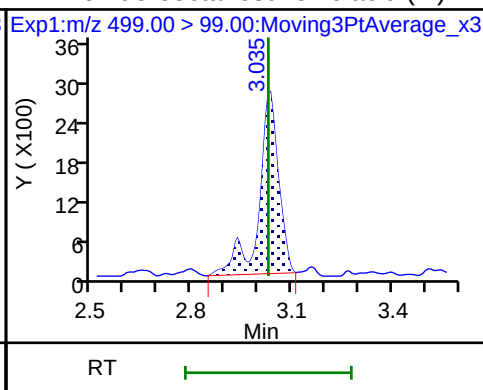
D 19 13C5 PFNA



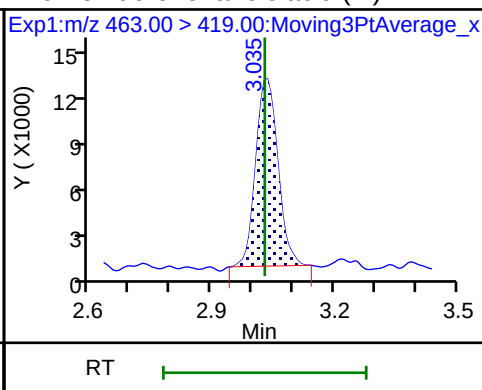
17 Perfluorooctanesulfonic acid (M)



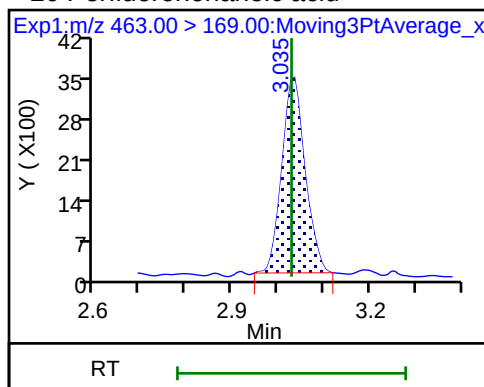
17 Perfluorooctanesulfonic acid (M)



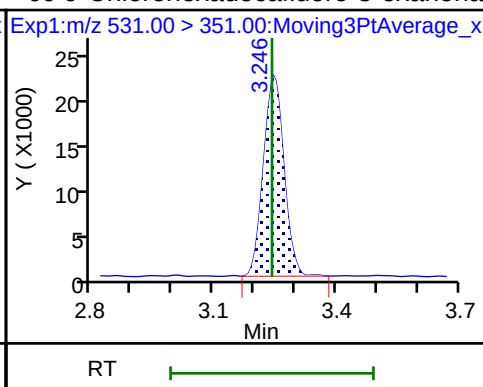
20 Perfluorononanoic acid (M)



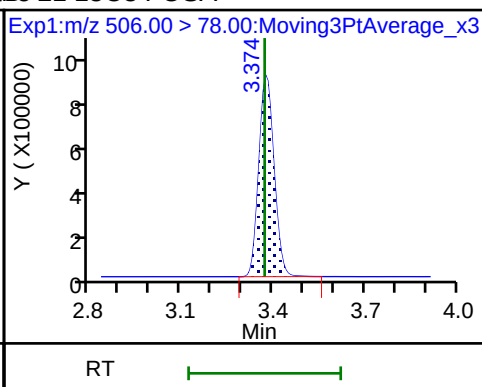
20 Perfluorononanoic acid



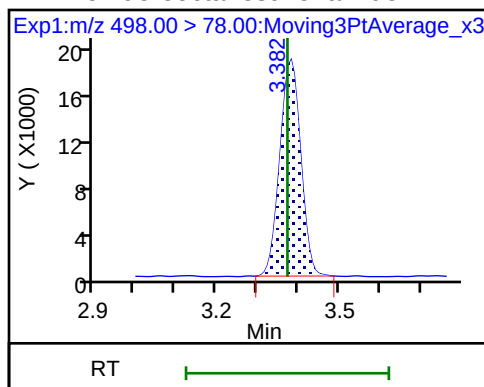
69 9-Chlorohexadecafluoro-3-oxanonane



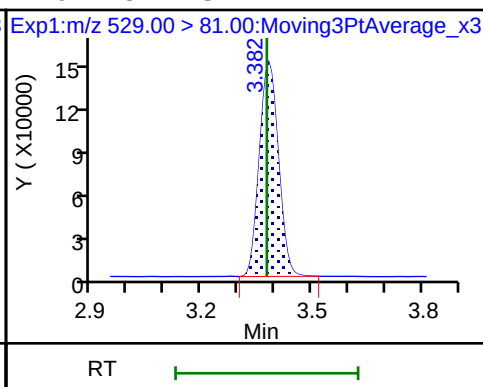
De 21 13C8 FOSA



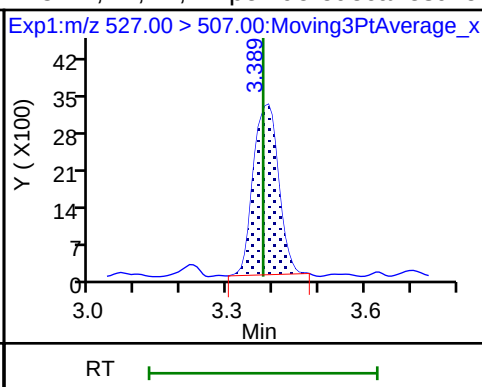
22 Perfluorooctanesulfonamide



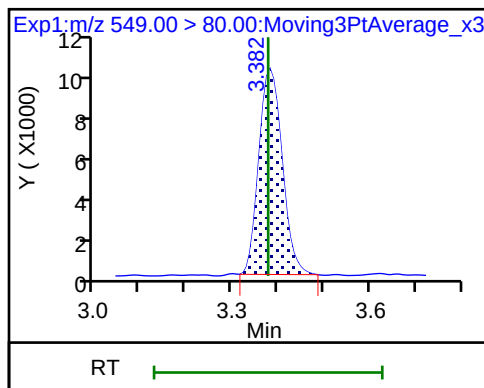
D 26 M2-8:2 FTS



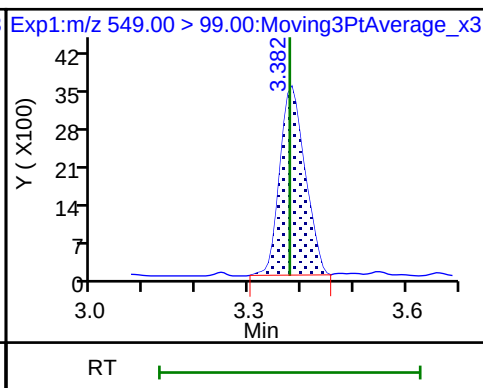
25 1H,1H,2H,2H-perfluorodecanesulfoni



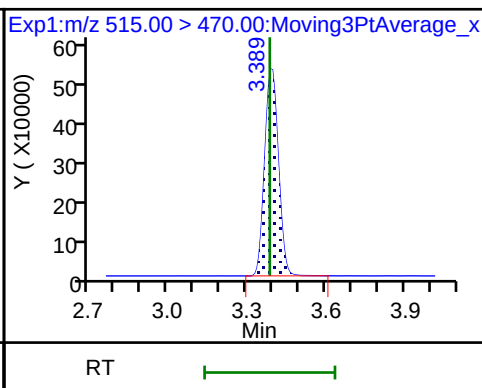
68 Perfluorononanesulfonic acid

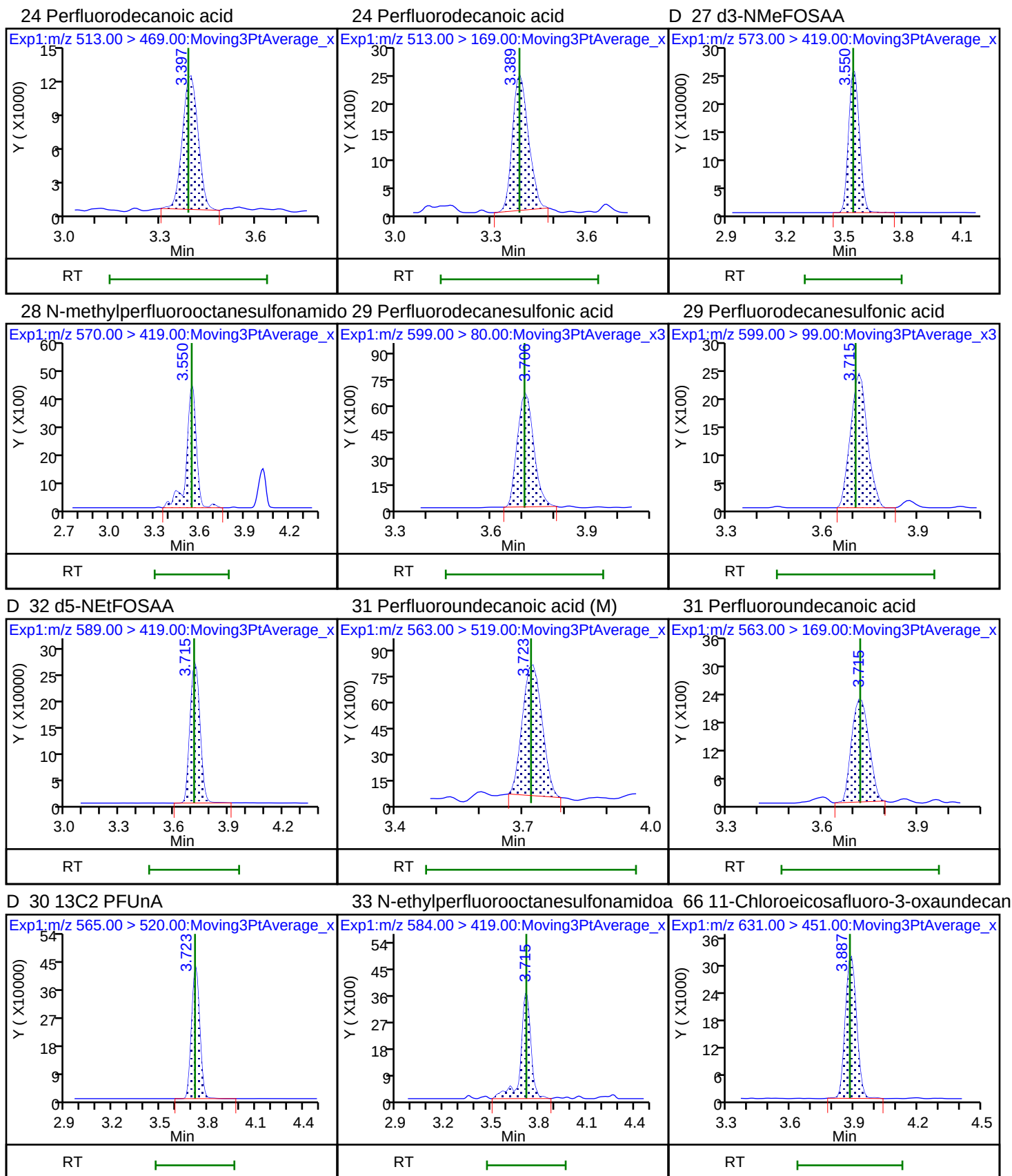


68 Perfluorononanesulfonic acid



D 23 13C2 PFDA

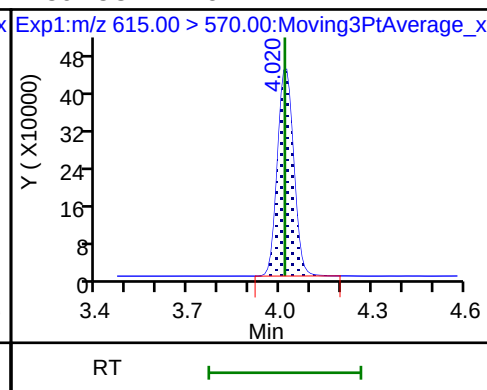
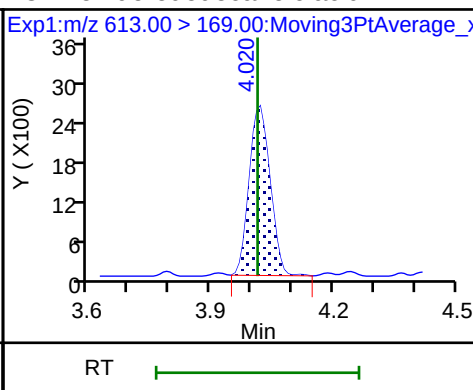
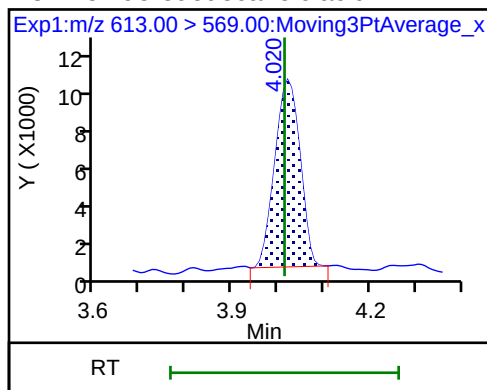




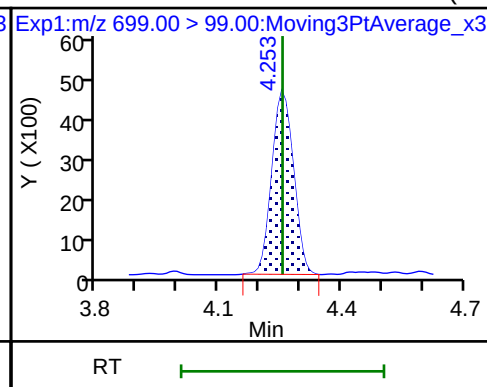
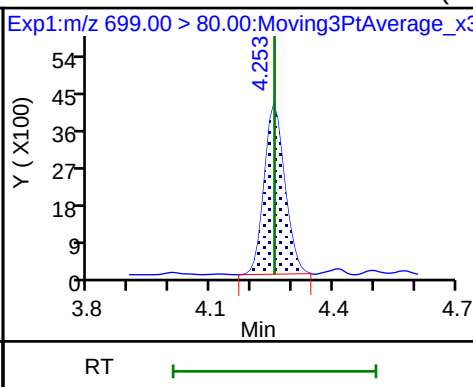
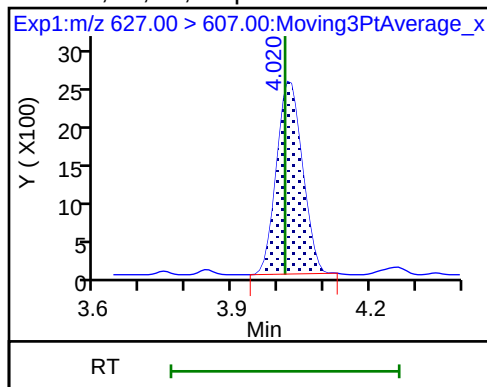
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDa



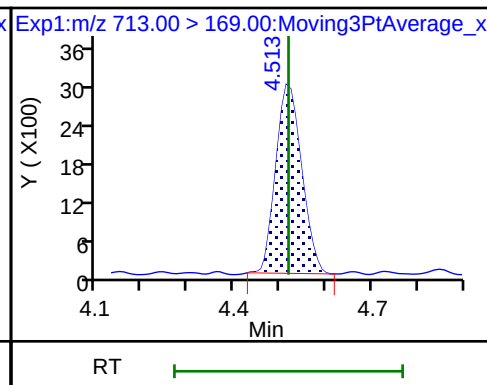
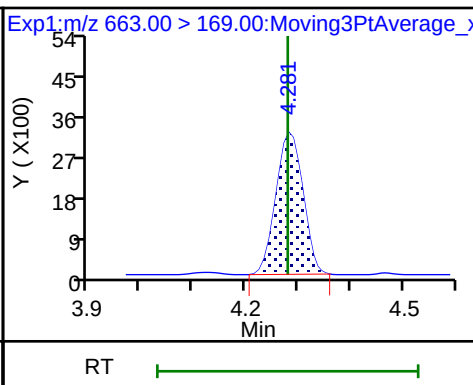
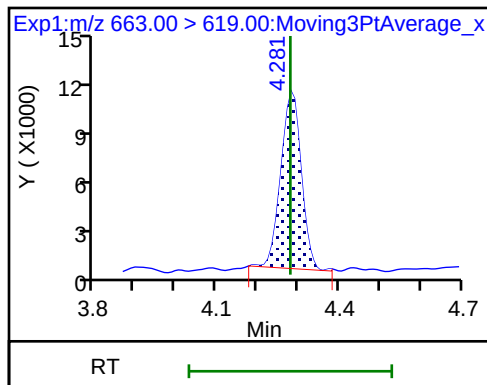
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

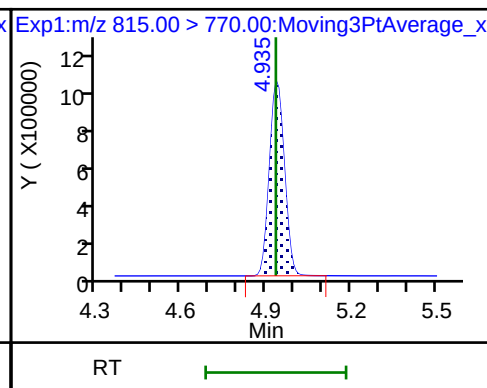
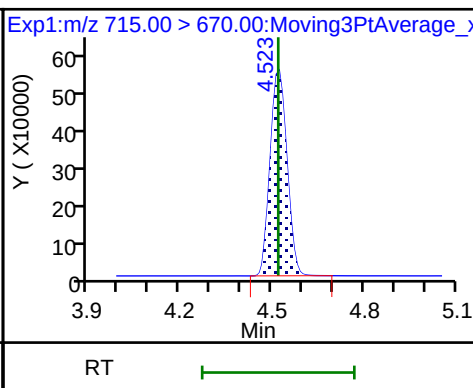
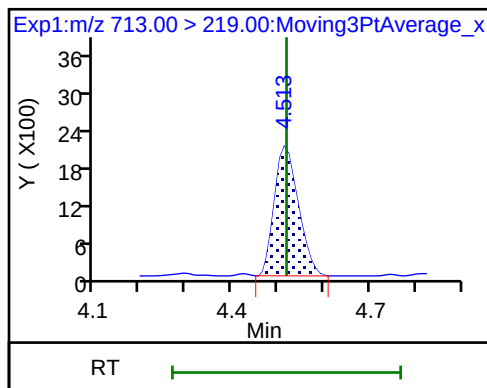
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

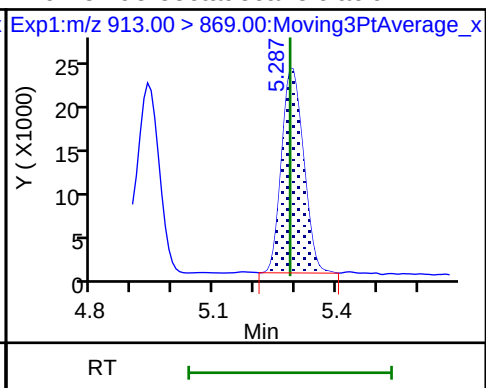
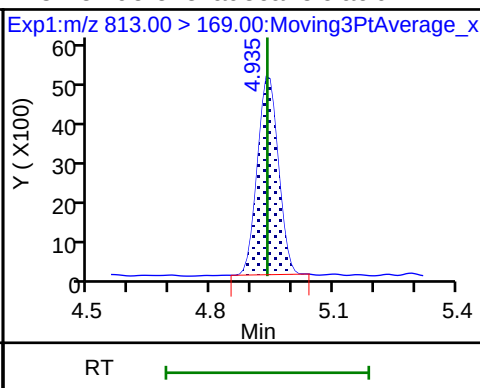
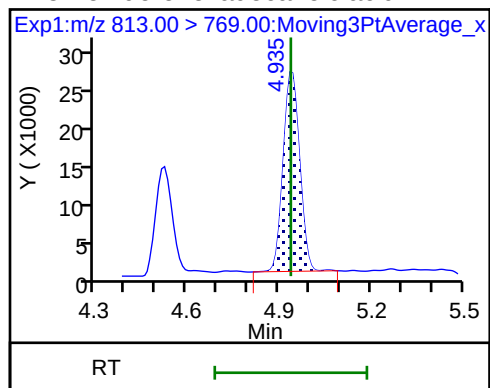
D 44 13C2 PFHxDA



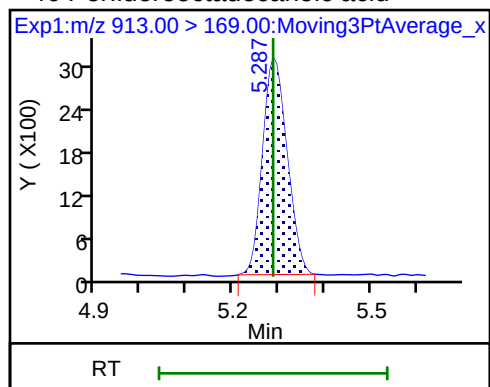
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d

Injection Date: 17-Oct-2018 20:03:02

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

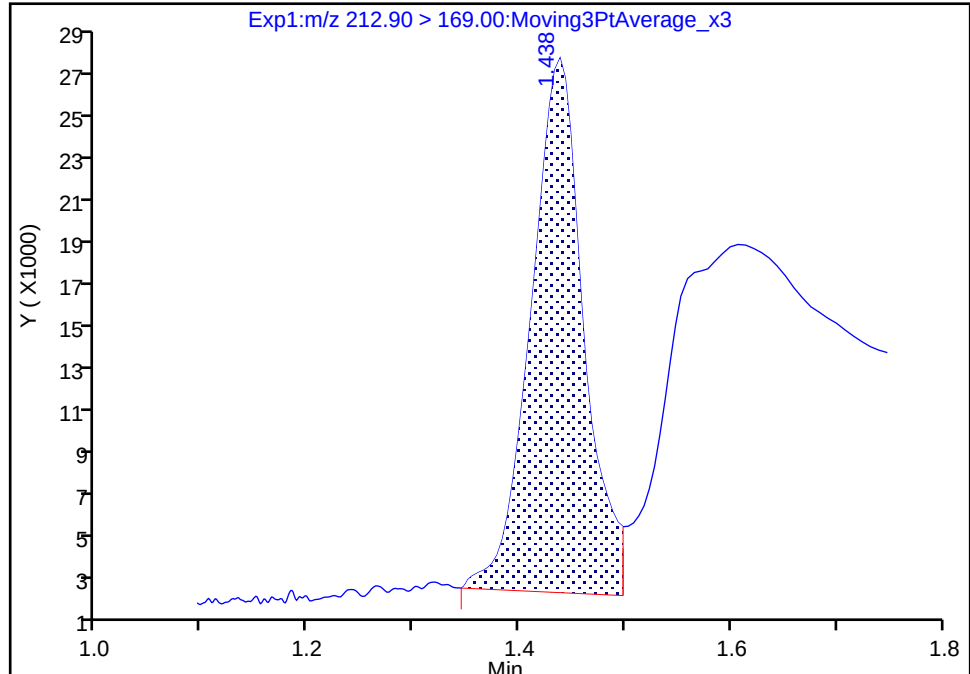
Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

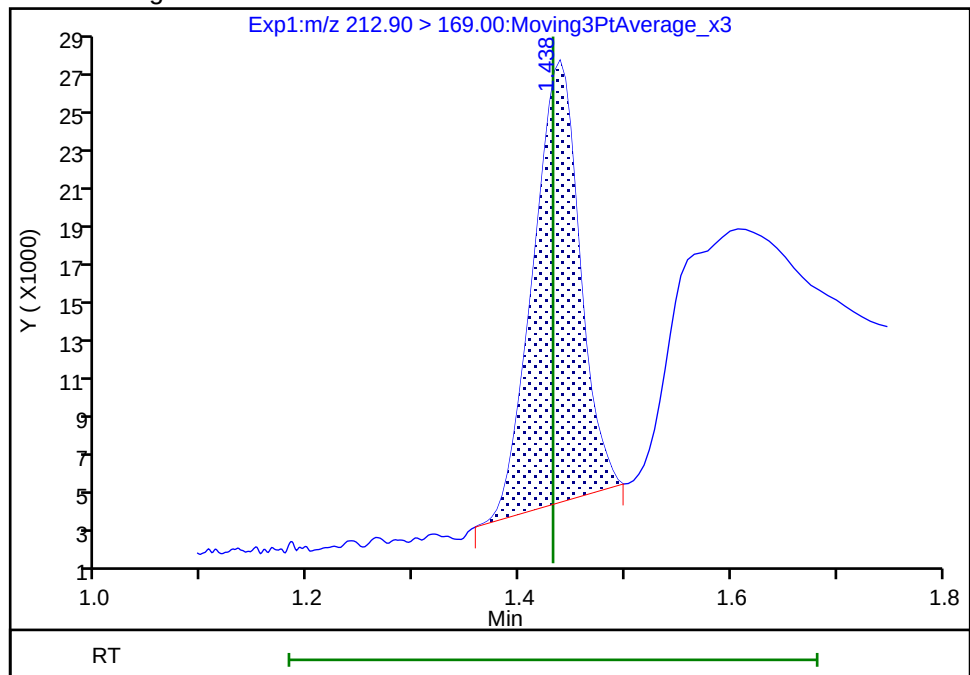
RT: 1.44
Area: 88583
Amount: 0.056980
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 71607
Amount: 0.048494
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:27:00

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d

Injection Date: 17-Oct-2018 20:03:02

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

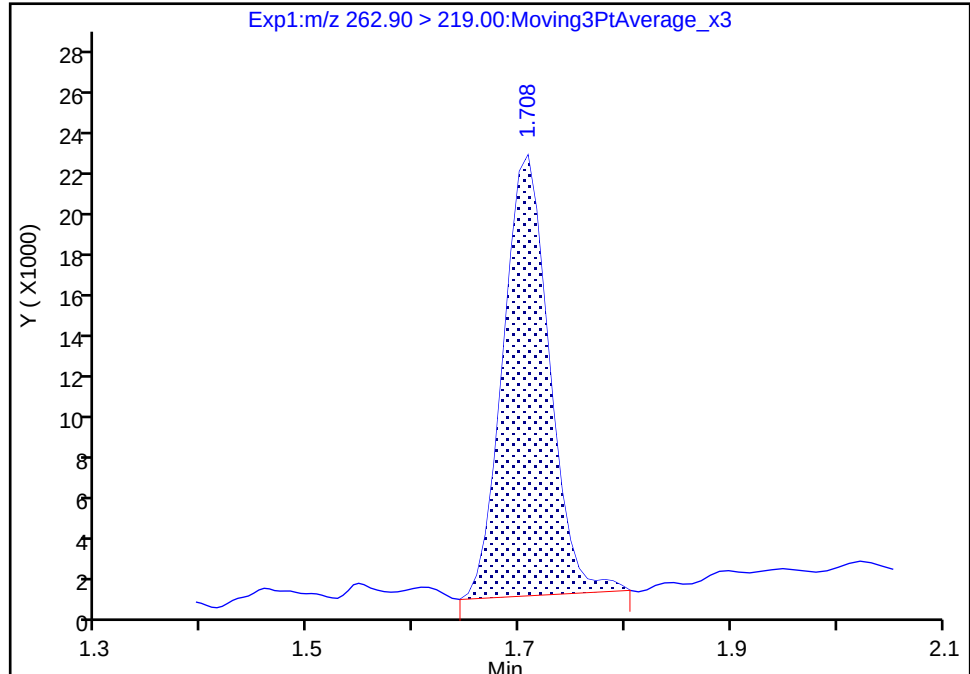
Detector: EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

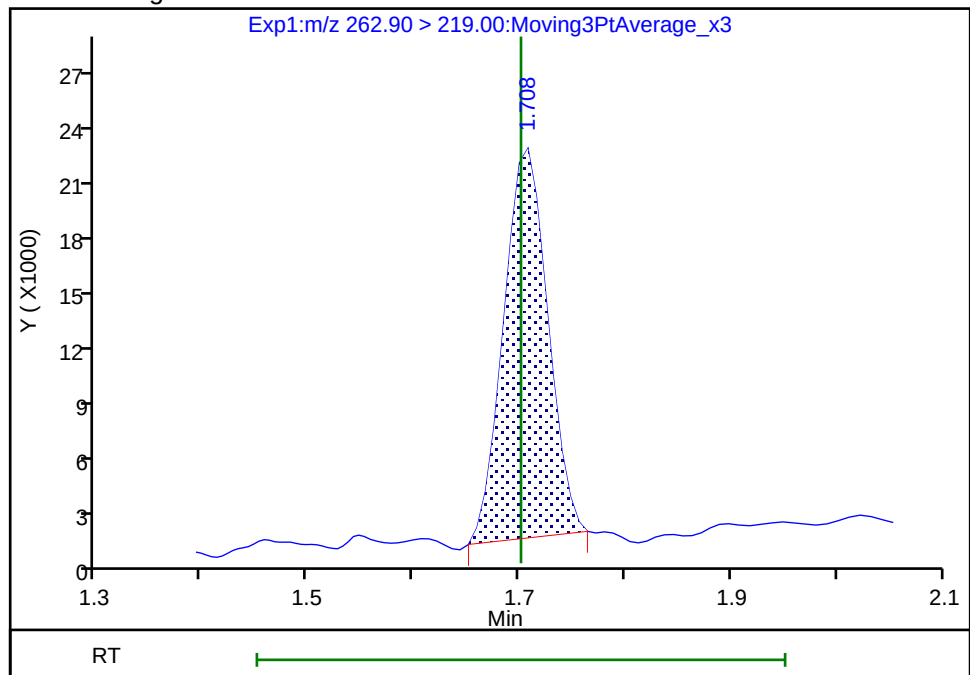
RT: 1.71
Area: 63296
Amount: 0.051674
Amount Units: ng/ml

Processing Integration Results



RT: 1.71
Area: 59129
Amount: 0.048746
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:27:14

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d

Injection Date: 17-Oct-2018 20:03:02

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

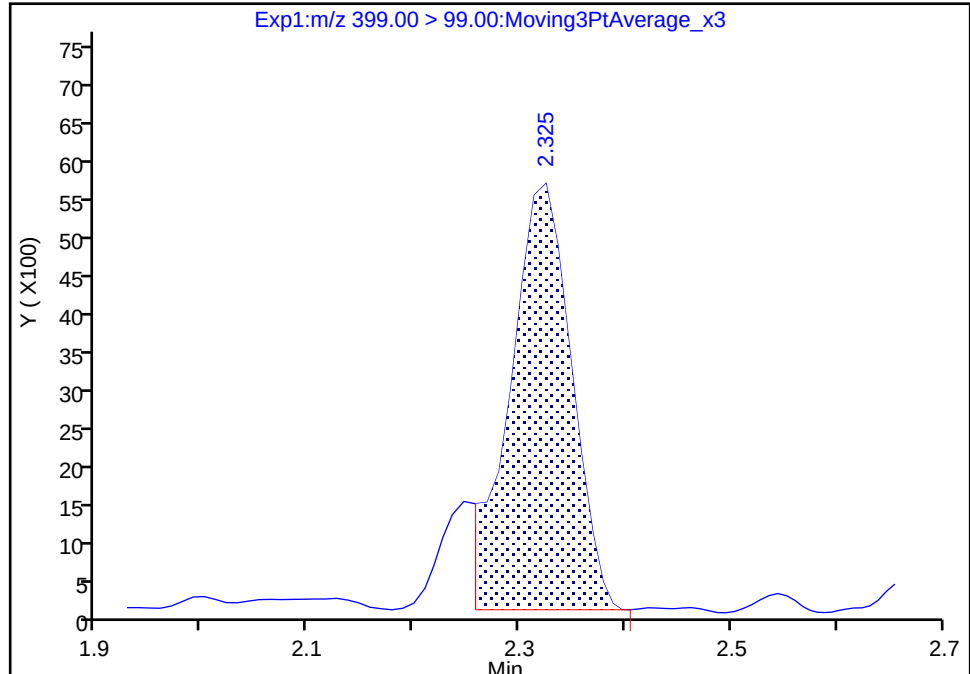
Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

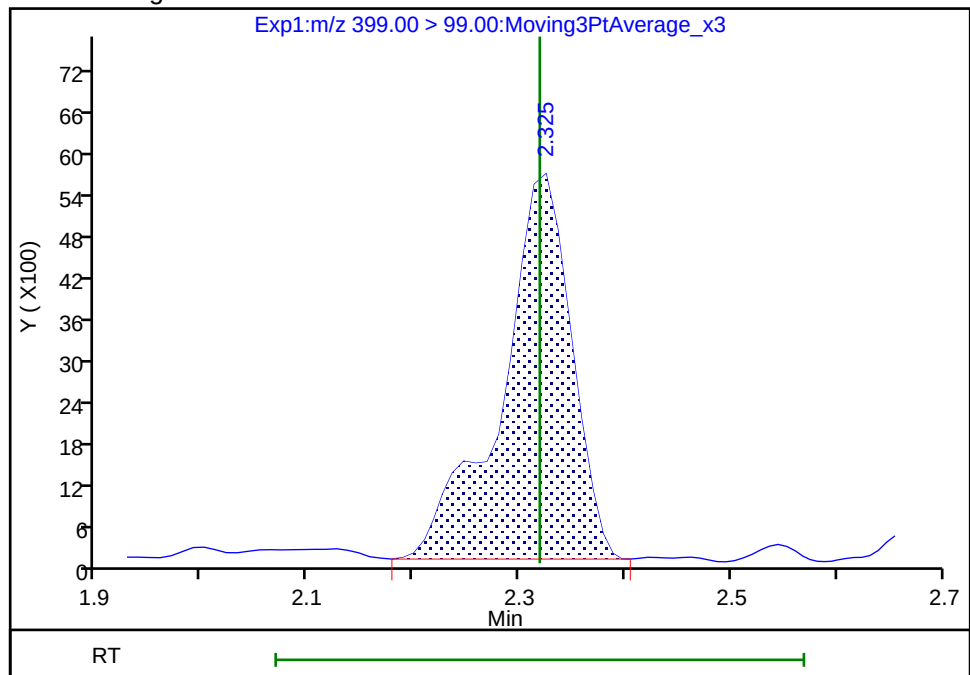
RT: 2.33
Area: 22674
Amount: 0.048630
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 25858
Amount: 0.048630
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:28:24

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d

Injection Date: 17-Oct-2018 20:03:02

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

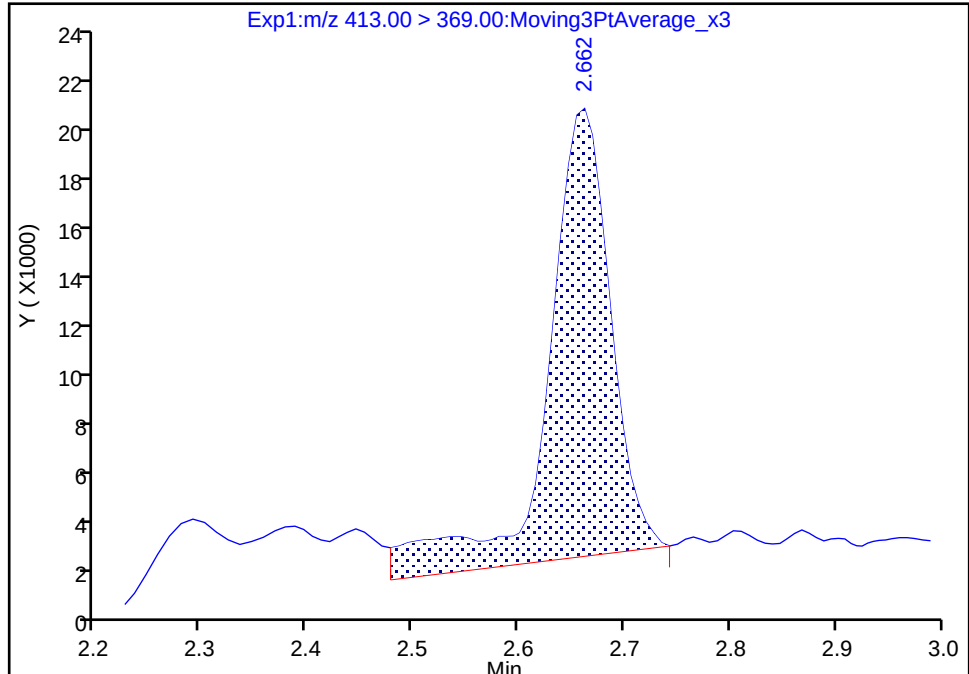
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

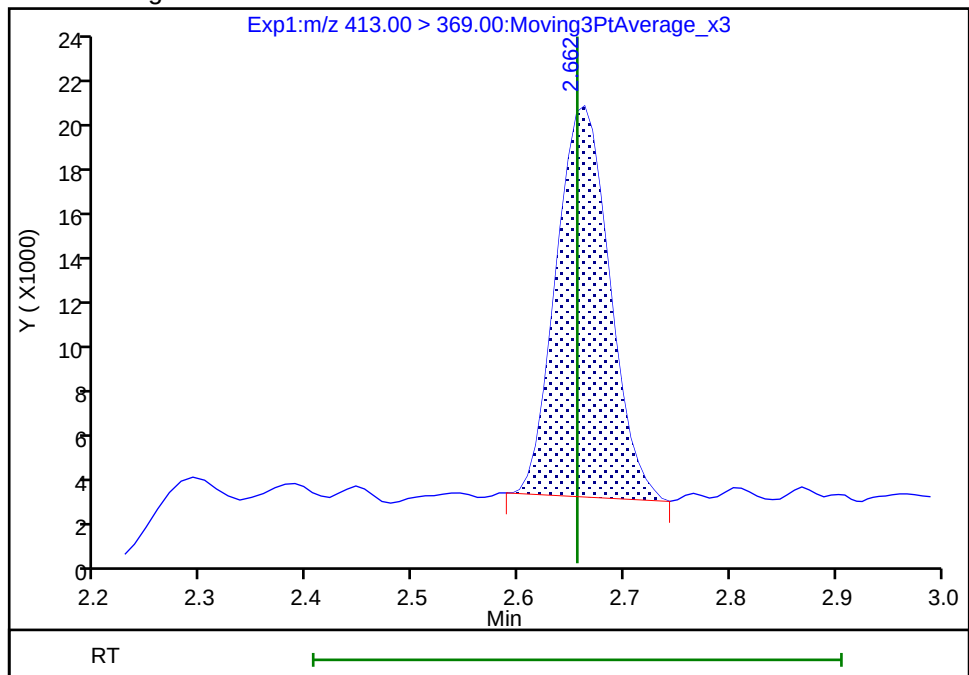
RT: 2.66
Area: 75897
Amount: 0.060283
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 61656
Amount: 0.051094
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:28:37

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

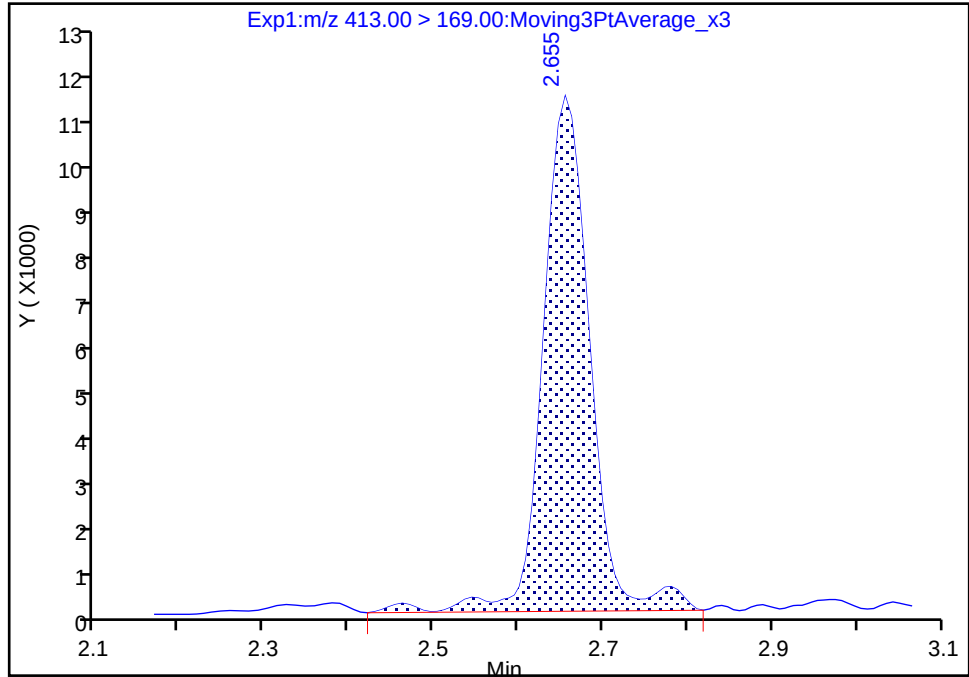
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d
Injection Date: 17-Oct-2018 20:03:02 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

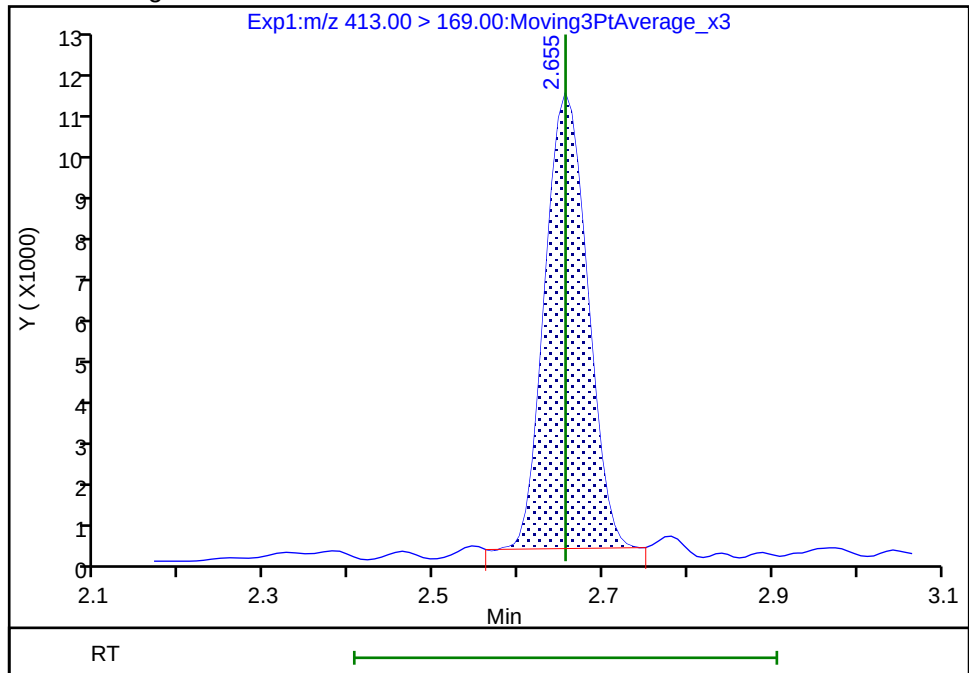
RT: 2.66
Area: 42708
Amount: 0.060283
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 37720
Amount: 0.051094
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:28:41

Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d

Injection Date: 17-Oct-2018 20:03:02

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 11 Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

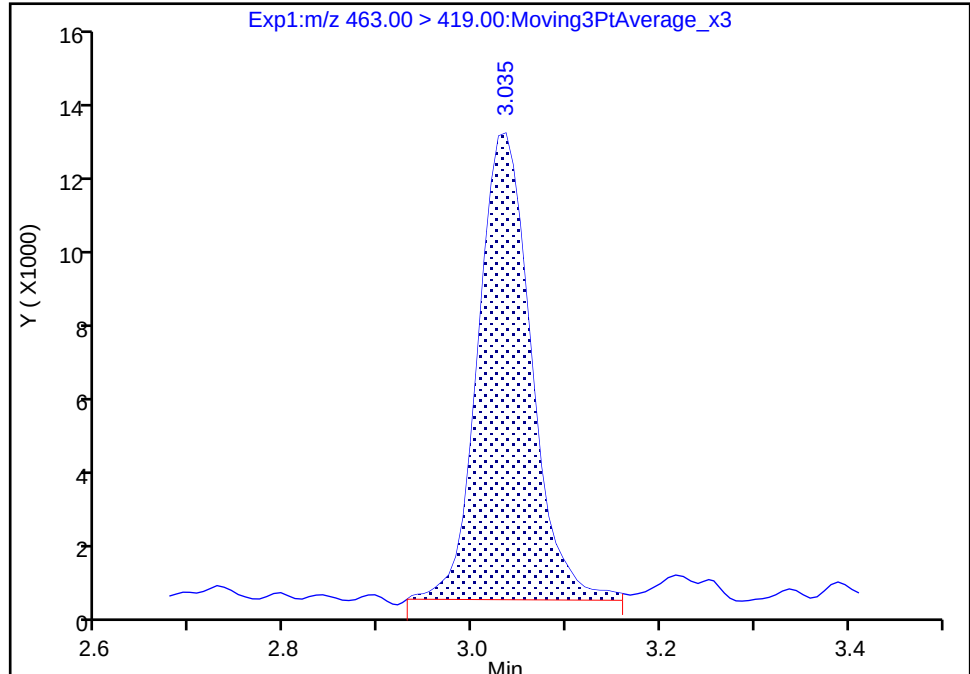
Detector: EXP1

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

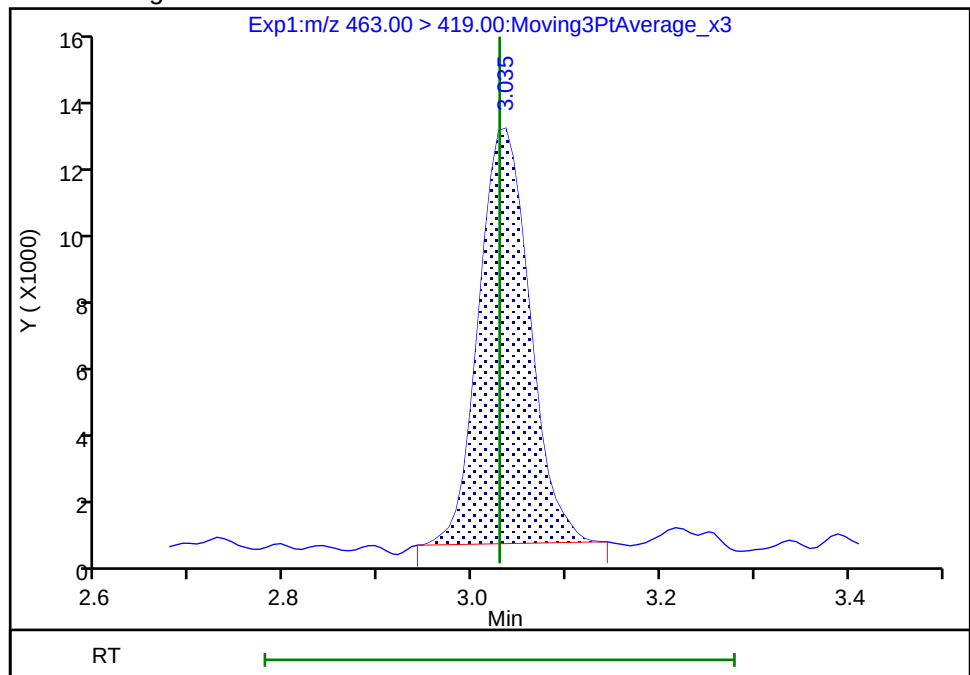
RT: 3.04
Area: 48743
Amount: 0.054691
Amount Units: ng/ml

Processing Integration Results



RT: 3.04
Area: 46150
Amount: 0.052215
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:29:34

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

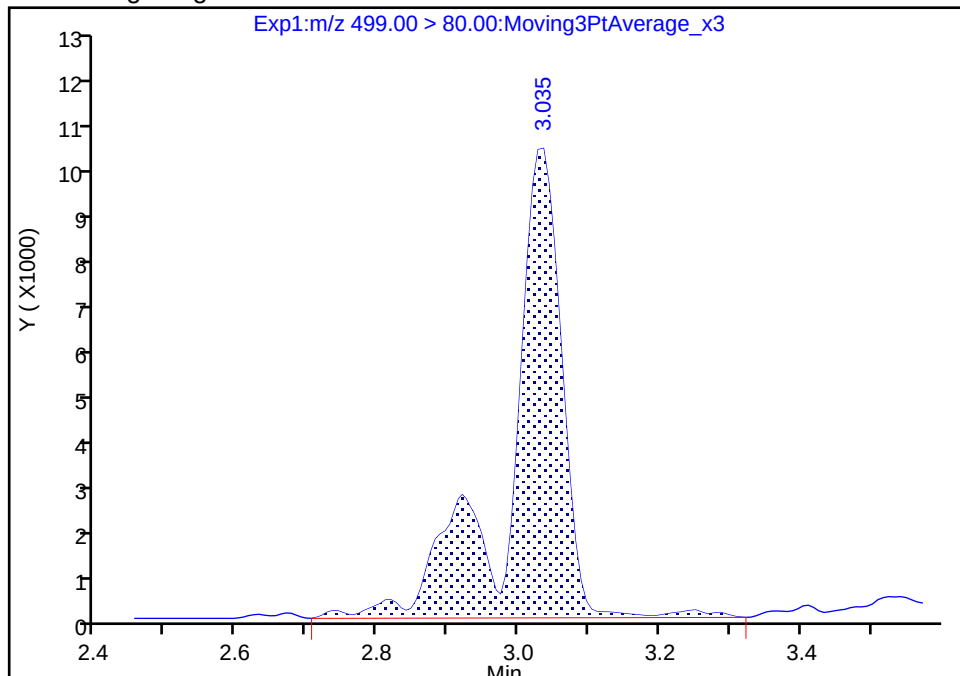
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d
Injection Date: 17-Oct-2018 20:03:02 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

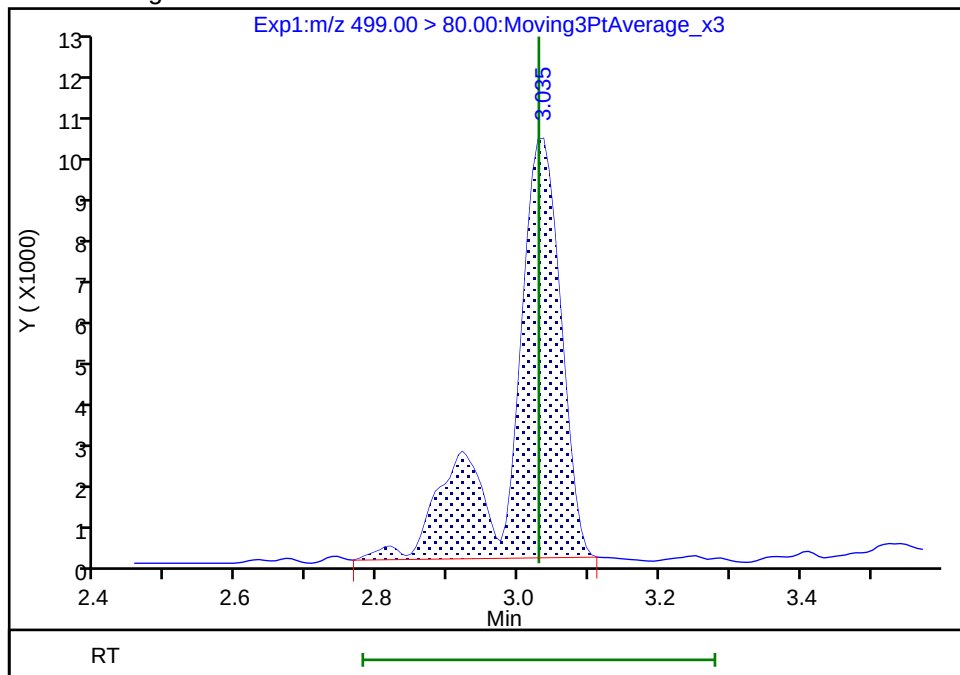
RT: 3.04
Area: 52364
Amount: 0.050062
Amount Units: ng/ml

Processing Integration Results



RT: 3.04
Area: 48892
Amount: 0.047686
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:29:44

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

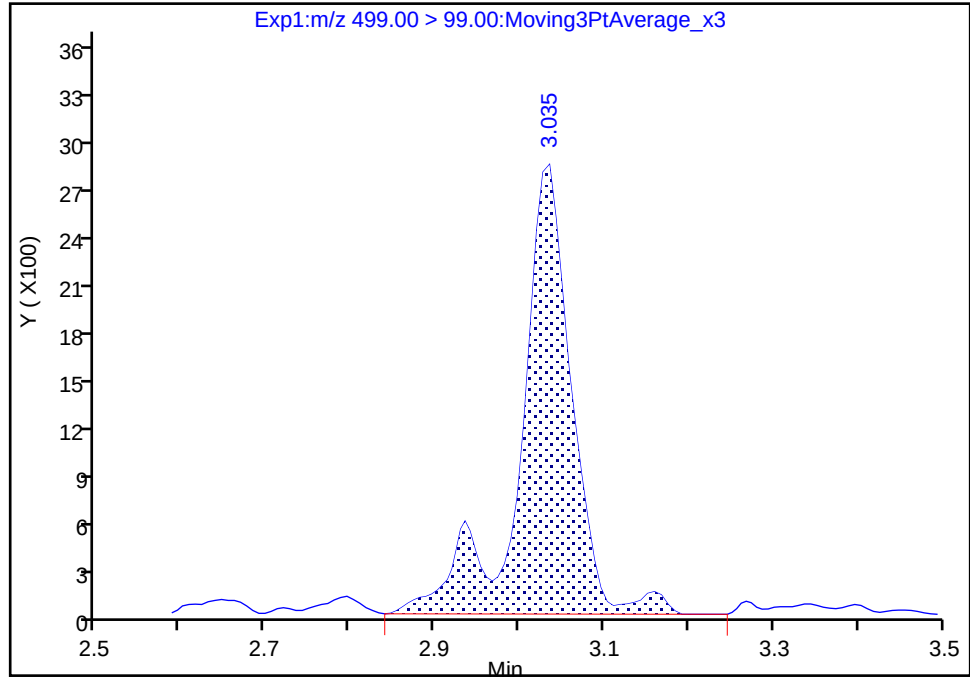
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d
Injection Date: 17-Oct-2018 20:03:02 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

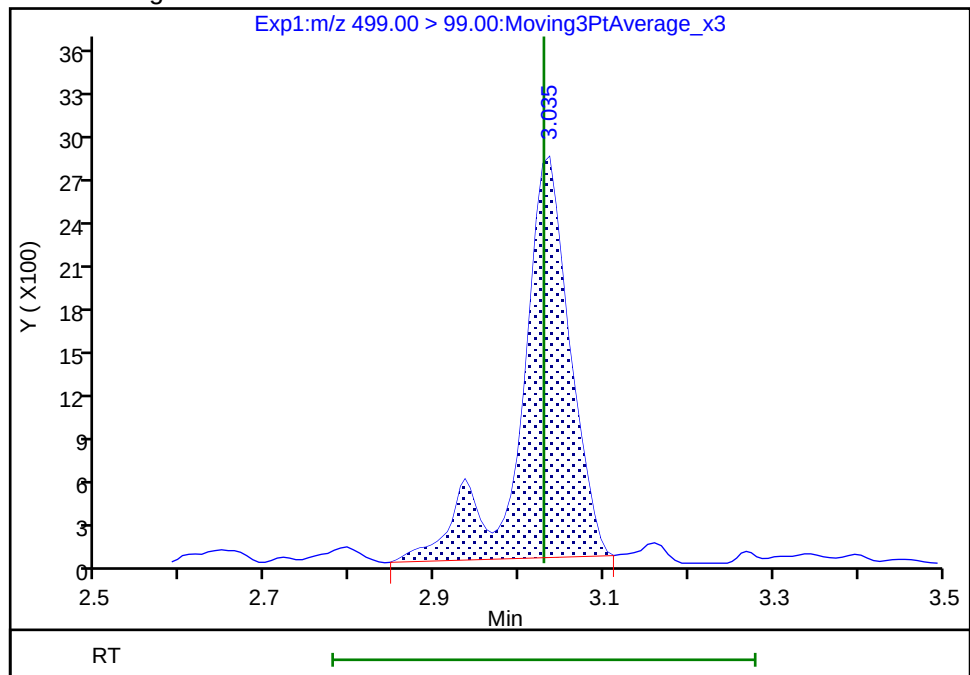
RT: 3.04
Area: 11905
Amount: 0.050062
Amount Units: ng/ml

Processing Integration Results



RT: 3.04
Area: 11103
Amount: 0.047686
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:29:52

Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

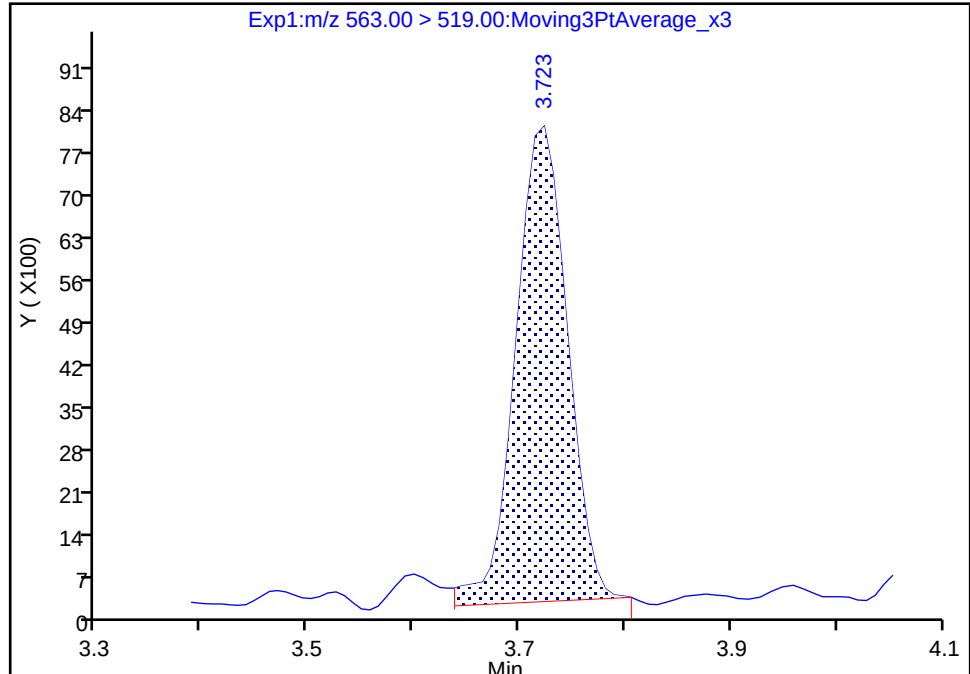
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_006.d
Injection Date: 17-Oct-2018 20:03:02 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

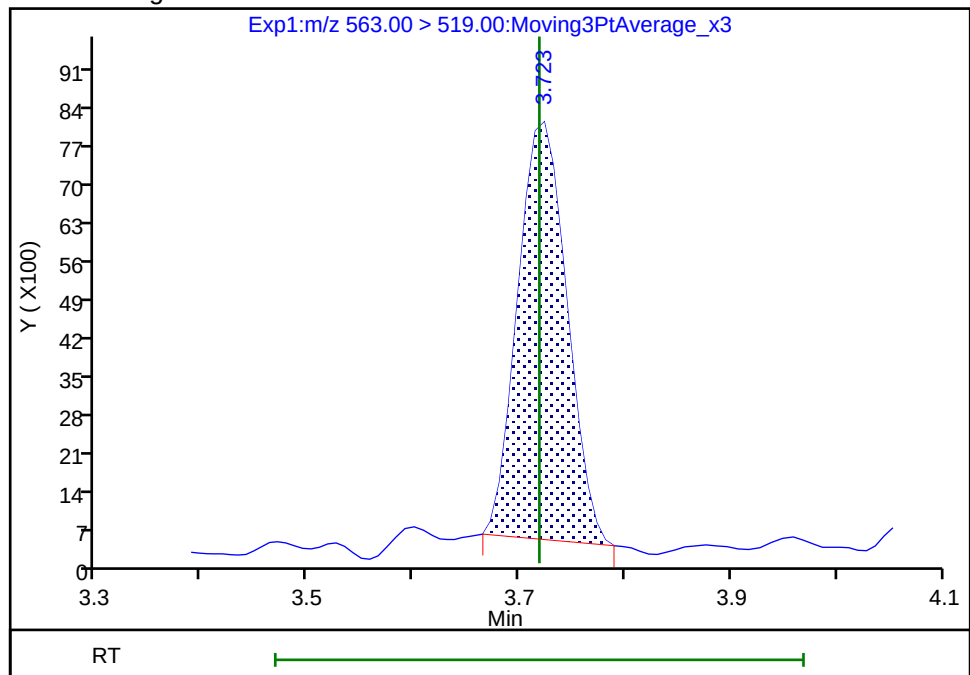
RT: 3.72
Area: 26914
Amount: 0.048811
Amount Units: ng/ml

Processing Integration Results



RT: 3.72
Area: 24753
Amount: 0.045400
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:30:20
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_007.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 17-Oct-2018 20:10:27 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 09:14:10 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: hannigana

Date: 18-Oct-2018 08:32:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.430	0.006	0.541	4172045	2.45		98.1	8209	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.436	1.432	0.004	1.000	379541	0.2531		101	27.7	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.701	0.002	1.000	287548	0.2389		95.5	41.1	
D 3 13C5 PFPeA										
267.90 > 223.00	1.703	1.701	0.002	0.642	2726766	2.47		98.6	8882	
D 47 13C3 PFBS										
301.90 > 83.00	1.736	1.733	0.003	0.654	49929	2.20		94.4	550	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.739	0.005	1.005	388854	0.2249		102	110	
298.90 > 99.00	1.744	1.739	0.005	1.005	164690		2.36(1.25-3.74)	102	95.3	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.945	1.941	0.004	0.733	342160	2.28		97.8	489	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.945	1.943	0.002	1.120	78834	0.2428		104	1146	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.974	0.002	0.745	3021720	2.51		101	7181	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.977	-0.001	1.000	292704	0.2389		95.6	85.3	
313.00 > 119.00	1.976	1.977	-0.001	1.000	26678		10.97(5.03-15.10)	95.6	91.0	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.007	2.001	0.006	1.157	362841	0.2511		107	1264	
349.00 > 99.00	1.997	2.001	-0.004	1.151	129846		2.79(1.36-4.07)	107	419	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.080	2.074	0.006	0.784	237657	2.59		103	885	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.080	2.074	0.006	1.000	65240	0.2345		93.8	73.5	
D 9 13C4 PFHpA										
367.00 > 322.00	2.300	2.302	-0.002	0.867	2741646	2.48		99.4	9208	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.311	2.305	0.006	1.005	310546	0.2453		98.1	82.0	
363.00 > 169.00	2.311	2.305	0.006	1.005	121603		2.55(1.13-3.40)	98.1	115	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.322	2.319	0.003	1.000	313496	0.2086		91.7	514	
399.00 > 99.00	2.322	2.319	0.003	1.000	104690		2.99(1.50-4.49)	91.7	212	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.322	2.319	0.003	0.876	3220249	2.35		99.3	5268	
77 DONA										
377.00 > 251.00	2.345	2.346	-0.001	0.775	849264	0.2430		103	1582	
377.00 > 85.00	2.345	2.346	-0.001	0.775	501958		1.69(0.85-2.54)	103	2309	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.628	2.627	0.001	1.000	75745	0.2283		96.3	305	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.628	2.628	0.0	0.991	477201	2.25		94.6	1143	
D 73 13C8 PFOA										
421.00 > 376.00	2.644	2.643	0.001	0.997	4121875	2.36		96.3	9865	
* 62 13C2 PFOA										
415.00 > 370.00	2.652	2.654	-0.002		2717686	2.50			7451	
D 14 13C4 PFOA										
417.00 > 372.00	2.652	2.655	-0.003	1.000	2667180	2.48		99.4	5873	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.659	2.656	0.003	1.003	290058	0.2376		95.0	30.9	M
413.00 > 169.00	2.659	2.656	0.003	1.003	169669		1.71(0.84-2.52)	95.0	272	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.666	2.664	0.002	0.882	265153	0.2332		98.0	801	
449.00 > 99.00	2.666	2.664	0.002	0.882	71562		3.71(1.94-5.82)	98.0	289	
D 72 13C8 PFOS										
507.00 > 99.00	3.025	3.024	0.001	1.141	1094272	2.36		98.6	3466	
D 18 13C4 PFOS										
503.00 > 80.00	3.025	3.025	0.0	1.141	2064266	2.37		99.2	3115	
D 19 13C5 PFNA										
468.00 > 423.00	3.025	3.027	-0.002	1.141	2207720	2.44		97.8	5355	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.032	3.029	0.003	1.003	223258	0.2219		95.7	210	
499.00 > 99.00	3.025	3.029	-0.004	1.000	48752		4.58(2.31-6.93)	95.7	116	
20 Perfluorononanoic acid										
463.00 > 419.00	3.032	3.029	0.003	1.003	219518	0.2478		99.1	96.6	
463.00 > 169.00	3.025	3.029	-0.004	1.000	59057		3.72(1.90-5.69)	99.1	291	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.245	3.242	0.003	1.073	381193	0.2255		96.8	998	
D 21 13C8 FOSA										
506.00 > 78.00	3.373	3.371	0.002	1.272	3120406	2.48		99.3	4865	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.373	3.372	0.001	1.000	297317	0.2377		95.1	1216	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.381	3.376	0.005	1.275	491564	2.25		93.9	1458	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.381	3.378	0.003	1.000	63577	0.2572		107	532	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.381	3.378	0.003	1.118	172338	0.2488		104	1044	
549.00 > 99.00	3.381	3.378	0.003	1.118	59832		2.88(1.33-3.97)	104	325	
D 23 13C2 PFDA										
515.00 > 470.00	3.388	3.386	0.002	1.278	1892135	2.44		97.5	5588	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.388	3.388	0.0	1.000	196167	0.2547		102	213	
513.00 > 169.00	3.388	3.388	0.0	1.000	37418		5.24(2.36-7.09)	102	129	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.548	3.544	0.004	1.338	956094	2.43		97.3	2006	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.556	3.548	0.008	1.002	90390	0.2457		98.3	95.6	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.713	3.704	0.009	1.228	131859	0.2408		99.9	578	
599.00 > 99.00	3.705	3.704	0.001	1.225	47074		2.80(1.39-4.16)	99.9	388	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.713	3.711	0.002	1.400	987075	2.45		97.9	1445	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.722	3.719	0.003	1.000	129683	0.2420		96.8	124	
563.00 > 169.00	3.722	3.719	0.003	1.000	34757		3.73(2.12-6.36)	96.8	244	
D 30 13C2 PFUnA										
565.00 > 520.00	3.722	3.719	0.003	1.403	1500465	2.47		98.9	2509	
33 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	3.722	3.720	0.002	1.002	80826	0.2443		97.7	198	M
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.885	3.879	0.006	1.284	582505	0.2330		98.9	2088	
35 MeFOSA										
512.00 > 169.00	3.895	3.888	0.007		96193	NC			340	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.018	4.013	0.005	1.000	173272	0.2399		96.0	112	
613.00 > 169.00	4.018	4.013	0.005	1.000	48764		3.55(2.13-6.40)	96.0	344	
D 36 13C2 PFDaA										
615.00 > 570.00	4.018	4.015	0.003	1.515	1633431	2.50		100.0	2818	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.018	4.015	0.003	1.189	46428	0.2504		104	568	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.261	4.255	0.006	1.409	57059	0.2187		90.4	298	
699.00 > 99.00	4.252	4.255	-0.003	1.406	93114		0.61(0.00-0.00)	90.4	513	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.279	0.001	1.065	180522	0.2524		101	187	
663.00 > 169.00	4.280	4.279	0.001	1.065	60049		3.01(1.25-3.76)	101	308	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.518	0.004	1.000	56813	0.2510		100	508	
713.00 > 219.00	4.522	4.518	0.004	1.000	39047		1.45(0.71-2.13)	100	441	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.522	4.519	0.003	1.705	2107663	2.49		99.7	4714	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.934	4.934	0.0	1.861	3959905	2.59		104	6264	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.943	4.938	0.005	1.002	369528	0.2407		96.3	64.5	
813.00 > 169.00	4.943	4.938	0.005	1.002	71563		5.16(2.86-8.58)	96.3	546	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.286	0.007	1.073	437321	0.2459		98.4	66.8	
913.00 > 169.00	5.286	5.286	0.0	1.071	58607		7.46(3.83-11.48)	98.4	490	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_007.d

Injection Date: 17-Oct-2018 20:10:27

Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 12

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

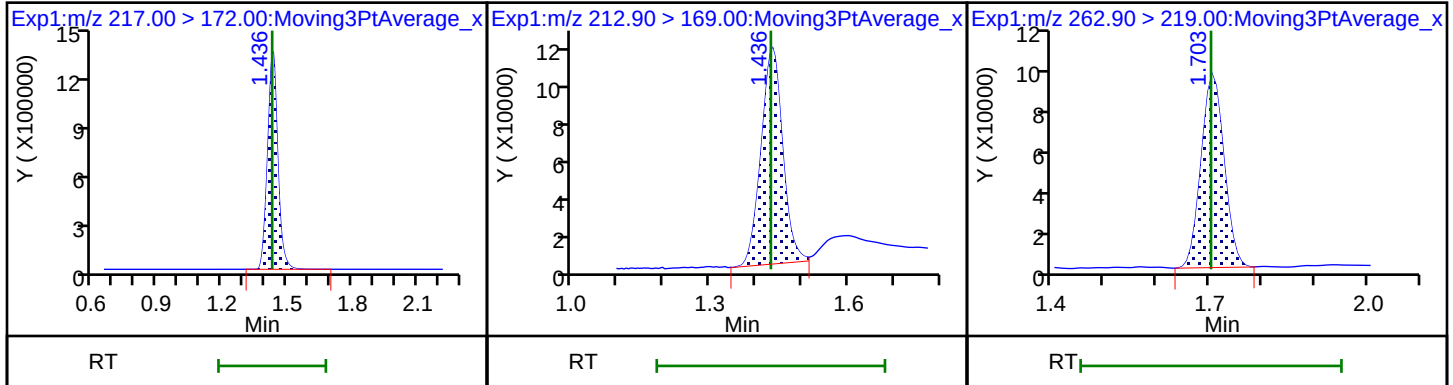
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

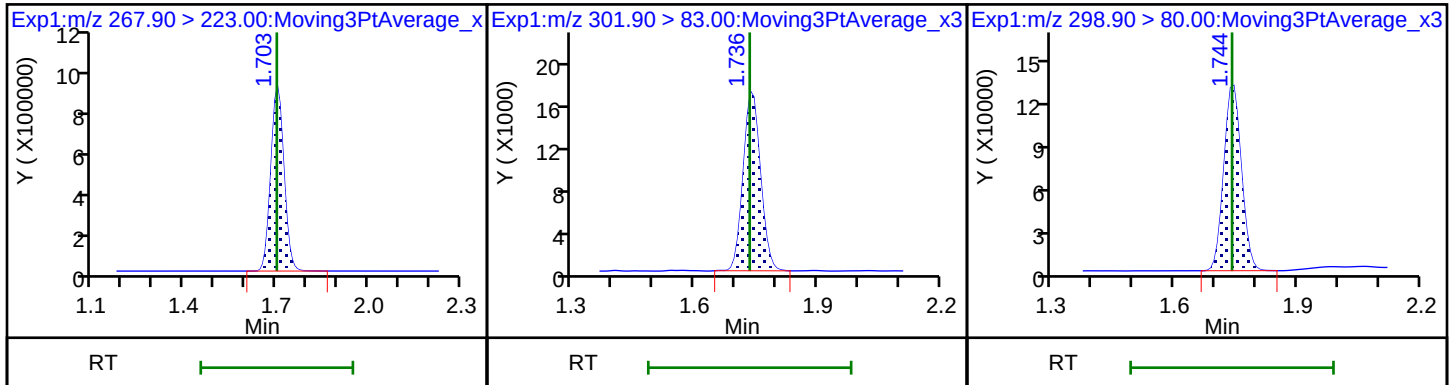
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

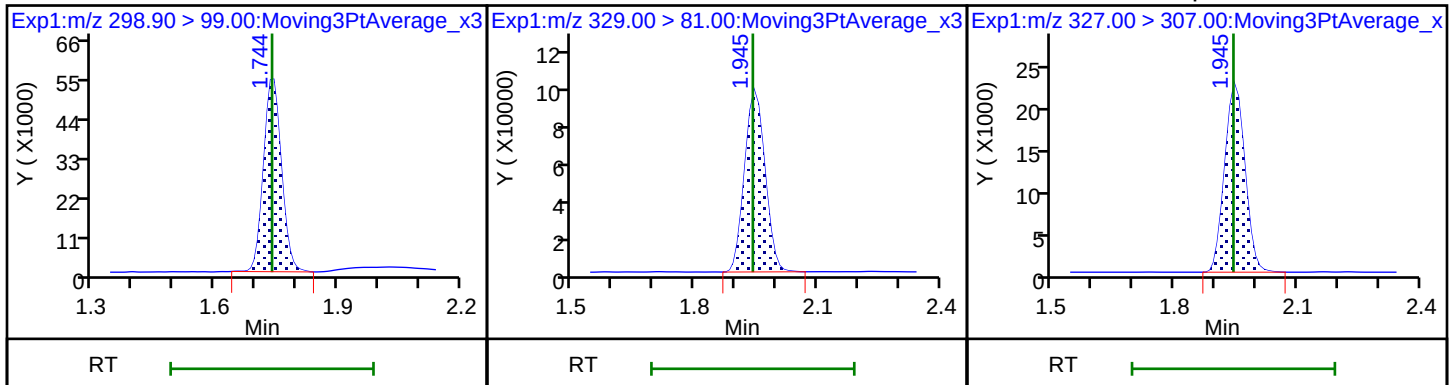
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

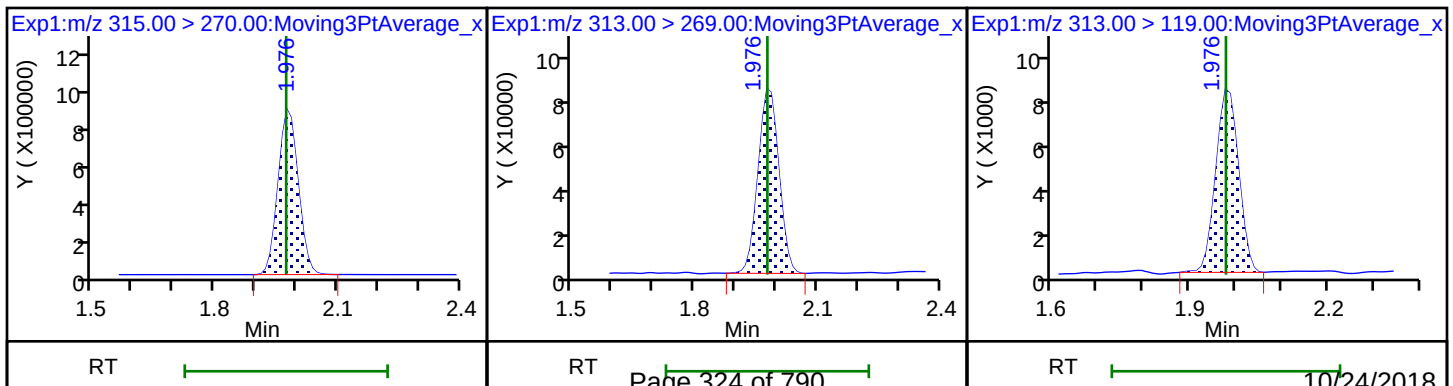
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

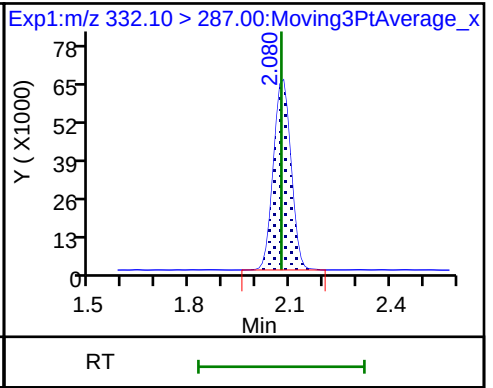
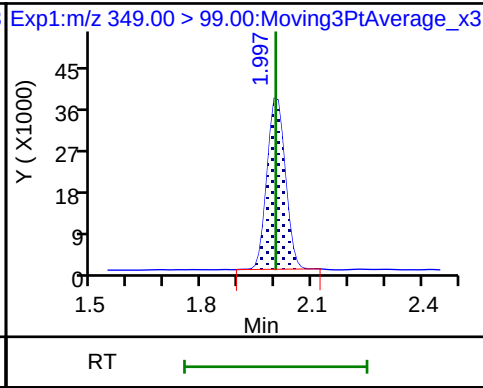
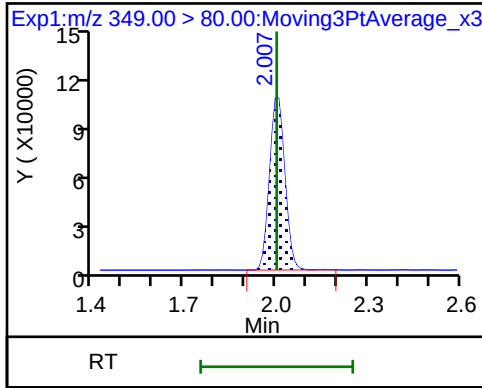
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

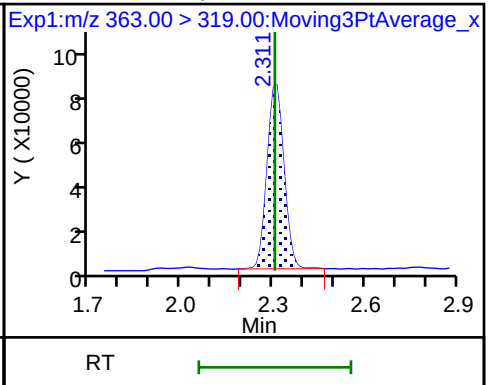
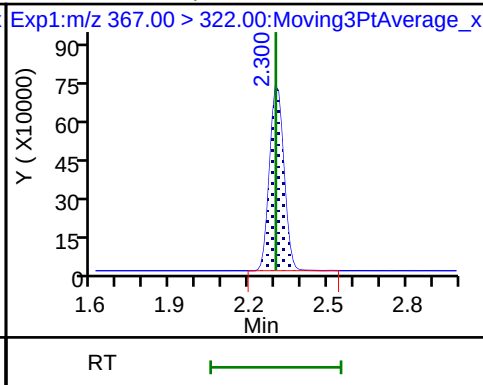
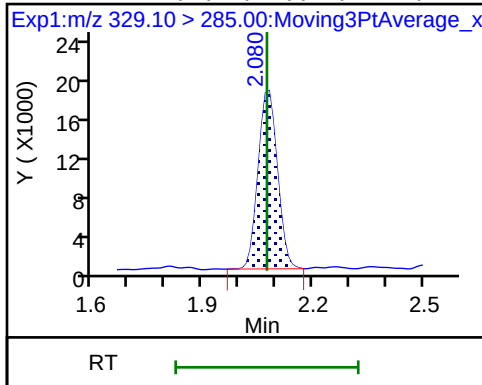
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

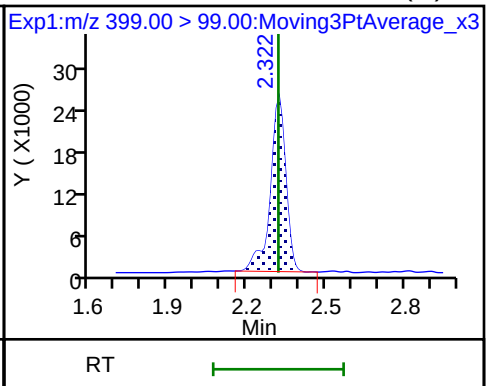
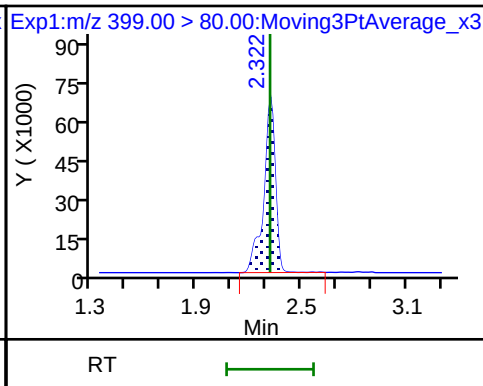
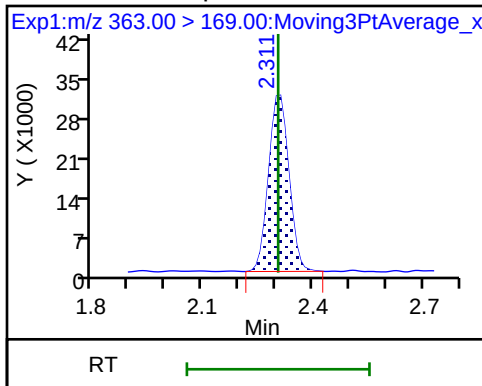
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

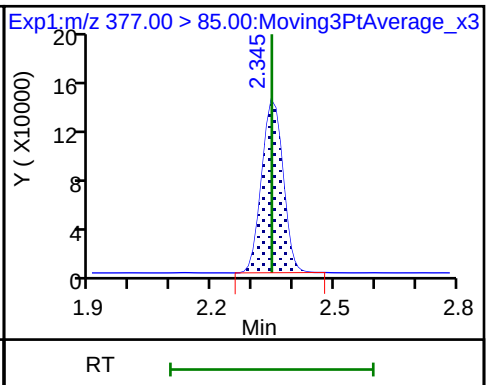
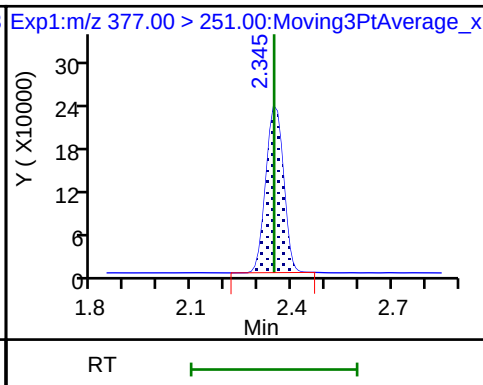
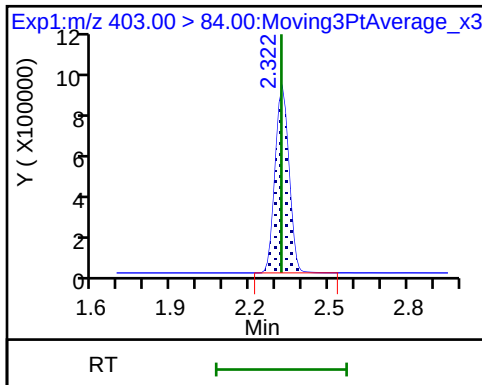
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

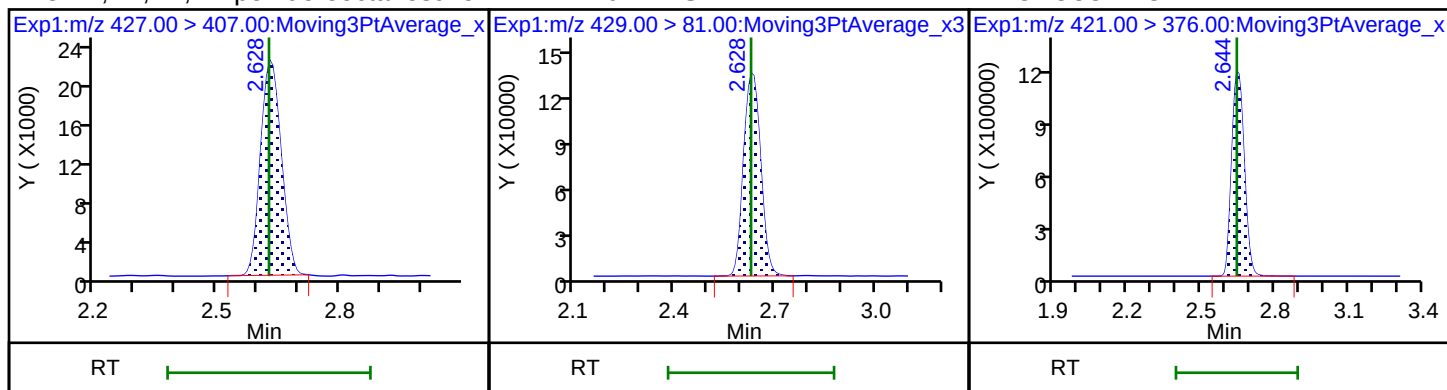
77 DONA

77 DONA



13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

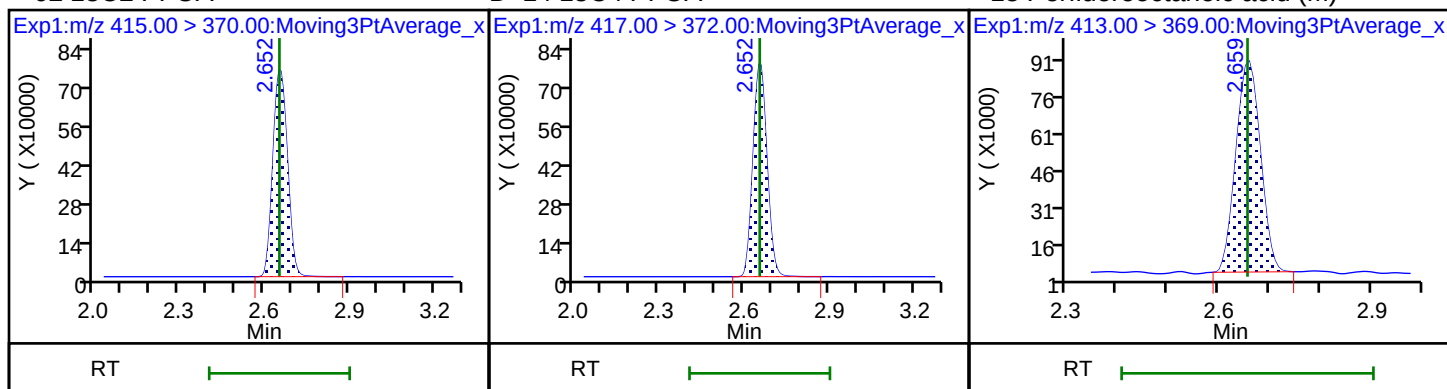
D 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

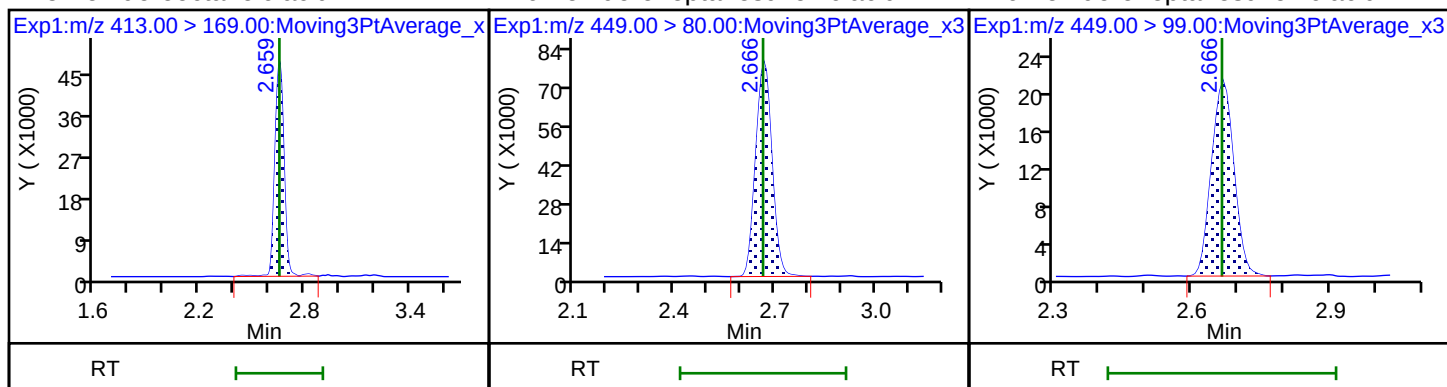
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

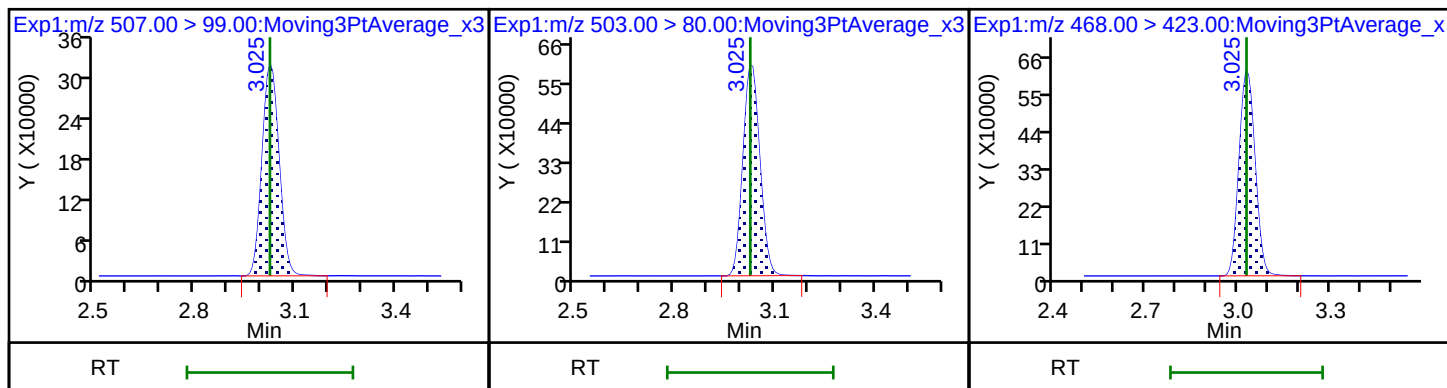
16 Perfluoroheptanesulfonic acid

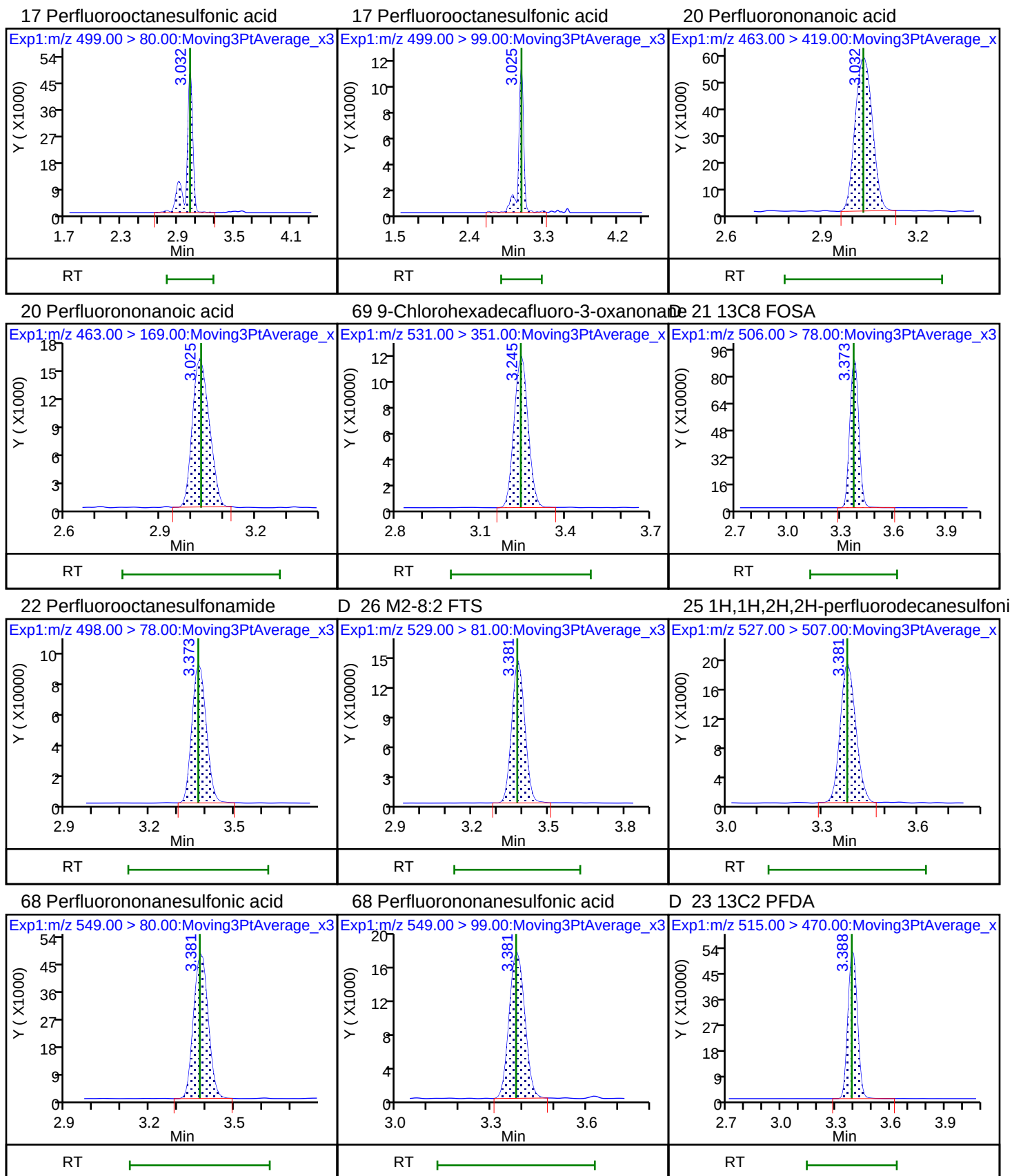


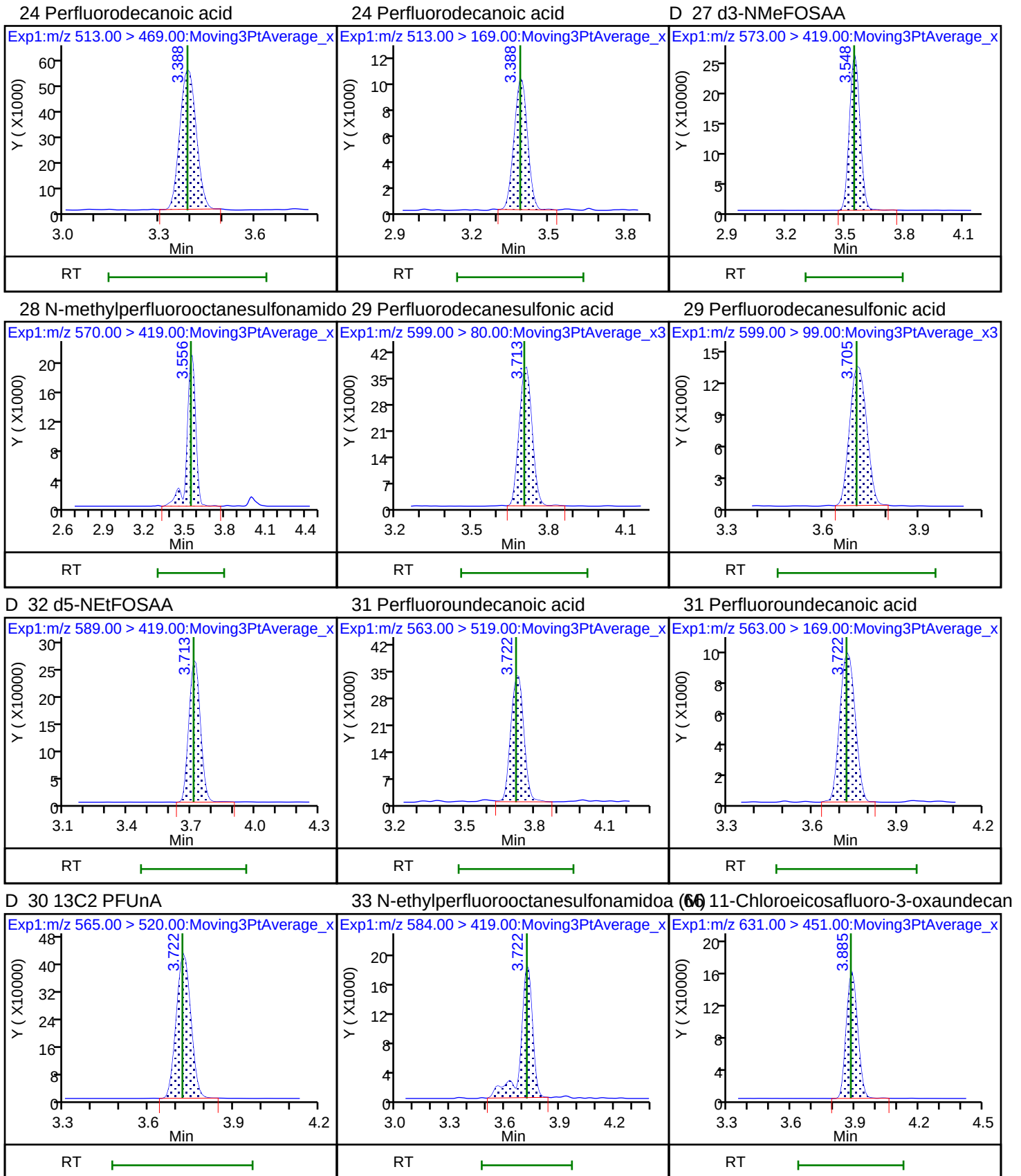
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA



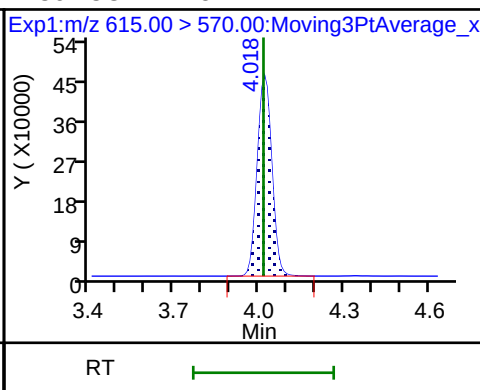
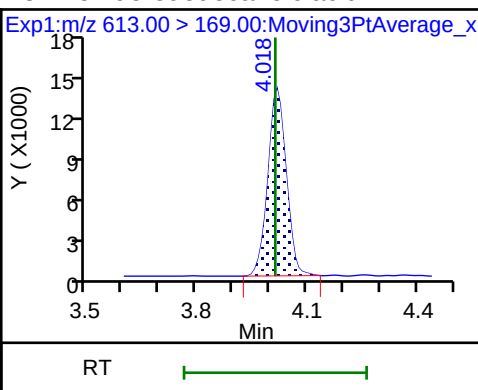
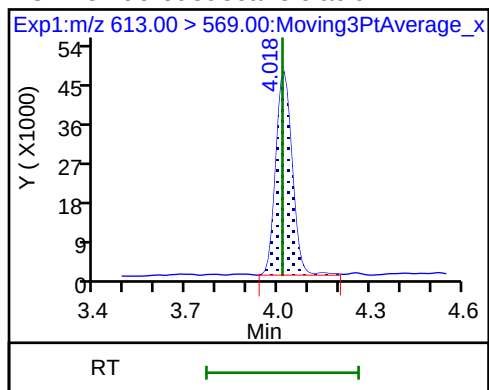




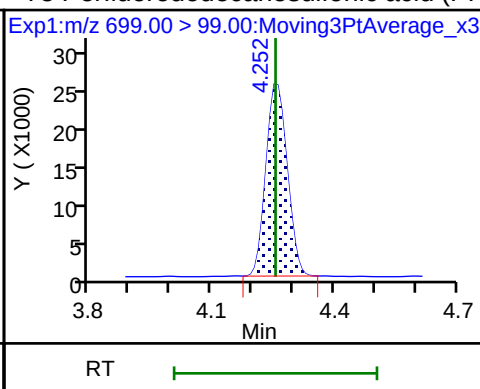
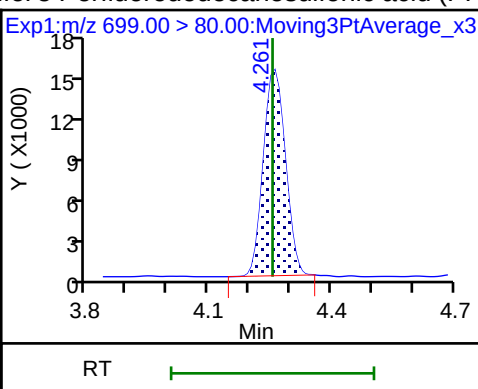
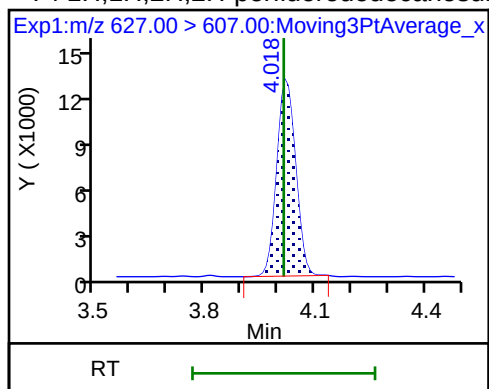
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



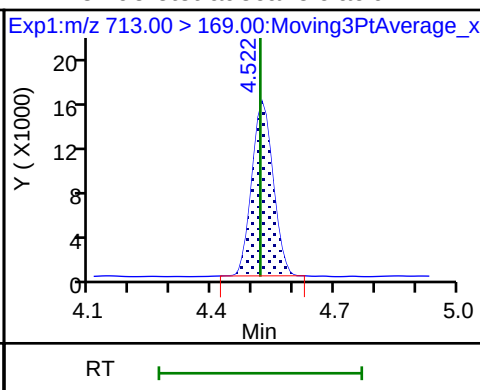
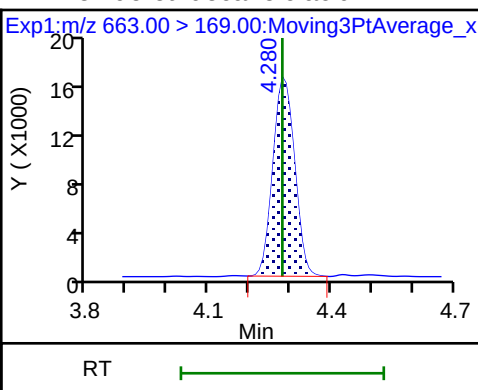
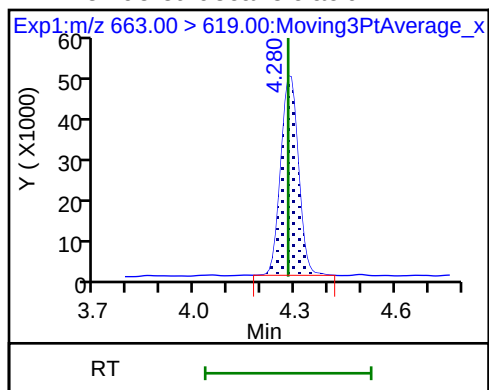
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

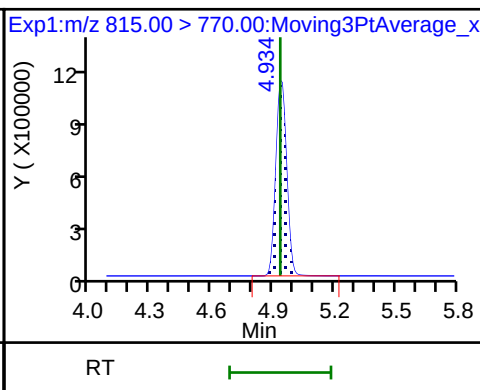
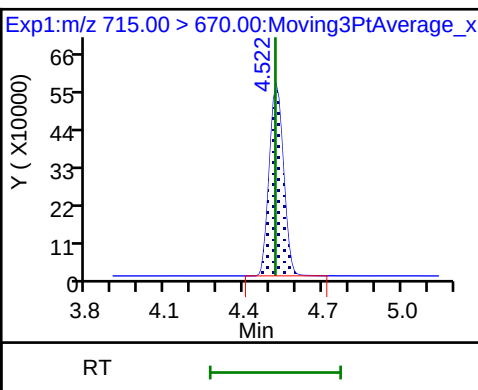
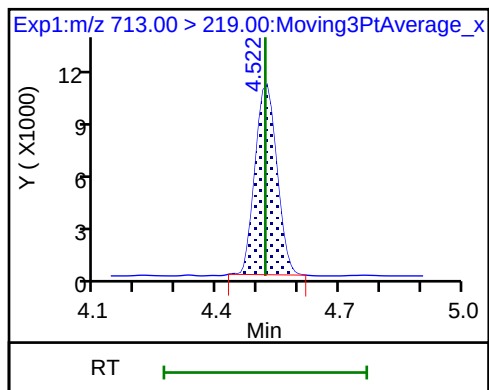
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

D 44 13C2 PFHxDA

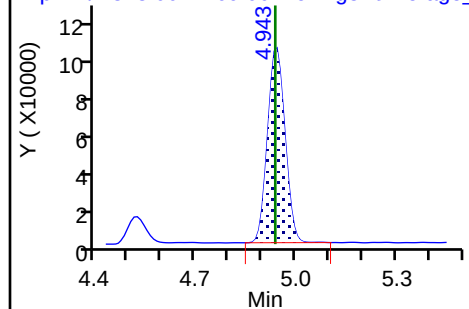


45 Perfluorohexadecanoic acid

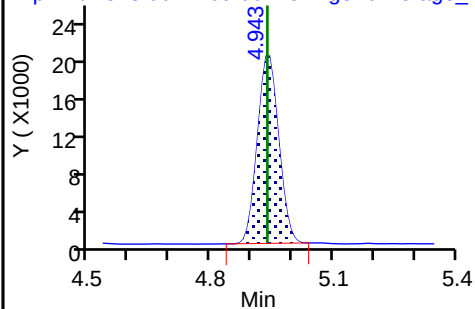
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

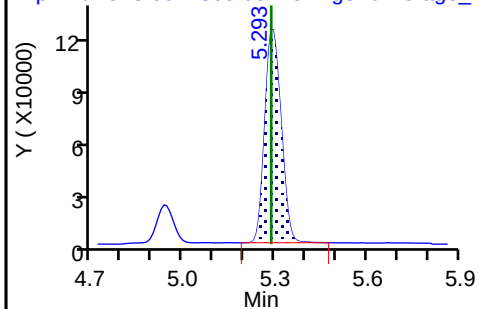
Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

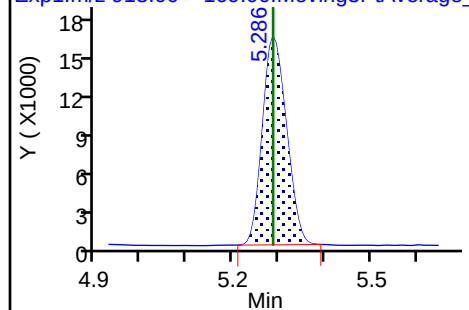


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

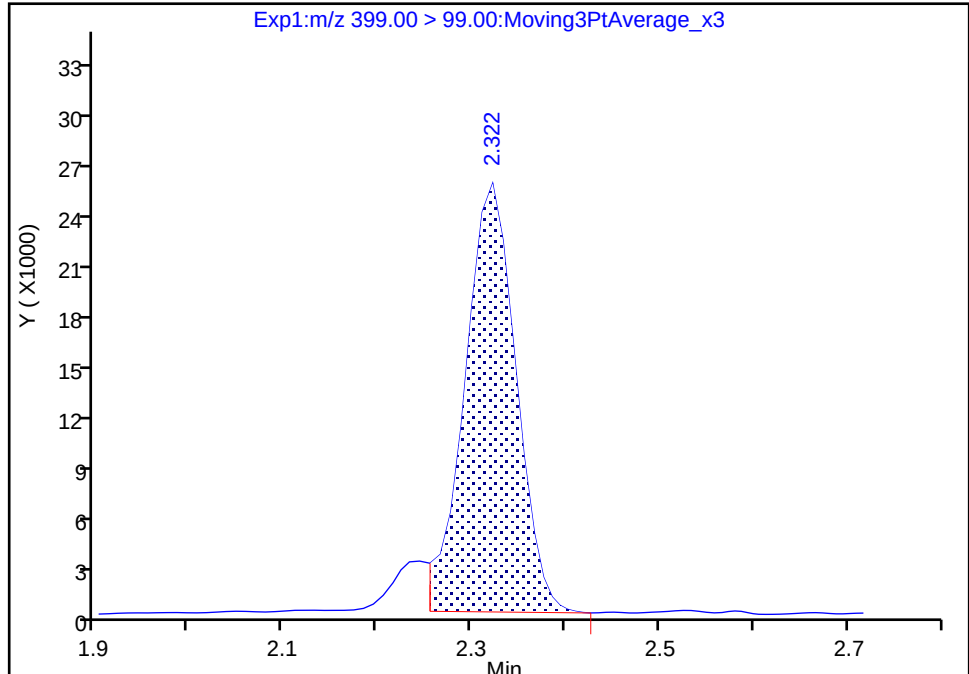
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_007.d
Injection Date: 17-Oct-2018 20:10:27 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

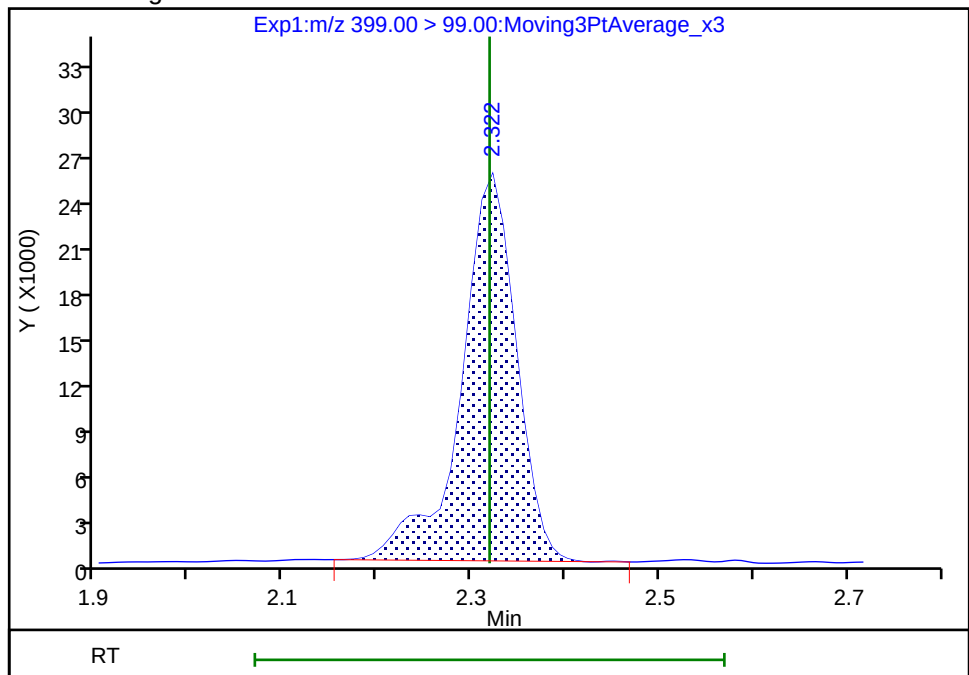
RT: 2.32
Area: 96904
Amount: 0.208621
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 104690
Amount: 0.208621
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:32:11
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 331 of 790

10/24/2018

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_007.d

Injection Date: 17-Oct-2018 20:10:27

Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

12

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

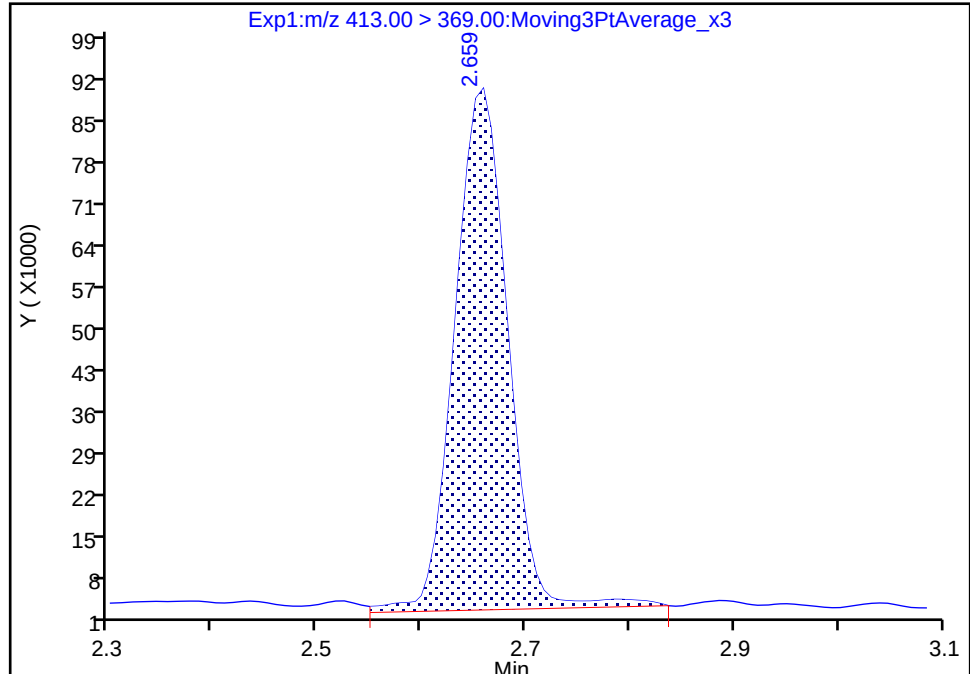
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

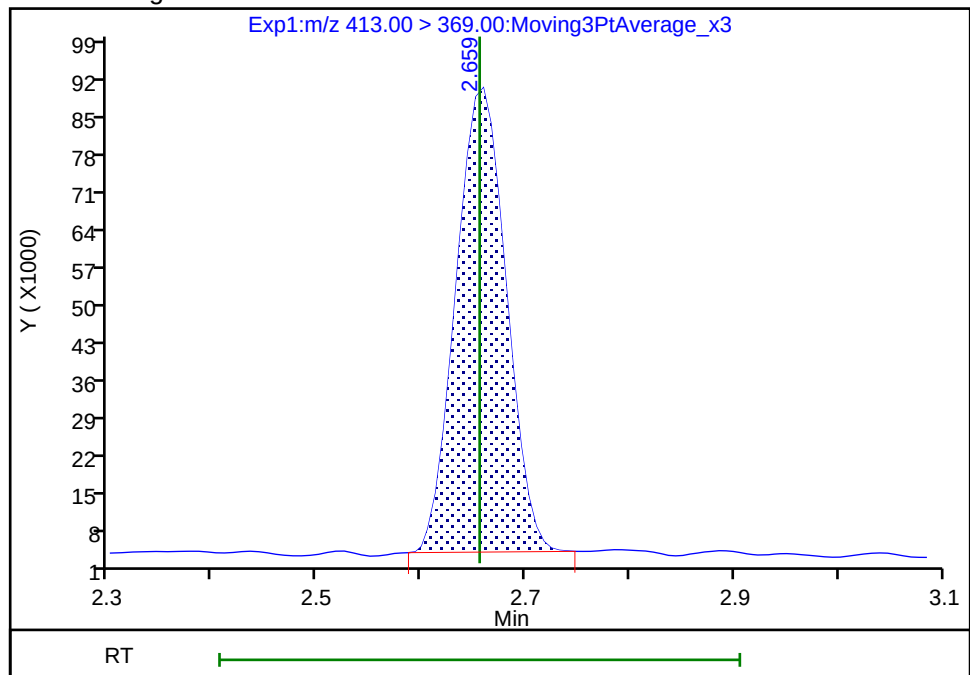
RT: 2.66
Area: 310698
Amount: 0.252125
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 290058
Amount: 0.237648
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:32:24

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_007.d

Injection Date: 17-Oct-2018 20:10:27

Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

12

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

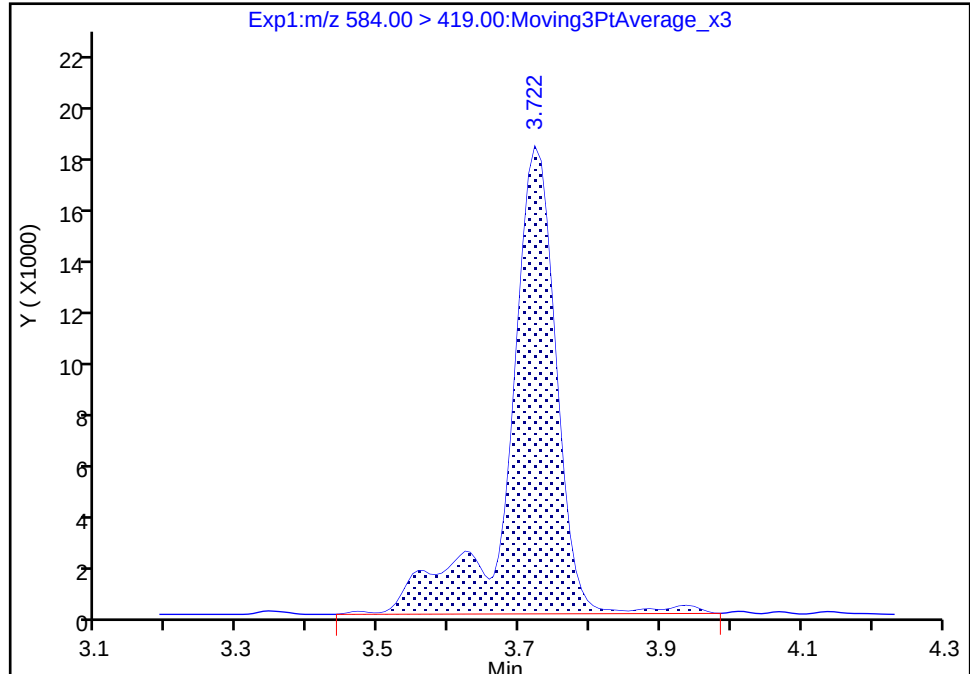
Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

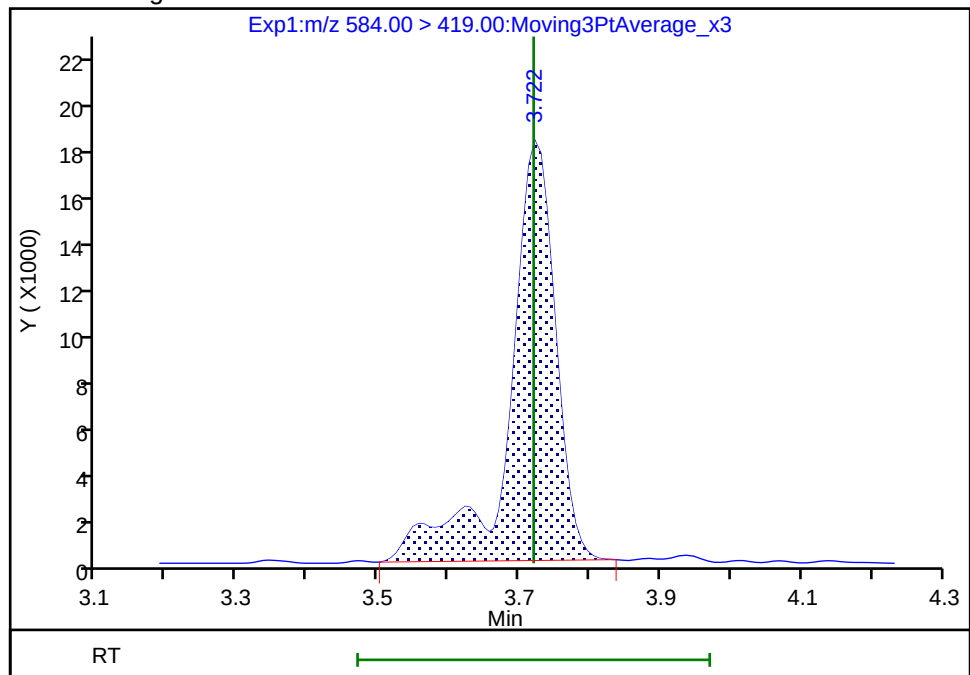
RT: 3.72
Area: 84105
Amount: 0.264583
Amount Units: ng/ml

Processing Integration Results



RT: 3.72
Area: 80826
Amount: 0.244280
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:32:42

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_008.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 17-Oct-2018 20:17:53 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 09:18:41 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: hannigana

Date: 18-Oct-2018 09:18:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.426	1.430	-0.004	0.538	4178599	2.55		102	9035	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.426	1.432	-0.006	1.000	1459934	0.9721		97.2	100	
D 3 13C5 PFPeA										
267.90 > 223.00	1.696	1.701	-0.005	0.639	2650106	2.49		99.6	8759	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.696	1.701	-0.005	1.000	1153584	0.9860		98.6	166	
D 47 13C3 PFBS										
301.90 > 83.00	1.728	1.733	-0.005	0.651	51396	2.35		101	482	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.739	-0.003	1.005	1685869	0.9472		107	450	
298.90 > 99.00	1.736	1.739	-0.003	1.005	687450		2.45(1.25-3.74)	107	407	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.935	1.941	-0.006	0.729	336212	2.33		99.9	412	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.935	1.943	-0.008	1.120	289583	0.8663		92.7	5073	
D 7 13C2 PFHxA										
315.00 > 270.00	1.966	1.974	-0.008	0.741	2901537	2.51		100	7667	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.977	-0.001	1.005	1116786	0.9494		94.9	319	
313.00 > 119.00	1.976	1.977	-0.001	1.005	100552		11.11(5.03-15.10)	94.9	246	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.997	2.001	-0.004	1.156	1408183	0.9468		101	3409	
349.00 > 99.00	1.997	2.001	-0.004	1.156	528321		2.67(1.36-4.07)	101	1916	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.070	2.074	-0.004	1.000	255822	1.01		101	340	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.070	2.074	-0.004	0.781	217359	2.46		98.3	801	
D 9 13C4 PFHpA										
367.00 > 322.00	2.301	2.302	-0.001	0.867	2650025	2.49		99.8	4854	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.301	2.305	-0.004	1.000	1206231	0.9858		98.6	301	
363.00 > 169.00	2.301	2.305	-0.004	1.000	459609		2.62(1.13-3.40)	98.6	452	
D 11 18O2 PFHxS										
403.00 > 84.00	2.312	2.319	-0.007	0.872	3207369	2.43		103	4553	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.312	2.319	-0.007	1.000	1245510	0.8322		91.4	1308	
399.00 > 99.00	2.312	2.319	-0.007	1.000	401199		3.10(1.50-4.49)	91.4	728	
77 DONA										
377.00 > 251.00	2.345	2.346	-0.001	0.777	3339488	0.9700		103	4359	
377.00 > 85.00	2.345	2.346	-0.001	0.777	1949782		1.71(0.85-2.54)	103	4529	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.621	2.627	-0.006	1.000	293005	0.8445		89.1	1150	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.621	2.628	-0.007	0.988	499033	2.44		103	1433	
D 73 13C8 PFOA										
421.00 > 376.00	2.637	2.643	-0.006	0.994	4380335	2.60		106	8286	
* 62 13C2 PFOA										
415.00 > 370.00	2.652	2.654	-0.002		2615878	2.50			6256	
D 14 13C4 PFOA										
417.00 > 372.00	2.652	2.655	-0.003	1.000	2596403	2.51		101	4665	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.652	2.656	-0.004	1.000	1164962	0.9805		98.0	125	
413.00 > 169.00	2.652	2.656	-0.004	1.000	616546		1.89(0.84-2.52)	98.0	721	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.660	2.664	-0.004	0.881	1049056	0.9363		98.4	2045	
449.00 > 99.00	2.660	2.664	-0.004	0.881	278562		3.77(1.94-5.82)	98.4	1582	
D 72 13C8 PFOS										
507.00 > 99.00	3.018	3.024	-0.006	1.138	1091663	2.44		102	3343	
D 18 13C4 PFOS										
503.00 > 80.00	3.018	3.025	-0.007	1.138	2033727	2.43		102	3327	
D 19 13C5 PFNA										
468.00 > 423.00	3.025	3.027	-0.002	1.141	2218957	2.55		102	5480	
20 Perfluorononanoic acid										
463.00 > 419.00	3.025	3.029	-0.004	1.000	896013	1.01		101	388	
463.00 > 169.00	3.025	3.029	-0.004	1.000	238311		3.76(1.90-5.69)	101	1198	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.025	3.029	-0.004	1.003	904763	0.9128		98.4	630	
499.00 > 99.00	3.018	3.029	-0.011	1.000	192490		4.70(2.31-6.93)	98.4	606	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.238	3.242	-0.004	1.073	1497234	0.8989		96.5	2515	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.371	-0.005	1.269	3078841	2.54		102	4294	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.366	3.372	-0.006	1.000	1201424	0.9736		97.4	2117	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.374	3.376	-0.002	1.272	515065	2.45		102	1721	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.374	3.378	-0.004	1.000	244571	0.9441		98.5	830	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.374	3.378	-0.004	1.118	652603	0.9564		99.6	1709	
549.00 > 99.00	3.374	3.378	-0.004	1.118	235906		2.77(1.33-3.97)	99.6	1445	
D 23 13C2 PFDA										
515.00 > 470.00	3.381	3.386	-0.005	1.275	1879926	2.52		101	5349	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.388	3.388	0.0	1.002	766690	1.00		100	714	
513.00 > 169.00	3.381	3.388	-0.007	1.000	144967		5.29(2.36-7.09)	100	306	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.541	3.544	-0.003	1.335	942373	2.49		99.6	2192	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.541	3.548	-0.007	1.000	352126	0.9711		97.1	354	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.697	3.704	-0.007	1.225	498075	0.9231		95.8	1652	
599.00 > 99.00	3.697	3.704	-0.007	1.225	173235		2.88(1.39-4.16)	95.8	1002	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.705	3.711	-0.006	1.397	996478	2.57		103	1489	
D 30 13C2 PFUnA										
565.00 > 520.00	3.714	3.719	-0.005	1.400	1491670	2.55		102	3359	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.714	3.719	-0.005	1.000	536387	1.01		101	548	
563.00 > 169.00	3.714	3.719	-0.005	1.000	130594		4.11(2.12-6.36)	101	899	
33 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	3.714	3.720	-0.006	1.002	329325	0.9859		98.6	770	M
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.875	3.879	-0.004	1.284	2366026	0.9606		102	5682	
35 MeFOSA										
512.00 > 169.00	3.885	3.888	-0.003		374403	NC			556	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.010	4.013	-0.003	1.000	666776	0.9417		94.2	478	
613.00 > 169.00	4.010	4.013	-0.003	1.000	172449		3.87(2.13-6.40)	94.2	1220	
D 36 13C2 PFDaA										
615.00 > 570.00	4.010	4.015	-0.005	1.512	1601215	2.55		102	2751	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.010	4.015	-0.005	1.189	175147	0.9015		93.5	1158	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.252	4.255	-0.003	1.409	243639	0.9477		97.9	1403	
699.00 > 99.00	4.252	4.255	-0.003	1.409	363592		0.67(0.00-0.00)	97.9	1353	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.271	4.279	-0.008	1.065	677867	0.9668		96.7	522	
663.00 > 169.00	4.271	4.279	-0.008	1.065	234235		2.89(1.25-3.76)	96.7	1436	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.512	4.518	-0.006	1.000	212736	0.9695		97.0	1147	
713.00 > 219.00	4.512	4.518	-0.006	1.000	152719		1.39(0.71-2.13)	97.0	1300	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.512	4.519	-0.007	1.701	2043528	2.51		100	4578	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.926	4.934	-0.008	1.857	3583299	2.43		97.3	4886	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.934	4.938	-0.004	1.002	1313765	1.02		102	219	
813.00 > 169.00	4.926	4.938	-0.012	1.000	249908		5.26(2.86-8.58)	102	1323	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.279	5.286	-0.007	1.072	1654032	1.03		103	248	
913.00 > 169.00	5.279	5.286	-0.007	1.072	222433		7.44(3.83-11.48)	103	1111	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_008.d

Injection Date: 17-Oct-2018 20:17:53

Instrument ID: A8_N

Lims ID: IC L4 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

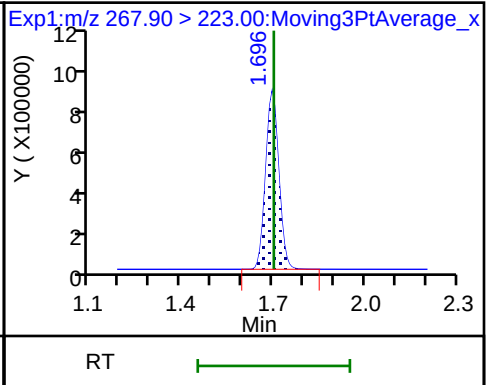
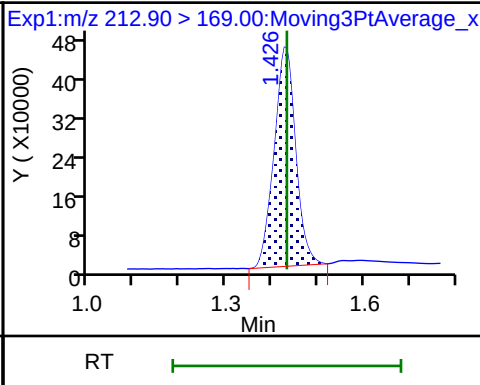
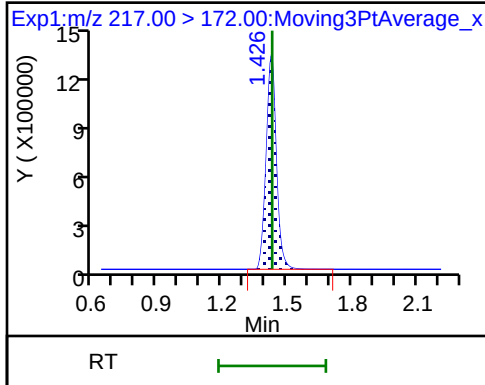
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

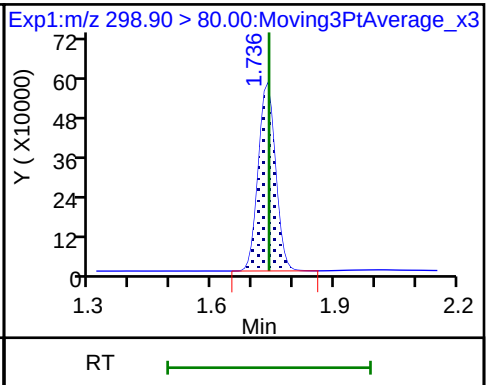
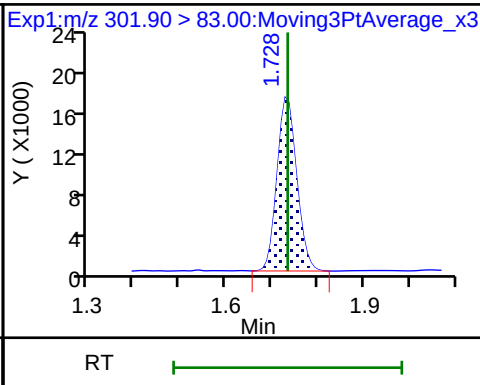
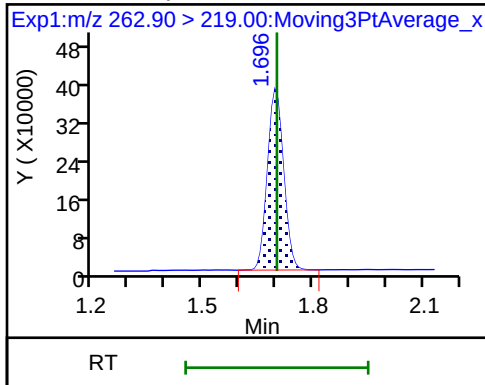
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

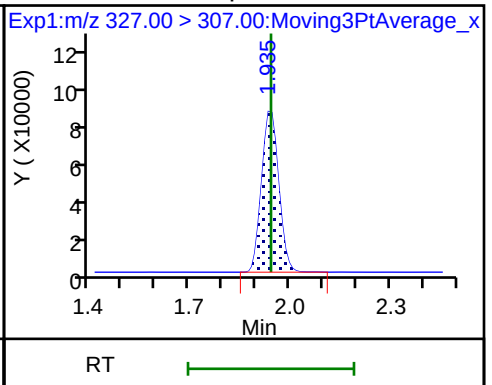
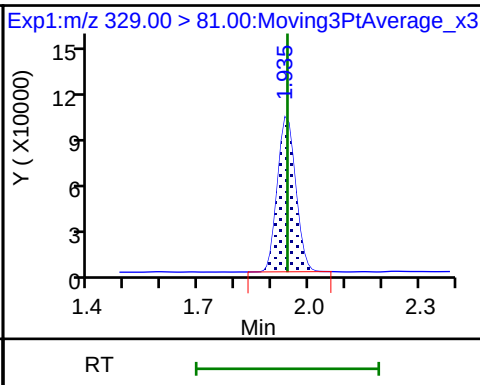
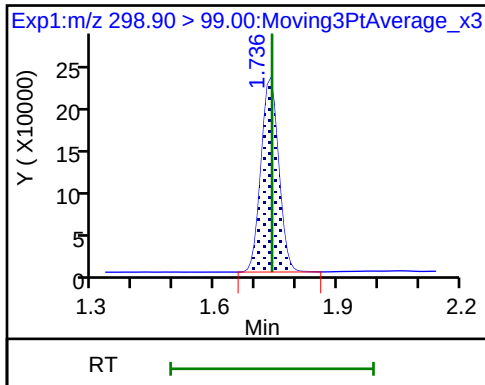
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

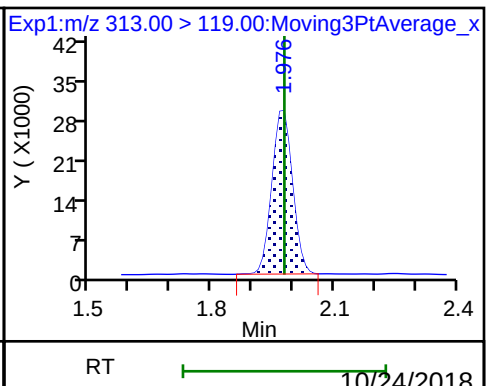
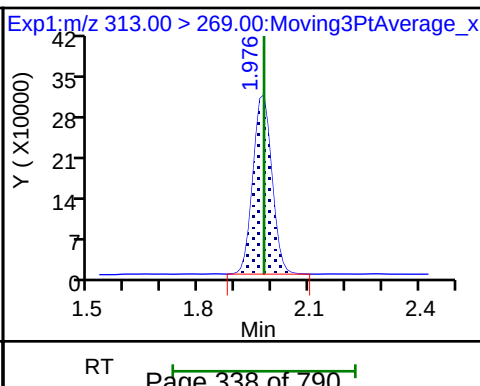
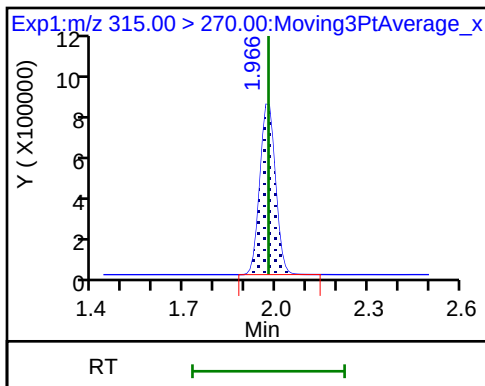
61 1H,1H,2H,2H-perfluorohexanesulfoni

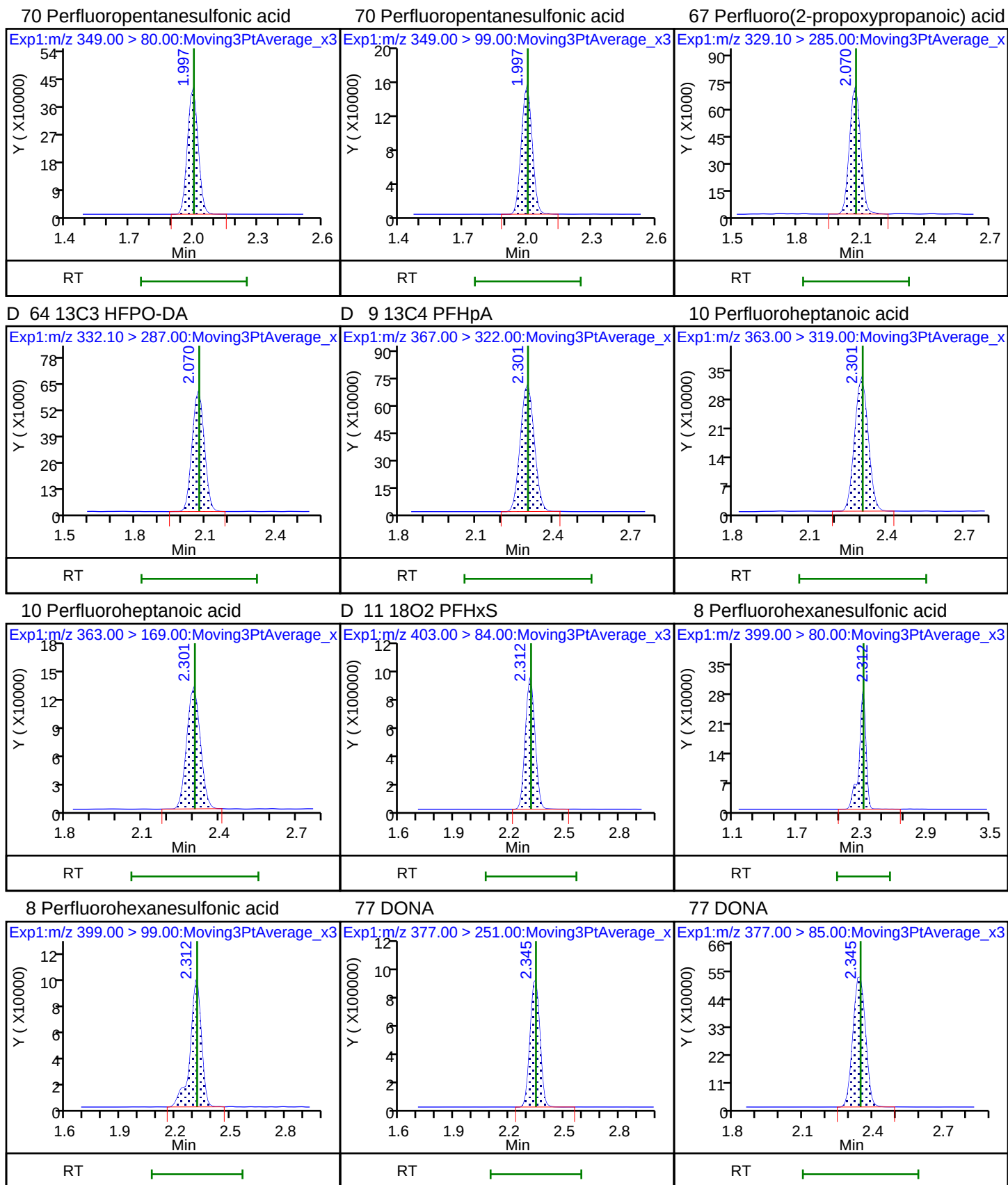


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

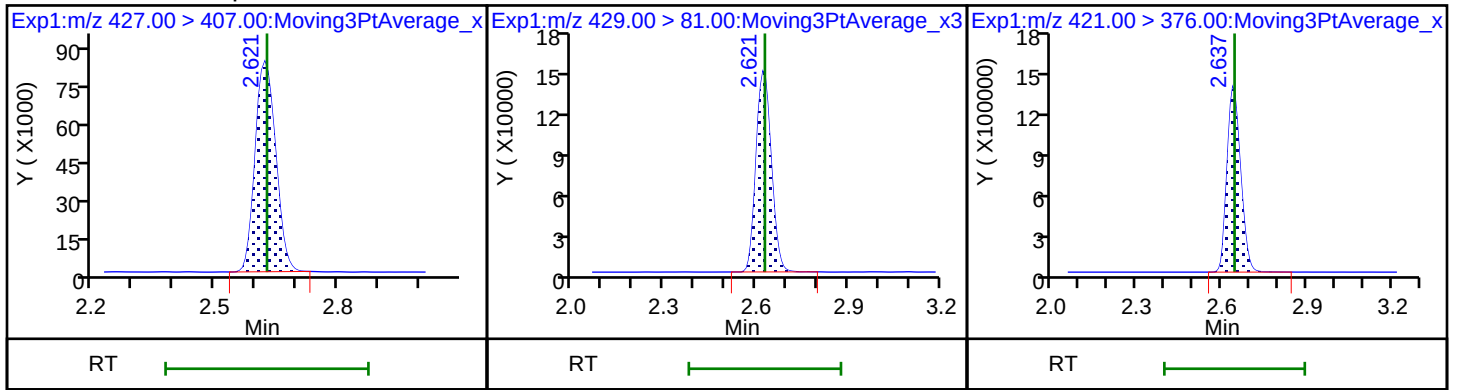
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

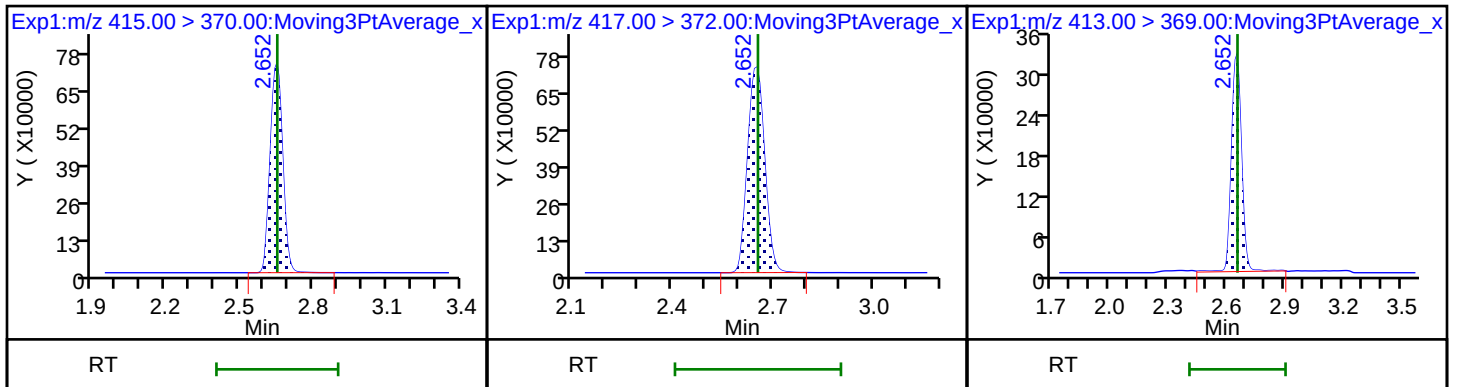
D 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

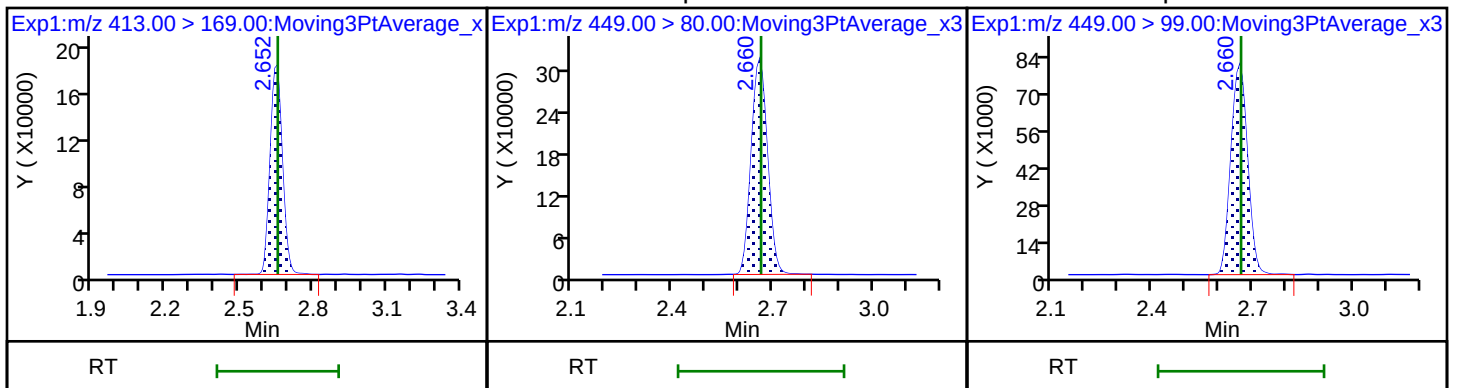
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

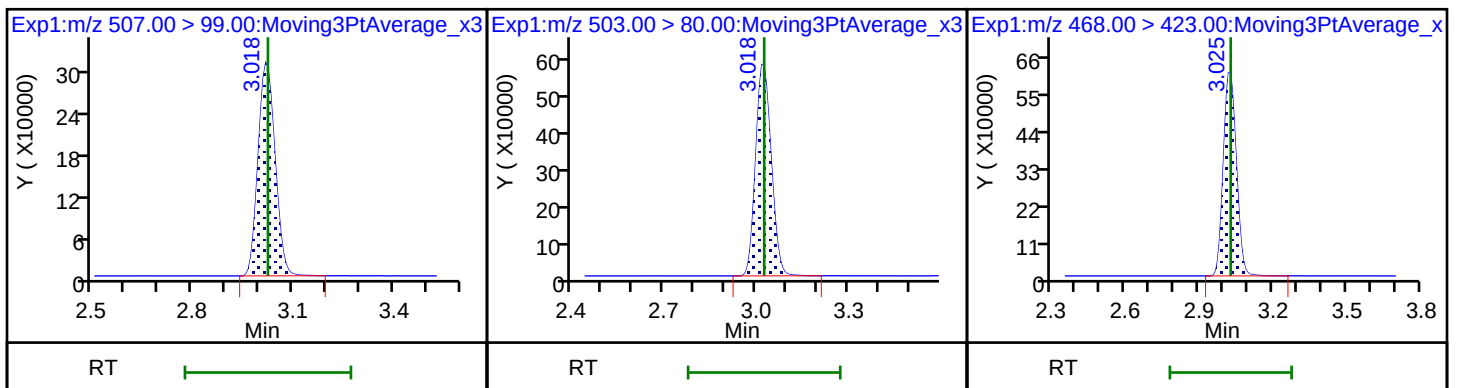
16 Perfluoroheptanesulfonic acid

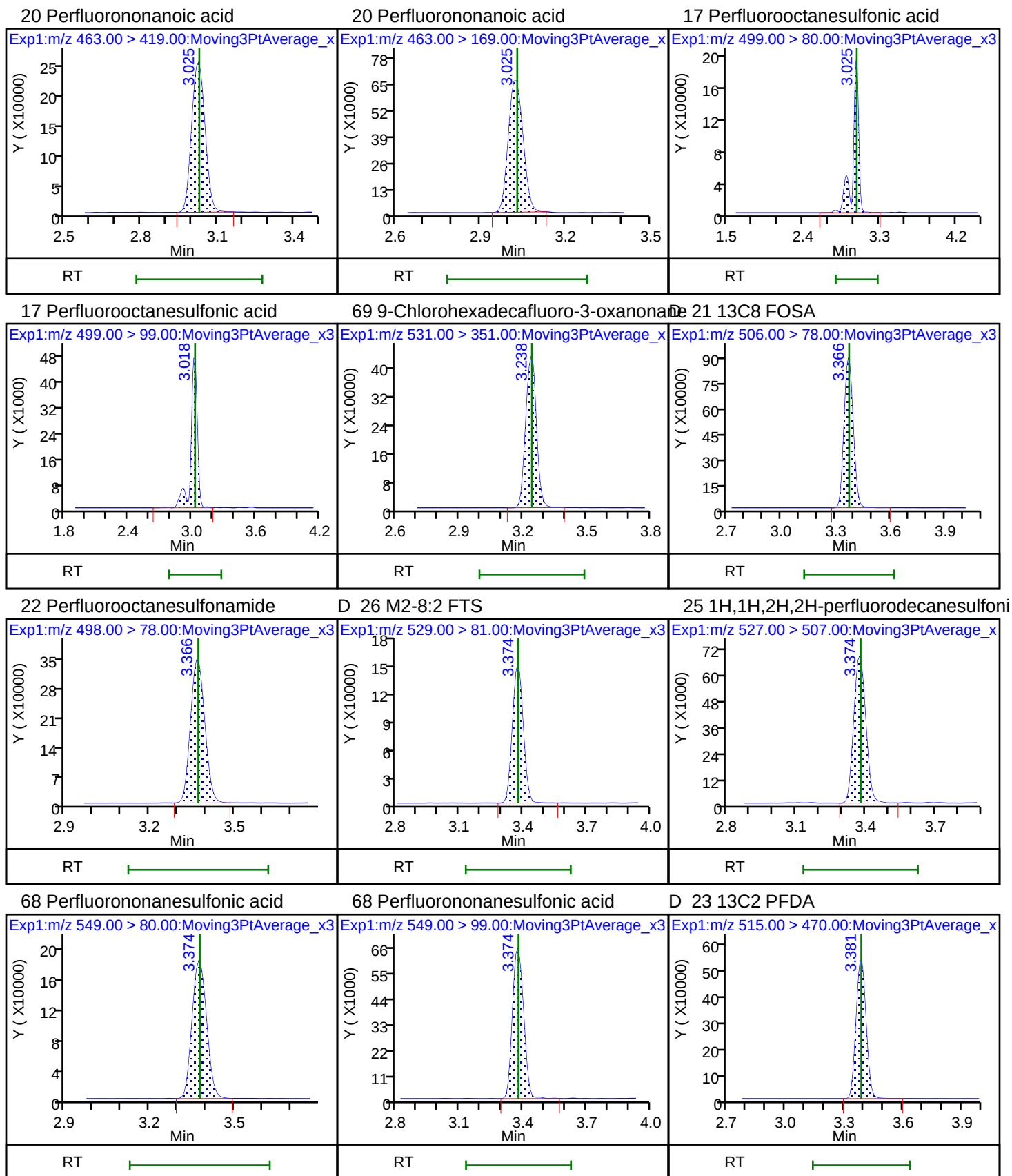


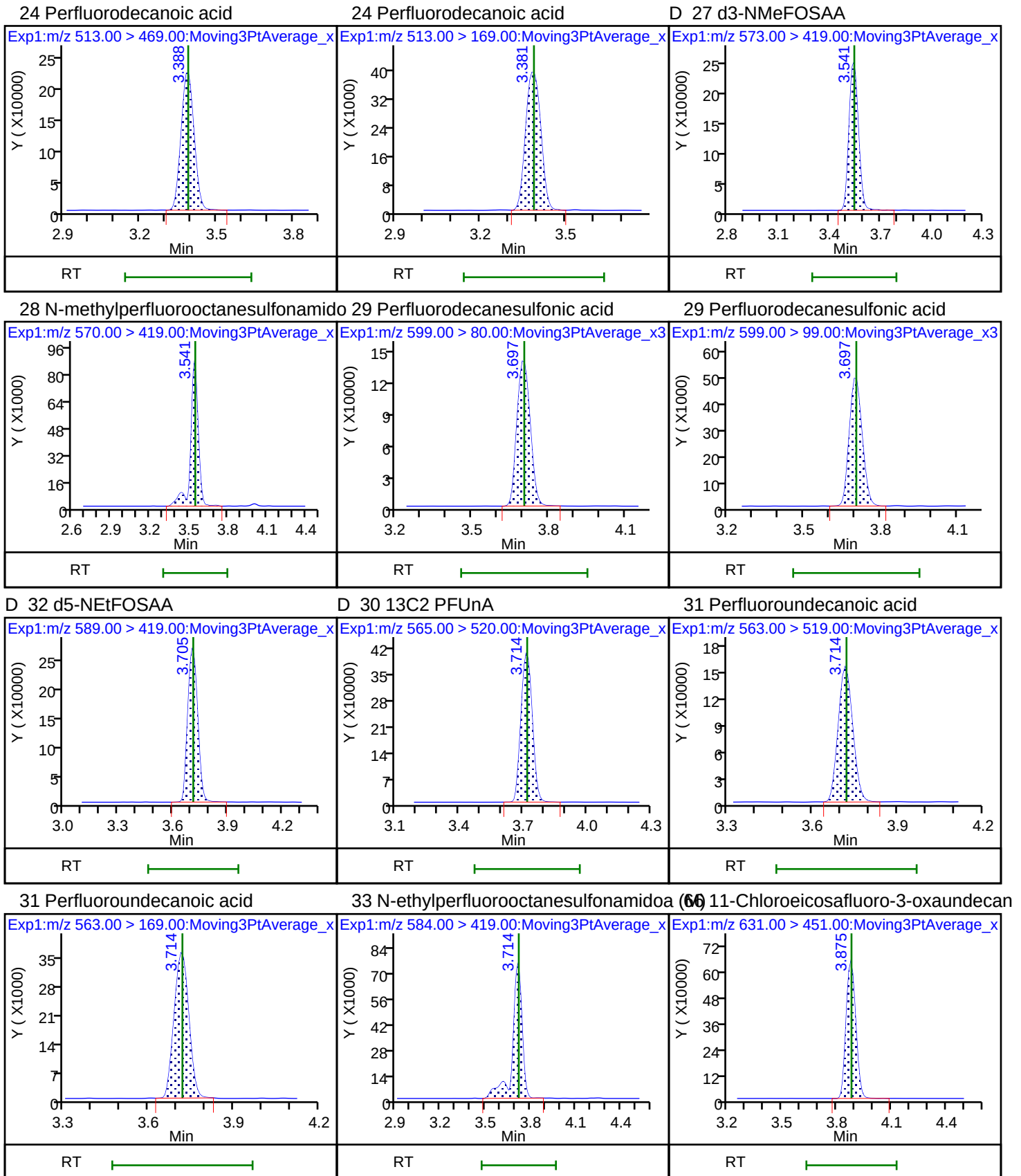
D 72 13C8 PFOS

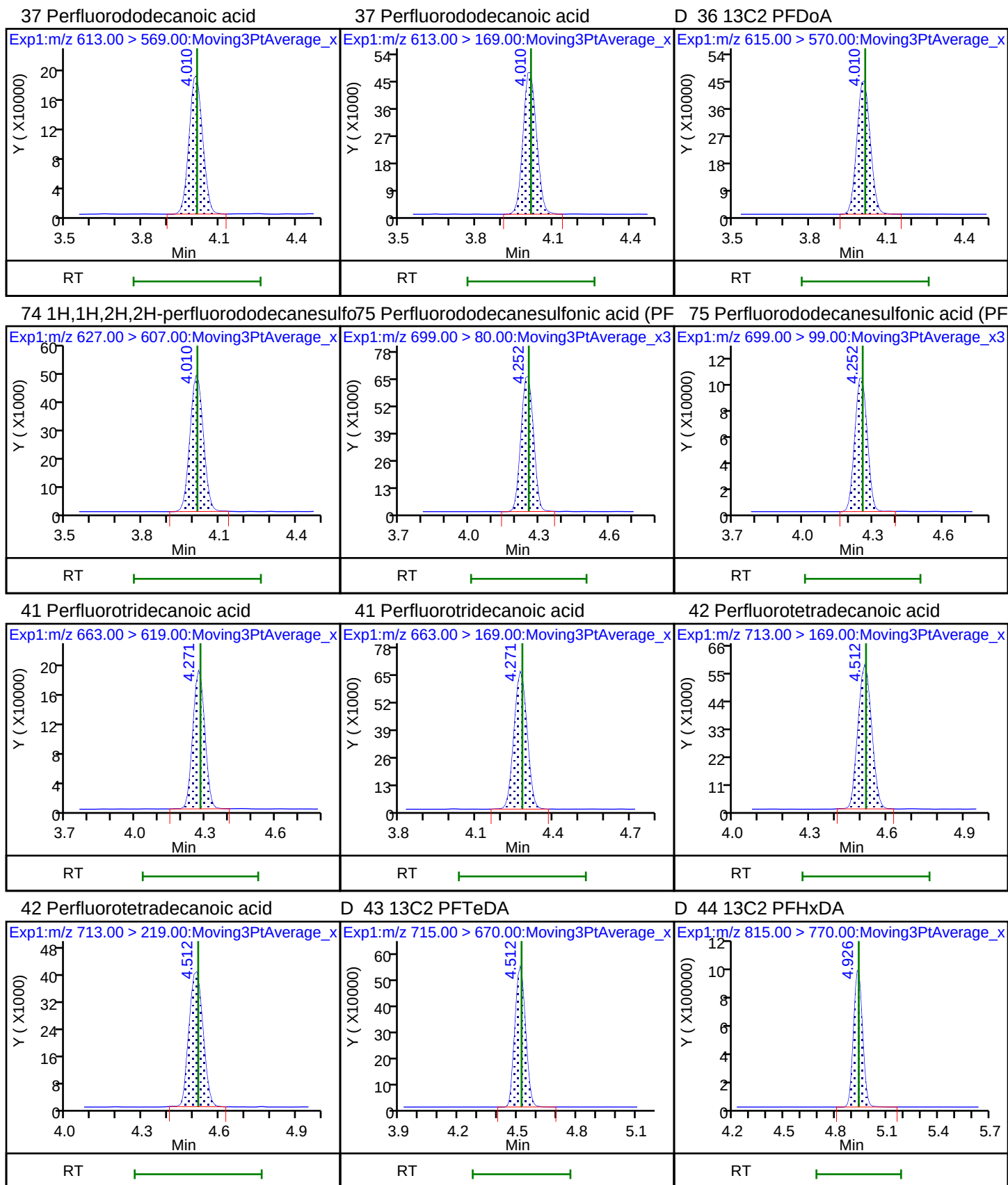
D 18 13C4 PFOS

D 19 13C5 PFNA





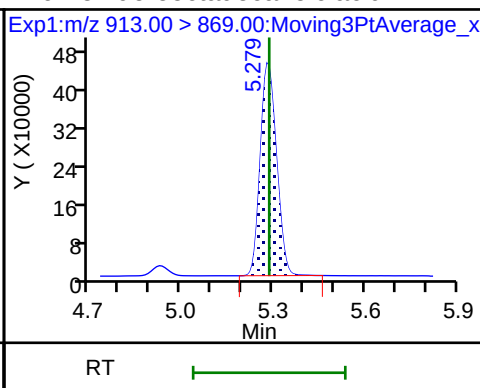
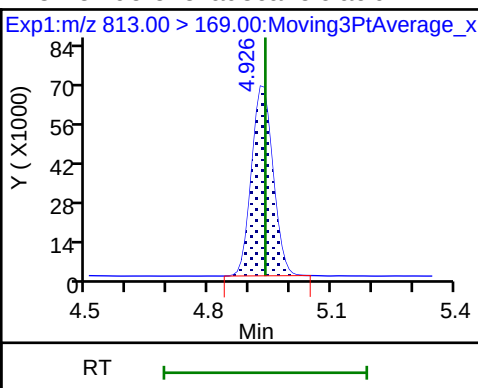
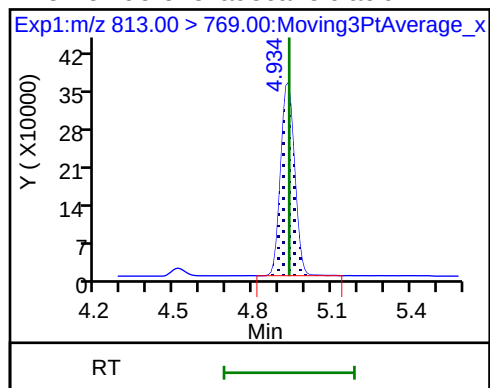




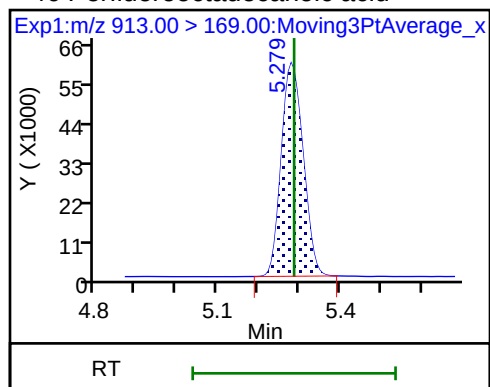
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

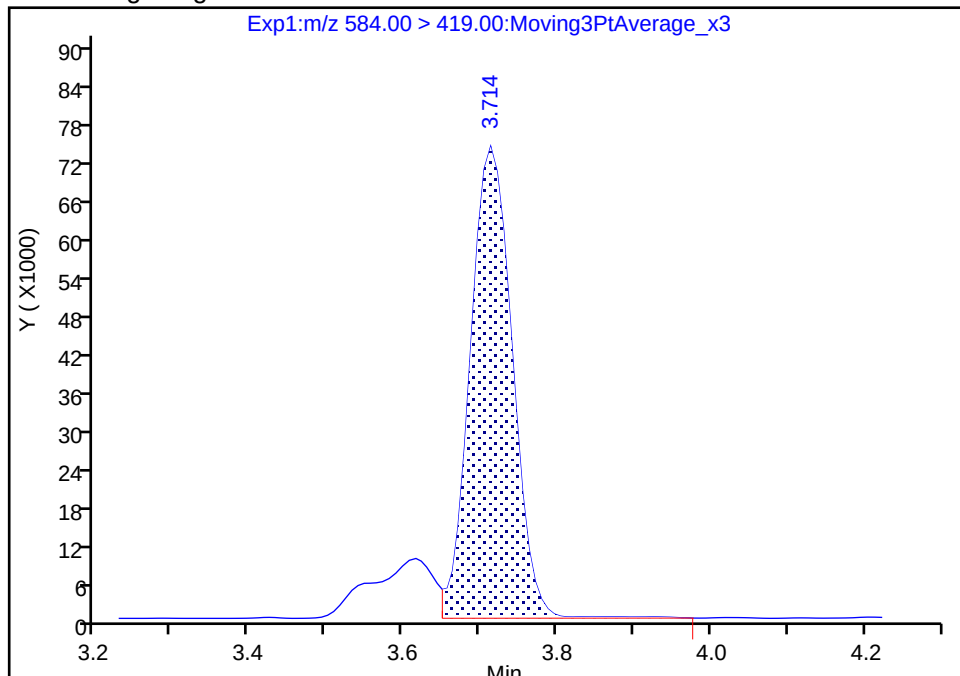
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_008.d
Injection Date: 17-Oct-2018 20:17:53 Instrument ID: A8_N
Lims ID: IC L4 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

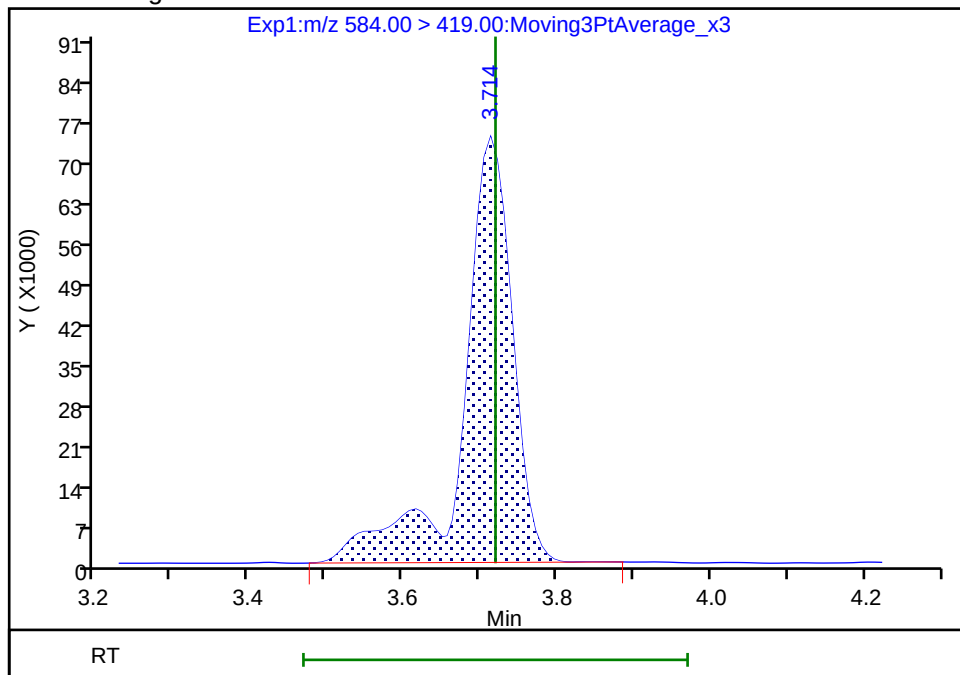
RT: 3.71
Area: 280538
Amount: 0.879391
Amount Units: ng/ml

Processing Integration Results



RT: 3.71
Area: 329325
Amount: 0.985924
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:34:26

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_009.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 17-Oct-2018 20:25:18 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 09:14:16 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: hannigana

Date: 18-Oct-2018 08:35:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.430	-0.002	0.538	4144976	2.48		99.2	9125	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.428	1.432	-0.004	1.000	3782098	2.54		102	277	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.701	-0.001	1.000	2907693	2.42		96.8	432	
D 3 13C5 PFPeA										
267.90 > 223.00	1.700	1.701	-0.001	0.640	2720613	2.50		100	7687	
D 47 13C3 PFBS										
301.90 > 83.00	1.732	1.733	-0.001	0.652	50893	2.28		97.9	403	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.739	0.001	1.005	3925103	2.23		101	1030	
298.90 > 99.00	1.740	1.739	0.001	1.005	1608824		2.44(1.25-3.74)	101	847	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.939	1.941	-0.002	0.730	332173	2.26		96.6	421	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.939	1.943	-0.004	1.119	748223	2.26		96.8	5237	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.974	0.007	0.746	2748296	2.33		93.1	8423	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.977	0.004	1.000	2777107	2.49		99.7	770	
313.00 > 119.00	1.981	1.977	0.004	1.000	244108		11.38(5.03-15.10)	99.7	551	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.002	2.001	0.001	1.156	3458651	2.35		100	5671	
349.00 > 99.00	2.002	2.001	0.001	1.156	1322242		2.62(1.36-4.07)	100	3595	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.075	2.074	0.001	0.781	210945	2.34		93.4	1115	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.075	2.074	0.001	1.000	656775	2.66		106	785	
D 9 13C4 PFHpA										
367.00 > 322.00	2.303	2.302	0.001	0.867	2648583	2.44		97.7	6952	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.303	2.305	-0.002	1.000	2861821	2.34		93.6	662	
363.00 > 169.00	2.303	2.305	-0.002	1.000	1177022		2.43(1.13-3.40)	93.6	944	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.325	2.319	0.006	1.000	3081601	2.17		95.3	2601	
399.00 > 99.00	2.325	2.319	0.006	1.000	996620		3.09(1.50-4.49)	95.3	1379	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.325	2.319	0.006	0.876	3045455	2.26		95.5	4355	
77 DONA										
377.00 > 251.00	2.347	2.346	0.001	0.775	7970634	2.40		102	10843	
377.00 > 85.00	2.347	2.346	0.001	0.775	4797991		1.66(0.85-2.54)	102	7750	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.632	2.627	0.005	1.000	748216	2.14		90.2	2233	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.632	2.628	0.004	0.991	503222	2.41		102	1272	
D 73 13C8 PFOA										
421.00 > 376.00	2.647	2.643	0.004	0.997	4091045	2.38		97.2	9571	
* 62 13C2 PFOA										
415.00 > 370.00	2.655	2.654	0.001		2671135	2.50			4816	
D 14 13C4 PFOA										
417.00 > 372.00	2.655	2.655	0.0	1.000	2538964	2.41		96.3	4873	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.655	2.656	-0.001	1.000	2896759	2.49		99.6	324	
413.00 > 169.00	2.655	2.656	-0.001	1.000	1541477		1.88(0.84-2.52)	99.6	1807	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.663	2.664	-0.001	0.879	2787749	2.58		108	3921	
449.00 > 99.00	2.663	2.664	-0.001	0.879	681995		4.09(1.94-5.82)	108	1819	
D 72 13C8 PFOS										
507.00 > 99.00	3.023	3.024	-0.001	1.138	1050356	2.30		96.3	2528	
D 18 13C4 PFOS										
503.00 > 80.00	3.030	3.025	0.005	1.141	1961272	2.29		95.9	3012	
D 19 13C5 PFNA										
468.00 > 423.00	3.030	3.027	0.003	1.141	2151165	2.42		96.9	4483	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.030	3.029	0.001	1.000	2135957	2.23		96.3	1145	
499.00 > 99.00	3.030	3.029	0.001	1.000	478736		4.46(2.31-6.93)	96.3	1061	
20 Perfluorononanoic acid										
463.00 > 419.00	3.030	3.029	0.001	1.000	2247469	2.60		104	943	
463.00 > 169.00	3.030	3.029	0.001	1.000	570684		3.94(1.90-5.69)	104	2012	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.242	3.242	0.0	1.070	3962548	2.47		106	4769	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.371	0.0	1.269	3024467	2.45		97.9	3921	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.371	3.372	-0.001	1.000	2971543	2.45		98.1	3317	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.378	3.376	0.002	1.272	495331	2.31		96.2	1520	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.378	3.378	0.0	1.000	597967	2.40		100	2127	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.378	3.378	0.0	1.115	1637026	2.49		104	4166	
549.00 > 99.00	3.378	3.378	0.0	1.115	556062		2.94(1.33-3.97)	104	2407	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.386	0.0	1.275	1900744	2.49		99.6	4156	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.386	3.388	-0.002	1.000	1950567	2.52		101	1742	
513.00 > 169.00	3.386	3.388	-0.002	1.000	366207		5.33(2.36-7.09)	101	338	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.546	3.544	0.002	1.336	933151	2.42		96.6	2132	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.546	3.548	-0.002	1.000	849180	2.36		94.6	602	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.705	3.704	0.001	1.223	1266618	2.43		101	3584	
599.00 > 99.00	3.705	3.704	0.001	1.223	432217		2.93(1.39-4.16)	101	2034	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.713	3.711	0.002	1.398	939990	2.37		94.9	891	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.722	3.719	0.003	1.000	1249244	2.47		98.9	1088	
563.00 > 169.00	3.722	3.719	0.003	1.000	309730		4.03(2.12-6.36)	98.9	1090	
D 30 13C2 PFUnA										
565.00 > 520.00	3.722	3.719	0.003	1.402	1415081	2.37		94.9	2967	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.722	3.720	0.002	1.002	798635	2.53		101	2078	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.876	3.879	-0.003	1.279	5786480	2.44		103	6682	
35 MeFOSA										
512.00 > 169.00	3.886	3.888	-0.002		882138	NC			509	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.013	0.006	1.000	1682095	2.55		102	985	
613.00 > 169.00	4.011	4.013	-0.002	0.998	434003		3.88(2.13-6.40)	102	2362	
D 36 13C2 PFDaA										
615.00 > 570.00	4.019	4.015	0.004	1.514	1493866	2.33		93.0	3053	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.019	4.015	0.004	1.190	456329	2.44		101	2794	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.262	4.255	0.007	1.406	606829	2.45		101	2136	
699.00 > 99.00	4.252	4.255	-0.003	1.403	900764		0.67(0.00-0.00)	101	2509	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.279	0.002	1.065	1707746	2.61		104	1377	
663.00 > 169.00	4.281	4.279	0.002	1.065	577066		2.96(1.25-3.76)	104	1922	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.524	4.518	0.006	1.000	530205	2.45		98.2	2098	
713.00 > 219.00	4.514	4.518	-0.004	0.998	371122		1.43(0.71-2.13)	98.2	1776	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.524	4.519	0.005	1.704	2012130	2.42		96.8	4351	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.935	4.934	0.001	1.859	3512403	2.34		93.4	5430	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.935	4.938	-0.003	1.000	3152249	2.53		101	494	
813.00 > 169.00	4.935	4.938	-0.003	1.000	592833		5.32(2.86-8.58)	101	2461	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.287	5.286	0.001	1.071	3849535	2.44		97.6	489	
913.00 > 169.00	5.287	5.286	0.001	1.071	506217		7.60(3.83-11.48)	97.6	1873	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_009.d

Injection Date: 17-Oct-2018 20:25:18

Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

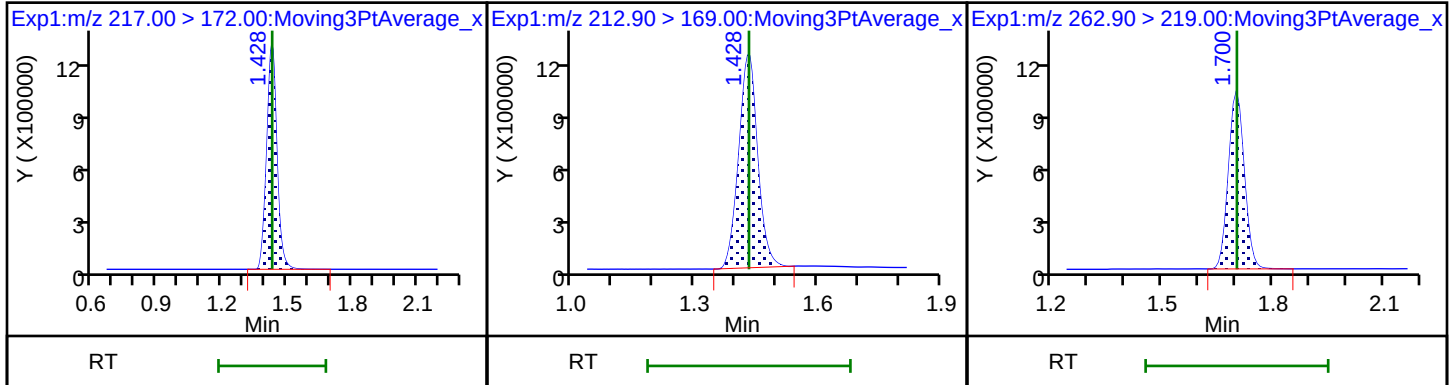
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

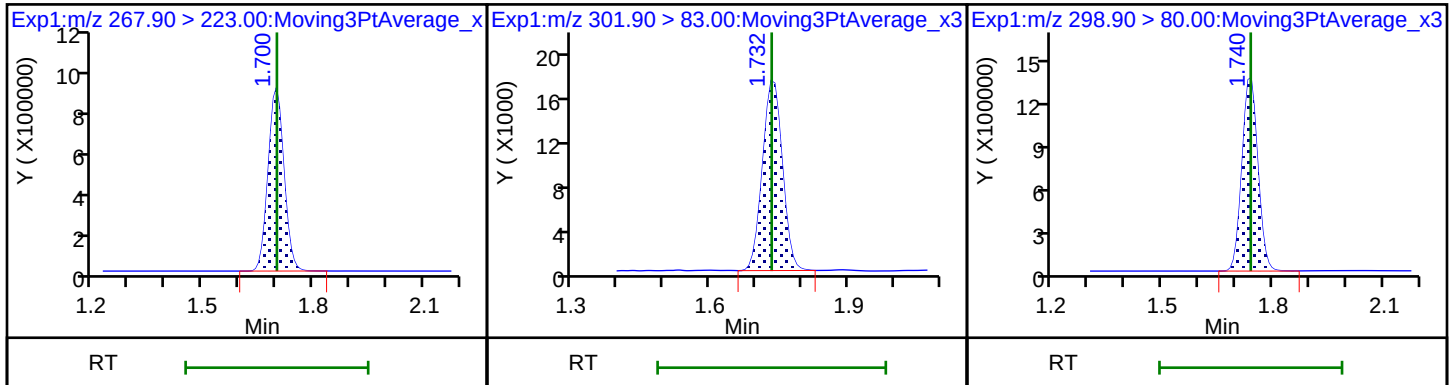
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

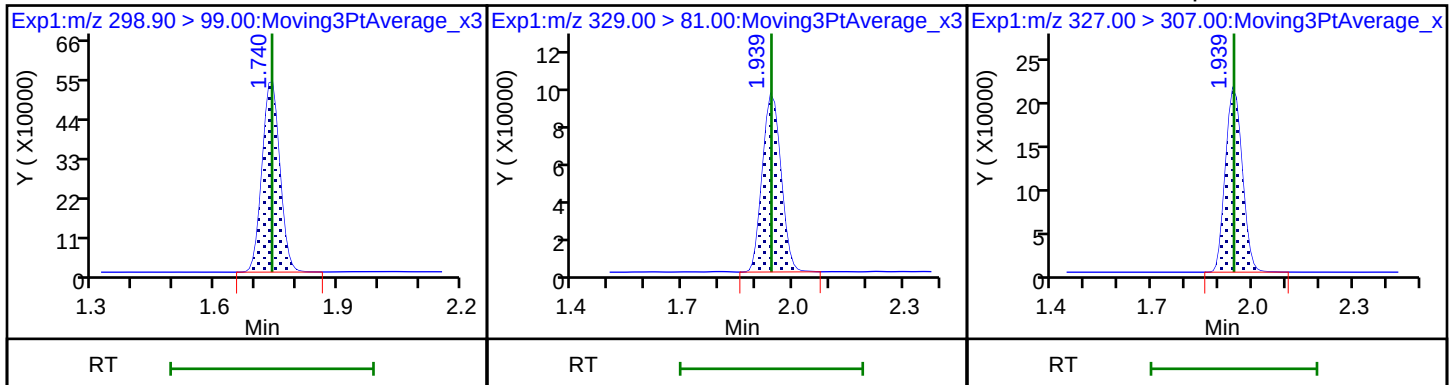
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

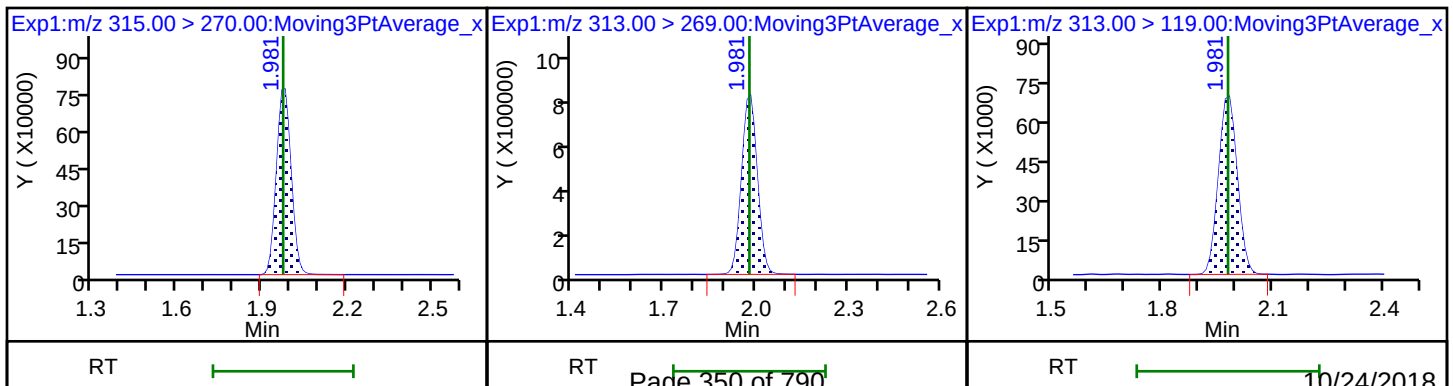
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

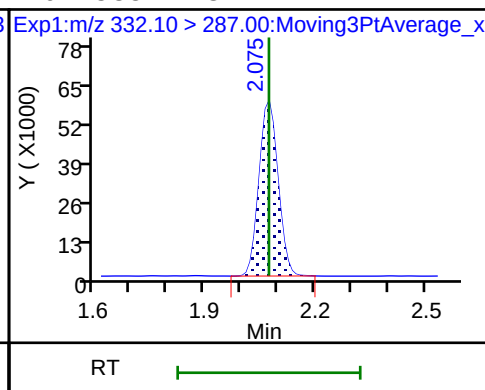
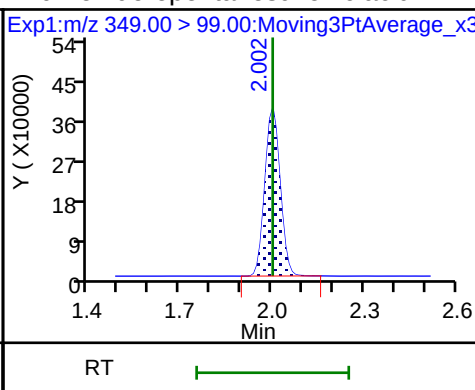
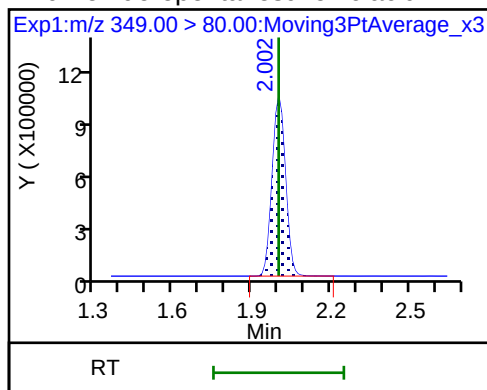
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

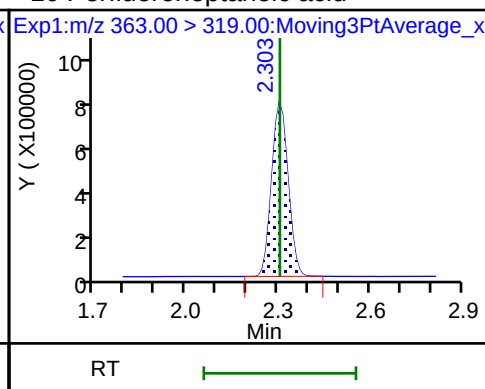
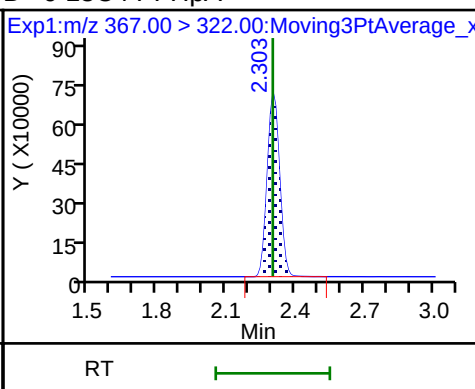
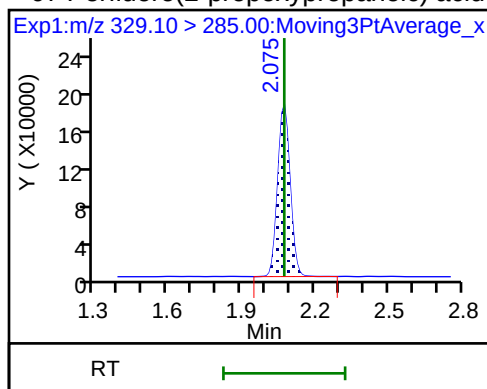
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

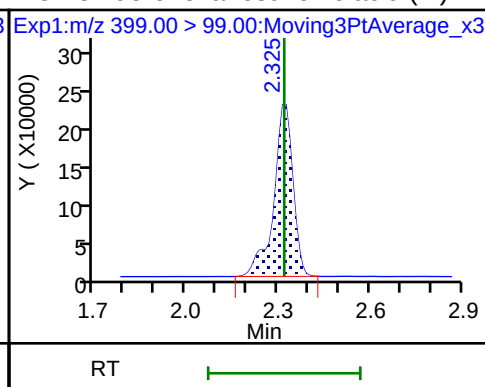
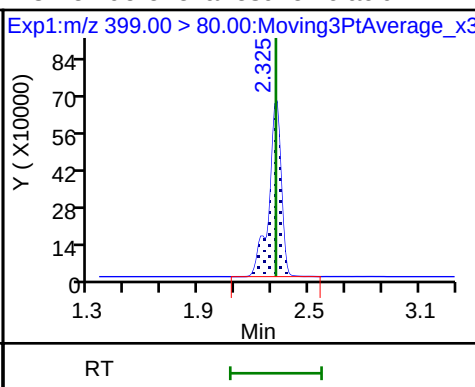
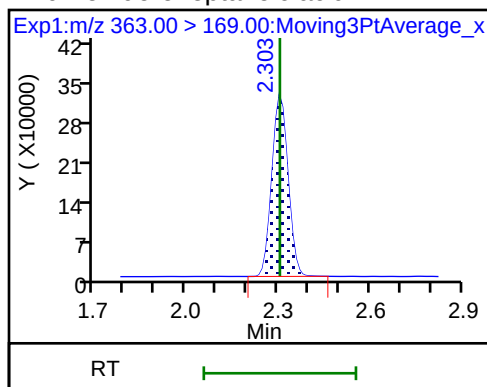
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

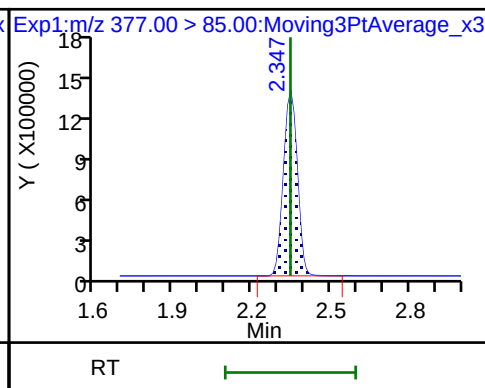
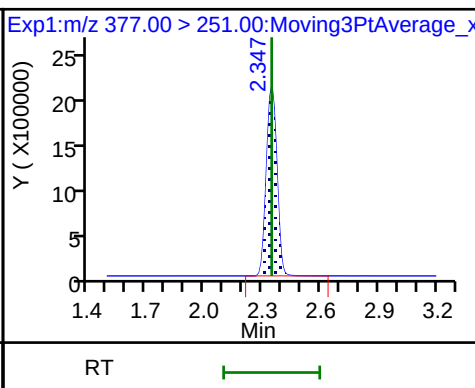
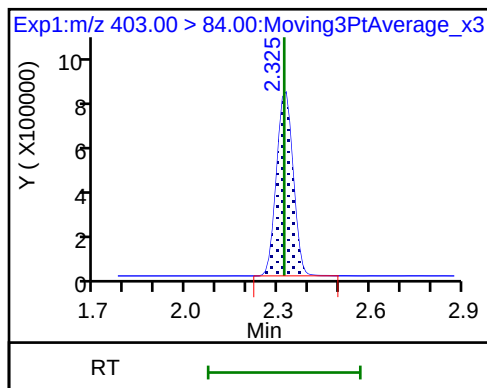
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

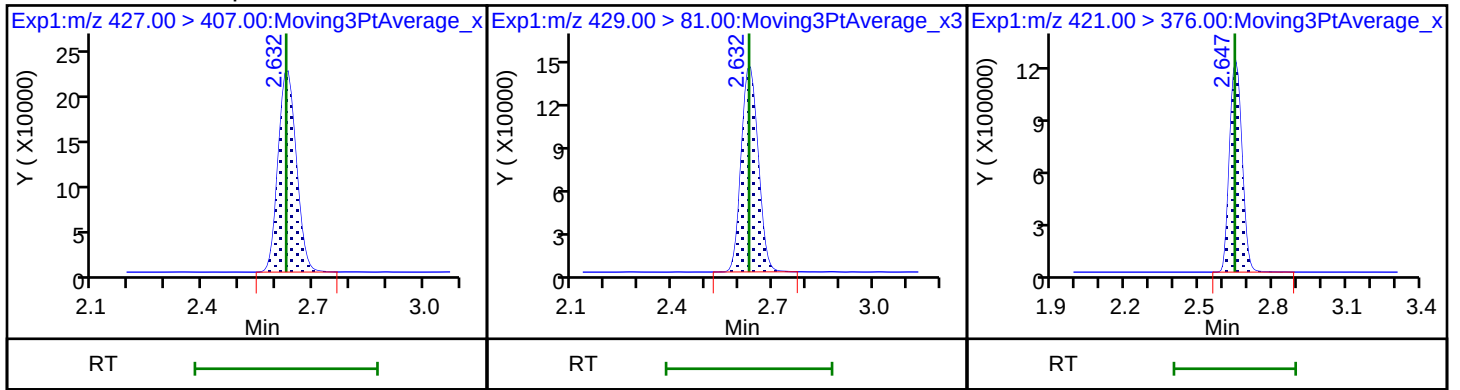
77 DONA

77 DONA



13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

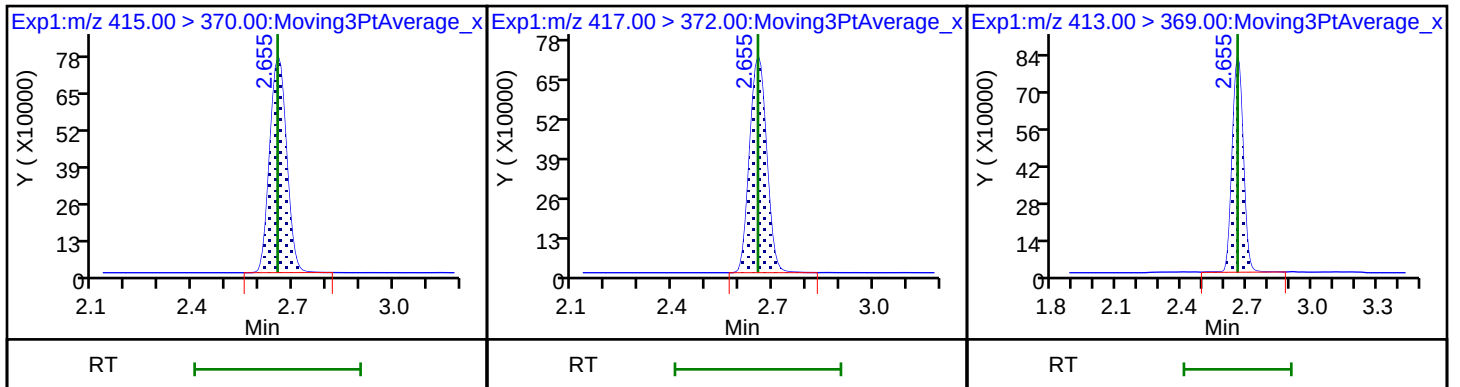
D 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

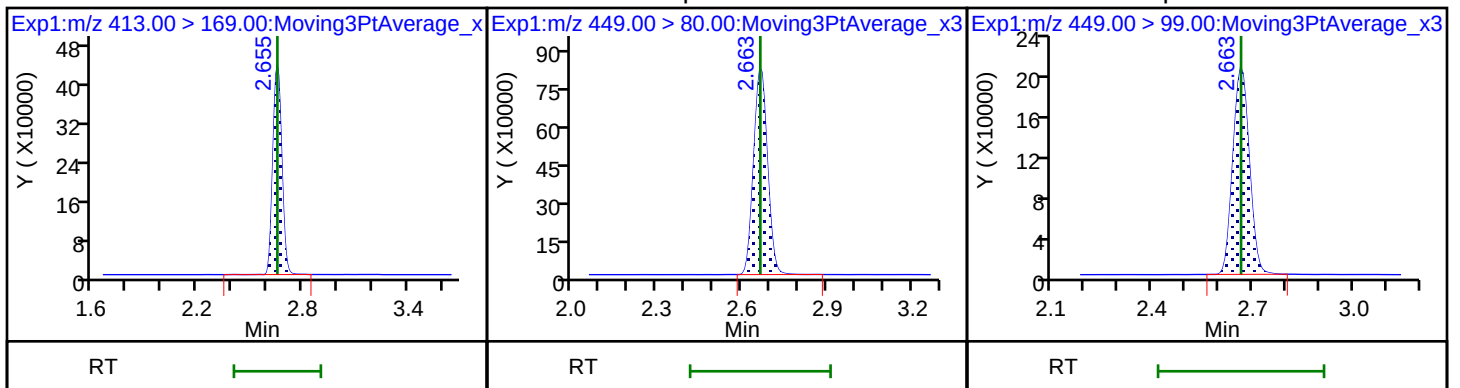
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

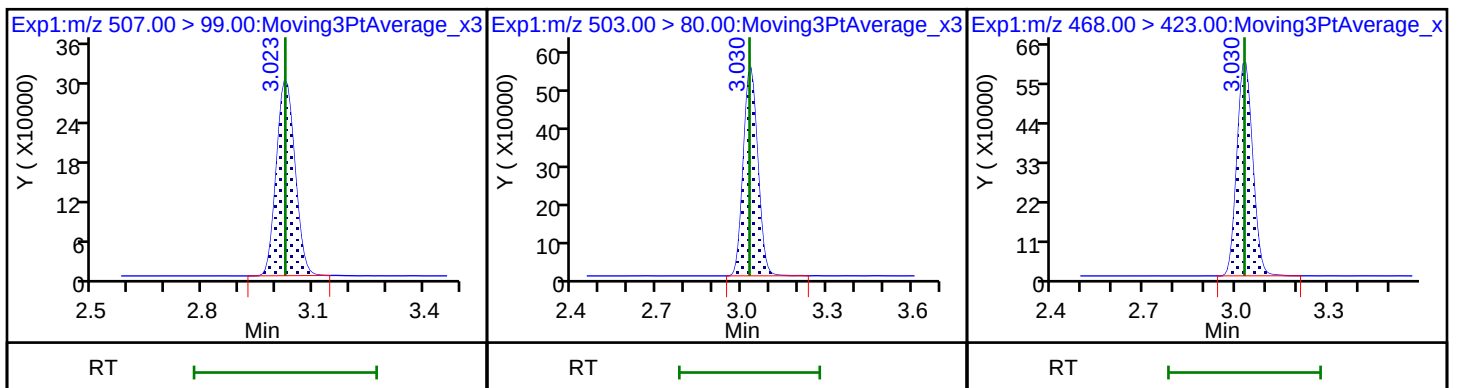
16 Perfluoroheptanesulfonic acid

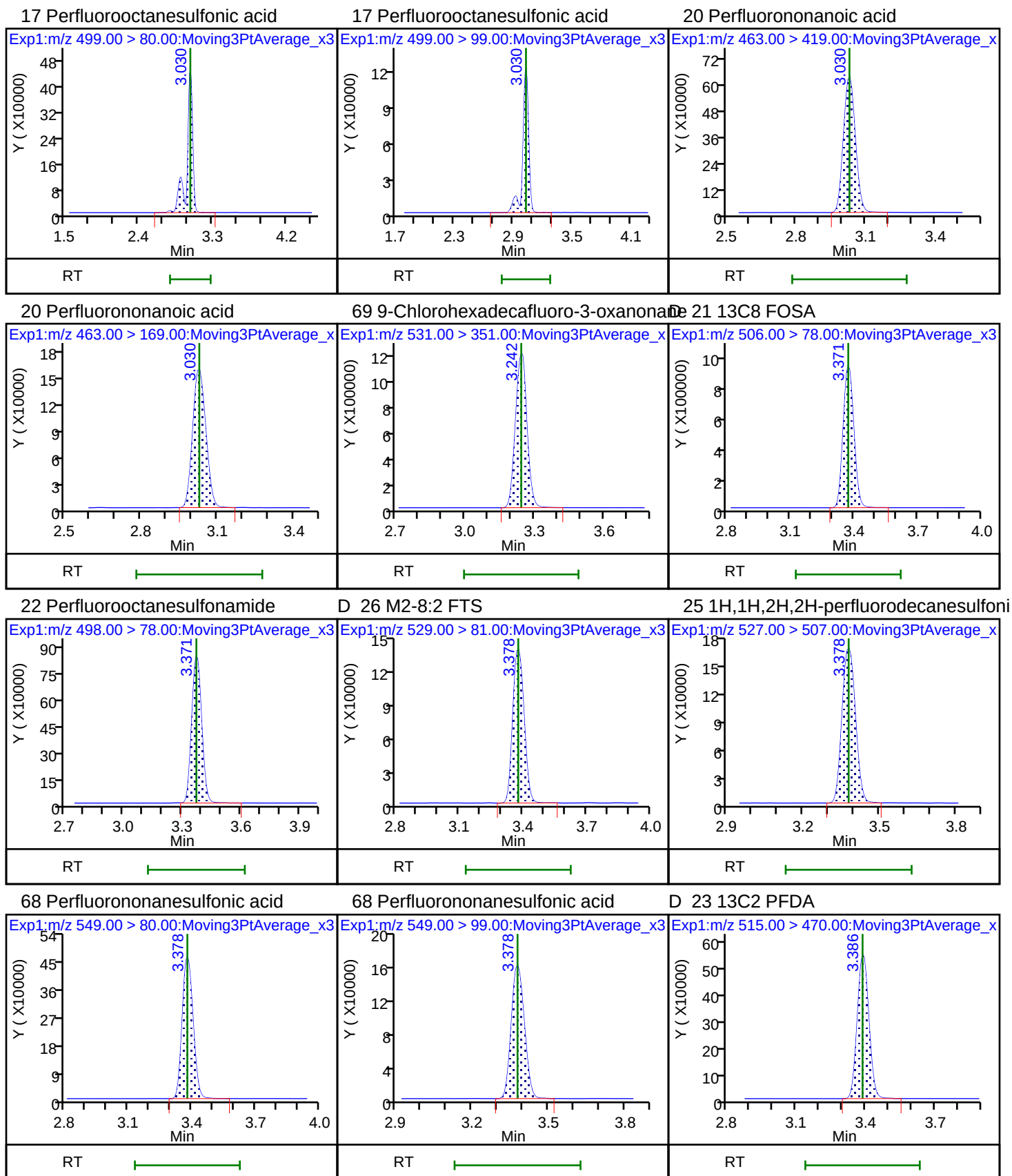


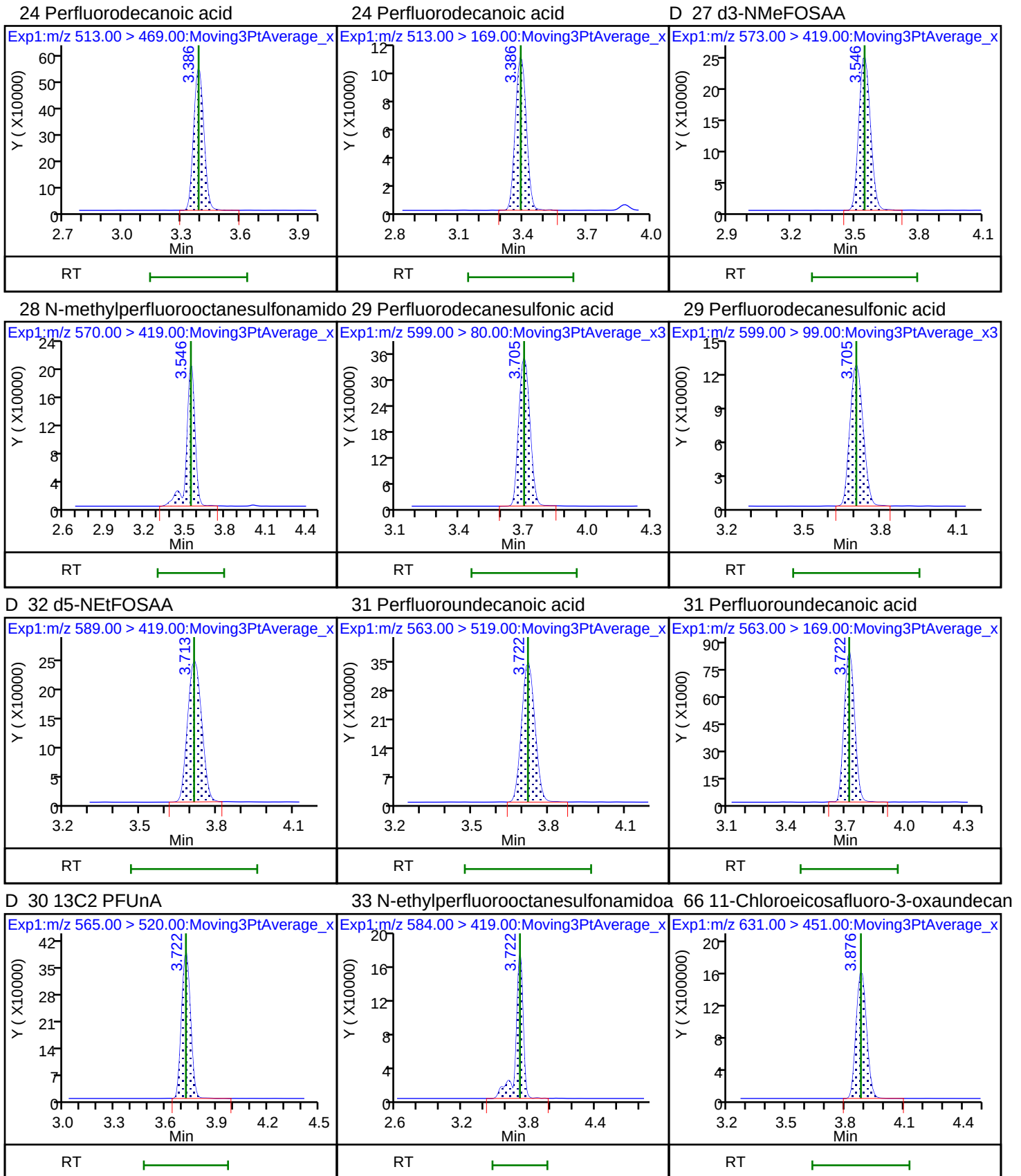
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA



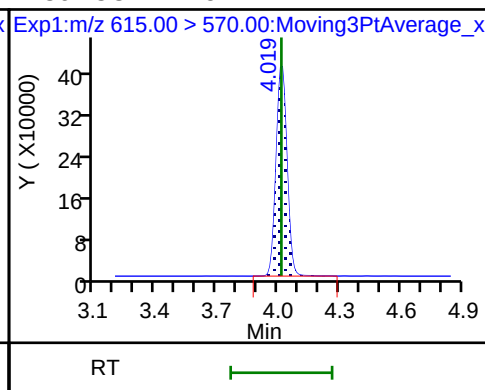
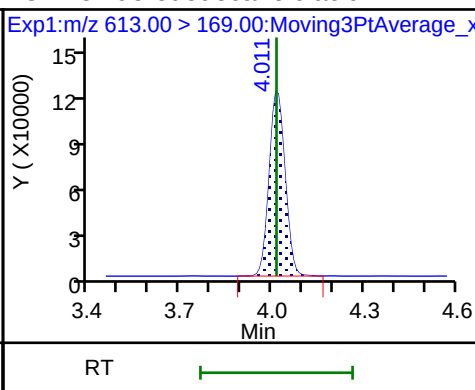
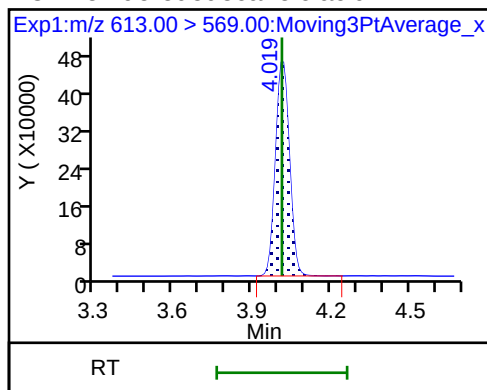




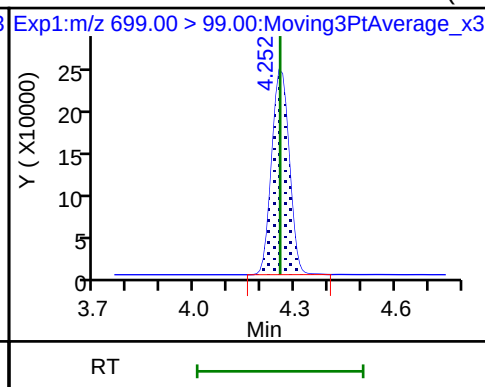
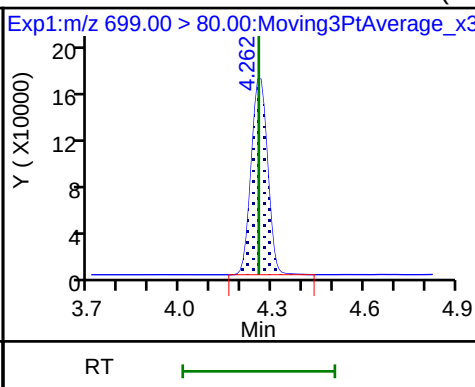
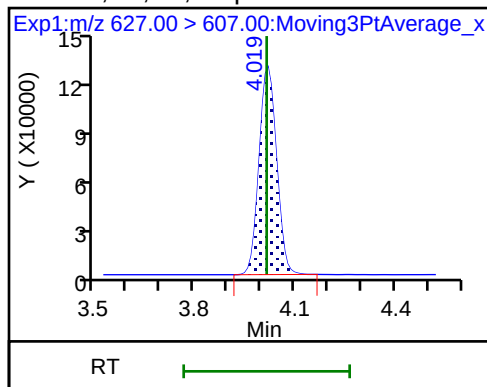
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



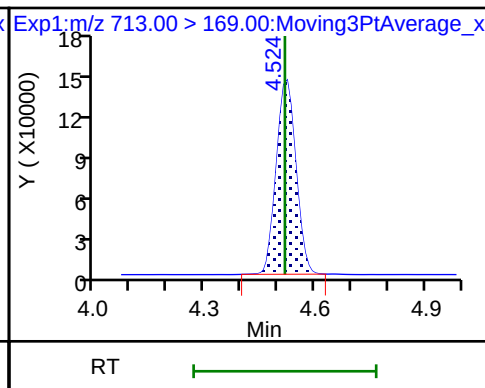
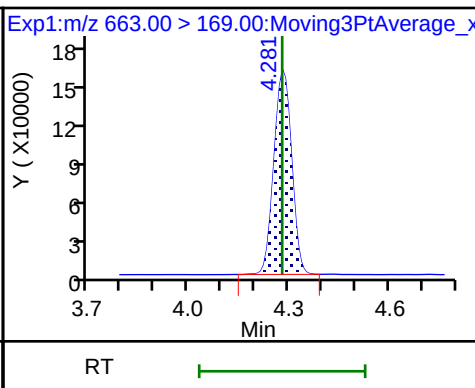
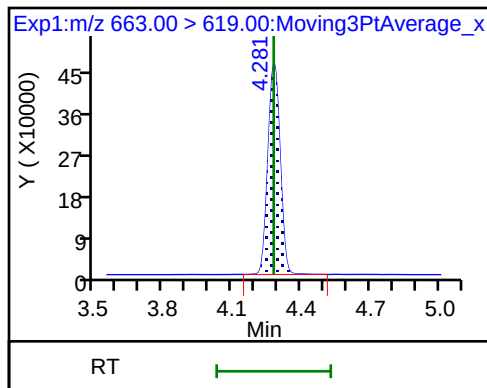
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

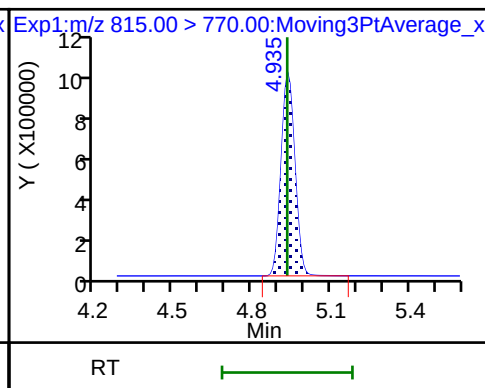
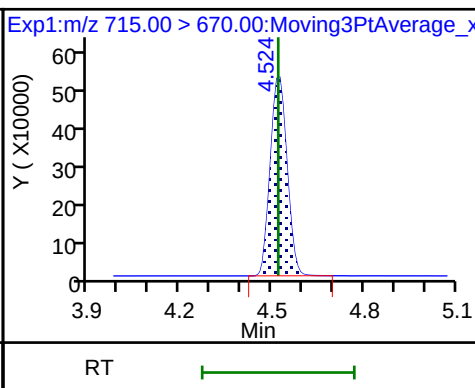
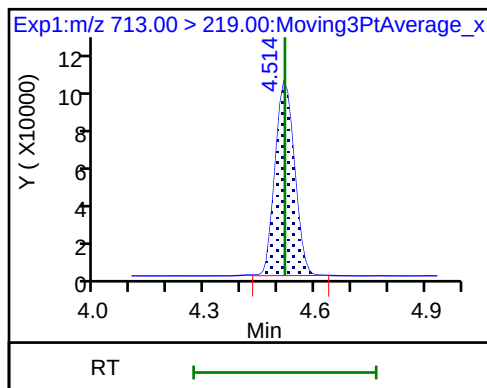
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

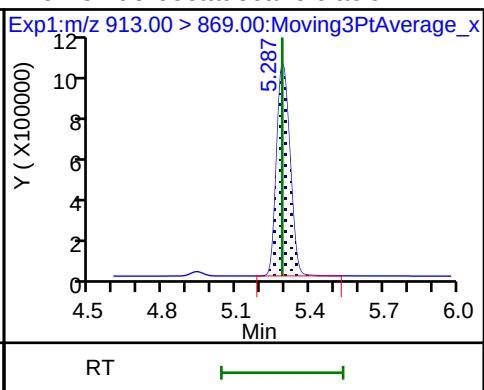
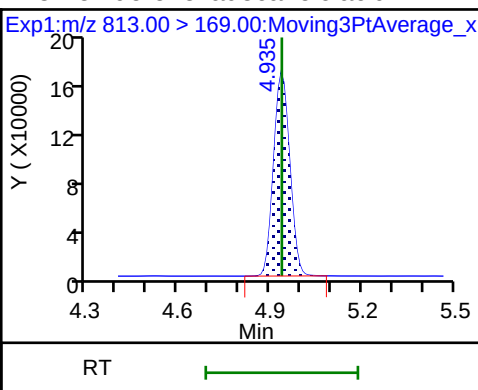
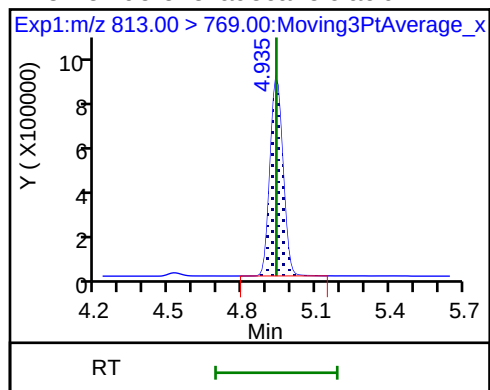
D 44 13C2 PFHxDA



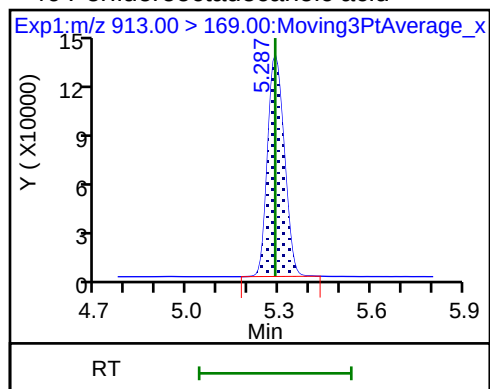
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_009.d

Injection Date: 17-Oct-2018 20:25:18

Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

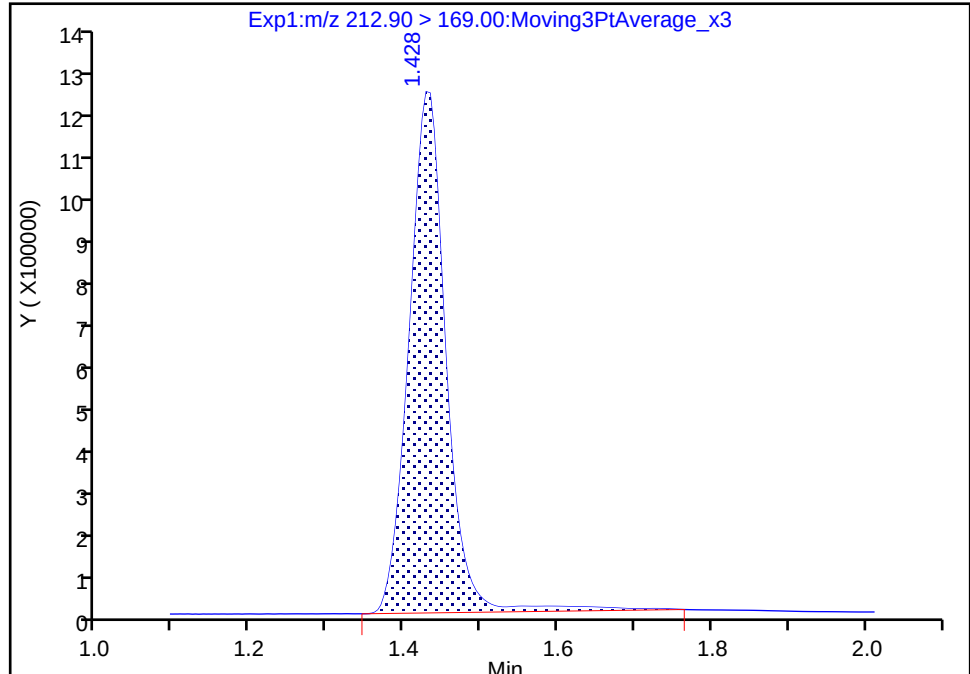
Detector: EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

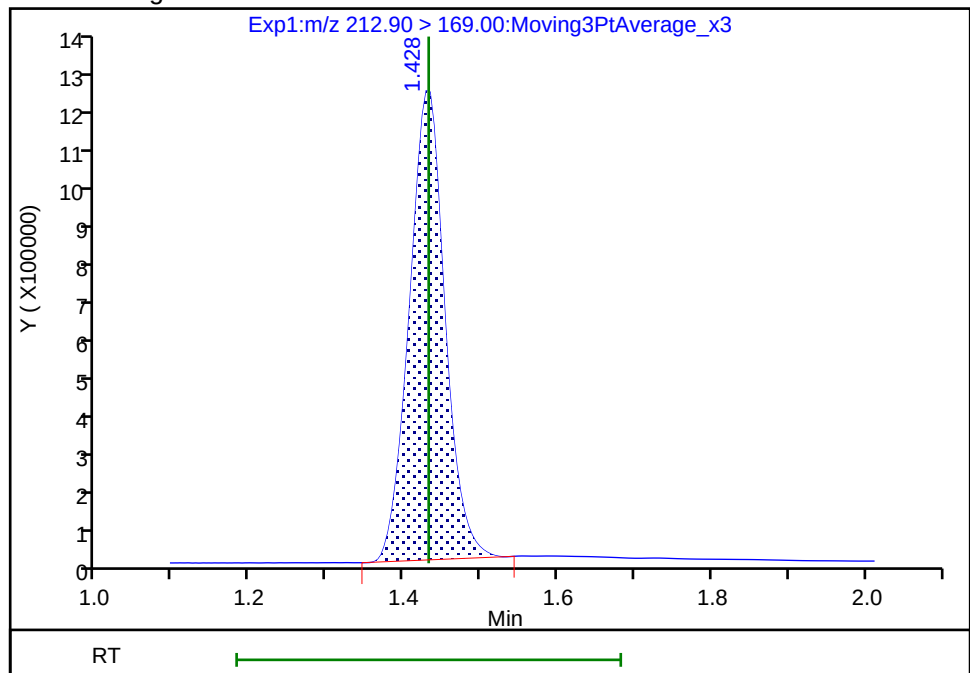
RT: 1.43
Area: 3943151
Amount: 2.594860
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 3782098
Amount: 2.538662
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:35:19

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_009.d

Injection Date: 17-Oct-2018 20:25:18

Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

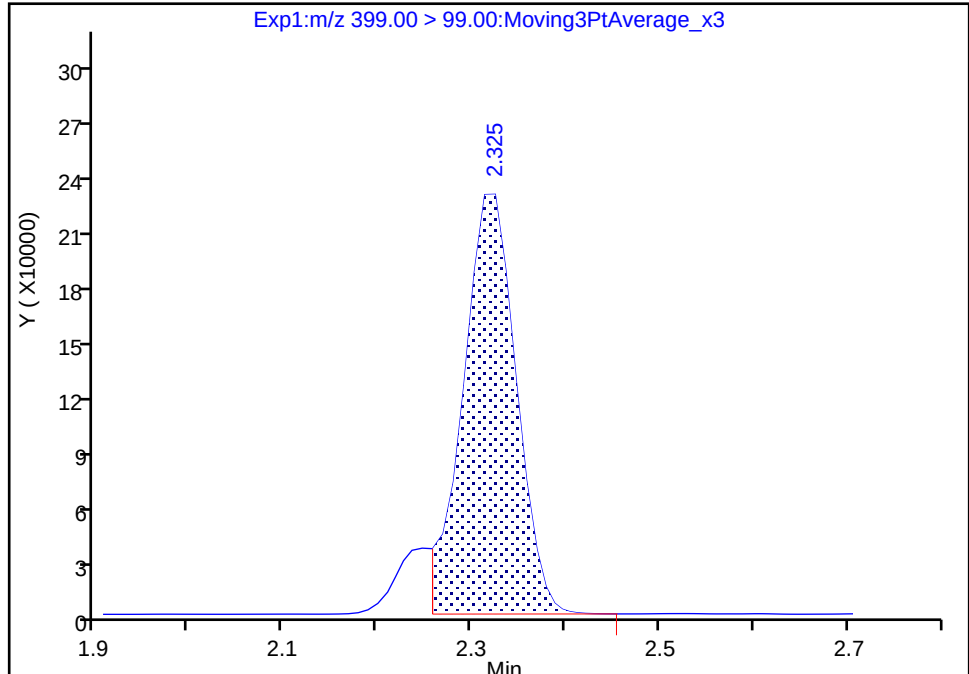
Detector: EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

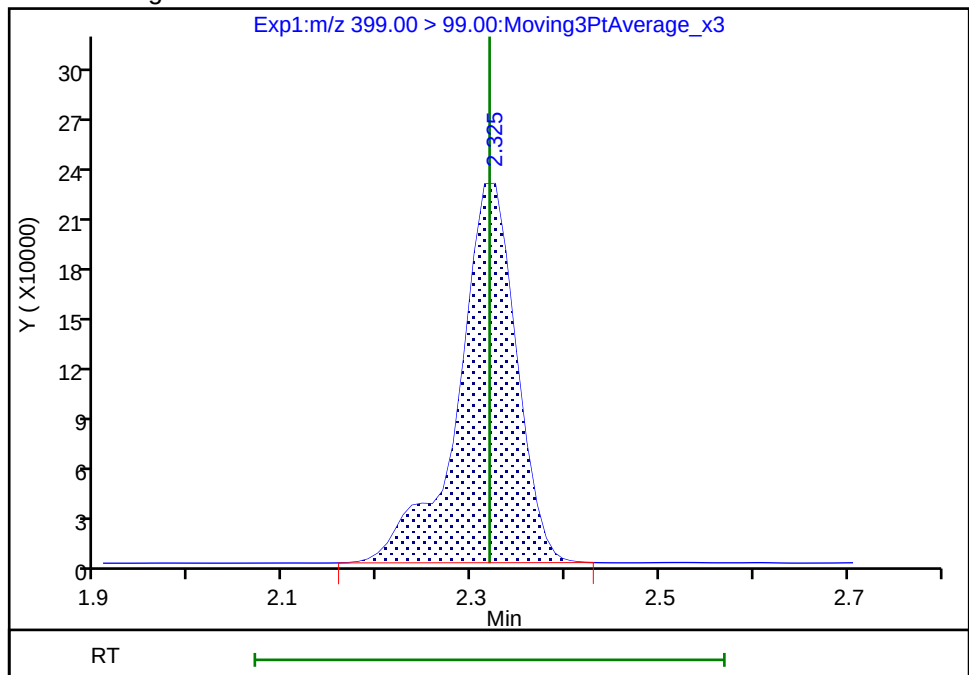
RT: 2.33
Area: 903604
Amount: 2.168397
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 996620
Amount: 2.168397
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:35:32

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_010.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 17-Oct-2018 20:32:45 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 6
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 09:14:22 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: hannigana

Date: 18-Oct-2018 08:37:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.430	0.001	0.540	4460851	2.53		101	9654	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.431	1.432	-0.001	1.000	8359813	5.21		104	624	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.701	0.001	1.000	6425299	5.10		102	932	
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.701	0.001	0.642	2852376	2.49		99.5	9333	
D 47 13C3 PFBS										
301.90 > 83.00	1.734	1.733	0.001	0.654	55340	2.35		101	505	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.734	1.739	-0.005	1.000	8248713	4.30		97.4	1990	
298.90 > 99.00	1.734	1.739	-0.005	1.000	3452937		2.39(1.25-3.74)	97.4	1754	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.944	1.941	0.003	0.733	370769	2.39		102	467	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.944	1.943	0.001	1.121	1639266	4.55		97.5	15663	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.974	0.001	0.745	3107396	2.49		99.8	9590	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.975	1.977	-0.002	1.000	6534076	5.19		104	1838	
313.00 > 119.00	1.975	1.977	-0.002	1.000	573687		11.39(5.03-15.10)	104	1700	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.996	2.001	-0.005	1.151	7553751	4.72		101	8676	
349.00 > 99.00	1.996	2.001	-0.005	1.151	2854018		2.65(1.36-4.07)	101	6928	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.069	2.074	-0.005	0.780	235953	2.48		99.1	1121	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.069	2.074	-0.005	1.000	1480994	5.36		107	1785	
D 9 13C4 PFHpA										
367.00 > 322.00	2.299	2.302	-0.003	0.867	2813960	2.46		98.4	7104	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.305	-0.006	1.000	6550369	5.04		101	1392	
363.00 > 169.00	2.299	2.305	-0.006	1.000	2508251		2.61(1.13-3.40)	101	1899	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.322	2.319	0.003	1.000	6676661	4.40		96.8	3767	
399.00 > 99.00	2.322	2.319	0.003	1.000	2272025		2.94(1.50-4.49)	96.8	2768	
D 11 18O2 PFHxS										
403.00 > 84.00	2.322	2.319	0.003	0.876	3249926	2.28		96.6	4384	
77 DONA										
377.00 > 251.00	2.344	2.346	-0.002	0.774	17303901	4.72		100	10929	
377.00 > 85.00	2.344	2.346	-0.002	0.774	10331663		1.67(0.85-2.54)	100	12094	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.628	2.627	0.001	1.000	1569936	4.48		94.5	5464	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.628	2.628	0.0	0.991	504242	2.29		96.4	1451	
D 73 13C8 PFOA										
421.00 > 376.00	2.643	2.643	0.0	0.997	4294834	2.37		96.8	7230	
* 62 13C2 PFOA										
415.00 > 370.00	2.651	2.654	-0.003		2817733	2.50			5857	
D 14 13C4 PFOA										
417.00 > 372.00	2.658	2.655	0.003	1.003	2797583	2.51		101	4677	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.658	2.656	0.002	1.000	6153646	4.81		96.0	630	
413.00 > 169.00	2.658	2.656	0.002	1.000	3385400		1.82(0.84-2.52)	96.0	3290	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.666	2.664	0.002	0.880	5746515	4.82		101	5532	
449.00 > 99.00	2.666	2.664	0.002	0.880	1488700		3.86(1.94-5.82)	101	2607	
D 72 13C8 PFOS										
507.00 > 99.00	3.028	3.024	0.004	1.142	1135390	2.36		98.7	3350	
D 18 13C4 PFOS										
503.00 > 80.00	3.028	3.025	0.003	1.142	2164058	2.40		100	2966	
D 19 13C5 PFNA										
468.00 > 423.00	3.028	3.027	0.001	1.142	2315388	2.47		98.9	4789	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.028	3.029	-0.001	1.000	4799925	4.55		98.1	1763	
499.00 > 99.00	3.028	3.029	-0.001	1.000	1018614		4.71(2.31-6.93)	98.1	1857	
20 Perfluorononanoic acid										
463.00 > 419.00	3.028	3.029	-0.001	1.000	4963300	5.34		107	1840	
463.00 > 169.00	3.028	3.029	-0.001	1.000	1242537		3.99(1.90-5.69)	107	4323	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.246	3.242	0.004	1.072	8696541	4.91		105	6361	
D 21 13C8 FOSA										
506.00 > 78.00	3.374	3.371	0.003	1.273	3156364	2.42		96.9	4862	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.374	3.372	0.002	1.000	6579818	5.20		104	3539	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.374	3.376	-0.002	1.273	539041	2.38		99.3	1380	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.382	3.378	0.004	1.002	1372213	5.06		106	3698	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.382	3.378	0.004	1.117	3488988	4.81		100	3993	
549.00 > 99.00	3.382	3.378	0.004	1.117	1217387		2.87(1.33-3.97)	100	3001	
D 23 13C2 PFDA										
515.00 > 470.00	3.389	3.386	0.003	1.278	2052842	2.55		102	3061	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.389	3.388	0.001	1.000	4032551	4.83		96.5	2875	
513.00 > 169.00	3.389	3.388	0.001	1.000	789051		5.11(2.36-7.09)	96.5	406	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.542	3.544	-0.002	1.336	1057611	2.60		104	1443	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.550	3.548	0.002	1.002	1997664	4.91		98.2	962	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.706	3.704	0.002	1.224	2790429	4.86		101	5366	
599.00 > 99.00	3.706	3.704	0.002	1.224	937895		2.98(1.39-4.16)	101	2463	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.715	3.711	0.004	1.401	1021255	2.44		97.7	1337	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.715	3.719	-0.004	1.000	2883662	5.08		102	2130	
563.00 > 169.00	3.715	3.719	-0.004	1.000	722005		3.99(2.12-6.36)	102	1900	
D 30 13C2 PFUnA										
565.00 > 520.00	3.715	3.719	-0.004	1.401	1588696	2.53		101	3321	
33 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	3.723	3.720	0.003	1.002	1801762	5.26		105	2148	M
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.879	3.879	0.0	1.281	12629382	4.82		102	15131	
35 MeFOSA										
512.00 > 169.00	3.889	3.888	0.001		2043917	NC			631	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.012	4.013	-0.001	1.000	3770136	4.99		99.7	2260	
613.00 > 169.00	4.012	4.013	-0.001	1.000	964929		3.91(2.13-6.40)	99.7	2856	
D 36 13C2 PFDaA										
615.00 > 570.00	4.012	4.015	-0.003	1.513	1710233	2.52		101	2993	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.020	4.015	0.005	1.191	987104	4.85		101	3174	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.253	4.255	-0.002	1.405	1313465	4.80		99.2	3545	
699.00 > 99.00	4.253	4.255	-0.002	1.405	2061353		0.64(0.00-0.00)	99.2	5246	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.282	4.279	0.003	1.067	3667128	4.90		97.9	2434	
663.00 > 169.00	4.282	4.279	0.003	1.067	1264828		2.90(1.25-3.76)	97.9	3511	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.515	4.518	-0.003	0.998	1164140	4.88		97.5	3378	
713.00 > 219.00	4.515	4.518	-0.003	0.998	826617		1.41(0.71-2.13)	97.5	4147	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.525	4.519	0.006	1.707	2223388	2.53		101	5435	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.936	4.934	0.002	1.862	4068899	2.57		103	6118	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.936	4.938	-0.002	1.000	7177476	4.99		99.8	992	
813.00 > 169.00	4.936	4.938	-0.002	1.000	1339193		5.36(2.86-8.58)	99.8	3386	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.284	5.286	-0.002	1.071	8799100	4.82		96.3	932	
913.00 > 169.00	5.284	5.286	-0.002	1.071	1159282		7.59(3.83-11.48)	96.3	2431	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL6_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_010.d

Injection Date: 17-Oct-2018 20:32:45

Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

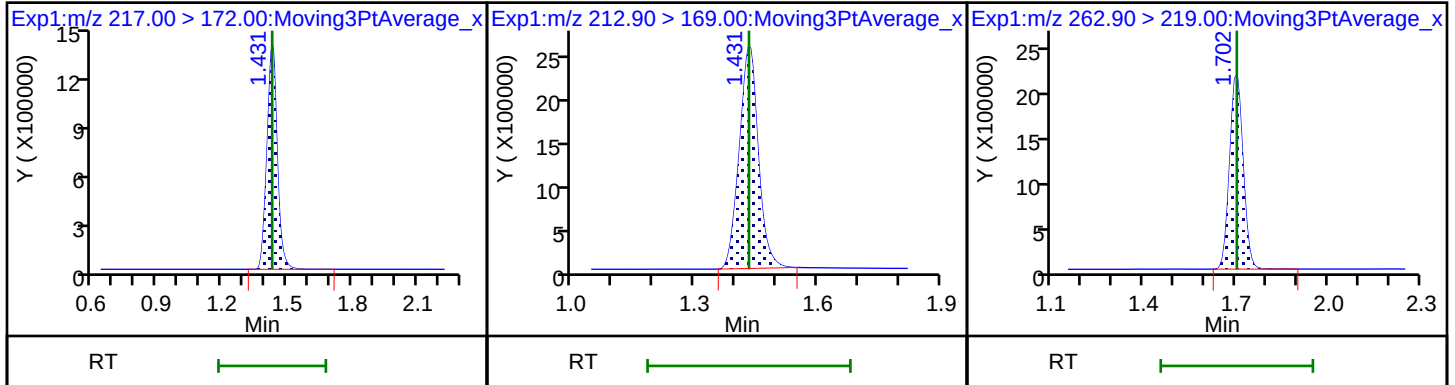
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

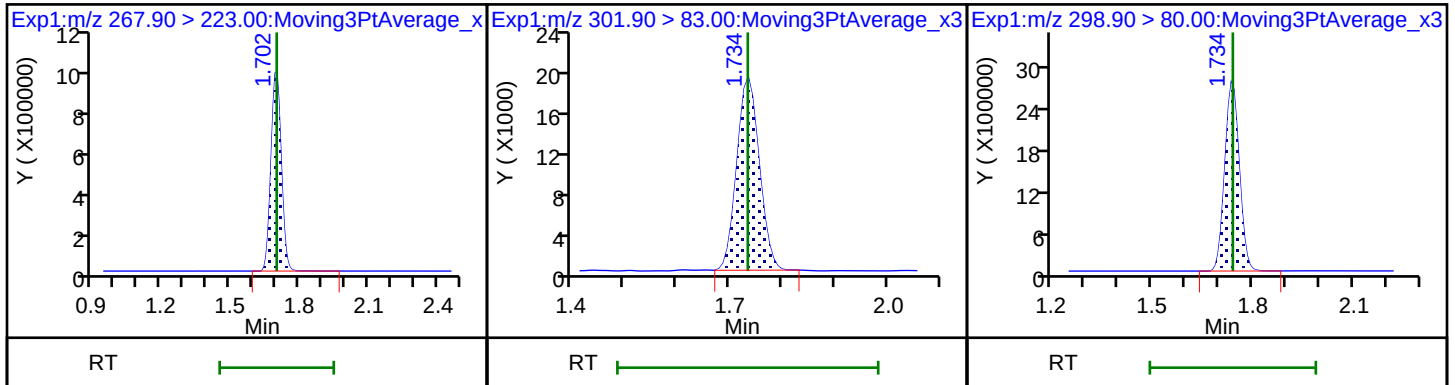
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

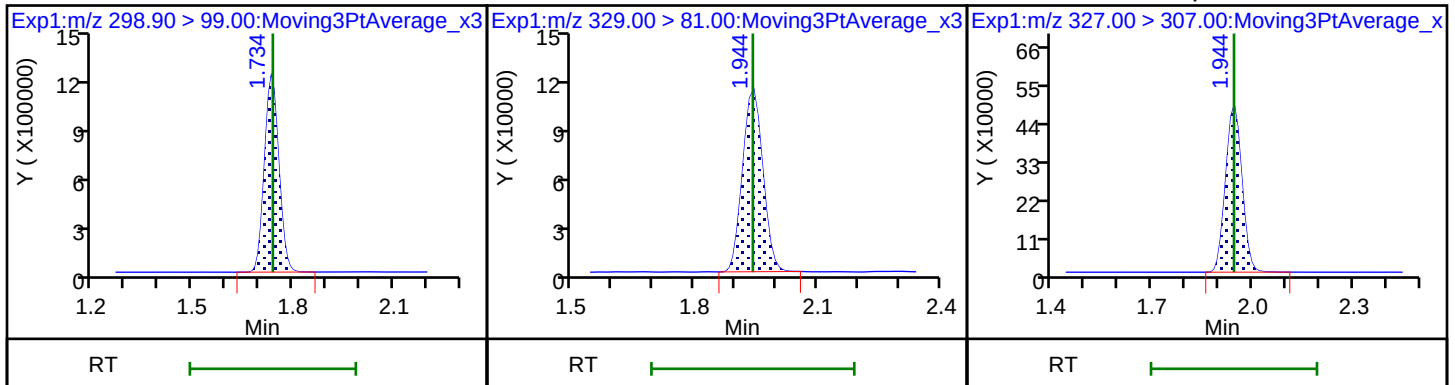
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

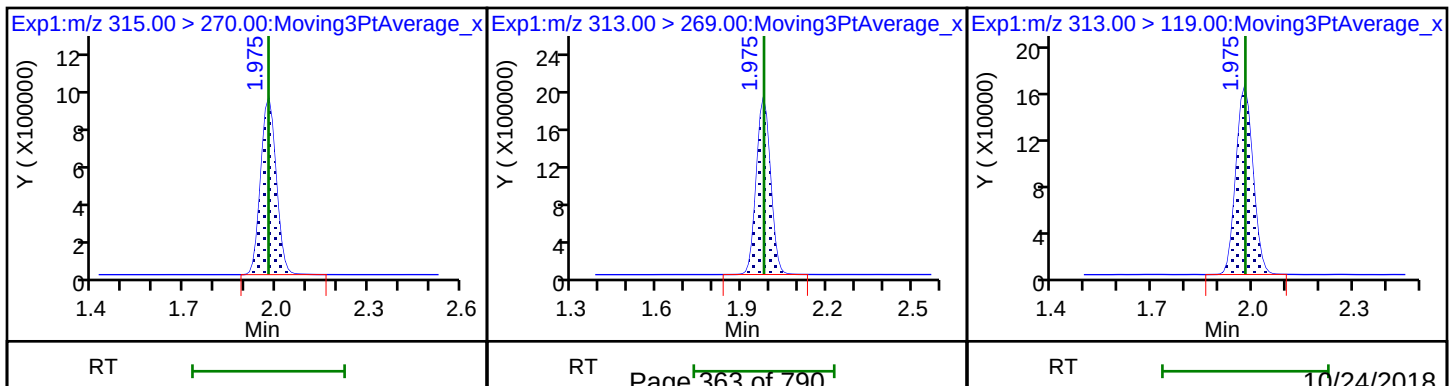
61 1H,1H,2H,2H-perfluorohexanesulfoni

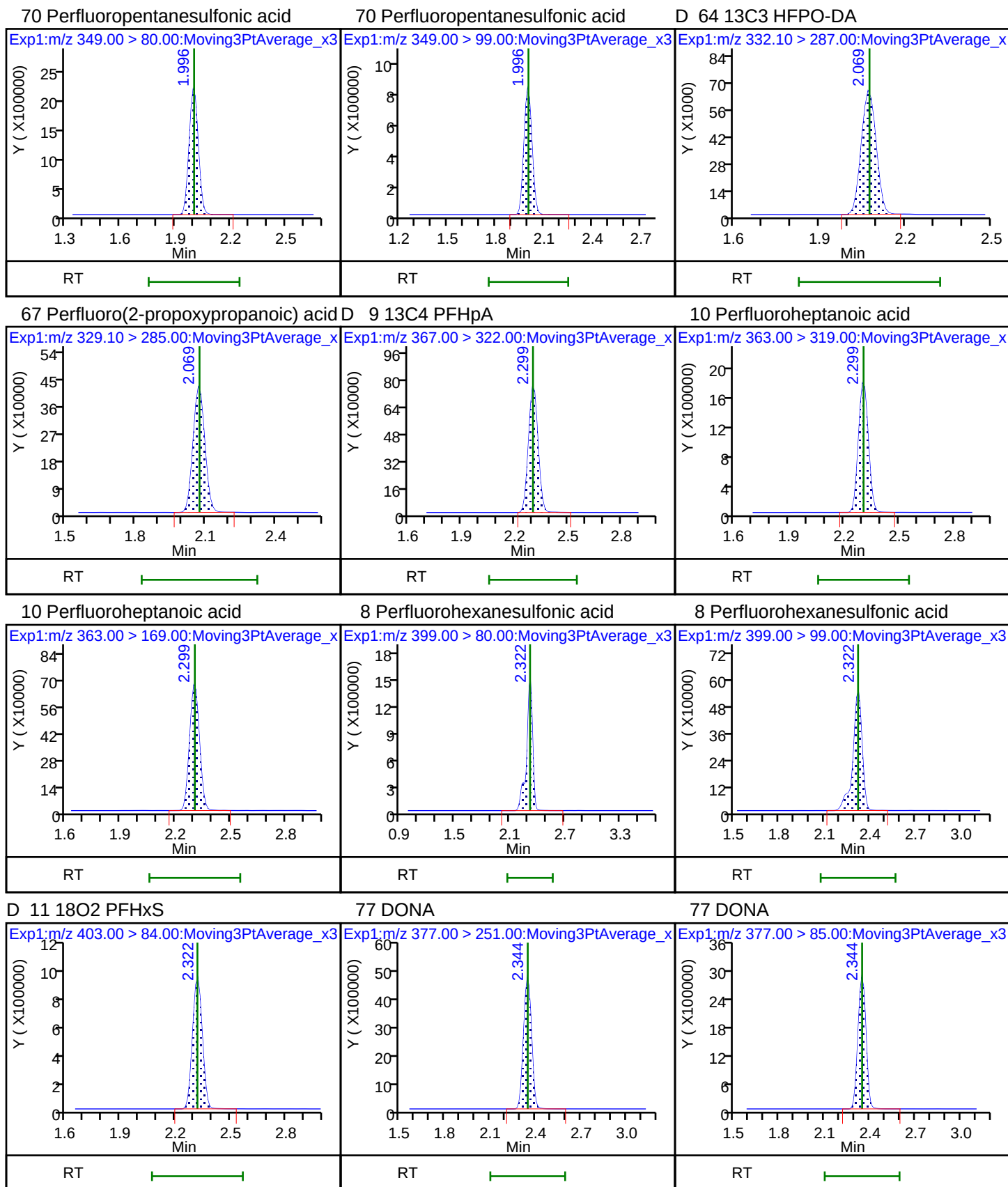


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

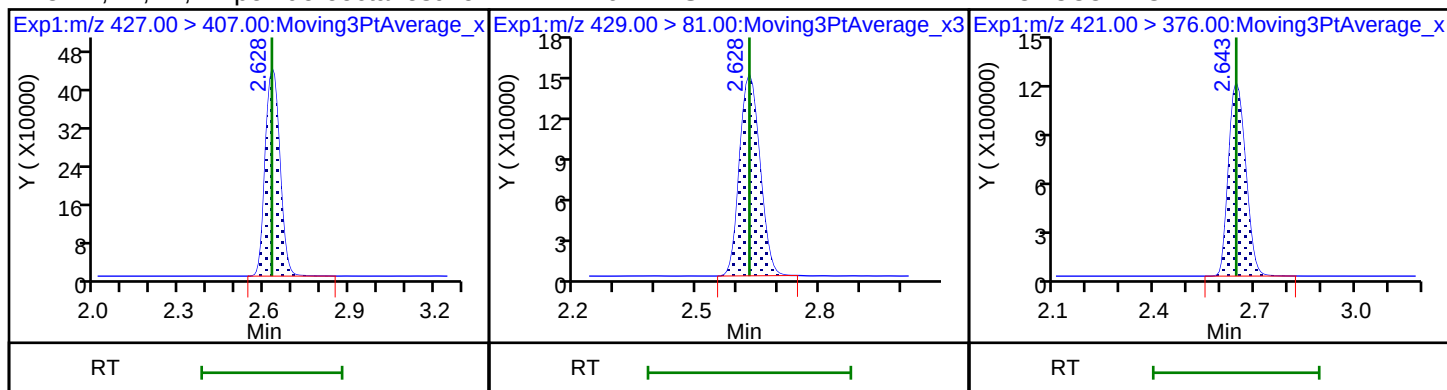
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

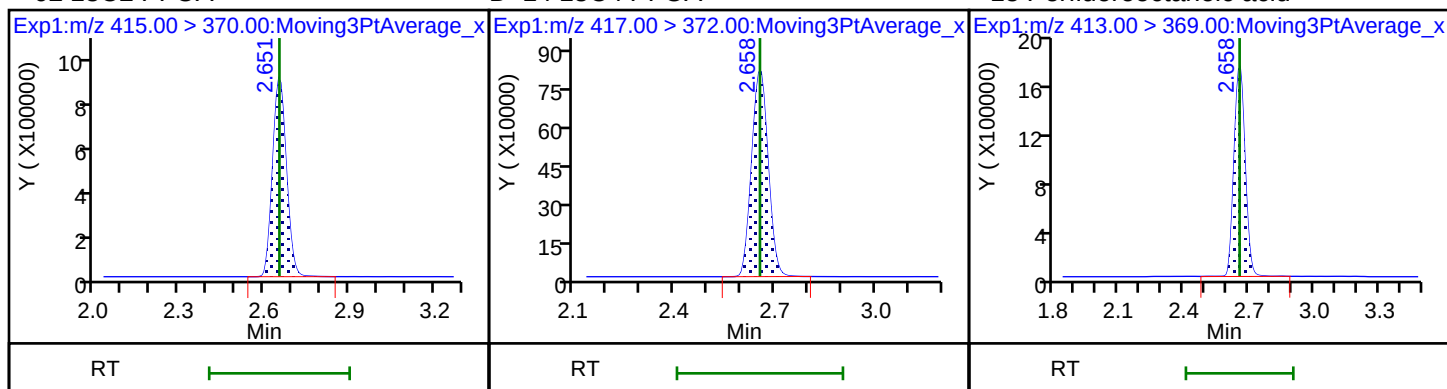
D 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

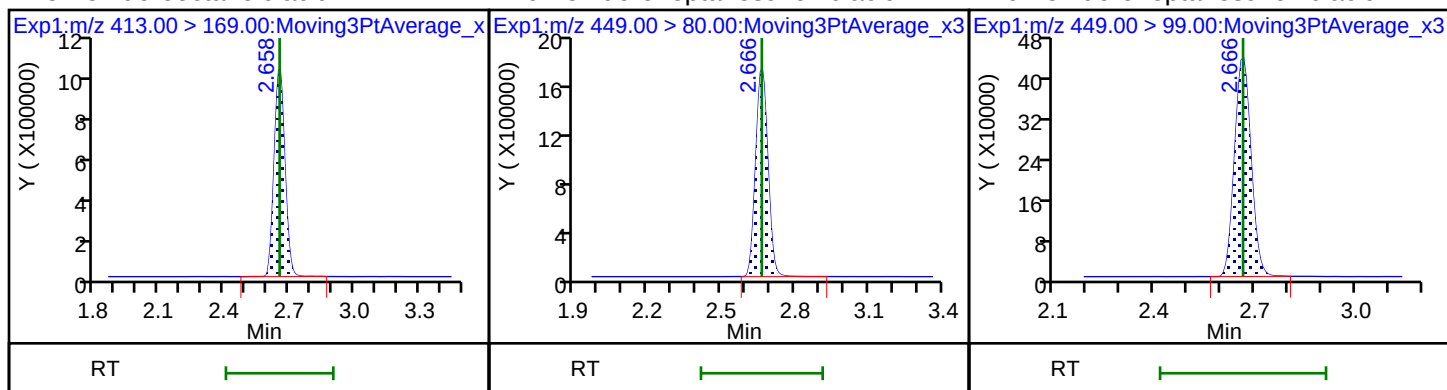
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

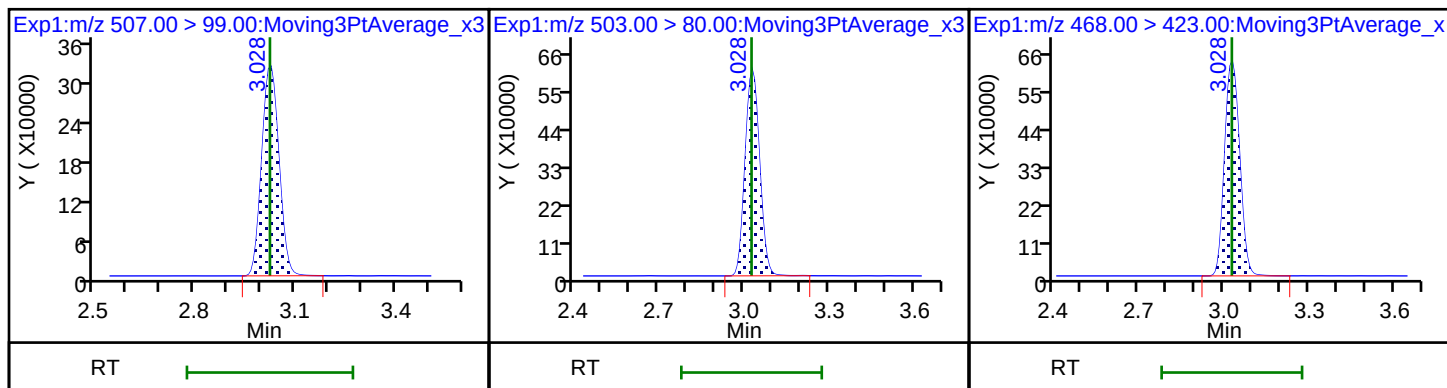
16 Perfluoroheptanesulfonic acid

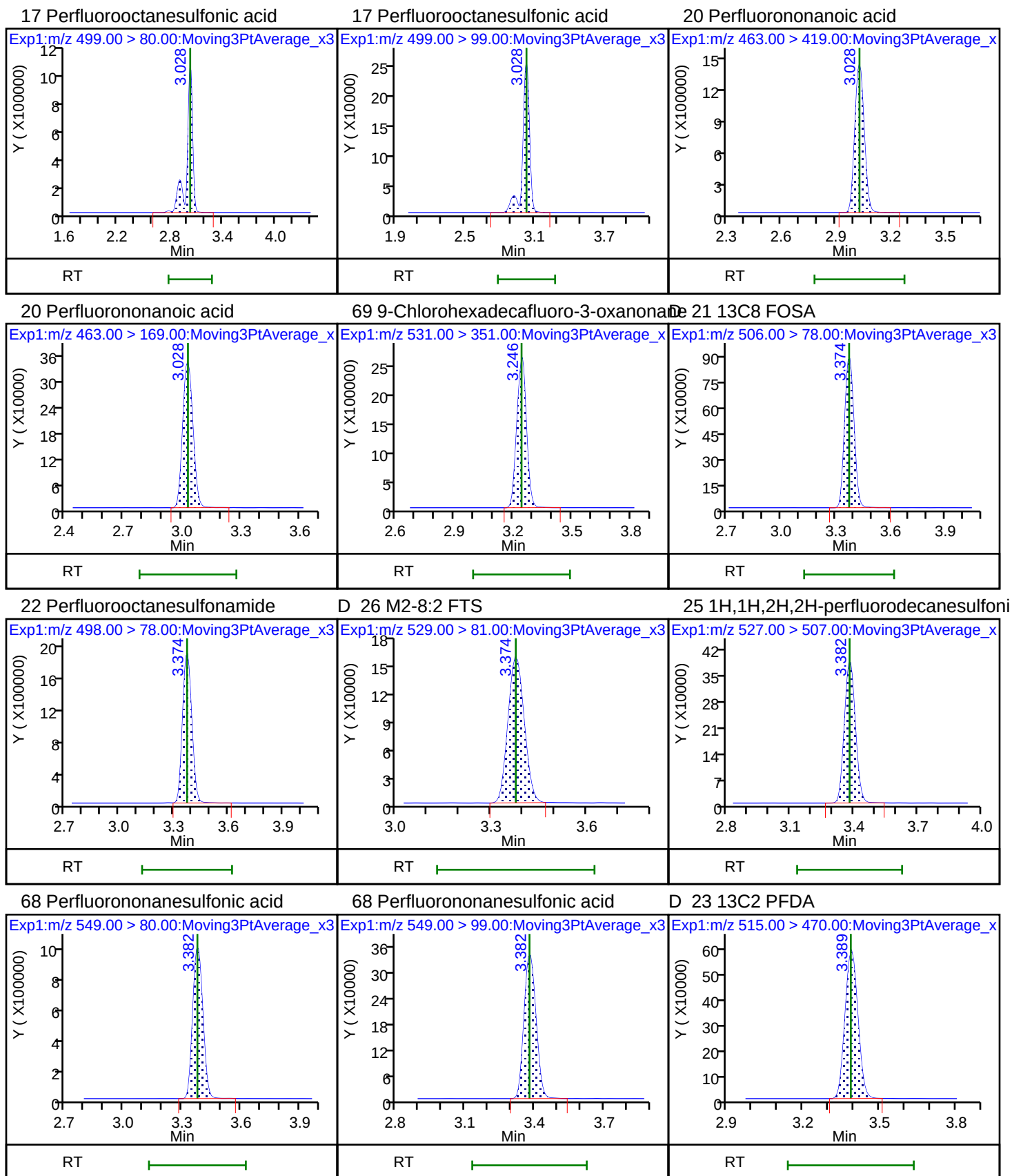


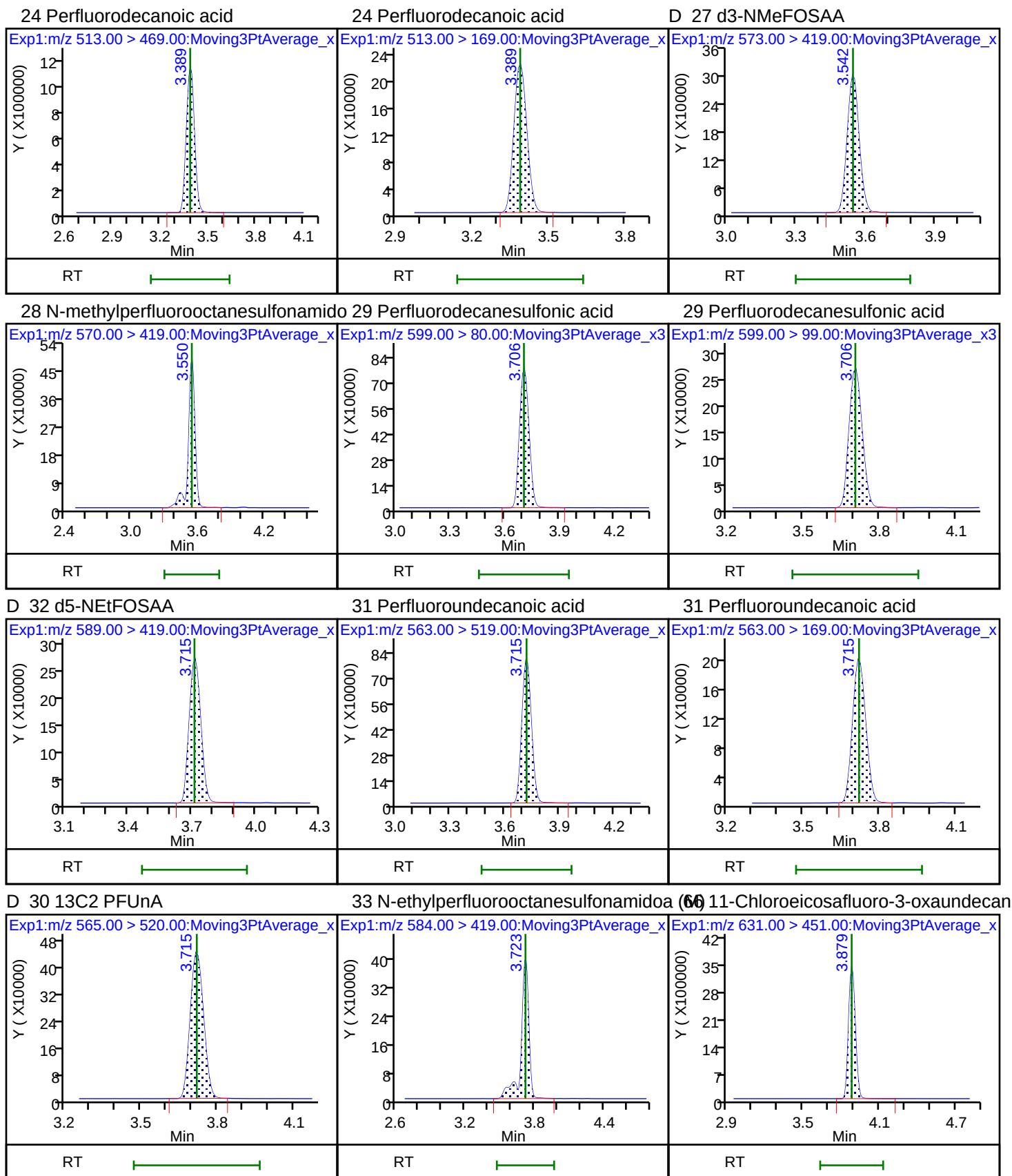
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA



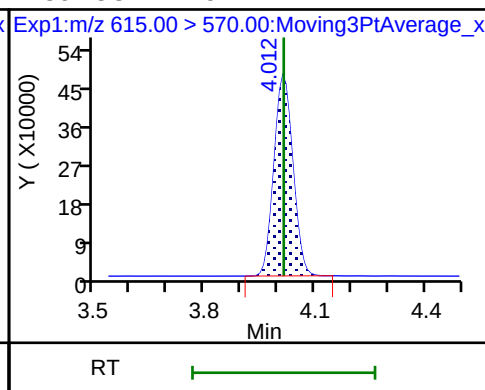
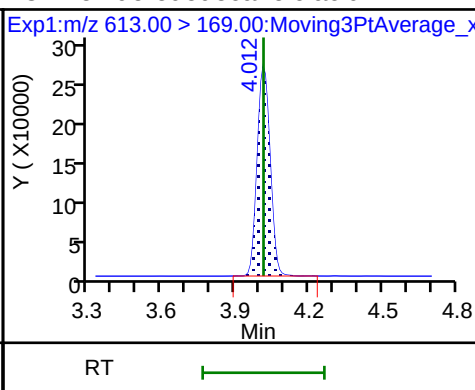
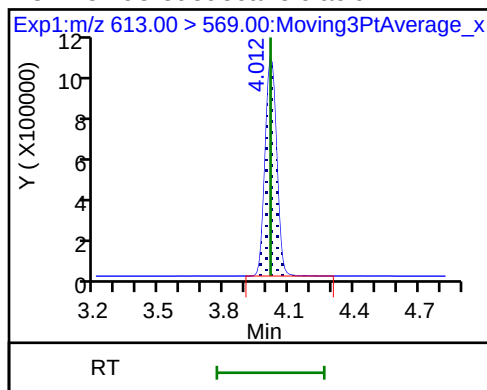




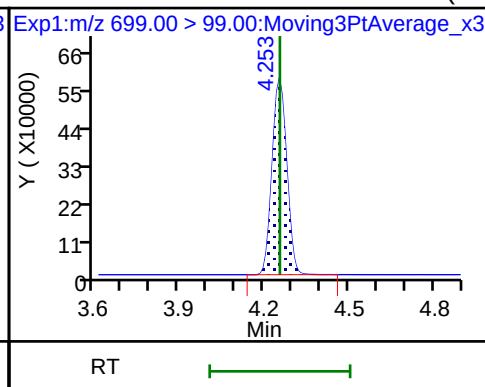
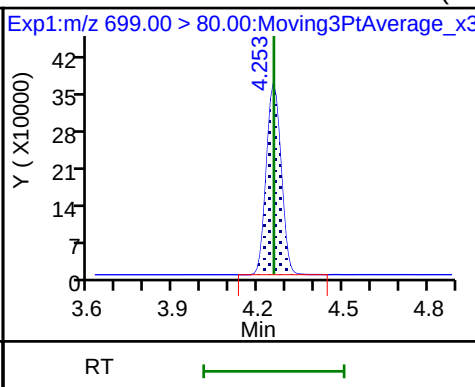
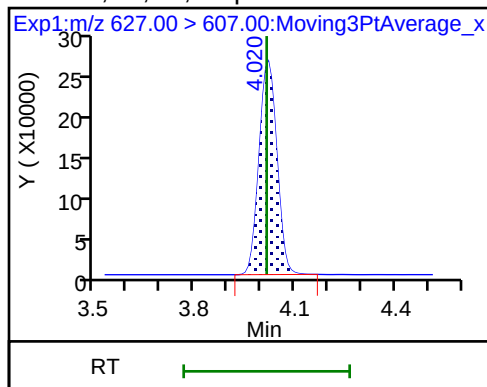
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDa



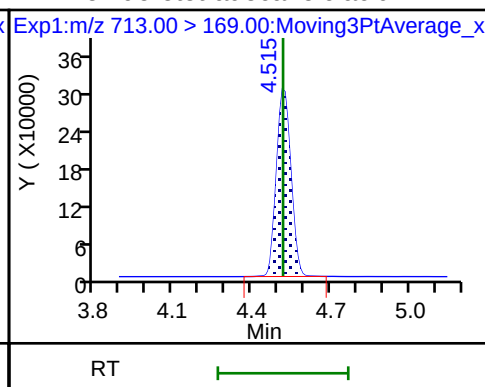
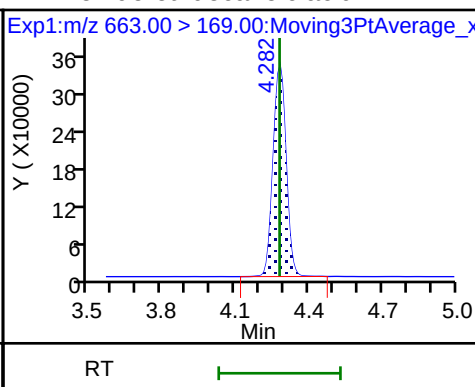
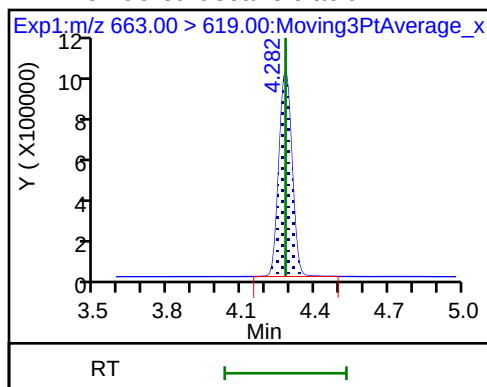
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

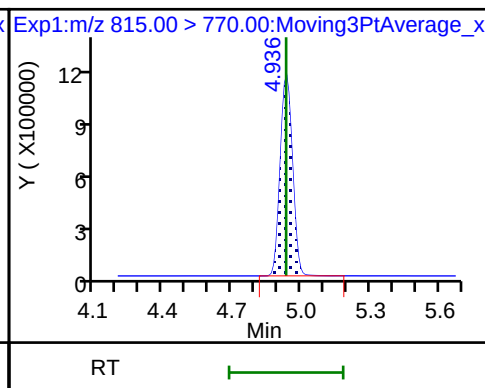
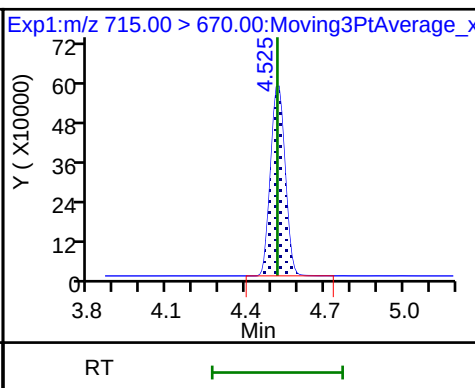
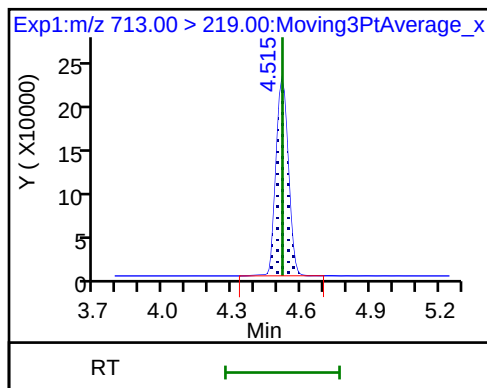
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

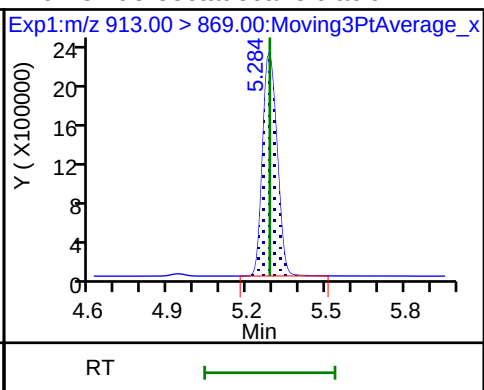
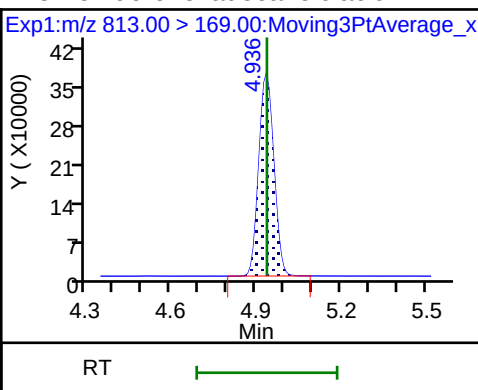
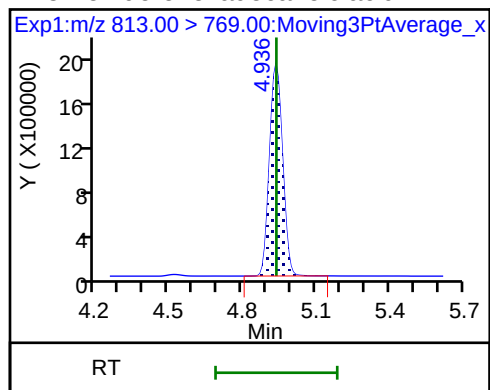
D 44 13C2 PFHxDA



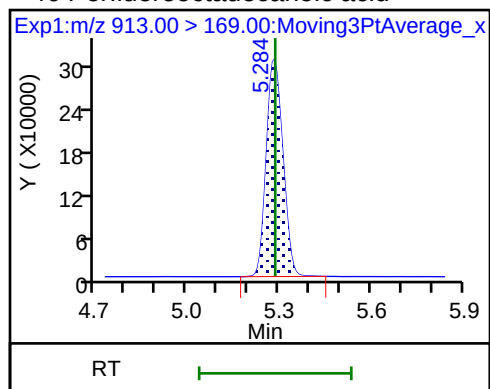
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



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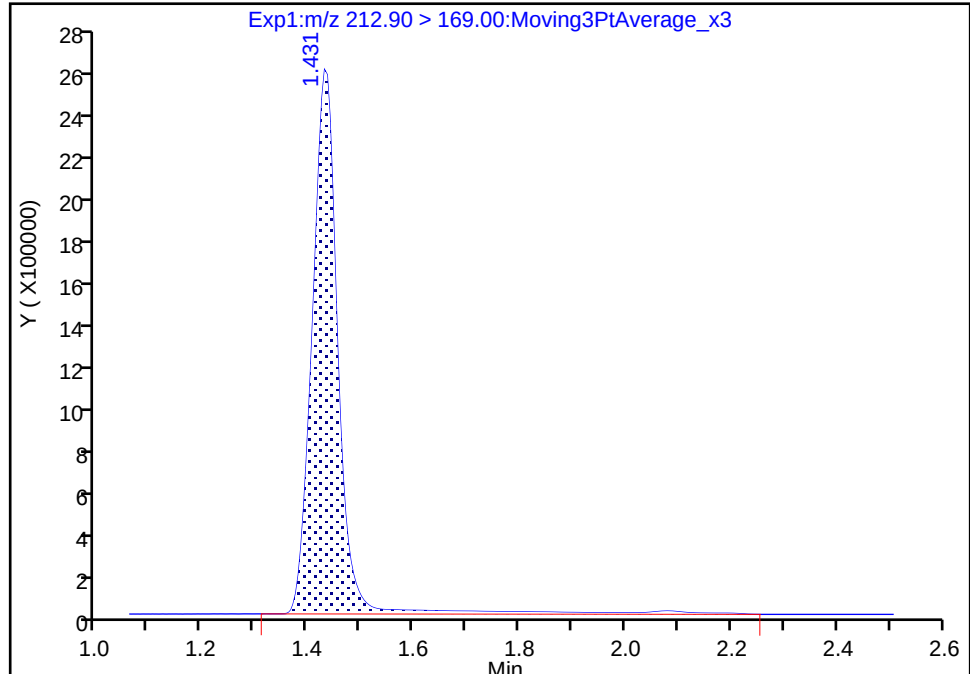
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Injection Date: 17-Oct-2018 20:32:45 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

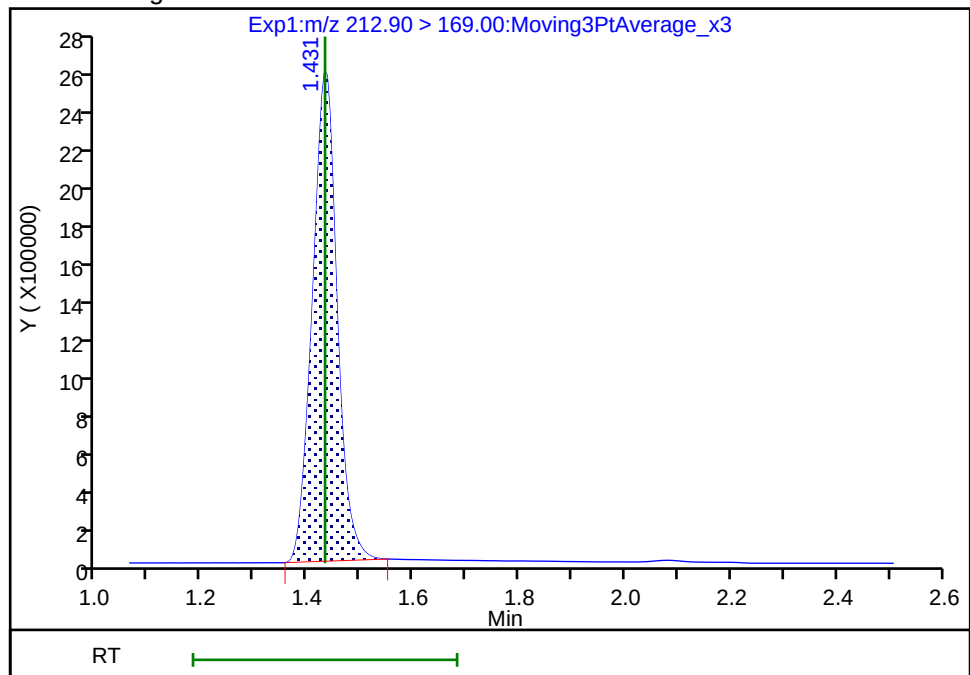
RT: 1.43
Area: 8912120
Amount: 5.482694
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 8359813
Amount: 5.214023
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:36:18
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

TestAmerica Sacramento

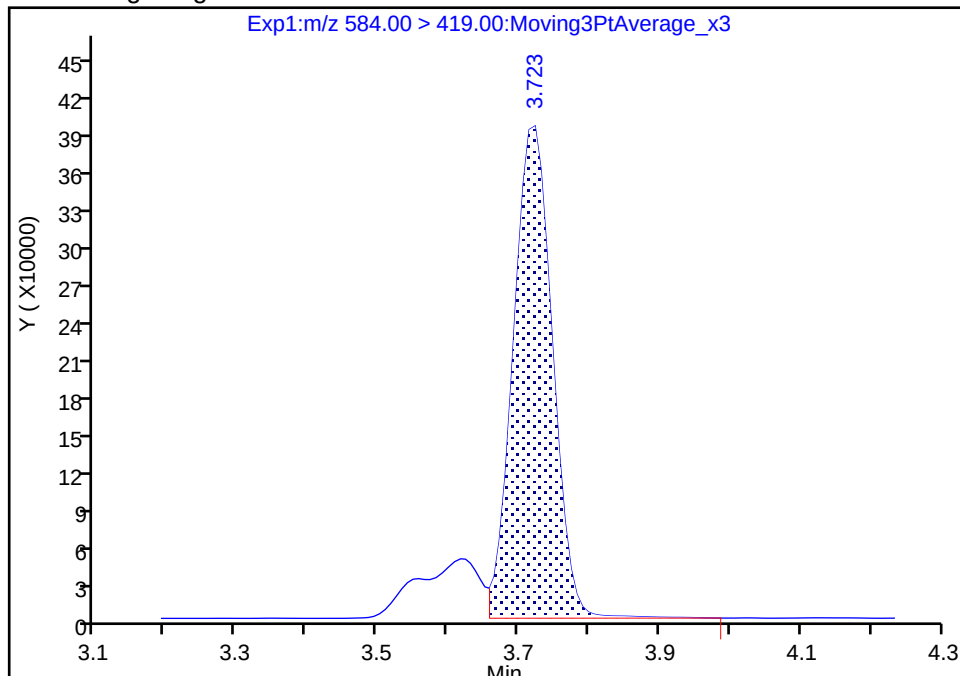
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Injection Date: 17-Oct-2018 20:32:45 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

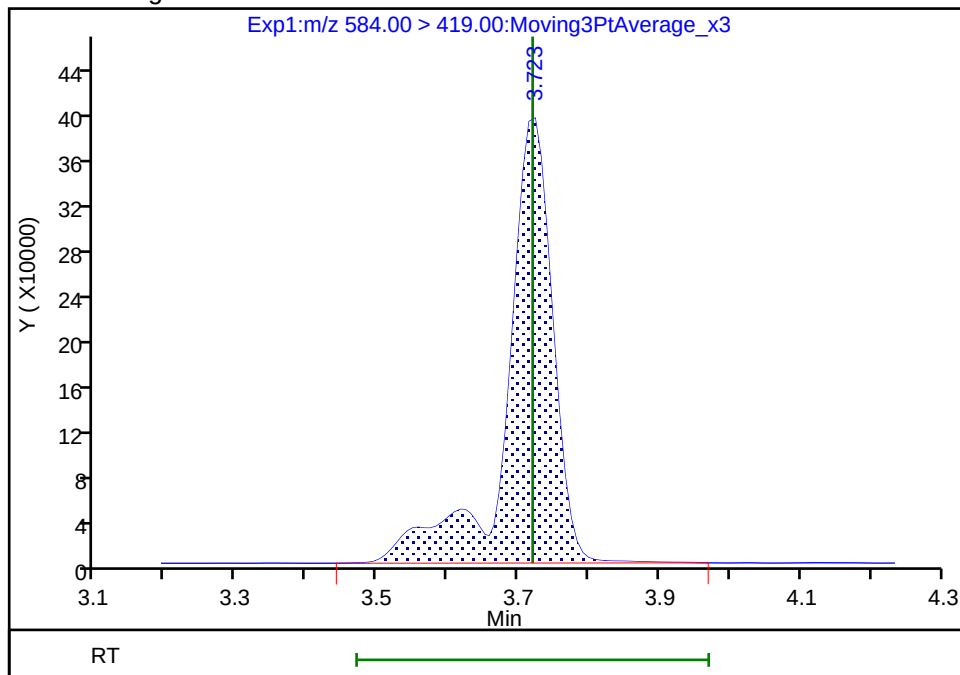
RT: 3.72
Area: 1513252
Amount: 4.529488
Amount Units: ng/ml

Processing Integration Results



RT: 3.72
Area: 1801762
Amount: 5.263199
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:37:00

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d
 Lims ID: IC L7 Full
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 17-Oct-2018 20:40:12 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 7
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 09:14:28 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: hannigana

Date: 18-Oct-2018 08:38:00

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.429	1.430	-0.002	0.538	4179625	2.54		102	8807	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.429	1.432	-0.004	1.000	15590404	10.4		104	1060	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.701	-0.001	1.000	11456035	9.56		95.6	1659	
D 3 13C5 PFPeA										
267.90 > 223.00	1.700	1.701	-0.001	0.640	2714527	2.54		102	9321	
D 47 13C3 PFBS										
301.90 > 83.00	1.732	1.733	-0.001	0.652	54292	2.47		106	483	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.739	0.001	1.005	14636215	7.78		88.1	3423	
298.90 > 99.00	1.732	1.739	-0.007	1.000	6701478		2.18(1.25-3.74)	88.1	3200	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.939	1.941	-0.002	0.730	354472	2.45		105	459	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.939	1.943	-0.004	1.119	3116037	8.82		94.5	9680	
D 7 13C2 PFHxA										
315.00 > 270.00	1.970	1.974	-0.004	0.742	2966276	2.56		102	7487	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.970	1.977	-0.007	1.000	11618005	9.66		96.6	3010	
313.00 > 119.00	1.970	1.977	-0.007	1.000	1099783		10.56(5.03-15.10)	96.6	2496	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.002	2.001	0.001	1.156	14247637	9.07		96.7	10154	
349.00 > 99.00	2.002	2.001	0.001	1.156	5523447		2.58(1.36-4.07)	96.7	6861	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.075	2.074	0.001	0.781	226148	2.55		102	879	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.075	2.074	0.001	1.000	2742054	10.4		104	3519	
D 9 13C4 PFHpA										
367.00 > 322.00	2.303	2.302	0.001	0.867	2589646	2.43		97.2	7463	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.303	2.305	-0.002	1.000	12819430	10.7		107	2319	
363.00 > 169.00	2.303	2.305	-0.002	1.000	5044068		2.54(1.13-3.40)	107	3789	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.314	2.319	-0.005	1.000	12650025	8.40		92.4	178429	
399.00 > 99.00	2.314	2.319	-0.005	1.000	4357576		2.90(1.50-4.49)	92.4	3642	
D 11 18O2 PFHxS										
403.00 > 84.00	2.314	2.319	-0.005	0.871	3225442	2.44		103	6000	
77 DONA										
377.00 > 251.00	2.347	2.346	0.001	0.776	29498532	8.64		91.7	9102	
377.00 > 85.00	2.347	2.346	0.001	0.776	19041513		1.55(0.85-2.54)	91.7	12254	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.625	2.627	-0.002	1.000	2928892	8.40		88.6	4455	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.625	2.628	-0.003	0.988	501332	2.45		103	1335	
D 73 13C8 PFOA										
421.00 > 376.00	2.640	2.643	-0.003	0.994	4119638	2.44		99.7	7064	
* 62 13C2 PFOA										
415.00 > 370.00	2.656	2.654	0.002		2623796	2.50			5762	
D 14 13C4 PFOA										
417.00 > 372.00	2.656	2.655	0.001	1.000	2630179	2.54		102	5274	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.656	2.656	0.0	1.000	11403743	9.47		94.7	1050	
413.00 > 169.00	2.656	2.656	0.0	1.000	6333511		1.80(0.84-2.52)	94.7	4490	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.663	2.664	-0.001	0.880	11107369	10.0		105	5361	
449.00 > 99.00	2.663	2.664	-0.001	0.880	2870625		3.87(1.94-5.82)	105	3258	
D 72 13C8 PFOS										
507.00 > 99.00	3.025	3.024	0.001	1.139	1092741	2.44		102	3416	
D 18 13C4 PFOS										
503.00 > 80.00	3.025	3.025	0.0	1.139	2017148	2.40		100	2387	
D 19 13C5 PFNA										
468.00 > 423.00	3.025	3.027	-0.002	1.139	2258961	2.59		104	5330	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.025	3.029	-0.004	1.000	9352654	9.51		103	2415	
499.00 > 99.00	3.025	3.029	-0.004	1.000	1991956		4.70(2.31-6.93)	103	2961	
20 Perfluorononanoic acid										
463.00 > 419.00	3.025	3.029	-0.004	1.000	9390789	10.4		104	3150	
463.00 > 169.00	3.025	3.029	-0.004	1.000	2342989		4.01(1.90-5.69)	104	5622	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.237	3.242	-0.005	1.070	16230705	9.83		105	15219	
D 21 13C8 FOSA										
506.00 > 78.00	3.373	3.371	0.002	1.270	3061161	2.52		101	3891	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.373	3.372	0.001	1.000	12126916	9.88		98.8	3444	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.373	3.376	-0.003	1.270	525781	2.49		104	1042	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.373	3.378	-0.005	1.000	2597223	9.82		103	3843	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.373	3.378	-0.005	1.115	6594617	9.74		101	5818	
549.00 > 99.00	3.373	3.378	-0.005	1.115	2335339		2.82(1.33-3.97)	101	5018	
D 23 13C2 PFDA										
515.00 > 470.00	3.388	3.386	0.002	1.276	1874211	2.50		100	3865	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.388	3.388	0.0	1.000	7806316	10.2		102	4723	
513.00 > 169.00	3.388	3.388	0.0	1.000	1489041		5.24(2.36-7.09)	102	338	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.541	3.544	-0.003	1.333	981554	2.59		103	1946	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.549	3.548	0.001	1.002	3712723	9.83		98.3	1812	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.705	3.704	0.001	1.225	5511083	10.3		107	6515	
599.00 > 99.00	3.705	3.704	0.001	1.225	1780402		3.10(1.39-4.16)	107	4024	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.714	3.711	0.003	1.398	1008796	2.59		104	1220	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.722	3.719	0.003	1.000	5286821	9.92		99.2	4167	
563.00 > 169.00	3.722	3.719	0.003	1.000	1334541		3.96(2.12-6.36)	99.2	3110	
D 30 13C2 PFUnA										
565.00 > 520.00	3.722	3.719	0.003	1.401	1491542	2.55		102	3544	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.722	3.720	0.002	1.002	3413588	10.1		101	1533	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.877	3.879	-0.002	1.282	22806669	9.34		99.1	11989	
35 MeFOSA										
512.00 > 169.00	3.888	3.888	0.0		4055344	NC			623	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.012	4.013	-0.001	1.000	6901929	9.66		96.6	3498	
613.00 > 169.00	4.012	4.013	-0.001	1.000	1818975		3.79(2.13-6.40)	96.6	3470	
D 36 13C2 PFDaA										
615.00 > 570.00	4.012	4.015	-0.003	1.510	1615868	2.56		102	3189	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.012	4.015	-0.003	1.189	1869619	9.43		97.8	4591	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.253	4.255	-0.002	1.406	2459777	9.65		99.7	5240	
699.00 > 99.00	4.253	4.255	-0.002	1.406	3811738		0.65(0.00-0.00)	99.7	7784	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.282	4.279	0.003	1.067	6662887	9.42		94.2	2791	
663.00 > 169.00	4.282	4.279	0.003	1.067	2394715		2.78(1.25-3.76)	94.2	4344	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.525	4.518	0.007	1.002	2150932	10.0		100	4340	
713.00 > 219.00	4.515	4.518	-0.003	1.000	1554489		1.38(0.71-2.13)	100	3482	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.515	4.519	-0.004	1.700	1997261	2.45		97.8	4703	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.936	4.934	0.002	1.858	3729434	2.53		101	4036	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.945	4.938	0.007	1.002	13188598	10.0		100	1613	
813.00 > 169.00	4.936	4.938	-0.002	1.000	2515233		5.24(2.86-8.58)	100	4197	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.295	5.286	0.009	1.073	16162572	9.65		96.5	1433	
913.00 > 169.00	5.288	5.286	0.002	1.071	2148664		7.52(3.83-11.48)	96.5	2630	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Injection Date: 17-Oct-2018 20:40:12

Instrument ID: A8_N

Lims ID: IC L7 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

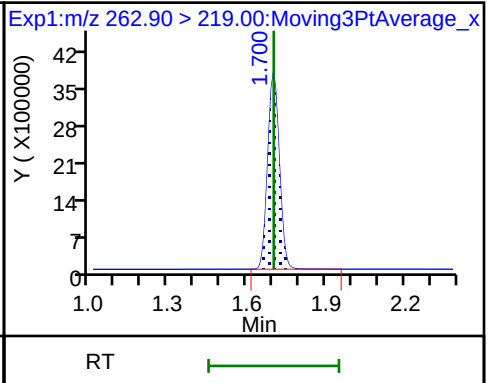
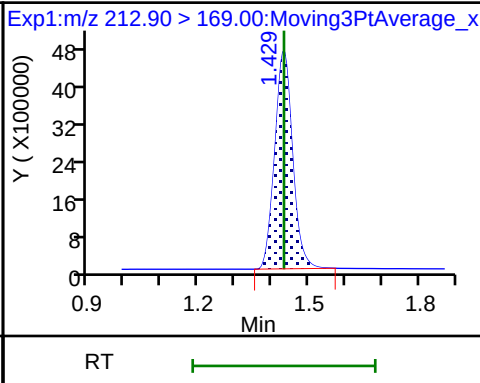
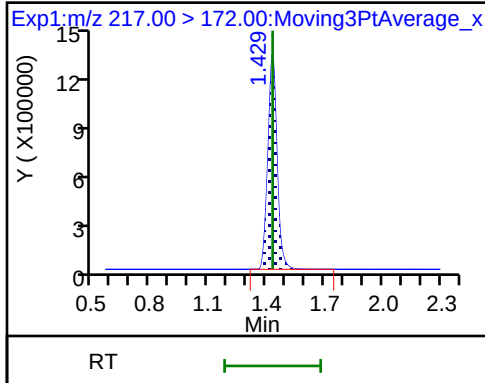
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

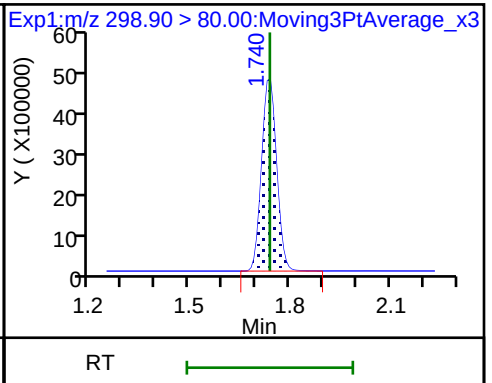
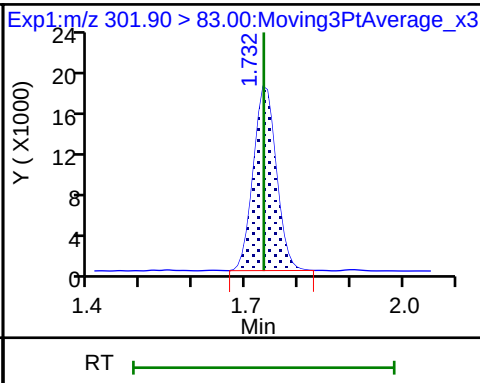
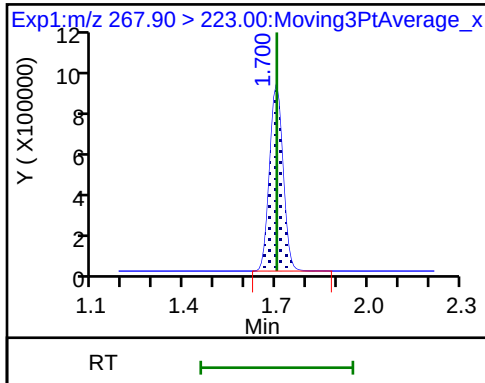
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

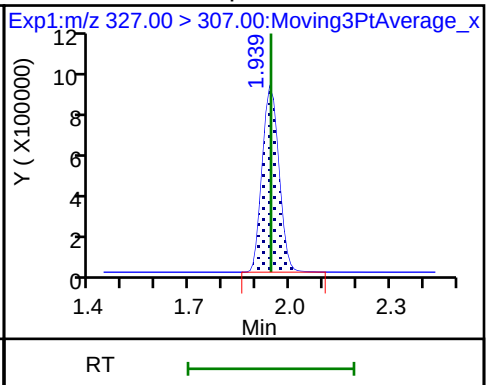
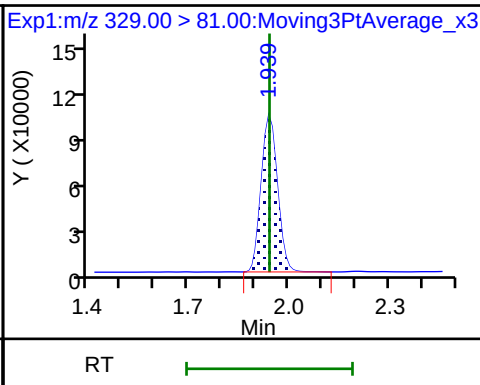
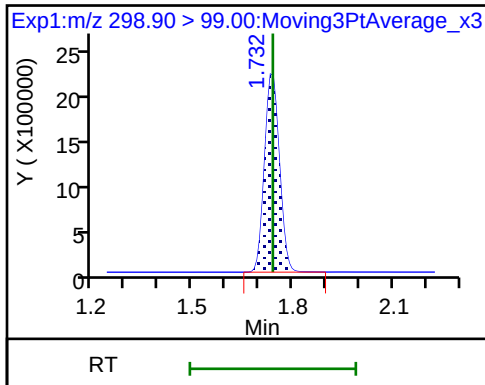
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

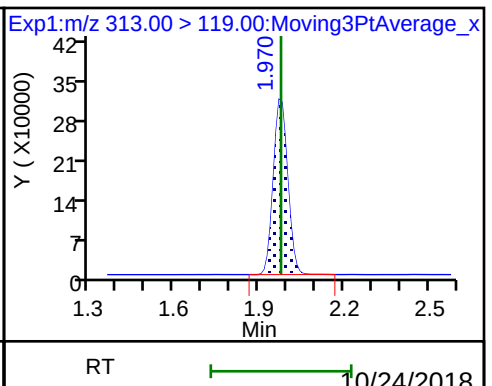
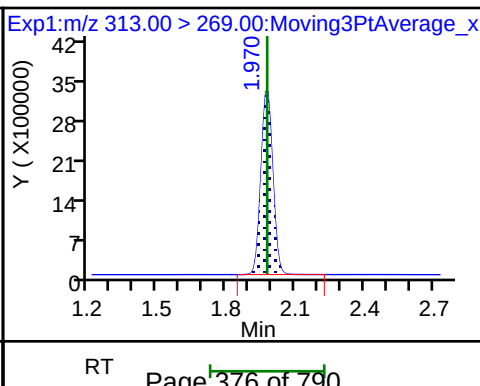
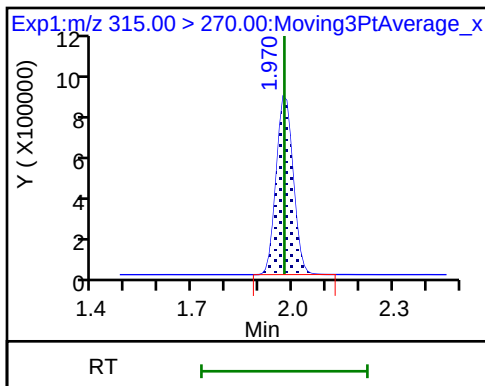
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

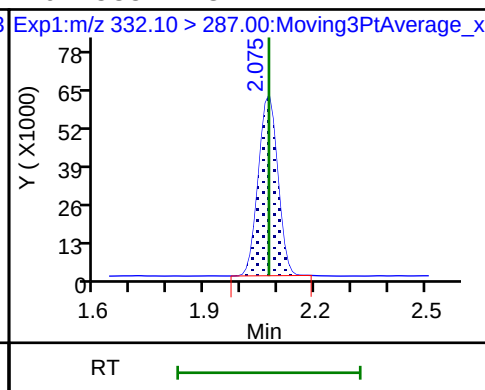
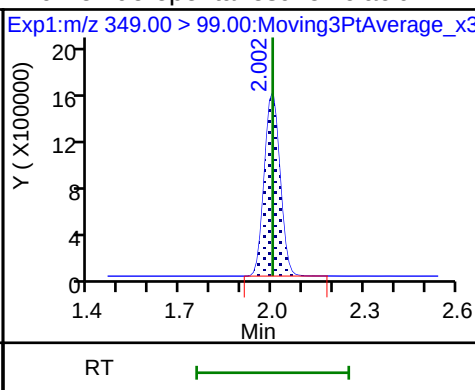
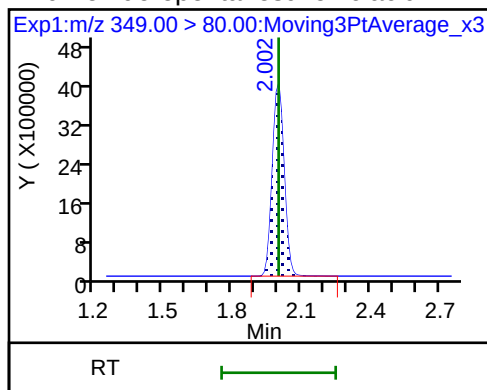
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

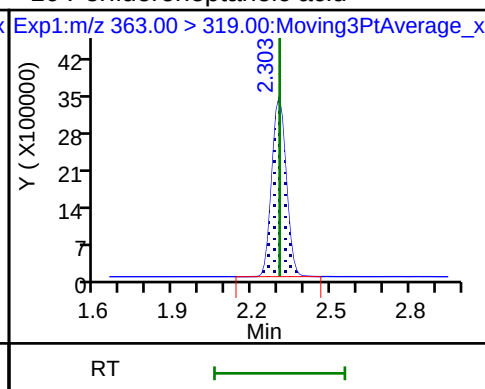
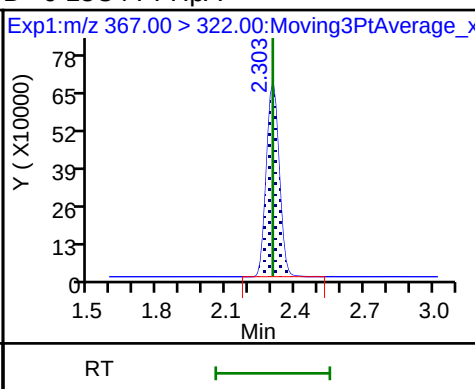
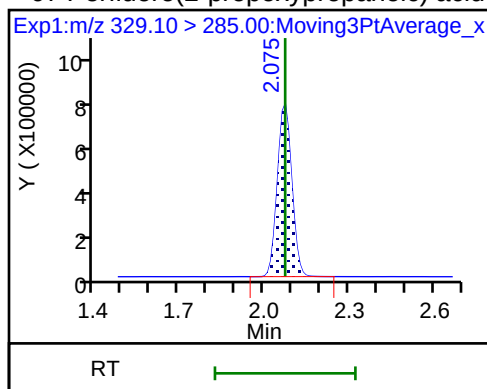
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

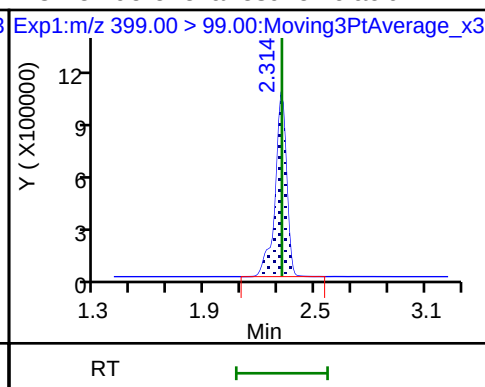
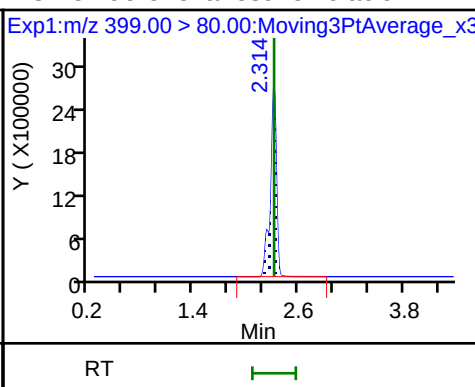
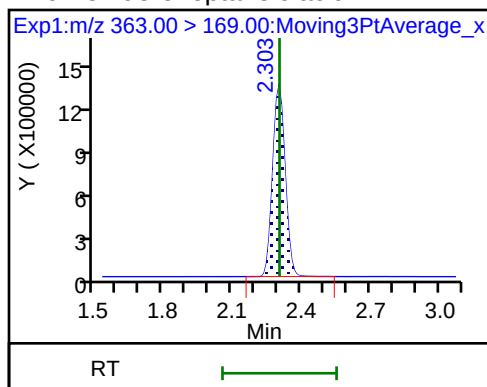
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

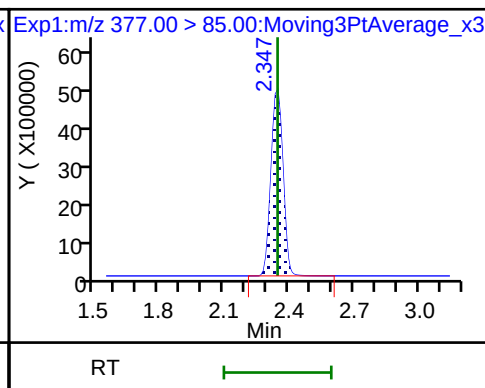
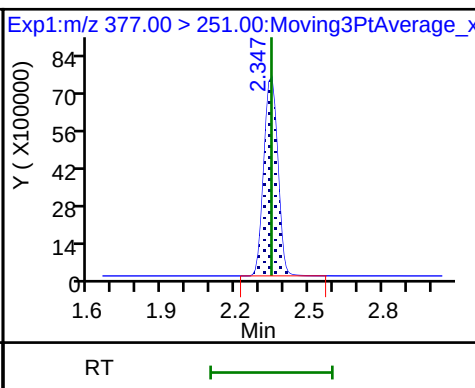
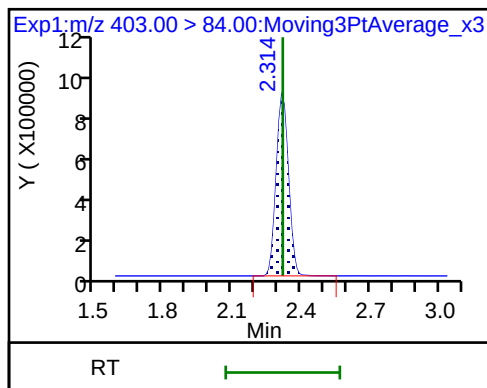
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

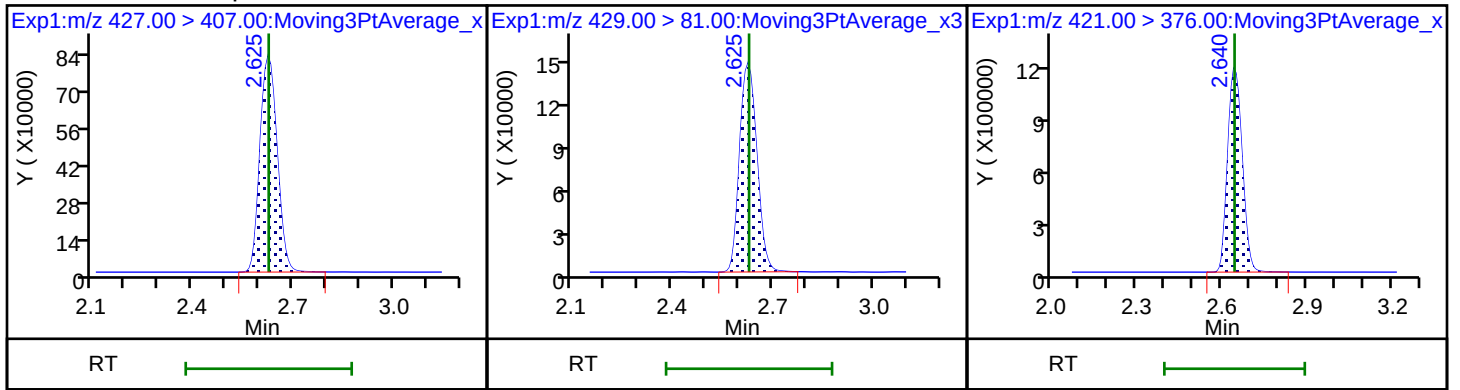
77 DONA

77 DONA



13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

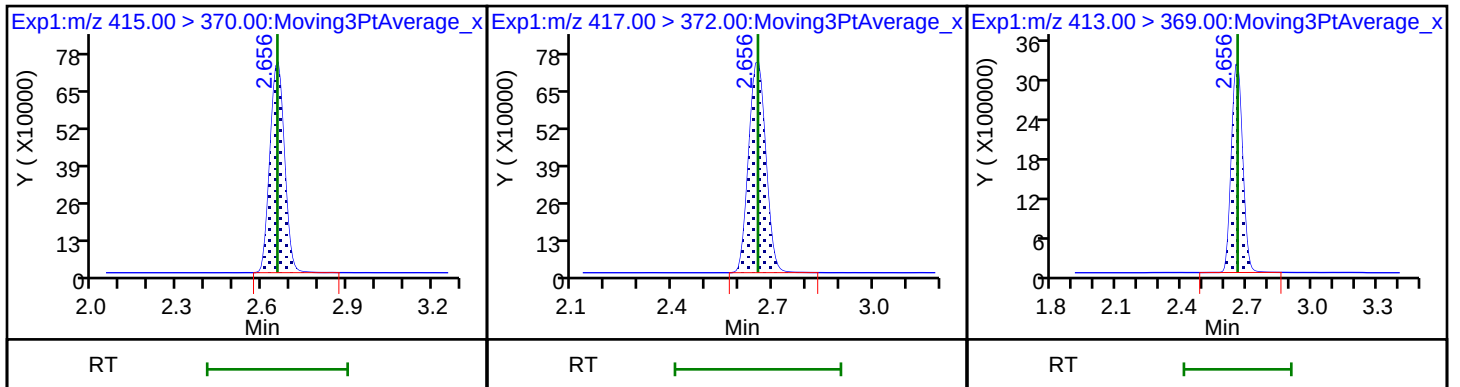
D 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

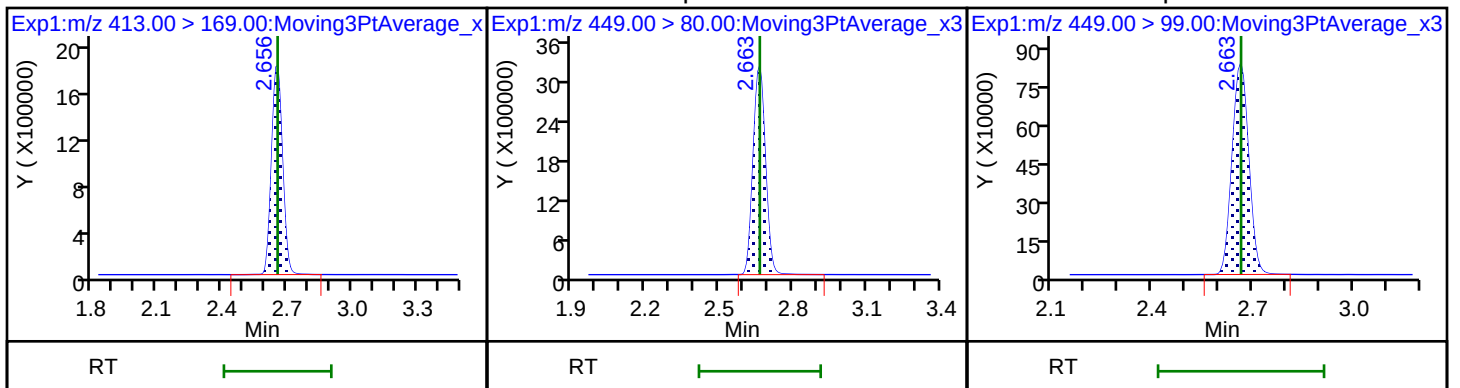
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

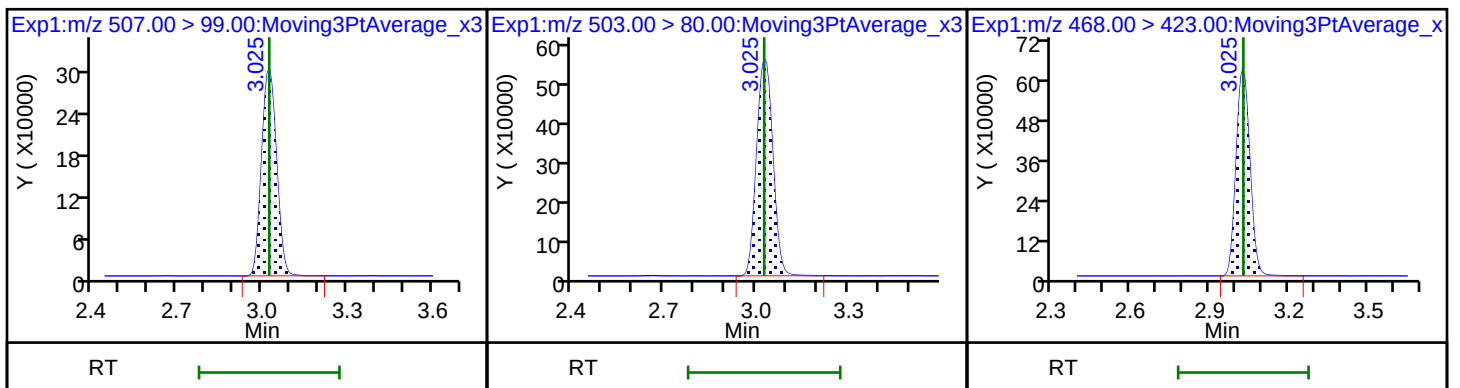
16 Perfluoroheptanesulfonic acid

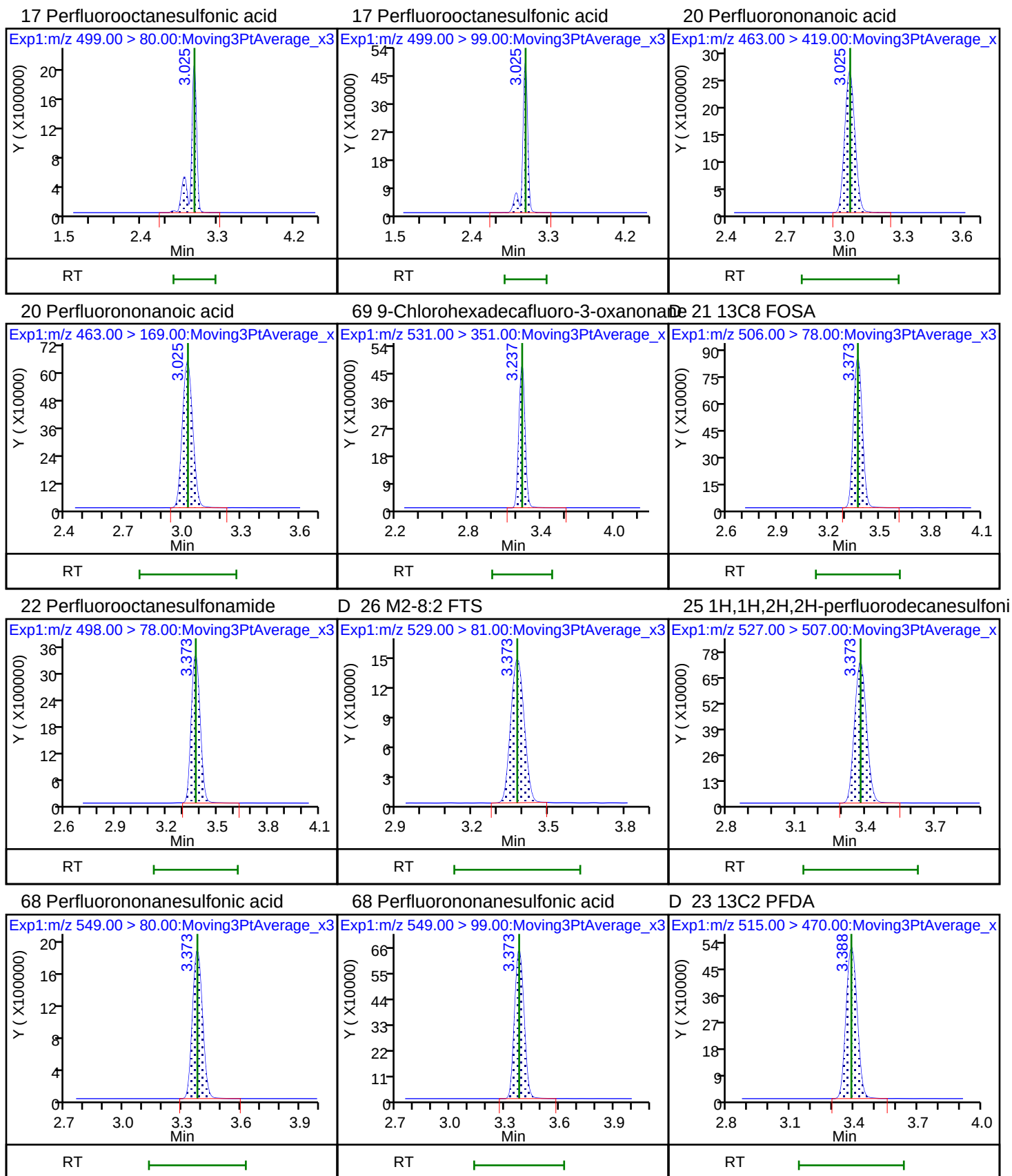


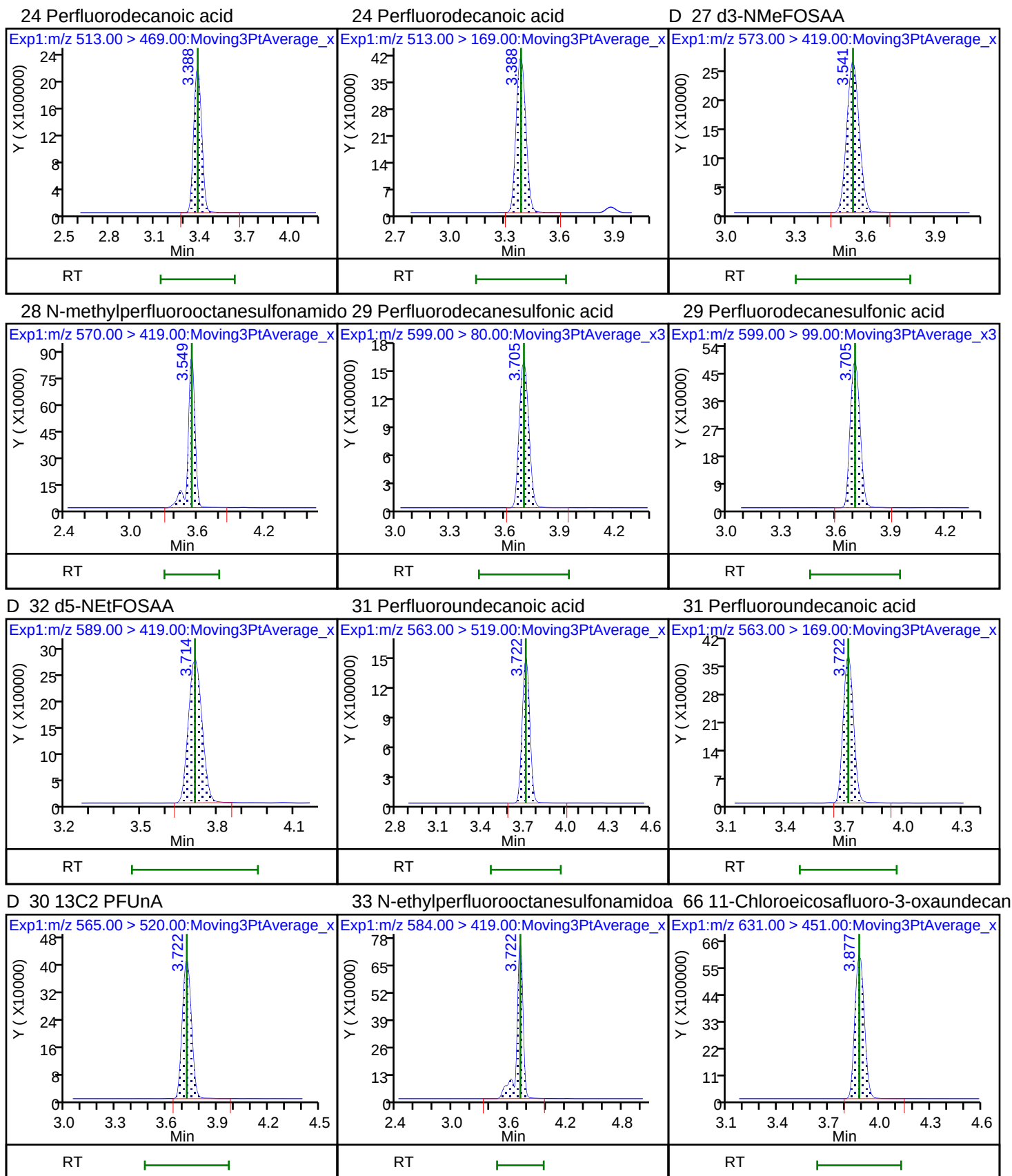
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D 18 13C4 PFOS

D 19 13C5 PFNA



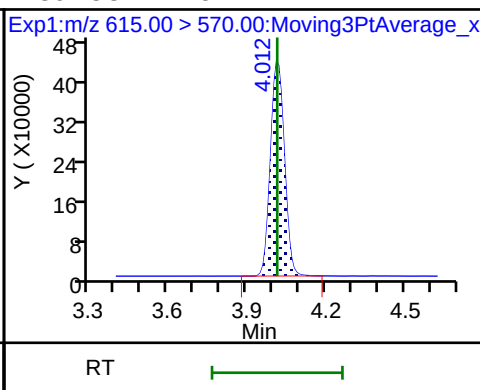
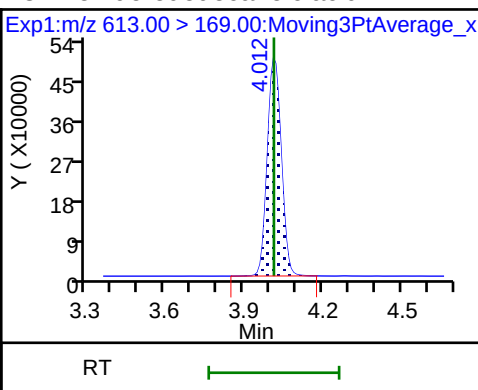
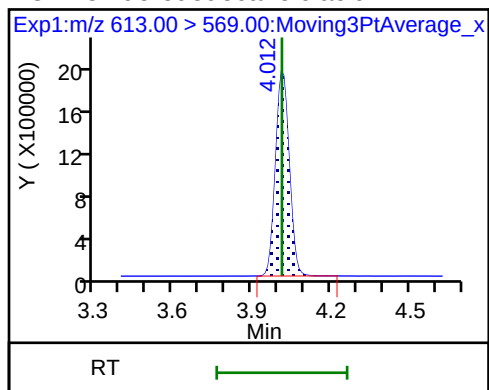




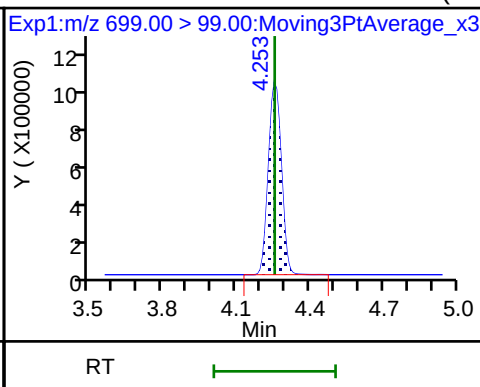
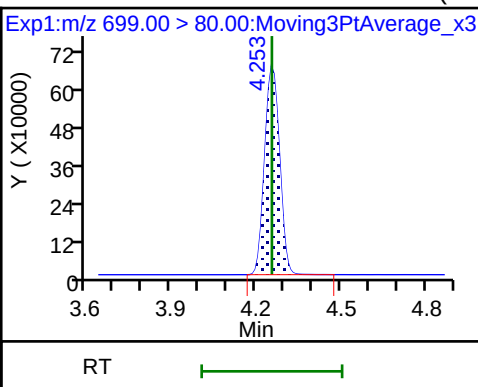
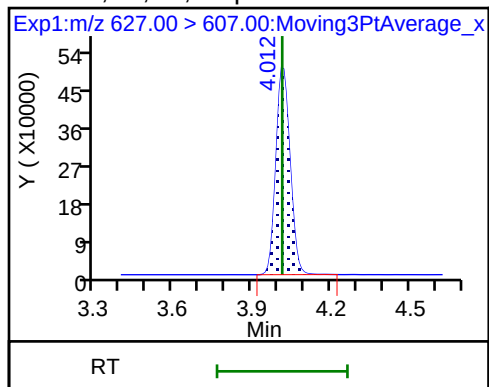
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



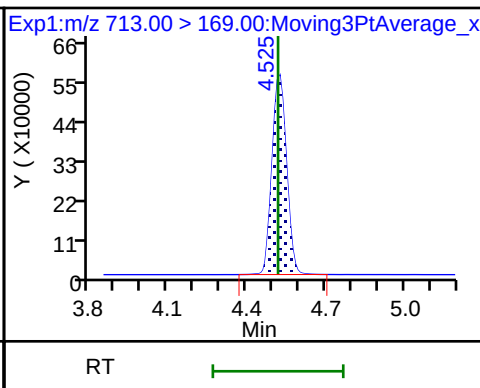
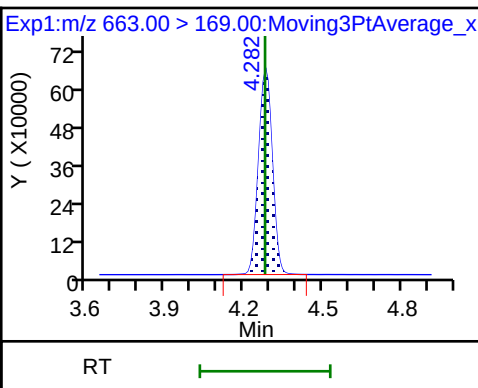
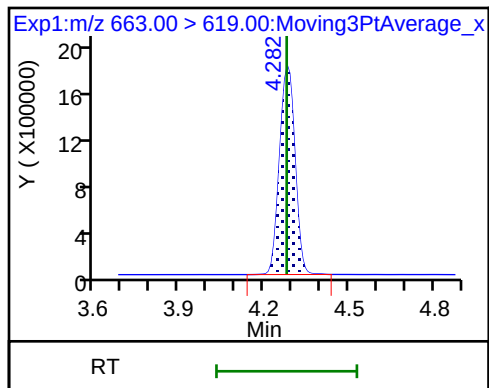
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

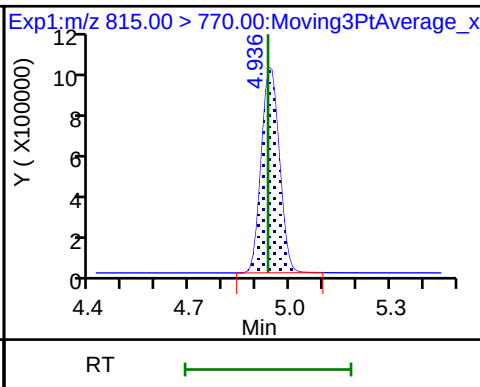
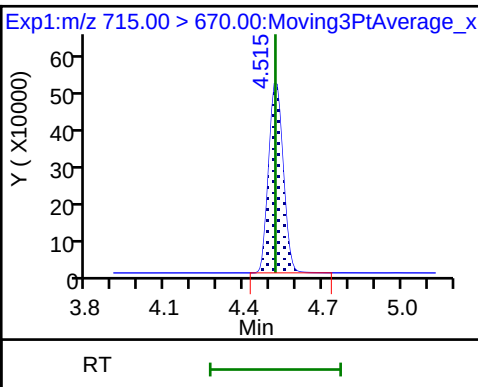
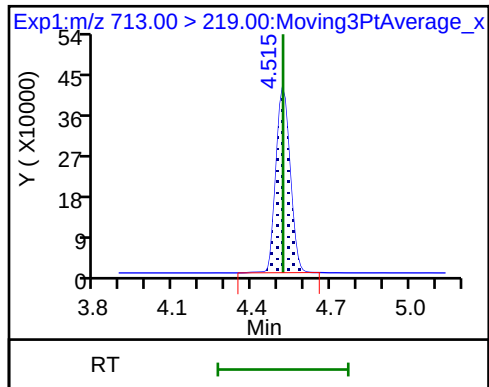
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

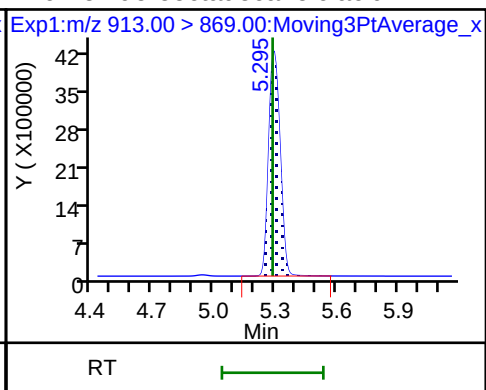
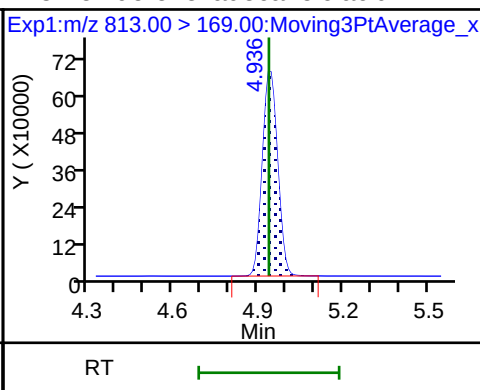
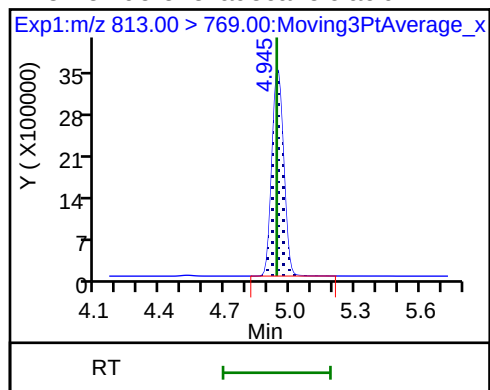
D 44 13C2 PFHxDA



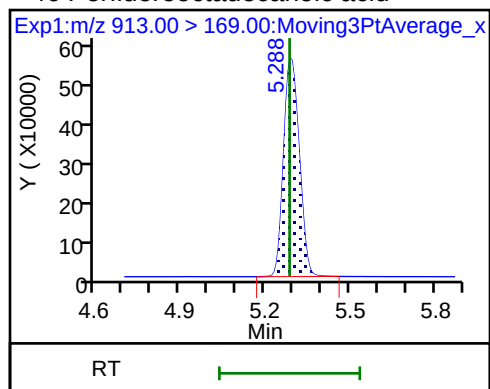
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

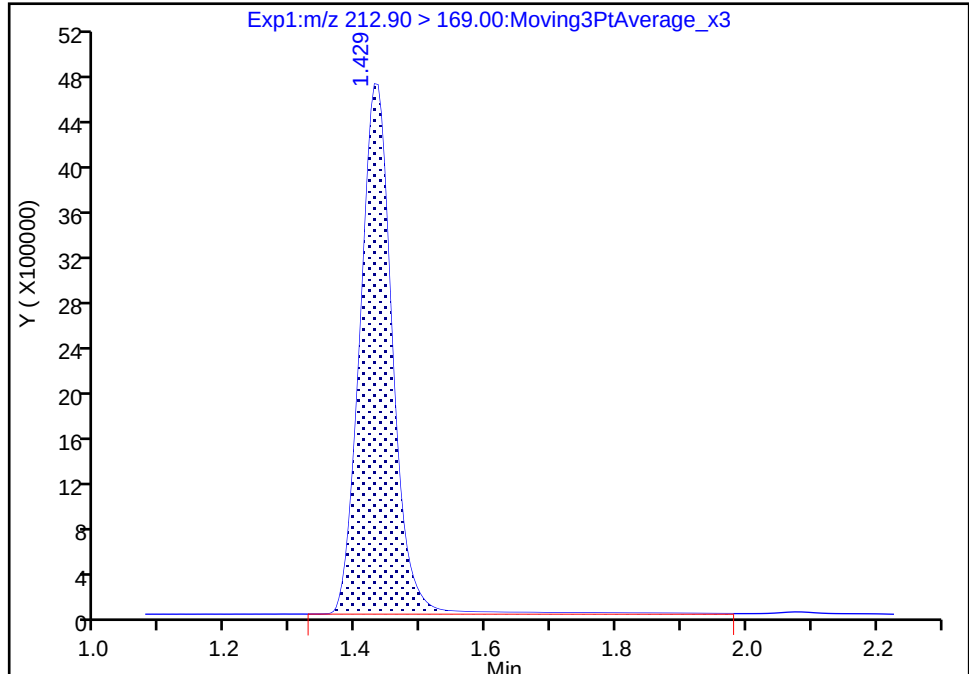
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d
Injection Date: 17-Oct-2018 20:40:12 Instrument ID: A8_N
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

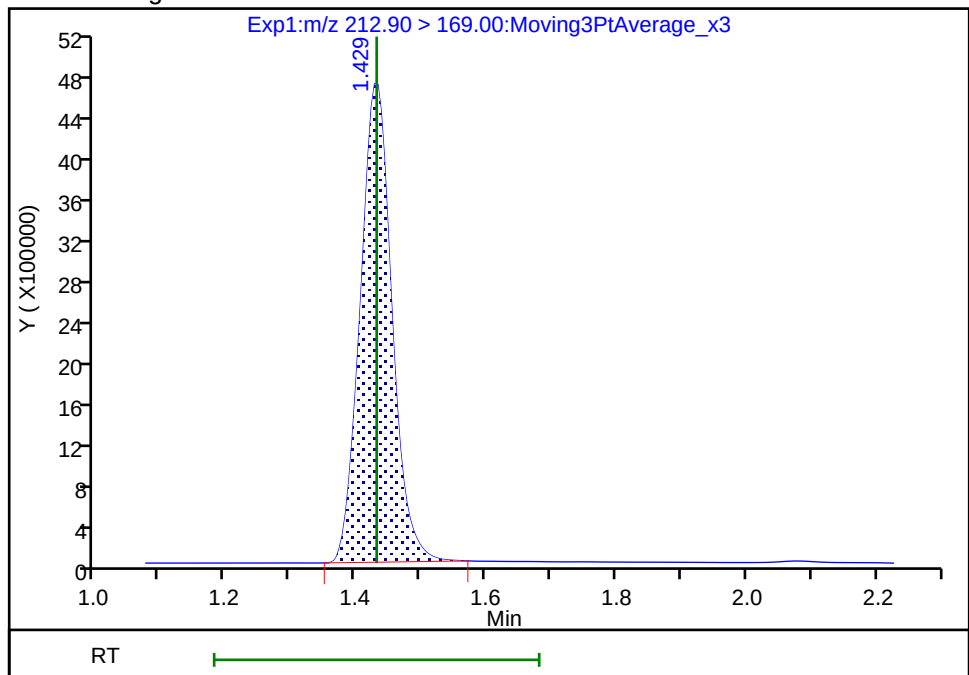
RT: 1.43
Area: 16009320
Amount: 10.614584
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 15590404
Amount: 10.378011
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:37:44
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-251474/2	2018.10.11LLICALA_002.d
Level 2	IC 320-251474/3	2018.10.11LLICALA_003.d
Level 3	IC 320-251474/4	2018.10.11LLICALA_004.d
Level 4	IC 320-251474/5	2018.10.11LLICALA_005.d
Level 5	IC 320-251474/6	2018.10.11LLICALA_006.d
Level 6	IC 320-251474/7	2018.10.11LLICALA_007.d
Level 7	IC 320-251474/8	2018.10.11LLICALA_008.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorobutanoic acid (PFBA)	1.504	1.504	1.499	1.499	1.499	1.499	1.505				1.252 - 1.752	1.501
Perfluoropentanoic acid (PFPeA)	1.797	1.789	1.789	1.789	1.789	1.789	1.789				1.540 - 2.040	1.790
Perfluorobutanesulfonic acid (PFBS)	1.831	1.830	1.831	1.830	1.831	1.830	1.830				1.580 - 2.080	1.830
4:2 FTS	2.038	2.048	2.038	2.038	2.038	2.037	2.048				1.791 - 2.291	2.041
Perfluorohexanoic acid (PFHxA)	2.089	2.078	2.079	2.079	2.079	2.078	2.079				1.830 - 2.330	2.080
Perfluoropentanesulfonic acid (PFPeS)	2.109	2.109	2.099	2.099	2.099	2.099	2.109				1.853 - 2.353	2.103
HFPO-DA (GenX)	2.181	2.181	2.171	2.171	2.171	2.181	2.181				1.926 - 2.426	2.177
Perfluoroheptanoic acid (PFHpA)	++++	2.413	2.413	2.413	2.413	2.413	2.413				2.163 - 2.663	2.413
Perfluorohexanesulfonic acid (PFHxS)	2.426	2.426	2.426	2.426	2.426	2.426	2.426				2.176 - 2.676	2.426
DONA	2.465	2.452	2.452	2.452	2.452	2.452	2.452				2.204 - 2.704	2.454
6:2 FTS	++++	2.750	2.735	2.734	2.734	2.734	2.750				2.491 - 2.991	2.740
Perfluorooctanoic acid (PFOA)	2.782	2.766	2.766	2.766	2.766	2.766	2.766				2.519 - 3.019	2.768
Perfluoroheptanesulfonic Acid (PFHpS)	2.782	2.782	2.766	2.782	2.782	2.782	2.782				2.530 - 3.030	2.780
Perfluorooctanesulfonic acid (PFOS)	3.153	3.135	3.135	3.135	3.135	3.135	3.153				2.890 - 3.390	3.140
Perfluorononanoic acid (PFNA)	3.153	3.153	3.135	3.135	3.135	3.135	3.153				2.893 - 3.393	3.143
F-53B Major	3.351	3.351	3.351	3.351	3.351	3.351	3.351				3.101 - 3.601	3.351
Perfluorooctanesulfonamide (FOSA)	3.481	3.480	3.465	3.480	3.480	3.480	3.481				3.228 - 3.728	3.478
Perfluorononanesulfonic acid (PFNS)	3.496	3.496	3.481	3.496	3.496	3.480	3.496				3.242 - 3.742	3.492
8:2 FTS	3.496	3.496	3.481	3.496	3.496	3.496	3.496				3.244 - 3.744	3.494
Perfluorodecanoic acid (PFDA)	3.512	3.512	3.496	3.496	3.496	3.496	3.512				3.253 - 3.753	3.503
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	3.669	3.655	3.655	3.655	3.655	3.655	3.655				3.407 - 3.907	3.657
Perfluorodecanesulfonic acid (PFDS)	3.823	3.823	3.807	3.807	3.807	3.807	3.823				3.564 - 4.064	3.814
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.839	3.839	3.823	3.823	3.823	3.823	3.823				3.578 - 4.078	3.828
Perfluoroundecanoic acid (PFUnA)	3.839	3.839	3.823	3.823	3.823	3.823	3.839				3.580 - 4.080	3.830
F-53B Minor	3.992	3.991	3.992	3.991	3.991	3.991	3.991				3.741 - 4.241	3.991
Perfluorododecanoic acid (PFDoA)	4.123	4.122	4.123	4.122	4.122	4.122	4.122				3.872 - 4.372	4.122
10:2 FTS	4.139	4.122	4.123	4.122	4.122	4.122	4.122				3.875 - 4.375	4.125
Perfluorododecanesulfonic acid (PFDoS)	4.373	4.373	4.358	4.357	4.357	4.357	4.373				4.114 - 4.614	4.364
Perfluorotridecanoic acid (PFTriA)	4.404	4.404	4.388	4.388	4.388	4.388	4.388				4.143 - 4.643	4.393
Perfluorotetradecanoic acid (PFTeA)	++++	4.644	4.627	4.627	4.627	4.627	4.644				4.384 - 4.884	4.633
Perfluoro-n-hexadecanoic acid (PFHxDA)	5.074	5.057	5.058	5.058	5.057	5.057	5.058				4.810 - 5.310	5.060
Perfluoro-n-octadecanoic acid (PFODA)	5.420	5.420	5.405	5.406	5.406	5.405	5.405				5.159 - 5.659	5.410

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C4 PFBA	1.504	1.504	1.499	1.499	1.499	1.499	1.505				1.252 - 1.752	1.501
13C5 PFPeA	1.789	1.789	1.789	1.789	1.781	1.789	1.789				1.538 - 2.038	1.788
13C3 PFBS	1.831	1.830	1.822	1.830	1.822	1.830	1.830				1.578 - 2.078	1.828
M2-4:2 FTS	2.048	2.048	2.038	2.038	2.038	2.037	2.048				1.792 - 2.292	2.042
13C2 PFHxA	2.079	2.078	2.079	2.079	2.079	2.078	2.079				1.829 - 2.329	2.079
13C3 HFPO-DA	2.181	2.181	2.171	2.171	2.181	2.170	2.181				1.926 - 2.426	2.177
13C4 PFHpA	2.413	2.413	2.400	2.413	2.413	2.413	2.413				2.161 - 2.661	2.411
18O2 PFHxS	2.426	2.426	2.426	2.426	2.426	2.426	2.426				2.176 - 2.676	2.426
M2-6:2 FTS	2.751	2.750	2.735	2.750	2.734	2.734	2.750				2.494 - 2.994	2.743
13C8 PFOA	2.766	2.766	2.751	2.766	2.750	2.766	2.766				2.512 - 3.012	2.762
13C4 PFOA	2.782	2.766	2.766	2.766	2.766	2.766	2.766				2.519 - 3.019	2.768
13C8 PFOS	3.135	3.135	3.135	3.135	3.135	3.135	3.135				2.885 - 3.385	3.135
13C4 PFOS	3.153	3.135	3.135	3.135	3.135	3.135	3.153				2.890 - 3.390	3.140
13C5 PFNA	3.153	3.153	3.135	3.135	3.135	3.135	3.153				2.893 - 3.393	3.143
13C8 FOSA	3.481	3.480	3.465	3.465	3.465	3.480	3.481				3.224 - 3.724	3.474
M2-8:2 FTS	3.496	3.496	3.481	3.480	3.496	3.496	3.496				3.242 - 3.742	3.492
13C2 PFDA	3.512	3.496	3.496	3.496	3.496	3.496	3.512				3.251 - 3.751	3.501
d3-NMeFOSAA	3.655	3.655	3.655	3.655	3.655	3.655	3.655				3.405 - 3.905	3.655
d5-NEtFOSAA	3.823	3.823	3.823	3.823	3.823	3.823	3.823				3.573 - 4.073	3.823
13C2 PFUnA	3.839	3.839	3.823	3.823	3.823	3.823	3.839				3.580 - 4.080	3.830
13C2 PFDoA	4.139	4.122	4.123	4.122	4.122	4.122	4.122				3.875 - 4.375	4.125
13C2 PFTeDA	4.644	4.644	4.627	4.627	4.627	4.627	4.644				4.384 - 4.884	4.634
13C2 PFHxDA	5.058	5.057	5.058	5.058	5.057	5.057	5.058				4.808 - 5.308	5.058

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-251474/2	2018.10.11LLICALA_002.d
Level 2	IC 320-251474/3	2018.10.11LLICALA_003.d
Level 3	IC 320-251474/4	2018.10.11LLICALA_004.d
Level 4	IC 320-251474/5	2018.10.11LLICALA_005.d
Level 5	IC 320-251474/6	2018.10.11LLICALA_006.d
Level 6	IC 320-251474/7	2018.10.11LLICALA_007.d
Level 7	IC 320-251474/8	2018.10.11LLICALA_008.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C8 PFOA	2512065 2495748	2541368 2554361	2584938 2322107	2583669	Ave		2513465.11				3.6		50.0			
13C8 PFOS	415764 441807	433435 420821	444136 425133	421995	Ave		429012.791				2.6		50.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.9772 0.9376	0.9651 0.8746	0.8961	0.9361	0.9167	AveID		0.9291				3.9		35.0			
Perfluoropentanoic acid (PFPeA)	1.1684 0.9704	1.0791 0.8926	0.9827	1.0071	0.9795	AveID		1.0114				8.7		35.0			
Perfluorobutanesulfonic acid (PFBS)	126.39 102.00	113.14 87.446	105.60	106.64	105.06	AveID		106.61				11.0		50.0			
4:2 FTS	20.710 21.374	22.897 20.334	23.062	20.501	22.690	AveID		21.653				5.5		50.0			
Perfluorohexanoic acid (PFHxA)	1.0382 0.8576	0.9083 0.7814	0.8474	0.9052	0.9161	AveID		0.8935				8.9		35.0			
Perfluoropentanesulfonic acid (PFPeS)	43.836 48.886	50.567 44.572	50.097	49.187	50.194	AveID		48.191				5.8		50.0			
HFPO-DA (GenX)	1.9187 2.0011	1.7885 1.9519	2.0849	1.7709	1.7556	AveID		1.8960				6.7		35.0			
Perfluoroheptanoic acid (PFHpA)	++++ 1.0587	1.2001 0.8782	1.0137	1.1107	1.1148	AveID		1.0627				10.3		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.6182 1.1875	1.2411 1.1327	1.1744	1.1990	1.2687	AveID		1.2602				13.0		35.0			
DONA	2.8813 2.5152	2.8350 2.1965	2.9503	2.8375	2.7358	AveID		2.7074				9.8		50.0			
6:2 FTS	++++ 1.9404	2.3083 2.3088	2.5172	2.1701	2.1485	AveID		2.2322				8.7		35.0			
Perfluorooctanoic acid (PFOA)	1.2218 0.9155	1.3168 0.8711	1.1093	1.1564	1.0569	AveID		1.0925				14.6		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.0197 1.0820	1.0775 1.0279	1.1314	1.0884	1.0544	AveID		1.0688				3.6		50.0			
Perfluorooctanesulfonic acid (PFOS)	1.0687 1.1042	1.0669 1.0982	1.1191	1.0536	1.0767	AveID		1.0839				2.2		35.0			
Perfluorononanoic acid (PFNA)	1.1320 0.9373	1.0899 0.8596	0.9880	1.0797	0.9842	AveID		1.0101				9.5		35.0			
F-53B Major	1.3137 1.1422	1.1393 1.1359	1.2151	1.2721	1.1954	AveID		1.2020				5.8		50.0			
Perfluorooctanesulfonamide (FOSA)	3.2370 2.8910	2.8912 2.5578	3.0949	3.0592	3.0505	AveID		2.9688				7.3		35.0			
Perfluorononanesulfonic acid (PFNS)	0.5612 0.7154	0.5787 0.6427	0.6898	0.6461	0.6956	AveID		0.6471				9.1		50.0			
8:2 FTS	11.281 14.706	19.057 13.926	15.375	15.749	14.889	AveID		14.998				15.5		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorodecanoic acid (PFDA)	1.1572 1.0748	1.2443 0.8976	1.2382	1.1547	1.1833	AveID		1.1357				10.5		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.0268 1.0154	0.9733 0.9946	0.9510	0.9816	1.0259	AveID		0.9955				2.9		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.8604 0.8686	0.8373 0.8470	0.8860	0.9032	0.9052	AveID		0.8725				3.1		50.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.8748 0.9222	1.0645 0.8845	0.9295	0.9022	0.9359	AveID		0.9305				6.8		35.0			
Perfluoroundecanoic acid (PFUnA)	1.1641 0.8430	0.9640 0.7968	0.9353	0.9558	0.8790	AveID		0.9340				12.7		35.0			
F-53B Minor	1.3818 1.3310	1.4477 1.2122	1.5204	1.4161	1.4727	AveID		1.3974				7.3		50.0			
Perfluorododecanoic acid (PFDoA)	0.9830 0.8858	1.1526 0.7919	1.0542	1.0792	1.0271	AveID		0.9962				12.3		35.0			
10:2 FTS	9.5962 12.094	9.1493 9.1110	10.870	10.566	9.5465	AveID		10.133				10.8		50.0			
Perfluorododecanesulfonic acid (PFDoS)	0.0806 0.0913	0.1030 0.1053	0.1002	0.0948	0.0911	AveID		0.0952				8.9		50.0			
Perfluorotridecanoic acid (PFTriA)	0.7644 0.7450	0.9113 0.6545	0.8756	0.8496	0.8277	AveID		0.8040				11.0		50.0			
Perfluorotetradecanoic acid (PFTeA)	++++ 0.1625	0.1425 0.1623	0.1593	0.1609	0.1681	AveID		0.1593				5.5		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.8907 0.8687	1.3317 0.8014	0.9857	0.9213	0.8388	L2ID	0.0257	0.8498							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.6104 0.5956	0.5840 0.5848	0.5850	0.5780	0.5500	AveID		0.5840				3.1		50.0			
13C4 PFBA	0.8642 0.9059	0.9212 0.9154	0.8803	0.8483	0.8911	Ave		0.8895				3.0		50.0			
13C5 PFPeA	0.7755 0.8156	0.8261 0.8237	0.7916	0.7795	0.8097	Ave		0.8031				2.6		50.0			
13C3 PFBS	0.0101 0.0116	0.0111 0.0121	0.0110	0.0111	0.0111	Ave		0.0112				5.4		50.0			
M2-4:2 FTS	0.0944 0.0984	0.0937 0.0972	0.0994	0.0979	0.0935	Ave		0.0964				2.5		50.0			
13C2 PFHxA	0.8324 0.8743	0.9152 0.8997	0.8722	0.8299	0.8459	Ave		0.8671				3.8		50.0			
13C3 HFPO-DA	0.0940 0.0850	0.0922 0.0898	0.0828	0.0886	0.0954	Ave		0.0897				5.1		50.0			
13C4 PFHpA	1.0072 1.0248	1.0711 1.0311	1.0675	0.9917	1.0246	Ave		1.0311				2.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
18O2 PFHxS	0.6267 0.6708	0.6794 0.6870	0.6786	0.6419	0.6382	Ave		0.6604				3.6		50.0			
M2-6:2 FTS	0.1034 0.1121	0.1100 0.1032	0.0951	0.1059	0.1084	Ave		0.1054				5.3		50.0			
13C4 PFOA	0.9636 1.0259	0.9990 0.9873	0.9555	0.9315	0.9782	Ave		0.9773				3.2		50.0			
13C4 PFOS	0.6518 0.6865	0.7052 0.6605	0.6592	0.6640	0.6878	Ave		0.6736				2.9		50.0			
13C5 PFNA	0.8750 0.9278	0.9461 0.8701	0.8618	0.8130	0.9601	Ave		0.8934				5.9		50.0			
13C8 FOSA	0.3364 0.3440	0.3666 0.3559	0.3545	0.3600	0.3582	Ave		0.3536				2.9		50.0			
M2-8:2 FTS	0.0132 0.0125	0.0143 0.0129	0.0131	0.0132	0.0132	Ave		0.0132				4.3		50.0			
13C2 PFDA	0.9275 0.9093	1.0085 0.9105	0.9145	0.9460	0.9342	Ave		0.9358				3.7		50.0			
d3-NMeFOSAA	0.3725 0.3753	0.4056 0.3860	0.3770	0.3826	0.3818	Ave		0.3830				2.9		50.0			
d5-NEtFOSAA	0.3106 0.3035	0.3325 0.2929	0.3024	0.3191	0.3129	Ave		0.3106				4.1		50.0			
13C2 PFUnA	0.7708 0.7759	0.8391 0.7538	0.8065	0.7572	0.8088	Ave		0.7875				4.0		50.0			
13C2 PFDoA	0.9729 0.9911	0.9820 0.9798	0.9123	0.9214	0.9391	Ave		0.9569				3.3		50.0			
13C2 PFTeDA	0.6423 0.6843	0.7232 0.7167	0.6551	0.6763	0.7073	Ave		0.6864				4.5		50.0			
13C2 PFHxDA	0.5798 0.6583	0.6128 0.6423	0.6167	0.6254	0.6584	Ave		0.6277				4.5		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-251474/2	2018.10.11LLICALA_002.d
Level 2	IC 320-251474/3	2018.10.11LLICALA_003.d
Level 3	IC 320-251474/4	2018.10.11LLICALA_004.d
Level 4	IC 320-251474/5	2018.10.11LLICALA_005.d
Level 5	IC 320-251474/6	2018.10.11LLICALA_006.d
Level 6	IC 320-251474/7	2018.10.11LLICALA_007.d
Level 7	IC 320-251474/8	2018.10.11LLICALA_008.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C8 PFOA	Ave	6148279 6251798	6219999 5683357	6326635	6323529	6108344	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	Ave	993675 1005761	1035909 1016067	1061485	1008569	1055918	2.39 2.39	2.39 2.39	2.39	2.39	2.39

Curve Type Legend:

Ave = Average

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-251474/2	2018.10.11LLICALA_002.d
Level 2	IC 320-251474/3	2018.10.11LLICALA_003.d
Level 3	IC 320-251474/4	2018.10.11LLICALA_004.d
Level 4	IC 320-251474/5	2018.10.11LLICALA_005.d
Level 5	IC 320-251474/6	2018.10.11LLICALA_006.d
Level 6	IC 320-251474/7	2018.10.11LLICALA_007.d
Level 7	IC 320-251474/8	2018.10.11LLICALA_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	64191 12564346	123180 22587652	592507	2356541	5870219	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	68877 11707312	123506 20741937	584340	2329552	5699844	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	86018 15502374	153196 26384501	772843	3110135	7418616	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	14892 3432343	32759 6482417	178326	631699	1692800	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	65682 11091230	115174 19834153	555205	2229505	5568970	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	31656 7884063	72655 14270066	389033	1522085	3760869	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	13703 2515312	22847 4946701	129659	465437	1203049	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	+++++ 16049968	178087 25547404	812774	3268620	8208285	+++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	70146 10722929	106300 19977527	544755	2078376	5294820	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	134466 24058924	260943 38557445	1376065	5267155	12737717	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	+++++ 3048942	33341 6372895	170418	646549	1587312	+++++ 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	89576 13907088	182437 24287207	796940	3199644	7437212	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	48095 10459679	100232 18235049	533296	2041870	4961142	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	49133 10404812	96738 18990522	514180	1926714	4938422	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	75293 12864459	142868 21101773	639620	2604690	6790628	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	60658 10809339	103748 19728020	560701	2336306	5506827	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	82770 14711349	146833 25682166	824008	3268430	7852124	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorononanesulfonic acid (PFNS)		AveID	26691 6974186	54285 11497697	327864	1222253	3300643	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
8:2 FTS		AveID	10833 2608418	36272 4843707	144522	592370	1356540	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	81583 14457977	173863 23055822	850566	3241800	7944664	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	29068 5637620	54699 10829758	269288	1114543	2814910	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	41090 8502267	78865 15215926	422908	1715840	4313115	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	20652 4139807	49041 7307882	211124	854420	2104584	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	68208 9675430	112078 16944068	566602	2147761	5109046	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	64487 12731495	133248 21279288	709129	2628626	6856853	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	72689 12986876	156817 21889533	722380	2950740	6931888	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	9273 2158536	17523 3188869	102815	399897	875216	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	3867 897097	9743 1899403	48026	180900	435775	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	56523 10922210	123990 18090450	600026	2323068	5586352	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	++++ 1645383	14279 3280842	78365	322831	854290	++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	83329 8459432	113058 14520572	456562	1709707	3968774	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	26903 5799467	49577 10595250	270948	1072709	2602671	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	6568765 6700404	6381428 6456459	6612347	6293335	6403577	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	5894793 6032173	5722754 5809709	5946284	5782873	5819064	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	71599 79950	71228 79356	76993	76703	74287	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	670456 679933	606355 640488	697038	678120	627784	2.34 2.34	2.34 2.34	2.34	2.34	2.34

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251474

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/11/2018 15:53 Calibration End Date: 10/11/2018 16:39 Calibration ID: 41590

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C2 PFHxA	13PF OA	Ave	6326738 6466293	6339964 6345383	6551765	6157268	6079239	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	714166 628473	638726 633573	621883	657057	685250	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	7655497 7579685	7419628 7272401	8018015	7357303	7363222	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	4506428 4693517	4452006 4583543	4822222	4505123	4338507	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	746762 787321	723729 691528	678448	746402	740354	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	7324239 7587887	6920420 6962938	7176818	6910498	7029540	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	4736253 4853826	4670495 4453656	4733422	4709698	4725138	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	6651109 6862640	6553900 6136983	6473570	6031179	6899879	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	2556972 2544312	2539349 2510150	2662442	2671011	2574025	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	96031 88683	95165 86956	93995	94033	91109	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	7049996 6725669	6986282 6421384	6869435	7018496	6713828	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	2830977 2776140	2809926 2722227	2831621	2838603	2743922	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	2360783 2244574	2303425 2065591	2271484	2367618	2248680	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	5859095 5738724	5812959 5316309	6057960	5617713	5812454	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	7394762 7330830	6802969 6910249	6852495	6835450	6748906	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	4881924 5061589	5009644 5054901	4920346	5017340	5082840	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	4407236 4868951	4244843 4529704	4631945	4639633	4731738	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 11-Oct-2018 15:53:58 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD1
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 17:36:06 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK049

First Level Reviewer: hannigana

Date: 11-Oct-2018 17:03:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.502	0.002	0.541	6568765	2.43		97.2	18635	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.504	1.502	0.002	1.000	64191	0.0263		105	1.5	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.788	0.001	0.643	5894793	2.41		96.6	14151	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.790	0.007	1.005	68877	0.0289		116	5.8	
D 47 13C3 PFBS										
301.90 > 83.00	1.831	1.828	0.003	0.658	71599	2.11		90.7	339	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.831	1.830	0.001	1.000	86018	0.0262		119	10.4	
298.90 > 99.00	1.831	1.830	0.001	1.000	33211		2.59(1.35-4.05)	119	7.9	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.041	-0.003	1.113	14892	0.0223		95.6	106	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.048	2.042	0.006	0.736	670456	2.29		98.0	804	
D 7 13C2 PFHxA										
315.00 > 270.00	2.079	2.079	0.0	0.747	6326738	2.40		96.0	19533	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.089	2.080	0.009	1.005	65682	0.0290		116	9.7	M
313.00 > 119.00	2.058	2.080	-0.022	0.990	4412		14.89(6.96-20.87)	116	5.9	M
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.103	0.006	1.152	31656	0.0213		91.0	93.3	
349.00 > 99.00	2.109	2.103	0.006	1.152	15617		2.03(1.15-3.45)	91.0	21.5	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	13703	0.0253		101	6.3	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.181	2.176	0.005	0.784	714166	2.62		105	3340	
D 9 13C4 PFHpA										
367.00 > 322.00	2.413	2.411	0.002	0.867	7655497	2.44		97.7	21276	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	121013	0.0372		149	19.0	
363.00 > 169.00	2.413	2.413	0.0	1.000	21377		5.66(2.17-6.52)	149	31.9	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	70146	0.0292		128	59.5	
399.00 > 99.00	2.439	2.426	0.013	1.005	18105		3.87(1.90-5.70)	128	14.2	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.426	0.0	0.872	4506428	2.24		94.9	10319	
76 DONA										
377.00 > 251.00	2.465	2.454	0.011	0.782	134466	0.0251		106	272	
377.00 > 85.00	2.452	2.454	-0.002	0.778	58095		2.31(1.13-3.39)	106	52.4	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.751	2.741	0.010	1.000	43551	0.0621		262	50.3	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.751	2.744	0.007	0.989	746762	2.33		98.1	995	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.762	0.004		6148279	2.45		99.9	13069	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.782	2.769	0.013	1.000	89576	0.0280		112	6.2	M
413.00 > 169.00	2.782	2.769	0.013	1.000	29521		3.03(1.36-4.08)	112	32.0	M
* 62 13C2 PFOA										
415.00 > 370.00	2.782	2.769	0.013		7600839	2.50			12073	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.769	0.013	1.000	7324239	2.47		98.6	11223	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.780	0.002	0.882	48095	0.0227		95.4	77.3	
449.00 > 99.00	2.782	2.780	0.002	0.882	12595		3.82(1.84-5.53)	95.4	32.3	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		993675	2.32		96.9	4630	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.153	3.140	0.013	1.000	49133	0.0229		98.6	20.4	
499.00 > 99.00	3.153	3.140	0.013	1.000	12250		4.01(2.04-6.12)	98.6	36.3	M
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.140	0.013	1.133	4736253	2.31		96.8	4740	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.143	0.010	1.133	6651109	2.45		97.9	7813	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.143	0.010	1.000	75293	0.0280		112	8.5	
463.00 > 169.00	3.153	3.143	0.010	1.000	11037		6.82(2.68-8.03)	112	32.1	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.063	60658	0.0255		109	48.5	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.474	0.007	1.251	2556972	2.38		95.1	5871	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.481	3.478	0.003	1.000	82770	0.0273		109	191	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.492	0.004	1.257	96031	2.39		99.9	587	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.492	0.004	1.109	26691	0.0208		86.7	135	
549.00 > 99.00	3.496	3.492	0.004	1.109	5479		4.87(3.02-9.05)	86.7	34.9	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.494	0.002	1.000	10833	0.0180		75.2	76.0	
D 23 13C2 PFDA										
515.00 > 470.00	3.512	3.501	0.011	1.262	7049996	2.48		99.1	13033	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.512	3.503	0.009	1.000	81583	0.0255		102	12.1	
513.00 > 169.00	3.512	3.503	0.009	1.000	4600		17.74(7.12-21.35)	102	10.1	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.314	2830977	2.43		97.3	5877	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.669	3.657	0.012	1.004	29068	0.0258		103	11.3	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.823	3.814	0.009	1.213	41090	0.0238		98.6	65.3	
599.00 > 99.00	3.823	3.814	0.009	1.213	9071		4.53(2.14-6.43)	98.6	29.8	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.374	2360783	2.50		100	3076	
33 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	3.839	3.828	0.011	1.004	20652	0.0235		94.0	54.6	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.839	3.830	0.009	1.380	5859095	2.45		97.9	10317	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.839	3.830	0.009	1.000	68208	0.0312		125	17.2	
563.00 > 169.00	3.839	3.830	0.009	1.000	4631		14.73(5.24-15.72)	125	14.9	
35 MeFOSA										
512.00 > 169.00	3.960	3.962	-0.002		13375	NC			60.8	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.992	3.991	0.001	1.266	64487	0.0233		98.9	235	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.123	4.122	0.001	0.996	72689	0.0247		98.7	17.9	M
613.00 > 169.00	4.123	4.122	0.001	0.996	5607		12.96(4.68-14.05)	98.7	7.0	
D 36 13C2 PFDaA										
615.00 > 570.00	4.139	4.125	0.014	1.488	7394762	2.54		102	12521	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.139	4.125	0.014	1.184	9273	0.0228		94.7	8.9	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.158	4.155	0.003		15311	NC			39.6	
75 Perfluorododecanesulfonic acid (PF										M
699.00 > 80.00	4.373	4.364	0.009	1.387	3867	0.0205		84.7	7.4	M
699.00 > 99.00	4.373	4.364	0.009	1.387	6102		0.63(0.28-0.83)	84.7	15.1	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.404	4.393	0.011	1.064	56523	0.0238		95.1	31.4	
663.00 > 169.00	4.404	4.393	0.011	1.064	9667		5.85(3.09-9.27)	95.1	20.7	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.644	4.634	0.010	1.669	4881924	2.34		93.6	8213	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.634	0.010	1.000	11508	0.0370		148	30.9	
713.00 > 219.00	4.627	4.634	-0.007	0.996	6357		1.81(0.70-2.09)	148	18.8	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.058	5.058	0.0	1.818	4407236	2.31		92.4	6756	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.074	5.060	0.014	1.003	83329	0.0254		101	35.3	
813.00 > 169.00	5.074	5.060	0.014	1.003	12284		6.78(2.77-8.32)	101	28.4	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.420	5.409	0.011	1.072	26903	0.0261		105	24.3	
913.00 > 169.00	5.420	5.409	0.011	1.072	5156		5.22(2.55-7.64)	105	18.1	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

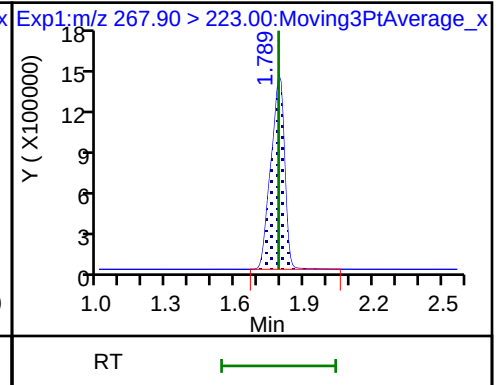
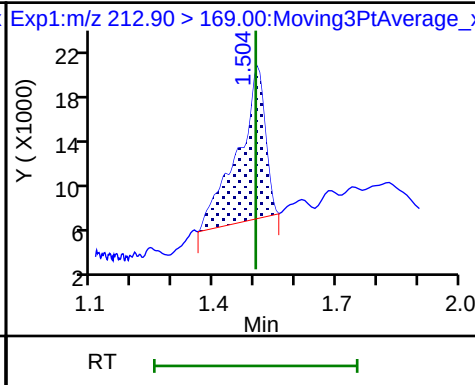
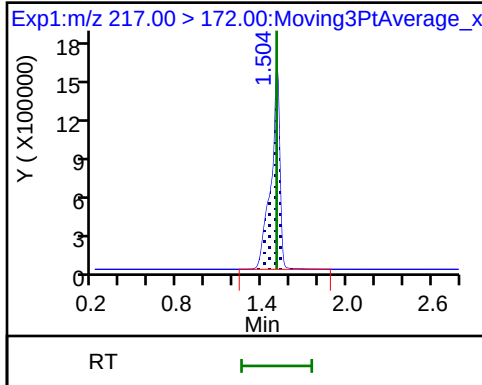
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

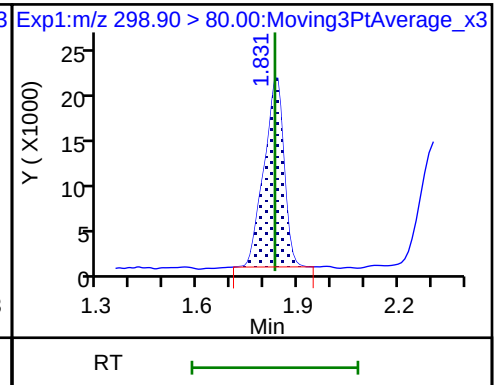
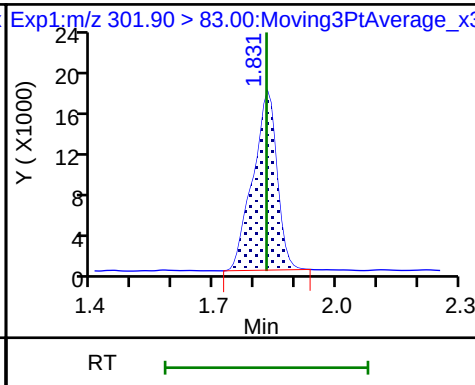
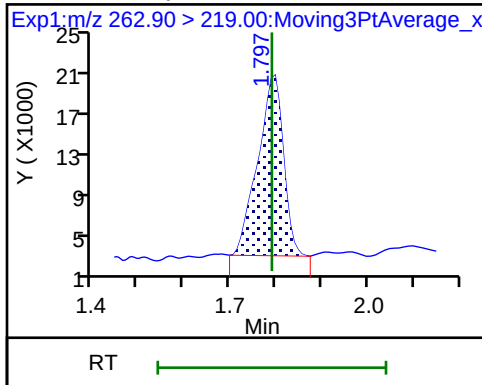
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

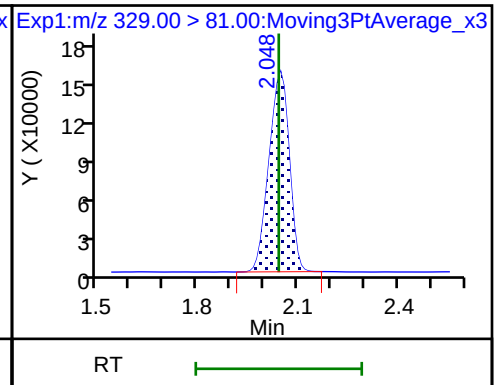
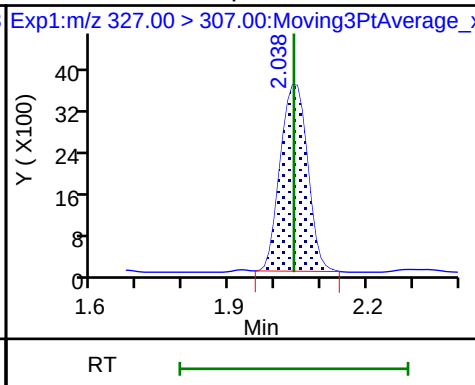
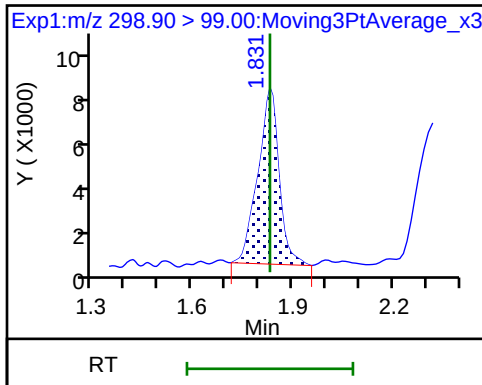
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

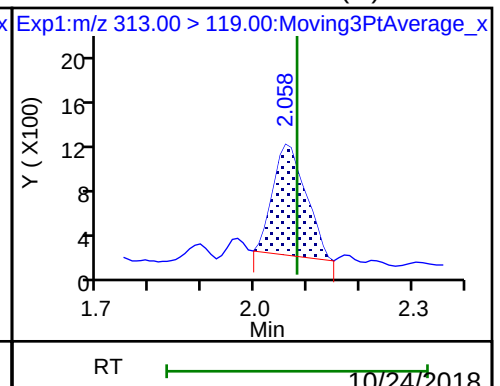
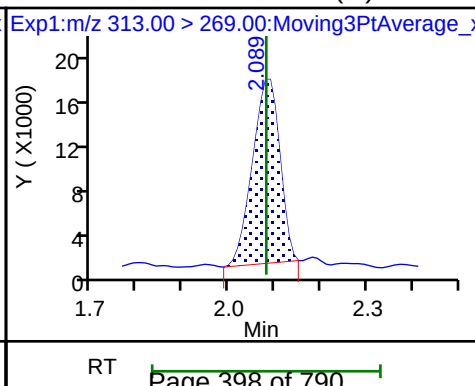
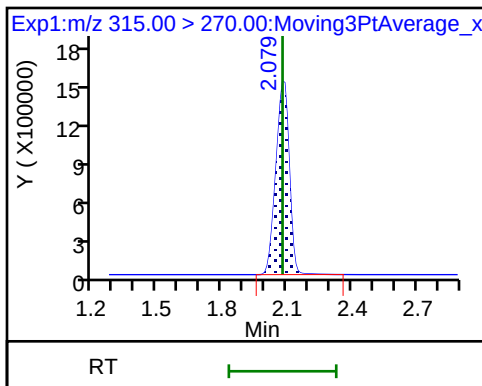
D 60 M2-4:2 FTS

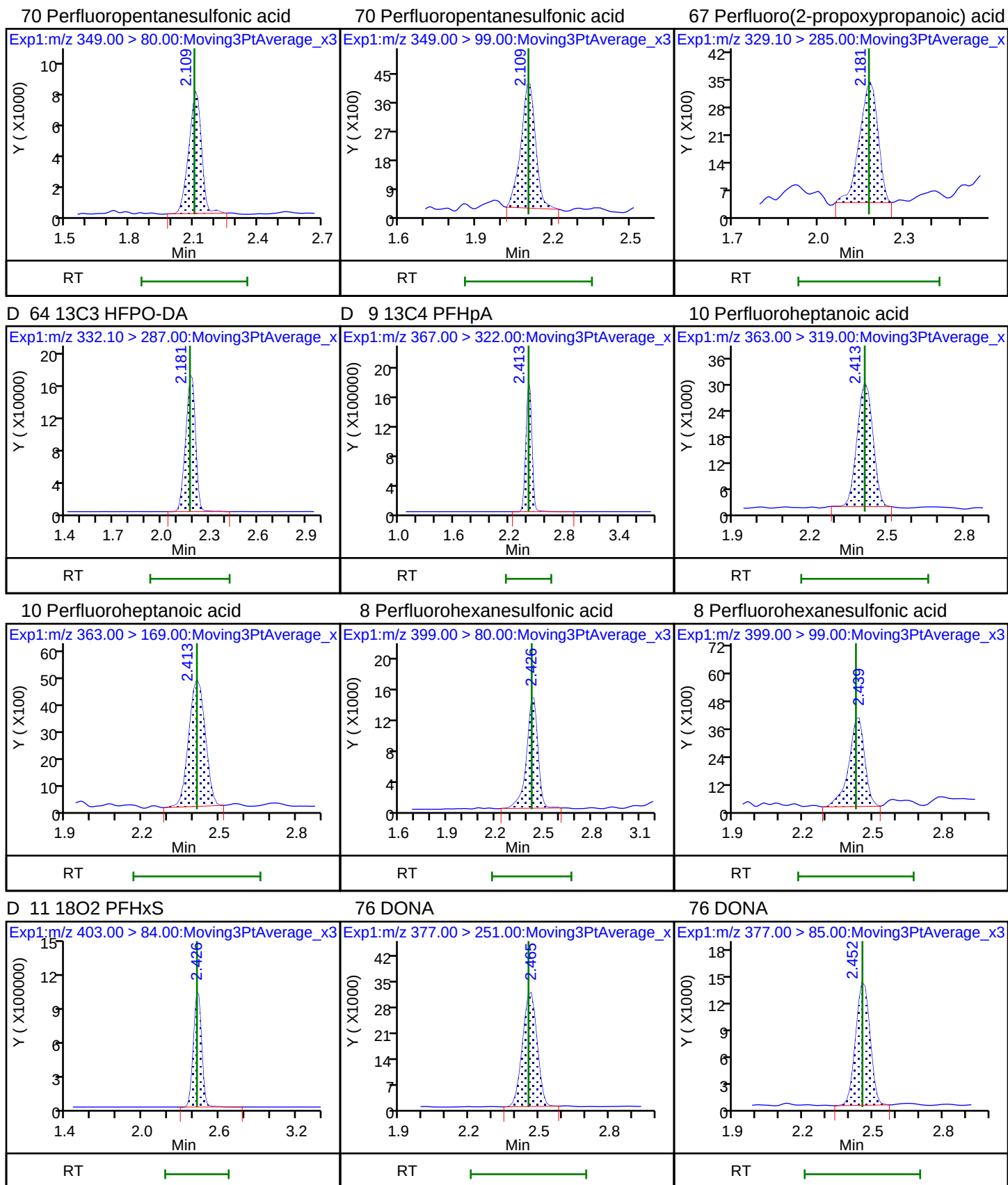


D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

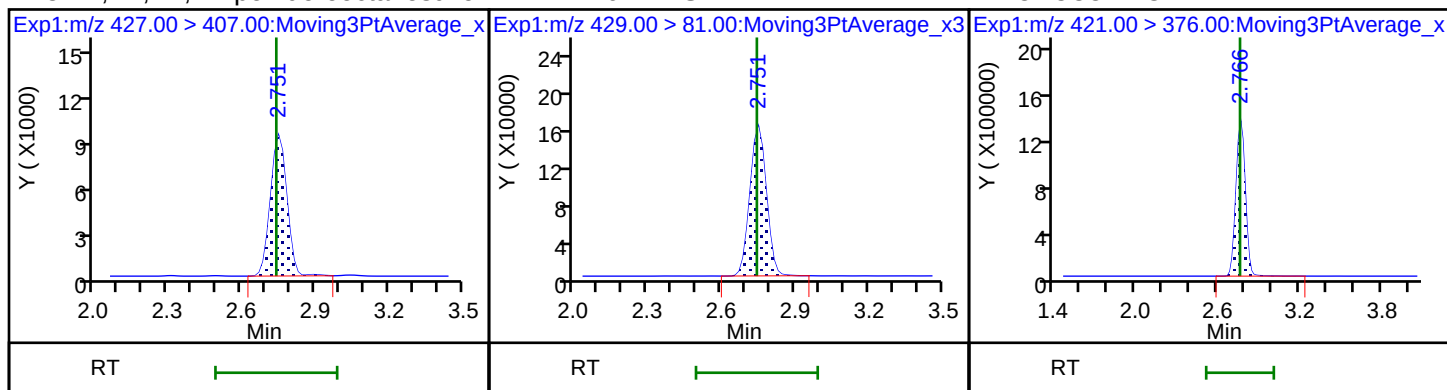
6 Perfluorohexanoic acid (M)





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

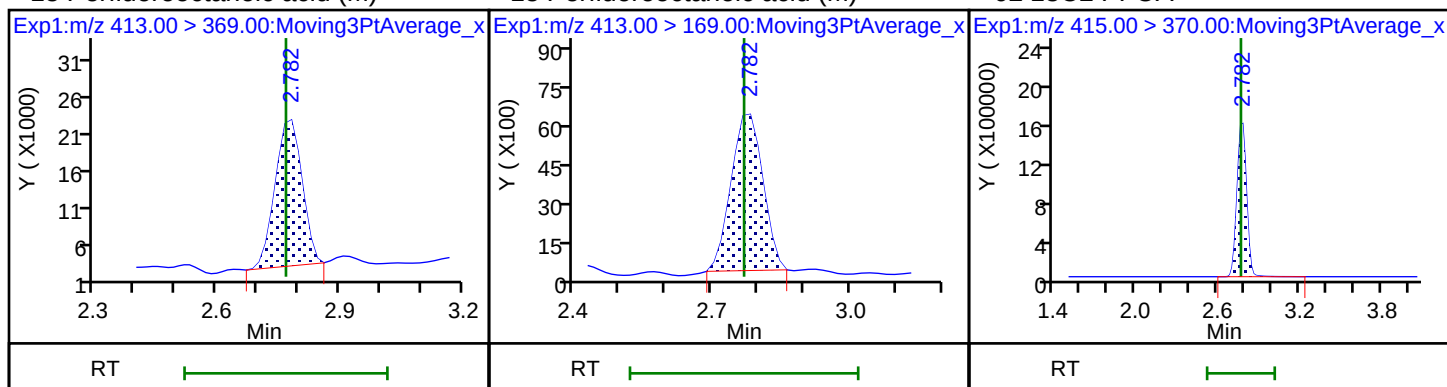
D 73 13C8 PFOA



15 Perfluorooctanoic acid (M)

15 Perfluorooctanoic acid (M)

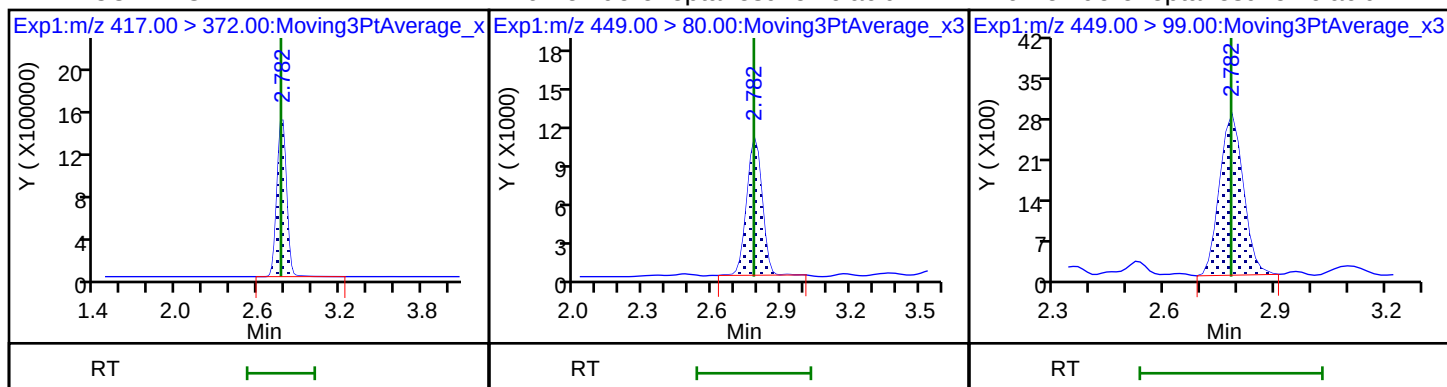
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

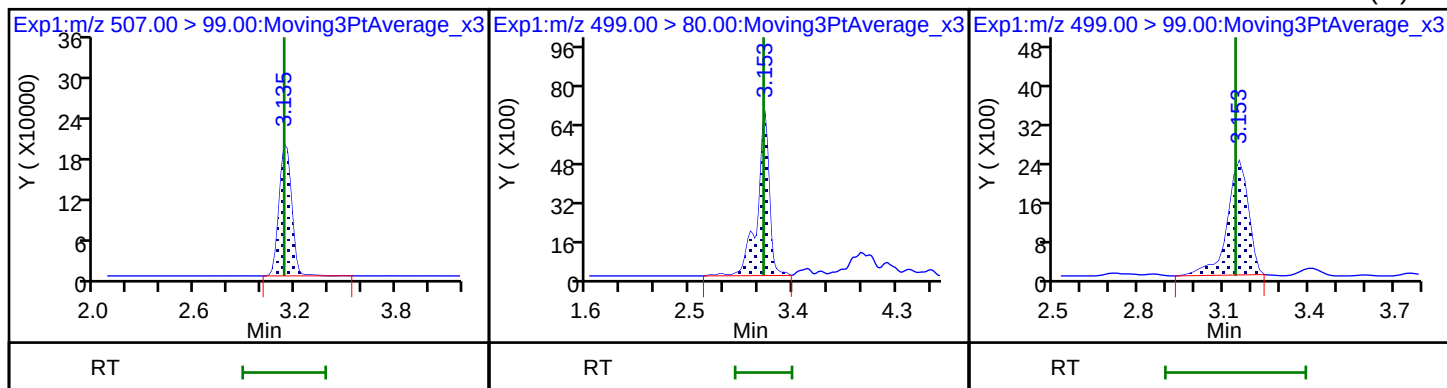
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

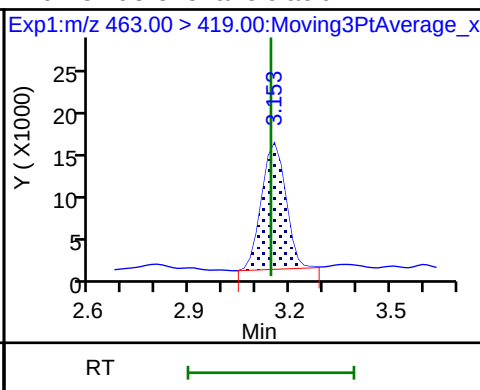
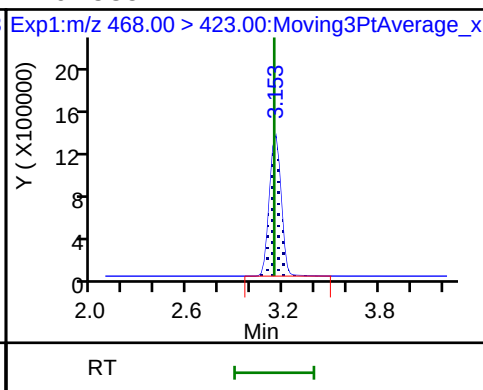
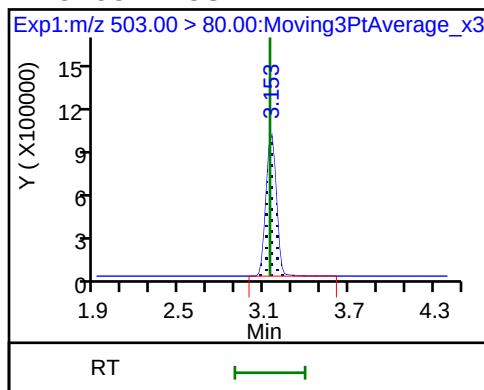
17 Perfluorooctanesulfonic acid (M)



D 18 13C4 PFOS

D 19 13C5 PFNA

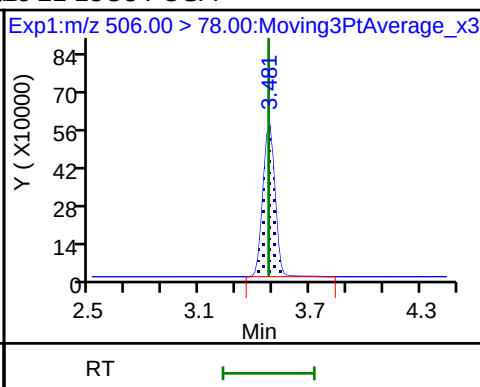
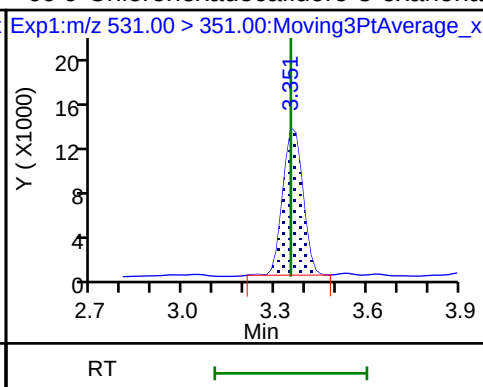
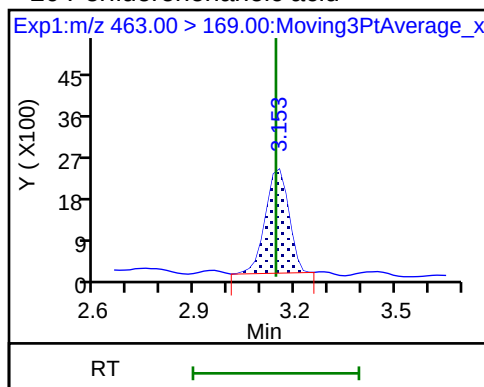
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonadiene

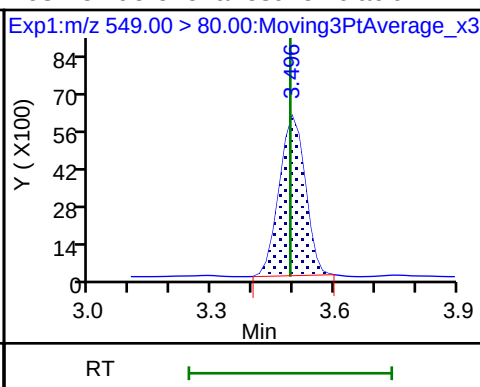
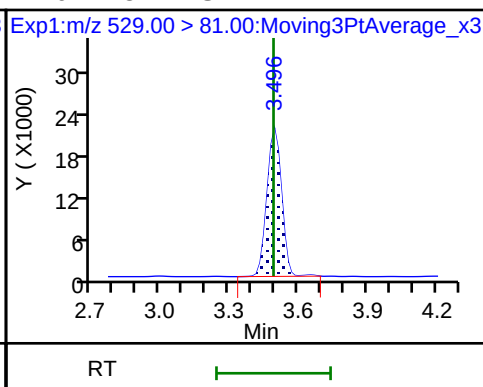
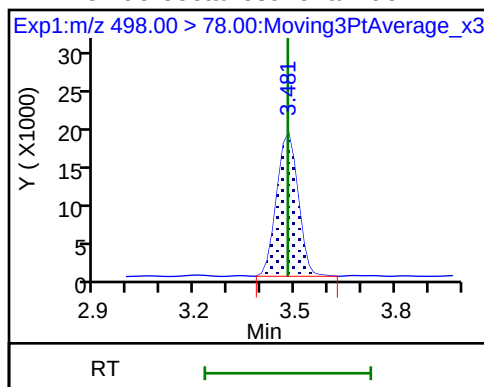
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

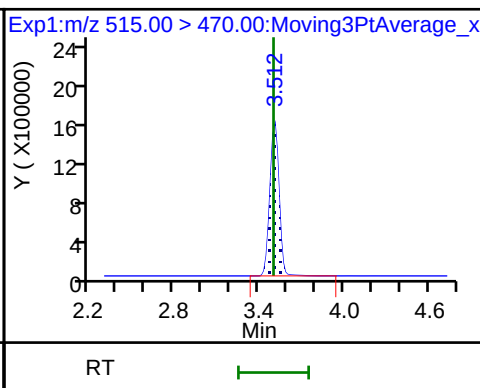
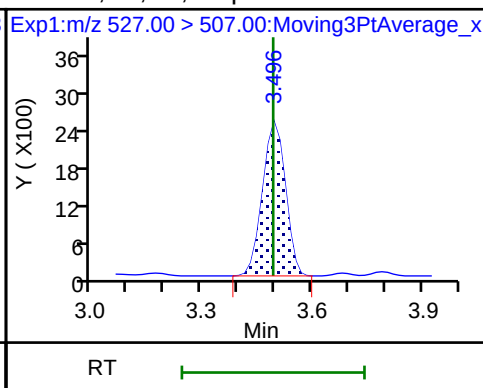
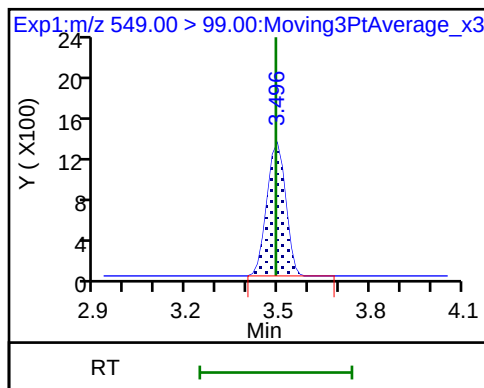
68 Perfluorononanesulfonic acid

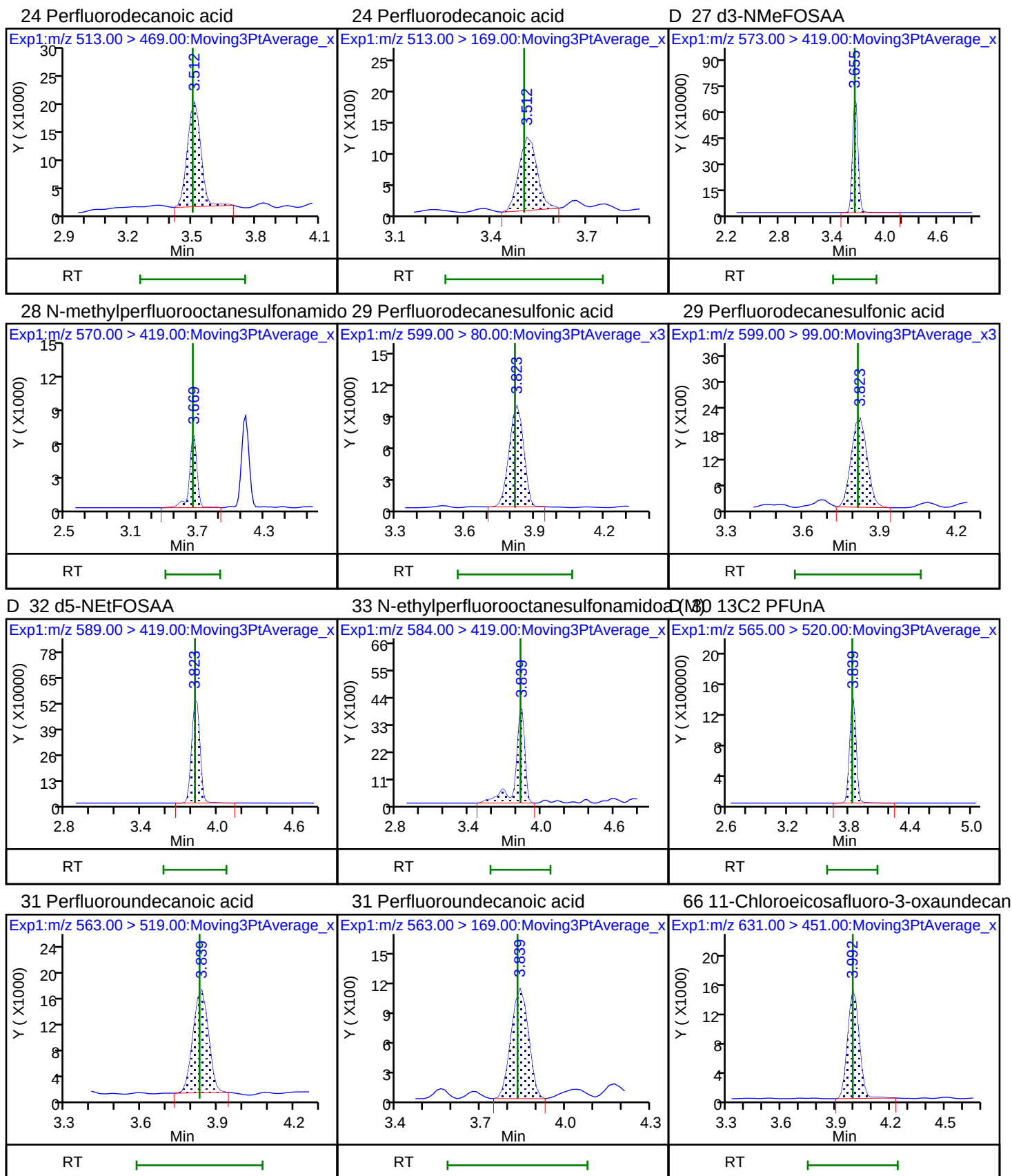


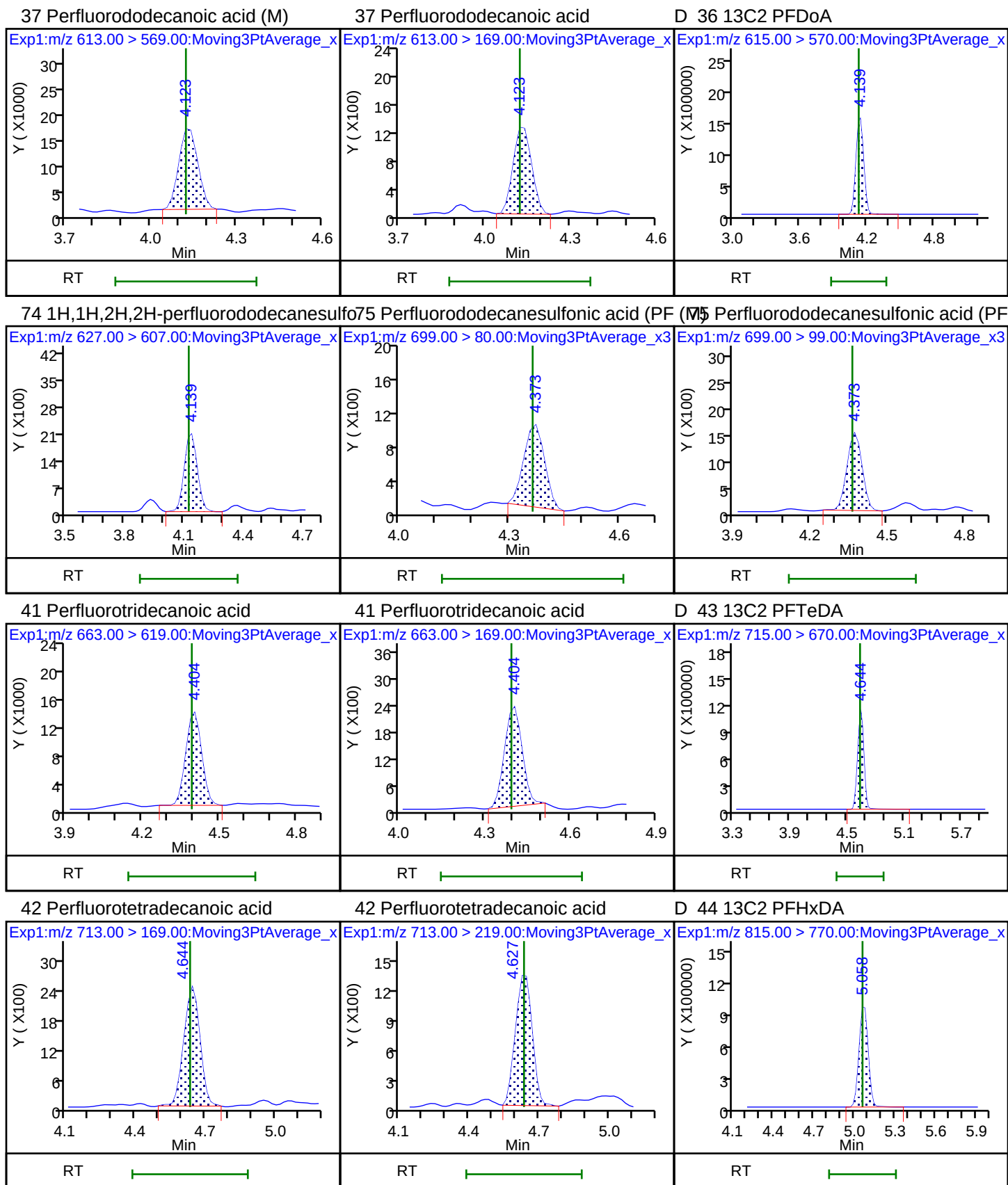
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonate

23 13C2 PFDA



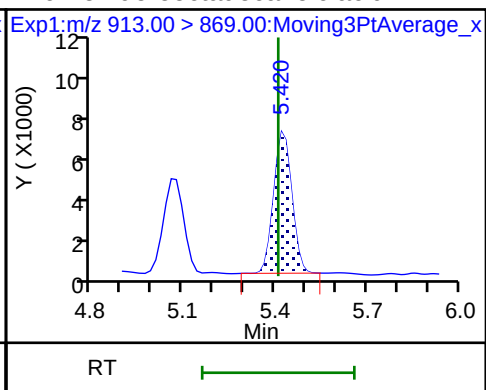
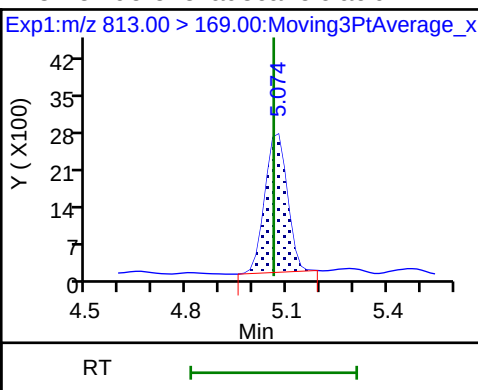
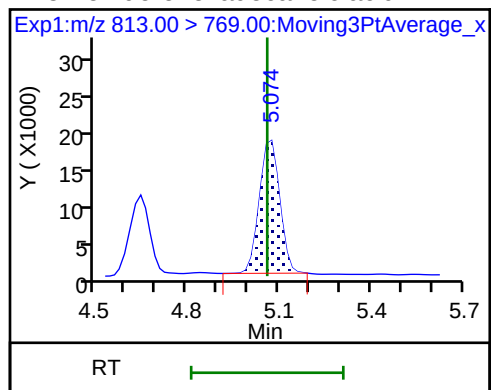




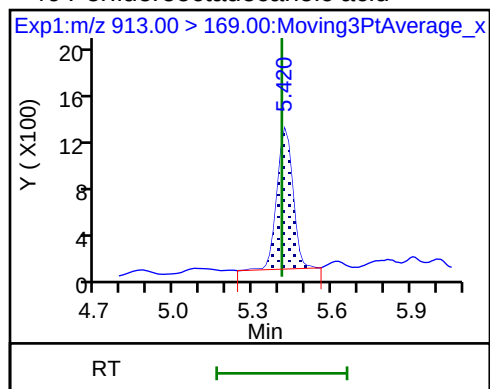
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

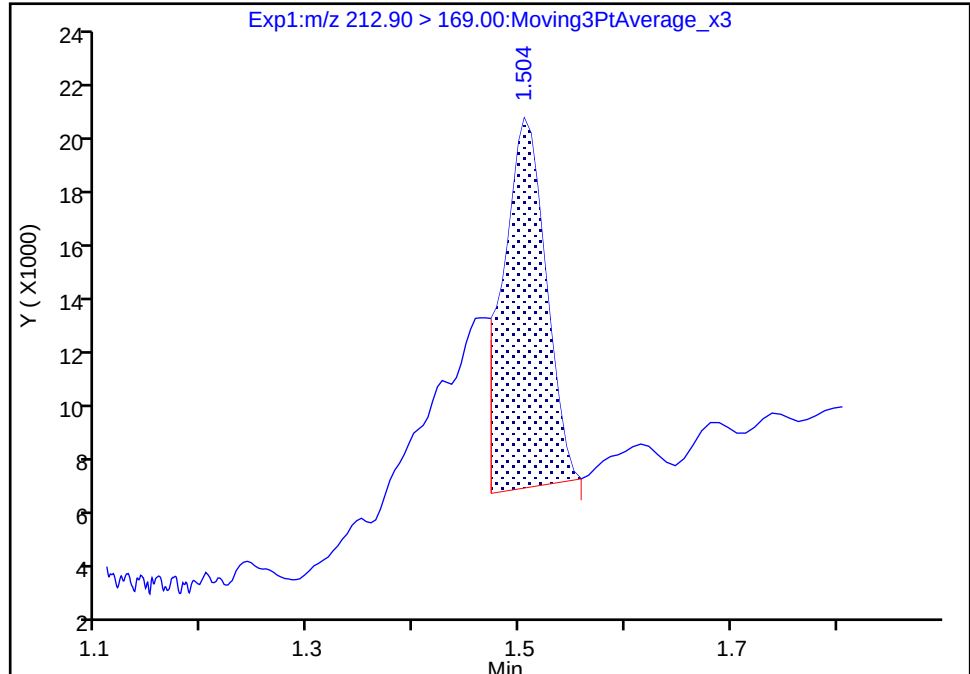
Detector: EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

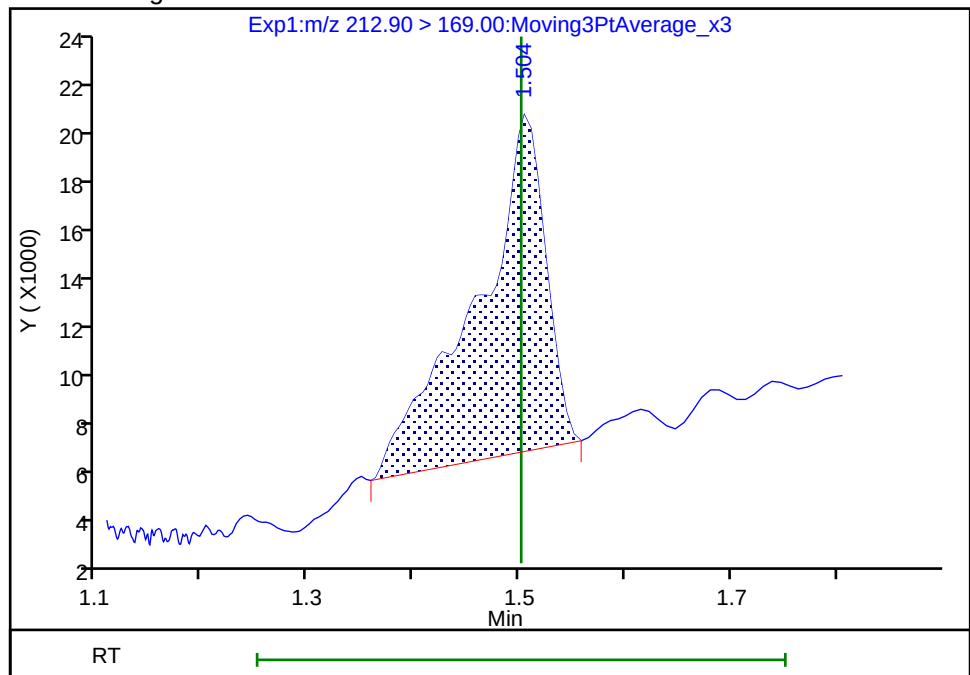
RT: 1.50
Area: 37939
Amount: 0.017450
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 64191
Amount: 0.026296
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:07:55

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

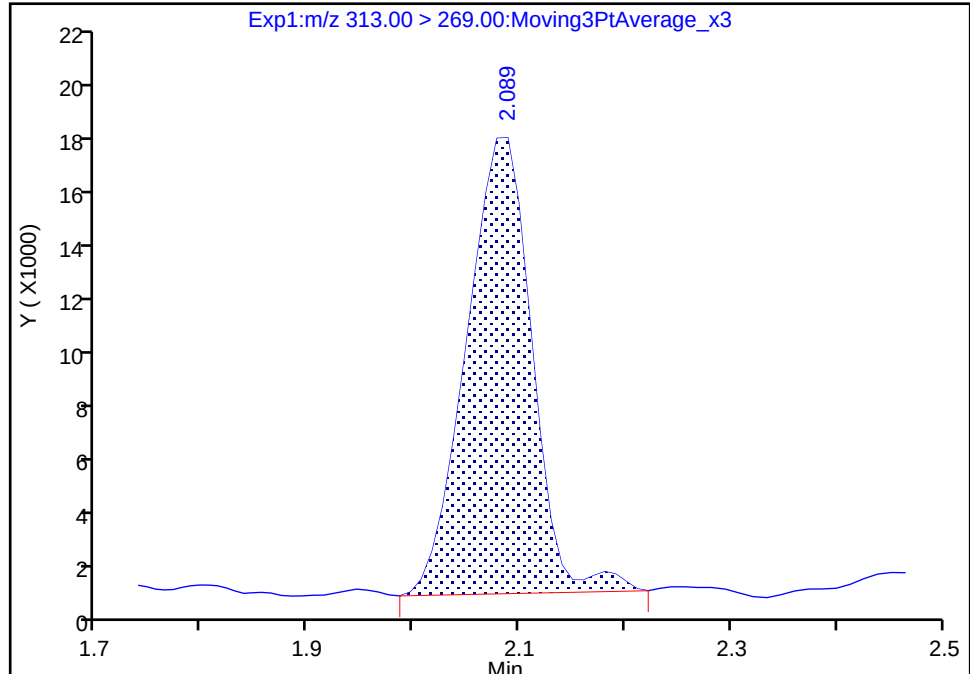
Detector: EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

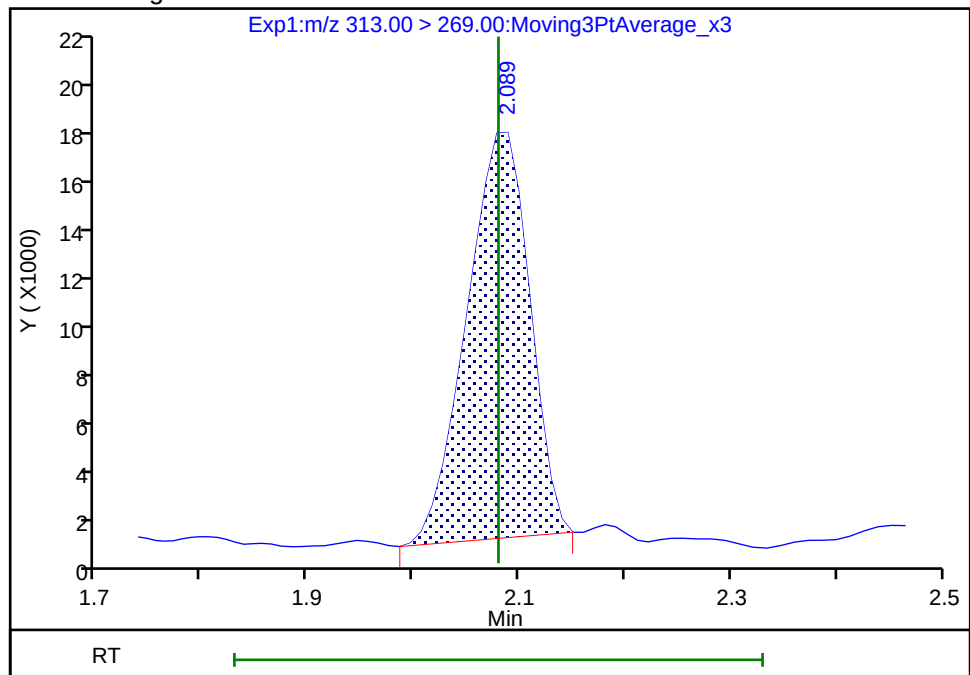
RT: 2.09
Area: 69624
Amount: 0.029942
Amount Units: ng/ml

Processing Integration Results



RT: 2.09
Area: 65682
Amount: 0.029049
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:08:15

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

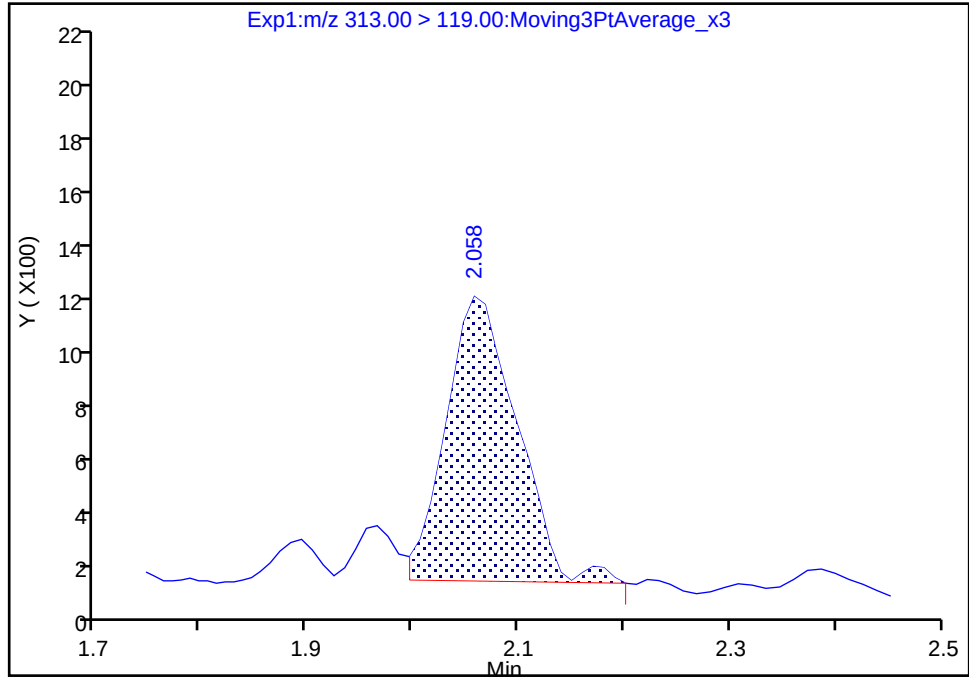
Detector: EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

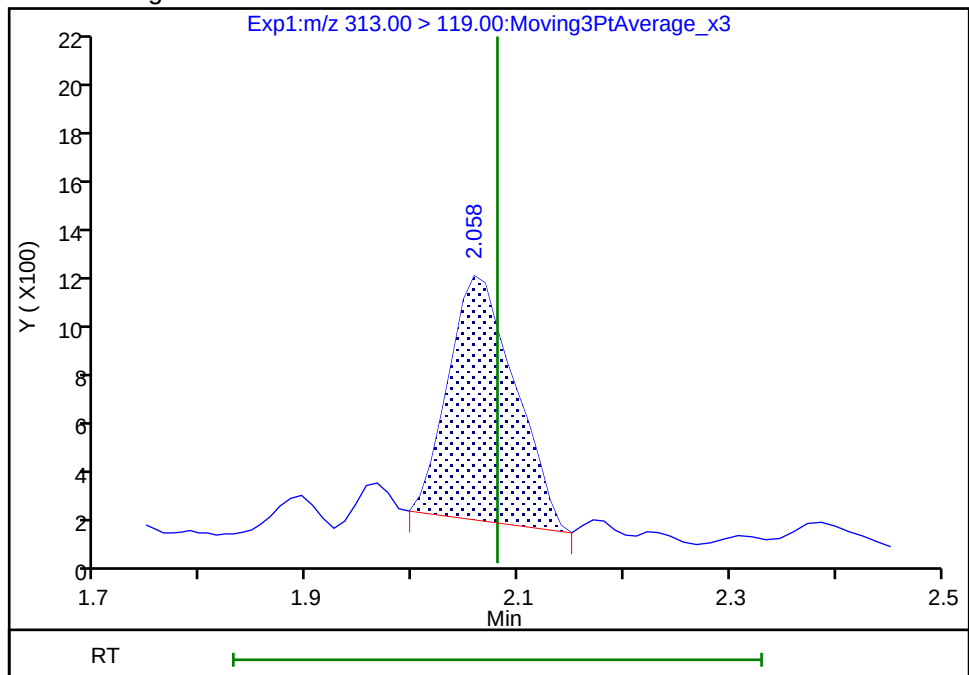
RT: 2.06
Area: 4949
Amount: 0.029942
Amount Units: ng/ml

Processing Integration Results



RT: 2.06
Area: 4412
Amount: 0.029049
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:08:22

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

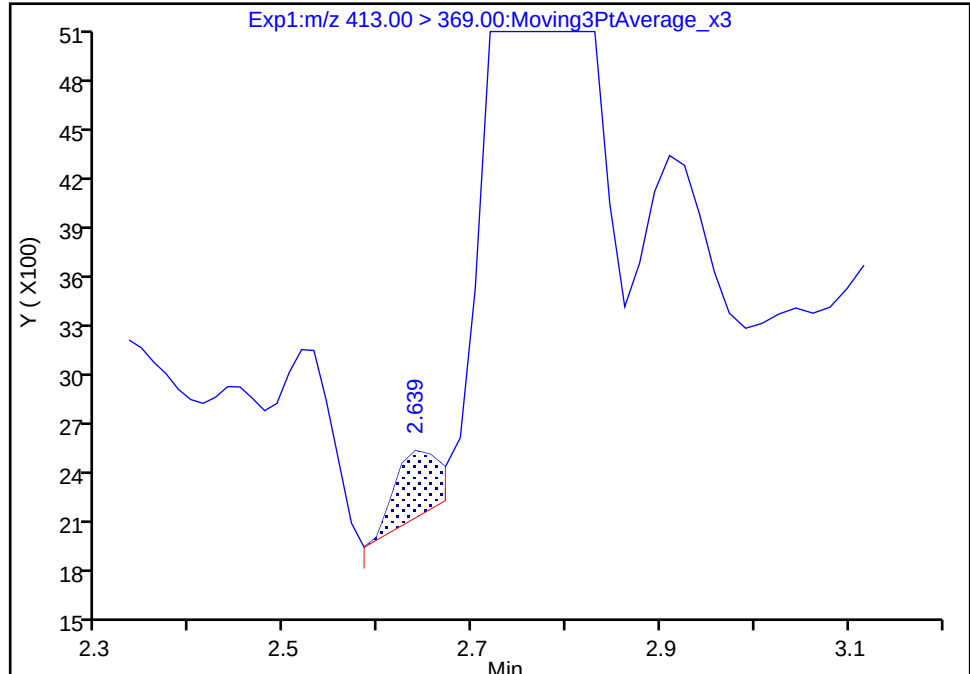
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

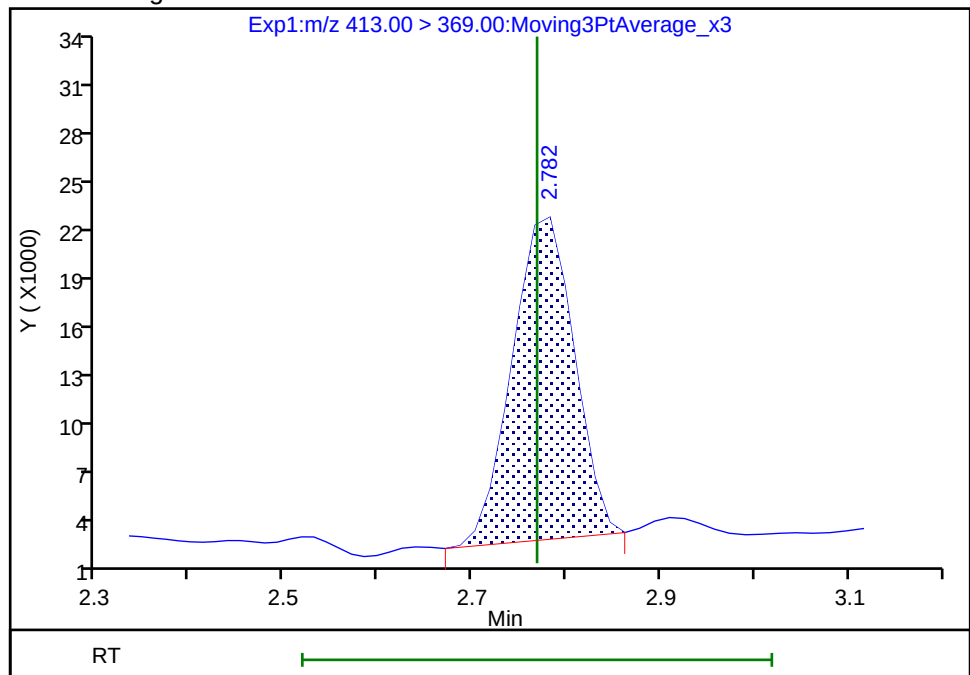
RT: 2.64
Area: 1255
Amount: 0.001123
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 89576
Amount: 0.027985
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:05:24

Audit Action: Manually Integrated

Audit Reason: Wrong peak

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor:

1.0000

Method: PFAS_A9

Limit Group:

LC PFC ICAL

Column:

Detector

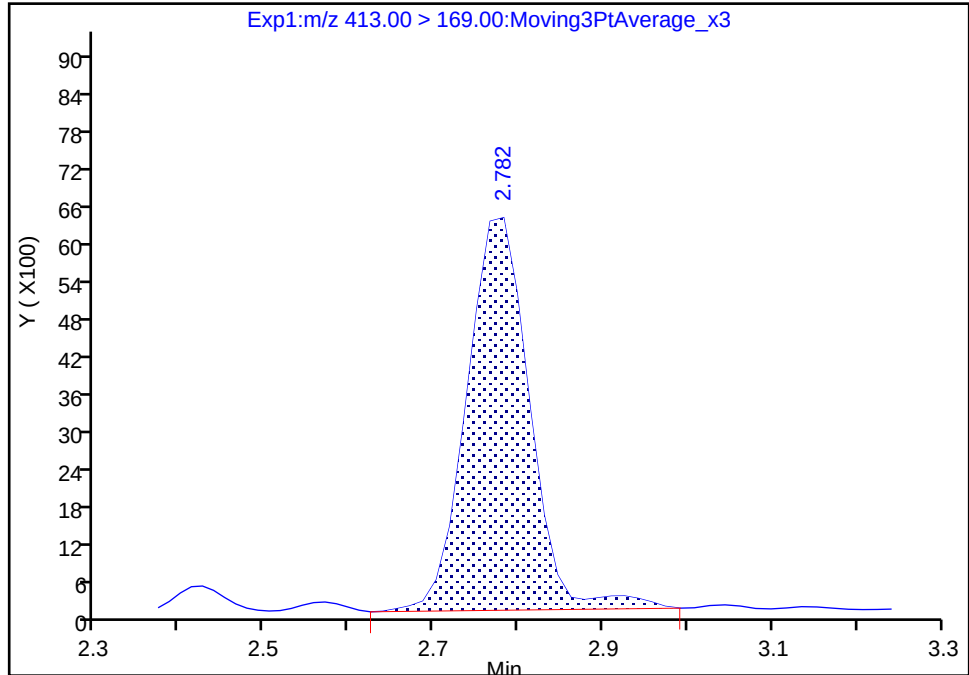
EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

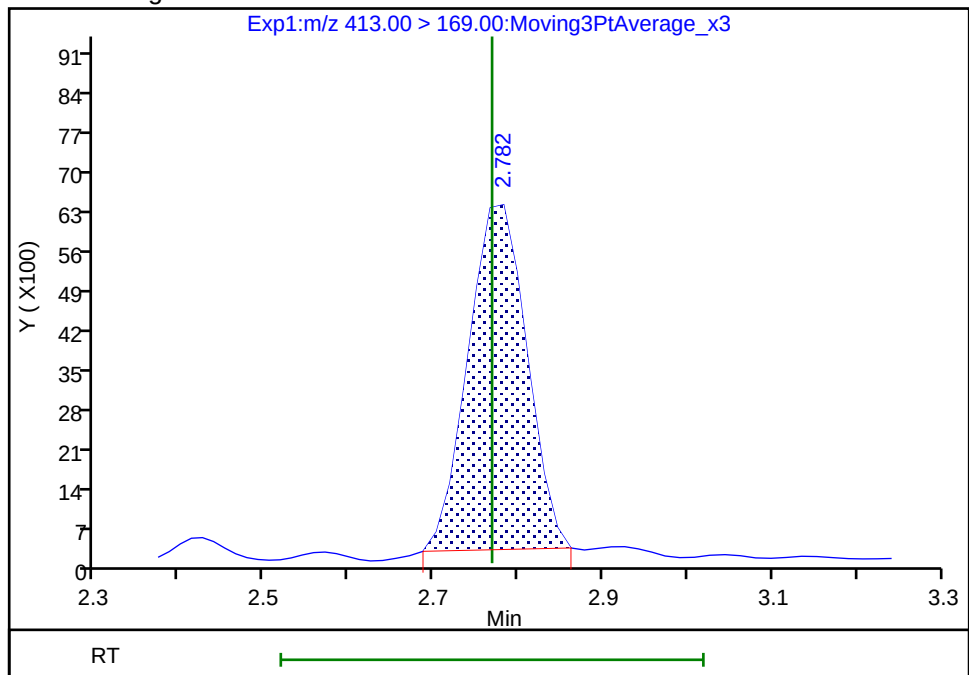
RT: 2.78
Area: 32673
Amount: 0.001123
Amount Units: ng/ml

Processing Integration Results



RT: 2.78
Area: 29521
Amount: 0.027985
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:08:42

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

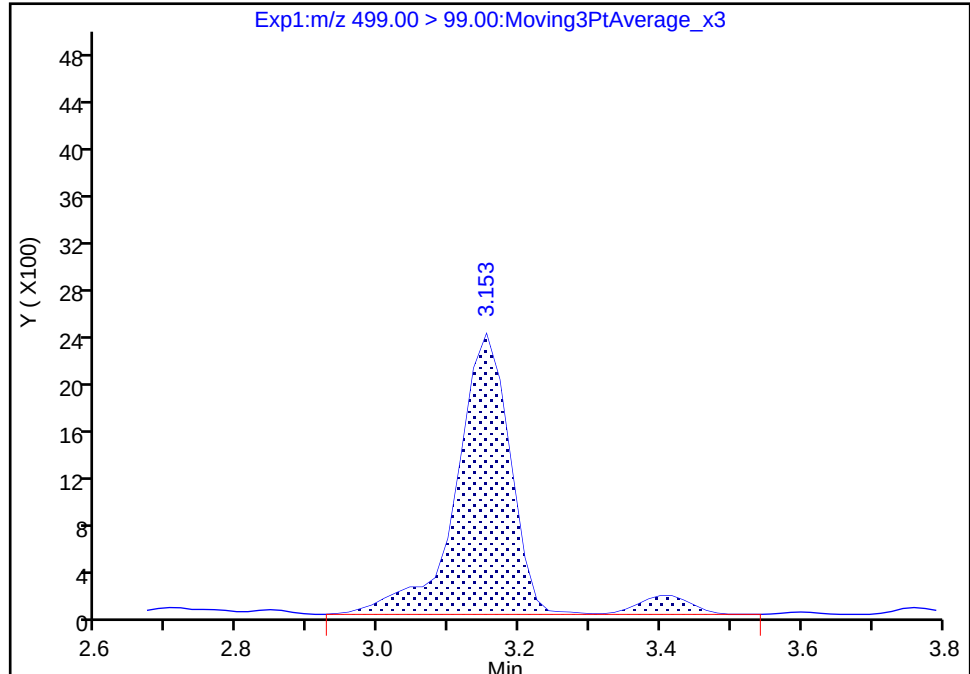
Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

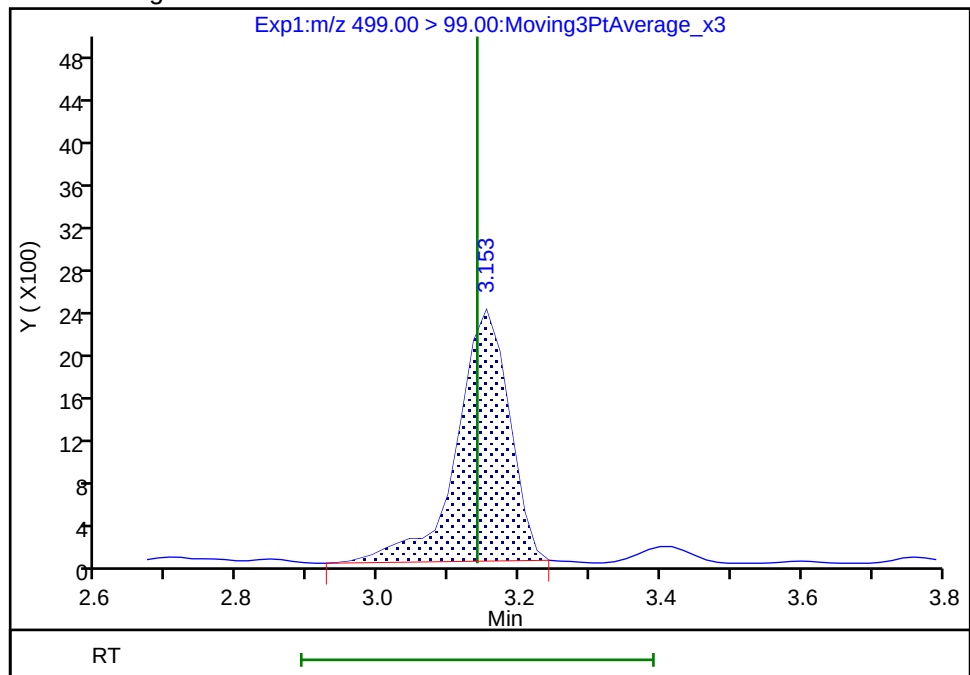
RT: 3.15
Area: 13377
Amount: 0.022875
Amount Units: ng/ml

Processing Integration Results



RT: 3.15
Area: 12250
Amount: 0.022875
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:08:52

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

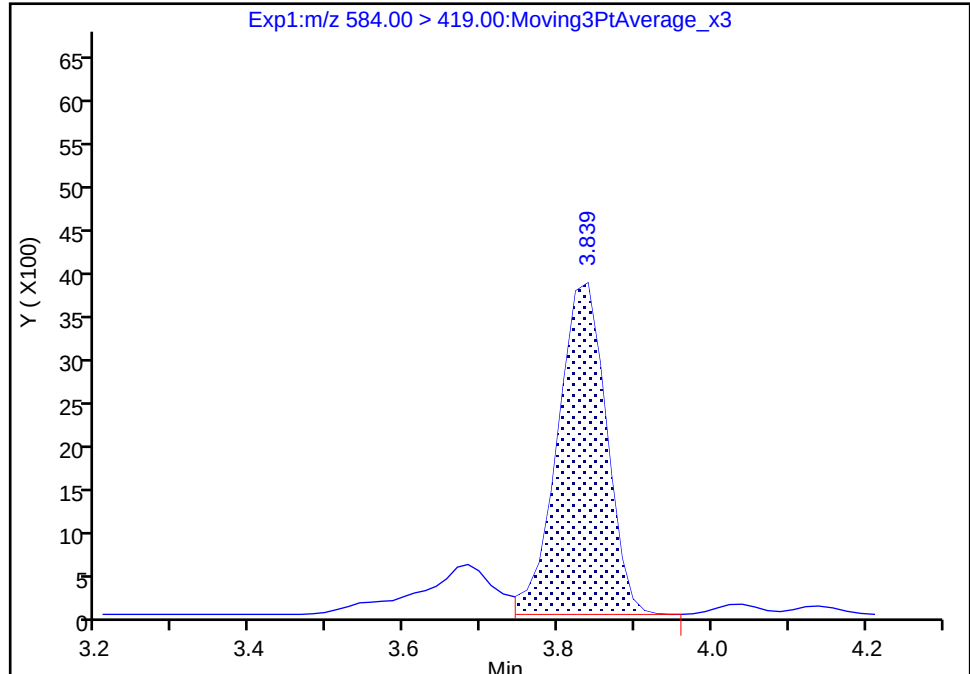
Detector: EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

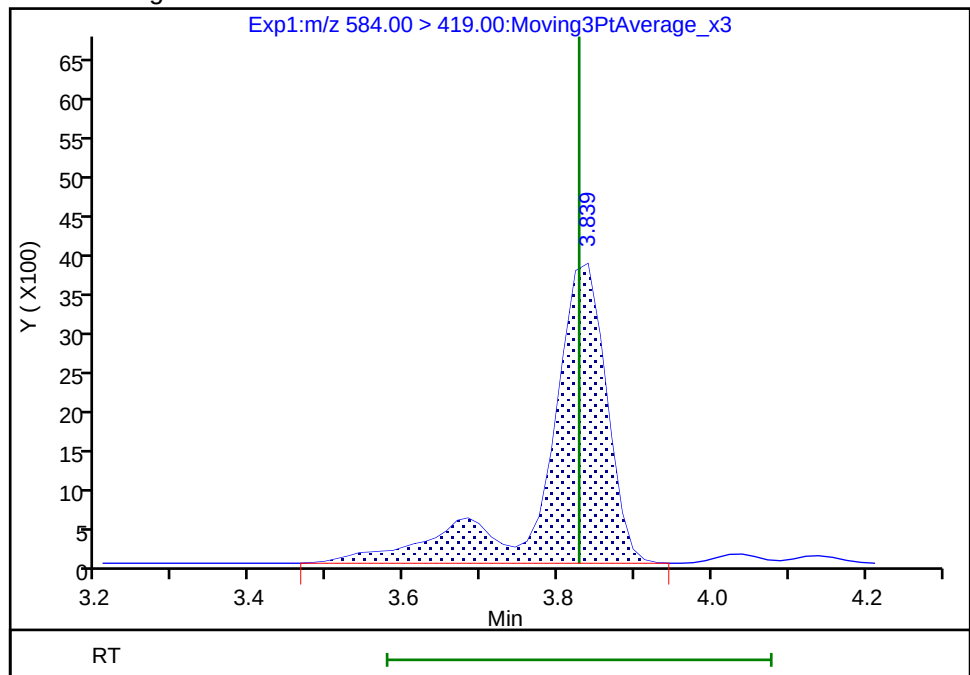
RT: 3.84
Area: 16749
Amount: 0.019558
Amount Units: ng/ml

Processing Integration Results



RT: 3.84
Area: 20652
Amount: 0.023503
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:09:24

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

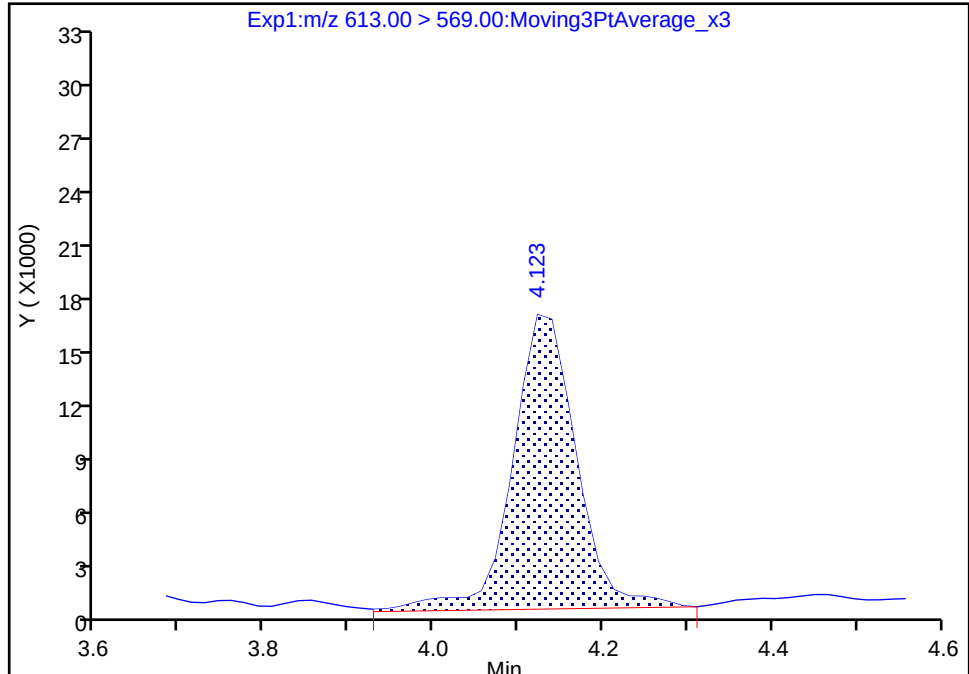
Detector: EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

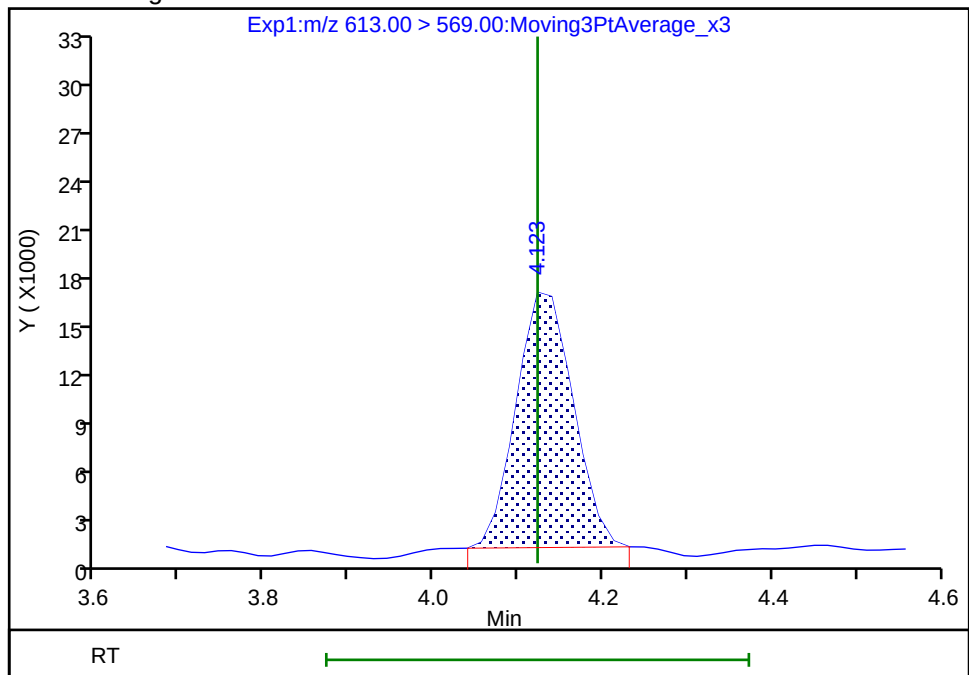
RT: 4.12
Area: 85136
Amount: 0.028210
Amount Units: ng/ml

Processing Integration Results



RT: 4.12
Area: 72689
Amount: 0.024667
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:09:40

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d

Injection Date: 11-Oct-2018 15:53:58

Instrument ID: A9

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

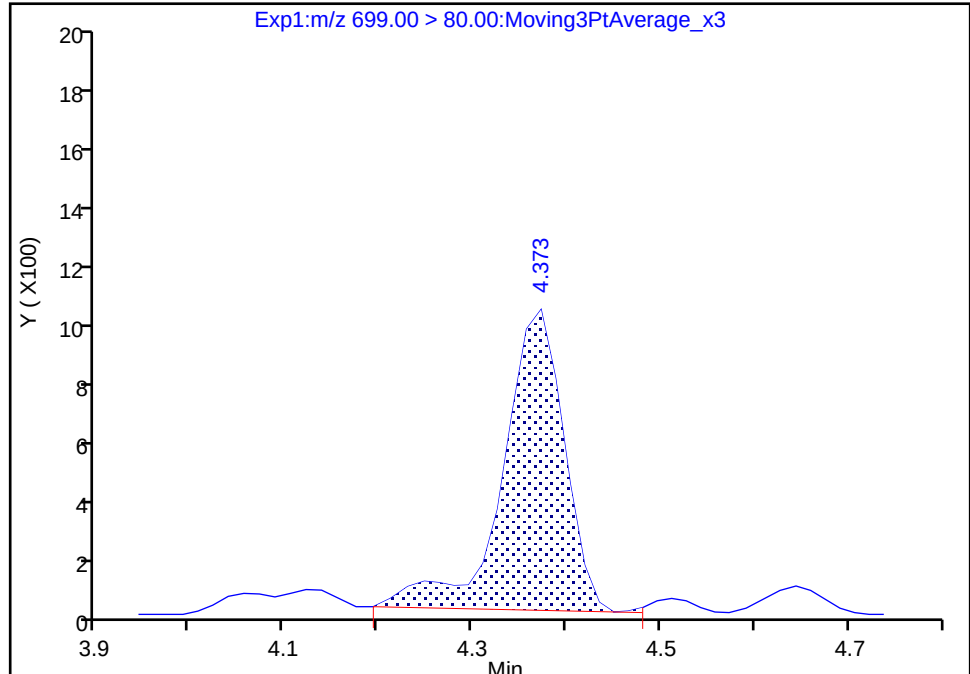
Detector: EXP1

75 Perfluorododecanesulfonic acid (PFDoS), CAS: 79780-39-5

Signal: 1

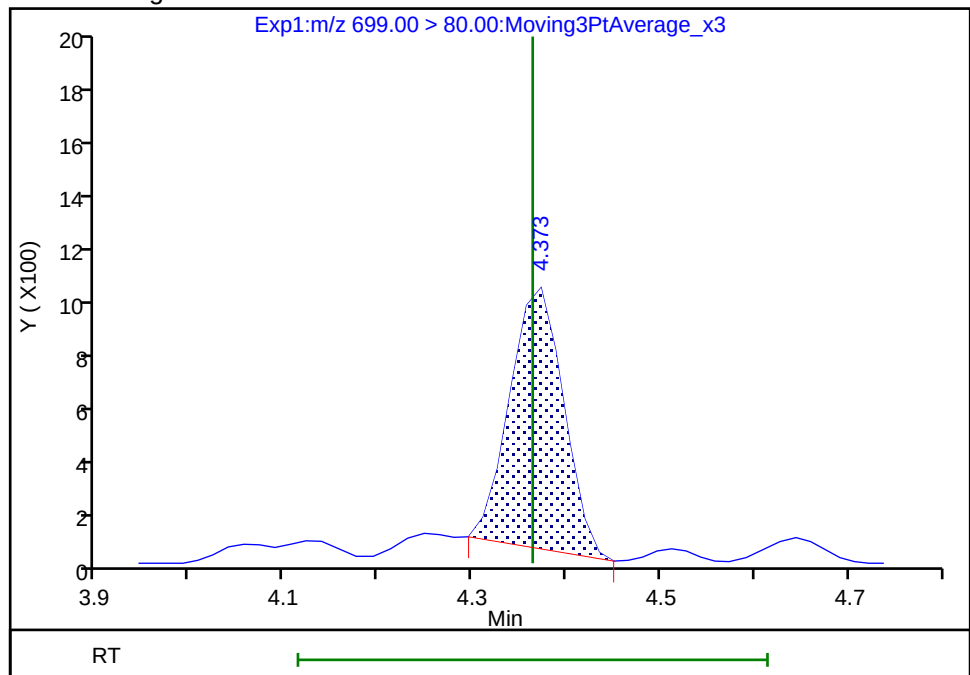
RT: 4.37
Area: 4639
Amount: 0.024012
Amount Units: ng/ml

Processing Integration Results



RT: 4.37
Area: 3867
Amount: 0.020500
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:09:52

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_003.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 11-Oct-2018 16:01:29 ALS Bottle#: 11 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 17:36:11 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK049

First Level Reviewer: hannigana

Date: 11-Oct-2018 17:11:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.502	0.002	0.544	6381428	2.59		104	15936	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.504	1.502	0.002	1.000	123180	0.0519		104	2.9	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.788	0.001	0.647	5722754	2.57		103	15005	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.789	1.790	-0.001	1.000	123506	0.0533		107	10.2	M
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.828	0.002	0.662	71228	2.30		99.0	353	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.830	0.0	1.000	153196	0.0469		106	17.2	
298.90 > 99.00	1.830	1.830	0.0	1.000	53497		2.86(1.35-4.05)	106	12.5	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.041	0.007	1.119	32759	0.0494		106	258	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.048	2.042	0.006	0.740	606355	2.27		97.3	639	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.079	-0.001	0.751	6339964	2.64		106	20919	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.078	2.080	-0.002	1.000	115174	0.0508		102	16.3	M
313.00 > 119.00	2.078	2.080	-0.002	1.000	9826		11.72(6.96-20.87)	102	13.3	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.103	0.006	1.152	72655	0.0492		105	143	
349.00 > 99.00	2.109	2.103	0.006	1.152	31470		2.31(1.15-3.45)	105	42.1	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	22847	0.0472		94.3	10.2	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.181	2.176	0.005	0.788	638726	2.57		103	2268	
D 9 13C4 PFHpA										
367.00 > 322.00	2.413	2.411	0.002	0.872	7419628	2.60		104	23280	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	178087	0.0565		113	25.1	
363.00 > 169.00	2.413	2.413	0.0	1.000	35571		5.01(2.17-6.52)	113	51.1	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	106300	0.0448		98.5	81.7	
399.00 > 99.00	2.426	2.426	0.0	1.000	33635		3.16(1.90-5.70)	98.5	28.7	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.426	0.0	0.877	4452006	2.43		103	6265	
76 DONA										
377.00 > 251.00	2.452	2.454	-0.002	0.782	260943	0.0493		105	505	
377.00 > 85.00	2.452	2.454	-0.002	0.782	108148		2.41(1.13-3.39)	105	95.8	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.741	0.009	1.000	33341	0.0490		103	46.3	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.750	2.744	0.006	0.994	723729	2.48		104	1052	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.762	0.004		6219999	2.47		101	11875	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.769	-0.003	1.000	182437	0.0603		121	11.9	
413.00 > 169.00	2.766	2.769	-0.003	1.000	60571		3.01(1.36-4.08)	121	93.1	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.769	-0.003		6927371	2.50			9523	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.769	-0.003	1.000	6920420	2.56		102	12451	
16 Perfluoroheptanesulfonic acid										R
449.00 > 80.00	2.782	2.780	0.002	0.888	100232	0.0480		101	147	R
449.00 > 99.00	2.782	2.780	0.002	0.888	17846		5.62(1.84-5.53)	101	43.5	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		1035909	2.41		101	2508	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.135	3.140	-0.005	1.000	96738	0.0457		98.4	41.8	
499.00 > 99.00	3.135	3.140	-0.005	1.000	20130		4.81(2.04-6.12)	98.4	34.9	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.140	-0.005	1.133	4670495	2.50		105	4941	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.143	0.010	1.140	6553900	2.65		106	6706	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.143	0.010	1.000	142868	0.0540		108	14.2	
463.00 > 169.00	3.153	3.143	0.010	1.000	27981		5.11(2.68-8.03)	108	73.4	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	103748	0.0442		94.8	83.0	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.474	0.006	1.258	2539349	2.59		104	5304	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.478	0.002	1.000	146833	0.0487		97.4	318	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.492	0.004	1.264	95165	2.60		109	392	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.492	0.004	1.115	54285	0.0429		89.4	172	
549.00 > 99.00	3.496	3.492	0.004	1.115	11719		4.63(3.02-9.05)	89.4	125	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.494	0.002	1.000	36272	0.0609		127	254	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.501	-0.005	1.264	6986282	2.69		108	9547	
24 Perfluorodecanoic acid										M
513.00 > 469.00	3.512	3.503	0.009	1.005	173863	0.0548		110	27.1	M
513.00 > 169.00	3.512	3.503	0.009	1.005	11210		15.51(7.12-21.35)	110	15.1	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.321	2809926	2.65		106	4891	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.657	-0.002	1.000	54699	0.0489		97.8	23.6	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.823	3.814	0.009	1.220	78865	0.0463		96.0	95.4	
599.00 > 99.00	3.823	3.814	0.009	1.220	20222		3.90(2.14-6.43)	96.0	86.6	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.382	2303425	2.68		107	4800	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.839	3.828	0.011	1.004	49041	0.0572		114	58.7	
D 30 13C2 PFUnA										
565.00 > 520.00	3.839	3.830	0.009	1.388	5812959	2.66		107	11009	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.839	3.830	0.009	1.000	112078	0.0516		103	24.3	
563.00 > 169.00	3.823	3.830	-0.007	0.996	10020		11.19(5.24-15.72)	103	41.8	
35 MeFOSA										
512.00 > 169.00	3.960	3.962	-0.002		25222	NC			91.1	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.991	3.991	0.0	1.273	133248	0.0488		104	342	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.122	4.122	0.0	1.000	156817	0.0578		116	39.9	
613.00 > 169.00	4.122	4.122	0.0	1.000	16596		9.45(4.68-14.05)	116	21.3	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.125	-0.003	1.490	6802969	2.57		103	10226	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.125	-0.003	1.179	17523	0.0435		90.3	24.9	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.155	0.002		30109	NC			77.9	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.373	4.364	0.009	1.395	9743	0.0524		108	15.0	
699.00 > 99.00	4.373	4.364	0.009	1.395	18026		0.54(0.28-0.83)	108	54.1	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.404	4.393	0.011	1.068	123990	0.0567		113	66.8	
663.00 > 169.00	4.388	4.393	-0.005	1.064	18349		6.76(3.09-9.27)	113	30.0	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.644	4.634	0.010	1.679	5009644	2.63		105	8035	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.634	0.010	1.000	14279	0.0447		89.5	31.9	
713.00 > 219.00	4.644	4.634	0.010	1.000	13366		1.07(0.70-2.09)	89.5	45.1	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.057	5.058	-0.001	1.828	4244843	2.44		97.6	7003	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.060	-0.003	1.000	113058	0.0481		96.2	53.3	
813.00 > 169.00	5.057	5.060	-0.003	1.000	20008		5.65(2.77-8.32)	96.2	48.8	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.420	5.409	0.011	1.072	49577	0.0500		100	41.9	
913.00 > 169.00	5.420	5.409	0.011	1.072	9040		5.48(2.55-7.64)	100	35.0	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_003.d

Injection Date: 11-Oct-2018 16:01:29

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

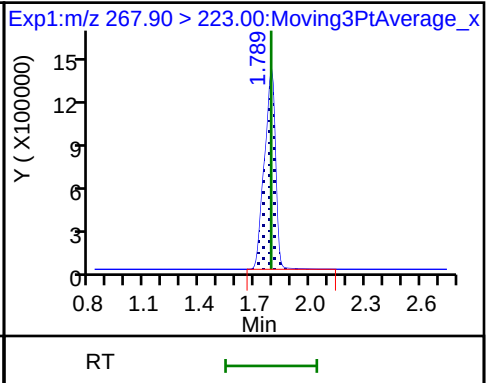
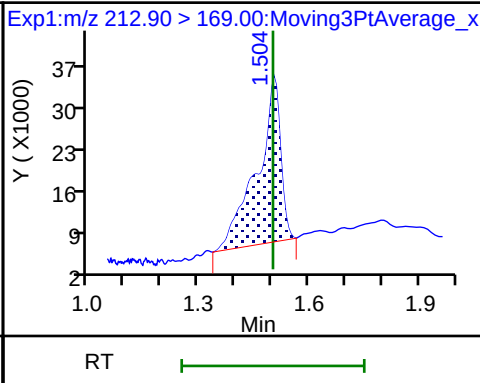
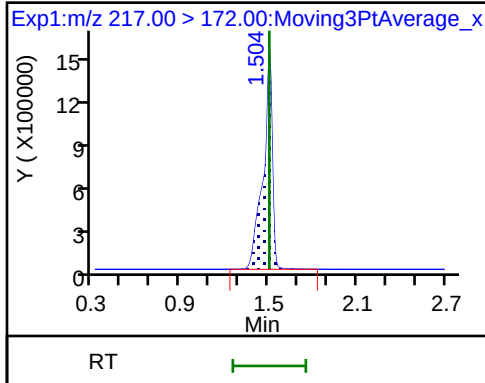
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

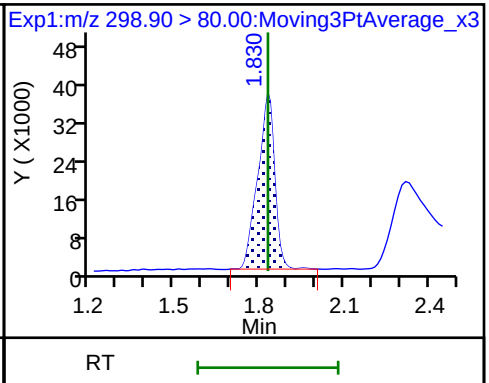
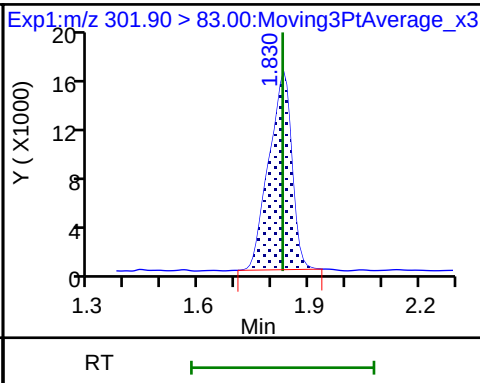
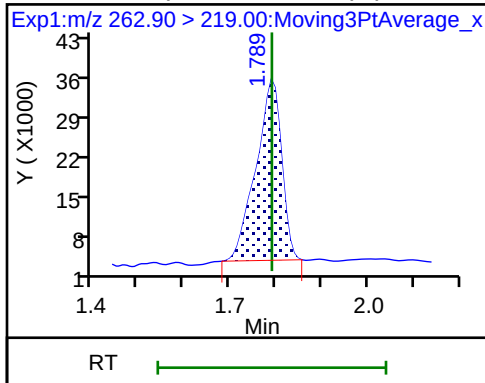
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3 PFBS

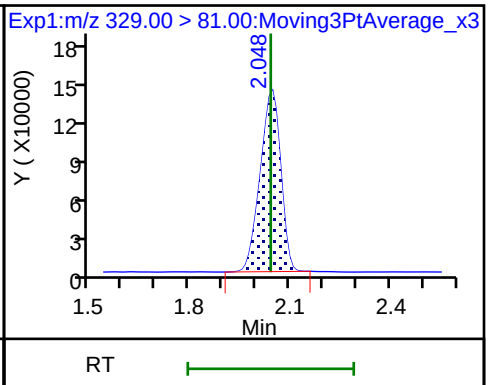
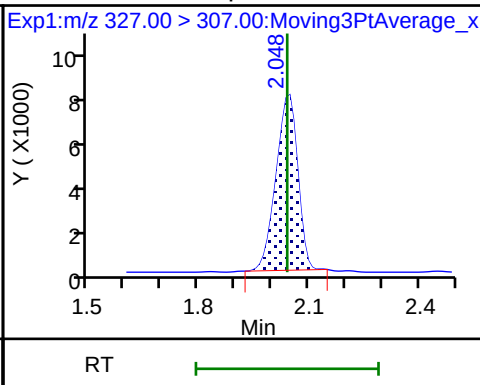
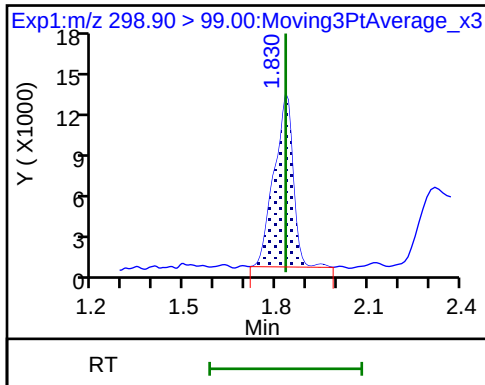
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

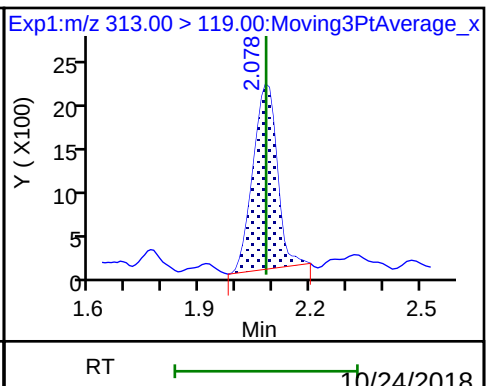
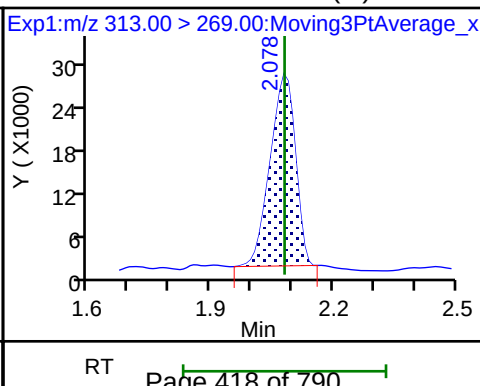
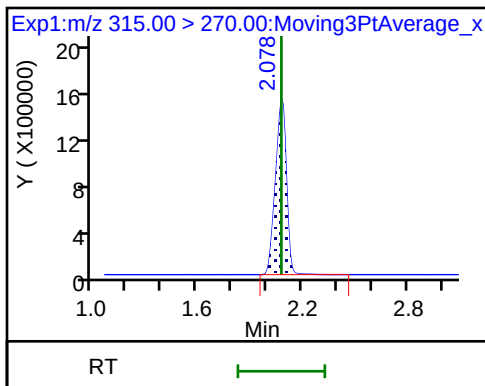
D 60 M2-4:2 FTS

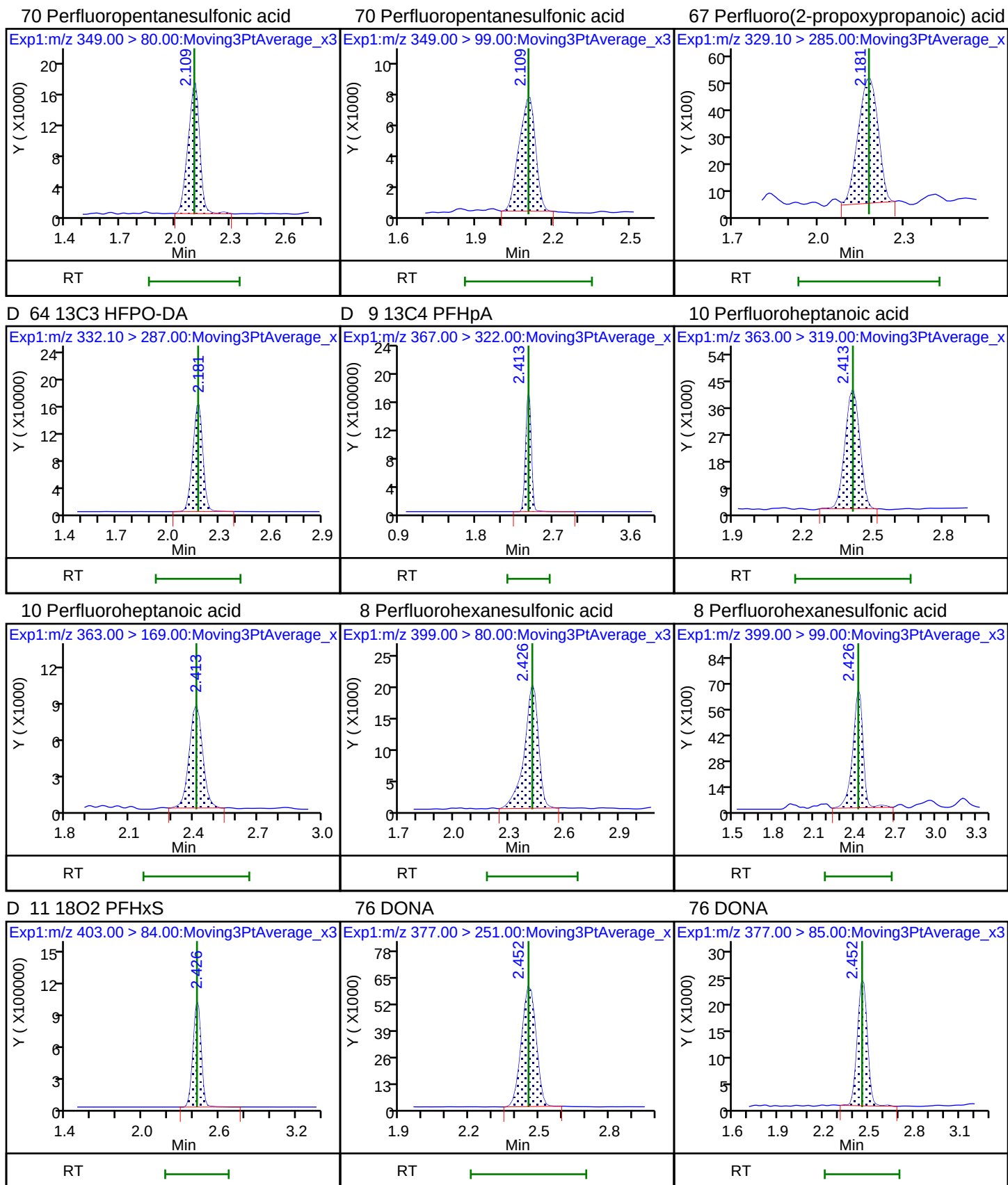


D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

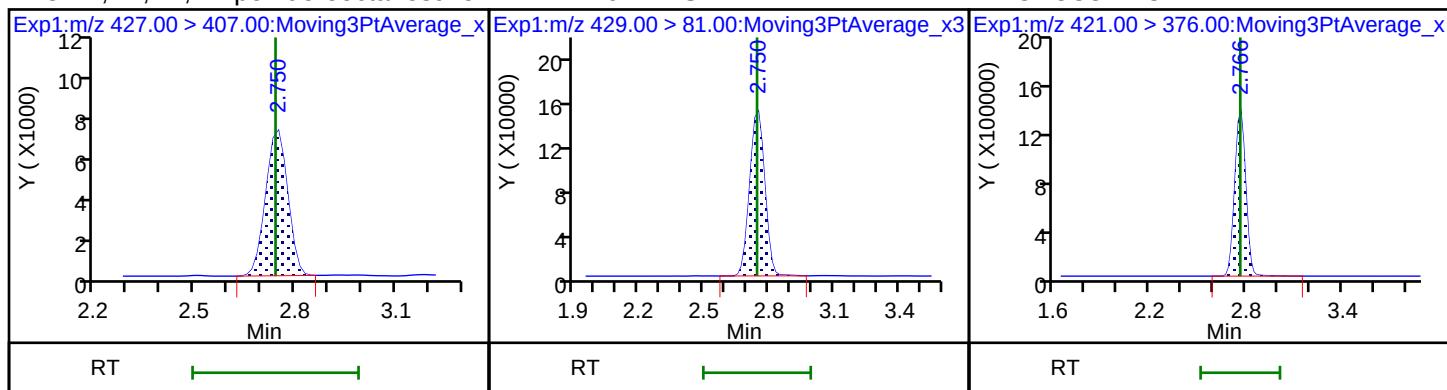
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

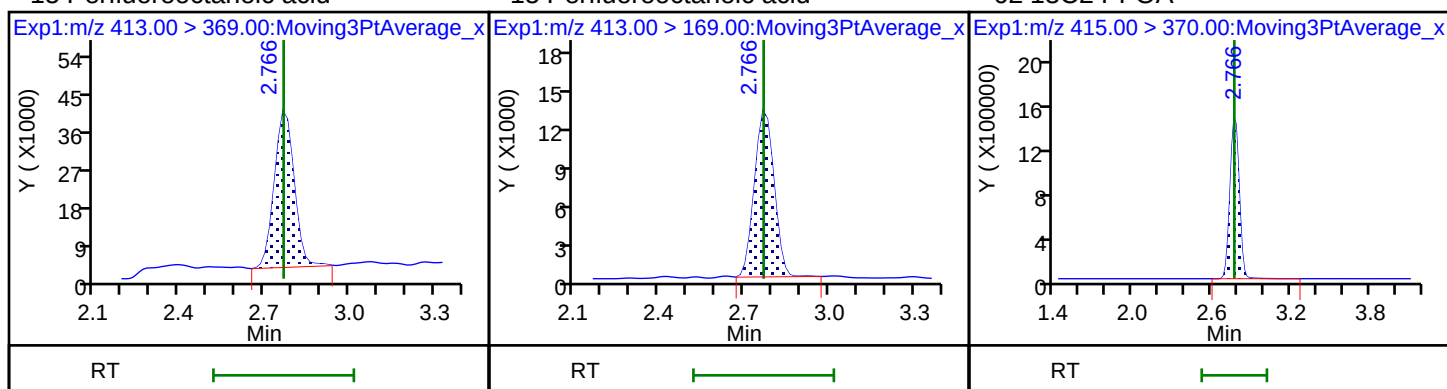
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

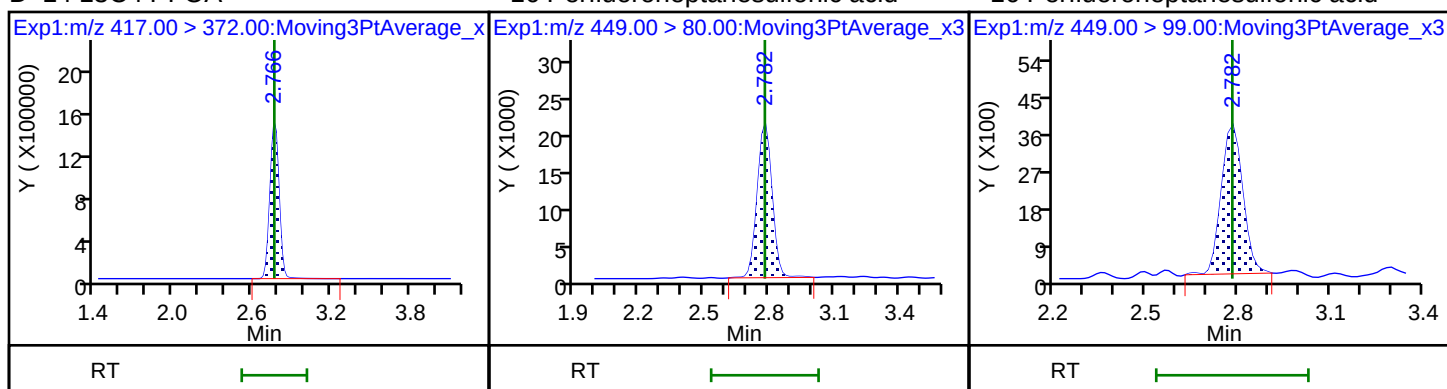
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

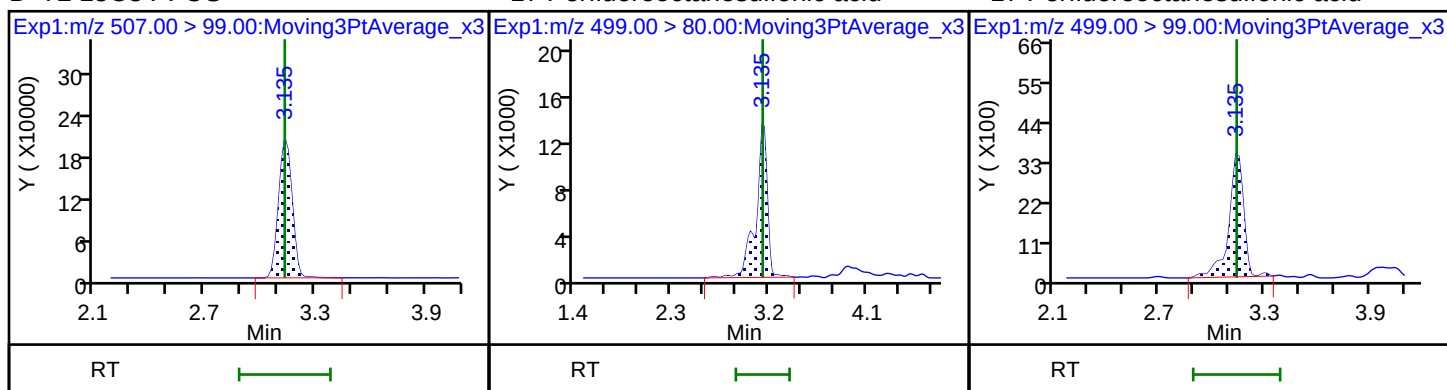
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

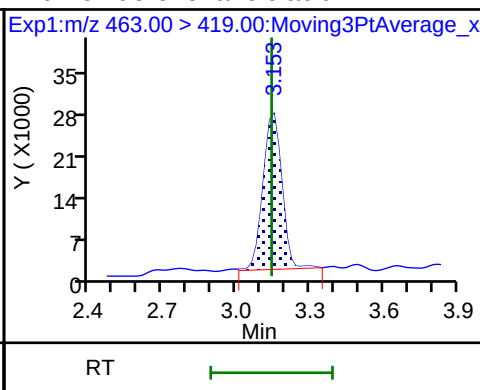
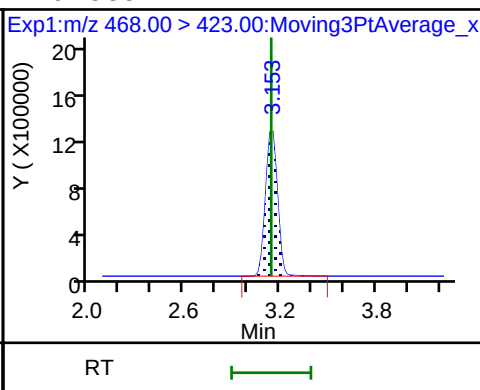
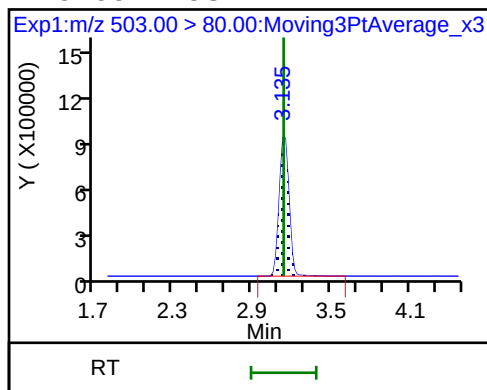
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

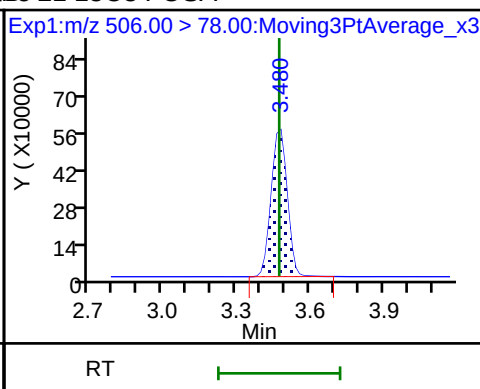
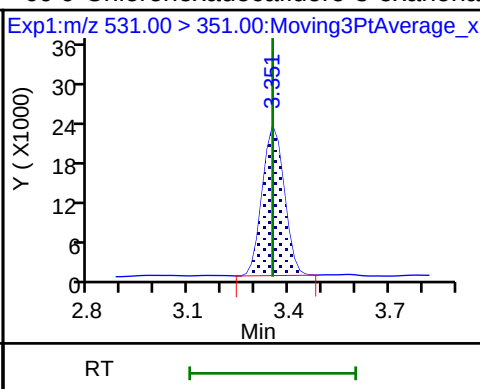
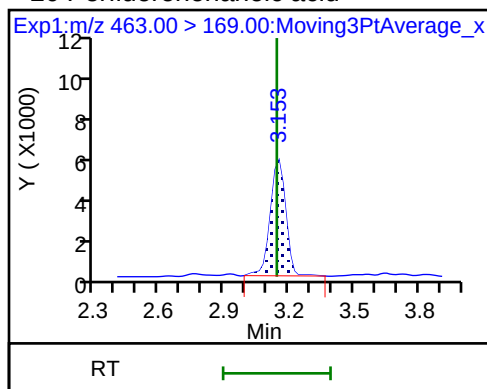
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanone

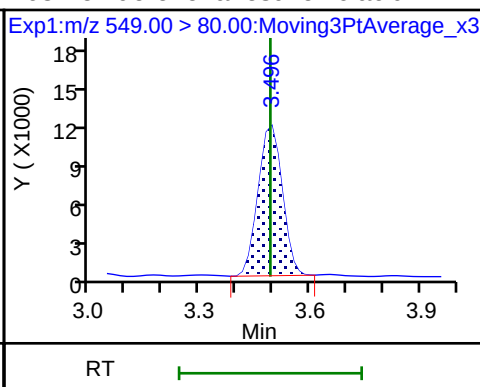
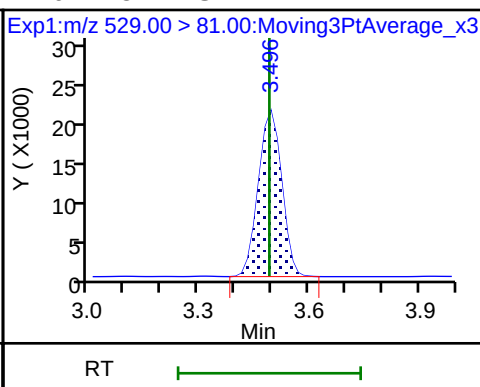
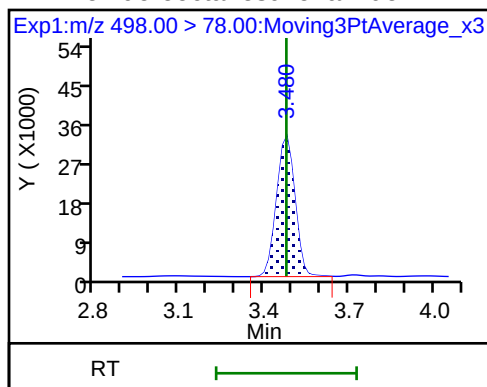
D 21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

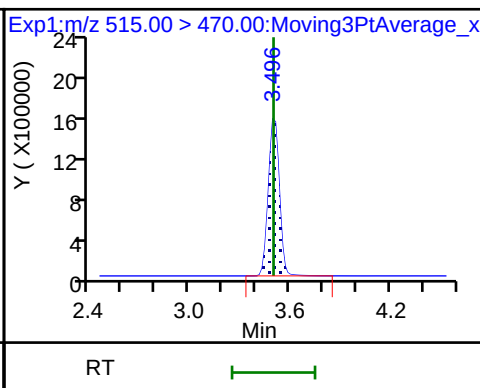
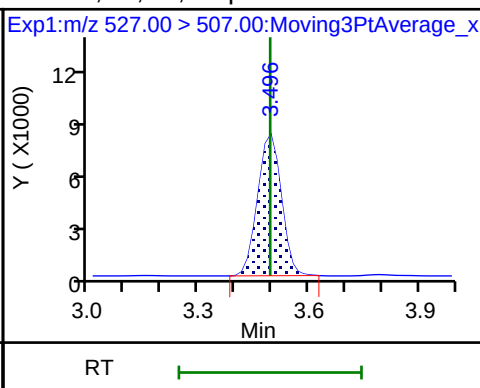
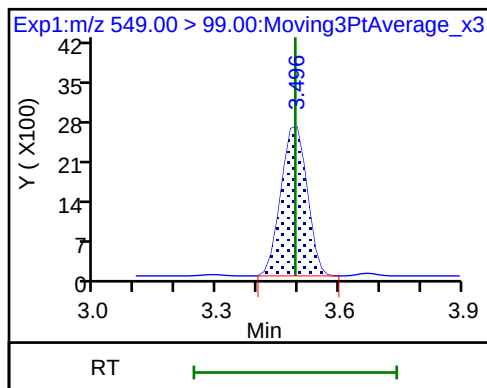
68 Perfluorononanesulfonic acid

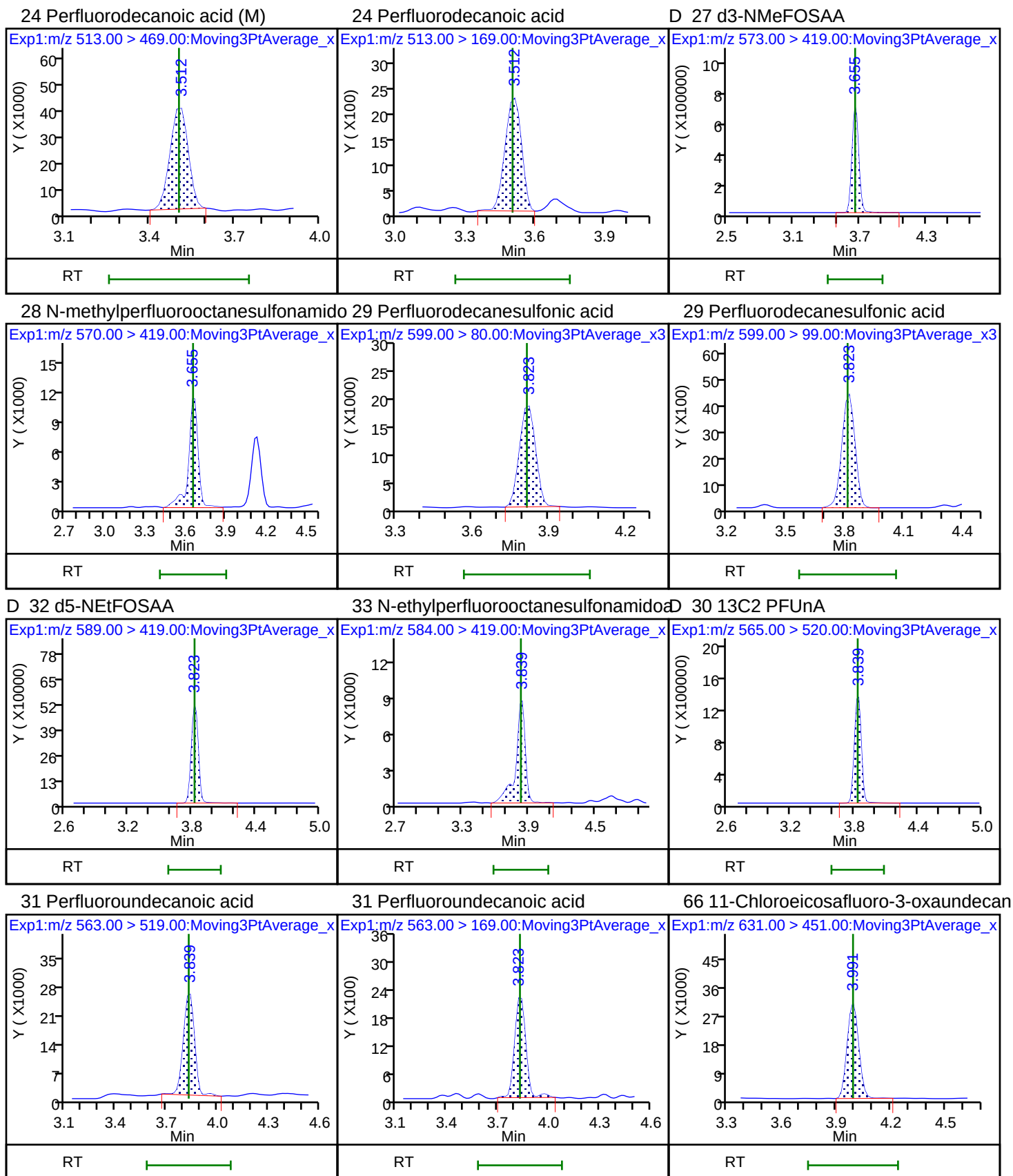


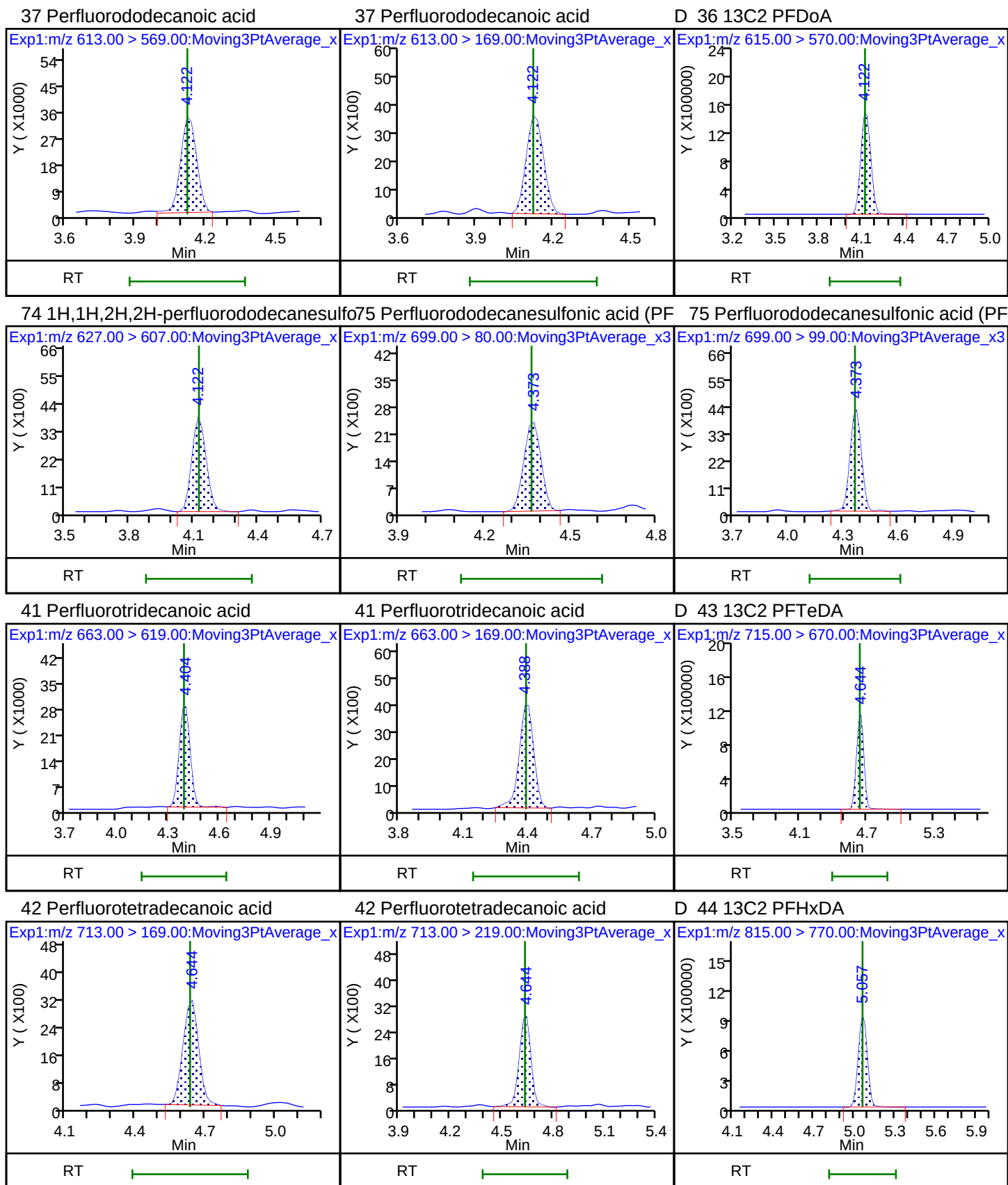
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonate

D 23 13C2 PFDA



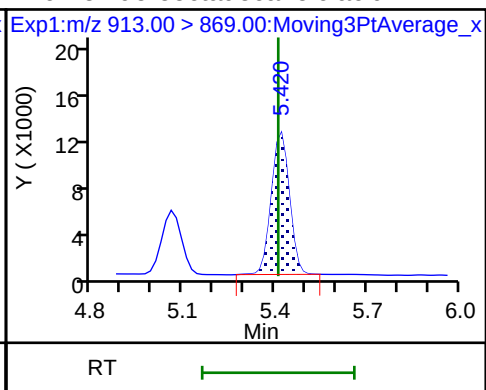
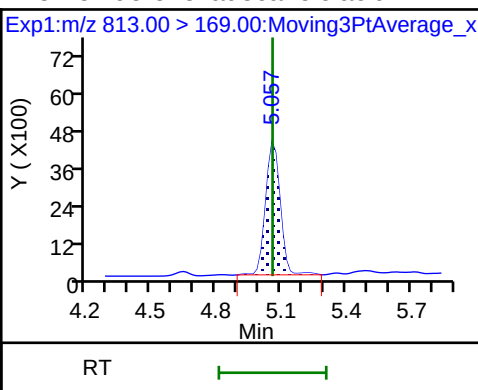
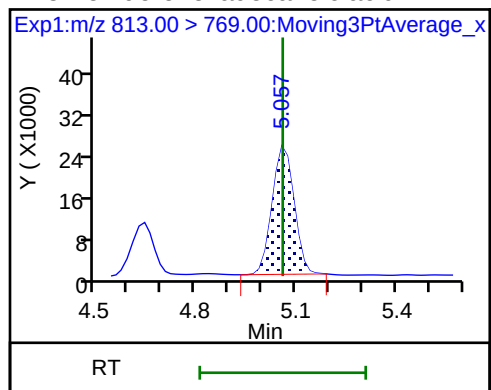




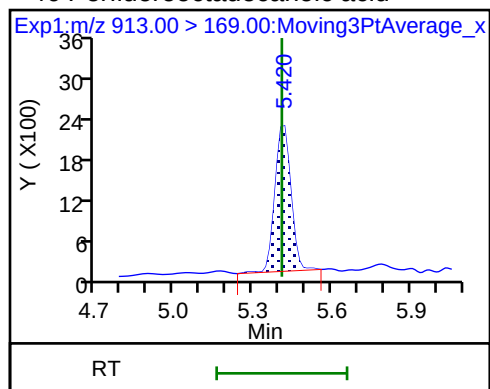
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_003.d

Injection Date: 11-Oct-2018 16:01:29

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

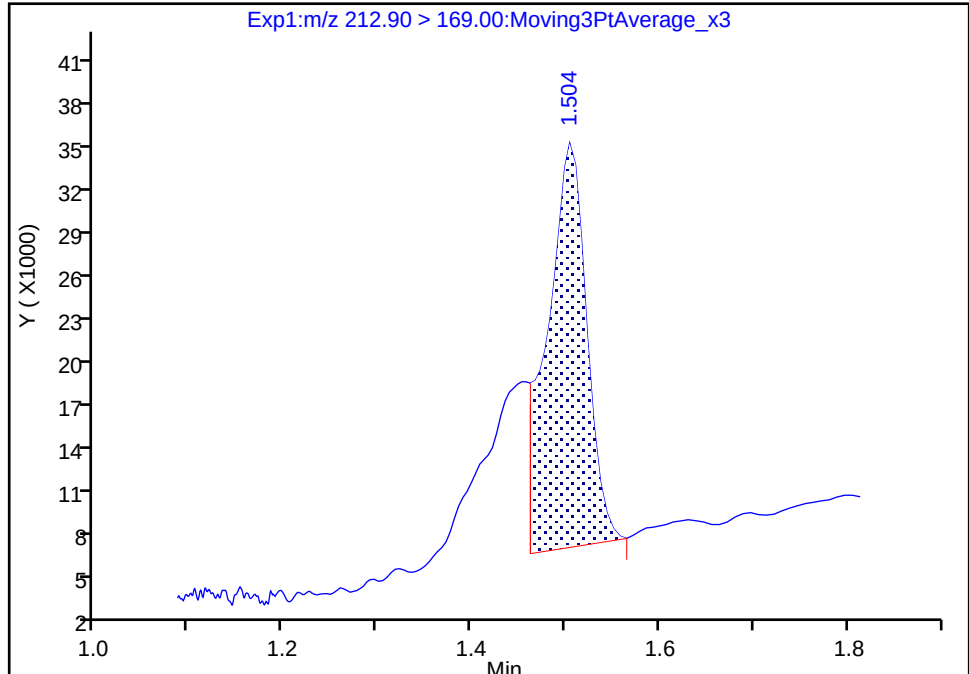
Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

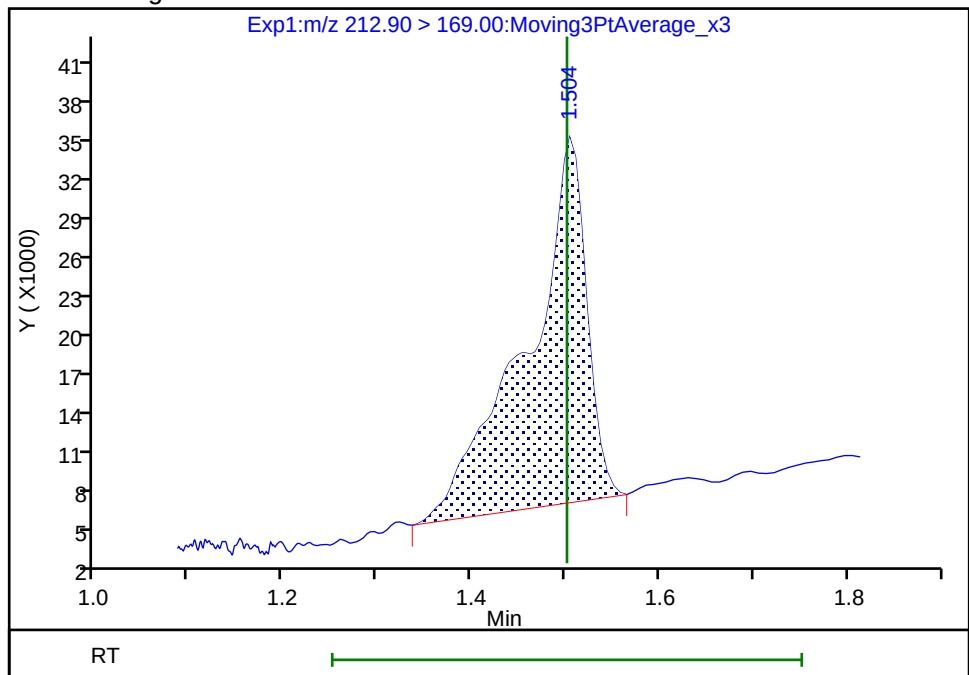
RT: 1.50
Area: 79986
Amount: 0.035426
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 123180
Amount: 0.051942
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:10:38

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_003.d

Injection Date: 11-Oct-2018 16:01:29

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

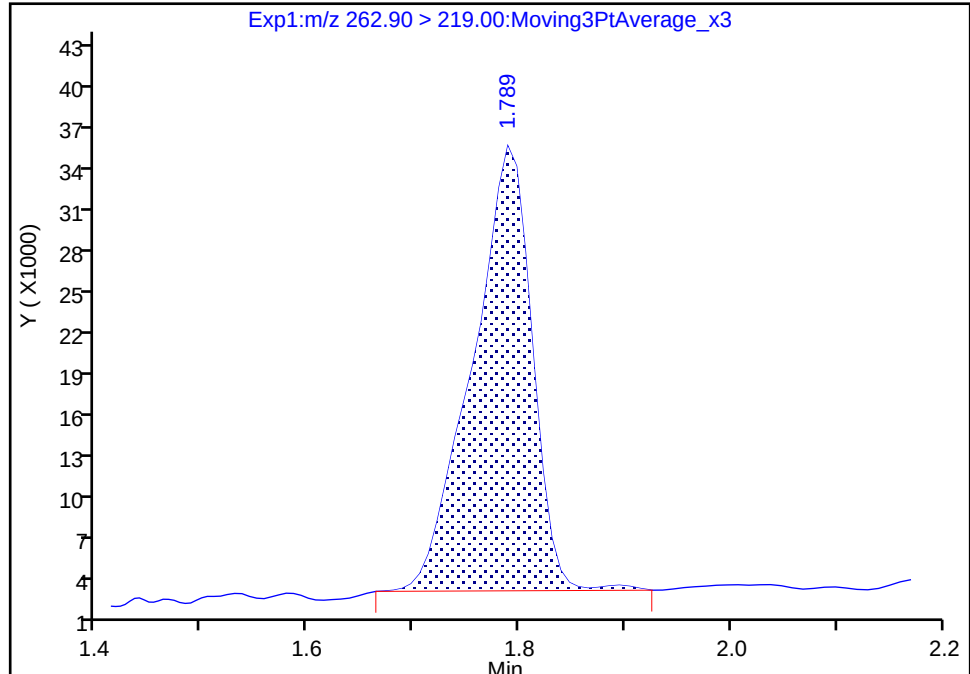
Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

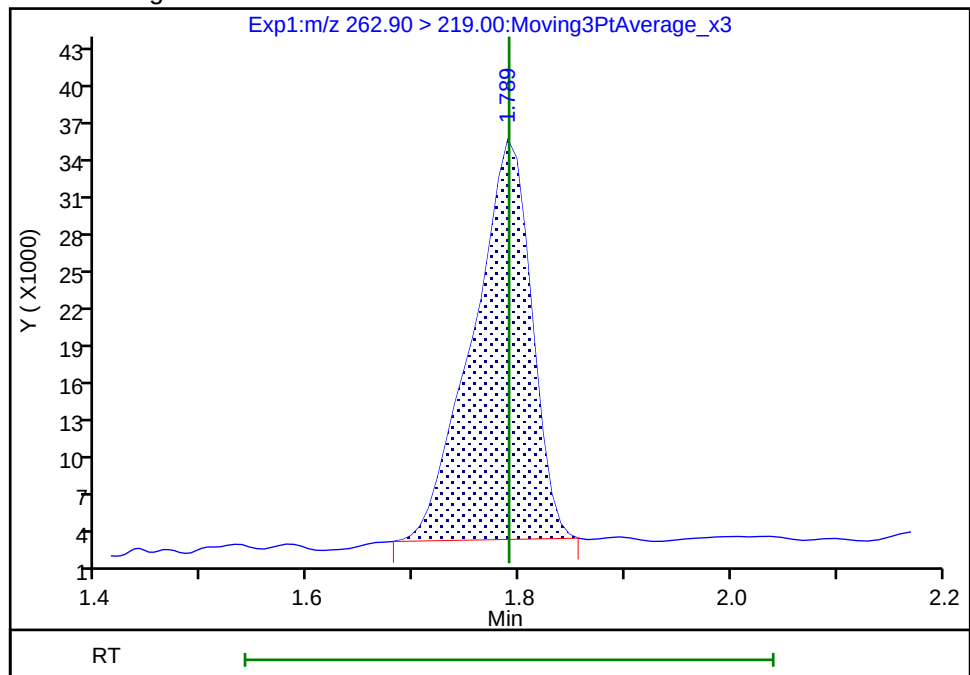
RT: 1.79
Area: 126347
Amount: 0.054382
Amount Units: ng/ml

Processing Integration Results



RT: 1.79
Area: 123506
Amount: 0.053346
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:10:48

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_003.d

Injection Date: 11-Oct-2018 16:01:29

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

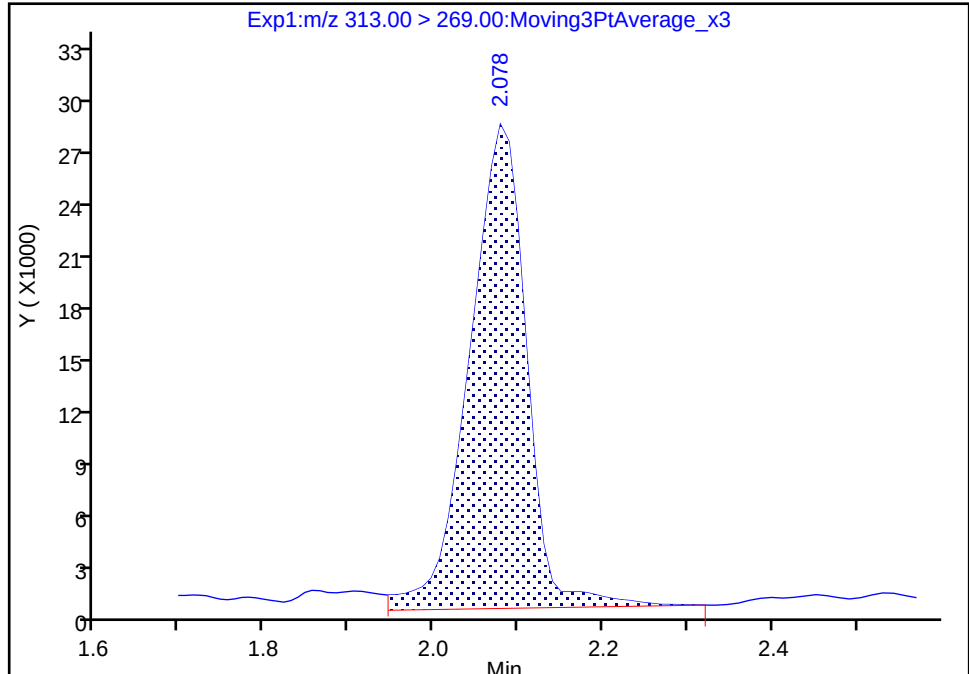
Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

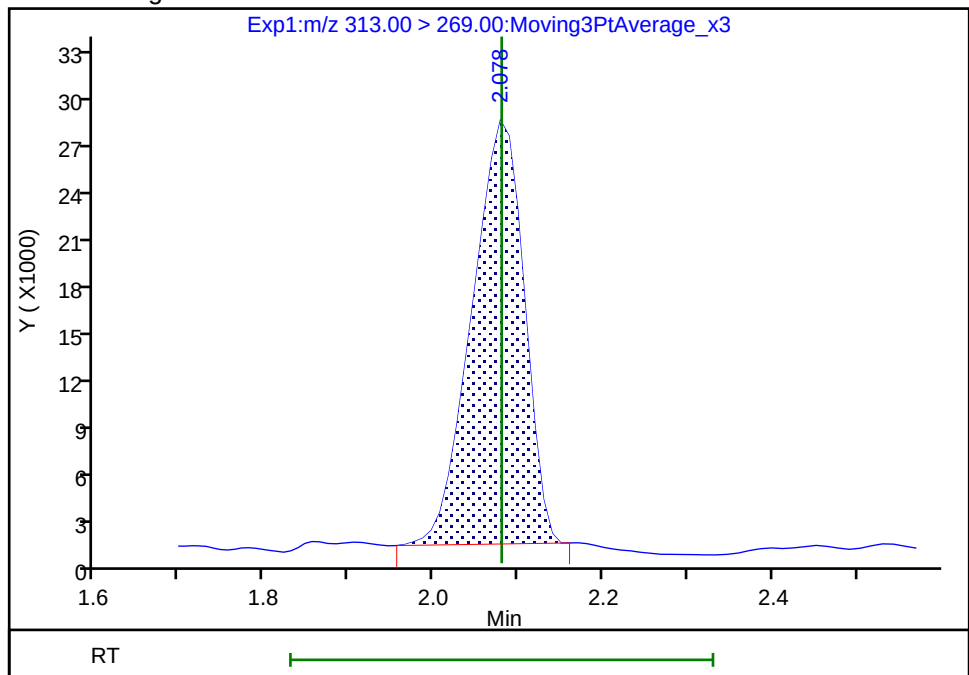
RT: 2.08
Area: 129799
Amount: 0.056249
Amount Units: ng/ml

Processing Integration Results



RT: 2.08
Area: 115174
Amount: 0.050831
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:11:04

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_003.d

Injection Date: 11-Oct-2018 16:01:29

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

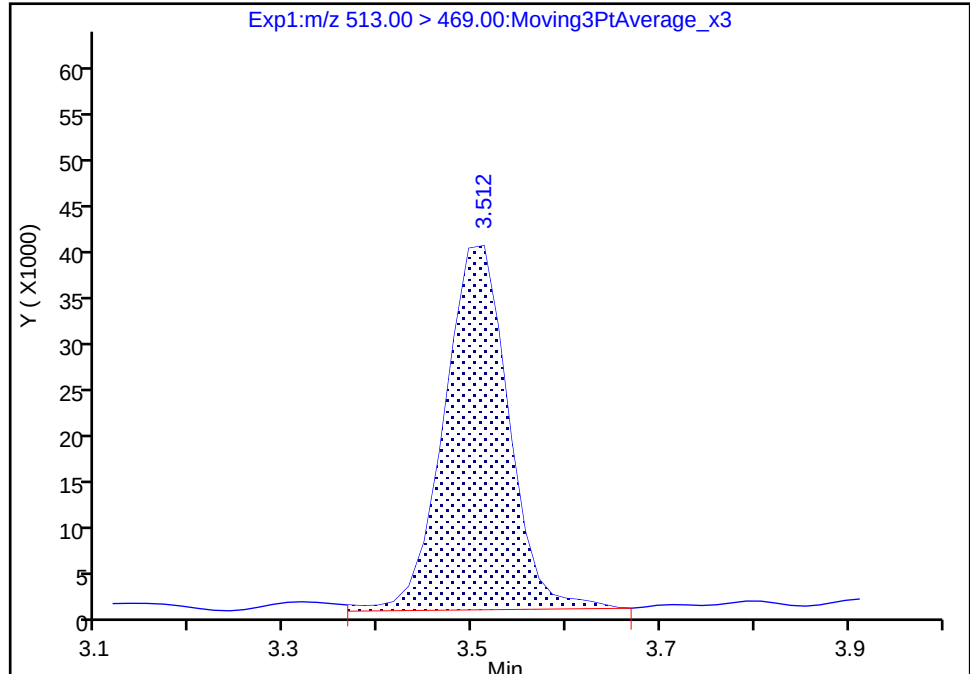
Detector EXP1

24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

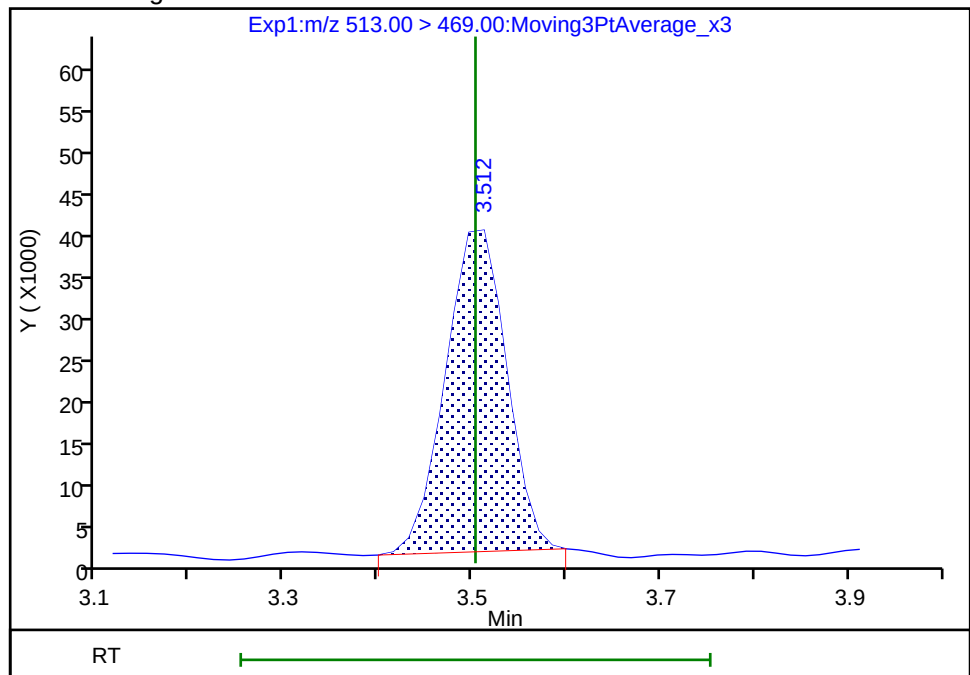
RT: 3.51
Area: 187795
Amount: 0.058436
Amount Units: ng/ml

Processing Integration Results



RT: 3.51
Area: 173863
Amount: 0.054780
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:11:39

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_004.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 11-Oct-2018 16:09:03 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 17:36:16 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK049

First Level Reviewer: hannigana

Date: 11-Oct-2018 17:13:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.502	-0.003	0.542	6612347	2.47		99.0	17217	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.499	1.502	-0.003	1.000	592507	0.2411		96.4	13.5	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.788	0.001	0.647	5946284	2.46		98.6	15443	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.790	-0.001	1.000	584340	0.2429		97.2	44.1	
D 47 13C3 PFBS										
301.90 > 83.00	1.822	1.828	-0.006	0.659	76993	2.30		98.7	400	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.831	1.830	0.001	1.005	772843	0.2189		99.1	83.4	
298.90 > 99.00	1.831	1.830	0.001	1.005	274847		2.81(1.35-4.05)	99.1	62.5	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.041	-0.003	1.118	178326	0.2487		107	959	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.038	2.042	-0.004	0.737	697038	2.41		103	801	
D 7 13C2 PFHxA										
315.00 > 270.00	2.079	2.079	0.0	0.751	6551765	2.51		101	15028	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.079	2.080	-0.001	1.000	555205	0.2371		94.8	78.4	
313.00 > 119.00	2.079	2.080	-0.001	1.000	43569		12.74(6.96-20.87)	94.8	58.2	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.103	-0.004	1.152	389033	0.2438		104	837	
349.00 > 99.00	2.099	2.103	-0.004	1.152	181554		2.14(1.15-3.45)	104	242	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.171	2.176	-0.005	1.000	129659	0.2749		110	62.7	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.171	2.176	-0.005	0.785	621883	2.31		92.3	1833	
D 9 13C4 PFHpA										
367.00 > 322.00	2.400	2.411	-0.011	0.867	8018015	2.59		104	14502	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.005	812774	0.2385		95.4	112	
363.00 > 169.00	2.413	2.413	0.0	1.005	181360		4.48(2.17-6.52)	95.4	304	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	544755	0.2120		93.2	388	
399.00 > 99.00	2.426	2.426	0.0	1.000	155613		3.50(1.90-5.70)	93.2	139	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.426	0.0	0.877	4822222	2.43		103	9388	
76 DONA										
377.00 > 251.00	2.452	2.454	-0.002	0.782	1376065	0.2566		109	2667	
377.00 > 85.00	2.452	2.454	-0.002	0.782	578215		2.38(1.13-3.39)	109	539	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.735	2.741	-0.006	1.000	170418	0.2673		113	221	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.735	2.744	-0.009	0.988	678448	2.14		90.2	983	
D 73 13C8 PFOA										
421.00 > 376.00	2.751	2.762	-0.011		6326635	2.52		103	9473	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.769	-0.003	1.000	796940	0.2541		102	53.4	
413.00 > 169.00	2.766	2.769	-0.003	1.000	283773		2.81(1.36-4.08)	102	358	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.769	-0.003		7511370	2.50			15474	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.769	-0.003	1.000	7176818	2.44		97.8	10892	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.780	-0.014	0.882	533296	0.2519		106	522	
449.00 > 99.00	2.766	2.780	-0.014	0.882	120681		4.42(1.84-5.53)	106	294	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		1061485	2.47		104	3702	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.135	3.140	-0.005	1.000	514180	0.2395		103	177	
499.00 > 99.00	3.135	3.140	-0.005	1.000	116142		4.43(2.04-6.12)	103	236	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.140	-0.005	1.133	4733422	2.34		97.9	3911	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.143	-0.008	1.133	6473570	2.41		96.5	10057	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.143	-0.008	1.000	639620	0.2445		97.8	60.7	
463.00 > 169.00	3.135	3.143	-0.008	1.000	124840		5.12(2.68-8.03)	97.8	290	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	560701	0.2355		101	507	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.474	-0.009	1.253	2662442	2.51		100	5416	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.465	3.478	-0.013	1.000	824008	0.2606		104	1545	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.481	3.492	-0.011	1.258	93995	2.37		98.9	355	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.481	3.492	-0.011	1.110	327864	0.2558		107	751	
549.00 > 99.00	3.481	3.492	-0.011	1.110	59289		5.53(3.02-9.05)	107	588	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.481	3.494	-0.013	1.000	144522	0.2455		103	1081	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.501	-0.005	1.264	6869435	2.44		97.7	8155	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.503	-0.007	1.000	850566	0.2725		109	128	
513.00 > 169.00	3.496	3.503	-0.007	1.000	50172		16.95(7.12-21.35)	109	85.7	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.321	2831621	2.46		98.4	6114	
28 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	3.655	3.657	-0.002	1.000	269288	0.2388		95.5	125	M
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.814	-0.007	1.215	422908	0.2447		102	435	
599.00 > 99.00	3.807	3.814	-0.007	1.215	100437		4.21(2.14-6.43)	102	398	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.382	2271484	2.43		97.4	2819	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.828	-0.005	1.000	211124	0.2497		99.9	384	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.830	-0.007	1.382	6057960	2.56		102	12356	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.830	-0.007	1.000	566602	0.2503		100	128	
563.00 > 169.00	3.823	3.830	-0.007	1.000	52955		10.70(5.24-15.72)	100	149	
35 MeFOSA										
512.00 > 169.00	3.960	3.962	-0.002		139942	NC			467	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.992	3.991	0.001	1.273	709129	0.2562		109	1605	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.123	4.122	0.001	1.000	722380	0.2645		106	169	
613.00 > 169.00	4.123	4.122	0.001	1.000	72530		9.96(4.68-14.05)	106	89.4	
D 36 13C2 PFDaA										
615.00 > 570.00	4.123	4.125	-0.002	1.490	6852495	2.38		95.3	9959	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.123	4.125	-0.002	1.184	102815	0.2585		107	133	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.155	-0.016		147225	NC			316	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.358	4.364	-0.006	1.390	48026	0.2547		105	81.0	
699.00 > 99.00	4.358	4.364	-0.006	1.390	85449		0.56(0.28-0.83)	105	210	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.388	4.393	-0.005	1.064	600026	0.2723		109	367	
663.00 > 169.00	4.388	4.393	-0.005	1.064	104179		5.76(3.09-9.27)	109	195	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.627	4.634	-0.007	1.673	4920346	2.39		95.4	8092	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.627	4.634	-0.007	1.000	78365	0.2500		100	194	
713.00 > 219.00	4.627	4.634	-0.007	1.000	56944		1.38(0.70-2.09)	100	143	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.058	5.058	0.0	1.828	4631945	2.46		98.2	7897	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.058	5.060	-0.002	1.000	456562	0.2597		104	191	
813.00 > 169.00	5.058	5.060	-0.002	1.000	74895		6.10(2.77-8.32)	104	166	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.405	5.409	-0.004	1.069	270948	0.2504		100	186	
913.00 > 169.00	5.405	5.409	-0.004	1.069	50113		5.41(2.55-7.64)	100	177	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_004.d

Injection Date: 11-Oct-2018 16:09:03

Instrument ID: A9

Lims ID: IC L3 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 12

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

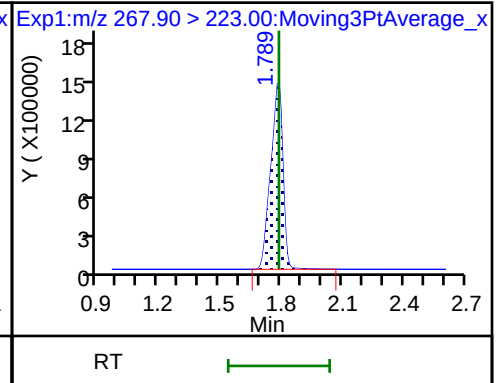
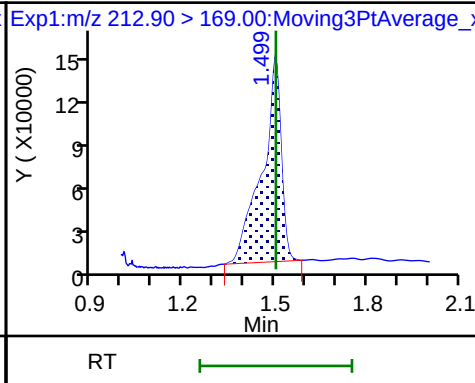
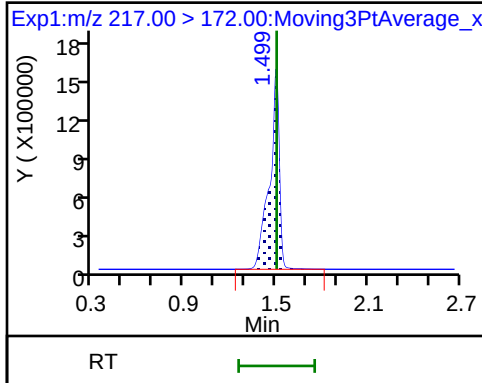
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

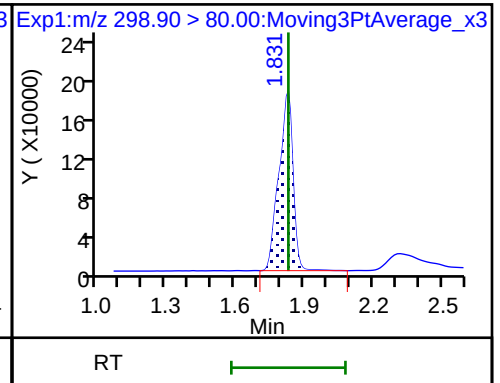
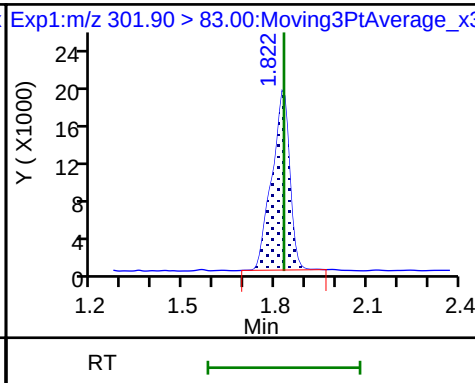
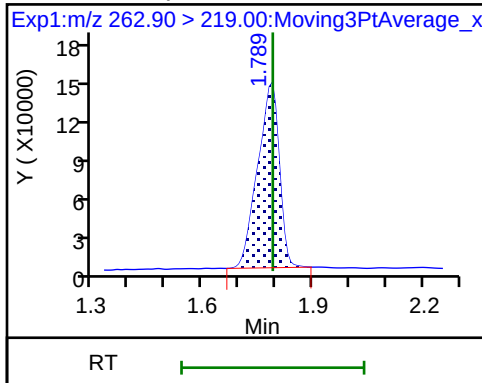
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

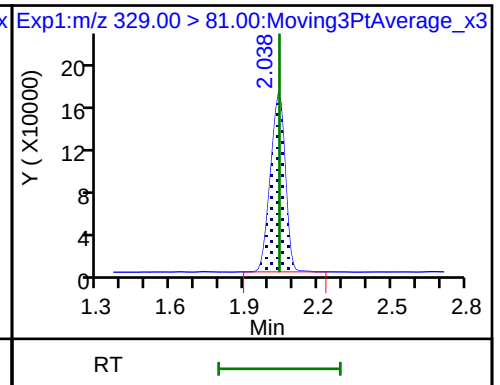
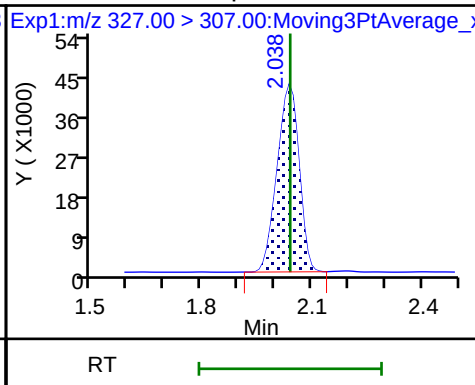
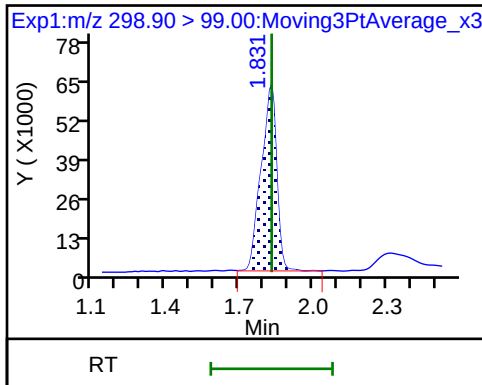
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

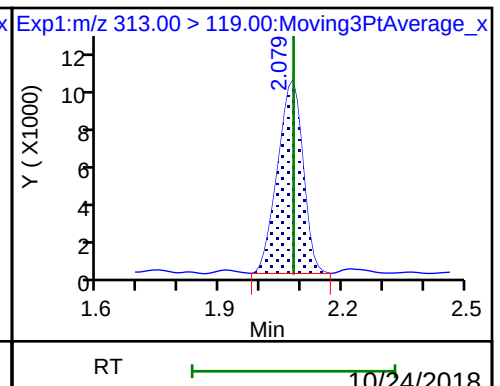
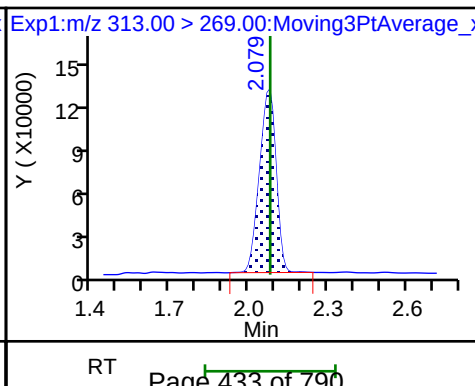
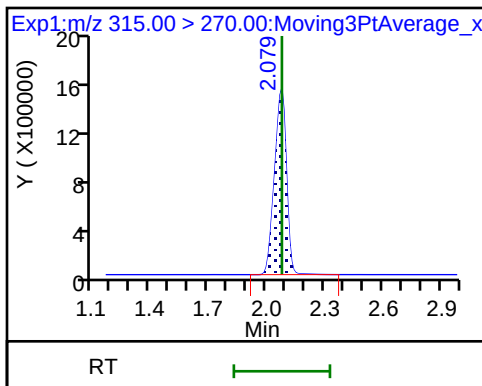
D 60 M2-4:2 FTS

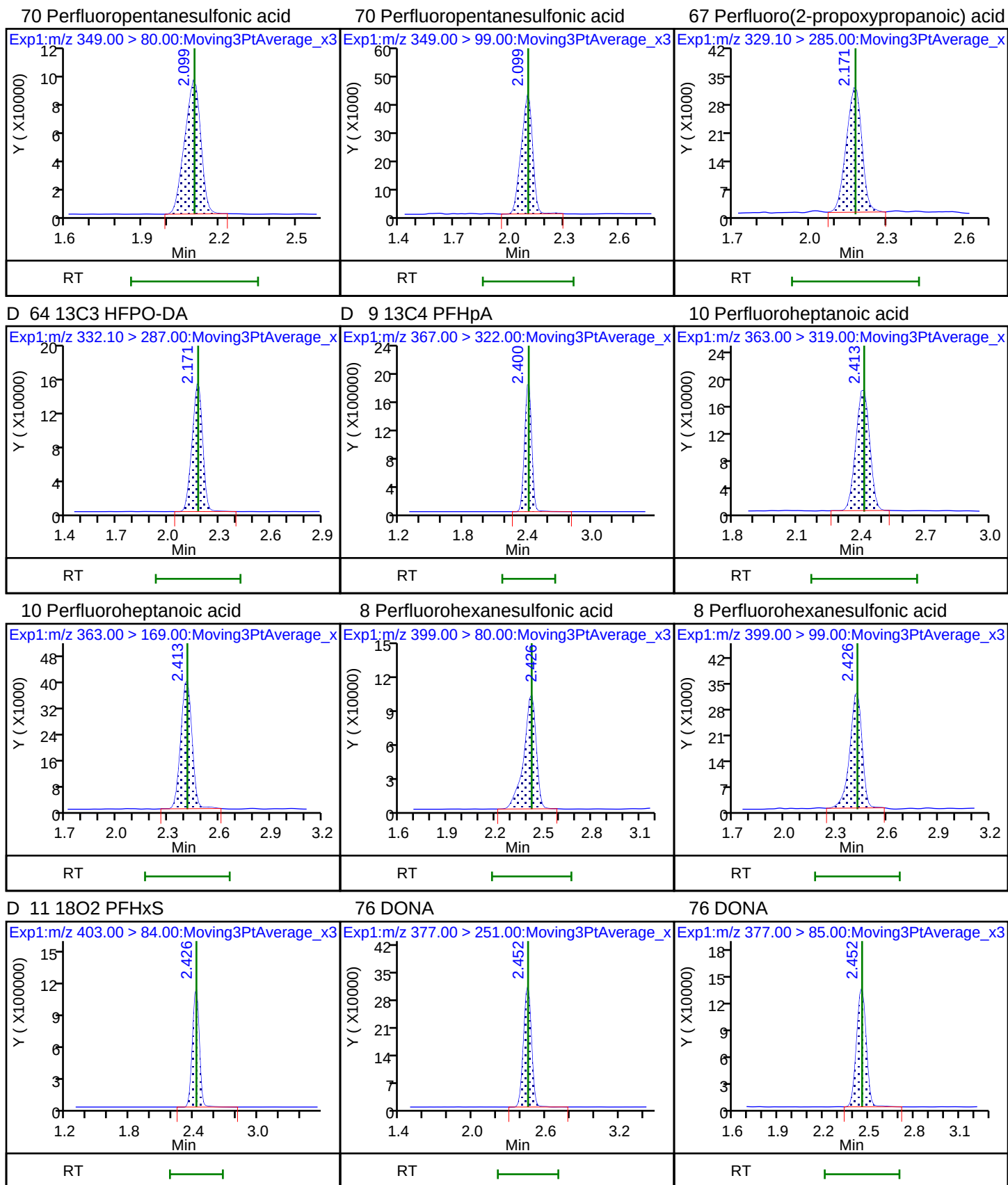


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

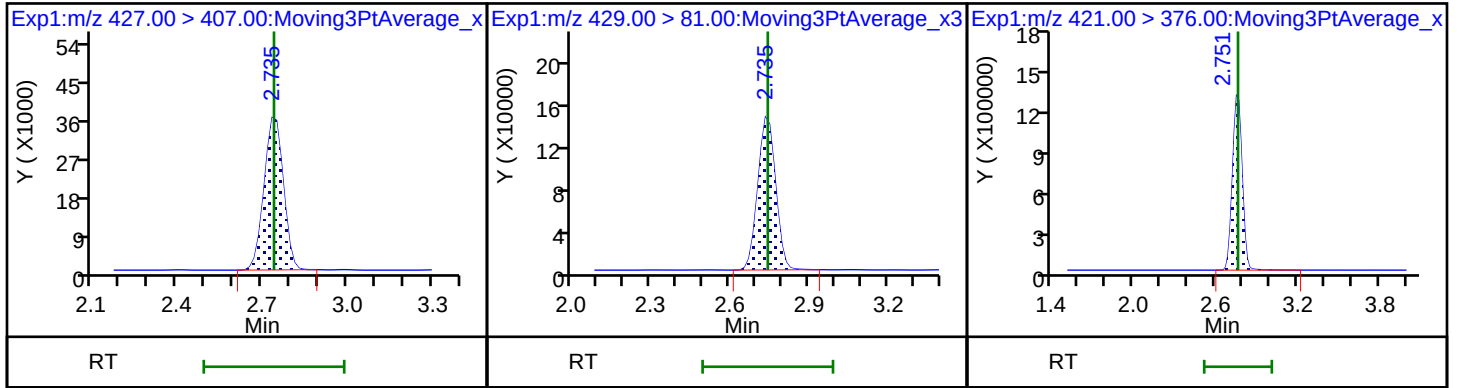
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

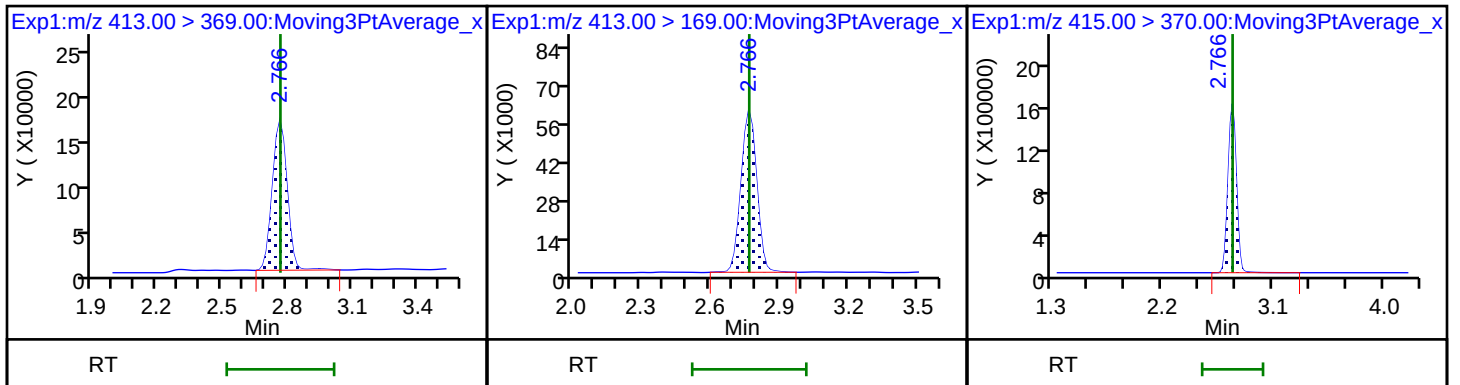
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

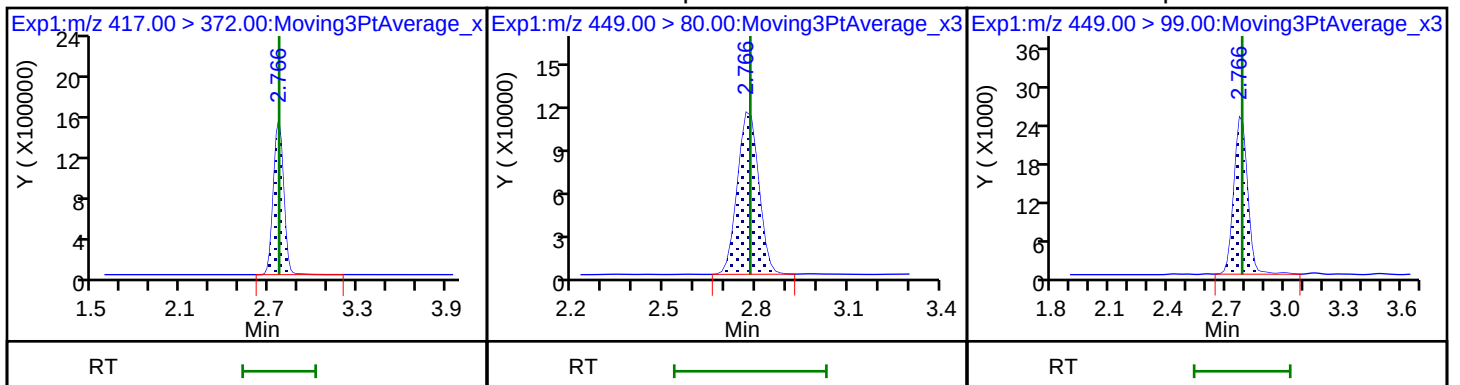
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

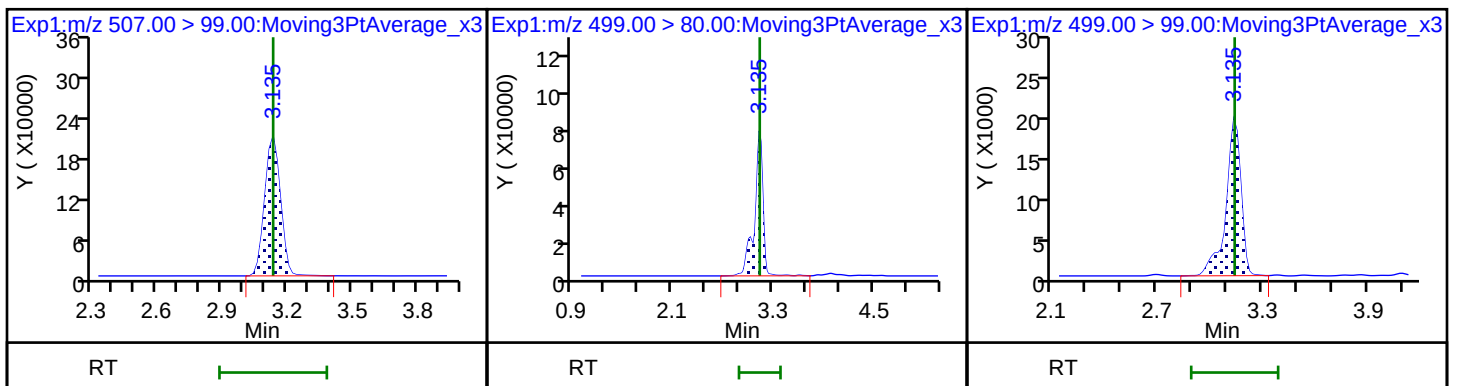
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

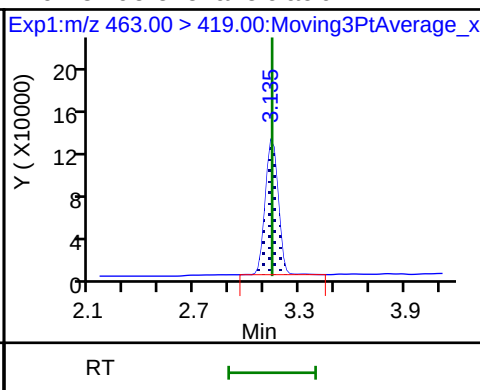
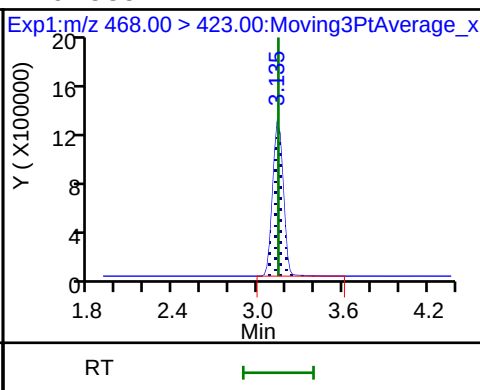
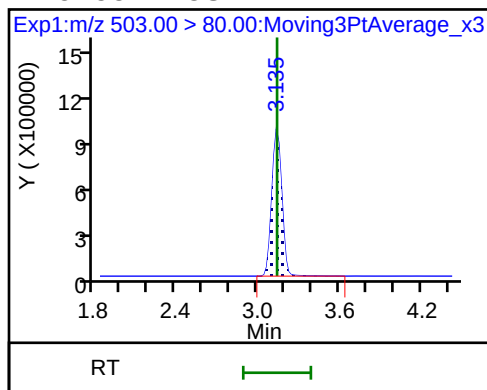
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

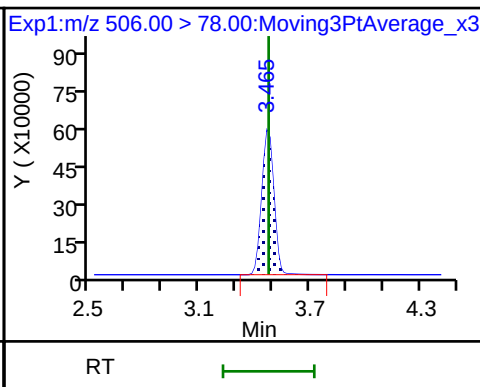
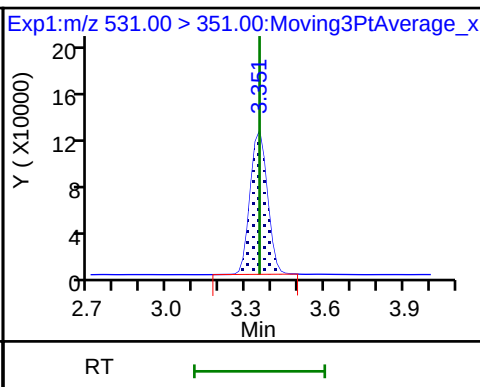
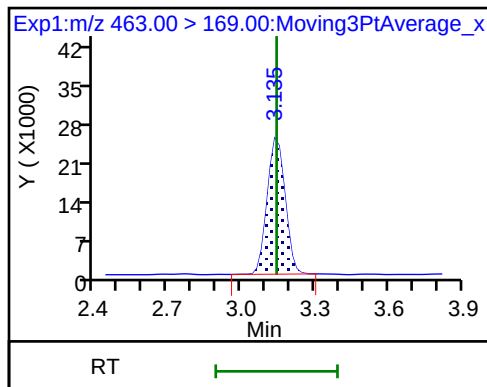
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanone

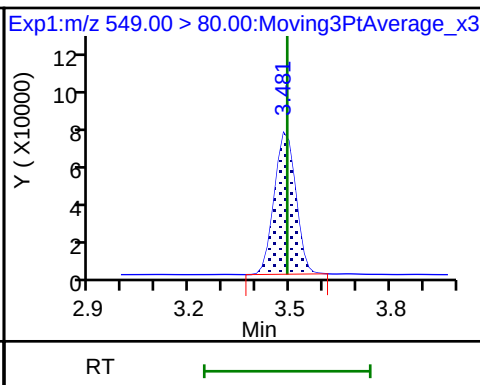
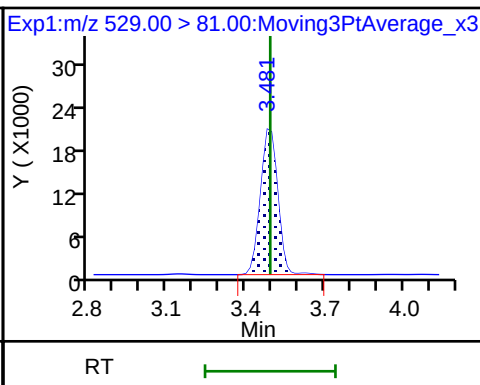
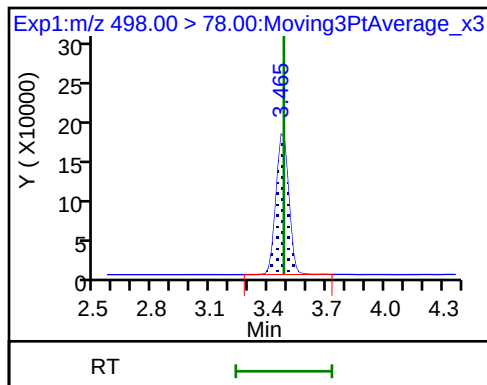
D 21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

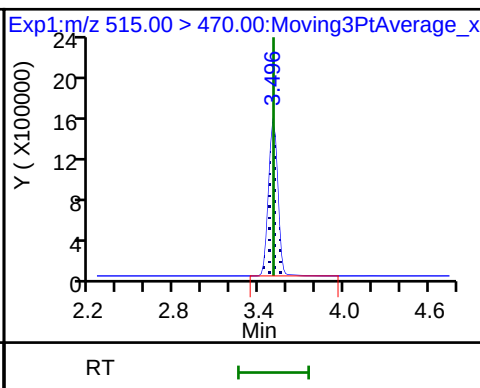
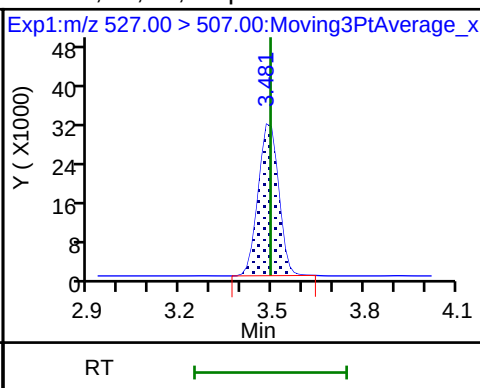
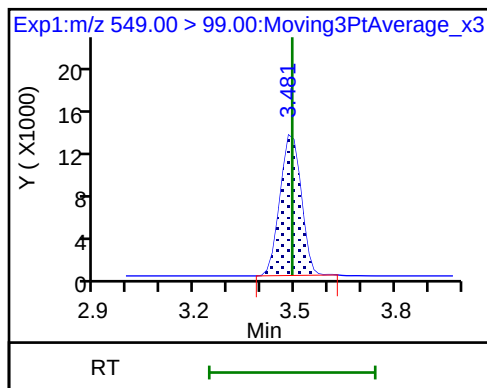
68 Perfluorononanesulfonic acid

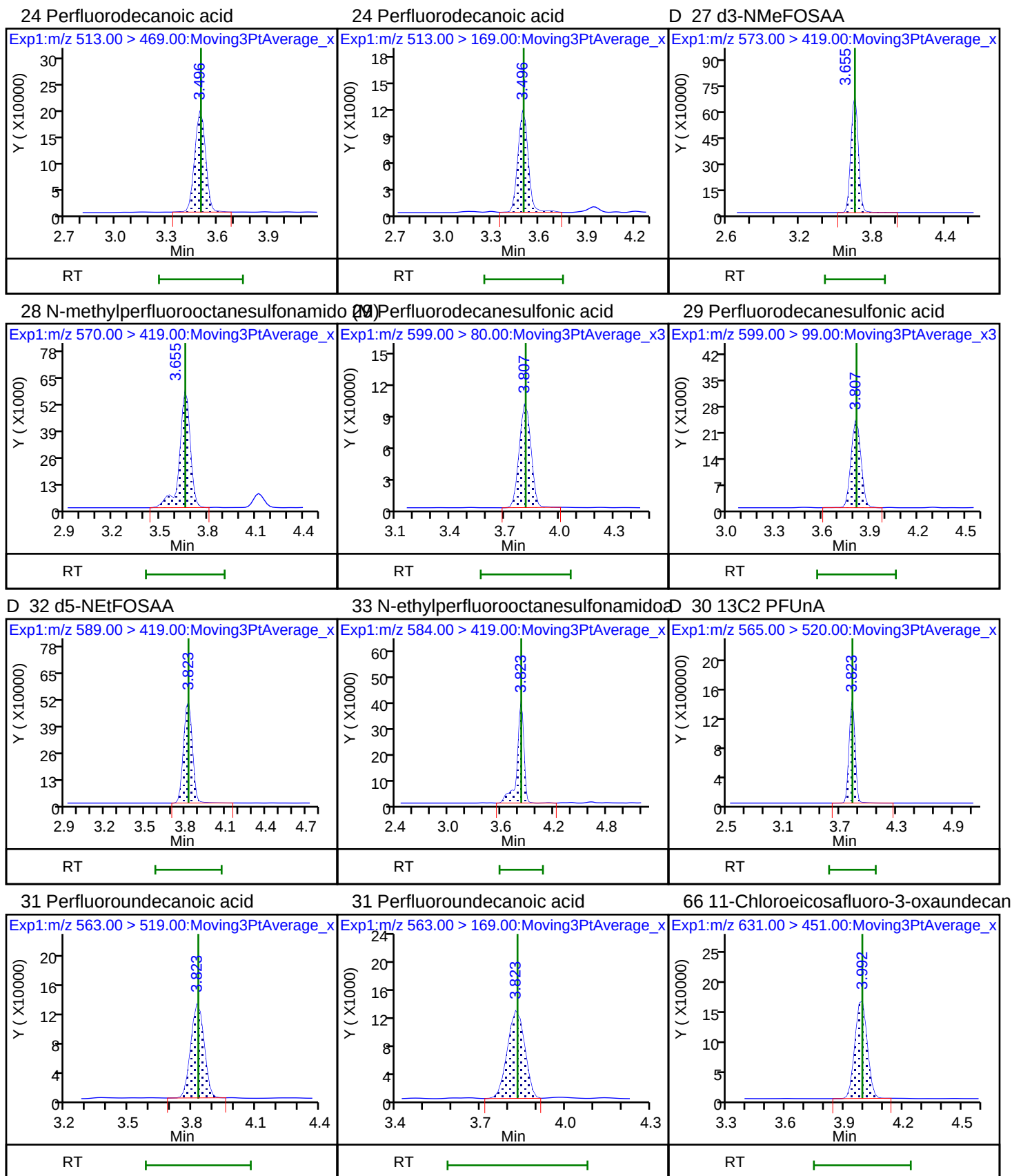


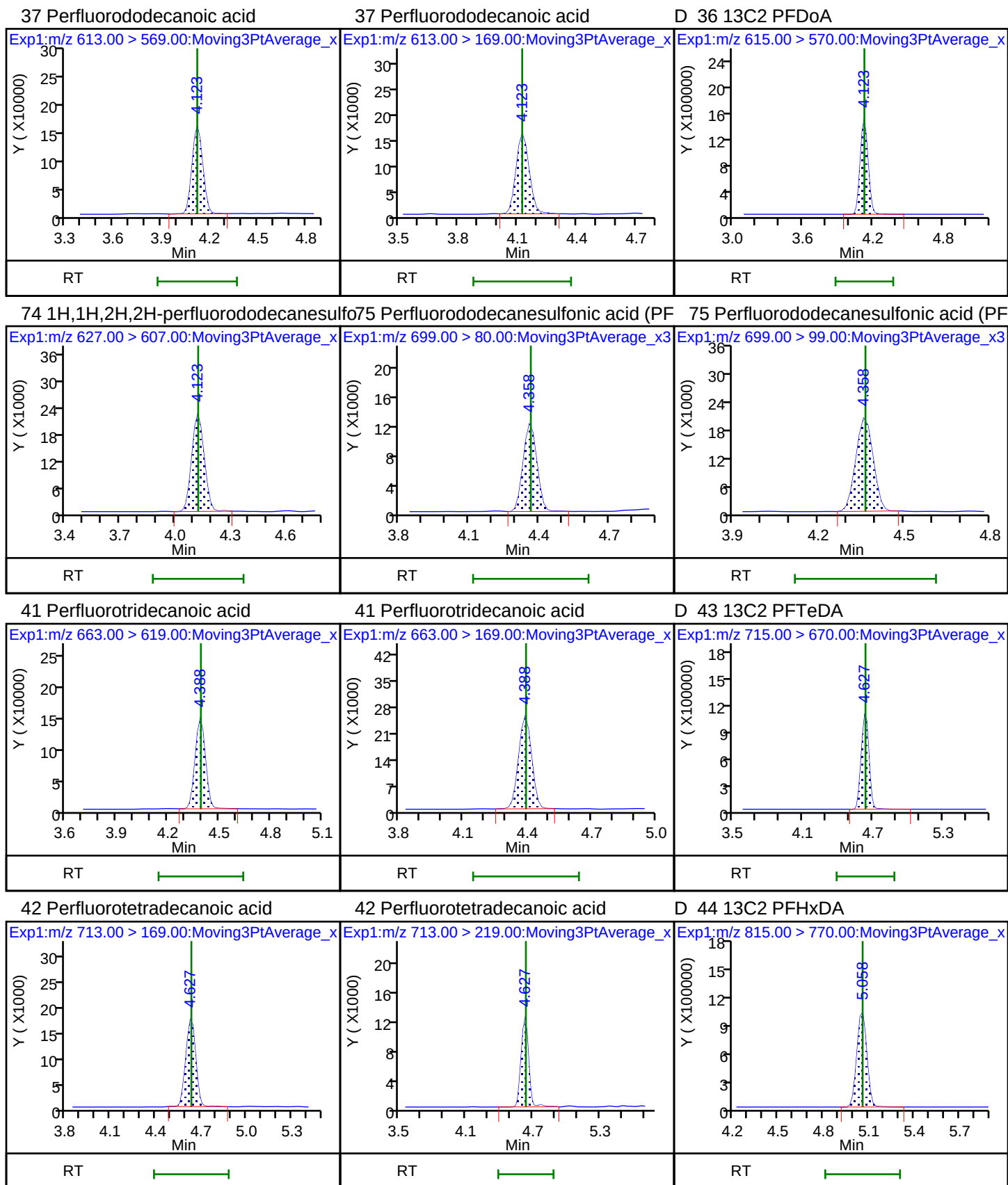
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonate

D 23 13C2 PFDA





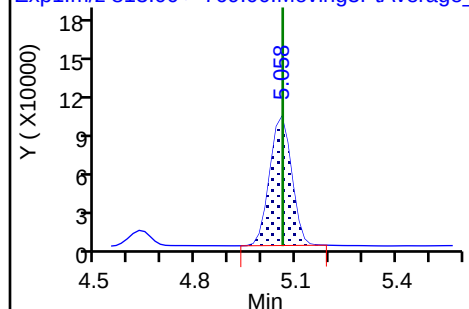


45 Perfluorohexadecanoic acid

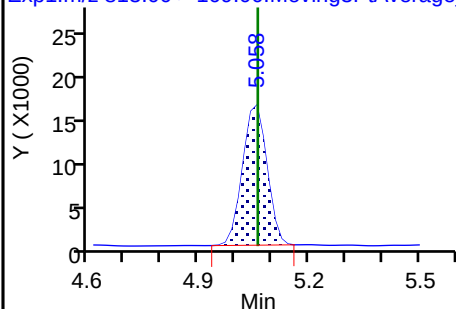
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

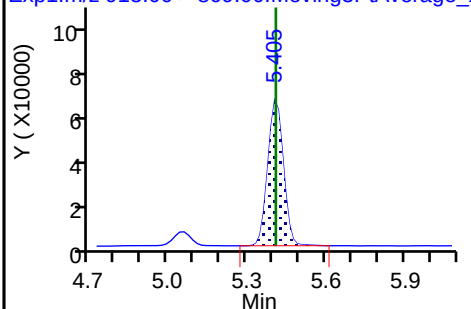
Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

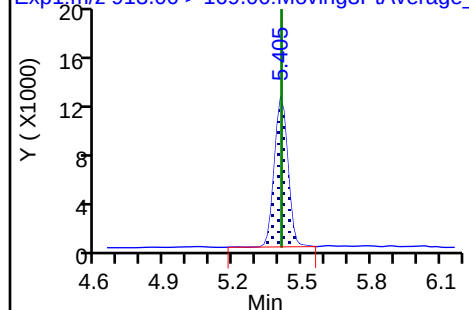


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_004.d

Injection Date: 11-Oct-2018 16:09:03

Instrument ID: A9

Lims ID: IC L3 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

12

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

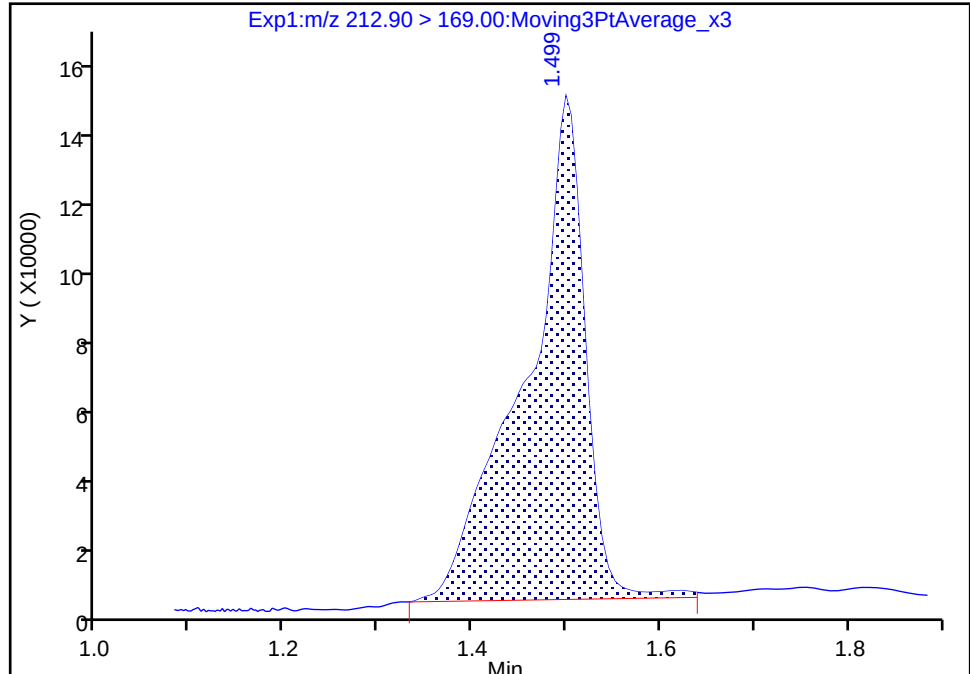
Detector: EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

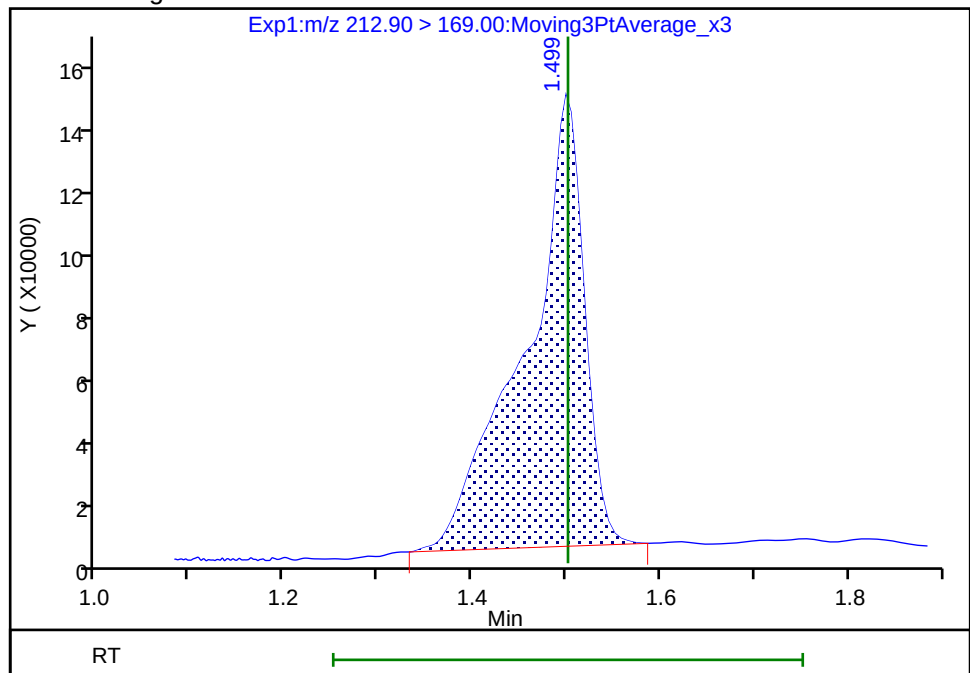
RT: 1.50
Area: 610153
Amount: 0.247286
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 592507
Amount: 0.241119
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:12:20

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_004.d

Injection Date: 11-Oct-2018 16:09:03

Instrument ID: A9

Lims ID: IC L3 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 12

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

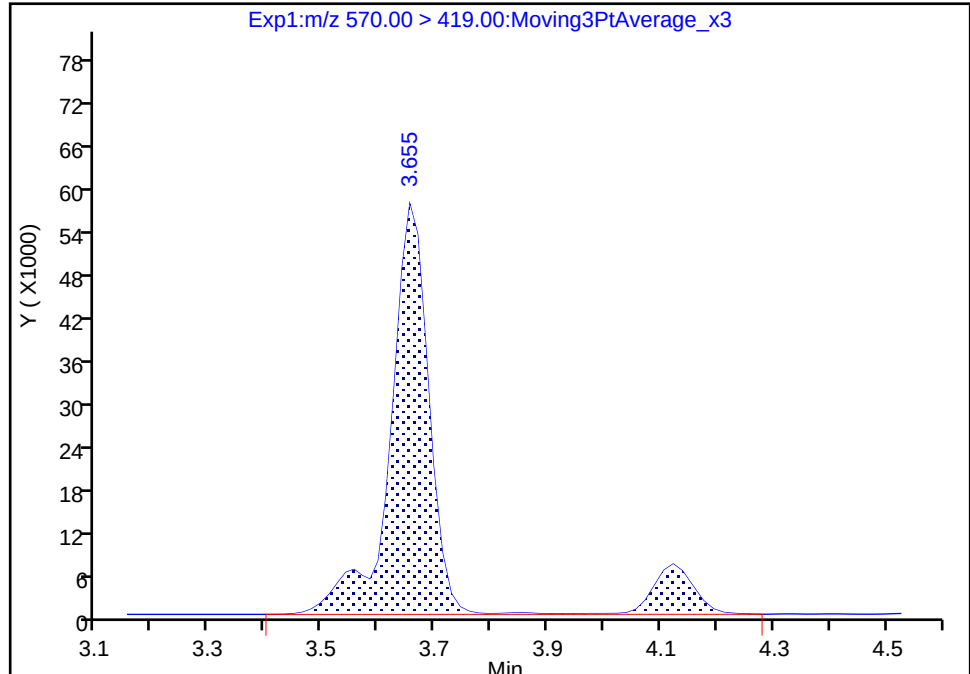
Detector EXP1

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

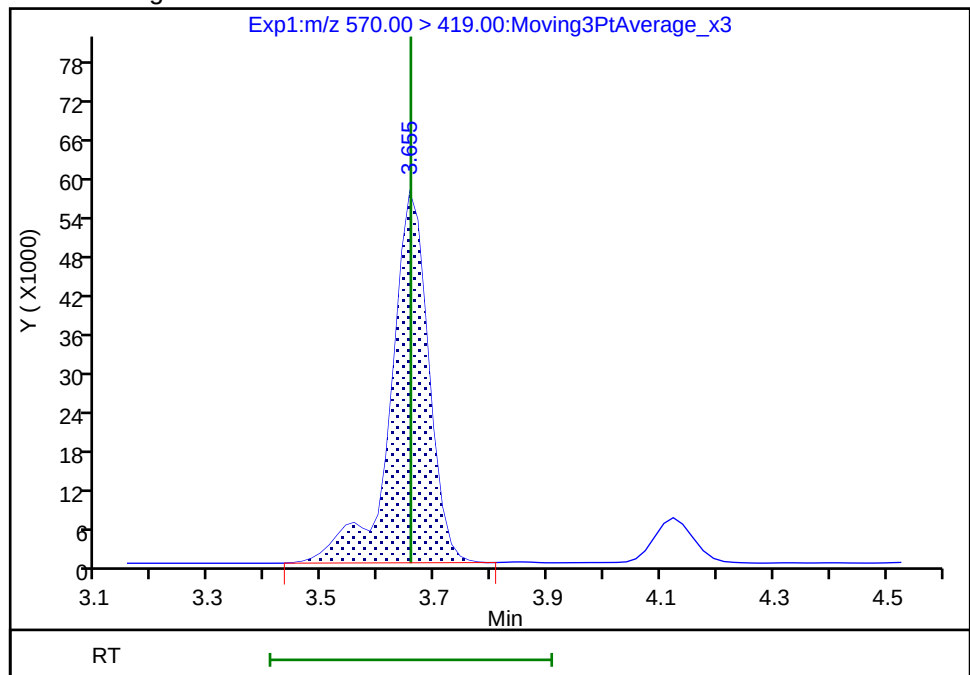
RT: 3.66
Area: 305984
Amount: 0.266415
Amount Units: ng/ml

Processing Integration Results



RT: 3.66
Area: 269288
Amount: 0.238825
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:12:40

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_005.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 11-Oct-2018 16:16:32 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 17:35:58 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK049

First Level Reviewer: hannigana

Date: 11-Oct-2018 17:35:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.499	1.502	-0.003	1.000	2356541	1.01		101	65.1	
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.502	-0.003	0.542	6293335	2.38		95.4	20039	
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.788	0.001	0.647	5782873	2.43		97.1	13952	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.790	-0.001	1.000	2329552	1.00		99.6	212	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.828	0.002	0.662	76703	2.31		99.6	537	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.830	0.0	1.000	3110135	0.8843		100	337	
298.90 > 99.00	1.830	1.830	0.0	1.000	1060664		2.93(1.35-4.05)	100	242	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.041	-0.003	1.113	631699	0.8843		94.7	2936	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.038	2.042	-0.004	0.737	678120	2.37		102	845	
D 7 13C2 PFHxA										
315.00 > 270.00	2.079	2.079	0.0	0.751	6157268	2.39		95.7	19062	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.079	2.080	-0.001	1.000	2229505	1.01		101	367	
313.00 > 119.00	2.079	2.080	-0.001	1.000	161509		13.80(6.96-20.87)	101	231	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.103	-0.004	1.147	1522085	0.9574		102	3178	
349.00 > 99.00	2.099	2.103	-0.004	1.147	692640		2.20(1.15-3.45)	102	962	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.171	2.176	-0.005	0.785	657057	2.47		98.8	1921	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.171	2.176	-0.005	1.000	465437	0.9340		93.4	243	
D 9 13C4 PFHpA										
367.00 > 322.00	2.413	2.411	0.002	0.872	7357303	2.40		96.2	18036	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	3268620	1.05		105	541	
363.00 > 169.00	2.413	2.413	0.0	1.000	709032		4.61(2.17-6.52)	105	946	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.426	0.0	0.877	4505123	2.30		97.2	6919	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	2078376	0.8658		95.1	1372	
399.00 > 99.00	2.426	2.426	0.0	1.000	577424		3.60(1.90-5.70)	95.1	457	
76 DONA										
377.00 > 251.00	2.452	2.454	-0.002	0.782	5267155	0.9873		105	8378	
377.00 > 85.00	2.452	2.454	-0.002	0.782	2294282		2.30(1.13-3.39)	105	1942	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.741	-0.007	0.994	646549	0.9216		97.2	822	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.750	2.744	0.006	0.994	746402	2.39		100	1415	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.762	0.004		6323529	2.52		103	12254	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.769	-0.003	1.000	6910498	2.38		95.3	11493	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.769	-0.003		7418877	2.50			12764	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.769	-0.003	1.000	3199644	1.06		106	213	
413.00 > 169.00	2.766	2.769	-0.003	1.000	1142706		2.80(1.36-4.08)	106	1944	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.780	0.002	0.888	2041870	0.9695		102	2497	
449.00 > 99.00	2.782	2.780	0.002	0.888	493810		4.13(1.84-5.53)	102	1124	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		1008569	2.35		98.4	3410	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.140	-0.005	1.133	4709698	2.36		98.6	4520	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.135	3.140	-0.005	1.000	1926714	0.9021		97.2	696	
499.00 > 99.00	3.135	3.140	-0.005	1.000	473684		4.07(2.04-6.12)	97.2	1044	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.143	-0.008	1.000	2604690	1.07		107	250	
463.00 > 169.00	3.135	3.143	-0.008	1.000	459698		5.67(2.68-8.03)	107	1026	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.143	-0.008	1.133	6031179	2.27		91.0	7786	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	2336306	0.9864		106	1432	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.474	-0.009	1.253	2671011	2.55		102	6622	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.478	0.002	1.004	3268430	1.03		103	5096	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.480	3.492	-0.012	1.258	94033	2.40		100	457	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.492	0.004	1.115	1222253	0.9585		99.8	1786	
549.00 > 99.00	3.496	3.492	0.004	1.115	210998		5.79(3.02-9.05)	99.8	556	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.494	0.002	1.004	592370	1.01		105	2502	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.501	-0.005	1.264	7018496	2.53		101	8878	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.503	-0.007	1.000	3241800	1.02		102	485	
513.00 > 169.00	3.496	3.503	-0.007	1.000	212995		15.22(7.12-21.35)	102	283	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.321	2838603	2.50		99.9	4476	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.657	-0.002	1.000	1114543	0.9860		98.6	435	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.814	-0.007	1.215	1715840	1.00		104	1391	
599.00 > 99.00	3.807	3.814	-0.007	1.215	344381		4.98(2.14-6.43)	104	1286	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.382	2367618	2.57		103	3569	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.828	-0.005	1.000	854420	0.9696		97.0	1488	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.830	-0.007	1.000	2147761	1.02		102	534	
563.00 > 169.00	3.823	3.830	-0.007	1.000	199286		10.78(5.24-15.72)	102	675	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.830	-0.007	1.382	5617713	2.40		96.2	10881	
35 MeFOSA										
512.00 > 169.00	3.960	3.962	-0.002		564485	NC			1222	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.991	3.991	0.0	1.273	2628626	0.9546		101	7216	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.122	4.122	0.0	1.000	2950740	1.08		108	757	
613.00 > 169.00	4.122	4.122	0.0	1.000	323909		9.11(4.68-14.05)	108	500	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.125	-0.003	1.184	399897	1.01		104	575	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.125	-0.003	1.490	6835450	2.41		96.3	17216	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.155	0.002		576819	NC			448	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.357	4.364	-0.007	1.390	180900	0.9644		99.6	293	
699.00 > 99.00	4.357	4.364	-0.007	1.390	322861		0.56(0.28-0.83)	99.6	723	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.388	4.393	-0.005	1.064	2323068	1.06		106	1403	
663.00 > 169.00	4.388	4.393	-0.005	1.064	365727		6.35(3.09-9.27)	106	591	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.627	4.634	-0.007	1.000	322831	1.01		101	827	
713.00 > 219.00	4.627	4.634	-0.007	1.000	243388		1.33(0.70-2.09)	101	564	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.627	4.634	-0.007	1.673	5017340	2.46		98.5	8893	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.058	5.058	0.0	1.828	4639633	2.49		99.6	7396	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.058	5.060	-0.002	1.000	1709707	1.05		105	702	
813.00 > 169.00	5.058	5.060	-0.002	1.000	286567		5.97(2.77-8.32)	105	738	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.406	5.409	-0.003	1.069	1072709	0.9898		99.0	670	
913.00 > 169.00	5.406	5.409	-0.003	1.069	205160		5.23(2.55-7.64)	99.0	999	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_005.d

Injection Date: 11-Oct-2018 16:16:32

Instrument ID: A9

Lims ID: IC L4 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

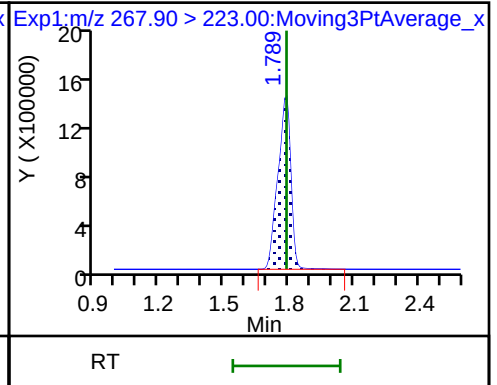
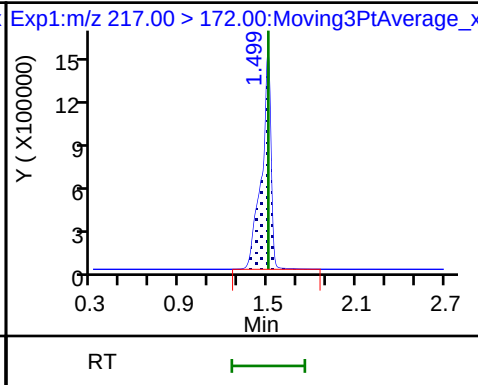
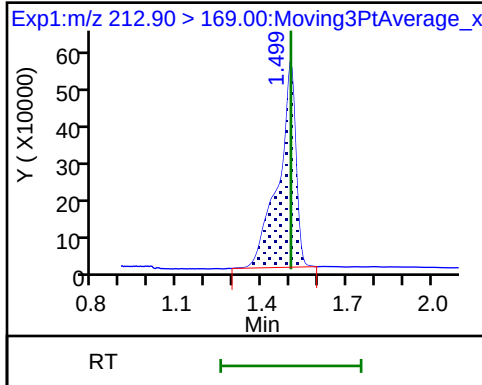
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

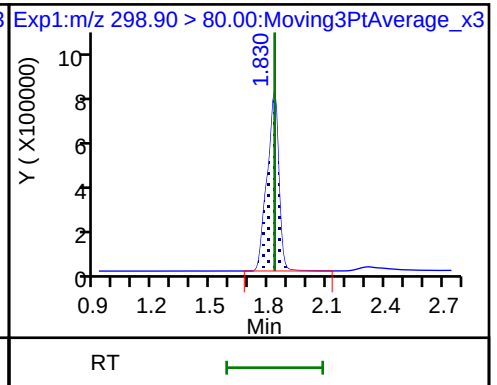
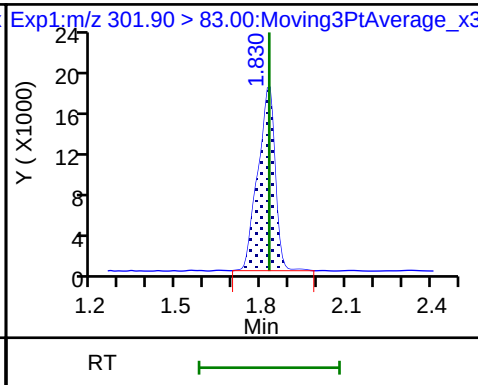
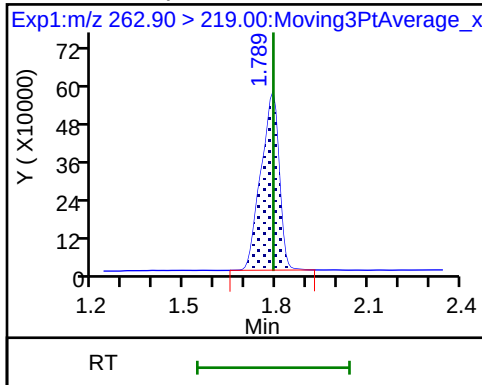
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

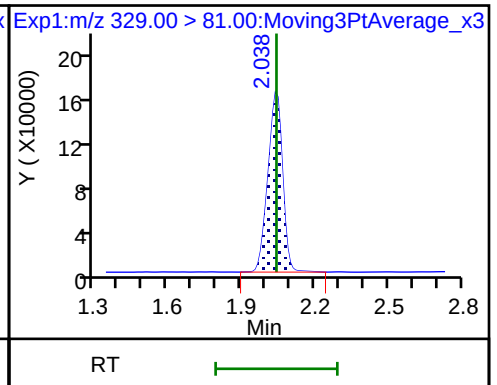
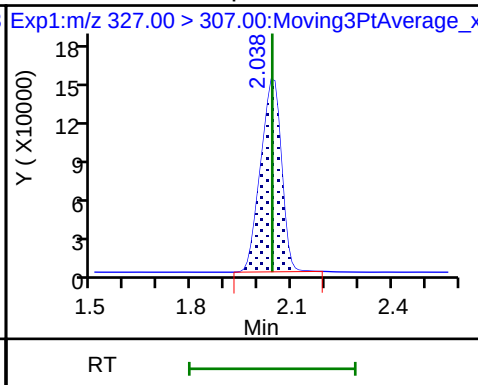
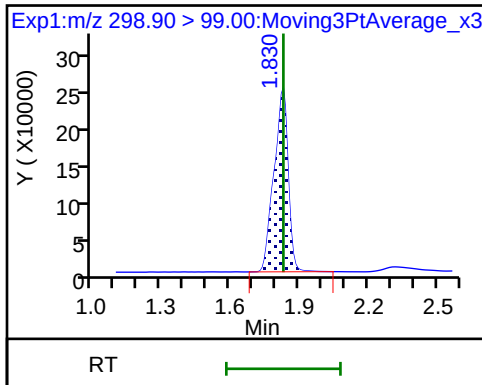
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

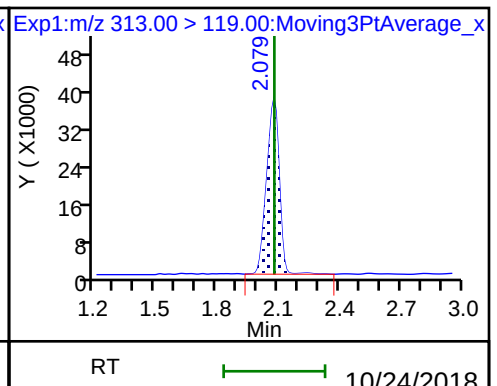
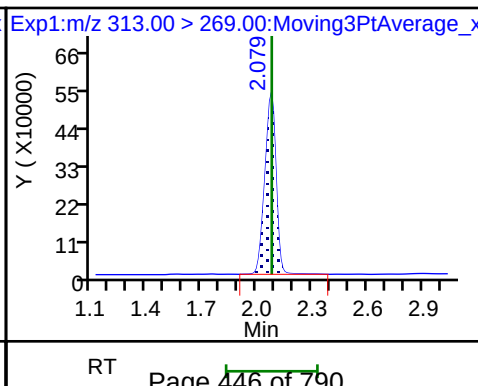
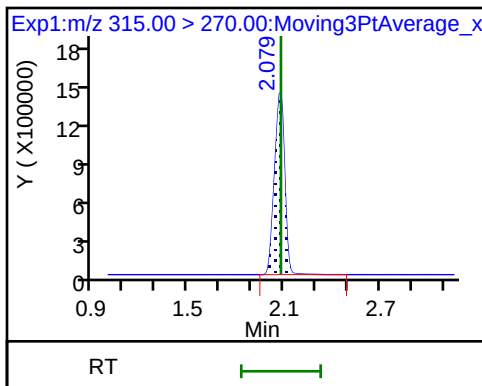
D 60 M2-4:2 FTS

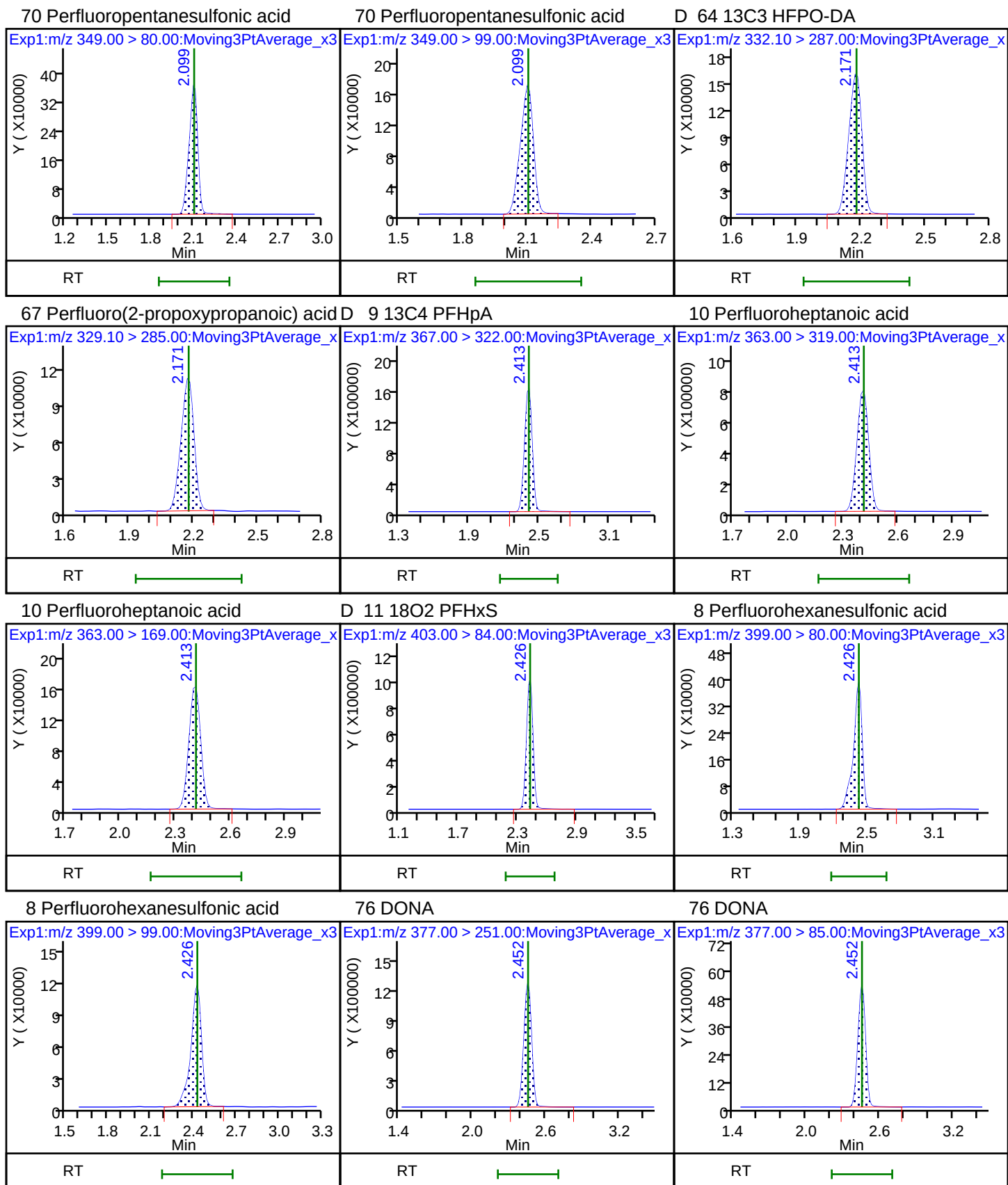


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

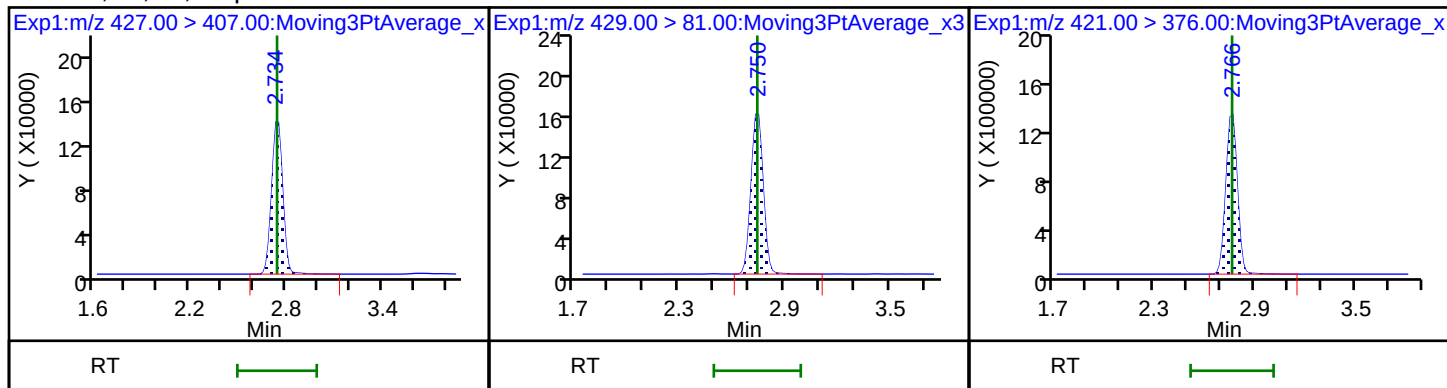
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

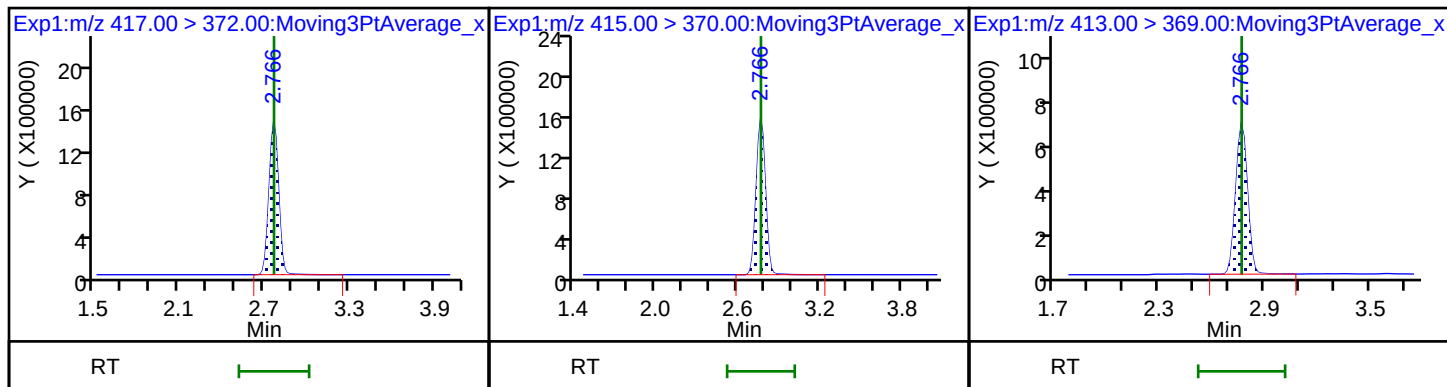
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

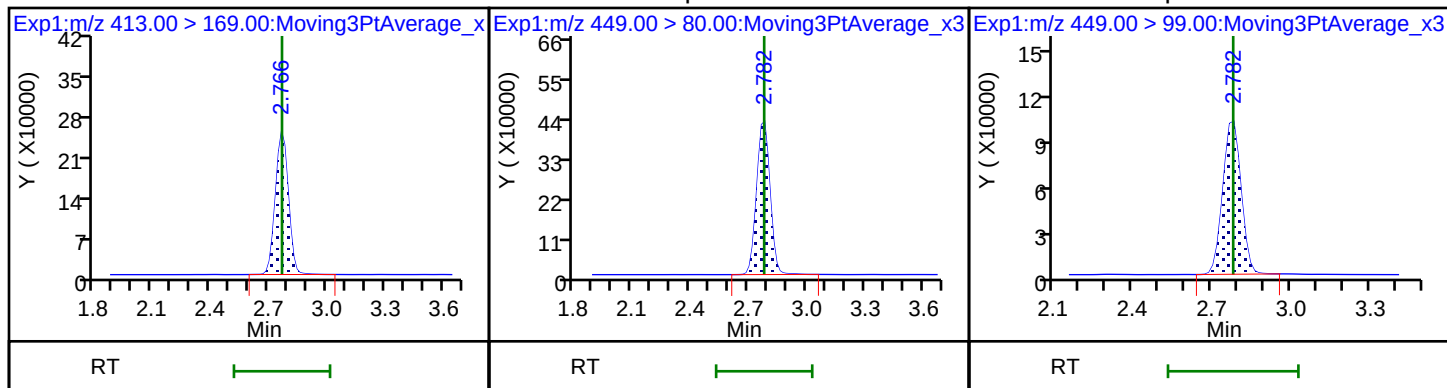
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

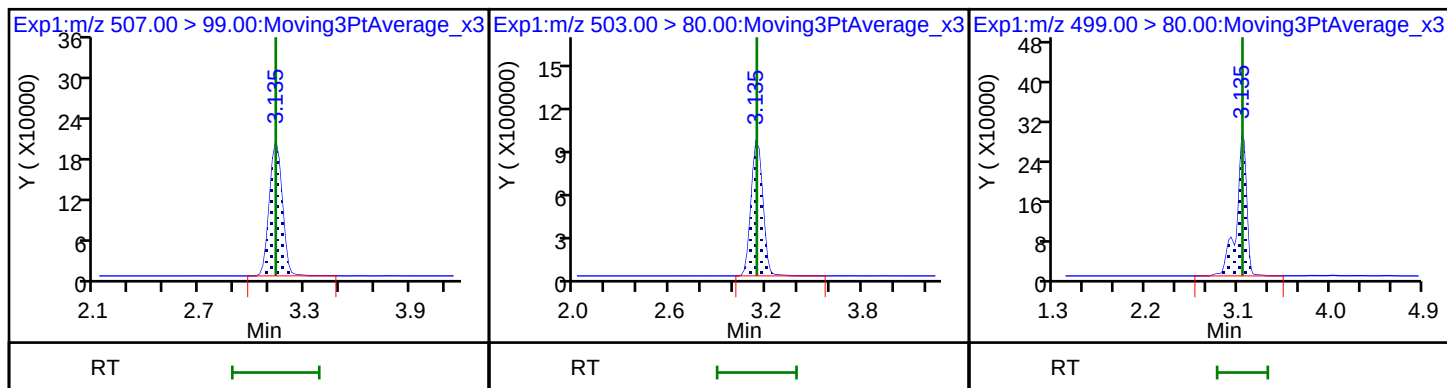
16 Perfluoroheptanesulfonic acid

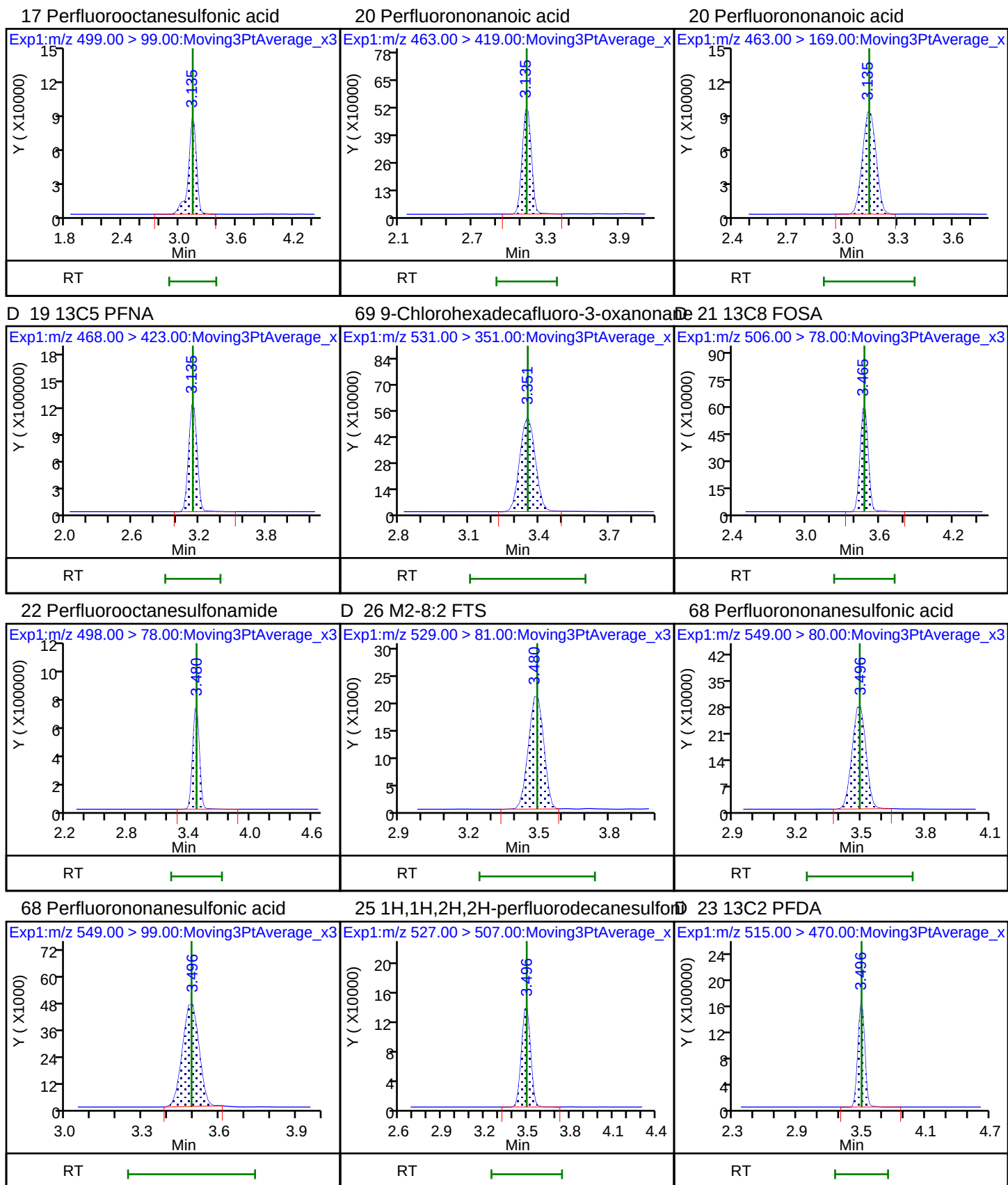


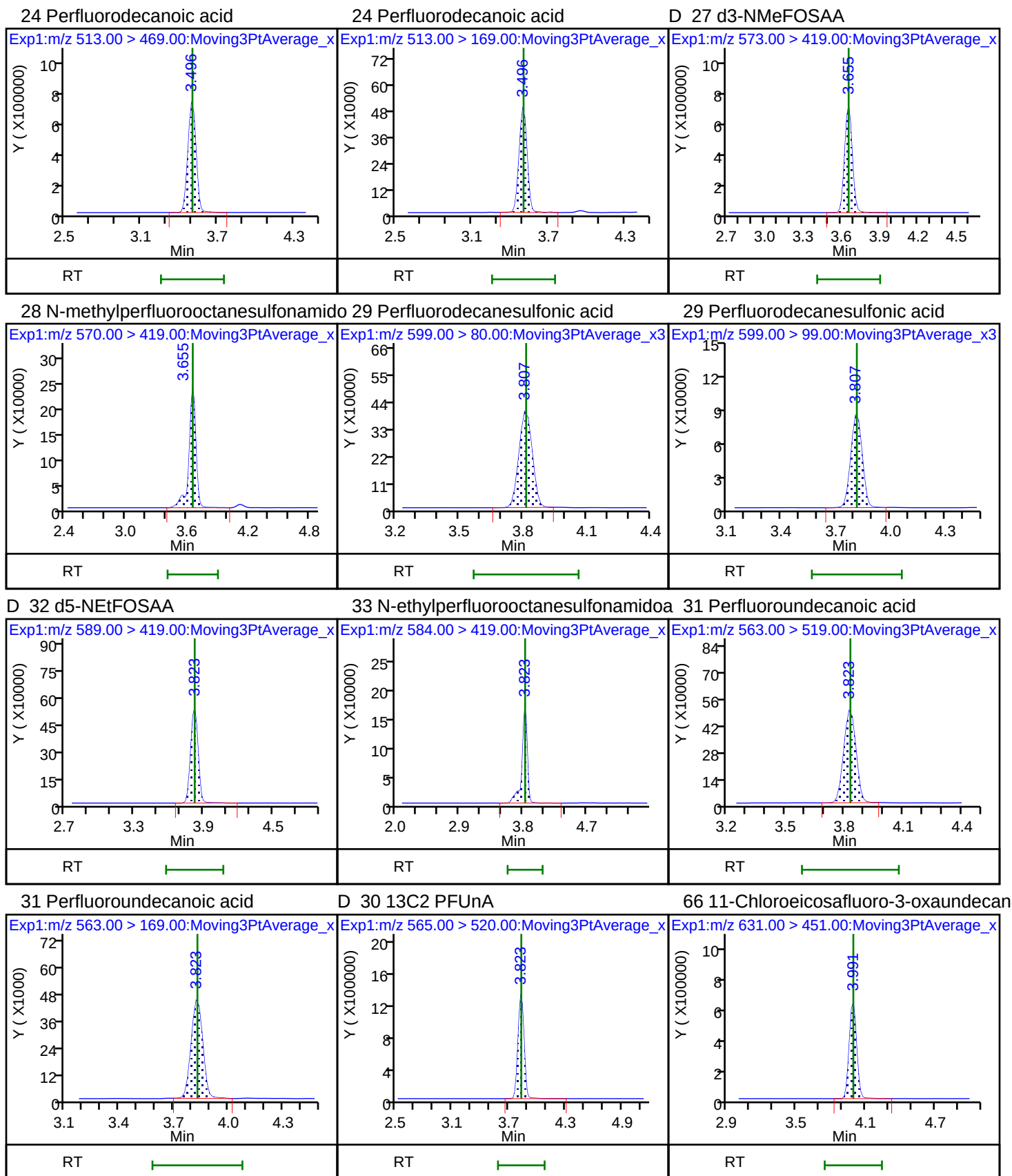
D 72 13C8 PFOS

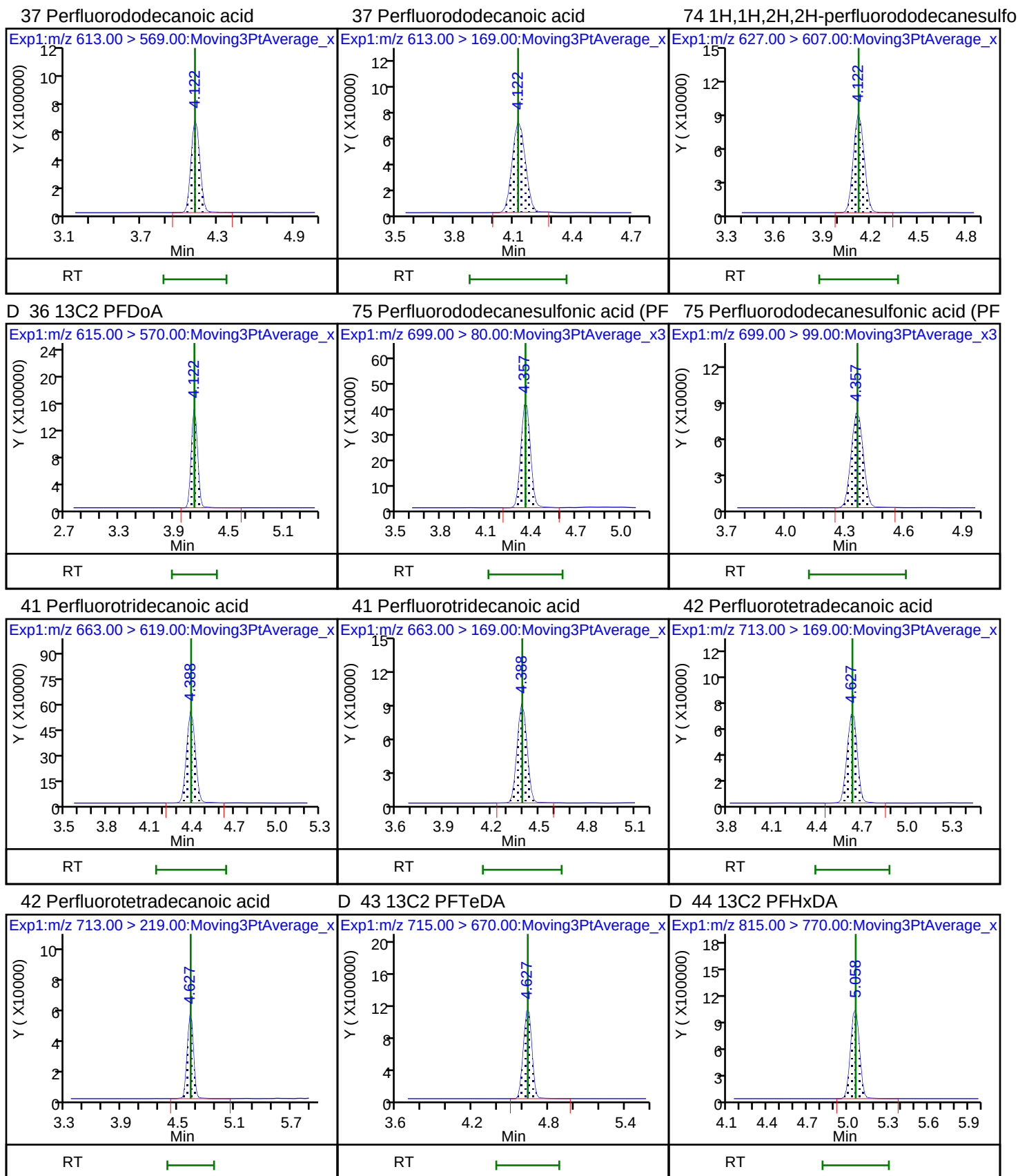
D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid





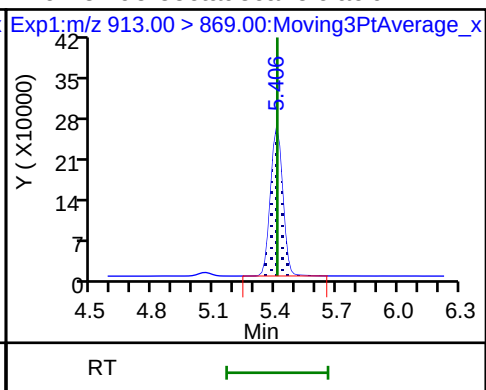
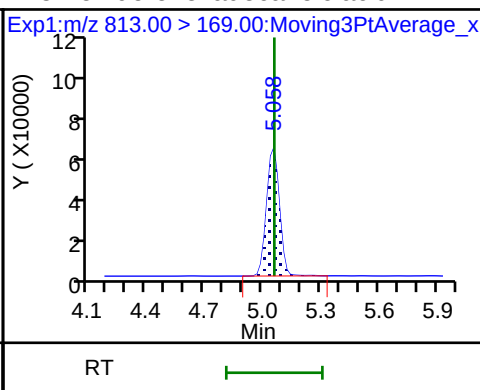
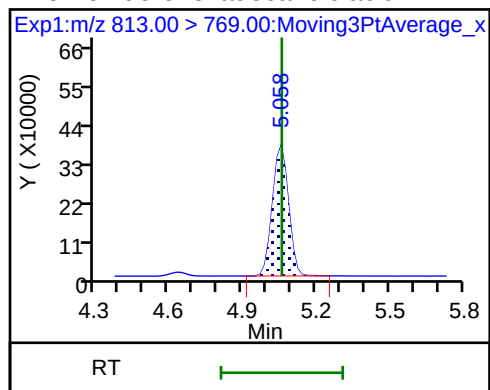




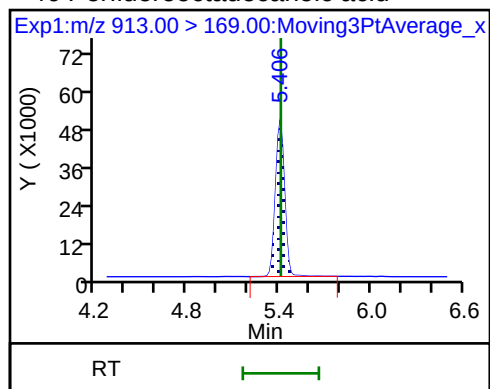
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_006.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 11-Oct-2018 16:24:00 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 17:36:21 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK049

First Level Reviewer: hannigana

Date: 11-Oct-2018 17:14:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.502	-0.003	0.542	6403577	2.50		100	19141	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.499	1.502	-0.003	1.000	5870219	2.47		98.7	186	
D 3 13C5 PFPeA										
267.90 > 223.00	1.781	1.788	-0.007	0.644	5819064	2.52		101	17360	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.790	-0.001	1.005	5699844	2.42		96.8	566	
D 47 13C3 PFBS										
301.90 > 83.00	1.822	1.828	-0.006	0.659	74287	2.31		99.5	434	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.831	1.830	0.0	1.005	7418616	2.18		98.5	731	
298.90 > 99.00	1.831	1.830	0.0	1.005	2580518		2.87(1.35-4.05)	98.5	609	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.041	-0.003	1.118	1692800	2.45		105	10874	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.038	2.042	-0.004	0.737	627784	2.27		97.1	677	
D 7 13C2 PFHxA										
315.00 > 270.00	2.079	2.079	-0.001	0.751	6079239	2.44		97.6	19770	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.079	2.080	-0.002	1.000	5568970	2.56		103	1063	
313.00 > 119.00	2.079	2.080	-0.002	1.000	400833		13.89(6.96-20.87)	103	857	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.103	-0.004	1.152	3760869	2.44		104	5381	
349.00 > 99.00	2.099	2.103	-0.004	1.152	1759467		2.14(1.15-3.45)	104	2614	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.171	2.176	-0.005	0.995	1203049	2.31		92.6	731	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.181	2.176	0.005	0.788	685250	2.66		106	2235	
D 9 13C4 PFHpA										
367.00 > 322.00	2.413	2.411	0.002	0.872	7363222	2.48		99.4	18922	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	8208285	2.62		105	1322	
363.00 > 169.00	2.413	2.413	0.0	1.000	1844326		4.45(2.17-6.52)	105	2945	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	5294820	2.29		101	2817	
399.00 > 99.00	2.426	2.426	0.0	1.000	1385925		3.82(1.90-5.70)	101	1201	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.426	0.0	0.877	4338507	2.29		96.6	8868	
76 DONA										
377.00 > 251.00	2.452	2.454	-0.002	0.782	12737717	2.38		101	18368	
377.00 > 85.00	2.452	2.454	-0.002	0.782	6113202		2.08(1.13-3.39)	101	5833	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.741	-0.007	1.000	1587312	2.28		96.3	1719	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.734	2.744	-0.010	0.988	740354	2.44		103	1570	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.762	-0.012		6108344	2.43		99.3	10647	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.769	-0.003	1.000	7437212	2.42		96.7	490	
413.00 > 169.00	2.766	2.769	-0.003	1.000	2790929		2.66(1.36-4.08)	96.7	3712	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.769	-0.003		7186537	2.50			8104	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.769	-0.003	1.000	7029540	2.50		100	15204	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.780	0.002	0.888	4961142	2.35		98.7	3951	
449.00 > 99.00	2.782	2.780	0.002	0.888	1191778		4.16(1.84-5.53)	98.7	2796	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		1055918	2.46		103	3478	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.135	3.140	-0.005	1.000	4938422	2.30		99.3	1416	
499.00 > 99.00	3.135	3.140	-0.005	1.000	1142734		4.32(2.04-6.12)	99.3	1565	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.140	-0.005	1.133	4725138	2.44		102	3641	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.143	-0.008	1.133	6899879	2.69		107	9494	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.143	-0.008	1.000	6790628	2.44		97.4	687	
463.00 > 169.00	3.135	3.143	-0.008	1.000	1230319		5.52(2.68-8.03)	97.4	2453	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	5506827	2.32		99.5	3702	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.474	-0.009	1.253	2574025	2.53		101	3524	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.478	0.002	1.004	7852124	2.57		103	5838	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.492	0.004	1.264	91109	2.40		100	547	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.492	0.004	1.115	3300643	2.58		108	4214	
549.00 > 99.00	3.496	3.492	0.004	1.115	515519		6.40(3.02-9.05)	108	3507	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.494	0.002	1.000	1356540	2.38		99.3	4601	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.501	-0.005	1.264	6713828	2.50		99.8	13130	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.503	-0.007	1.000	7944664	2.60		104	1169	
513.00 > 169.00	3.496	3.503	-0.007	1.000	501018		15.86(7.12-21.35)	104	455	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.321	2743922	2.49		99.7	2742	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.657	-0.002	1.000	2814910	2.58		103	1034	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.814	-0.007	1.215	4313115	2.50		104	3156	
599.00 > 99.00	3.807	3.814	-0.007	1.215	915202		4.71(2.14-6.43)	104	2512	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.382	2248680	2.52		101	3502	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.828	-0.005	1.000	2104584	2.51		101	2928	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.830	-0.007	1.382	5812454	2.57		103	9080	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.830	-0.007	1.000	5109046	2.35		94.1	1159	
563.00 > 169.00	3.823	3.830	-0.007	1.000	454811		11.23(5.24-15.72)	94.1	2030	
35 MeFOSA										
512.00 > 169.00	3.960	3.962	-0.002		1423310	NC			912	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.991	3.991	0.0	1.273	6856853	2.48		105	10652	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.122	4.122	0.0	1.000	6931888	2.58		103	1664	
613.00 > 169.00	4.122	4.122	0.0	1.000	705854		9.82(4.68-14.05)	103	947	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.125	-0.003	1.490	6748906	2.45		98.1	10526	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.125	-0.003	1.179	875216	2.27		94.2	1149	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.155	0.002		1493953	NC			602	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.357	4.364	-0.007	1.390	435775	2.32		95.7	645	
699.00 > 99.00	4.357	4.364	-0.007	1.390	801323		0.54(0.28-0.83)	95.7	1915	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.388	4.393	-0.005	1.064	5586352	2.57		103	2963	
663.00 > 169.00	4.388	4.393	-0.005	1.064	940134		5.94(3.09-9.27)	103	1442	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.627	4.634	-0.007	1.673	5082840	2.58		103	7578	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.627	4.634	-0.007	1.000	854290	2.64		106	2853	
713.00 > 219.00	4.627	4.634	-0.007	1.000	569128		1.50(0.70-2.09)	106	1721	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.057	5.058	-0.001	1.828	4731738	2.62		105	8443	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.060	-0.003	1.000	3968774	2.44		97.5	1389	
813.00 > 169.00	5.057	5.060	-0.003	1.000	741105		5.36(2.77-8.32)	97.5	2006	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.406	5.409	-0.003	1.069	2602671	2.35		94.2	1511	
913.00 > 169.00	5.406	5.409	-0.003	1.069	465195		5.59(2.55-7.64)	94.2	1819	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_006.d

Injection Date: 11-Oct-2018 16:24:00

Instrument ID: A9

Lims ID: IC L5 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

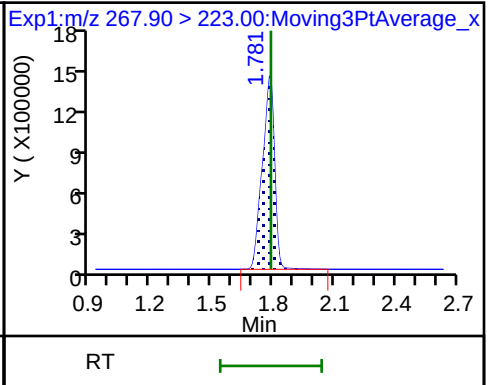
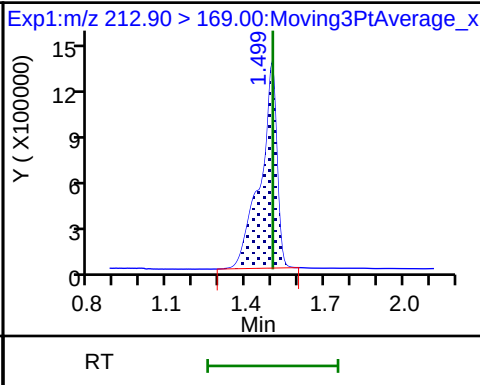
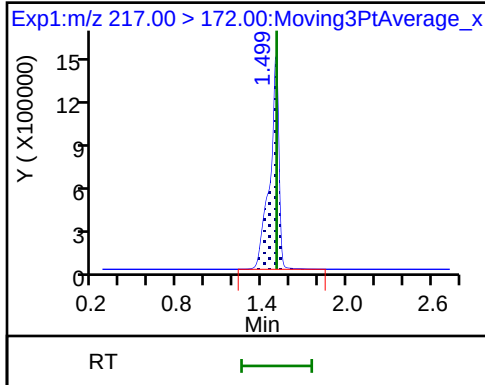
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

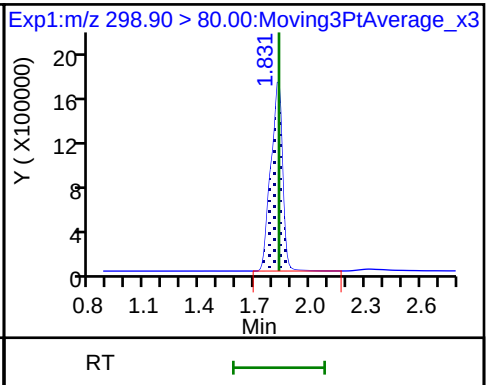
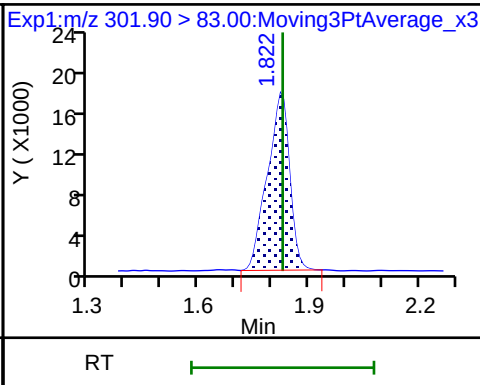
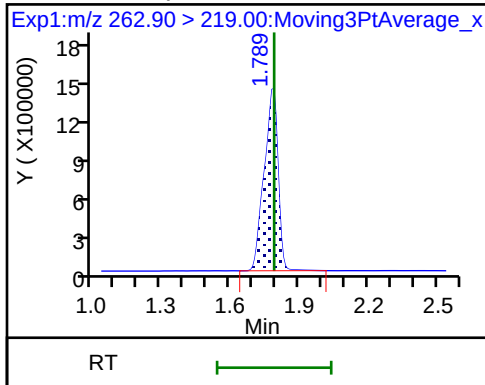
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

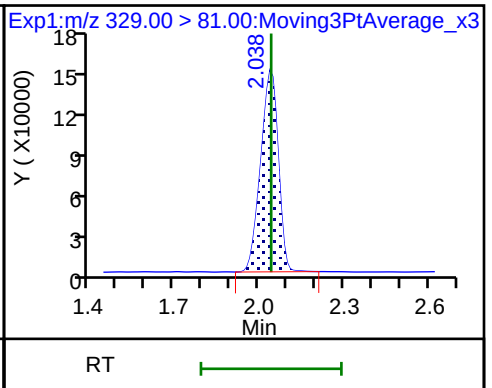
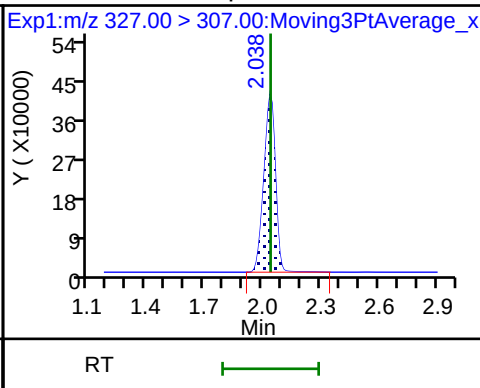
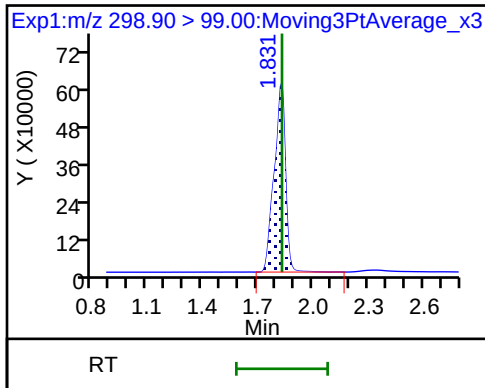
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

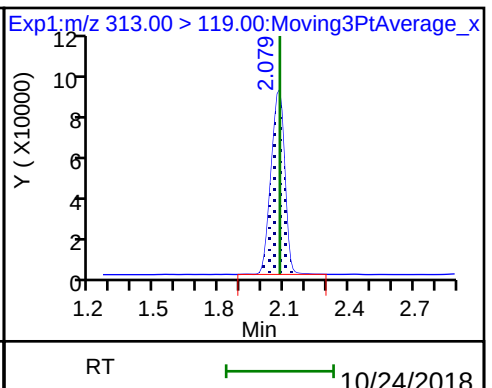
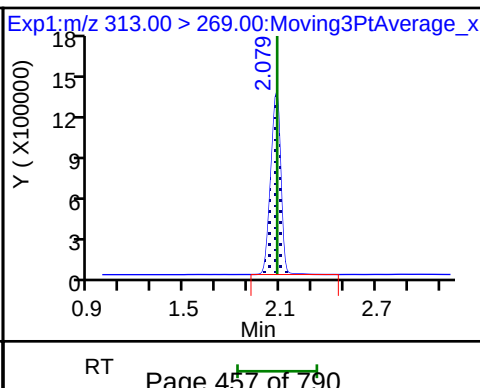
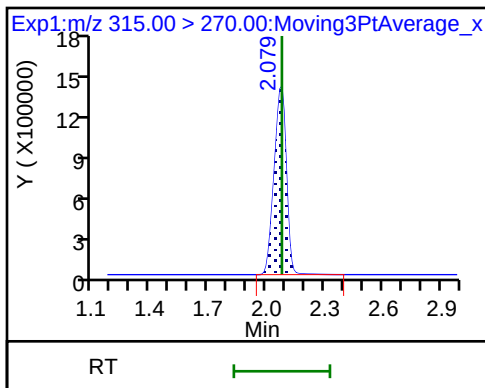
D 60 M2-4:2 FTS

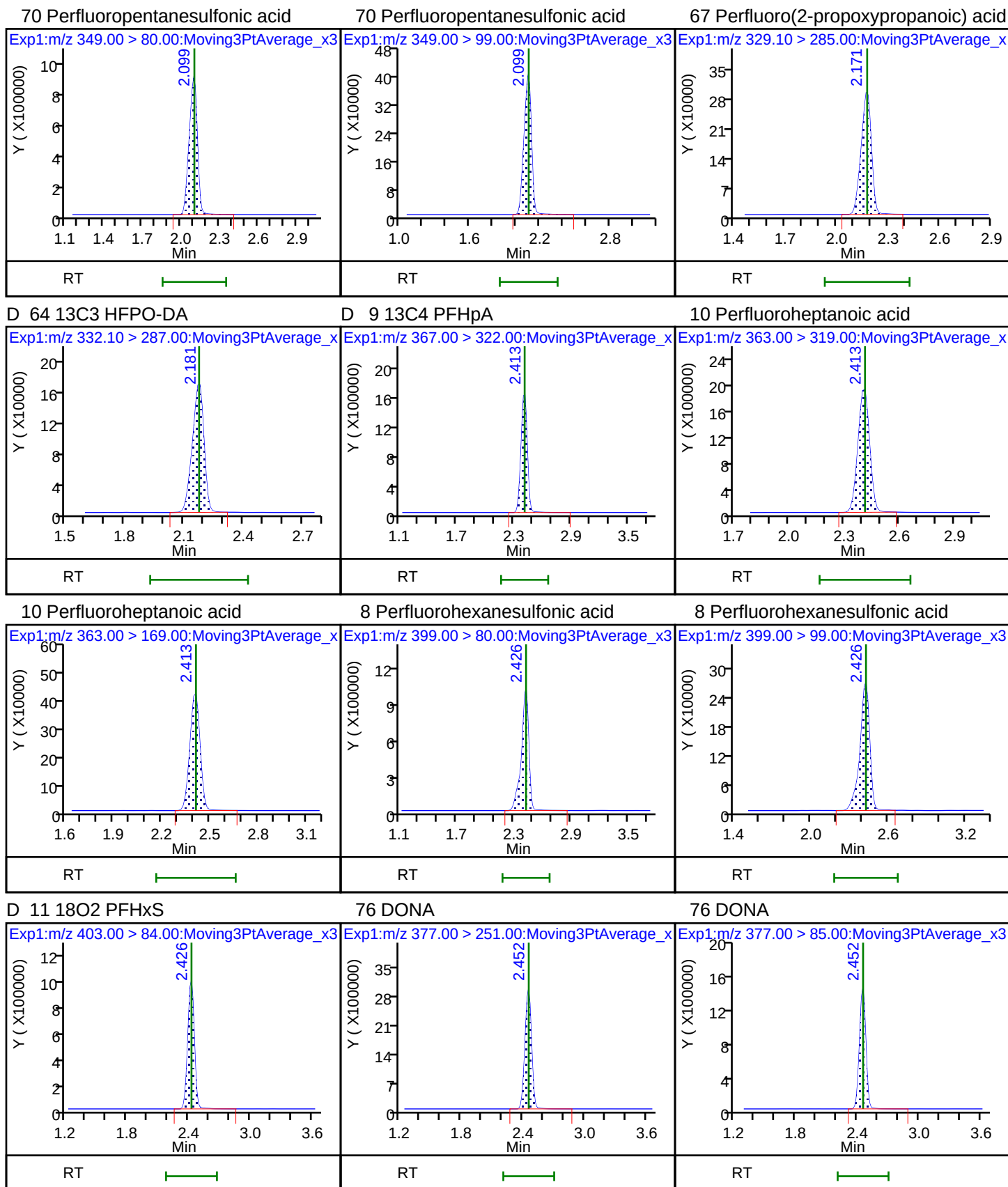


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

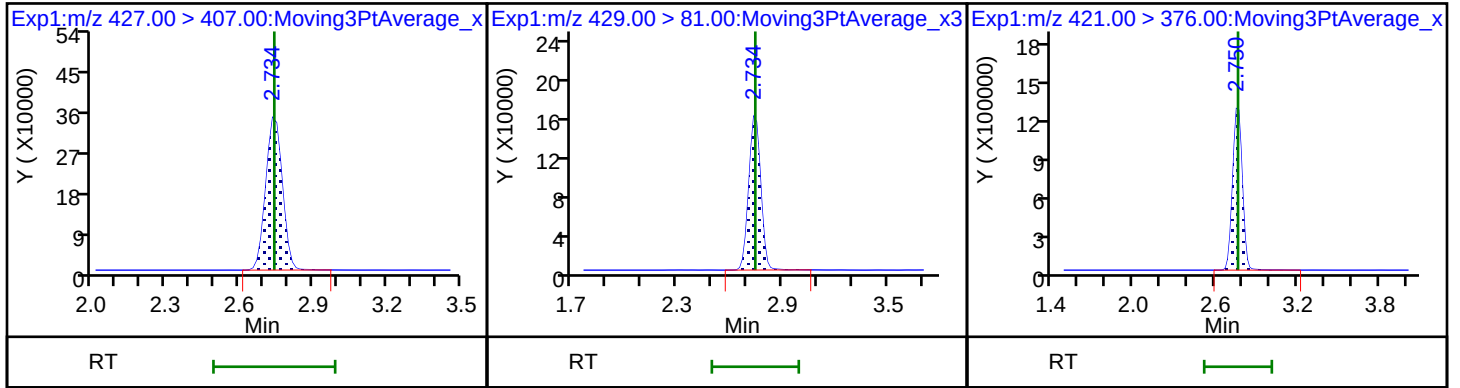
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

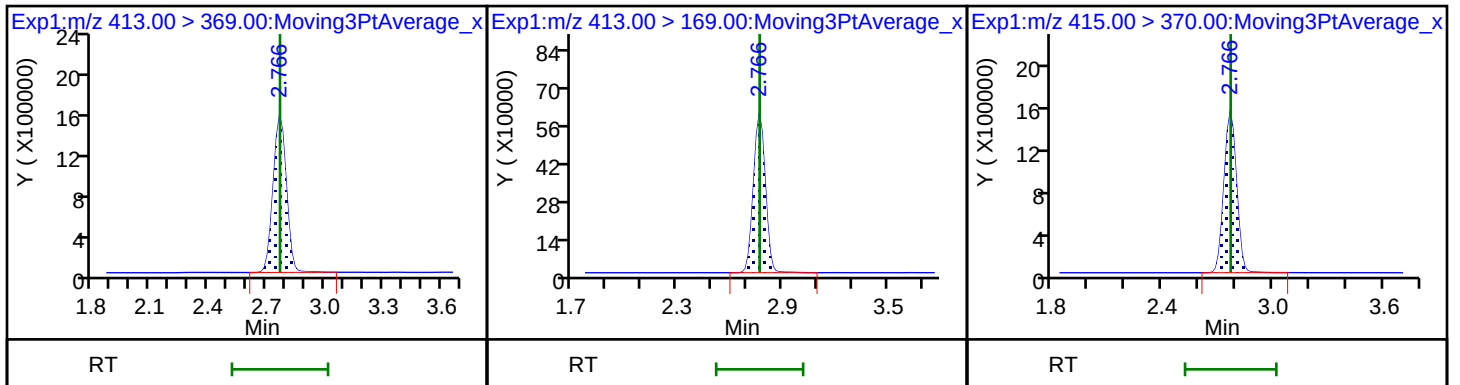
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

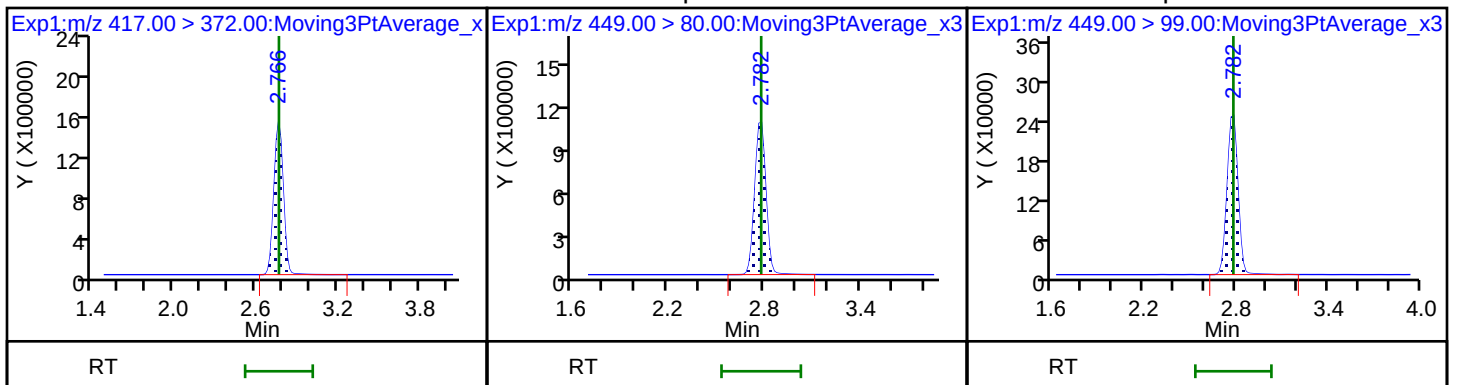
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

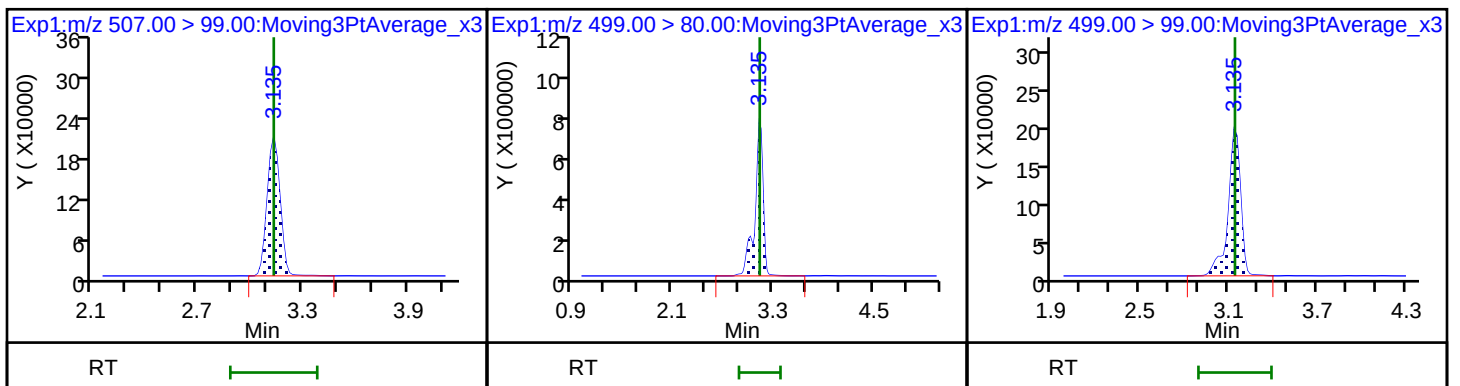
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

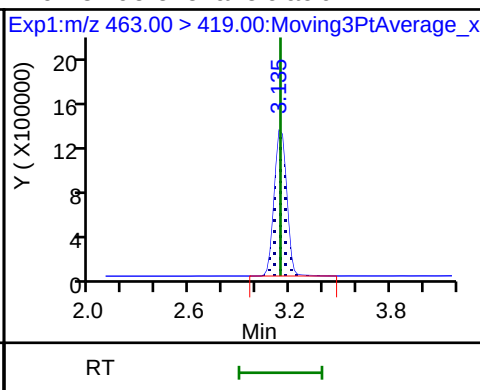
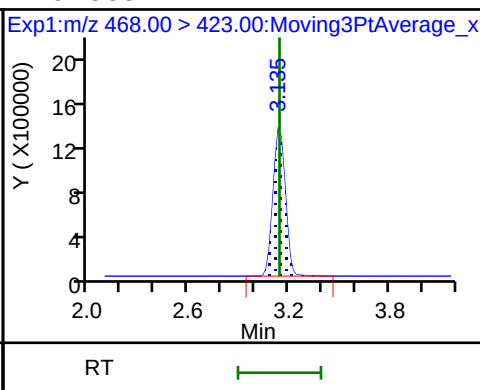
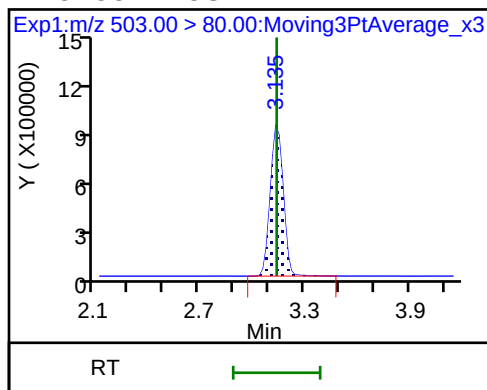
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

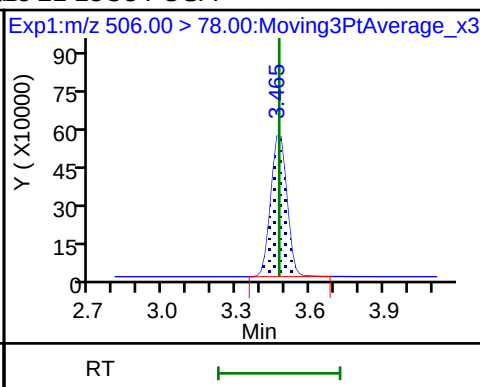
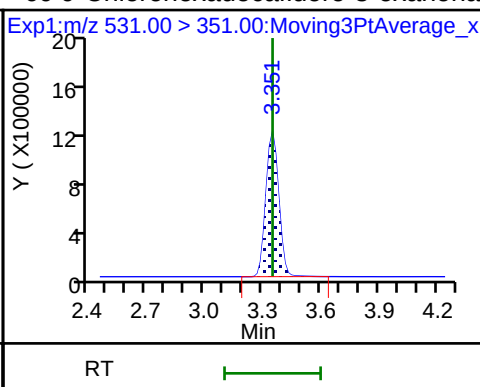
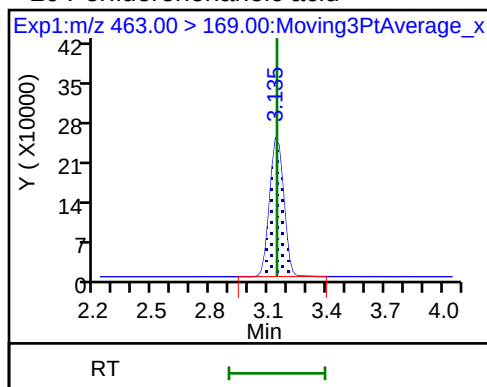
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

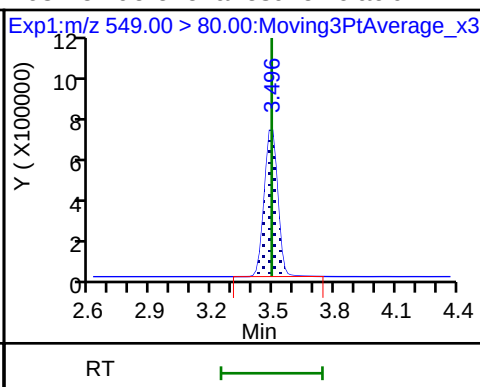
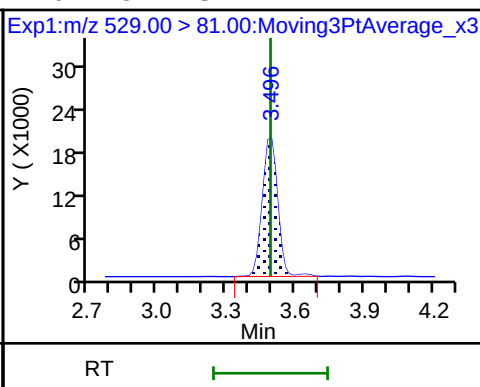
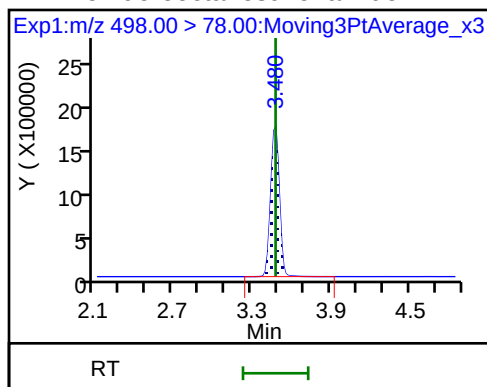
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

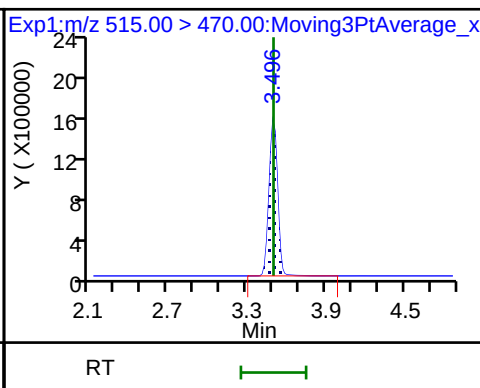
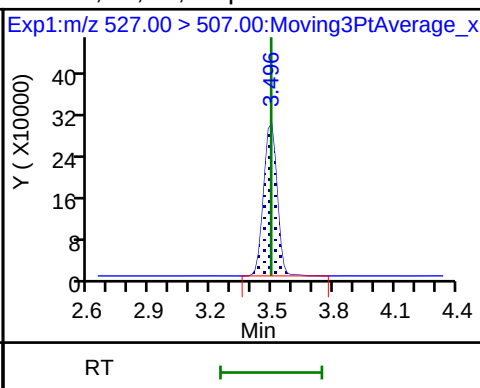
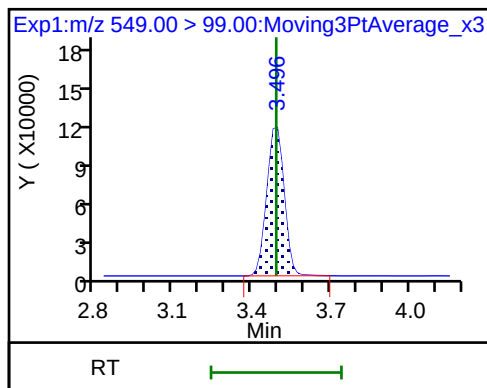
68 Perfluorononanesulfonic acid

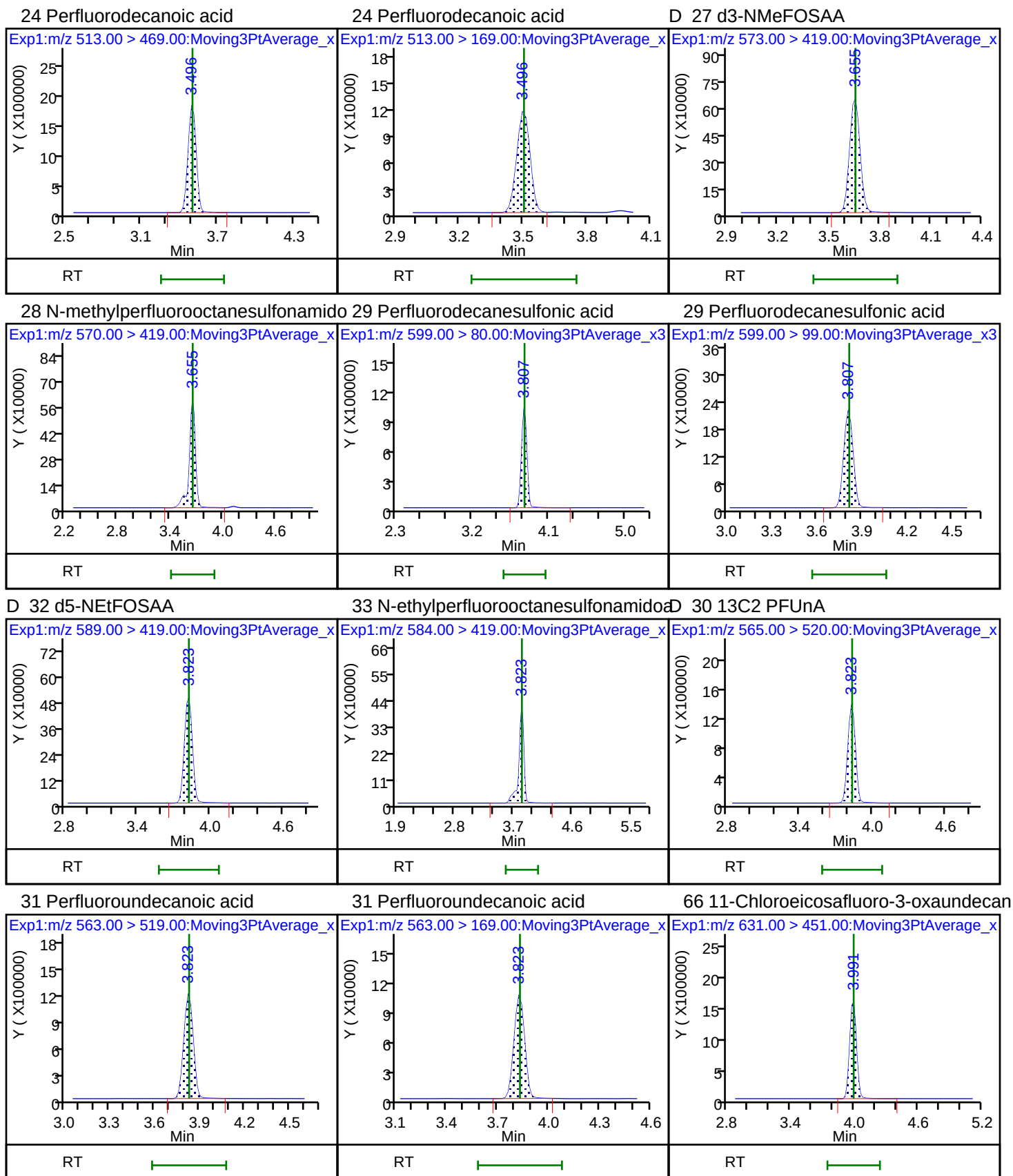


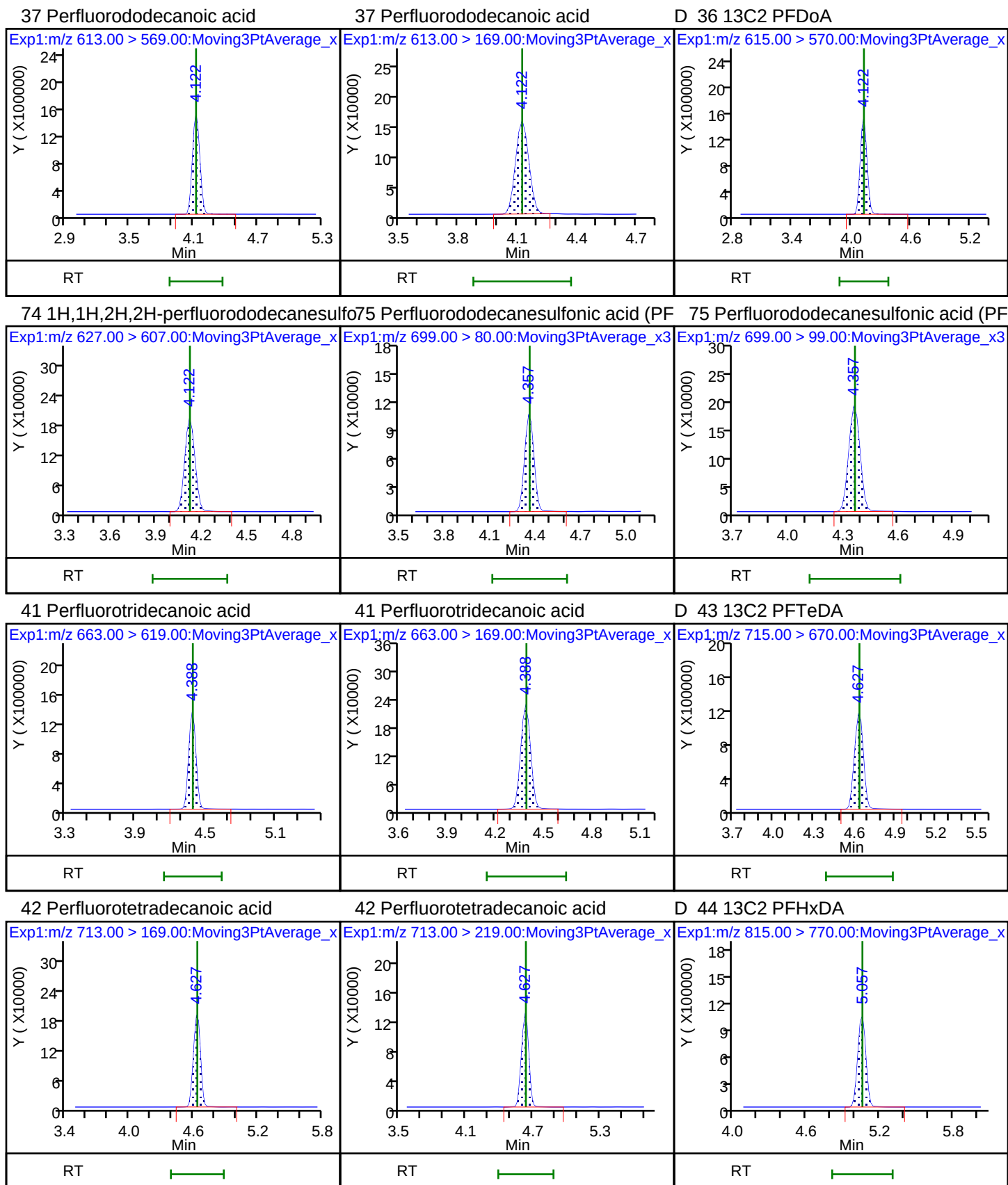
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonic acid

23 13C2 PFDA



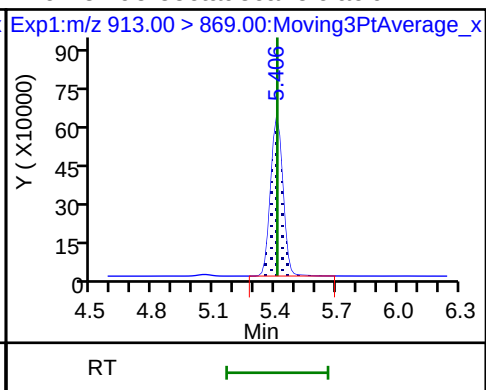
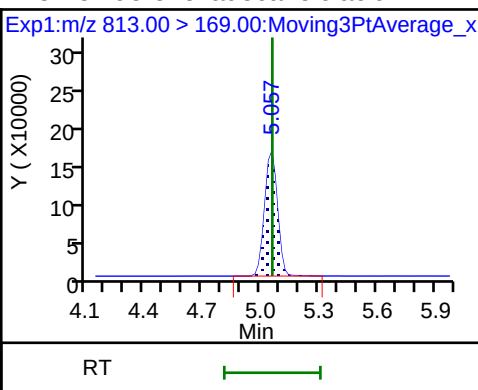
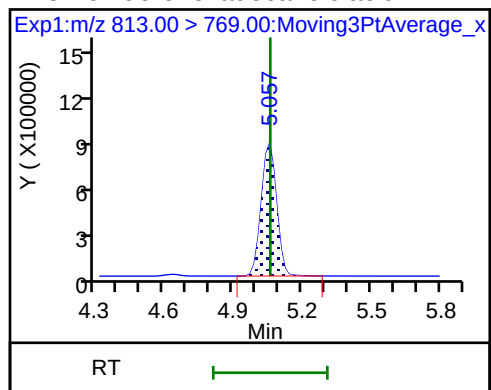




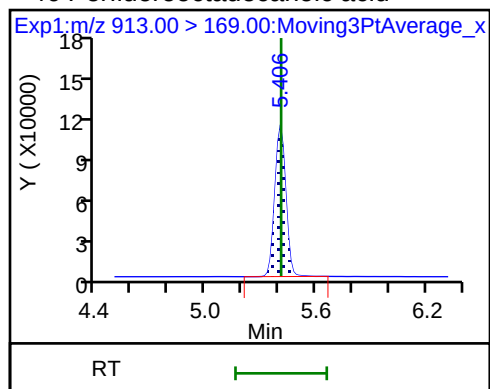
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_007.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 11-Oct-2018 16:31:31 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD6
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 17:36:25 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK049

First Level Reviewer: hannigana

Date: 11-Oct-2018 17:14:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.502	-0.003	0.542	6700404	2.55		102	20985	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.499	1.502	-0.003	1.000	12564346	5.05		101	415	
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.788	0.001	0.647	6032173	2.54		102	20099	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.790	-0.001	1.000	11707312	4.80		95.9	1172	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.828	0.002	0.662	79950	2.42		104	462	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.830	0.0	1.000	15502374	4.23		95.7	1488	
298.90 > 99.00	1.830	1.830	0.0	1.000	5671456		2.73(1.35-4.05)	95.7	1381	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.037	2.041	-0.004	1.113	3432343	4.61		98.7	16145	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.037	2.042	-0.005	0.737	679933	2.38		102	726	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.079	-0.001	0.751	6466293	2.52		101	23517	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.080	-0.002	1.000	11091230	4.80		96.0	1786	
313.00 > 119.00	2.078	2.080	-0.002	1.000	863981		12.84(6.96-20.87)	96.0	1483	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.103	-0.004	1.147	7884063	4.76		101	10508	
349.00 > 99.00	2.099	2.103	-0.004	1.147	3813551		2.07(1.15-3.45)	101	5051	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.005	2515312	5.28		106	1372	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.170	2.176	-0.006	0.785	628473	2.37		94.8	1846	
D 9 13C4 PFHpA										
367.00 > 322.00	2.413	2.411	0.002	0.872	7579685	2.48		99.4	17498	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	16049968	4.98		99.6	2604	
363.00 > 169.00	2.413	2.413	0.0	1.000	3856157		4.16(2.17-6.52)	99.6	5900	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	10722929	4.29		94.2	5514	
399.00 > 99.00	2.426	2.426	0.0	1.000	3042890		3.52(1.90-5.70)	94.2	2420	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.426	0.0	0.877	4693517	2.40		102	8572	
76 DONA										
377.00 > 251.00	2.452	2.454	-0.002	0.782	24058924	4.38		92.9	37396	
377.00 > 85.00	2.452	2.454	-0.002	0.782	11977385		2.01(1.13-3.39)	92.9	10382	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.741	-0.007	1.000	3048942	4.12		86.9	3660	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.734	2.744	-0.010	0.988	787321	2.52		106	1369	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.762	0.004		6251798	2.49		102	14515	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.769	-0.003	1.000	13907088	4.19		83.8	886	
413.00 > 169.00	2.766	2.769	-0.003	1.000	5478736		2.54(1.36-4.08)	83.8	5561	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.769	-0.003		7396312	2.50			11962	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.769	-0.003	1.000	7587887	2.62		105	15272	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.780	0.002	0.888	10459679	4.82		101	5800	
449.00 > 99.00	2.782	2.780	0.002	0.888	2659886		3.93(1.84-5.53)	101	3627	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		1005761	2.34		98.1	2498	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.135	3.140	-0.005	1.000	10404812	4.73		102	3137	
499.00 > 99.00	3.135	3.140	-0.005	1.000	2367780		4.39(2.04-6.12)	102	2533	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.140	-0.005	1.133	4853826	2.44		102	4713	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.143	-0.008	1.133	6862640	2.60		104	6166	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.143	-0.008	1.000	12864459	4.64		92.8	1177	
463.00 > 169.00	3.135	3.143	-0.008	1.000	2609261		4.93(2.68-8.03)	92.8	5233	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	10809339	4.43		95.0	5159	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.474	0.006	1.258	2544312	2.43		97.3	4648	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.478	0.002	1.000	14711349	4.87		97.4	5883	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.492	0.004	1.264	88683	2.27		94.8	603	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.480	3.492	-0.012	1.110	6974186	5.31		111	5452	
549.00 > 99.00	3.480	3.492	-0.012	1.110	1092574		6.38(3.02-9.05)	111	3155	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.494	0.002	1.000	2608418	4.70		98.1	5426	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.501	-0.005	1.264	6725669	2.43		97.2	9666	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.503	-0.007	1.000	14457977	4.73		94.6	1727	
513.00 > 169.00	3.496	3.503	-0.007	1.000	1074618		13.45(7.12-21.35)	94.6	530	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.321	2776140	2.45		98.0	3682	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.657	-0.002	1.000	5637620	5.10		102	1940	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.814	-0.007	1.215	8502267	4.80		99.5	5325	
599.00 > 99.00	3.807	3.814	-0.007	1.215	1860779		4.57(2.14-6.43)	99.5	4751	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.382	2244574	2.44		97.7	3836	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.828	-0.005	1.000	4139807	4.96		99.1	2741	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.830	-0.007	1.382	5738724	2.46		98.5	9721	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.830	-0.007	1.000	9675430	4.51		90.3	1967	
563.00 > 169.00	3.823	3.830	-0.007	1.000	975189		9.92(5.24-15.72)	90.3	2129	
35 MeFOSA										
512.00 > 169.00	3.960	3.962	-0.002		2960928	NC			1019	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.991	3.991	0.0	1.273	12731495	4.49		95.2	16077	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.122	4.122	0.0	1.000	12986876	4.45		88.9	2552	
613.00 > 169.00	4.122	4.122	0.0	1.000	1577285		8.23(4.68-14.05)	88.9	2540	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.125	-0.003	1.490	7330830	2.59		104	16719	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.125	-0.003	1.179	2158536	5.75		119	2497	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.155	0.002		3173123	NC			637	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.357	4.364	-0.007	1.390	897097	4.64		95.9	1301	
699.00 > 99.00	4.357	4.364	-0.007	1.390	1709744		0.52(0.28-0.83)	95.9	3170	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.388	4.393	-0.005	1.064	10922210	4.63		92.7	5468	
663.00 > 169.00	4.388	4.393	-0.005	1.064	2063472		5.29(3.09-9.27)	92.7	3004	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.627	4.634	-0.007	1.673	5061589	2.49		99.7	8913	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.627	4.634	-0.007	1.000	1645383	5.10		102	4103	
713.00 > 219.00	4.627	4.634	-0.007	1.000	1164996		1.41(0.70-2.09)	102	3431	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.057	5.058	-0.001	1.828	4868951	2.62		105	9620	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.060	-0.003	1.000	8459432	5.08		102	2699	
813.00 > 169.00	5.057	5.060	-0.003	1.000	1527753		5.54(2.77-8.32)	102	3337	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.405	5.409	-0.005	1.069	5799467	5.10		102	2745	
913.00 > 169.00	5.405	5.409	-0.005	1.069	1061880		5.46(2.55-7.64)	102	3450	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL6_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_007.d

Injection Date: 11-Oct-2018 16:31:31

Instrument ID: A9

Lims ID: IC L6 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 15

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

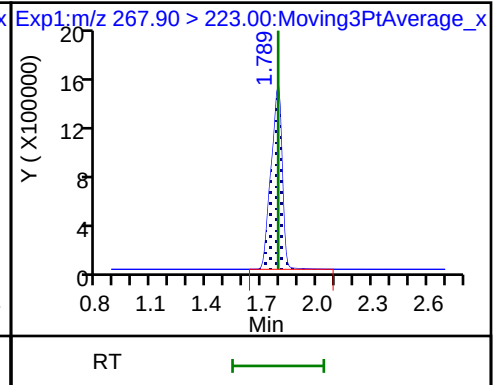
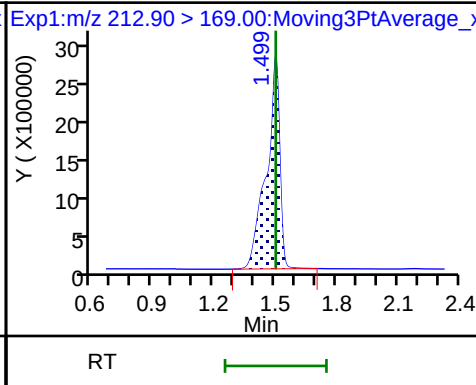
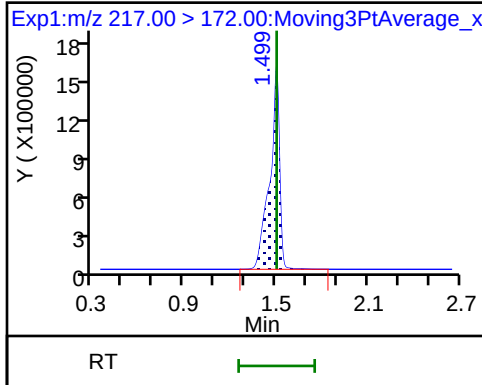
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

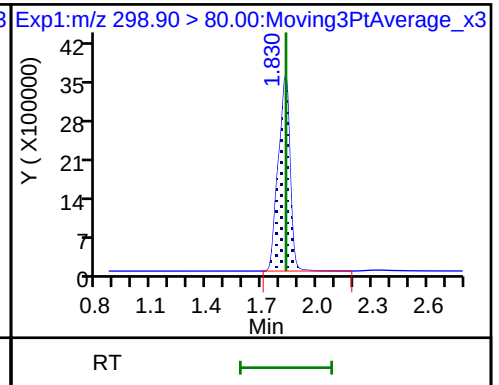
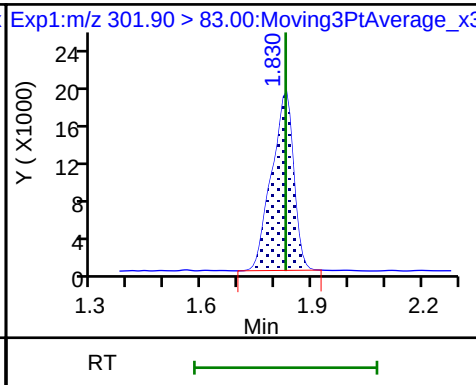
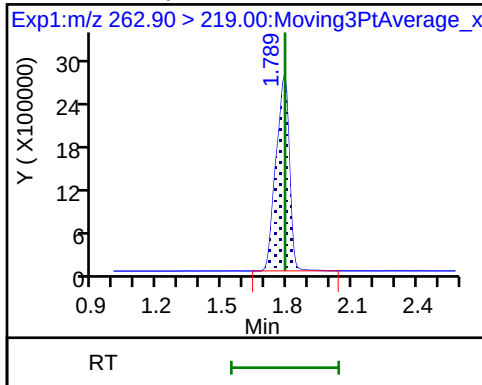
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

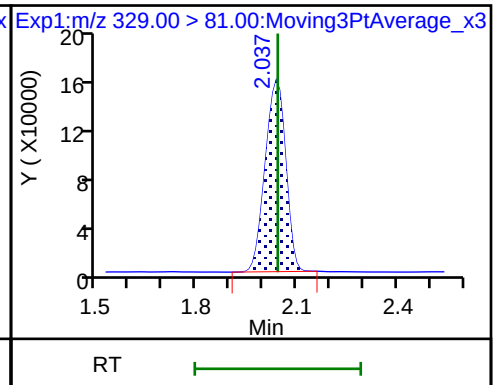
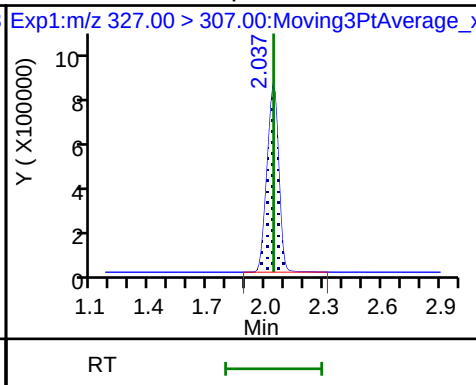
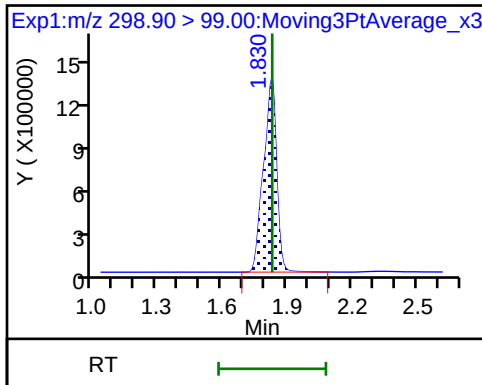
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

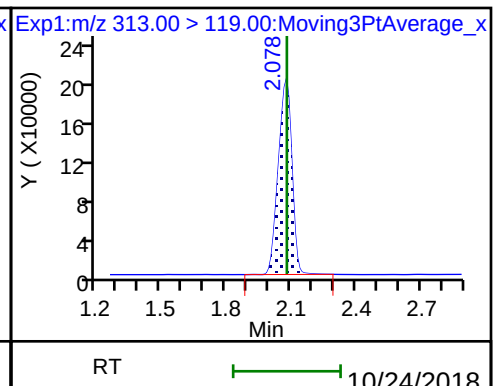
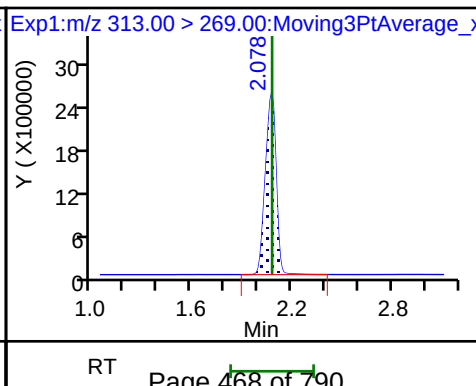
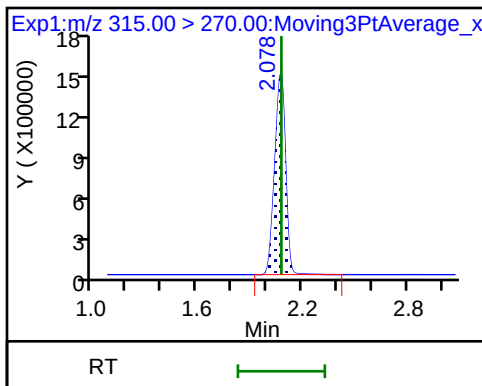
D 60 M2-4:2 FTS

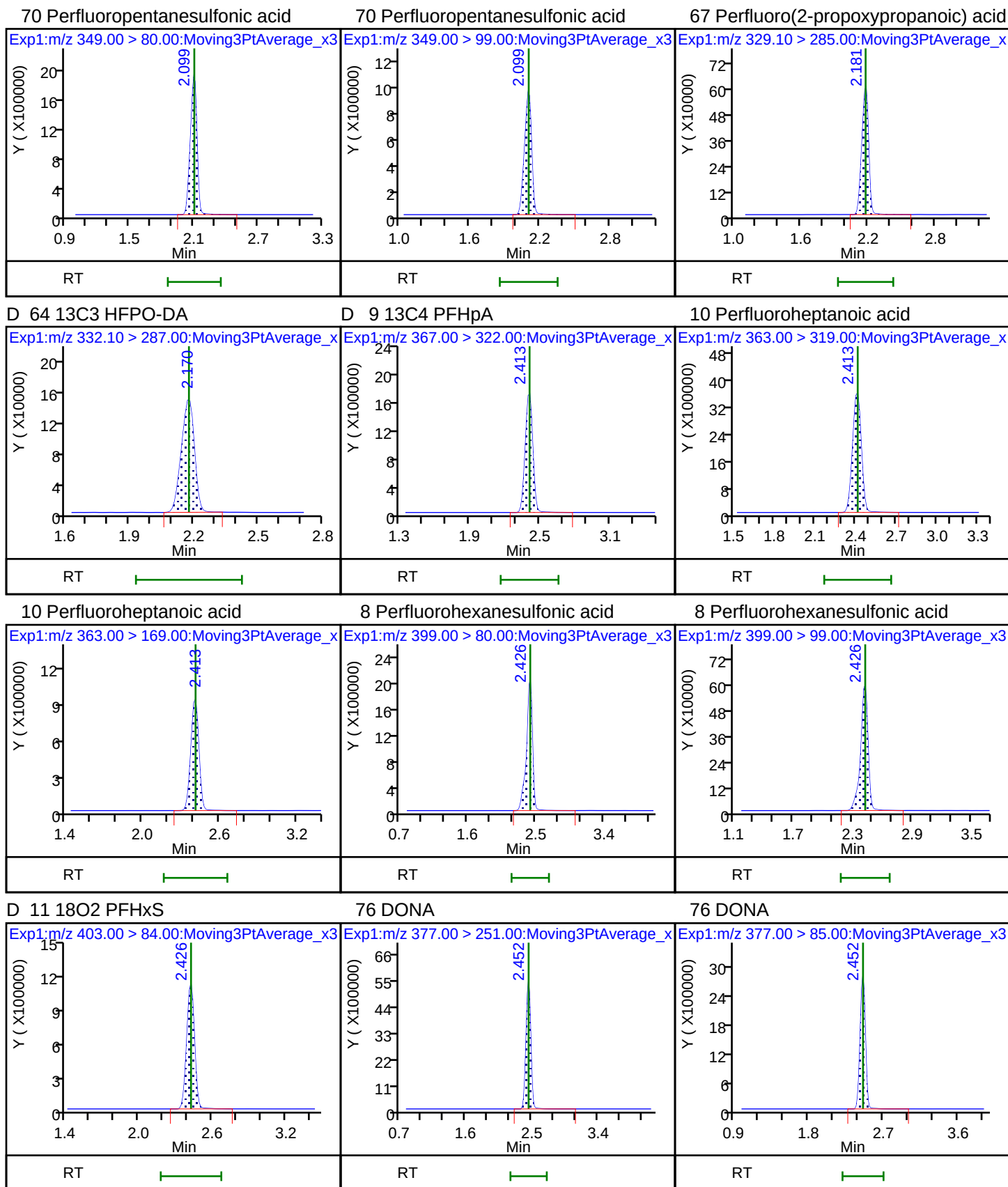


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

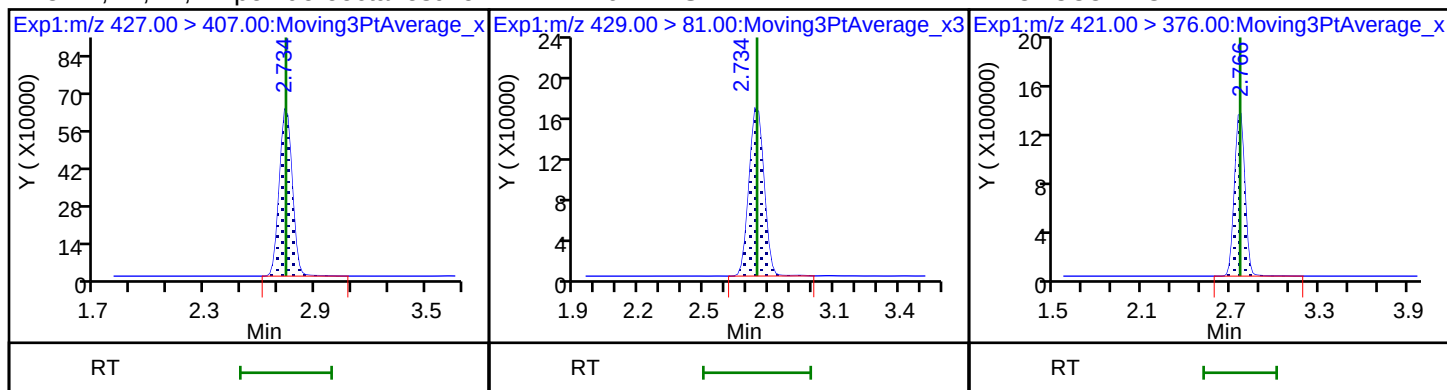
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

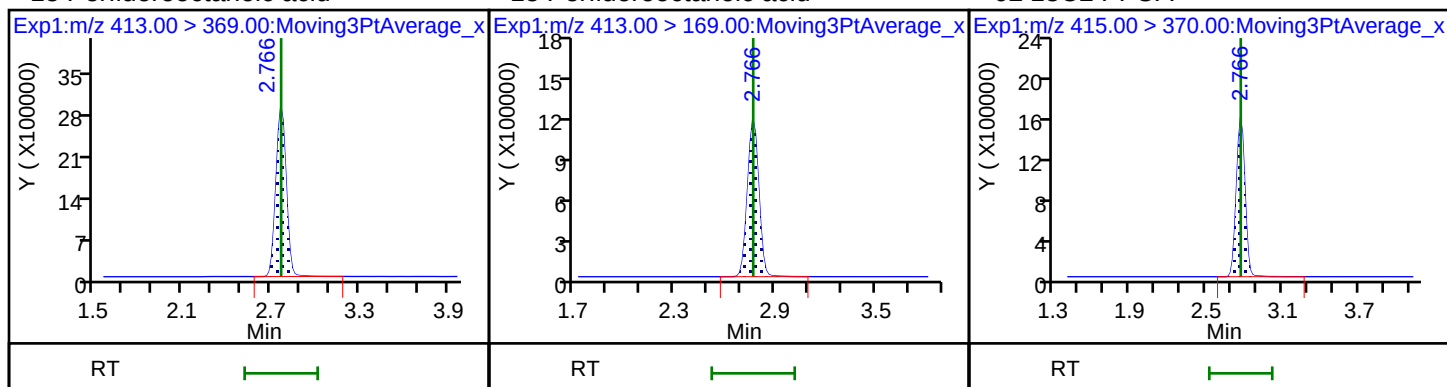
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

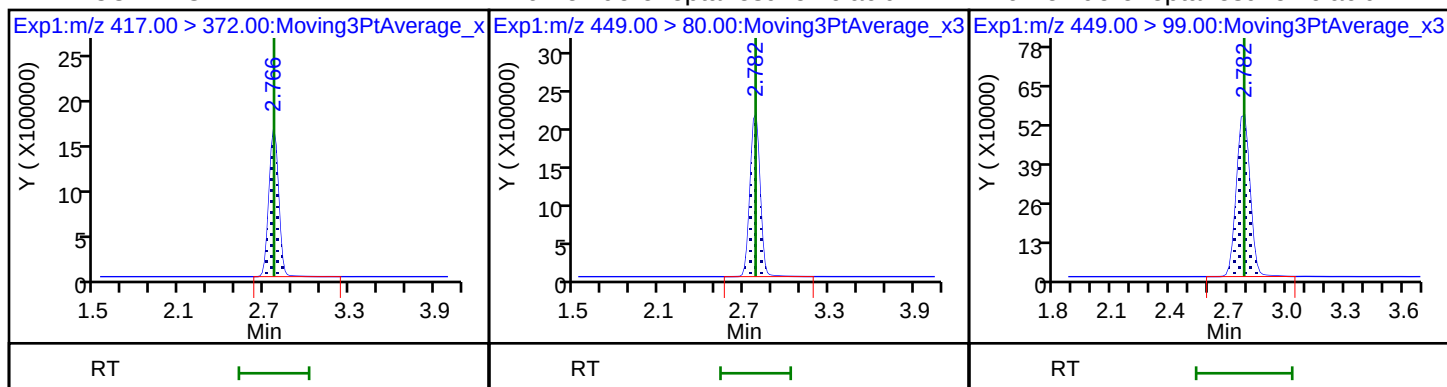
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

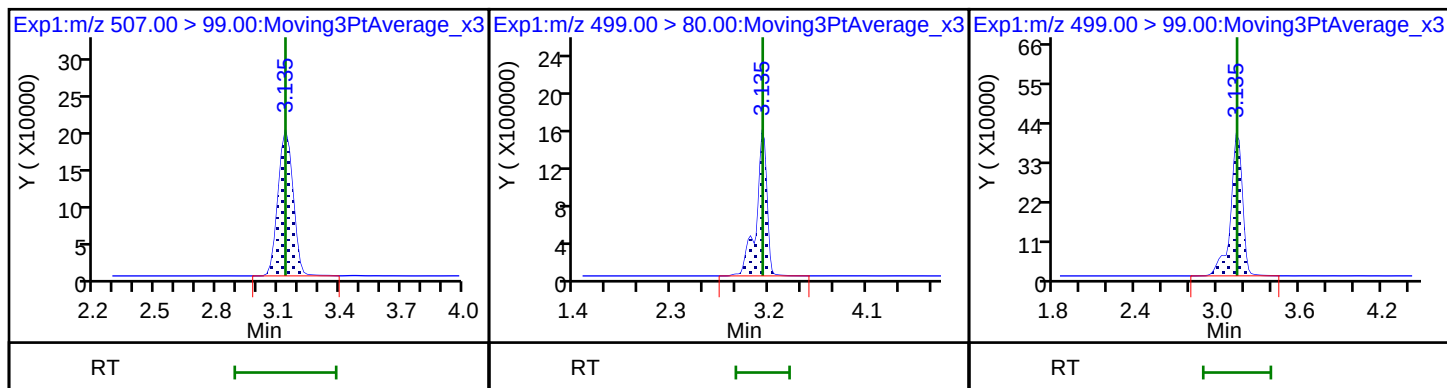
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

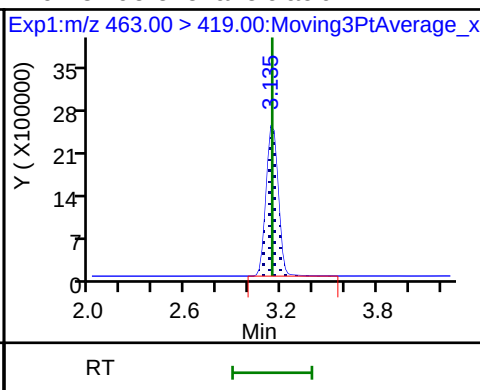
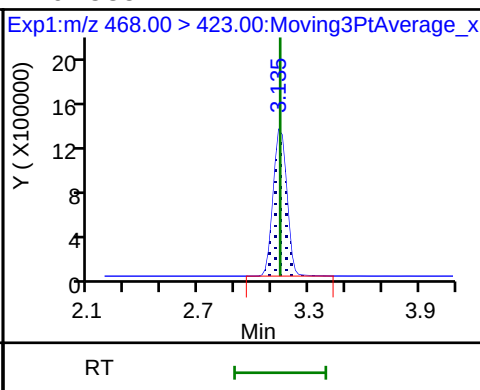
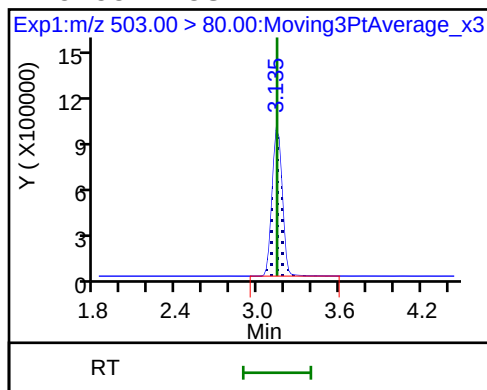
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

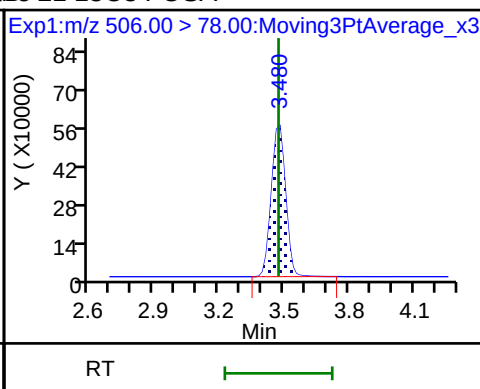
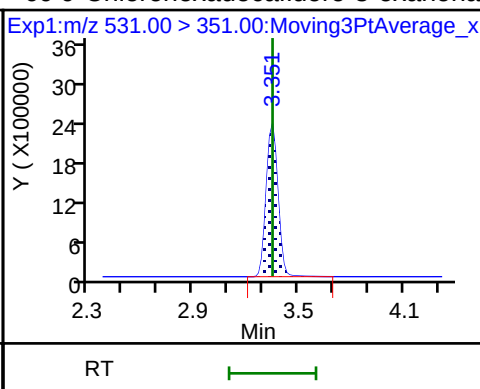
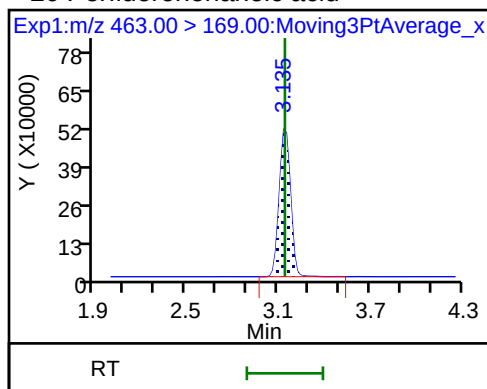
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonadecanoic acid

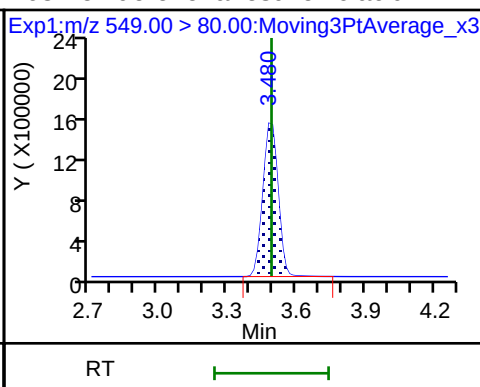
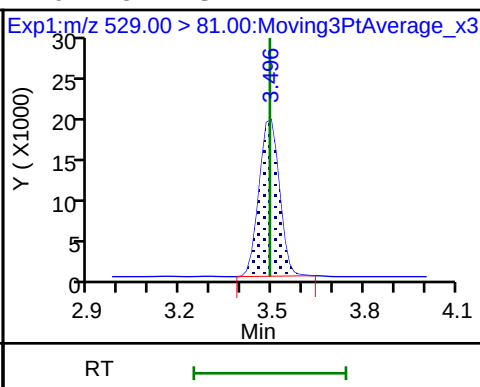
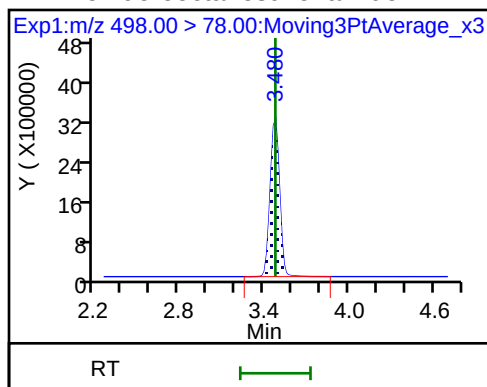
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

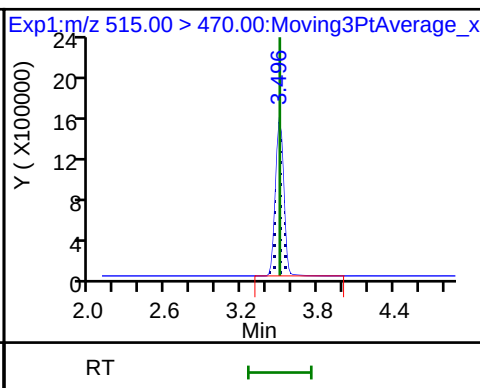
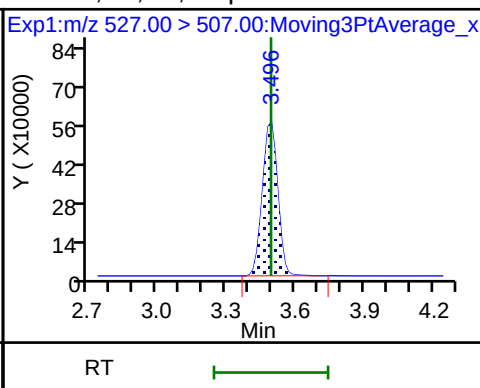
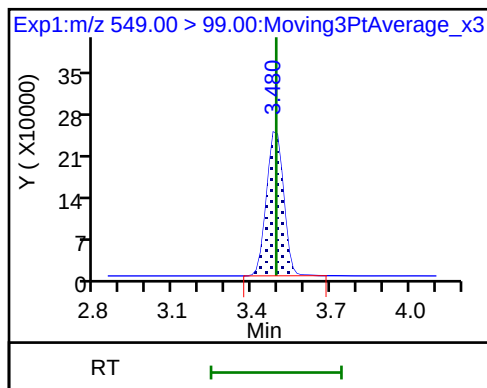
68 Perfluorononanesulfonic acid

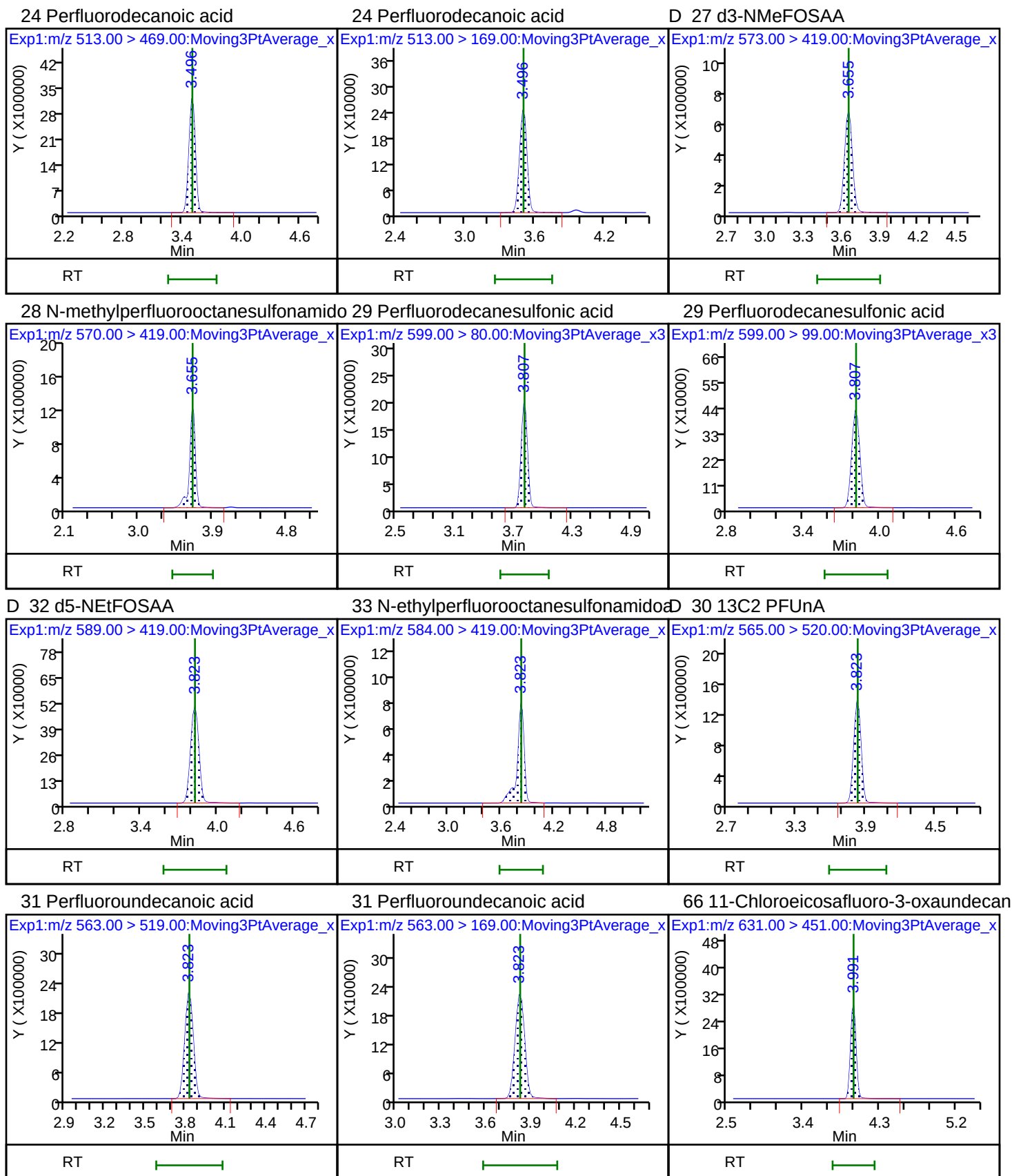


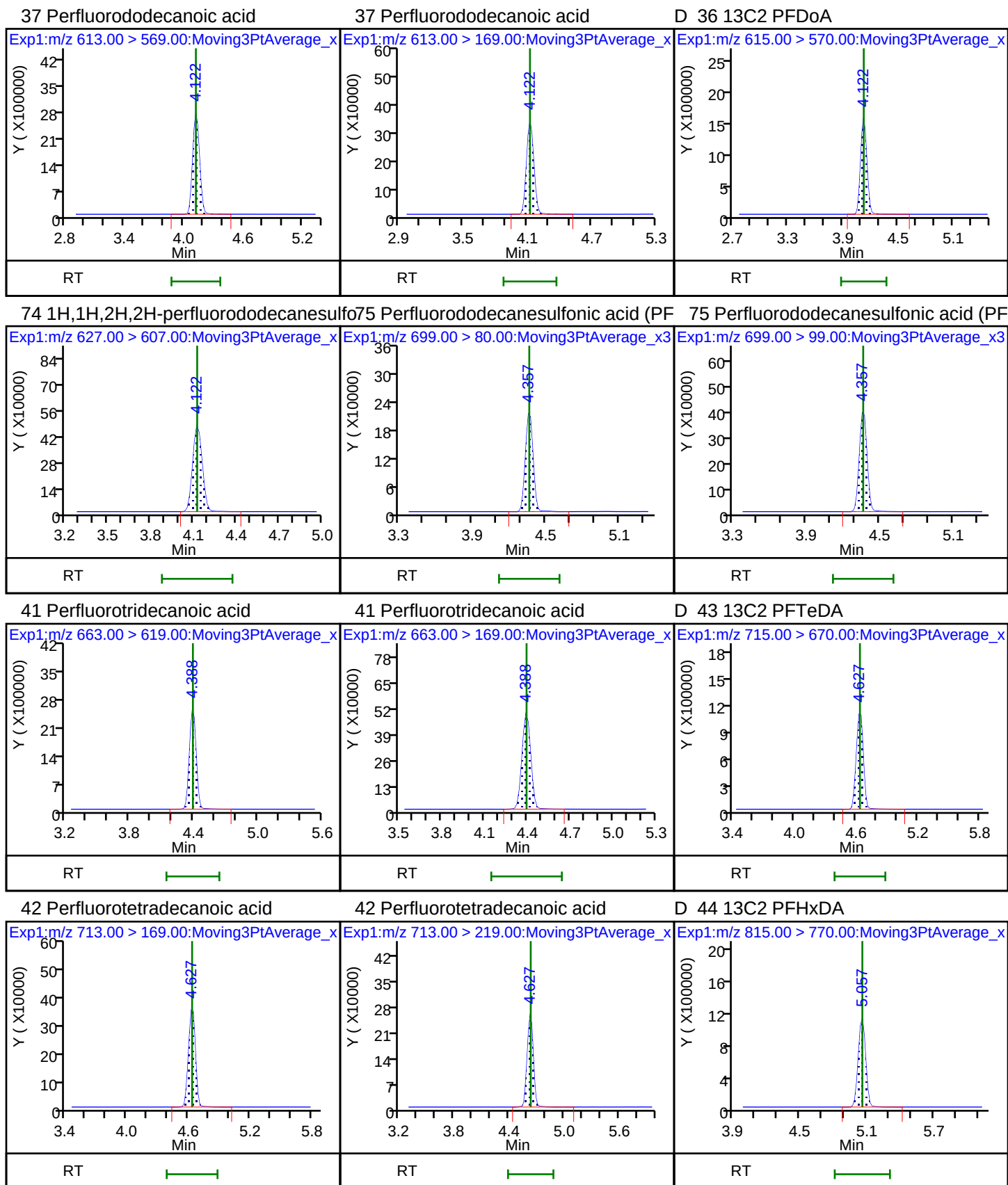
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonic acid

23 13C2 PFDA



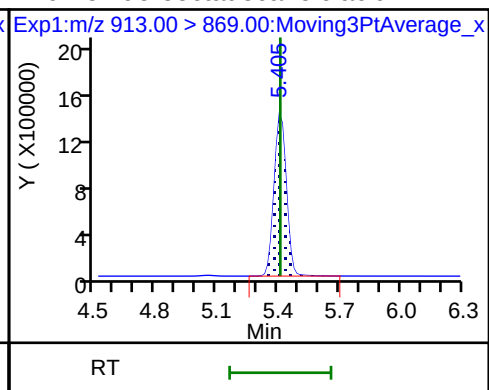
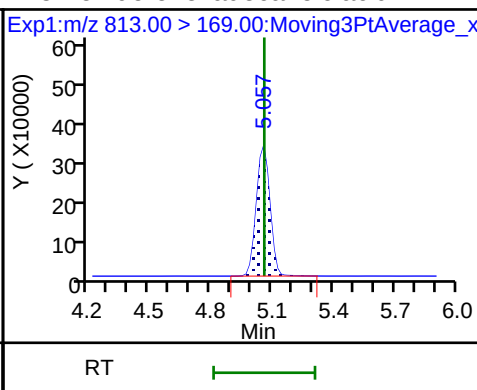
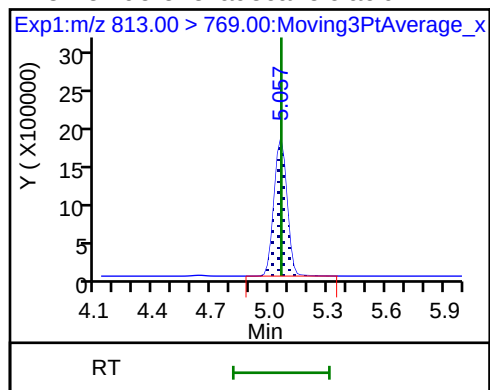




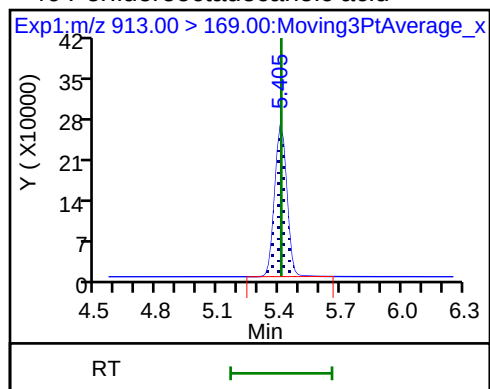
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d
 Lims ID: IC L7 Full
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 11-Oct-2018 16:39:02 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD7
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 17:36:30 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK049

First Level Reviewer: hannigana

Date: 11-Oct-2018 17:15:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.505	1.502	0.003	0.544	6456459	2.57		103	19254	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.505	1.502	0.003	1.000	22587652	9.41		94.1	641	
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.788	0.001	0.647	5809709	2.56		103	18439	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.790	-0.001	1.000	20741937	8.82		88.2	1807	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.828	0.002	0.662	79356	2.52		108	464	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.830	0.0	1.000	26384501	7.25		82.0	2390	
298.90 > 99.00	1.830	1.830	0.0	1.000	10640233		2.48(1.35-4.05)	82.0	2321	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.041	0.007	1.119	6482417	8.77		93.9	23944	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.048	2.042	0.006	0.740	640488	2.36		101	877	
D 7 13C2 PFHxA										
315.00 > 270.00	2.079	2.079	0.0	0.751	6345383	2.59		104	24291	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.079	2.080	-0.001	1.000	19834153	8.75		87.5	3244	
313.00 > 119.00	2.079	2.080	-0.001	1.000	1650096		12.02(6.96-20.87)	87.5	2045	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.103	0.006	1.152	14270066	8.68		92.5	14856	
349.00 > 99.00	2.109	2.103	0.006	1.152	6902249		2.07(1.15-3.45)	92.5	7528	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	4946701	10.3		103	2749	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.181	2.176	0.005	0.788	633573	2.50		100	2216	
D 9 13C4 PFHpA										
367.00 > 322.00	2.413	2.411	0.002	0.872	7272401	2.50		100	15064	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	25547404	8.26		82.6	3435	
363.00 > 169.00	2.413	2.413	0.0	1.000	7122288		3.59(2.17-6.52)	82.6	8579	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	19977527	8.18		89.9	6859	
399.00 > 99.00	2.426	2.426	0.0	1.000	6065163		3.29(1.90-5.70)	89.9	5050	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.426	0.0	0.877	4583543	2.46		104	7360	
76 DONA										
377.00 > 251.00	2.452	2.454	-0.002	0.778	38557445	7.64		81.1	39101	
377.00 > 85.00	2.452	2.454	-0.002	0.778	20444194		1.89(1.13-3.39)	81.1	14041	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.741	0.009	1.000	6372895	9.81		103	5767	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.750	2.744	0.006	0.994	691528	2.32		97.9	1008	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.762	0.004		5683357	2.26		92.4	11156	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.769	-0.003	1.000	24287207	7.98		79.7	1558	
413.00 > 169.00	2.766	2.769	-0.003	1.000	10385070		2.34(1.36-4.08)	79.7	7590	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.769	-0.003		7052860	2.50			9013	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.769	-0.003	1.000	6962938	2.53		101	15963	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.780	0.002	0.882	18235049	9.16		96.2	5746	
449.00 > 99.00	2.782	2.780	0.002	0.882	5005094		3.64(1.84-5.53)	96.2	5732	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		1016067	2.37		99.1	2289	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.153	3.140	0.013	1.000	18990522	9.40		101	3308	
499.00 > 99.00	3.153	3.140	0.013	1.000	4568935		4.16(2.04-6.12)	101	3011	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.140	0.013	1.140	4453656	2.34		98.1	4068	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.143	0.010	1.140	6136983	2.43		97.4	10906	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.143	0.010	1.000	21101773	8.51		85.1	1843	
463.00 > 169.00	3.153	3.143	0.010	1.000	4858314		4.34(2.68-8.03)	85.1	6001	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.063	19728020	8.81		94.5	7275	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.474	0.007	1.258	2510150	2.52		101	7706	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.481	3.478	0.003	1.000	25682166	8.62		86.2	10925	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.492	0.004	1.264	86956	2.33		97.5	369	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.492	0.004	1.109	11497697	9.54		99.3	6011	
549.00 > 99.00	3.496	3.492	0.004	1.109	2046111		5.62(3.02-9.05)	99.3	7886	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.494	0.002	1.000	4843707	8.90		92.9	8345	
D 23 13C2 PFDA										
515.00 > 470.00	3.512	3.501	0.011	1.270	6421384	2.43		97.3	8500	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.512	3.503	0.009	1.000	23055822	7.90		79.0	2416	
513.00 > 169.00	3.512	3.503	0.009	1.000	1845503		12.49(7.12-21.35)	79.0	481	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.321	2722227	2.52		101	1760	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.657	-0.002	1.000	10829758	10.0		99.9	2445	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.823	3.814	0.009	1.213	15215926	9.36		97.1	6790	
599.00 > 99.00	3.807	3.814	-0.007	1.208	3599281		4.23(2.14-6.43)	97.1	6351	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.382	2065591	2.36		94.3	3717	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.828	-0.005	1.000	7307882	9.51		95.1	3407	
D 30 13C2 PFUnA										
565.00 > 520.00	3.839	3.830	0.009	1.388	5316309	2.39		95.7	7464	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.839	3.830	0.009	1.000	16944068	8.53		85.3	2683	
563.00 > 169.00	3.839	3.830	0.009	1.000	1879158		9.02(5.24-15.72)	85.3	4773	
35 MeFOSA										
512.00 > 169.00	3.976	3.962	0.014		5680038	NC			889	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.991	3.991	0.0	1.266	21279288	8.17		86.7	15601	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.122	4.122	0.0	1.000	21889533	7.95		79.5	4230	
613.00 > 169.00	4.122	4.122	0.0	1.000	2992210		7.32(4.68-14.05)	79.5	3229	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.125	-0.003	1.490	6910249	2.56		102	13140	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.125	-0.003	1.179	3188869	8.67		89.9	3656	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.155	0.002		6101916	NC			600	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.373	4.364	0.009	1.387	1899403	10.7		111	2491	
699.00 > 99.00	4.373	4.364	0.009	1.387	3301684		0.58(0.28-0.83)	111	5154	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.388	4.393	-0.005	1.064	18090450	8.14		81.4	7717	
663.00 > 169.00	4.388	4.393	-0.005	1.064	3654074		4.95(3.09-9.27)	81.4	4561	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.644	4.634	0.010	1.679	5054901	2.61		104	10812	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.634	0.010	1.000	3280842	10.2		102	6331	
713.00 > 219.00	4.627	4.634	-0.007	0.996	2255052		1.45(0.70-2.09)	102	5503	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.058	5.058	0.0	1.828	4529704	2.56		102	8008	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.058	5.060	-0.002	1.000	14520572	9.40		94.0	4243	
813.00 > 169.00	5.058	5.060	-0.002	1.000	3123645		4.65(2.77-8.32)	94.0	6270	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.405	5.409	-0.004	1.069	10595250	10.0		100	4061	
913.00 > 169.00	5.405	5.409	-0.004	1.069	2067141		5.13(2.55-7.64)	100	5086	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL7_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Injection Date: 11-Oct-2018 16:39:02

Instrument ID: A9

Lims ID: IC L7 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 16

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

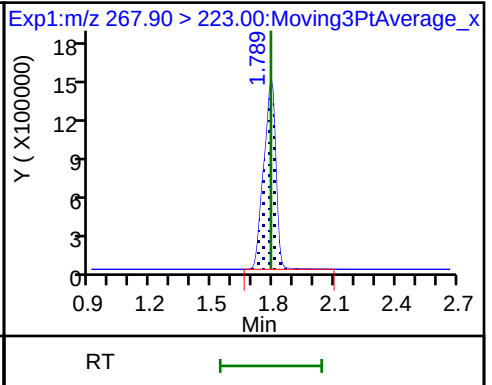
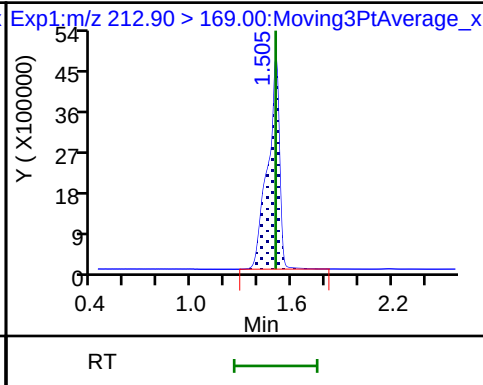
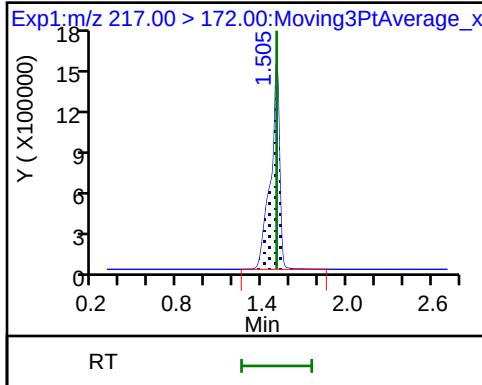
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

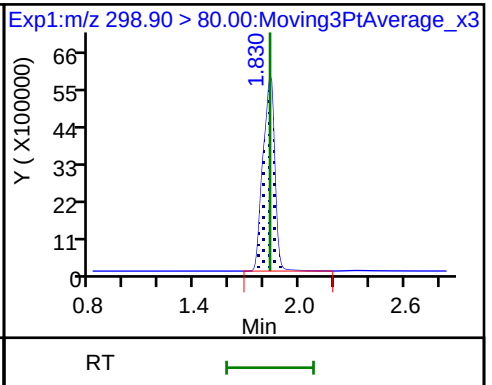
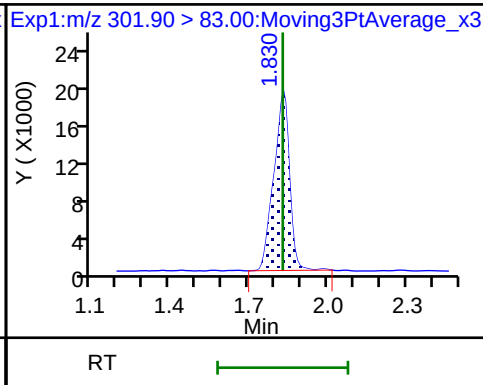
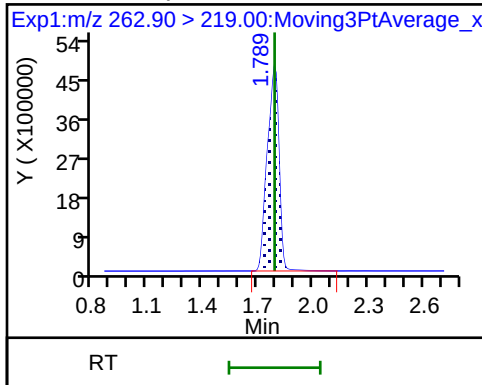
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

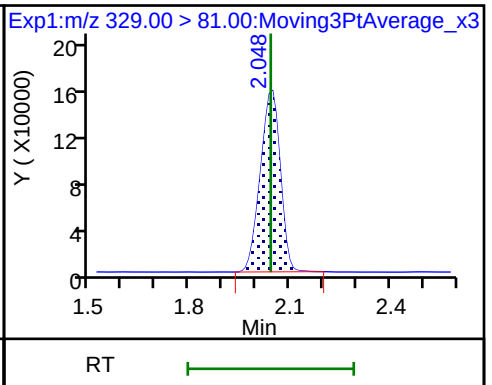
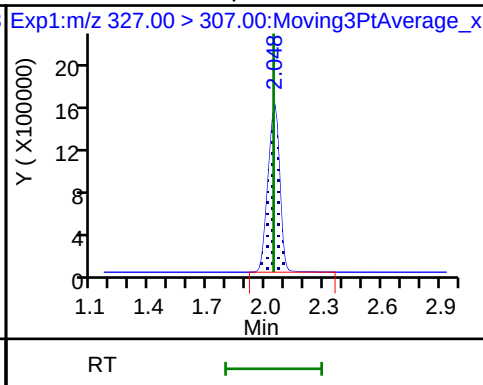
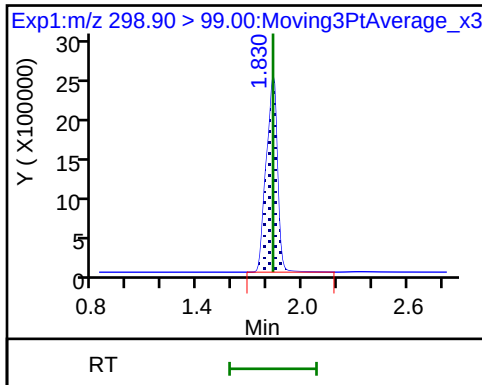
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

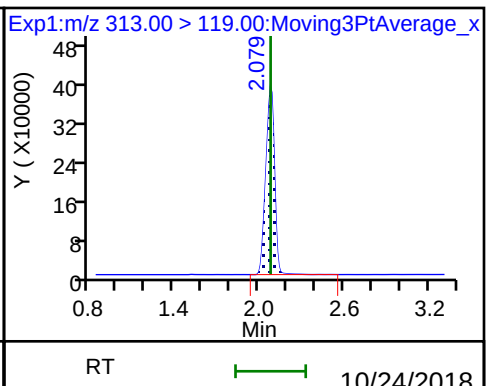
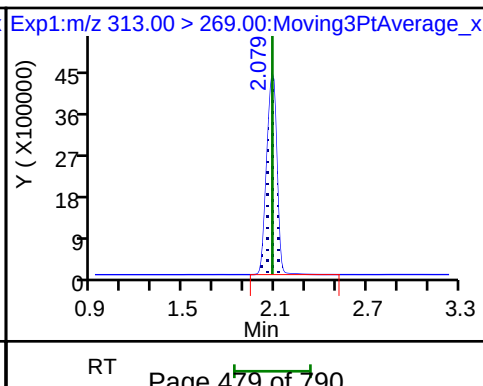
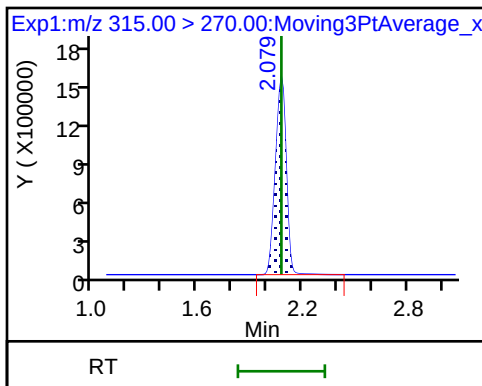
D 60 M2-4:2 FTS

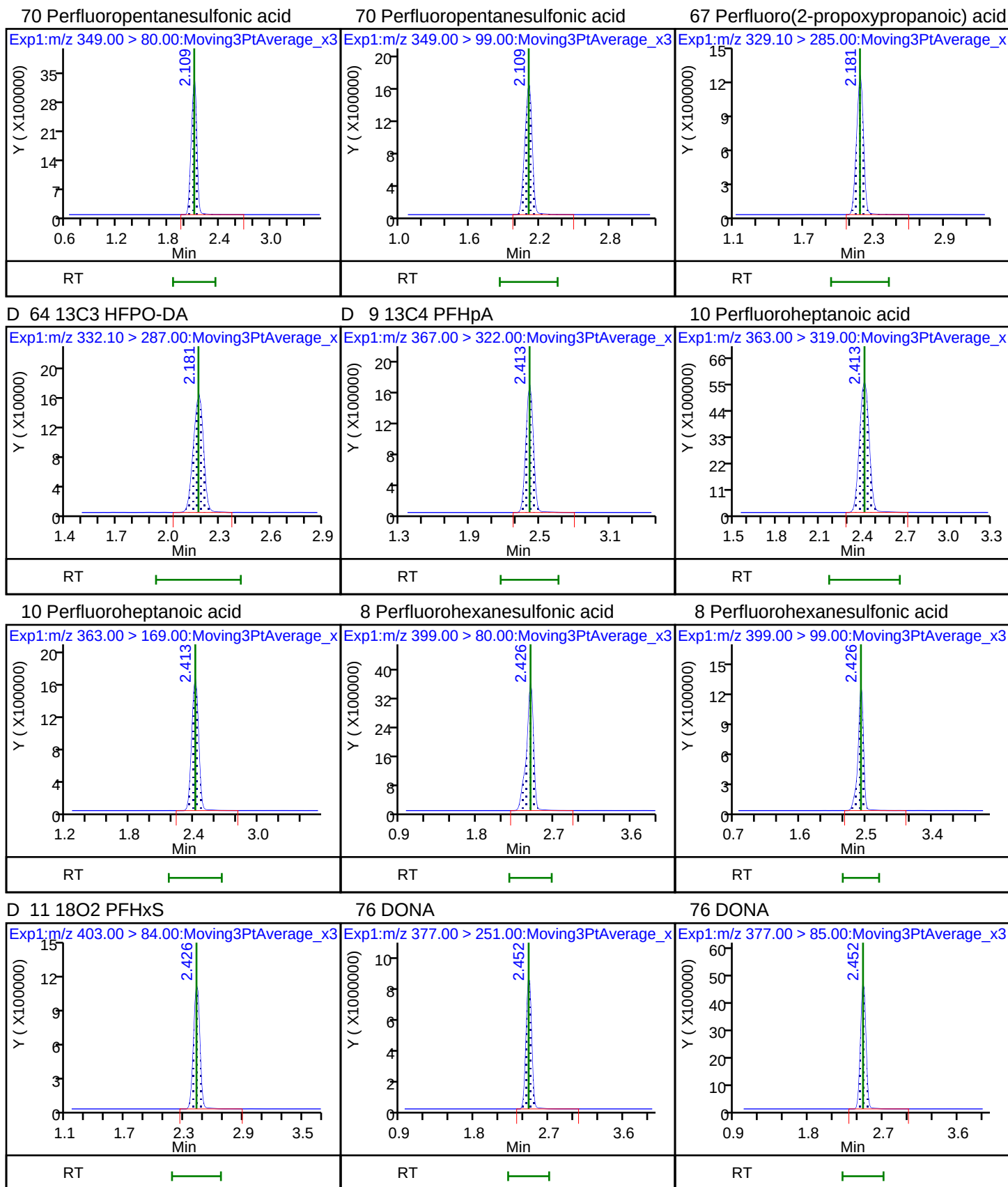


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

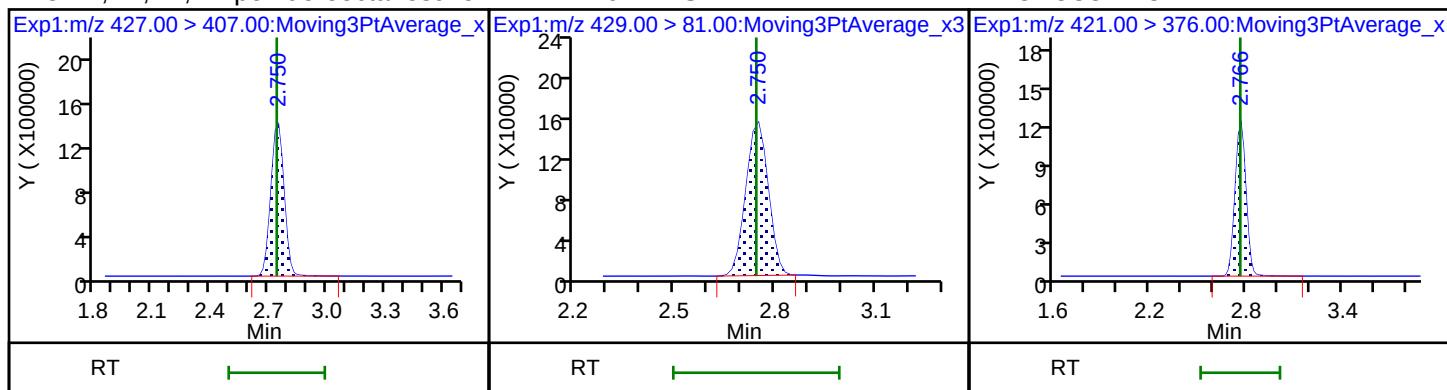
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

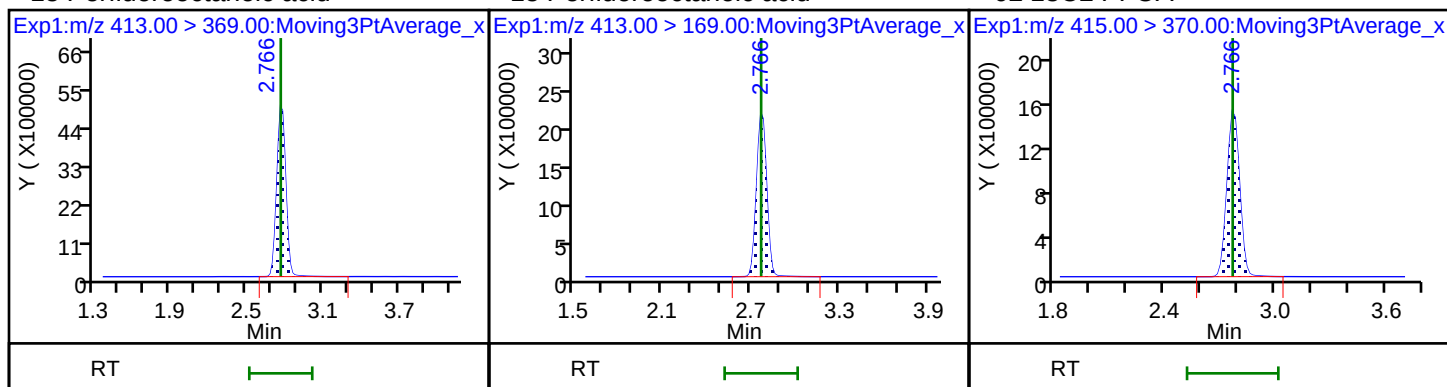
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

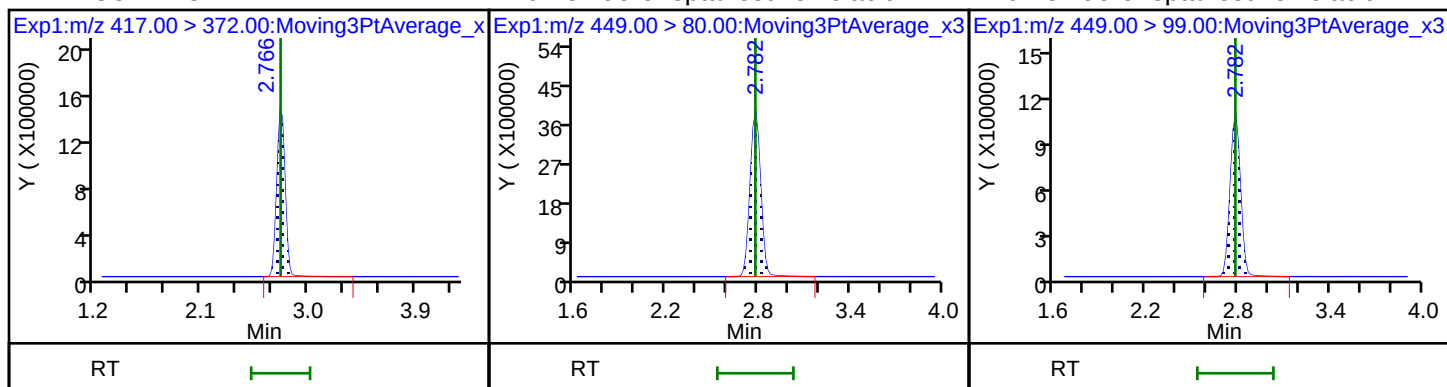
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

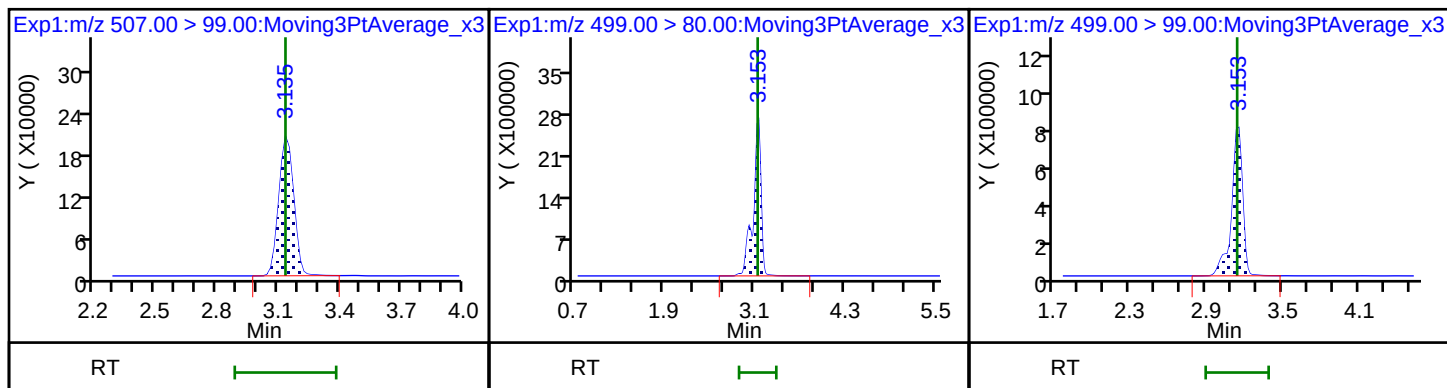
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

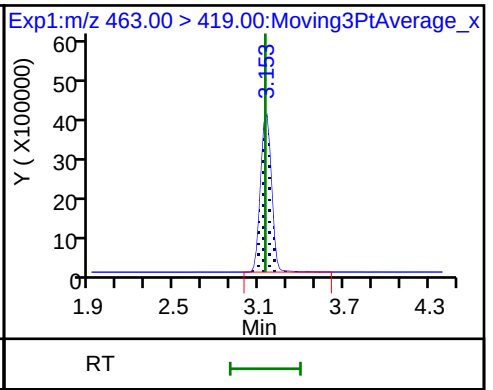
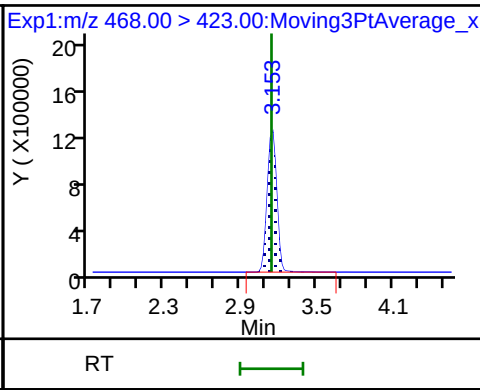
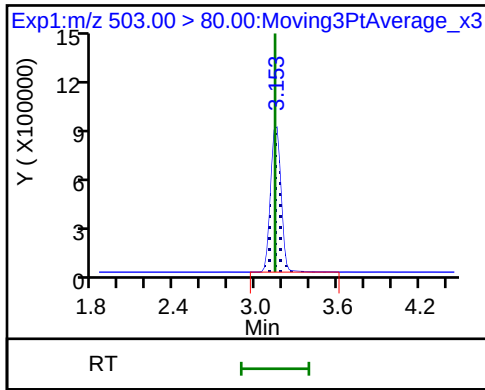
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

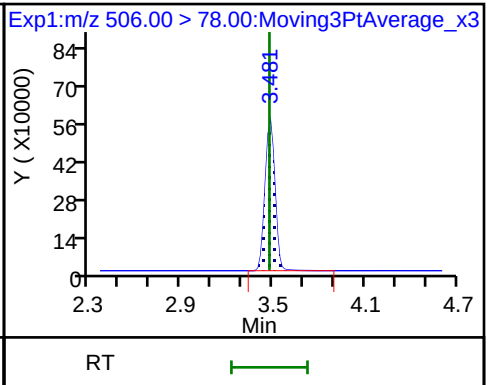
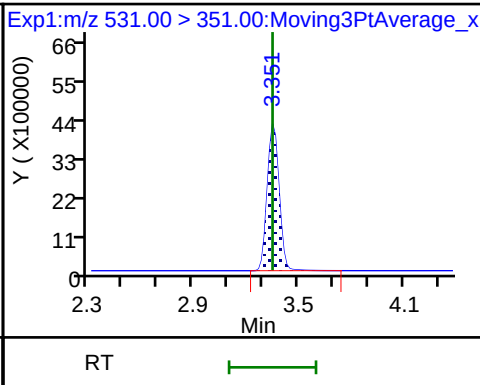
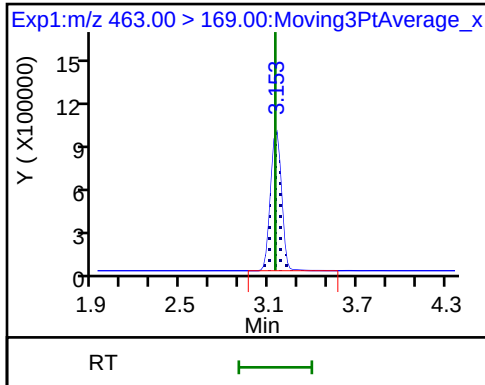
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonadecanoic acid

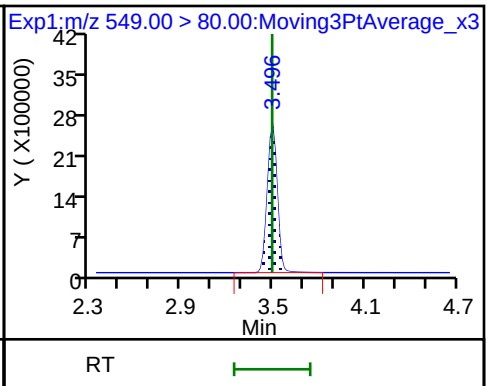
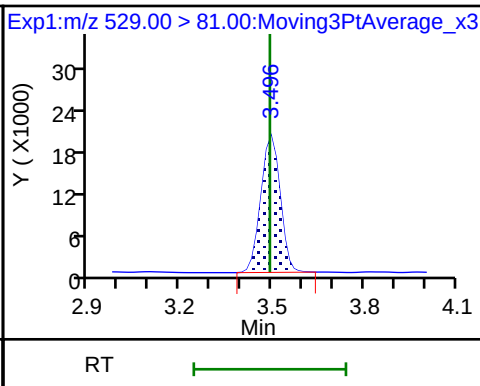
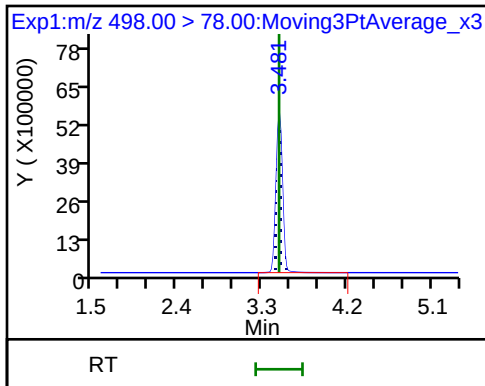
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

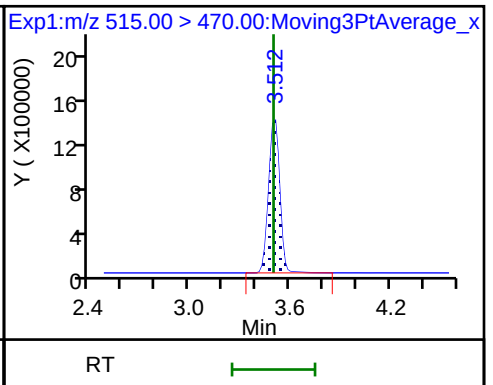
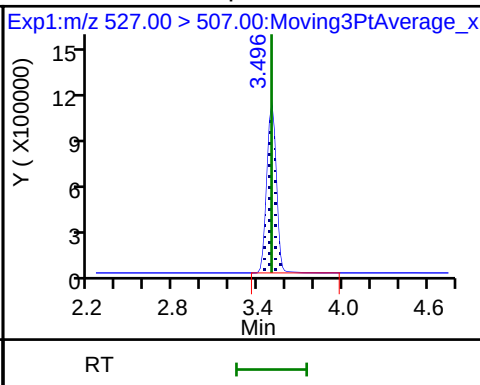
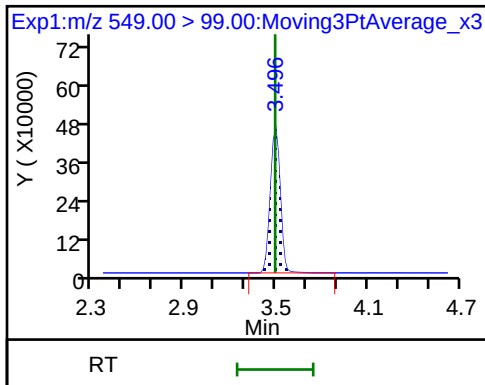
68 Perfluorononanesulfonic acid

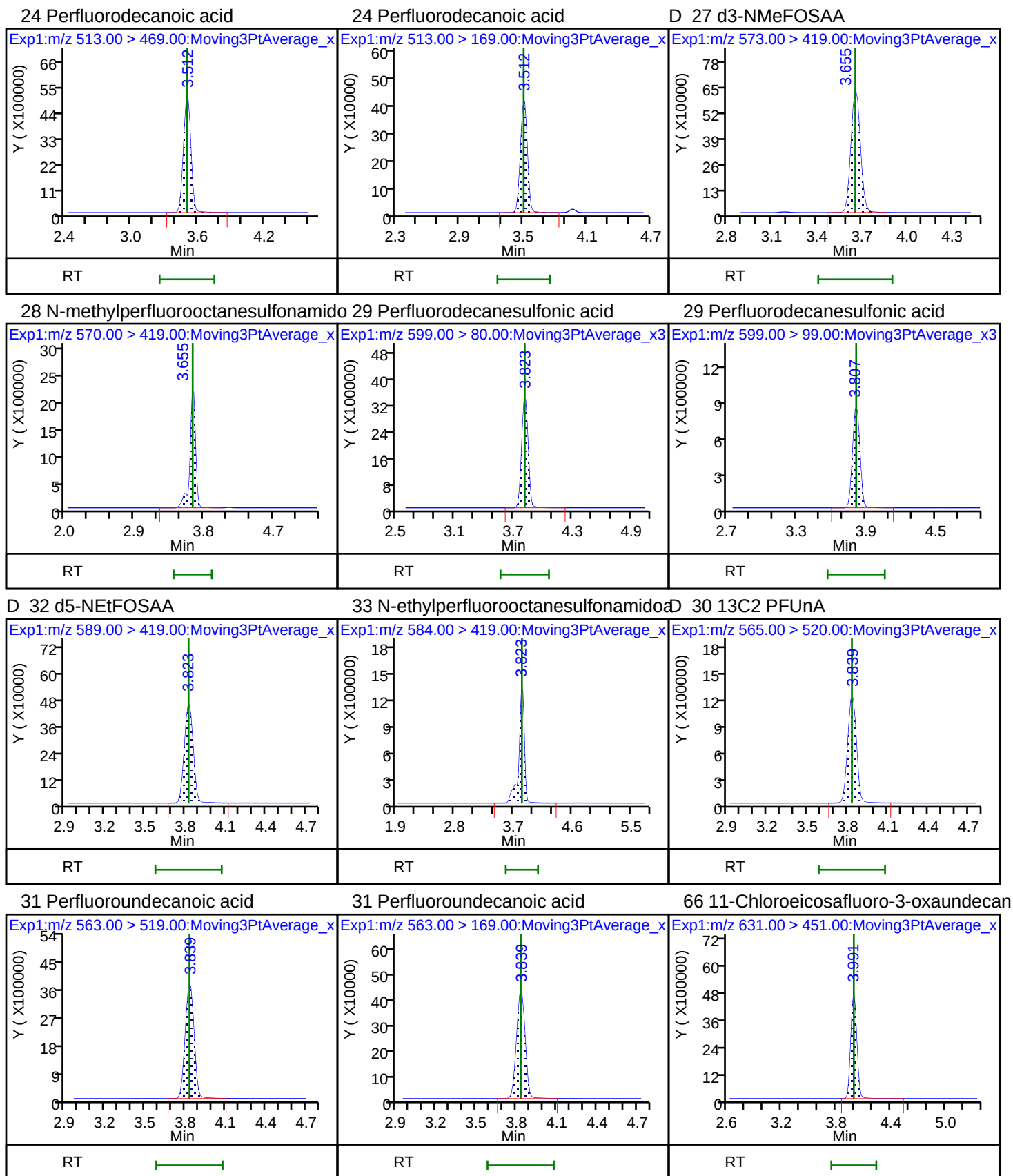


68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonic acid

23 13C2 PFDA

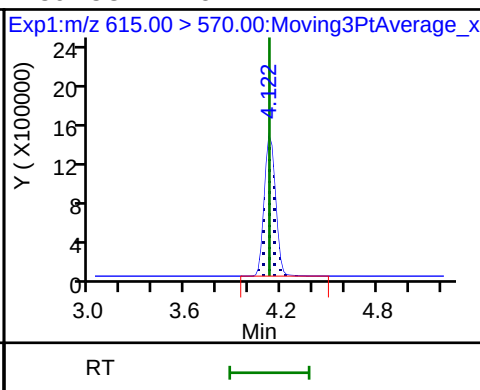
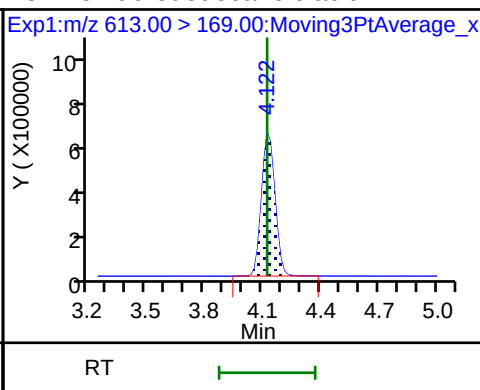
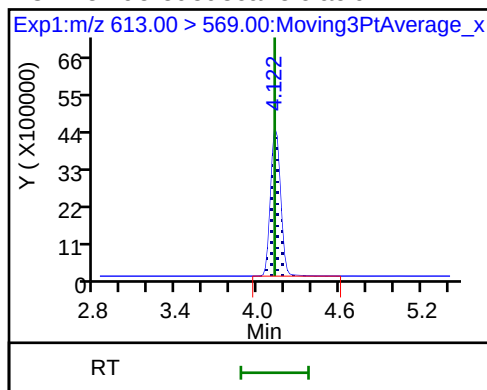




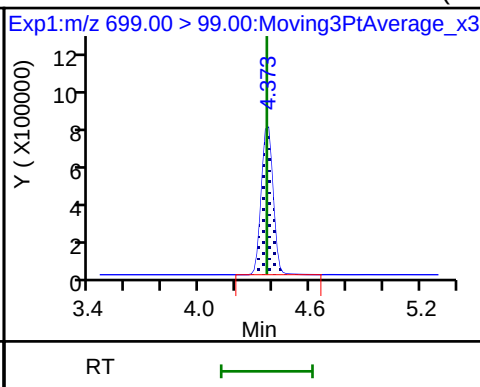
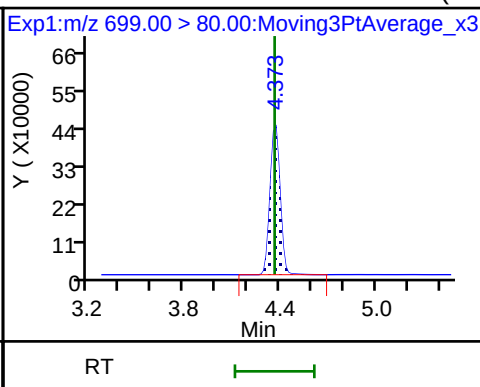
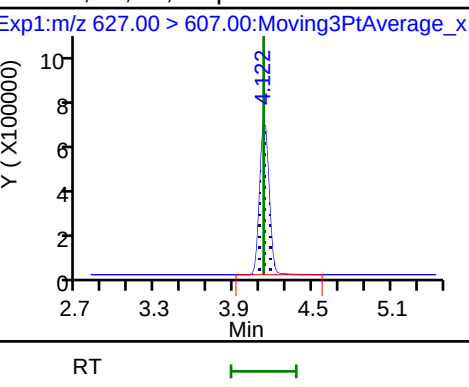
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



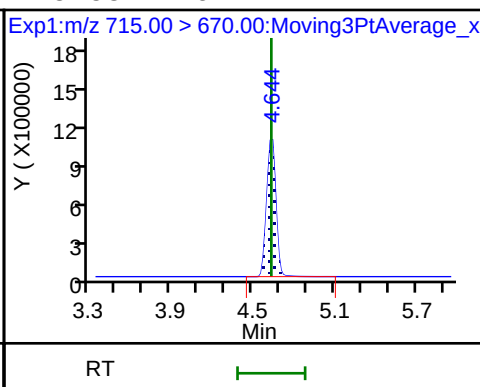
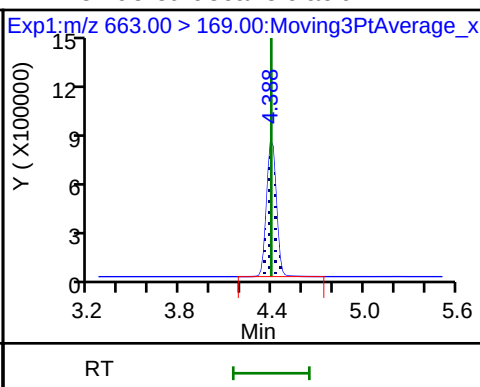
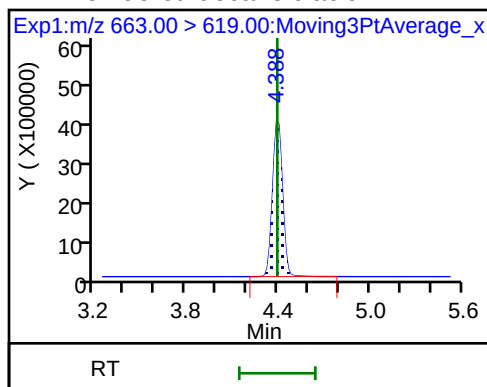
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

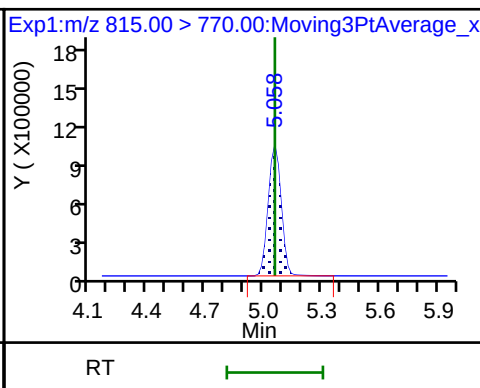
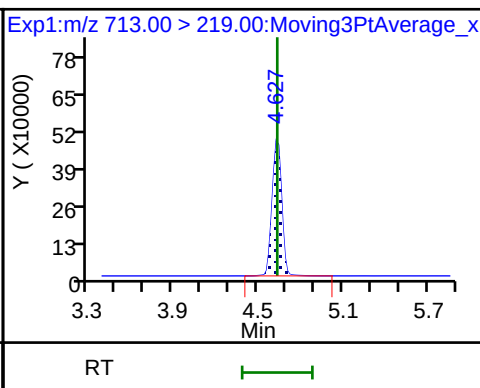
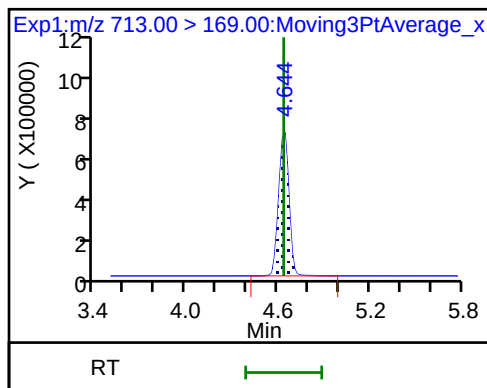
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

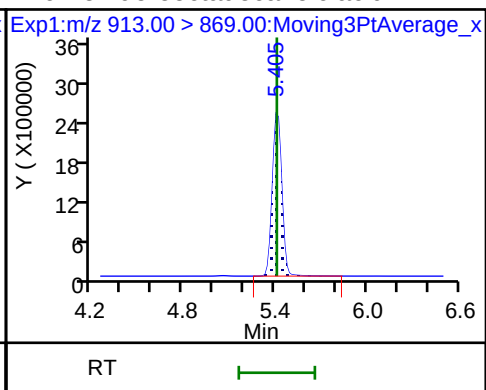
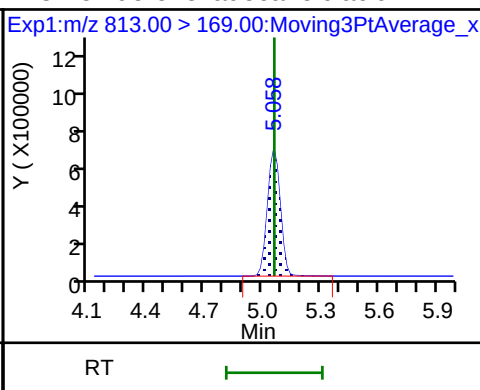
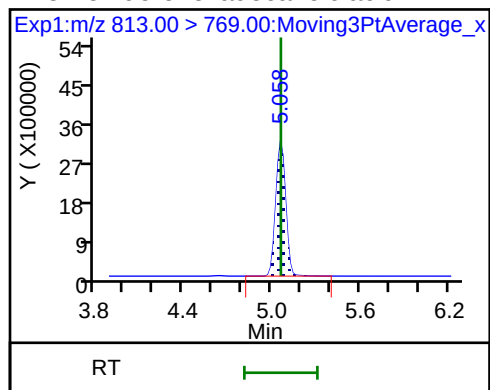
D 44 13C2 PFHxDA



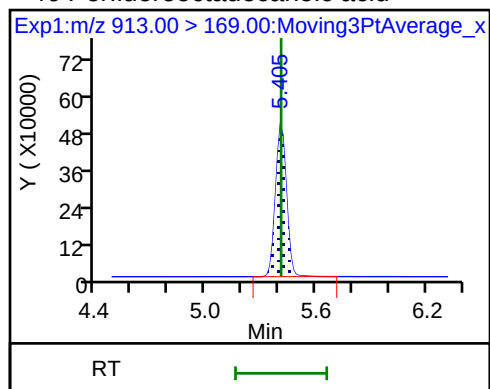
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251040

SDG No.: _____

Instrument ID: A9_NC GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/08/2018 15:34 Calibration End Date: 10/08/2018 16:19 Calibration ID: 41560

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-251040/2	2018.10.08LLICAL_002.d
Level 2	IC 320-251040/3	2018.10.08LLICAL_003.d
Level 3	IC 320-251040/4	2018.10.08LLICAL_004.d
Level 4	IC 320-251040/5	2018.10.08LLICAL_005.d
Level 5	IC 320-251040/6	2018.10.08LLICAL_006.d
Level 6	IC 320-251040/7	2018.10.08LLICAL_007.d
Level 7	IC 320-251040/8	2018.10.08LLICAL_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8296 0.9460	0.8788 0.8569	0.9315	0.9121	0.9497	AveID		0.9007				5.2		35.0			
Perfluoropentanoic acid (PFPeA)	1.1302 0.9878	1.0485 0.8852	1.0338	0.9921	1.0305	AveID		1.0154				7.3		35.0			
Perfluorobutanesulfonic acid (PFBS)	107.56 105.57	108.45 87.484	110.34	121.87	107.52	AveID		106.97				9.5		50.0			
4:2 FTS	25.252 24.850	23.307 21.823	28.032	27.742	26.007	AveID		25.288				8.9		50.0			
Perfluorohexanoic acid (PFHxA)	1.0185 0.8646	0.8981 0.8066	0.8486	0.9290	0.9007	AveID		0.8952				7.5		35.0			
Perfluoropentanesulfonic acid (PFPeS)	52.601 49.838	47.932 44.409	47.391	53.417	48.720	AveID		49.187				6.3		50.0			
HFPO-DA (GenX)	1.4718 1.5191	1.8716 1.6690	1.8187	1.6826	1.7993	AveID		1.6903				9.0		35.0			
Perfluoroheptanoic acid (PFHpA)	1.1946 0.9623	1.2987 0.8759	1.0747	1.0856	1.0740	AveID		1.0808				12.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.4246 1.2115	1.3550 1.1368	1.1792	1.1727	1.1547	AveID		1.2335				9.0		35.0			
DONA	2.7462 2.5751	2.9006 2.0816	2.7812	2.7993	2.8666	AveID		2.6786				10.6		50.0			
6:2 FTS	2.1226 2.1844	2.0828 2.2746	2.1977	2.1289	2.0511	AveID		2.1489				3.5		35.0			
Perfluorooctanoic acid (PFOA)	1.1772 0.9567	1.1653 0.8232	1.1853	1.1397	1.0710	AveID		1.0740				12.7		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	0.9299 1.0337	1.0779 0.9358	1.0352	1.0217	1.1033	AveID		1.0197				6.4		50.0			
Perfluorononanoic acid (PFNA)	0.9708 0.9897	1.1873 0.8418	1.1046	1.0141	1.0030	AveID		1.0159				10.7		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251040
SDG No.: _____
Instrument ID: A9_NC GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/08/2018 15:34 Calibration End Date: 10/08/2018 16:19 Calibration ID: 41560

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorooctanesulfonic acid (PFOS)	1.1164 1.1148	1.0761 1.0197	1.0195	1.0440	1.1610	AveID		1.0788				5.0		35.0			
F-53B Major	1.0893 1.1735	1.1125 1.0500	1.1239	1.2187	1.2521	AveID		1.1457				6.3		50.0			
Perfluorooctanesulfonamide (FOSA)	3.1819 2.8300	2.8756 2.5401	2.9953	3.1743	3.1869	AveID		2.9691				8.1		35.0			
8:2 FTS	15.968 14.312	16.530 14.436	13.925	15.079	14.048	AveID		14.900				6.7		35.0			
Perfluorononanesulfonic acid (PFNS)	0.5165 0.6763	0.6609 0.6262	0.6939	0.6325	0.6702	AveID		0.6395				9.3		50.0			
Perfluorodecanoic acid (PFDA)	1.2973 1.0272	1.1983 0.8986	1.2094	1.1660	1.1704	AveID		1.1382				11.7		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.2349 0.9557	1.0202 0.8922	1.0839	0.9702	0.9758	AveID		1.0190				11.0		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.9341 0.8783	0.9196 0.7747	0.8460	0.8528	0.9536	AveID		0.8799				7.0		50.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.7558 0.9314	1.0093 0.9393	0.8641	0.9003	0.9034	AveID		0.9005				8.7		35.0			
Perfluoroundecanoic acid (PFUnA)	0.9831 0.8762	1.0965 0.7608	0.9323	0.9405	0.8851	AveID		0.9249				11.2		35.0			
F-53B Minor	1.3378 1.3391	1.4632 1.0941	1.3731	1.3330	1.5311	AveID		1.3530				10.1		50.0			
10:2 FTS	8.5325 10.033	8.5647 9.9611	8.9059	10.168	10.214	AveID		9.4827				8.2		50.0			
Perfluorododecanoic acid (PFDoA)	1.1028 0.9550	1.1505 0.7915	0.9994	1.1145	1.0182	AveID		1.0188				12.0		35.0			
Perfluorododecanesulfonic acid (PFDoS)	0.0911 0.0865	0.0945 0.0971	0.0805	0.0841	0.0923	AveID		0.0894				6.6		50.0			
Perfluorotridecanoic acid (PFTriA)	0.8142 0.7212	0.8159 0.6498	0.8340	0.7757	0.7639	AveID		0.7678				8.4		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.1662 0.1514	0.1436 0.1713	0.1618	0.1533	0.1672	AveID		0.1593				6.3		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.8831 0.9228	1.3257 0.7790	1.0322	0.9108	0.9446	L2ID	0.0245	0.8840							0.9950		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.5717 0.5793	0.5745 0.5629	0.5505	0.5744	0.5673	AveID		0.5686				1.7		50.0			
13C4 PFBA	0.9356 0.9235	0.8730 0.9471	0.9129	0.9135	0.8850	Ave		0.9129				2.9		50.0			
13C5 PFPeA	0.8088 0.8272	0.7981 0.8377	0.8101	0.8209	0.7925	Ave		0.8136				2.0		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251040
SDG No.: _____
Instrument ID: A9_NC GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/08/2018 15:34 Calibration End Date: 10/08/2018 16:19 Calibration ID: 41560

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C3 PFBS	0.0114 0.0113	0.0107 0.0122	0.0110	0.0102	0.0111	Ave		0.0111				5.4		50.0			
M2-4:2 FTS	0.1159 0.1028	0.1135 0.1102	0.1170	0.1123	0.1142	Ave		0.1123				4.2		50.0			
13C2 PFHxA	0.8779 0.9034	0.8644 0.8808	0.8895	0.8476	0.8823	Ave		0.8780				2.0		50.0			
13C3 HFPO-DA	0.1135 0.1184	0.1021 0.1127	0.1040	0.1125	0.1017	Ave		0.1093				6.0		50.0			
13C4 PFHpA	1.1200 1.0724	1.0169 1.0842	1.1174	1.0741	1.0452	Ave		1.0757				3.4		50.0			
18O2 PFHxS	0.7272 0.6720	0.6287 0.6746	0.6582	0.6657	0.6556	Ave		0.6688				4.5		50.0			
M2-6:2 FTS	0.1226 0.1184	0.1250 0.1092	0.1137	0.1173	0.1223	Ave		0.1183				4.7		50.0			
13C4 PFOA	1.0518 1.0407	1.0117 0.9922	0.9826	0.9948	0.9768	Ave		1.0072				2.9		50.0			
13C4 PFOS	0.7384 0.6922	0.6844 0.7044	0.7216	0.7200	0.6579	Ave		0.7027				3.8		50.0			
13C5 PFNA	0.9822 0.9024	0.8779 0.9162	0.9377	0.9352	0.9414	Ave		0.9276				3.6		50.0			
13C8 FOSA	0.3876 0.3856	0.3613 0.3834	0.3839	0.3827	0.3656	Ave		0.3786				2.8		50.0			
M2-8:2 FTS	0.0170 0.0162	0.0145 0.0141	0.0173	0.0150	0.0148	Ave		0.0155				8.2		50.0			
13C2 PFDA	1.0293 0.9930	0.9835 0.9568	1.0154	1.0093	0.9440	Ave		0.9902				3.1		50.0			
d3-NMeFOSAA	0.3899 0.4272	0.3964 0.4368	0.3918	0.4043	0.4097	Ave		0.4080				4.4		50.0			
d5-NEtFOSAA	0.3913 0.3351	0.3493 0.2978	0.3560	0.3412	0.3331	Ave		0.3434				8.2		50.0			
13C2 PFUnA	0.9474 0.8431	0.8917 0.7881	0.9277	0.8451	0.8447	Ave		0.8697				6.4		50.0			
13C2 PFDoA	0.9792 0.9930	0.9660 0.9870	1.0197	0.9607	0.9916	Ave		0.9853				2.0		50.0			
13C2 PFTeDA	0.7636 0.7789	0.7226 0.7593	0.7101	0.7434	0.7305	Ave		0.7441				3.3		50.0			
13C2 PFHxDA	0.6302 0.6475	0.6119 0.6872	0.6507	0.6247	0.6357	Ave		0.6411				3.8		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251040

SDG No.: _____

Instrument ID: A9_NC GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/08/2018 15:34 Calibration End Date: 10/08/2018 16:19 Calibration ID: 41560

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-251040/2	2018.10.08LLICAL_002.d
Level 2	IC 320-251040/3	2018.10.08LLICAL_003.d
Level 3	IC 320-251040/4	2018.10.08LLICAL_004.d
Level 4	IC 320-251040/5	2018.10.08LLICAL_005.d
Level 5	IC 320-251040/6	2018.10.08LLICAL_006.d
Level 6	IC 320-251040/7	2018.10.08LLICAL_007.d
Level 7	IC 320-251040/8	2018.10.08LLICAL_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	55350 12741336	114993 23183759	621289	2425031	6148804	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	65183 11917914	125418 21181201	611845	2370311	5974398	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	77149 15400772	153892 26889058	786776	3209940	7708891	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	19137 3830199	34944 7087005	211192	772013	1970065	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	63765 11392355	116364 20292846	551522	2291756	5814524	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	40034 7714548	72172 14483215	358565	1492866	3706443	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	11908 2623793	28642 5372108	138206	550701	1338114	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	95409 15050418	197936 27129513	877382	3393554	8212810	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	67225 10804781	116189 19933811	516006	2067490	5039680	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	136217 24489142	280317 39456837	1381179	5525589	12997505	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	17588 3574555	36980 6727757	173033	689049	1739691	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	88384 14535225	176881 23356347	851781	3302838	7661508	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	46617 9935244	105278 17926266	519561	2038091	5055659	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorononanoic acid (PFNA)		AveID	67998 13024350	156233 22030903	756751	2760185	6908313	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	54553 10444032	102454 19040703	498789	2030195	5186075	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251040

SDG No.: _____

Instrument ID: A9_NC GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/08/2018 15:34 Calibration End Date: 10/08/2018 16:19 Calibration ID: 41560

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	53459 11042011	106374 19691464	552215	2380191	5616724	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	87943 15916184	155717 27818096	840207	3535811	8523670	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	18560 3237310	34379 5573861	168403	629053	1455462	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorononanesulfonic acid (PFNS)		AveID	26111 6555094	65089 12096985	351176	1272431	3096967	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	95216 14875716	176656 24561300	897262	3425261	8083233	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	34338 5954444	60614 11133253	310263	1141616	2924705	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	47418 8547971	90945 15026499	429960	1722740	4424576	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	21090 4551858	52843 7991517	224781	893949	2201823	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	66414 10773565	146548 17127313	631941	2313221	5470259	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	66356 12734725	141403 20737880	681881	2631247	6942172	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
10:2 FTS		AveID	9980 2283642	17924 3870252	108376	426832	1064813	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanoic acid (PFDoA)		AveID	77006 13830502	166595 22316278	744568	3116420	7386115	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanesulfonic acid (PFDoS)		AveID	4641 845792	9385 1890678	41097	170631	430170	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	56856 10444494	118134 18322366	621359	2169014	5541583	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	9050 1720158	15557 3715060	83945	331752	893689	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	84622 8713928	121594 15292384	490718	1656158	4392884	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	25689 5470405	52693 11048928	261686	1044451	2638460	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	6671663 6734324	6542661 6763888	6669674	6646629	6474644	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	5767441 6032451	5981047 5982095	5918441	5972721	5797753	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	75459 76736	74643 80838	75016	69273	75427	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	771975 700433	794486 734803	798190	763112	780074	2.34 2.34	2.34 2.34	2.34	2.34	2.34

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1 Analy Batch No.: 251040

SDG No.: _____

Instrument ID: A9_NC GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/08/2018 15:34 Calibration End Date: 10/08/2018 16:19 Calibration ID: 41560

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C2 PFHxA	13PF OA	Ave	6260475 6588082	6478093 6289956	6499107	6167049	6455245	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	809070 863618	765192 804707	759903	818210	743699	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	7986734 7819876	7620810 7743093	8163828	7815013	7646945	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	4905447 4635737	4457031 4557302	4549031	4581891	4537178	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	830362 819926	889638 741003	788998	810886	849965	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	7500552 7588829	7582098 7086001	7179317	7237928	7146611	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	5033966 4825745	4903846 4809092	5039938	5008202	4601493	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	7004056 6580219	6579405 6542686	6851100	6804709	6887328	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	2763814 2812043	2707594 2737891	2805127	2784760	2674606	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	116236 113097	103987 96530	120933	104296	103603	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	7339820 7241176	7370819 6832877	7418813	7343804	6906677	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	2780584 3115088	2970583 3119751	2862555	2941803	2997272	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	2790524 2443548	2617704 2126886	2601331	2482383	2437316	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	6755624 6147995	6682711 5627913	6778230	6148756	6180061	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	6982834 7240998	7239926 7048885	7450292	6990353	7254326	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	5444905 5680142	5415723 5422584	5188334	5409315	5344466	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	4493748 4721477	4586032 4907518	4754005	4545647	4650762	2.50 2.50	2.50 2.50	2.50	2.50	2.50

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_002.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 08-Oct-2018 15:34:22 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD1
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:00:13 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:34:45

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.501	0.003	0.535	6671663	2.56		102	10380	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.504	1.501	0.003	1.000	55350	0.0230		92.1	3.0	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.797	1.791	0.006	0.639	5767441	2.49		99.4	9614	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.793	0.004	1.000	65183	0.0278		111	6.7	
D 47 13C3 PFBS										
301.90 > 83.00	1.838	1.834	0.004	0.653	75459	2.38		102	484	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.838	1.834	0.004	1.000	77149	0.0222		101	44.5	
298.90 > 99.00	1.838	1.834	0.004	1.000	27736		2.78(1.35-4.05)	101	28.6	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.053	0.005	1.119	19137	0.0233		99.9	154	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.058	2.055	0.003	0.731	771975	2.41		103	1098	
D 7 13C2 PFHxA										
315.00 > 270.00	2.099	2.091	0.008	0.746	6260475	2.50		100	13323	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.099	2.091	0.008	1.000	63765	0.0284		114	15.7	M
313.00 > 119.00	2.088	2.091	-0.003	0.995	5297		12.04(6.96-20.87)	114	11.5	M
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.119	2.118	0.001	1.153	40034	0.0251		107	76.8	
349.00 > 99.00	2.119	2.118	0.001	1.153	16619		2.41(1.15-3.45)	107	53.9	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.201	2.194	0.007	0.782	809070	2.60		104	2183	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.201	2.194	0.007	1.000	11908	0.0218		87.1	7.4	
D 9 13C4 PFHpA										
367.00 > 322.00	2.439	2.429	0.010	0.867	7986734	2.60		104	9044	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.439	2.431	0.008	1.000	95409	0.0276		111	18.5	M
363.00 > 169.00	2.439	2.431	0.008	1.000	21645		4.41(2.17-6.52)	111	47.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.452	2.444	0.008	0.871	4905447	2.57		109	7458	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.452	2.446	0.006	1.000	67225	0.0263		115	94.2	
399.00 > 99.00	2.452	2.446	0.006	1.000	19987		3.36(1.90-5.70)	115	30.2	
76 DONA										
377.00 > 251.00	2.478	2.476	0.002	0.777	136217	0.0241		103	357	
377.00 > 85.00	2.478	2.476	0.002	0.777	62409		2.18(0.00-0.00)	103	68.6	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.782	2.771	0.011	0.989	830362	2.46		104	1088	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.773	0.009	1.000	17588	0.0234		98.8	42.1	
* 62 13C2 PFOA										
415.00 > 370.00	2.814	2.800	0.014		7131014	2.50			8460	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.800	0.014	1.000	7500552	2.61		104	10920	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.814	2.800	0.014	1.000	88384	0.0274		110	6.1	M
413.00 > 169.00	2.814	2.800	0.014	1.000	35347		2.50(1.36-4.08)	110	58.8	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.805	0.009	0.882	46617	0.0217		91.2	77.0	
449.00 > 99.00	2.814	2.805	0.009	0.882	10082		4.62(1.84-5.53)	91.2	34.7	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.179	0.011	1.134	7004056	2.65		106	5271	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.179	0.011	1.134	5033966	2.51		105	3808	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.179	0.011	1.000	67998	0.0239		95.6	8.6	
463.00 > 169.00	3.190	3.179	0.011	1.000	13358		5.09(2.68-8.03)	95.6	35.3	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.190	3.179	0.011	1.000	54553	0.0240		103	49.2	
499.00 > 99.00	3.190	3.179	0.011	1.000	15469		3.53(2.04-6.12)	103	47.7	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.399	3.388	0.011	1.066	53459	0.0222		95.1	52.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.237	2763814	2.56		102	3663	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.496	3.485	0.011	1.004	87943	0.0268		107	192	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.541	3.531	0.010	1.259	116236	2.62		109	719	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.541	3.531	0.010	1.110	26111	0.0194		80.8	87.8	R
549.00 > 99.00	3.541	3.531	0.010	1.110	3872		6.74(1.42-4.26)	80.8	33.0	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.541	3.531	0.010	1.000	18560	0.0257		107	69.3	
D 23 13C2 PFDA										
515.00 > 470.00	3.556	3.539	0.017	1.264	7339820	2.60		104	8876	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.556	3.541	0.015	1.000	95216	0.0285		114	14.2	
513.00 > 169.00	3.541	3.541	0.0	0.996	4473		21.29(7.12-21.35)	114	9.9	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.712	3.693	0.019	1.319	2780584	2.39		95.6	5274	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.712	3.699	0.013	1.000	34338	0.0303		121	16.9	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.869	3.854	0.015	1.213	47418	0.0256		106	62.6	
599.00 > 99.00	3.869	3.854	0.015	1.213	8393		5.65(2.14-6.43)	106	40.3	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.861	0.008	1.375	2790524	2.85		114	4085	
33 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	3.883	3.873	0.010	1.004	21090	0.0210		83.9	50.3	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.883	3.873	0.010	1.380	6755624	2.72		109	7206	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.883	3.873	0.010	1.000	66414	0.0266		106	16.4	
563.00 > 169.00	3.883	3.873	0.010	1.000	7964		8.34(5.24-15.72)	106	32.2	
35 MeFOSA										
512.00 > 169.00	3.959	3.960	-0.001		16371	NC			55.6	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.039	4.030	0.009	1.266	66356	0.0233		98.9	189	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.152	0.005		17525	NC			30.2	
D 36 13C2 PFDoA										
615.00 > 570.00	4.175	4.168	0.007	1.484	6982834	2.48		99.4	9034	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.194	4.173	0.021	1.004	77006	0.0271		108	16.6	
613.00 > 169.00	4.175	4.173	0.002	1.000	6129		12.56(4.68-14.05)	108	11.4	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.194	4.173	0.021	1.184	9980	0.0217		90.0	12.2	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.419	4.410	0.009	1.385	4641	0.0246		102	4.4	
699.00 > 99.00	4.419	4.410	0.009	1.385	5564		0.83(0.00-0.00)	102	13.2	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.450	4.441	0.009	1.066	56856	0.0265		106	30.7	
663.00 > 169.00	4.450	4.441	0.009	1.066	8643		6.58(3.09-9.27)	106	17.2	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.706	4.686	0.020	1.000	9050	0.0261		104	21.9	
713.00 > 219.00	4.691	4.686	0.005	0.997	8081		1.12(0.70-2.09)	104	25.3	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.706	4.686	0.020	1.673	5444905	2.57		103	8269	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.125	5.115	0.010	1.821	4493748	2.46		98.3	6398	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.141	5.118	0.023	1.003	84622	0.0255		102	25.8	
813.00 > 169.00	5.125	5.118	0.007	1.000	15696		5.39(2.77-8.32)	102	35.2	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.504	5.486	0.018	1.074	25689	0.0251		101	16.6	
913.00 > 169.00	5.504	5.486	0.018	1.074	4401		5.84(2.55-7.64)	101	19.9	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_002.d

Injection Date: 08-Oct-2018 15:34:22

Instrument ID: A9_NC

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

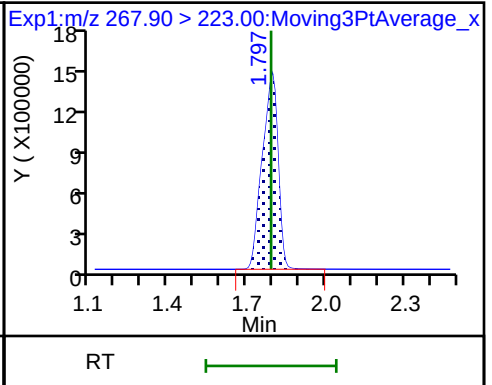
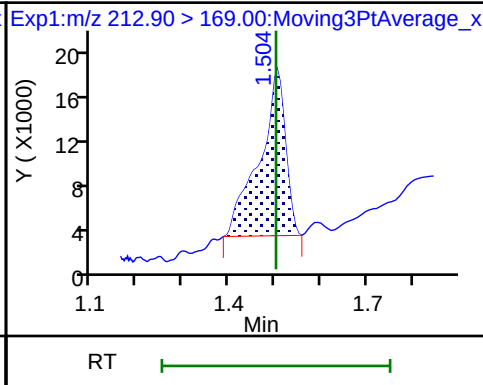
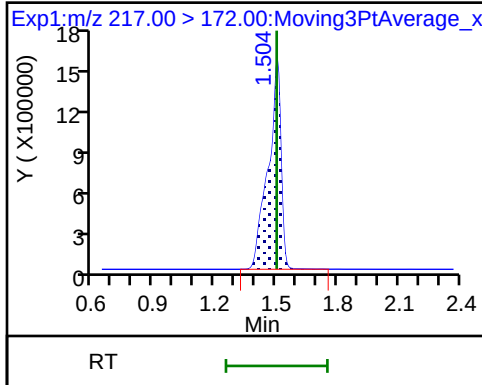
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

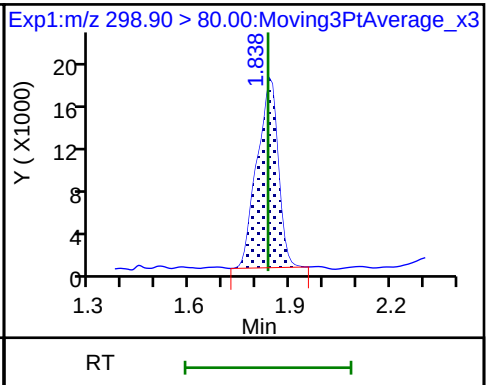
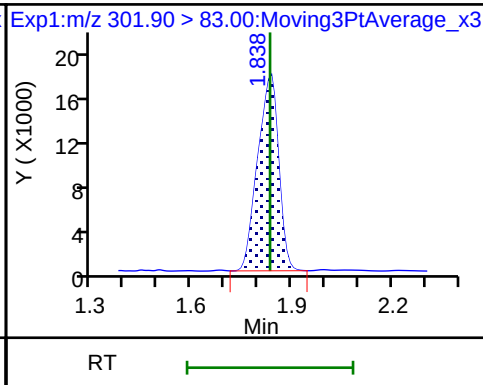
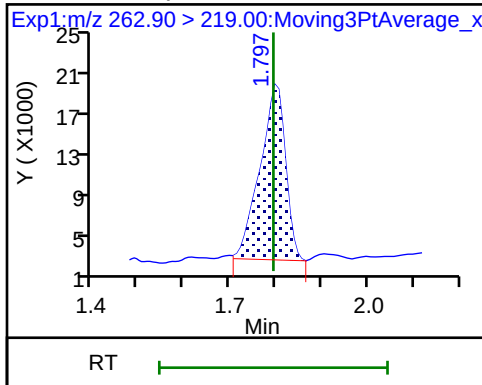
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

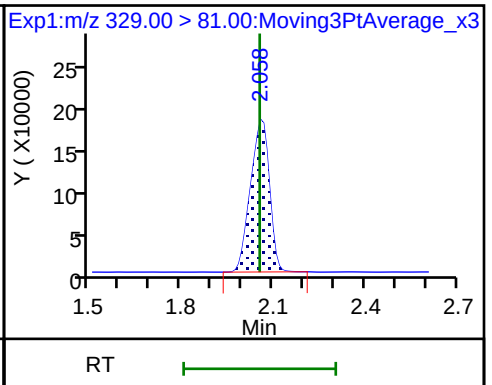
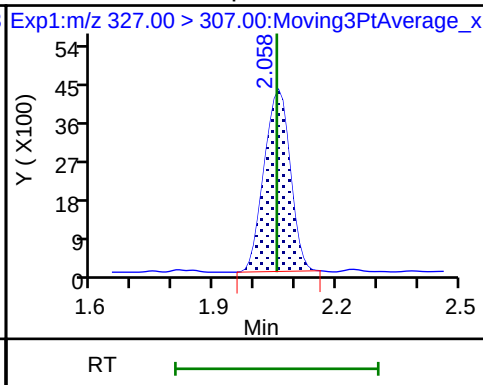
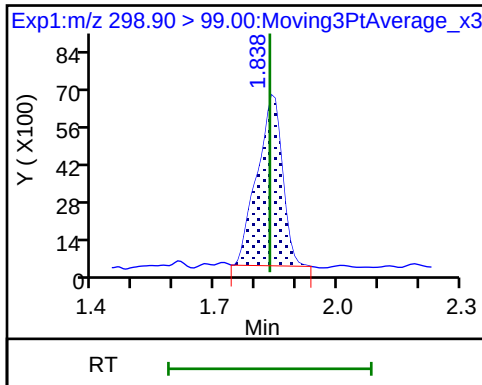
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

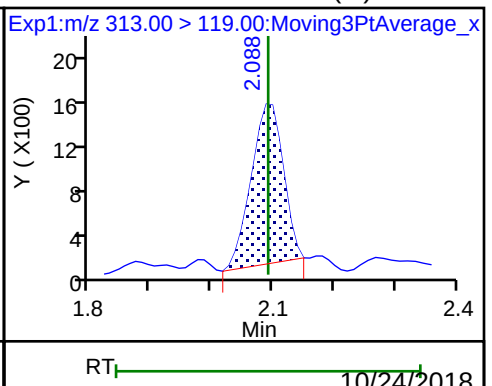
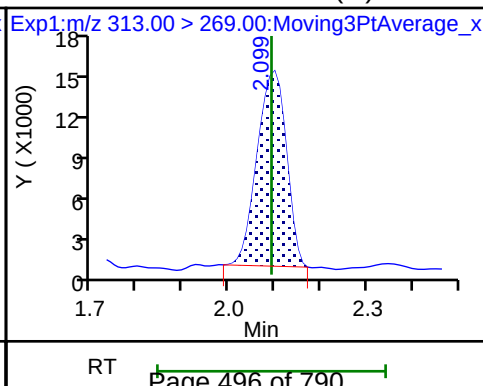
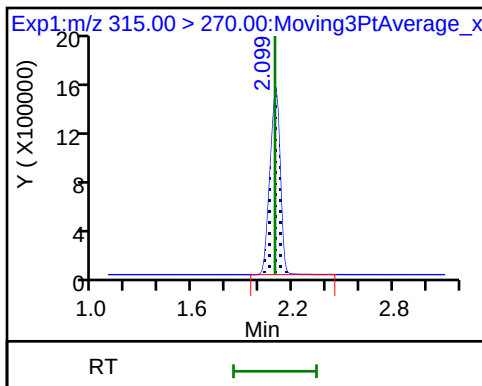
D 60 M2-4:2 FTS

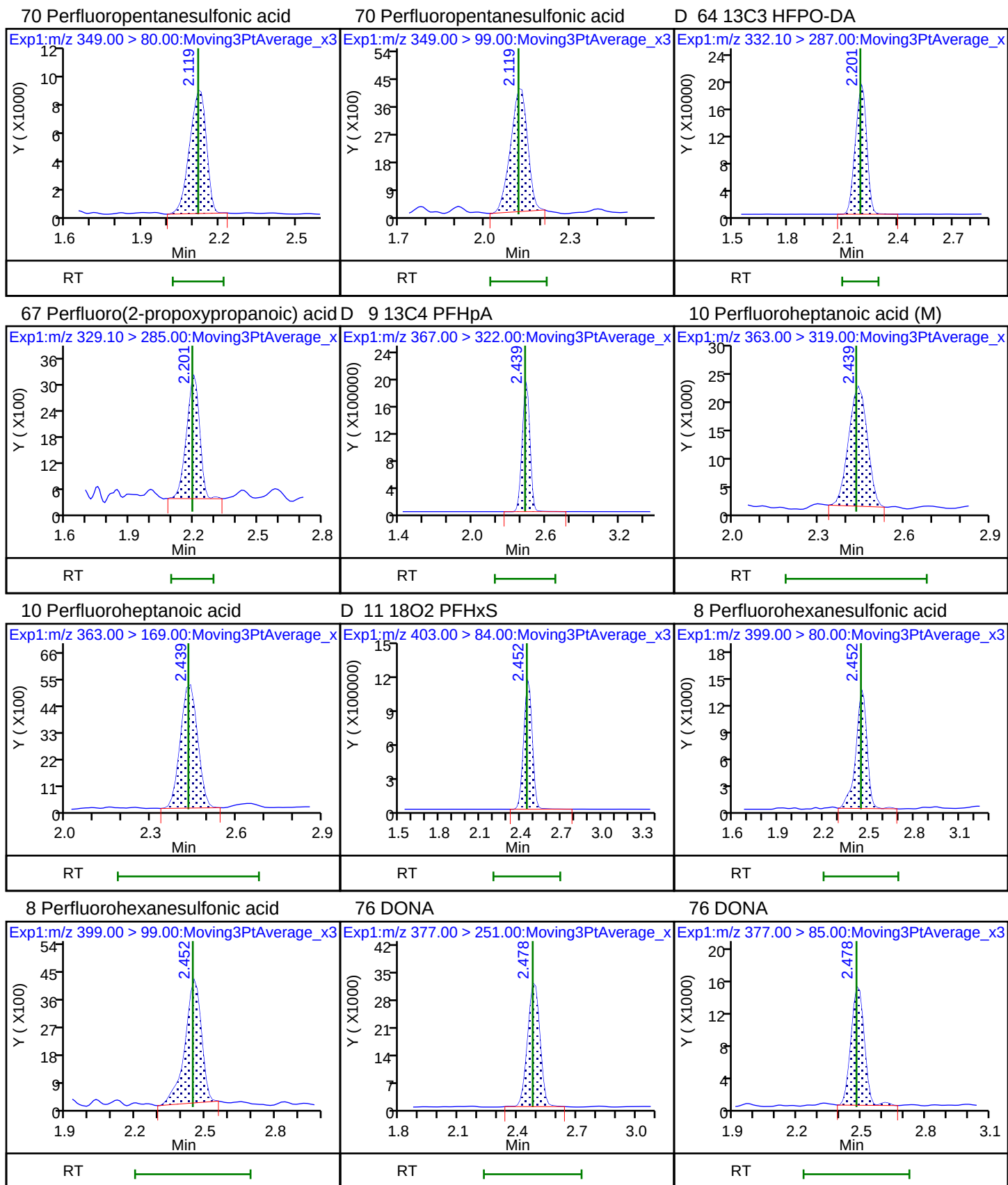


D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

6 Perfluorohexanoic acid (M)

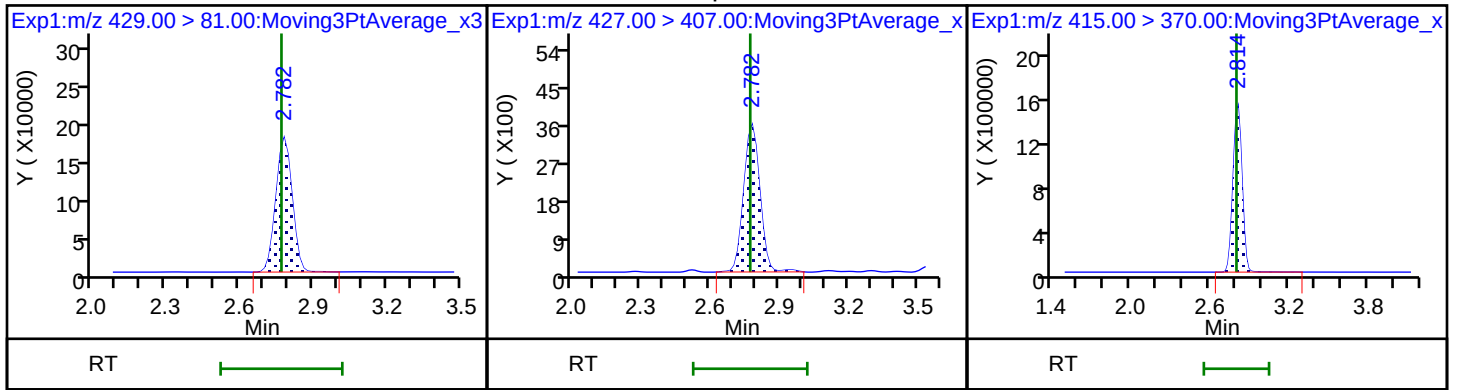




D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfonate

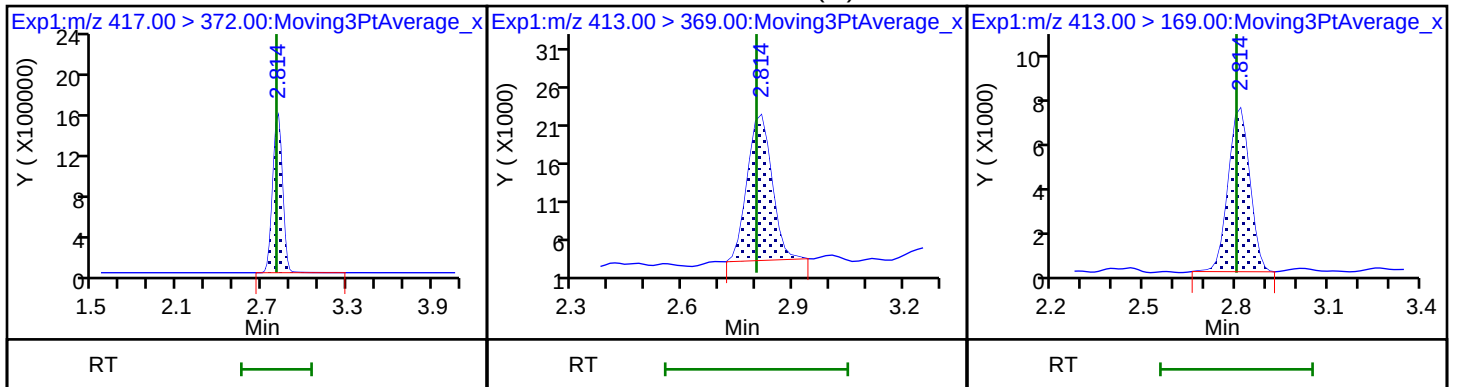
62 13C2 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid (M)

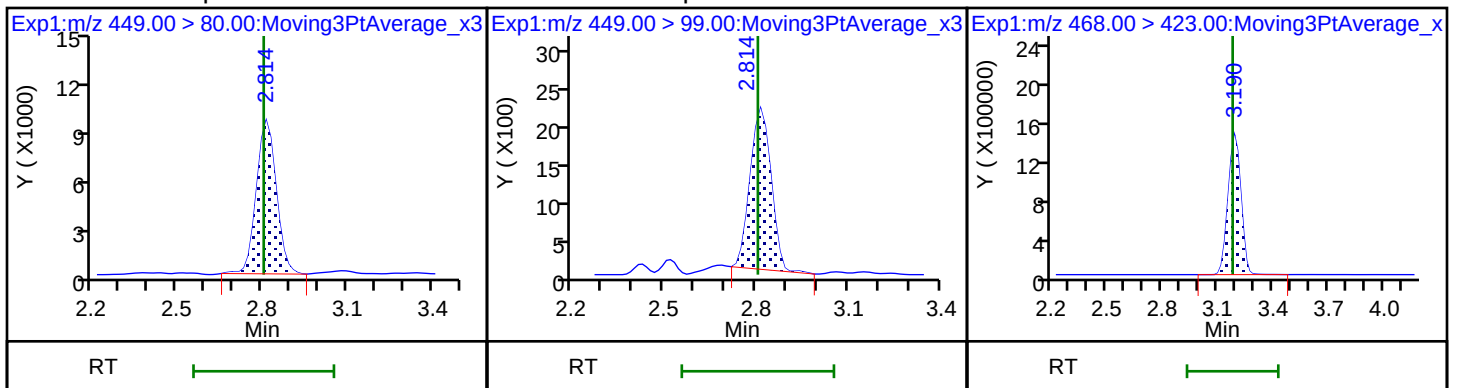
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

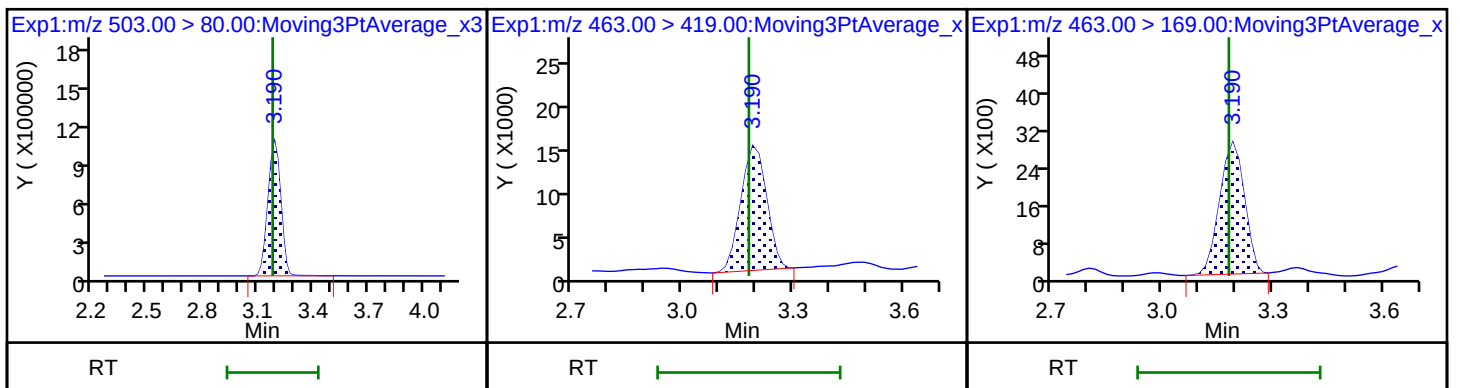
D 19 13C5 PFNA

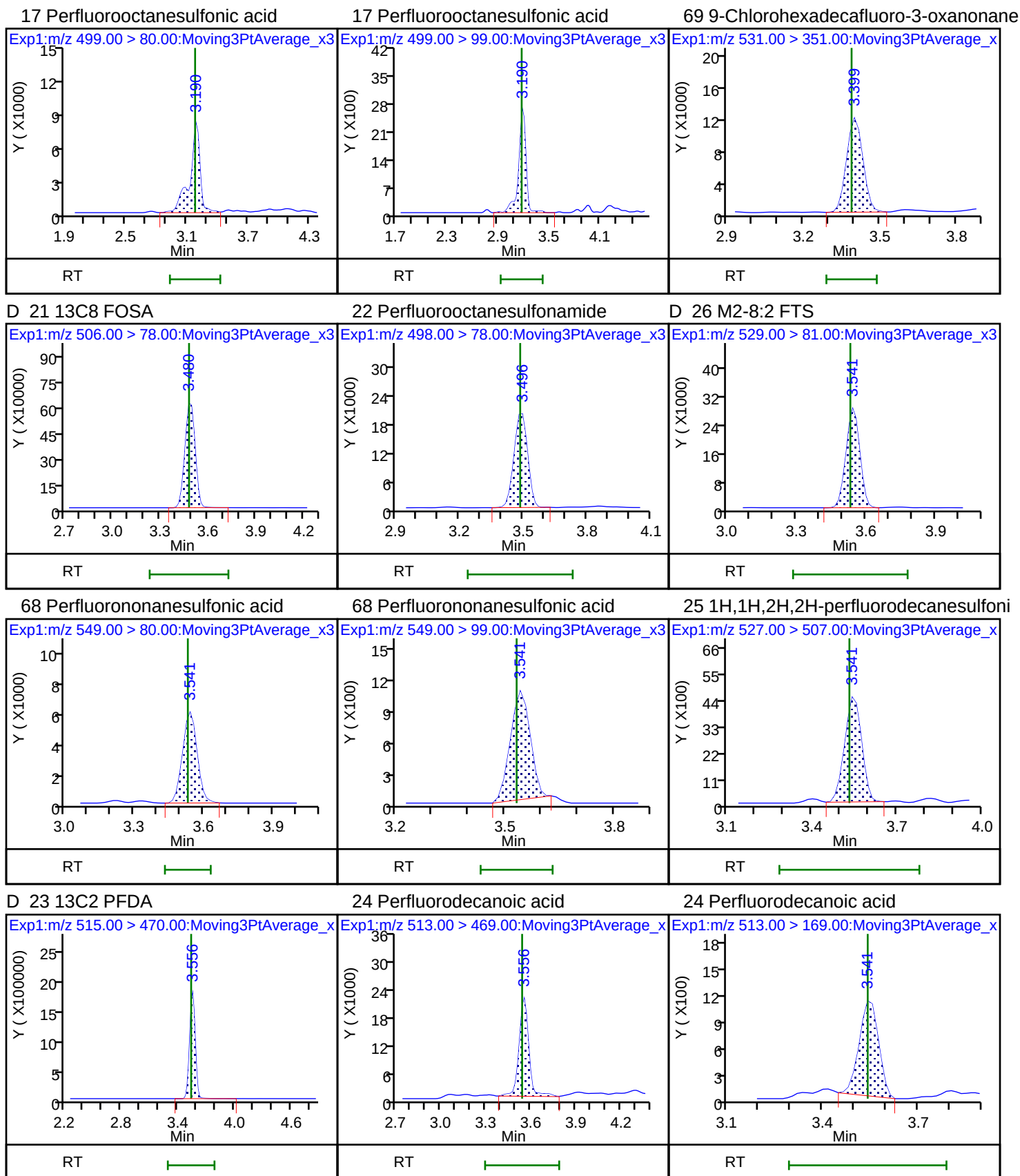


D 18 13C4 PFOS

20 Perfluorononanoic acid

20 Perfluorononanoic acid



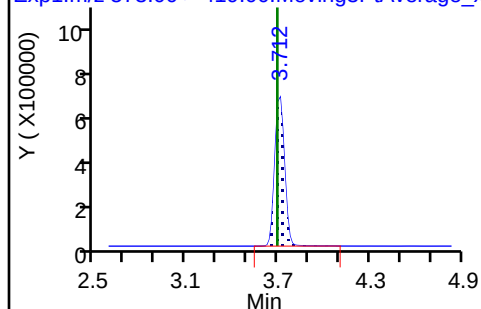


D 27 d3-NMeFOSAA

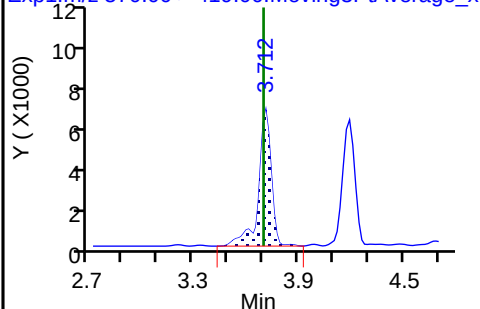
28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

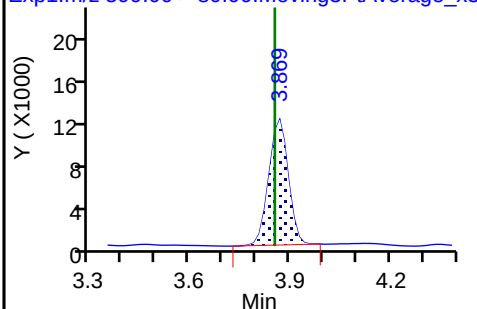
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Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3

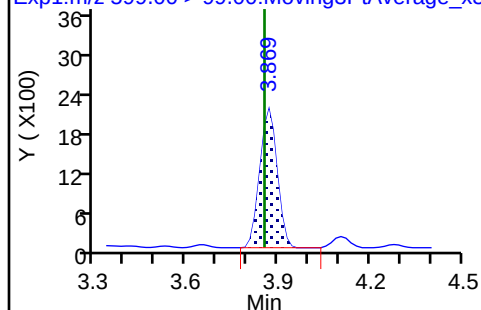


29 Perfluorodecanesulfonic acid

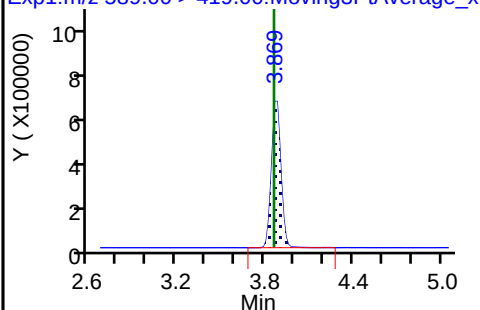
D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa (M)

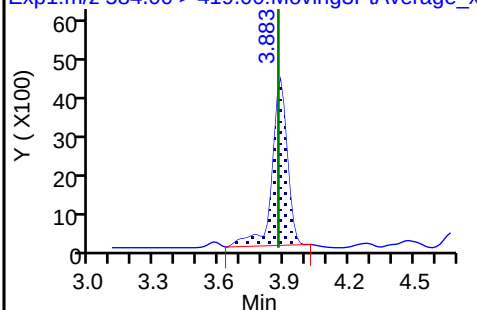
Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 584.00 > 419.00:Moving3PtAverage_x

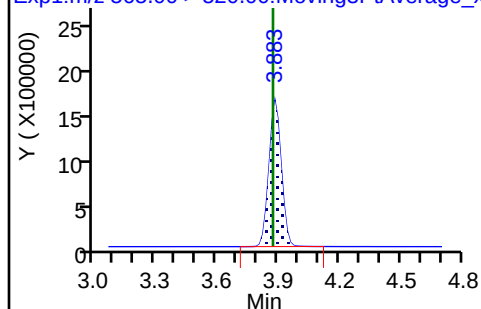


D 30 13C2 PFUnA

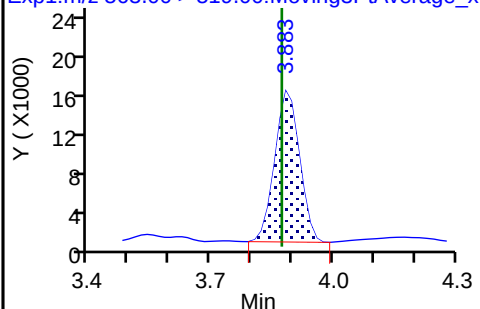
31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

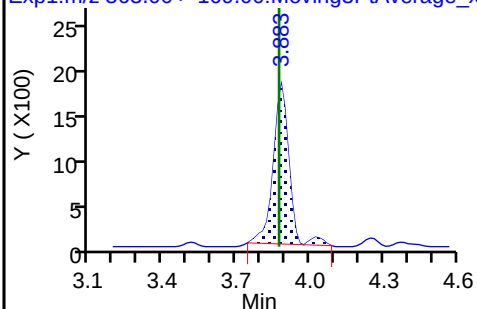
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Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x



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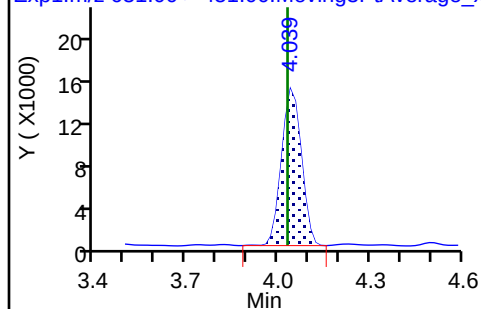


66 11-Chloroeicosafluoro-3-oxaundeca

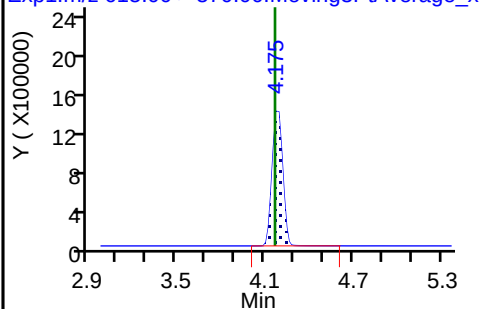
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

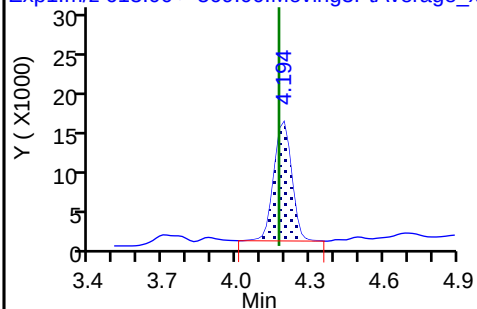
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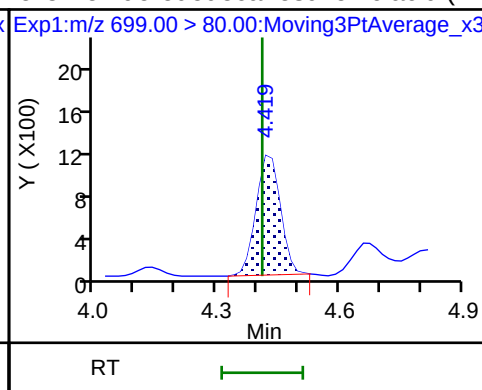
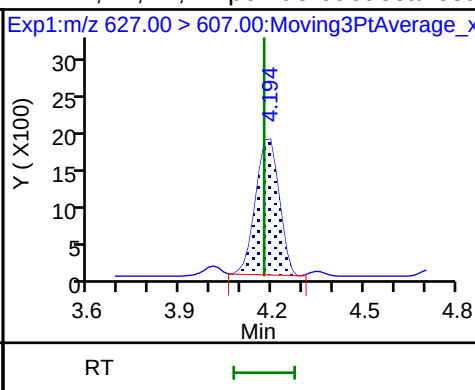
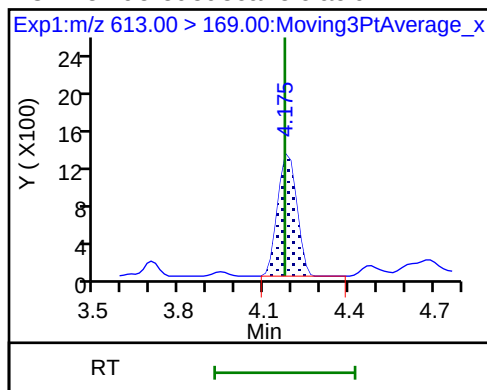


Exp1:m/z 613.00 > 569.00:Moving3PtAverage_x



37 Perfluorododecanoic acid

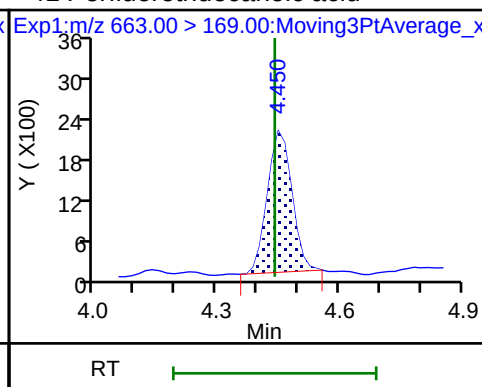
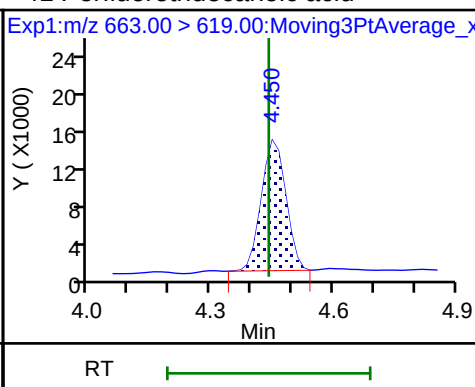
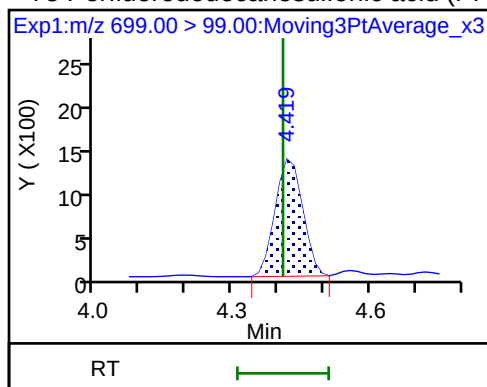
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF



75 Perfluorododecanesulfonic acid (PF

41 Perfluorotridecanoic acid

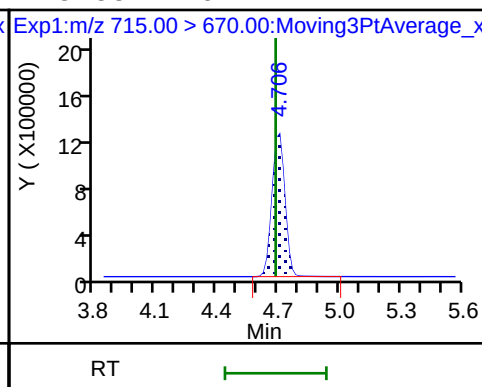
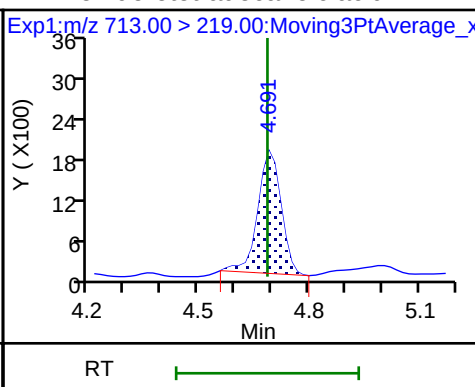
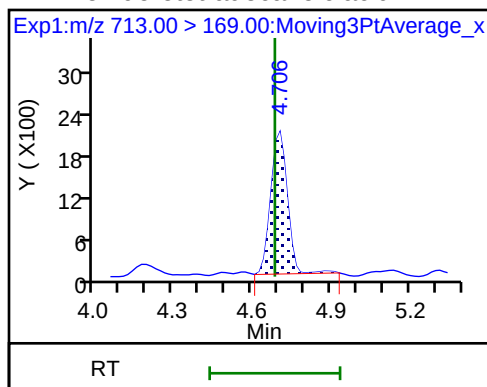
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

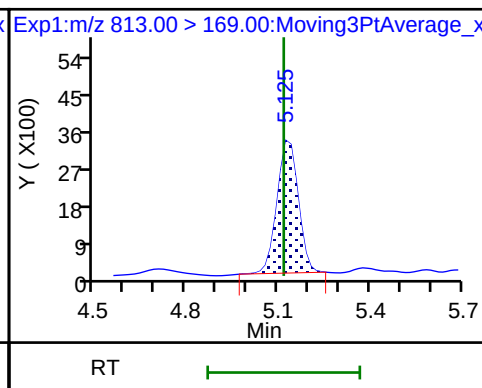
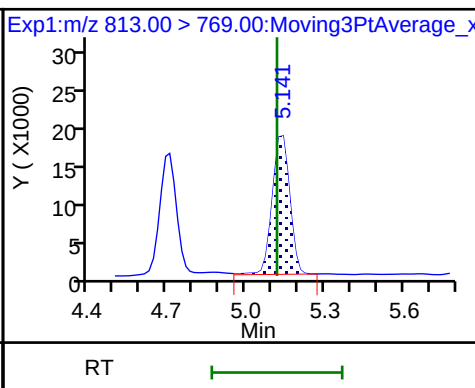
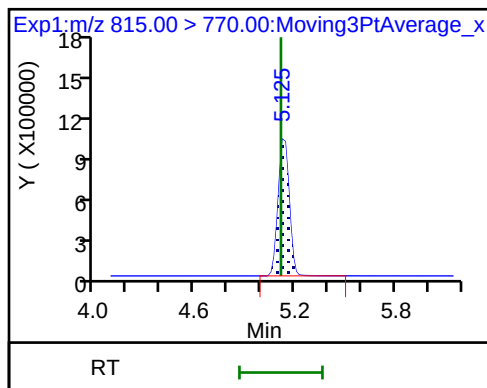
D 43 13C2 PFTeDA



D 44 13C2 PFHxDA

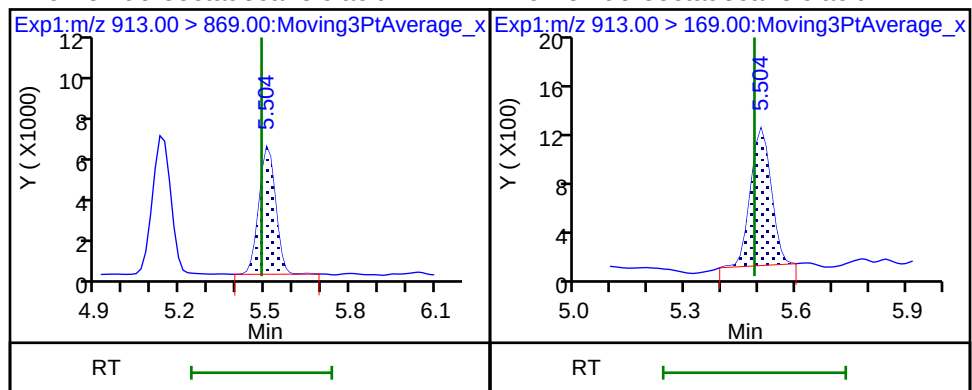
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_002.d

Injection Date: 08-Oct-2018 15:34:22

Instrument ID: A9_NC

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

Column:

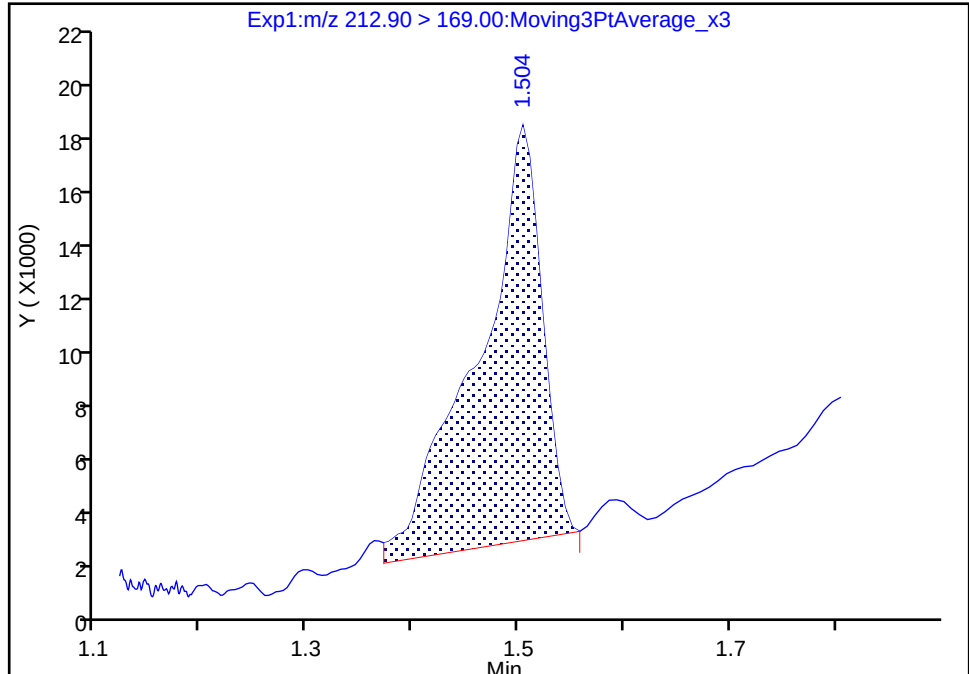
Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

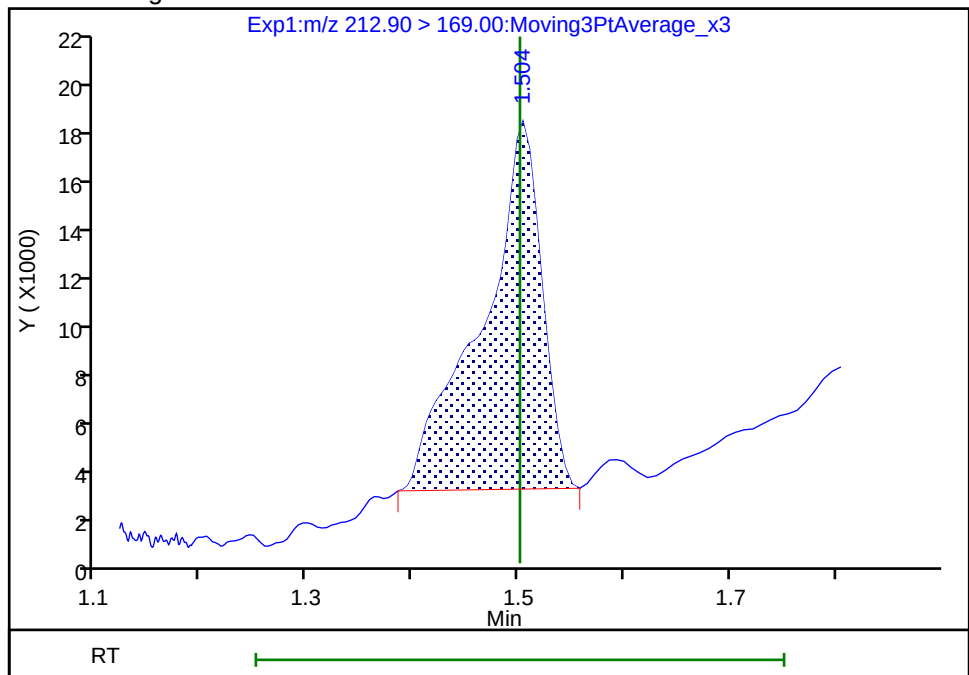
RT: 1.50
Area: 60723
Amount: 0.024524
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 55350
Amount: 0.023028
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:33:29

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_002.d

Injection Date: 08-Oct-2018 15:34:22

Instrument ID: A9_NC

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

Column:

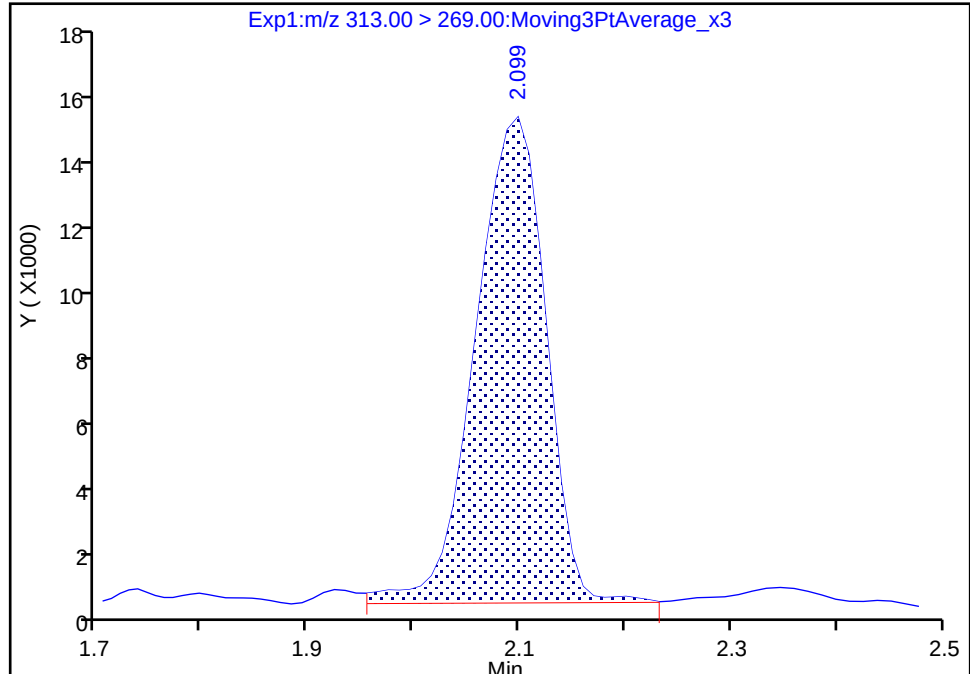
Detector: EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

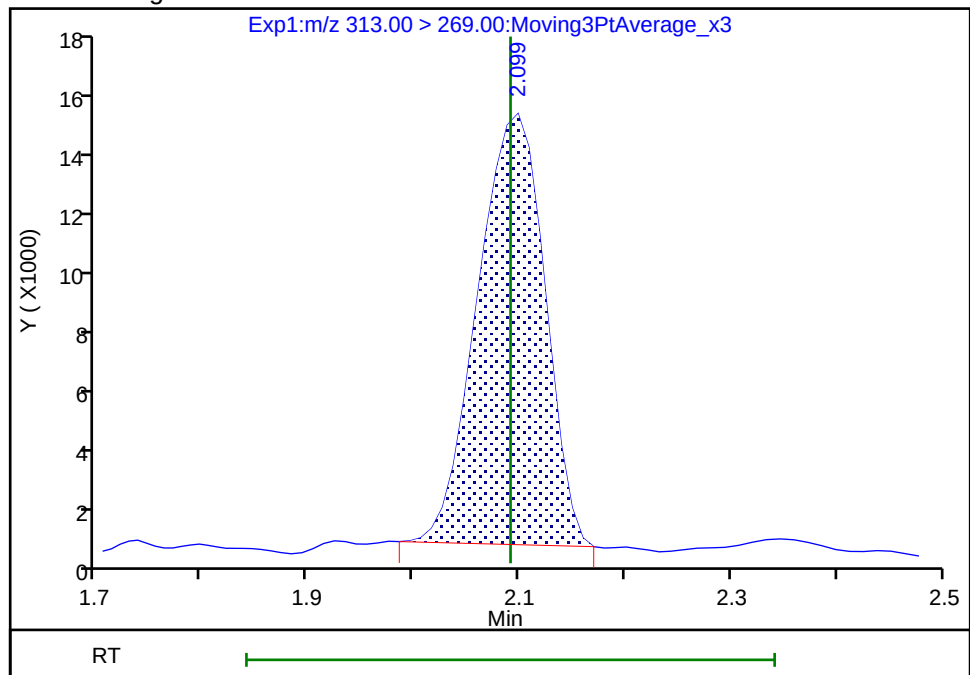
RT: 2.10
Area: 68245
Amount: 0.030100
Amount Units: ng/ml

Processing Integration Results



RT: 2.10
Area: 63765
Amount: 0.028445
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:33:44

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

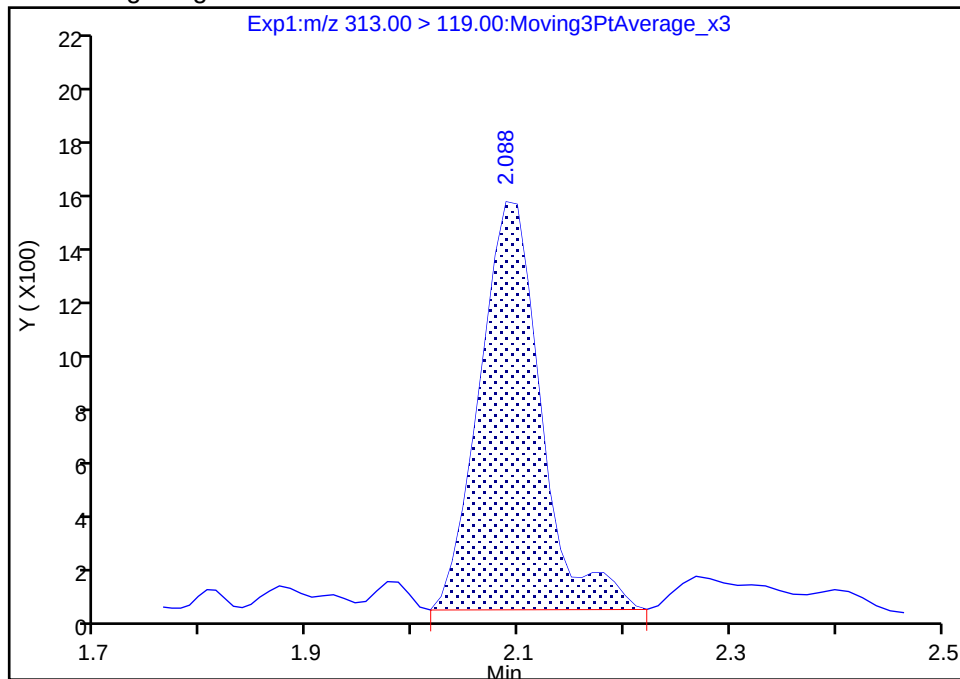
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_002.d
Injection Date: 08-Oct-2018 15:34:22 Instrument ID: A9_NC
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

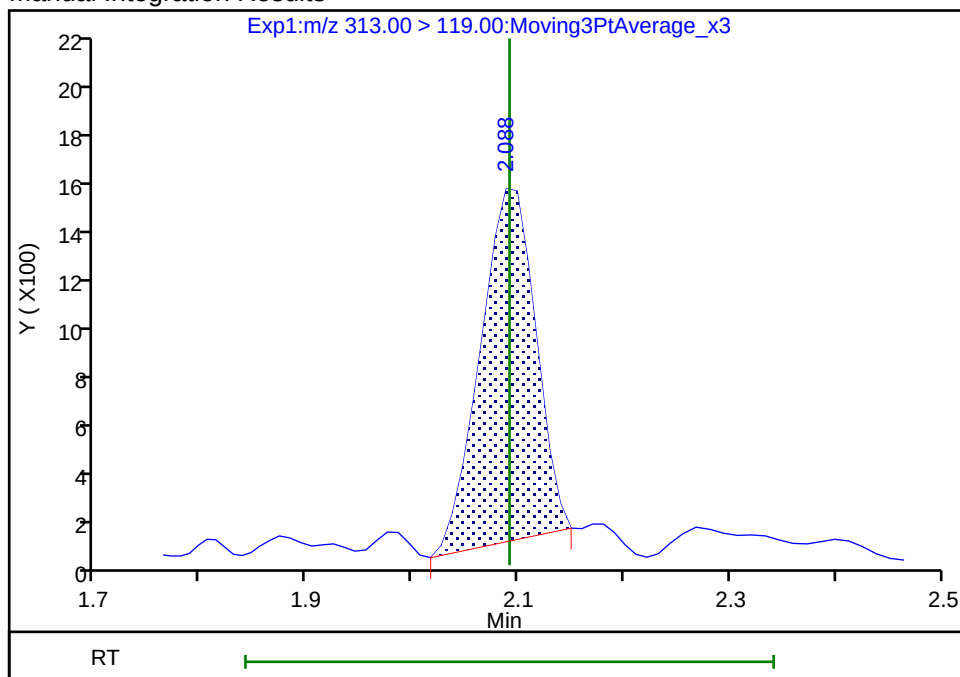
RT: 2.09
Area: 6158
Amount: 0.030100
Amount Units: ng/ml

Processing Integration Results



RT: 2.09
Area: 5297
Amount: 0.028445
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:33:49

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_002.d

Injection Date: 08-Oct-2018 15:34:22

Instrument ID: A9_NC

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

Column:

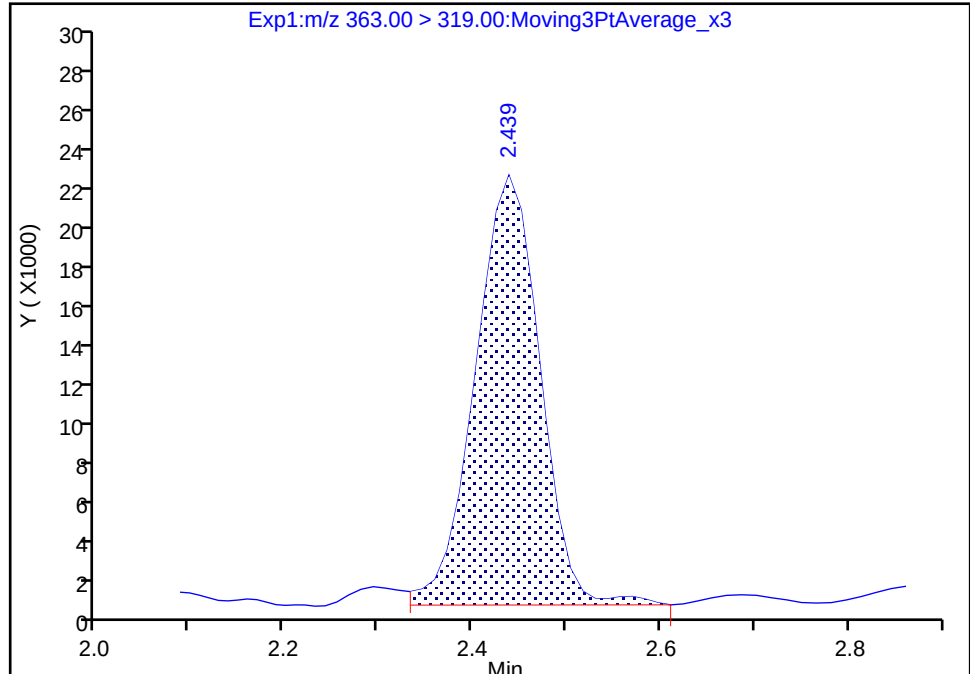
Detector: EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

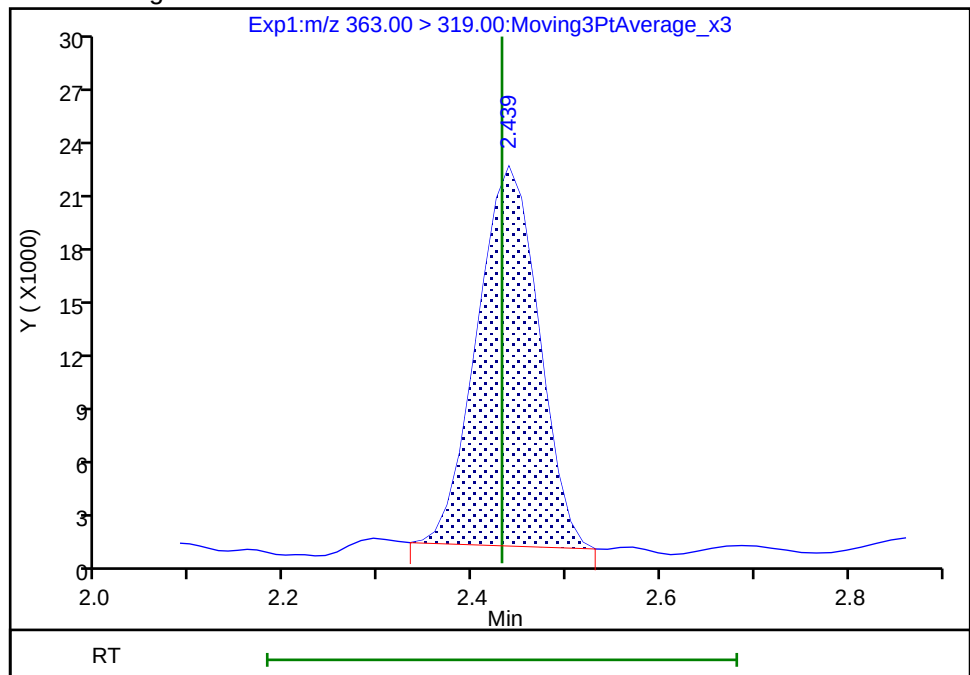
RT: 2.44
Area: 102574
Amount: 0.029358
Amount Units: ng/ml

Processing Integration Results



RT: 2.44
Area: 95409
Amount: 0.027631
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:33:59

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_002.d

Injection Date: 08-Oct-2018 15:34:22

Instrument ID: A9_NC

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

Column:

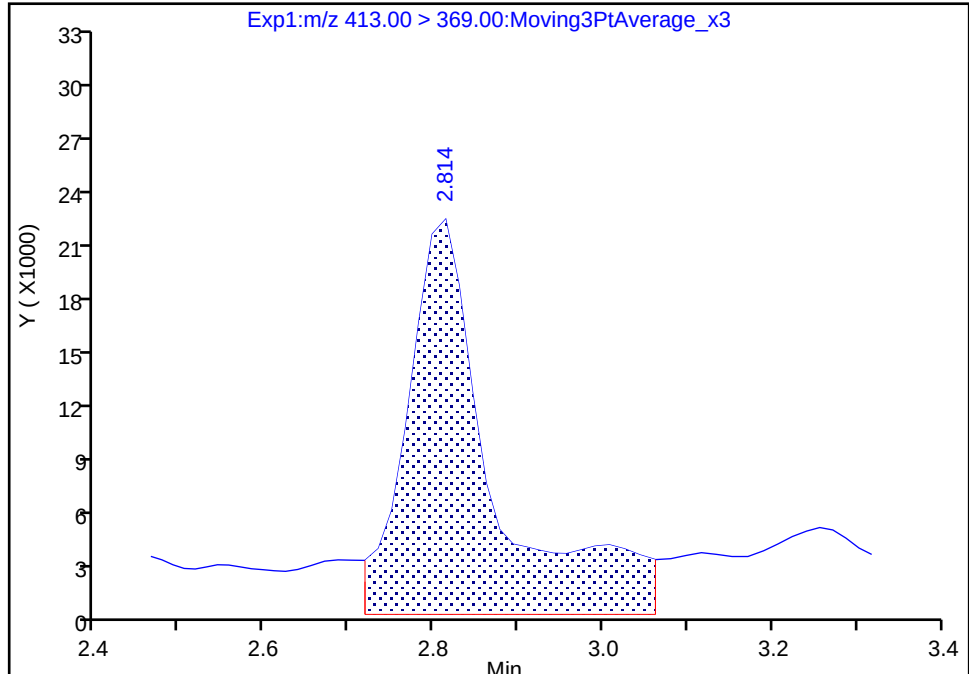
Detector: EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

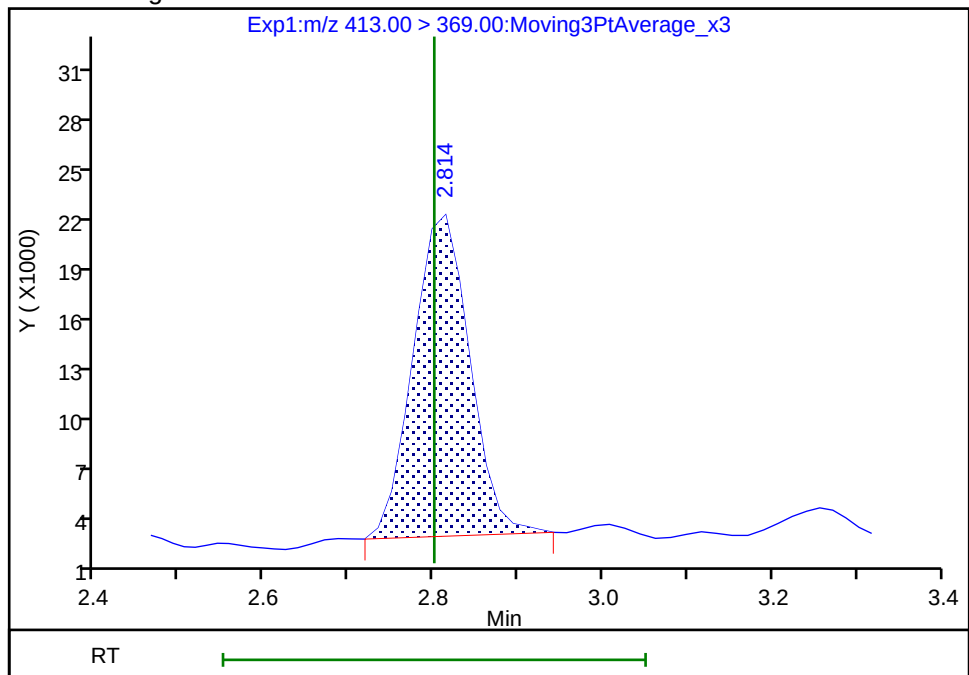
RT: 2.81
Area: 157672
Amount: 0.043581
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 88384
Amount: 0.027428
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:34:13

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_002.d

Injection Date: 08-Oct-2018 15:34:22

Instrument ID: A9_NC

Lims ID: IC L1 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

Column:

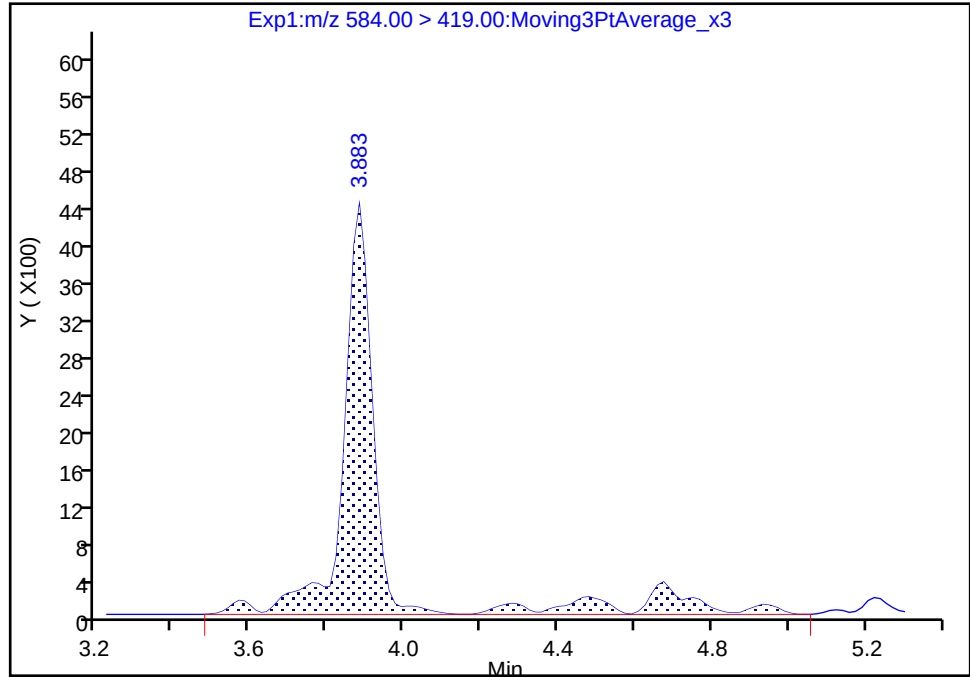
Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

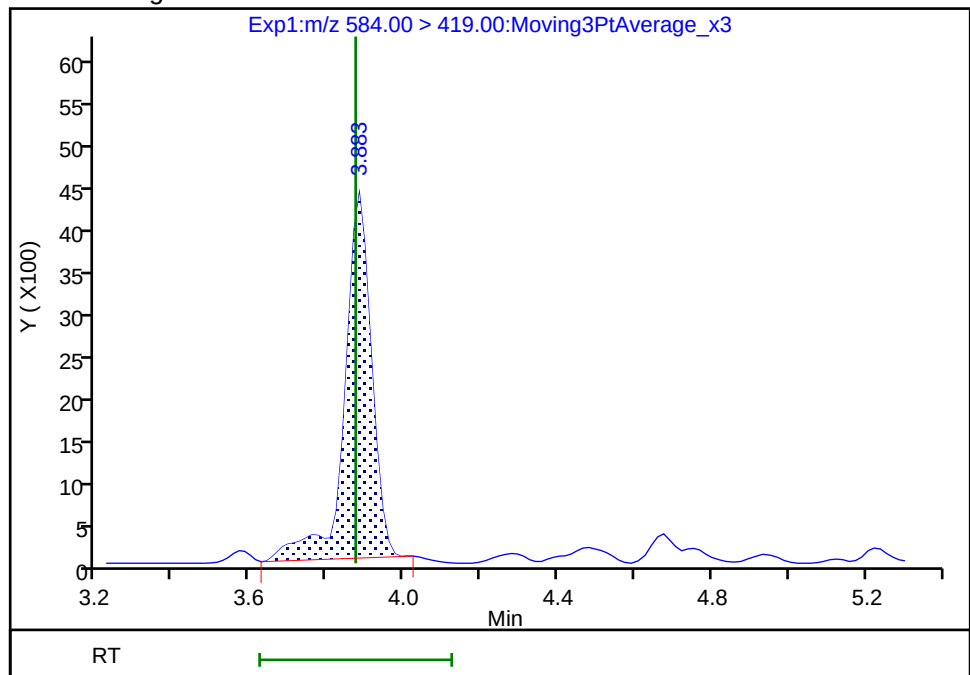
RT: 3.88
Area: 27995
Amount: 0.025957
Amount Units: ng/ml

Processing Integration Results



RT: 3.88
Area: 21090
Amount: 0.020982
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:34:31

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_003.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 08-Oct-2018 15:41:56 ALS Bottle#: 11 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:00:22 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:35:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.500	1.501	-0.001	1.000	114993	0.0488		97.6	6.0	M
D 1 13C4 PFBA										
217.00 > 172.00	1.500	1.501	-0.001	0.536	6542661	2.39		95.6	12157	
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.791	-0.002	0.639	5981047	2.45		98.1	9856	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.793	-0.004	1.000	125418	0.0516		103	12.2	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.831	1.834	-0.003	1.000	153892	0.0448		101	92.5	
298.90 > 99.00	1.831	1.834	-0.003	1.000	52473		2.93(1.35-4.05)	101	57.3	
D 47 13C3 PFBS										
301.90 > 83.00	1.831	1.834	-0.003	0.654	74643	2.24		96.2	563	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.053	0.005	1.124	34944	0.0430		92.2	343	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.058	2.055	0.003	0.736	794486	2.36		101	914	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.002	1.000	116364	0.0502		100	26.5	
313.00 > 119.00	2.099	2.091	0.008	1.005	7879		14.77(6.96-20.87)	100	15.5	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.002	0.746	6478093	2.46		98.4	13412	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.120	2.118	0.002	1.158	72172	0.0457		97.4	148	
349.00 > 99.00	2.120	2.118	0.002	1.158	34018		2.12(1.15-3.45)	97.4	85.4	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.201	2.194	0.007	0.787	765192	2.34		93.5	1817	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.191	2.194	-0.003	0.995	28642	0.0554		111	16.6	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.429	-0.003	0.867	7620810	2.36		94.5	8393	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.439	2.431	0.008	1.005	197936	0.0601		120	37.7	
363.00 > 169.00	2.426	2.431	-0.005	1.000	36792		5.38(2.17-6.52)	120	77.3	
D 11 18O2 PFHxS										
403.00 > 84.00	2.452	2.444	0.008	0.876	4457031	2.22		94.0	6910	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.452	2.446	0.006	1.000	116189	0.0500		110	122	
399.00 > 99.00	2.452	2.446	0.006	1.000	32437		3.58(1.90-5.70)	110	46.7	
76 DONA										
377.00 > 251.00	2.479	2.476	0.003	0.777	280317	0.0510		108	777	
377.00 > 85.00	2.479	2.476	0.003	0.777	109045		2.57(0.00-0.00)	108	124	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.767	2.771	-0.004	0.989	889638	2.51		106	1408	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.773	0.009	1.006	36980	0.0459		96.9	80.7	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	176881	0.0543		108	11.2	
413.00 > 169.00	2.798	2.800	-0.002	1.000	61694		2.87(1.36-4.08)	108	81.1	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.800	-0.002	1.000	7582098	2.51		100	10842	
* 62 13C2 PFOA										
415.00 > 370.00	2.798	2.800	-0.002		7494478	2.50			9158	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.805	0.009	0.882	105278	0.0503		106	170	
449.00 > 99.00	2.814	2.805	0.009	0.882	23576		4.47(1.84-5.53)	106	73.4	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.179	0.011	1.000	156233	0.0584		117	19.5	
463.00 > 169.00	3.172	3.179	-0.007	0.994	27988		5.58(2.68-8.03)	117	81.1	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.190	3.179	0.011	1.000	102454	0.0463		99.8	66.8	
499.00 > 99.00	3.172	3.179	-0.007	0.994	27876		3.68(2.04-6.12)	99.8	66.8	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.179	0.011	1.140	6579405	2.37		94.6	9040	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.179	0.011	1.140	4903846	2.33		97.4	3409	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.384	3.388	-0.004	1.061	106374	0.0452		97.1	103	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.480	0.001	1.244	2707594	2.39		95.4	6800	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.481	3.485	-0.004	1.000	155717	0.0484		96.8	315	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	34379	0.0531		111	189	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.527	3.531	-0.004	1.106	65089	0.0496		103	219	R
549.00 > 99.00	3.527	3.531	-0.004	1.106	11123		5.85(1.42-4.26)	103	69.3	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	103987	2.23		93.2	554	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.539	0.003	1.266	7370819	2.48		99.3	7622	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.541	0.001	1.000	176656	0.0526		105	30.9	
513.00 > 169.00	3.556	3.541	0.015	1.004	9850		17.93(7.12-21.35)	105	23.3	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.693	0.004	1.321	2970583	2.43		97.1	4205	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.697	3.699	-0.002	1.000	60614	0.0501		100	23.8	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.855	3.854	0.001	1.208	90945	0.0504		105	91.1	
599.00 > 99.00	3.855	3.854	0.001	1.208	18030		5.04(2.14-6.43)	105	62.4	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.870	3.861	0.009	1.383	2617704	2.54		102	3231	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.870	3.873	-0.003	1.000	146548	0.0593		119	33.6	
563.00 > 169.00	3.870	3.873	-0.003	1.000	13732		10.67(5.24-15.72)	119	58.9	
D 30 13C2 PFUnA										
565.00 > 520.00	3.870	3.873	-0.003	1.383	6682711	2.56		103	11536	
33 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	3.870	3.873	-0.003	1.000	52843	0.0560		112	104	M
35 MeFOSA										
512.00 > 169.00	3.960	3.960	0.0		28859	NC			121	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.040	4.030	0.010	1.266	141403	0.0509		108	401	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.158	4.152	0.006		30989	NC			85.0	
D 36 13C2 PFDaA										
615.00 > 570.00	4.176	4.168	0.008	1.492	7239926	2.45		98.0	7874	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.176	4.173	0.003	1.184	17924	0.0435		90.3	20.3	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.176	4.173	0.003	1.000	166595	0.0565		113	42.2	
613.00 > 169.00	4.176	4.173	0.003	1.000	16538		10.07(4.68-14.05)	113	33.3	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.419	4.410	0.009	1.385	9385	0.0511		106	14.4	
699.00 > 99.00	4.419	4.410	0.009	1.385	15521		0.60(0.00-0.00)	106	51.0	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.450	4.441	0.009	1.066	118134	0.0531		106	60.5	
663.00 > 169.00	4.450	4.441	0.009	1.066	21543		5.48(3.09-9.27)	106	47.4	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.691	4.686	0.005	1.676	5415723	2.43		97.1	9831	

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_003.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.691	4.686	0.005	1.000	15557	0.0451		90.2	34.2	
713.00 > 219.00	4.691	4.686	0.005	1.000	13131		1.18(0.70-2.09)	90.2	42.7	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.125	5.115	0.010	1.831	4586032	2.39		95.4	6163	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.125	5.118	0.007	1.000	121594	0.0473		94.5	36.1	
813.00 > 169.00	5.125	5.118	0.007	1.000	21541		5.64(2.77-8.32)	94.5	46.0	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.491	5.486	0.005	1.071	52693	0.0505		101	33.0	
913.00 > 169.00	5.491	5.486	0.005	1.071	8626		6.11(2.55-7.64)	101	42.0	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_003.d

Injection Date: 08-Oct-2018 15:41:56

Instrument ID: A9_NC

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

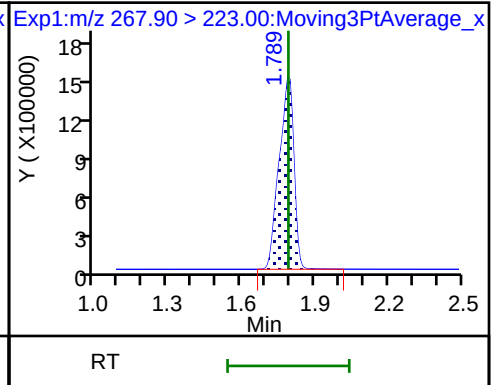
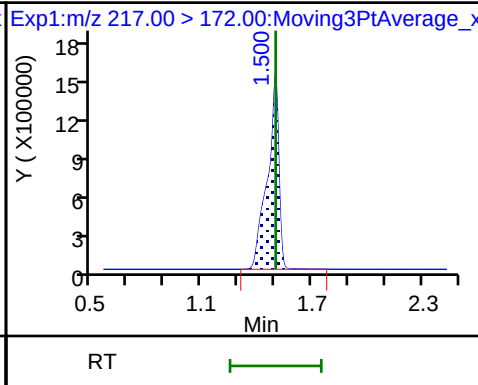
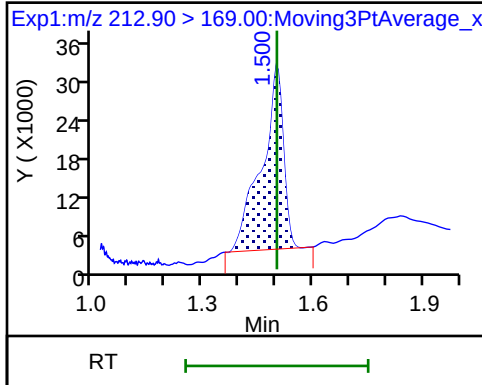
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid (M)

D 1 13C4 PFBA

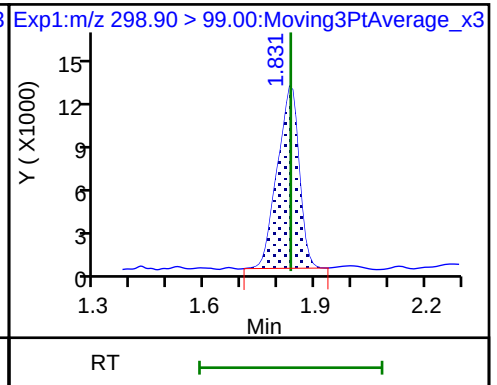
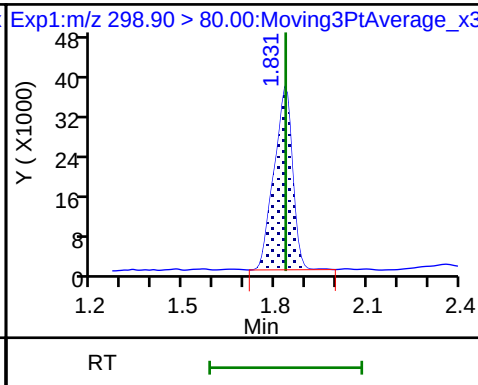
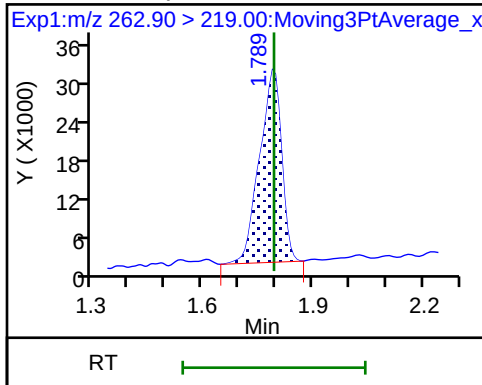
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

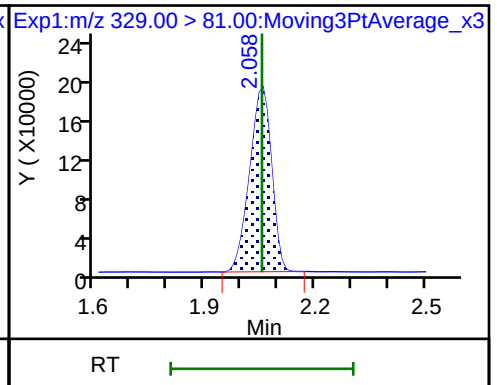
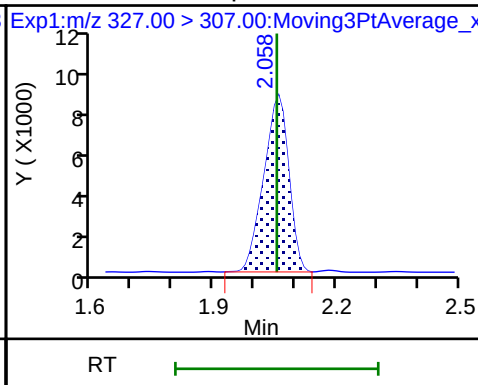
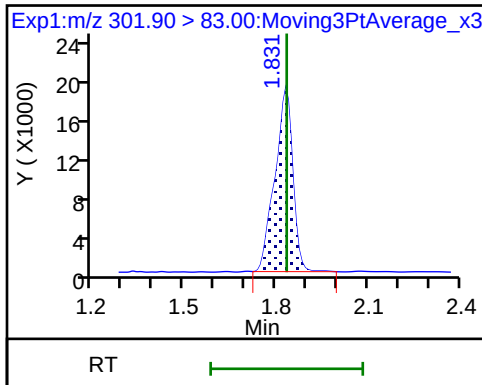
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

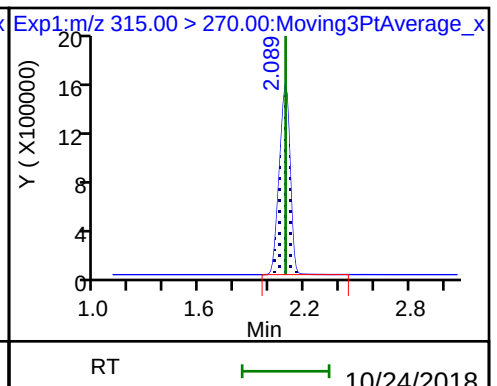
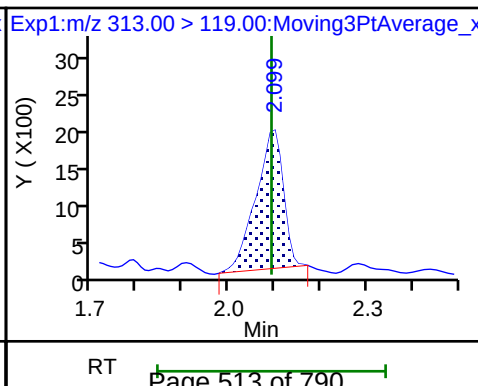
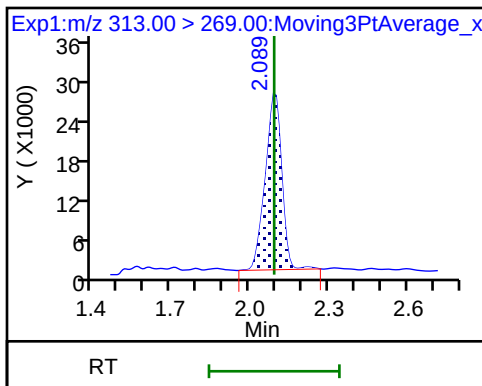
D 60 M2-4:2 FTS

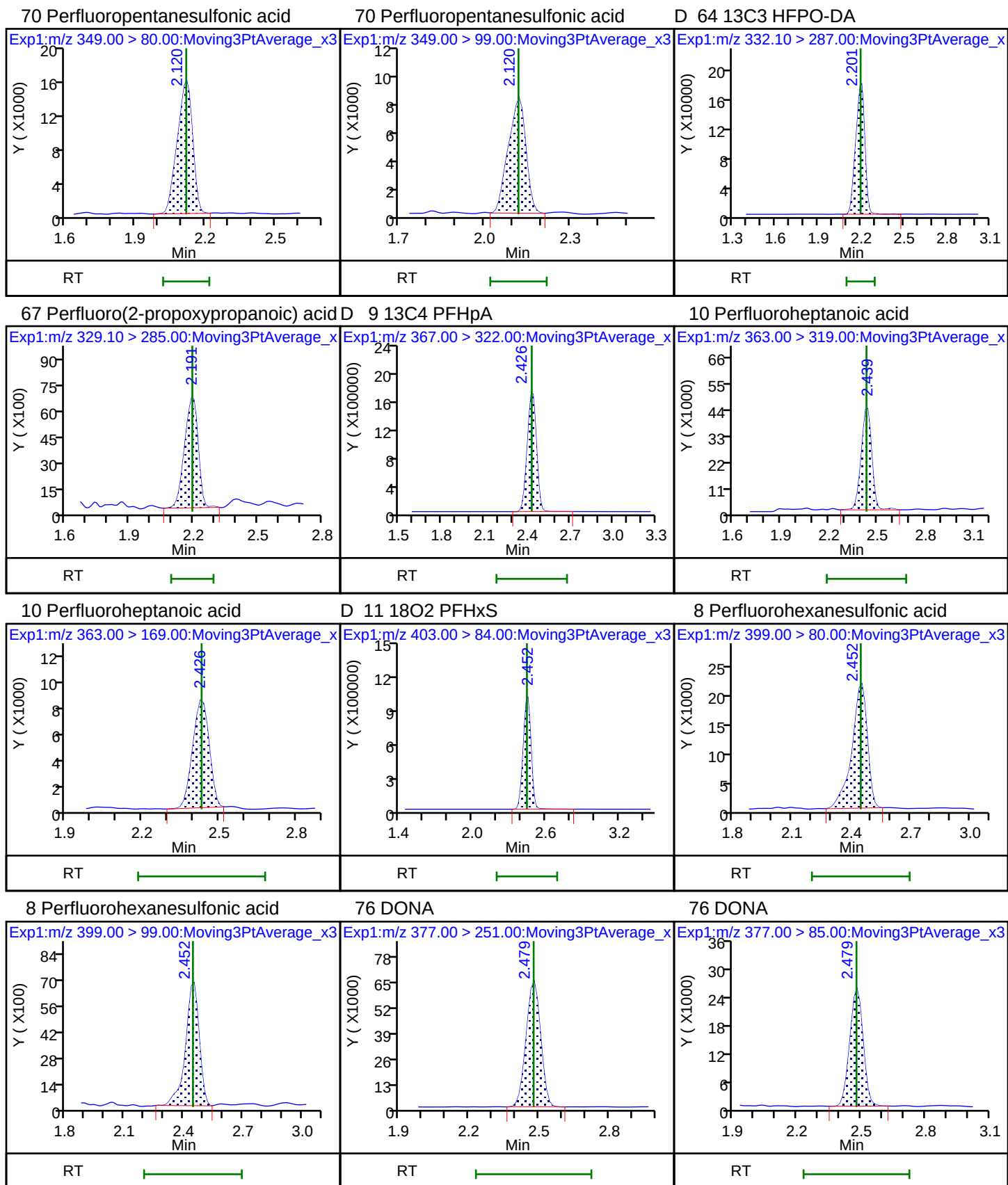


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

D 7 13C2 PFHxA

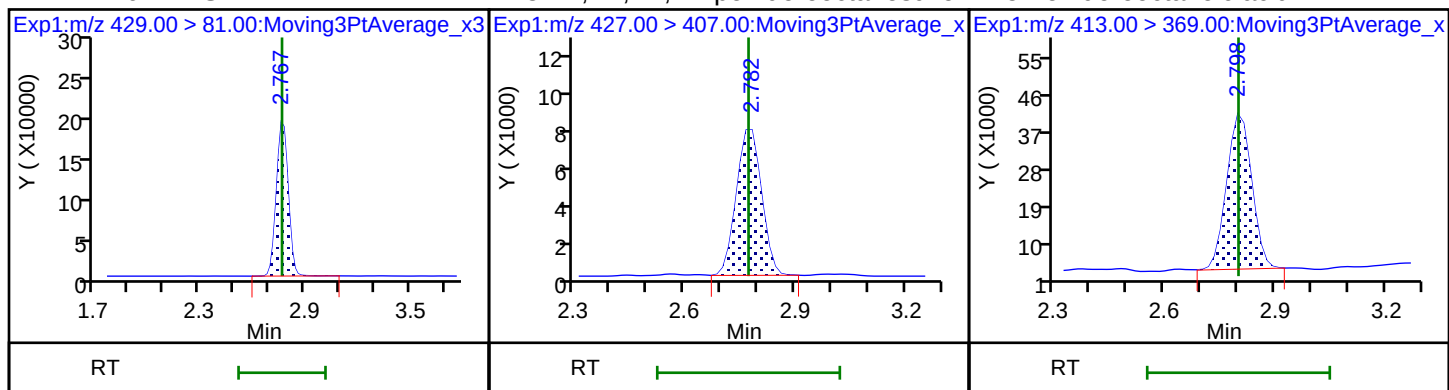




D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfo

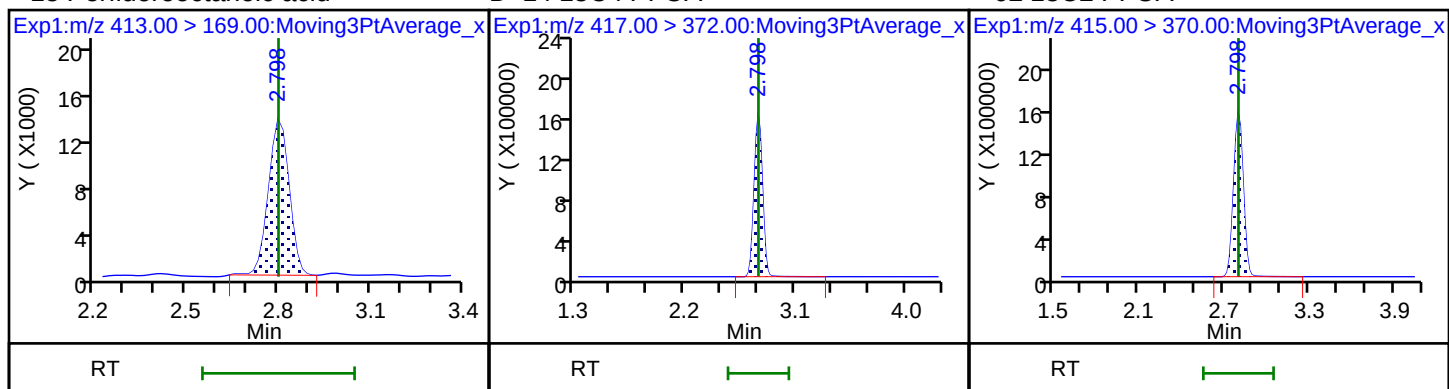
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

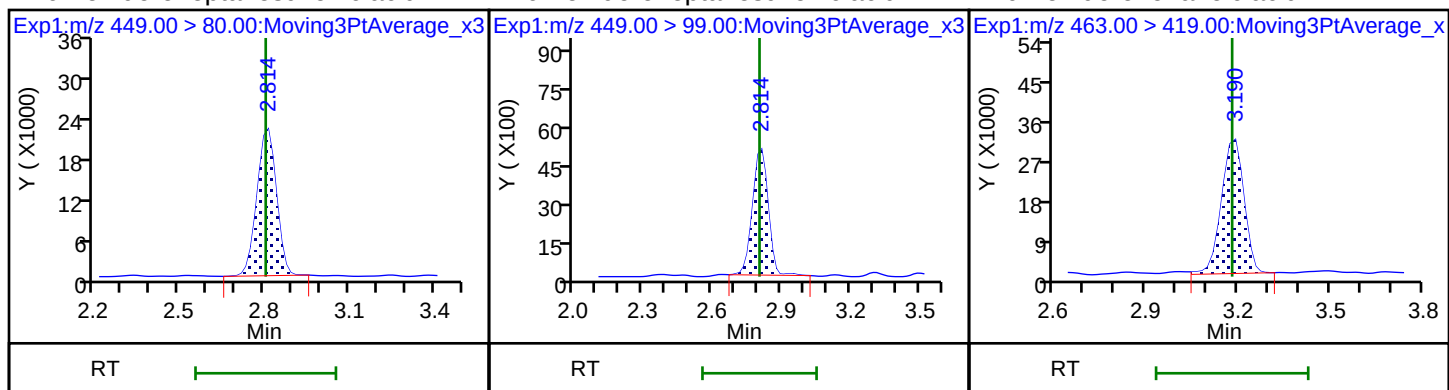
* 62 13C2 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

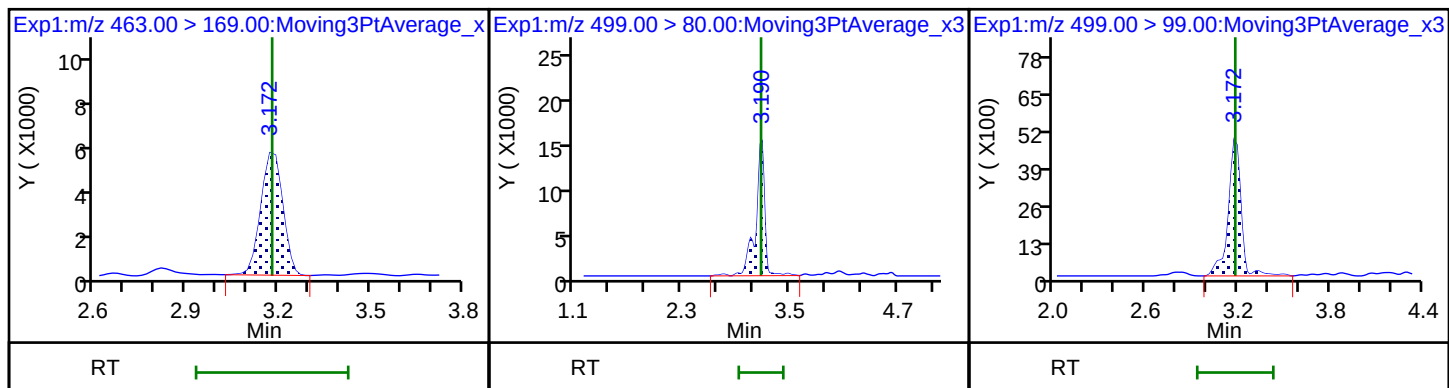
20 Perfluorononanoic acid



20 Perfluorononanoic acid

17 Perfluorooctanesulfonic acid

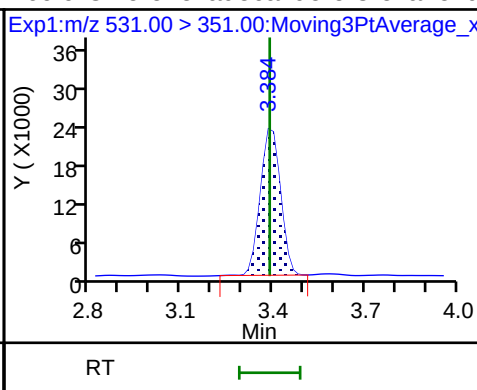
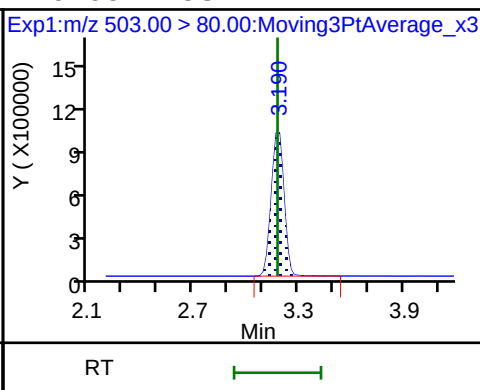
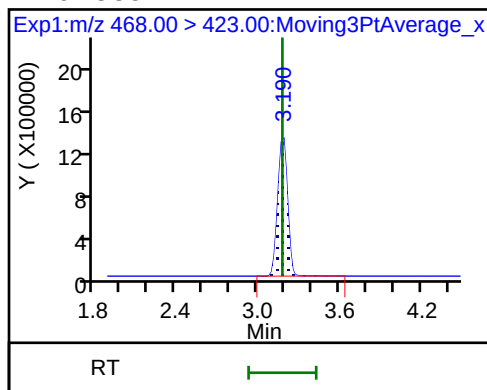
17 Perfluorooctanesulfonic acid



D 19 13C5 PFNA

D 18 13C4 PFOS

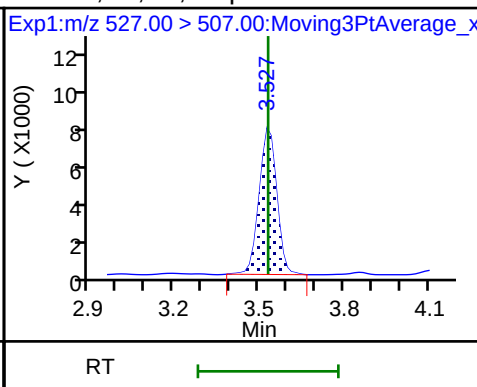
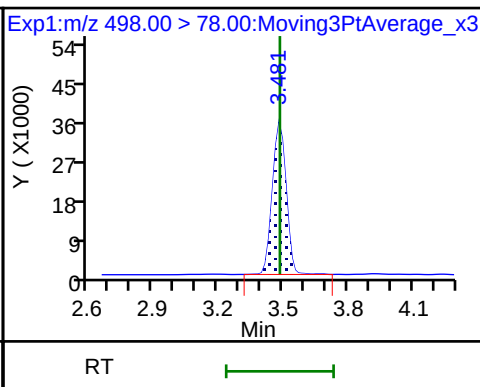
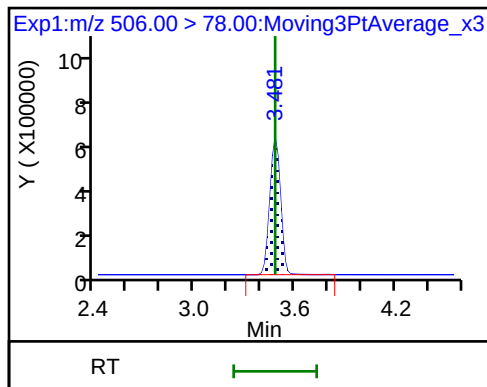
69 9-Chlorohexadecafluoro-3-oxanonane



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

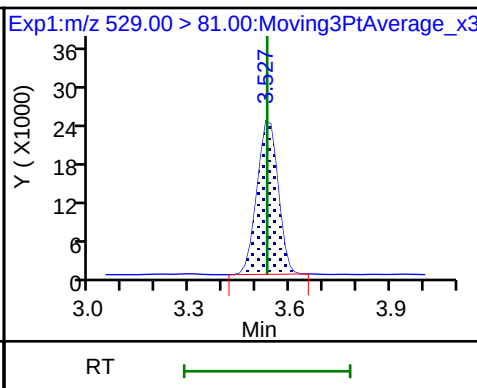
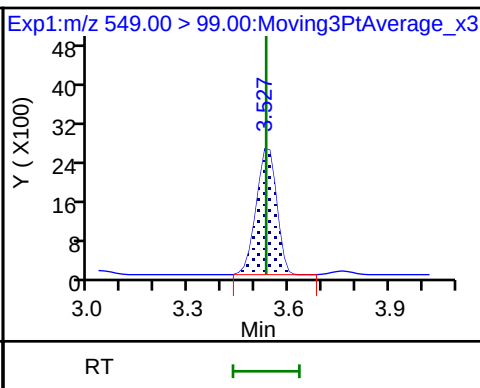
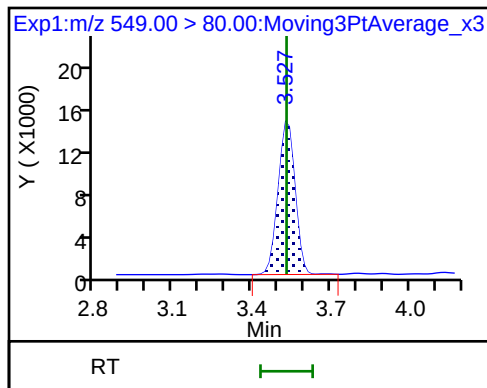
25 1H,1H,2H,2H-perfluorodecanesulfoni



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

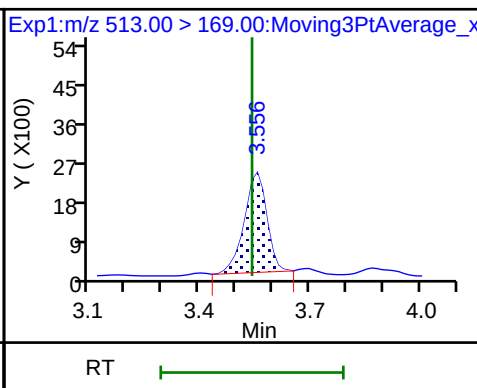
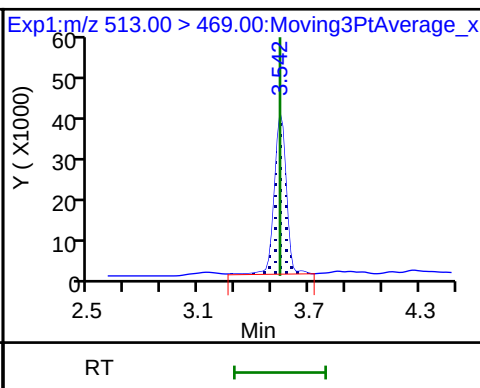
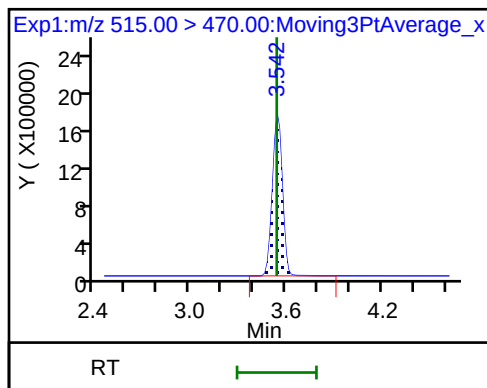
D 26 M2-8:2 FTS



D 23 13C2 PFDA

24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

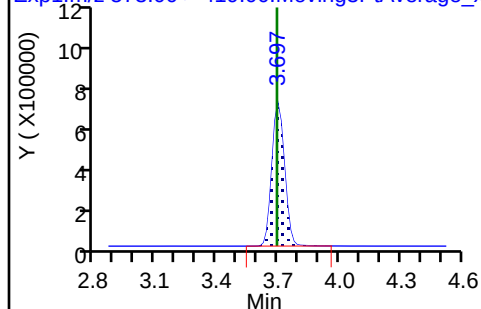


D 27 d3-NMeFOSAA

28 N-methylperfluorooctanesulfonamido

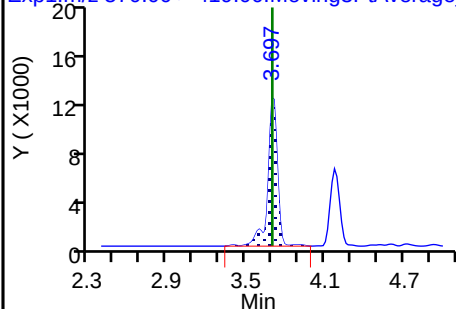
29 Perfluorodecanesulfonic acid

Exp1:m/z 573.00 > 419.00:Moving3PtAverage_x3



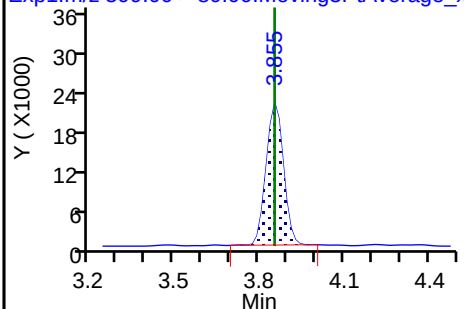
RT

Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x3



RT

Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3



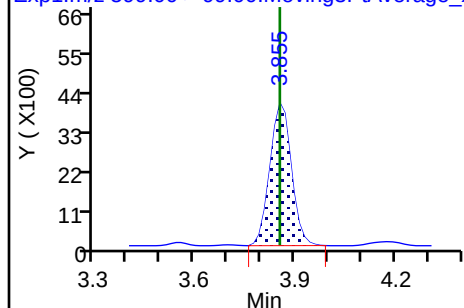
RT

29 Perfluorodecanesulfonic acid

D 32 d5-NEtFOSAA

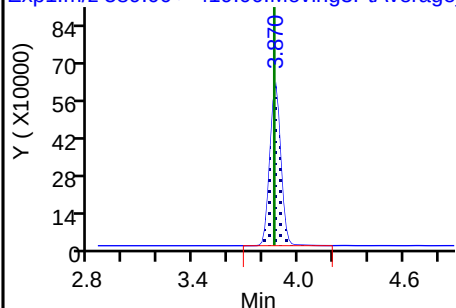
31 Perfluoroundecanoic acid

Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



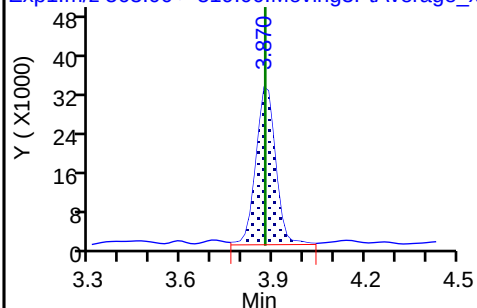
RT

Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x3



RT

Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x3



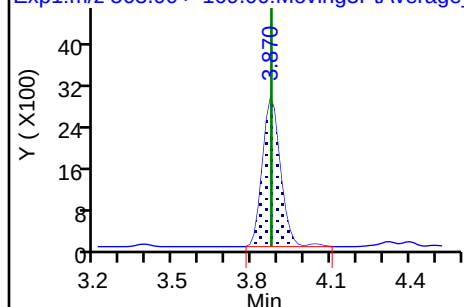
RT

31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

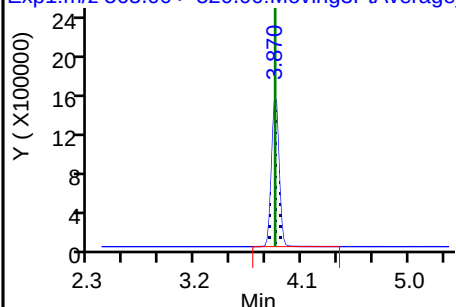
33 N-ethylperfluorooctanesulfonamidoa (M)

Exp1:m/z 563.00 > 169.00:Moving3PtAverage_x3



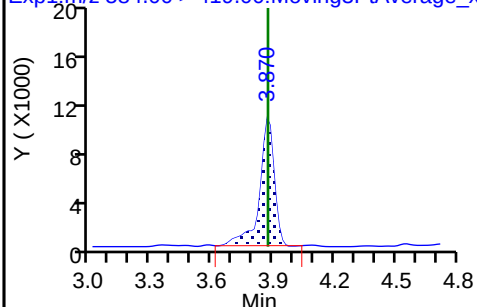
RT

Exp1:m/z 565.00 > 520.00:Moving3PtAverage_x3



RT

Exp1:m/z 584.00 > 419.00:Moving3PtAverage_x3



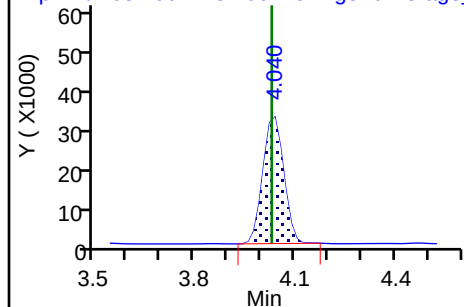
RT

66 11-Chloroeicosafluoro-3-oxaundecad

D 36 13C2 PFDaA

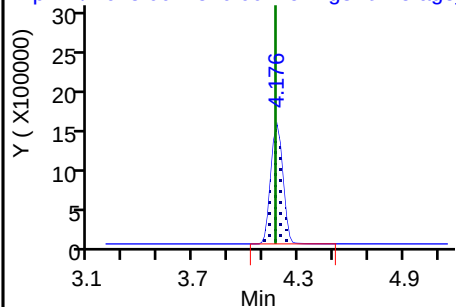
74 1H,1H,2H,2H-perfluorododecanesulfo

Exp1:m/z 631.00 > 451.00:Moving3PtAverage_x3



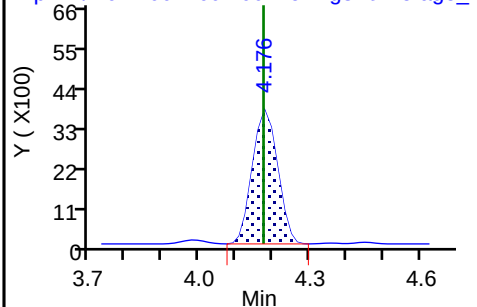
RT

Exp1:m/z 615.00 > 570.00:Moving3PtAverage_x3

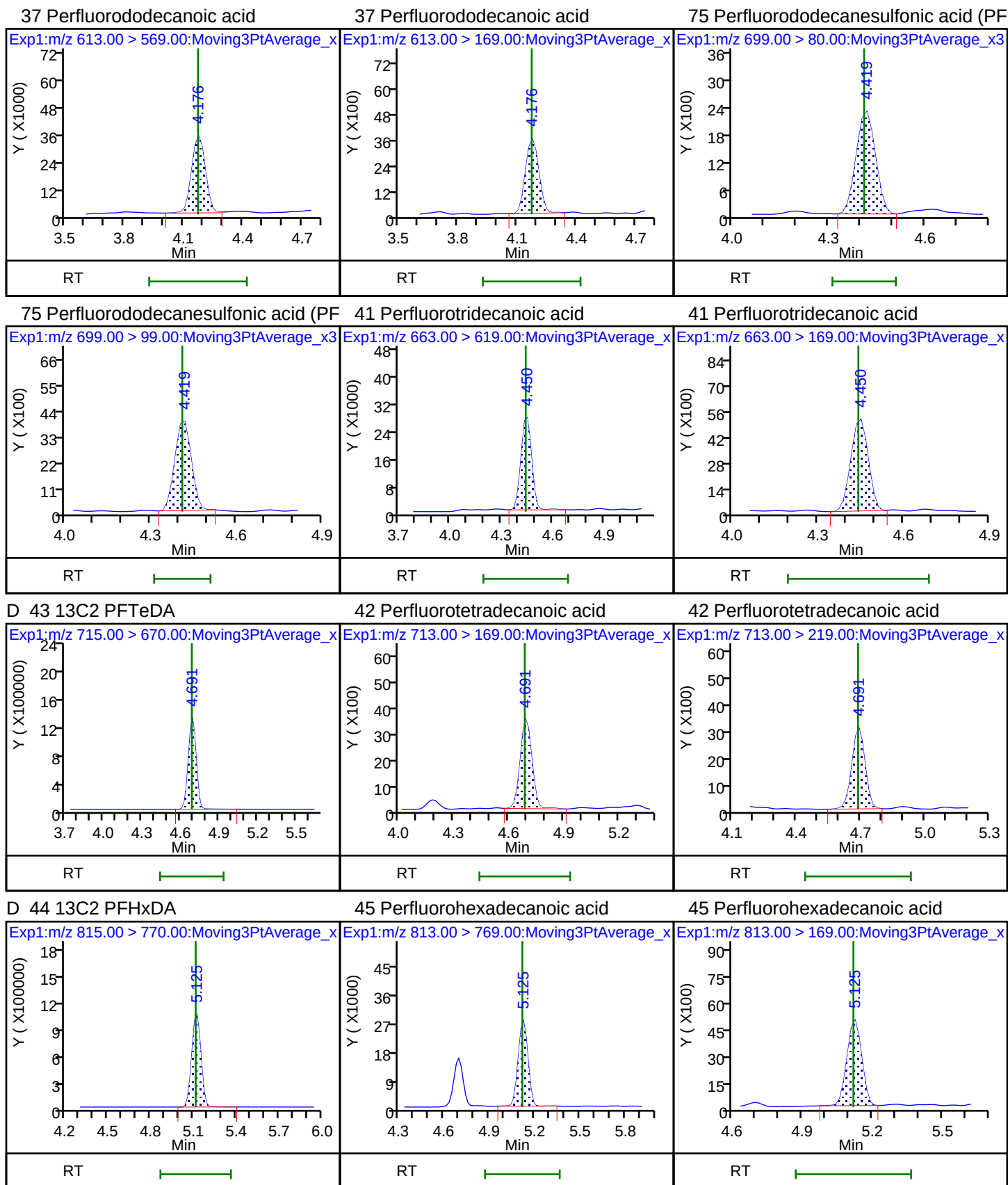


RT

Exp1:m/z 627.00 > 607.00:Moving3PtAverage_x3

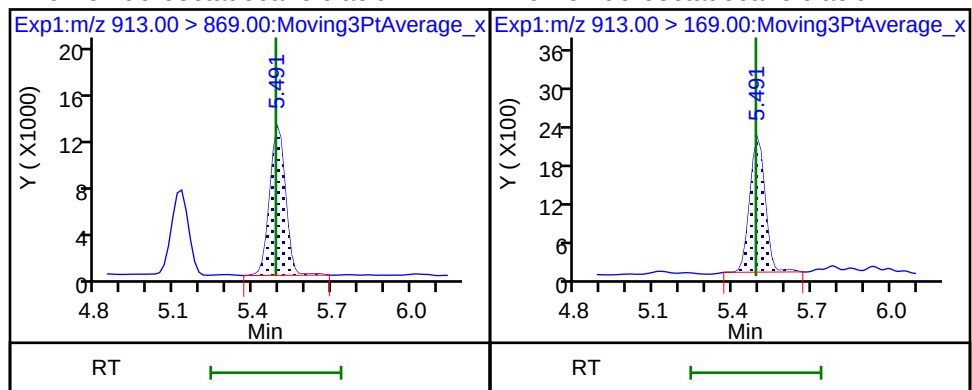


RT



46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_003.d

Injection Date: 08-Oct-2018 15:41:56

Instrument ID: A9_NC

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

Column:

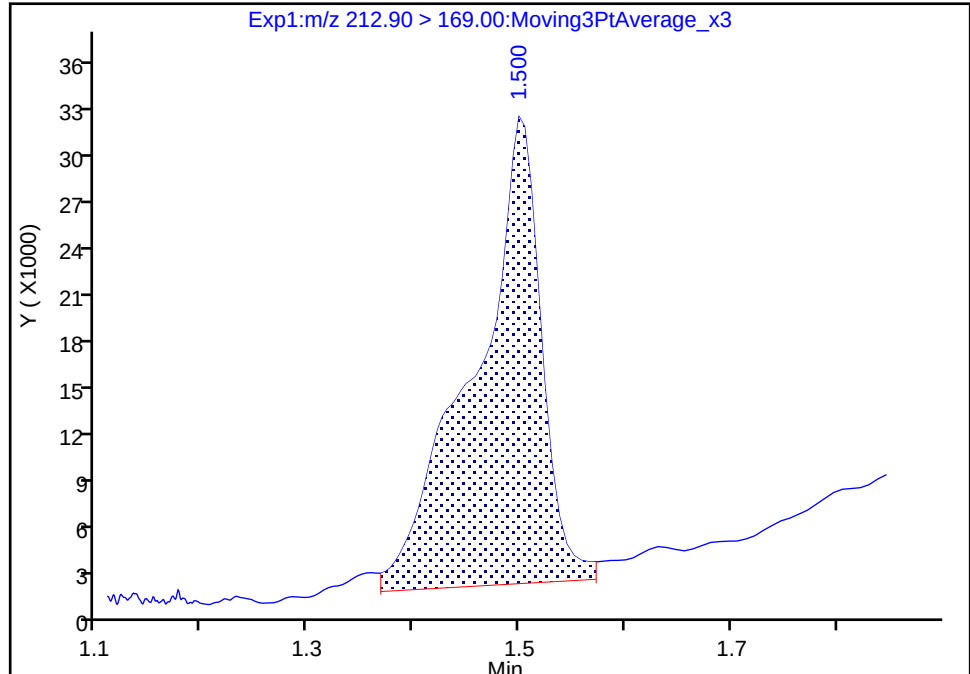
Detector: EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

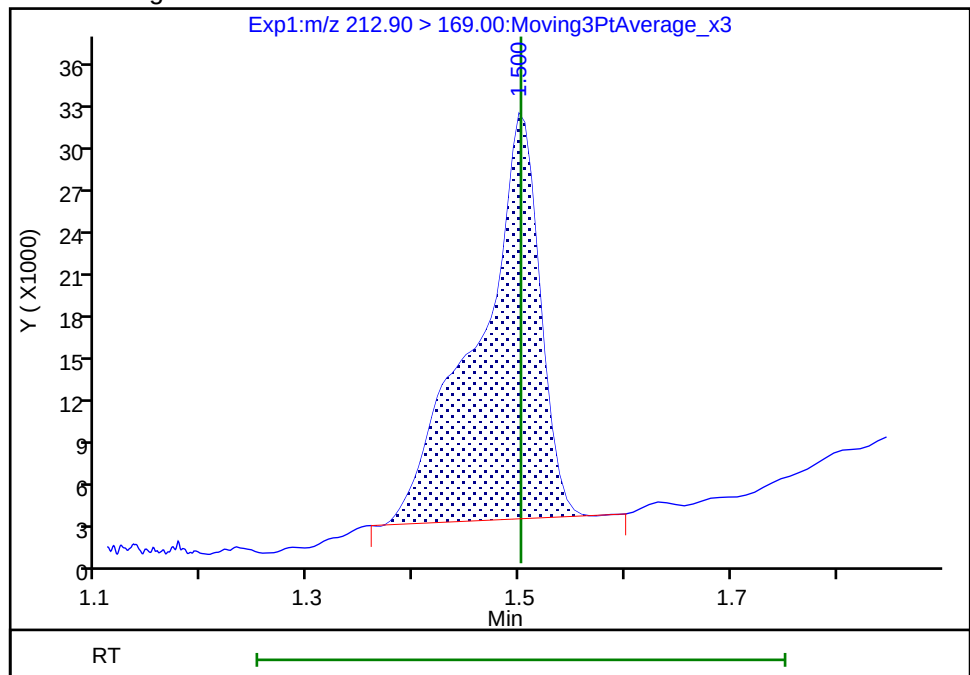
RT: 1.50
Area: 129329
Amount: 0.053931
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 114993
Amount: 0.048786
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:35:17

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

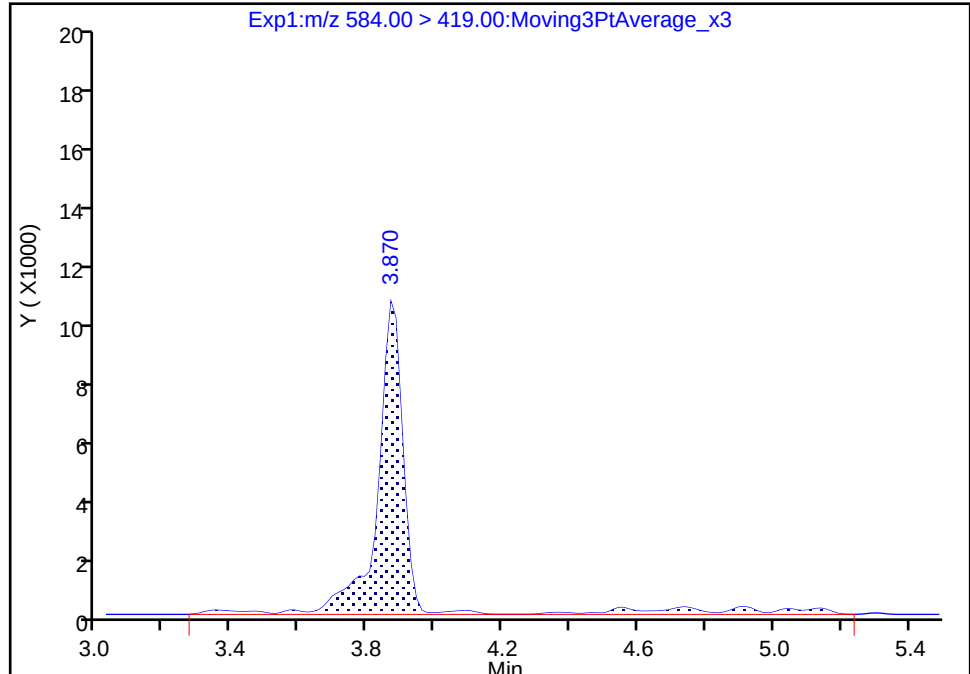
Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_003.d
Injection Date: 08-Oct-2018 15:41:56 Instrument ID: A9_NC
Lims ID: IC L2 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

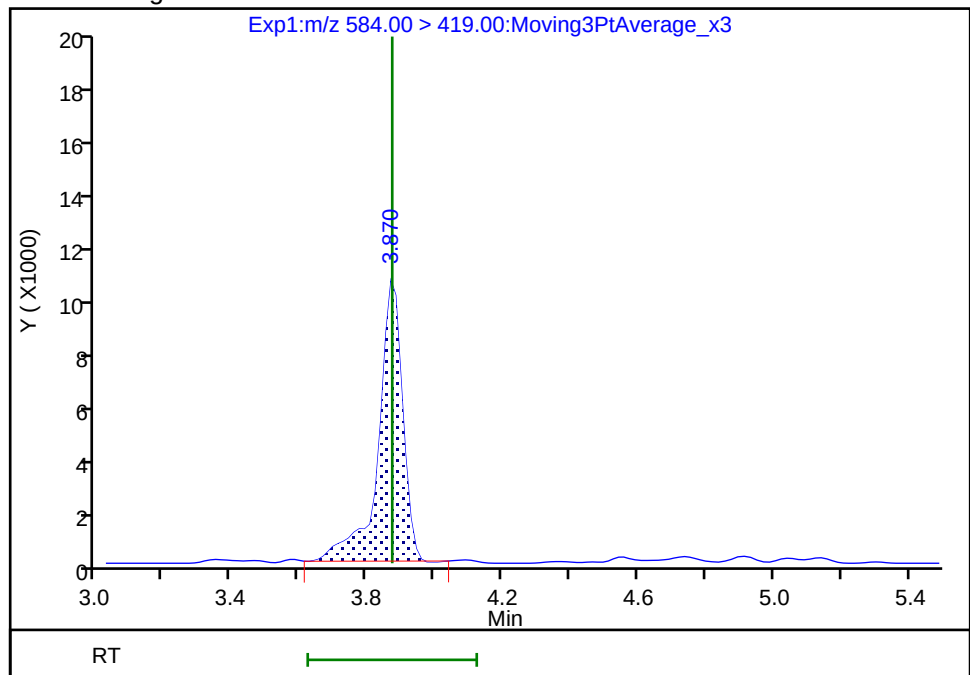
RT: 3.87
Area: 63971
Amount: 0.065631
Amount Units: ng/ml

Processing Integration Results



RT: 3.87
Area: 52843
Amount: 0.056042
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:35:39
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 521 of 790

10/24/2018

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_004.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 08-Oct-2018 15:49:26 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:00:33 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:36:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.501	0.003	0.538	6669674	2.50		100	8516	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.504	1.501	0.003	1.000	621289	0.2586		103	30.9	
D 3 13C5 PFPeA										
267.90 > 223.00	1.797	1.791	0.006	0.642	5918441	2.49		99.6	14994	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.793	0.004	1.000	611845	0.2545		102	61.5	
D 47 13C3 PFBS										
301.90 > 83.00	1.839	1.834	0.005	0.657	75016	2.31		99.2	486	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.839	1.834	0.005	1.000	786776	0.2280		103	466	
298.90 > 99.00	1.839	1.834	0.005	1.000	276778		2.84(1.35-4.05)	103	269	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.053	0.005	1.119	211192	0.2588		111	1720	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.058	2.055	0.003	0.735	798190	2.43		104	1133	
D 7 13C2 PFHxA										
315.00 > 270.00	2.099	2.091	0.008	0.750	6499107	2.53		101	10281	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.099	2.091	0.008	1.000	551522	0.2370		94.8	116	
313.00 > 119.00	2.089	2.091	-0.002	0.995	40872		13.49(6.96-20.87)	94.8	81.1	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.119	2.118	0.001	1.153	358565	0.2259		96.3	543	
349.00 > 99.00	2.119	2.118	0.001	1.153	171349		2.09(1.15-3.45)	96.3	550	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.194	-0.003	0.783	759903	2.38		95.2	2144	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.201	2.194	0.007	1.005	138206	0.2690		108	84.2	
D 9 13C4 PFHpA										
367.00 > 322.00	2.439	2.429	0.010	0.872	8163828	2.60		104	9302	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.439	2.431	0.008	1.000	877382	0.2486		99.4	184	
363.00 > 169.00	2.439	2.431	0.008	1.000	195410		4.49(2.17-6.52)	99.4	417	
D 11 18O2 PFHxS										
403.00 > 84.00	2.452	2.444	0.008	0.876	4549031	2.33		98.4	6857	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.452	2.446	0.006	1.000	516006	0.2175		95.6	588	
399.00 > 99.00	2.452	2.446	0.006	1.000	147167		3.51(1.90-5.70)	95.6	213	
76 DONA										
377.00 > 251.00	2.478	2.476	0.002	0.777	1381179	0.2445		104	3145	
377.00 > 85.00	2.478	2.476	0.002	0.777	570813		2.42(0.00-0.00)	104	560	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.782	2.771	0.011	0.994	788998	2.28		96.1	873	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.773	0.009	1.000	173033	0.2424		102	514	
* 62 13C2 PFOA										
415.00 > 370.00	2.798	2.800	-0.002		7306142	2.50			6973	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.800	-0.002	1.000	7179317	2.44		97.6	13478	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	851781	0.2762		110	53.1	
413.00 > 169.00	2.798	2.800	-0.002	1.000	277964		3.06(1.36-4.08)	110	497	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.805	0.009	0.882	519561	0.2416		102	558	
449.00 > 99.00	2.814	2.805	0.009	0.882	121423		4.28(1.84-5.53)	102	457	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.179	0.011	1.140	6851100	2.53		101	7198	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.179	0.011	1.140	5039938	2.45		103	3579	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.179	0.011	1.000	756751	0.2718		109	91.4	
463.00 > 169.00	3.190	3.179	0.011	1.000	131951		5.74(2.68-8.03)	109	441	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.190	3.179	0.011	1.000	498789	0.2193		94.5	338	
499.00 > 99.00	3.190	3.179	0.011	1.000	113165		4.41(2.04-6.12)	94.5	419	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.400	3.388	0.012	1.066	552215	0.2286		98.1	541	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.480	0.001	1.244	2805127	2.54		101	3439	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.496	3.485	0.011	1.004	840207	0.2522		101	1338	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.542	3.531	0.011	1.266	120933	2.66		111	516	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.542	3.531	0.011	1.110	351176	0.2604		109	894	R
549.00 > 99.00	3.542	3.531	0.011	1.110	65590		5.35(1.42-4.26)	109	432	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.542	3.531	0.011	1.000	168403	0.2238		93.5	794	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.539	0.003	1.266	7418813	2.56		103	7963	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.541	0.001	1.000	897262	0.2657		106	155	
513.00 > 169.00	3.542	3.541	0.001	1.000	59706		15.03(7.12-21.35)	106	99.1	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.693	0.004	1.321	2862555	2.40		96.0	3704	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.713	3.699	0.014	1.004	310263	0.2659		106	127	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.855	3.854	0.001	1.208	429960	0.2317		96.2	443	
599.00 > 99.00	3.869	3.854	0.015	1.213	90645		4.74(2.14-6.43)	96.2	323	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.861	0.008	1.383	2601331	2.59		104	2476	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.883	3.873	0.010	1.004	224781	0.2399		96.0	358	
D 30 13C2 PFUnA										
565.00 > 520.00	3.883	3.873	0.010	1.388	6778230	2.67		107	6830	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.883	3.873	0.010	1.000	631941	0.2520		101	152	
563.00 > 169.00	3.883	3.873	0.010	1.000	54493		11.60(5.24-15.72)	101	193	
35 MeFOSA										
512.00 > 169.00	3.960	3.960	0.0		149060	NC			396	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.040	4.030	0.010	1.266	681881	0.2390		101	2039	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.152	0.005		153750	NC			274	
D 36 13C2 PFDaA										
615.00 > 570.00	4.176	4.168	0.008	1.492	7450292	2.59		103	6164	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.176	4.173	0.003	1.000	744568	0.2452		98.1	184	
613.00 > 169.00	4.176	4.173	0.003	1.000	69454		10.72(4.68-14.05)	98.1	107	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.176	4.173	0.003	1.179	108376	0.2263		93.9	143	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.419	4.410	0.009	1.385	41097	0.2179		90.0	59.8	
699.00 > 99.00	4.419	4.410	0.009	1.385	77087		0.53(0.00-0.00)	90.0	251	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.450	4.441	0.009	1.066	621359	0.2716		109	374	
663.00 > 169.00	4.450	4.441	0.009	1.066	98977		6.28(3.09-9.27)	109	228	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.691	4.686	0.005	1.000	83945	0.2540		102	175	
713.00 > 219.00	4.691	4.686	0.005	1.000	54814		1.53(0.70-2.09)	102	175	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.691	4.686	0.005	1.676	5188334	2.39		95.4	10977	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.125	5.115	0.010	1.832	4754005	2.54		101	5507	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.125	5.118	0.007	1.000	490718	0.2642		106	146	
813.00 > 169.00	5.125	5.118	0.007	1.000	81807		6.00(2.77-8.32)	106	205	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.490	5.486	0.004	1.071	261686	0.2420		96.8	169	
913.00 > 169.00	5.490	5.486	0.004	1.071	49681		5.27(2.55-7.64)	96.8	244	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_004.d

Injection Date: 08-Oct-2018 15:49:26

Instrument ID: A9_NC

Lims ID: IC L3 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 12

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

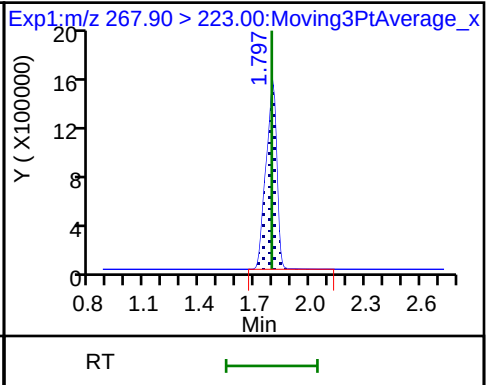
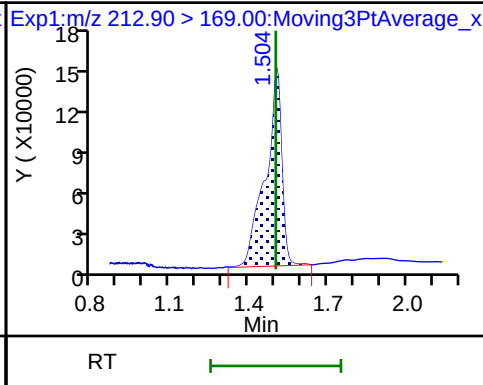
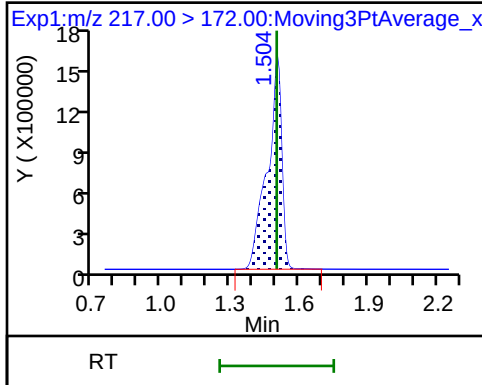
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

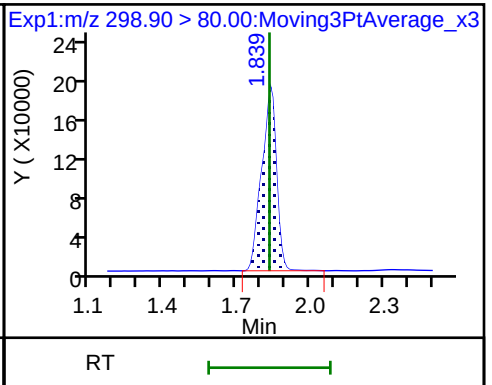
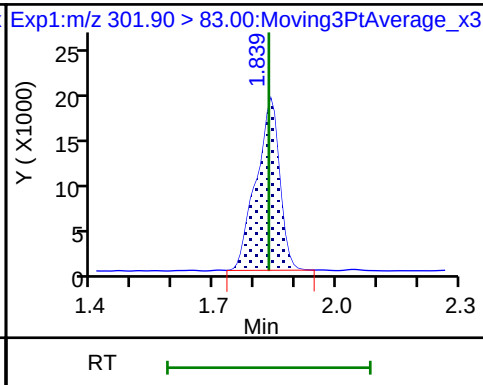
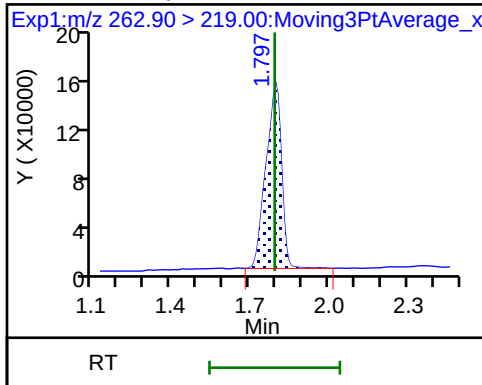
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

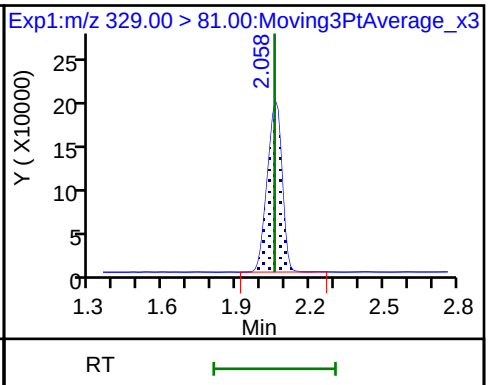
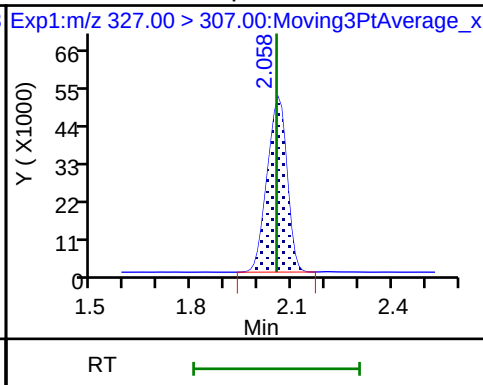
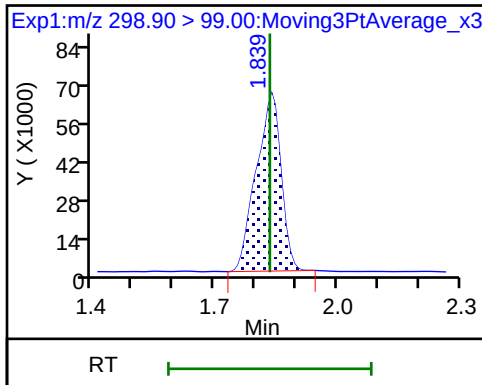
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

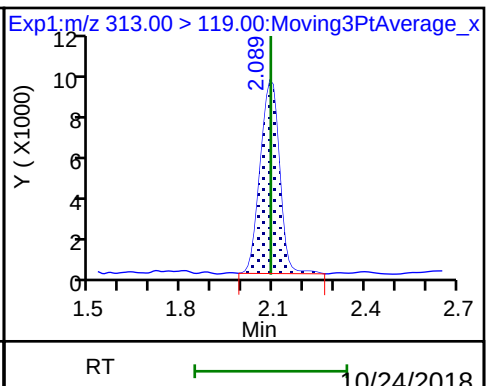
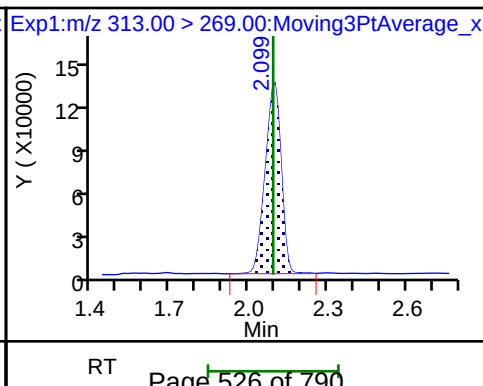
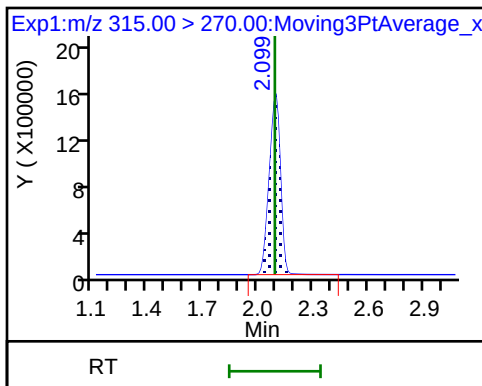
D 60 M2-4:2 FTS

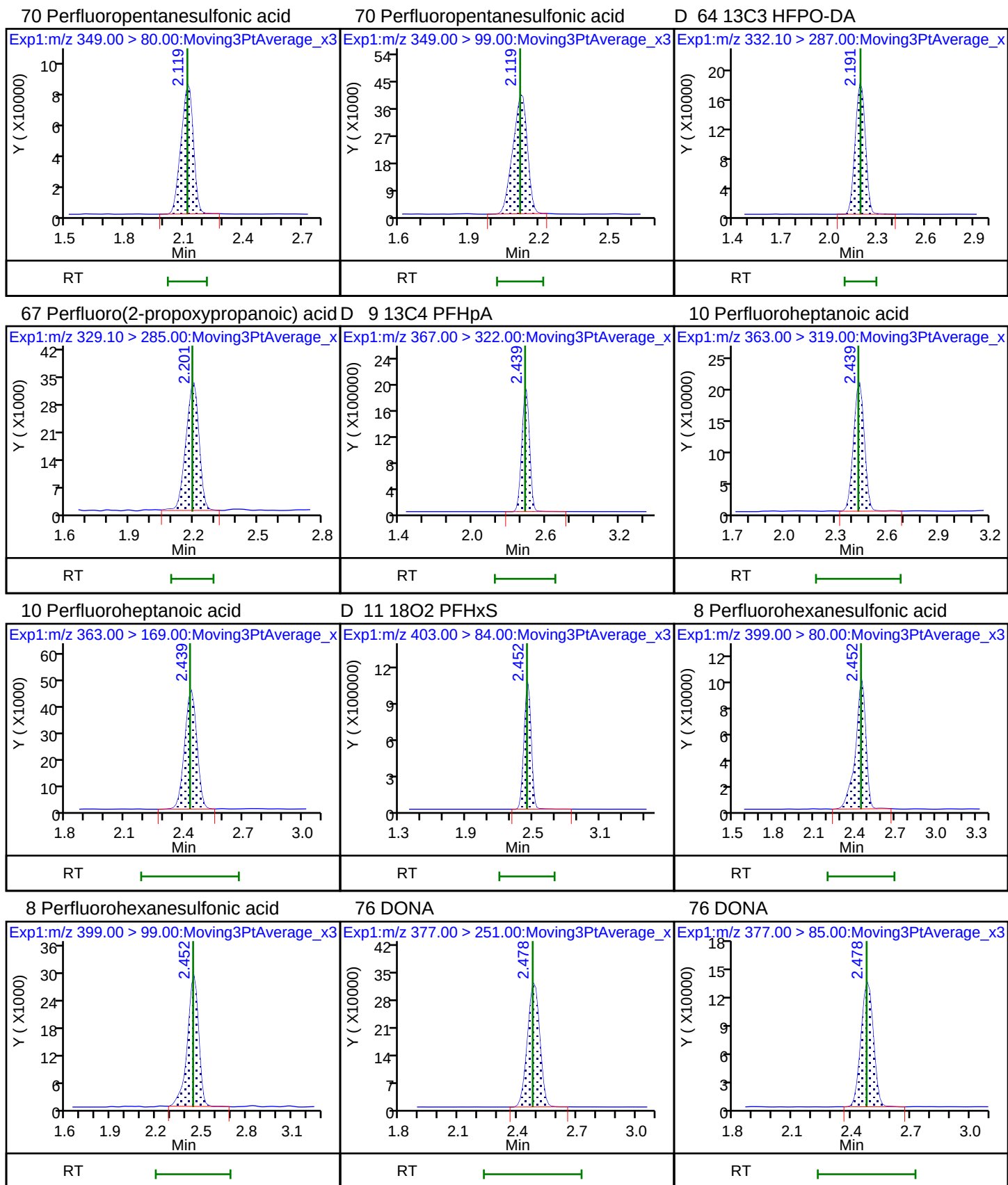


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

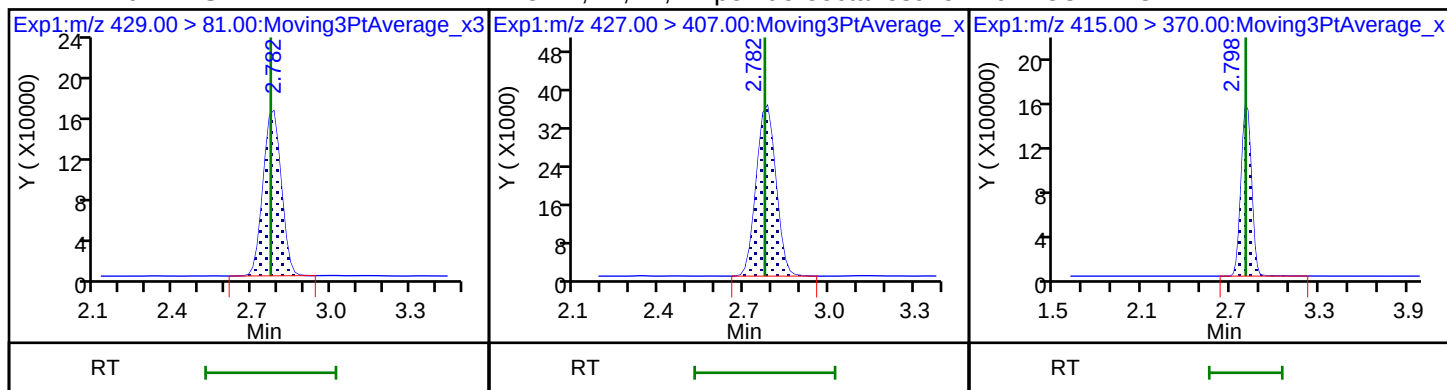




D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfonate

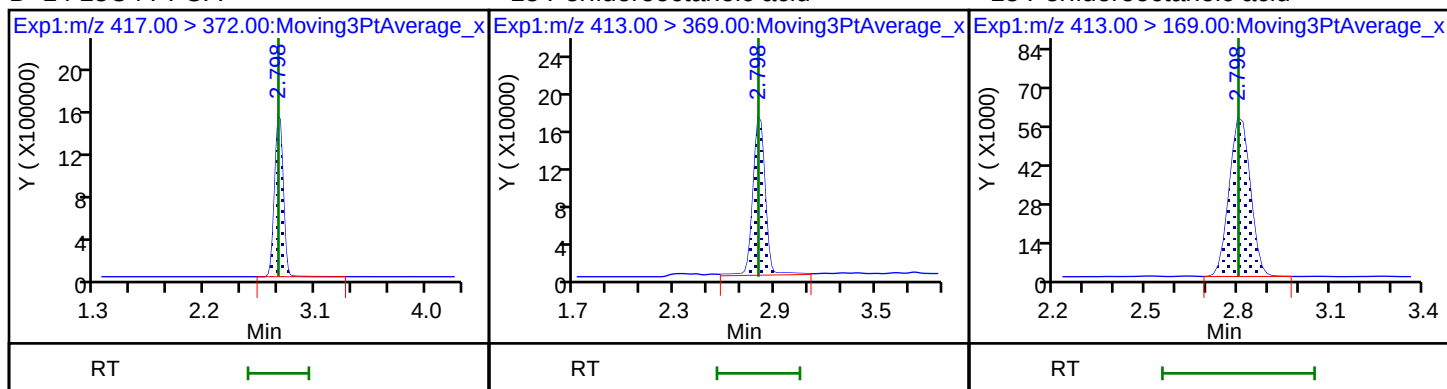
62 13C2 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

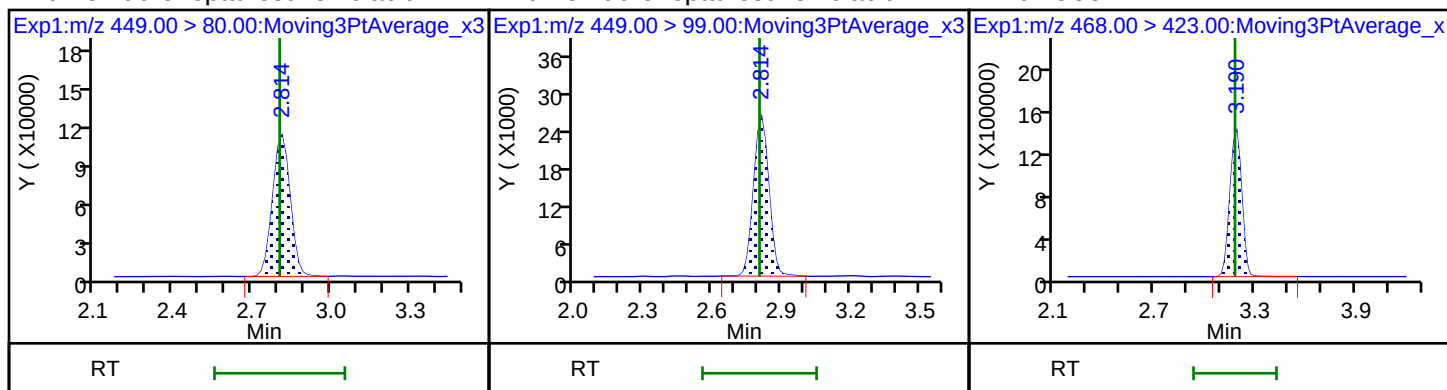
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

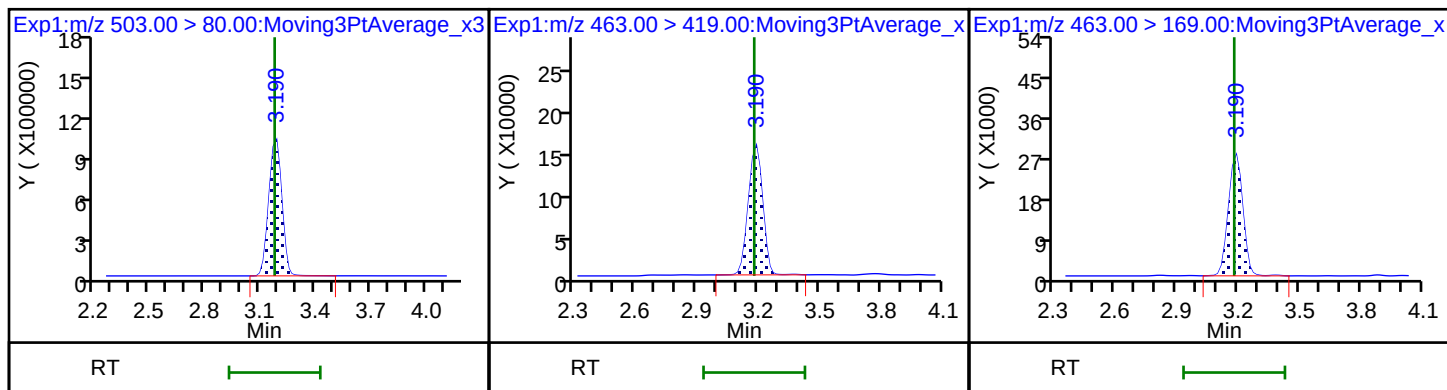
D 19 13C5 PFNA

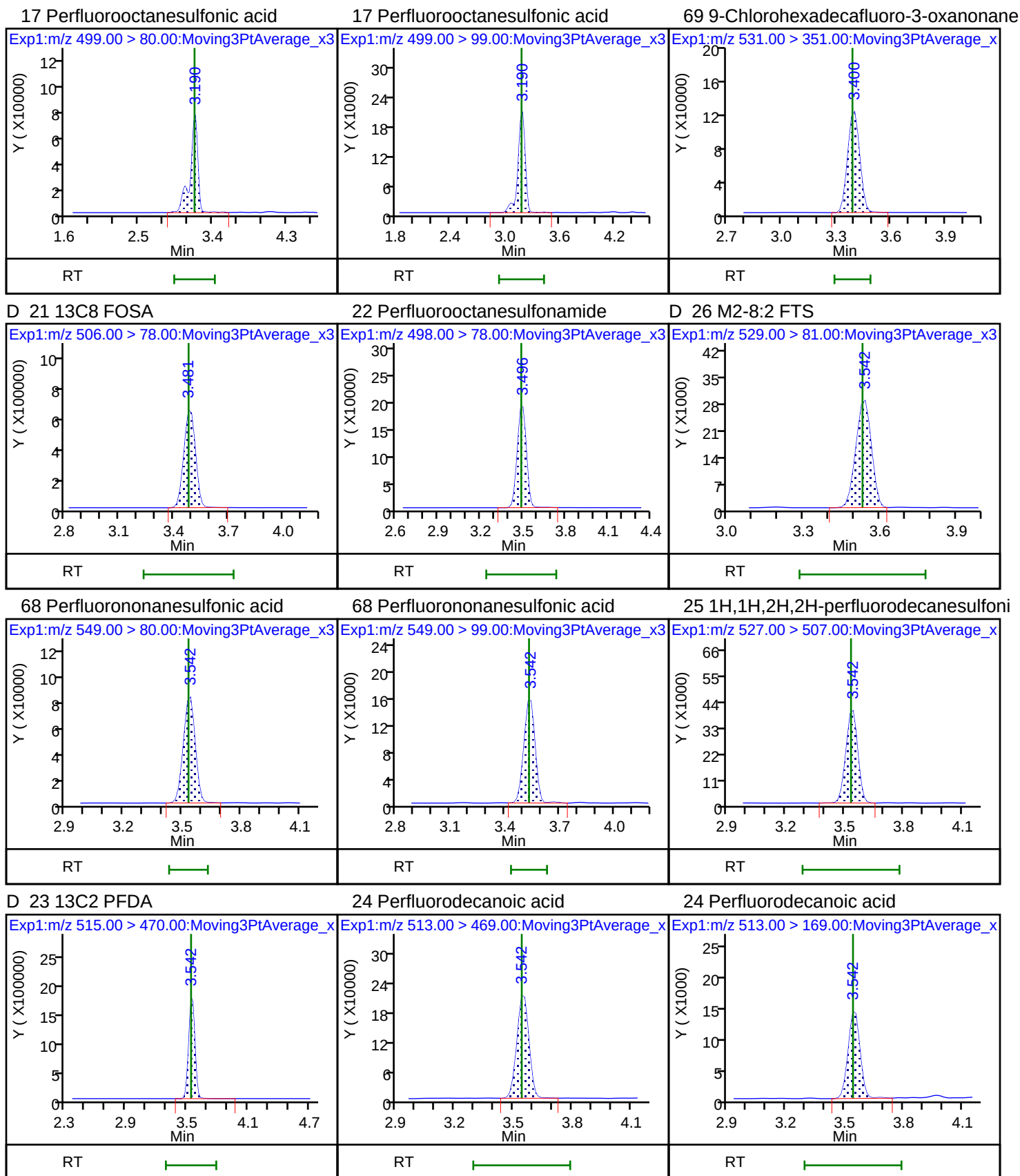


D 18 13C4 PFOS

20 Perfluorononanoic acid

20 Perfluorononanoic acid

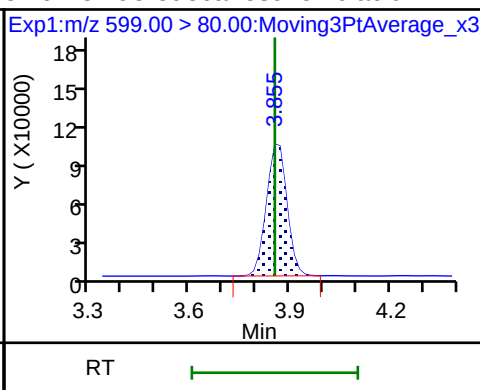
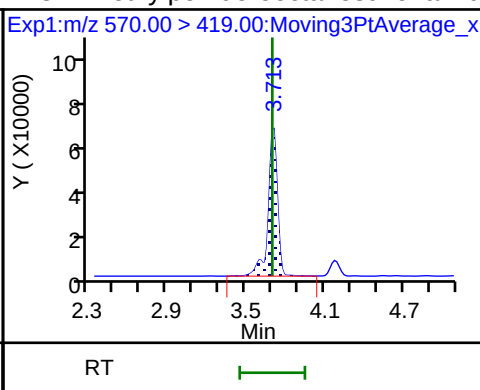
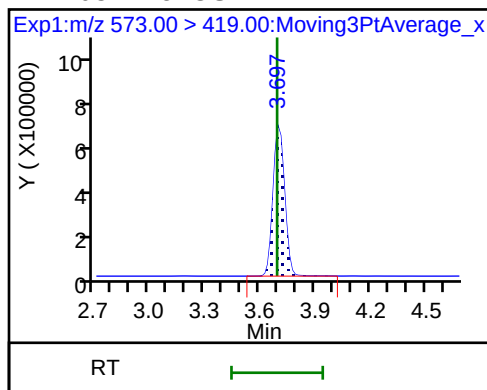




D 27 d3-NMeFOSAA

28 N-methylperfluorooctanesulfonamido

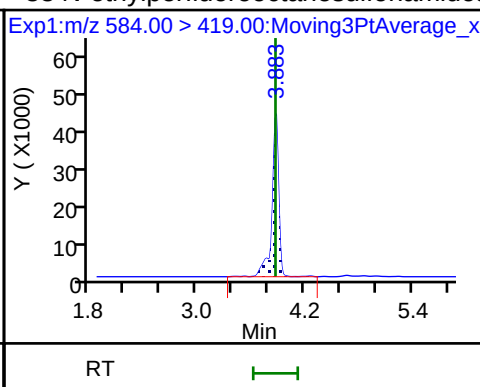
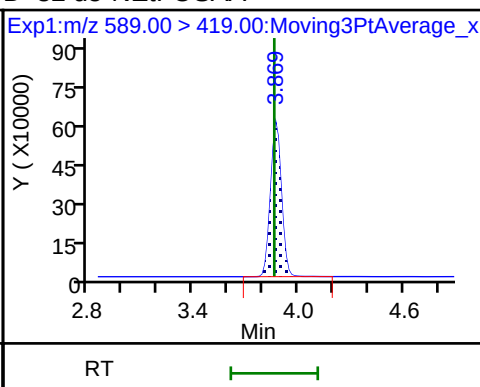
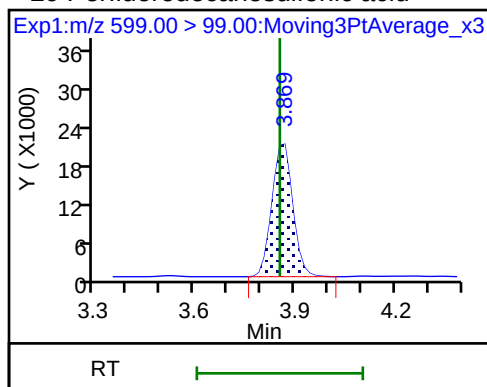
29 Perfluorodecanesulfonic acid



29 Perfluorodecanesulfonic acid

D 32 d5-NEtFOSAA

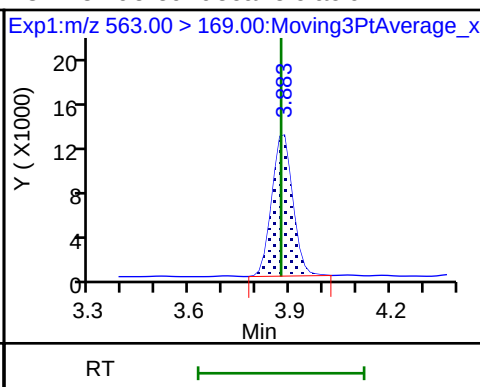
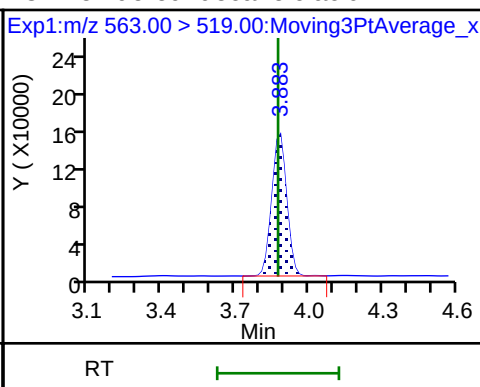
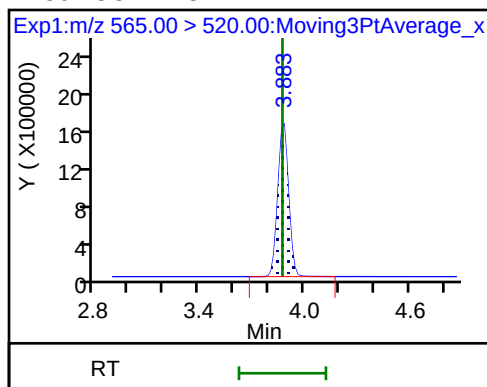
33 N-ethylperfluorooctanesulfonamido



D 30 13C2 PFUnA

31 Perfluoroundecanoic acid

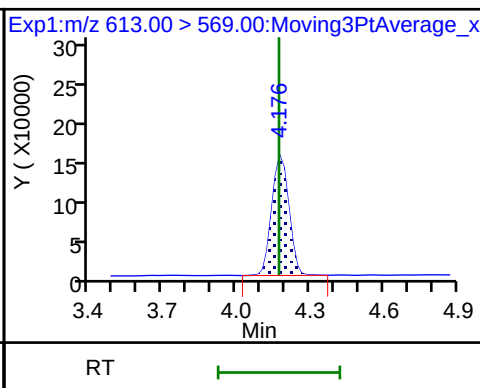
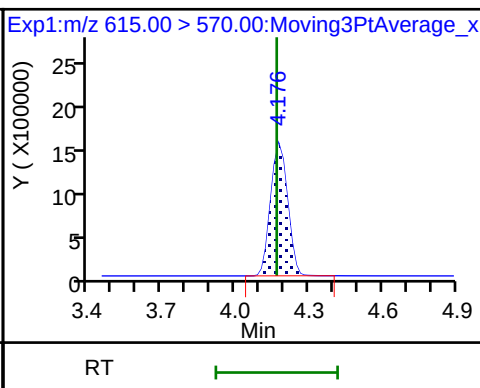
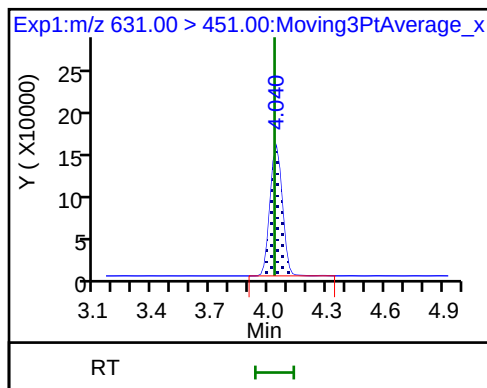
31 Perfluoroundecanoic acid



66 11-Chloroeicosafuoro-3-oxaundeca

D 36 13C2 PFDaA

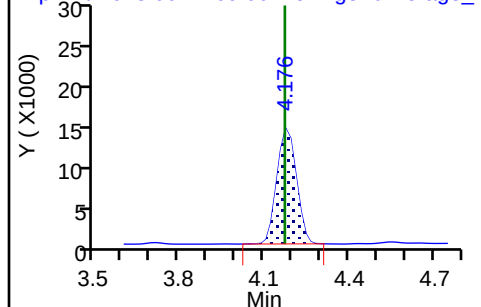
37 Perfluorododecanoic acid



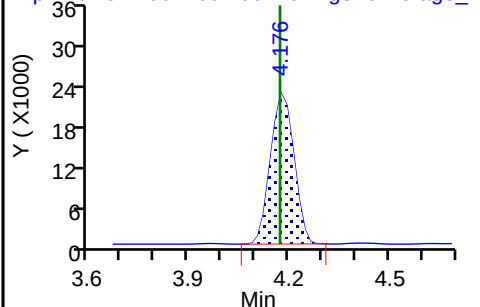
37 Perfluorododecanoic acid

74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF

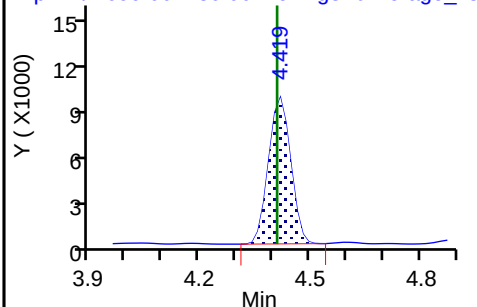
Exp1:m/z 613.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 627.00 > 607.00:Moving3PtAverage_x



Exp1:m/z 699.00 > 80.00:Moving3PtAverage_x3

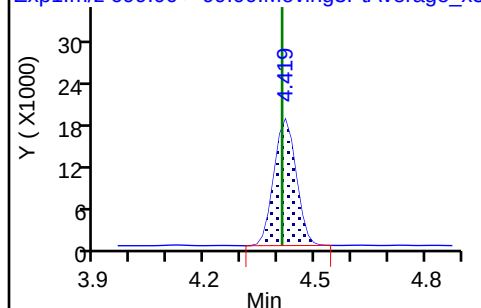


75 Perfluorododecanesulfonic acid (PF

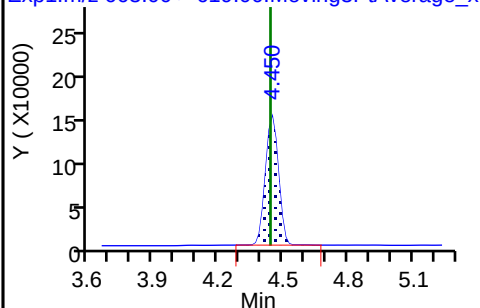
41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

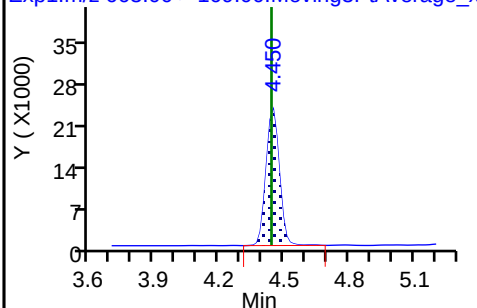
Exp1:m/z 699.00 > 99.00:Moving3PtAverage_x3



Exp1:m/z 663.00 > 619.00:Moving3PtAverage_x



Exp1:m/z 663.00 > 169.00:Moving3PtAverage_x

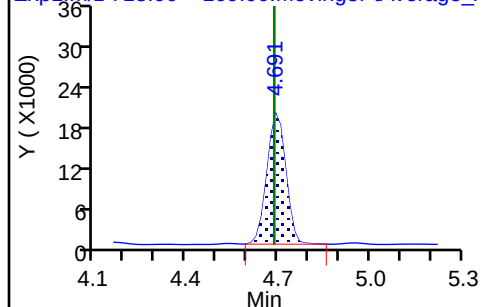


42 Perfluorotetradecanoic acid

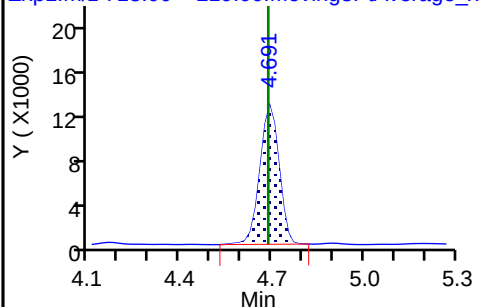
42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

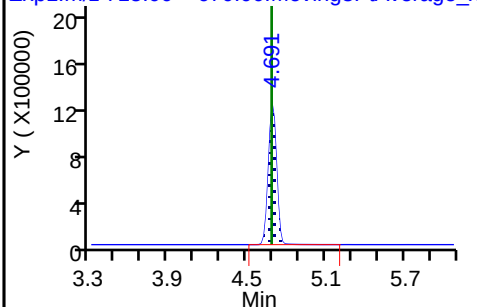
Exp1:m/z 713.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 713.00 > 219.00:Moving3PtAverage_x



Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x

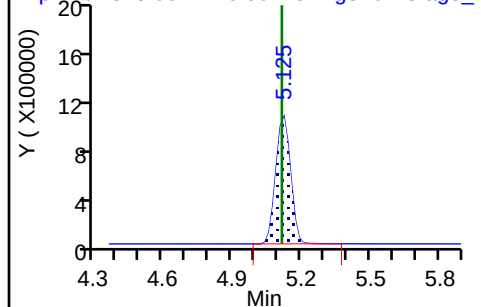


D 44 13C2 PFHxDA

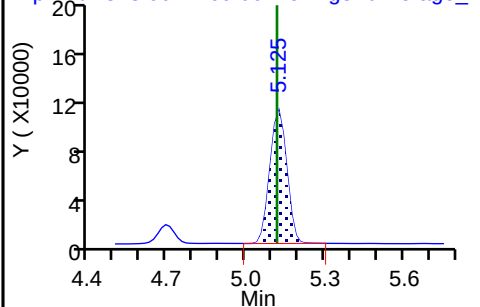
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

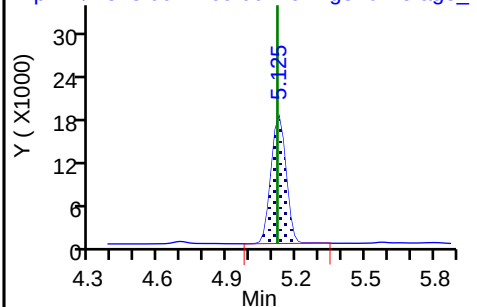
Exp1:m/z 815.00 > 770.00:Moving3PtAverage_x



Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x

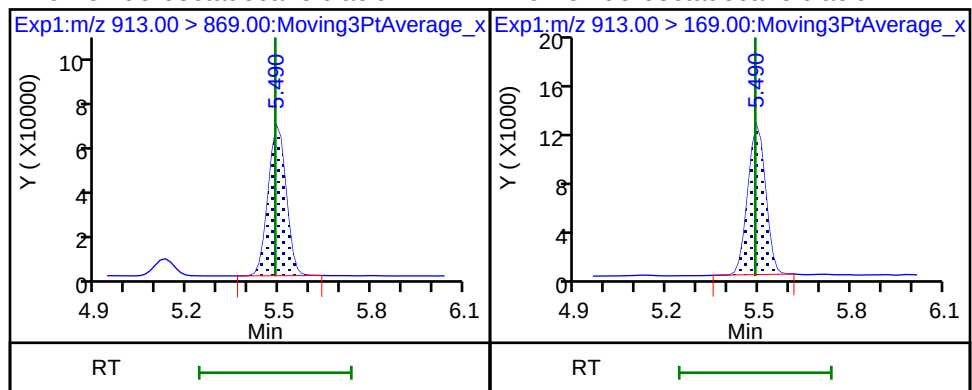


Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_005.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 08-Oct-2018 15:56:59 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:00:39 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: westendorfc

Date: 10-Oct-2018 15:00:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.499	1.501	-0.002	1.000	2425031	1.01		101	116	
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.501	-0.002	0.536	6646629	2.50		100	8510	
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.791	-0.002	0.639	5972721	2.52		101	8824	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.793	0.004	1.005	2370311	0.9771		97.7	228	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.834	-0.004	1.000	3209940	1.01		114	1359	
298.90 > 99.00	1.830	1.834	-0.004	1.000	1086216		2.96(1.35-4.05)	114	932	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.834	-0.004	0.654	69273	2.14		91.9	453	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.053	0.005	1.124	772013	1.02		110	4858	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.058	2.055	0.003	0.735	763112	2.34		100	1185	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.002	1.000	2291756	1.04		104	524	
313.00 > 119.00	2.089	2.091	-0.002	1.000	167794		13.66(6.96-20.87)	104	360	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.002	0.746	6167049	2.41		96.5	12587	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.119	2.118	0.001	1.158	1492866	1.02		109	1972	
349.00 > 99.00	2.119	2.118	0.001	1.158	700410		2.13(1.15-3.45)	109	1693	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.194	-0.003	0.783	818210	2.57		103	2030	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.191	2.194	-0.003	1.000	550701	1.00		99.5	372	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.429	-0.003	0.867	7815013	2.50		99.8	11567	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.431	-0.005	1.000	3393554	1.00		100	624	
363.00 > 169.00	2.426	2.431	-0.005	1.000	705004		4.81(2.17-6.52)	100	1272	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.444	-0.005	0.872	4581891	2.35		99.5	5930	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.446	-0.007	1.000	2067490	0.8652		95.1	1848	
399.00 > 99.00	2.439	2.446	-0.007	1.000	581389		3.56(1.90-5.70)	95.1	703	
76 DONA										
377.00 > 251.00	2.478	2.476	0.002	0.781	5525589	0.9844		105	6376	
377.00 > 85.00	2.478	2.476	0.002	0.781	2309735		2.39(0.00-0.00)	105	2130	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.766	2.771	-0.005	0.989	810886	2.35		99.1	1160	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.773	-0.007	1.000	689049	0.9392		99.1	1497	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	3302838	1.06		106	195	
413.00 > 169.00	2.798	2.800	-0.002	1.000	1102226		3.00(1.36-4.08)	106	1208	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.800	-0.002	1.000	7237928	2.47		98.8	6461	
* 62 13C2 PFOA										
415.00 > 370.00	2.798	2.800	-0.002		7276086	2.50			9667	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.805	-0.007	0.882	2038091	0.9539		100	2053	
449.00 > 99.00	2.798	2.805	-0.007	0.882	521778		3.91(1.84-5.53)	100	1201	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.179	-0.008	1.000	2760185	1.00		99.8	319	
463.00 > 169.00	3.171	3.179	-0.008	1.000	497221		5.55(2.68-8.03)	99.8	1216	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.171	3.179	-0.008	1.000	2030195	0.8981		96.8	1055	
499.00 > 99.00	3.171	3.179	-0.008	1.000	483476		4.20(2.04-6.12)	96.8	1087	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.179	-0.008	1.133	6804709	2.52		101	5107	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.179	-0.008	1.133	5008202	2.45		102	3381	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.388	-0.005	1.067	2380191	0.99		106	1692	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	2784760	2.53		101	7471	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.485	-0.005	1.000	3535811	1.07		107	2983	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	629053	0.9695		101	2121	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.527	3.531	-0.004	1.112	1272431	0.9495		98.9	2245	R
549.00 > 99.00	3.527	3.531	-0.004	1.112	237914		5.35(1.42-4.26)	98.9	1300	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	104296	2.31		96.2	573	
D 23 13C2 PFDA										
515.00 > 470.00	3.541	3.539	0.002	1.266	7343804	2.55		102	5840	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.541	3.541	0.0	1.000	3425261	1.02		102	574	
513.00 > 169.00	3.541	3.541	0.0	1.000	234981		14.58(7.12-21.35)	102	314	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.693	0.004	1.321	2941803	2.48		99.1	2158	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.697	3.699	-0.002	1.000	1141616	0.9521		95.2	396	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.854	3.854	0.0	1.215	1722740	0.9344		96.9	1894	
599.00 > 99.00	3.854	3.854	0.0	1.215	366935		4.69(2.14-6.43)	96.9	1315	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.854	3.861	-0.007	1.378	2482383	2.48		99.3	3231	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.873	-0.004	1.000	2313221	1.02		102	543	
563.00 > 169.00	3.869	3.873	-0.004	1.000	188267		12.29(5.24-15.72)	102	782	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.873	-0.004	1.383	6148756	2.43		97.2	7265	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.869	3.873	-0.004	1.004	893949	1.00		100.0	2014	
35 MeFOSA										
512.00 > 169.00	3.960	3.960	0.0		591347	NC			778	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.030	-0.007	1.268	2631247	0.9280		98.5	3267	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.152	0.005		615128	NC			398	
D 36 13C2 PFDoA										
615.00 > 570.00	4.176	4.168	0.008	1.492	6990353	2.44		97.5	7389	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.176	4.173	0.003	1.184	426832	1.03		107	533	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.176	4.173	0.003	1.000	3116420	1.09		109	719	
613.00 > 169.00	4.176	4.173	0.003	1.000	305867		10.19(4.68-14.05)	109	478	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.403	4.410	-0.007	1.389	170631	0.9103		94.0	200	
699.00 > 99.00	4.403	4.410	-0.007	1.389	349135		0.49(0.00-0.00)	94.0	864	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.434	4.441	-0.007	1.062	2169014	1.01		101	1044	
663.00 > 169.00	4.434	4.441	-0.007	1.062	369728		5.87(3.09-9.27)	101	698	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.691	4.686	0.005	1.677	5409315	2.50		99.9	10908	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.691	4.686	0.005	1.000	331752	0.9627		96.3	732	
713.00 > 219.00	4.675	4.686	-0.011	0.997	216554		1.53(0.70-2.09)	96.3	631	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.108	5.115	-0.007	1.826	4545647	2.44		97.4	6669	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.108	5.118	-0.010	1.000	1656158	1.00		100	488	
813.00 > 169.00	5.108	5.118	-0.010	1.000	300433		5.51(2.77-8.32)	100	592	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.491	5.486	0.005	1.075	1044451	1.01		101	542	
913.00 > 169.00	5.477	5.486	-0.009	1.072	205684		5.08(2.55-7.64)	101	785	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_005.d

Injection Date: 08-Oct-2018 15:56:59

Instrument ID: A9_NC

Lims ID: IC L4 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

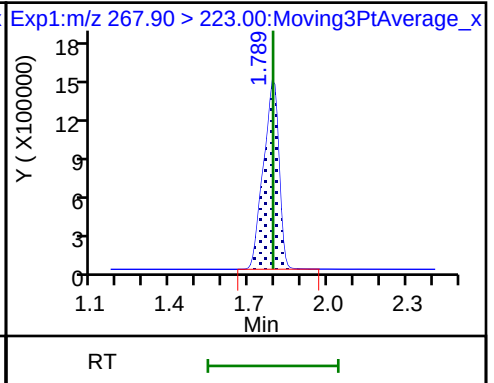
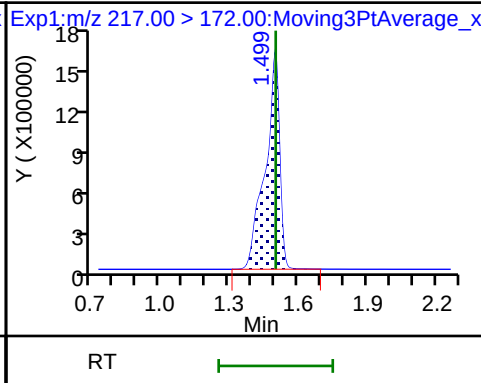
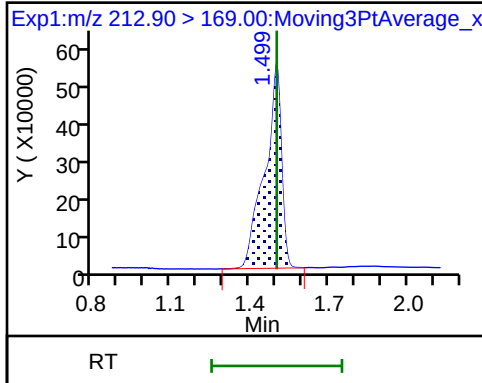
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

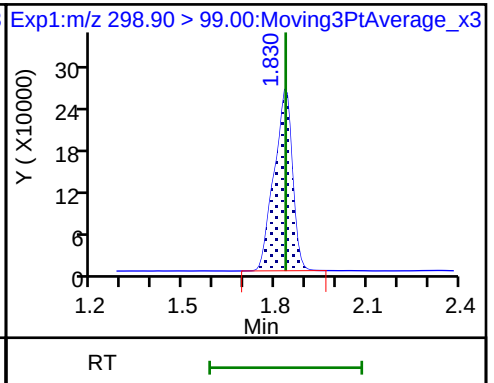
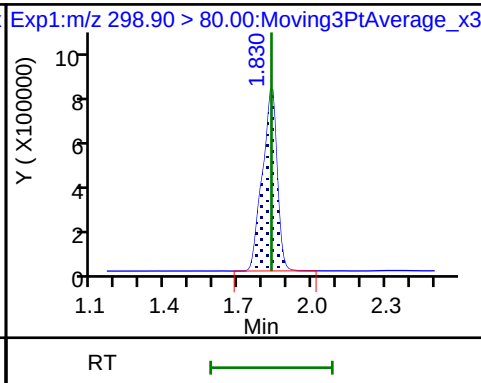
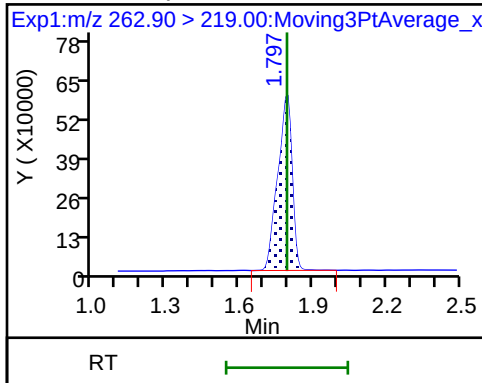
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

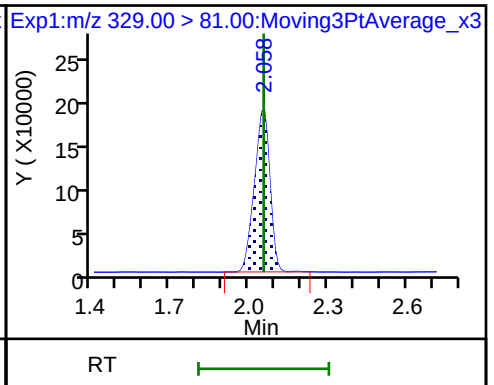
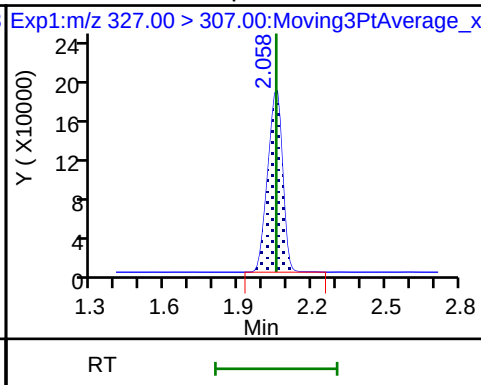
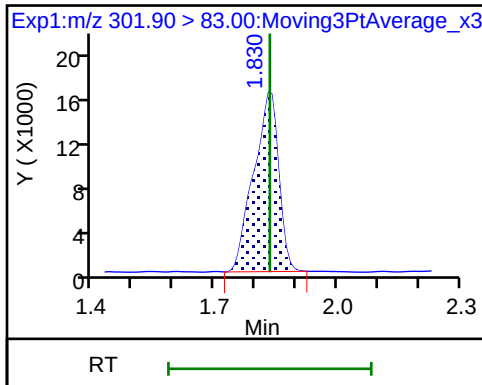
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

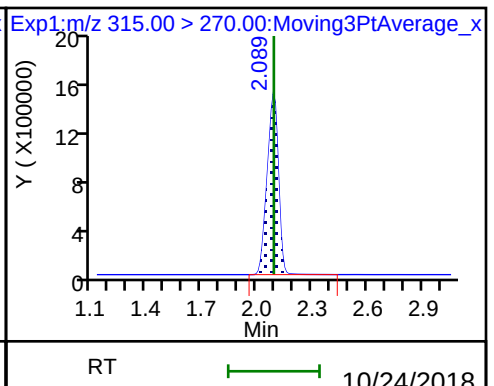
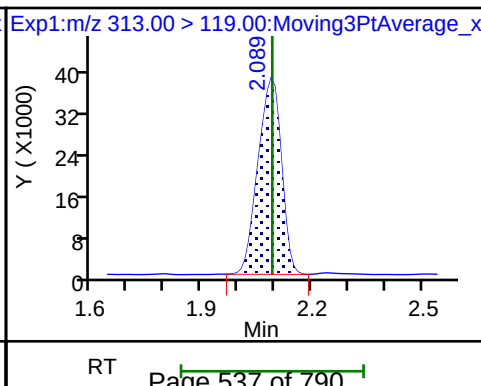
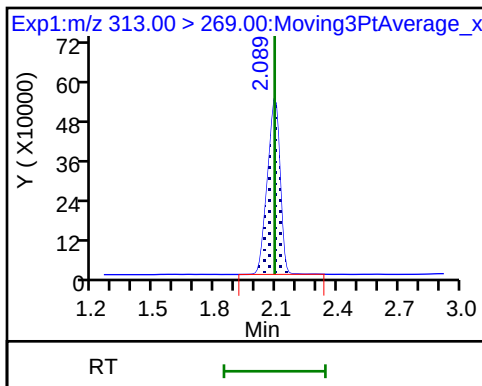
D 60 M2-4:2 FTS



6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

D 7 13C2 PFHxA

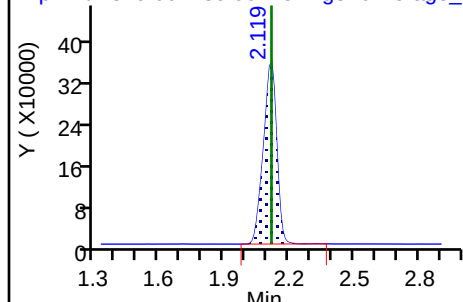


70 Perfluoropentanesulfonic acid

70 Perfluoropentanesulfonic acid

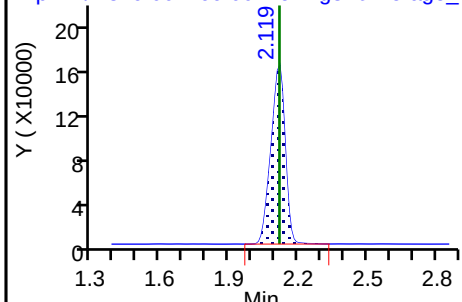
D 64 13C3 HFPO-DA

Exp1:m/z 349.00 > 80.00:Moving3PtAverage_x3



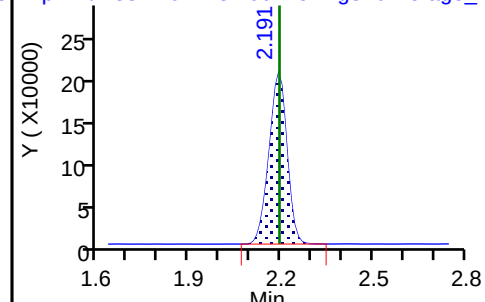
RT

Exp1:m/z 349.00 > 99.00:Moving3PtAverage_x3



RT

Exp1:m/z 332.10 > 287.00:Moving3PtAverage_x3

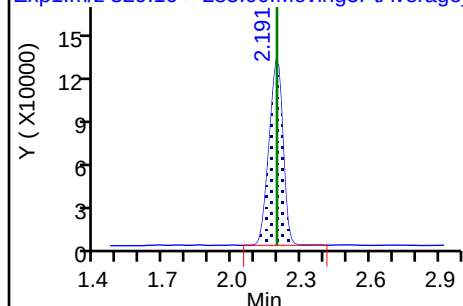


RT

67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

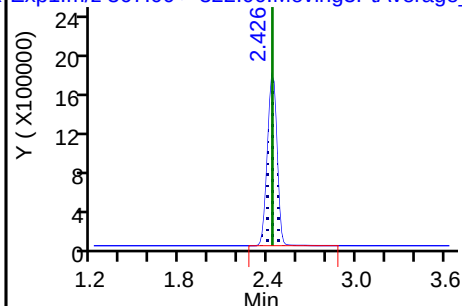
10 Perfluoroheptanoic acid

Exp1:m/z 329.10 > 285.00:Moving3PtAverage_x3



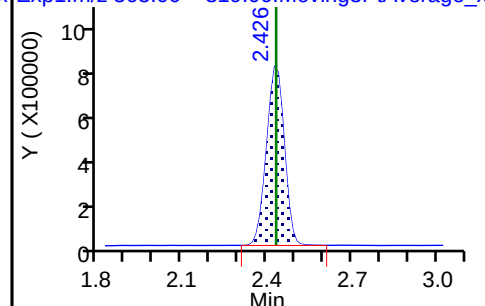
RT

Exp1:m/z 367.00 > 322.00:Moving3PtAverage_x3



RT

Exp1:m/z 363.00 > 319.00:Moving3PtAverage_x3



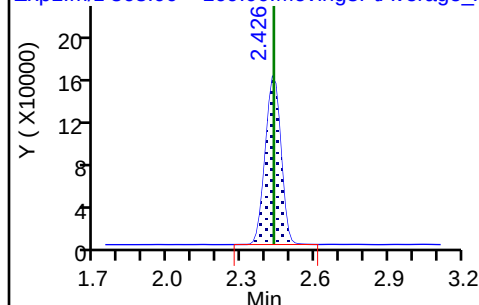
RT

10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

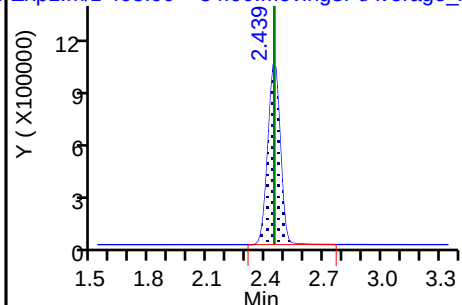
8 Perfluorohexanesulfonic acid

Exp1:m/z 363.00 > 169.00:Moving3PtAverage_x3



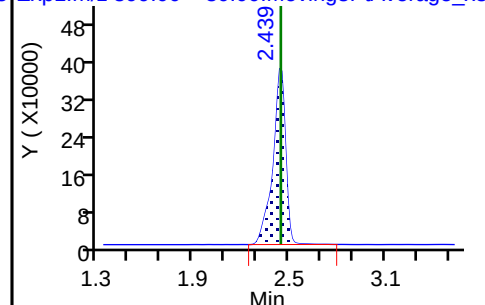
RT

Exp1:m/z 403.00 > 84.00:Moving3PtAverage_x3



RT

Exp1:m/z 399.00 > 80.00:Moving3PtAverage_x3



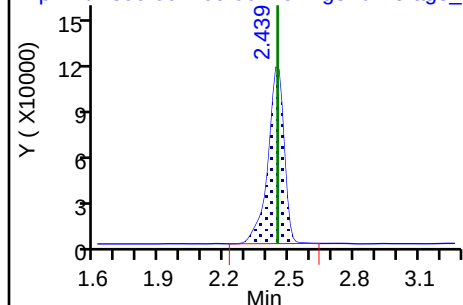
RT

8 Perfluorohexanesulfonic acid

76 DONA

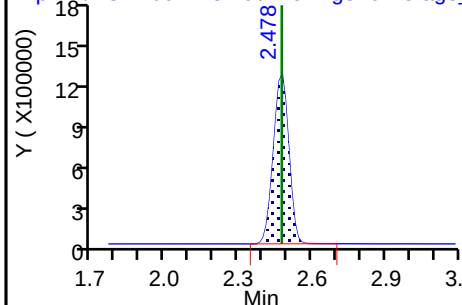
76 DONA

Exp1:m/z 399.00 > 99.00:Moving3PtAverage_x3



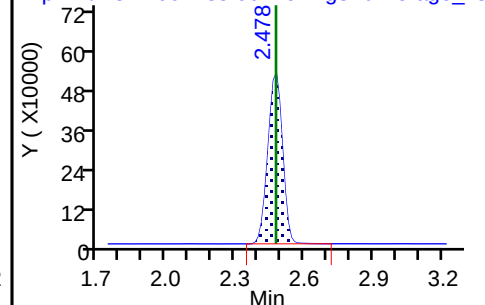
RT

Exp1:m/z 377.00 > 251.00:Moving3PtAverage_x3



RT

Exp1:m/z 377.00 > 85.00:Moving3PtAverage_x3

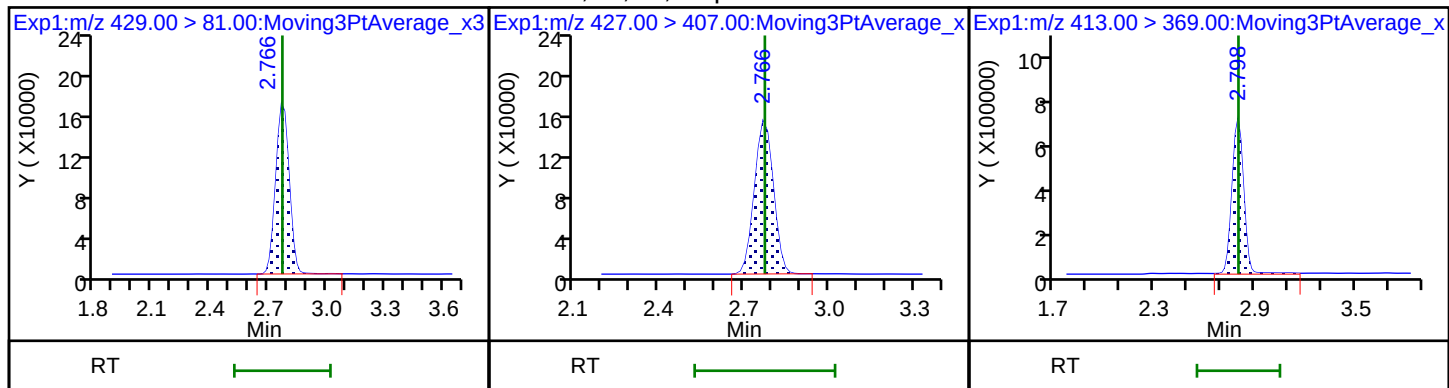


RT

D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfonyl

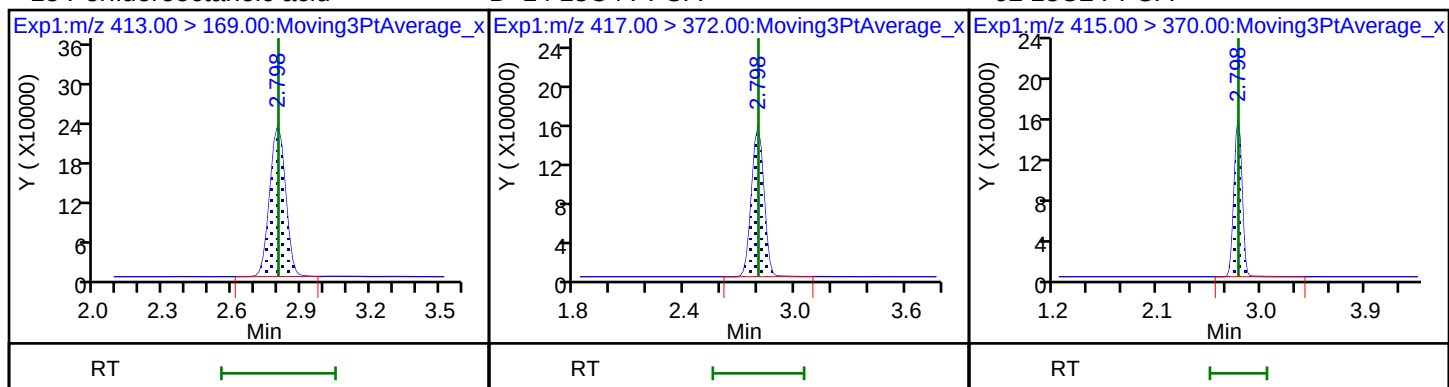
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

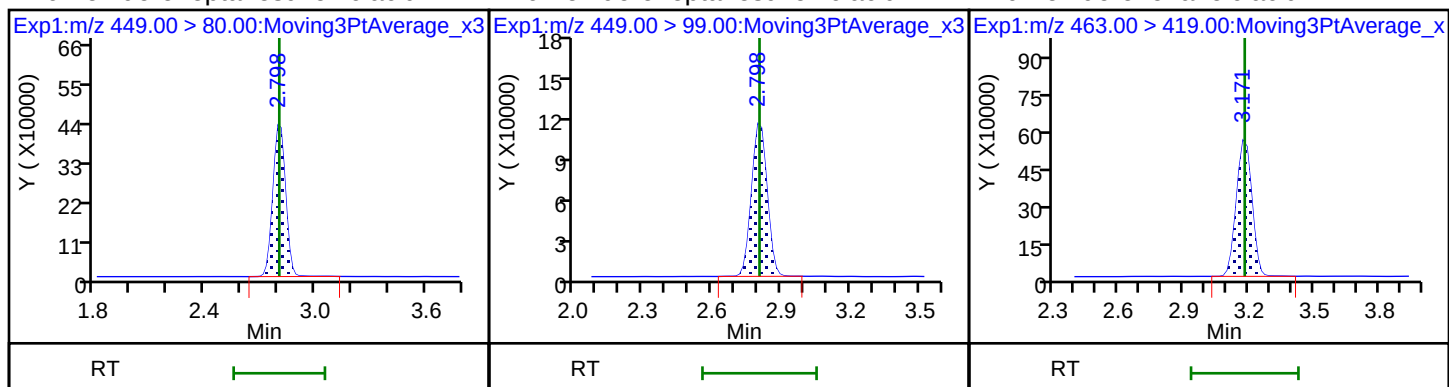
* 62 13C2 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

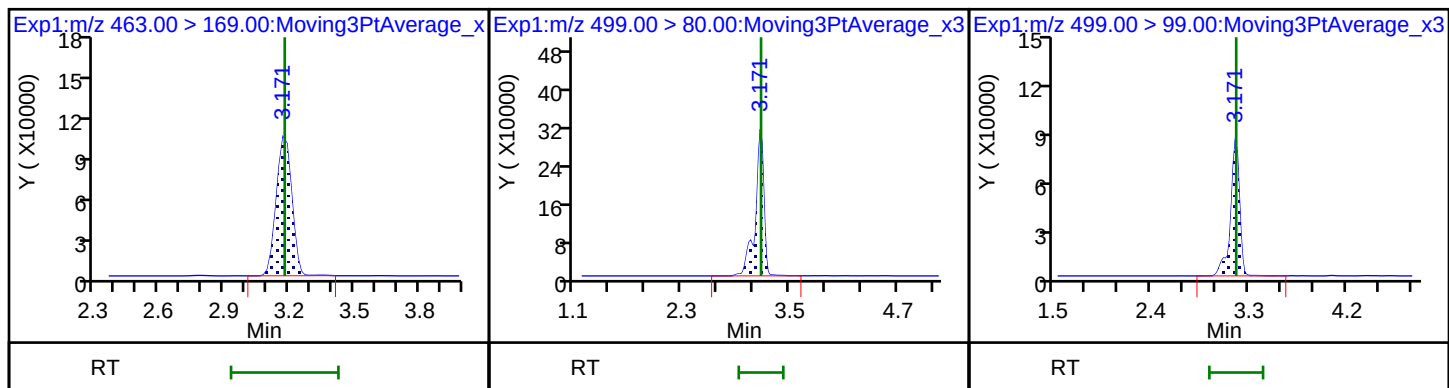
20 Perfluorononanoic acid



20 Perfluorononanoic acid

17 Perfluorooctanesulfonic acid

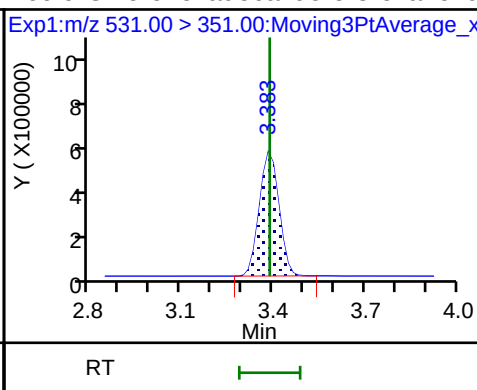
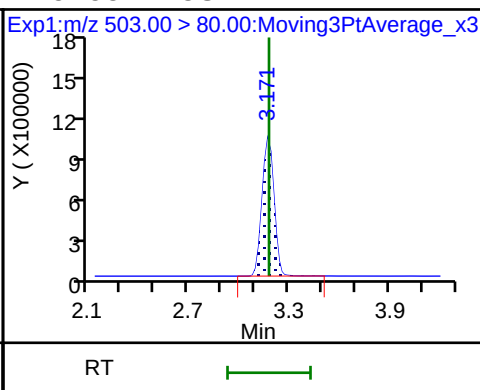
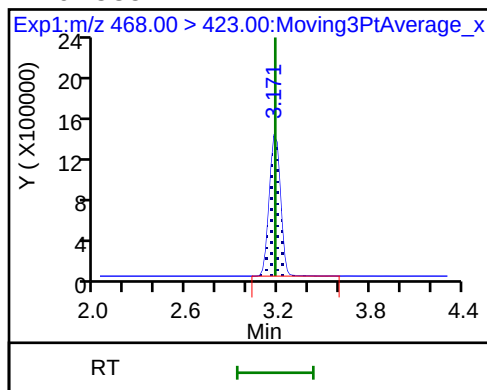
17 Perfluorooctanesulfonic acid



D 19 13C5 PFNA

D 18 13C4 PFOS

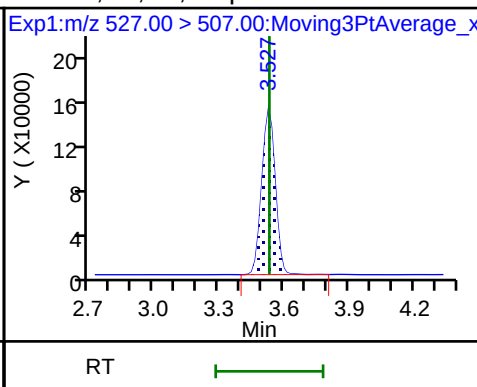
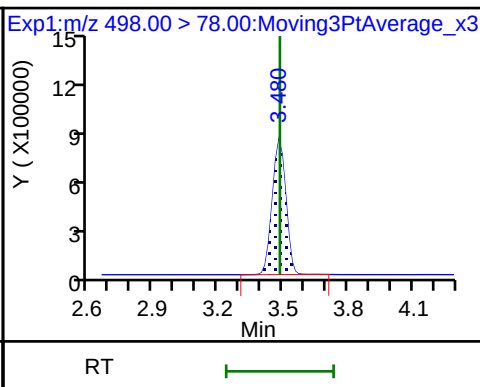
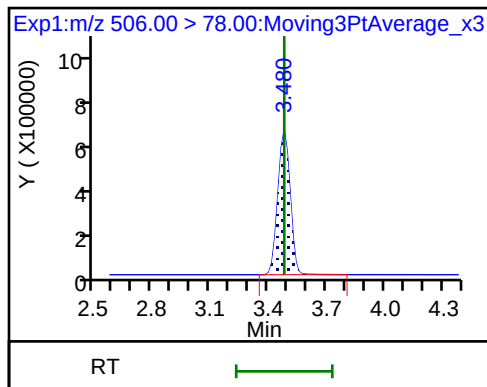
69 9-Chlorohexadecafluoro-3-oxanonane



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

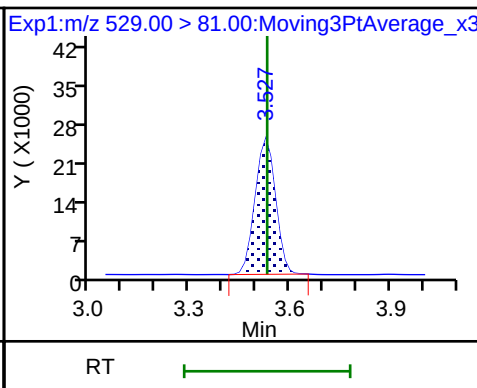
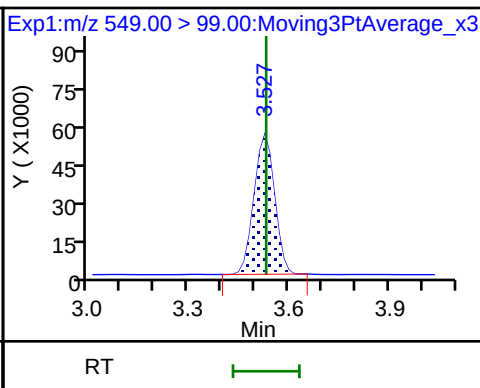
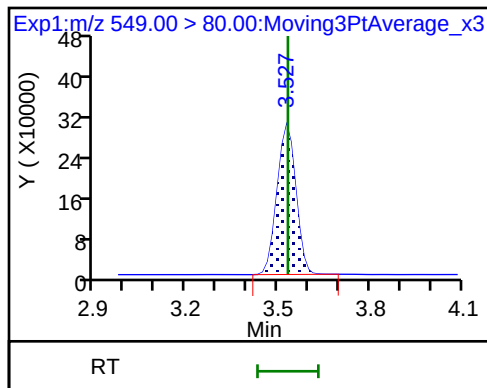
25 1H,1H,2H,2H-perfluorodecanesulfoni



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

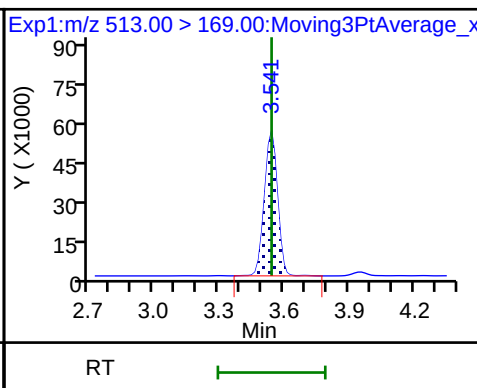
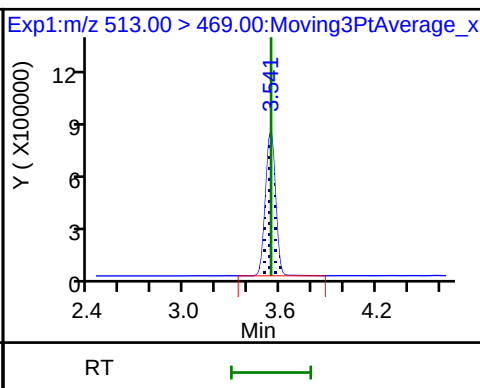
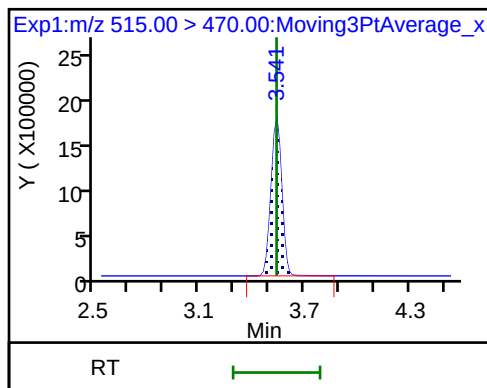
D 26 M2-8:2 FTS



D 23 13C2 PFDA

24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

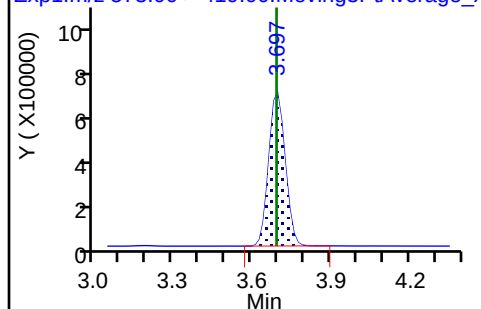


D 27 d3-NMeFOSAA

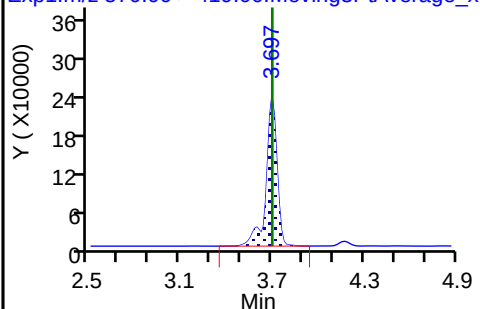
28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

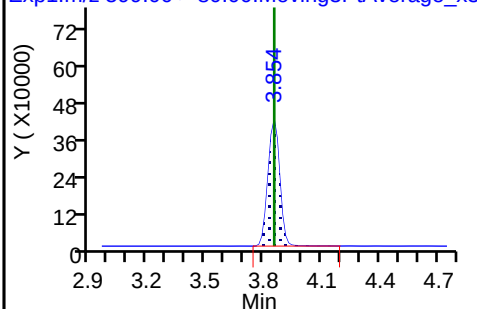
Exp1:m/z 573.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3

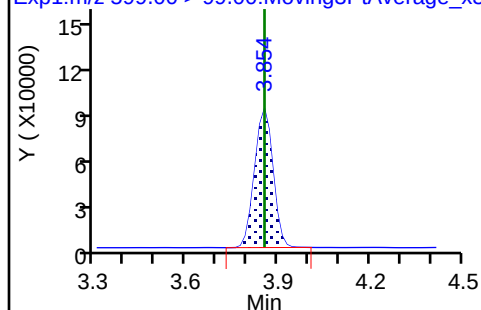


29 Perfluorodecanesulfonic acid

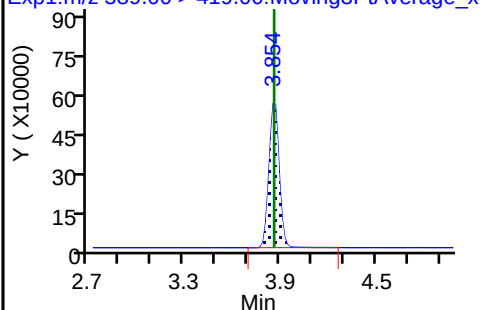
D 32 d5-NEtFOSAA

31 Perfluoroundecanoic acid

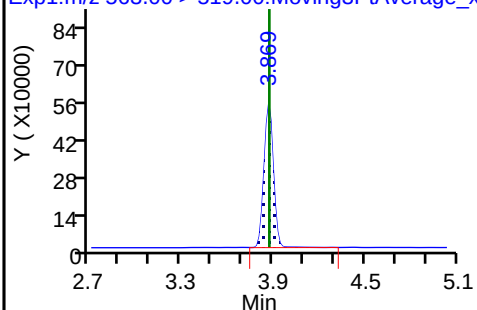
Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x

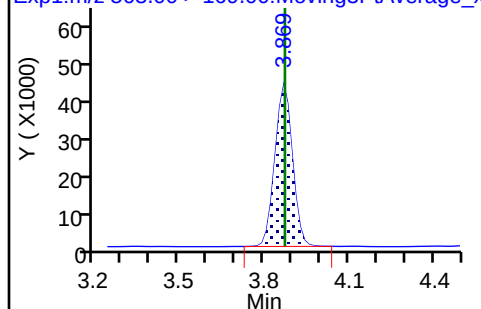


31 Perfluoroundecanoic acid

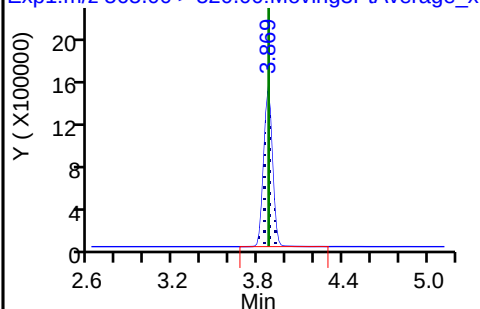
D 30 13C2 PFUnA

33 N-ethylperfluorooctanesulfonamidoa

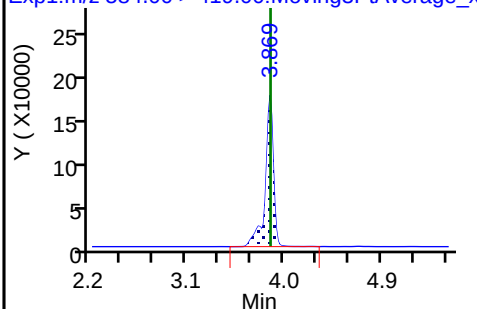
Exp1:m/z 563.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 565.00 > 520.00:Moving3PtAverage_x



Exp1:m/z 584.00 > 419.00:Moving3PtAverage_x

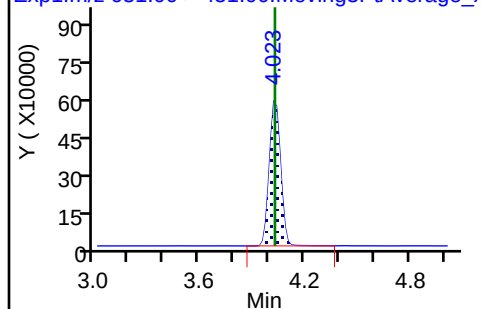


66 11-Chloroeicosafluoro-3-oxaundeca

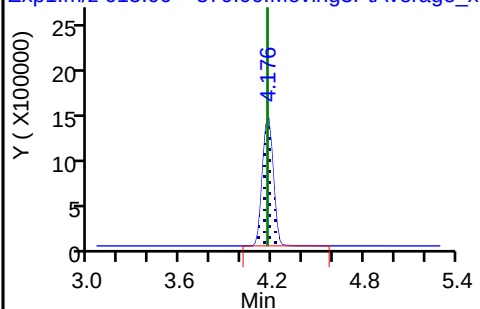
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo

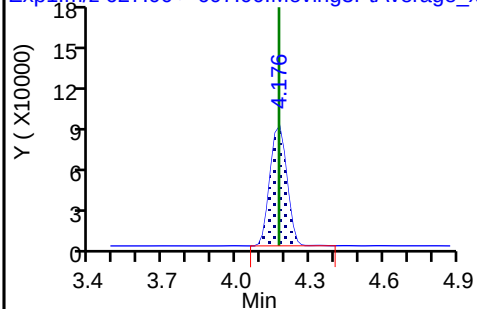
Exp1:m/z 631.00 > 451.00:Moving3PtAverage_x

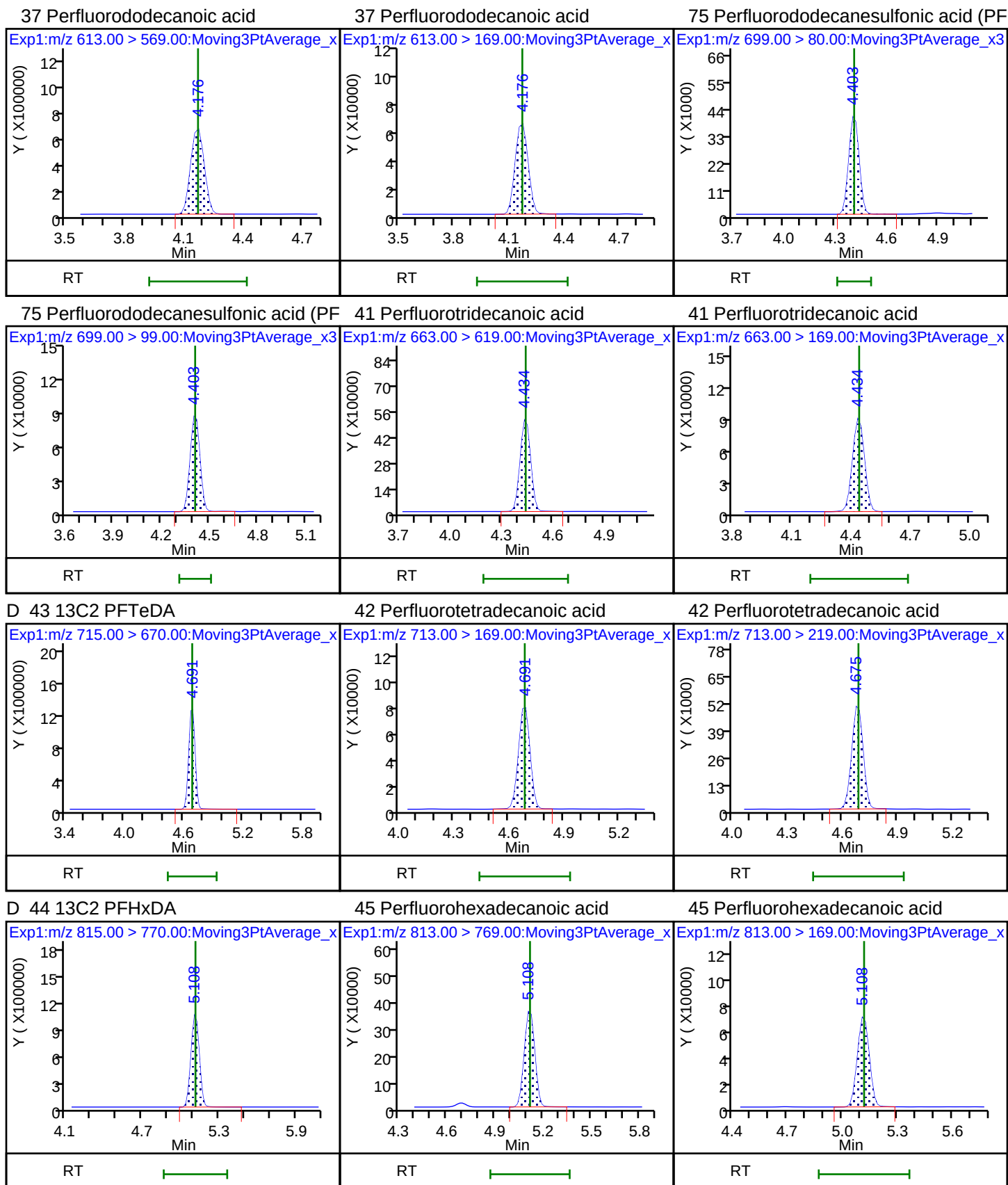


Exp1:m/z 615.00 > 570.00:Moving3PtAverage_x



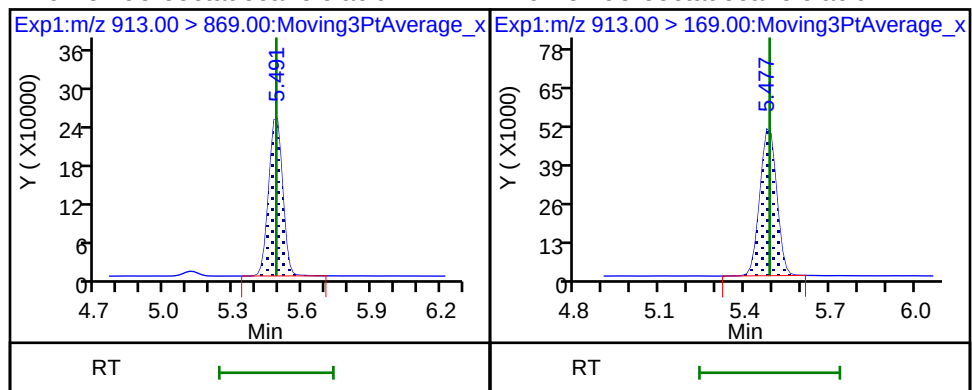
Exp1:m/z 627.00 > 607.00:Moving3PtAverage_x





46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_006.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 08-Oct-2018 16:04:27 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:00:45 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: westendorfc

Date: 10-Oct-2018 12:00:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.501	-0.002	0.536	6474644	2.42		96.9	10581	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.499	1.501	-0.002	1.000	6148804	2.64		105	305	
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.791	-0.002	0.639	5797753	2.44		97.4	10140	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.793	-0.004	1.000	5974398	2.54		101	562	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.834	-0.004	0.654	75427	2.31		99.6	668	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.834	-0.004	1.000	7708891	2.22		101	2936	
298.90 > 99.00	1.830	1.834	-0.004	1.000	2681553		2.87(1.35-4.05)	101	1921	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.053	-0.005	1.119	1970065	2.40		103	4501	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.048	2.055	-0.007	0.732	780074	2.37		102	1073	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.091	-0.003	0.746	6455245	2.51		100	11206	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.088	2.091	-0.003	1.000	5814524	2.52		101	1237	
313.00 > 119.00	2.088	2.091	-0.003	1.000	407925		14.25(6.96-20.87)	101	726	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.119	2.118	0.001	1.158	3706443	2.32		99.1	4007	
349.00 > 99.00	2.119	2.118	0.001	1.158	1712295		2.16(1.15-3.45)	99.1	3320	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.194	-0.003	0.783	743699	2.33		93.0	2250	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.191	2.194	-0.003	1.000	1338114	2.66		106	897	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.429	-0.003	0.867	7646945	2.43		97.2	11167	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.431	-0.005	1.000	8212810	2.48		99.4	1468	
363.00 > 169.00	2.426	2.431	-0.005	1.000	1797170		4.57(2.17-6.52)	99.4	3118	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.444	-0.005	0.872	4537178	2.32		98.0	6994	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.446	-0.007	1.000	5039680	2.13		93.6	3194	
399.00 > 99.00	2.439	2.446	-0.007	1.000	1431157		3.52(1.90-5.70)	93.6	1462	
76 DONA										
377.00 > 251.00	2.478	2.476	0.002	0.781	12997505	2.52		107	12174	
377.00 > 85.00	2.478	2.476	0.002	0.781	5932394		2.19(0.00-0.00)	107	4100	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.766	2.771	-0.005	0.989	849965	2.45		103	1089	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.773	-0.007	1.000	1739691	2.26		95.5	3252	
* 62 13C2 PFOA										
415.00 > 370.00	2.798	2.800	-0.002		7316021	2.50			6531	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.800	-0.002	1.000	7146611	2.42		97.0	7063	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	7661508	2.50		99.7	470	
413.00 > 169.00	2.798	2.800	-0.002	1.000	2557139		3.00(1.36-4.08)	99.7	1911	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.805	-0.007	0.882	5055659	2.58		108	4441	
449.00 > 99.00	2.798	2.805	-0.007	0.882	1175961		4.30(1.84-5.53)	108	2195	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.179	-0.008	1.133	6887328	2.54		101	5329	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.179	-0.008	1.133	4601493	2.24		93.6	3256	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.179	-0.008	1.000	6908313	2.47		98.7	730	
463.00 > 169.00	3.171	3.179	-0.008	1.000	1289262		5.36(2.68-8.03)	98.7	2448	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.171	3.179	-0.008	1.000	5186075	2.50		108	2485	
499.00 > 99.00	3.171	3.179	-0.008	1.000	1195363		4.34(2.04-6.12)	108	1950	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.388	-0.005	1.067	5616724	2.55		109	3171	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	2674606	2.41		96.6	4879	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.485	-0.005	1.000	8523670	2.68		107	5172	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	103603	2.28		95.1	550	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.527	3.531	-0.004	1.112	3096967	2.52		105	3244	R
549.00 > 99.00	3.527	3.531	-0.004	1.112	509404		6.08(1.42-4.26)	105	1751	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	1455462	2.26		94.3	3573	
D 23 13C2 PFDA										
515.00 > 470.00	3.527	3.539	-0.012	1.261	6906677	2.38		95.3	5980	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.541	3.541	0.0	1.004	8083233	2.57		103	1175	
513.00 > 169.00	3.527	3.541	-0.014	1.000	556195		14.53(7.12-21.35)	103	466	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.682	3.693	-0.011	1.316	2997272	2.51		100	1689	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.696	3.699	-0.003	1.004	2924705	2.39		95.8	4381	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.854	3.854	0.0	1.215	4424576	2.61		108	3192	
599.00 > 99.00	3.854	3.854	0.0	1.215	881469		5.02(2.14-6.43)	108	2321	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.854	3.861	-0.007	1.378	2437316	2.43		97.0	2719	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.869	3.873	-0.004	1.004	2201823	2.51		100	2513	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.873	-0.004	1.383	6180061	2.43		97.1	6774	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.873	-0.004	1.000	5470259	2.39		95.7	1117	
563.00 > 169.00	3.869	3.873	-0.004	1.000	502547		10.89(5.24-15.72)	95.7	1731	
35 MeFOSA										
512.00 > 169.00	3.959	3.960	-0.001		1444259	NC			903	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.030	-0.007	1.268	6942172	2.66		113	9183	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.152	-0.013		1566011	NC			512	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.168	-0.011	1.486	7254326	2.52		101	4469	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.173	-0.016	1.000	7386115	2.50		99.9	1559	
613.00 > 169.00	4.157	4.173	-0.016	1.000	771577		9.57(4.68-14.05)	99.9	1283	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.173	-0.016	1.179	1064813	2.60		108	1006	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.403	4.410	-0.007	1.389	430170	2.50		103	708	
699.00 > 99.00	4.403	4.410	-0.007	1.389	806590		0.53(0.00-0.00)	103	1573	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.434	4.441	-0.007	1.067	5541583	2.49		99.5	2956	
663.00 > 169.00	4.434	4.441	-0.007	1.067	872736		6.35(3.09-9.27)	99.5	1560	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.675	4.686	-0.011	1.000	893689	2.62		105	1681	
713.00 > 219.00	4.675	4.686	-0.011	1.000	605141		1.48(0.70-2.09)	105	1731	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.675	4.686	-0.011	1.671	5344466	2.45		98.2	8178	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.108	5.115	-0.007	1.826	4650762	2.48		99.2	7703	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.108	5.118	-0.010	1.000	4392884	2.64		106	1187	
813.00 > 169.00	5.108	5.118	-0.010	1.000	760002		5.78(2.77-8.32)	106	1514	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.477	5.486	-0.009	1.072	2638460	2.49		99.8	1296	
913.00 > 169.00	5.477	5.486	-0.009	1.072	507237		5.20(2.55-7.64)	99.8	1557	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_006.d

Injection Date: 08-Oct-2018 16:04:27

Instrument ID: A9_NC

Lims ID: IC L5 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

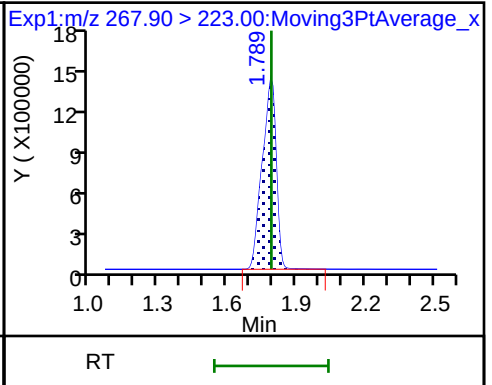
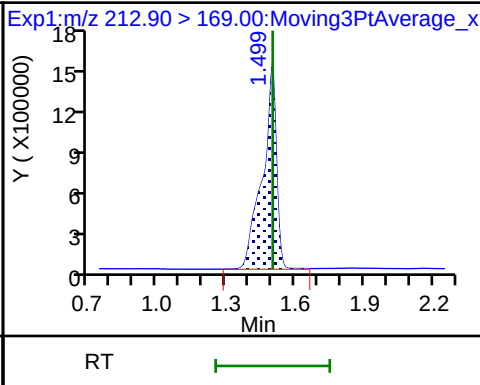
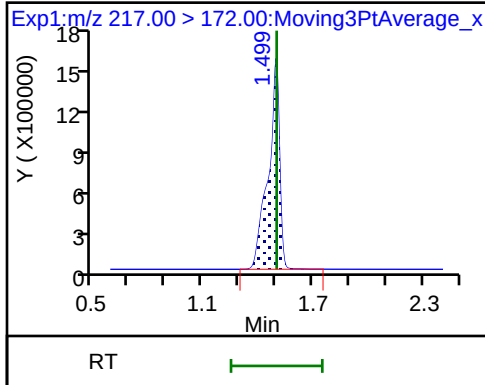
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

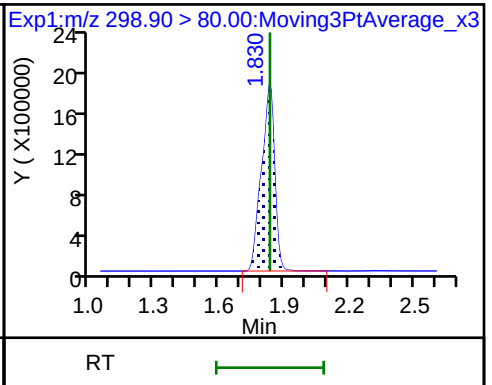
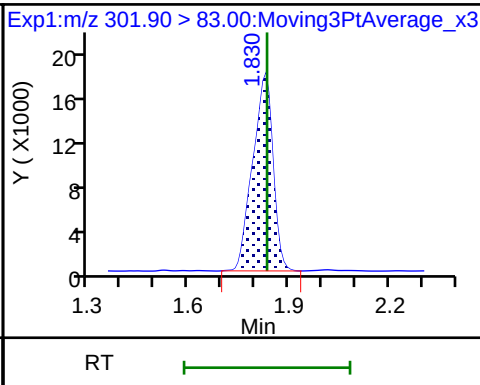
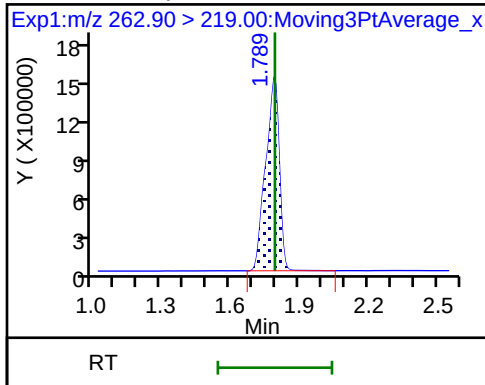
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

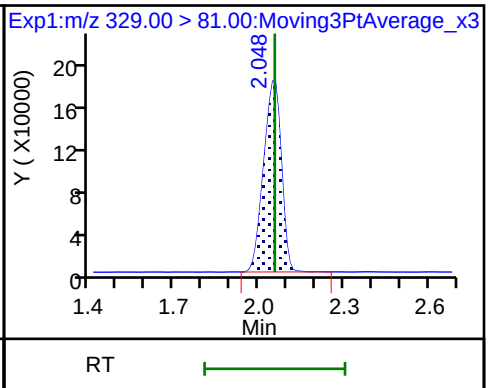
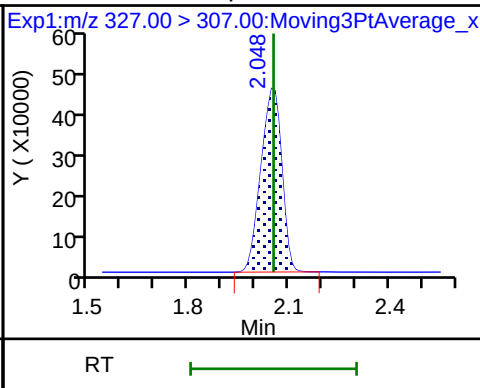
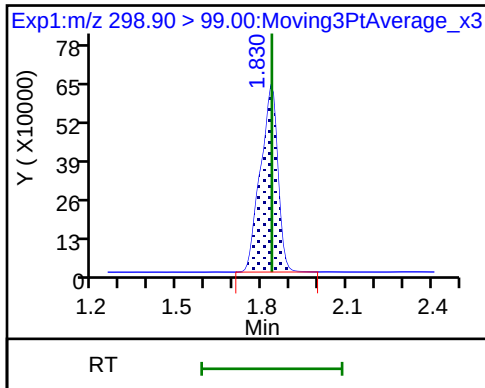
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

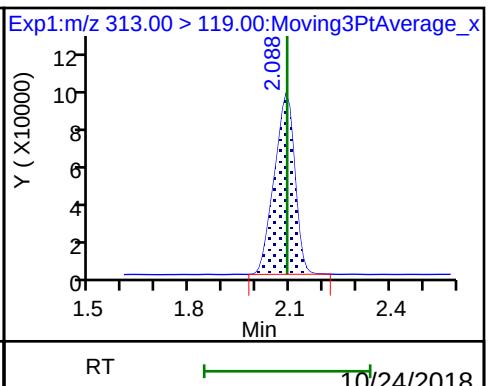
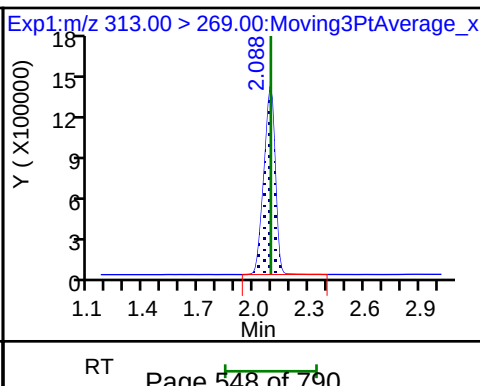
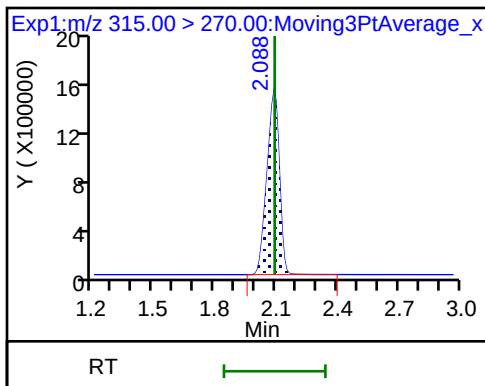
D 60 M2-4:2 FTS



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

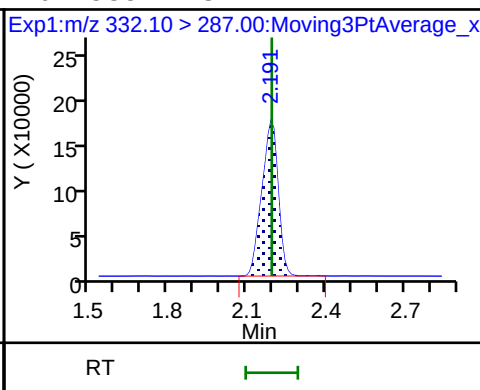
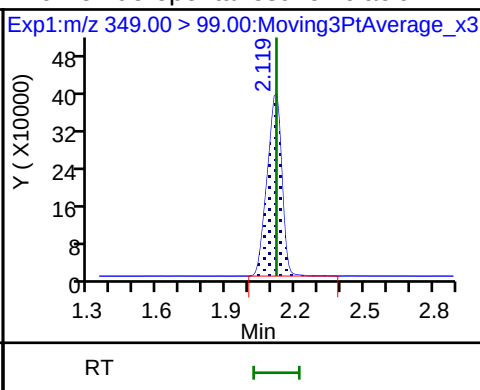
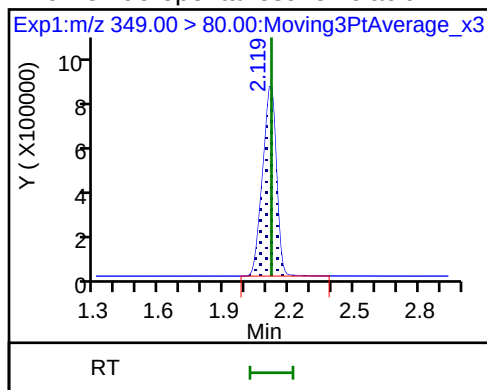
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

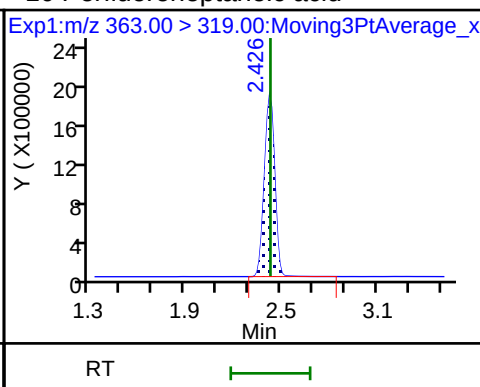
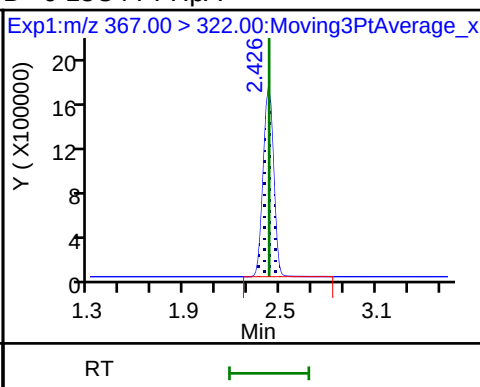
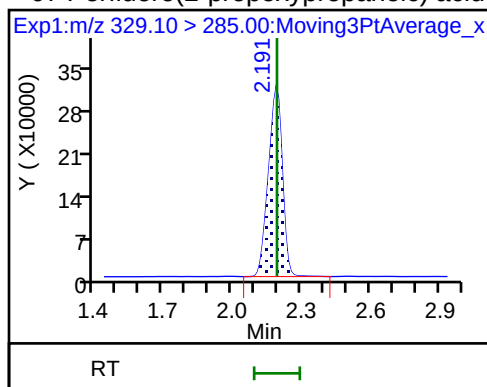
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

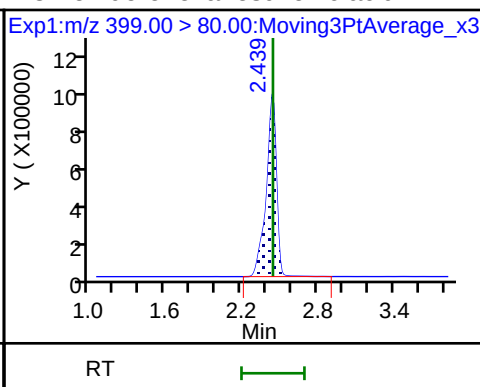
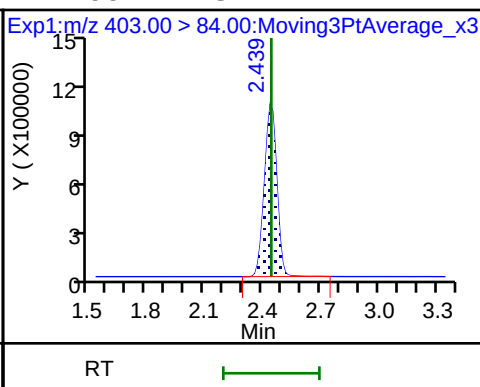
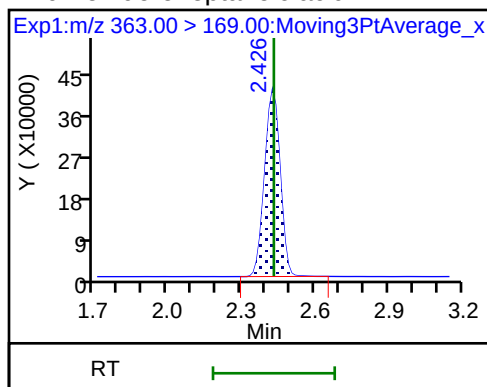
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

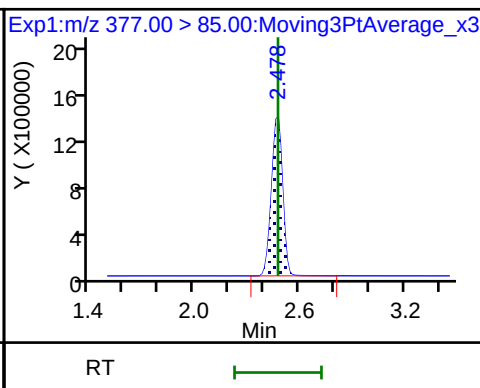
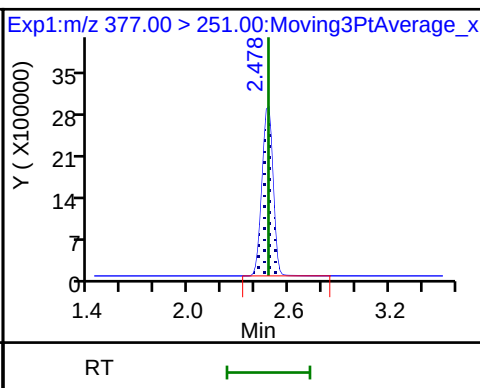
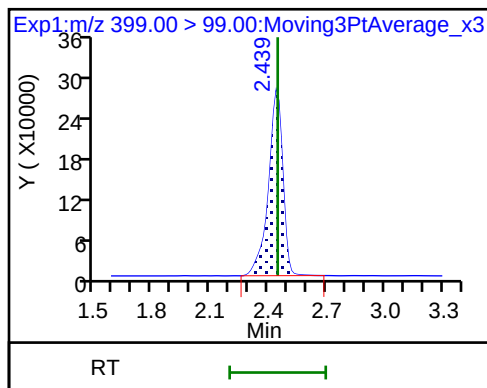
8 Perfluorohexanesulfonic acid



8 Perfluorohexanesulfonic acid

76 DONA

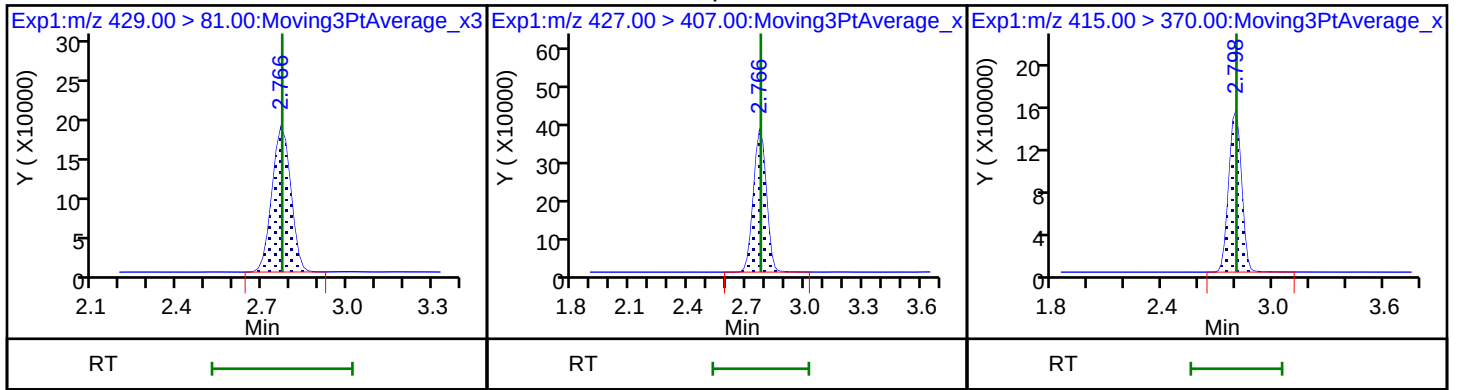
76 DONA



D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfonate

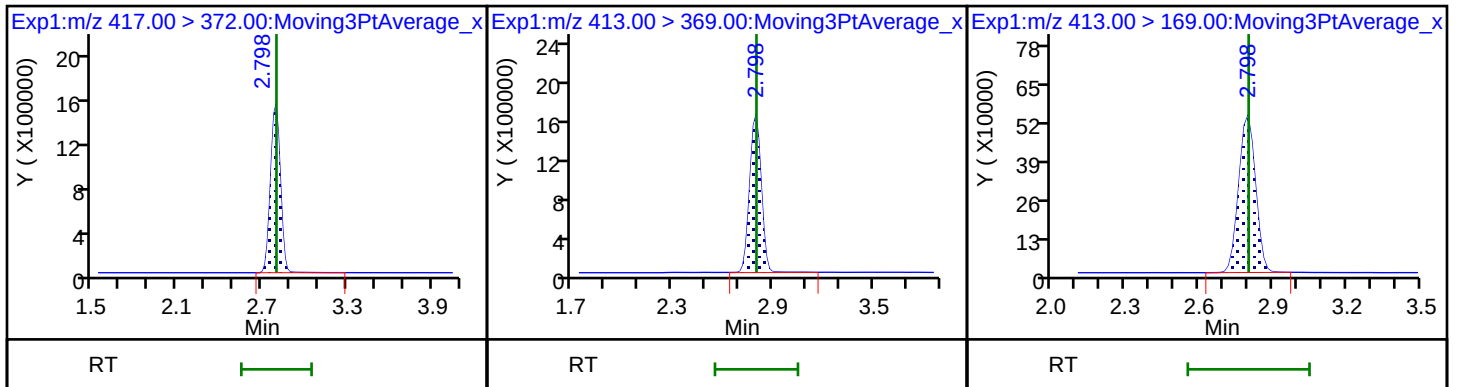
62 13C2 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

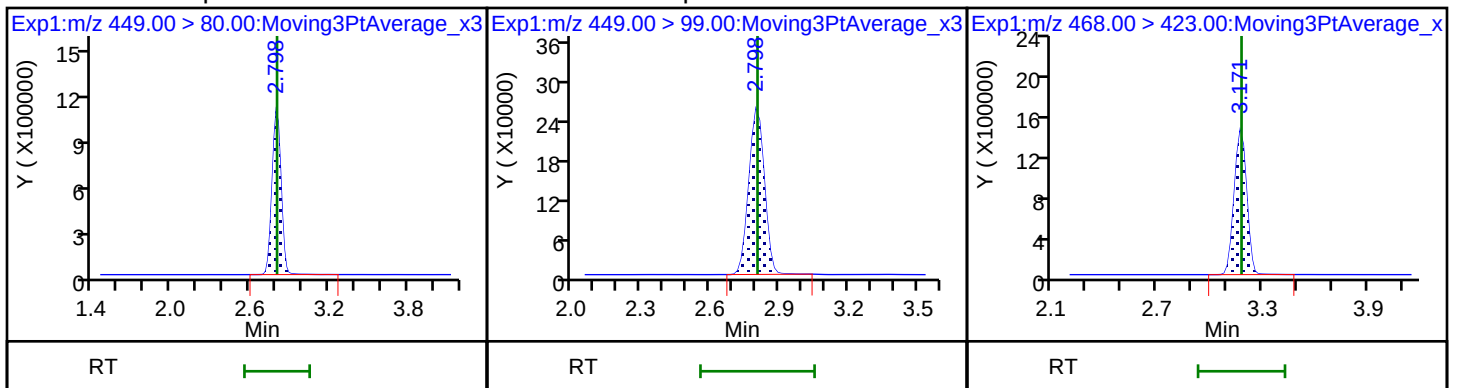
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

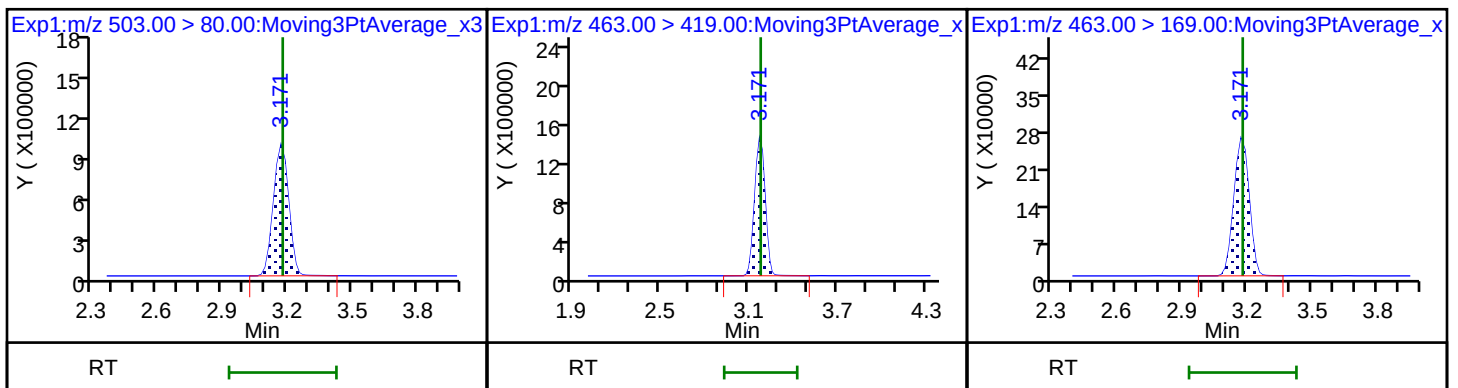
D 19 13C5 PFNA

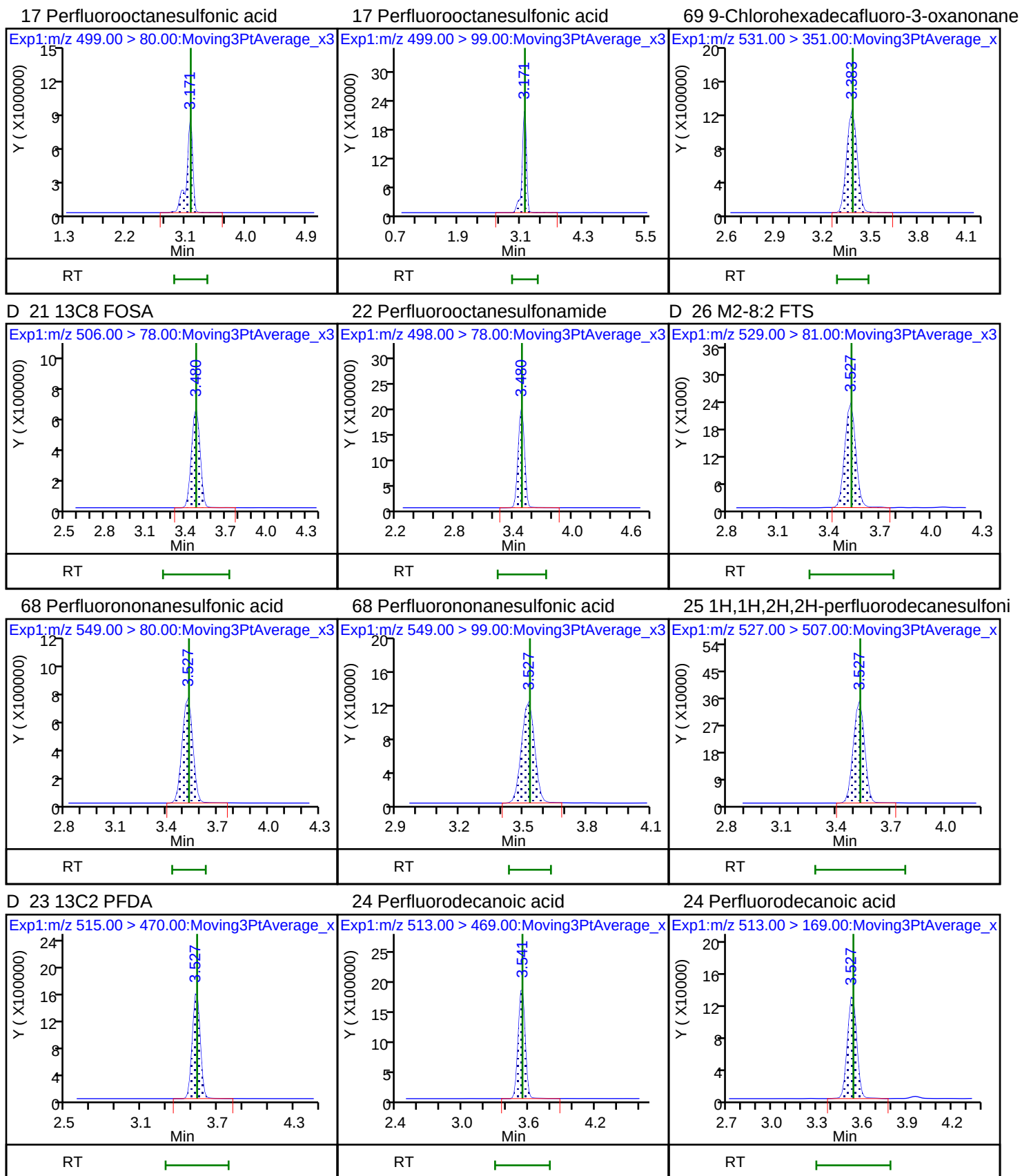


D 18 13C4 PFOS

20 Perfluorononanoic acid

20 Perfluorononanoic acid

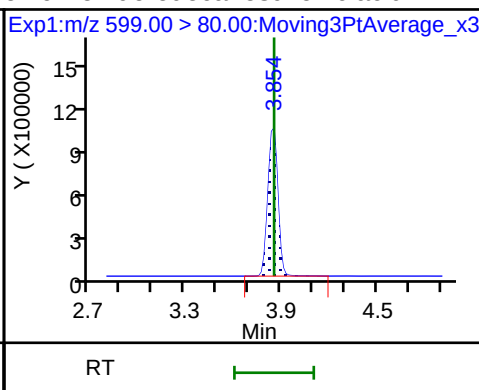
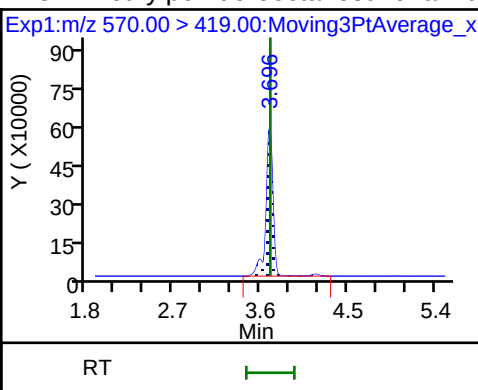
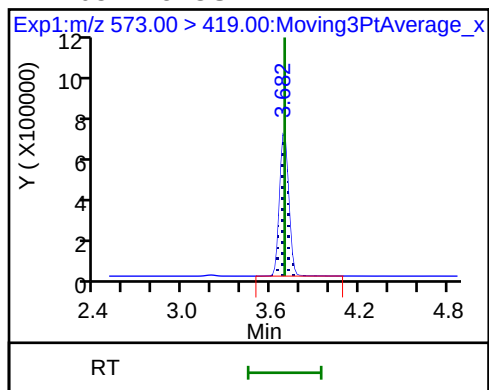




D 27 d3-NMeFOSAA

28 N-methylperfluorooctanesulfonamido

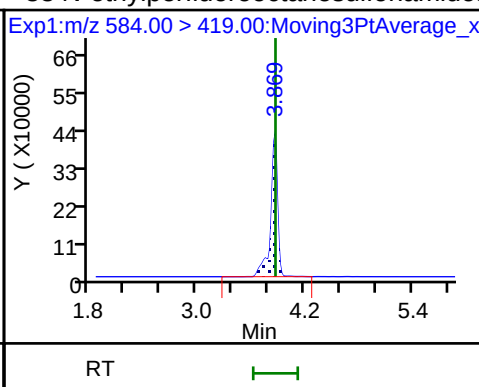
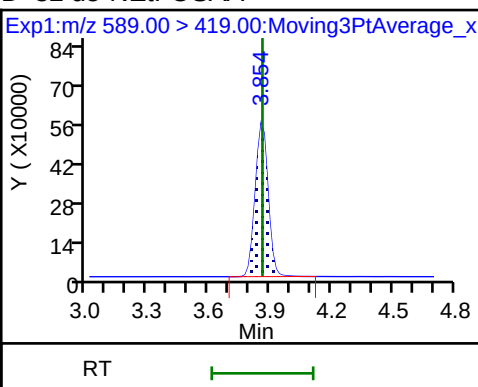
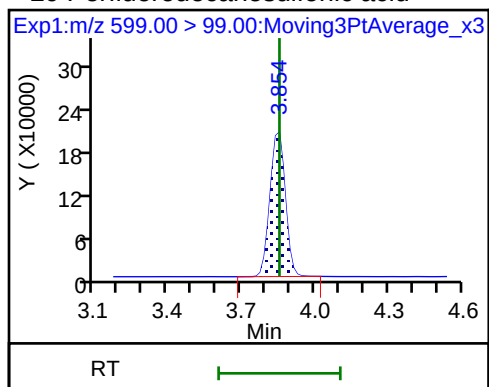
29 Perfluorodecanesulfonic acid



29 Perfluorodecanesulfonic acid

D 32 d5-NEtFOSAA

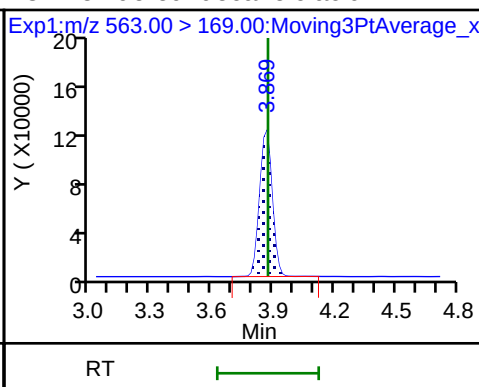
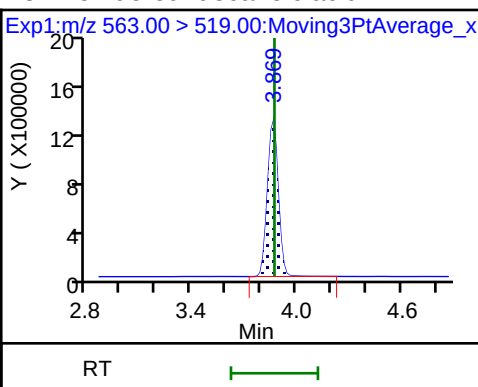
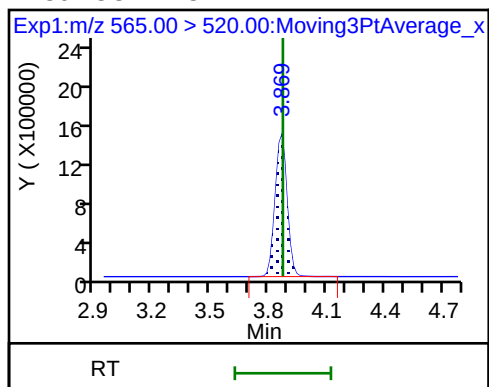
33 N-ethylperfluorooctanesulfonamidoa



D 30 13C2 PFUnA

31 Perfluoroundecanoic acid

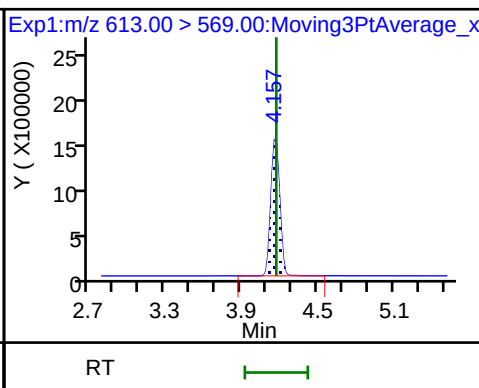
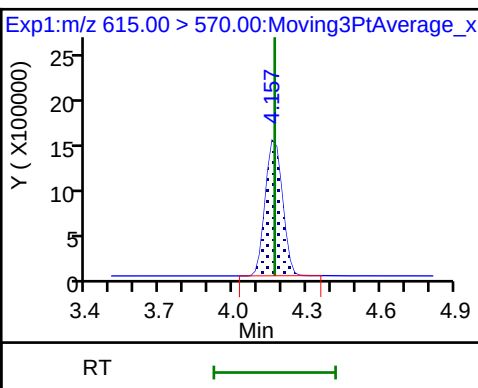
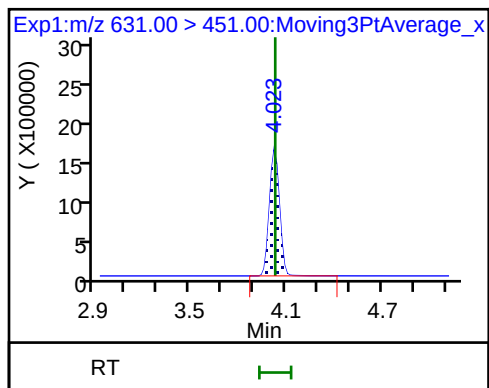
31 Perfluoroundecanoic acid



66 11-Chloroeicosafluoro-3-oxaundeca

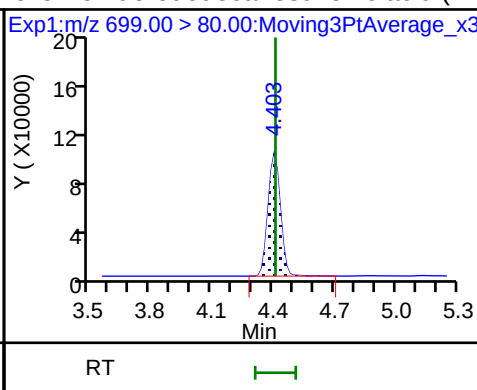
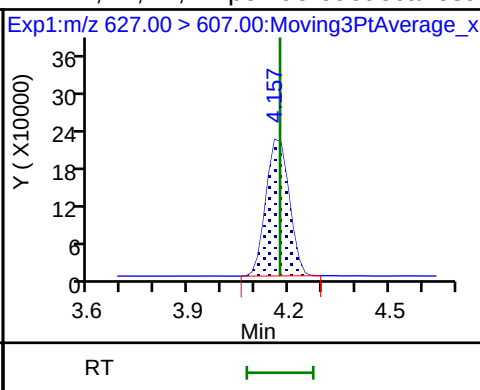
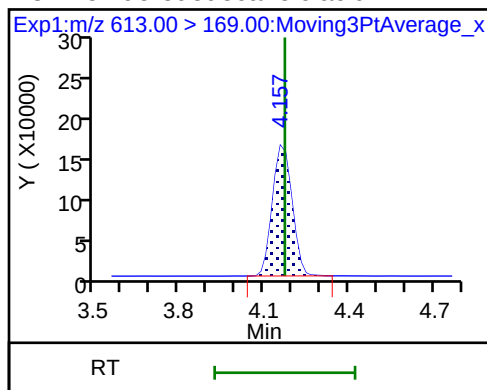
D 36 13C2 PFDaA

37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

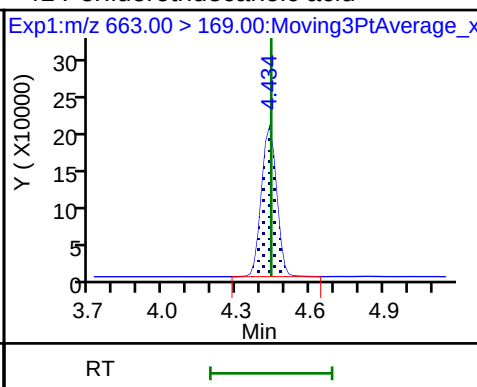
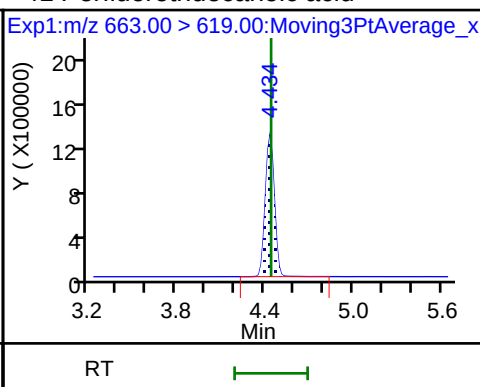
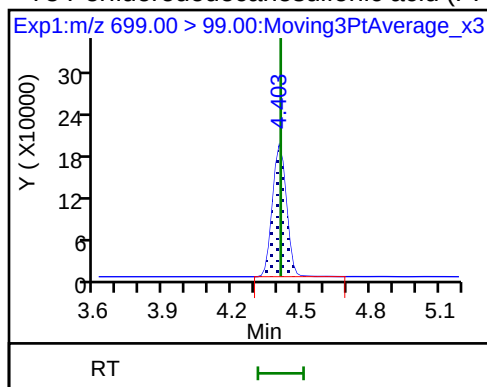
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF



75 Perfluorododecanesulfonic acid (PF

41 Perfluorotridecanoic acid

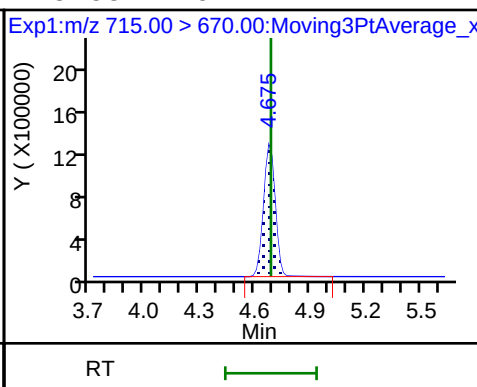
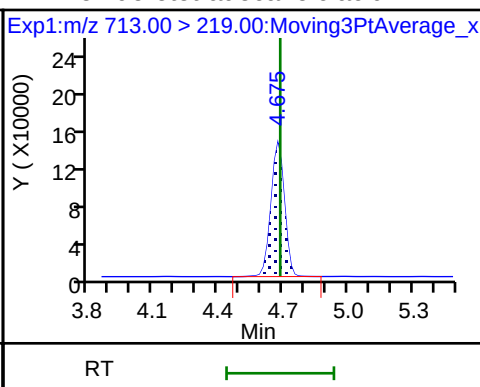
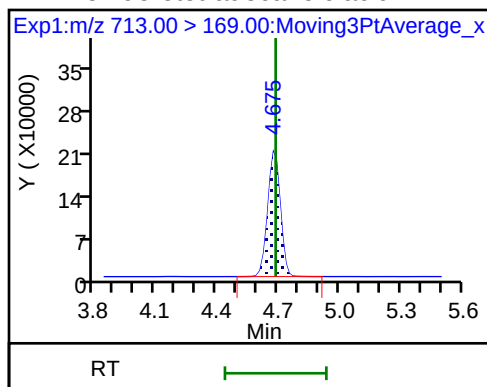
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

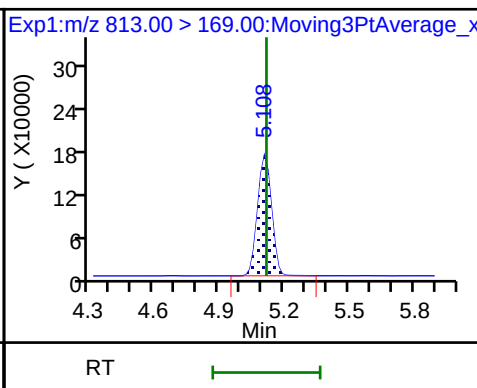
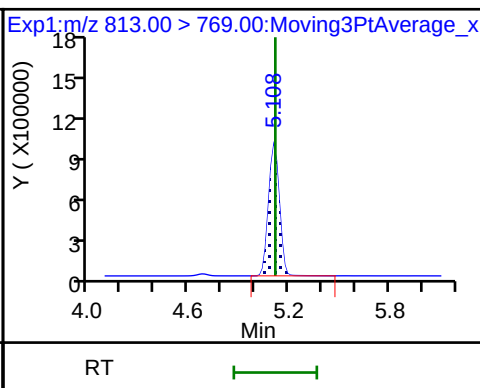
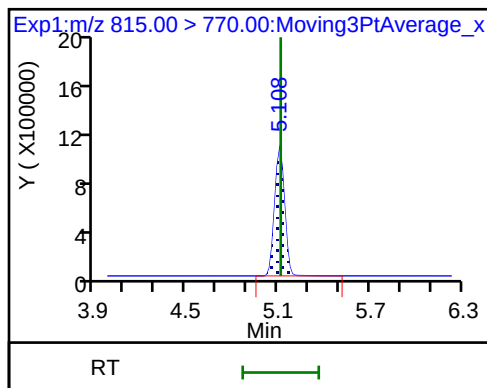
D 43 13C2 PFTeDA



D 44 13C2 PFHxDA

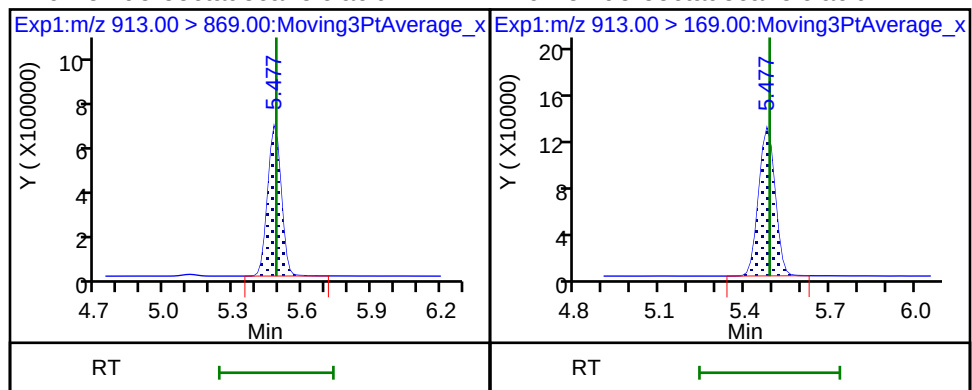
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_007.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 08-Oct-2018 16:11:58 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD6
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:00:53 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:38:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.499	1.501	-0.002	1.000	12741336	5.25		105	605	
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.501	-0.002	0.536	6734324	2.53		101	7670	
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.791	-0.002	0.639	6032451	2.54		102	9681	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.793	-0.004	1.000	11917914	4.86		97.3	1070	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.834	-0.004	1.000	15400772	4.36		98.7	5038	
298.90 > 99.00	1.830	1.834	-0.004	1.000	5540497		2.78(1.35-4.05)	98.7	3423	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.834	-0.004	0.654	76736	2.36		102	613	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.053	-0.005	1.119	3830199	4.59		98.3	5511	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.048	2.055	-0.007	0.732	700433	2.14		91.6	985	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.088	2.091	-0.003	1.000	11392355	4.83		96.6	2312	
313.00 > 119.00	2.088	2.091	-0.003	1.000	853143		13.35(6.96-20.87)	96.6	1318	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.091	-0.003	0.746	6588082	2.57		103	7170	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.118	-0.009	1.152	7714548	4.75		101	8905	
349.00 > 99.00	2.109	2.118	-0.009	1.152	3649403		2.11(1.15-3.45)	101	5872	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.194	-0.003	0.783	863618	2.71		108	2553	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.191	2.194	-0.003	1.000	2623793	4.49		89.9	1532	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.429	-0.003	0.867	7819876	2.49		99.7	15357	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.431	-0.005	1.000	15050418	4.45		89.0	2565	
363.00 > 169.00	2.426	2.431	-0.005	1.000	3709770		4.06(2.17-6.52)	89.0	5820	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.444	-0.005	0.872	4635737	2.38		100	5618	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.446	-0.007	1.000	10804781	4.47		98.2	5115	
399.00 > 99.00	2.439	2.446	-0.007	1.000	3014348		3.58(1.90-5.70)	98.2	2688	
76 DONA										
377.00 > 251.00	2.465	2.476	-0.011	0.777	24489142	4.53		96.1	10062	
377.00 > 85.00	2.465	2.476	-0.011	0.777	12227431		2.00(0.00-0.00)	96.1	8163	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.766	2.771	-0.005	0.989	819926	2.38		100	1043	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.773	-0.007	1.000	3574555	4.82		102	4320	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	14535225	4.46		89.1	867	
413.00 > 169.00	2.798	2.800	-0.002	1.000	5627957		2.58(1.36-4.08)	89.1	5273	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.800	-0.002	1.000	7588829	2.58		103	13299	
* 62 13C2 PFOA										
415.00 > 370.00	2.798	2.800	-0.002		7292252	2.50			8109	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.805	-0.007	0.882	9935244	4.83		101	6159	
449.00 > 99.00	2.798	2.805	-0.007	0.882	2565773		3.87(1.84-5.53)	101	4074	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.179	-0.008	1.000	13024350	4.87		97.4	1325	
463.00 > 169.00	3.171	3.179	-0.008	1.000	2518410		5.17(2.68-8.03)	97.4	3026	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.171	3.179	-0.008	1.000	10444032	4.79		103	4012	
499.00 > 99.00	3.171	3.179	-0.008	1.000	2399840		4.35(2.04-6.12)	103	4308	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.179	-0.008	1.133	6580219	2.43		97.3	3999	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.179	-0.008	1.133	4825745	2.35		98.5	3876	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.388	-0.005	1.067	11042011	4.77		102	5857	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	2812043	2.55		102	3230	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.485	-0.005	1.000	15916184	4.77		95.3	6987	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	3237310	4.60		96.1	3969	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.527	3.531	-0.004	1.112	6555094	5.08		106	3330	R
549.00 > 99.00	3.527	3.531	-0.004	1.112	1174013		5.58(1.42-4.26)	106	4006	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	113097	2.49		104	607	
D 23 13C2 PFDA										
515.00 > 470.00	3.527	3.539	-0.012	1.261	7241176	2.51		100	8415	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.527	3.541	-0.014	1.000	14875716	4.51		90.2	2047	
513.00 > 169.00	3.527	3.541	-0.014	1.000	1115180		13.34(7.12-21.35)	90.2	552	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.682	3.693	-0.011	1.316	3115088	2.62		105	1189	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.682	3.699	-0.017	1.000	5954444	4.69		93.8	5418	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.839	3.854	-0.015	1.210	8547971	4.81		99.8	5024	
599.00 > 99.00	3.839	3.854	-0.015	1.210	1880240		4.55(2.14-6.43)	99.8	3036	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.854	3.861	-0.007	1.378	2443548	2.44		97.6	2524	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.873	-0.004	1.000	10773565	4.74		94.7	2073	
563.00 > 169.00	3.869	3.873	-0.004	1.000	1026634		10.49(5.24-15.72)	94.7	1826	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.873	-0.004	1.383	6147995	2.42		96.9	4014	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.869	3.873	-0.004	1.004	4551858	5.17		103	4534	
35 MeFOSA										
512.00 > 169.00	3.960	3.960	0.0		3094369	NC			949	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.030	-0.007	1.268	12734725	4.66		99.0	6888	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.152	-0.013		3231773	NC			557	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.168	-0.011	1.486	7240998	2.52		101	6887	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.173	-0.016	1.179	2283642	5.10		106	2608	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.173	-0.016	1.000	13830502	4.69		93.7	2806	
613.00 > 169.00	4.157	4.173	-0.016	1.000	1657569		8.34(4.68-14.05)	93.7	2474	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.403	4.410	-0.007	1.389	845792	4.68		96.8	1030	
699.00 > 99.00	4.403	4.410	-0.007	1.389	1535963		0.55(0.00-0.00)	96.8	2525	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.434	4.441	-0.007	1.067	10444494	4.70		93.9	4447	
663.00 > 169.00	4.434	4.441	-0.007	1.067	1895060		5.51(3.09-9.27)	93.9	3194	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.675	4.686	-0.011	1.671	5680142	2.62		105	6743	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.675	4.686	-0.011	1.000	1720158	4.75		95.1	3392	
713.00 > 219.00	4.675	4.686	-0.011	1.000	1208736		1.42(0.70-2.09)	95.1	3033	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.108	5.115	-0.007	1.826	4721477	2.52		101	8488	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.108	5.118	-0.010	1.000	8713928	5.19		104	1950	
813.00 > 169.00	5.108	5.118	-0.010	1.000	1607127		5.42(2.77-8.32)	104	2735	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.477	5.486	-0.009	1.072	5470405	5.09		102	2125	
913.00 > 169.00	5.477	5.486	-0.009	1.072	1019650		5.36(2.55-7.64)	102	2132	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL6_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_007.d

Injection Date: 08-Oct-2018 16:11:58

Instrument ID: A9_NC

Lims ID: IC L6 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 15

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

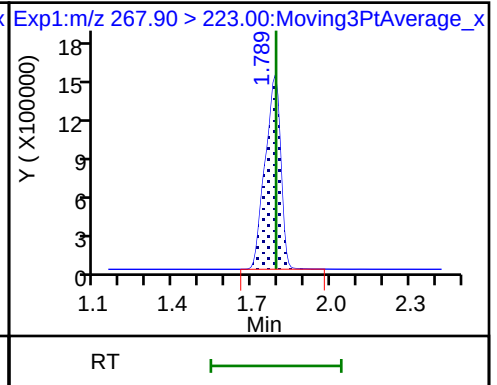
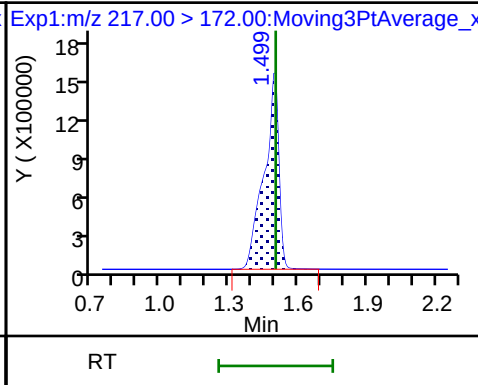
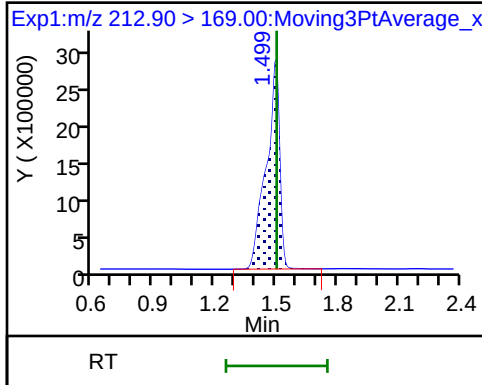
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

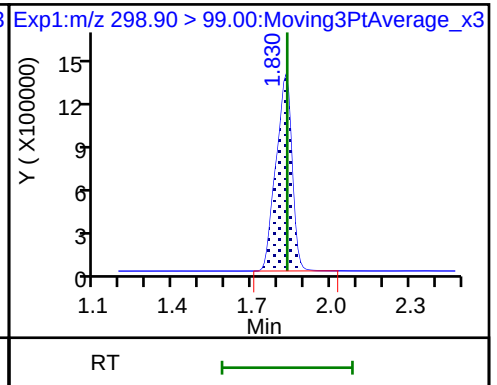
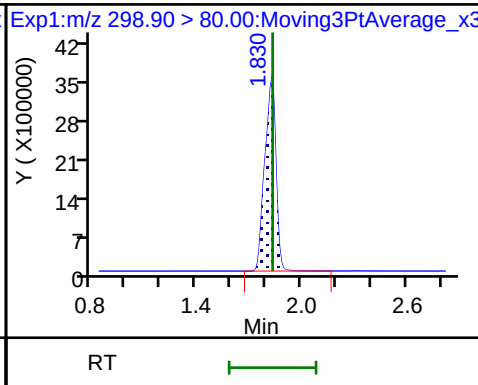
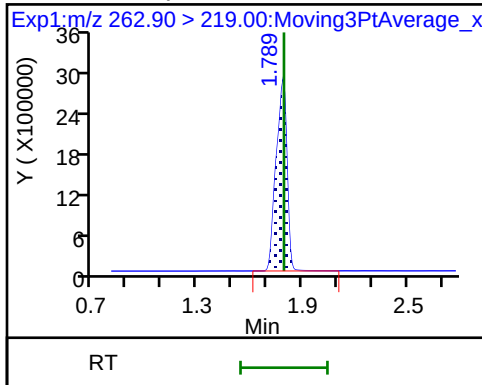
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

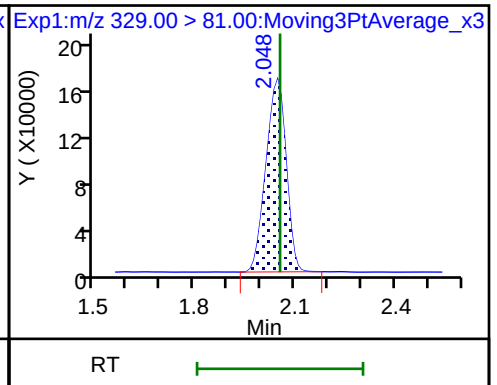
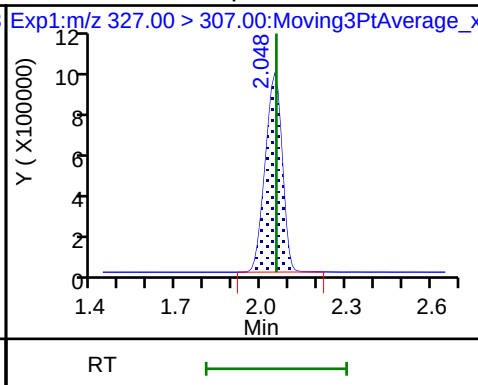
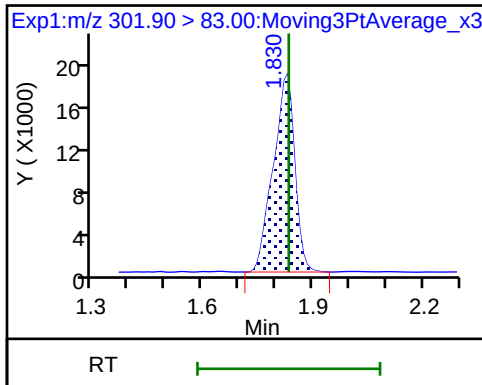
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

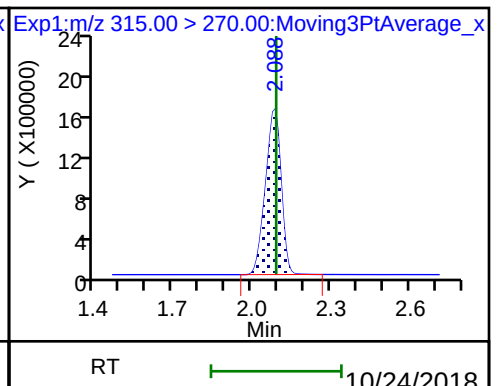
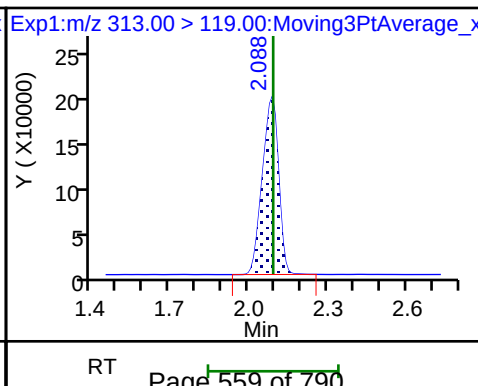
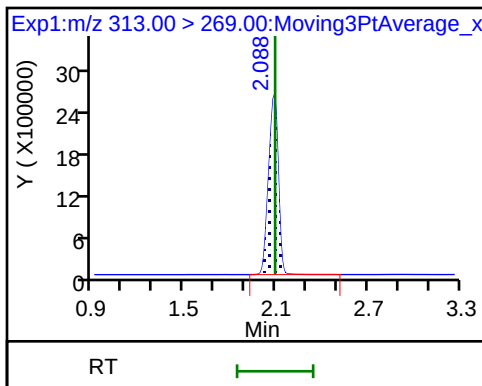
D 60 M2-4:2 FTS



6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

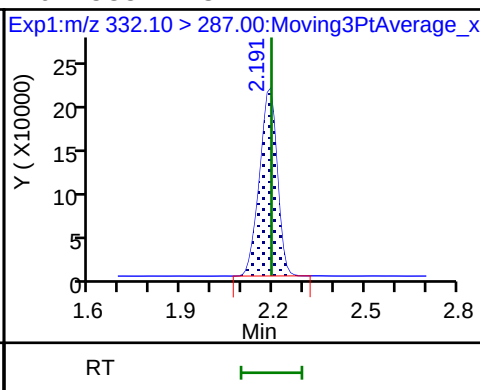
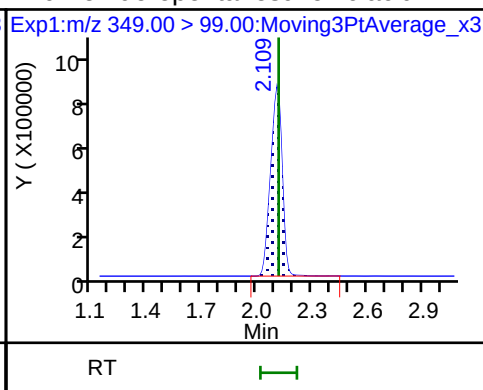
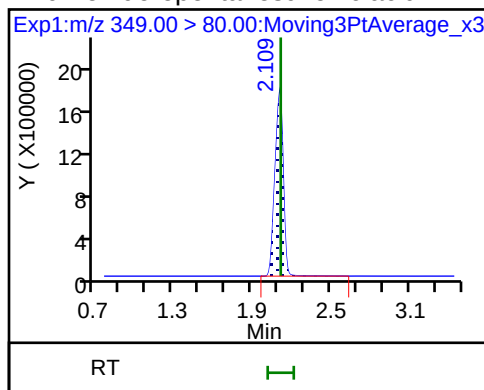
D 7 13C2 PFHxA



70 Perfluoropentanesulfonic acid

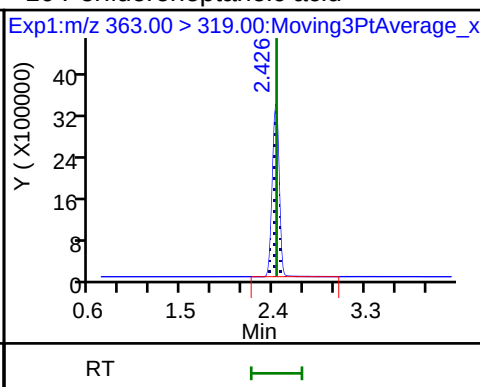
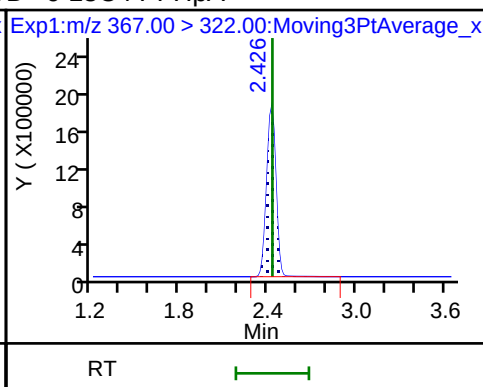
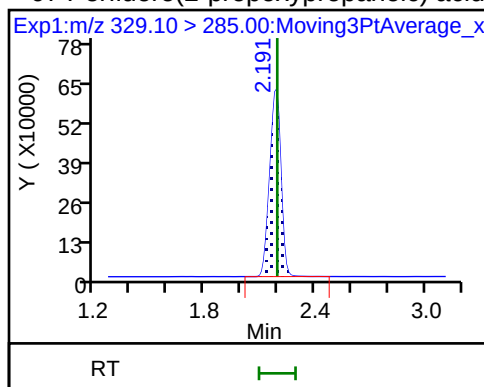
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

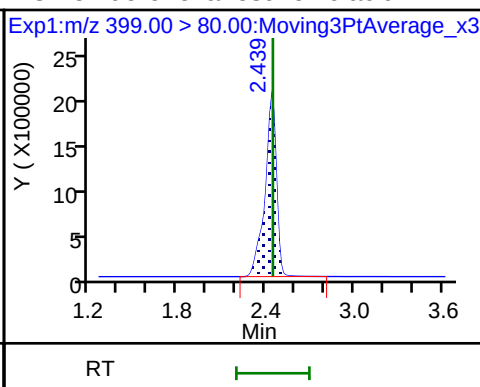
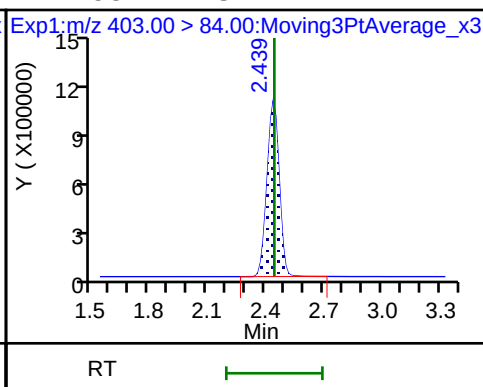
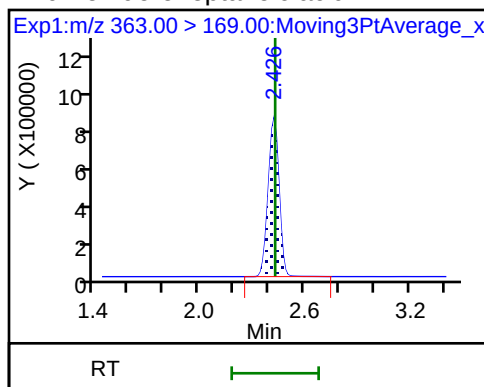
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

D 11 18O2 PFHxS

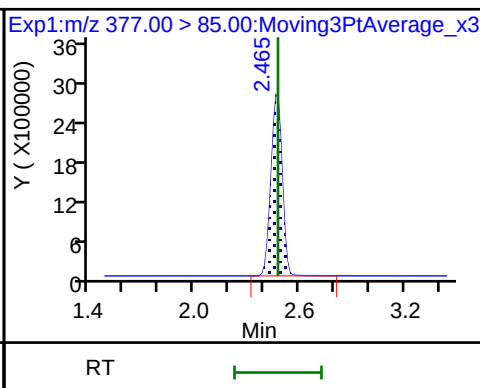
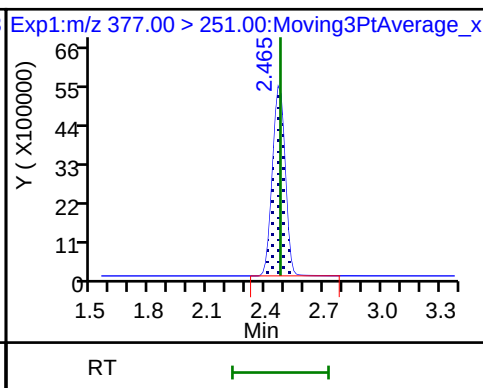
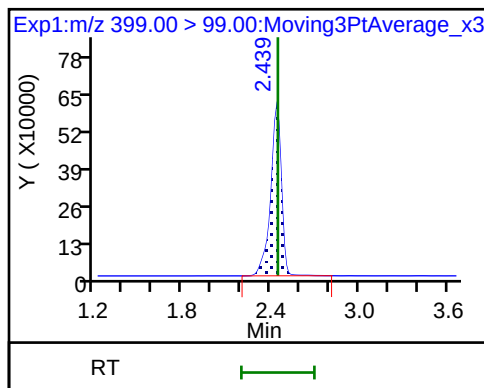
8 Perfluorohexanesulfonic acid



8 Perfluorohexanesulfonic acid

76 DONA

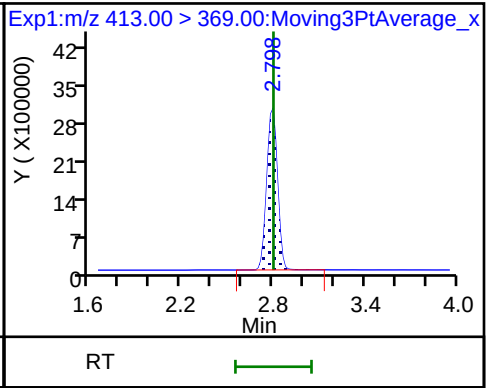
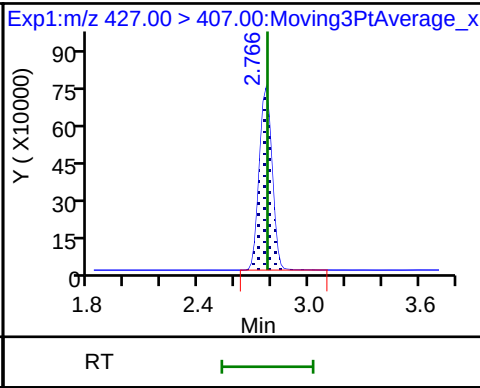
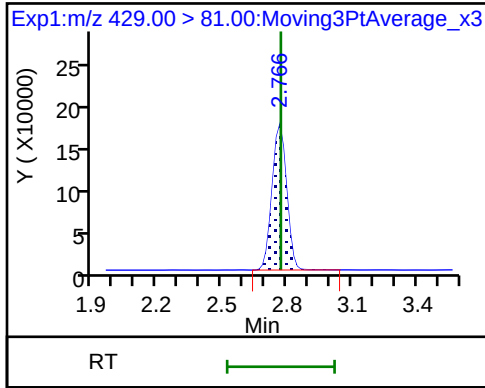
76 DONA



D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfo

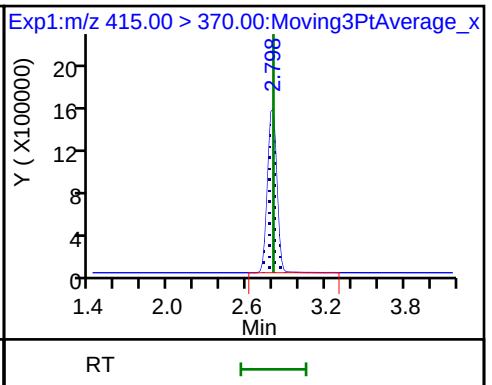
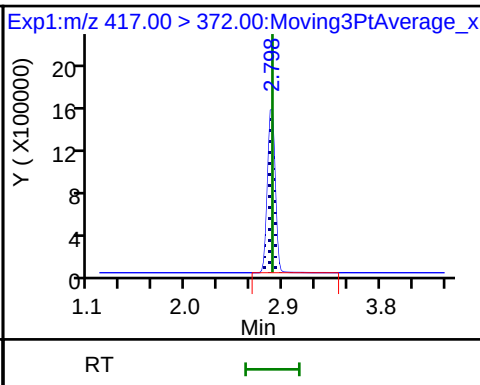
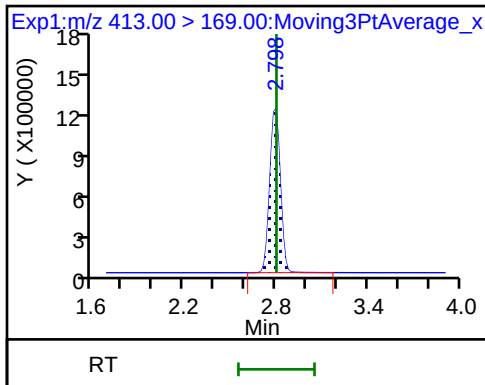
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

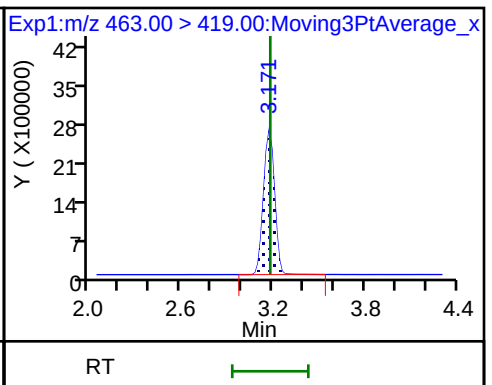
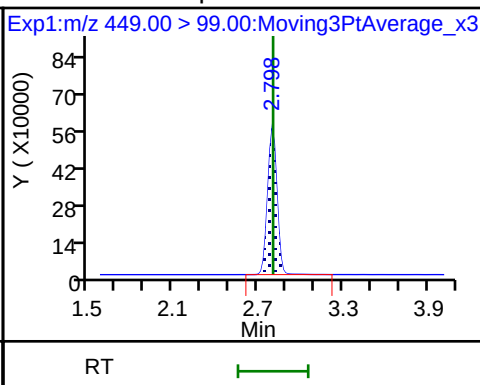
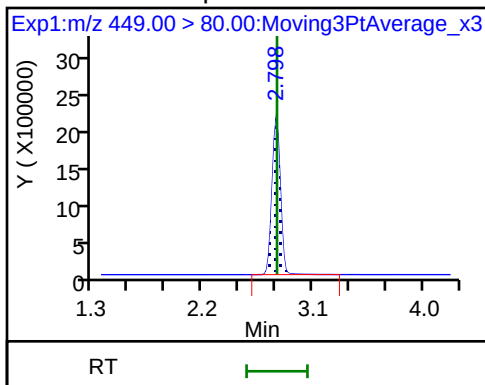
* 62 13C2 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

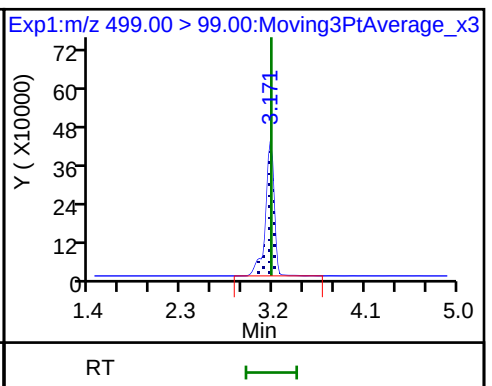
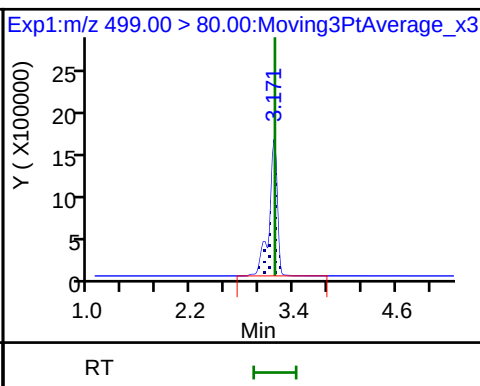
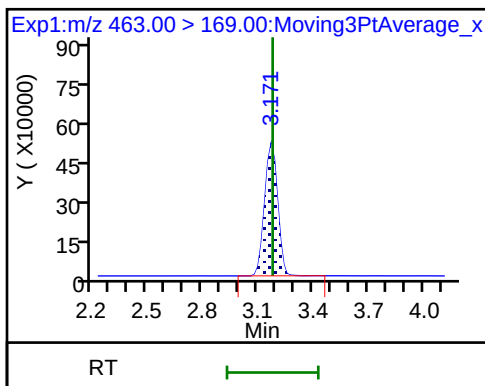
20 Perfluorononanoic acid



20 Perfluorononanoic acid

17 Perfluorooctanesulfonic acid

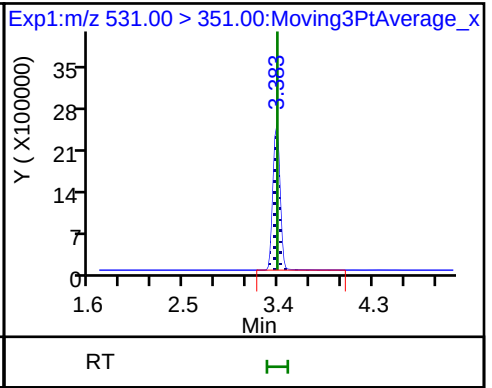
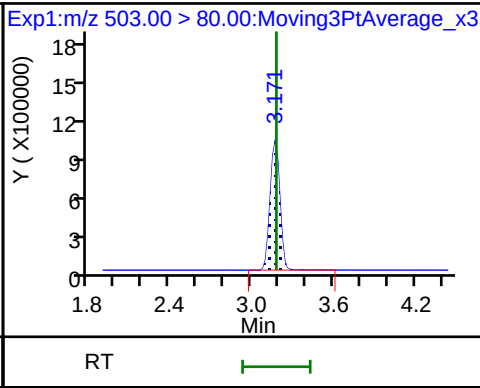
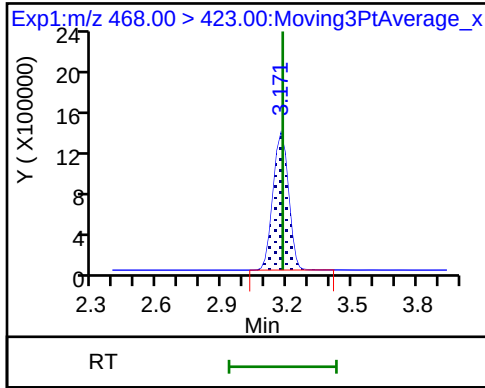
17 Perfluorooctanesulfonic acid



D 19 13C5 PFNA

D 18 13C4 PFOS

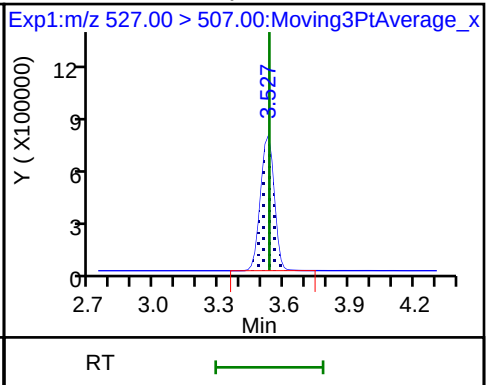
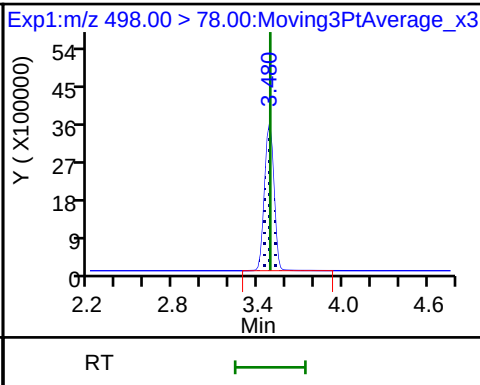
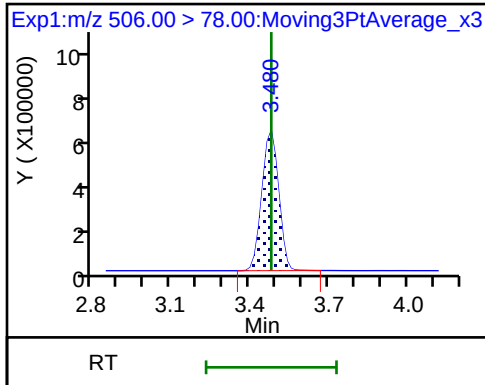
69 9-Chlorohexadecafluoro-3-oxanonane



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

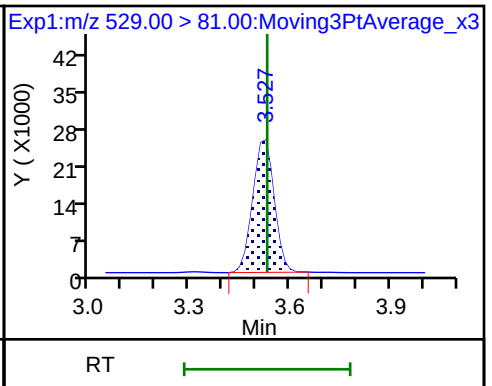
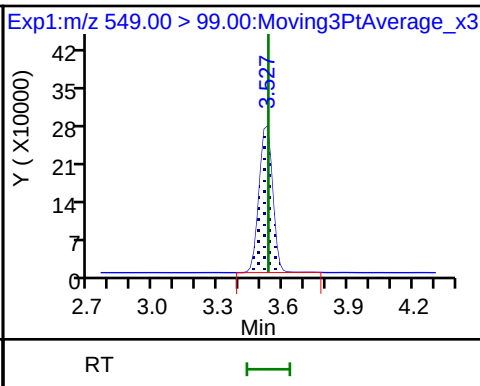
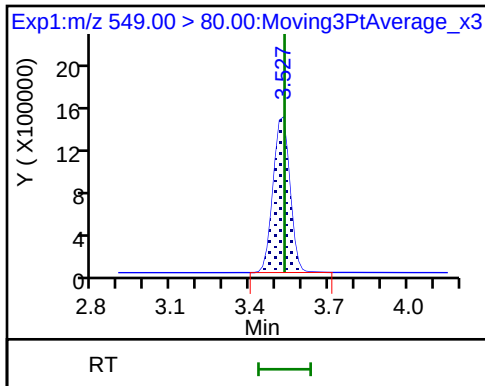
25 1H,1H,2H,2H-perfluorodecanesulfoni



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

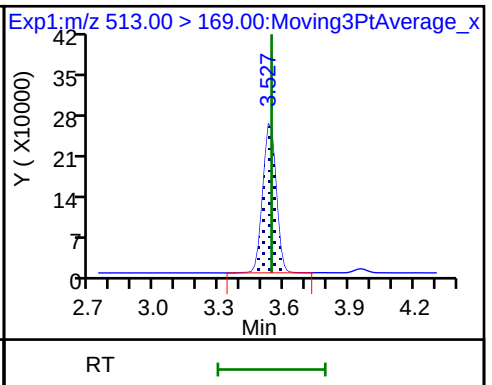
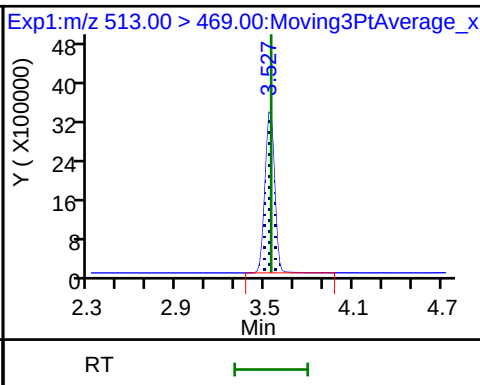
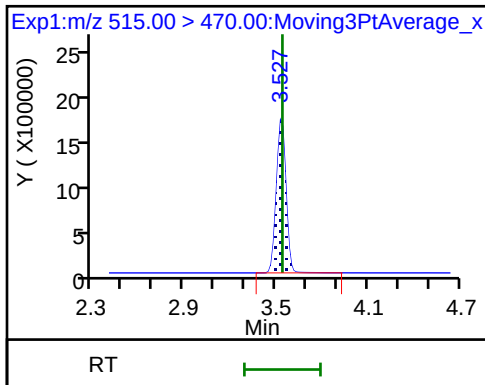
D 26 M2-8:2 FTS



D 23 13C2 PFDA

24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

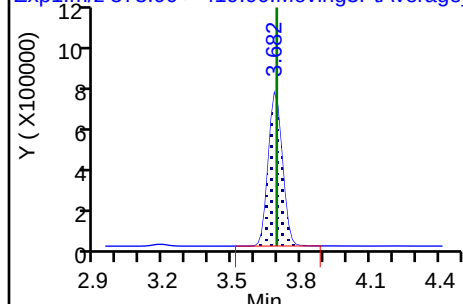


D 27 d3-NMeFOSAA

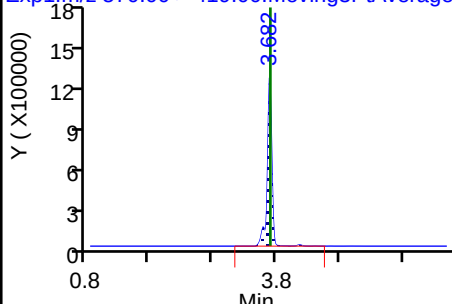
28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

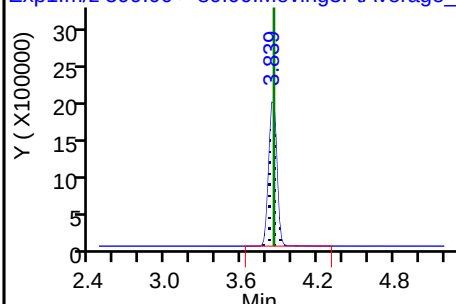
Exp1:m/z 573.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3

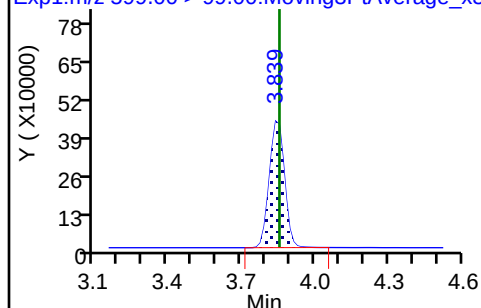


29 Perfluorodecanesulfonic acid

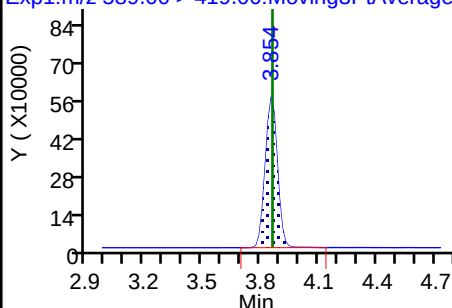
D 32 d5-NEtFOSAA

31 Perfluoroundecanoic acid

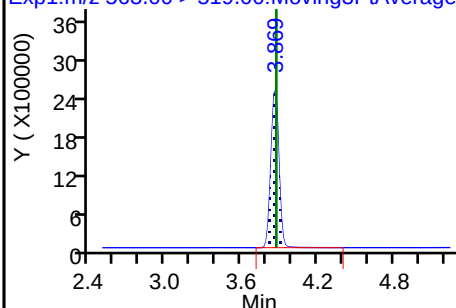
Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x

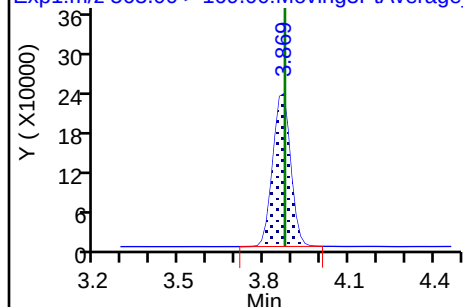


31 Perfluoroundecanoic acid

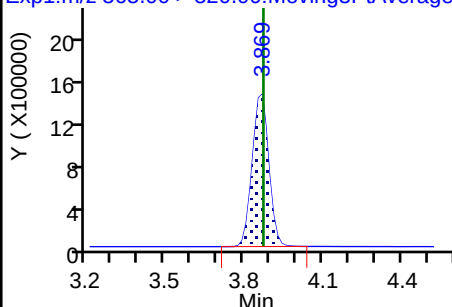
D 30 13C2 PFUnA

33 N-ethylperfluorooctanesulfonamidoa

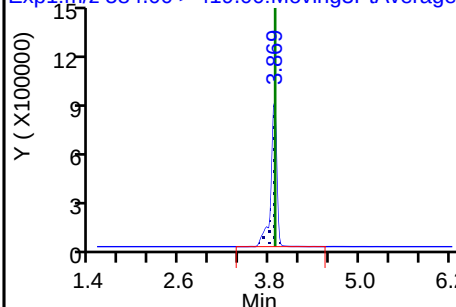
Exp1:m/z 563.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 565.00 > 520.00:Moving3PtAverage_x



Exp1:m/z 584.00 > 419.00:Moving3PtAverage_x

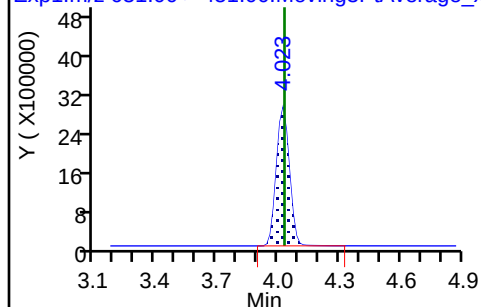


66 11-Chloroeicosafluoro-3-oxaundeca

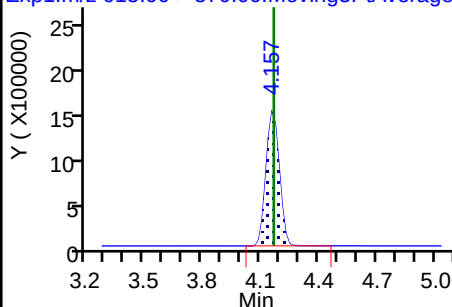
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo

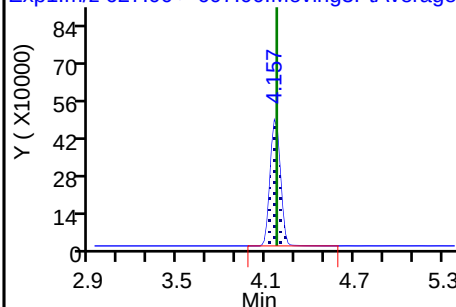
Exp1:m/z 631.00 > 451.00:Moving3PtAverage_x

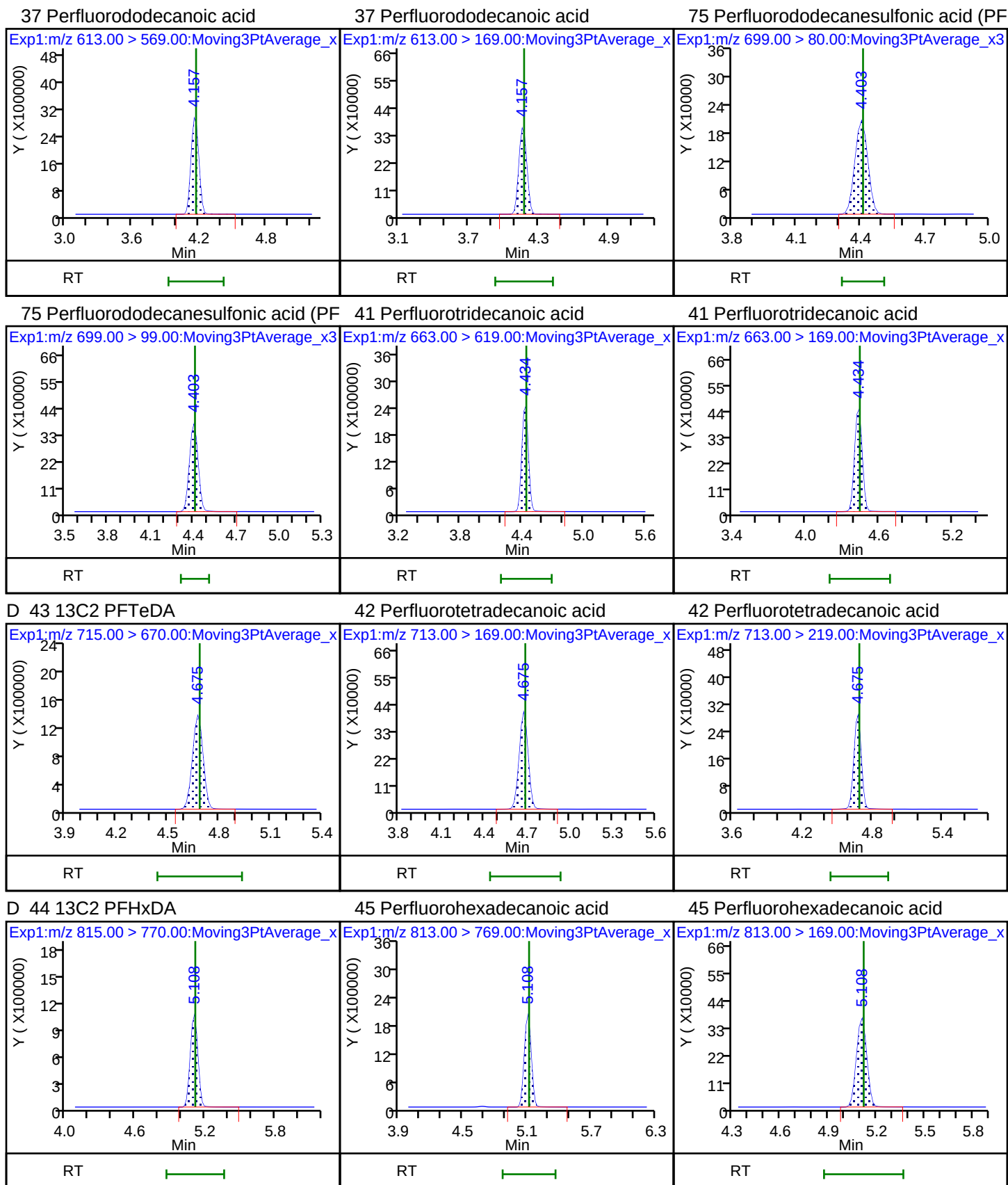


Exp1:m/z 615.00 > 570.00:Moving3PtAverage_x



Exp1:m/z 627.00 > 607.00:Moving3PtAverage_x

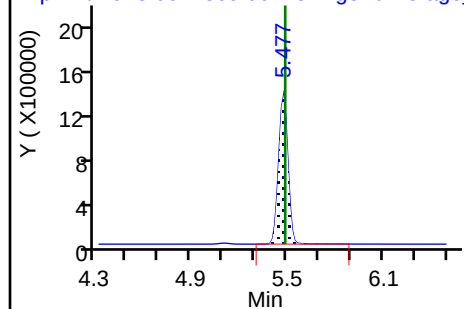




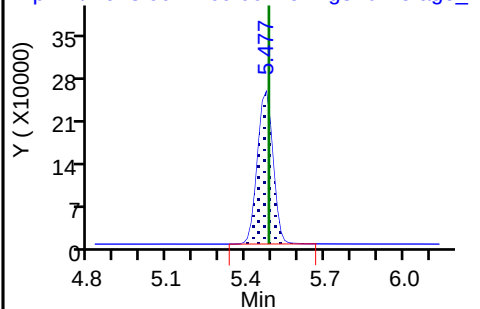
46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d
 Lims ID: IC L7 Full
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 08-Oct-2018 16:19:26 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CAL STD7
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:01:00 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:38:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.501	0.003	0.538	6763888	2.59		104	11420	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.504	1.501	0.003	1.000	23183759	9.51		95.1	1021	
D 3 13C5 PFPeA										
267.90 > 223.00	1.788	1.791	-0.003	0.639	5982095	2.57		103	8355	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.793	0.004	1.005	21181201	8.72		87.2	1793	
D 47 13C3 PFBS										
301.90 > 83.00	1.838	1.834	0.004	0.657	80838	2.54		109	554	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.838	1.834	0.004	1.000	26889058	7.23		81.8	7505	
298.90 > 99.00	1.838	1.834	0.004	1.000	10445420		2.57(1.35-4.05)	81.8	5661	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.047	2.053	-0.006	1.114	7087005	8.06		86.3	6148	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.057	2.055	0.002	0.735	734803	2.29		98.1	1160	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.091	-0.003	0.746	6289956	2.51		100	13106	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.088	2.091	-0.003	1.000	20292846	9.01		90.1	3400	
313.00 > 119.00	2.088	2.091	-0.003	1.000	1648749		12.31(6.96-20.87)	90.1	2548	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.119	2.118	0.001	1.153	14483215	8.47		90.3	7976	
349.00 > 99.00	2.119	2.118	0.001	1.153	7155340		2.02(1.15-3.45)	90.3	9259	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.190	2.194	-0.004	0.783	804707	2.58		103	2666	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.190	2.194	-0.004	1.000	5372108	9.87		98.7	3301	
D 9 13C4 PFHpA										
367.00 > 322.00	2.425	2.429	-0.004	0.867	7743093	2.52		101	8760	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.425	2.431	-0.006	1.000	27129513	8.10		81.0	4131	
363.00 > 169.00	2.425	2.431	-0.006	1.000	7342540		3.69(2.17-6.52)	81.0	5198	
D 11 18O2 PFHxS										
403.00 > 84.00	2.438	2.444	-0.006	0.872	4557302	2.39		101	6422	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.451	2.446	0.005	1.005	19933811	8.39		92.2	5937	
399.00 > 99.00	2.438	2.446	-0.008	1.000	5899982		3.38(1.90-5.70)	92.2	3250	
76 DONA										
377.00 > 251.00	2.478	2.476	0.002	0.781	39456837	7.32		77.7	28789	
377.00 > 85.00	2.478	2.476	0.002	0.781	20752981		1.90(0.00-0.00)	77.7	14868	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.766	2.771	-0.005	0.989	741003	2.19		92.3	1088	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.773	-0.007	1.000	6727757	10.0		106	6752	
* 62 13C2 PFOA										
415.00 > 370.00	2.798	2.800	-0.002		7141487	2.50			6695	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.800	-0.002	1.000	7086001	2.46		98.5	6548	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	23356347	7.67		76.6	1239	
413.00 > 169.00	2.798	2.800	-0.002	1.000	10143374		2.30(1.36-4.08)	76.6	6250	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.805	-0.007	0.882	17926266	8.74		91.8	5061	
449.00 > 99.00	2.798	2.805	-0.007	0.882	5107999		3.51(1.84-5.53)	91.8	5554	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.179	-0.008	1.133	6542686	2.47		98.8	4488	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.179	-0.008	1.133	4809092	2.40		100	3029	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.179	-0.008	1.000	22030903	8.29		82.9	1793	
463.00 > 169.00	3.171	3.179	-0.008	1.000	4992291		4.41(2.68-8.03)	82.9	6662	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.171	3.179	-0.008	1.000	19040703	8.77		94.5	4545	
499.00 > 99.00	3.171	3.179	-0.008	1.000	4841672		3.93(2.04-6.12)	94.5	4174	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.388	-0.005	1.067	19691464	8.54		91.6	4665	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	2737891	2.53		101	4790	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.485	-0.005	1.000	27818096	8.56		85.6	8668	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	96530	2.17		90.8	386	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.527	3.531	-0.004	1.112	12096985	9.40		97.9	6211	R
549.00 > 99.00	3.527	3.531	-0.004	1.112	2199282		5.50(1.42-4.26)	97.9	3412	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	5573861	9.28		96.9	5746	
D 23 13C2 PFDA										
515.00 > 470.00	3.541	3.539	0.002	1.266	6832877	2.42		96.6	7340	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.541	3.541	0.0	1.000	24561300	7.90		79.0	2762	
513.00 > 169.00	3.541	3.541	0.0	1.000	2131228		11.52(7.12-21.35)	79.0	616	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.682	3.693	-0.011	1.316	3119751	2.68		107	579	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.696	3.699	-0.003	1.004	11133253	8.76		87.6	8160	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.854	3.854	0.0	1.215	15026499	8.49		88.0	8140	
599.00 > 99.00	3.854	3.854	0.0	1.215	3405295		4.41(2.14-6.43)	88.0	3907	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.854	3.861	-0.007	1.378	2126886	2.17		86.7	2088	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.869	3.873	-0.004	1.004	7991517	10.4		104	6864	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.873	-0.004	1.383	5627913	2.27		90.6	5364	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.873	-0.004	1.000	17127313	8.23		82.3	2723	
563.00 > 169.00	3.869	3.873	-0.004	1.000	1826350		9.38(5.24-15.72)	82.3	4597	
35 MeFOSA										
512.00 > 169.00	3.959	3.960	-0.001		5979661	NC			964	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.022	4.030	-0.008	1.269	20737880	7.62		80.9	7320	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.152	0.005		6144291	NC			489	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.168	-0.011	1.486	7048885	2.50		100	9296	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.175	4.173	0.002	1.004	22316278	7.77		77.7	3624	
613.00 > 169.00	4.157	4.173	-0.016	1.000	3035162		7.35(4.68-14.05)	77.7	3490	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.175	4.173	0.002	1.184	3870252	10.1		105	2578	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.403	4.410	-0.007	1.389	1890678	10.5		109	1749	
699.00 > 99.00	4.403	4.410	-0.007	1.389	3329261		0.57(0.00-0.00)	109	4462	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.434	4.441	-0.007	1.067	18322366	8.46		84.6	9559	
663.00 > 169.00	4.434	4.441	-0.007	1.067	3870046		4.73(3.09-9.27)	84.6	5157	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.675	4.686	-0.011	1.000	3715060	10.8		108	5538	
713.00 > 219.00	4.675	4.686	-0.011	1.000	2407159		1.54(0.70-2.09)	108	4870	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.675	4.686	-0.011	1.671	5422584	2.55		102	8441	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.108	5.115	-0.007	1.826	4907518	2.68		107	9648	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.108	5.118	-0.010	1.000	15292384	8.78		87.8	3306	
813.00 > 169.00	5.108	5.118	-0.010	1.000	3285465		4.65(2.77-8.32)	87.8	5369	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.475	5.486	-0.011	1.072	11048928	9.90		99.0	3402	
913.00 > 169.00	5.475	5.486	-0.011	1.072	2180612		5.07(2.55-7.64)	99.0	3789	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL7_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Injection Date: 08-Oct-2018 16:19:26

Instrument ID: A9_NC

Lims ID: IC L7 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 16

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

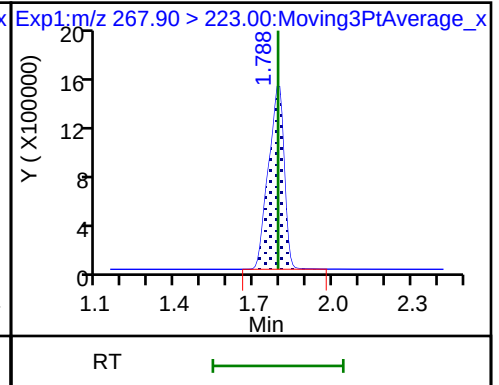
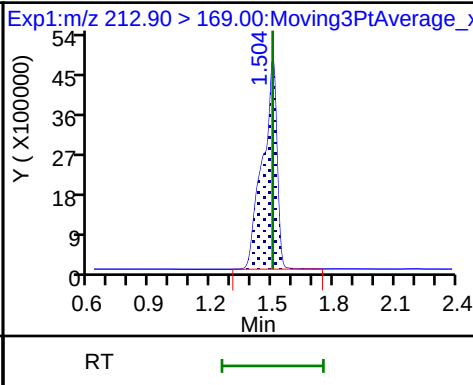
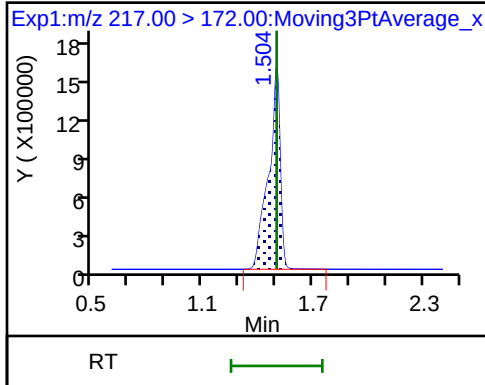
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

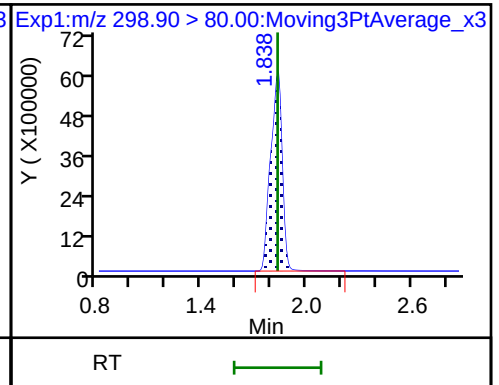
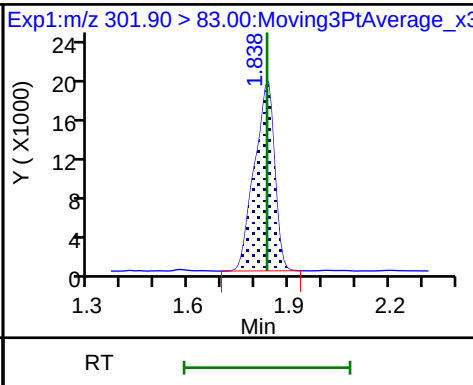
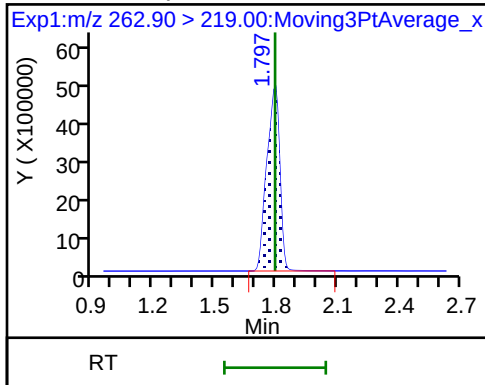
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

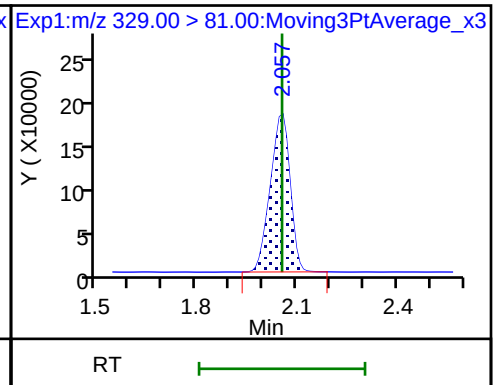
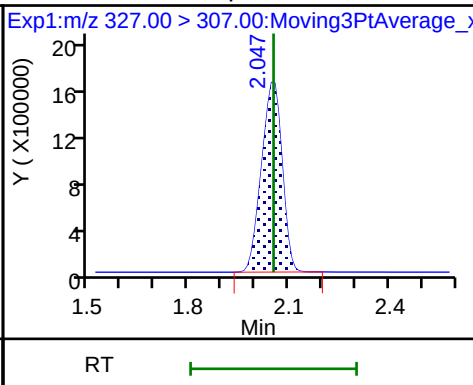
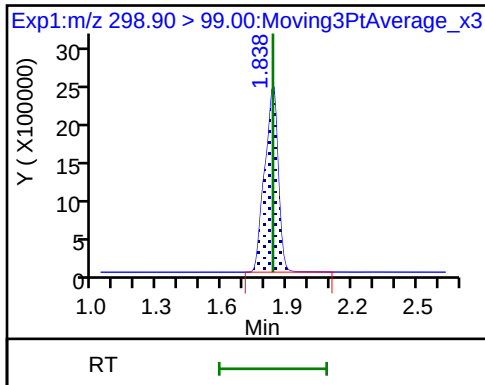
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

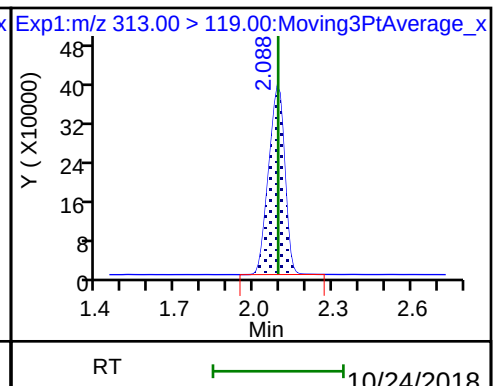
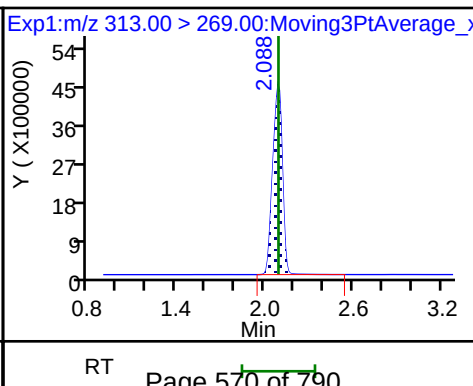
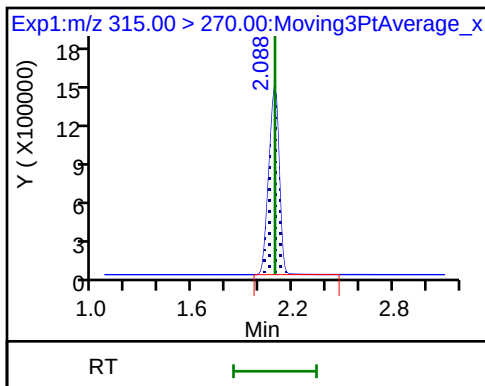
D 60 M2-4:2 FTS

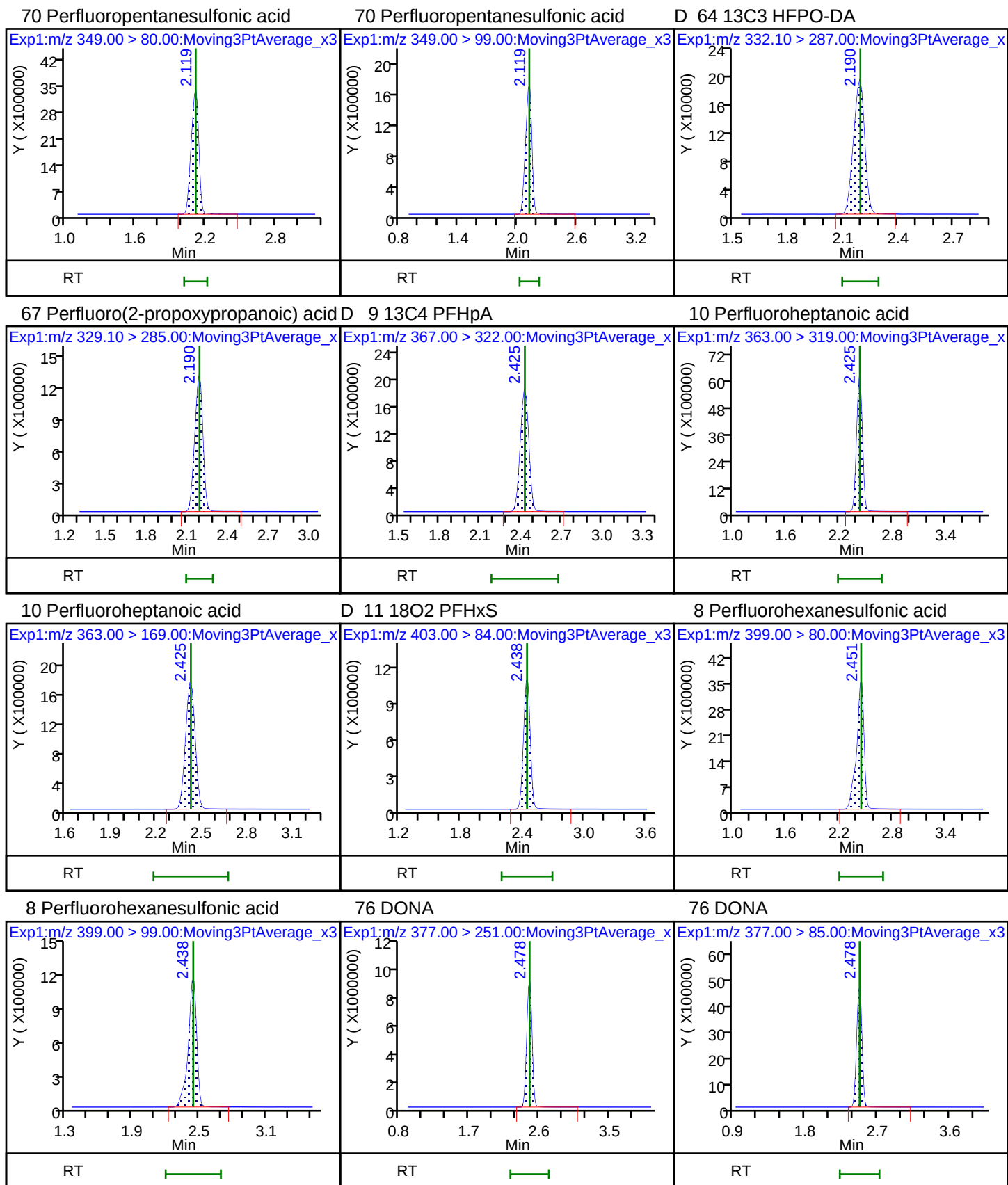


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

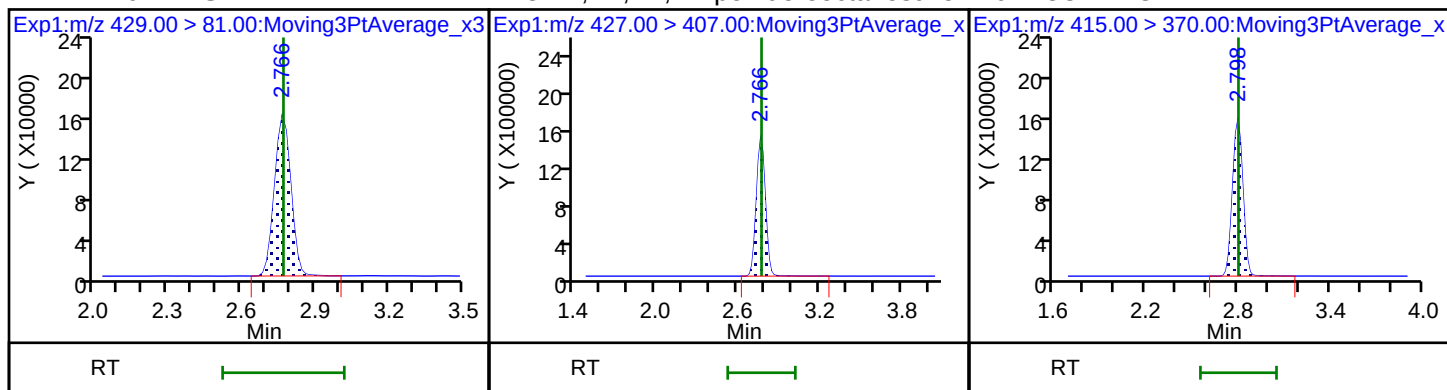




D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfonate

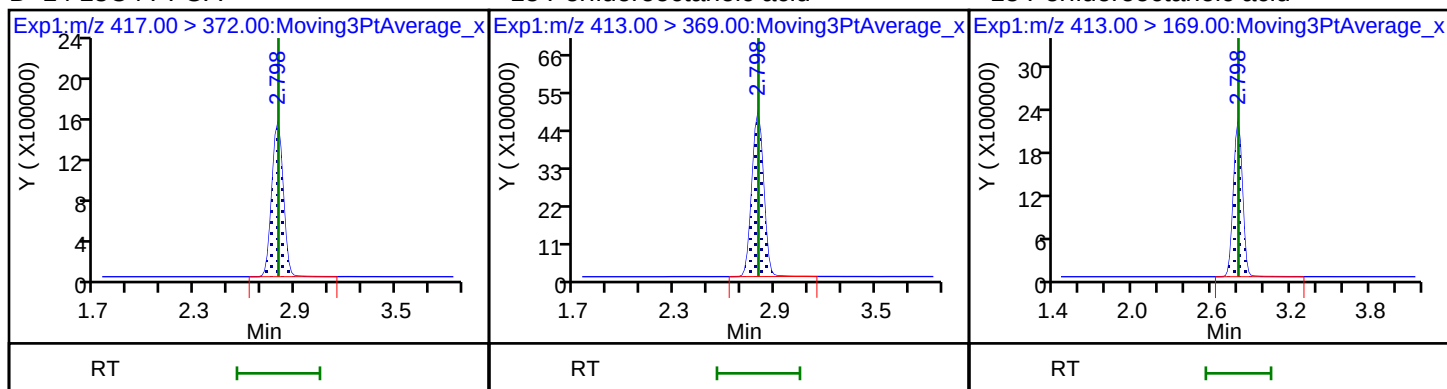
62 13C2 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

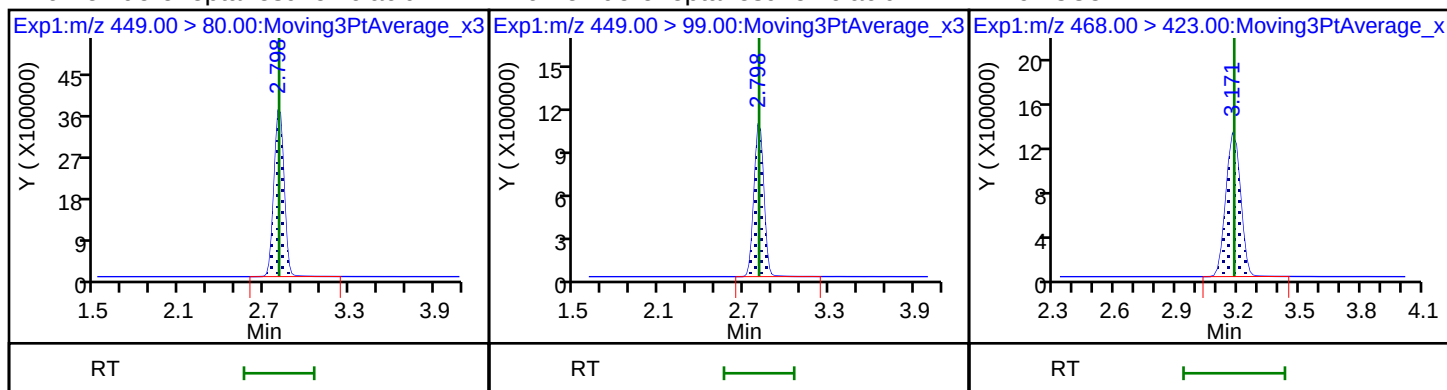
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

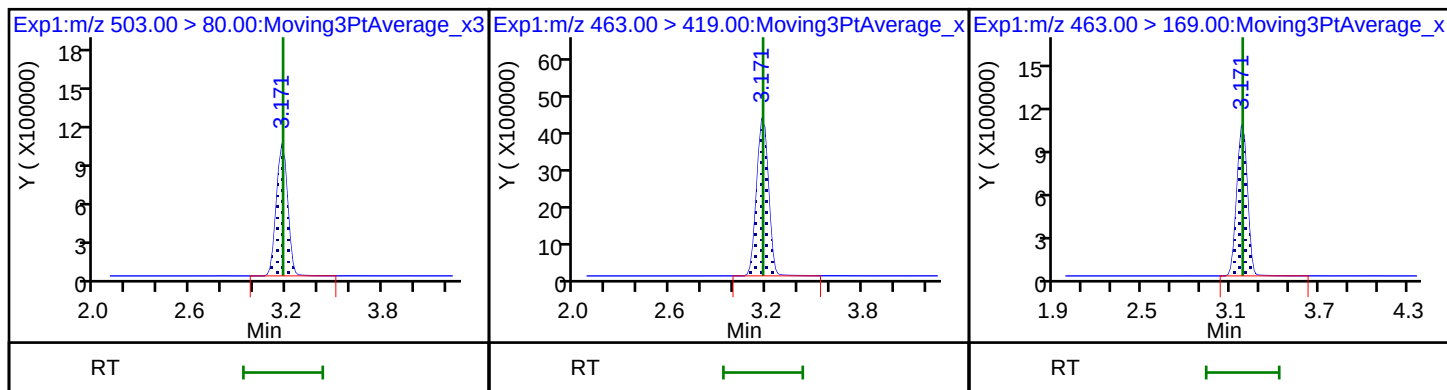
D 19 13C5 PFNA

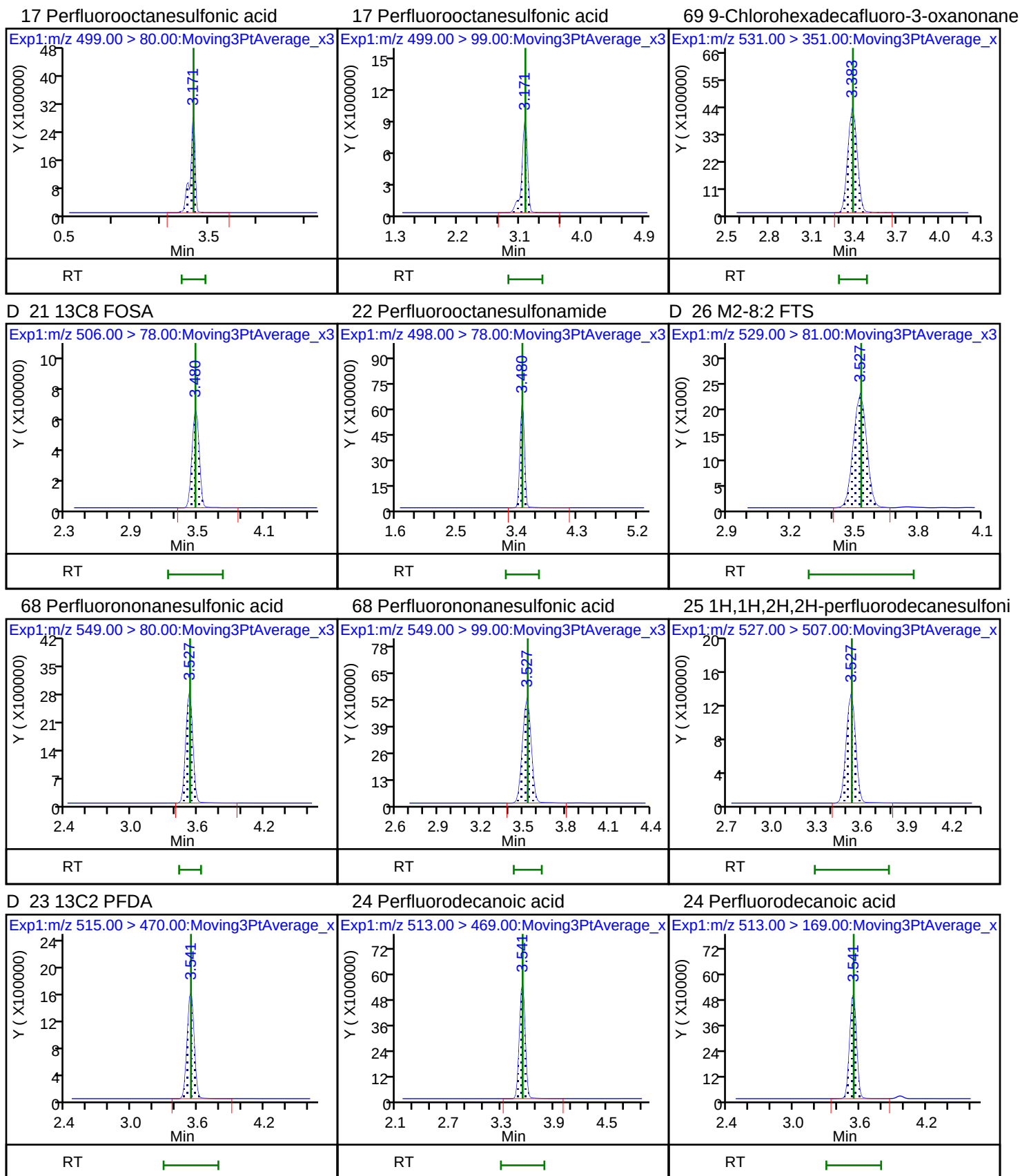


D 18 13C4 PFOS

20 Perfluorononanoic acid

20 Perfluorononanoic acid



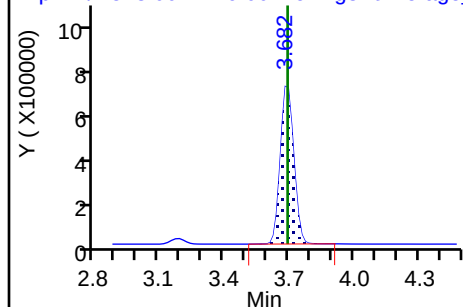


D 27 d3-NMeFOSAA

28 N-methylperfluorooctanesulfonamido

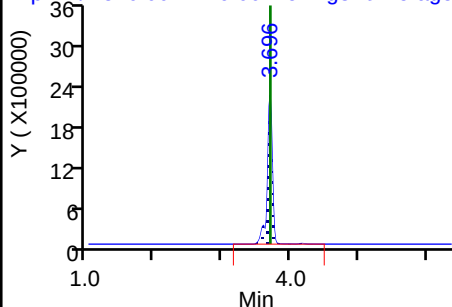
29 Perfluorodecanesulfonic acid

Exp1:m/z 573.00 > 419.00:Moving3PtAverage_x3



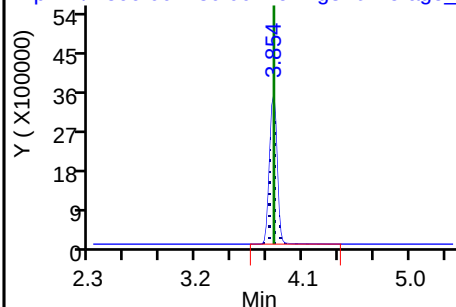
RT

Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x3



RT

Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3



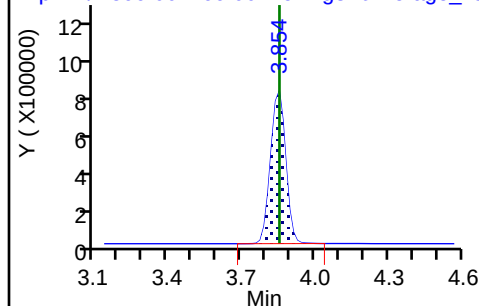
RT

29 Perfluorodecanesulfonic acid

D 32 d5-NEtFOSAA

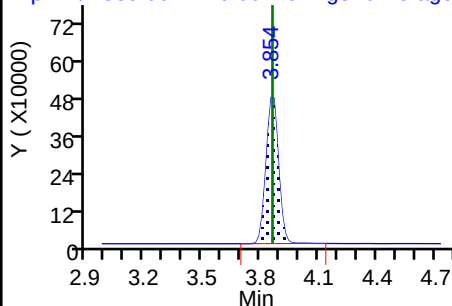
33 N-ethylperfluorooctanesulfonamido

Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



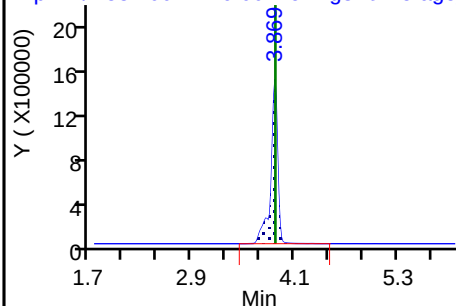
RT

Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x3



RT

Exp1:m/z 584.00 > 419.00:Moving3PtAverage_x3



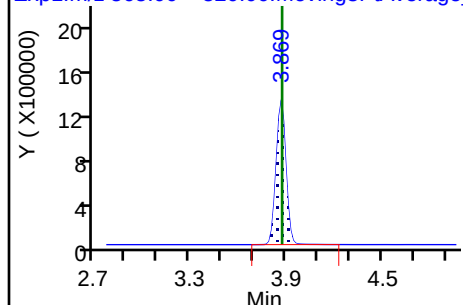
RT

D 30 13C2 PFUnA

31 Perfluoroundecanoic acid

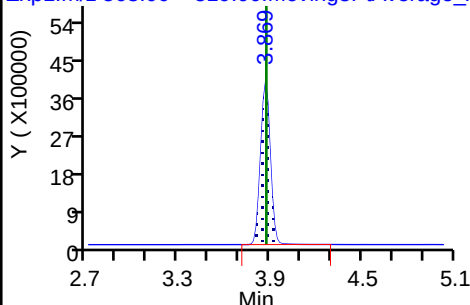
31 Perfluoroundecanoic acid

Exp1:m/z 565.00 > 520.00:Moving3PtAverage_x3



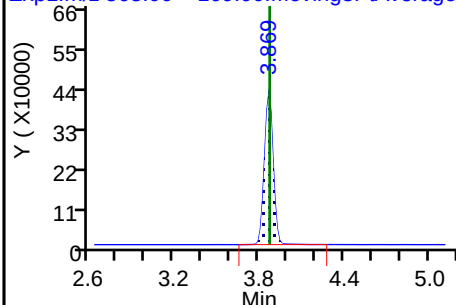
RT

Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x3



RT

Exp1:m/z 563.00 > 169.00:Moving3PtAverage_x3



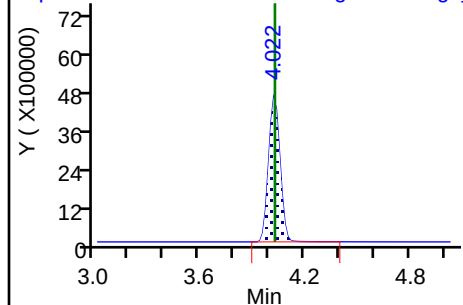
RT

66 11-Chloroeicosafluoro-3-oxaundecanoic acid

D 36 13C2 PFDaA

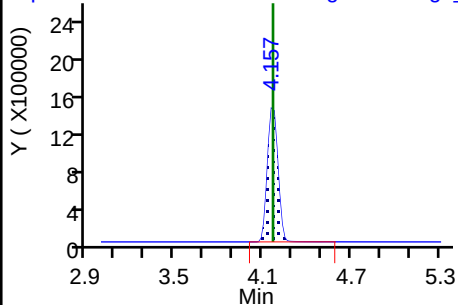
37 Perfluorododecanoic acid

Exp1:m/z 631.00 > 451.00:Moving3PtAverage_x3



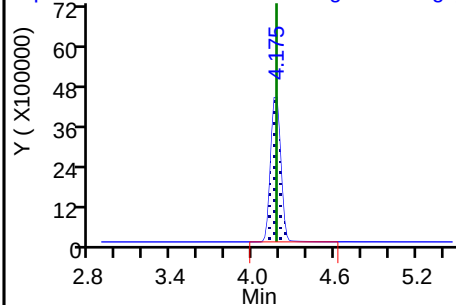
RT

Exp1:m/z 615.00 > 570.00:Moving3PtAverage_x3



RT

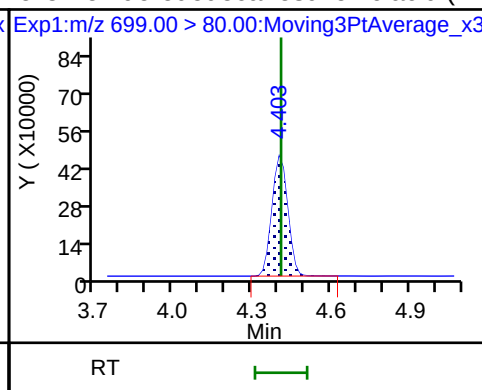
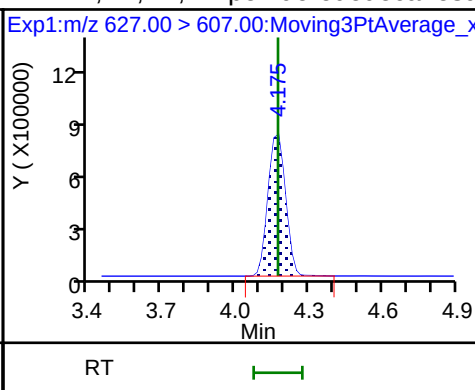
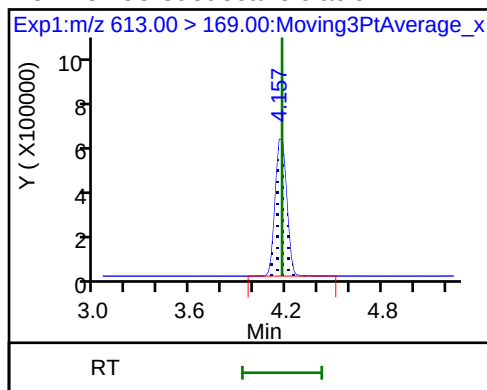
Exp1:m/z 613.00 > 569.00:Moving3PtAverage_x3



RT

37 Perfluorododecanoic acid

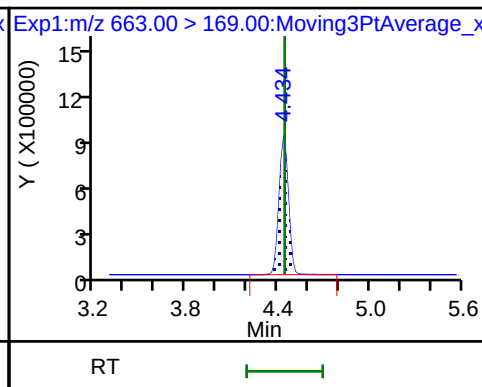
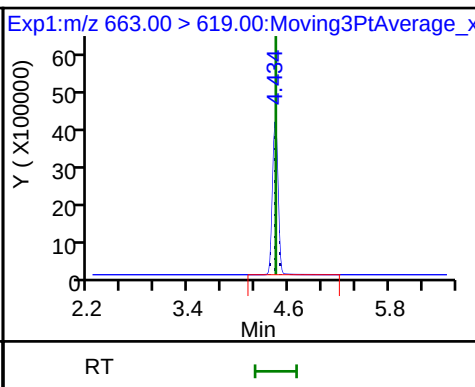
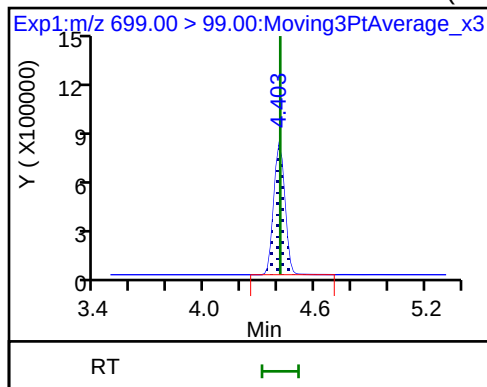
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF



75 Perfluorododecanesulfonic acid (PF

41 Perfluorotridecanoic acid

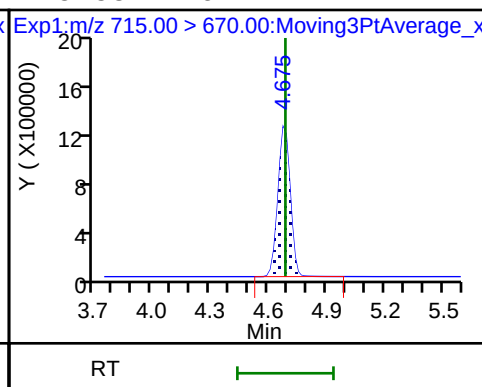
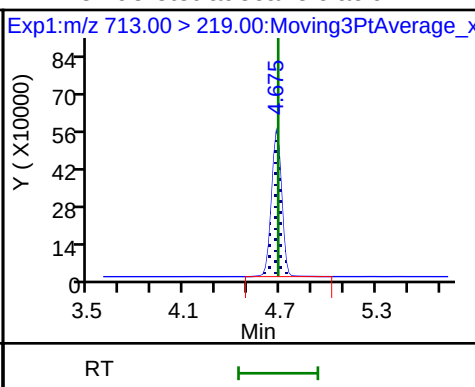
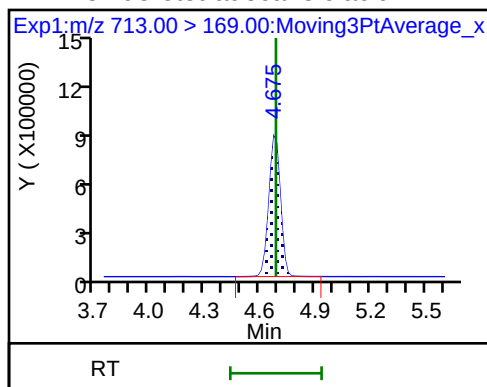
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

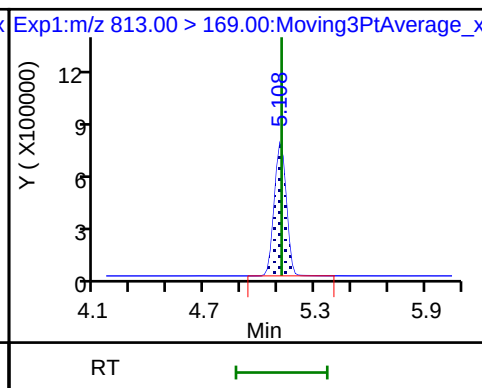
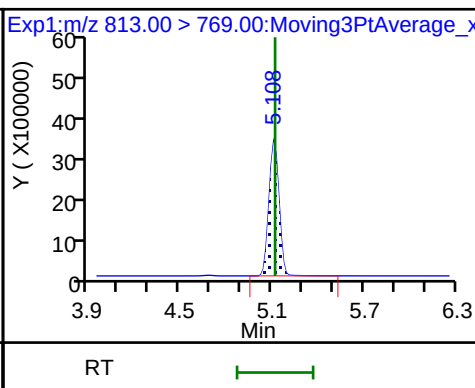
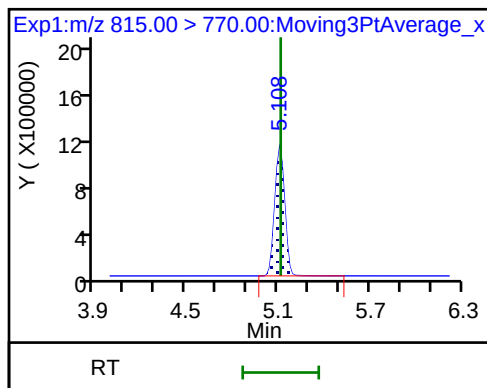
D 43 13C2 PFTeDA



D 44 13C2 PFHxDA

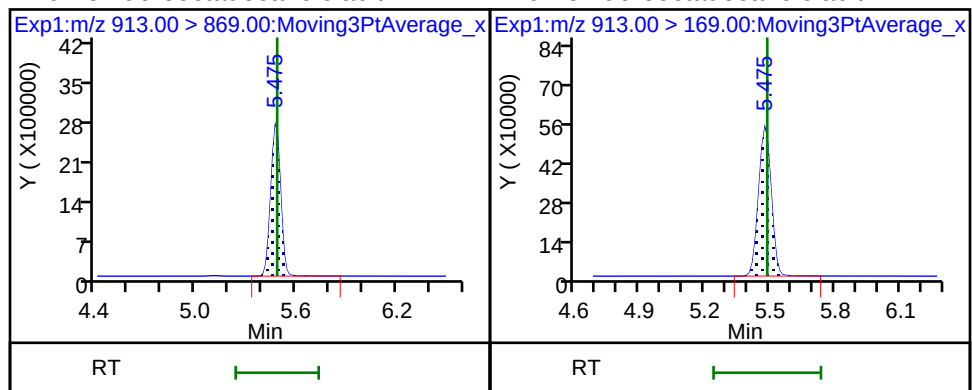
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: ICV 320-253035/10 Calibration Date: 10/17/2018 20:55

Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40

Lab File ID: 2018.10.17ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8986	0.9233		2.57	2.50	2.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.104	1.093		2.48	2.50	-1.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	80.51	78.65		2.16	2.21	-2.3	50.0
4:2 FTS	AveID	15.12	15.19		2.35	2.34	0.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.014	1.000		2.47	2.50	-1.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.28	71.85		2.51	2.35	6.8	50.0
HFPO-DA (GenX)	AveID	2.927	3.123		2.67	2.50	6.7	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.154	1.099		2.38	2.50	-4.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.104	0.9926		2.05	2.28	-10.1	40.0
DONA	AveID	4.046	4.240		2.47	2.36	4.8	50.0
6:2 FTS	AveID	1.651	1.504		2.16	2.38	-8.9	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.144	1.142		2.50	2.50	-0.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.317	1.387		2.50	2.38	5.4	50.0
Perfluorononanoic acid (PFNA)	AveID	1.003	0.9859		2.46	2.50	-1.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.165	1.110		2.20	2.31	-4.7	40.0
F-53B Major	AveID	1.957	1.989		2.37	2.33	1.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.002	1.047		2.61	2.50	4.4	40.0
8:2 FTS	AveID	1.205	1.204		2.40	2.40	-0.0	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8019	0.8236		2.46	2.40	2.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.018	1.022		2.51	2.50	0.5	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9620	1.041		2.70	2.50	8.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6341	0.6517		2.48	2.41	2.8	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8380	0.9804		2.92	2.50	17.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8929	0.8708		2.44	2.50	-2.5	40.0
F-53B Minor	AveID	2.895	3.083		2.51	2.36	6.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.105	1.062		2.40	2.50	-4.0	40.0
10:2 FTS	AveID	0.9034	0.8603		2.29	2.41	-4.8	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3021	0.3076		2.46	2.42	1.8	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.095	1.162		2.65	2.50	6.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2684	0.2549		2.37	2.50	-5.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9234		2.60	2.50	4.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: ICV 320-253035/10 Calibration Date: 10/17/2018 20:55
 Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40
 Lab File ID: 2018.10.17ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.123	1.149		2.56	2.50	2.3	50.0
13C4 PFBA	Ave	1.565	1.588		2.54	2.50	1.5	50.0
13C5 PFPeA	Ave	1.017	1.070		2.63	2.50	5.2	50.0
13C3 PFBS	Ave	0.0209	0.0211		2.34	2.33	0.9	50.0
M2-4:2 FTS	Ave	0.1378	0.1399		2.37	2.34	1.5	50.0
13C2 PFHxA	Ave	1.106	1.101		2.49	2.50	-0.4	50.0
13C3 HFPO-DA	Ave	0.0845	0.0801		2.37	2.50	-5.3	50.0
13C4 PFHpA	Ave	1.015	1.019		2.51	2.50	0.3	50.0
18O2 PFHxS	Ave	1.262	1.282		2.40	2.37	1.6	50.0
M2-6:2 FTS	Ave	0.1953	0.2000		2.43	2.38	2.4	40.0
13C8 PFOA	Ave	1.609	1.606		2.44	2.45	-0.2	50.0
13C4 PFOA	Ave	0.9873	1.006		2.55	2.50	1.9	50.0
13C5 PFNA	Ave	0.8307	0.8405		2.53	2.50	1.2	50.0
13C8 PFOS	Ave	0.4270	0.4315		2.41	2.39	1.0	50.0
13C4 PFOS	Ave	0.8012	0.8021		2.39	2.39	0.1	50.0
13C8 FOSA	Ave	1.156	1.146		2.48	2.50	-0.9	50.0
M2-8:2 FTS	Ave	0.2011	0.2047		2.44	2.40	1.8	40.0
13C2 PFDA	Ave	0.7142	0.7072		2.48	2.50	-1.0	50.0
d3-NMeFOSAA	Ave	0.3615	0.3612		2.50	2.50	-0.0	50.0
d5-NEtFOSAA	Ave	0.3709	0.3753		2.53	2.50	1.2	50.0
13C2 PFUnA	Ave	0.5582	0.5643		2.53	2.50	1.1	50.0
13C2 PFDoA	Ave	0.6012	0.5860		2.44	2.50	-2.5	50.0
13C2 PFTeDA	Ave	0.7782	0.8067		2.59	2.50	3.7	50.0
13C2 PFHxDA	Ave	1.407	1.419		2.52	2.50	0.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_013.d
 Lims ID: ICV FULL
 Client ID:
 Sample Type: ICV
 Inject. Date: 17-Oct-2018 20:55:00 ALS Bottle#: 17 Worklist Smp#: 10
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist:
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 09:19:01 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK033

First Level Reviewer: hannigana

Date: 18-Oct-2018 08:40:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.430	0.004	0.540	4197380	2.54		101	8235	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.439	1.432	0.007	1.003	3875328	2.57			264	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.701	-0.001	1.000	3092951	2.48			449	
D 3 13C5 PFPeA										
267.90 > 223.00	1.700	1.701	-0.001	0.640	2829655	2.63		105	8518	
D 47 13C3 PFBS										
301.90 > 83.00	1.740	1.733	0.007	0.655	51877	2.34		101	507	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.739	0.001	1.000	3882747	2.16			1017	
298.90 > 99.00	1.740	1.739	0.001	1.000	1637098		2.37(1.25-3.74)		893	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.949	1.941	0.008	0.734	345445	2.37		102	497	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.939	1.943	-0.004	1.114	792110	2.35			5124	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.974	0.007	0.746	2909623	2.49		99.6	7918	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.977	0.004	1.000	2911050	2.47			977	
313.00 > 119.00	1.981	1.977	0.004	1.000	252078		11.55(5.03-15.10)		614	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.002	2.001	0.001	1.150	3767612	2.51			5972	
349.00 > 99.00	2.002	2.001	0.001	1.150	1327716		2.84(1.36-4.07)		3873	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.075	2.074	0.001	0.781	211619	2.37		94.7	1066	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.075	2.074	0.001	1.000	660964	2.67			1038	
D 9 13C4 PFHpA										
367.00 > 322.00	2.303	2.302	0.001	0.867	2693010	2.51		100	7028	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.303	2.305	-0.002	1.000	2959238	2.38			721	
363.00 > 169.00	2.303	2.305	-0.002	1.000	1207913		2.45(1.13-3.40)		1167	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.314	2.319	-0.005	1.000	3066902	2.05			3301	
399.00 > 99.00	2.314	2.319	-0.005	1.000	1023092		3.00(1.50-4.49)		1365	
D 11 18O2 PFHxS										
403.00 > 84.00	2.314	2.319	-0.005	0.871	3205005	2.40		102	4884	
77 DONA										
377.00 > 251.00	2.347	2.346	0.001	0.775	8468763	2.47			7285	
377.00 > 85.00	2.347	2.346	0.001	0.775	5069500		1.67(0.85-2.54)		9252	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.624	2.627	-0.003	0.997	755268	2.16			1802	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.632	2.628	0.004	0.991	502327	2.43		102	1635	
D 73 13C8 PFOA										
421.00 > 376.00	2.639	2.643	-0.004	0.994	4156689	2.44		99.8	6599	
* 62 13C2 PFOA										
415.00 > 370.00	2.655	2.654	0.001		2643540	2.50			6774	
D 14 13C4 PFOA										
417.00 > 372.00	2.655	2.655	0.0	1.000	2659339	2.55		102	6815	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.655	2.656	-0.001	1.000	3037333	2.50			327	
413.00 > 169.00	2.655	2.656	-0.001	1.000	1593625		1.91(0.84-2.52)		1891	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.663	2.664	-0.001	0.879	2794543	2.50			3602	
449.00 > 99.00	2.663	2.664	-0.001	0.879	714930		3.91(1.94-5.82)		1401	
D 72 13C8 PFOS										
507.00 > 99.00	3.023	3.024	-0.001	1.138	1090470	2.41		101	4541	
D 18 13C4 PFOS										
503.00 > 80.00	3.030	3.025	0.005	1.141	2027068	2.39		100	2930	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.027	-0.004	1.138	2221817	2.53		101	5724	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.030	3.029	0.001	1.000	2177397	2.20			1337	
499.00 > 99.00	3.030	3.029	0.001	1.000	471565		4.62(2.31-6.93)		818	
20 Perfluorononanoic acid										
463.00 > 419.00	3.030	3.029	0.001	1.003	2190466	2.46			903	
463.00 > 169.00	3.023	3.029	-0.006	1.000	574248		3.81(1.90-5.69)		1899	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.242	3.242	0.0	1.070	3931426	2.37			5494	
D 21 13C8 FOSA										
506.00 > 78.00	3.370	3.371	-0.001	1.269	3029297	2.48		99.1	3367	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.370	3.372	-0.002	1.000	3170259	2.61			2587	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.378	3.376	0.002	1.272	518517	2.44		102	1421	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.378	3.378	0.0	1.000	625357	2.40			2761	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.378	3.378	0.0	1.115	1676416	2.46			2799	
549.00 > 99.00	3.378	3.378	0.0	1.115	588627		2.85(1.33-3.97)		2522	
D 23 13C2 PFDA										
515.00 > 470.00	3.385	3.386	-0.001	1.275	1869575	2.48		99.0	4863	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.385	3.388	-0.003	1.000	1910974	2.51			1700	
513.00 > 169.00	3.385	3.388	-0.003	1.000	365373		5.23(2.36-7.09)		1170	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.546	3.544	0.002	1.335	954871	2.50		99.9	1955	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.546	3.548	-0.002	1.000	993860	2.70			790	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.708	3.704	0.004	1.224	1333543	2.48			3018	
599.00 > 99.00	3.708	3.704	0.004	1.224	434246		3.07(1.39-4.16)		2242	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.716	3.711	0.005	1.400	992081	2.53		101	1097	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.716	3.719	-0.003	0.998	1298953	2.44			1367	
563.00 > 169.00	3.725	3.719	0.006	1.000	336187		3.86(2.12-6.36)		1527	
D 30 13C2 PFUnA										
565.00 > 520.00	3.725	3.719	0.006	1.403	1491672	2.53		101	6132	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.716	3.720	-0.004	1.000	972606	2.92			1525	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.879	3.879	0.0	1.280	6157545	2.51			6438	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.013	4.013	0.0	1.000	1644648	2.40			1031	
613.00 > 169.00	4.013	4.013	0.0	1.000	440913		3.73(2.13-6.40)		1852	
D 36 13C2 PFDaA										
615.00 > 570.00	4.013	4.015	-0.002	1.511	1549182	2.44		97.5	2999	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.021	4.015	0.006	1.190	448862	2.29			1971	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.255	4.255	0.0	1.404	631361	2.46			2178	
699.00 > 99.00	4.255	4.255	0.0	1.404	924050		0.68(0.00-0.00)		3660	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.283	4.279	0.004	1.067	1800907	2.65			1284	
663.00 > 169.00	4.283	4.279	0.004	1.067	610119		2.95(1.25-3.76)		2399	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.517	4.518	-0.001	1.000	543500	2.37			2222	
713.00 > 219.00	4.517	4.518	-0.001	1.000	386534		1.41(0.71-2.13)		1877	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.517	4.519	-0.002	1.701	2132424	2.59		104	4597	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.937	4.934	0.003	1.859	3750943	2.52		101	4129	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.937	4.938	-0.001	1.000	3463643	2.60			545	
813.00 > 169.00	4.937	4.938	-0.001	1.000	658339		5.26(2.86-8.58)		2178	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.281	5.286	-0.005	1.070	4309646	2.56			513	
913.00 > 169.00	5.281	5.286	-0.005	1.070	560489		7.69(3.83-11.48)		1696	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_013.d

Injection Date: 17-Oct-2018 20:55:00

Instrument ID: A8_N

Lims ID: ICV FULL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

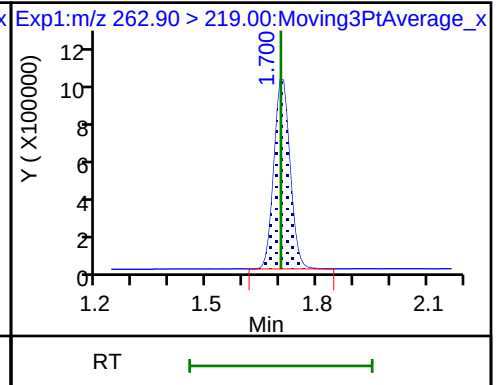
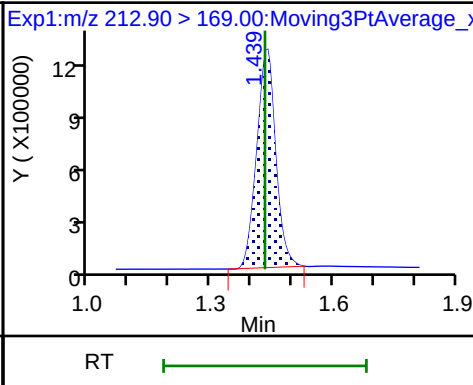
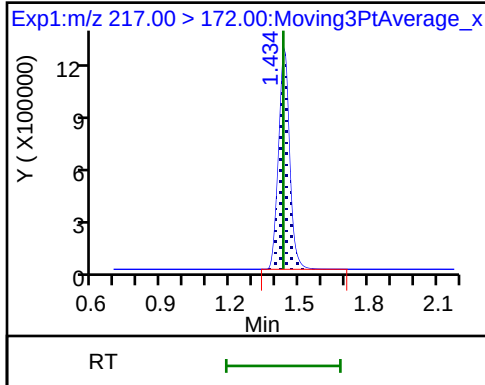
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

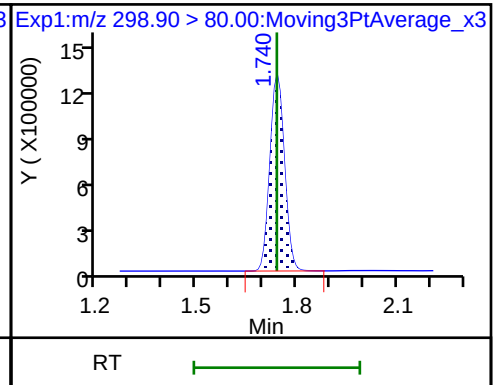
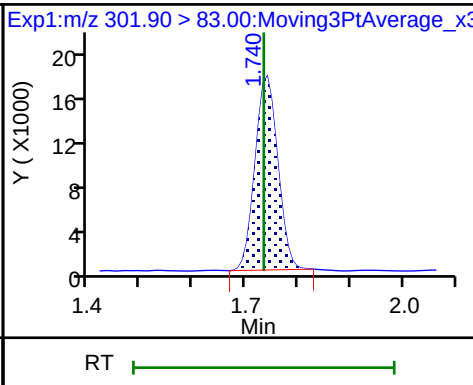
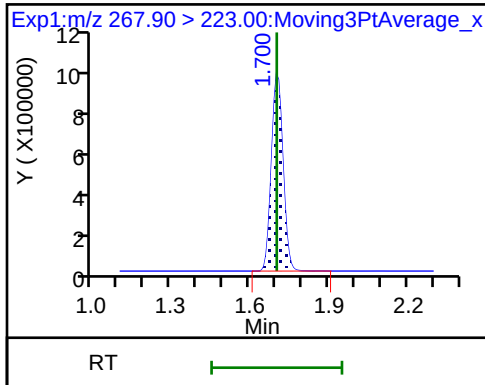
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

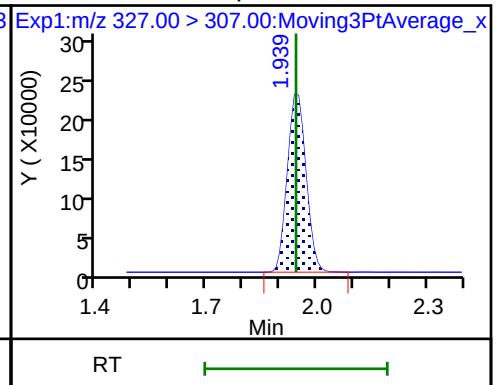
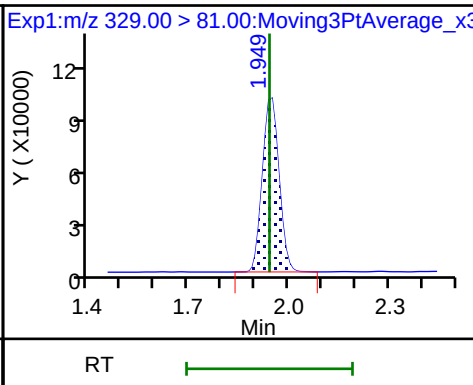
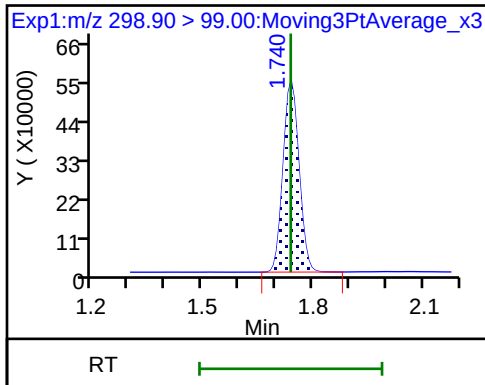
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

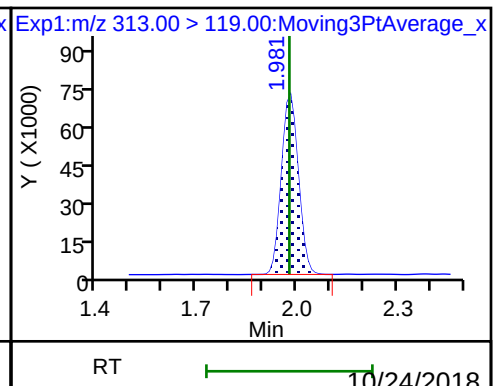
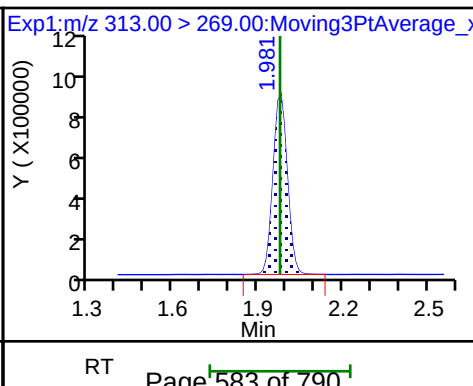
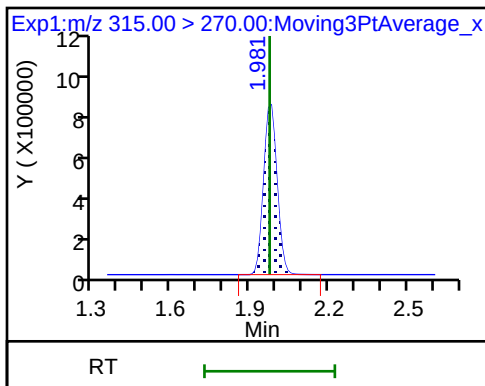
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

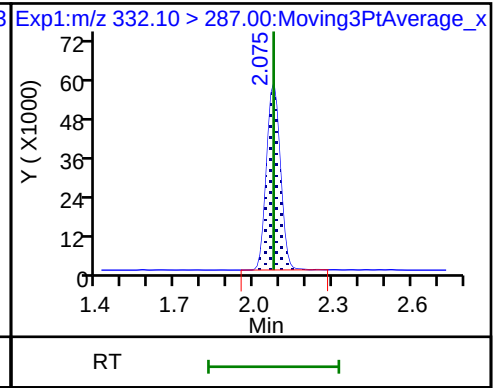
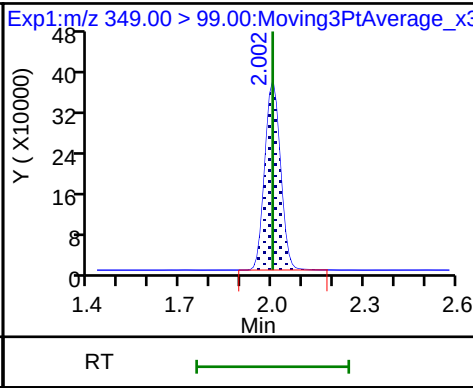
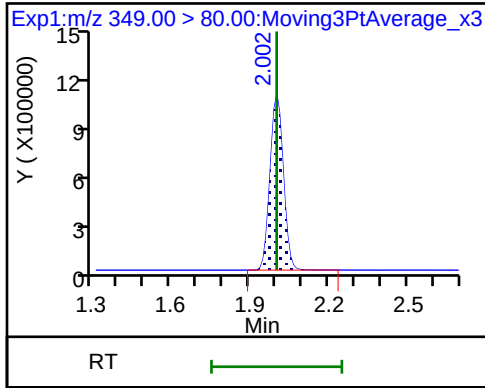
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

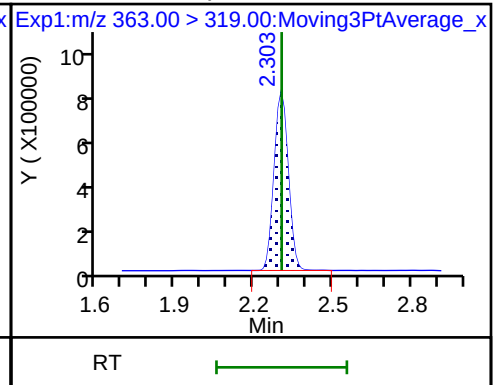
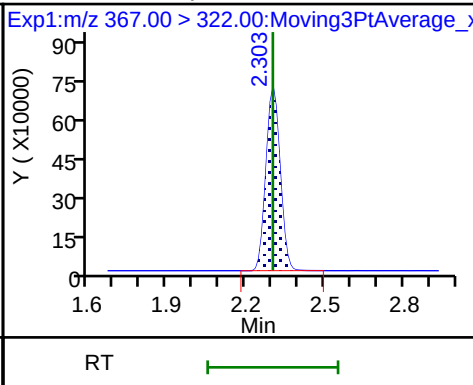
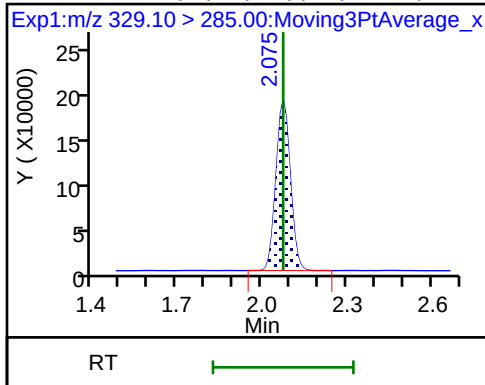
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

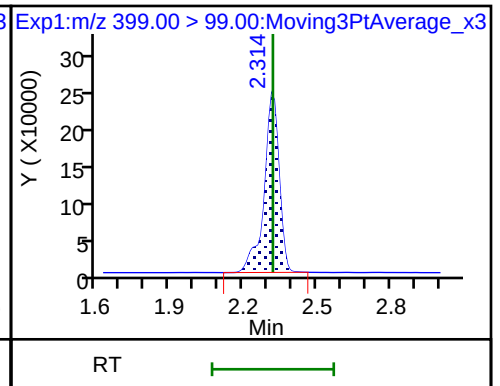
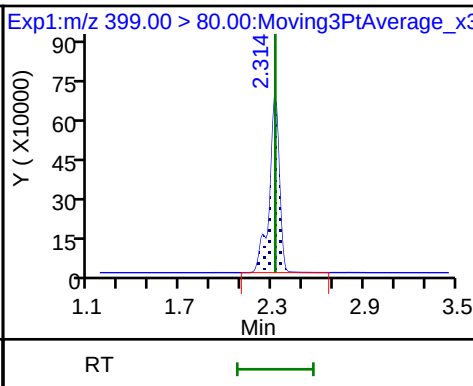
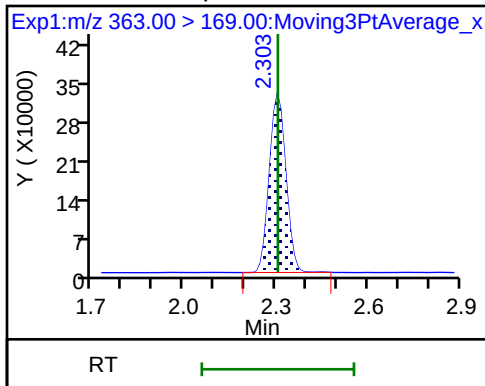
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

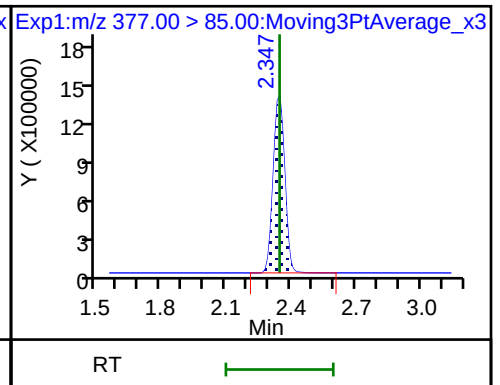
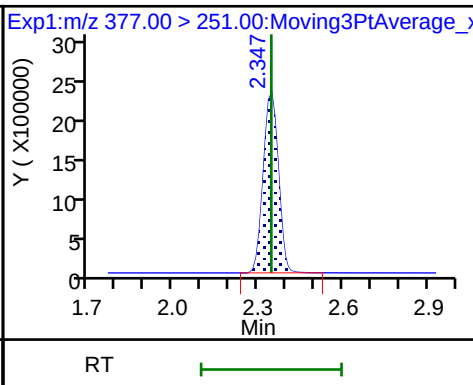
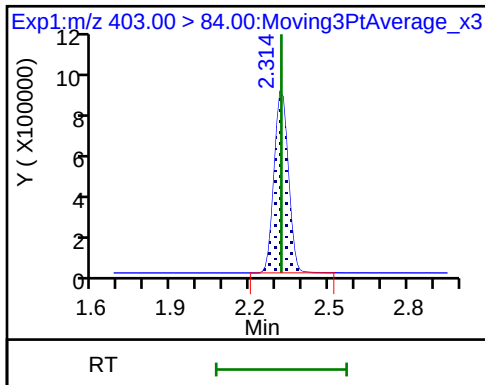
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

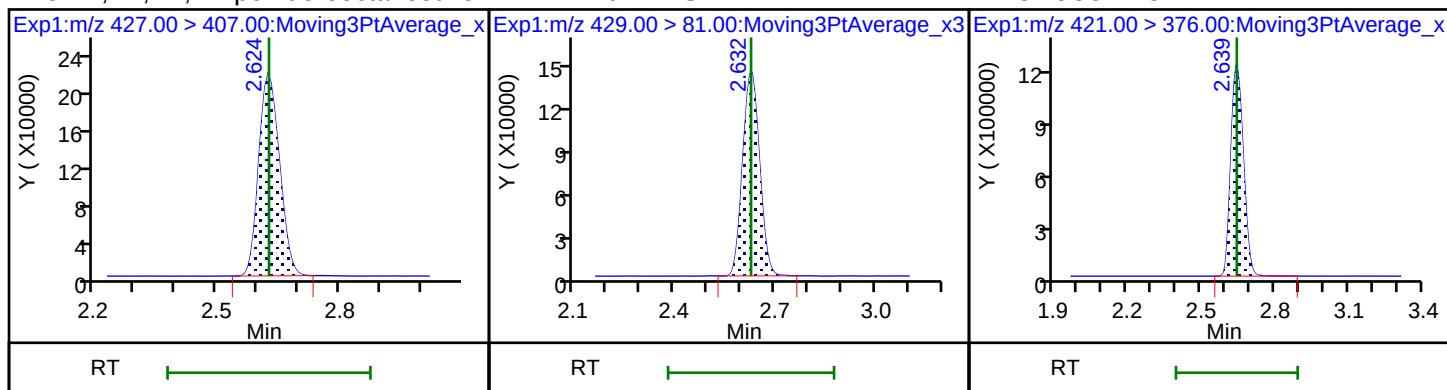
77 DONA

77 DONA



13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

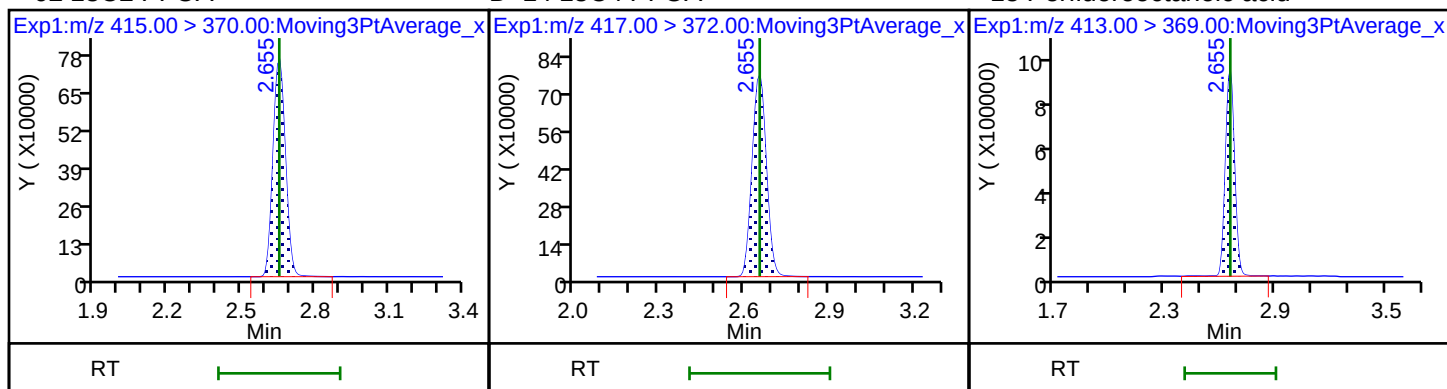
D 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

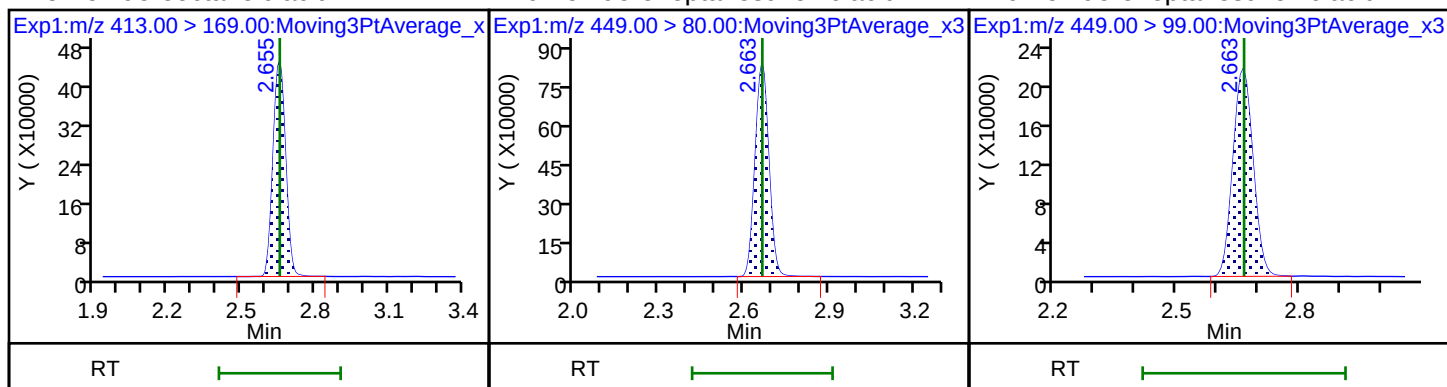
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

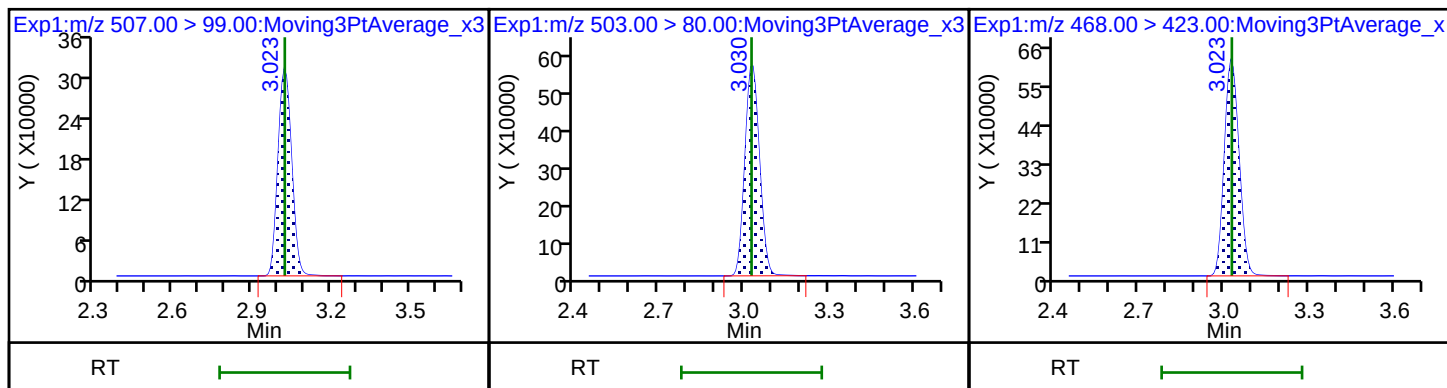
16 Perfluoroheptanesulfonic acid

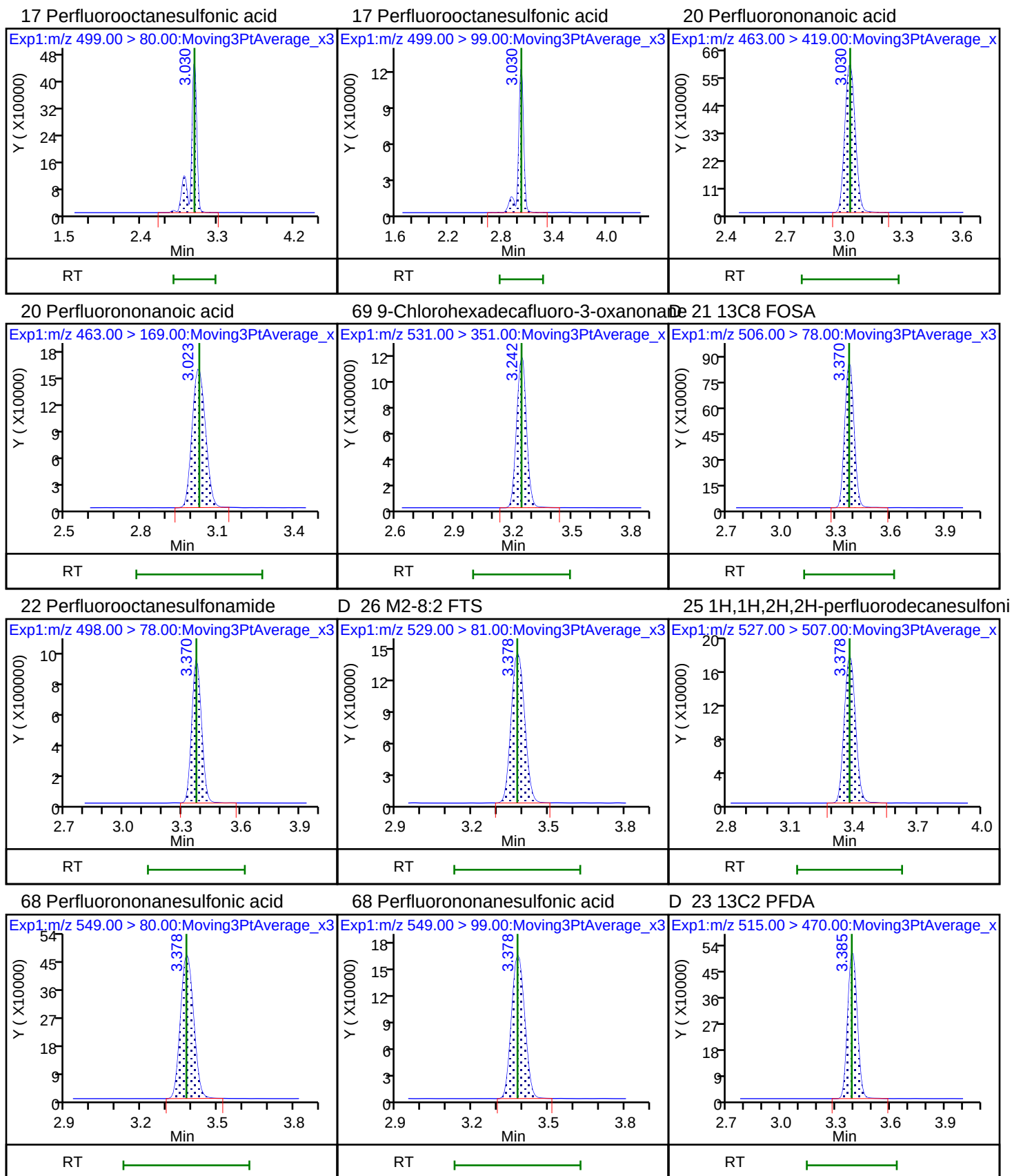


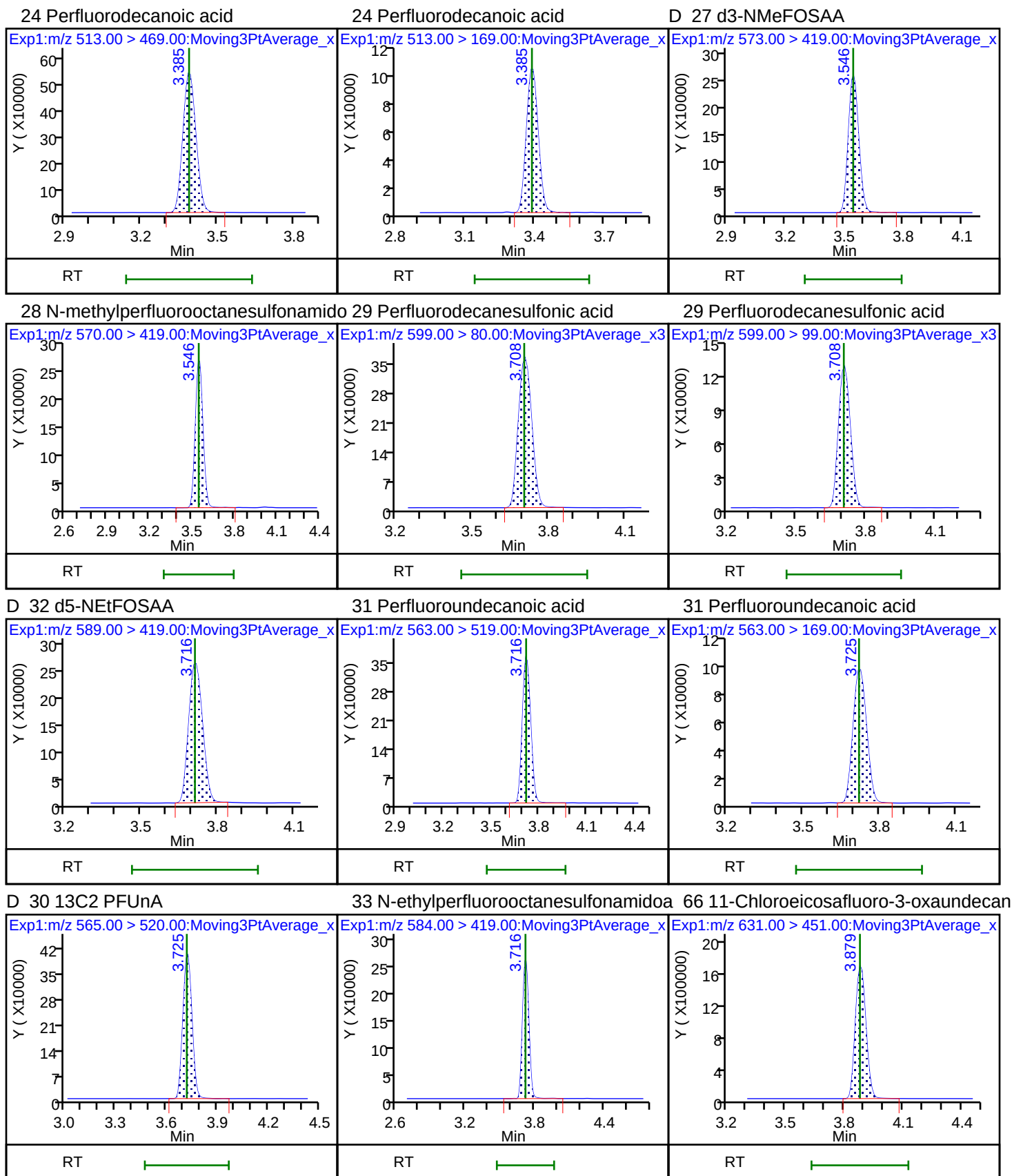
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA



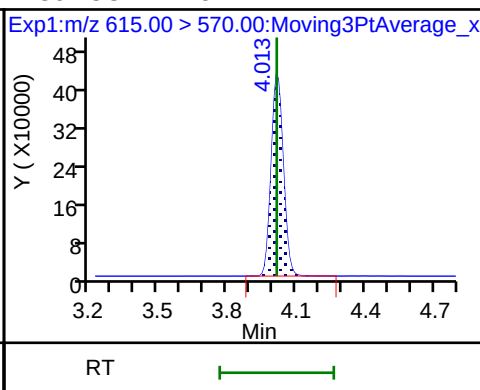
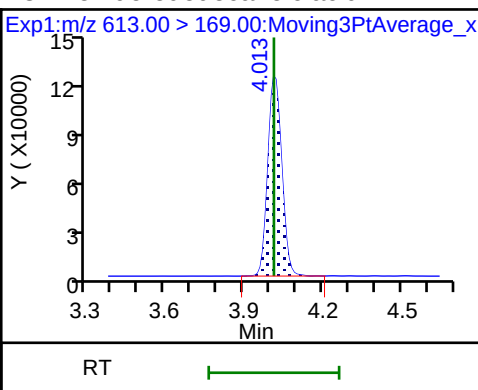
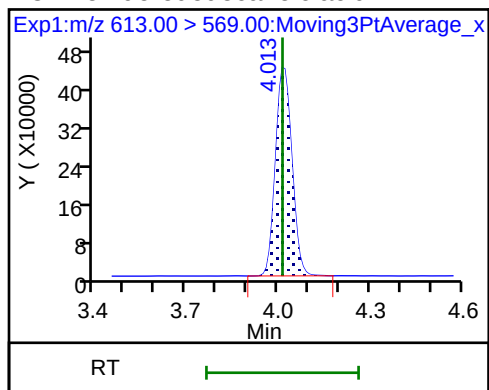




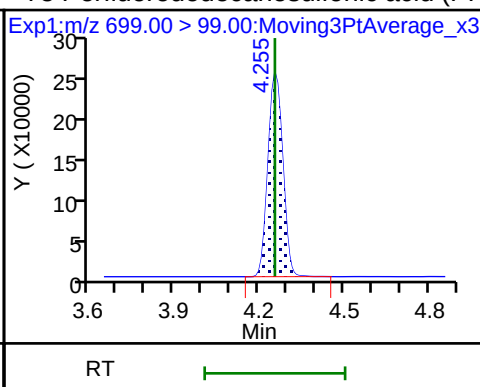
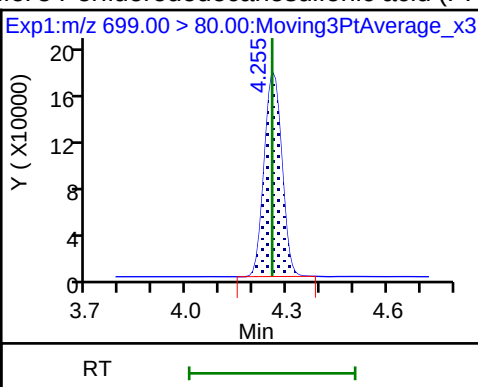
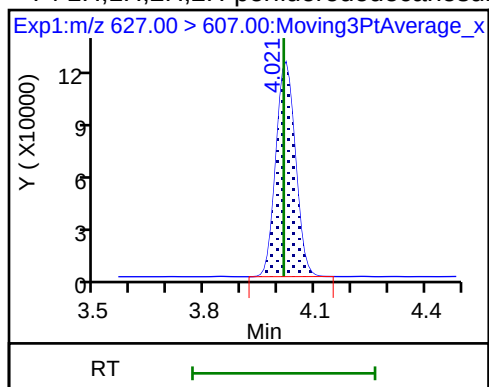
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDa



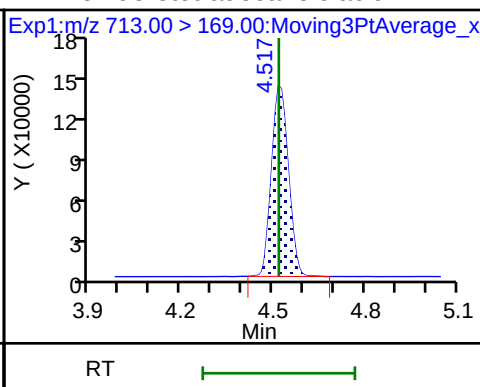
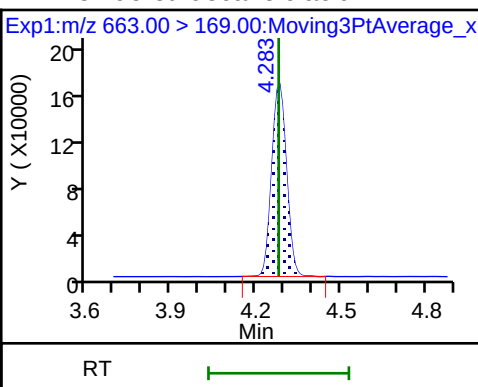
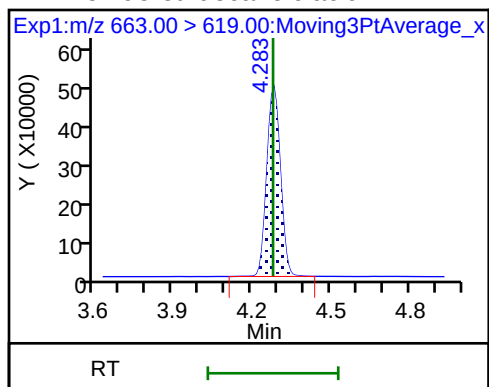
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

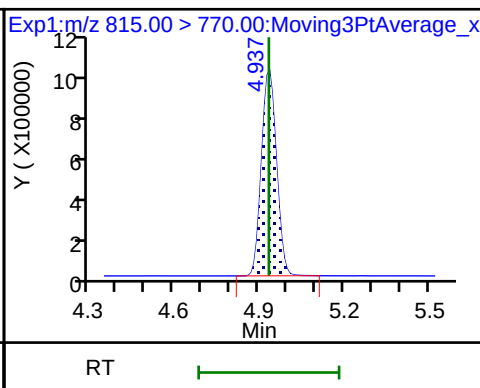
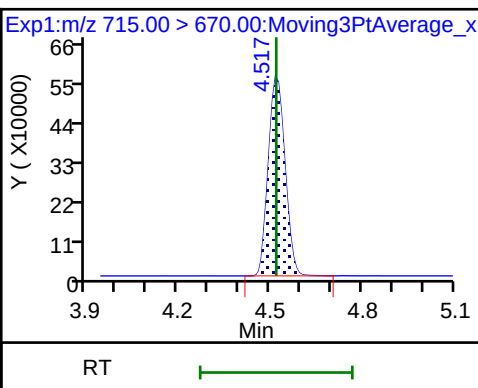
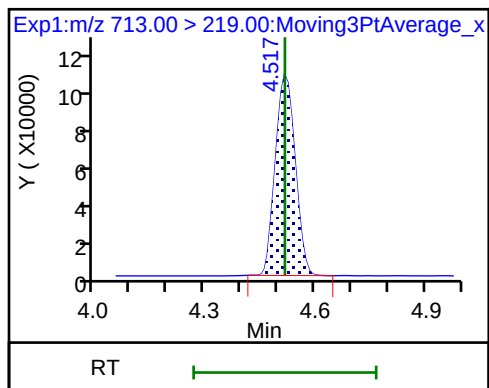
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

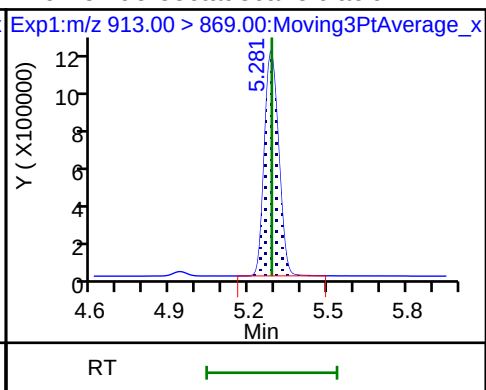
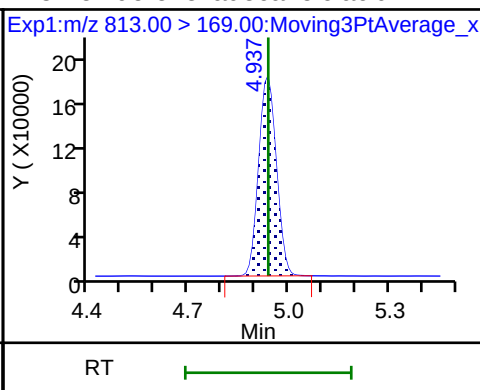
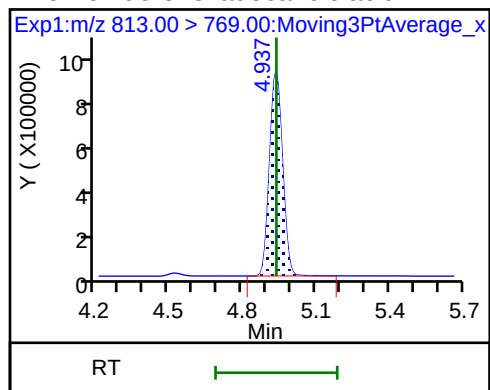
D 44 13C2 PFHxDA



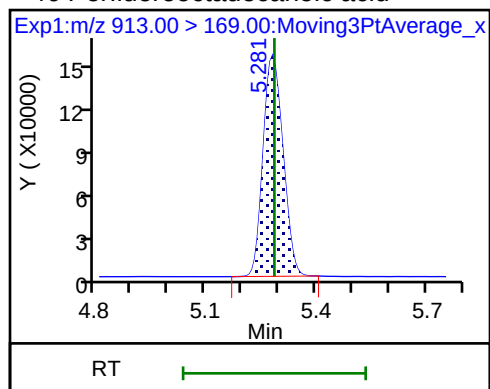
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

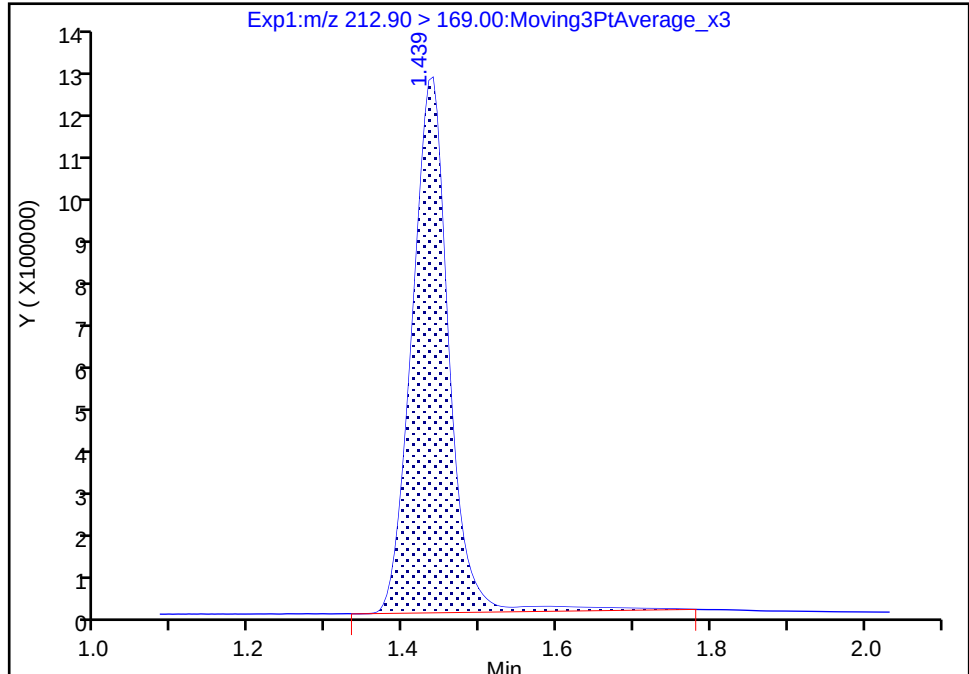
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17\ICAL_013.d
Injection Date: 17-Oct-2018 20:55:00 Instrument ID: A8_N
Lims ID: ICV FULL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

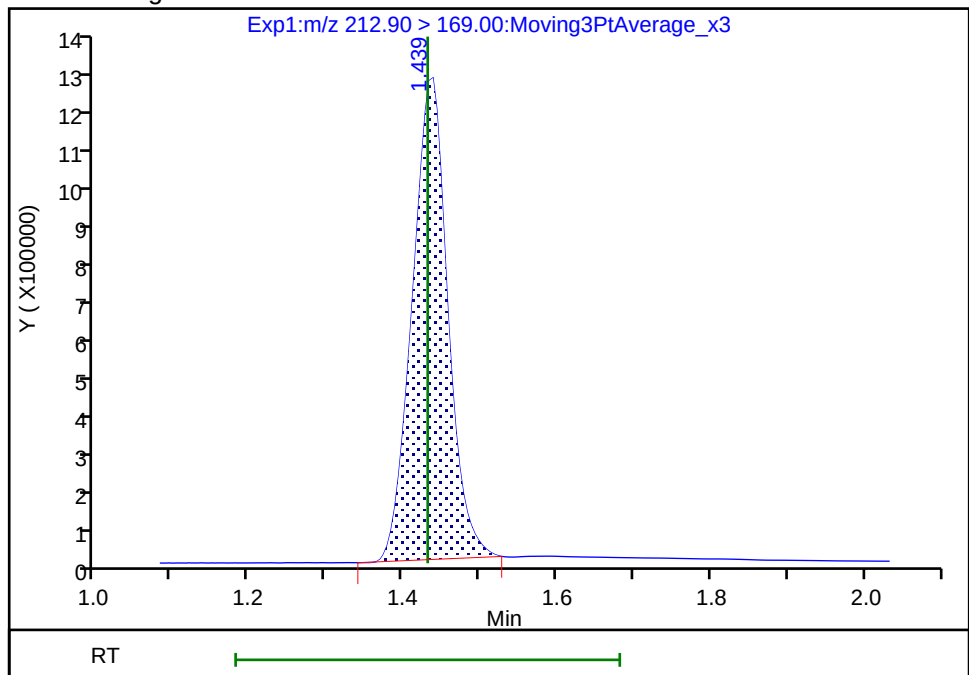
RT: 1.44
Area: 4040178
Amount: 2.678035
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 3875328
Amount: 2.568764
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 18-Oct-2018 08:40:12
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/24/2018

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCVL 320-253219/2 Calibration Date: 10/18/2018 15:06

Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40

Lab File ID: 2018.10.17LLAAA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8986	0.8370		0.0466	0.0500	-6.9	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.104	1.148		0.0520	0.0500	4.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	80.51	69.18		0.0380	0.0442	-14.1	50.0
4:2 FTS	AveID	15.12	13.86		0.428	0.467	-8.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.014	0.9334		0.0460	0.0500	-7.9	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.28	58.52		0.0408	0.0469	-13.0	50.0
HFPO-DA (GenX)	AveID	2.927	3.111		0.0531	0.0500	6.3	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.154	1.107		0.0480	0.0500	-4.1	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.104	1.057		0.0436	0.0455	-4.2	50.0
DONA	AveID	4.046	3.906		0.0455	0.0471	-3.5	50.0
6:2 FTS	AveID	1.651	1.556		0.447	0.474	-5.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.144	1.095		0.0479	0.0501	-4.3	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.317	1.258		0.0455	0.0476	-4.5	50.0
Perfluorononanoic acid (PFNA)	AveID	1.003	0.9606		0.0479	0.0500	-4.2	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.165	1.093		0.0435	0.0464	-6.2	50.0
F-53B Major	AveID	1.957	1.710		0.0407	0.0466	-12.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.002	0.9717		0.0485	0.0500	-3.0	50.0
8:2 FTS	AveID	1.205	1.185		0.471	0.479	-1.6	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8019	0.7981		0.0478	0.0480	-0.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.018	1.016		0.0499	0.0500	-0.2	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9620	0.9634		0.501	0.500	0.1	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6341	0.5765		0.0438	0.0482	-9.1	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8380	0.8199		0.489	0.500	-2.2	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8929	0.8223		0.0460	0.0500	-7.9	50.0
F-53B Minor	AveID	2.895	2.606		0.0424	0.0471	-10.0	50.0
10:2 FTS	AveID	0.9034	0.9602		0.0512	0.0482	6.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.105	1.122		0.0507	0.0500	1.5	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3021	0.3083		0.0494	0.0484	2.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.095	1.078		0.0492	0.0500	-1.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2684	0.2360		0.0440	0.0500	-12.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.266		0.0473	0.0500	-5.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-253219/2 Calibration Date: 10/18/2018 15:06
 Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40
 Lab File ID: 2018.10.17LLAAA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.123	1.153		0.0513	0.0500	2.7	50.0
13C4 PFBA	Ave	1.565	1.525		2.44	2.50	-2.6	50.0
13C5 PFPeA	Ave	1.017	1.016		2.50	2.50	-0.1	50.0
13C3 PFBS	Ave	0.0209	0.0225		2.50	2.33	7.6	50.0
M2-4:2 FTS	Ave	0.1378	0.1364		2.31	2.34	-1.0	50.0
13C2 PFHxA	Ave	1.106	1.100		2.49	2.50	-0.5	50.0
13C3 HFPO-DA	Ave	0.0845	0.0769		2.28	2.50	-9.0	50.0
13C4 PFHpA	Ave	1.015	1.036		2.55	2.50	2.0	50.0
18O2 PFHxS	Ave	1.262	1.302		2.44	2.37	3.2	50.0
M2-6:2 FTS	Ave	0.1953	0.1963		2.39	2.38	0.5	50.0
13C8 PFOA	Ave	1.609	1.595		2.43	2.45	-0.9	50.0
13C4 PFOA	Ave	0.9873	0.9778		2.48	2.50	-1.0	50.0
13C4 PFOS	Ave	0.8012	0.8125		2.42	2.39	1.4	50.0
13C5 PFNA	Ave	0.8307	0.8109		2.44	2.50	-2.4	50.0
13C8 PFOS	Ave	0.4270	0.4321		2.42	2.39	1.2	50.0
13C8 FOSA	Ave	1.156	1.130		2.44	2.50	-2.3	50.0
M2-8:2 FTS	Ave	0.2011	0.2046		2.44	2.40	1.7	50.0
13C2 PFDA	Ave	0.7142	0.6925		2.42	2.50	-3.0	50.0
d3-NMeFOSAA	Ave	0.3615	0.3469		2.40	2.50	-4.1	50.0
d5-NEtFOSAA	Ave	0.3709	0.3825		2.58	2.50	3.1	50.0
13C2 PFUnA	Ave	0.5582	0.5706		2.56	2.50	2.2	50.0
13C2 PFDoA	Ave	0.6012	0.6055		2.52	2.50	0.7	50.0
13C2 PFTeDA	Ave	0.7782	0.7449		2.39	2.50	-4.3	50.0
13C2 PFHxDA	Ave	1.407	1.340		2.38	2.50	-4.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 18-Oct-2018 15:06:07 ALS Bottle#: 34 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCVL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub38
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 19-Oct-2018 08:21:15 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: mongkols

Date: 19-Oct-2018 08:21:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.438	1.436	0.002	1.003	65035	0.0466		93.1	4.8	
D 1 13C4 PFBA										
217.00 > 172.00	1.433	1.436	-0.003	0.539	3884995	2.44		97.4	7993	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.708	1.702	0.006	1.000	59432	0.0520		104	8.3	
D 3 13C5 PFPeA										
267.90 > 223.00	1.708	1.704	0.004	0.642	2588040	2.50		99.9	6903	
D 47 13C3 PFBS										
301.90 > 83.00	1.740	1.736	0.004	0.654	53339	2.50		108	596	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.742	-0.002	1.000	70147	0.0380		85.9	22.1	
298.90 > 99.00	1.740	1.742	-0.002	1.000	31070		2.26(1.25-3.74)		18.7	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.949	1.943	0.006	1.120	148521	0.4281		91.7	1766	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.949	1.945	0.004	0.733	324660	2.31		99.0	449	
D 7 13C2 PFHxA										
315.00 > 270.00	1.980	1.976	0.004	0.744	2802451	2.49		99.5	7413	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.980	1.985	-0.005	1.000	52314	0.0460		92.1	14.2	
313.00 > 119.00	1.980	1.985	-0.005	1.000	4534		11.54(5.03-15.10)		10.9	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.001	2.006	-0.005	1.150	62964	0.0408		87.0	266	
349.00 > 99.00	2.001	2.006	-0.005	1.150	24605		2.56(1.36-4.07)		92.1	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.085	2.079	0.006	1.005	12195	0.0531		106	19.0	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.074	2.081	-0.007	0.780	195982	2.28		91.0	775	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.310	0.004	1.000	58443	0.0480		95.9	14.3	
363.00 > 169.00	2.314	2.310	0.004	1.000	21664		2.70(1.13-3.40)		24.4	
D 9 13C4 PFHpA										
367.00 > 322.00	2.314	2.312	0.002	0.870	2638813	2.55		102	7195	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.325	2.321	0.004	1.000	63822	0.0436		95.8	82.2	
399.00 > 99.00	2.325	2.321	0.004	1.000	20734		3.08(1.50-4.49)		43.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.325	2.323	0.002	0.874	3138215	2.44		103	5062	
77 DONA										
377.00 > 251.00	2.347	2.343	0.004	0.776	152320	0.0455		96.5	340	
377.00 > 85.00	2.347	2.343	0.004	0.776	90027		1.69(0.85-2.54)		523	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.629	2.627	0.002	1.000	147546	0.4467		94.2	486	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.629	2.636	-0.007	0.988	475102	2.39		101	1604	
D 73 13C8 PFOA										
421.00 > 376.00	2.645	2.652	-0.007	0.994	3979097	2.43		99.1	9673	
* 62 13C2 PFOA										
415.00 > 370.00	2.660	2.658	0.002		2547668	2.50			6683	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.660	2.658	0.002	1.003	54597	0.0479		95.7	5.5	M
413.00 > 169.00	2.653	2.658	-0.005	1.000	31647		1.73(0.84-2.52)		40.9	M
D 14 13C4 PFOA										
417.00 > 372.00	2.653	2.659	-0.006	0.997	2491051	2.48		99.0	4402	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.667	2.665	0.002	0.882	49576	0.0455		95.5	241	
449.00 > 99.00	2.660	2.665	-0.005	0.880	13728		3.61(1.94-5.82)		53.3	
20 Perfluorononanoic acid										
463.00 > 419.00	3.032	3.025	0.007	1.003	39692	0.0479		95.8	17.8	
463.00 > 169.00	3.024	3.025	-0.001	1.000	10302		3.85(1.90-5.69)		57.9	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.032	3.025	0.007	1.003	41990	0.0435		93.8	64.7	M
499.00 > 99.00	3.024	3.025	-0.001	1.000	10854		3.87(2.31-6.93)		37.6	M
D 18 13C4 PFOS										
503.00 > 80.00	3.024	3.034	-0.010	1.137	1978980	2.42		101	2958	
D 19 13C5 PFNA										
468.00 > 423.00	3.024	3.034	-0.010	1.137	2065943	2.44		97.6	4622	
D 72 13C8 PFOS										
507.00 > 99.00	3.024	3.034	-0.010	1.137	1052421	2.42		101	3027	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.244	3.237	0.007	1.073	65972	0.0407		87.4	265	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.372	3.366	0.006	1.000	55943	0.0485		97.0	399	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.379	3.373	0.006	1.002	118363	0.4714		98.4	715	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.379	3.373	0.006	1.118	31720	0.0478		99.5	157	
549.00 > 99.00	3.379	3.373	0.006	1.118	10924		2.90(1.33-3.97)		85.6	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.387	3.381	0.006	1.000	35843	0.0499		99.8	37.0	
513.00 > 169.00	3.394	3.381	0.013	1.002	7576		4.73(2.36-7.09)		37.1	
D 21 13C8 FOSA										
506.00 > 78.00	3.372	3.381	-0.009	1.268	2878716	2.44		97.7	3292	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.372	3.389	-0.017	1.268	499257	2.44		102	1920	
D 23 13C2 PFDA										
515.00 > 470.00	3.387	3.396	-0.009	1.273	1764185	2.42		97.0	4208	
28 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	3.547	3.541	0.006	1.002	170287	0.5007		100	185	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.539	3.557	-0.018	1.331	883775	2.40		95.9	1638	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.702	3.695	0.007	1.224	23010	0.0438		90.9	125	
599.00 > 99.00	3.694	3.695	-0.001	1.221	7856		2.93(1.39-4.16)		43.9	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.728	3.712	0.016	1.002	23906	0.0460		92.1	23.0	
563.00 > 169.00	3.719	3.712	0.007	1.000	5507		4.34(2.12-6.36)		35.0	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.719	3.712	0.007	1.002	159784	0.4892		97.8	532	
D 30 13C2 PFUnA										
565.00 > 520.00	3.719	3.722	-0.003	1.398	1453570	2.56		102	1934	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.711	3.722	-0.011	1.395	974383	2.58		103	1503	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.882	3.874	0.008	1.284	101615	0.0424		90.0	335	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.016	4.009	0.007	1.000	34615	0.0507		101	24.6	
613.00 > 169.00	4.016	4.009	0.007	1.000	7433		4.66(2.13-6.40)		31.0	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.016	4.009	0.007	1.191	9648	0.0512		106	83.0	
D 36 13C2 PFDaA										
615.00 > 570.00	4.016	4.027	-0.011	1.510	1542554	2.52		101	4464	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.259	4.250	0.009	1.408	12356	0.0494		102	75.5	
699.00 > 99.00	4.249	4.250	-0.001	1.405	16834		0.73(0.00-0.00)		125	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.278	4.279	-0.001	1.065	33266	0.0492		98.5	23.6	
663.00 > 169.00	4.287	4.279	0.008	1.067	10425		3.19(1.25-3.76)		69.0	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.518	4.521	-0.003	1.000	8958	0.0440		87.9	67.0	
713.00 > 219.00	4.518	4.521	-0.003	1.000	7141		1.25(0.71-2.13)		114	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.518	4.532	-0.014	1.698	1897859	2.39		95.7	3161	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.941	4.935	0.006	1.000	86449	0.0473		94.5	15.9	
813.00 > 169.00	4.941	4.935	0.006	1.000	16552		5.22(2.86-8.58)		110	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.941	4.943	-0.002	1.858	3414405	2.38		95.2	5121	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.291	5.286	0.005	1.071	78727	0.0513		103	12.7	
913.00 > 169.00	5.284	5.286	-0.002	1.069	10597		7.43(3.83-11.48)		99.5	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LLCCVL_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_005.d

Injection Date: 18-Oct-2018 15:06:07

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 34

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

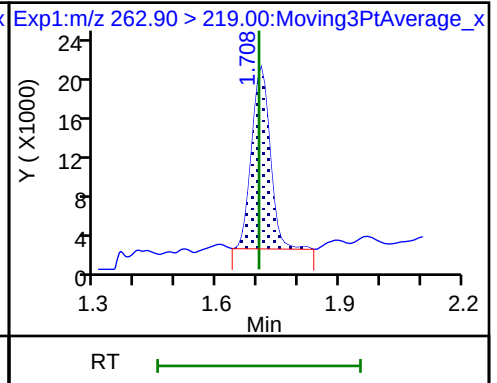
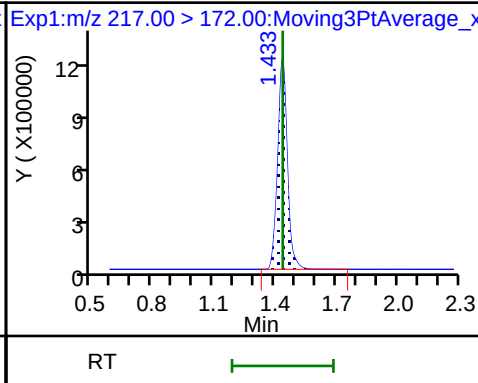
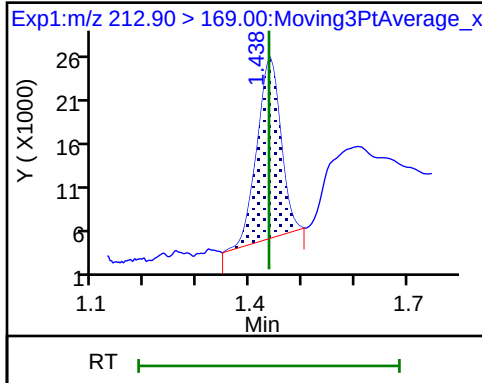
Method: A8_N

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

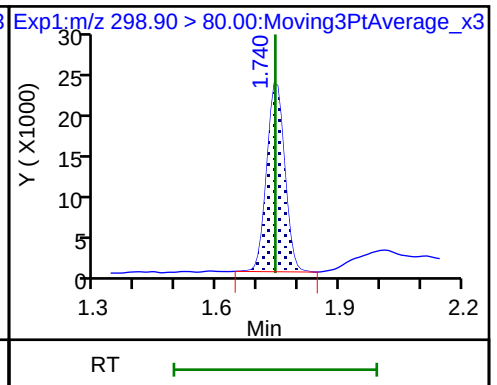
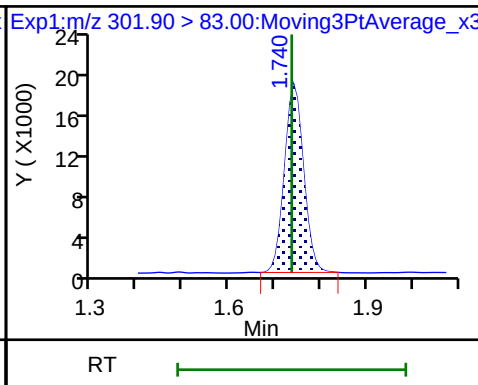
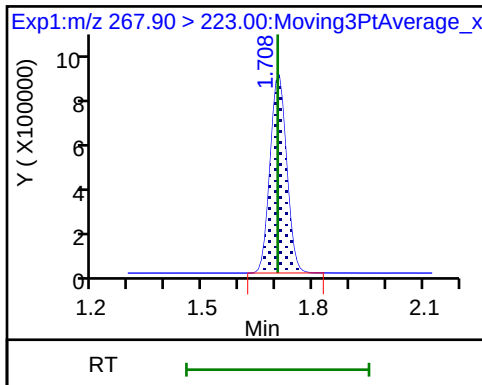
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

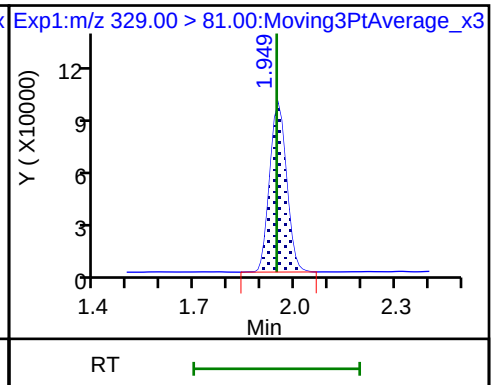
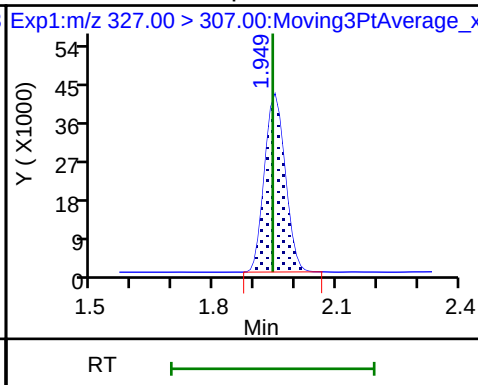
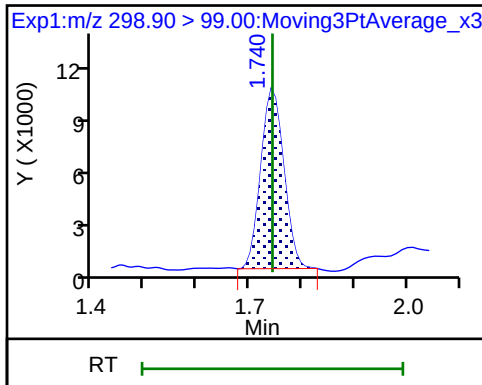
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

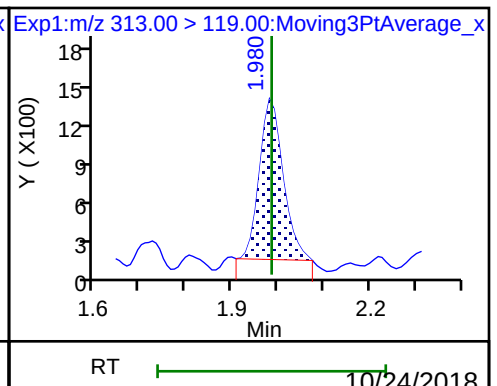
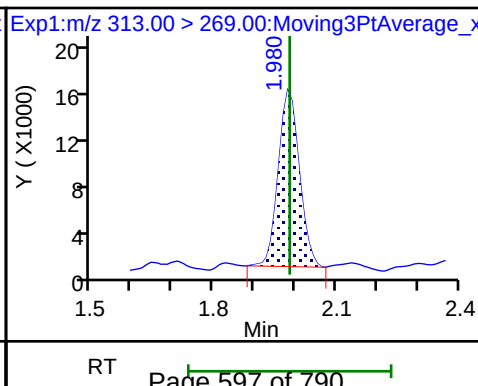
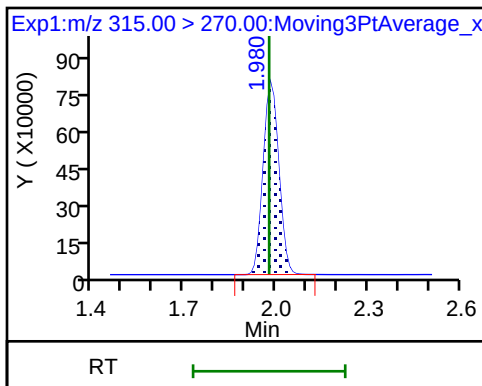
D 60 M2-4:2 FTS

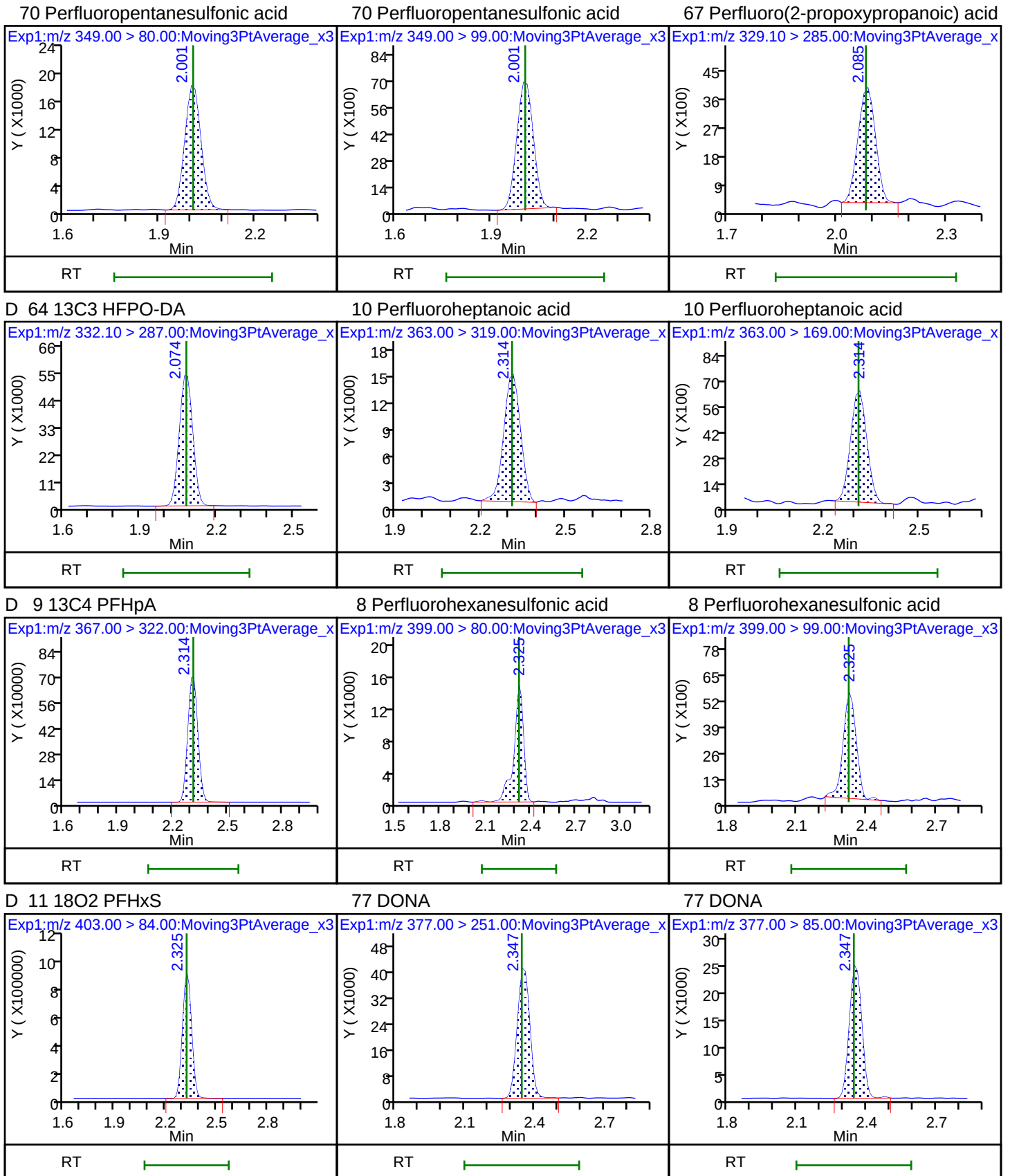


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

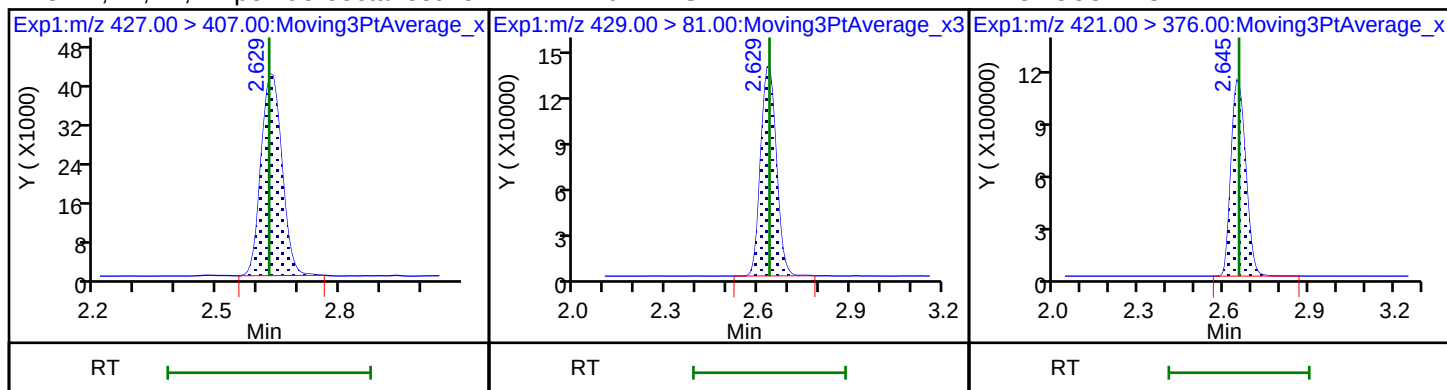
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

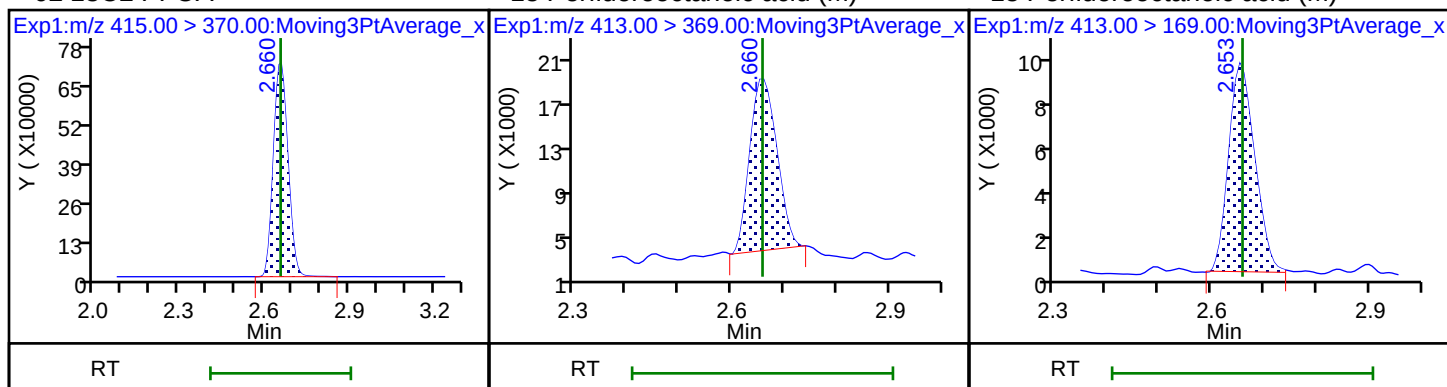
D 73 13C8 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid (M)

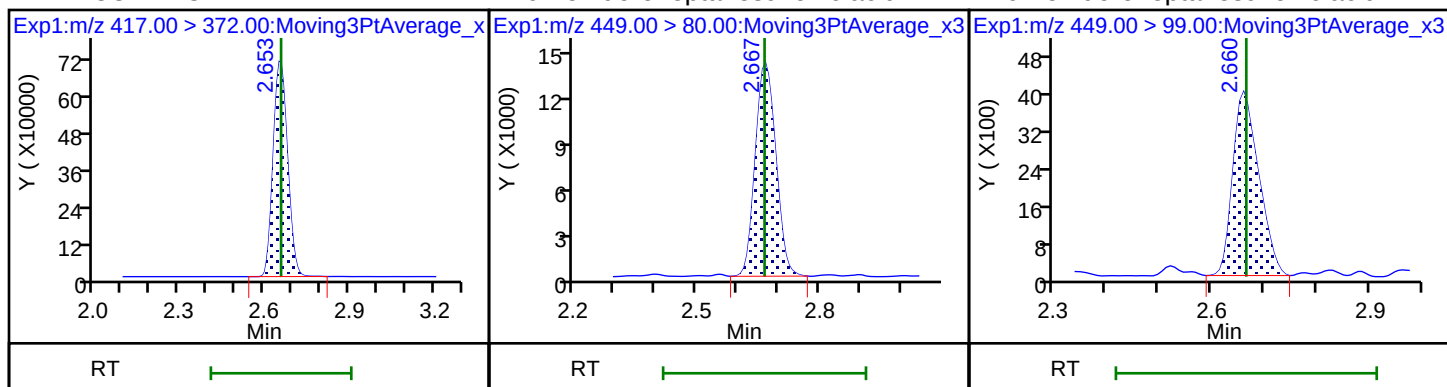
15 Perfluorooctanoic acid (M)



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

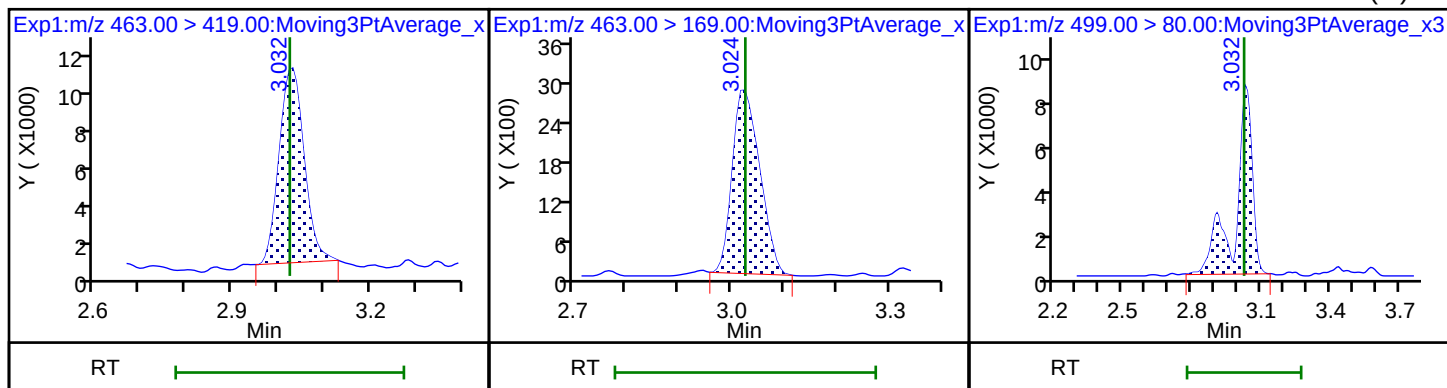
16 Perfluoroheptanesulfonic acid



20 Perfluorononanoic acid

20 Perfluorononanoic acid

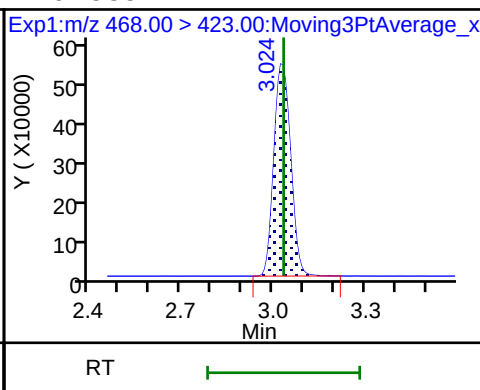
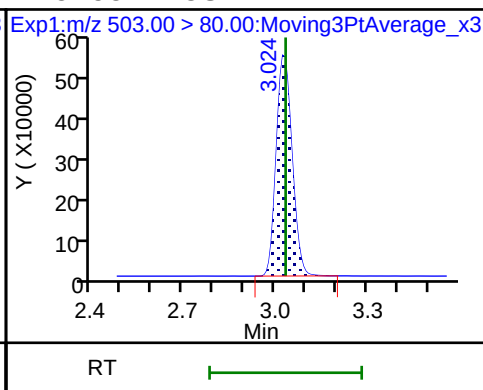
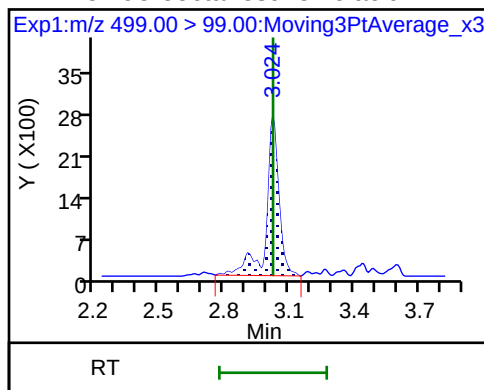
17 Perfluorooctanesulfonic acid (M)



17 Perfluorooctanesulfonic acid

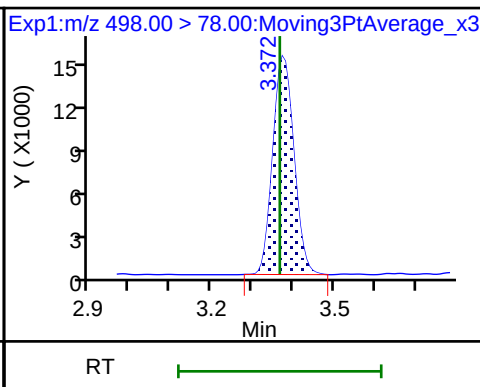
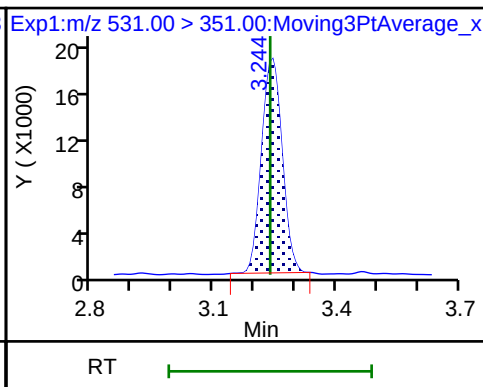
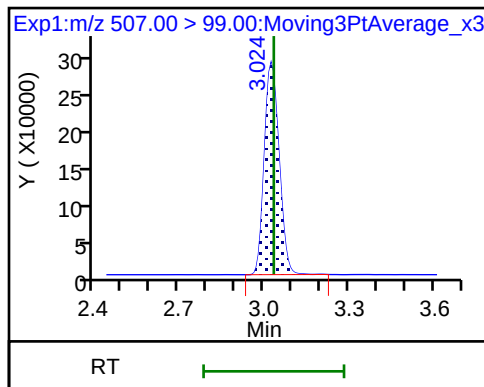
D 18 13C4 PFOS

D 19 13C5 PFNA



D 72 13C8 PFOS

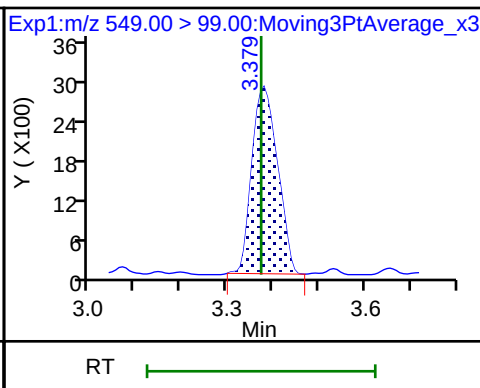
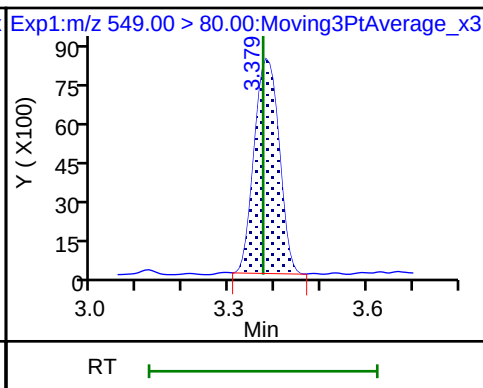
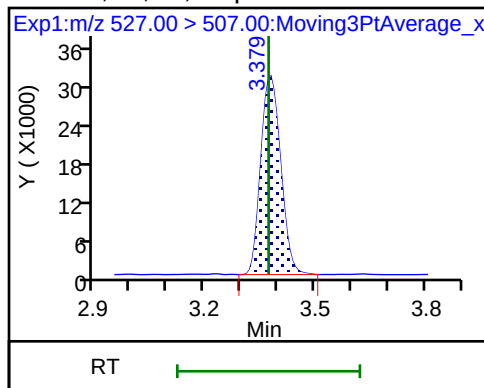
69 9-Chlorohexadecafluoro-3-oxanonan-2 Perfluorooctanesulfonamide



25 1H,1H,2H,2H-perfluorodecanesulfoni

68 Perfluorononanesulfonic acid

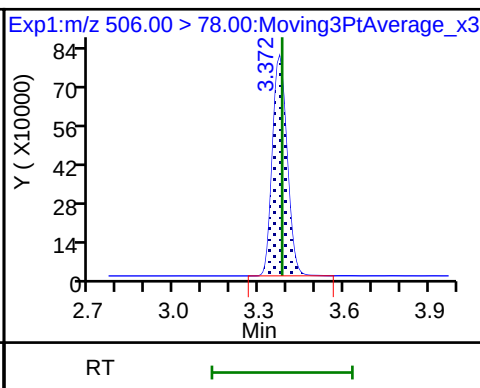
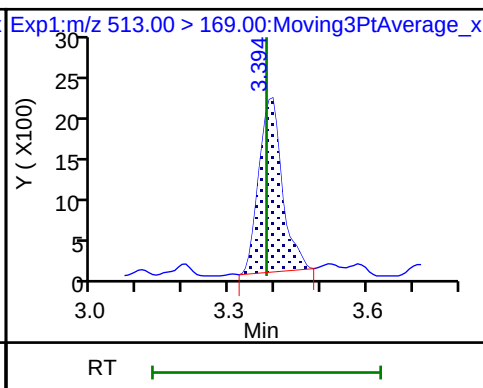
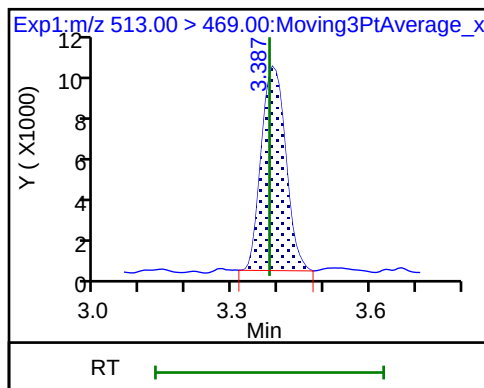
68 Perfluorononanesulfonic acid



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

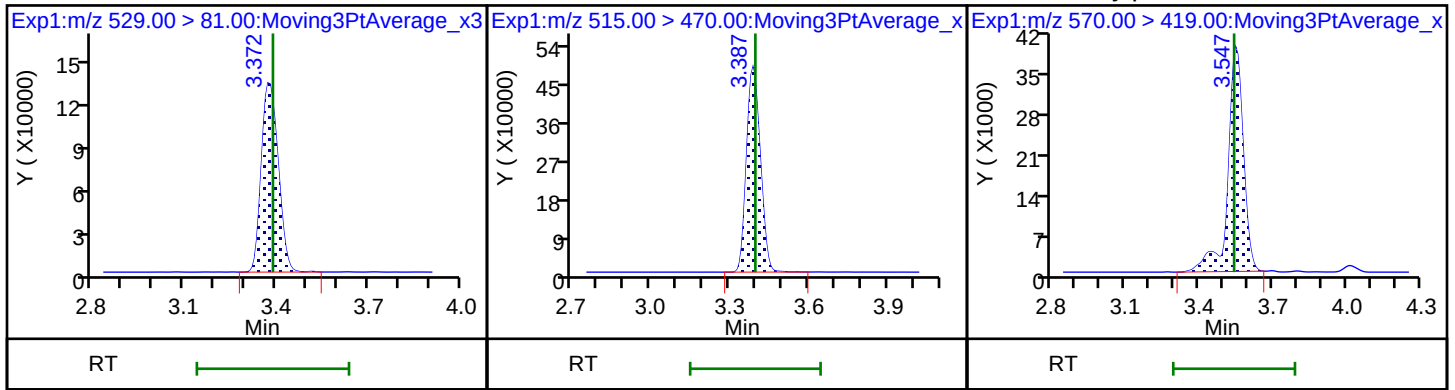
D 21 13C8 FOSA



D 26 M2-8:2 FTS

D 23 13C2 PFDA

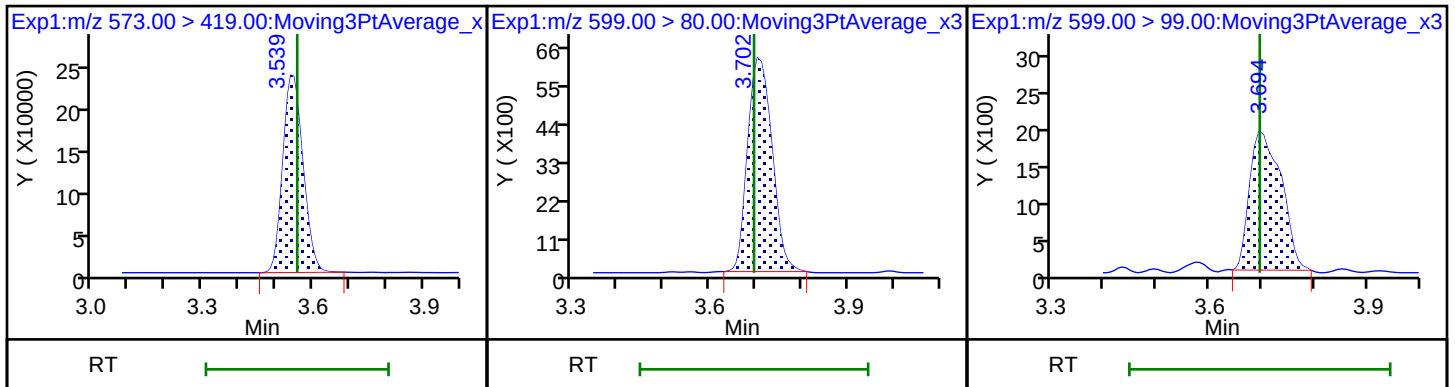
28 N-methylperfluorooctanesulfonamido (M)



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

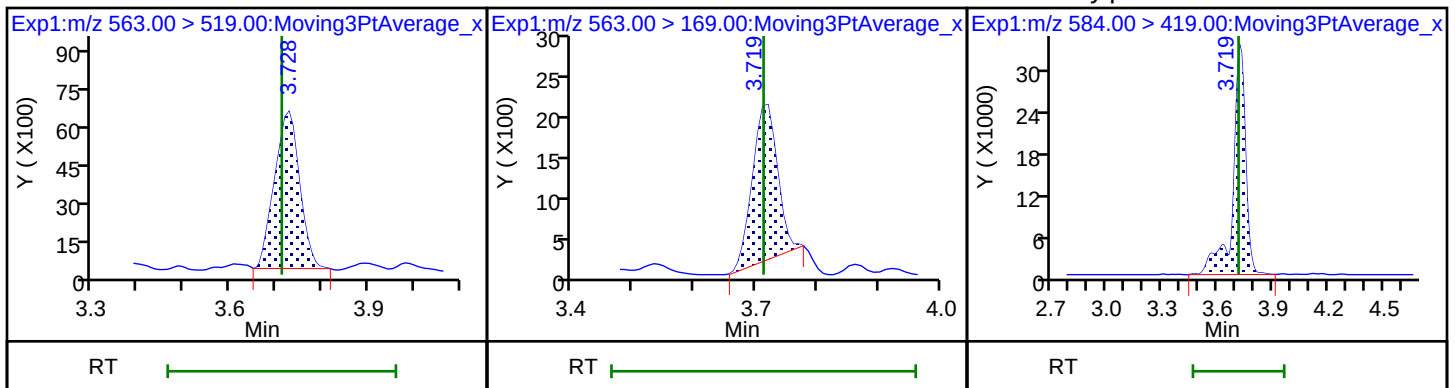
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

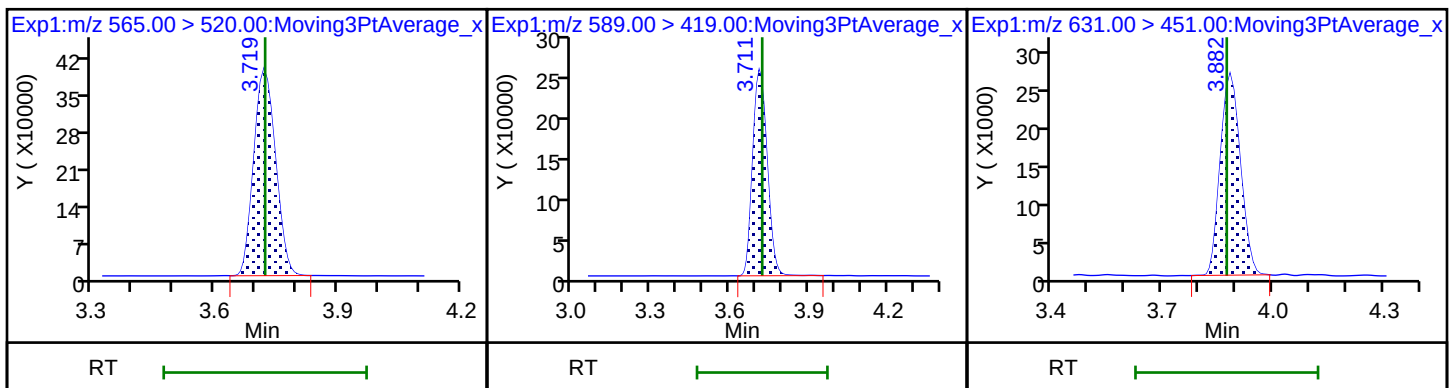
33 N-ethylperfluorooctanesulfonamidoa

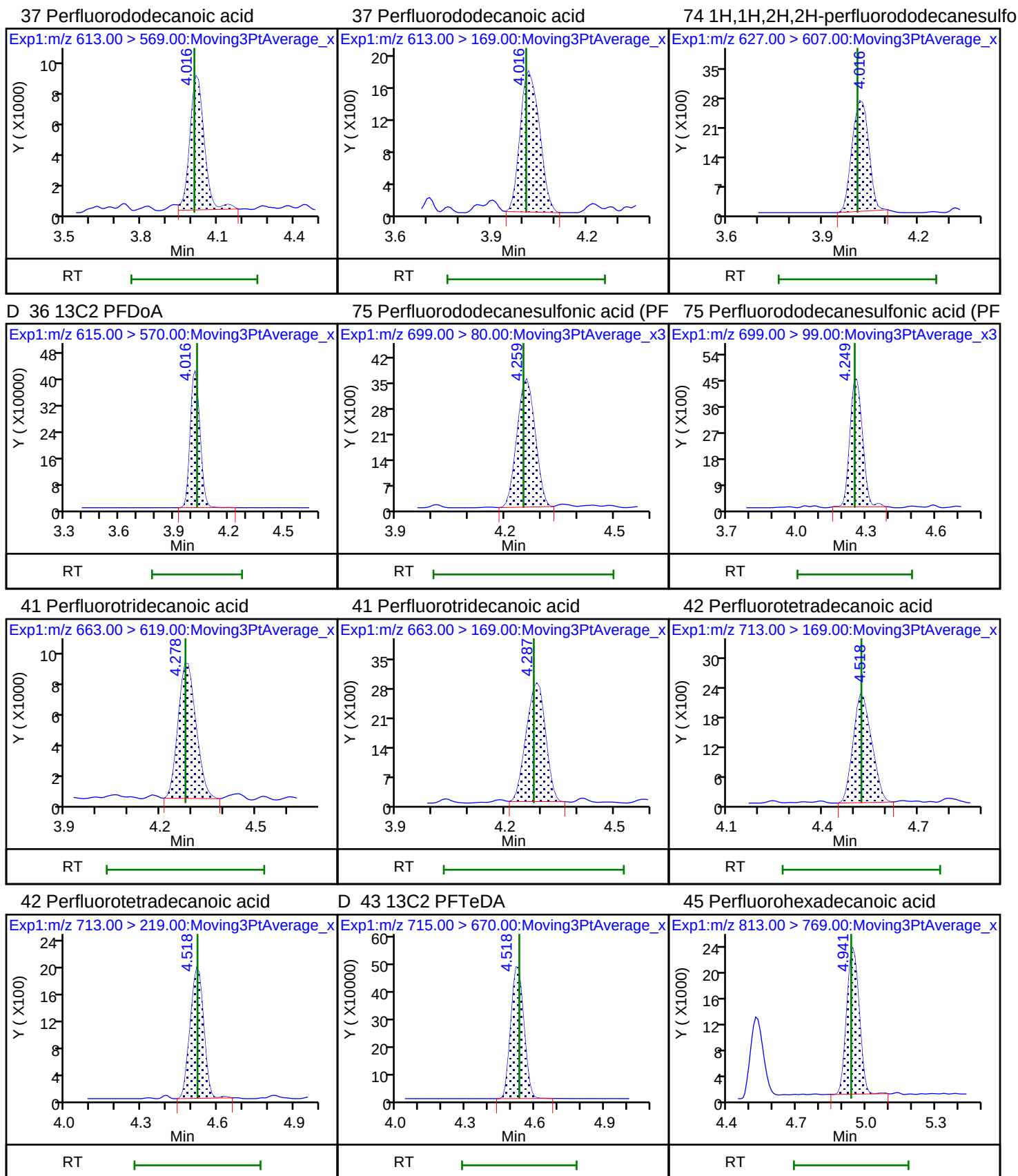


D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

66 11-Chloroeicosafuoro-3-oxaundecan

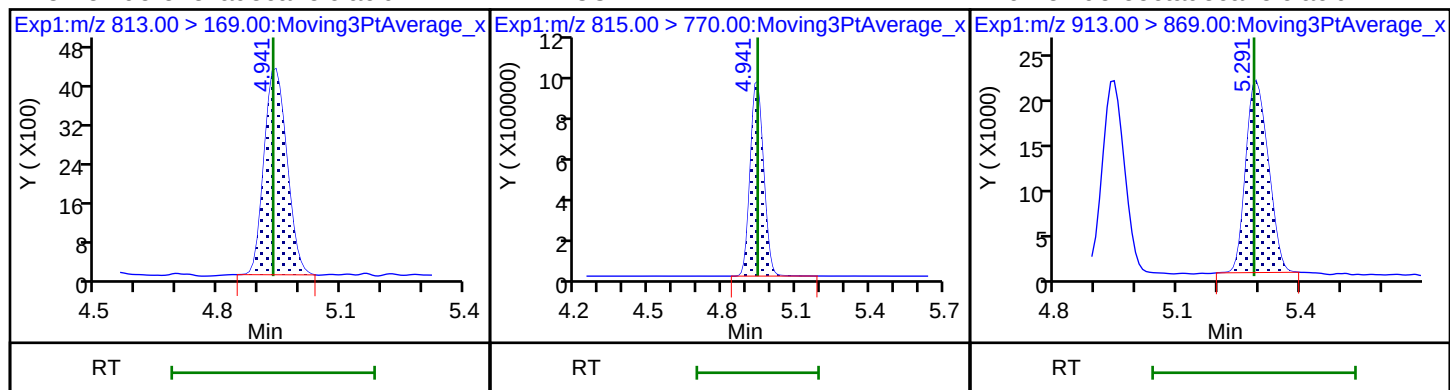




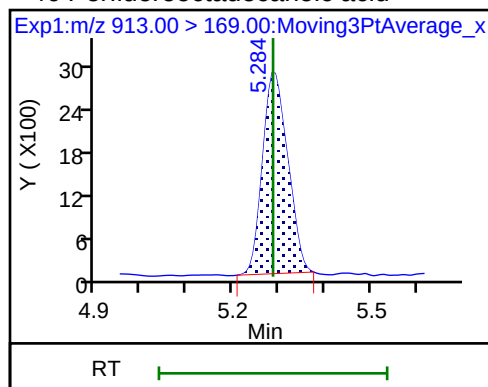
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_005.d

Injection Date: 18-Oct-2018 15:06:07

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

34

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

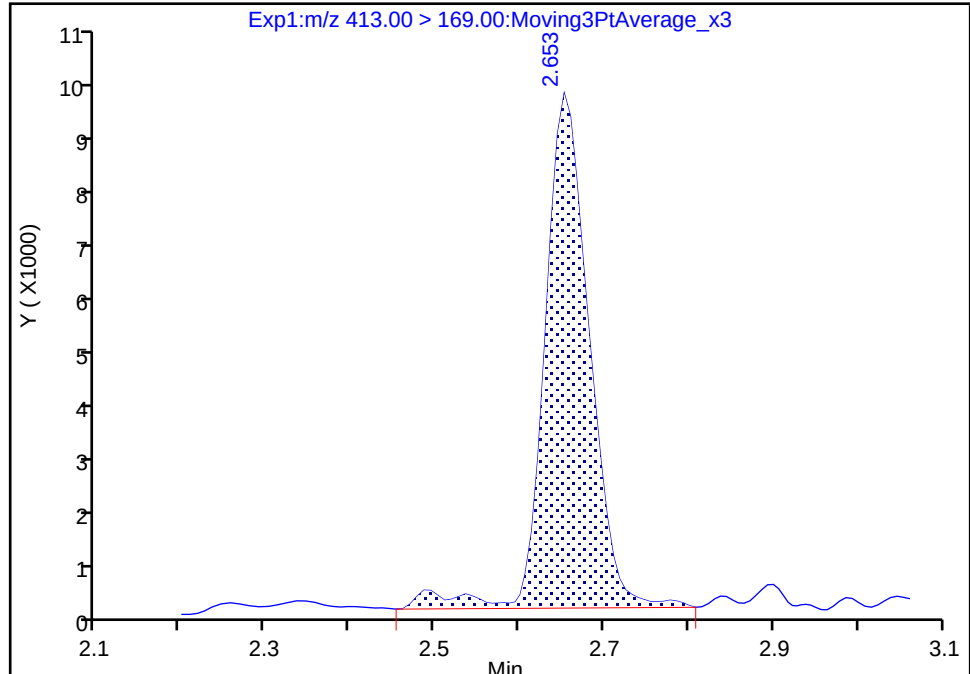
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

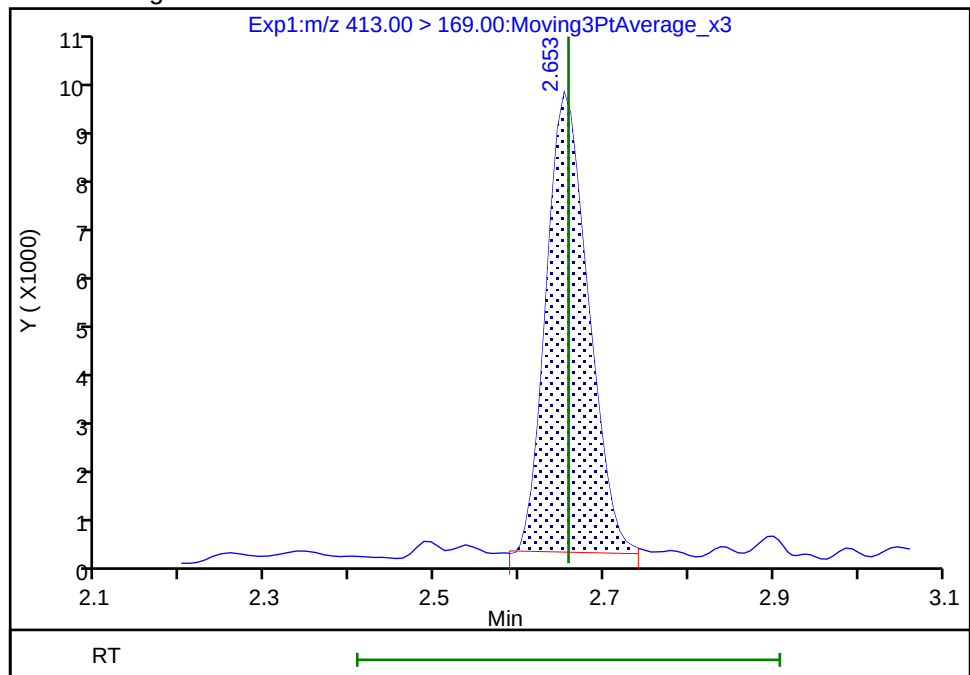
RT: 2.65
Area: 34393
Amount: 0.067999
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 31647
Amount: 0.047895
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 18-Oct-2018 17:30:56

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_005.d

Injection Date: 18-Oct-2018 15:06:07

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 34

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

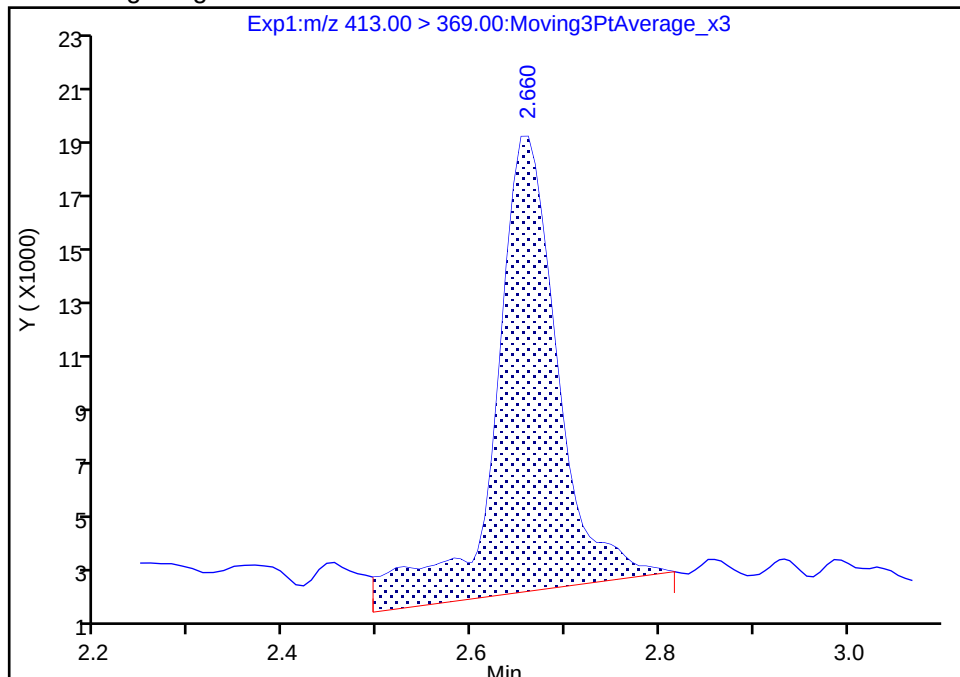
Detector: EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

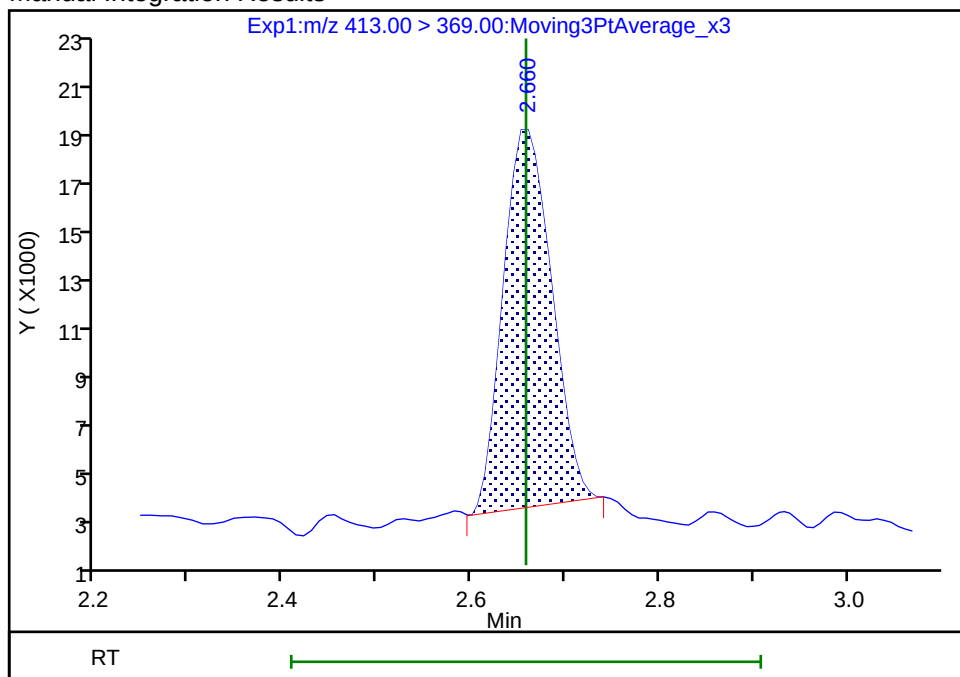
RT: 2.66
Area: 77515
Amount: 0.067999
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 54597
Amount: 0.047895
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 18-Oct-2018 17:31:02

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_005.d

Injection Date: 18-Oct-2018 15:06:07

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

34

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

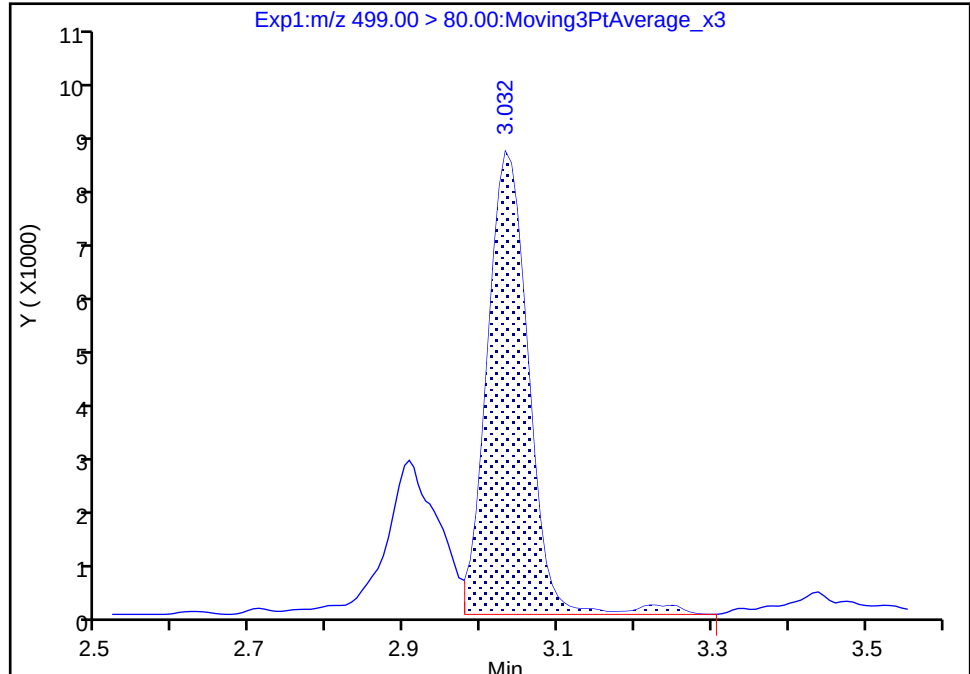
Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

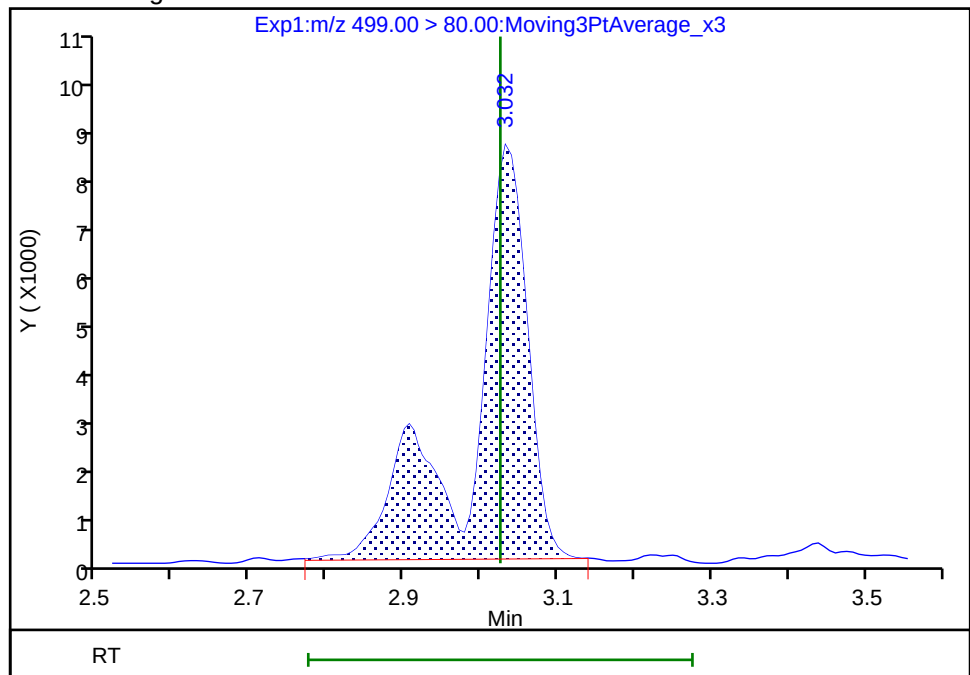
RT: 3.03
Area: 31196
Amount: 0.032344
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 41990
Amount: 0.043536
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 18-Oct-2018 17:31:15

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_005.d

Injection Date: 18-Oct-2018 15:06:07

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 34 Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

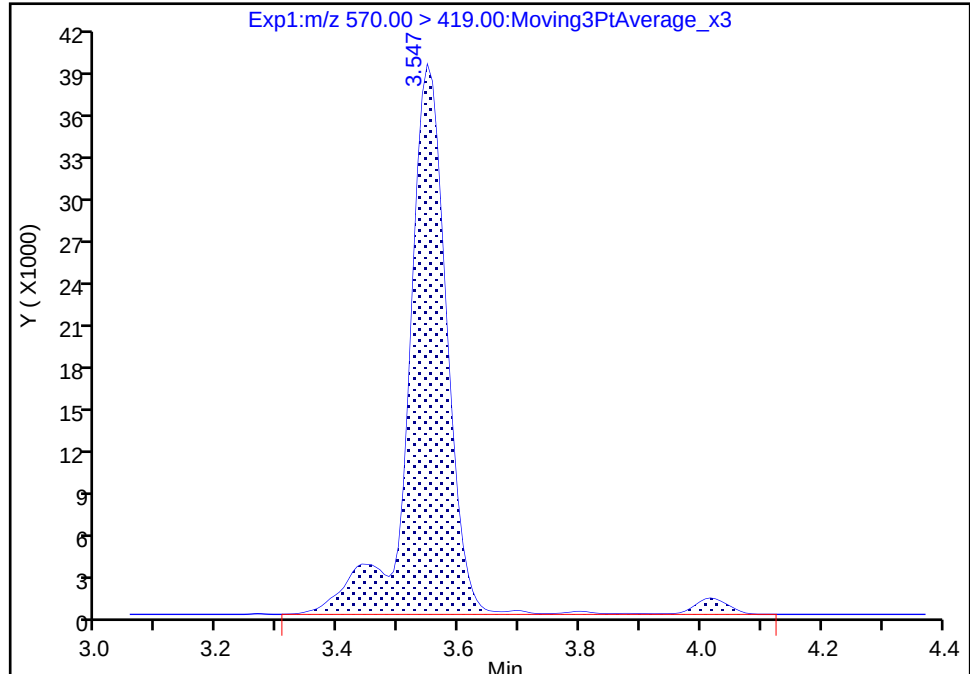
Detector EXP1

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

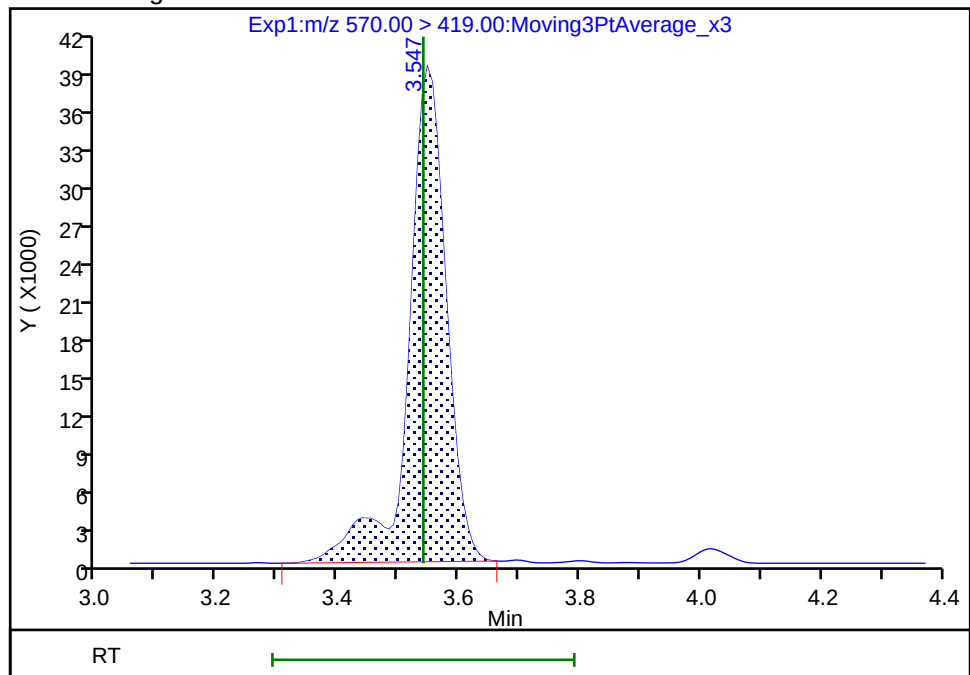
RT: 3.55
Area: 177975
Amount: 0.523345
Amount Units: ng/ml

Processing Integration Results



RT: 3.55
Area: 170287
Amount: 0.500738
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 19-Oct-2018 08:21:07

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCV 320-253219/3 Calibration Date: 10/18/2018 15:13

Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40

Lab File ID: 2018.10.17LLAAA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8986	0.8954		0.996	1.00	-0.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.104	1.107		1.00	1.00	0.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	80.51	83.19		0.913	0.884	3.3	50.0
4:2 FTS	AveID	15.12	15.08		0.932	0.934	-0.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.014	0.996		0.982	1.00	-1.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.28	69.24		0.965	0.938	2.9	50.0
HFPO-DA (GenX)	AveID	2.927	3.060		1.05	1.00	4.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.154	1.133		0.982	1.00	-1.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.104	1.012		0.834	0.910	-8.3	40.0
DONA	AveID	4.046	4.255		0.991	0.942	5.2	50.0
6:2 FTS	AveID	1.651	1.541		0.884	0.948	-6.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.144	1.141		0.998	1.00	-0.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.317	1.317		0.952	0.952	0.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.003	1.051		1.05	1.00	4.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.165	1.099		0.876	0.928	-5.6	40.0
F-53B Major	AveID	1.957	1.939		0.923	0.932	-0.9	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.002	0.9592		0.957	1.00	-4.3	40.0
8:2 FTS	AveID	1.205	1.247		0.992	0.958	3.5	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8019	0.7720		0.924	0.960	-3.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.018	1.042		1.02	1.00	2.4	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9620	0.9384		0.975	1.00	-2.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6341	0.6572		0.999	0.964	3.6	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8380	0.8123		0.969	1.00	-3.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8929	0.8765		0.982	1.00	-1.8	40.0
F-53B Minor	AveID	2.895	2.864		0.932	0.942	-1.1	50.0
10:2 FTS	AveID	0.9034	0.9426		1.01	0.964	4.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.105	1.049		0.949	1.00	-5.1	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3021	0.2704		0.866	0.968	-10.5	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.095	1.100		1.00	1.00	0.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2684	0.2564		0.955	1.00	-4.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8788		0.975	1.00	-2.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCV 320-253219/3 Calibration Date: 10/18/2018 15:13
 Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40
 Lab File ID: 2018.10.17LLAAA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.123	1.152		1.03	1.00	2.6	50.0
13C4 PFBA	Ave	1.565	1.551		2.48	2.50	-0.9	50.0
13C5 PFPeA	Ave	1.017	0.9839		2.42	2.50	-3.3	50.0
13C3 PFBS	Ave	0.0209	0.0204		2.27	2.33	-2.4	50.0
M2-4:2 FTS	Ave	0.1378	0.1358		2.30	2.34	-1.4	50.0
13C2 PFHxA	Ave	1.106	1.116		2.52	2.50	1.0	50.0
13C3 HFPO-DA	Ave	0.0845	0.0805		2.38	2.50	-4.8	50.0
13C4 PFHpA	Ave	1.015	0.9702		2.39	2.50	-4.4	50.0
18O2 PFHxS	Ave	1.262	1.242		2.33	2.37	-1.6	50.0
M2-6:2 FTS	Ave	0.1953	0.1982		2.41	2.38	1.5	40.0
13C8 PFOA	Ave	1.609	1.560		2.37	2.45	-3.0	50.0
13C4 PFOA	Ave	0.9873	0.9770		2.47	2.50	-1.1	50.0
13C4 PFOS	Ave	0.8012	0.8063		2.41	2.39	0.6	50.0
13C5 PFNA	Ave	0.8307	0.8001		2.41	2.50	-3.7	50.0
13C8 PFOS	Ave	0.4270	0.4269		2.39	2.39	-0.0	50.0
13C8 FOSA	Ave	1.156	1.157		2.50	2.50	0.0	50.0
M2-8:2 FTS	Ave	0.2011	0.1952		2.32	2.40	-3.0	40.0
13C2 PFDA	Ave	0.7142	0.7097		2.48	2.50	-0.6	50.0
d3-NMeFOSAA	Ave	0.3615	0.3624		2.51	2.50	0.2	50.0
d5-NEtFOSAA	Ave	0.3709	0.3792		2.56	2.50	2.2	50.0
13C2 PFUnA	Ave	0.5582	0.5564		2.49	2.50	-0.3	50.0
13C2 PFDoA	Ave	0.6012	0.5958		2.48	2.50	-0.9	50.0
13C2 PFTeDA	Ave	0.7782	0.7482		2.40	2.50	-3.9	50.0
13C2 PFHxDA	Ave	1.407	1.350		2.40	2.50	-4.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_006.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 18-Oct-2018 15:13:33 ALS Bottle#: 35 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 19-Oct-2018 08:24:47 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: mongkols

Date: 19-Oct-2018 08:24:47

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.436	1.436	0.0	1.000	1423126	1.00		99.6	110	M
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.436	0.0	0.540	3973573	2.48		99.1	7332	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.702	0.0	1.000	1116154	1.00		100	169	
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.704	-0.002	0.640	2520981	2.42		96.7	7919	
D 47 13C3 PFBS										
301.90 > 83.00	1.734	1.736	-0.002	0.653	48666	2.27		97.6	349	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.742	0.0	1.005	1539323	0.9134		103	483	
298.90 > 99.00	1.742	1.742	0.0	1.005	628957		2.45(1.25-3.74)		378	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.943	1.943	0.0	1.121	294911	0.9317		99.8	2613	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.943	1.945	-0.002	0.731	325061	2.30		98.6	419	
D 7 13C2 PFHxA										
315.00 > 270.00	1.985	1.976	0.009	0.747	2859826	2.52		101	8940	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.985	0.0	1.000	1139140	0.9825		98.2	286	
313.00 > 119.00	1.975	1.985	-0.010	0.995	98540		11.56(5.03-15.10)		206	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.006	2.006	0.0	1.157	1359374	0.9653		103	4069	
349.00 > 99.00	2.006	2.006	0.0	1.157	524009		2.59(1.36-4.07)		1780	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.079	2.079	0.0	1.000	252305	1.05		105	251	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.079	2.081	-0.002	0.782	206150	2.38		95.2	859	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.310	0.0	1.000	1126817	0.9817		98.2	274	
363.00 > 169.00	2.310	2.310	0.0	1.000	458873		2.46(1.13-3.40)		399	
D 9 13C4 PFHpA										
367.00 > 322.00	2.310	2.312	-0.002	0.869	2486003	2.39		95.6	5416	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.321	0.0	1.000	1171622	0.8341		91.7	1477	
399.00 > 99.00	2.321	2.321	0.0	1.000	390952		3.00(1.50-4.49)		635	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.323	-0.002	0.873	3010129	2.33		98.4	3868	
77 DONA										
377.00 > 251.00	2.343	2.343	0.0	0.775	3312220	0.99		105	4750	
377.00 > 85.00	2.355	2.343	0.012	0.778	1893495		1.75(0.85-2.54)		4310	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.627	2.627	0.0	1.000	296610	0.8844		93.3	1131	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.627	2.636	-0.009	0.988	482347	2.41		101	1770	
D 73 13C8 PFOA										
421.00 > 376.00	2.643	2.652	-0.009	0.994	3913740	2.37		97.0	6842	
* 62 13C2 PFOA										
415.00 > 370.00	2.658	2.658	0.0		2562354	2.50			5187	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.658	2.658	0.0	1.003	1143189	1.00		99.7	117	
413.00 > 169.00	2.658	2.658	0.0	1.003	622040		1.84(0.84-2.52)		725	
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.659	-0.008	0.997	2503297	2.47		98.9	6491	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.665	2.665	0.0	0.881	1036230	0.9523		100	2316	
449.00 > 99.00	2.665	2.665	0.0	0.881	271959		3.81(1.94-5.82)		785	
20 Perfluorononanoic acid										
463.00 > 419.00	3.025	3.025	0.0	1.000	861735	1.05		105	355	
463.00 > 169.00	3.025	3.025	0.0	1.000	222156		3.88(1.90-5.69)		935	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.025	3.025	0.0	1.000	843148	0.8759		94.4	731	M
499.00 > 99.00	3.025	3.025	0.0	1.000	185538		4.54(2.31-6.93)		440	M
D 18 13C4 PFOS										
503.00 > 80.00	3.025	3.034	-0.009	1.138	1975159	2.41		101	3675	
D 19 13C5 PFNA										
468.00 > 423.00	3.025	3.034	-0.009	1.138	2050187	2.41		96.3	3937	
D 72 13C8 PFOS										
507.00 > 99.00	3.025	3.034	-0.009	1.138	1045798	2.39		100.0	2431	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.237	3.237	0.0	1.070	1493800	0.9235		99.1	3108	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.366	3.366	0.0	1.000	1137355	0.9572		95.7	2226	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.373	3.373	0.0	1.002	238945	0.99		104	1116	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.373	3.373	0.0	1.115	612440	0.9241		96.3	1919	
549.00 > 99.00	3.373	3.373	0.0	1.115	217134		2.82(1.33-3.97)		1023	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.381	3.381	0.0	1.000	757861	1.02		102	701	
513.00 > 169.00	3.381	3.381	0.0	1.000	146283		5.18(2.36-7.09)		262	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.381	-0.015	1.266	2964352	2.50		100	4596	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.366	3.389	-0.023	1.266	479070	2.32		97.0	1479	
D 23 13C2 PFDA										
515.00 > 470.00	3.381	3.396	-0.015	1.272	1818579	2.48		99.4	5199	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.541	3.541	0.0	1.002	348541	0.9755		97.5	380	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.533	3.557	-0.024	1.329	928550	2.51		100	2071	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.695	3.695	0.0	1.221	523552	1.00		104	1575	
599.00 > 99.00	3.695	3.695	0.0	1.221	163596		3.20(1.39-4.16)		964	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.712	3.712	0.0	1.000	499859	0.9817		98.2	511	
563.00 > 169.00	3.712	3.712	0.0	1.000	127740		3.91(2.12-6.36)		617	
33 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	3.712	3.712	0.0	1.002	315737	0.9694		96.9	930	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.712	3.722	-0.010	1.397	1425668	2.49		99.7	2650	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.703	3.722	-0.019	1.393	971698	2.56		102	1311	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.874	3.874	0.0	1.281	2229238	0.9319		98.9	4603	
35 MeFOSA										
512.00 > 169.00	3.874	3.874	0.0		355168	NC			385	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.009	4.009	0.0	1.000	640684	0.9490		94.9	435	
613.00 > 169.00	4.009	4.009	0.0	1.000	175087		3.66(2.13-6.40)		848	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.009	4.009	0.0	1.191	181752	1.01		104	717	
D 36 13C2 PFDaA										
615.00 > 570.00	4.009	4.027	-0.018	1.508	1526726	2.48		99.1	3105	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.250	4.250	0.0	1.405	216272	0.8662		89.5	1014	
699.00 > 99.00	4.250	4.250	0.0	1.405	323508		0.67(0.00-0.00)		1354	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.279	4.279	0.0	1.067	671532	1.00		100	485	
663.00 > 169.00	4.269	4.279	-0.010	1.065	217179		3.09(1.25-3.76)		1363	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.521	4.521	0.0	1.000	196595	0.9550		95.5	1155	
713.00 > 219.00	4.511	4.521	-0.010	0.998	141734		1.39(0.71-2.13)		761	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.521	4.532	-0.011	1.701	1917120	2.40		96.1	3632	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.935	4.935	0.0	1.000	1215994	0.9750		97.5	209	
813.00 > 169.00	4.935	4.935	0.0	1.000	237965		5.11(2.86-8.58)		1232	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.935	4.943	-0.008	1.857	3459267	2.40		95.9	4632	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.286	5.286	0.0	1.071	1593472	1.03		103	235	
913.00 > 169.00	5.286	5.286	0.0	1.071	208720		7.63(3.83-11.48)		1136	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_006.d

Injection Date: 18-Oct-2018 15:13:33

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

35

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

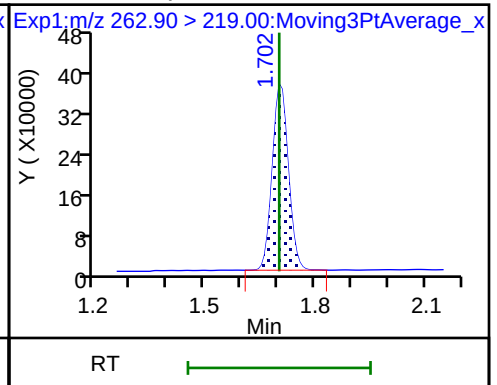
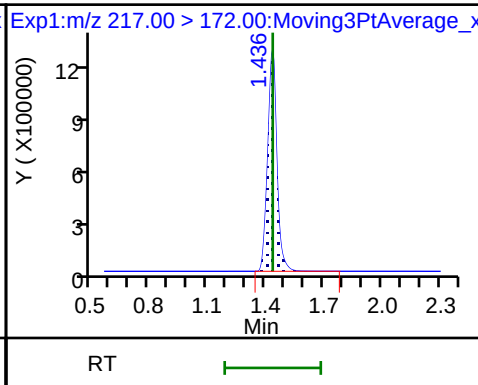
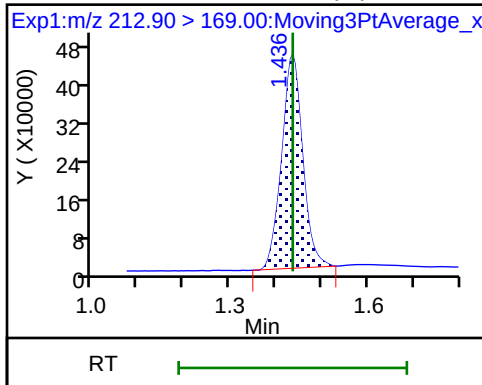
Method: A8_N

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid (M)

D 1 13C4 PFBA

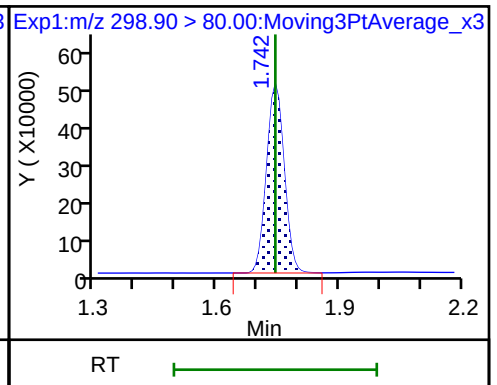
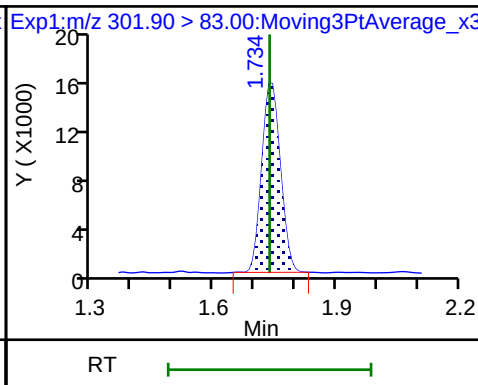
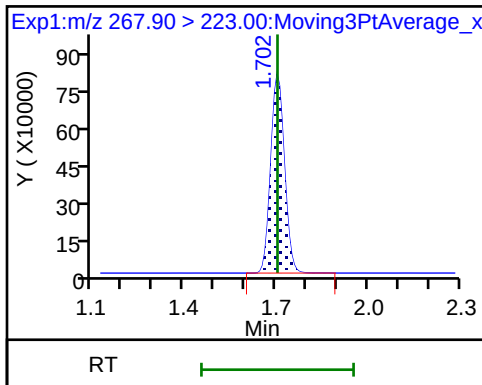
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

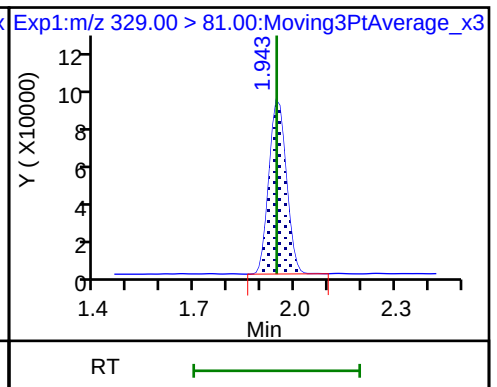
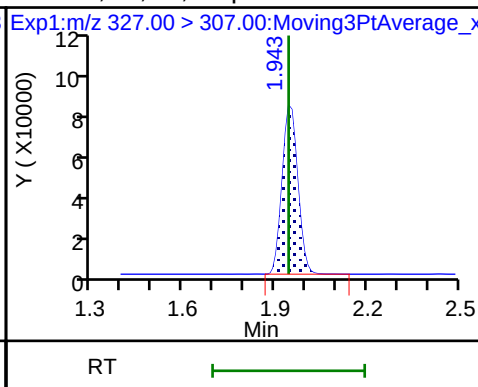
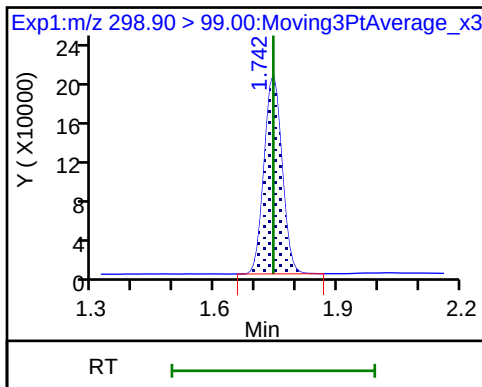
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

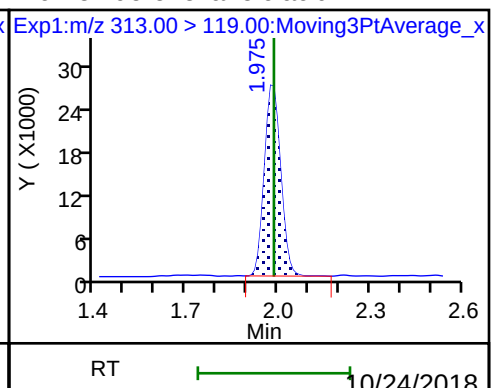
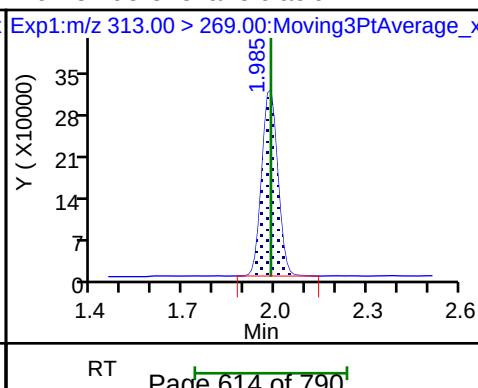
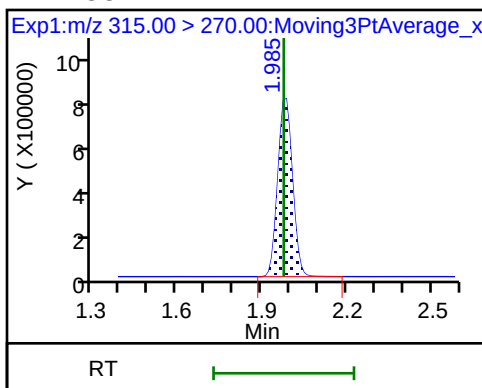
D 60 M2-4:2 FTS

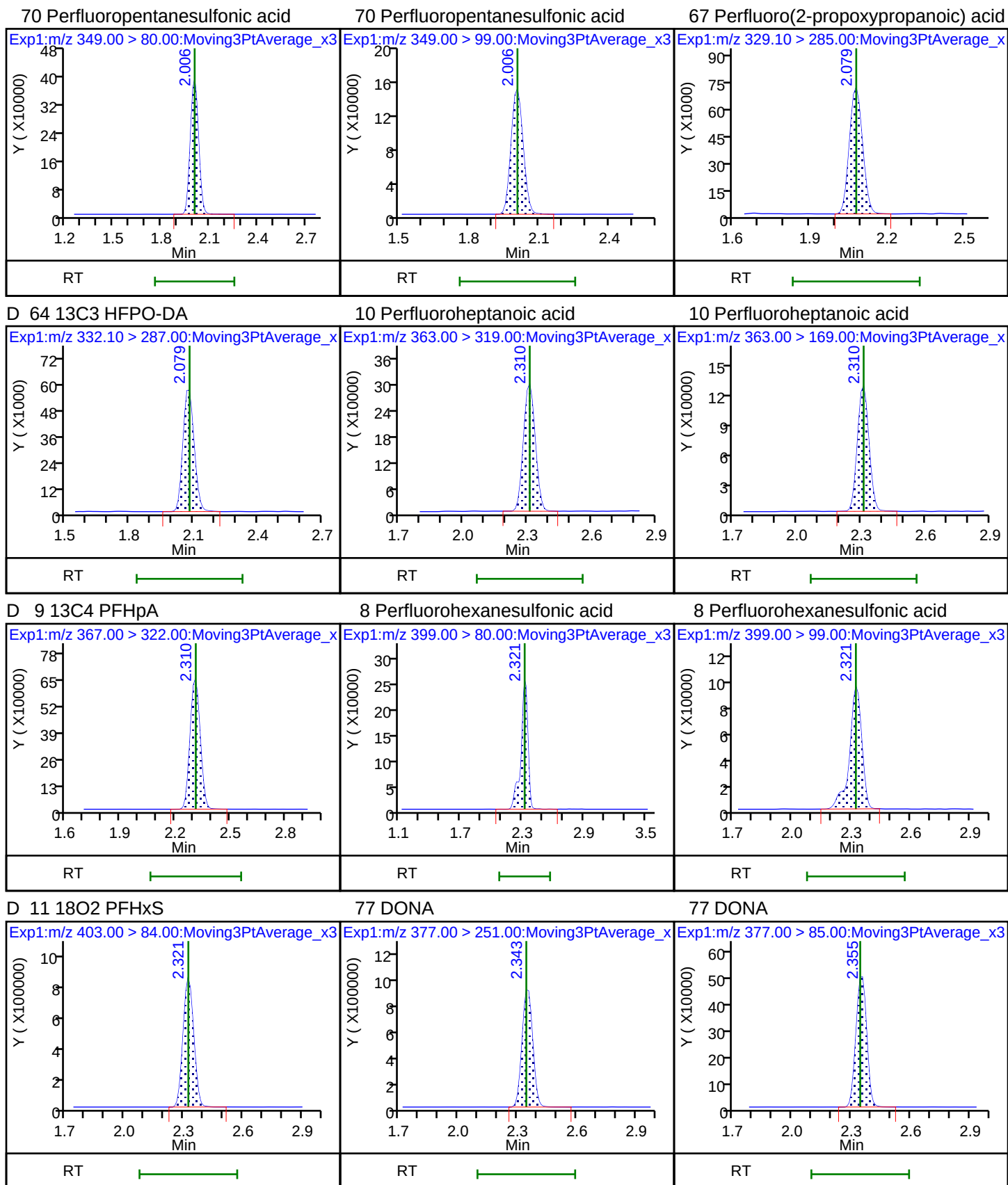


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

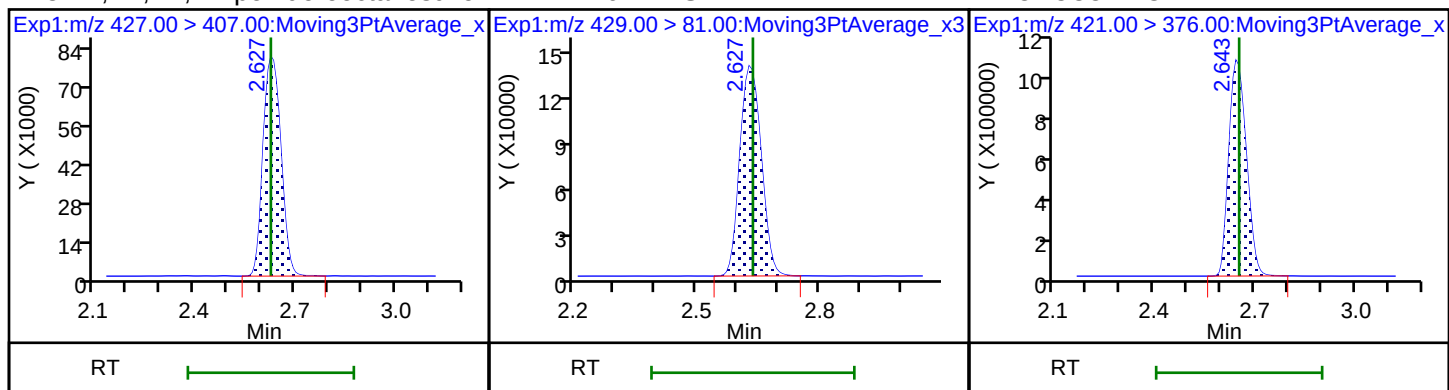
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

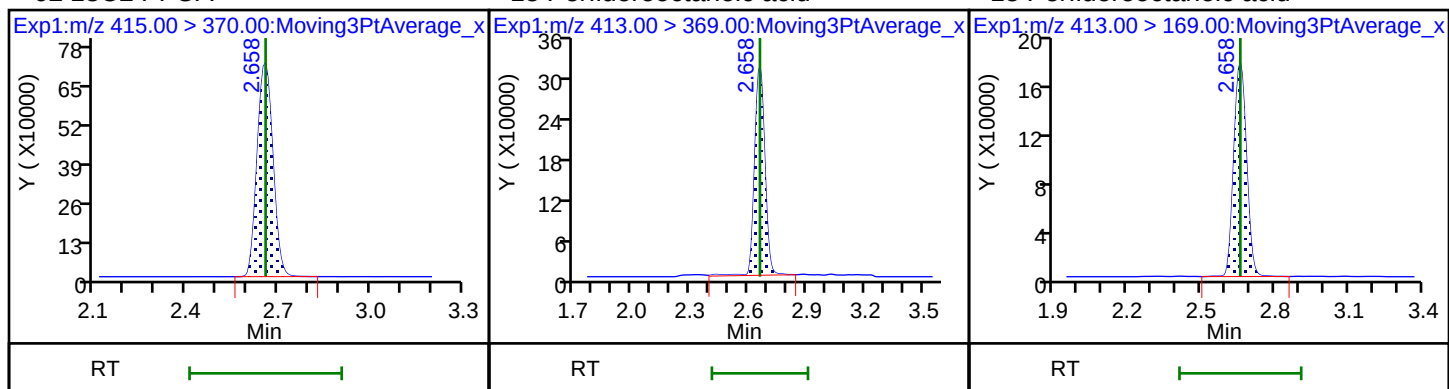
D 73 13C8 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid

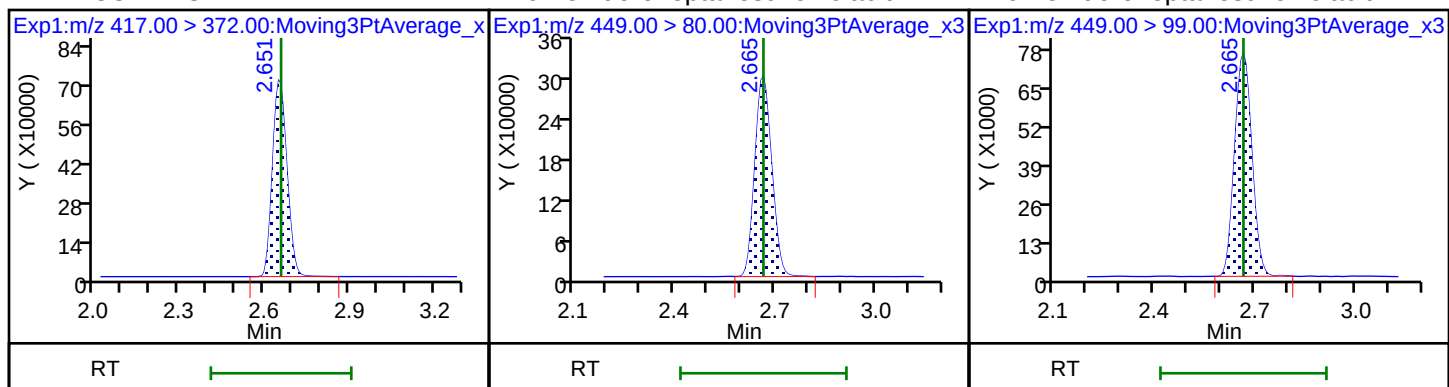
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

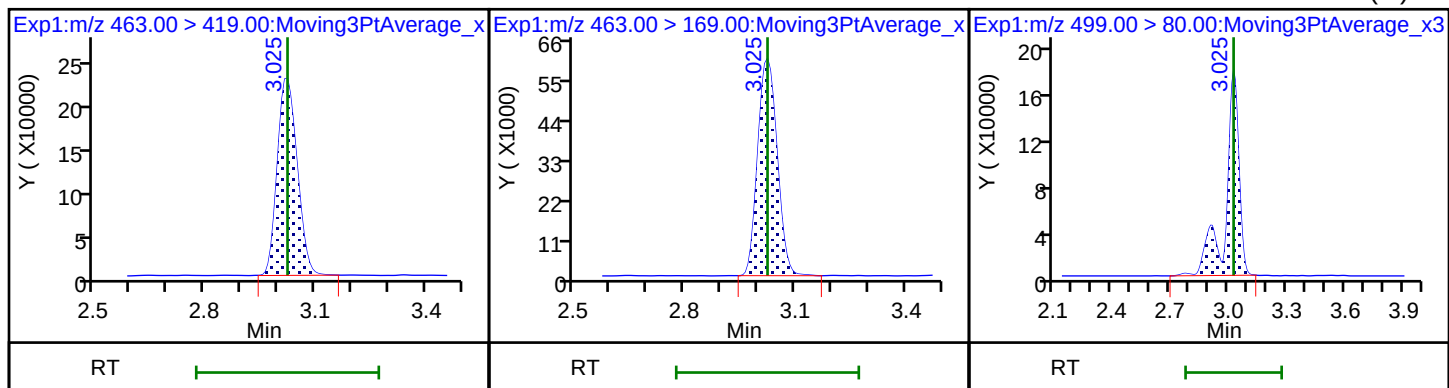
16 Perfluoroheptanesulfonic acid



20 Perfluorononanoic acid

20 Perfluorononanoic acid

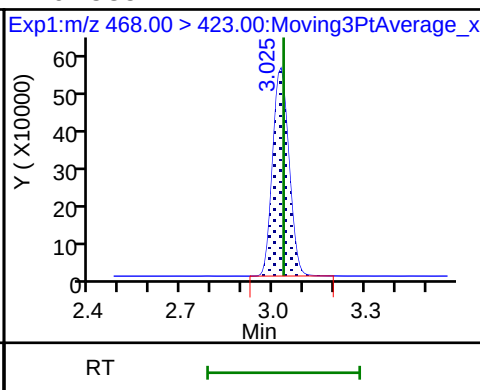
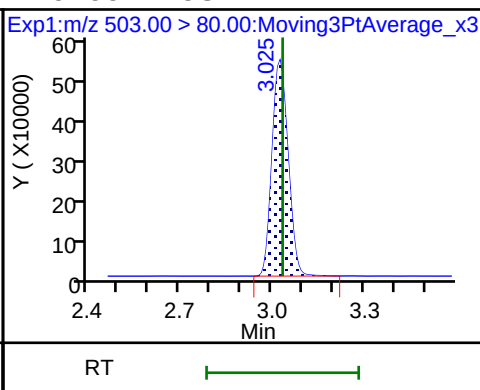
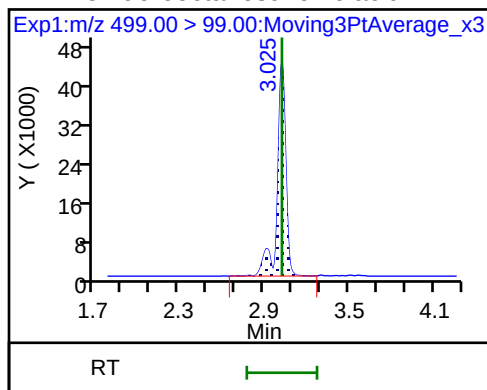
17 Perfluorooctanesulfonic acid (M)



17 Perfluorooctanesulfonic acid

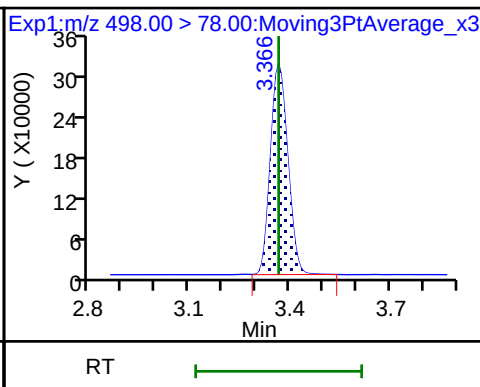
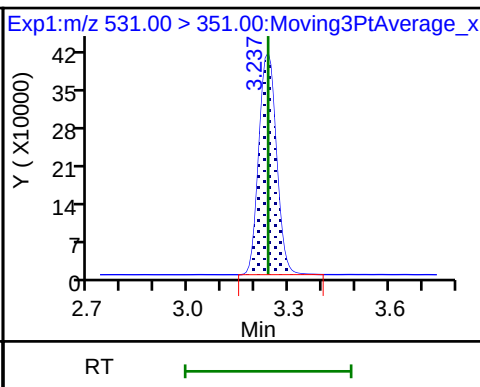
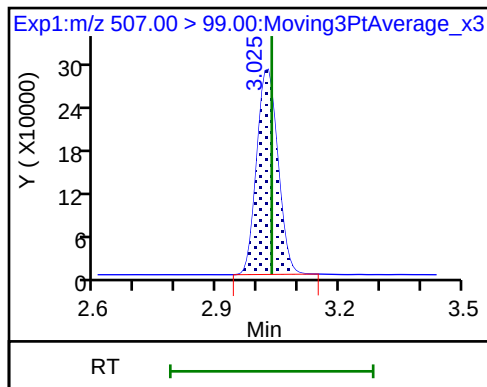
D 18 13C4 PFOS

D 19 13C5 PFNA



D 72 13C8 PFOS

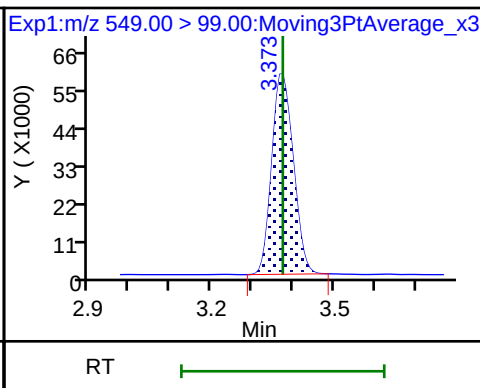
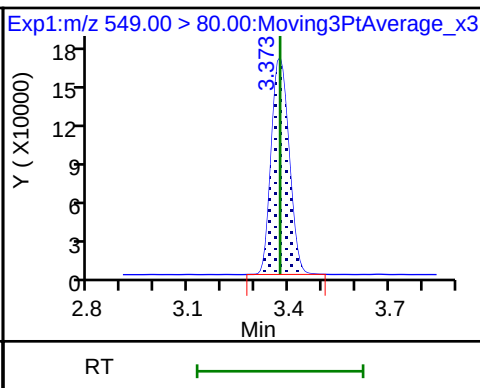
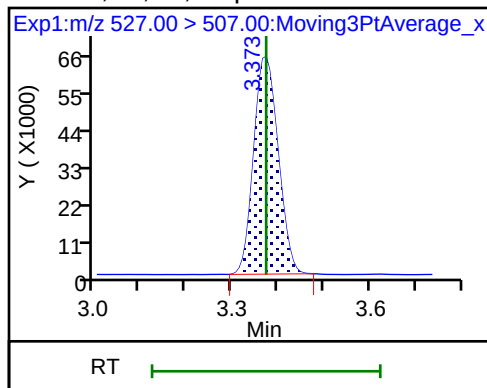
69 9-Chlorohexadecafluoro-3-oxanonan-22 Perfluorooctanesulfonamide



25 1H,1H,2H,2H-perfluorodecanesulfoni

68 Perfluorononanesulfonic acid

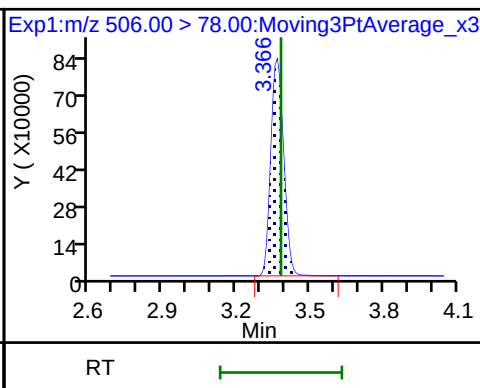
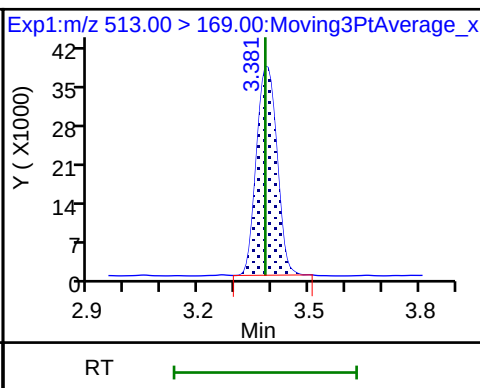
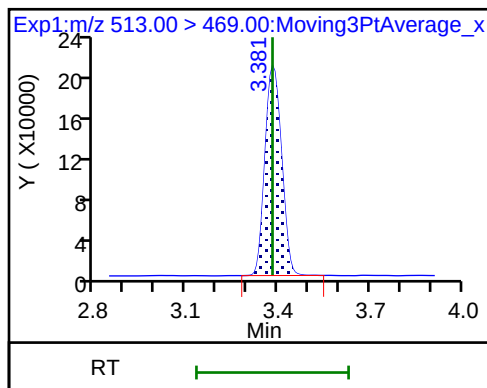
68 Perfluorononanesulfonic acid



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

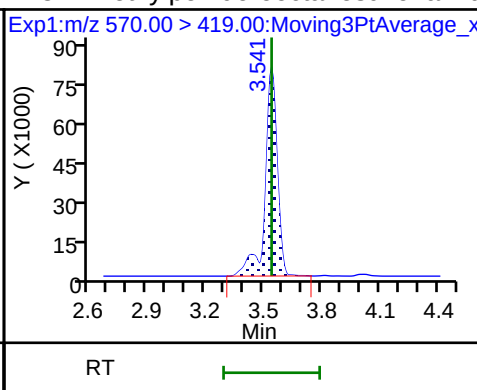
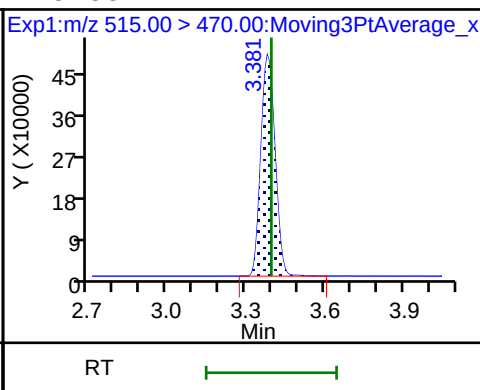
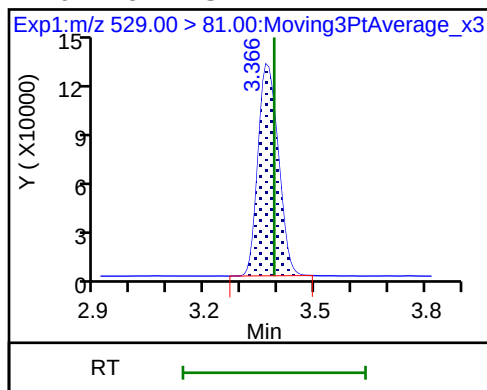
D 21 13C8 FOSA



D 26 M2-8:2 FTS

D 23 13C2 PFDA

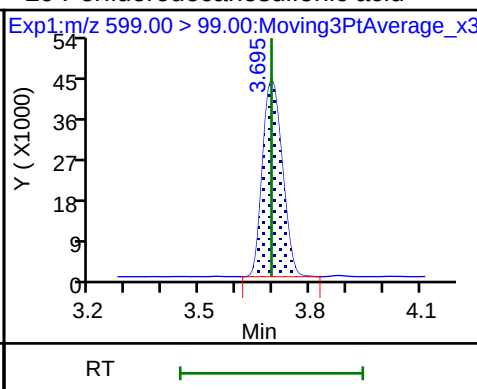
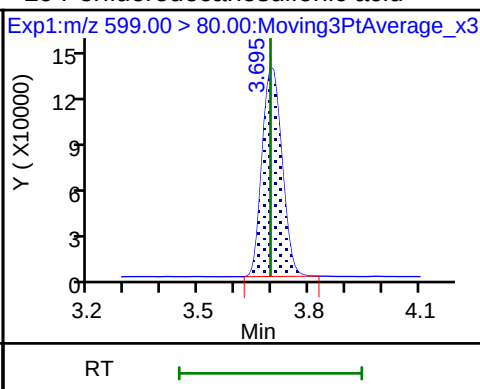
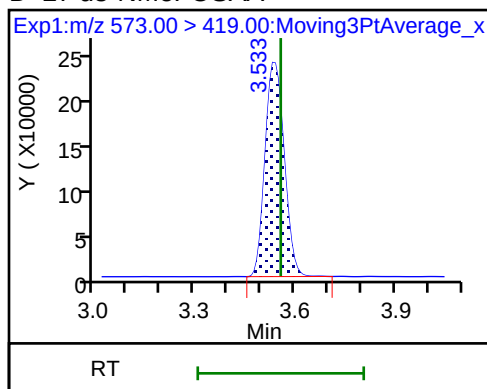
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

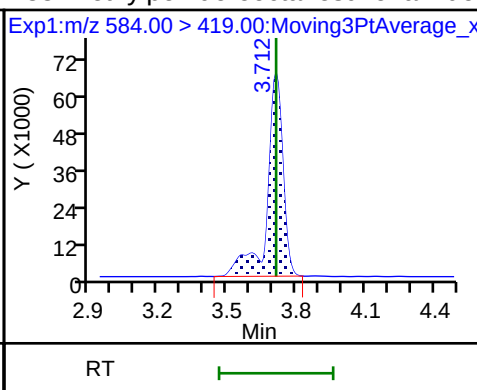
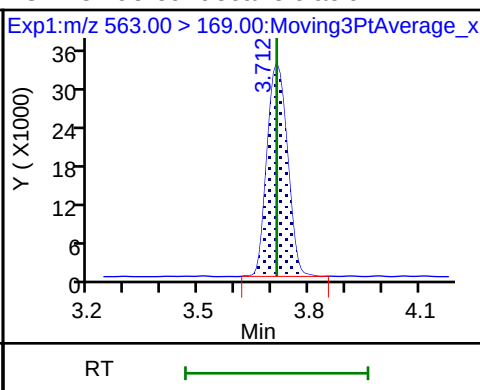
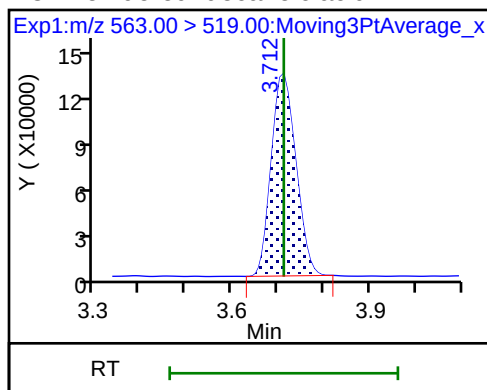
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

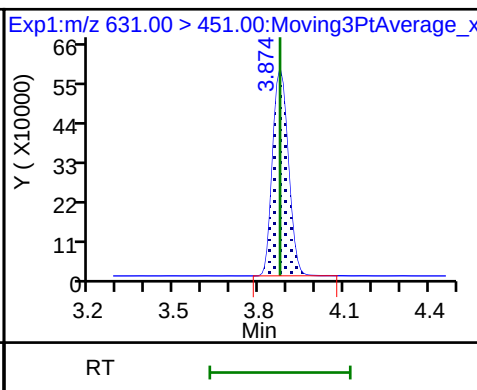
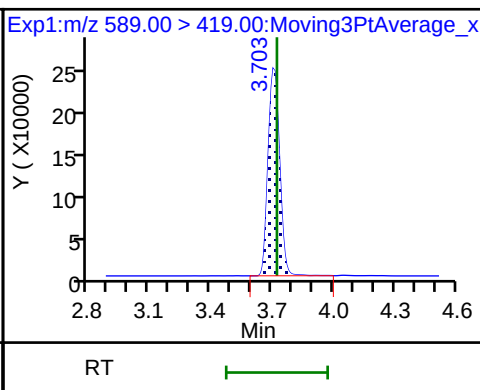
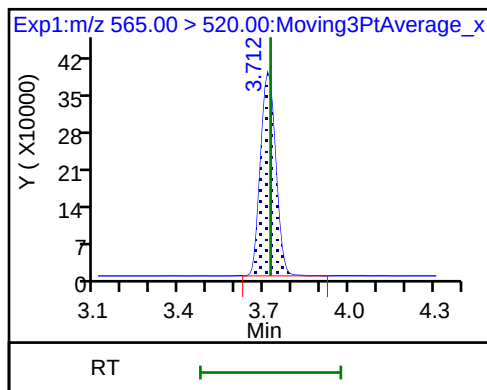
33 N-ethylperfluorooctanesulfonamidoa (M)

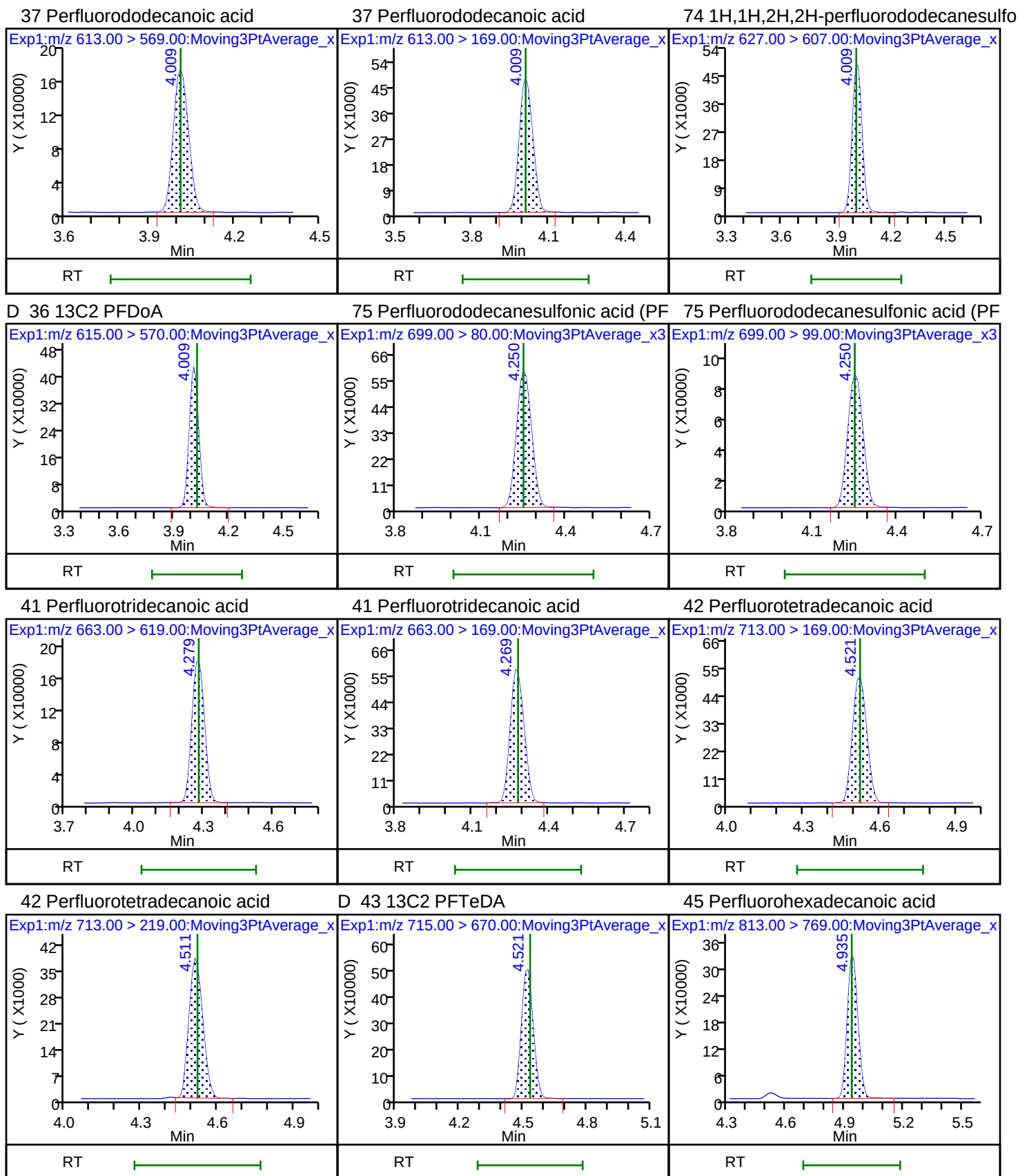


D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

66 11-Chloroeicosafluoro-3-oxaundecan



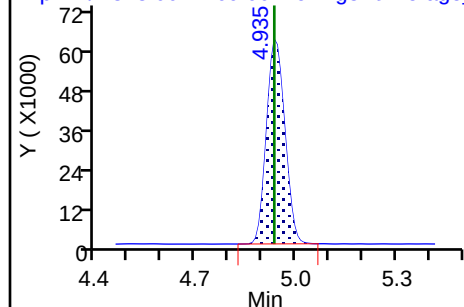


45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

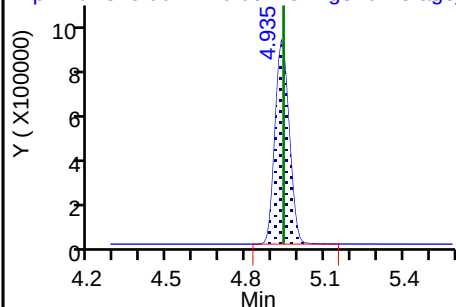
46 Perfluorooctadecanoic acid

Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



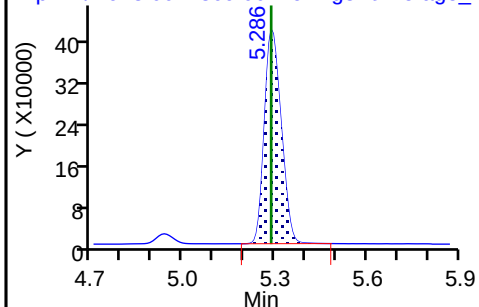
RT

Exp1:m/z 815.00 > 770.00:Moving3PtAverage_x



RT

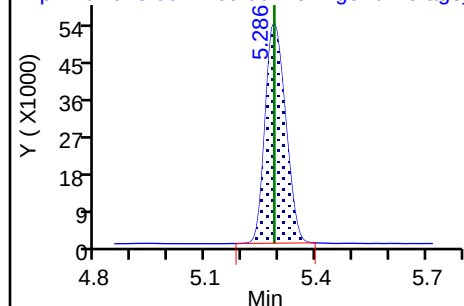
Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



RT

46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_006.d

Injection Date: 18-Oct-2018 15:13:33

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

35

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

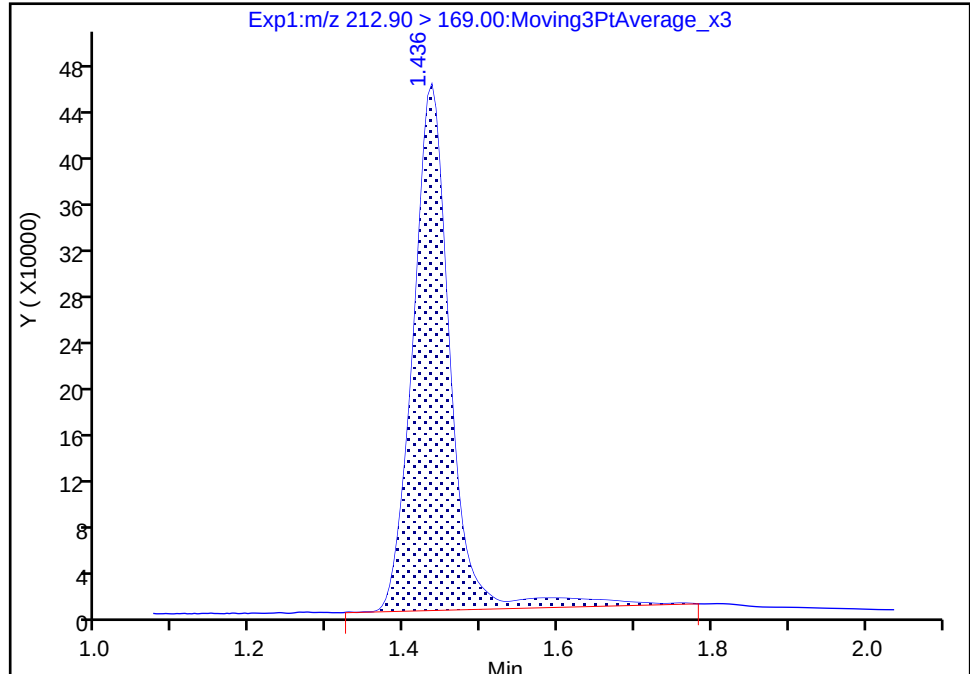
Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

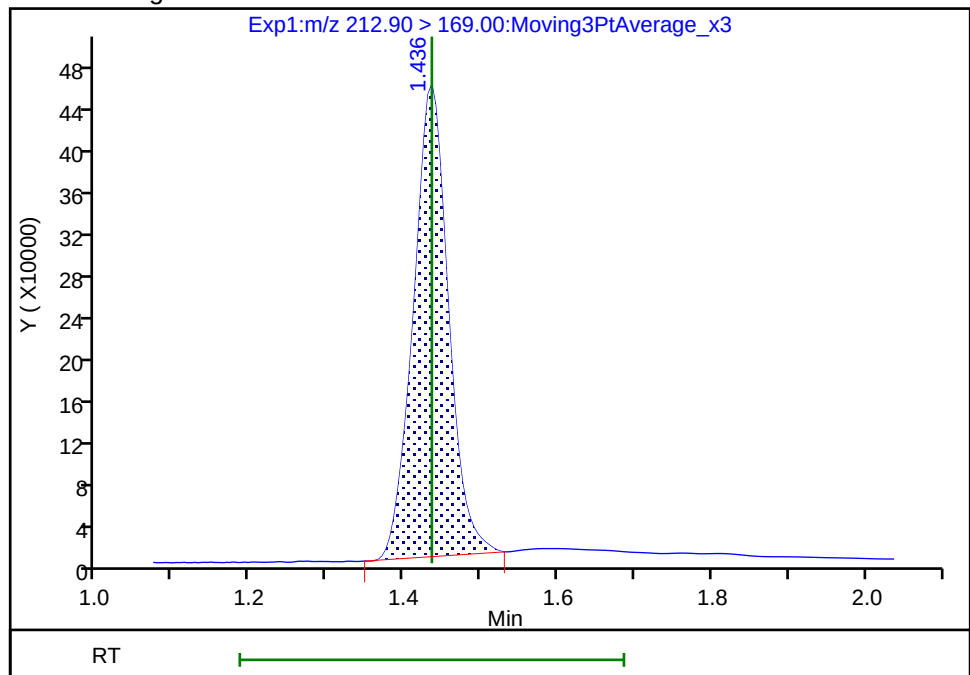
RT: 1.44
Area: 1528611
Amount: 1.070311
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 1423126
Amount: 0.996452
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 19-Oct-2018 08:23:08

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_006.d

Injection Date: 18-Oct-2018 15:13:33

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

35

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

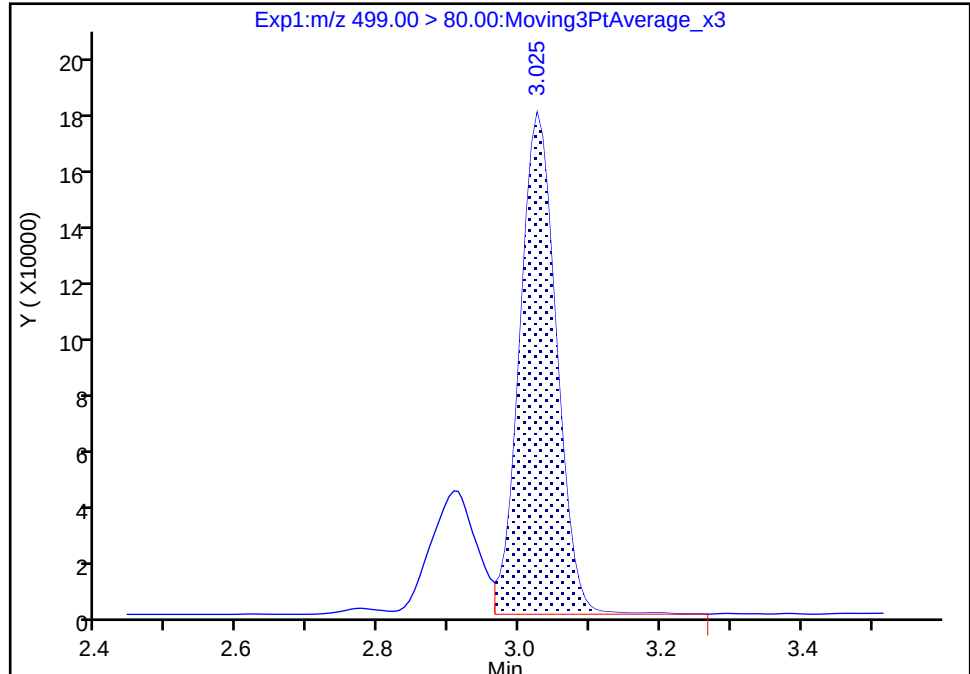
Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

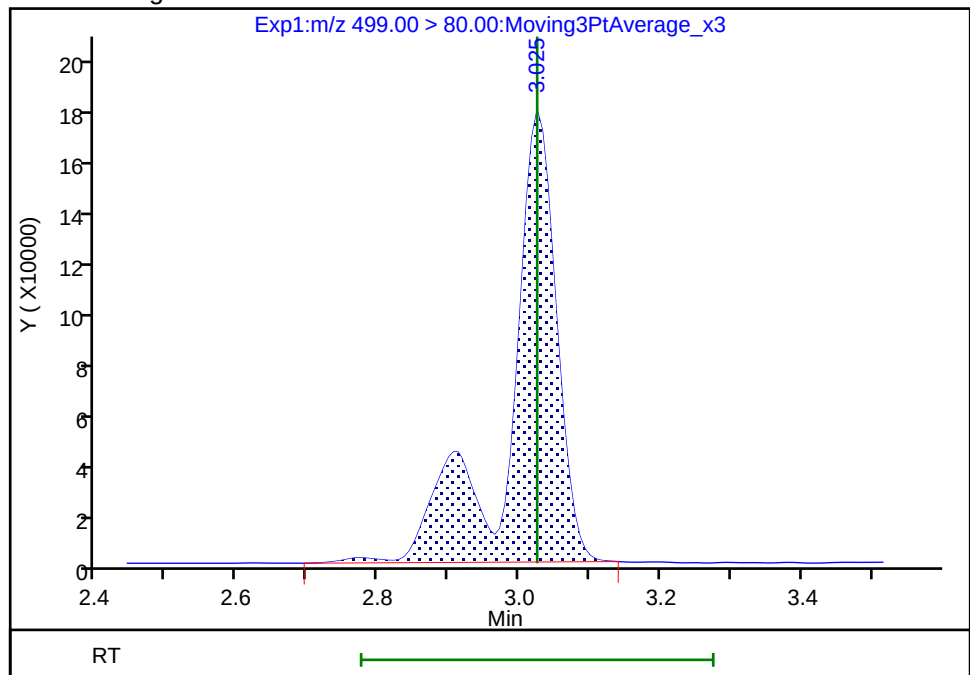
RT: 3.02
Area: 647010
Amount: 0.672126
Amount Units: ng/ml

Processing Integration Results



RT: 3.02
Area: 843148
Amount: 0.875877
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 19-Oct-2018 08:23:53

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

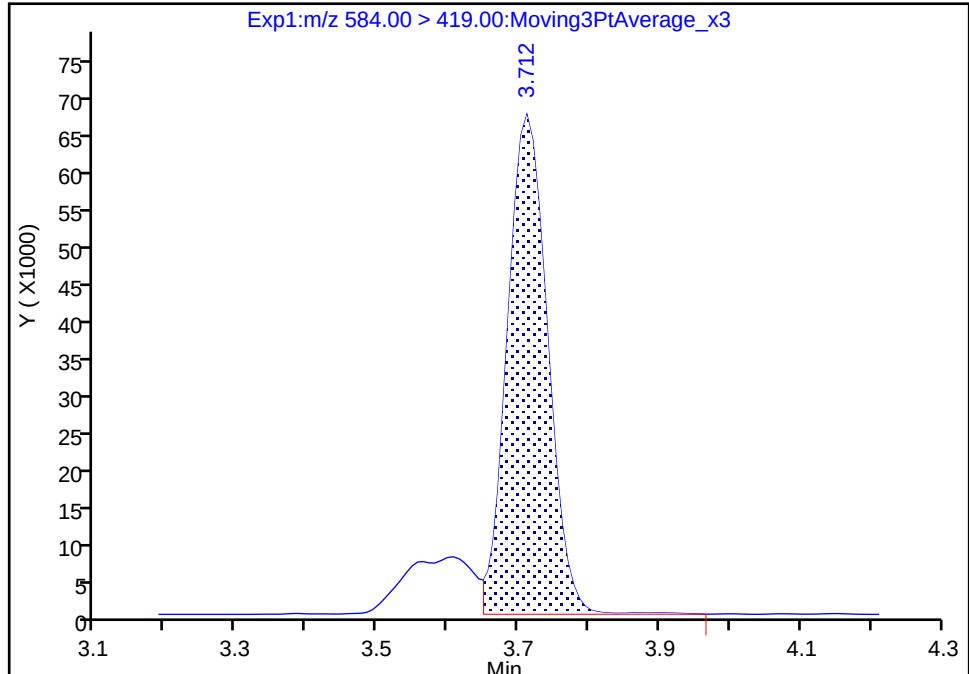
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66155.b\2018.10.17LLAAA_006.d
Injection Date: 18-Oct-2018 15:13:33 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

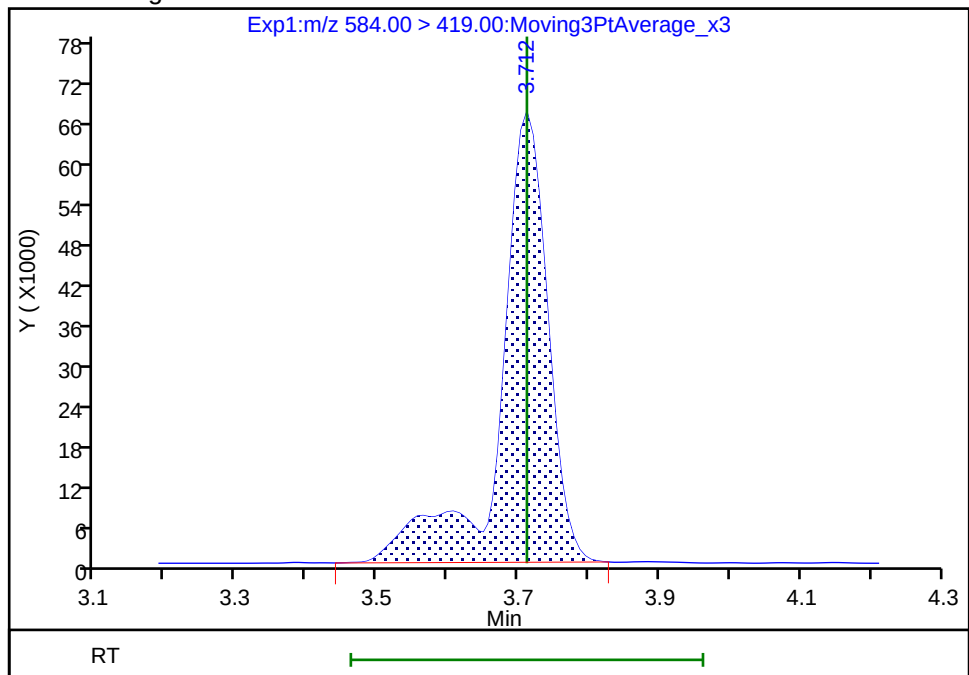
RT: 3.71
Area: 266259
Amount: 0.817447
Amount Units: ng/ml

Processing Integration Results



RT: 3.71
Area: 315737
Amount: 0.969350
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 19-Oct-2018 08:24:27

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCV 320-253242/1 Calibration Date: 10/18/2018 20:48

Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40

Lab File ID: 2018.10.17LLAAA_032.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8986	0.9285		1.03	1.00	3.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.104	1.084		0.982	1.00	-1.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	80.51	83.09		0.912	0.884	3.2	50.0
4:2 FTS	AveID	15.12	14.19		0.877	0.934	-6.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.014	1.026		1.01	1.00	1.2	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.28	72.19		1.01	0.938	7.3	50.0
HFPO-DA (GenX)	AveID	2.927	3.018		1.03	1.00	3.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.154	1.084		0.939	1.00	-6.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.104	0.9926		0.818	0.910	-10.1	40.0
DONA	AveID	4.046	3.929		0.915	0.942	-2.9	50.0
6:2 FTS	AveID	1.651	1.515		0.870	0.948	-8.3	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.144	1.151		1.01	1.00	0.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.317	1.281		0.926	0.952	-2.7	50.0
Perfluorononanoic acid (PFNA)	AveID	1.003	1.031		1.03	1.00	2.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.165	1.124		0.896	0.928	-3.5	40.0
F-53B Major	AveID	1.957	1.912		0.910	0.932	-2.3	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.002	0.9628		0.961	1.00	-3.9	40.0
8:2 FTS	AveID	1.205	1.221		0.971	0.958	1.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8019	0.7656		0.916	0.960	-4.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.018	0.9940		0.977	1.00	-2.3	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9620	0.9586		0.996	1.00	-0.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6341	0.6270		0.953	0.964	-1.1	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8380	0.8847		1.06	1.00	5.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8929	0.8527		0.955	1.00	-4.5	40.0
F-53B Minor	AveID	2.895	2.893		0.941	0.942	-0.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.105	1.012		0.915	1.00	-8.5	40.0
10:2 FTS	AveID	0.9034	0.8777		0.937	0.964	-2.9	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3021	0.2743		0.879	0.968	-9.2	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.095	1.078		0.985	1.00	-1.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2684	0.2628		0.979	1.00	-2.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8791		0.975	1.00	-2.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCV 320-253242/1 Calibration Date: 10/18/2018 20:48
 Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40
 Lab File ID: 2018.10.17LLAAA_032.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.123	1.122		0.999	1.00	-0.0	50.0
13C4 PFBA	Ave	1.565	1.530		2.44	2.50	-2.2	50.0
13C5 PFPeA	Ave	1.017	1.010		2.48	2.50	-0.7	50.0
13C3 PFBS	Ave	0.0209	0.0202		2.24	2.33	-3.7	50.0
M2-4:2 FTS	Ave	0.1378	0.1386		2.35	2.34	0.6	50.0
13C2 PFHxA	Ave	1.106	1.076		2.43	2.50	-2.7	50.0
13C3 HFPO-DA	Ave	0.0845	0.0839		2.48	2.50	-0.7	50.0
13C4 PFHpA	Ave	1.015	1.050		2.59	2.50	3.4	50.0
18O2 PFHxS	Ave	1.262	1.275		2.39	2.37	1.0	50.0
M2-6:2 FTS	Ave	0.1953	0.1990		2.42	2.38	1.9	40.0
13C8 PFOA	Ave	1.609	1.593		2.42	2.45	-1.0	50.0
13C4 PFOA	Ave	0.9873	0.9831		2.49	2.50	-0.4	50.0
13C4 PFOS	Ave	0.8012	0.8130		2.43	2.39	1.5	50.0
13C5 PFNA	Ave	0.8307	0.8348		2.51	2.50	0.5	50.0
13C8 PFOS	Ave	0.4270	0.4417		2.47	2.39	3.4	50.0
13C8 FOSA	Ave	1.156	1.141		2.47	2.50	-1.3	50.0
M2-8:2 FTS	Ave	0.2011	0.2072		2.47	2.40	3.0	40.0
13C2 PFDA	Ave	0.7142	0.7198		2.52	2.50	0.8	50.0
d3-NMeFOSAA	Ave	0.3615	0.3489		2.41	2.50	-3.5	50.0
13C2 PFUnA	Ave	0.5582	0.5854		2.62	2.50	4.9	50.0
d5-NEtFOSAA	Ave	0.3709	0.3637		2.45	2.50	-2.0	50.0
13C2 PFDoA	Ave	0.6012	0.5997		2.49	2.50	-0.2	50.0
13C2 PFTeDA	Ave	0.7782	0.7569		2.43	2.50	-2.7	50.0
13C2 PFHxDA	Ave	1.407	1.367		2.43	2.50	-2.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_032.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 18-Oct-2018 20:48:13 ALS Bottle#: 35 Worklist Smp#: 1
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Oct-2018 07:29:22 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK013

First Level Reviewer: mongkols

Date: 22-Oct-2018 07:29:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.429	1.431	-0.002	0.538	3835683	2.44		97.8	7713	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.434	1.434	0.0	1.003	1424489	1.03		103	114	
D 3 13C5 PFPeA										
267.90 > 223.00	1.700	1.695	0.005	0.641	2532496	2.48		99.3	7472	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.700	0.0	1.000	1097844	0.9819		98.2	151	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.732	1.732	0.0	1.000	1484023	0.9123		103	493	
298.90 > 99.00	1.732	1.732	0.0	1.000	609404		2.44(1.25-3.74)		369	
D 47 13C3 PFBS										
301.90 > 83.00	1.732	1.736	-0.004	0.653	46974	2.24		96.3	434	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.939	1.939	0.0	1.119	267850	0.8767		93.9	1976	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.939	1.945	-0.006	0.731	324495	2.35		101	416	
D 7 13C2 PFHxA										
315.00 > 270.00	1.970	1.976	-0.006	0.743	2696791	2.43		97.3	6896	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.980	1.980	0.0	1.005	1106907	1.01		101	219	
313.00 > 119.00	1.980	1.980	0.0	1.005	101884		10.86(5.03-15.10)		175	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.001	2.001	0.0	1.155	1368119	1.01		107	3233	
349.00 > 99.00	2.001	2.001	0.0	1.155	494730		2.77(1.36-4.07)		1588	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.074	2.070	0.004	0.782	210328	2.48		99.3	1262	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.074	2.074	0.0	1.000	253899	1.03		103	299	
D 9 13C4 PFHpA										
367.00 > 322.00	2.303	2.300	0.003	0.868	2632753	2.59		103	7964	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.303	2.303	0.0	1.000	1141045	0.9387		93.9	269	
363.00 > 169.00	2.303	2.303	0.0	1.000	455311		2.51(1.13-3.40)		415	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.314	2.314	0.0	1.000	1154685	0.8185		89.9	1565	
399.00 > 99.00	2.314	2.314	0.0	1.000	395197		2.92(1.50-4.49)		663	
D 11 18O2 PFHxS										
403.00 > 84.00	2.314	2.323	-0.009	0.872	3023309	2.39		101	4456	
77 DONA										
377.00 > 251.00	2.347	2.347	0.0	0.776	3016913	0.9147		97.1	5071	
377.00 > 85.00	2.347	2.347	0.0	0.776	1850000		1.63(0.85-2.54)		4599	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.630	2.629	0.002	0.991	473875	2.42		102	1448	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.630	2.630	0.0	1.000	286509	0.8696		91.7	920	
D 73 13C8 PFOA										
421.00 > 376.00	2.637	2.644	-0.007	0.994	3908915	2.42		99.0	6195	
D 14 13C4 PFOA										
417.00 > 372.00	2.653	2.652	0.001	1.000	2464381	2.49		99.6	4492	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.653	2.653	0.0	1.000	1135599	1.01		101	119	
413.00 > 169.00	2.653	2.653	0.0	1.000	605542		1.88(0.84-2.52)		630	
* 62 13C2 PFOA										
415.00 > 370.00	2.653	2.653	0.0		2506718	2.50			4106	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.660	2.660	0.0	0.879	994161	0.9262		97.3	2780	
449.00 > 99.00	2.660	2.660	0.0	0.879	263265		3.78(1.94-5.82)		806	
D 72 13C8 PFOS										
507.00 > 99.00	3.025	3.025	0.0	1.140	1058425	2.47		103	3183	
D 19 13C5 PFNA										
468.00 > 423.00	3.025	3.025	0.0	1.140	2092513	2.51		100	3085	
D 18 13C4 PFOS										
503.00 > 80.00	3.025	3.025	0.0	1.140	1948288	2.43		101	2498	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.025	3.025	0.0	1.000	850497	0.8957		96.5	760	M
499.00 > 99.00	3.025	3.025	0.0	1.000	179518		4.74(2.31-6.93)		599	
20 Perfluorononanoic acid										
463.00 > 419.00	3.025	3.025	0.0	1.000	862580	1.03		103	335	
463.00 > 169.00	3.025	3.025	0.0	1.000	221169		3.90(1.90-5.69)		768	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.237	3.237	0.0	1.070	1452719	0.9105		97.7	2632	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.366	3.366	0.0	1.000	1101348	0.9608		96.1	1998	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.373	-0.007	1.269	2859781	2.47		98.7	4639	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.374	3.374	0.0	1.000	243051	0.9711		101	1033	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.374	3.380	-0.006	1.272	497631	2.47		103	2134	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.381	3.381	0.0	1.118	599101	0.9165		95.5	2289	
549.00 > 99.00	3.374	3.381	-0.007	1.115	220305		2.72(1.33-3.97)		1034	
D 23 13C2 PFDA										
515.00 > 470.00	3.381	3.388	-0.007	1.274	1804274	2.52		101	5164	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.388	3.388	0.0	1.002	717348	0.9769		97.7	552	
513.00 > 169.00	3.388	3.388	0.0	1.002	135937		5.28(2.36-7.09)		265	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.541	3.548	-0.007	1.335	874615	2.41		96.5	1501	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.549	3.549	0.0	1.002	335356	1.00		99.6	352	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.705	3.705	0.0	1.225	492753	0.9532		98.9	1965	
599.00 > 99.00	3.705	3.705	0.0	1.225	163632		3.01(1.39-4.16)		1095	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.714	3.713	0.001	1.400	911651	2.45		98.0	1247	
D 30 13C2 PFUnA										
565.00 > 520.00	3.714	3.722	-0.008	1.400	1467509	2.62		105	2374	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.722	3.722	0.0	1.002	322628	1.06		106	839	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.722	3.722	0.0	1.002	500524	0.9549		95.5	550	
563.00 > 169.00	3.714	3.722	-0.008	1.000	132890		3.77(2.12-6.36)		640	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.875	3.875	0.0	1.281	2221348	0.9414		99.9	3127	
35 MeFOSA										
512.00 > 169.00	3.885	3.885	0.0		340813	NC			527	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.010	4.010	0.0	1.000	608269	0.9150		91.5	423	
613.00 > 169.00	4.010	4.010	0.0	1.000	171717		3.54(2.13-6.40)		965	
D 36 13C2 PFDaA										
615.00 > 570.00	4.010	4.018	-0.008	1.512	1503359	2.49		99.8	3714	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.019	4.019	0.0	1.191	175801	0.9365		97.1	749	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.252	4.252	0.0	1.405	216446	0.8788		90.8	1549	
699.00 > 99.00	4.252	4.252	0.0	1.405	324944		0.67(0.00-0.00)		1476	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.280	0.0	1.067	648380	0.9849		98.5	430	
663.00 > 169.00	4.280	4.280	0.0	1.067	216124		3.00(1.25-3.76)		1073	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.522	4.522	0.0	1.705	1897231	2.43		97.3	4242	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.522	0.0	1.000	199471	0.9792		97.9	1161	
713.00 > 219.00	4.513	4.522	-0.009	0.998	136587		1.46(0.71-2.13)		1169	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.934	4.943	-0.009	1.860	3425472	2.43		97.1	4137	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.943	4.943	0.0	1.002	1204464	0.9753		97.5	212	
813.00 > 169.00	4.934	4.943	-0.009	1.000	232479		5.18(2.86-8.58)		1264	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.293	0.0	1.073	1537287	1.00		99.9	239	
913.00 > 169.00	5.286	5.293	-0.007	1.071	200970		7.65(3.83-11.48)		1068	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_032.d

Injection Date: 18-Oct-2018 20:48:13

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 35

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

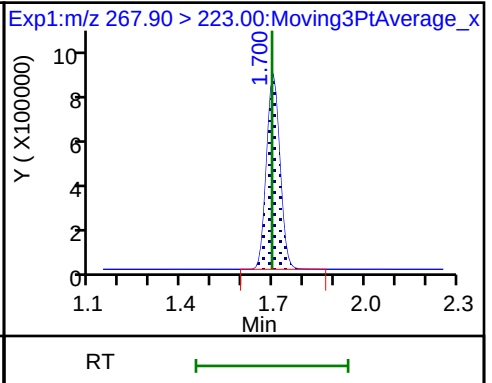
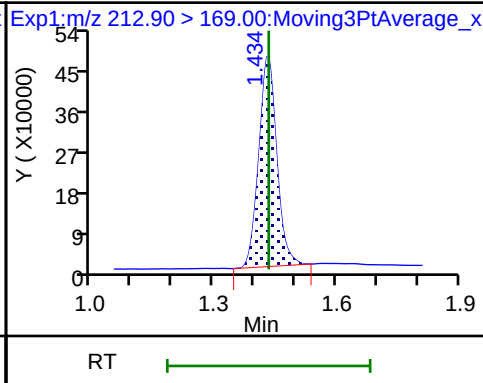
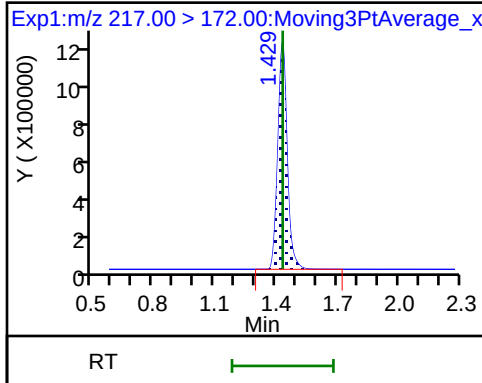
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

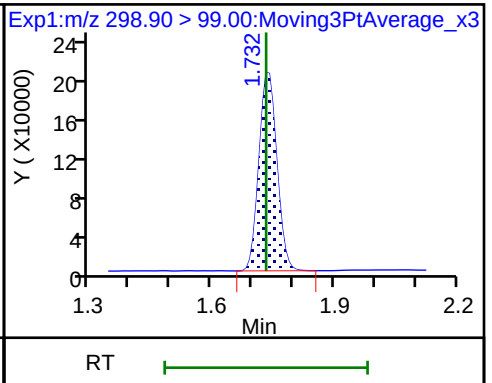
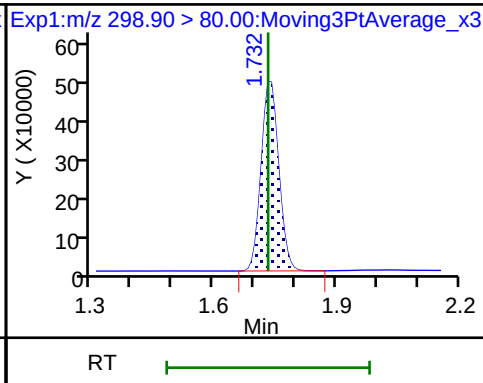
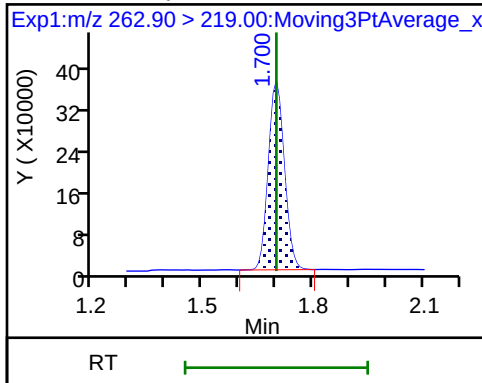
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

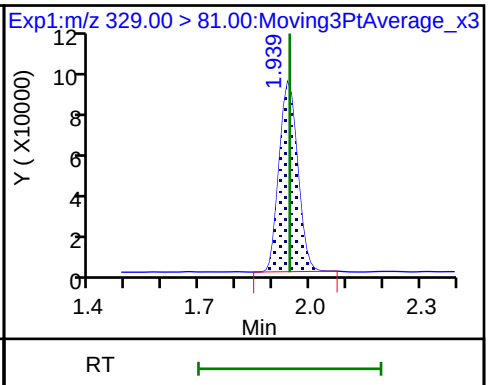
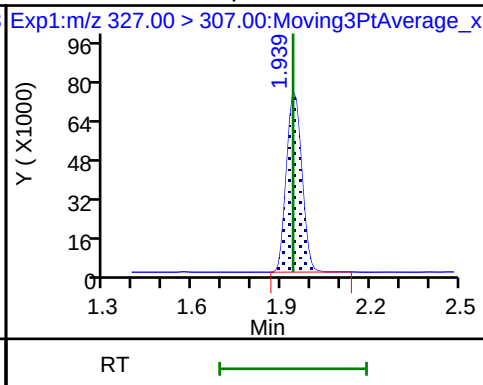
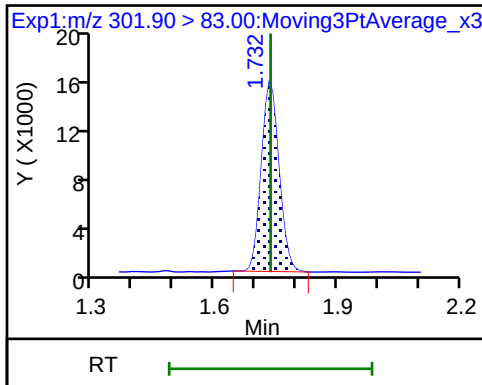
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

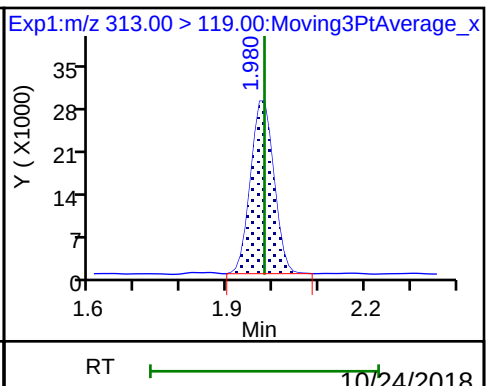
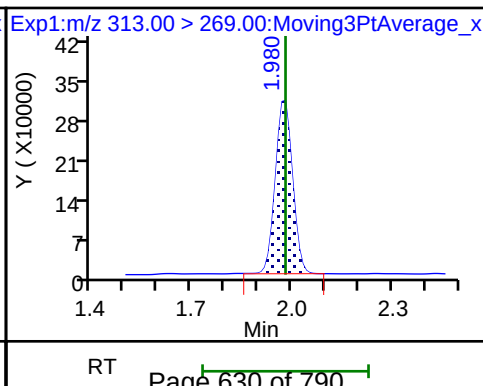
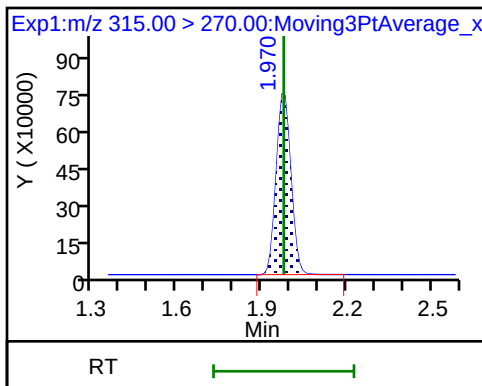
D 60 M2-4:2 FTS



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

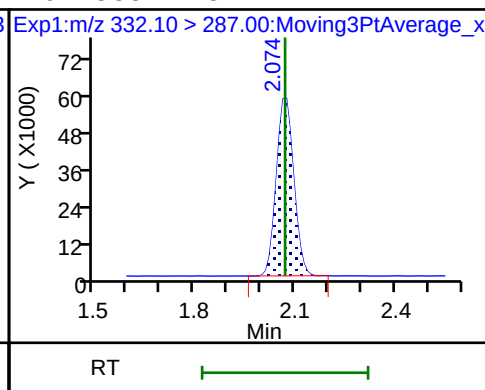
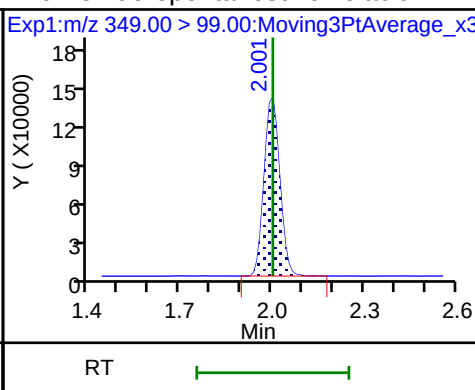
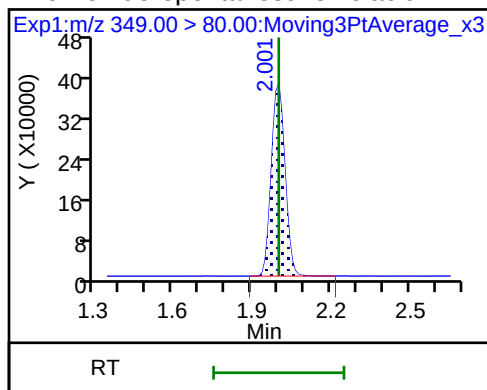
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

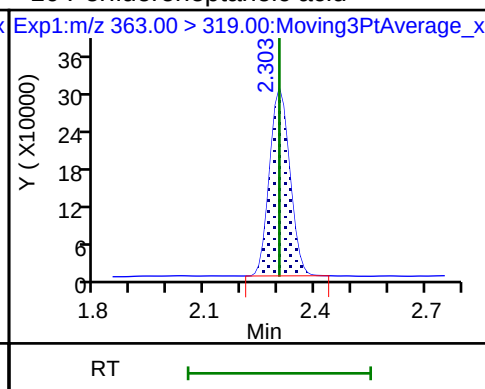
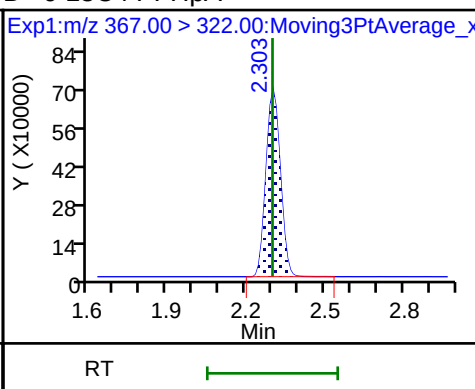
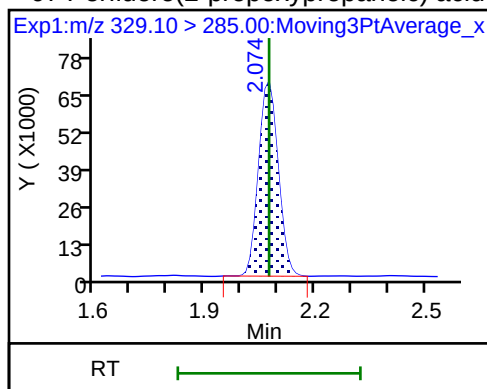
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

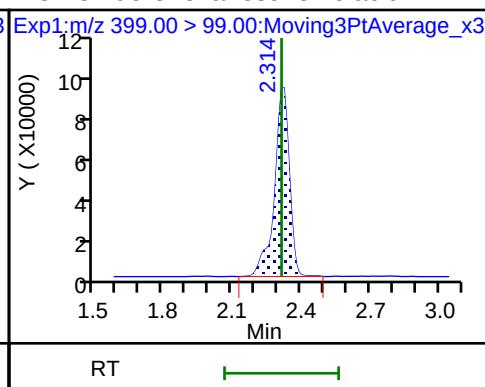
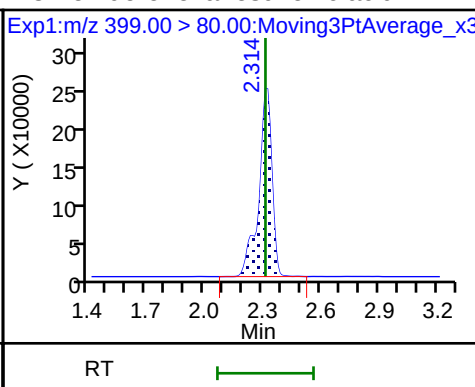
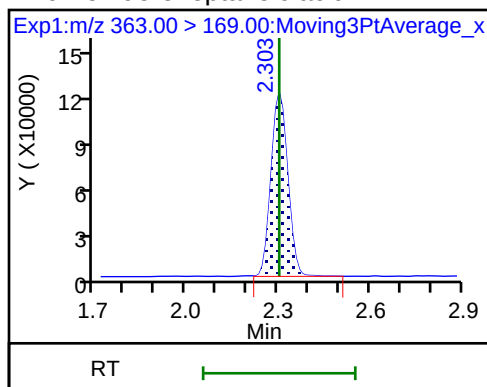
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

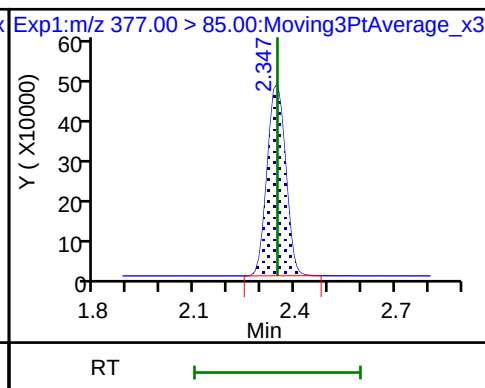
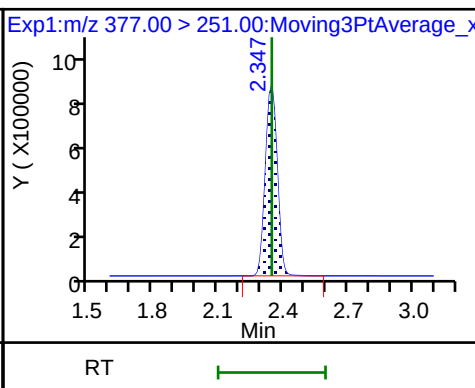
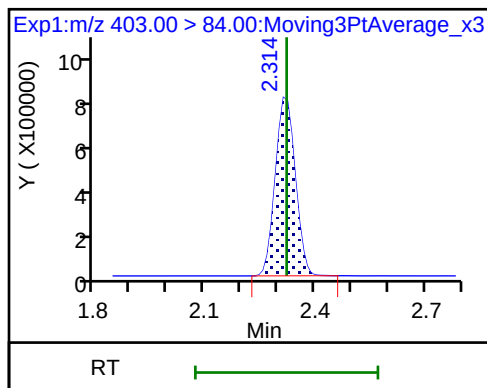
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

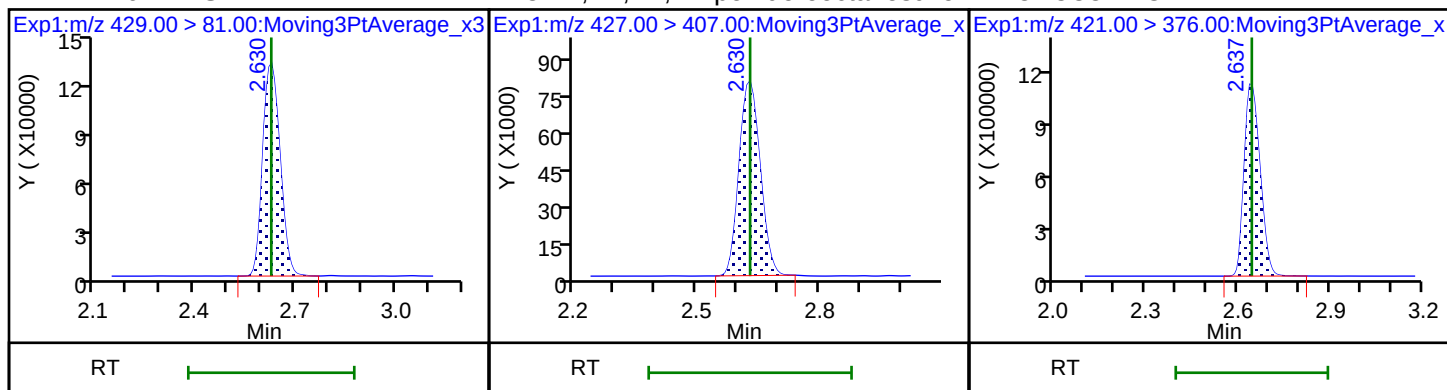
77 DONA

77 DONA



D 12 M2-6:2 FTS

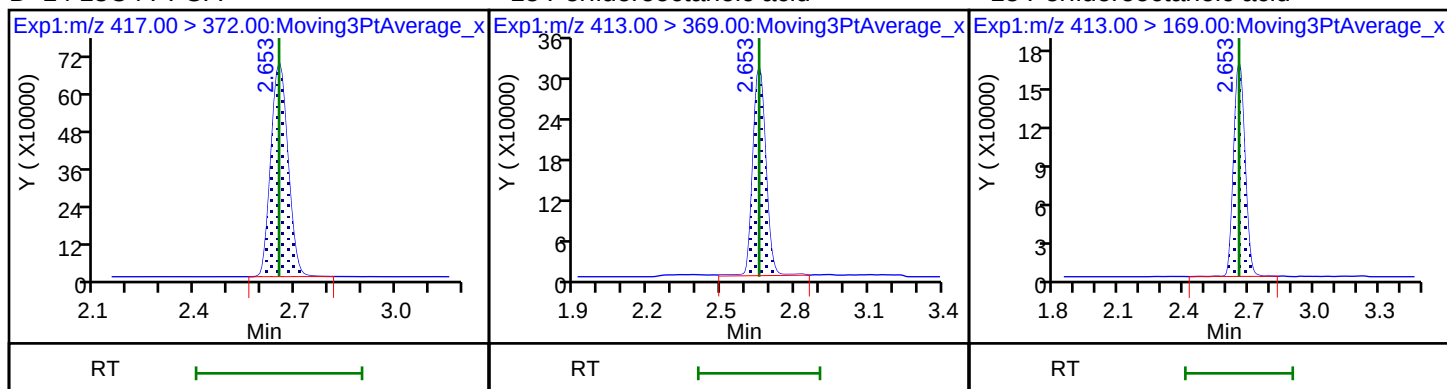
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

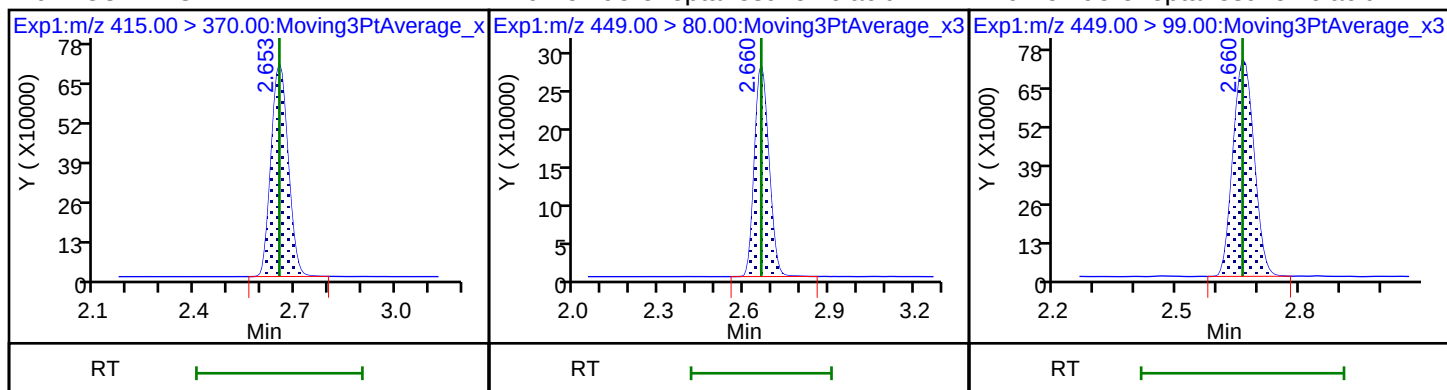
15 Perfluorooctanoic acid



* 62 13C2 PFOA

16 Perfluoroheptanesulfonic acid

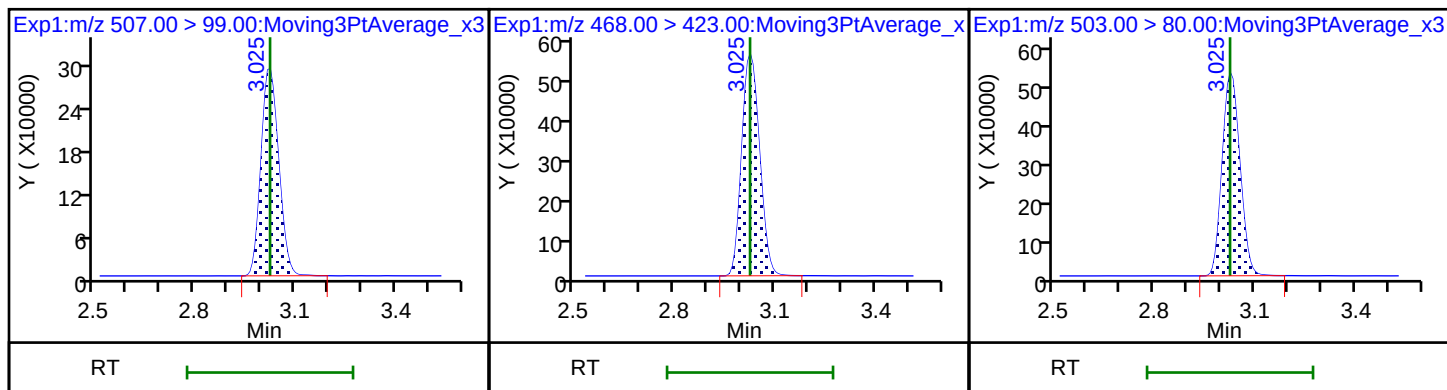
16 Perfluoroheptanesulfonic acid

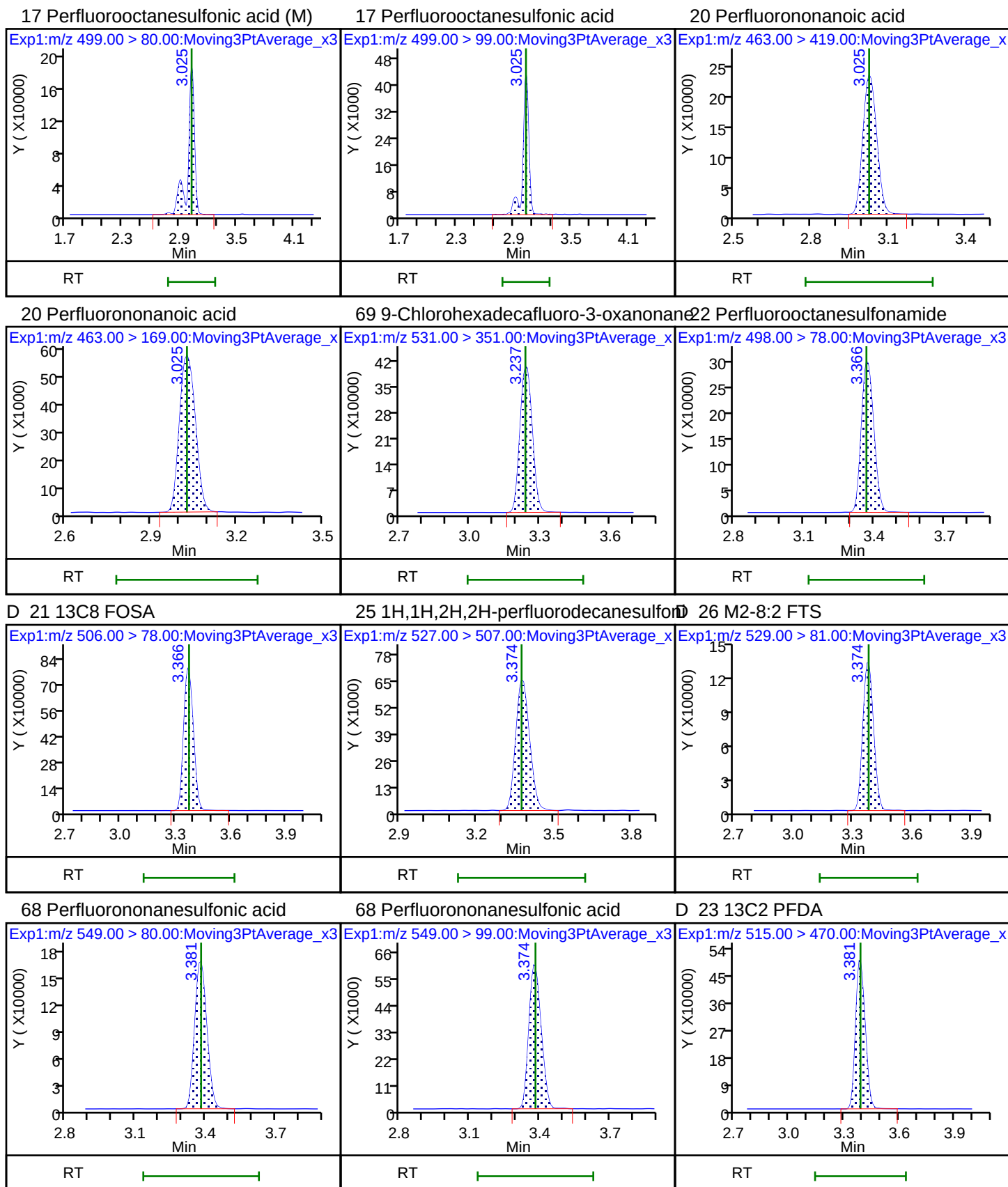


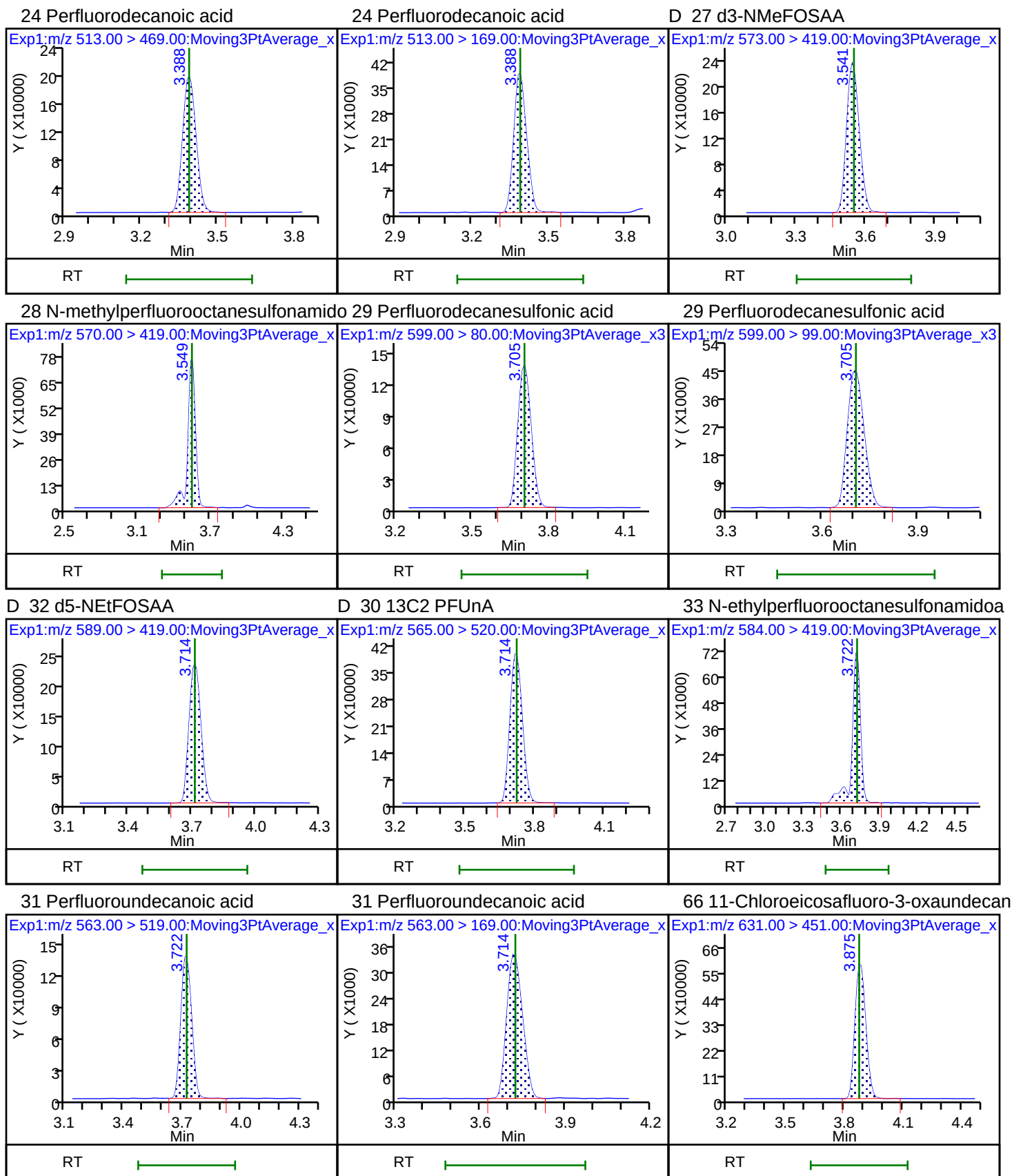
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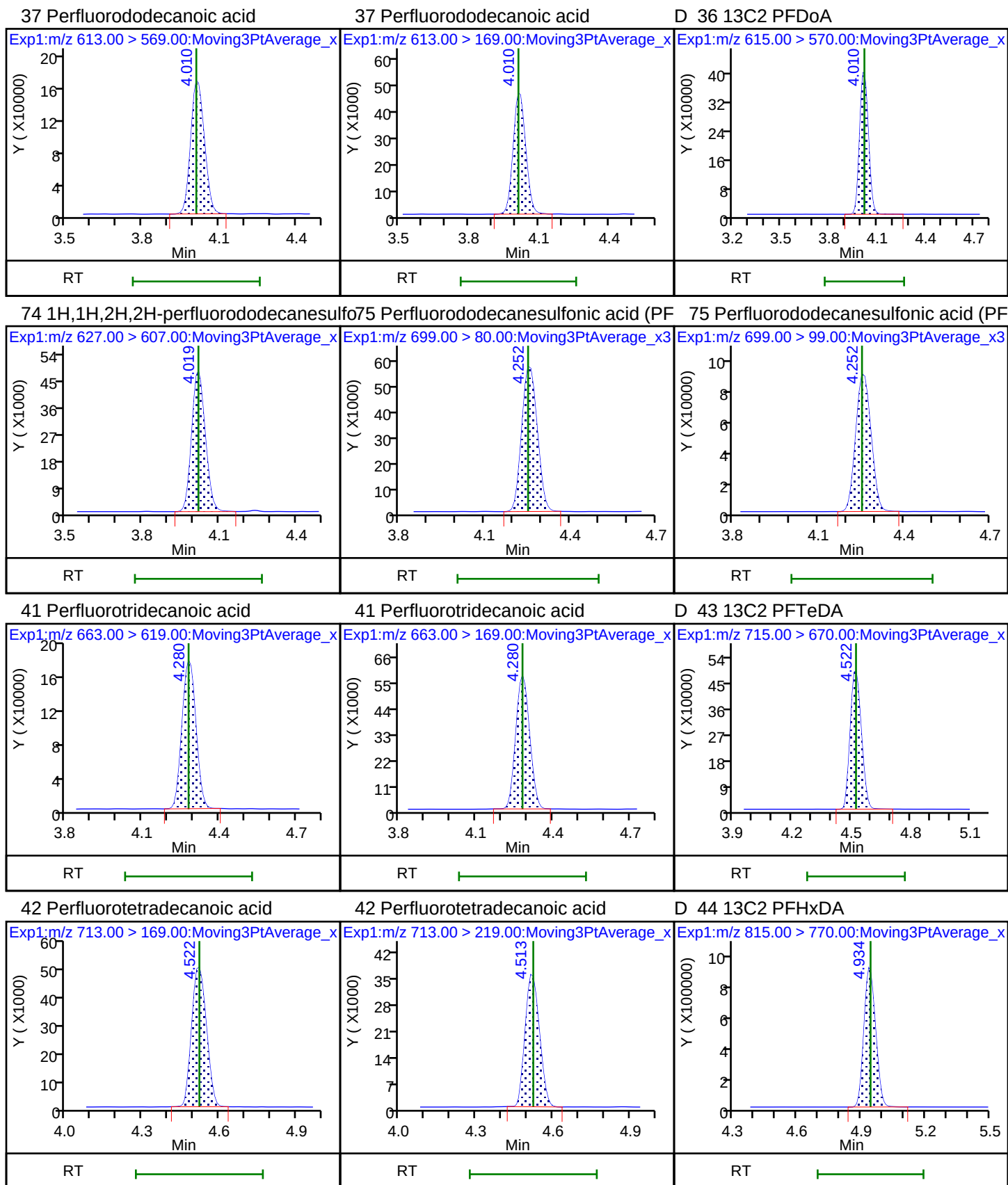
D 19 13C5 PFNA

D 18 13C4 PFOS







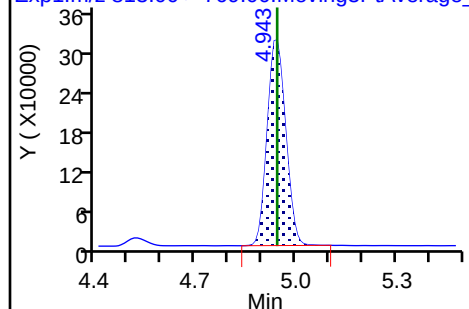


45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

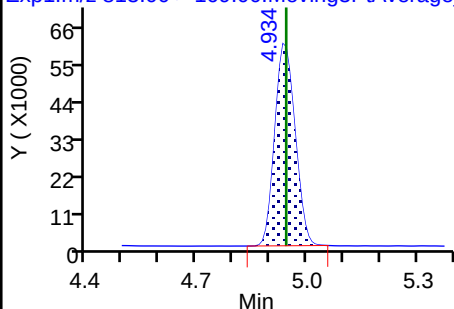
46 Perfluorooctadecanoic acid

Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



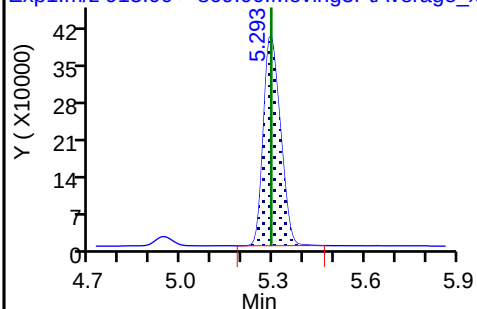
RT

Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



RT

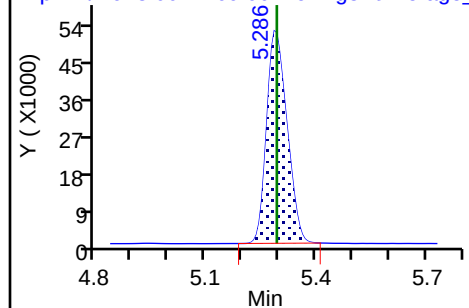
Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



RT

46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

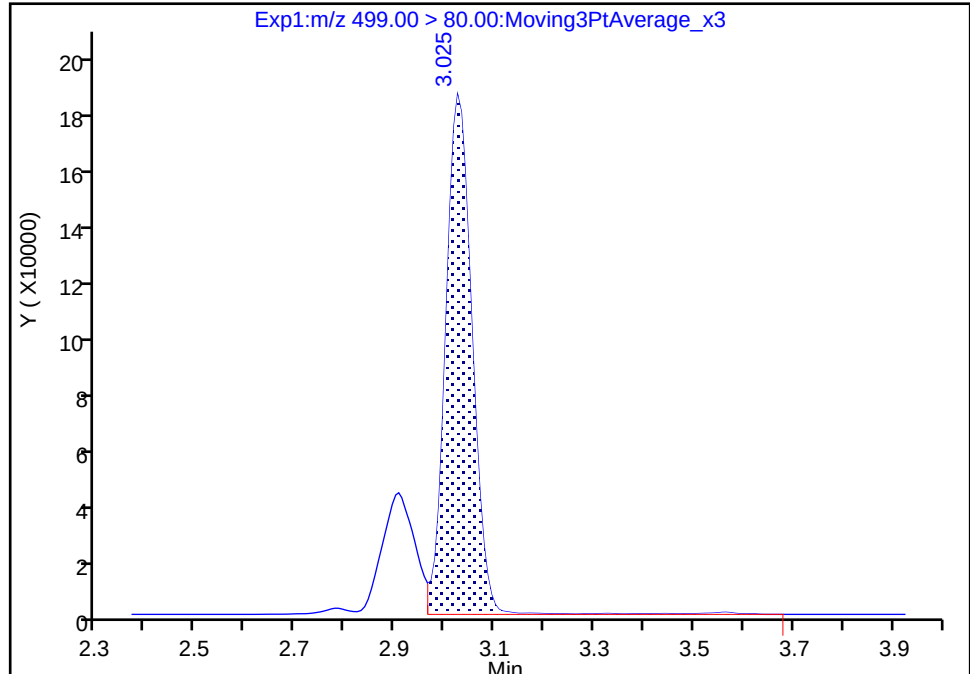
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_032.d
Injection Date: 18-Oct-2018 20:48:13 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

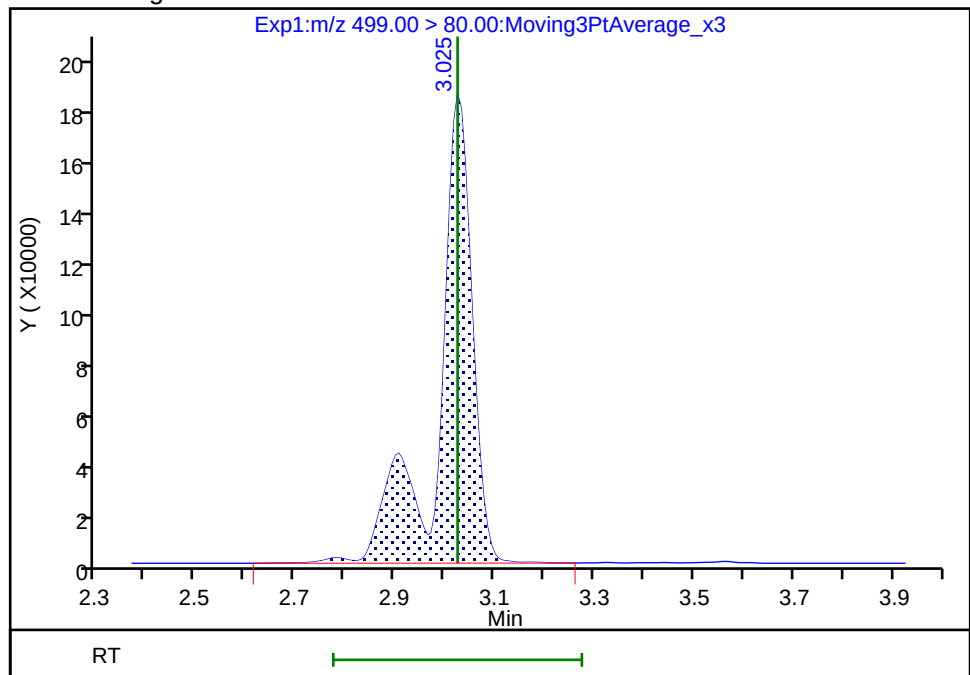
RT: 3.03
Area: 659784
Amount: 0.694849
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 850497
Amount: 0.895697
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:29:14
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 637 of 790

10/24/2018

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCV 320-253242/5 Calibration Date: 10/18/2018 21:17

Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40

Lab File ID: 2018.10.17LLAAA_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8986	0.9761		2.72	2.50	8.6	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.104	1.099		2.49	2.50	-0.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	80.51	79.23		2.17	2.21	-1.6	50.0
4:2 FTS	AveID	15.12	15.30		2.36	2.34	1.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.014	1.030		2.54	2.50	1.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.28	66.69		2.32	2.35	-0.9	50.0
HFPO-DA (GenX)	AveID	2.927	3.184		2.72	2.50	8.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.154	0.997		2.16	2.50	-13.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.104	0.9896		2.04	2.28	-10.3	40.0
DONA	AveID	4.046	4.491		2.61	2.36	11.0	50.0
6:2 FTS	AveID	1.651	1.543		2.21	2.37	-6.5	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.144	1.132		2.48	2.50	-1.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.317	1.367		2.47	2.38	3.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.003	1.087		2.71	2.50	8.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.165	1.131		2.25	2.32	-2.9	40.0
F-53B Major	AveID	1.957	1.986		2.36	2.33	1.5	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.002	0.9933		2.48	2.50	-0.9	40.0
8:2 FTS	AveID	1.205	1.245		2.47	2.40	3.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.8019	0.8591		2.57	2.40	7.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.018	0.9703		2.38	2.50	-4.6	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9620	0.8600		2.24	2.50	-10.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6341	0.6391		2.43	2.41	0.8	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8380	0.8572		2.56	2.50	2.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8929	0.8428		2.36	2.50	-5.6	40.0
F-53B Minor	AveID	2.895	3.028		2.46	2.36	4.6	50.0
10:2 FTS	AveID	0.9034	0.8726		2.33	2.41	-3.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.105	1.122		2.54	2.50	1.5	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.3021	0.2980		2.39	2.42	-1.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.095	1.111		2.54	2.50	1.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2684	0.2669		2.49	2.50	-0.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9146		2.58	2.50	3.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCV 320-253242/5 Calibration Date: 10/18/2018 21:17
 Instrument ID: A8_N Calib Start Date: 10/17/2018 19:55
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/17/2018 20:40
 Lab File ID: 2018.10.17LLAAA_036.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.123	1.156		2.57	2.50	3.0	50.0
13C4 PFBA	Ave	1.565	1.502		2.40	2.50	-4.0	50.0
13C5 PFPeA	Ave	1.017	0.9876		2.43	2.50	-2.9	50.0
13C3 PFBS	Ave	0.0209	0.0212		2.35	2.33	1.2	50.0
M2-4:2 FTS	Ave	0.1378	0.1405		2.38	2.34	2.0	50.0
13C2 PFHxA	Ave	1.106	1.046		2.37	2.50	-5.4	50.0
13C3 HFPO-DA	Ave	0.0845	0.0833		2.46	2.50	-1.5	50.0
13C4 PFHpA	Ave	1.015	1.063		2.62	2.50	4.7	50.0
18O2 PFHxS	Ave	1.262	1.264		2.37	2.37	0.2	50.0
M2-6:2 FTS	Ave	0.1953	0.1874		2.28	2.38	-4.0	40.0
13C8 PFOA	Ave	1.609	1.545		2.35	2.45	-4.0	50.0
13C4 PFOA	Ave	0.9873	0.9526		2.41	2.50	-3.5	50.0
13C8 PFOS	Ave	0.4270	0.4020		2.25	2.39	-5.9	50.0
13C4 PFOS	Ave	0.8012	0.7715		2.30	2.39	-3.7	50.0
13C5 PFNA	Ave	0.8307	0.7909		2.38	2.50	-4.8	50.0
13C8 FOSA	Ave	1.156	1.110		2.40	2.50	-4.0	50.0
M2-8:2 FTS	Ave	0.2011	0.2046		2.44	2.40	1.7	40.0
13C2 PFDA	Ave	0.7142	0.7183		2.51	2.50	0.6	50.0
d3-NMeFOSAA	Ave	0.3615	0.3772		2.61	2.50	4.3	50.0
13C2 PFUnA	Ave	0.5582	0.5586		2.50	2.50	0.0	50.0
d5-NEtFOSAA	Ave	0.3709	0.3706		2.50	2.50	-0.0	50.0
13C2 PFDoA	Ave	0.6012	0.5914		2.46	2.50	-1.6	50.0
13C2 PFTeDA	Ave	0.7782	0.7478		2.40	2.50	-3.9	50.0
13C2 PFHxDA	Ave	1.407	1.343		2.39	2.50	-4.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_036.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 18-Oct-2018 21:17:58 ALS Bottle#: 36 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Oct-2018 07:37:58 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17ICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK013

First Level Reviewer: mongkols

Date: 22-Oct-2018 07:37:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.424	1.431	-0.007	0.536	2445351	2.40		96.0	5423	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.424	1.434	-0.010	1.000	2386835	2.72		109	216	
D 3 13C5 PFPeA										
267.90 > 223.00	1.701	1.695	0.006	0.641	1607759	2.43		97.1	4779	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.701	1.700	0.001	1.000	1766814	2.49		99.6	274	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.733	1.732	0.001	1.000	2413633	2.17		98.4	903	
298.90 > 99.00	1.733	1.732	0.001	1.000	1024757		2.36(1.25-3.74)		710	
D 47 13C3 PFBS										
301.90 > 83.00	1.733	1.736	-0.003	0.653	32048	2.35		101	231	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.940	1.939	0.001	1.120	492560	2.36		101	4577	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.940	1.945	-0.005	0.731	213664	2.38		102	300	
D 7 13C2 PFHxA										
315.00 > 270.00	1.971	1.976	-0.005	0.742	1702783	2.37		94.6	5409	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.971	1.980	-0.009	1.000	1753479	2.54		102	390	
313.00 > 119.00	1.971	1.980	-0.009	1.000	171495		10.22(5.03-15.10)		335	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.003	2.001	0.002	1.156	2155675	2.32		99.1	4908	
349.00 > 99.00	2.003	2.001	0.002	1.156	801883		2.69(1.36-4.07)		2561	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.076	2.070	0.006	0.782	135538	2.46		98.5	810	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.076	2.074	0.002	1.000	431506	2.72		109	492	
D 9 13C4 PFHpA										
367.00 > 322.00	2.304	2.300	0.004	0.868	1729792	2.62		105	5093	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.304	2.303	0.001	1.000	1723763	2.16		86.3	415	
363.00 > 169.00	2.304	2.303	0.001	1.000	678430		2.54(1.13-3.40)		554	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.315	2.314	0.001	1.000	1853120	2.04		89.7	1823	
399.00 > 99.00	2.315	2.314	0.001	1.000	640810		2.89(1.50-4.49)		906	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.315	2.323	-0.008	0.872	1946749	2.37		100	5664	
77 DONA										
377.00 > 251.00	2.349	2.347	0.002	0.775	5312648	2.61		111	8681	
377.00 > 85.00	2.349	2.347	0.002	0.775	2998332		1.77(0.85-2.54)		4990	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.631	2.629	0.003	0.991	289848	2.28		96.0	977	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.631	2.630	0.001	1.000	446348	2.21		93.5	1257	
D 73 13C8 PFOA										
421.00 > 376.00	2.647	2.644	0.003	0.997	2462108	2.35		96.0	8489	
D 14 13C4 PFOA										
417.00 > 372.00	2.655	2.652	0.003	1.000	1550714	2.41		96.5	5795	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.655	2.653	0.002	1.000	1757286	2.48		99.0	202	
413.00 > 169.00	2.655	2.653	0.002	1.000	986661		1.78(0.84-2.52)		1231	
* 62 13C2 PFOA										
415.00 > 370.00	2.655	2.653	0.002		1627904	2.50			4415	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.662	2.660	0.002	0.879	1634282	2.47		104	2420	
449.00 > 99.00	2.662	2.660	0.002	0.879	428429		3.81(1.94-5.82)		1327	
D 72 13C8 PFOS										
507.00 > 99.00	3.022	3.025	-0.003	1.138	625538	2.25		94.1	2174	
D 19 13C5 PFNA										
468.00 > 423.00	3.029	3.025	0.004	1.141	1287570	2.38		95.2	4850	
D 18 13C4 PFOS										
503.00 > 80.00	3.029	3.025	0.004	1.141	1200588	2.30		96.3	2527	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.029	3.025	0.004	1.000	1317892	2.25		97.1	1131	M
499.00 > 99.00	3.029	3.025	0.004	1.000	293599		4.49(2.31-6.93)		884	
20 Perfluorononanoic acid										
463.00 > 419.00	3.029	3.025	0.004	1.000	1399776	2.71		108	601	
463.00 > 169.00	3.029	3.025	0.004	1.000	355801		3.93(1.90-5.69)		1740	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.242	3.237	0.005	1.070	2324280	2.36		101	3704	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.369	3.366	0.003	1.000	1794254	2.48		99.1	2495	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.369	3.373	-0.004	1.269	1806328	2.40		96.0	4437	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.377	3.374	0.003	1.000	397111	2.47		103	1857	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.377	3.380	-0.003	1.272	319039	2.44		102	1310	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.377	3.381	-0.004	1.115	1035689	2.57		107	4400	
549.00 > 99.00	3.377	3.381	-0.004	1.115	361975		2.86(1.33-3.97)		1405	
D 23 13C2 PFDA										
515.00 > 470.00	3.384	3.388	-0.004	1.275	1169324	2.51		101	2980	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.392	3.388	0.004	1.002	1134577	2.38		95.4	1198	
513.00 > 169.00	3.392	3.388	0.004	1.002	220616		5.14(2.36-7.09)		400	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.545	3.548	-0.003	1.335	614110	2.61		104	1379	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.553	3.549	0.004	1.002	528149	2.24		89.4	579	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.707	3.705	0.002	1.224	773697	2.43		101	3429	
599.00 > 99.00	3.707	3.705	0.002	1.224	267439		2.89(1.39-4.16)		1418	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.716	3.713	0.003	1.399	603355	2.50		99.9	1182	
D 30 13C2 PFUnA										
565.00 > 520.00	3.716	3.722	-0.006	1.399	909267	2.50		100	2004	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.724	3.722	0.002	1.002	517191	2.56		102	1065	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.724	3.722	0.002	1.002	766351	2.36		94.4	797	
563.00 > 169.00	3.724	3.722	0.002	1.002	207855		3.69(2.12-6.36)		1487	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.878	3.875	0.003	1.280	3581656	2.46		105	6626	
35 MeFOSA										
512.00 > 169.00	3.888	3.885	0.003		561603	NC			508	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.020	4.010	0.010	1.000	1080267	2.54		102	867	
613.00 > 169.00	4.020	4.010	0.010	1.000	277013		3.90(2.13-6.40)		1674	
D 36 13C2 PFDaA										
615.00 > 570.00	4.020	4.018	0.002	1.514	962664	2.46		98.4	3865	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.020	4.019	0.001	1.190	280142	2.33		96.6	1797	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.263	4.252	0.011	1.407	362226	2.39		98.6	1447	
699.00 > 99.00	4.263	4.252	0.011	1.407	575786		0.63(0.00-0.00)		3522	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.280	0.001	1.065	1069961	2.54		102	849	
663.00 > 169.00	4.281	4.280	0.001	1.065	351240		3.05(1.25-3.76)		1489	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.524	4.522	0.002	1.704	1217286	2.40		96.1	3285	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.524	4.522	0.002	1.000	324930	2.49		99.4	1406	
713.00 > 219.00	4.524	4.522	0.002	1.000	220540		1.47(0.71-2.13)		1403	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.943	4.943	0.0	1.862	2186918	2.39		95.5	3617	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.943	4.943	0.0	1.000	2000061	2.58		103	472	
813.00 > 169.00	4.943	4.943	0.0	1.000	368085		5.43(2.86-8.58)		1950	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.293	0.0	1.071	2527645	2.57		103	510	
913.00 > 169.00	5.286	5.293	-0.007	1.069	321510		7.86(3.83-11.48)		1618	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_036.d

Injection Date: 18-Oct-2018 21:17:58

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 36

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

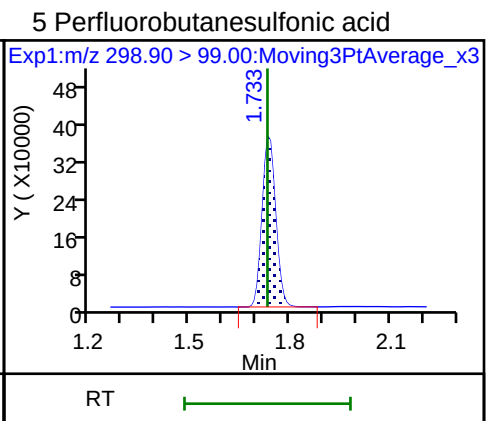
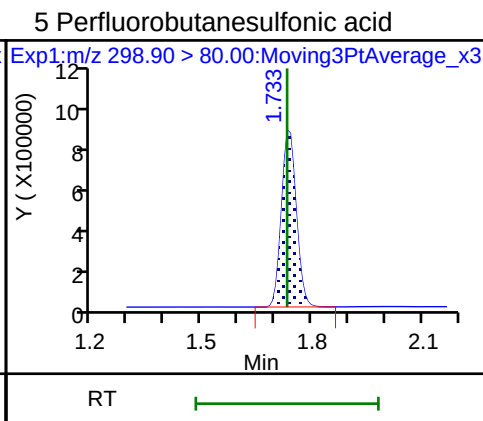
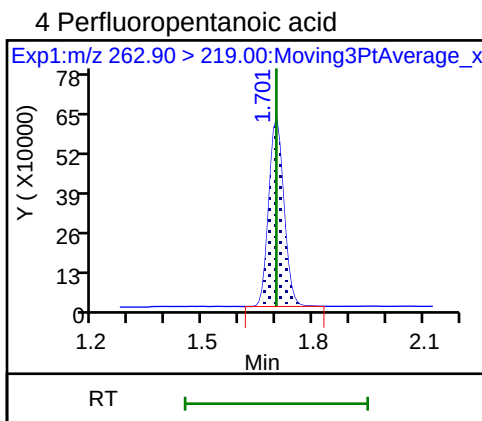
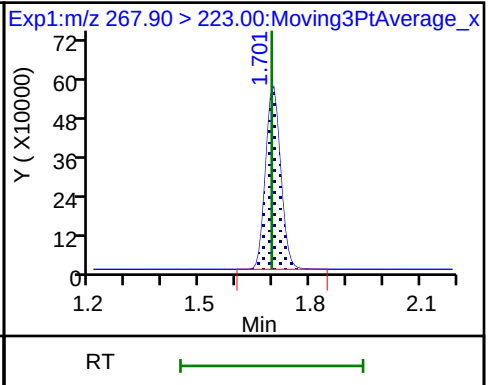
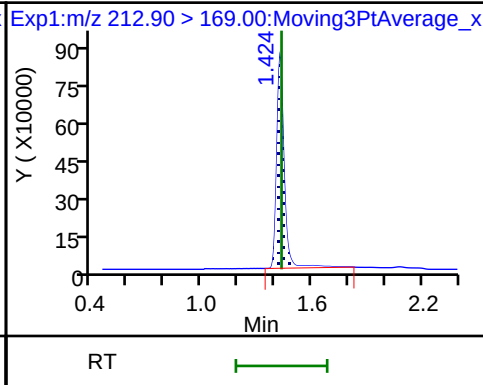
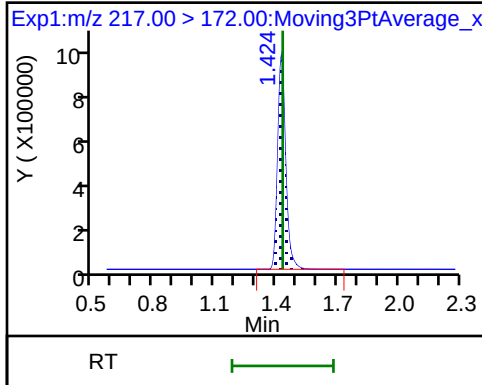
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

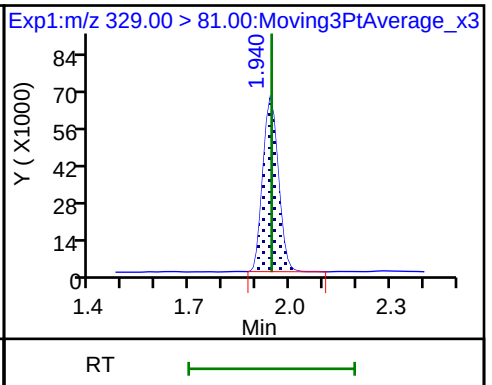
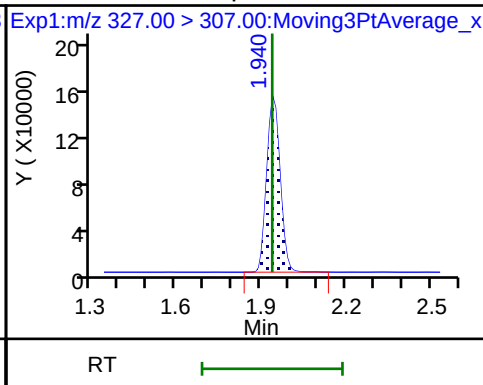
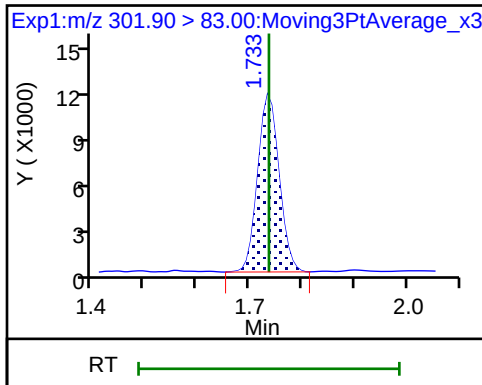
D 3 13C5 PFPeA



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

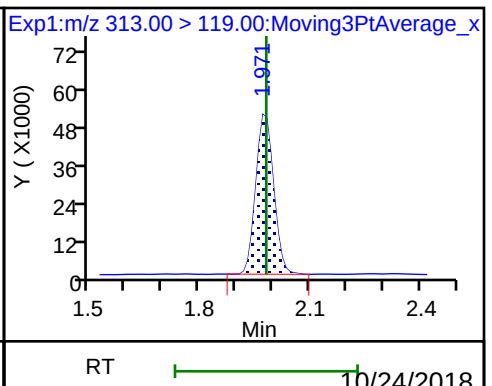
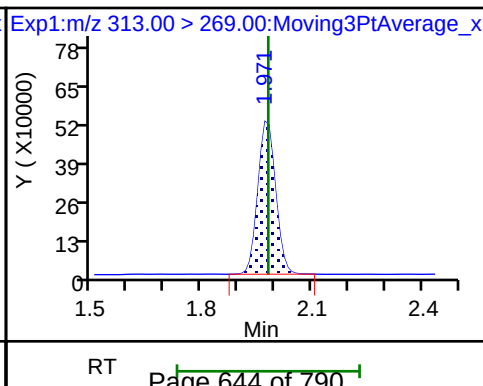
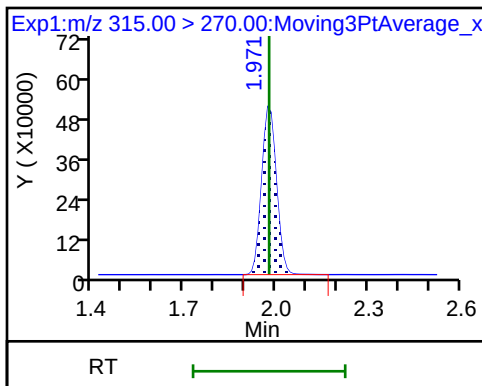
D 60 M2-4:2 FTS

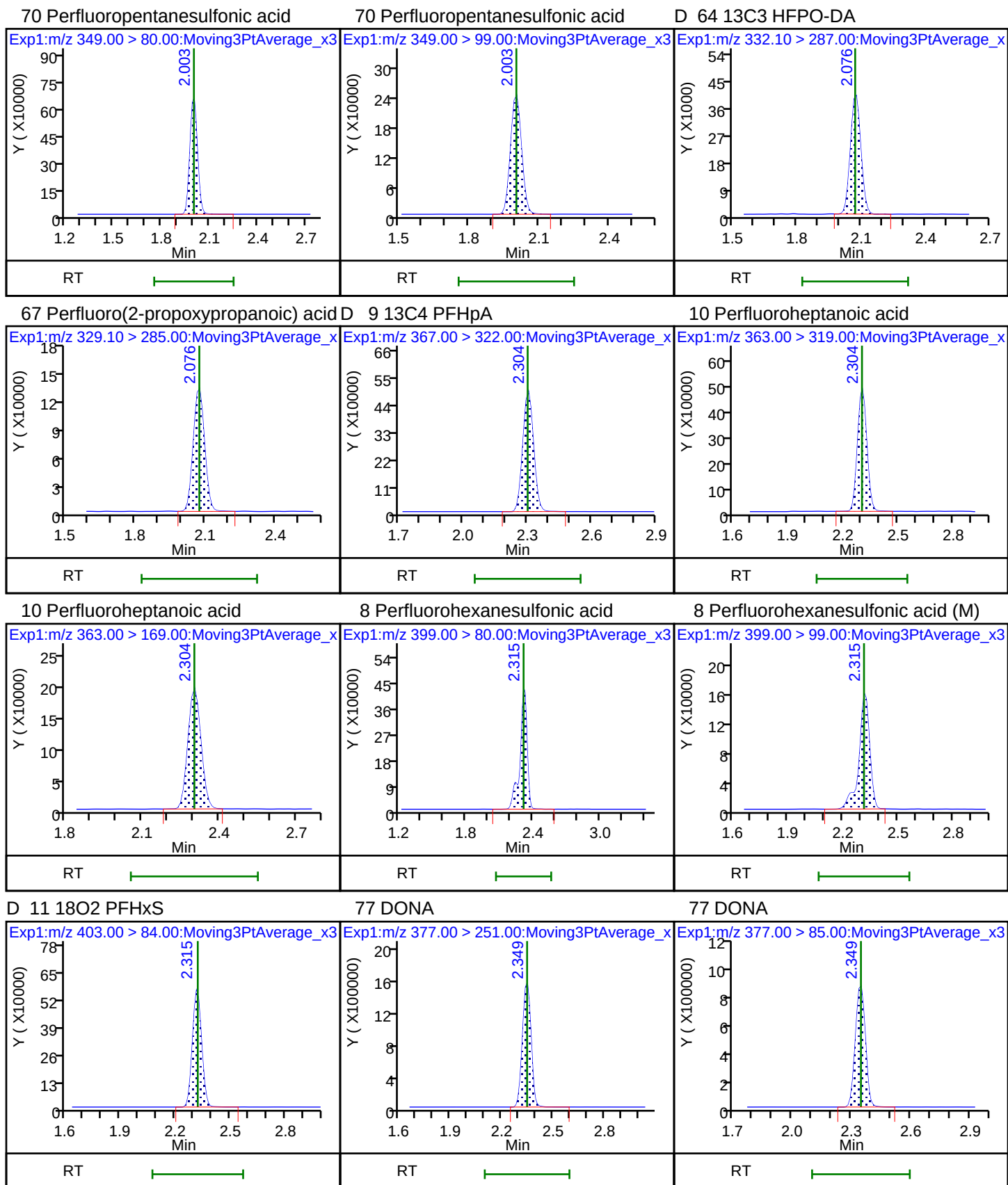


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

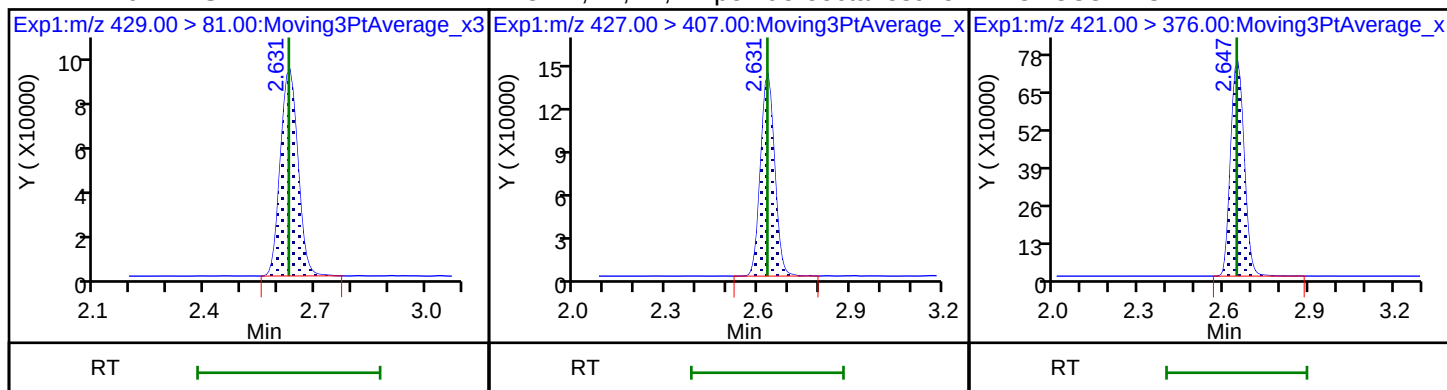
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

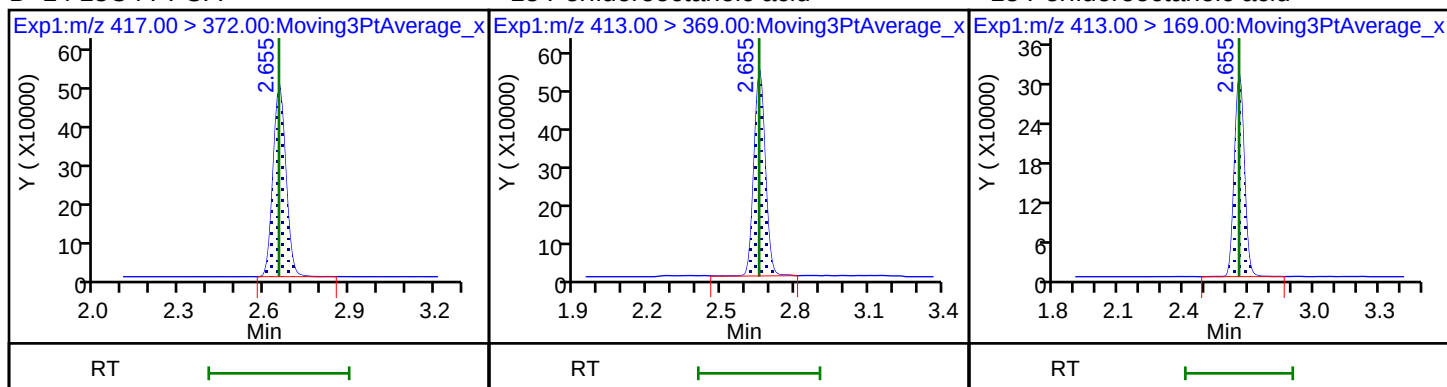
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

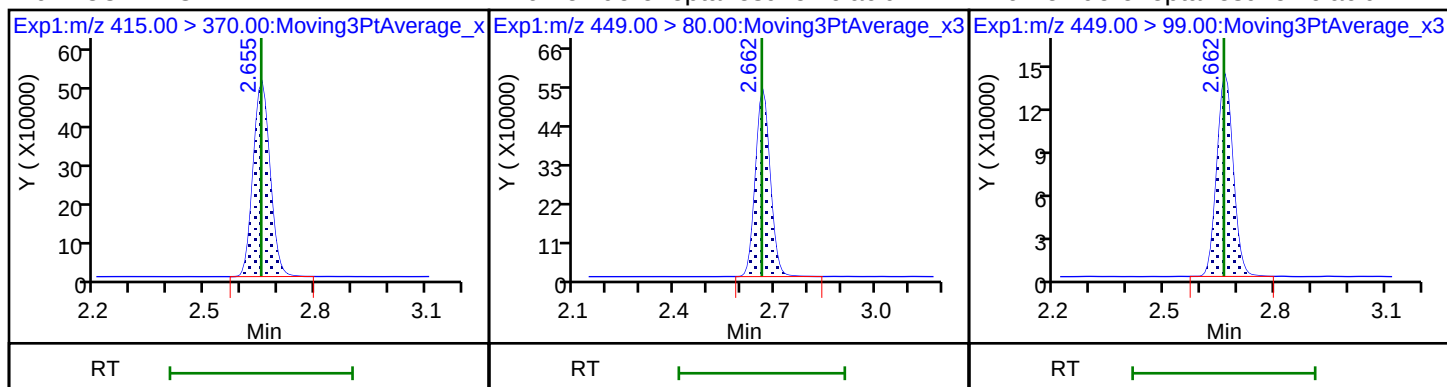
15 Perfluorooctanoic acid



* 62 13C2 PFOA

16 Perfluoroheptanesulfonic acid

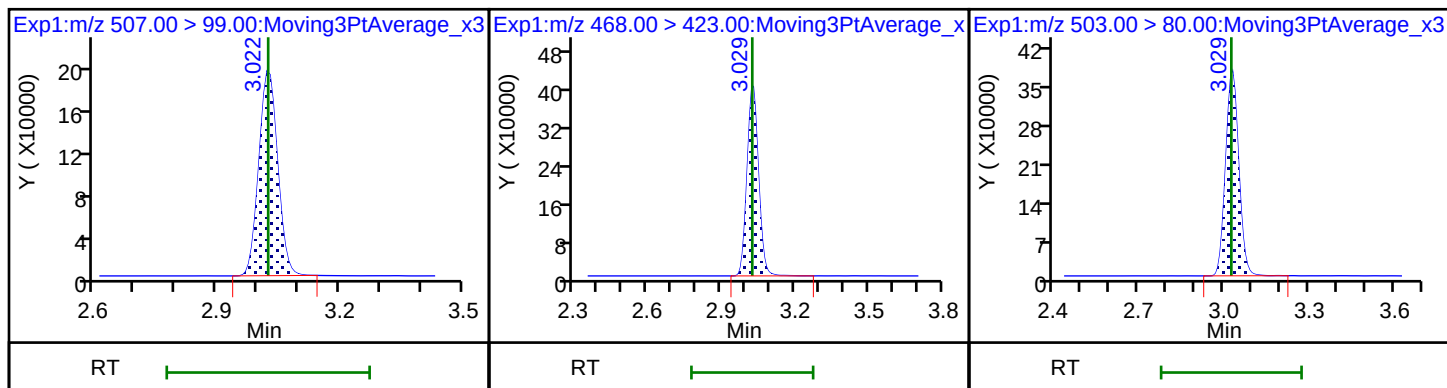
16 Perfluoroheptanesulfonic acid

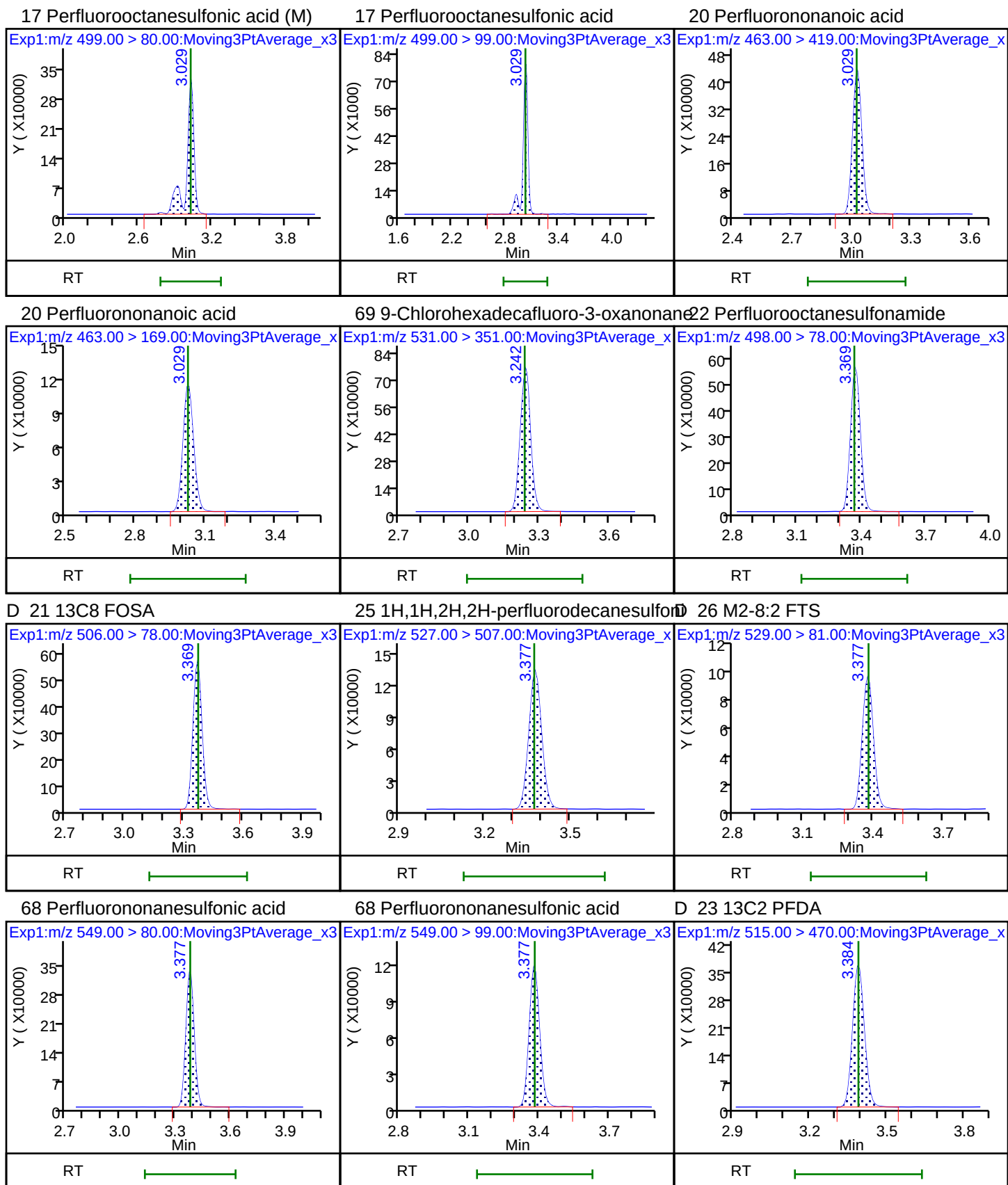


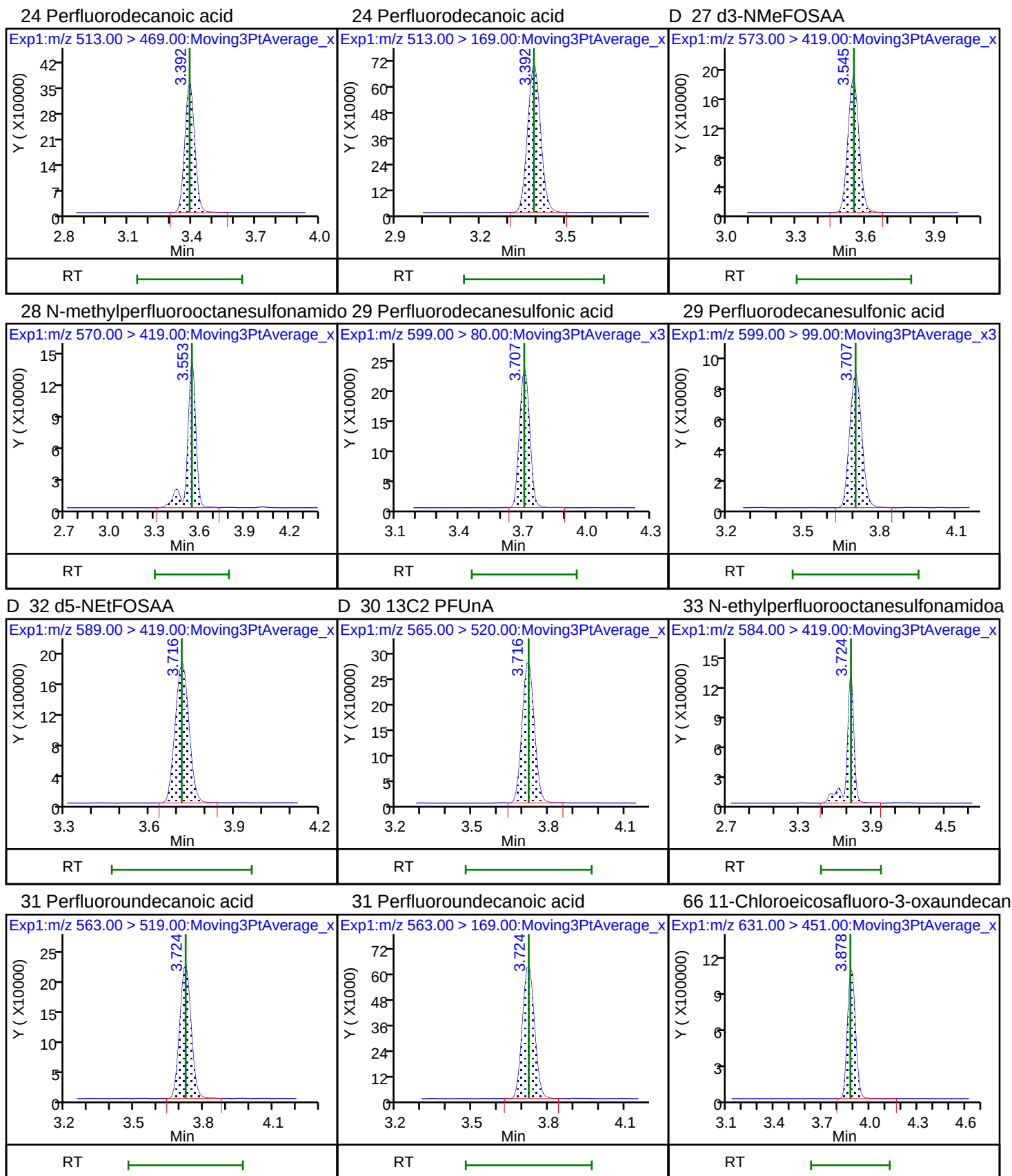
D 72 13C8 PFOS

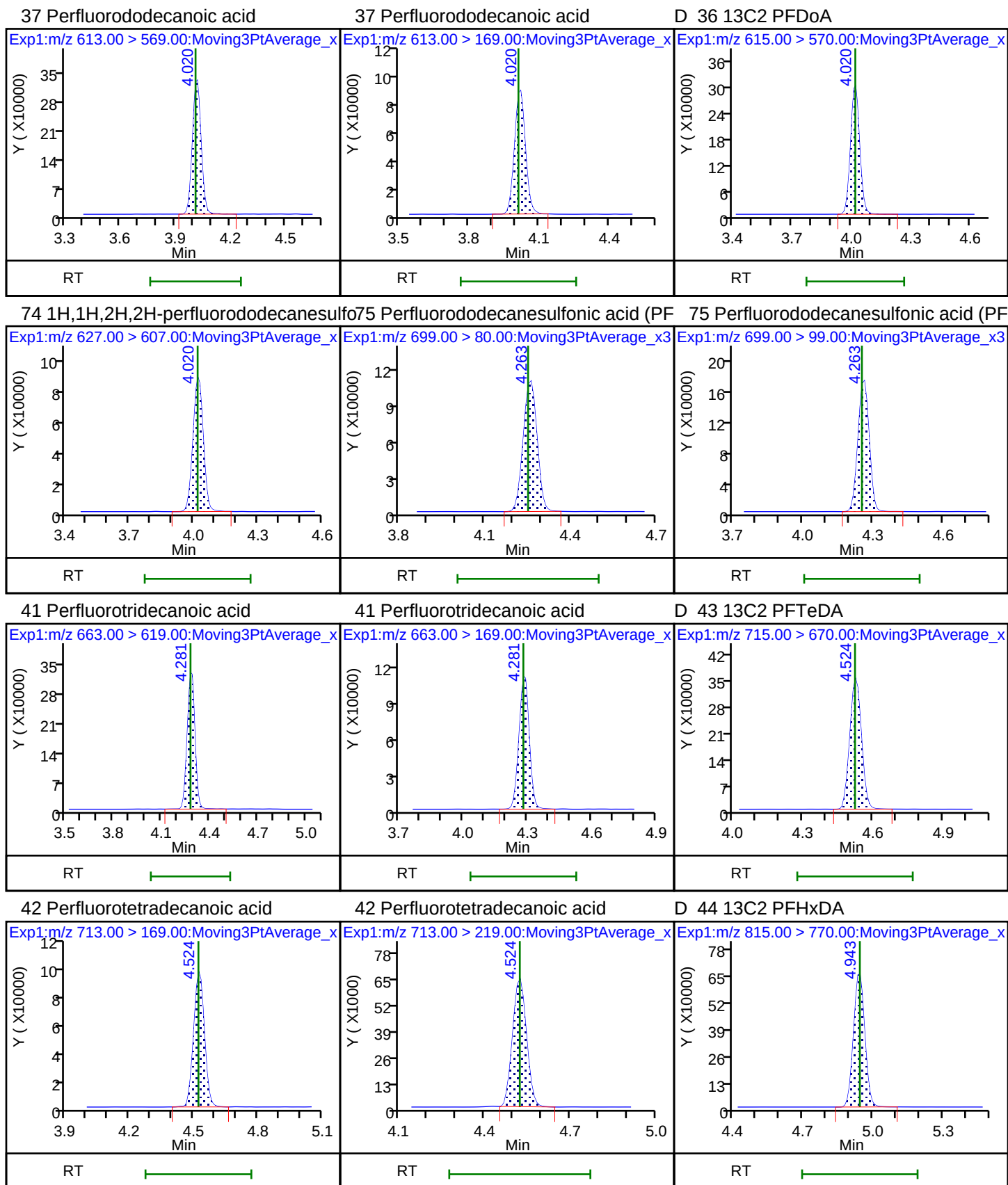
D 19 13C5 PFNA

D 18 13C4 PFOS





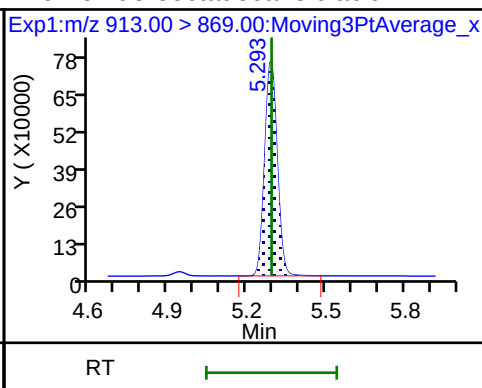
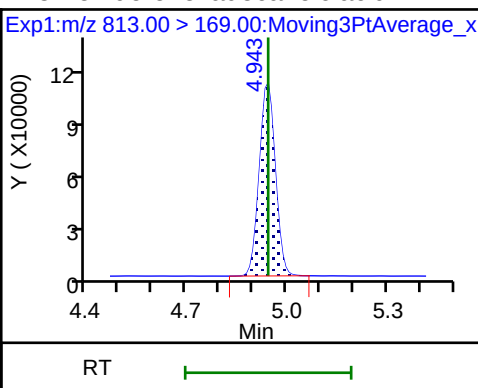
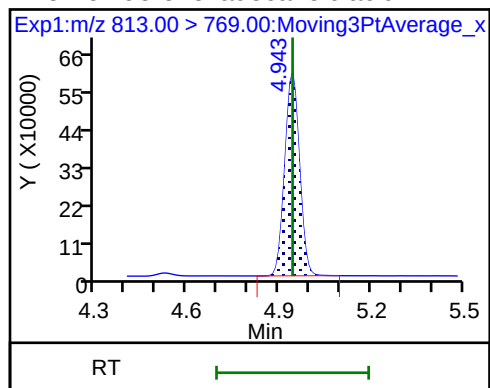




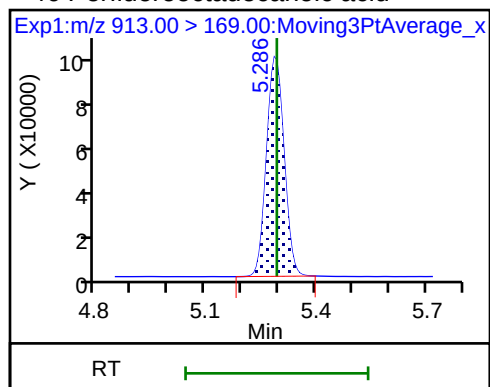
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

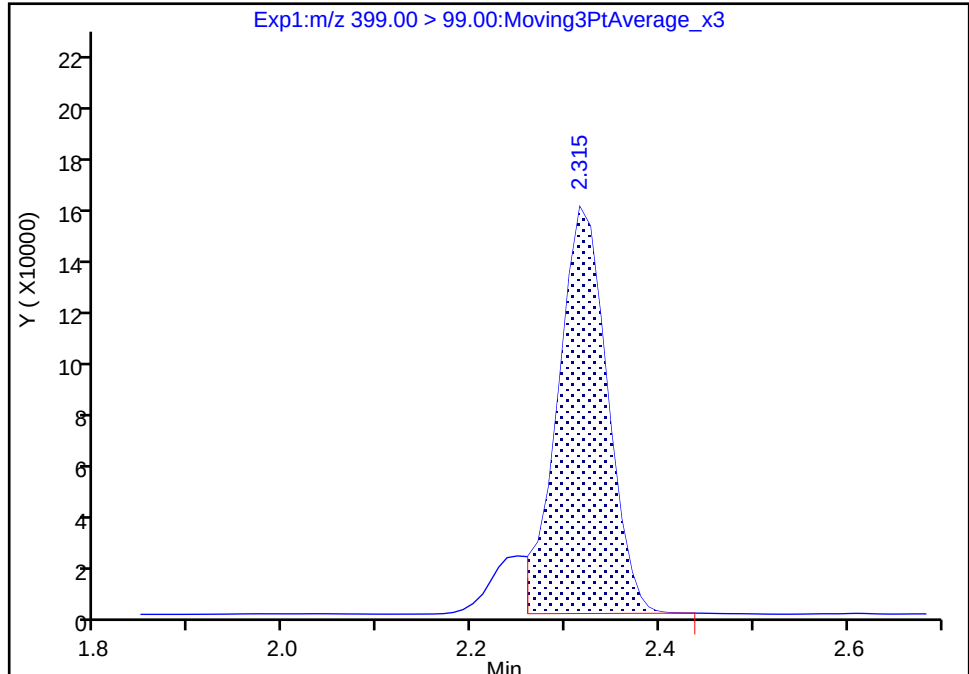
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_036.d
Injection Date: 18-Oct-2018 21:17:58 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

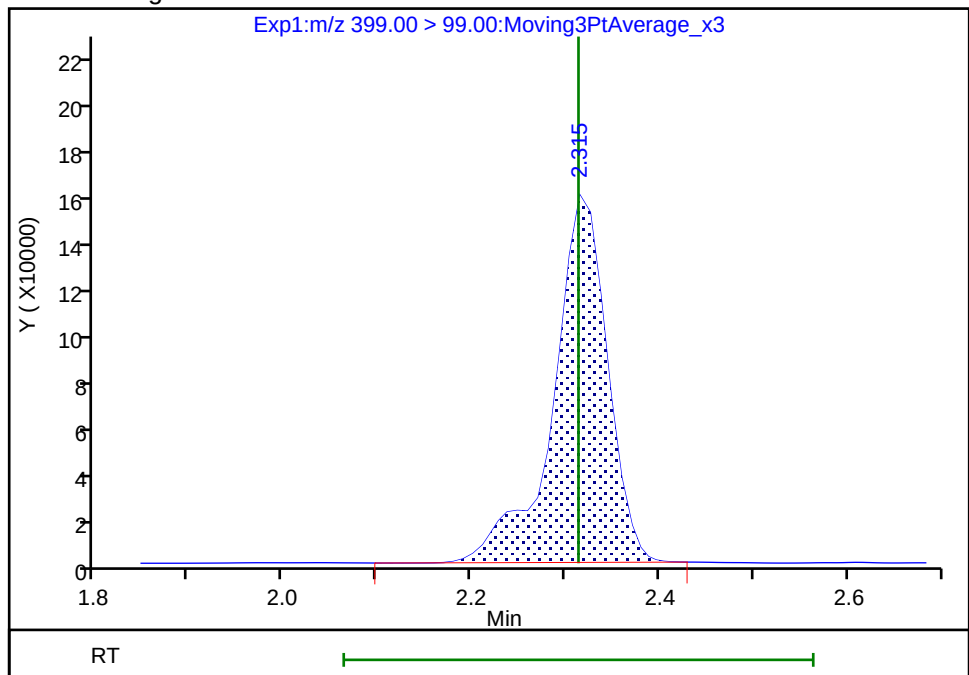
RT: 2.32
Area: 581263
Amount: 2.039897
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 640810
Amount: 2.039897
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:37:33
Audit Action: Manually Integrated

Audit Reason: Isomers
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10/24/2018

TestAmerica Sacramento

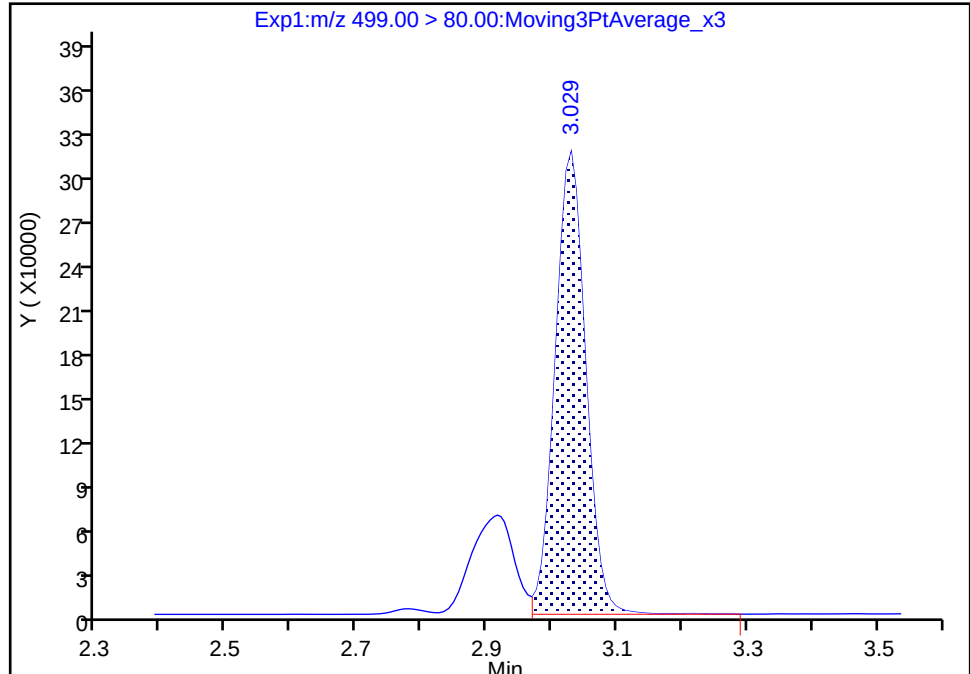
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_036.d
Injection Date: 18-Oct-2018 21:17:58 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

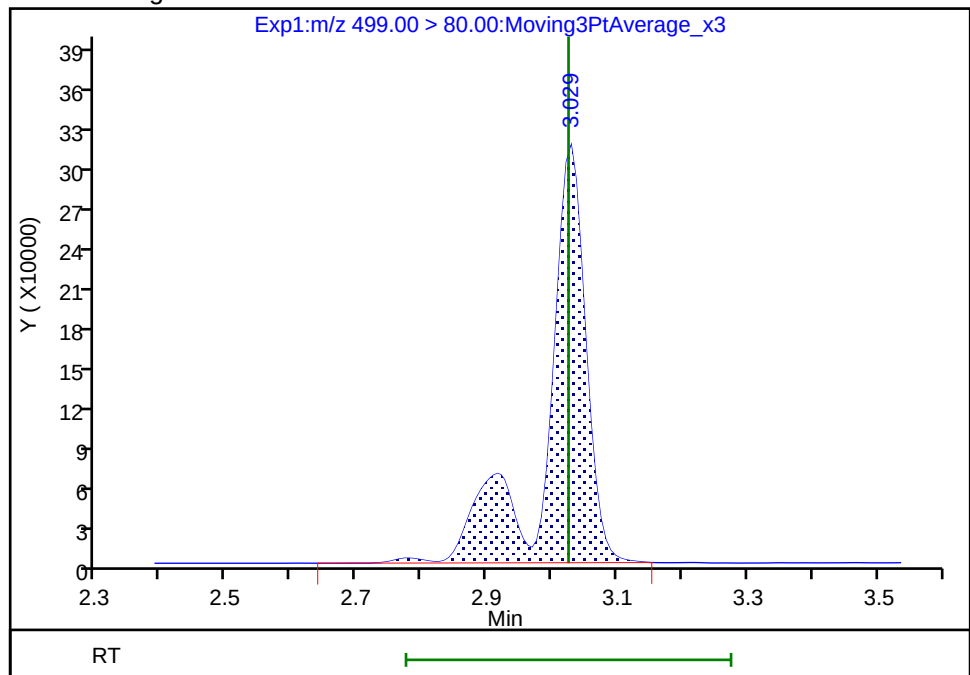
RT: 3.03
Area: 1012722
Amount: 1.730764
Amount Units: ng/ml

Processing Integration Results



RT: 3.03
Area: 1317892
Amount: 2.252306
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 22-Oct-2018 07:37:47

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: ICV 320-251474/10 Calibration Date: 10/11/2018 16:54

Instrument ID: A9 Calib Start Date: 10/11/2018 15:53

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/11/2018 16:39

Lab File ID: 2018.10.11LLICALA_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9291	0.9286		2.50	2.50	-0.0	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.011	1.021		2.52	2.50	0.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	106.6	109.9		2.28	2.21	3.1	50.0
4:2 FTS	AveID	21.65	23.16		2.50	2.34	6.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8935	0.8904		2.49	2.50	-0.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.19	52.03		2.54	2.35	8.0	50.0
HFPO-DA (GenX)	AveID	1.896	1.796		2.37	2.50	-5.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.073		2.52	2.50	1.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.260	1.157		2.09	2.28	-8.2	40.0
DONA	AveID	2.707	2.768		2.41	2.36	2.3	50.0
6:2 FTS	AveID	2.232	2.284		2.43	2.38	2.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.069	1.034		2.30	2.38	-3.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.093	1.068		2.44	2.50	-2.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.010	1.012		2.51	2.50	0.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.084	1.112		2.37	2.31	2.6	40.0
F-53B Major	AveID	1.202	1.249		2.42	2.33	3.9	50.0
8:2 FTS	AveID	15.00	13.56		2.17	2.40	-9.6	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6471	0.6579		2.44	2.40	1.7	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.230		2.72	2.50	8.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.136	1.161		2.56	2.50	2.2	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.996	1.088		2.73	2.50	9.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8725	0.9163		2.53	2.41	5.0	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9305	1.001		2.69	2.50	7.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9340	0.9119		2.44	2.50	-2.4	40.0
F-53B Minor	AveID	1.397	1.494		2.52	2.36	6.9	50.0
10:2 FTS	AveID	10.13	9.281		2.21	2.41	-8.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.996	1.042		2.61	2.50	4.5	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0952	0.0890		2.26	2.42	-6.6	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8040	0.7865		2.45	2.50	-2.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1537		2.41	2.50	-3.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8666		2.52	2.50	0.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: ICV 320-251474/10 Calibration Date: 10/11/2018 16:54
 Instrument ID: A9 Calib Start Date: 10/11/2018 15:53
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/11/2018 16:39
 Lab File ID: 2018.10.11LLICALA_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5840	0.5777		2.47	2.50	-1.1	50.0
13C4 PFBA	Ave	0.8895	0.9230		2.59	2.50	3.8	50.0
13C5 PFPeA	Ave	0.8031	0.8297		2.58	2.50	3.3	50.0
13C3 PFBS	Ave	0.0112	0.0115		2.39	2.33	2.9	50.0
M2-4:2 FTS	Ave	0.0964	0.0960		2.33	2.34	-0.4	50.0
13C2 PFHxA	Ave	0.8671	0.8943		2.58	2.50	3.1	50.0
13C3 HFPO-DA	Ave	0.0897	0.0988		2.76	2.50	10.2	50.0
13C4 PFHpA	Ave	1.031	1.110		2.69	2.50	7.7	50.0
18O2 PFHxS	Ave	0.6604	0.7252		2.60	2.37	9.8	50.0
M2-6:2 FTS	Ave	0.1054	0.1130		2.55	2.38	7.2	40.0
13C8 PFOA	Ave	2513465	2339715		2.28	2.45	-6.9	50.0
13C4 PFOA	Ave	0.9773	1.025		2.62	2.50	4.8	50.0
13C4 PFOS	Ave	0.6736	0.7114		2.52	2.39	5.6	50.0
13C5 PFNA	Ave	0.8934	0.9759		2.73	2.50	9.2	50.0
13C8 PFOS	Ave	429013	397650		2.22	2.39	-7.3	50.0
13C8 FOSA	Ave	0.3536	0.3728		2.64	2.50	5.4	50.0
M2-8:2 FTS	Ave	0.0132	0.0142		2.57	2.40	7.4	40.0
13C2 PFDA	Ave	0.9358	0.9301		2.48	2.50	-0.6	50.0
d3-NMeFOSAA	Ave	0.3830	0.4039		2.64	2.50	5.5	50.0
13C2 PFUnA	Ave	0.7875	0.8517		2.70	2.50	8.2	50.0
d5-NEtFOSAA	Ave	0.3106	0.3379		2.72	2.50	8.8	50.0
13C2 PFDoA	Ave	0.9569	1.033		2.70	2.50	8.0	50.0
13C2 PFTeDA	Ave	0.6864	0.7341		2.67	2.50	6.9	50.0
13C2 PFHxDA	Ave	0.6277	0.6722		2.68	2.50	7.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_010.d
 Lims ID: ICV Full
 Client ID:
 Sample Type: ICV
 Inject. Date: 11-Oct-2018 16:54:03 ALS Bottle#: 17 Worklist Smp#: 10
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist:
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 17:43:45 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK049

First Level Reviewer: hannigana

Date: 11-Oct-2018 17:43:34

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.502	-0.003	0.542	6172965	2.59		104	18610	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.499	1.502	-0.003	1.000	5731964	2.50			220	
D 3 13C5 PFPeA										
267.90 > 223.00	1.780	1.788	-0.008	0.644	5548752	2.58		103	19935	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.790	-0.001	1.005	5662717	2.52			616	
D 47 13C3 PFBS										
301.90 > 83.00	1.822	1.828	-0.006	0.659	71438	2.39		103	406	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.830	0.0	1.005	7473965	2.28			721	
298.90 > 99.00	1.830	1.830	0.0	1.005	2563788		2.92(1.35-4.05)		666	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.037	2.041	-0.004	1.118	1663180	2.50			9745	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.037	2.042	-0.005	0.737	599764	2.33		99.6	821	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.079	-0.001	0.751	5980898	2.58		103	17522	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.078	2.080	-0.002	1.000	5325073	2.49			969	M
313.00 > 119.00	2.078	2.080	-0.002	1.000	383776		13.88(6.96-20.87)		651	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.103	-0.004	1.152	3756966	2.54			5199	
349.00 > 99.00	2.099	2.103	-0.004	1.152	1660419		2.26(1.15-3.45)		2657	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.170	2.176	-0.006	1.000	1187069	2.37			706	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.170	2.176	-0.006	0.785	660935	2.76		110	2673	
D 9 13C4 PFHpA										
367.00 > 322.00	2.399	2.411	-0.012	0.867	7425900	2.69		108	24979	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.399	2.413	-0.014	1.000	7967718	2.52			1365	
363.00 > 169.00	2.399	2.413	-0.014	1.000	1772449		4.50(2.17-6.52)		3014	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	5115542	2.09			3276	
399.00 > 99.00	2.413	2.426	-0.013	0.995	1397560		3.66(1.90-5.70)		1068	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.426	0.0	0.877	4588097	2.60		110	9390	
76 DONA										
377.00 > 251.00	2.452	2.454	-0.002	0.782	12407452	2.41			22284	
377.00 > 85.00	2.452	2.454	-0.002	0.782	5569456		2.23(1.13-3.39)		4797	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.741	-0.007	1.000	1639897	2.43			1805	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.734	2.744	-0.010	0.988	717906	2.55		107	1355	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.762	-0.012		5726452	2.28		93.1	10802	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.769	-0.003	1.000	7316159	2.44			481	
413.00 > 169.00	2.766	2.769	-0.003	1.000	2650831		2.76(1.36-4.08)		3826	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.769	-0.003		6687999	2.50			9937	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.769	-0.003	1.000	6852012	2.62		105	7655	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.780	-0.014	0.882	4671571	2.30			4267	
449.00 > 99.00	2.766	2.780	-0.014	0.882	1130389		4.13(1.84-5.53)		2164	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		950384	2.22		92.7	3266	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.135	3.140	-0.005	1.000	4897400	2.37			1615	
499.00 > 99.00	3.135	3.140	-0.005	1.000	1094488		4.47(2.04-6.12)		1740	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.140	-0.005	1.133	4548430	2.52		106	4275	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.143	-0.008	1.133	6526787	2.73		109	7596	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.143	-0.008	1.000	6606094	2.51			652	
463.00 > 169.00	3.135	3.143	-0.008	1.000	1227197		5.38(2.68-8.03)		2364	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	5537908	2.42			4017	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.474	-0.009	1.253	2493048	2.64		105	5912	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.480	3.478	0.002	1.004	8053347	2.72			5789	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.480	3.492	-0.012	1.258	90837	2.57		107	553	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.480	3.492	-0.012	1.110	3004784	2.44			5141	
549.00 > 99.00	3.480	3.492	-0.012	1.110	503080		5.97(3.02-9.05)		2161	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.480	3.494	-0.014	1.000	1234260	2.17			4386	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.501	-0.005	1.264	6220642	2.48		99.4	7495	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.503	-0.007	1.000	7224021	2.56			966	
513.00 > 169.00	3.496	3.503	-0.007	1.000	459560		15.72(7.12-21.35)		853	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.321	2701488	2.64		105	5130	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.657	-0.002	1.000	2939719	2.73			1338	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.814	-0.007	1.215	4206773	2.53			3452	
599.00 > 99.00	3.807	3.814	-0.007	1.215	803652		5.23(2.14-6.43)		2296	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.382	2260151	2.72		109	3342	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.828	-0.005	1.000	2261568	2.69			5990	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.830	-0.007	1.382	5695886	2.70		108	5838	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.830	-0.007	1.000	5193829	2.44			1190	
563.00 > 169.00	3.823	3.830	-0.007	1.000	453895		11.44(5.24-15.72)		1308	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.975	3.991	-0.016	1.268	6693612	2.52			8090	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.122	4.122	0.0	1.000	7197089	2.61			1687	
613.00 > 169.00	4.122	4.122	0.0	1.000	767133		9.38(4.68-14.05)		1307	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.125	-0.003	1.490	6910133	2.70		108	8037	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.125	-0.003	1.184	848333	2.21			1370	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.357	4.364	-0.007	1.390	409655	2.26			623	
699.00 > 99.00	4.357	4.364	-0.007	1.390	725873		0.56(0.28-0.83)		1301	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.388	4.393	-0.005	1.064	5434950	2.45			2898	
663.00 > 169.00	4.388	4.393	-0.005	1.064	948460		5.73(3.09-9.27)		1593	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.627	4.634	-0.007	1.673	4909663	2.67		107	8178	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.627	4.634	-0.007	1.000	754418	2.41			1928	
713.00 > 219.00	4.627	4.634	-0.007	1.000	500197		1.51(0.70-2.09)		1289	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.040	5.058	-0.018	1.822	4495948	2.68		107	7188	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.040	5.060	-0.020	1.000	3896370	2.52			1252	
813.00 > 169.00	5.040	5.060	-0.020	1.000	695893		5.60(2.77-8.32)		1860	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.391	5.409	-0.018	1.070	2597114	2.47			1234	
913.00 > 169.00	5.391	5.409	-0.018	1.070	452726		5.74(2.55-7.64)		1514	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_010.d

Injection Date: 11-Oct-2018 16:54:03

Instrument ID: A9

Lims ID: ICV Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 17

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

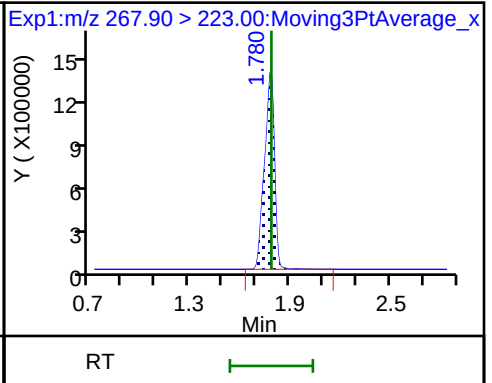
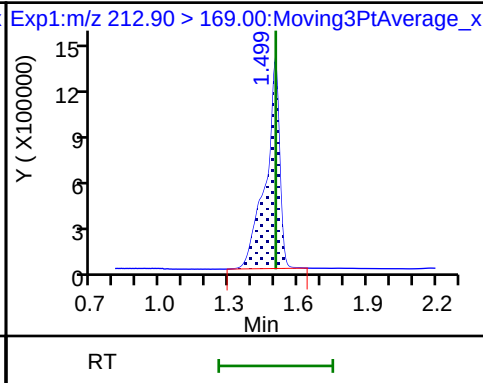
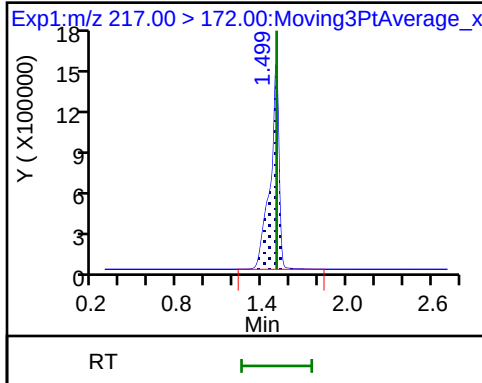
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

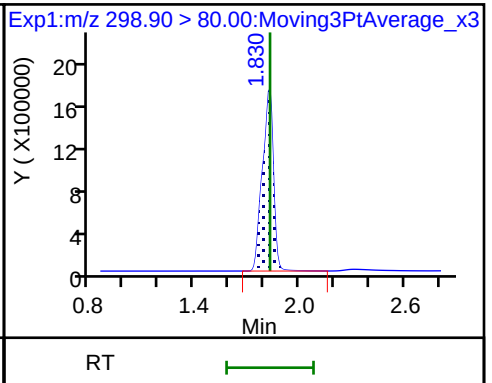
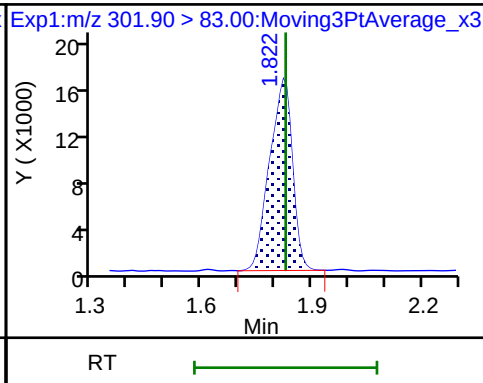
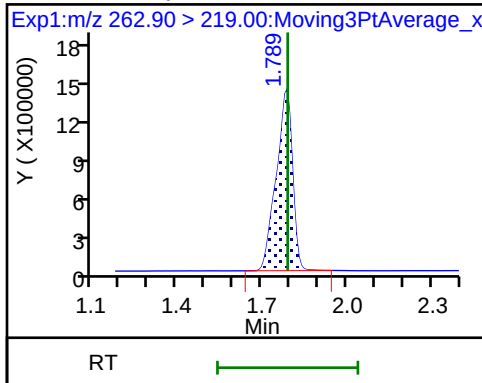
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

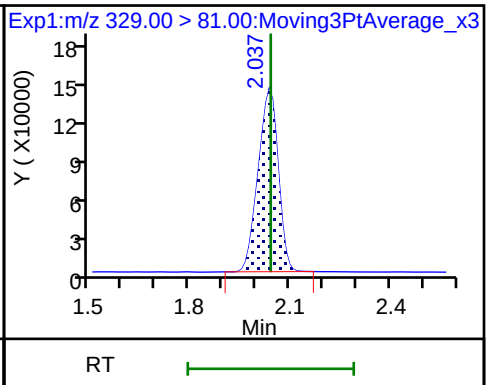
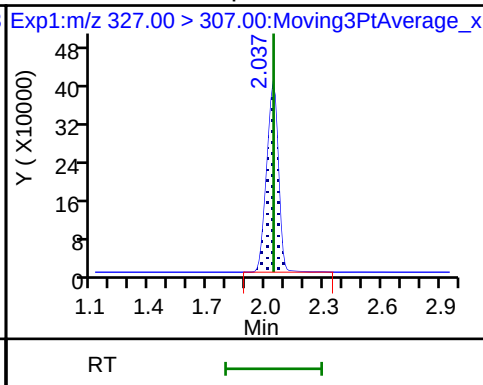
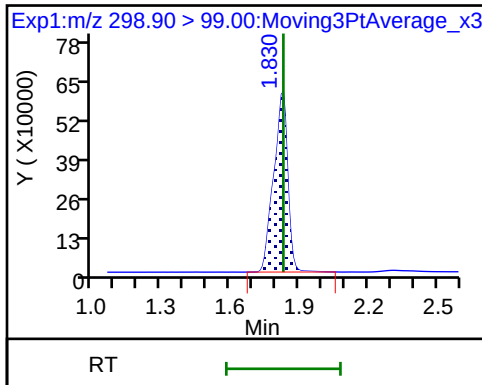
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

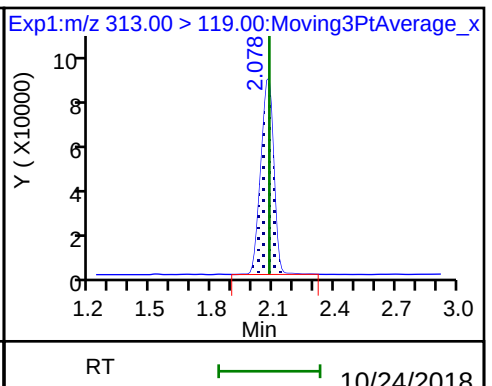
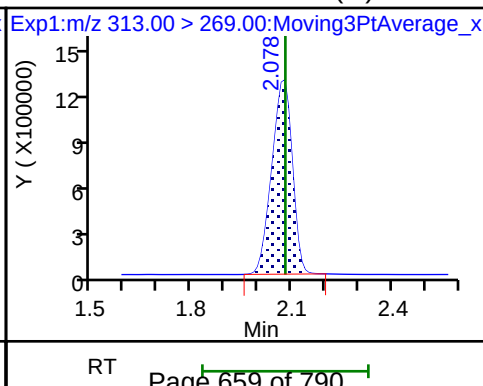
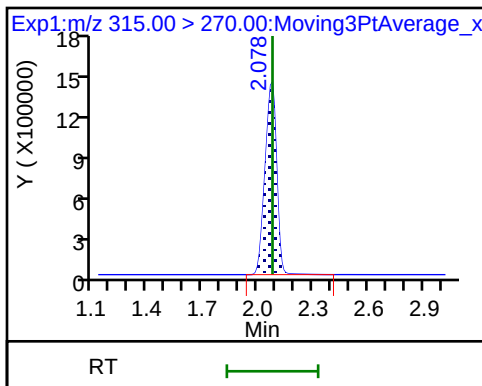
D 60 M2-4:2 FTS

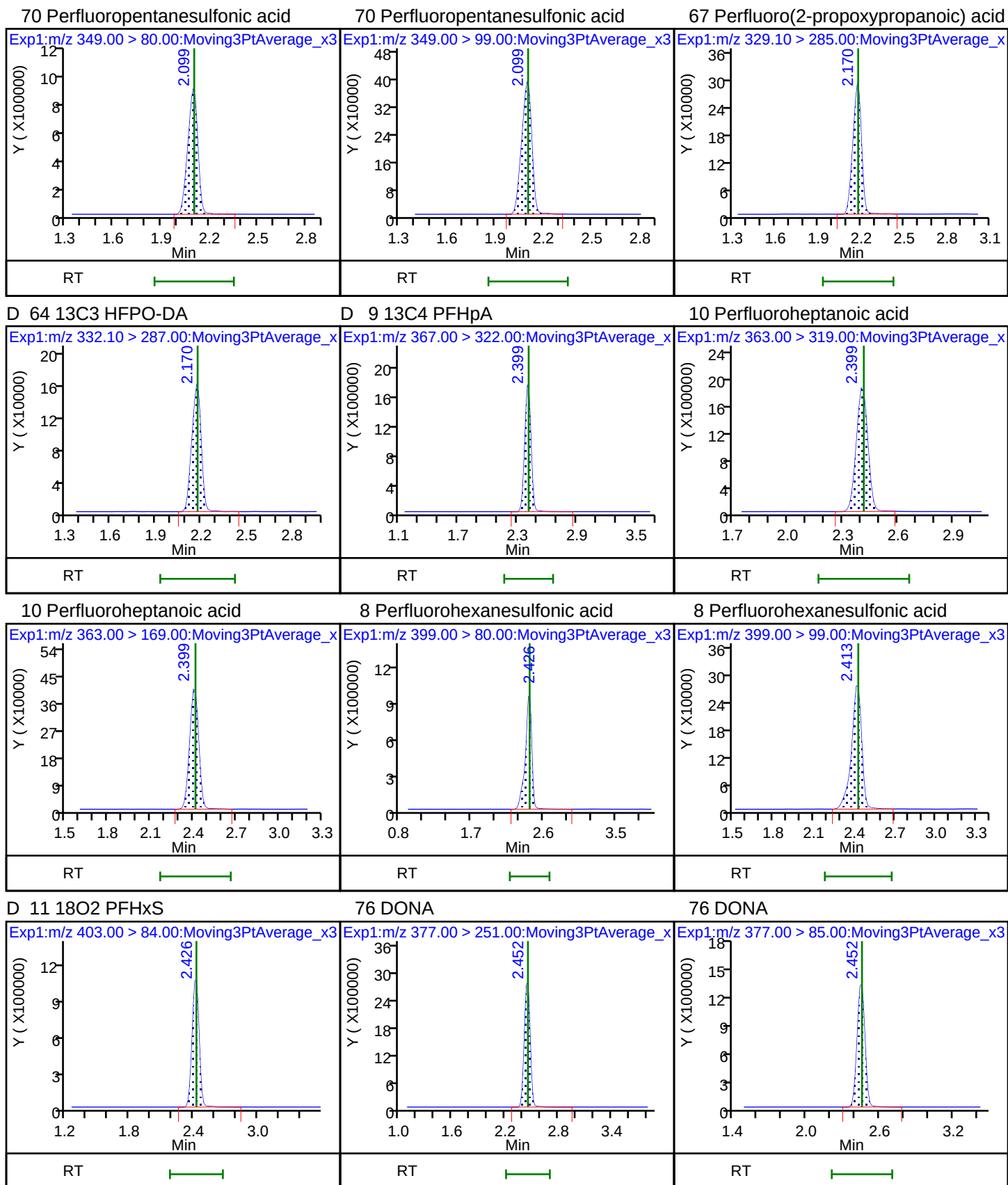


D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

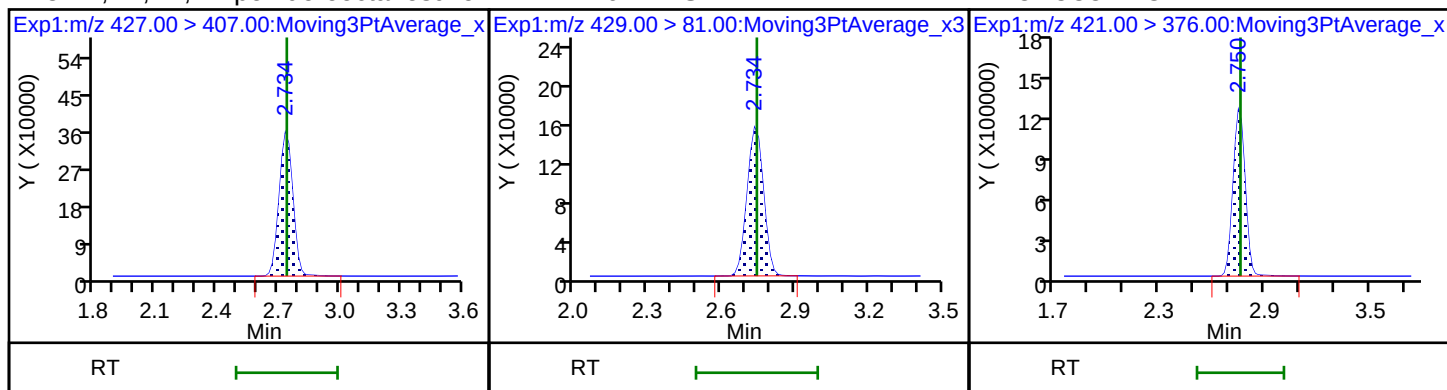
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

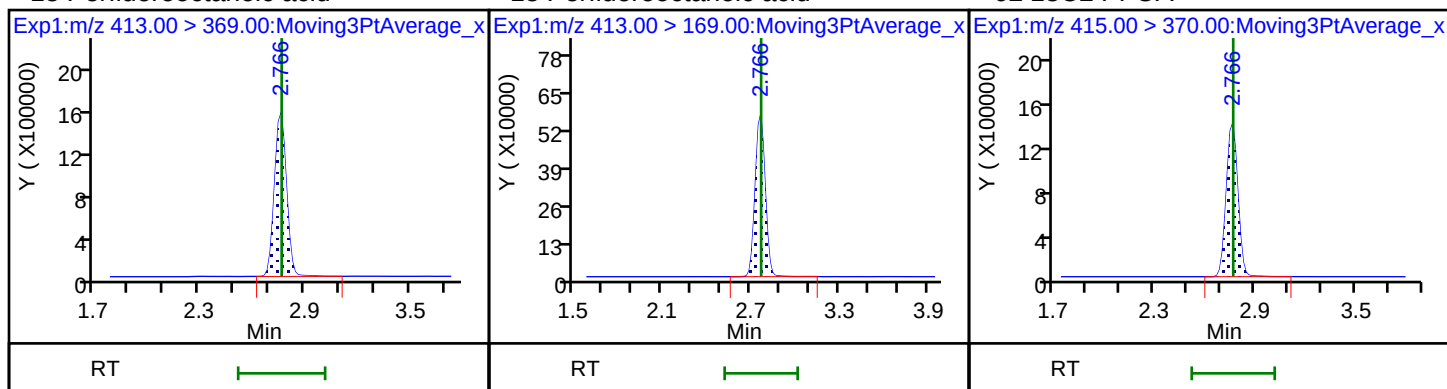
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

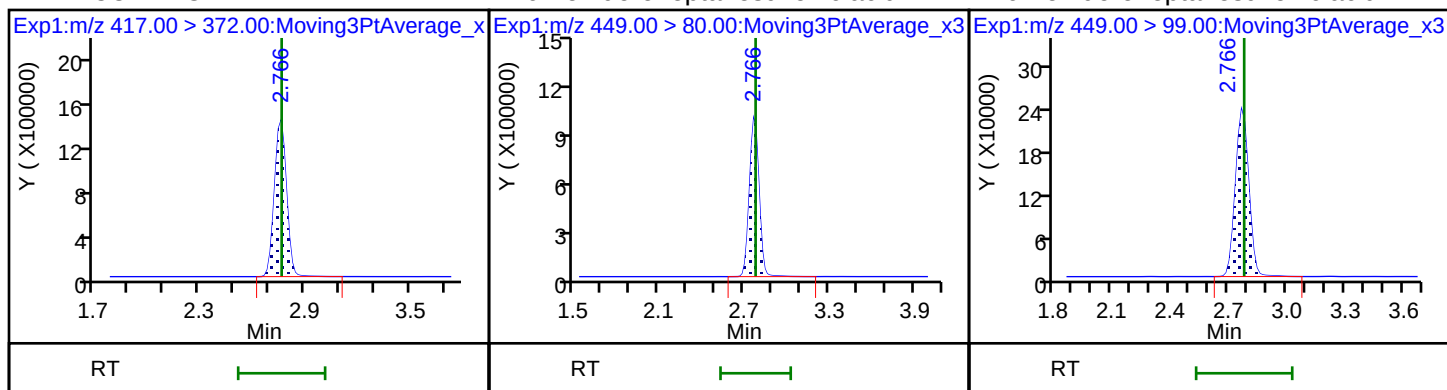
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

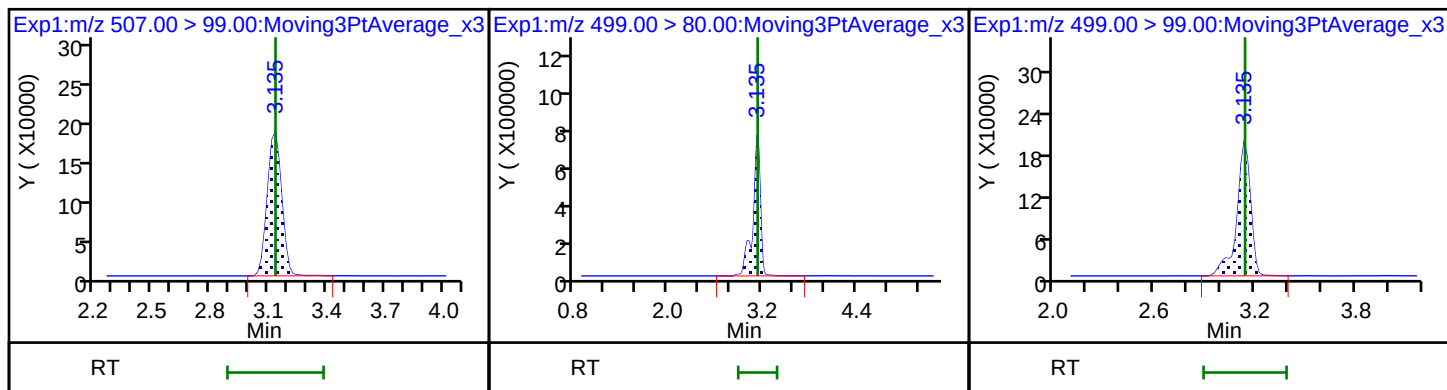
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

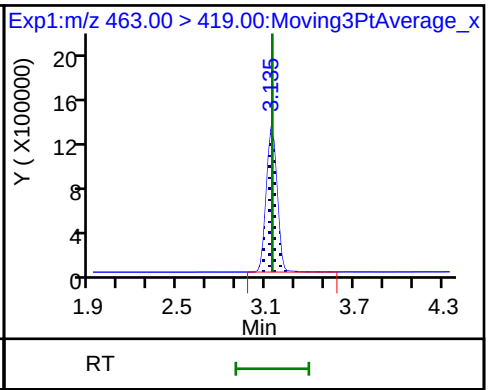
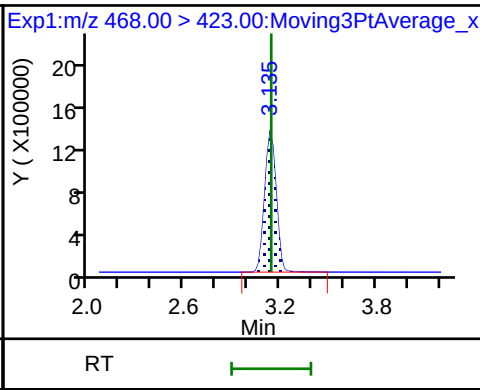
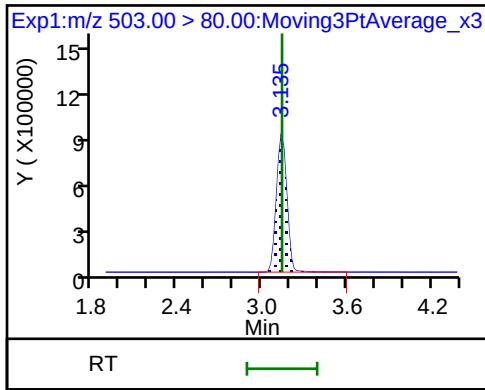
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

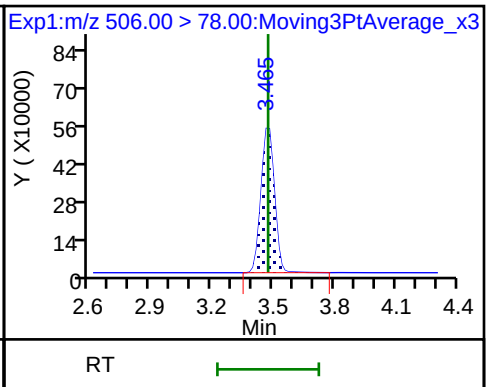
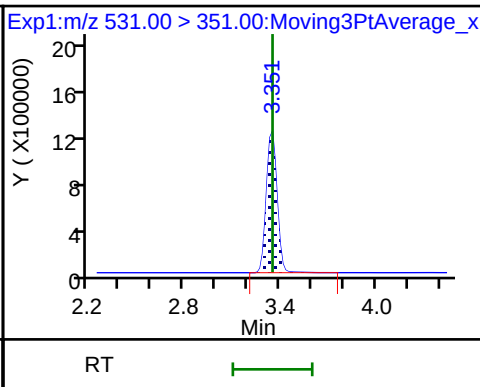
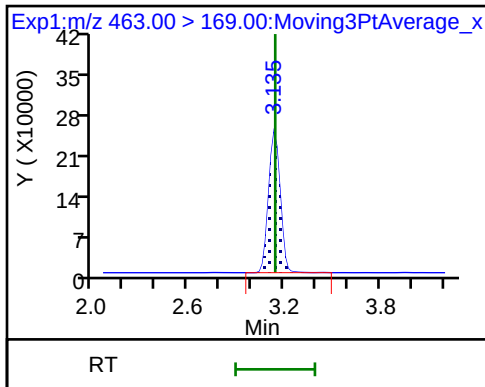
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonadecanoic acid

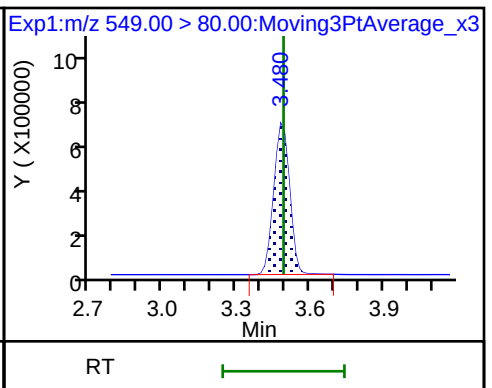
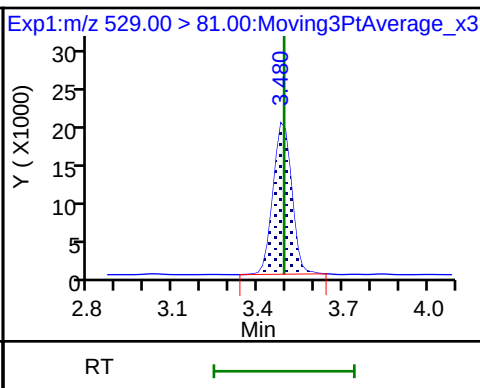
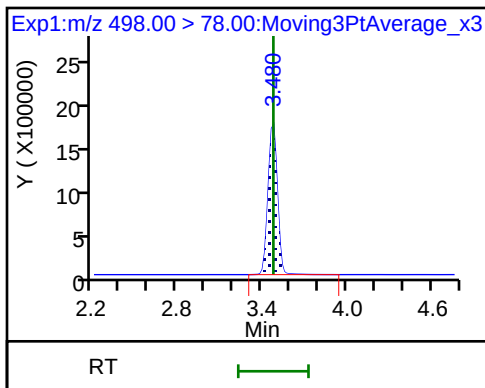
De 21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

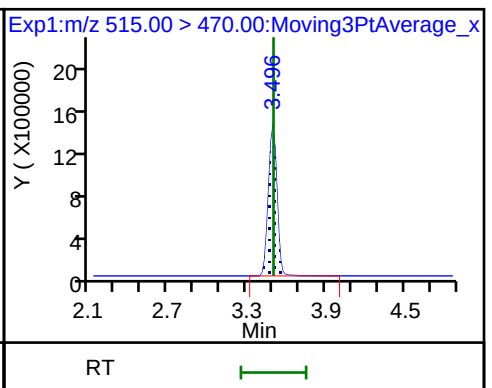
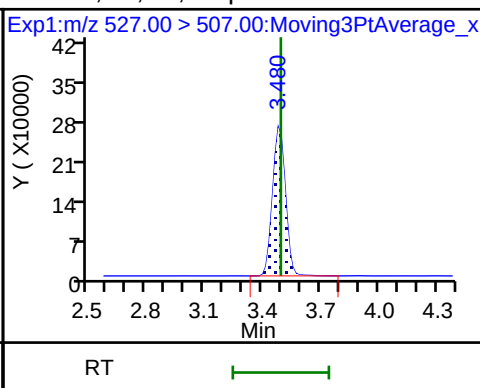
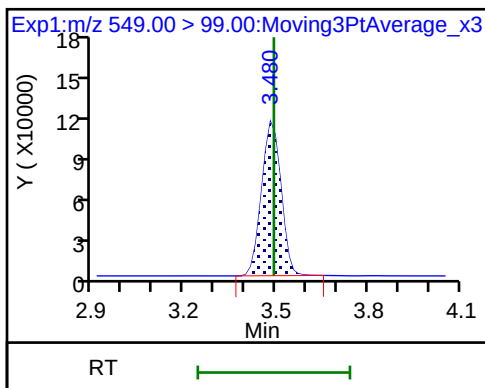
68 Perfluorononanesulfonic acid

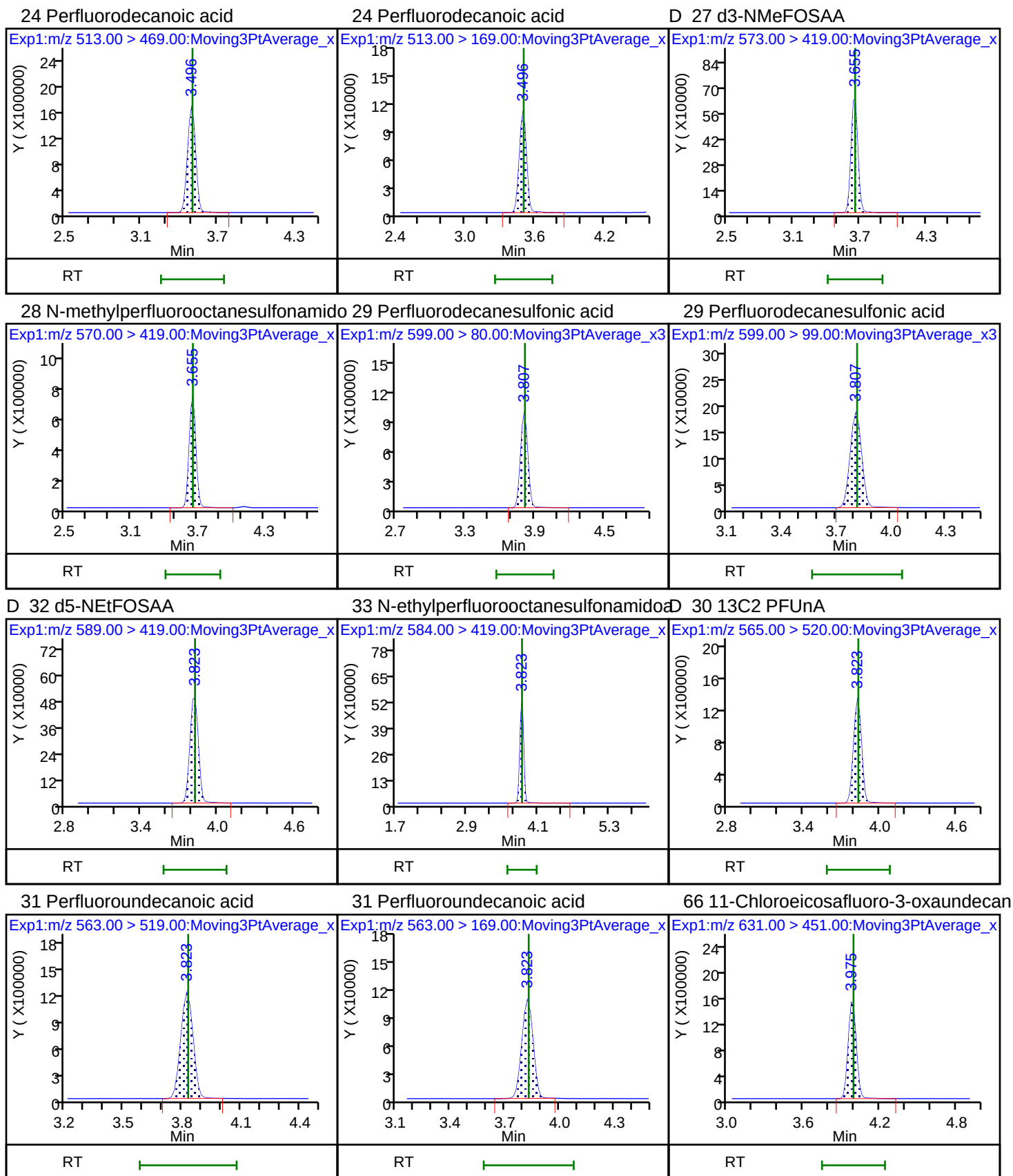


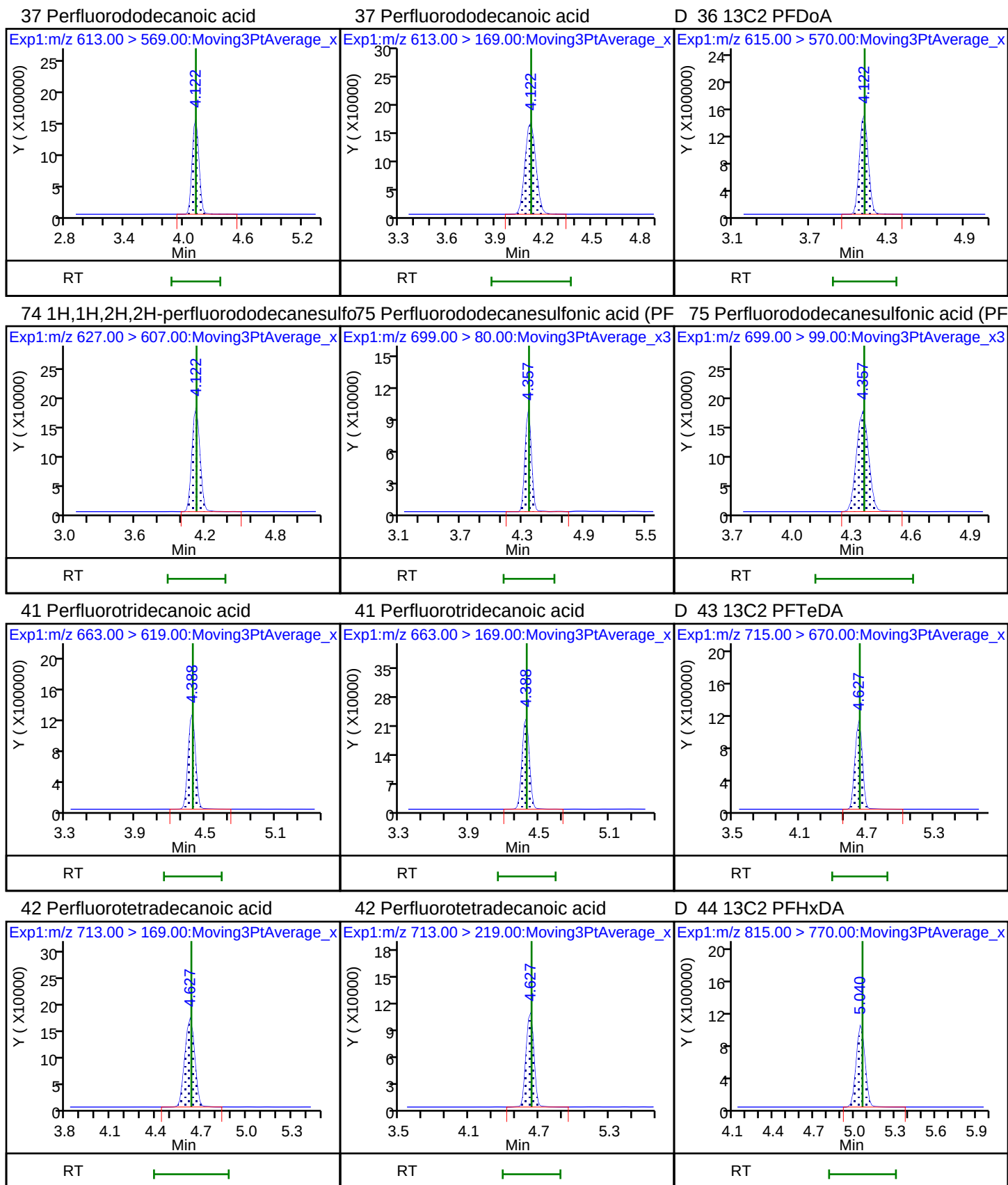
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonic acid

D 23 13C2 PFDA



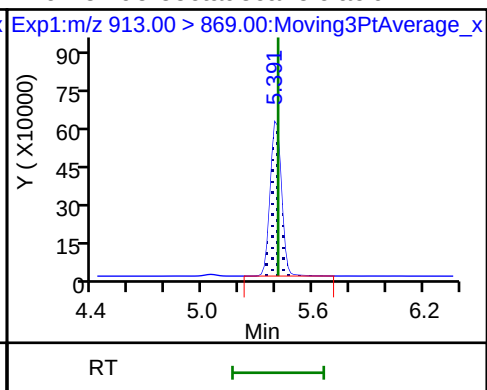
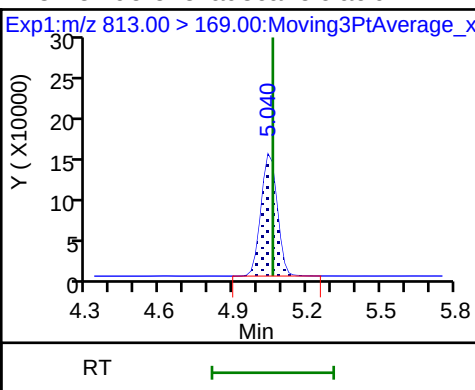
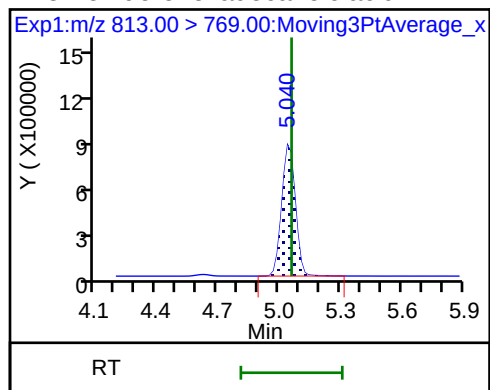




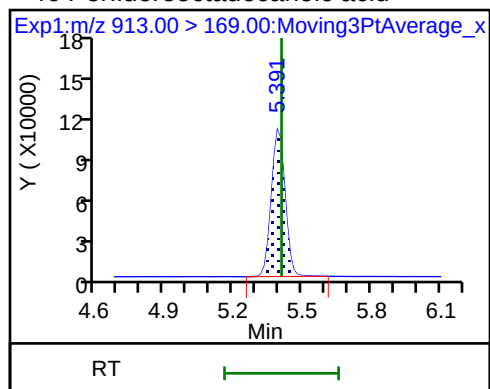
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_010.d

Injection Date: 11-Oct-2018 16:54:03

Instrument ID: A9

Lims ID: ICV Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

17

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

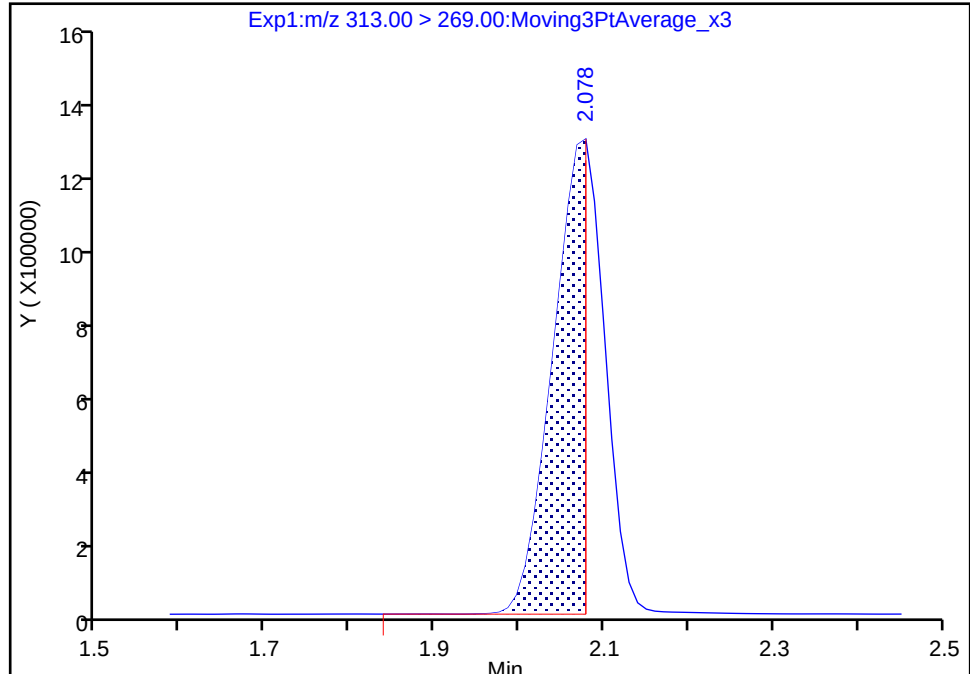
Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

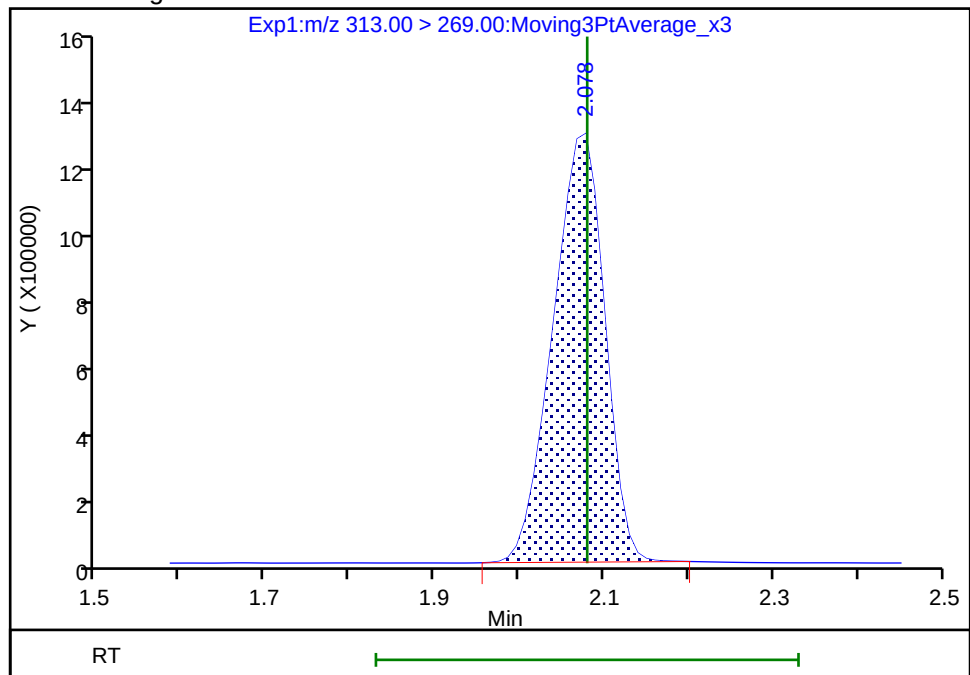
RT: 2.08
Area: 3306200
Amount: 1.546769
Amount Units: ng/ml

Processing Integration Results



RT: 2.08
Area: 5325073
Amount: 2.491276
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 11-Oct-2018 17:43:16

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCV 320-251568/1 Calibration Date: 10/11/2018 23:21

Instrument ID: A9 Calib Start Date: 10/11/2018 15:53

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/11/2018 16:39

Lab File ID: 2018.10.11LLAAX_043.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9291	0.9464		1.02	1.00	1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.011	1.002		0.991	1.00	-0.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	106.6	106.3		0.881	0.884	-0.3	50.0
4:2 FTS	AveID	21.65	22.17		0.956	0.934	2.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8935	0.8946		1.00	1.00	0.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.19	47.79		0.930	0.938	-0.8	50.0
HFPO-DA (GenX)	AveID	1.896	1.815		0.957	1.00	-4.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.081		1.02	1.00	1.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.260	1.206		0.870	0.910	-4.3	40.0
DONA	AveID	2.707	2.853		0.993	0.942	5.4	50.0
6:2 FTS	AveID	2.232	1.870		0.794	0.948	-16.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.069	1.131		1.01	0.952	5.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.093	1.075		0.985	1.00	-1.6	40.0
Perfluorononanoic acid (PFNA)	AveID	1.010	1.024		1.01	1.00	1.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.084	1.087		0.930	0.928	0.2	40.0
F-53B Major	AveID	1.202	1.146		0.889	0.932	-4.7	50.0
8:2 FTS	AveID	15.00	15.77		1.01	0.958	5.2	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6471	0.6704		0.995	0.960	3.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.299		1.11	1.00	11.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.136	1.176		1.04	1.00	3.5	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.996	1.030		1.03	1.00	3.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8725	0.9441		1.04	0.964	8.2	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9305	0.9806		1.05	1.00	5.4	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9340	0.9130		0.978	1.00	-2.2	40.0
F-53B Minor	AveID	1.397	1.461		0.985	0.942	4.6	50.0
10:2 FTS	AveID	10.13	9.575		0.911	0.964	-5.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.996	1.126		1.13	1.00	13.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0952	0.0887		0.902	0.968	-6.8	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8040	0.8173		1.02	1.00	1.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1493		0.937	1.00	-6.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9588		1.10	1.00	9.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCV 320-251568/1 Calibration Date: 10/11/2018 23:21
 Instrument ID: A9 Calib Start Date: 10/11/2018 15:53
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/11/2018 16:39
 Lab File ID: 2018.10.11LLAAX_043.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5840	0.5793		0.992	1.00	-0.8	50.0
13C4 PFBA	Ave	0.8895	0.9171		2.58	2.50	3.1	50.0
13C5 PFPeA	Ave	0.8031	0.8308		2.59	2.50	3.4	50.0
13C3 PFBS	Ave	0.0112	0.0118		2.45	2.33	5.5	50.0
M2-4:2 FTS	Ave	0.0964	0.1052		2.55	2.34	9.2	50.0
13C2 PFHxA	Ave	0.8671	0.9109		2.63	2.50	5.1	50.0
13C3 HFPO-DA	Ave	0.0897	0.0999		2.79	2.50	11.4	50.0
13C4 PFHpA	Ave	1.031	1.101		2.67	2.50	6.8	50.0
18O2 PFHxS	Ave	0.6604	0.6627		2.37	2.37	0.4	50.0
M2-6:2 FTS	Ave	0.1054	0.1254		2.82	2.38	18.9	40.0
13C8 PFOA	Ave	2513465	2452204		2.39	2.45	-2.4	50.0
13C4 PFOA	Ave	0.9773	1.008		2.58	2.50	3.1	50.0
13C4 PFOS	Ave	0.6736	0.7267		2.58	2.39	7.9	50.0
13C5 PFNA	Ave	0.8934	1.001		2.80	2.50	12.1	50.0
13C8 PFOS	Ave	429013	431227		2.40	2.39	0.5	50.0
13C2 PFDA	Ave	0.9358	0.9825		2.62	2.50	5.0	50.0
13C8 FOSA	Ave	0.3536	0.3808		2.69	2.50	7.7	50.0
M2-8:2 FTS	Ave	0.0132	0.0137		2.48	2.40	3.6	40.0
d3-NMeFOSAA	Ave	0.3830	0.4043		2.64	2.50	5.6	50.0
13C2 PFUnA	Ave	0.7875	0.8859		2.81	2.50	12.5	50.0
d5-NEtFOSAA	Ave	0.3106	0.3349		2.70	2.50	7.8	50.0
13C2 PFDoA	Ave	0.9569	0.9547		2.49	2.50	-0.2	50.0
13C2 PFTeDA	Ave	0.6864	0.7824		2.85	2.50	14.0	50.0
13C2 PFHxDA	Ave	0.6277	0.6872		2.74	2.50	9.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_043.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 11-Oct-2018 23:21:44 ALS Bottle#: 28 Worklist Smp#: 1
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 16-Oct-2018 08:49:24 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK008

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.494	1.494	0.0	1.000	2355008	1.02		102	136	
D 1 13C4 PFBA										
217.00 > 172.00	1.494	1.494	0.0	0.543	6220823	2.58		103	15679	
D 3 13C5 PFPeA										
267.90 > 223.00	1.772	1.772	0.0	0.644	5635307	2.59		103	19814	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	2259571	0.99		99.1	267	
D 47 13C3 PFBS										
301.90 > 83.00	1.814	1.814	0.0	0.659	74331	2.45		106	491	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.814	0.0	1.000	3004213	0.8814		99.7	311	
298.90 > 99.00	1.814	1.814	0.0	1.000	992055		3.03(1.35-4.05)		247	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	662101	0.9565		102	2761	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.027	2.027	0.0	0.737	666436	2.55		109	904	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.058	0.0	0.748	6179082	2.63		105	25381	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.058	2.058	0.0	1.000	2211127	1.00		100	477	
313.00 > 119.00	2.058	2.058	0.0	1.000	155211		14.25(6.96-20.87)		316	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.089	0.0	1.152	1433226	0.9302		99.2	2817	
349.00 > 99.00	2.089	2.089	0.0	1.152	685220		2.09(1.15-3.45)		1392	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	491979	0.9573		95.7	321	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.160	2.160	0.0	0.785	677662	2.79		111	2011	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.386	2.386	0.0	1.000	3230916	1.02		102	637	
363.00 > 169.00	2.386	2.386	0.0	1.000	713510		4.53(2.17-6.52)		1765	
D 9 13C4 PFHpA										
367.00 > 322.00	2.386	2.386	0.0	0.868	7471040	2.67		107	12879	
D 11 18O2 PFHxS										
403.00 > 84.00	2.399	2.399	0.0	0.872	4252521	2.37		100	7993	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.399	2.399	0.0	1.000	1972542	0.8705		95.7	1412	
399.00 > 99.00	2.399	2.399	0.0	1.000	567318		3.48(1.90-5.70)		691	
76 DONA										
377.00 > 251.00	2.426	2.426	0.0	0.778	5300066	0.99		105	9744	
377.00 > 85.00	2.426	2.426	0.0	0.778	2250412		2.36(1.13-3.39)		2578	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.718	2.718	0.0	1.000	603145	0.7942		83.8	747	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.718	2.718	0.0	0.988	807991	2.82		119	1395	
D 73 13C8 PFOA										
421.00 > 376.00	2.734	2.734	0.0		6001770	2.39		97.6	14303	
* 62 13C2 PFOA										
415.00 > 370.00	2.750	2.750	0.0		6783390	2.50			11182	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.750	2.750	0.0	0.882	2123671	1.01		106	2599	
449.00 > 99.00	2.750	2.750	0.0	0.882	518607		4.09(1.84-5.53)		1373	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	2941956	0.9846		98.4	182	
413.00 > 169.00	2.750	2.750	0.0	1.000	1022159		2.88(1.36-4.08)		1889	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.750	0.0	1.000	6837200	2.58		103	9203	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.117	3.117	0.0	1.000	1988317	0.9303		100	771	
499.00 > 99.00	3.117	3.117	0.0	1.000	462677		4.30(2.04-6.12)		1065	
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.117	0.0	1.000	2783704	1.01		101	256	
463.00 > 169.00	3.117	3.117	0.0	1.000	508898		5.47(2.68-8.03)		1253	
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.116	0.001	1.133	4712718	2.58		108	3612	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.116	0.001	1.133	6793194	2.80		112	8550	
D 72 13C8 PFOS										
507.00 > 99.00	3.117	3.116	0.001		1030633	2.40		101	4855	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.318	3.318	0.0	1.065	2106168	0.8887		95.3	1583	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	3408812	1.11		111	4324	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.465	3.465	0.0	1.112	1269089	0.99		104	1934	
549.00 > 99.00	3.465	3.465	0.0	1.112	211521		6.00(3.02-9.05)		658	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.465	3.465	0.0	1.000	560995	1.01	105	2657	
D 23 13C2 PFDA	515.00 > 470.00	3.465	3.465	0.0	1.260	6664623	2.62	105	10397	
D 26 M2-8:2 FTS	529.00 > 81.00	3.465	3.465	0.0	1.260	88906	2.48	104	901	
D 21 13C8 FOSA	506.00 > 78.00	3.465	3.465	0.0	1.260	2582946	2.69	108	6734	
24 Perfluorodecanoic acid	513.00 > 469.00	3.480	3.480	0.0	1.004	3134867	1.04	104	432	
	513.00 > 169.00	3.480	3.480	0.0	1.004	177198	17.69(7.12-21.35)		184	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.627	3.627	0.0	1.319	2742828	2.64	106	5216	
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	3.627	3.627	0.0	1.000	1130226	1.03	103	451	
29 Perfluorodecanesulfonic acid	599.00 > 80.00	3.776	3.776	0.0	1.212	1794682	1.04	108	1556	
	599.00 > 99.00	3.776	3.776	0.0	1.212	353224	5.08(2.14-6.43)		1476	
D 30 13C2 PFUnA	565.00 > 520.00	3.791	3.791	0.0	1.379	6009042	2.81	112	14234	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.791	3.791	0.0	1.379	2271489	2.70	108	4177	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.791	3.791	0.0	1.000	2194540	0.9775	97.8	467	
	563.00 > 169.00	3.791	3.791	0.0	1.000	194140	11.30(5.24-15.72)		590	
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	3.791	3.791	0.0	1.000	890928	1.05	105	1190	
35 MeFOSA	512.00 > 169.00	3.960	3.960	0.0		553946	NC		796	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.960	3.960	0.0	1.271	2714401	0.9851	105	5963	
D 36 13C2 PFDoA	615.00 > 570.00	4.089	4.089	0.0	1.487	6476053	2.49	99.8	11779	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.089	4.089	0.0	1.180	342634	0.9109	94.5	525	
37 Perfluorododecanoic acid	613.00 > 569.00	4.089	4.089	0.0	1.000	2917275	1.13	113	710	
	613.00 > 169.00	4.089	4.089	0.0	1.000	286706	10.18(4.68-14.05)		465	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.139	4.139	0.0		599811	NC		475	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.326	4.326	0.0	1.388	169371	0.9023	93.2	342	
	699.00 > 99.00	4.326	4.326	0.0	1.388	301734	0.56(0.28-0.83)		1261	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.357	4.357	0.0	1.066	2117167	1.02	102	1061	
	663.00 > 169.00	4.357	4.357	0.0	1.066	379716	5.58(3.09-9.27)		753	
D 43 13C2 PFTeDA	715.00 > 670.00	4.591	4.591	0.0	1.669	5307399	2.85	114	11762	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.591	4.591	0.0	1.000	316937	0.9374		93.7	969	
713.00 > 219.00	4.591	4.591	0.0	1.000	214977		1.47(0.70-2.09)		745	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.007	5.007	0.0	1.821	4661619	2.74		109	8626	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.024	5.024	0.0	1.003	1787791	1.10		110	622	
813.00 > 169.00	5.024	5.024	0.0	1.003	300279		5.95(2.77-8.32)		520	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.362	5.362	0.0	1.071	1080104	0.99		99.2	592	
913.00 > 169.00	5.362	5.362	0.0	1.071	193167		5.59(2.55-7.64)		940	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_043.d

Injection Date: 11-Oct-2018 23:21:44

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 28

Worklist Smp#: 1

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

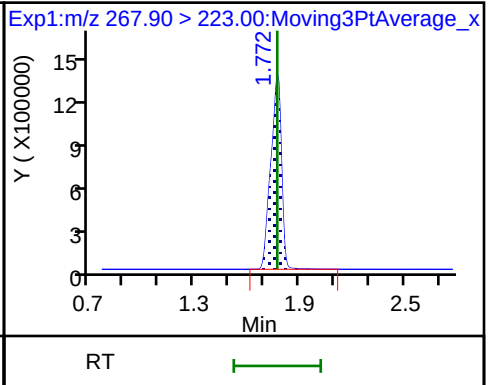
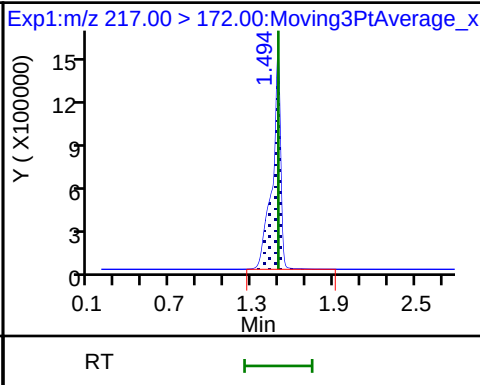
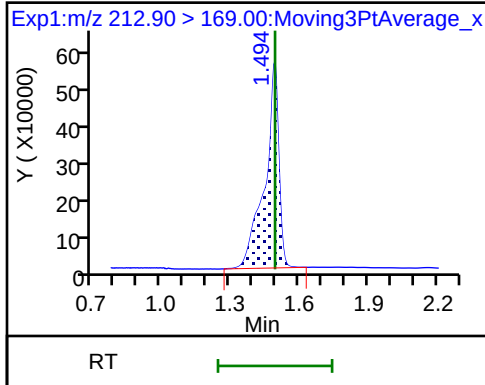
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

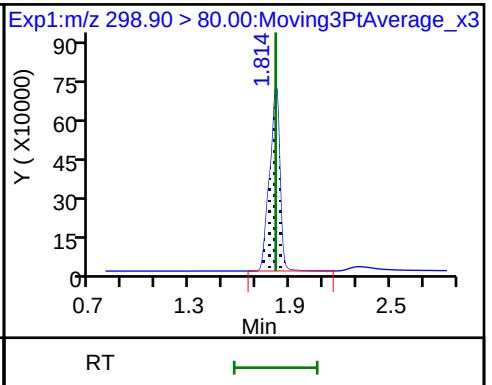
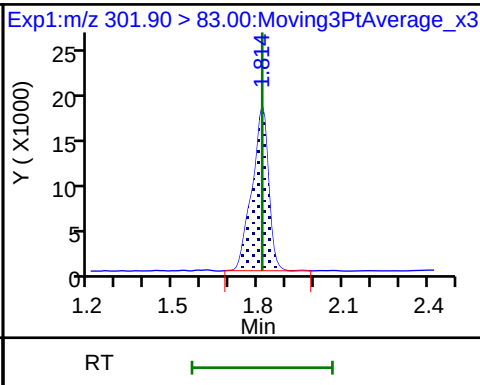
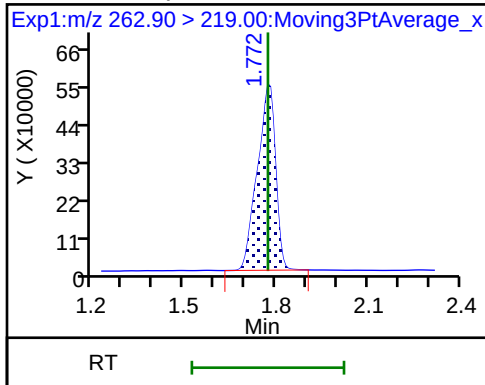
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

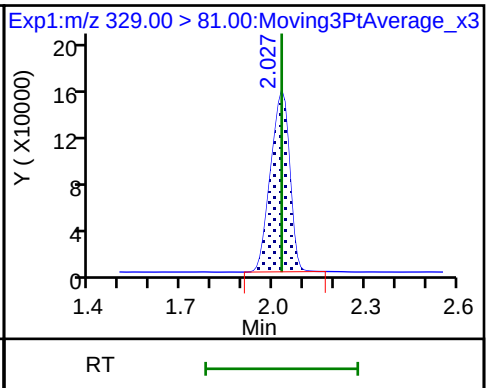
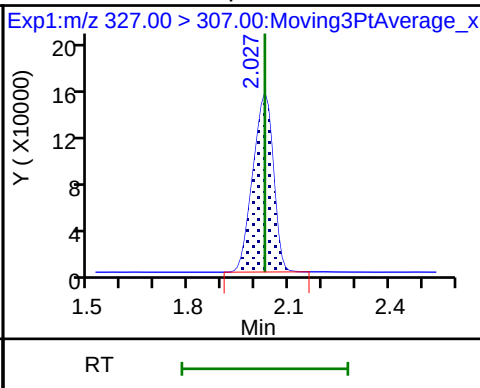
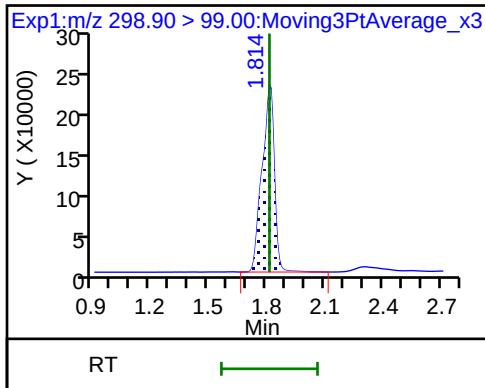
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

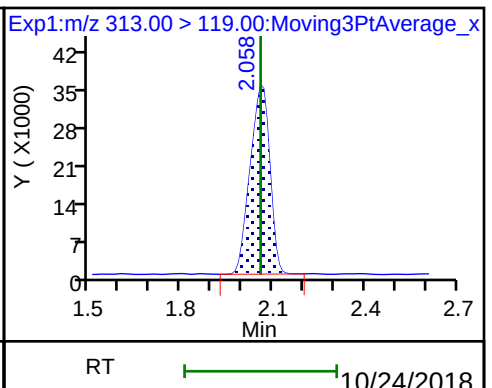
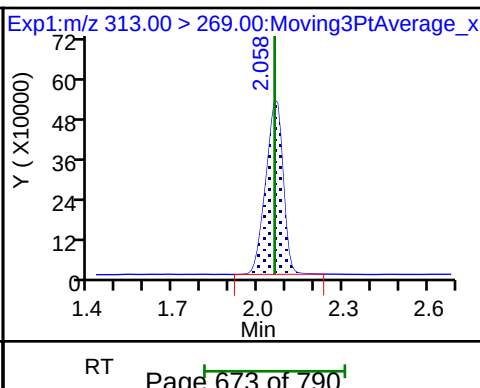
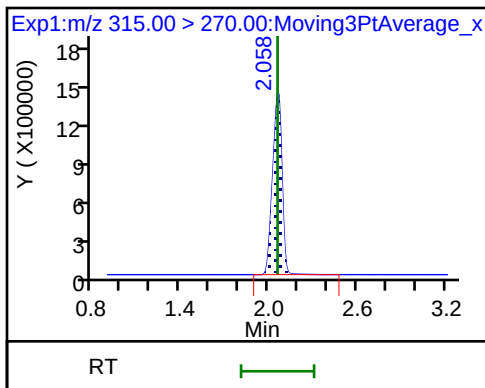
D 60 M2-4:2 FTS

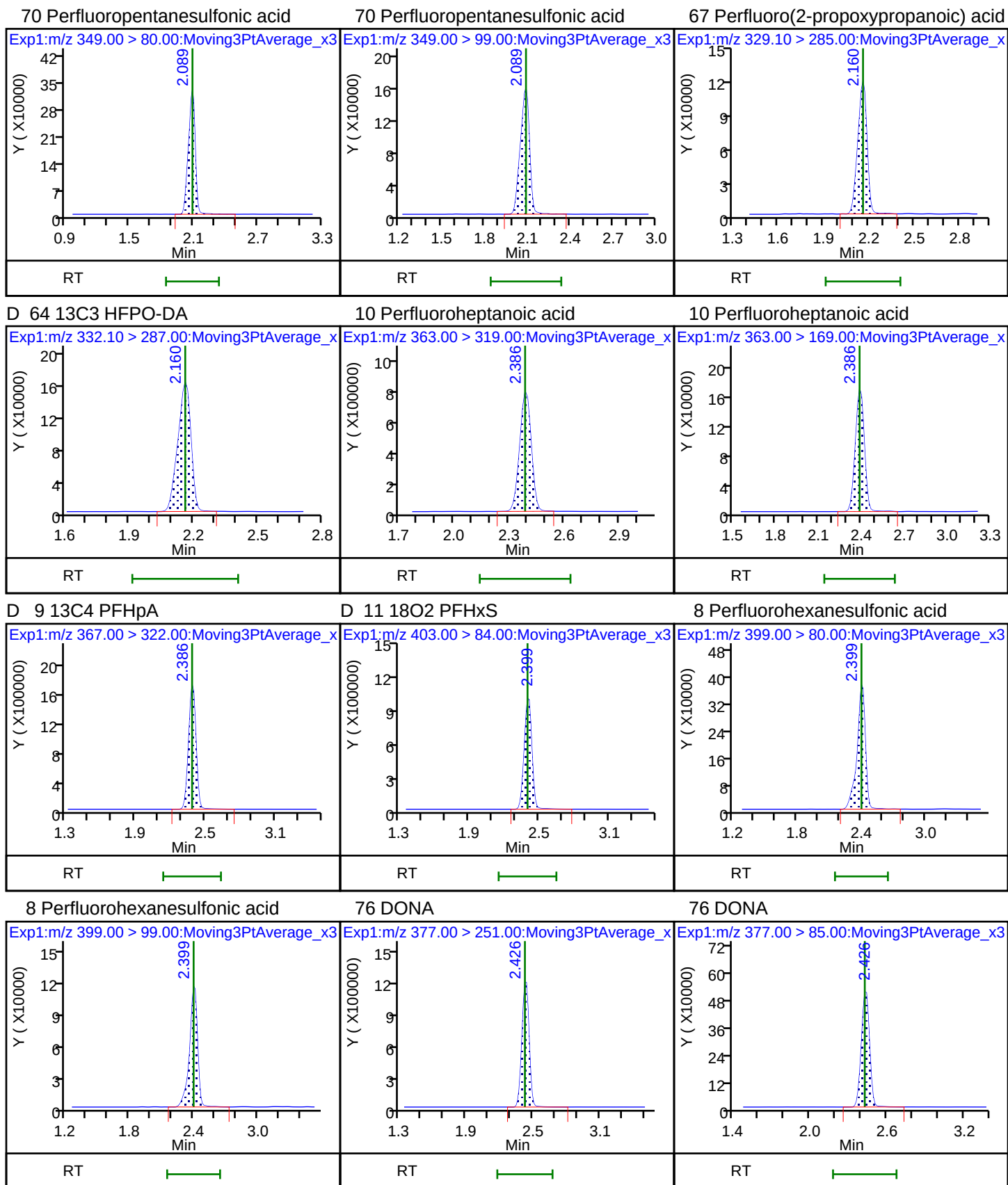


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

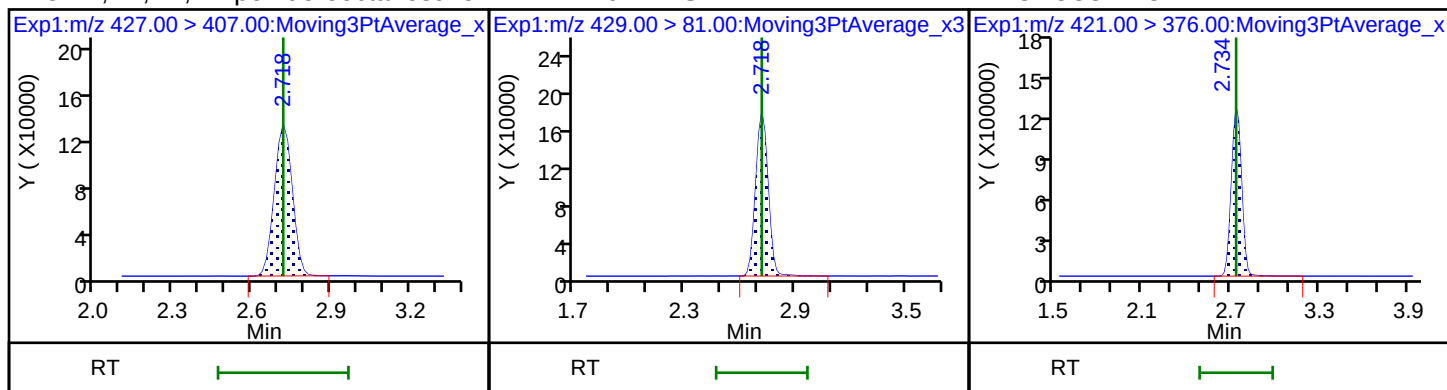
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

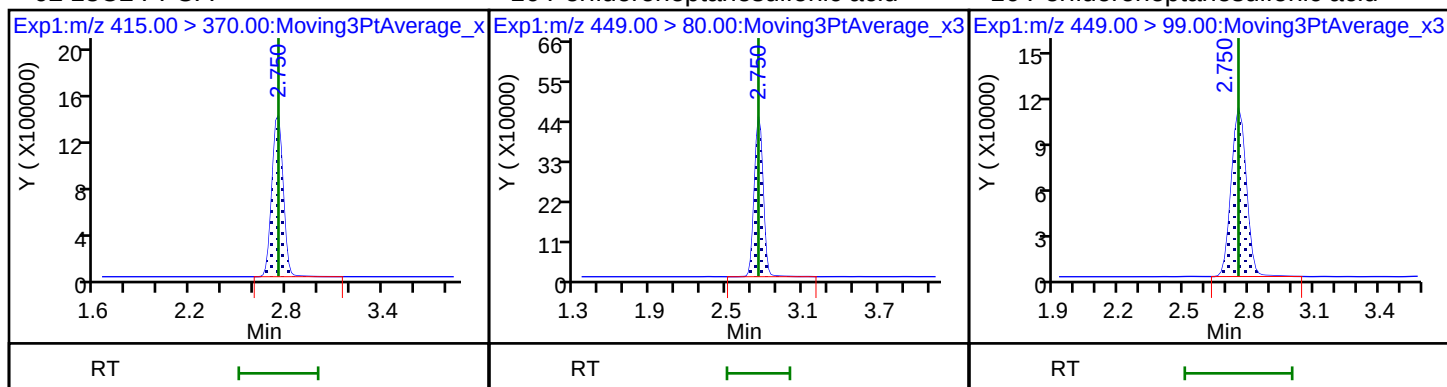
D 73 13C8 PFOA



* 62 13C2 PFOA

16 Perfluoroheptanesulfonic acid

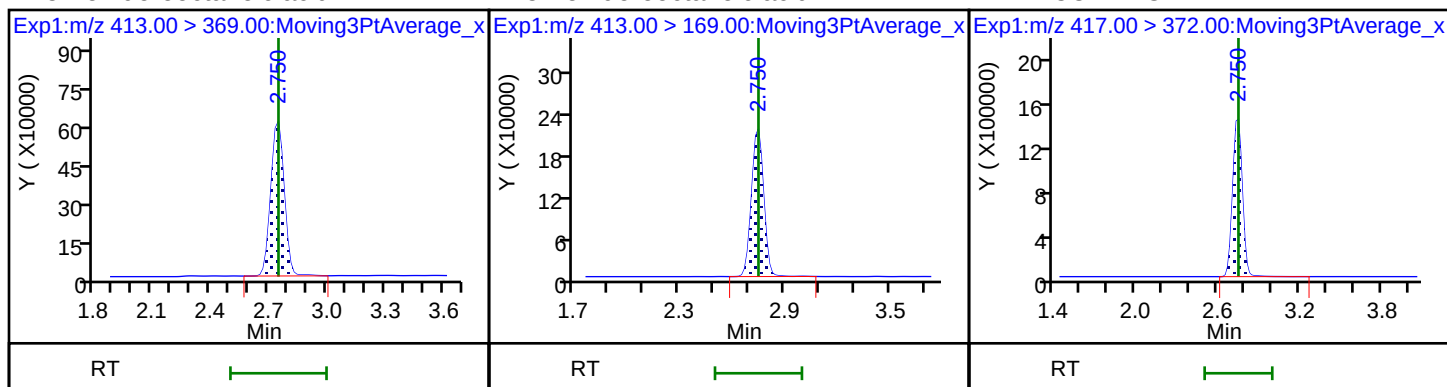
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

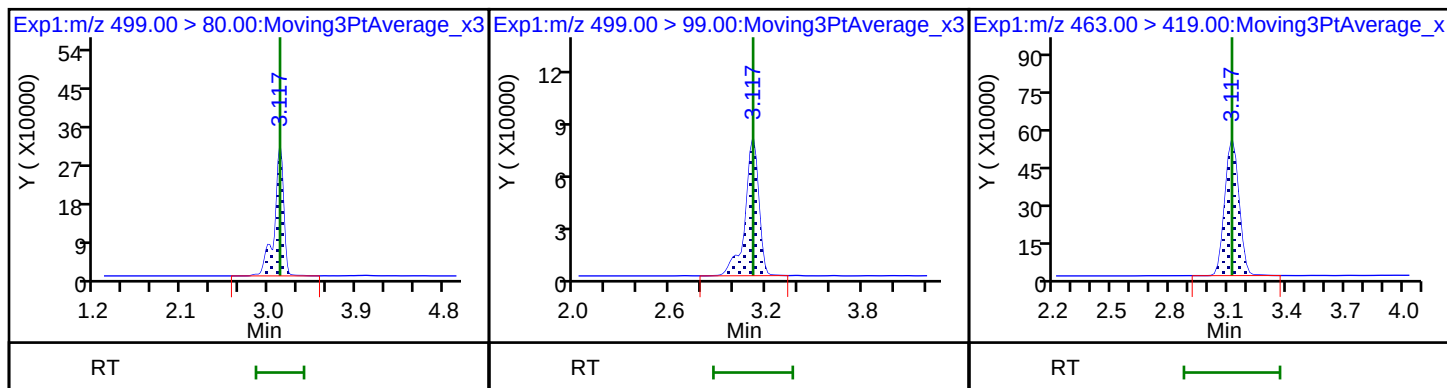
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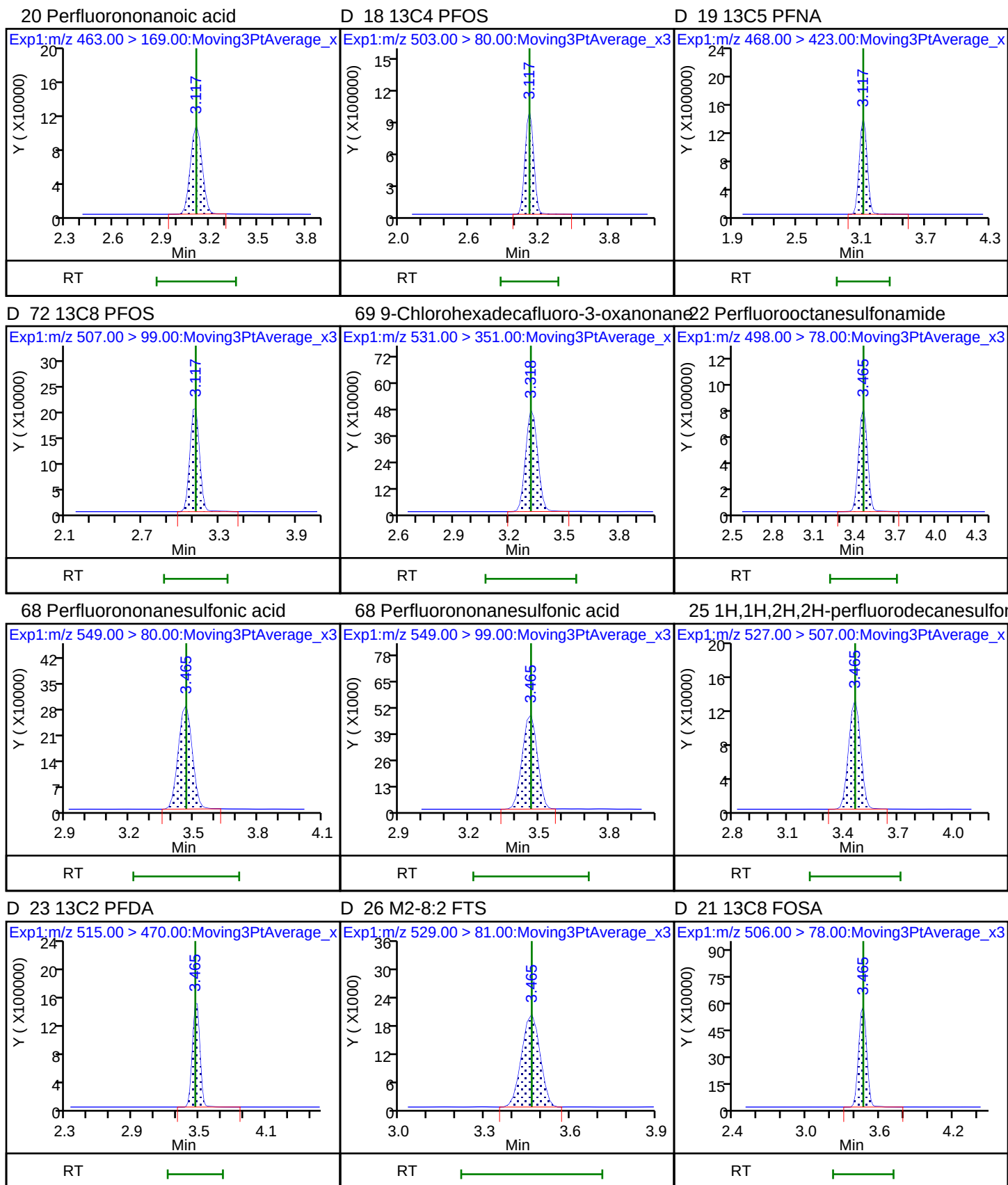


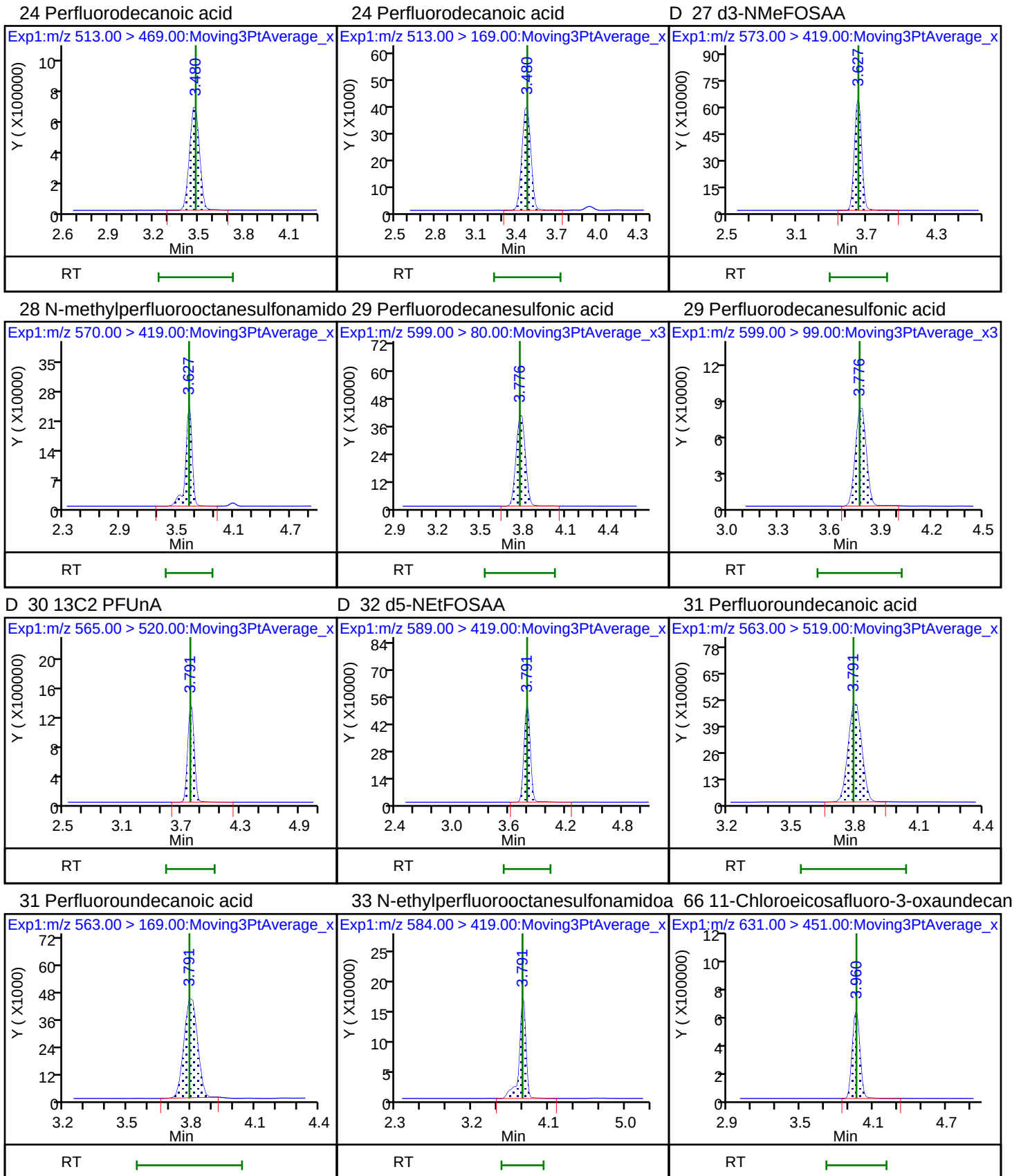
17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

20 Perfluorononanoic acid

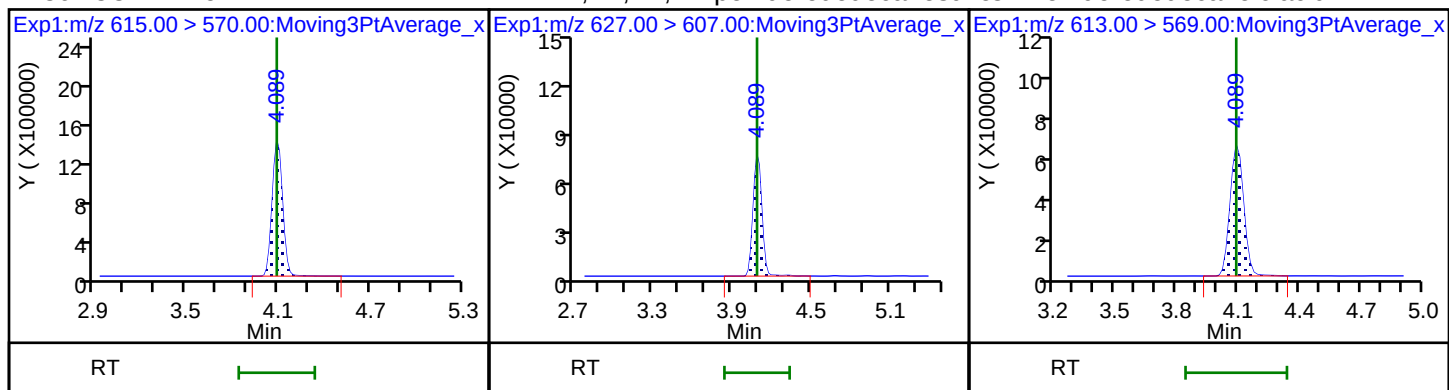






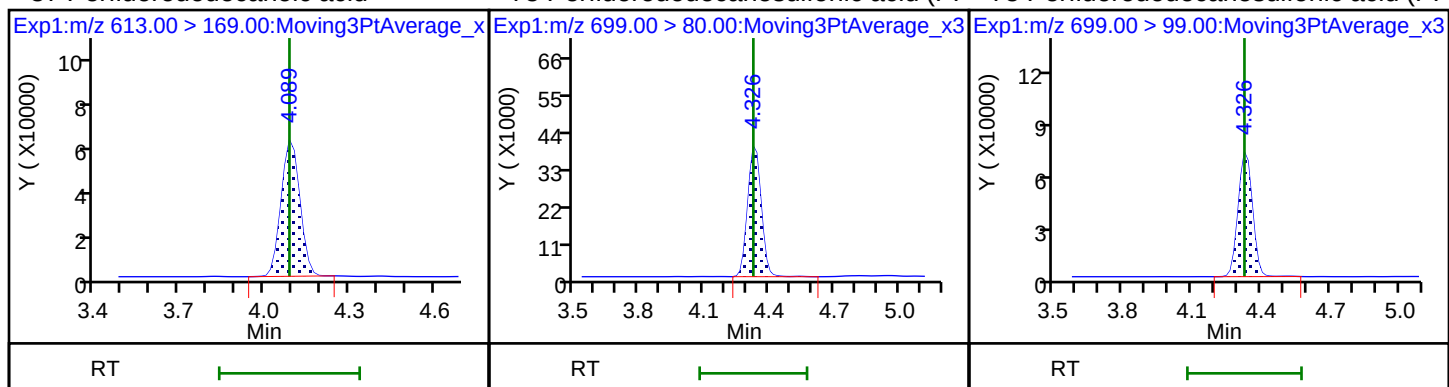
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

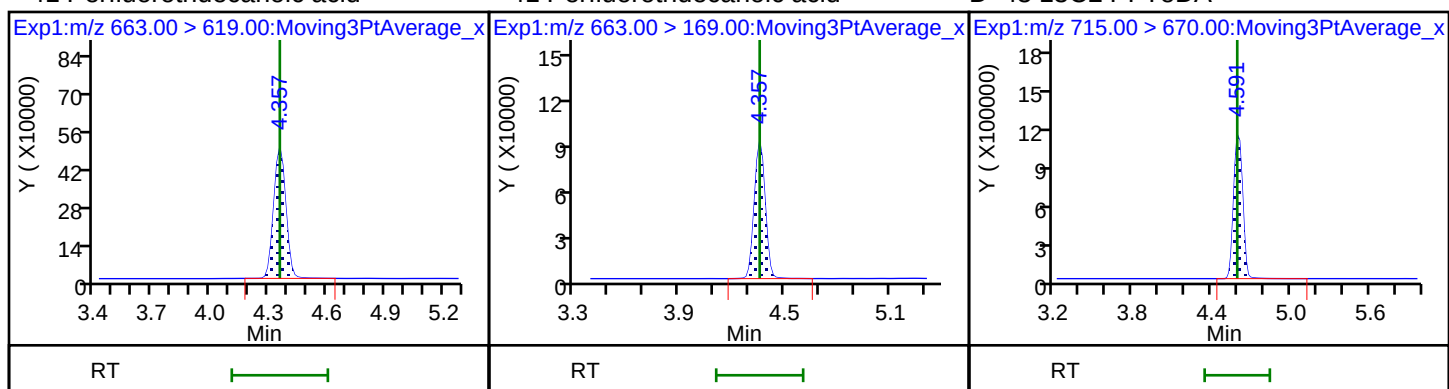
75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

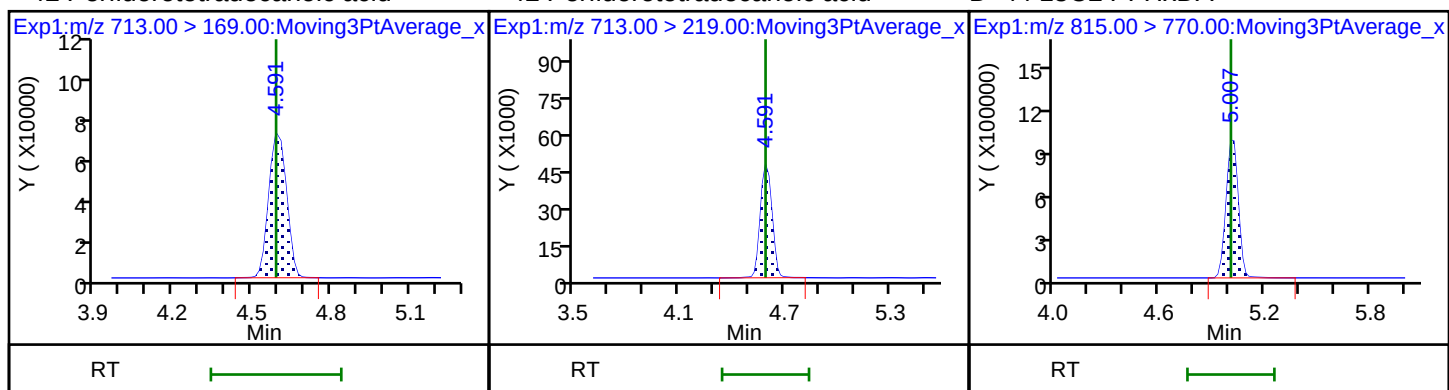
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2 PFHxDA

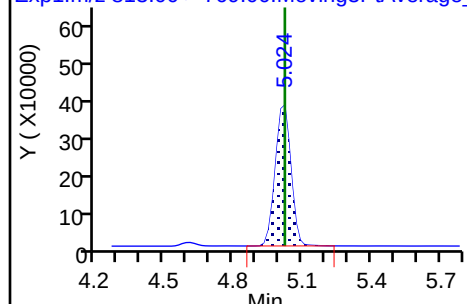


45 Perfluorohexadecanoic acid

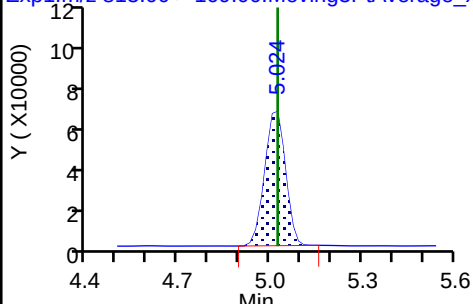
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

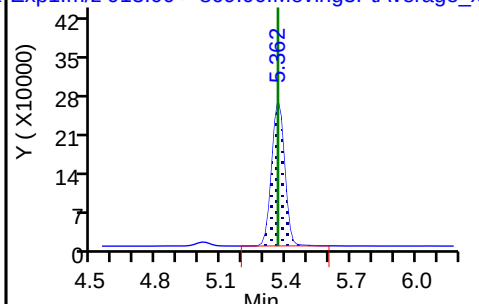
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Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

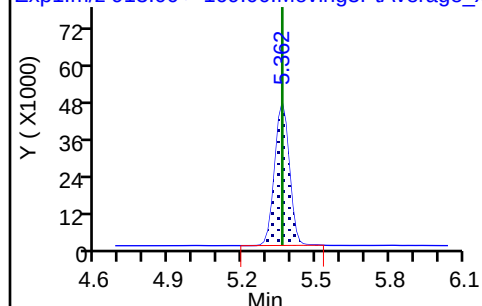


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCV 320-251568/12 Calibration Date: 10/12/2018 00:44

Instrument ID: A9 Calib Start Date: 10/11/2018 15:53

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/11/2018 16:39

Lab File ID: 2018.10.11LLAAX_054.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9291	0.9514		2.56	2.50	2.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.011	1.004		2.48	2.50	-0.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	106.6	107.7		2.23	2.21	1.0	50.0
4:2 FTS	AveID	21.65	23.17		2.50	2.34	7.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8935	0.8957		2.51	2.50	0.2	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.19	49.24		2.40	2.35	2.2	50.0
HFPO-DA (GenX)	AveID	1.896	1.816		2.39	2.50	-4.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.104		2.60	2.50	3.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.260	1.165		2.10	2.28	-7.5	40.0
DONA	AveID	2.707	2.845		2.47	2.36	5.1	50.0
6:2 FTS	AveID	2.232	2.296		2.44	2.37	2.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.069	1.096		2.44	2.38	2.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.093	1.056		2.42	2.50	-3.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.010	1.033		2.56	2.50	2.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.084	1.146		2.45	2.32	5.7	40.0
F-53B Major	AveID	1.202	1.235		2.39	2.33	2.8	50.0
8:2 FTS	AveID	15.00	14.05		2.24	2.40	-6.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6471	0.6864		2.55	2.40	6.1	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.157		2.66	2.50	6.3	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.136	1.026		2.26	2.50	-9.6	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.996	0.9895		2.48	2.50	-0.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8725	1.002		2.77	2.41	14.8	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9305	0.9314		2.50	2.50	0.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9340	0.8735		2.34	2.50	-6.5	40.0
F-53B Minor	AveID	1.397	1.409		2.37	2.36	0.8	50.0
10:2 FTS	AveID	10.13	9.658		2.30	2.41	-4.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.996	1.055		2.65	2.50	5.9	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0952	0.0957		2.43	2.42	0.6	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8040	0.8514		2.65	2.50	5.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1541		2.42	2.50	-3.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9592		2.79	2.50	11.7	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCV 320-251568/12 Calibration Date: 10/12/2018 00:44
 Instrument ID: A9 Calib Start Date: 10/11/2018 15:53
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/11/2018 16:39
 Lab File ID: 2018.10.11LLAAX_054.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5840	0.6437		2.76	2.50	10.2	50.0
13C4 PFBA	Ave	0.8895	0.8807		2.48	2.50	-1.0	50.0
13C5 PFPeA	Ave	0.8031	0.8191		2.55	2.50	2.0	50.0
13C3 PFBS	Ave	0.0112	0.0113		2.35	2.33	1.1	50.0
M2-4:2 FTS	Ave	0.0964	0.0992		2.40	2.34	3.0	50.0
13C2 PFHxA	Ave	0.8671	0.8605		2.48	2.50	-0.8	50.0
13C3 HFPO-DA	Ave	0.0897	0.0972		2.71	2.50	8.4	50.0
13C4 PFHpA	Ave	1.031	1.044		2.53	2.50	1.2	50.0
18O2 PFHxS	Ave	0.6604	0.6826		2.44	2.37	3.4	50.0
M2-6:2 FTS	Ave	0.1054	0.1174		2.64	2.38	11.3	40.0
13C8 PFOA	Ave	2513465	2288082		2.23	2.45	-9.0	50.0
13C4 PFOA	Ave	0.9773	1.004		2.57	2.50	2.7	50.0
13C4 PFOS	Ave	0.6736	0.6844		2.43	2.39	1.6	50.0
13C5 PFNA	Ave	0.8934	0.9229		2.58	2.50	3.3	50.0
13C8 PFOS	Ave	429013	412220		2.30	2.39	-3.9	50.0
13C8 FOSA	Ave	0.3536	0.3595		2.54	2.50	1.6	50.0
M2-8:2 FTS	Ave	0.0132	0.0142		2.57	2.40	7.2	40.0
13C2 PFDA	Ave	0.9358	0.9818		2.62	2.50	4.9	50.0
d3-NMeFOSAA	Ave	0.3830	0.3942		2.57	2.50	2.9	50.0
d5-NEtFOSAA	Ave	0.3106	0.3291		2.65	2.50	6.0	50.0
13C2 PFUnA	Ave	0.7875	0.8206		2.61	2.50	4.2	50.0
13C2 PFDoA	Ave	0.9569	0.9274		2.42	2.50	-3.1	50.0
13C2 PFTeDA	Ave	0.6864	0.7211		2.63	2.50	5.1	50.0
13C2 PFHxDA	Ave	0.6277	0.6747		2.69	2.50	7.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_054.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 12-Oct-2018 00:44:27 ALS Bottle#: 29 Worklist Smp#: 12
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 16-Oct-2018 12:50:03 Calib Date: 11-Oct-2018 16:39:02
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_008.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: westendorfc

Date: 16-Oct-2018 12:42:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.494	1.494	0.0	1.000	5686105	2.56		102	292	
D 1 13C4 PFBA										
217.00 > 172.00	1.494	1.494	0.0	0.543	5976387	2.48		99.0	12572	
D 3 13C5 PFPeA										
267.90 > 223.00	1.780	1.772	0.008	0.647	5558324	2.55		102	14117	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.780	0.0	1.000	5582675	2.48		99.3	511	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.822	0.0	1.005	7293022	2.23		101	729	
298.90 > 99.00	1.813	1.822	-0.009	1.000	2568512		2.84(1.35-4.05)		660	
D 47 13C3 PFBS										
301.90 > 83.00	1.813	1.814	-0.001	0.659	71240	2.35		101	304	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.027	2.027	0.0	0.737	628945	2.40		103	746	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	1657691	2.50		107	5253	
D 7 13C2 PFHxA										
315.00 > 270.00	2.057	2.058	-0.001	0.748	5839896	2.48		99.2	11377	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.068	0.0	1.005	5230717	2.51		100	898	
313.00 > 119.00	2.068	2.068	0.0	1.005	385703		13.56(6.96-20.87)		636	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.088	2.088	0.0	1.152	3537711	2.40		102	5101	
349.00 > 99.00	2.088	2.088	0.0	1.152	1705683		2.07(1.15-3.45)		2470	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.160	2.160	0.0	0.785	659615	2.71		108	1937	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	1197746	2.39		95.8	632	
D 9 13C4 PFHpA										
367.00 > 322.00	2.386	2.386	0.0	0.868	7082427	2.53		101	18096	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.386	2.386	0.0	1.000	7815454	2.60		104	1334	
363.00 > 169.00	2.386	2.386	0.0	1.000	1735517		4.50(2.17-6.52)		3622	
D 11 18O2 PFHxS										
403.00 > 84.00	2.412	2.399	0.013	0.877	4382341	2.44		103	7176	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.412	2.412	0.0	1.000	4912724	2.10		92.5	2723	
399.00 > 99.00	2.412	2.412	0.0	1.000	1387954		3.54(1.90-5.70)		1443	
76 DONA										
377.00 > 251.00	2.438	2.438	0.0	0.783	12445692	2.47		105	18492	
377.00 > 85.00	2.438	2.438	0.0	0.783	5746047		2.17(1.13-3.39)		6032	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.718	2.718	0.0	0.988	756756	2.64		111	1286	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.718	2.718	0.0	1.000	1733743	2.44		103	2107	
D 73 13C8 PFOA										
421.00 > 376.00	2.734	2.734	0.0		5600081	2.23		91.0	9405	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.750	0.0	1.000	6811314	2.57		103	12514	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	7197260	2.42		96.6	453	
413.00 > 169.00	2.750	2.750	0.0	1.000	2600378		2.77(1.36-4.08)		3821	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.750	2.750	0.0	0.882	4846557	2.44		103	4096	
449.00 > 99.00	2.750	2.750	0.0	0.882	1197885		4.05(1.84-5.53)		2740	
* 62 13C2 PFOA										
415.00 > 370.00	2.750	2.750	0.0		6786287	2.50			8115	
D 19 13C5 PFNA										
468.00 > 423.00	3.116	3.116	0.0	1.133	6262929	2.58		103	8136	
D 18 13C4 PFOS										
503.00 > 80.00	3.116	3.116	0.0	1.133	4439945	2.43		102	3304	
D 72 13C8 PFOS										
507.00 > 99.00	3.116	3.116	0.0		985205	2.30		96.1	3722	
20 Perfluorononanoic acid										
463.00 > 419.00	3.116	3.116	0.0	1.000	6466726	2.56		102	546	
463.00 > 169.00	3.116	3.116	0.0	1.000	1174515		5.51(2.68-8.03)		2130	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.116	3.116	0.0	1.000	4937108	2.45		106	1706	
499.00 > 99.00	3.116	3.116	0.0	1.000	1116956		4.42(2.04-6.12)		1229	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.334	3.334	0.0	1.070	5346587	2.39		103	3467	
D 21 13C8 FOSA										
506.00 > 78.00	3.464	3.465	-0.001	1.260	2439516	2.54		102	6007	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2 FTS										
529.00 > 81.00	3.464	3.465	-0.001	1.260	92026	2.57		107	525	
D 23 13C2 PFDA										
515.00 > 470.00	3.480	3.465	0.015	1.265	6662407	2.62		105	10122	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.464	3.464	0.0	1.000	1292641	2.24		93.7	4163	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.464	3.464	0.0	1.112	3060166	2.55		106	3216	
549.00 > 99.00	3.464	3.464	0.0	1.112	523013		5.85(3.02-9.05)		1944	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.464	3.464	0.0	1.000	7700376	2.66		106	6901	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.480	3.480	0.0	1.000	6837857	2.26		90.4	913	
513.00 > 169.00	3.480	3.480	0.0	1.000	461593		14.81(7.12-21.35)		375	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.627	0.0	1.319	2675094	2.57		103	4828	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.641	3.641	0.0	1.004	2646986	2.48		99.4	956	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.791	3.791	0.0	1.217	4485249	2.77		115	3446	
599.00 > 99.00	3.791	3.791	0.0	1.217	929925		4.82(2.14-6.43)		3251	
D 30 13C2 PFUnA										
565.00 > 520.00	3.807	3.791	0.016	1.384	5568495	2.61		104	9299	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.791	0.0	1.379	2233291	2.65		106	3321	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.807	3.807	0.0	1.000	4864106	2.34		93.5	993	
563.00 > 169.00	3.807	3.807	0.0	1.000	457492		10.63(5.24-15.72)		1787	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.807	3.807	0.0	1.004	2080077	2.50		100	3046	
35 MeFOSA										
512.00 > 169.00	3.959	3.959	0.0		1372809	NC			933	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.959	3.959	0.0	1.271	6162756	2.37		101	9758	
D 36 13C2 PFDaA										
615.00 > 570.00	4.105	4.089	0.016	1.493	6293830	2.42		96.9	9492	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.105	4.105	0.0	1.185	894353	2.30		95.3	2183	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.105	4.105	0.0	1.000	6641686	2.65		106	1437	
613.00 > 169.00	4.105	4.105	0.0	1.000	700848		9.48(4.68-14.05)		1134	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		1514098	NC			606	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.341	4.341	0.0	1.393	430349	2.43		101	662	
699.00 > 99.00	4.341	4.341	0.0	1.393	765788		0.56(0.28-0.83)		2717	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.372	4.372	0.0	1.065	5358796	2.65		106	2475	
663.00 > 169.00	4.357	4.372	-0.015	1.061	928278		5.77(3.09-9.27)		1565	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.609	4.591	0.018	1.676	4893774	2.63		105	9242	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	754347	2.42		96.8	2395	
713.00 > 219.00	4.609	4.609	0.0	1.000	550797		1.37(0.70-2.09)		2202	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.023	5.007	0.016	1.827	4578569	2.69		107	9201	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.023	5.023	0.0	1.000	4391800	2.79		112	1385	
813.00 > 169.00	5.023	5.023	0.0	1.000	704289		6.24(2.77-8.32)		1224	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.363	5.363	0.0	1.068	2947309	2.76		110	1555	
913.00 > 169.00	5.363	5.363	0.0	1.068	534943		5.51(2.55-7.64)		2321	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65730.b\2018.10.11LLAAX_054.d

Injection Date: 12-Oct-2018 00:44:27

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 29

Worklist Smp#: 12

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

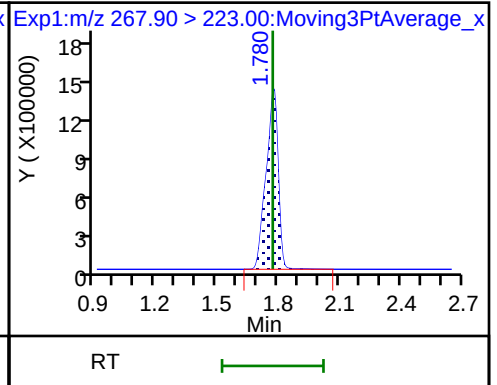
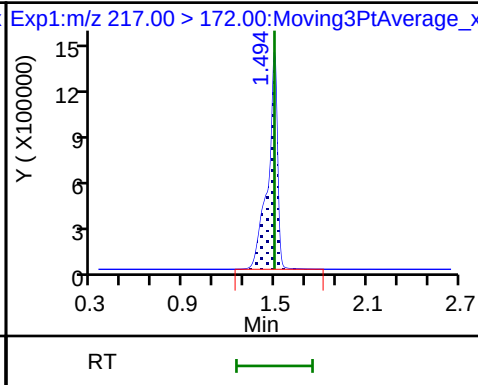
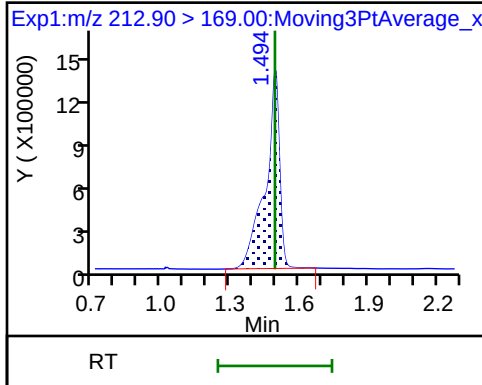
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

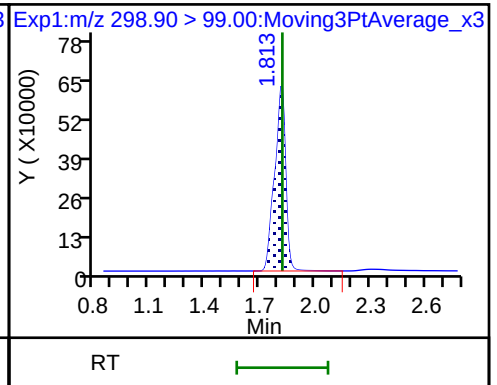
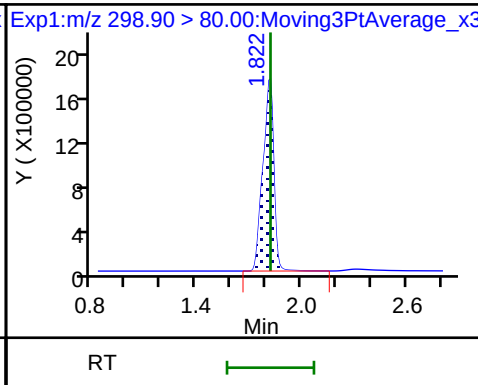
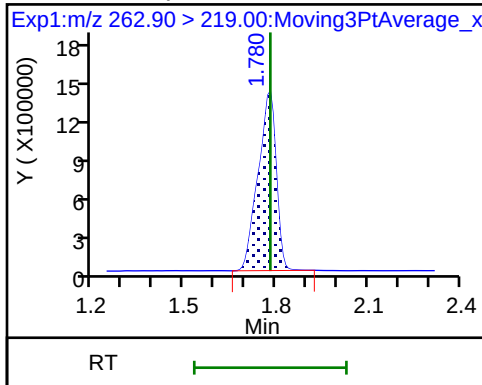
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

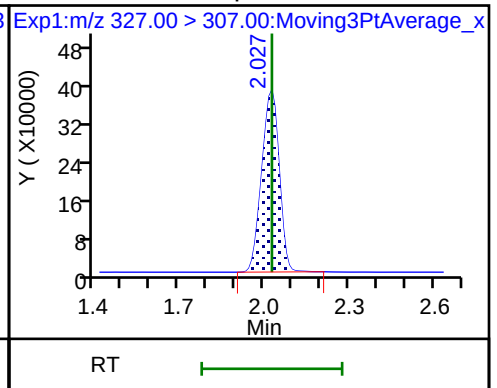
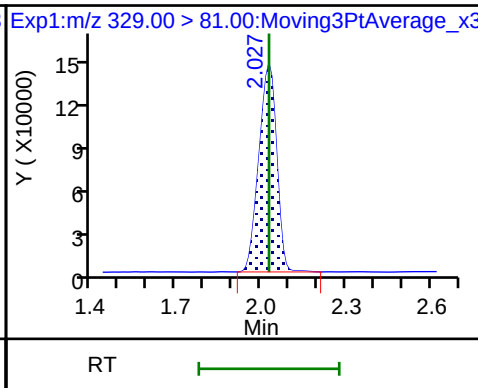
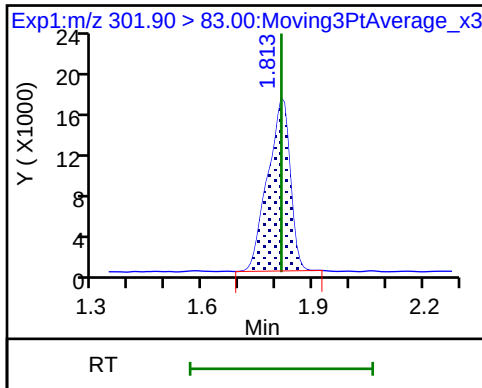
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

D 60 M2-4:2 FTS

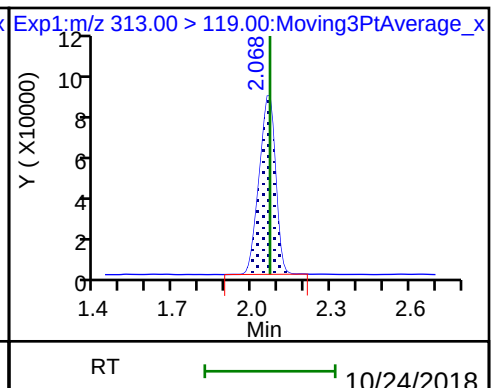
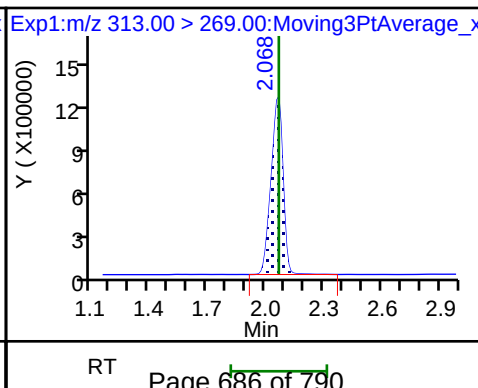
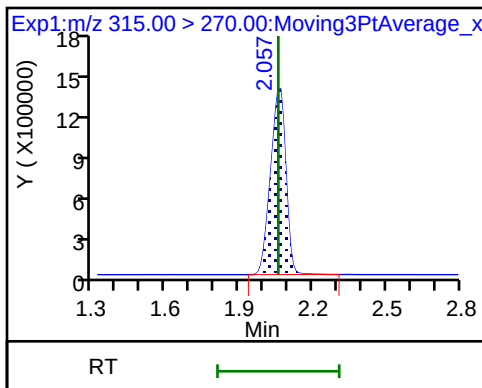
61 1H,1H,2H,2H-perfluorohexanesulfoni

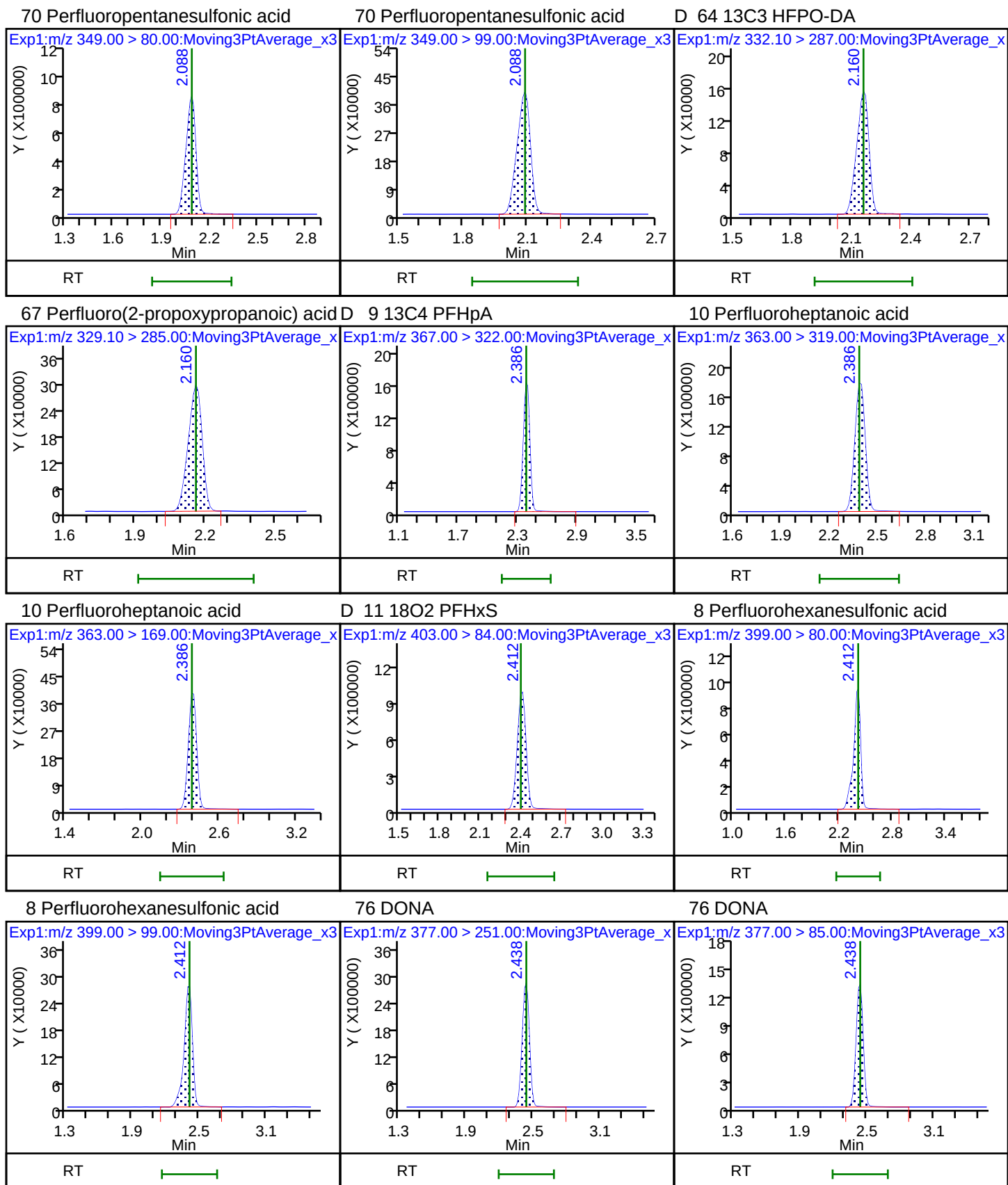


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

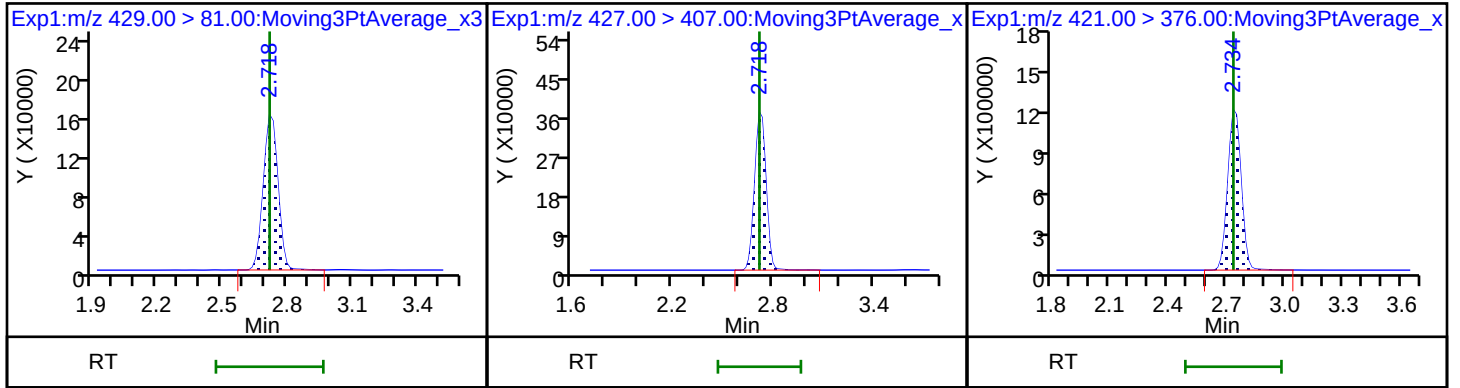
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

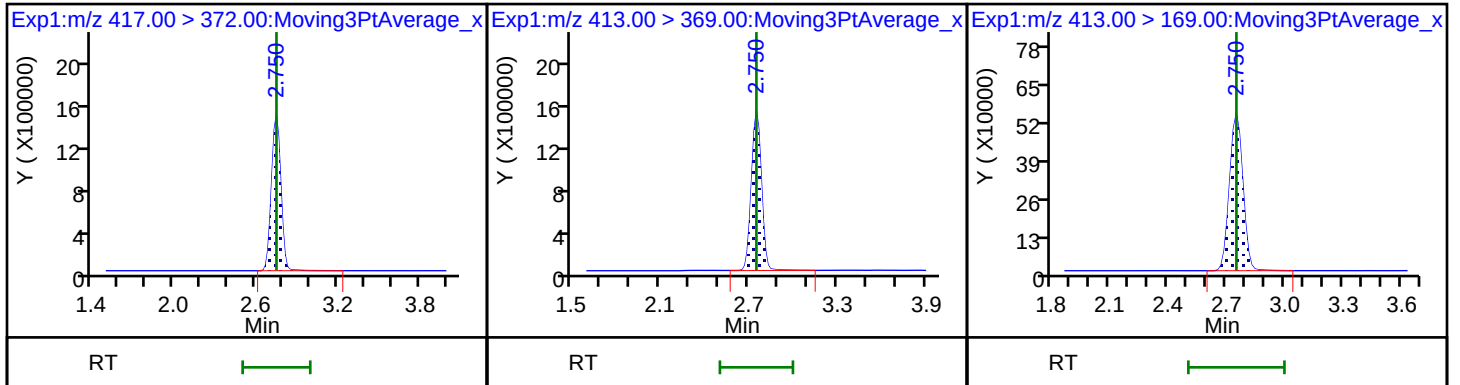
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

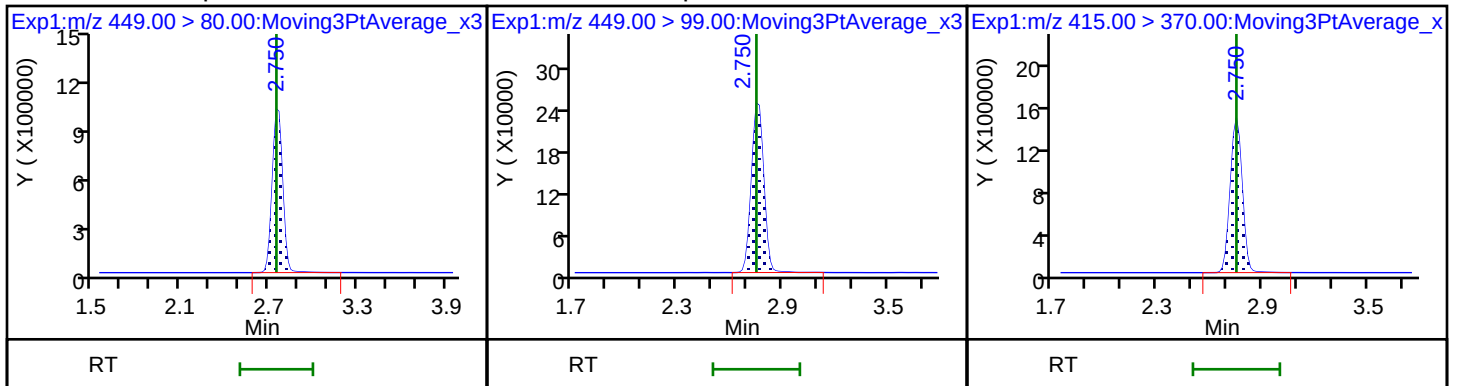
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

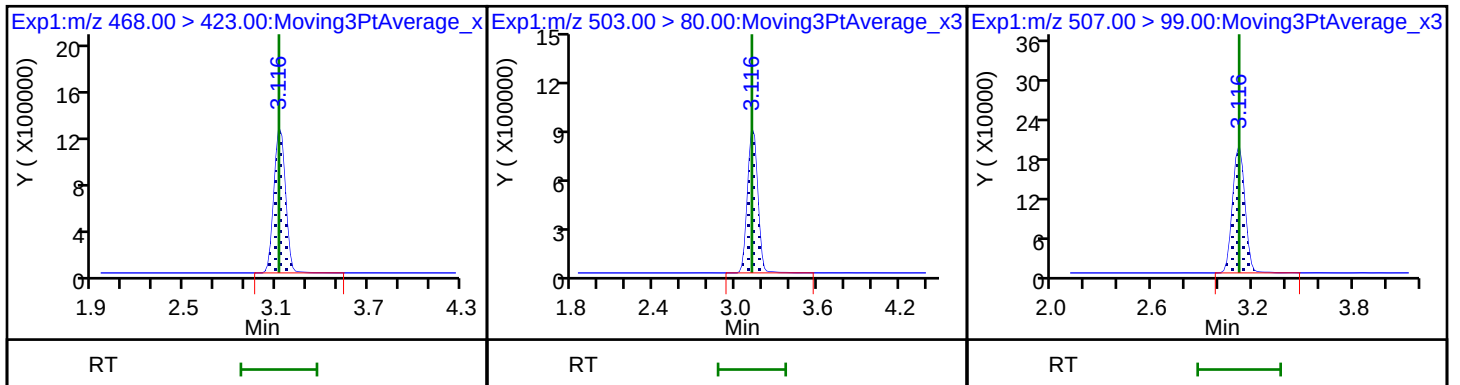
* 62 13C2 PFOA

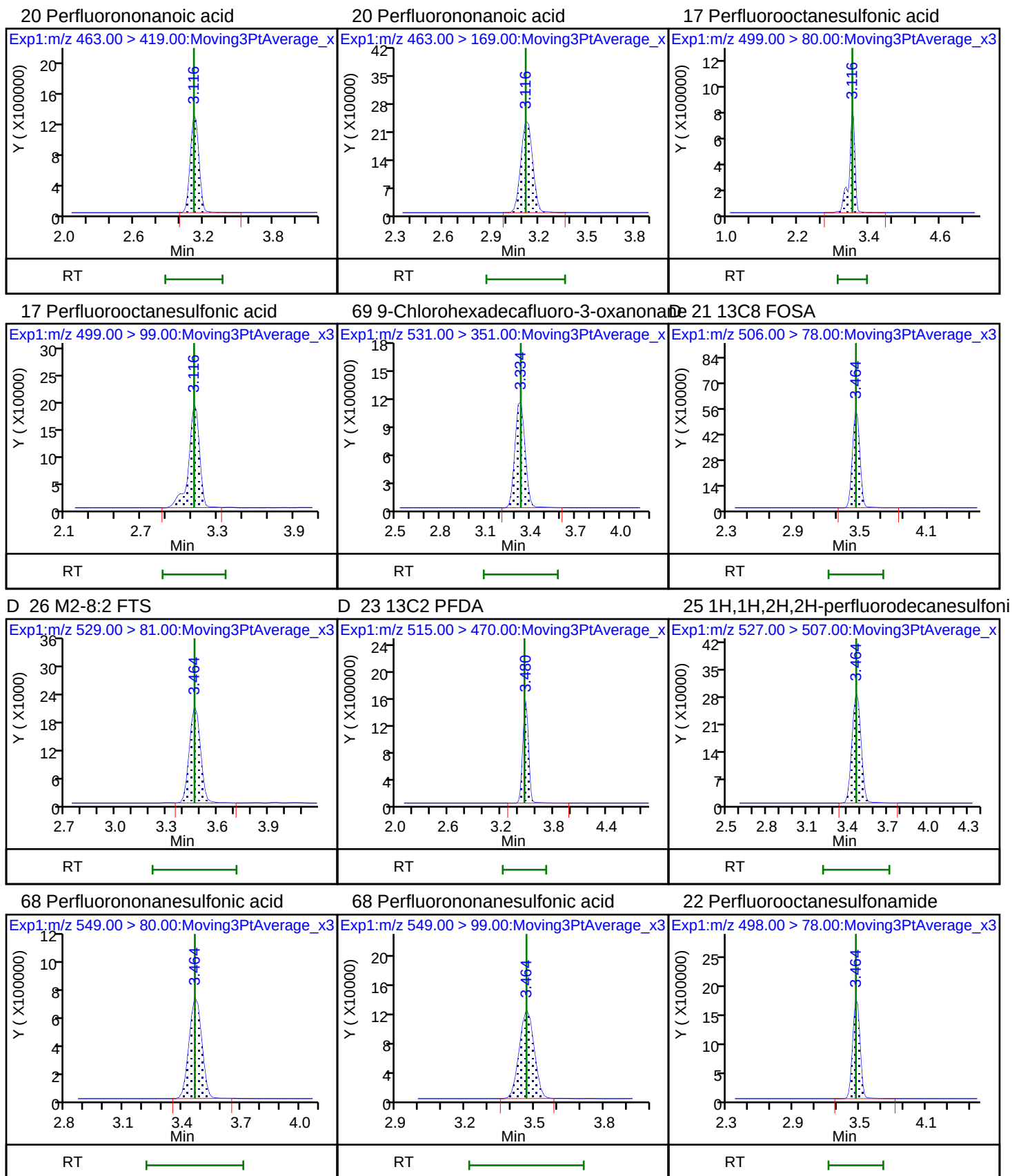


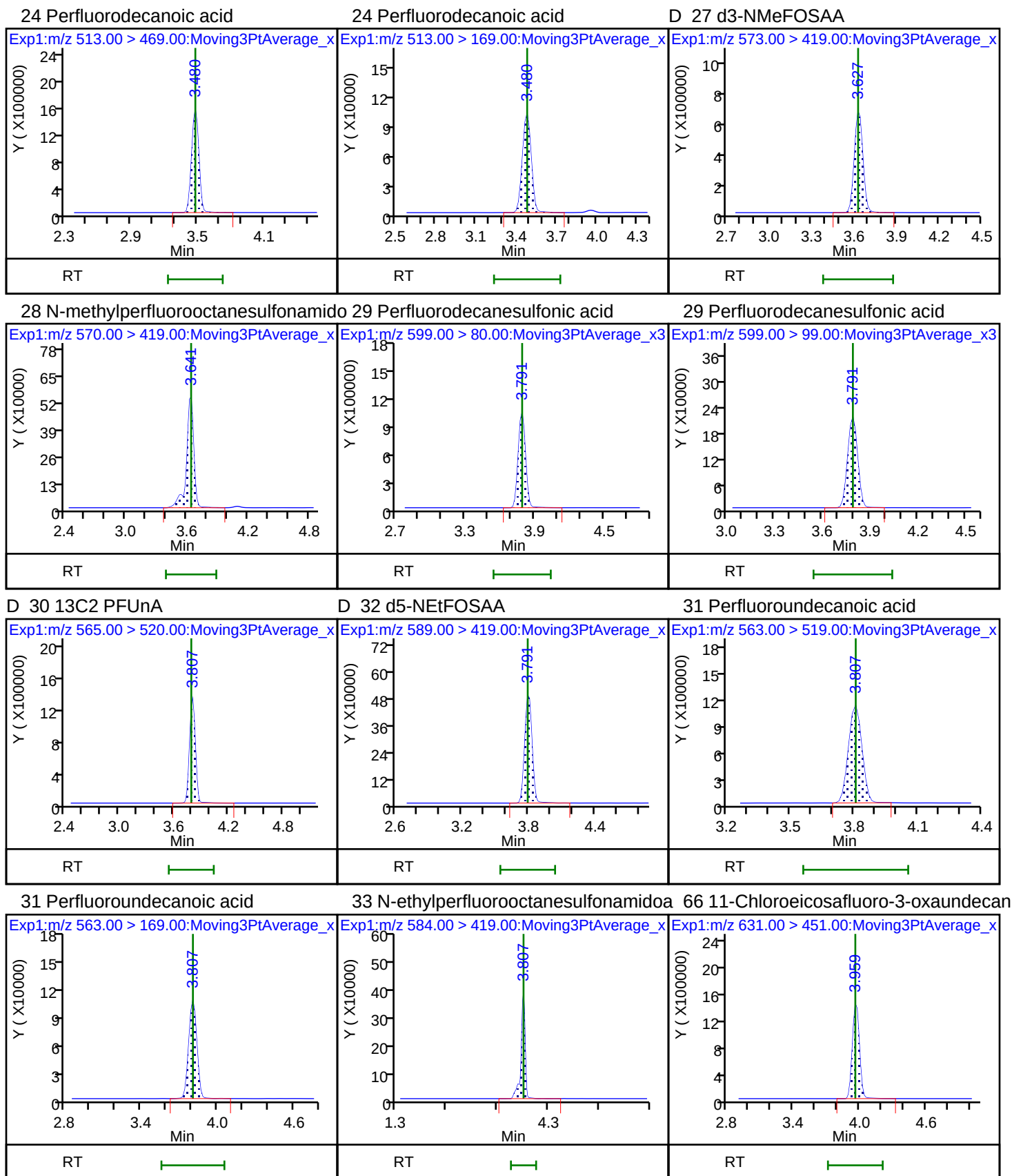
D 19 13C5 PFNA

D 18 13C4 PFOS

D 72 13C8 PFOS

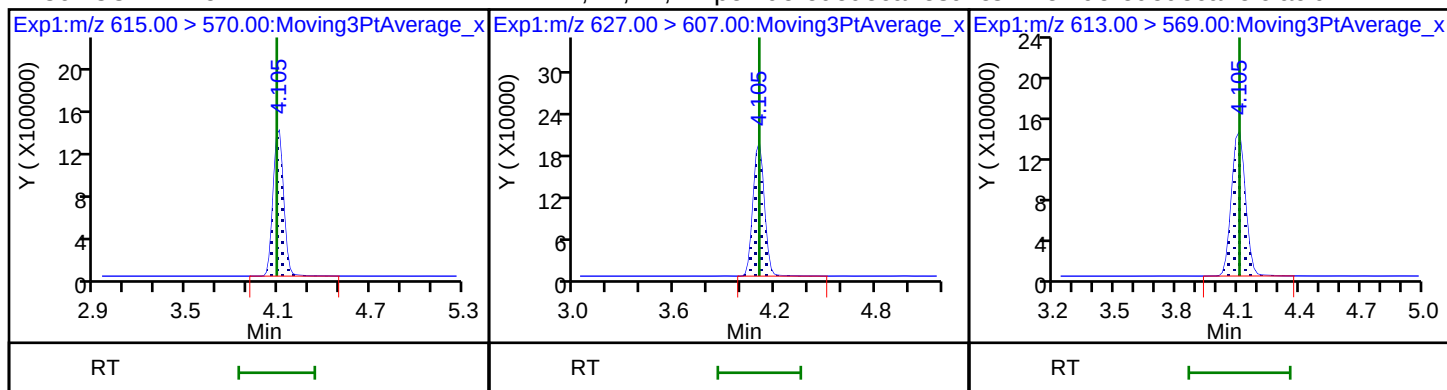






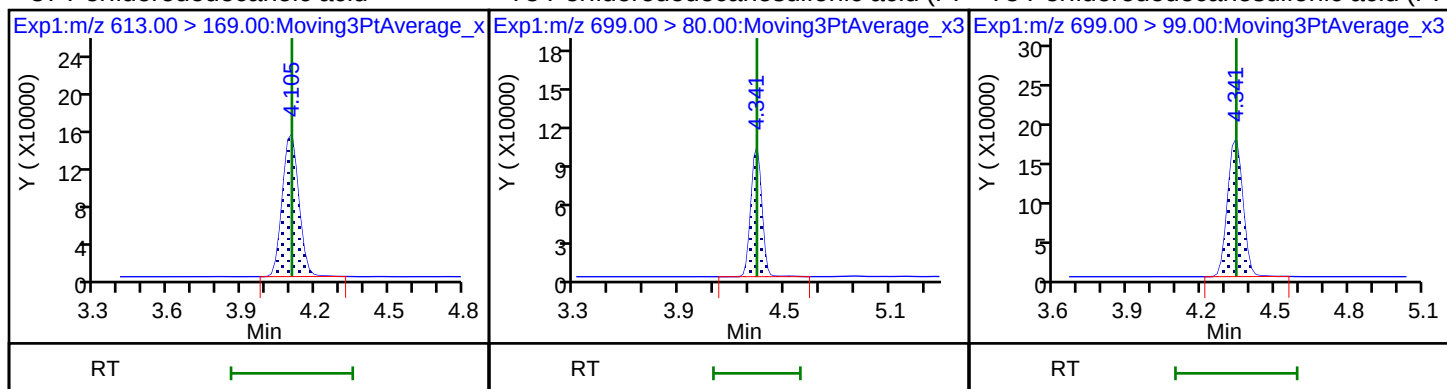
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

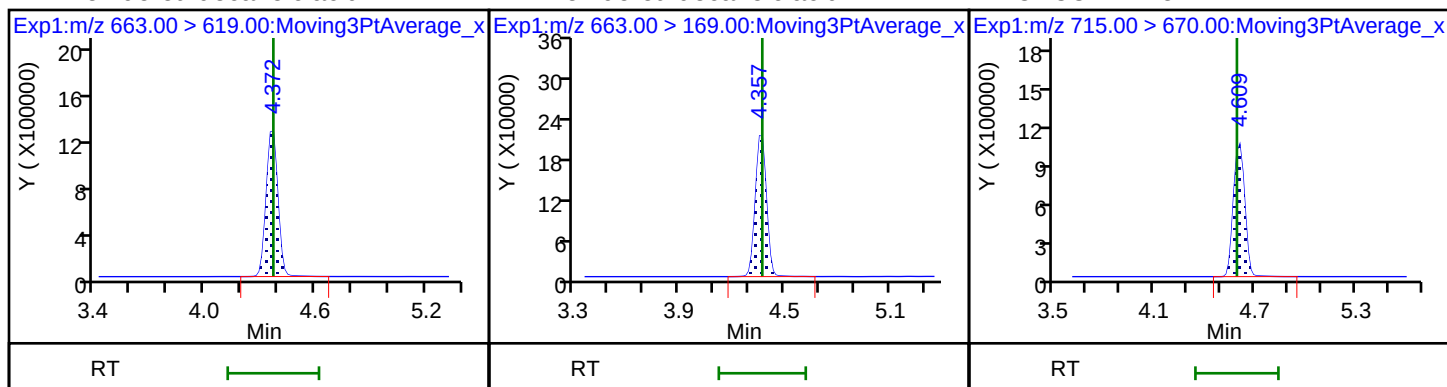
75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

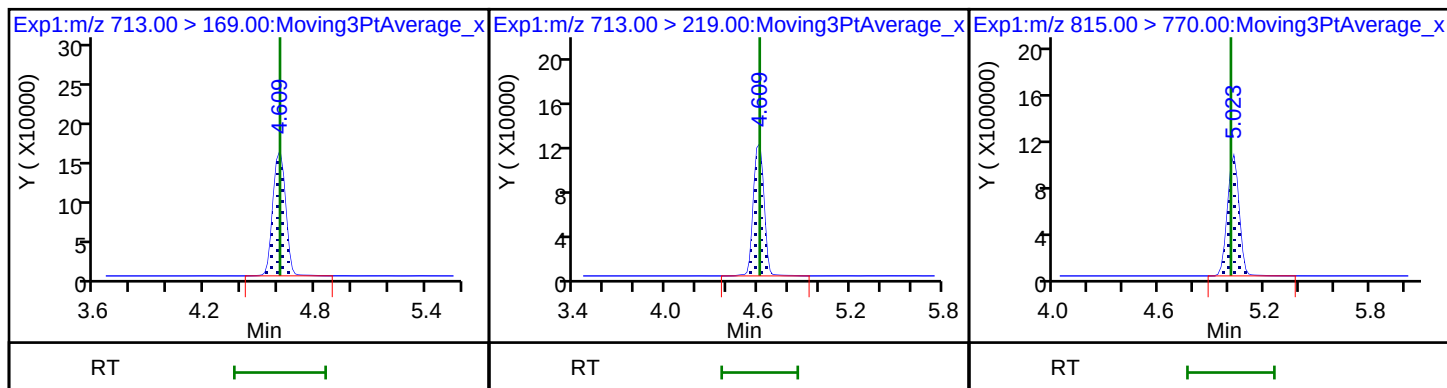
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

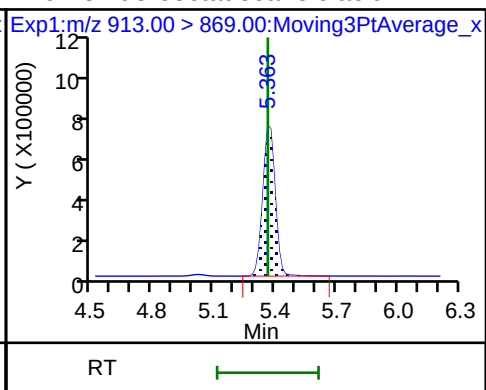
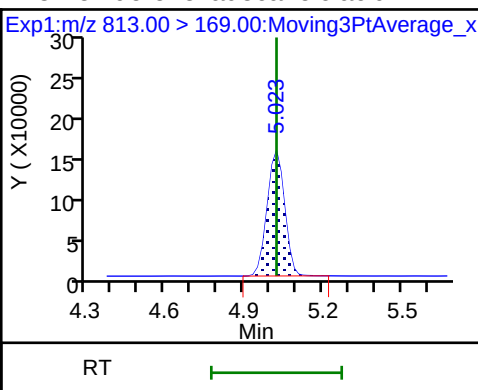
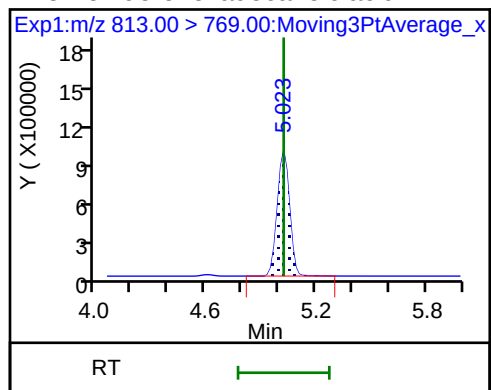
D 44 13C2 PFHxDA



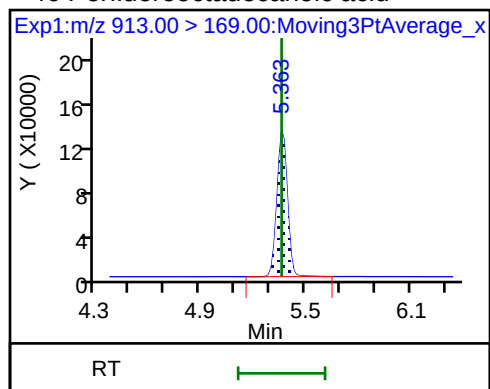
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: ICV 320-251040/10 Calibration Date: 10/08/2018 16:34

Instrument ID: A9_NC Calib Start Date: 10/08/2018 15:34

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/08/2018 16:19

Lab File ID: 2018.10.08LLICAL_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9286		2.58	2.50	3.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.015	0.996		2.45	2.50	-1.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	107.0	109.9		2.27	2.21	2.7	50.0
4:2 FTS	AveID	25.29	25.39		2.35	2.34	0.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8952	0.8518		2.38	2.50	-4.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.19	51.60		2.47	2.35	4.9	50.0
HFPO-DA (GenX)	AveID	1.690	1.586		2.35	2.50	-6.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.081	1.060		2.45	2.50	-1.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.233	1.190		2.20	2.28	-3.5	40.0
DONA	AveID	2.679	2.863		2.52	2.36	6.9	50.0
6:2 FTS	AveID	2.149	2.249		2.49	2.38	4.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.020	1.074		2.50	2.38	5.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.074	1.035		2.41	2.50	-3.6	40.0
Perfluorononanoic acid (PFNA)	AveID	1.016	0.9939		2.45	2.50	-2.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	1.086		2.33	2.31	0.7	40.0
F-53B Major	AveID	1.146	1.216		2.47	2.33	6.2	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.216		2.71	2.50	8.3	40.0
8:2 FTS	AveID	14.90	14.52		2.34	2.40	-2.5	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6395	0.7259		2.72	2.40	13.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.050		2.31	2.50	-7.7	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.019	1.084		2.66	2.50	6.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.9412		2.58	2.41	7.0	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9005	1.061		2.95	2.50	17.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9249	0.9067		2.45	2.50	-2.0	40.0
F-53B Minor	AveID	1.353	1.461		2.54	2.36	7.9	50.0
10:2 FTS	AveID	9.483	10.33		2.62	2.41	8.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	1.066		2.62	2.50	4.6	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0894	0.0884		2.39	2.42	-1.2	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7678	0.8496		2.77	2.50	10.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1564		2.45	2.50	-1.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9586		2.68	2.50	7.3	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: ICV 320-251040/10 Calibration Date: 10/08/2018 16:34
 Instrument ID: A9_NC Calib Start Date: 10/08/2018 15:34
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/08/2018 16:19
 Lab File ID: 2018.10.08LLICAL_010.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5686	0.5799		2.55	2.50	2.0	50.0
13C4 PFBA	Ave	0.9129	0.9048		2.48	2.50	-0.9	50.0
13C5 PFPeA	Ave	0.8136	0.8174		2.51	2.50	0.5	50.0
13C3 PFBS	Ave	0.0111	0.0107		2.24	2.33	-3.6	50.0
M2-4:2 FTS	Ave	0.1123	0.1077		2.24	2.34	-4.0	50.0
13C2 PFHxA	Ave	0.8780	0.8816		2.51	2.50	0.4	50.0
13C3 HFPO-DA	Ave	0.1093	0.1128		2.58	2.50	3.2	50.0
13C4 PFHpA	Ave	1.076	1.065		2.48	2.50	-1.0	50.0
18O2 PFHxS	Ave	0.6688	0.6600		2.33	2.37	-1.3	50.0
M2-6:2 FTS	Ave	0.1183	0.1159		2.33	2.38	-2.1	40.0
13C4 PFOA	Ave	1.007	1.055		2.62	2.50	4.7	50.0
13C4 PFOS	Ave	0.7027	0.6835		2.32	2.39	-2.7	50.0
13C5 PFNA	Ave	0.9276	0.9361		2.52	2.50	0.9	50.0
13C8 FOSA	Ave	0.3786	0.3700		2.44	2.50	-2.3	50.0
M2-8:2 FTS	Ave	0.0155	0.0142		2.19	2.40	-8.4	40.0
13C2 PFDA	Ave	0.9902	1.011		2.55	2.50	2.1	50.0
d3-NMeFOSAA	Ave	0.4080	0.4236		2.60	2.50	3.8	50.0
d5-NEtFOSAA	Ave	0.3434	0.3302		2.40	2.50	-3.9	50.0
13C2 PFUnA	Ave	0.8697	0.8467		2.43	2.50	-2.6	50.0
13C2 PFDoA	Ave	0.9853	0.9934		2.52	2.50	0.8	50.0
13C2 PFTeDA	Ave	0.7441	0.7489		2.52	2.50	0.6	50.0
13C2 PFHxDA	Ave	0.6411	0.6634		2.59	2.50	3.5	50.0
13C8 PFOA	None				0.00000 0	2.45	-100.0*	50.0
13C8 PFOS	None				0.00000 0	2.39	-100.0*	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_010.d
 Lims ID: ICV Full
 Client ID:
 Sample Type: ICV
 Inject. Date: 08-Oct-2018 16:34:27 ALS Bottle#: 17 Worklist Smp#: 10
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist:
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:01:26 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK015

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:39:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.505	1.501	0.004	1.000	6127063	2.58			303	
D 1 13C4 PFBA										
217.00 > 172.00	1.505	1.501	0.004	0.538	6598095	2.48		99.1	8962	
D 3 13C5 PFPeA										
267.90 > 223.00	1.797	1.791	0.006	0.642	5960344	2.51		100	12113	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.793	0.004	1.000	5936717	2.45			557	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.839	1.834	0.005	1.000	7608774	2.27			3053	
298.90 > 99.00	1.839	1.834	0.005	1.000	2688370		2.83(1.35-4.05)		2176	
D 47 13C3 PFBS										
301.90 > 83.00	1.839	1.834	0.005	0.657	72765	2.24		96.4	478	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.053	0.005	1.119	1857552	2.35			5665	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.058	2.055	0.003	0.736	733850	2.24		96.0	1304	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.002	1.000	5475937	2.38			1067	
313.00 > 119.00	2.089	2.091	-0.002	1.000	395782		13.84(6.96-20.87)		747	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.002	0.746	6428620	2.51		100	10193	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.120	2.118	0.002	1.153	3794984	2.47			5481	
349.00 > 99.00	2.120	2.118	0.002	1.153	1715360		2.21(1.15-3.45)		2229	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.201	2.194	0.007	0.787	822489	2.58		103	2071	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.191	2.194	-0.003	0.995	1304540	2.35			758	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.429	-0.003	0.867	7766864	2.48		99.0	10885	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.431	-0.005	1.000	8233974	2.45			1448	
363.00 > 169.00	2.426	2.431	-0.005	1.000	1794655		4.59(2.17-6.52)		2924	
D 11 18O2 PFHxS										
403.00 > 84.00	2.452	2.444	0.008	0.876	4552700	2.33		98.7	6093	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.452	2.446	0.006	1.000	5224449	2.20			3129	
399.00 > 99.00	2.439	2.446	-0.007	0.995	1431869		3.65(1.90-5.70)		1622	
76 DONA										
377.00 > 251.00	2.478	2.476	0.002	0.781	13444301	2.52			19995	
377.00 > 85.00	2.478	2.476	0.002	0.781	5885370		2.28(0.00-0.00)		3669	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.767	2.771	-0.004	0.989	802895	2.33		97.9	1271	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.767	2.773	-0.006	1.000	1805505	2.49			2517	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	7966251	2.41			487	
413.00 > 169.00	2.798	2.800	-0.002	1.000	2877584		2.77(1.36-4.08)		2822	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.800	-0.002	1.000	7693347	2.62		105	7835	
* 62 13C2 PFOA										
415.00 > 370.00	2.798	2.800	-0.002		7292323	2.50			7890	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.805	-0.007	0.882	5085519	2.50			3551	
449.00 > 99.00	2.798	2.805	-0.007	0.882	1226223		4.15(1.84-5.53)		2037	
20 Perfluorononanoic acid										
463.00 > 419.00	3.172	3.179	-0.007	1.000	6784631	2.45			726	
463.00 > 169.00	3.172	3.179	-0.007	1.000	1204141		5.63(2.68-8.03)		1677	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.172	3.179	-0.007	1.000	5009798	2.33			2522	
499.00 > 99.00	3.172	3.179	-0.007	1.000	1197761		4.18(2.04-6.12)		2700	
D 19 13C5 PFNA										
468.00 > 423.00	3.172	3.179	-0.007	1.133	6826578	2.52		101	8812	
D 18 13C4 PFOS										
503.00 > 80.00	3.172	3.179	-0.007	1.133	4765026	2.32		97.3	3652	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.384	3.388	-0.004	1.067	5650584	2.47			3994	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.480	0.001	1.244	2698306	2.44		97.7	5654	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.481	3.485	-0.004	1.000	8677264	2.71			5935	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	1447142	2.34			3747	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.527	3.531	-0.004	1.112	3473515	2.72			3189	R
549.00 > 99.00	3.527	3.531	-0.004	1.112	566393		6.13(1.42-4.26)		2817	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	99429	2.19		91.6	450	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.539	0.003	1.266	7373989	2.55		102	7429	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.541	0.001	1.000	7742579	2.31			1120	
513.00 > 169.00	3.542	3.541	0.001	1.000	521866		14.84(7.12-21.35)		1315	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.693	0.004	1.321	3088848	2.60		104	1792	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.697	3.699	-0.002	1.000	3347353	2.66			1185	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.855	3.854	0.001	1.215	4526805	2.58			2360	
599.00 > 99.00	3.855	3.854	0.001	1.215	913872		4.95(2.14-6.43)		1529	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.855	3.861	-0.006	1.378	2407828	2.40		96.1	2960	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.870	3.873	-0.003	1.000	5598081	2.45			1139	
563.00 > 169.00	3.870	3.873	-0.003	1.000	498773		11.22(5.24-15.72)		1510	
D 30 13C2 PFUnA										
565.00 > 520.00	3.870	3.873	-0.003	1.383	6174203	2.43		97.4	7370	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.870	3.873	-0.003	1.004	2554766	2.95			3794	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.030	-0.007	1.268	6857711	2.54			8316	
D 36 13C2 PFDaA										
615.00 > 570.00	4.158	4.168	-0.010	1.486	7244202	2.52		101	8713	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.158	4.173	-0.015	1.179	1033207	2.62			1161	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.158	4.173	-0.015	1.000	7722775	2.62			1589	
613.00 > 169.00	4.158	4.173	-0.015	1.000	790383		9.77(4.68-14.05)		1152	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.404	4.410	-0.006	1.388	426325	2.39			538	
699.00 > 99.00	4.404	4.410	-0.006	1.388	792684		0.54(0.00-0.00)		1938	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.435	4.441	-0.006	1.067	6154535	2.77			2982	
663.00 > 169.00	4.435	4.441	-0.006	1.067	898409		6.85(3.09-9.27)		1654	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.676	4.686	-0.010	1.671	5461023	2.52		101	9494	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.676	4.686	-0.010	1.000	853973	2.45			1659	
713.00 > 219.00	4.676	4.686	-0.010	1.000	584157		1.46(0.70-2.09)		1717	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.108	5.115	-0.007	1.825	4837426	2.59		103	6114	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.108	5.118	-0.010	1.000	4637241	2.68			1194	
813.00 > 169.00	5.108	5.118	-0.010	1.000	781222		5.94(2.77-8.32)		1420	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.477	5.486	-0.009	1.072	2805278	2.55			1132	
913.00 > 169.00	5.477	5.486	-0.009	1.072	538577		5.21(2.55-7.64)		1506	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_010.d

Injection Date: 08-Oct-2018 16:34:27

Instrument ID: A9_NC

Lims ID: ICV Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

17

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor:

1.0000

Method: PFAS_A9_NC

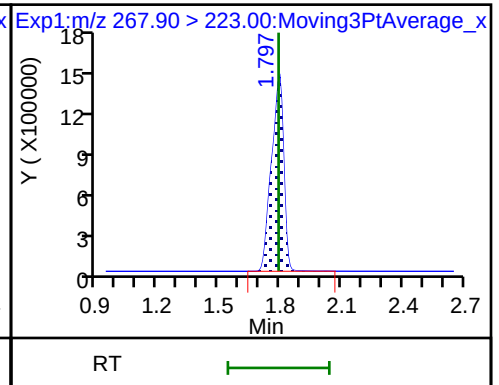
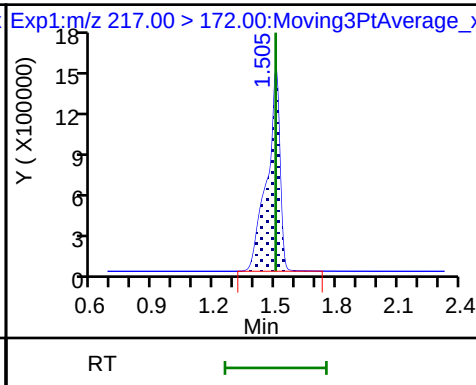
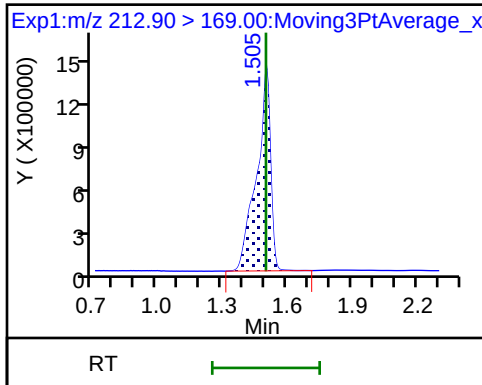
Limit Group:

LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

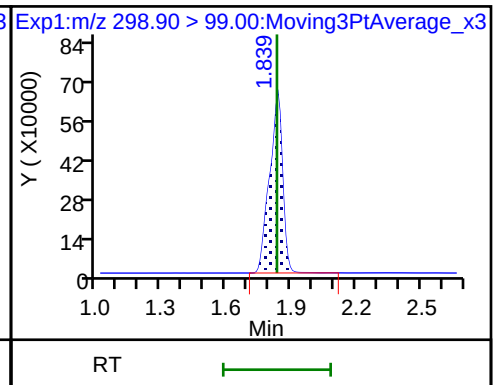
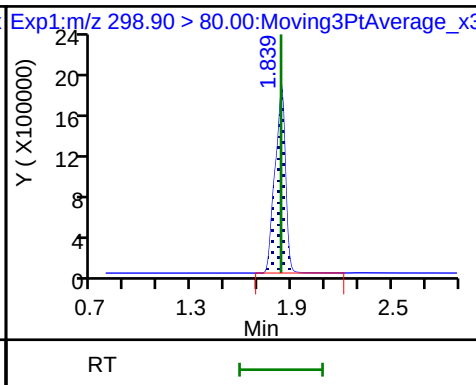
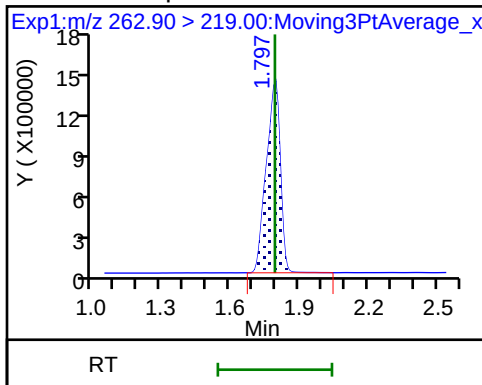
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

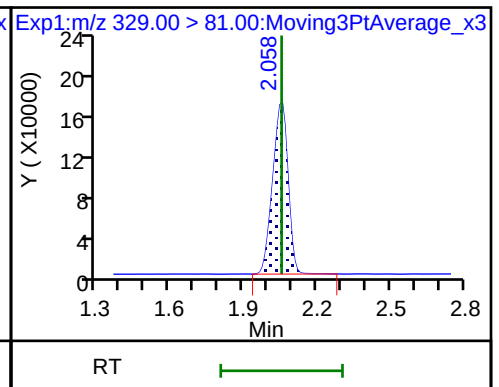
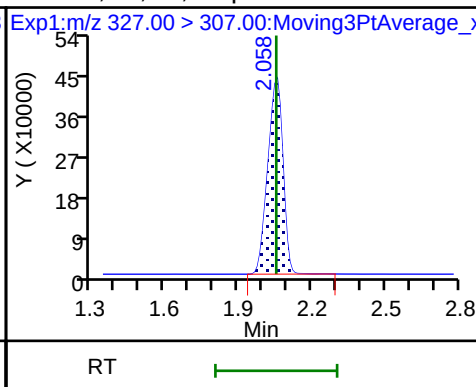
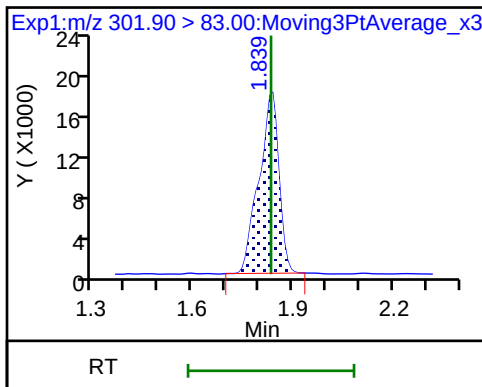
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

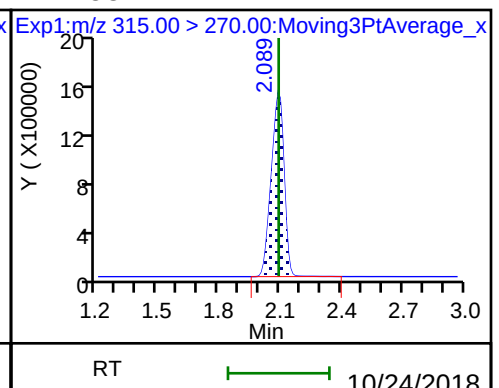
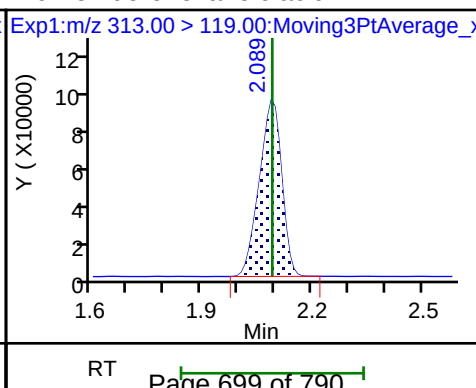
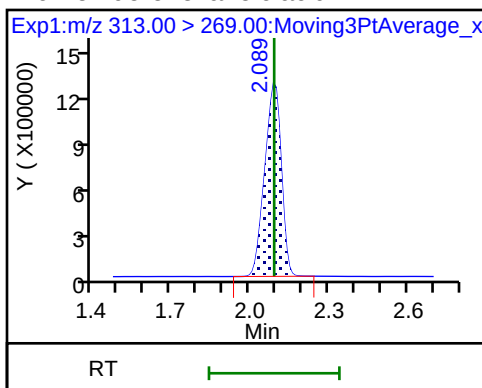
D 60 M2-4:2 FTS

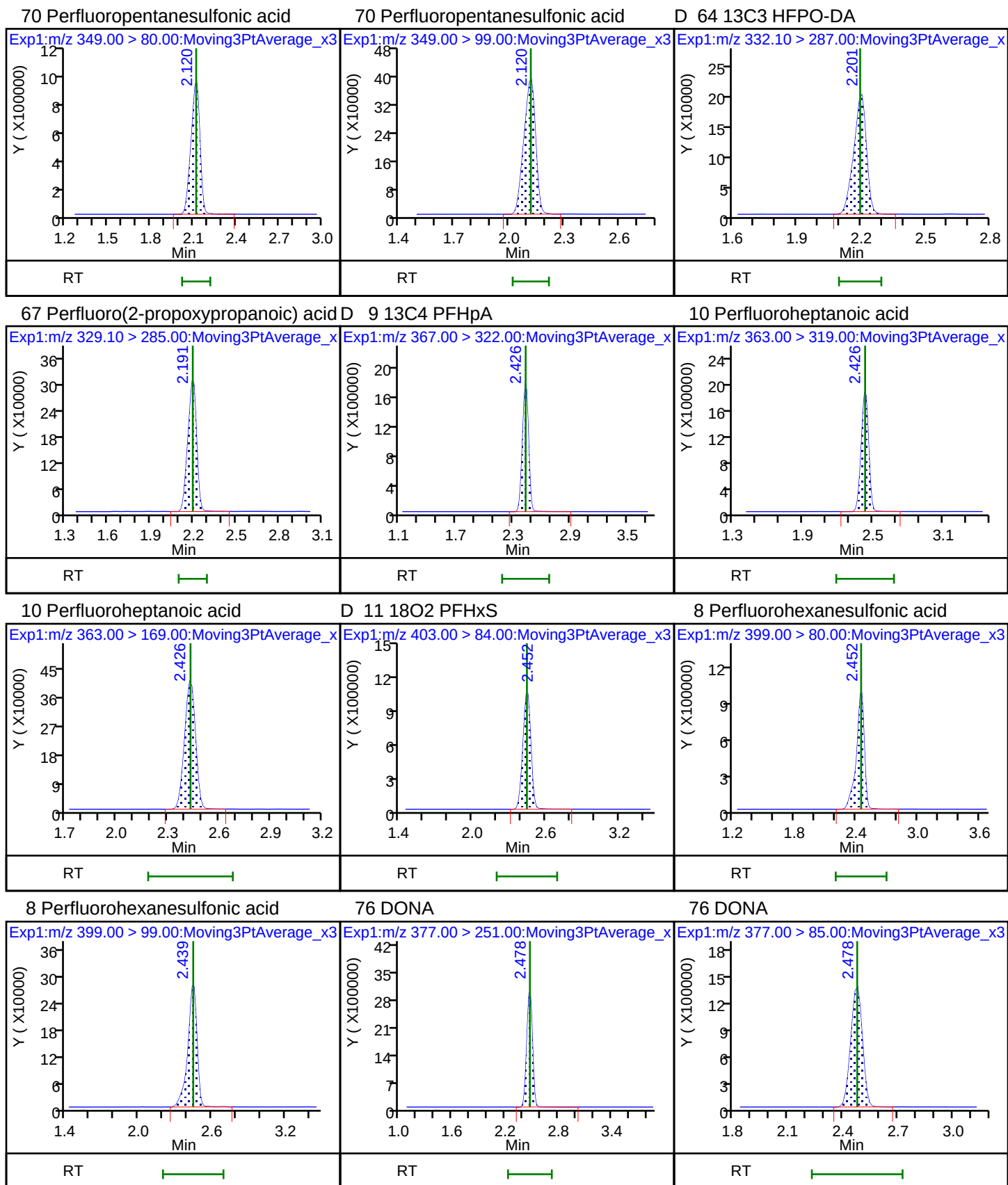


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

D 7 13C2 PFHxA

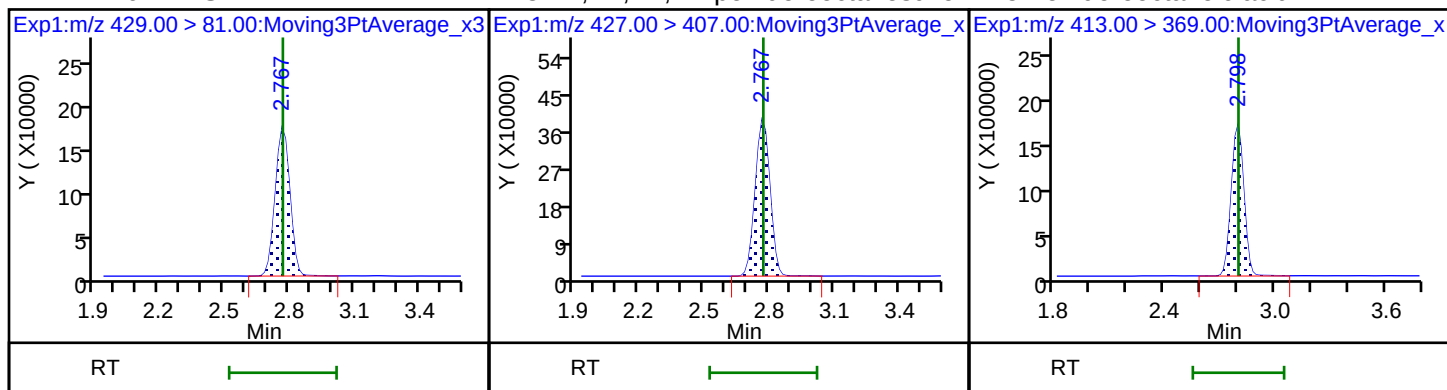




D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfo

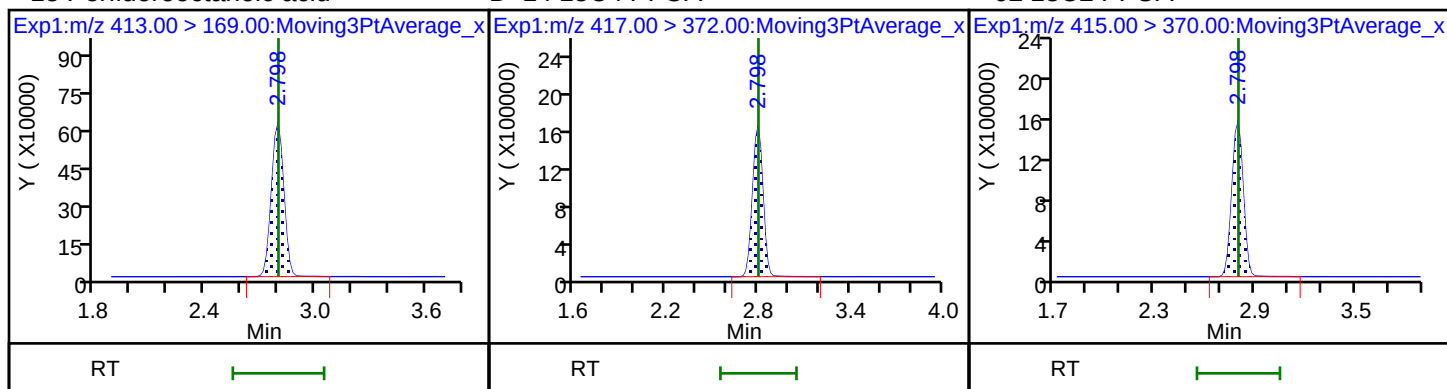
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

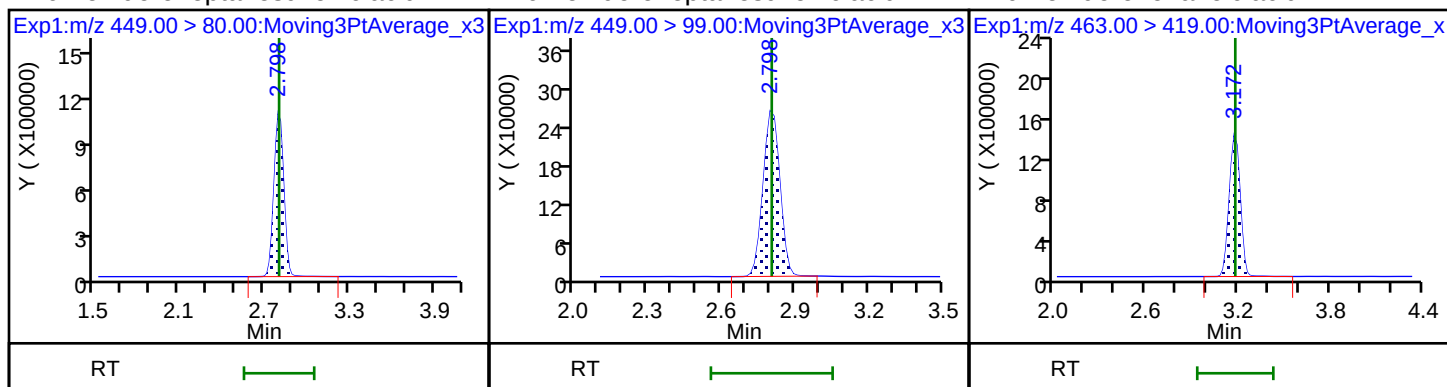
* 62 13C2 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

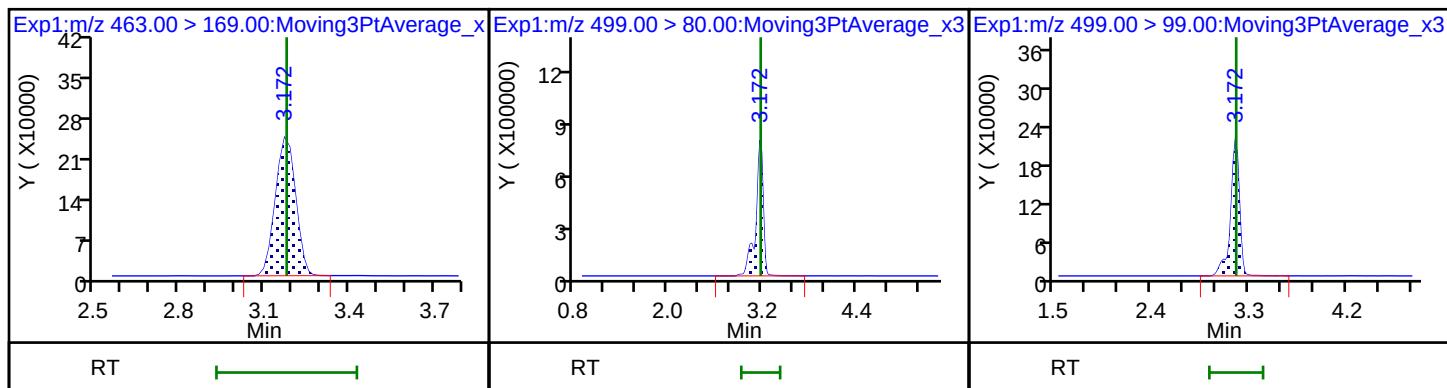
20 Perfluorononanoic acid



20 Perfluorononanoic acid

17 Perfluorooctanesulfonic acid

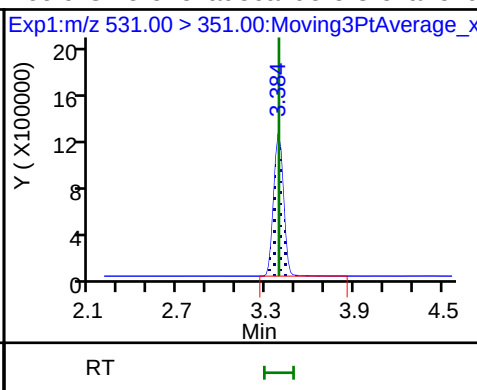
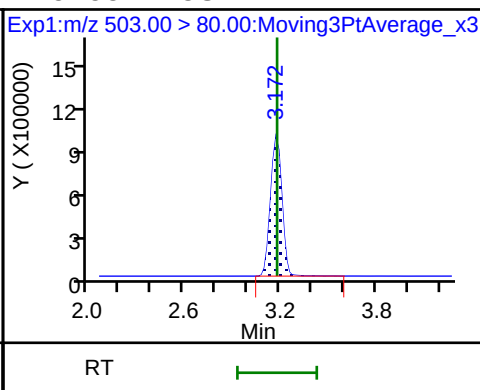
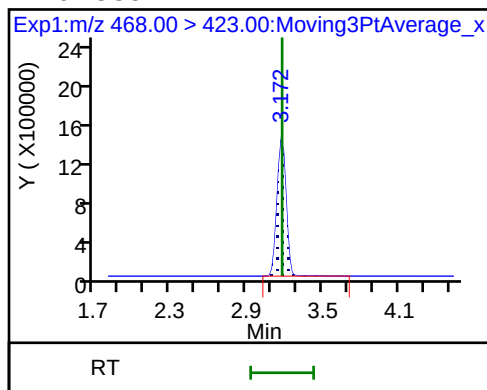
17 Perfluorooctanesulfonic acid



D 19 13C5 PFNA

D 18 13C4 PFOS

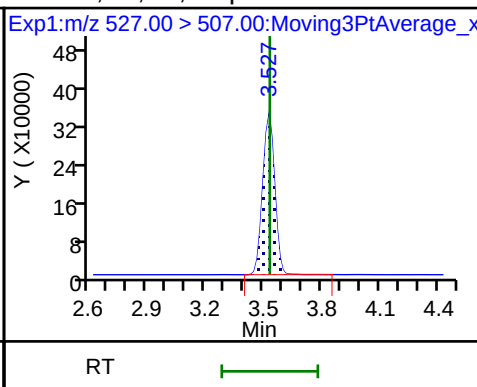
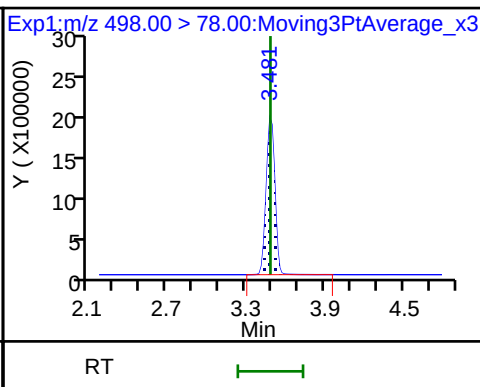
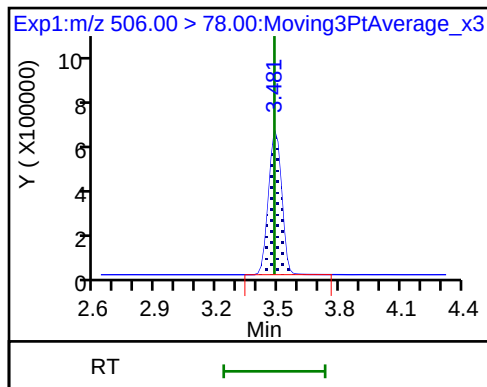
69 9-Chlorohexadecafluoro-3-oxanonane



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

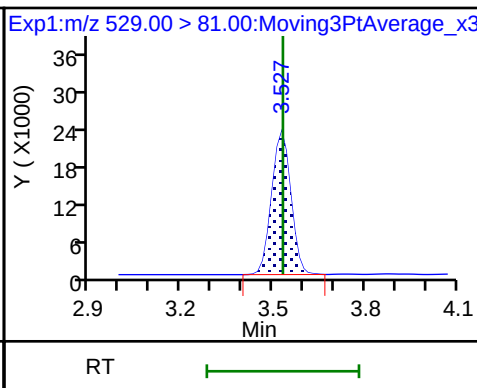
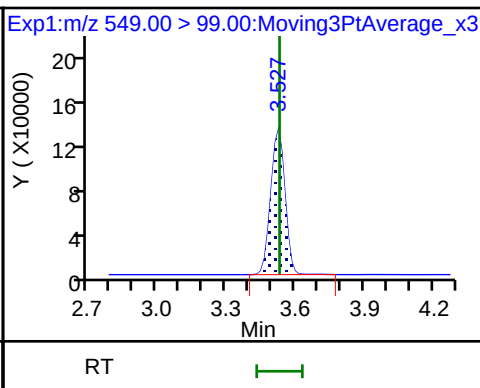
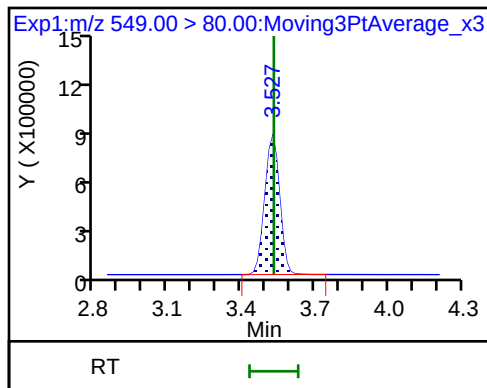
25 1H,1H,2H,2H-perfluorodecanesulfoni



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

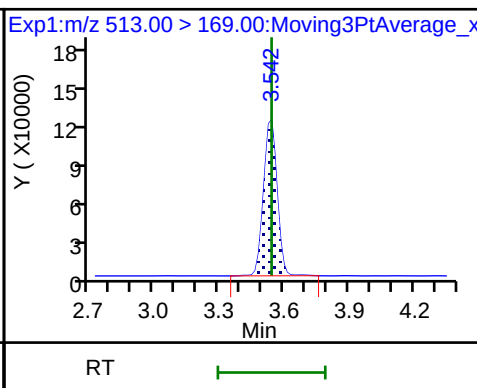
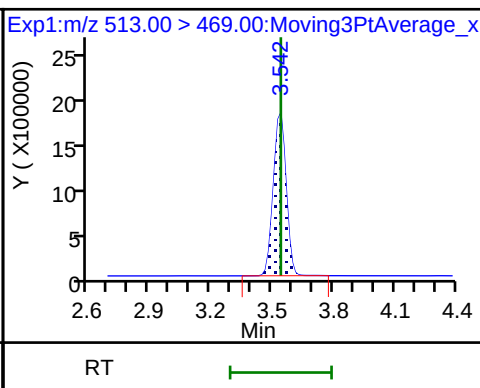
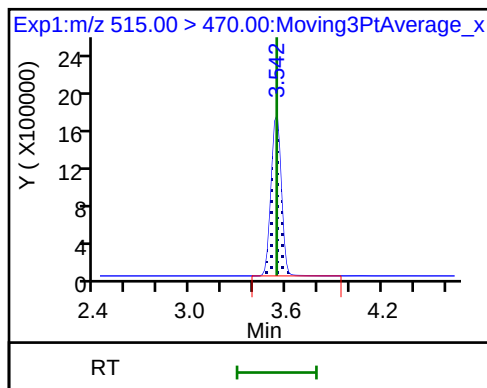
D 26 M2-8:2 FTS



D 23 13C2 PFDA

24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

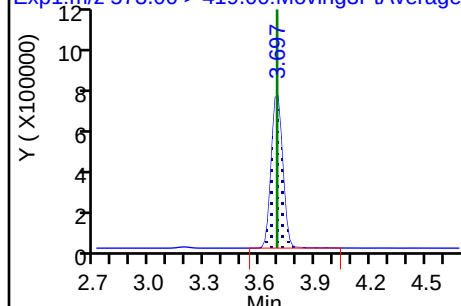


D 27 d3-NMeFOSAA

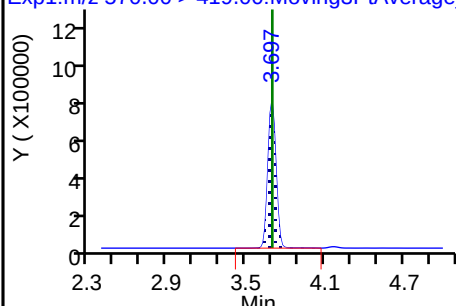
28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

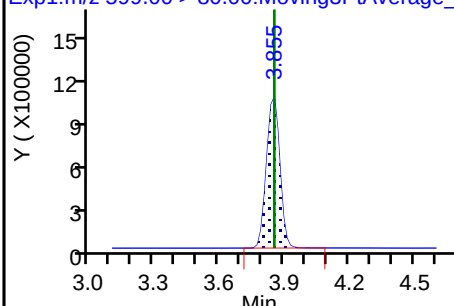
Exp1:m/z 573.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3

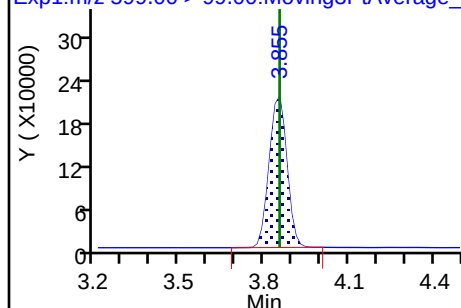


29 Perfluorodecanesulfonic acid

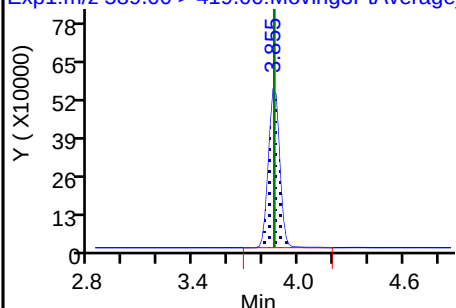
D 32 d5-NEtFOSAA

31 Perfluoroundecanoic acid

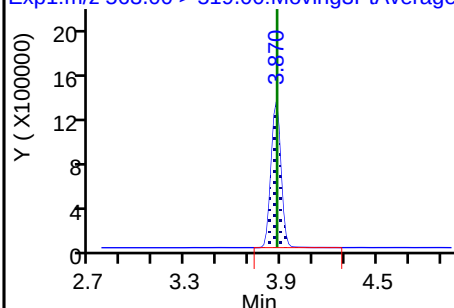
Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x

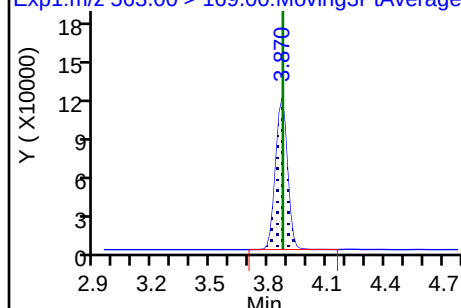


31 Perfluoroundecanoic acid

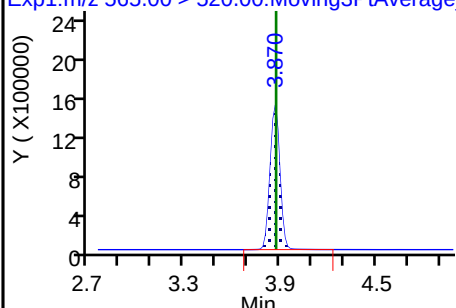
D 30 13C2 PFUnA

33 N-ethylperfluorooctanesulfonamidoa

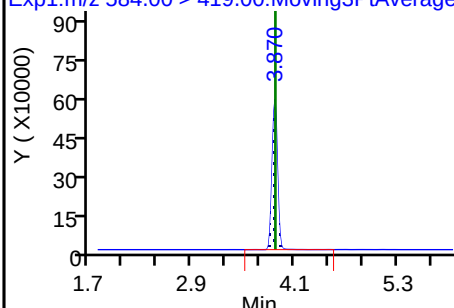
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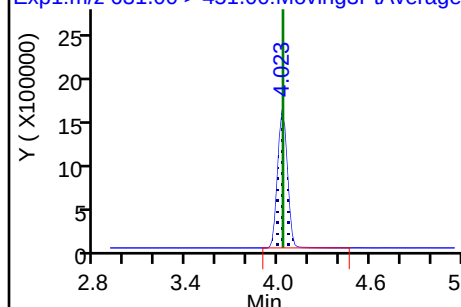


66 11-Chloroeicosafluoro-3-oxaundeca

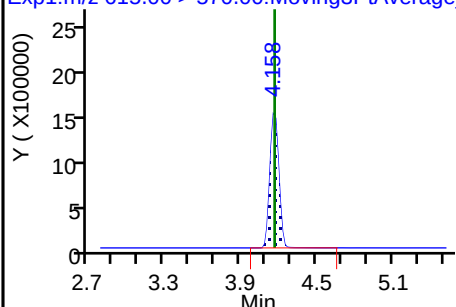
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo

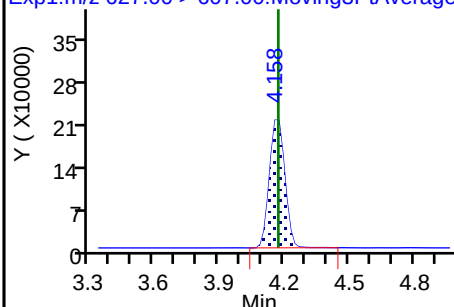
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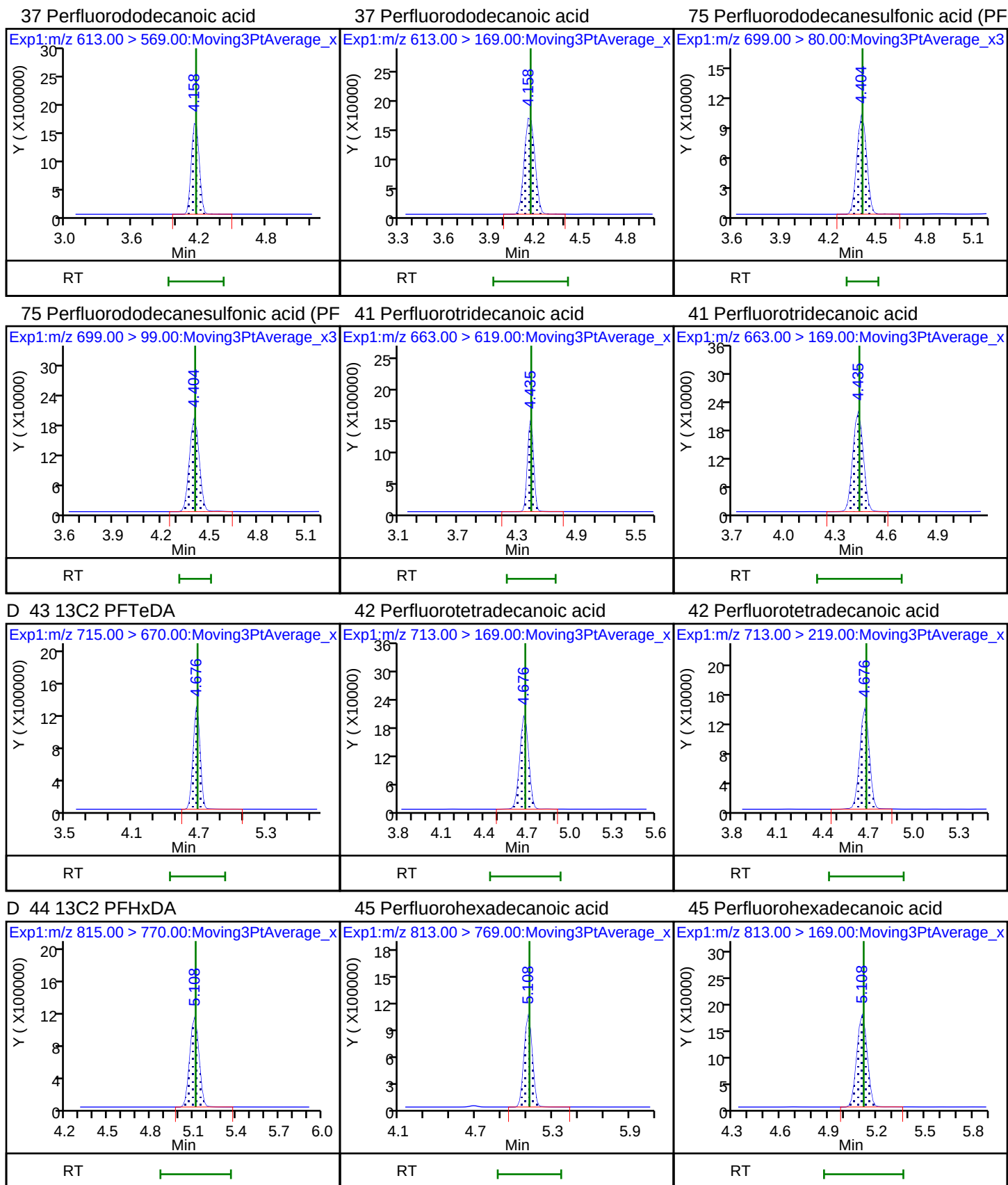


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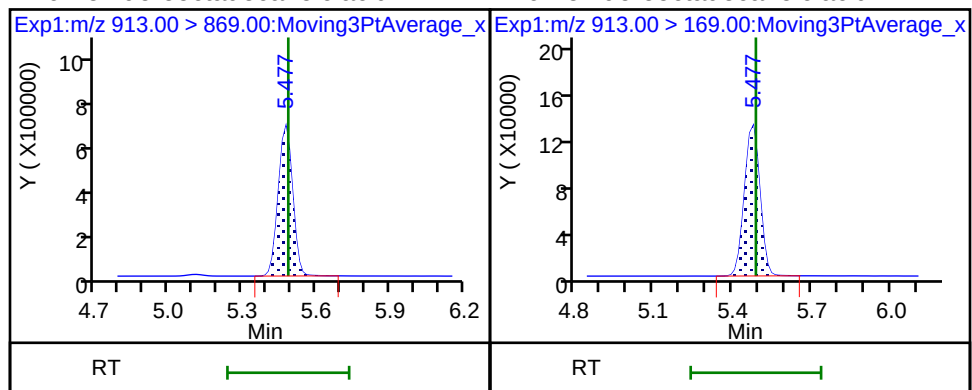
Exp1:m/z 627.00 > 607.00:Moving3PtAverage_x





46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCVL 320-251153/2 Calibration Date: 10/10/2018 08:37

Instrument ID: A9_NC Calib Start Date: 10/08/2018 15:34

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/08/2018 16:19

Lab File ID: 2018.10.09LLC_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.8990		0.0499	0.0500	-0.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.015	1.047		0.0516	0.0500	3.1	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	107.0	96.64		0.0399	0.0442	-9.7	50.0
4:2 FTS	AveID	25.29	23.76		0.439	0.467	-6.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8952	0.8809		0.0492	0.0500	-1.6	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.19	42.99		0.0410	0.0469	-12.6	50.0
HFPO-DA (GenX)	AveID	1.690	1.522		0.0450	0.0500	-9.9	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.081	1.038		0.0480	0.0500	-4.0	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.233	1.231		0.0454	0.0455	-0.2	50.0
DONA	AveID	2.679	2.568		0.0452	0.0471	-4.1	50.0
6:2 FTS	AveID	2.149	2.514		0.555	0.474	17.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.074	1.208		0.0563	0.0501	12.4	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.020	1.059		0.0494	0.0476	3.9	50.0
Perfluorononanoic acid (PFNA)	AveID	1.016	1.030		0.0507	0.0500	1.4	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	0.8841		0.0380	0.0464	-18.0	50.0
F-53B Major	AveID	1.146	1.001		0.0407	0.0466	-12.6	50.0
8:2 FTS	AveID	14.90	13.62		0.438	0.479	-8.6	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6395	0.5737		0.0431	0.0480	-10.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.016		0.0446	0.0500	-10.8	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	2.958		0.0498	0.0500	-0.4	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.019	0.9616		0.472	0.500	-5.6	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.8527		0.0467	0.0482	-3.1	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9005	0.8861		0.492	0.500	-1.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9249	0.9917		0.0536	0.0500	7.2	50.0
F-53B Minor	AveID	1.353	1.207		0.0420	0.0471	-10.8	50.0
10:2 FTS	AveID	9.483	7.722		0.0393	0.0482	-18.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	0.9626		0.0472	0.0500	-5.5	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0894	0.0723		0.0391	0.0484	-19.1	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7678	0.8675		0.0565	0.0500	13.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1464		0.0459	0.0500	-8.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.324		0.0472	0.0500	-5.7	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-251153/2 Calibration Date: 10/10/2018 08:37
 Instrument ID: A9_NC Calib Start Date: 10/08/2018 15:34
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/08/2018 16:19
 Lab File ID: 2018.10.09LLC_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5686	0.6648		0.0585	0.0500	16.9	50.0
13C4 PFBA	Ave	0.9129	0.8719		2.39	2.50	-4.5	50.0
13C5 PFPeA	Ave	0.8136	0.8093		2.49	2.50	-0.5	50.0
13C3 PFBS	Ave	0.0111	0.0110		2.29	2.33	-1.6	50.0
M2-4:2 FTS	Ave	0.1123	0.1025		2.13	2.34	-8.7	50.0
13C2 PFHxA	Ave	0.8780	0.8558		2.44	2.50	-2.5	50.0
13C3 HFPO-DA	Ave	0.1093	0.1266		2.90	2.50	15.8	50.0
13C4 PFHpA	Ave	1.076	1.107		2.57	2.50	2.9	50.0
18O2 PFHxS	Ave	0.6688	0.6979		2.47	2.37	4.4	50.0
M2-6:2 FTS	Ave	0.1183	0.1079		2.16	2.38	-8.9	50.0
13C4 PFOA	Ave	1.007	0.9472		2.35	2.50	-6.0	50.0
13C4 PFOS	Ave	0.7027	0.7426		2.53	2.39	5.7	50.0
13C5 PFNA	Ave	0.9276	0.9271		2.50	2.50	-0.0	50.0
M2-8:2 FTS	Ave	0.0155	0.0135		2.08	2.40	-13.0	50.0
13C2 PFDA	Ave	0.9902	0.9334		2.36	2.50	-5.7	50.0
13C8 FOSA	Ave	0.3786	0.3710		2.45	2.50	-2.0	50.0
d3-NMeFOSAA	Ave	0.4080	0.4040		2.48	2.50	-1.0	50.0
13C2 PFUnA	Ave	0.8697	0.8034		2.31	2.50	-7.6	50.0
d5-NEtFOSAA	Ave	0.3434	0.3545		2.58	2.50	3.2	50.0
13C2 PFDoA	Ave	0.9853	0.9451		2.40	2.50	-4.1	50.0
13C2 PFTeDA	Ave	0.7441	0.7533		2.53	2.50	1.2	50.0
13C2 PFHxDA	Ave	0.6411	0.6709		2.62	2.50	4.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 10-Oct-2018 08:37:12 ALS Bottle#: 21 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCVL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub3
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:07:54 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:23:13

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.489	1.484	0.005	0.544	6609131	2.39		95.5	5412	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.489	1.488	0.001	1.000	118826	0.0499		99.8	7.0	
D 3 13C5 PFPeA										
267.90 > 223.00	1.772	1.764	0.008	0.648	6134169	2.49		99.5	10975	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	128471	0.0516		103	15.1	
D 47 13C3 PFBS										
301.90 > 83.00	1.814	1.806	0.008	0.663	77201	2.29		98.4	545	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.814	0.0	1.000	141834	0.0399		90.3	40.9	
298.90 > 99.00	1.814	1.814	0.0	1.000	50612		2.80(1.35-4.05)		39.7	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.027	2.017	0.010	0.741	725803	2.13		91.3	1210	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	368468	0.4388		94.0	2464	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.058	2.058	0.0	1.000	114280	0.0492		98.4	29.9	
313.00 > 119.00	2.068	2.058	0.010	1.005	8419		13.57(6.96-20.87)		19.3	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.058	0.0	0.753	6486730	2.44		97.5	10009	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.088	0.001	1.152	66951	0.0410		87.4	140	
349.00 > 99.00	2.089	2.088	0.001	1.152	34676		1.93(1.15-3.45)		98.9	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.160	2.150	0.010	0.790	959327	2.90		116	2595	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	29204	0.0450		90.1	14.7	
D 9 13C4 PFHpA										
367.00 > 322.00	2.387	2.373	0.014	0.873	8388184	2.57		103	9566	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.386	0.001	1.000	174096	0.0480		96.0	34.9	
363.00 > 169.00	2.387	2.386	0.001	1.000	35869		4.85(2.17-6.52)		102	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.400	0.0	0.878	5004532	2.47		104	6915	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.412	-0.012	1.000	118541	0.0454		99.8	145	
399.00 > 99.00	2.400	2.412	-0.012	1.000	33243		3.57(1.90-5.70)		60.6	
76 DONA										
377.00 > 251.00	2.426	2.439	-0.013	0.778	272320	0.0452		95.9	1011	
377.00 > 85.00	2.426	2.439	-0.013	0.778	109714		2.48(0.00-0.00)		119	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.719	2.703	0.016	0.994	776710	2.16		91.1	1053	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.718	0.001	1.000	389704	0.5545		117	947	
D 14 13C4 PFOA										
417.00 > 372.00	2.735	2.735	0.0	1.000	7179462	2.35		94.0	4149	
* 62 13C2 PFOA										
415.00 > 370.00	2.735	2.750	-0.015		7579898	2.50			5649	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.735	2.750	-0.015	1.000	173560	0.0563		112	10.7	
413.00 > 169.00	2.735	2.750	-0.015	1.000	56795		3.06(1.36-4.08)		114	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.751	2.750	0.0	0.882	113520	0.0494		104	171	
449.00 > 99.00	2.751	2.750	0.0	0.882	27512		4.13(1.84-5.53)		103	
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.099	0.018	1.140	5380964	2.53		106	3174	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.099	0.018	1.140	7027473	2.50		100.0	3534	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.117	3.116	0.001	1.000	92362	0.0380		82.0	84.9	M
499.00 > 99.00	3.099	3.116	-0.017	0.994	25662		3.60(2.04-6.12)		59.9	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.116	0.001	1.000	144827	0.0507		101	16.0	
463.00 > 169.00	3.099	3.116	-0.017	0.994	26863		5.39(2.68-8.03)		78.5	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.318	3.334	-0.016	1.065	105040	0.0407		87.4	164	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.449	0.016	1.267	7075390	2.36		94.3	6026	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.449	3.449	0.0	1.261	98227	2.08		87.0	432	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.449	0.016	1.267	2811978	2.45		98.0	4617	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.449	3.465	-0.016	1.107	61999	0.0431		89.7	210	R
549.00 > 99.00	3.465	3.465	0.0	1.112	10150		6.11(1.42-4.26)		64.2	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.449	3.465	-0.016	1.000	267545	0.4378		91.4	841	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	166338	0.0498		99.6	413	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.480	-0.015	1.000	143745	0.0446		89.2	25.1	
513.00 > 169.00	3.465	3.480	-0.015	1.000	7750		18.55(7.12-21.35)		17.7	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.613	0.0	1.321	3062555	2.48		99.0	3774	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.627	3.627	0.0	1.004	588963	0.4718		94.4	230	
D 30 13C2 PFUnA										
565.00 > 520.00	3.792	3.776	0.016	1.387	6089934	2.31		92.4	5100	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.792	3.776	0.016	1.387	2686780	2.58		103	2921	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.776	3.791	-0.015	1.211	92539	0.0467		96.9	83.4	
599.00 > 99.00	3.776	3.791	-0.015	1.211	18386		5.03(2.14-6.43)		93.1	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.792	3.807	-0.015	1.000	476135	0.4920		98.4	762	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.792	3.807	-0.015	1.000	120791	0.0536		107	31.4	M
563.00 > 169.00	3.792	3.807	-0.015	1.000	8411		14.36(5.24-15.72)		36.7	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.960	-0.016	1.265	127961	0.0420		89.2	331	
D 36 13C2 PFDaA										
615.00 > 570.00	4.089	4.073	0.016	1.495	7163704	2.40		95.9	3524	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.089	4.089	0.0	1.186	15265	0.0393		81.4	33.6	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.089	4.089	0.0	1.000	137921	0.0472		94.5	35.3	
613.00 > 169.00	4.089	4.089	0.0	1.000	15191		9.08(4.68-14.05)		27.9	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.327	4.326	0.001	1.388	7883	0.0391		80.9	10.5	
699.00 > 99.00	4.327	4.326	0.001	1.388	16038		0.49(0.00-0.00)		49.6	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.342	4.357	-0.015	1.062	124293	0.0565		113	68.4	
663.00 > 169.00	4.357	4.357	0.0	1.066	16686		7.45(3.09-9.27)		50.6	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.679	5709525	2.53		101	9960	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.591	4.591	0.0	1.000	16713	0.0459		91.9	42.1	
713.00 > 219.00	4.573	4.591	-0.018	0.996	13462		1.24(0.70-2.09)		57.1	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.007	4.989	0.018	1.831	5085513	2.62		105	4998	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.007	5.007	0.0	1.000	134653	0.0472		94.3	56.3	
813.00 > 169.00	5.007	5.007	0.0	1.000	23107		5.83(2.77-8.32)		64.1	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.349	5.349	0.0	1.068	67612	0.0585		117	35.5	
913.00 > 169.00	5.349	5.349	0.0	1.068	11358		5.95(2.55-7.64)		81.2	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LLCCVL_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_005.d

Injection Date: 10-Oct-2018 08:37:12

Instrument ID: A9_NC

Lims ID: CCVL

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

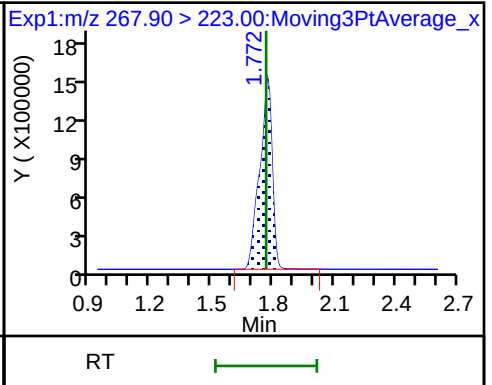
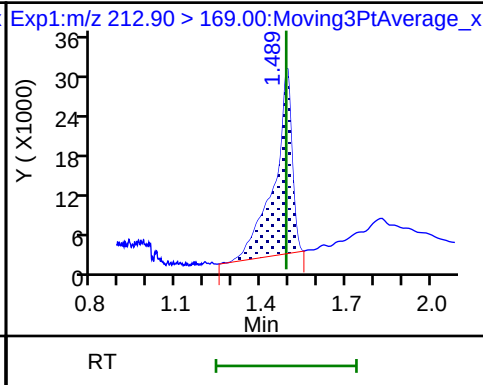
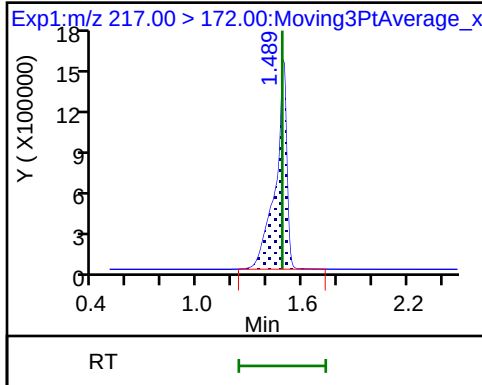
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

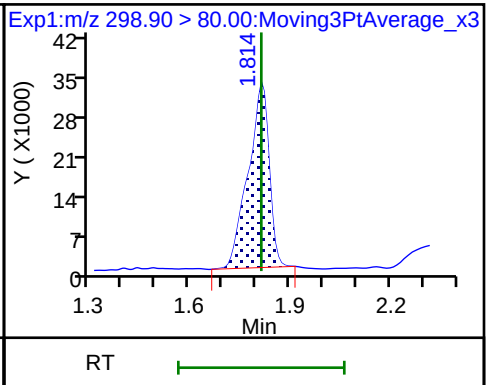
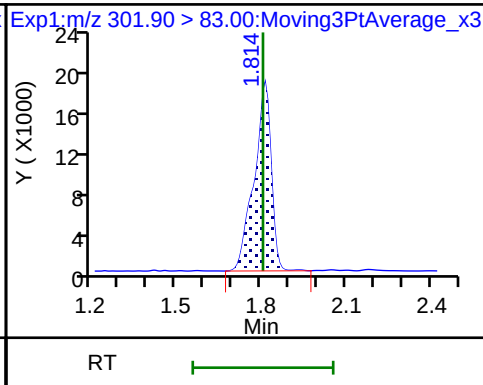
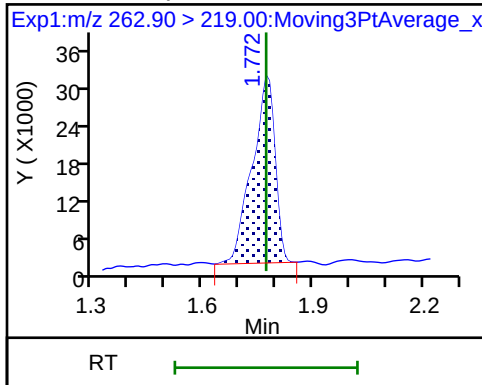
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

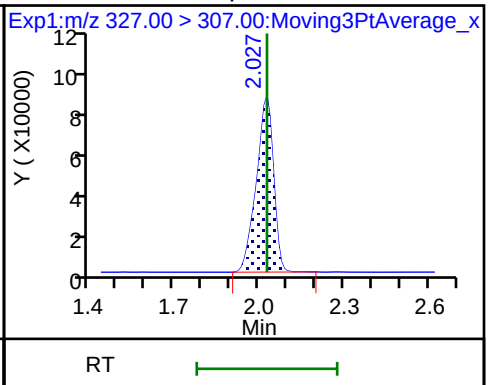
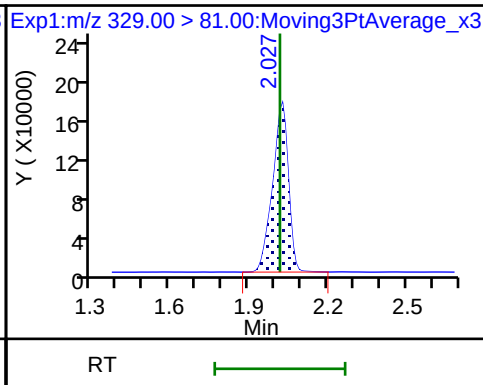
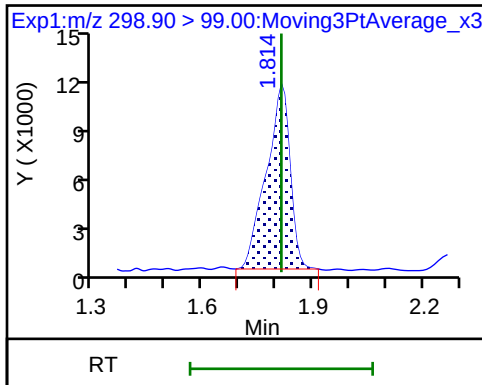
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

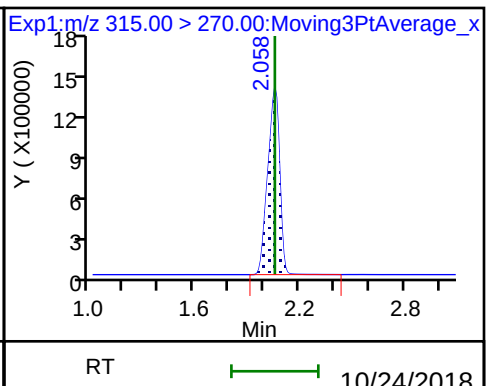
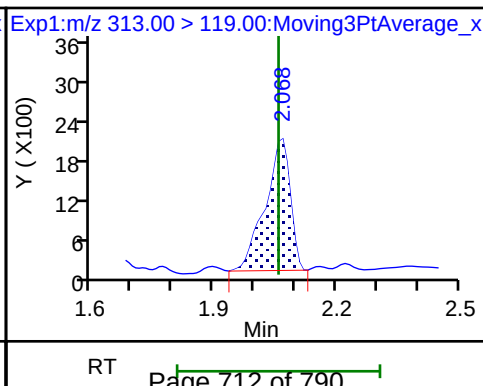
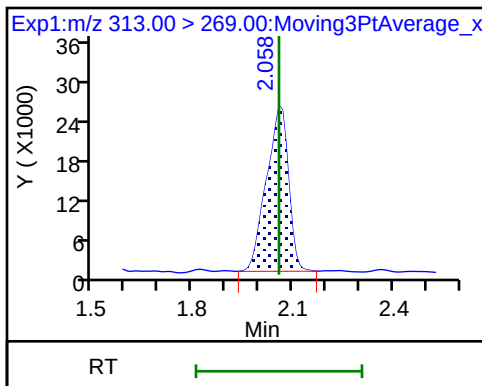
61 1H,1H,2H,2H-perfluorohexanesulfoni

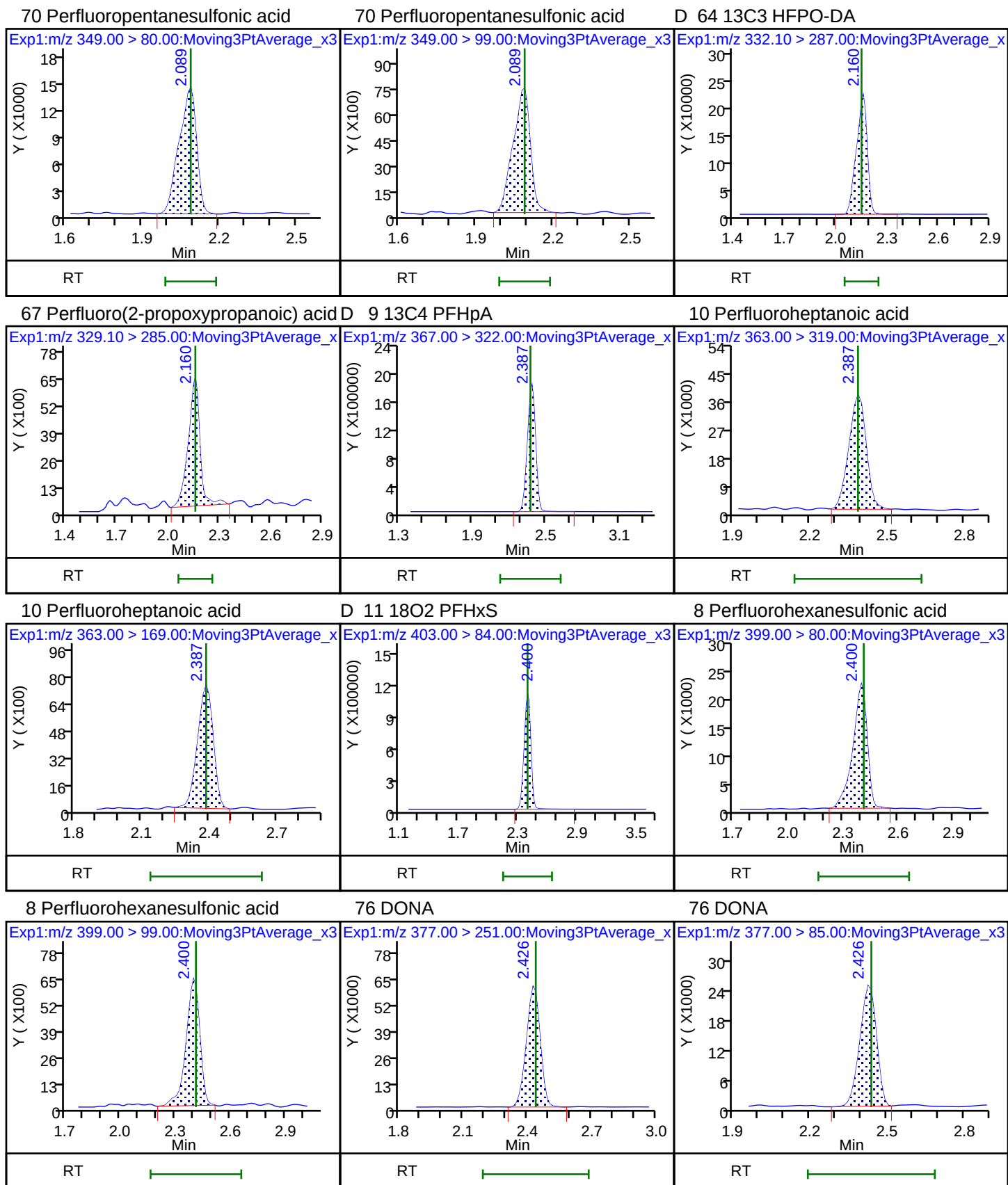


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

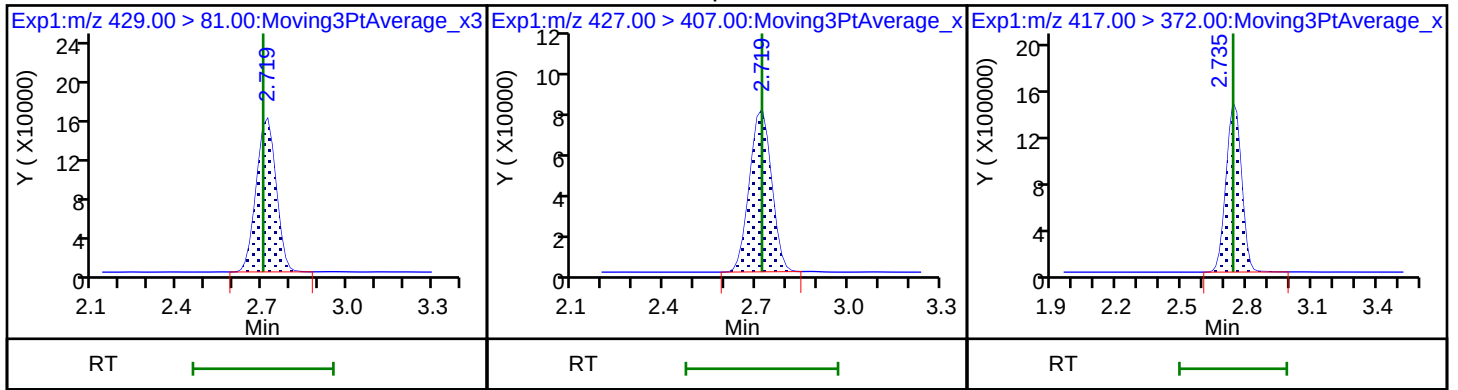
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

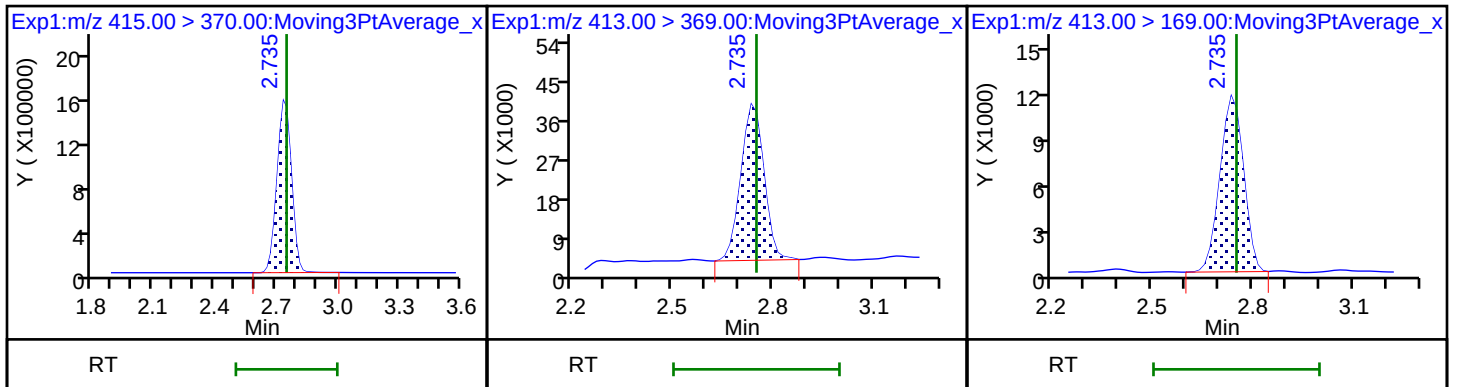
13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid

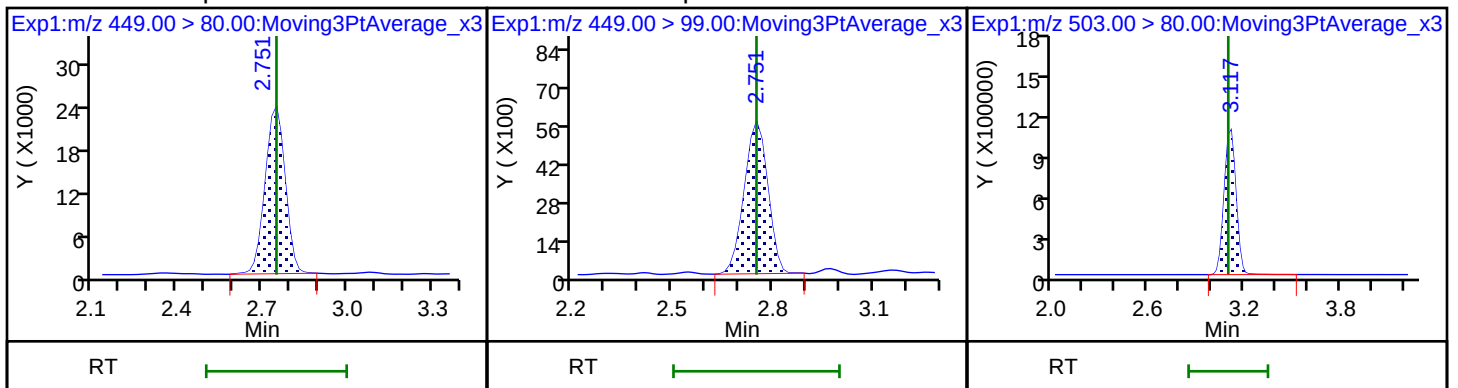
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

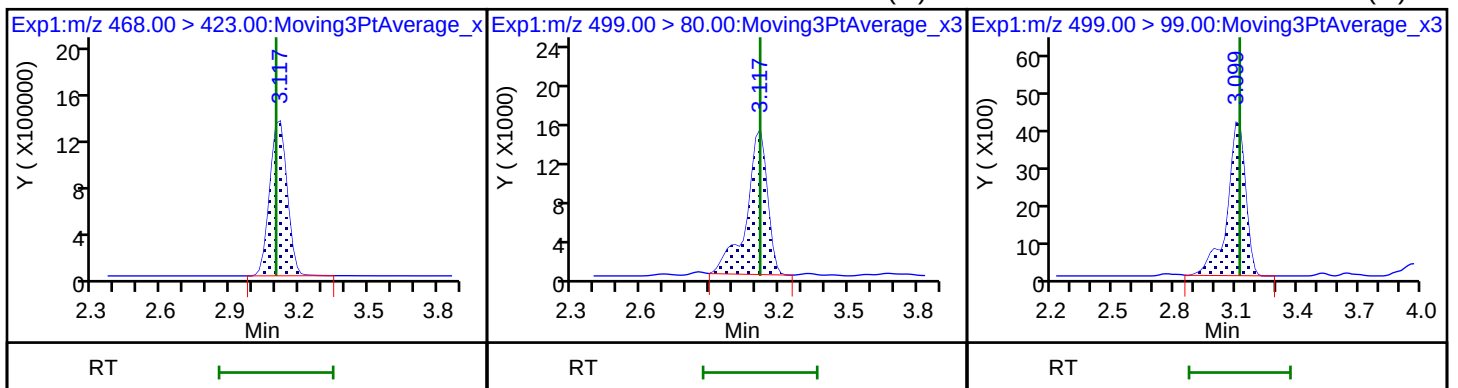
D 18 13C4 PFOS

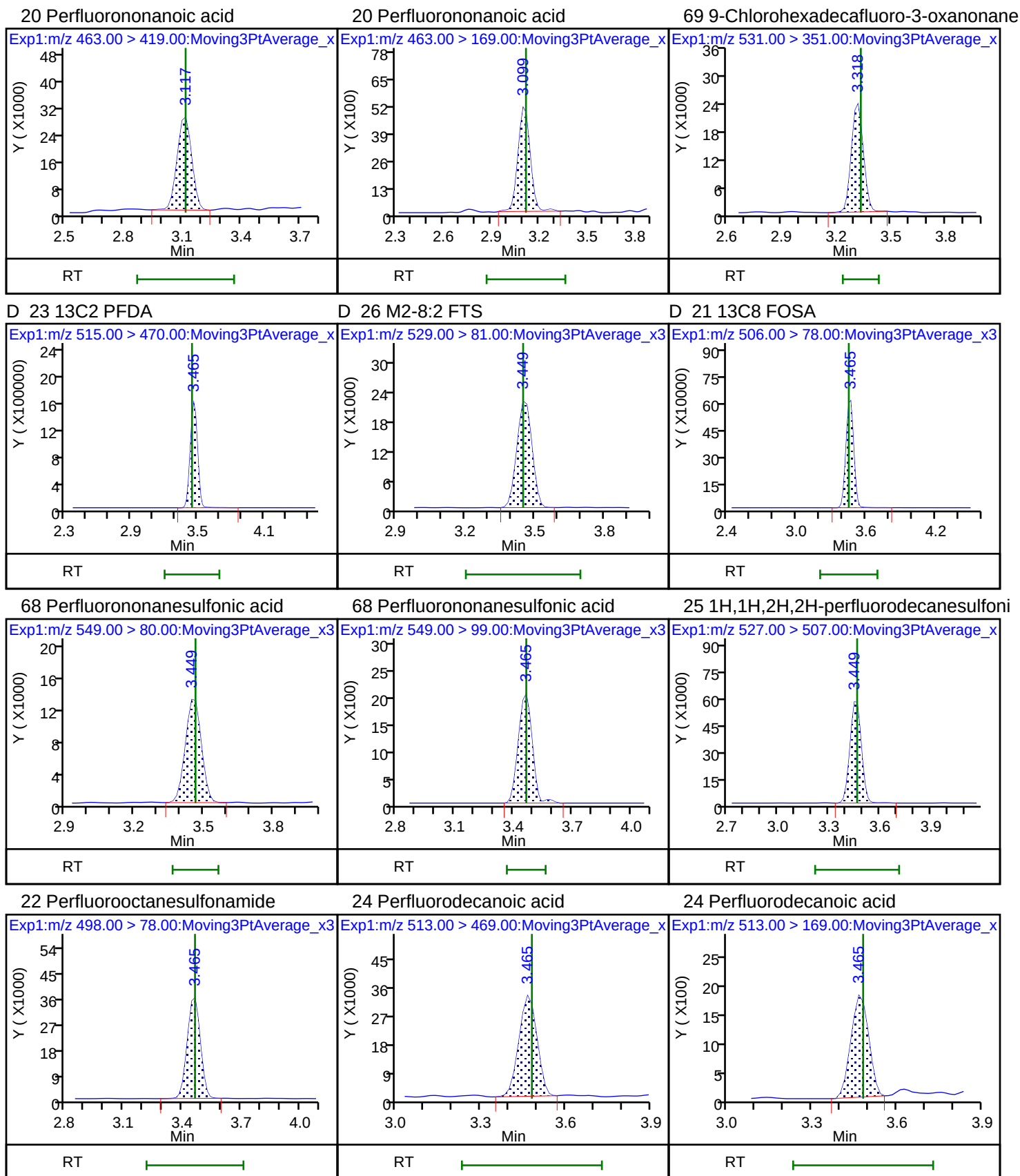


D 19 13C5 PFNA

17 Perfluorooctanesulfonic acid (M)

17 Perfluorooctanesulfonic acid (M)

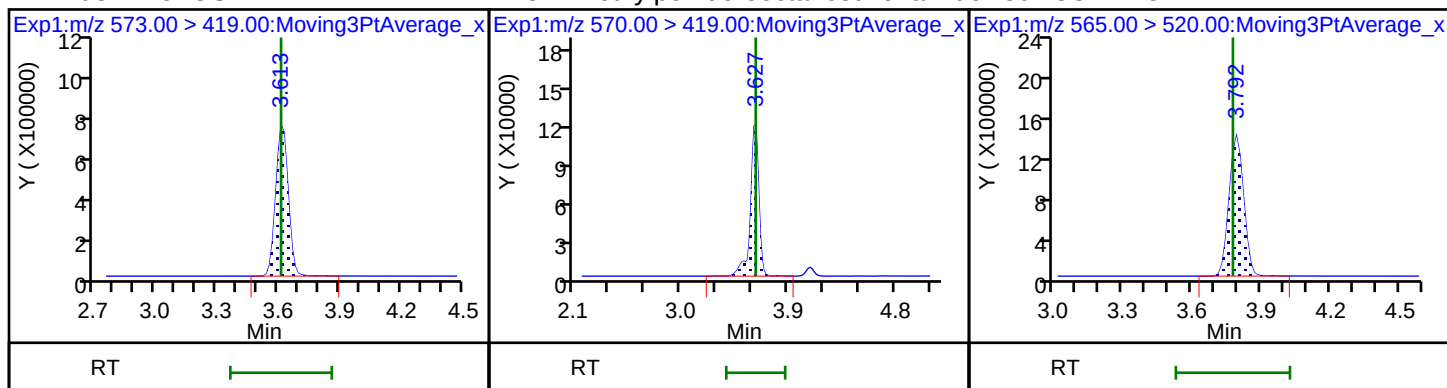




D 27 d3-NMeFOSAA

28 N-methylperfluorooctanesulfonamidD

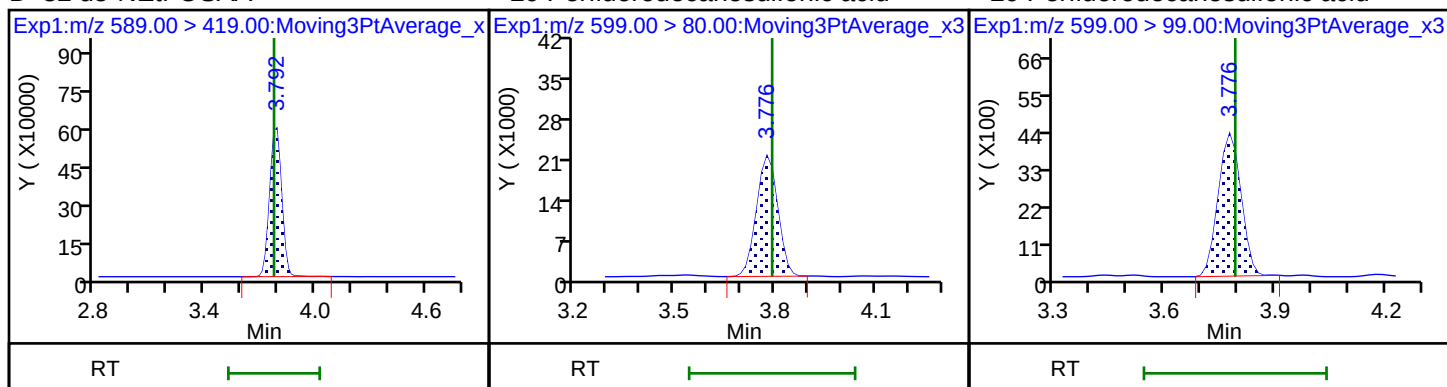
30 13C2 PFUnA



D 32 d5-NEtFOSAA

29 Perfluorodecanesulfonic acid

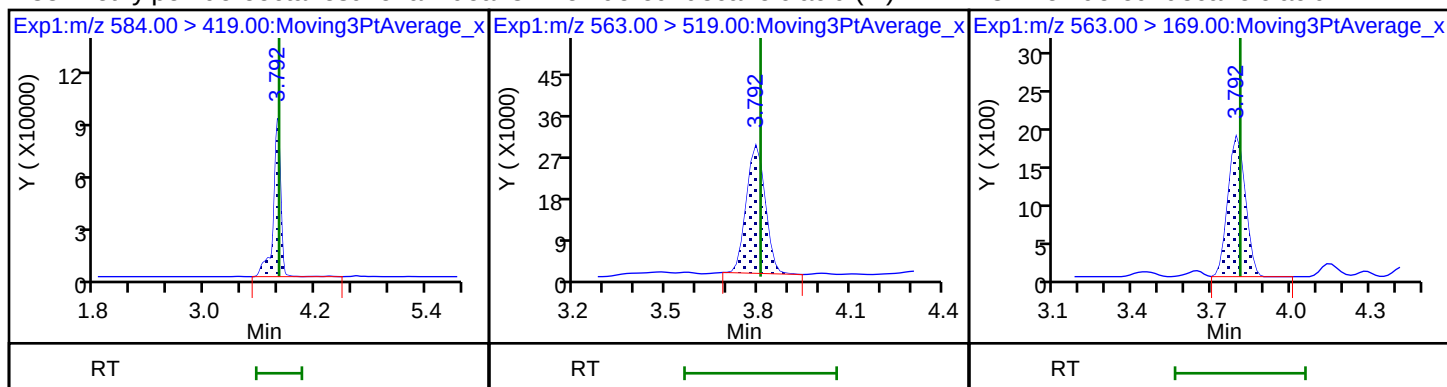
29 Perfluorodecanesulfonic acid



33 N-ethylperfluorooctanesulfonamidoa

31 Perfluoroundecanoic acid (M)

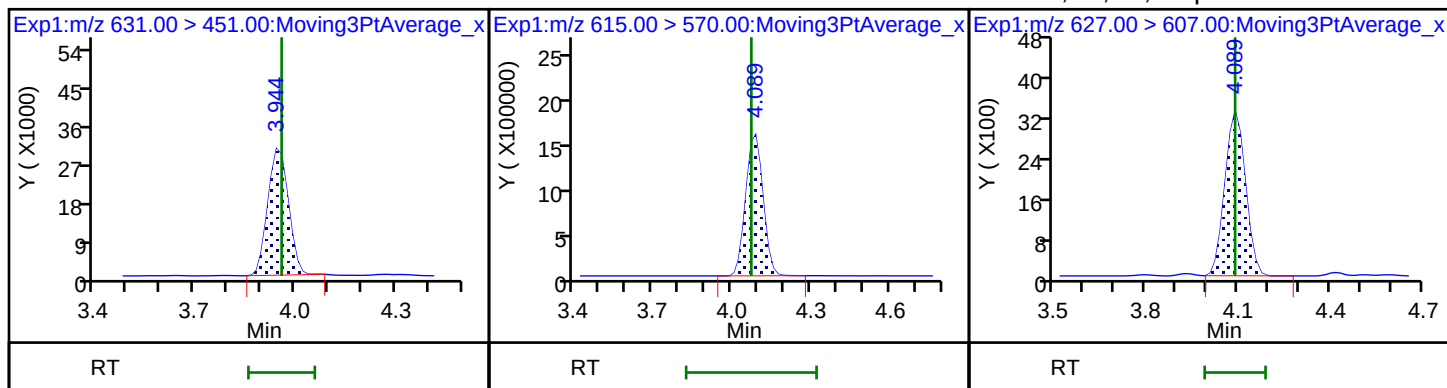
31 Perfluoroundecanoic acid

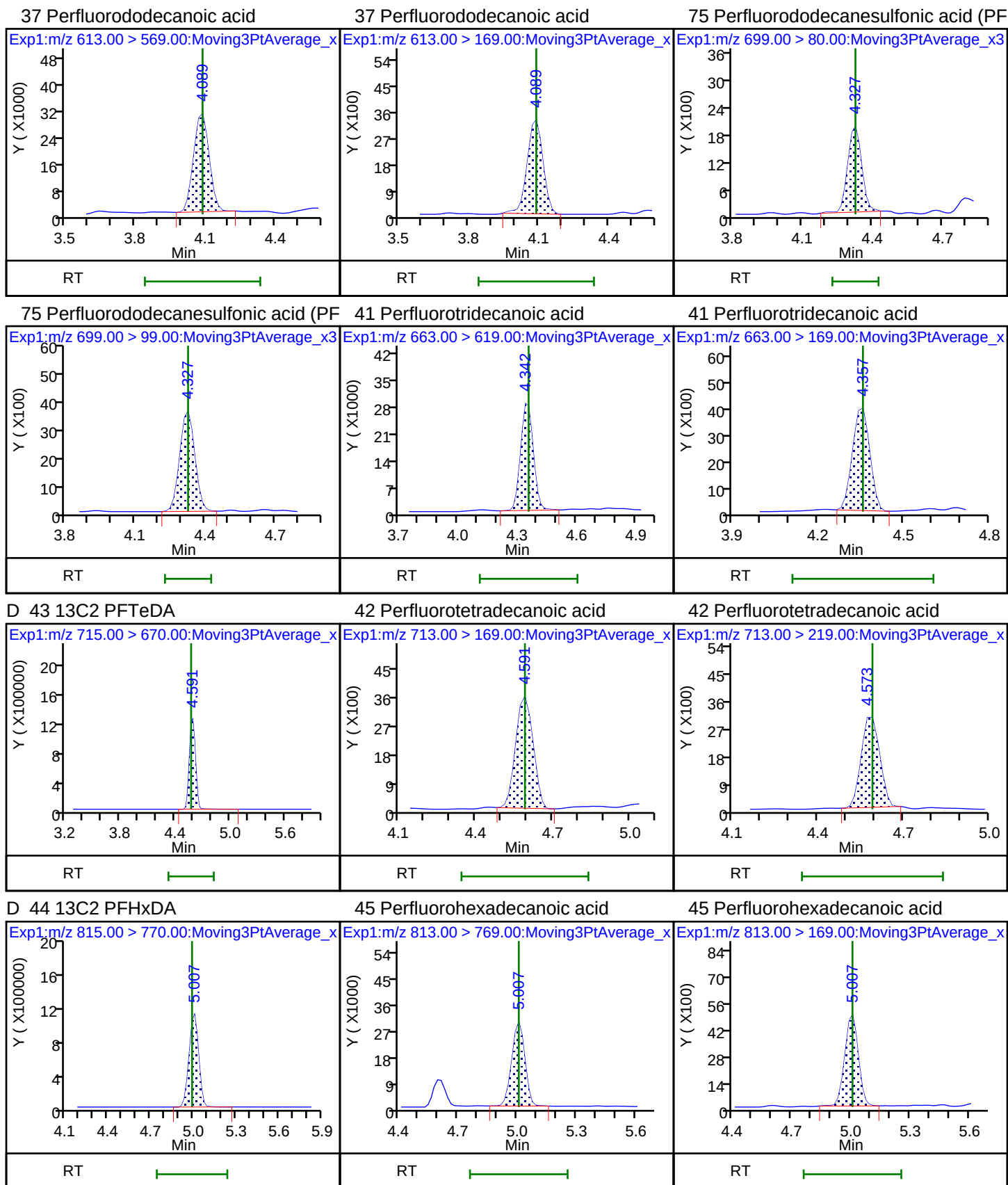


66 11-Chloroeicosafluoro-3-oxaundecaD

36 13C2 PFDaA

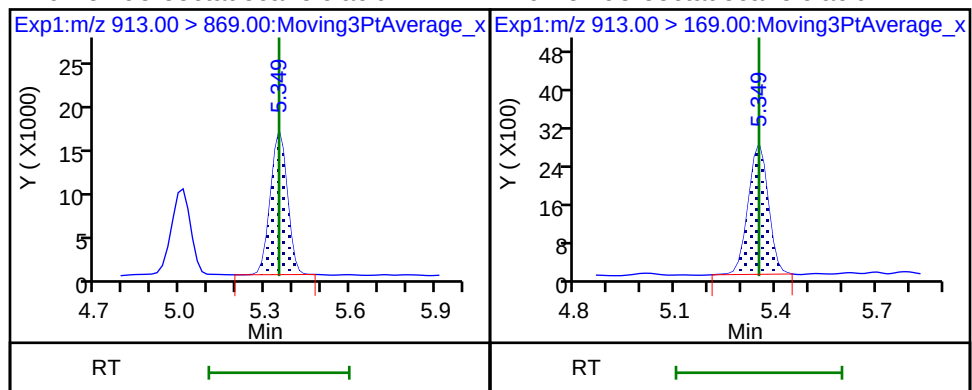
74 1H,1H,2H,2H-perfluorododecanesulfo





46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



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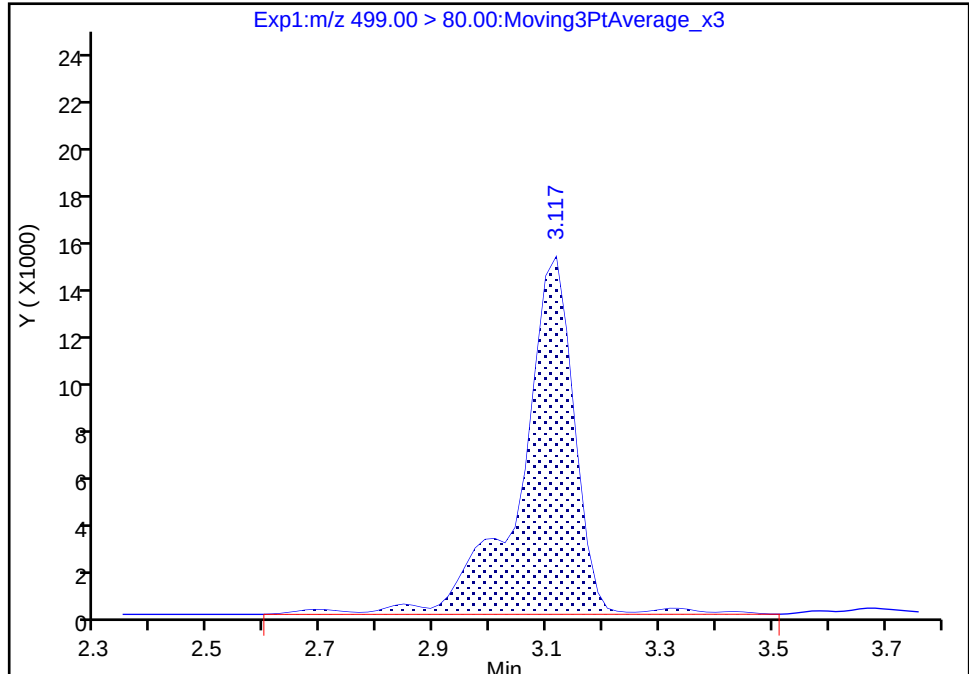
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Injection Date: 10-Oct-2018 08:37:12 Instrument ID: A9_NC
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

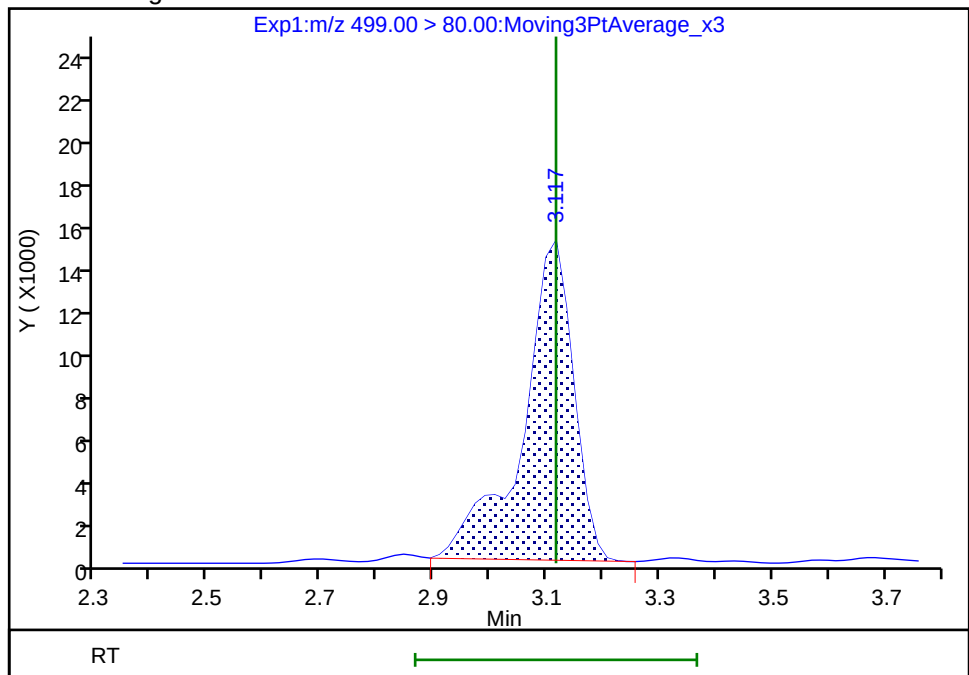
RT: 3.12
Area: 100445
Amount: 0.041355
Amount Units: ng/ml

Processing Integration Results



RT: 3.12
Area: 92362
Amount: 0.038027
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:22:54
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 719 of 790

10/24/2018

TestAmerica Sacramento

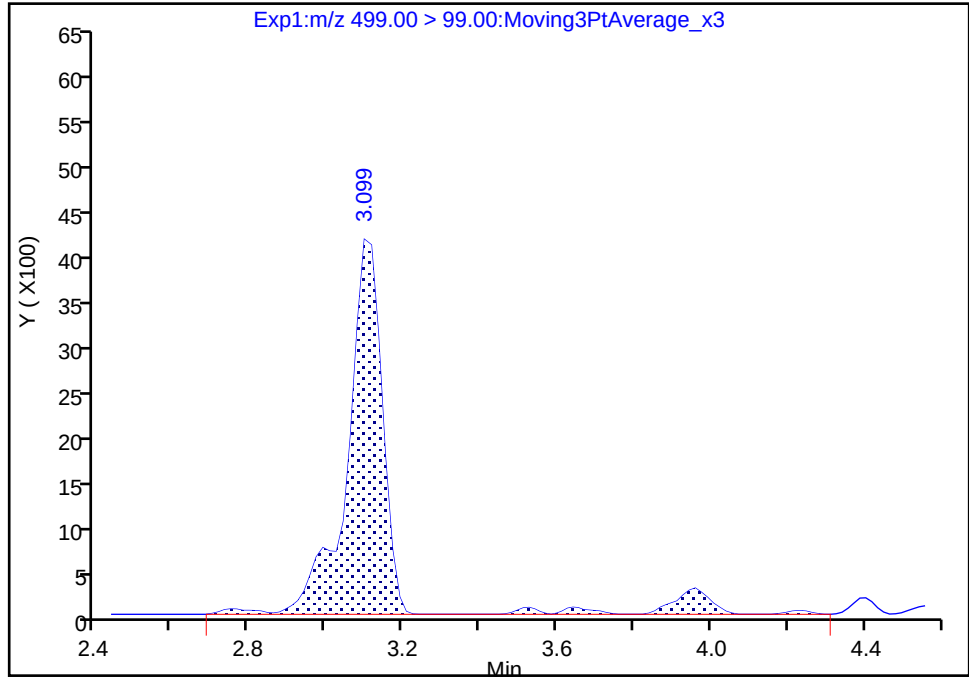
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Injection Date: 10-Oct-2018 08:37:12 Instrument ID: A9_NC
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

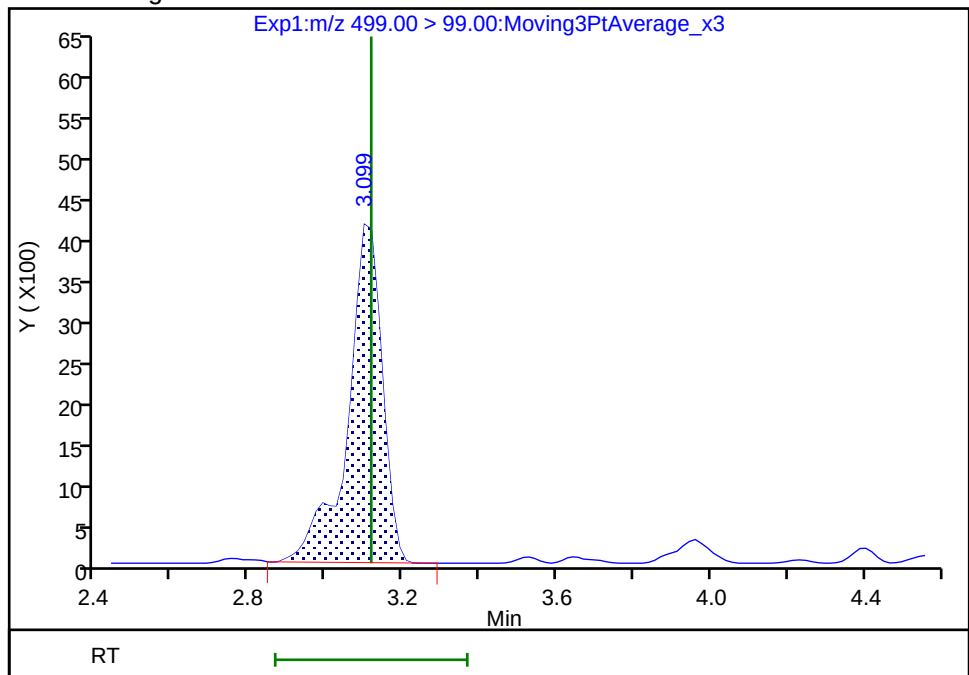
RT: 3.10
Area: 28862
Amount: 0.041355
Amount Units: ng/ml

Processing Integration Results



RT: 3.10
Area: 25662
Amount: 0.038027
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:22:56

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

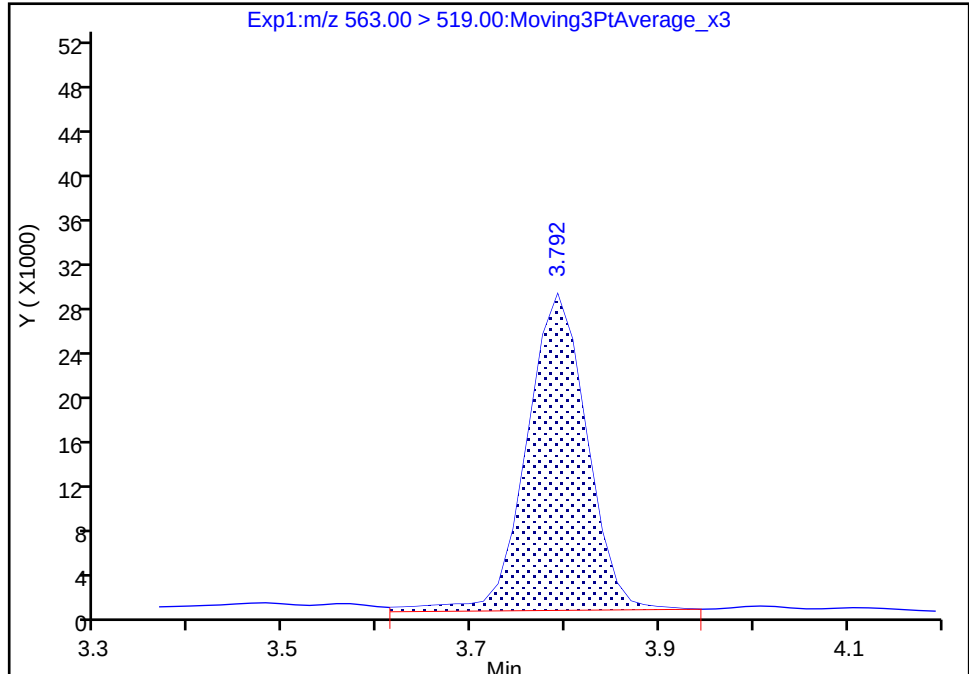
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Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9_NC Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

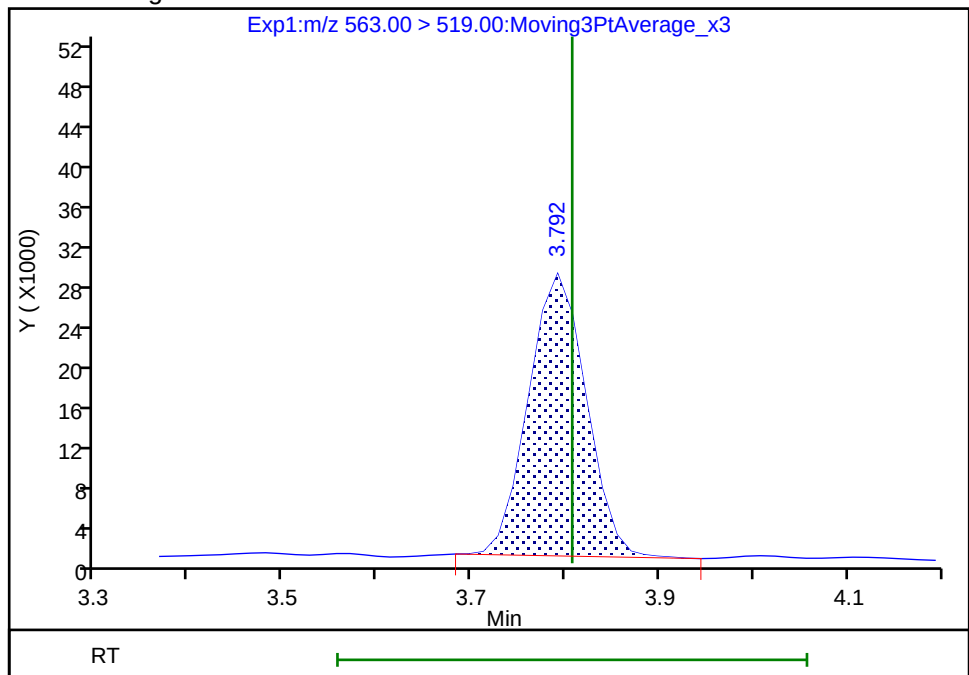
RT: 3.79
Area: 127938
Amount: 0.056783
Amount Units: ng/ml

Processing Integration Results



RT: 3.79
Area: 120791
Amount: 0.053611
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 11-Oct-2018 09:23:06
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 721 of 790

10/24/2018

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCV 320-251153/3 Calibration Date: 10/10/2018 08:44

Instrument ID: A9_NC Calib Start Date: 10/08/2018 15:34

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/08/2018 16:19

Lab File ID: 2018.10.09LLC_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9567		1.06	1.00	6.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.015	1.001		0.986	1.00	-1.4	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	107.0	105.9		0.875	0.884	-1.0	50.0
4:2 FTS	AveID	25.29	23.28		0.860	0.934	-7.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8952	0.8929		0.997	1.00	-0.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.19	48.08		0.917	0.938	-2.3	50.0
HFPO-DA (GenX)	AveID	1.690	1.343		0.794	1.00	-20.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.081	1.108		1.02	1.00	2.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.233	1.171		0.864	0.910	-5.1	40.0
DONA	AveID	2.679	2.958		1.04	0.942	10.4	50.0
6:2 FTS	AveID	2.149	2.335		1.03	0.948	8.7	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.074	1.088		1.01	1.00	1.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.020	1.018		0.950	0.952	-0.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.016	1.017		1.00	1.00	0.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	1.003		0.862	0.928	-7.1	40.0
F-53B Major	AveID	1.146	1.130		0.919	0.932	-1.4	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6395	0.6222		0.934	0.960	-2.7	50.0
8:2 FTS	AveID	14.90	14.80		0.952	0.958	-0.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.247		1.10	1.00	9.6	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.396		1.14	1.00	14.4	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.019	1.074		1.05	1.00	5.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.9068		0.994	0.964	3.1	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9005	0.8309		0.923	1.00	-7.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9249	0.9234		0.998	1.00	-0.2	40.0
F-53B Minor	AveID	1.353	1.333		0.928	0.942	-1.4	50.0
10:2 FTS	AveID	9.483	9.942		1.01	0.964	4.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	0.9655		0.948	1.00	-5.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0894	0.0868		0.939	0.968	-3.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7678	0.7637		0.995	1.00	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1582		0.993	1.00	-0.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9207		1.01	1.00	1.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCV 320-251153/3 Calibration Date: 10/10/2018 08:44
 Instrument ID: A9_NC Calib Start Date: 10/08/2018 15:34
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/08/2018 16:19
 Lab File ID: 2018.10.09LLC_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5686	0.6406		1.13	1.00	12.7	50.0
13C4 PFBA	Ave	0.9129	0.8983		2.46	2.50	-1.6	50.0
13C5 PFPeA	Ave	0.8136	0.8502		2.61	2.50	4.5	50.0
13C3 PFBS	Ave	0.0111	0.0119		2.48	2.33	6.8	50.0
M2-4:2 FTS	Ave	0.1123	0.1037		2.16	2.34	-7.7	50.0
13C2 PFHxA	Ave	0.8780	0.9077		2.58	2.50	3.4	50.0
13C3 HFPO-DA	Ave	0.1093	0.1424		3.26	2.50	30.4	50.0
13C4 PFHpA	Ave	1.076	1.101		2.56	2.50	2.4	50.0
18O2 PFHxS	Ave	0.6688	0.7080		2.50	2.37	5.9	50.0
M2-6:2 FTS	Ave	0.1183	0.1065		2.14	2.38	-10.0	40.0
13C4 PFOA	Ave	1.007	1.028		2.55	2.50	2.1	50.0
13C4 PFOS	Ave	0.7027	0.7303		2.48	2.39	3.9	50.0
13C5 PFNA	Ave	0.9276	0.9807		2.64	2.50	5.7	50.0
M2-8:2 FTS	Ave	0.0155	0.0136		2.10	2.40	-12.3	40.0
13C2 PFDA	Ave	0.9902	0.9679		2.44	2.50	-2.3	50.0
13C8 FOSA	Ave	0.3786	0.3842		2.54	2.50	1.5	50.0
d3-NMeFOSAA	Ave	0.4080	0.3968		2.43	2.50	-2.8	50.0
13C2 PFUnA	Ave	0.8697	0.8217		2.36	2.50	-5.5	50.0
d5-NEtFOSAA	Ave	0.3434	0.3632		2.64	2.50	5.8	50.0
13C2 PFDoA	Ave	0.9853	1.042		2.64	2.50	5.8	50.0
13C2 PFTeDA	Ave	0.7441	0.8259		2.78	2.50	11.0	50.0
13C2 PFHxDA	Ave	0.6411	0.7523		2.93	2.50	17.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_006.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 10-Oct-2018 08:44:40 ALS Bottle#: 30 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:07:59 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:24:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.489	1.484	0.005	0.544	6310137	2.46		98.4	6486	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.489	1.489	0.0	1.000	2414638	1.06		106	140	
D 3 13C5 PFPeA										
267.90 > 223.00	1.772	1.764	0.008	0.648	5971962	2.61		104	13251	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	2392077	0.9862		98.6	283	
D 47 13C3 PFBS										
301.90 > 83.00	1.814	1.806	0.008	0.663	77647	2.48		107	566	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.814	0.0	1.000	3126499	0.8752		99.0	793	
298.90 > 99.00	1.814	1.814	0.0	1.000	1053339		2.97(1.35-4.05)		778	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.027	2.017	0.010	0.741	680083	2.16		92.3	1241	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	726277	0.8600		92.1	4291	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.058	2.058	0.0	1.000	2277464	1.00		99.7	547	
313.00 > 119.00	2.058	2.058	0.0	1.000	183105		12.44(6.96-20.87)		493	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.058	0.0	0.753	6376376	2.58		103	10836	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.078	2.078	0.0	1.146	1506026	0.9168		97.7	2329	
349.00 > 99.00	2.078	2.078	0.0	1.146	686315		2.19(1.15-3.45)		1246	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.150	2.150	0.0	0.786	1000451	3.26		130	2313	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.005	537319	0.7944		79.4	292	
D 9 13C4 PFHpA										
367.00 > 322.00	2.386	2.373	0.013	0.873	7735959	2.56		102	6107	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.386	2.386	0.0	1.000	3427621	1.02		102	708	
363.00 > 169.00	2.386	2.386	0.0	1.000	741143		4.62(2.17-6.52)		1557	
D 11 18O2 PFHxS										
403.00 > 84.00	2.399	2.400	-0.001	0.877	4705021	2.50		106	5519	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.399	2.399	0.0	1.000	2119687	0.8638		94.9	1758	
399.00 > 99.00	2.399	2.399	0.0	1.000	562988		3.77(1.90-5.70)		768	
76 DONA										
377.00 > 251.00	2.426	2.426	0.0	0.778	5717025	1.04		110	10083	
377.00 > 85.00	2.426	2.426	0.0	0.778	2422039		2.36(0.00-0.00)		2147	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.718	2.703	0.015	0.994	710734	2.14		90.0	996	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.718	2.718	0.0	1.000	662399	1.03		109	1916	
D 14 13C4 PFOA										
417.00 > 372.00	2.734	2.735	-0.001	1.000	7220733	2.55		102	5946	
* 62 13C2 PFOA										
415.00 > 370.00	2.734	2.734	0.0		7024517	2.50			5482	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.734	2.734	0.0	1.000	3146708	1.01		101	187	
413.00 > 169.00	2.734	2.734	0.0	1.000	1071712		2.94(1.36-4.08)		1839	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.750	2.750	0.0	0.882	1988501	0.9504		99.8	1667	
449.00 > 99.00	2.750	2.750	0.0	0.882	483925		4.11(1.84-5.53)		996	
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.099	0.018	1.140	4904154	2.48		104	2910	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.099	0.018	1.140	6888826	2.64		106	6754	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.117	3.117	0.0	1.000	1909211	0.8625		92.9	1172	
499.00 > 99.00	3.117	3.117	0.0	1.000	489297		3.90(2.04-6.12)		1164	
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.117	0.0	1.000	2802911	1.00		100	298	
463.00 > 169.00	3.117	3.117	0.0	1.000	500741		5.60(2.68-8.03)		1301	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.318	3.318	0.0	1.065	2161251	0.9193		98.6	2059	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.449	0.016	1.267	6798708	2.44		97.7	5338	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.448	3.449	-0.001	1.261	91708	2.10		87.7	470	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.449	0.016	1.267	2698465	2.54		101	4718	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										R
549.00 > 80.00	3.448	3.448	0.0	1.107	1225639	0.9340		97.3	2856	R
549.00 > 99.00	3.448	3.448	0.0	1.107	213929		5.73(1.42-4.26)		1191	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.465	3.465	0.0	1.005	542968	0.9517		99.3	1735	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	3665703	1.14		114	3638	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.465	0.0	1.000	3391862	1.10		110	511	
513.00 > 169.00	3.465	3.465	0.0	1.000	222023		15.28(7.12-21.35)		322	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.613	3.613	0.0	1.321	2786966	2.43		97.2	2895	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.627	3.627	0.0	1.004	1197594	1.05		105	481	
D 30 13C2 PFUnA										
565.00 > 520.00	3.791	3.776	0.015	1.387	5772087	2.36		94.5	5044	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.776	0.015	1.387	2551335	2.64		106	2516	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.776	3.776	0.0	1.211	1793731	0.99		103	1307	
599.00 > 99.00	3.776	3.776	0.0	1.211	391832		4.58(2.14-6.43)		2037	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.791	3.791	0.0	1.000	847976	0.9227		92.3	1246	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.791	3.791	0.0	1.000	2131965	1.00		99.8	430	
563.00 > 169.00	3.791	3.791	0.0	1.000	202519		10.53(5.24-15.72)		880	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.944	3.944	0.0	1.265	2577442	0.9284		98.6	4747	
35 MeFOSA										
512.00 > 169.00	3.944	3.944	0.0		600261	NC			811	
D 36 13C2 PFDaA										
615.00 > 570.00	4.089	4.073	0.016	1.495	7319813	2.64		106	8021	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.089	4.089	0.0	1.186	366989	1.01		105	689	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.089	4.089	0.0	1.000	2826906	0.9476		94.8	717	
613.00 > 169.00	4.089	4.089	0.0	1.000	313630		9.01(4.68-14.05)		592	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.139	0.0		637705	NC			530	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.326	4.326	0.0	1.388	172423	0.9394		97.0	219	
699.00 > 99.00	4.326	4.326	0.0	1.388	330799		0.52(0.00-0.00)		1137	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.342	4.342	0.0	1.062	2236011	0.99		99.5	1117	
663.00 > 169.00	4.342	4.342	0.0	1.062	373997		5.98(3.09-9.27)		726	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.679	5801702	2.78		111	7703	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.591	4.591	0.0	1.000	367163	0.99		99.3	763	
713.00 > 219.00	4.573	4.591	-0.018	0.996	244858		1.50(0.70-2.09)		935	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.007	4.989	0.018	1.831	5284463	2.93		117	6381	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.007	5.007	0.0	1.000	1946179	1.01		101	857	
813.00 > 169.00	5.007	5.007	0.0	1.000	330212		5.89(2.77-8.32)		702	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.349	5.349	0.0	1.068	1354088	1.13		113	556	
913.00 > 169.00	5.349	5.349	0.0	1.068	240156		5.64(2.55-7.64)		1144	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_006.d

Injection Date: 10-Oct-2018 08:44:40

Instrument ID: A9_NC

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 30

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

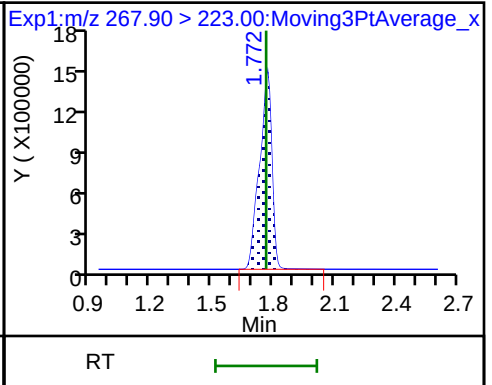
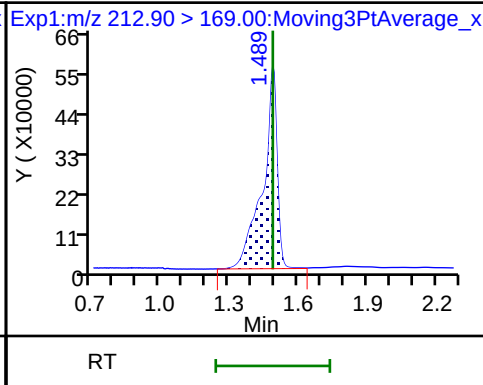
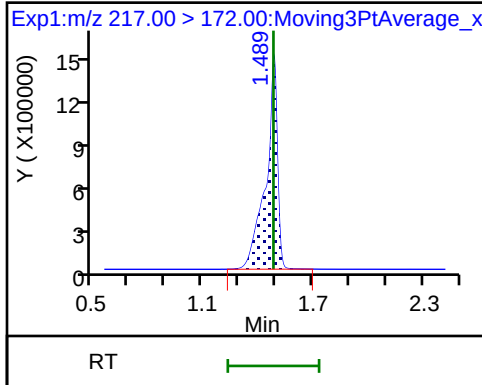
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

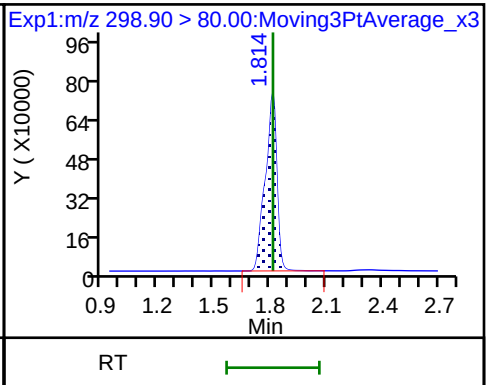
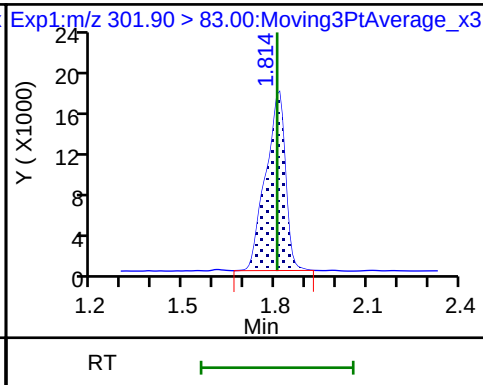
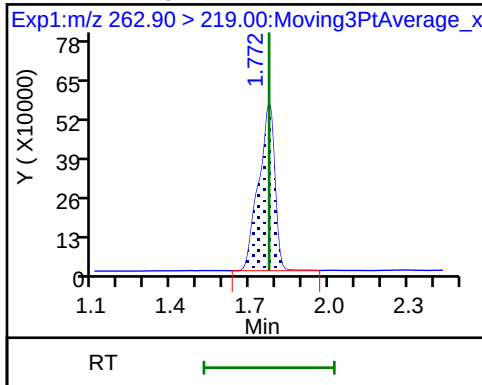
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

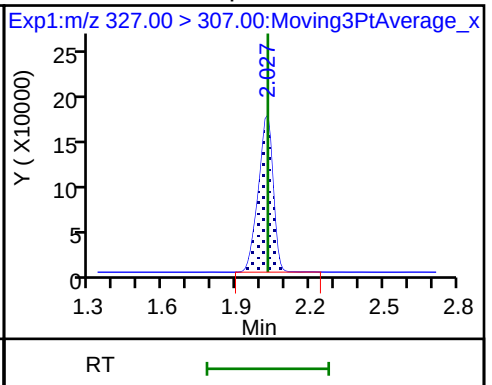
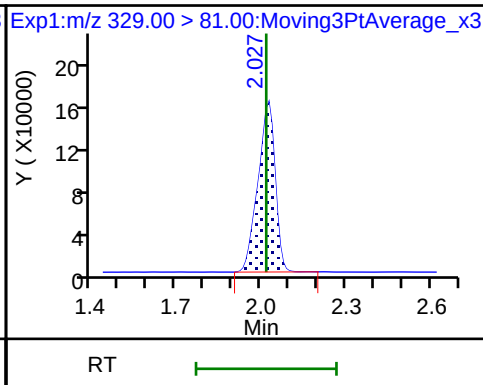
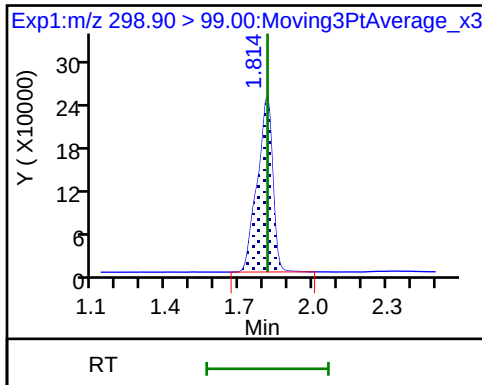
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

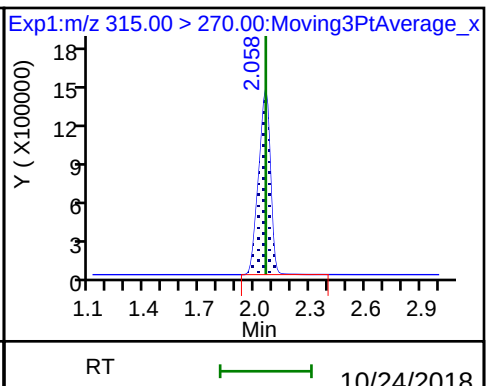
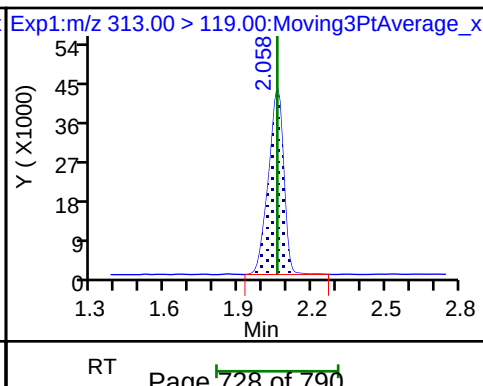
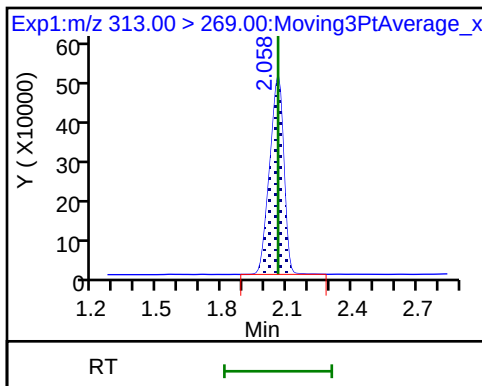
61 1H,1H,2H,2H-perfluorohexanesulfoni

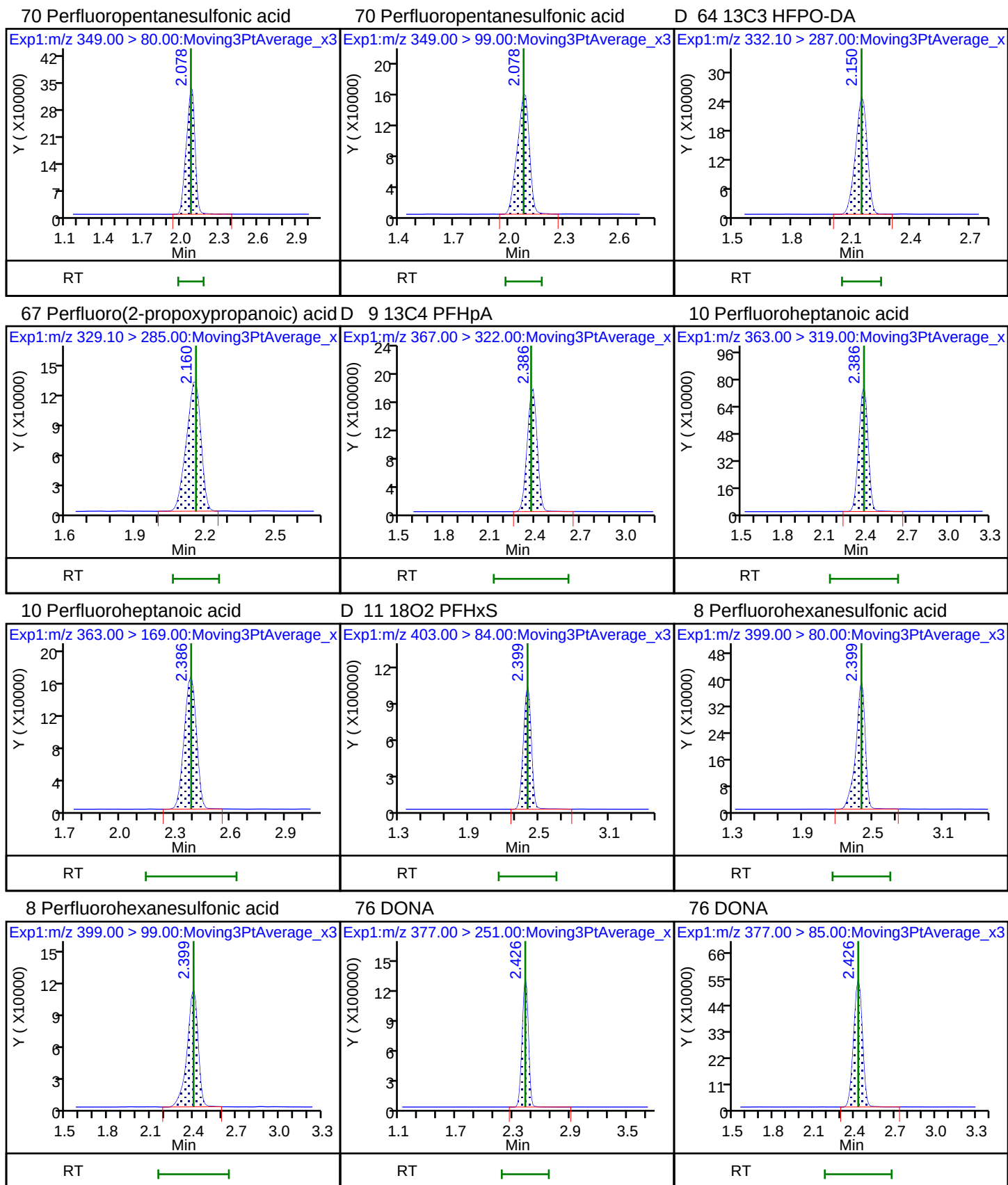


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

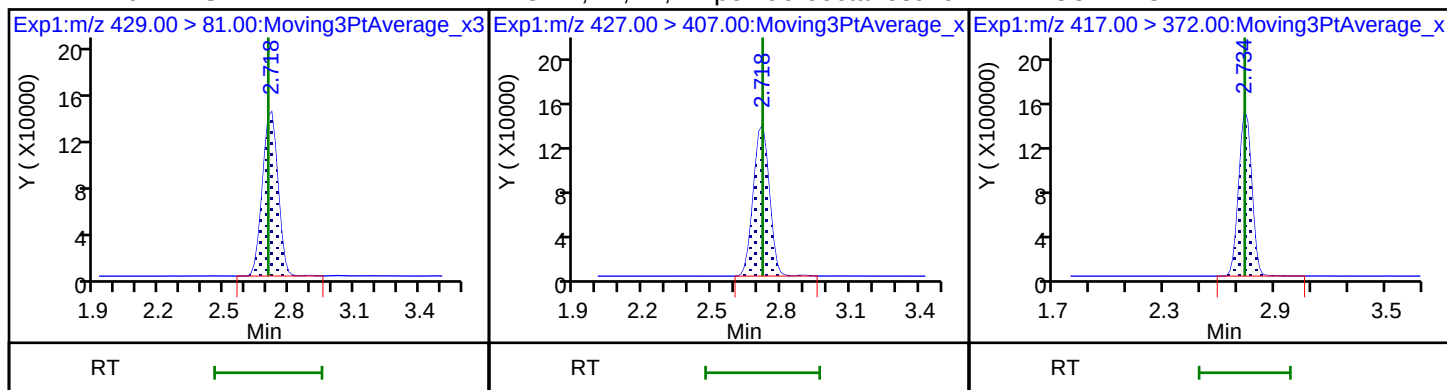
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

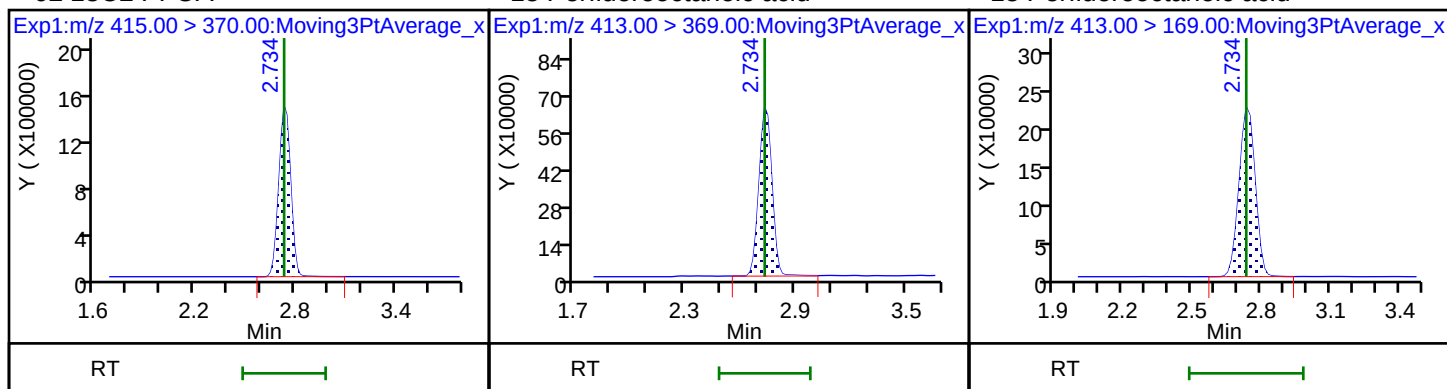
13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid

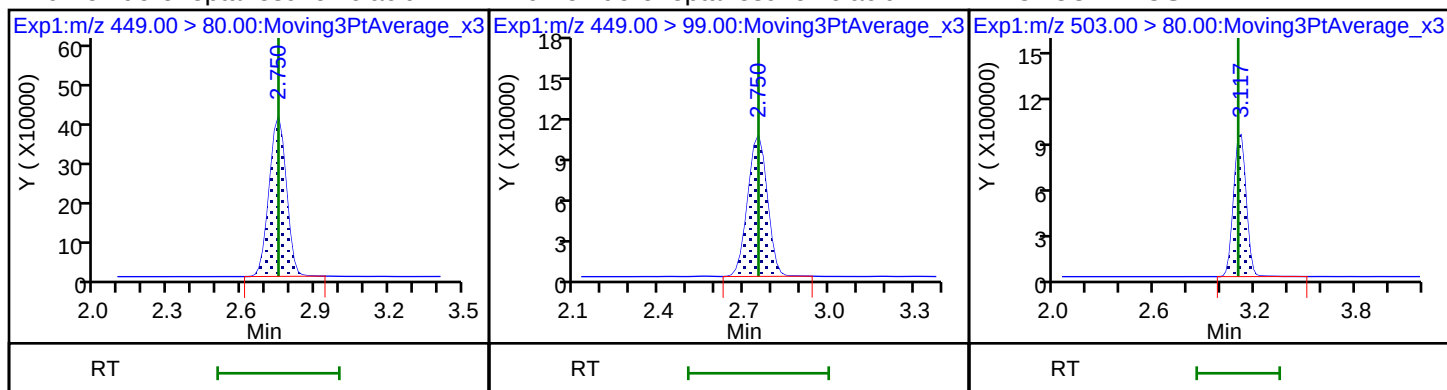
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

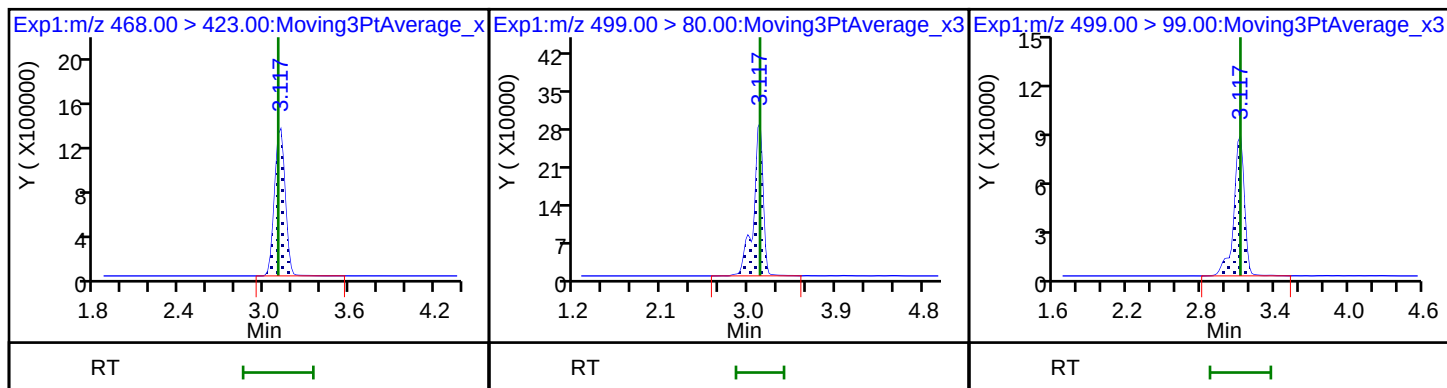
D 18 13C4 PFOS

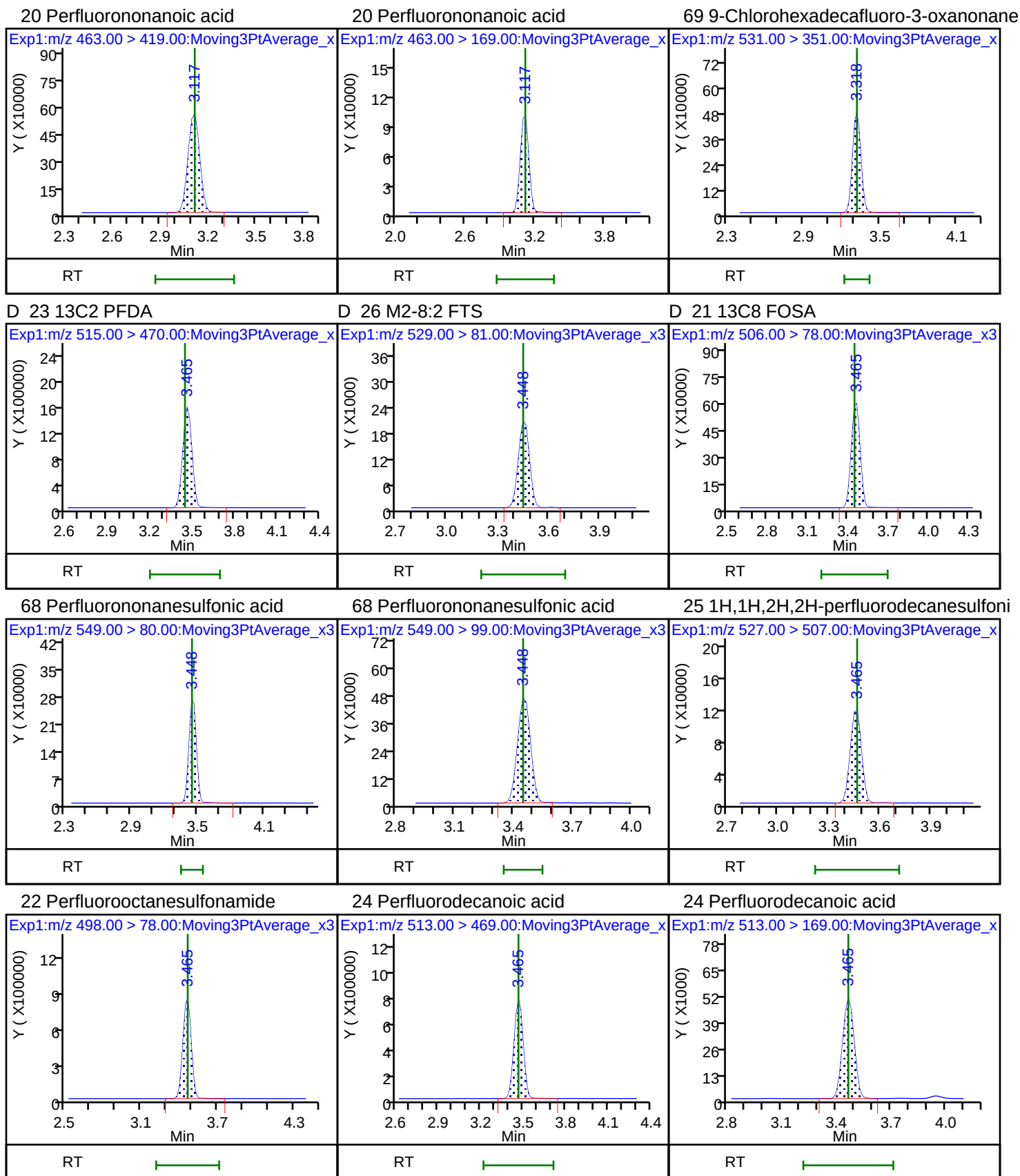


D 19 13C5 PFNA

17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

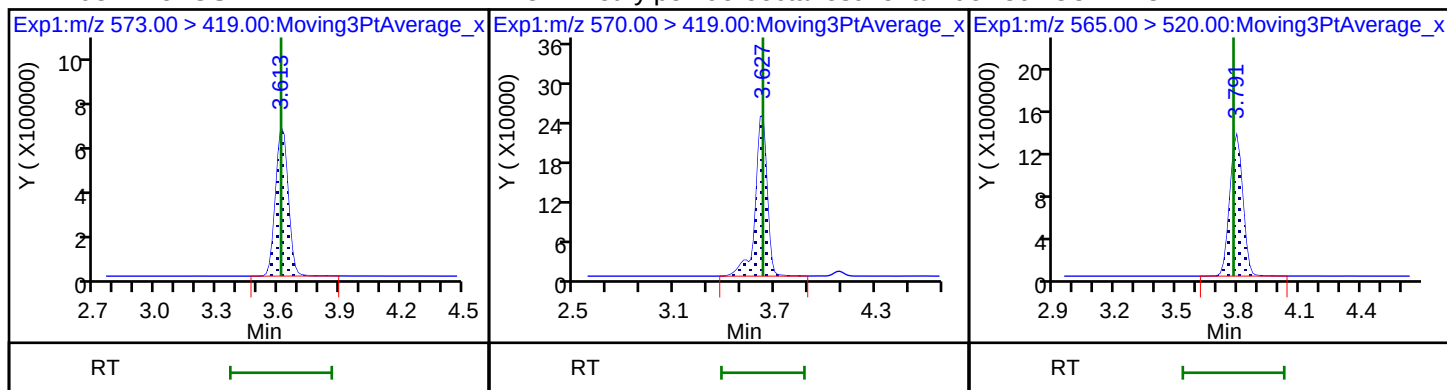




D 27 d3-NMeFOSAA

28 N-methylperfluorooctanesulfonamidD

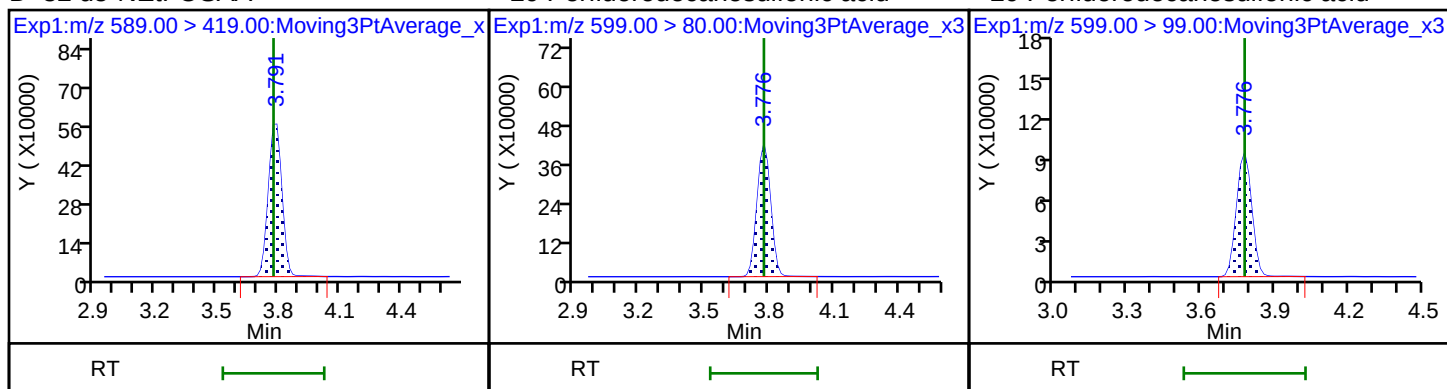
30 13C2 PFUnA



D 32 d5-NEtFOSAA

29 Perfluorodecanesulfonic acid

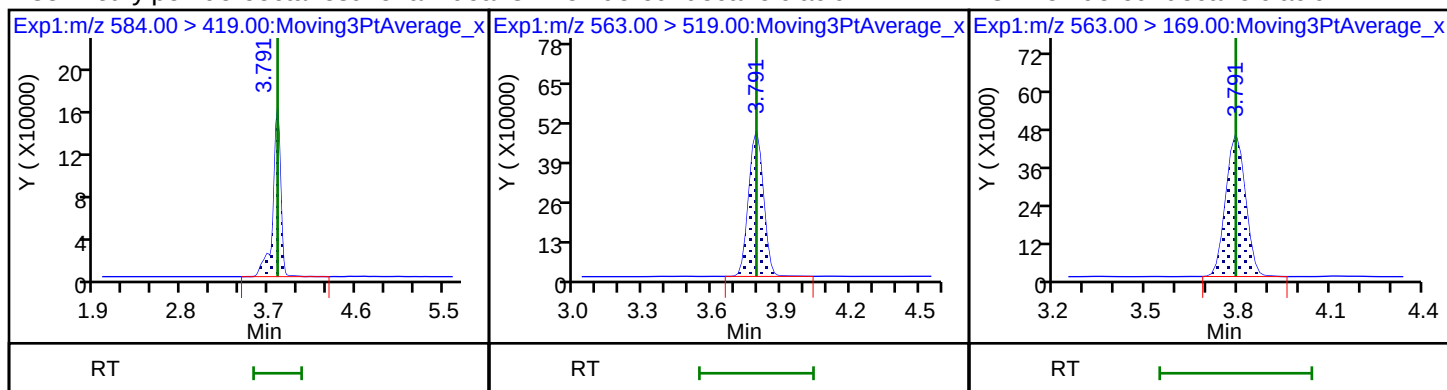
29 Perfluorodecanesulfonic acid



33 N-ethylperfluorooctanesulfonamidoa

31 Perfluoroundecanoic acid

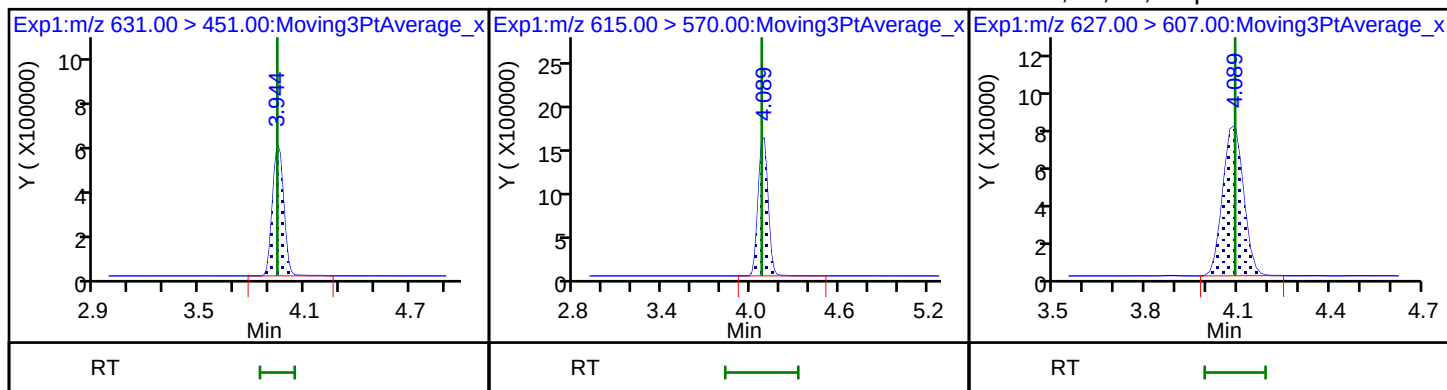
31 Perfluoroundecanoic acid

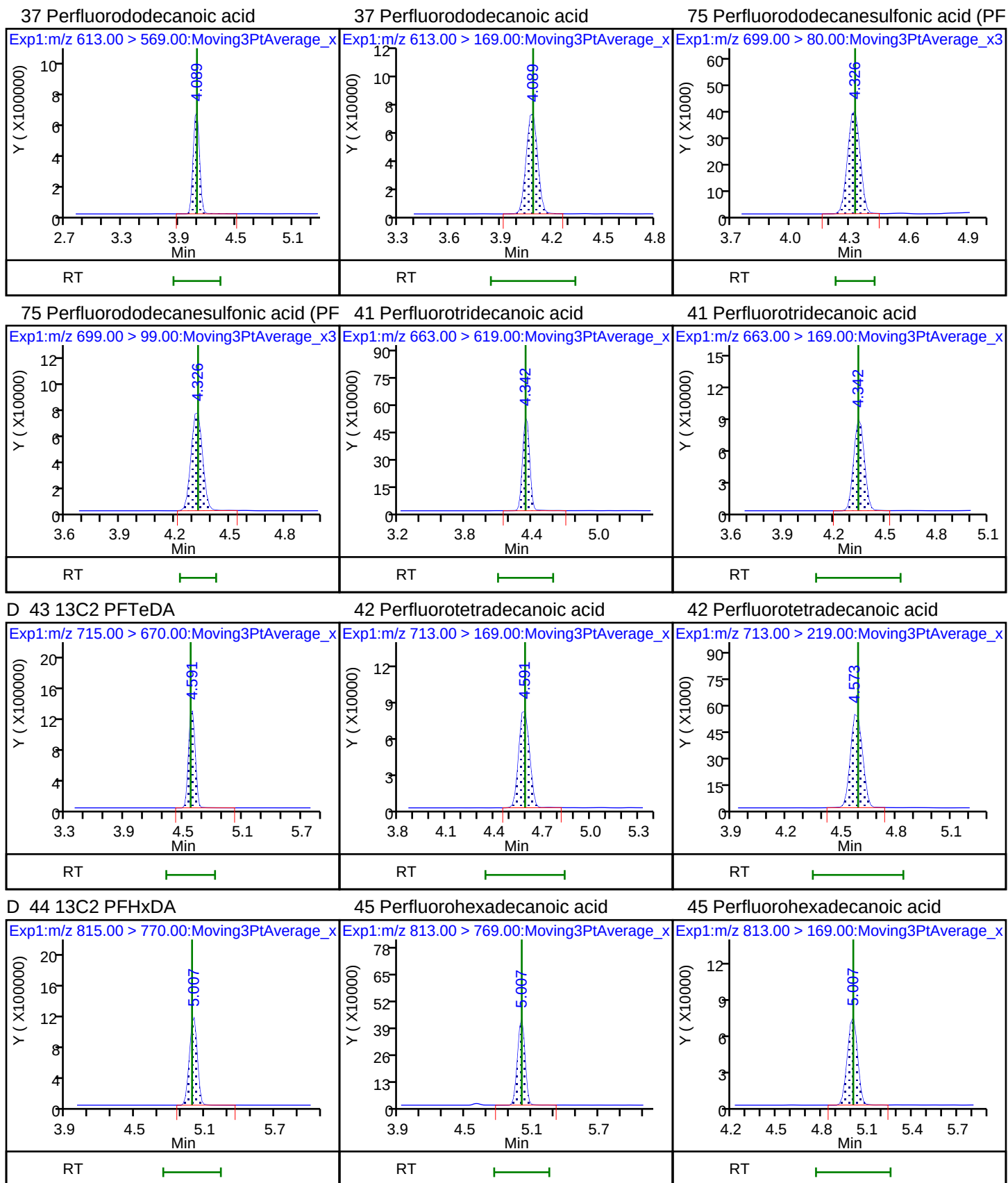


66 11-Chloroeicosafluoro-3-oxaundecaD

36 13C2 PFDaA

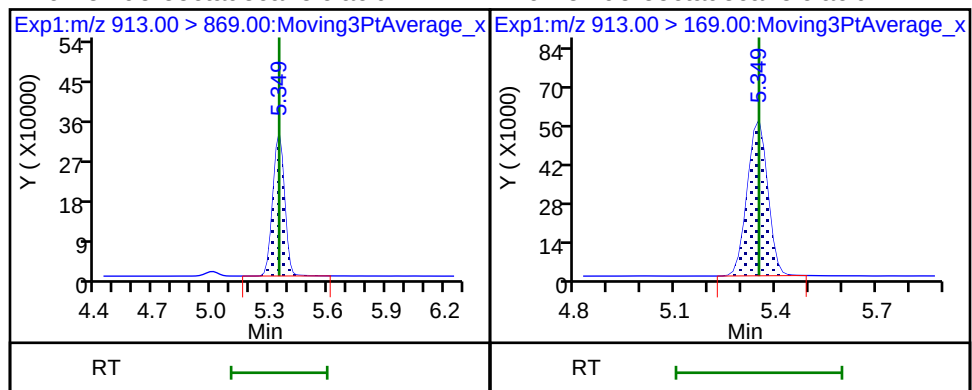
74 1H,1H,2H,2H-perfluorododecanesulfo





46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Lab Sample ID: CCV 320-251153/14 Calibration Date: 10/10/2018 10:07

Instrument ID: A9_NC Calib Start Date: 10/08/2018 15:34

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/08/2018 16:19

Lab File ID: 2018.10.09LLC_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9435		2.62	2.50	4.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.015	0.9946		2.45	2.50	-2.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	107.0	110.5		2.28	2.21	3.3	50.0
4:2 FTS	AveID	25.29	21.20		1.96	2.34	-16.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8952	0.8918		2.49	2.50	-0.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.19	51.79		2.47	2.35	5.3	50.0
HFPO-DA (GenX)	AveID	1.690	1.448		2.14	2.50	-14.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.081	1.105		2.56	2.50	2.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.233	1.176		2.17	2.28	-4.6	40.0
DONA	AveID	2.679	2.914		2.56	2.36	8.8	50.0
6:2 FTS	AveID	2.149	2.129		2.35	2.37	-0.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.020	1.140		2.66	2.38	11.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.074	1.056		2.46	2.50	-1.7	40.0
Perfluorononanoic acid (PFNA)	AveID	1.016	1.039		2.56	2.50	2.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	1.145		2.46	2.32	6.1	40.0
F-53B Major	AveID	1.146	1.226		2.49	2.33	7.0	50.0
8:2 FTS	AveID	14.90	14.78		2.38	2.40	-0.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.138	1.130		2.48	2.50	-0.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6395	0.6835		2.56	2.40	6.9	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	2.999		2.53	2.50	1.0	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.019	1.067		2.62	2.50	4.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.9030		2.47	2.41	2.6	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9005	0.9624		2.67	2.50	6.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9249	0.9848		2.66	2.50	6.5	40.0
F-53B Minor	AveID	1.353	1.378		2.40	2.36	1.9	50.0
10:2 FTS	AveID	9.483	9.143		2.32	2.41	-3.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	0.9783		2.40	2.50	-4.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0894	0.0872		2.36	2.42	-2.5	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7678	0.7731		2.52	2.50	0.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1483		2.33	2.50	-6.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9460		2.65	2.50	5.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Lab Sample ID: CCV 320-251153/14 Calibration Date: 10/10/2018 10:07
 Instrument ID: A9_NC Calib Start Date: 10/08/2018 15:34
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 10/08/2018 16:19
 Lab File ID: 2018.10.09LLC_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5686	0.6161		2.71	2.50	8.3	50.0
13C4 PFBA	Ave	0.9129	0.8912		2.44	2.50	-2.4	50.0
13C5 PFPeA	Ave	0.8136	0.8141		2.50	2.50	0.0	50.0
13C3 PFBS	Ave	0.0111	0.0111		2.32	2.33	-0.1	50.0
M2-4:2 FTS	Ave	0.1123	0.1026		2.13	2.34	-8.6	50.0
13C2 PFHxA	Ave	0.8780	0.8928		2.54	2.50	1.7	50.0
13C3 HFPO-DA	Ave	0.1093	0.1351		3.09	2.50	23.6	50.0
13C4 PFHpA	Ave	1.076	1.104		2.57	2.50	2.6	50.0
18O2 PFHxS	Ave	0.6688	0.6898		2.44	2.37	3.1	50.0
M2-6:2 FTS	Ave	0.1183	0.1041		2.09	2.38	-12.0	40.0
13C4 PFOA	Ave	1.007	0.998		2.48	2.50	-0.9	50.0
13C4 PFOS	Ave	0.7027	0.6811		2.32	2.39	-3.1	50.0
13C5 PFNA	Ave	0.9276	0.9359		2.52	2.50	0.9	50.0
13C2 PFDA	Ave	0.9902	0.9657		2.44	2.50	-2.5	50.0
13C8 FOSA	Ave	0.3786	0.3910		2.58	2.50	3.3	50.0
M2-8:2 FTS	Ave	0.0155	0.0130		1.99	2.40	-16.7	40.0
d3-NMeFOSAA	Ave	0.4080	0.3842		2.35	2.50	-5.8	50.0
13C2 PFUnA	Ave	0.8697	0.7874		2.26	2.50	-9.5	50.0
d5-NEtFOSAA	Ave	0.3434	0.3190		2.32	2.50	-7.1	50.0
13C2 PFDoA	Ave	0.9853	0.9626		2.44	2.50	-2.3	50.0
13C2 PFTeDA	Ave	0.7441	0.7871		2.64	2.50	5.8	50.0
13C2 PFHxDA	Ave	0.6411	0.7456		2.91	2.50	16.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_017.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 10-Oct-2018 10:07:24 ALS Bottle#: 31 Worklist Smp#: 14
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Sublist: chrom-PFAS_A9_NC*sub2
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:08:28 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:40:57

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.489	1.484	0.005	0.541	5574382	2.44		97.6	6918	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.489	1.489	0.0	1.000	5259141	2.62		105	250	
D 3 13C5 PFPeA										
267.90 > 223.00	1.772	1.764	0.008	0.644	5092213	2.50		100	8836	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	5064907	2.45		98.0	538	
D 47 13C3 PFBS										
301.90 > 83.00	1.814	1.806	0.008	0.659	64696	2.32		99.9	457	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.814	0.0	1.000	6795448	2.28		103	1735	
298.90 > 99.00	1.814	1.814	0.0	1.000	2373413		2.86(1.35-4.05)		1391	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.027	2.017	0.010	0.737	599269	2.13		91.4	938	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	1377399	1.96		83.8	4726	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.058	2.058	0.0	1.000	4980094	2.49		99.6	978	
313.00 > 119.00	2.058	2.058	0.0	1.000	363506		13.70(6.96-20.87)		837	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.058	0.0	0.748	5584283	2.54		102	9113	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.089	0.0	1.152	3379344	2.47		105	3538	
349.00 > 99.00	2.089	2.089	0.0	1.152	1524706		2.22(1.15-3.45)		2981	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.160	2.150	0.010	0.785	844974	3.09		124	1822	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	1223115	2.14		85.6	574	
D 9 13C4 PFHpA										
367.00 > 322.00	2.386	2.373	0.013	0.868	6904309	2.57		103	10275	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.386	2.386	0.0	1.000	7630988	2.56		102	1380	
363.00 > 169.00	2.386	2.386	0.0	1.000	1631665		4.68(2.17-6.52)		3079	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.399	2.399	0.0	1.000	4618718	2.17		95.4	2426	
399.00 > 99.00	2.399	2.399	0.0	1.000	1260904		3.66(1.90-5.70)		1432	
D 11 18O2 PFHxS										
403.00 > 84.00	2.399	2.400	-0.001	0.872	4081469	2.44		103	5363	
76 DONA										
377.00 > 251.00	2.426	2.426	0.0	0.778	11693700	2.56		109	9342	
377.00 > 85.00	2.426	2.426	0.0	0.778	5250025		2.23(0.00-0.00)		3406	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.718	2.703	0.015	0.988	618652	2.09		88.0	941	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.718	2.718	0.0	1.000	1314495	2.35		99.1	3216	
* 62 13C2 PFOA										
415.00 > 370.00	2.750	2.750	0.0		6254977	2.50			7648	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	6594348	2.46		98.3	423	
413.00 > 169.00	2.750	2.750	0.0	1.000	2309768		2.85(1.36-4.08)		2674	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.735	0.015	1.000	6241152	2.48		99.1	6449	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.750	2.750	0.0	0.882	4624489	2.66		112	4017	
449.00 > 99.00	2.750	2.750	0.0	0.882	1078201		4.29(1.84-5.53)		1661	
D 18 13C4 PFOS										
503.00 > 80.00	3.116	3.099	0.017	1.133	4072771	2.32		96.9	2341	
D 19 13C5 PFNA										
468.00 > 423.00	3.116	3.099	0.017	1.133	5853865	2.52		101	6150	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.116	3.116	0.0	1.000	4526213	2.46		106	2524	
499.00 > 99.00	3.116	3.116	0.0	1.000	1022793		4.43(2.04-6.12)		2134	
20 Perfluorononanoic acid										
463.00 > 419.00	3.116	3.116	0.0	1.000	6081800	2.56		102	631	
463.00 > 169.00	3.116	3.116	0.0	1.000	1038635		5.86(2.68-8.03)		1970	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.318	3.318	0.0	1.065	4869569	2.49		107	3987	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.465	3.465	0.0	1.112	2795262	2.56		107	2949	R
549.00 > 99.00	3.465	3.465	0.0	1.112	468611		5.96(1.42-4.26)		1701	R
D 26 M2-8:2 FTS										
529.00 > 81.00	3.465	3.449	0.016	1.260	77578	1.99		83.3	464	
D 23 13C2 PFDA										
515.00 > 470.00	3.465	3.449	0.016	1.260	6040342	2.44		97.5	2828	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.449	0.016	1.260	2445780	2.58		103	3474	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.465	3.465	0.0	1.000	1146324	2.38		99.2	2935	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	7334603	2.53		101	3656	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.465	3.465	0.0	1.000	6827091	2.48		99.3	1001	
513.00 > 169.00	3.480	3.465	0.015	1.004	437928		15.59(7.12-21.35)		388	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.613	0.014	1.319	2403409	2.35		94.2	4149	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.627	3.627	0.0	1.000	2564029	2.62		105	9761	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.776	3.776	0.0	1.211	3708525	2.47		103	2468	
599.00 > 99.00	3.776	3.776	0.0	1.211	819173		4.53(2.14-6.43)		1788	
D 30 13C2 PFUnA										
565.00 > 520.00	3.791	3.776	0.015	1.379	4925407	2.26		90.5	3398	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.776	0.015	1.379	1995555	2.32		92.9	1679	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.791	3.791	0.0	1.000	1920592	2.67		107	1943	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.791	3.791	0.0	1.000	4850386	2.66		106	1081	
563.00 > 169.00	3.791	3.791	0.0	1.000	425755		11.39(5.24-15.72)		1332	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.960	3.960	0.0	1.271	5531154	2.40		102	4240	
35 MeFOSA										
512.00 > 169.00	3.960	3.960	0.0		1339314	NC			919	
D 36 13C2 PFDaA										
615.00 > 570.00	4.089	4.073	0.016	1.487	6021218	2.44		97.7	8122	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.089	4.089	0.0	1.180	713733	2.32		96.4	1195	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.089	4.089	0.0	1.000	5890686	2.40		96.0	1327	
613.00 > 169.00	4.089	4.089	0.0	1.000	665119		8.86(4.68-14.05)		1170	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.139	0.0		1401372	NC			599	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.326	4.326	0.0	1.388	359663	2.36		97.5	446	
699.00 > 99.00	4.326	4.326	0.0	1.388	707664		0.51(0.00-0.00)		1573	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.357	4.357	0.0	1.066	4654725	2.52		101	2174	
663.00 > 169.00	4.357	4.357	0.0	1.066	832125		5.59(3.09-9.27)		1671	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.669	4923237	2.64		106	7750	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.591	4.591	0.0	1.000	730008	2.33		93.1	1848	
713.00 > 219.00	4.591	4.591	0.0	1.000	492469		1.48(0.70-2.09)		1489	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.007	4.989	0.018	1.821	4663695	2.91		116	6349	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.007	5.007	0.0	1.000	4411668	2.65		106	1513	
813.00 > 169.00	5.007	5.007	0.0	1.000	749257		5.89(2.77-8.32)		1313	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.347	5.347	0.0	1.068	2873425	2.71		108	1251	
913.00 > 169.00	5.347	5.347	0.0	1.068	537976		5.34(2.55-7.64)		1743	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_017.d

Injection Date: 10-Oct-2018 10:07:24

Instrument ID: A9_NC

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 31

Worklist Smp#: 14

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

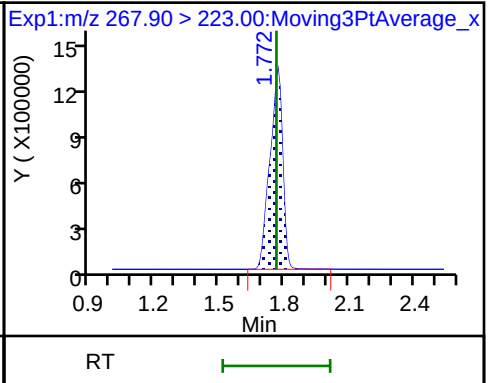
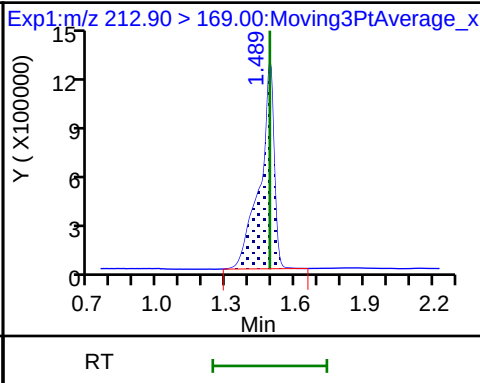
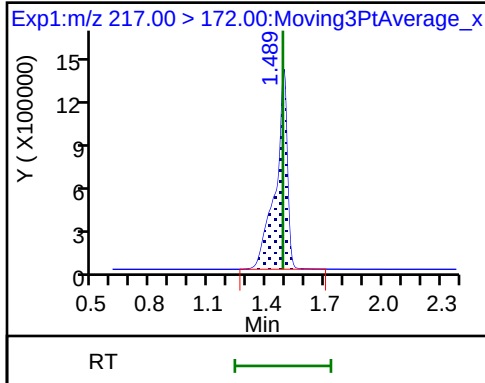
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

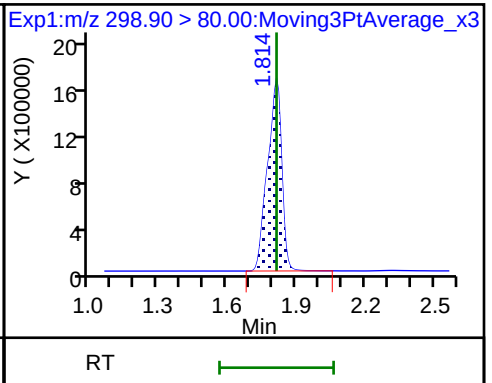
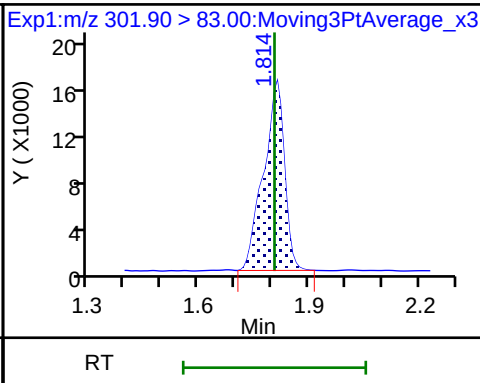
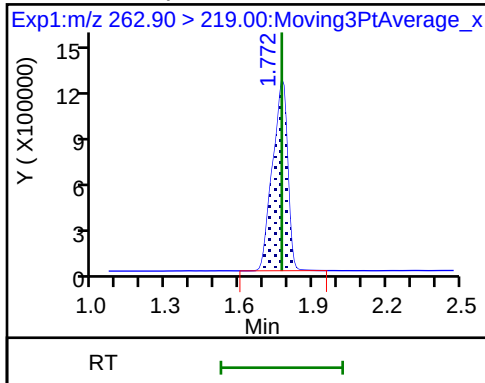
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

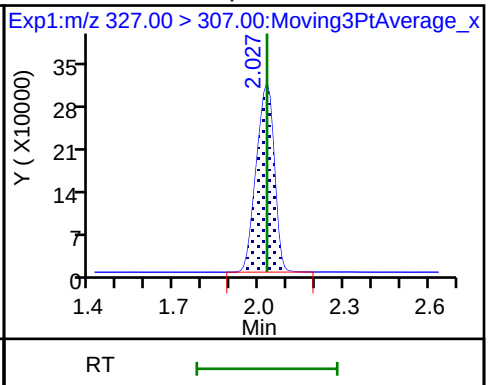
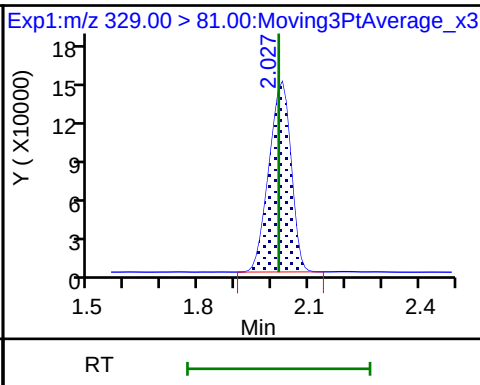
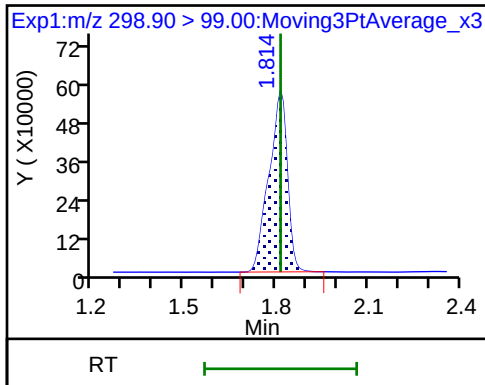
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

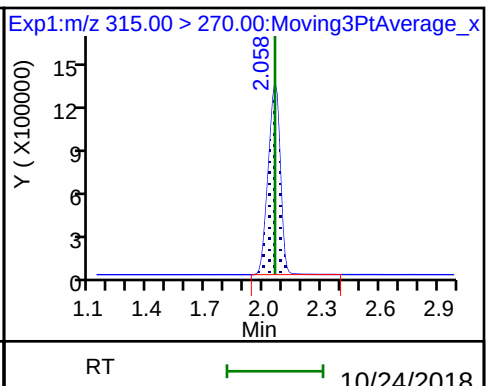
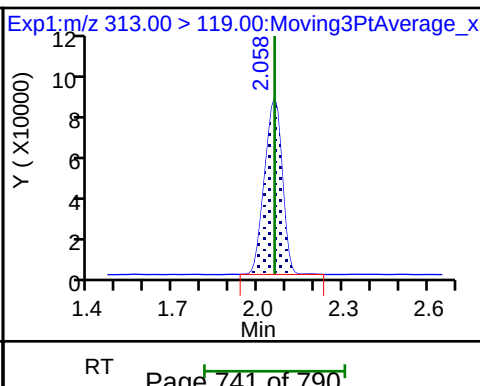
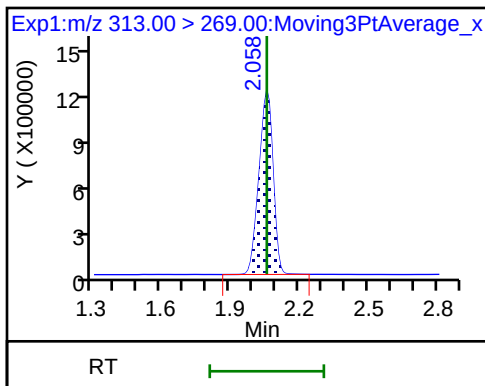
61 1H,1H,2H,2H-perfluorohexanesulfoni



6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

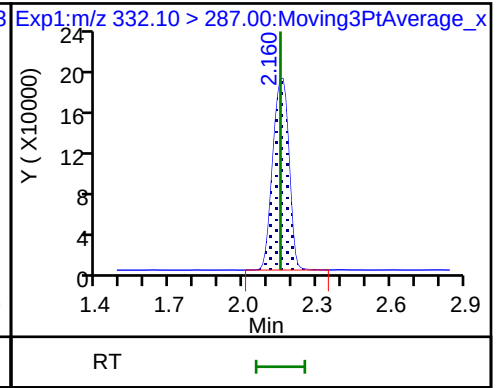
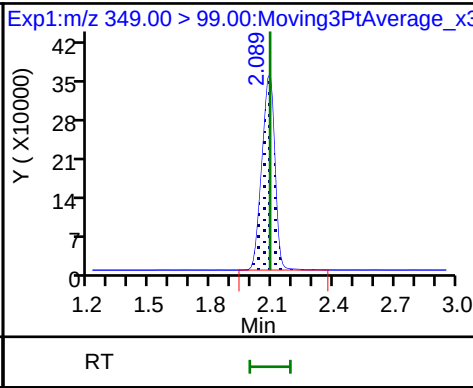
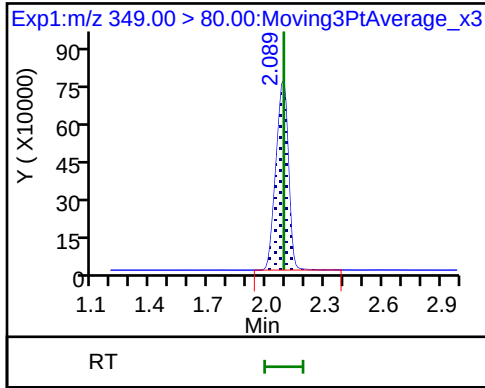
D 7 13C2 PFHxA



70 Perfluoropentanesulfonic acid

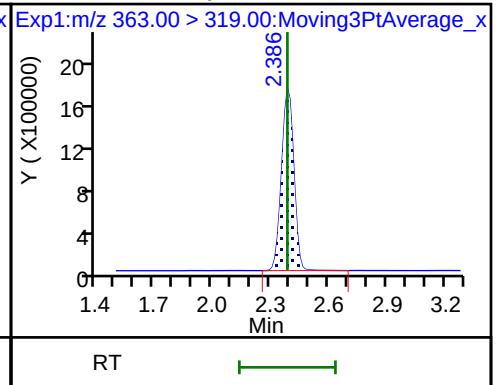
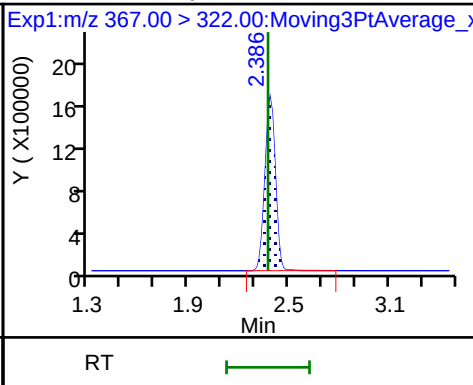
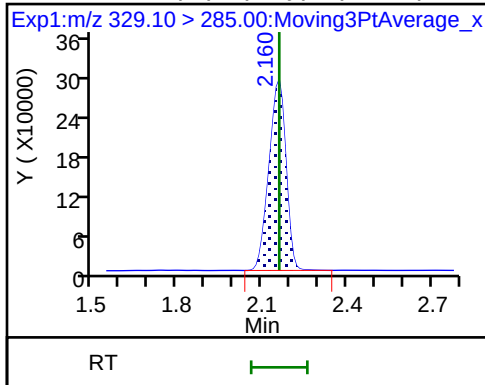
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

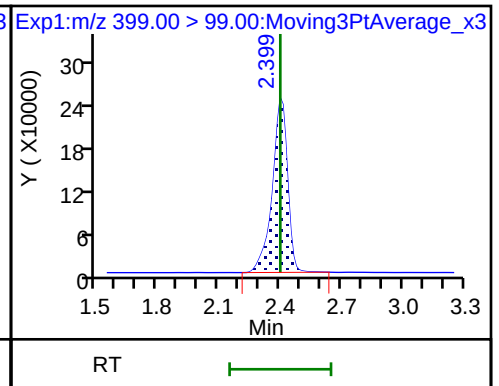
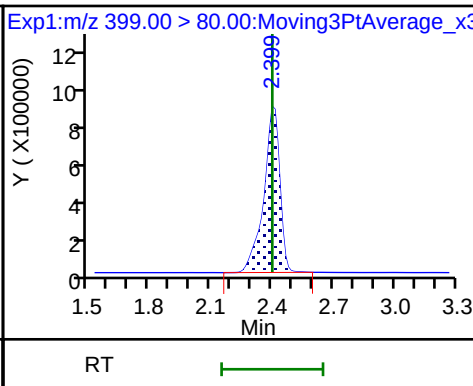
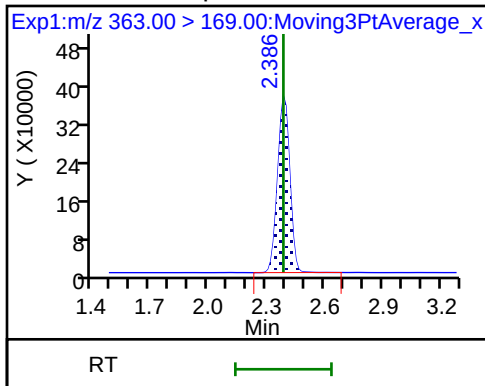
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

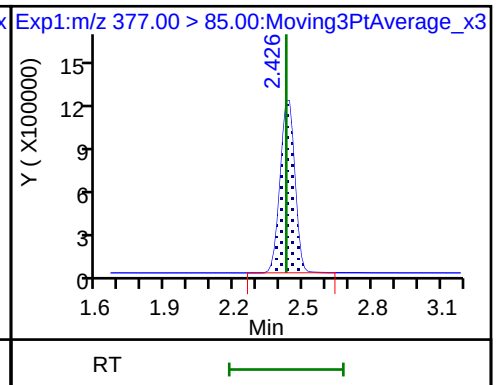
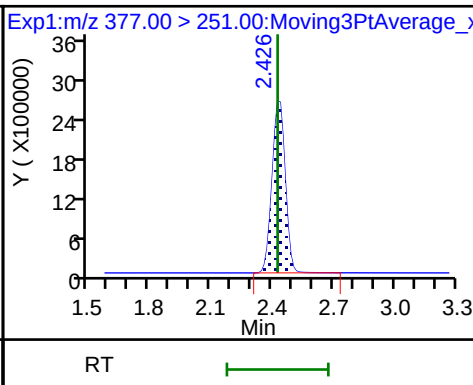
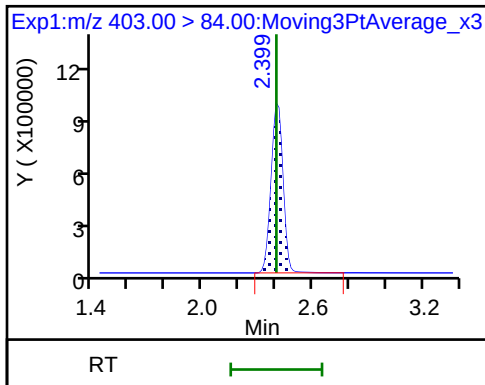
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

76 DONA

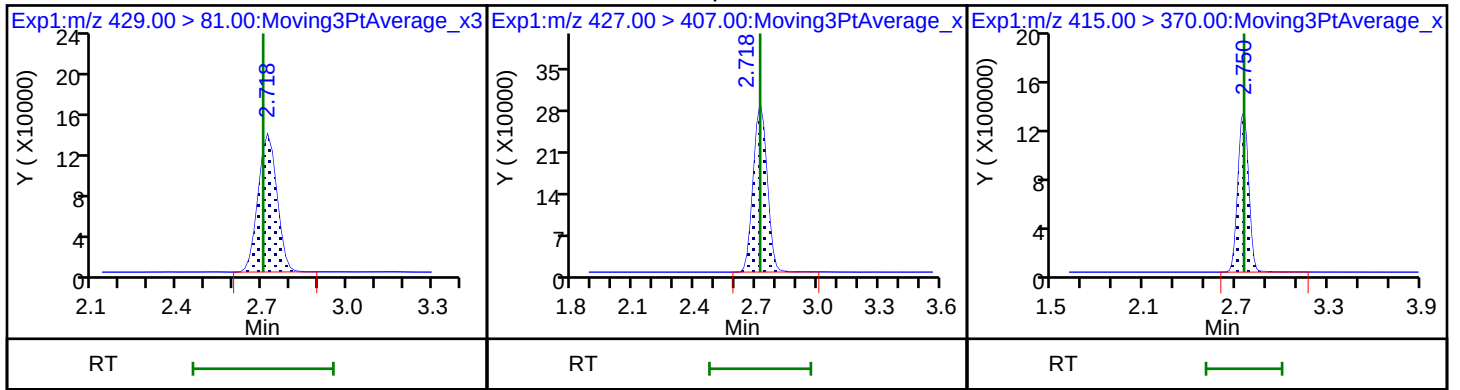
76 DONA



D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfonate

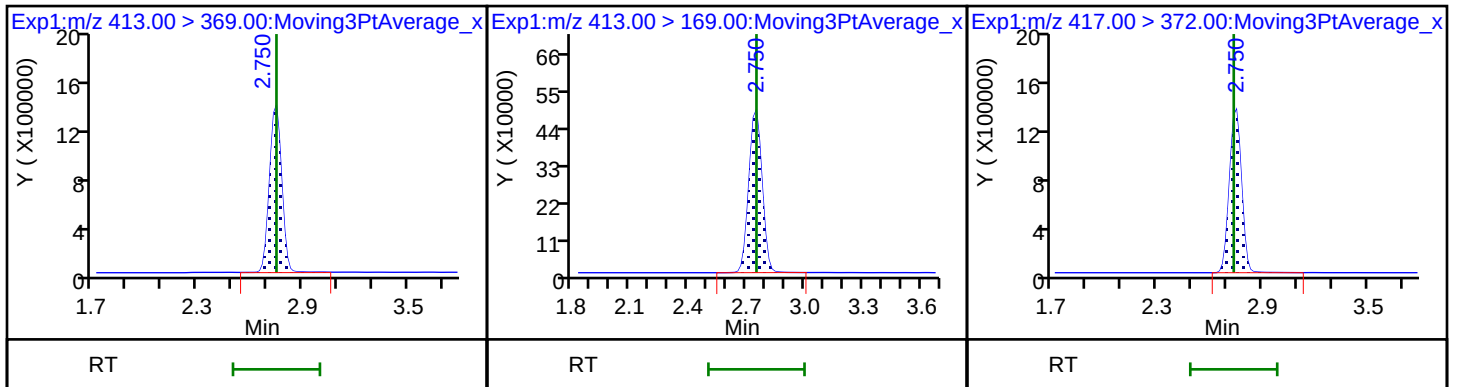
62 13C2 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

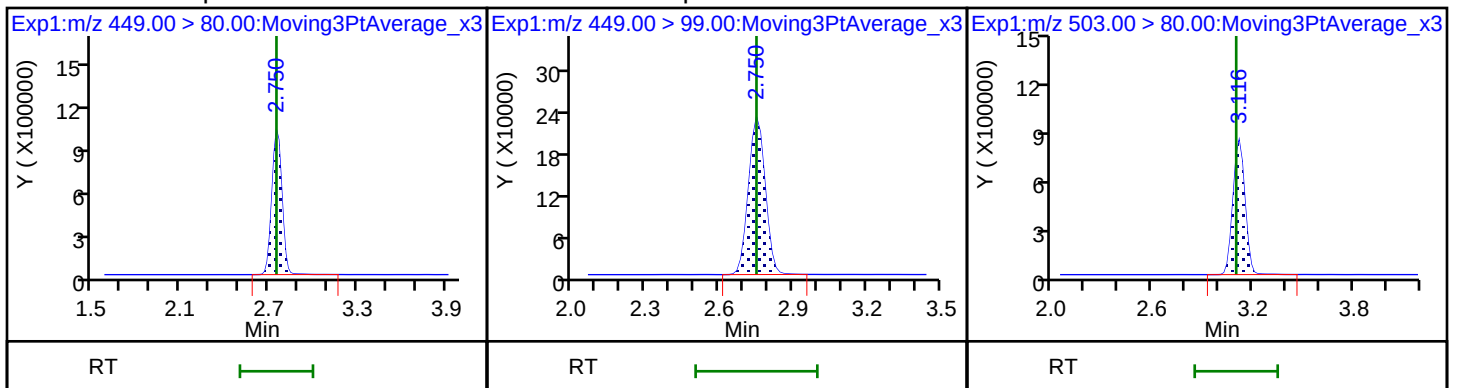
D 14 13C4 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

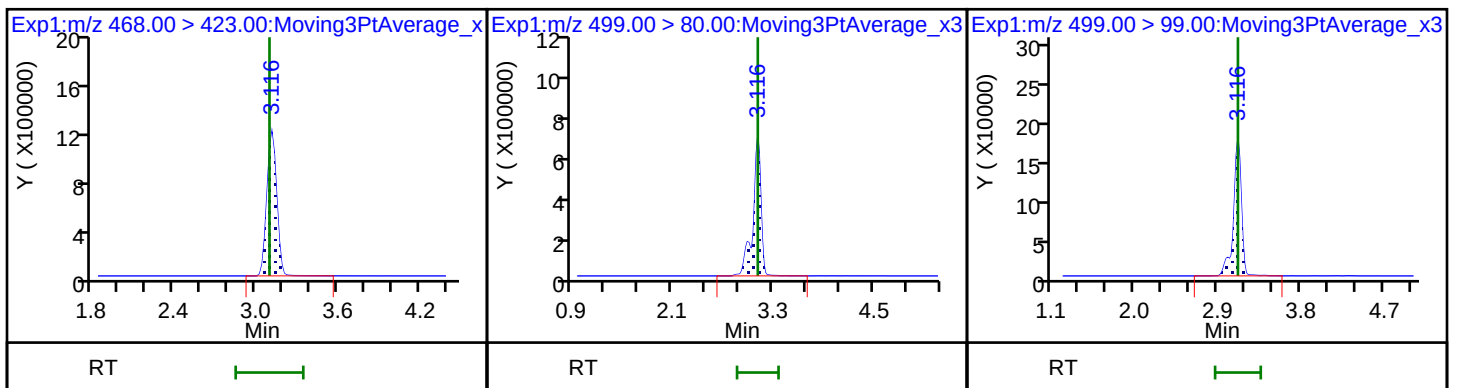
D 18 13C4 PFOS

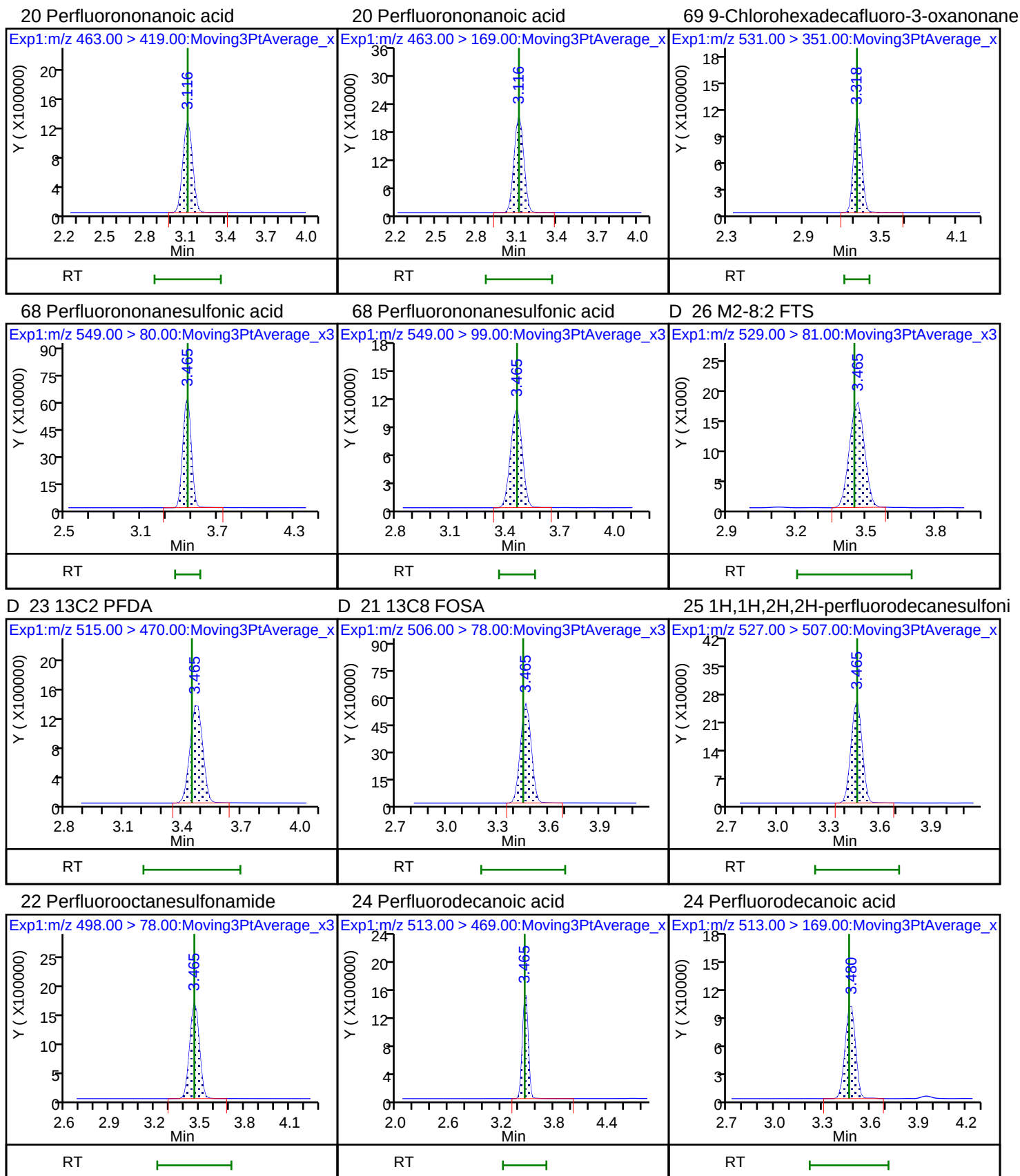


D 19 13C5 PFNA

17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid



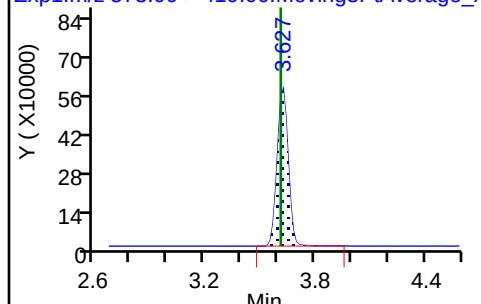


D 27 d3-NMeFOSAA

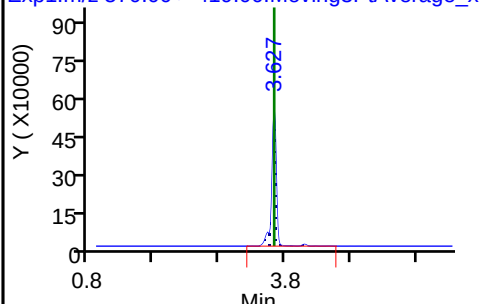
28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

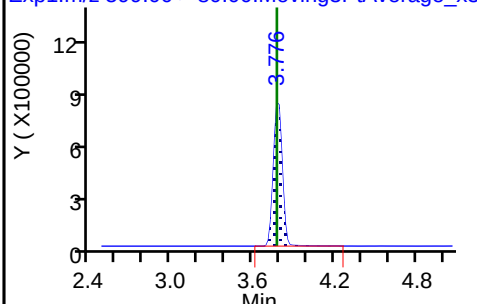
Exp1:m/z 573.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3

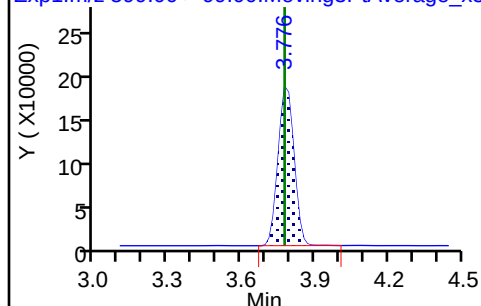


29 Perfluorodecanesulfonic acid

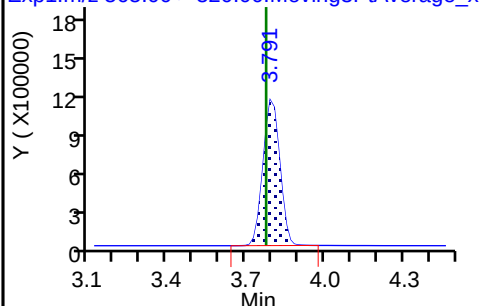
D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

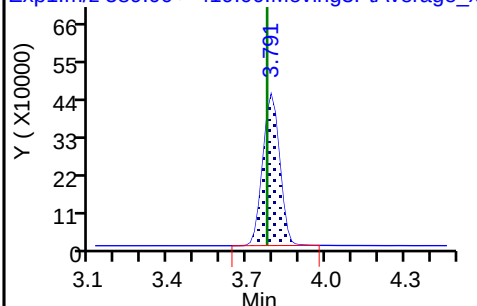
Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



Exp1:m/z 565.00 > 520.00:Moving3PtAverage_x



Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x

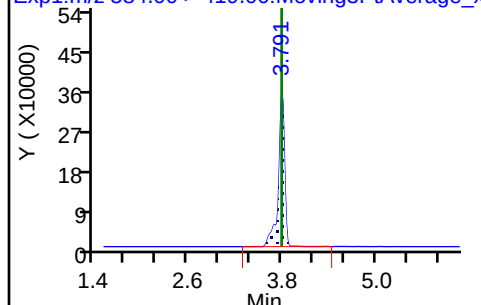


33 N-ethylperfluorooctanesulfonamidoa

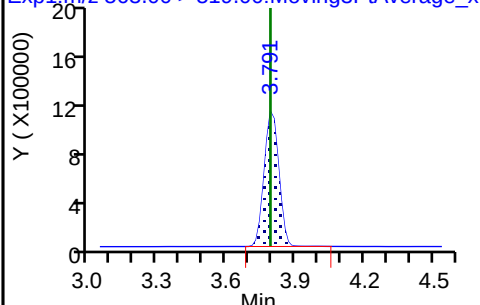
31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

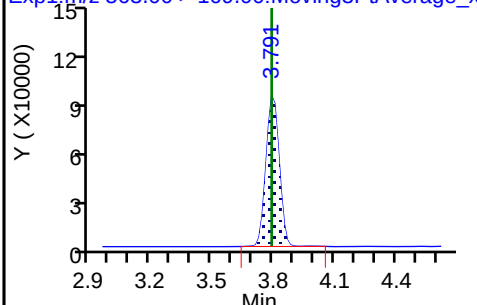
Exp1:m/z 584.00 > 419.00:Moving3PtAverage_x



Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x



Exp1:m/z 563.00 > 169.00:Moving3PtAverage_x

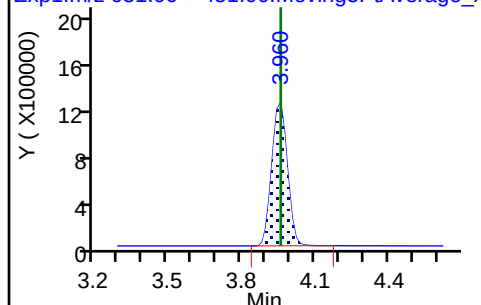


66 11-Chloroeicosafluoro-3-oxaundeca

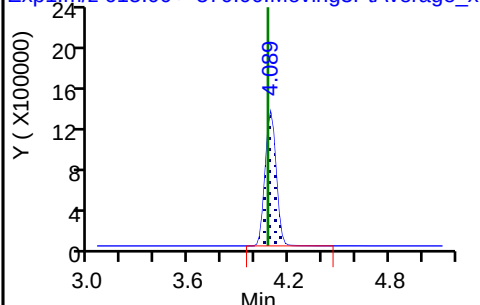
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo

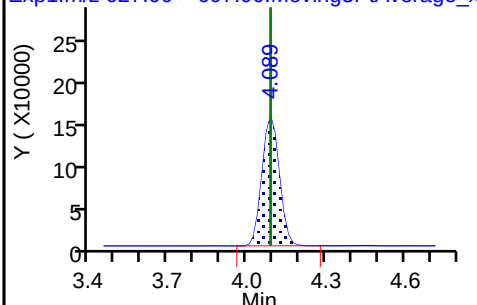
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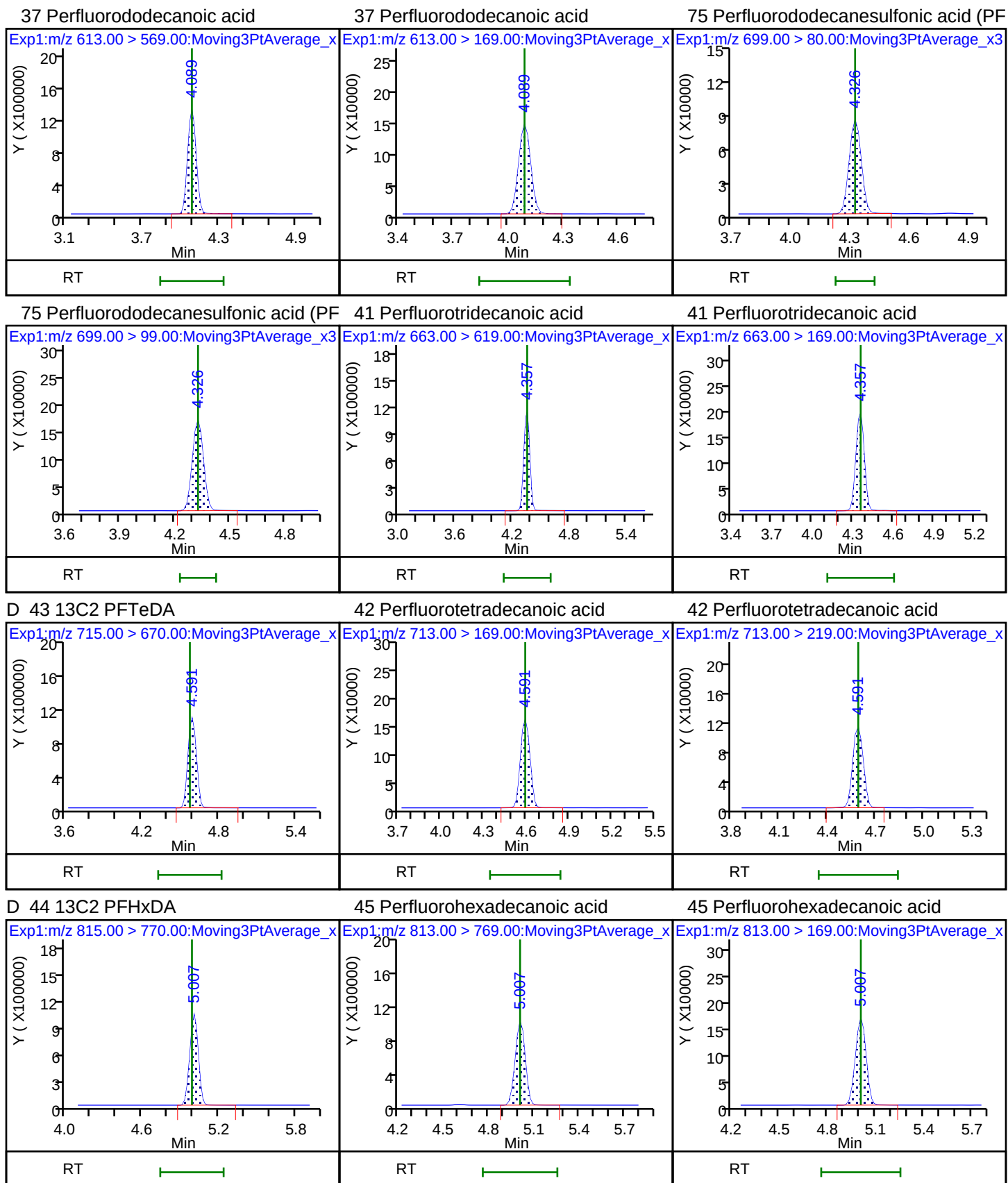


Exp1:m/z 615.00 > 570.00:Moving3PtAverage_x



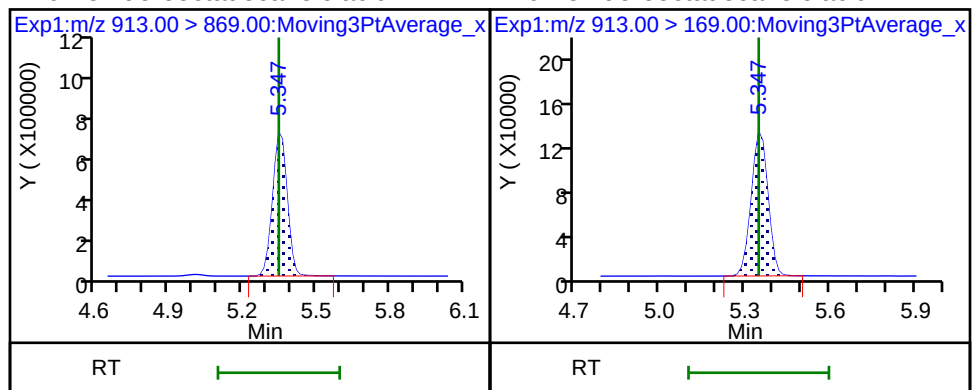
Exp1:m/z 627.00 > 607.00:Moving3PtAverage_x





46 Perfluorooctadecanoic acid

46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-249876/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_007.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/10/2018 08:52</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	0.399	J	2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.0	U	2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	2.0	U	2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.0	U	2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	2.0	U	2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.0	U	2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.0	U	2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.0	U	2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	2.0	U	2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.0	U	2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.0	U	2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	2.0	U	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.0	U	2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.0	U	2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.0	U	2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.0	U	2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20	U	20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20	U	20	1.9
27619-97-2	6:2 FTS	20	U	20	2.0
39108-34-4	8:2 FTS	20	U	20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-249876/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.09LLC_007.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/10/2018 08:52</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>Acquity</u> ID: <u>2.1 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>251153</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	92		25-150
STL01893	13C5 PFPeA	95		25-150
STL00993	13C2 PFHxA	93		25-150
STL01892	13C4 PFHpA	98		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	104		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	85		25-150
STL00998	13C2 PFDoA	102		25-150
STL02116	13C2 PFTeDA	97		25-150
STL02337	13C3 PFBS	103		25-150
STL00994	18O2 PFHxS	91		25-150
STL00991	13C4 PFOS	87		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	97		25-150
STL02117	d5-NEtFOSAA	94		25-150
STL02279	M2-6:2 FTS	87		25-150
STL02280	M2-8:2 FTS	78		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_007.d
 Lims ID: MB 320-249876/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 10-Oct-2018 08:52:10 ALS Bottle#: 1 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-249876/1-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: A9\Administrator Instrument ID: A9_NC
 Method: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\PFAS_A9_NC.m
 Limit Group: LC PFC ICAL
 Last Update: 11-Oct-2018 10:19:38 Calib Date: 08-Oct-2018 16:19:26
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65602.b\2018.10.08LLICAL_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK014

First Level Reviewer: westendorfc

Date: 11-Oct-2018 09:25:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA

217.00 > 172.00 1.494 1.484 0.010 0.543 3049037 2.30 91.9 8241

2 Perfluorobutanoic acid

212.90 > 169.00 1.499 1.488 0.011 1.004 10952 0.0100 0.6

D 3 13C5 PFPeA

267.90 > 223.00 1.780 1.764 0.016 0.647 2805916 2.37 94.9 11547

4 Perfluoropentanoic acid

262.90 > 219.00 1.789 1.772 0.017 1.005 4328 0.003798 0.8

D 47 13C3 PFBS

301.90 > 83.00 1.822 1.806 0.016 0.662 38931 2.41 103 469

D 7 13C2 PFHxA

315.00 > 270.00 2.068 2.058 0.010 0.752 2980773 2.34 93.4 5682

D 64 13C3 HFPO-DA

332.10 > 287.00 2.170 2.150 0.020 0.789 458230 2.89 115 2101

D 9 13C4 PFHpA

367.00 > 322.00 2.400 2.373 0.027 0.872 3826585 2.45 97.9 8154

D 11 18O2 PFHxS

403.00 > 84.00 2.413 2.400 0.013 0.877 2096578 2.16 91.2 3702

D 12 M2-6:2 FTS

429.00 > 81.00 2.734 2.703 0.031 0.994 355919 2.07 87.1 547

D 14 13C4 PFOA

417.00 > 372.00 2.750 2.735 0.015 1.000 3549831 2.42 97.0 6031

* 62 13C2 PFOA

415.00 > 370.00 2.750 2.750 0.0 3633527 2.50 6576 s

D 18 13C4 PFOS

503.00 > 80.00 3.117 3.099 0.018 1.133 2130897 2.09 87.3 1435

D 19 13C5 PFNA

468.00 > 423.00 3.117 3.099 0.018 1.133 3509803 2.60 104 4401

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2 FTS										
529.00 > 81.00	3.465	3.449	0.016	1.260	41965	1.86		77.6	240	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.449	0.016	1.260	1254163	2.28		91.2	2663	
D 23 13C2 PFDA										
515.00 > 470.00	3.480	3.449	0.031	1.265	3449349	2.40		95.9	4333	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.613	0.014	1.319	1432428	2.42		96.6	3140	
D 30 13C2 PFUnA										
565.00 > 520.00	3.807	3.776	0.031	1.384	2697204	2.13		85.4	4337	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.776	0.015	1.379	1175193	2.35		94.2	1565	
D 36 13C2 PFDaA										
615.00 > 570.00	4.089	4.073	0.016	1.487	3652219	2.55		102	4899	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.591	4.573	0.018	1.669	2615041	2.42		96.7	4601	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.007	4.989	0.018	1.820	2212585	2.37		95.0	3684	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.007	5.007	0.0	1.000	21381	-0.000396			11.9	
813.00 > 169.00	5.007	5.007	0.0	1.000	3559		6.01(2.77-8.32)		9.4	

QC Flag Legend

Processing Flags

s - Failed ISTD Recovery Test

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9_NC\20181010-65629.b\2018.10.09LLC_007.d

Injection Date: 10-Oct-2018 08:52:10

Instrument ID: A9_NC

Lims ID: MB 320-249876/1-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 1

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

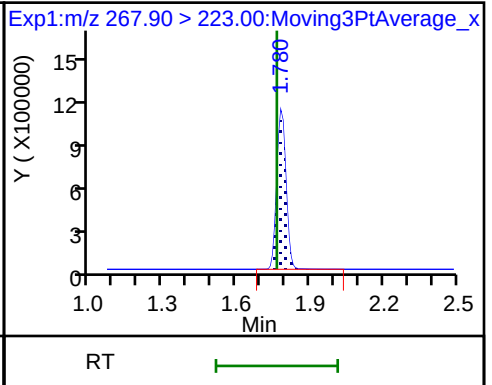
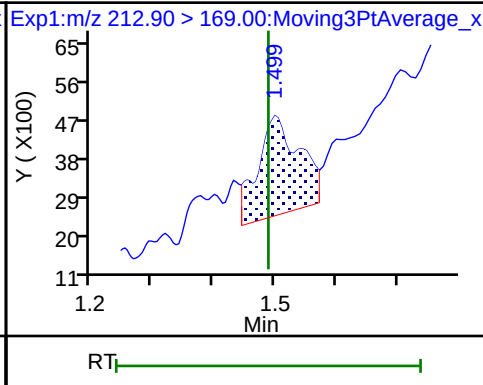
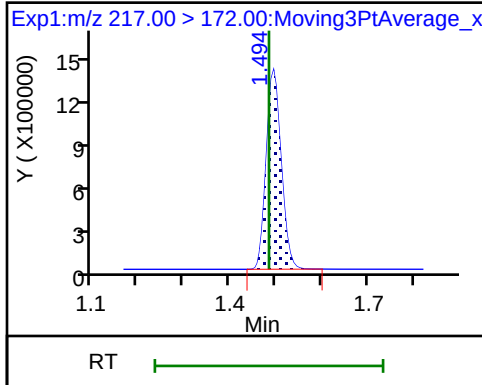
Method: PFAS_A9_NC

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

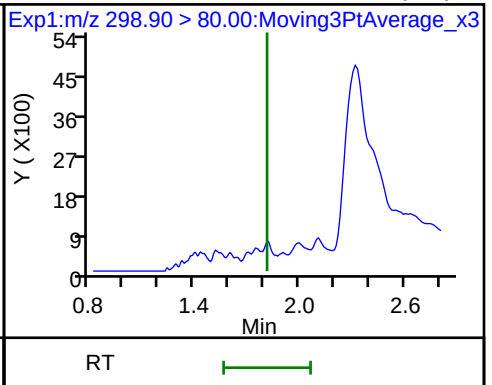
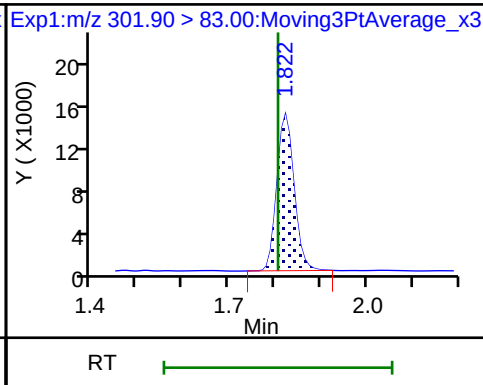
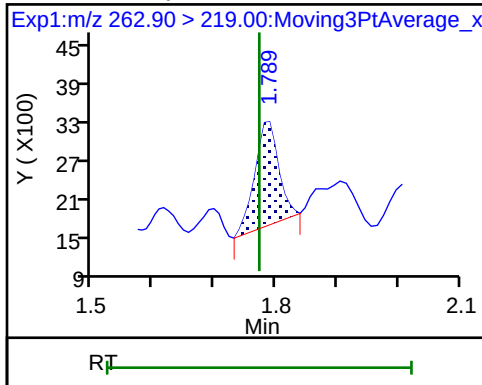
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

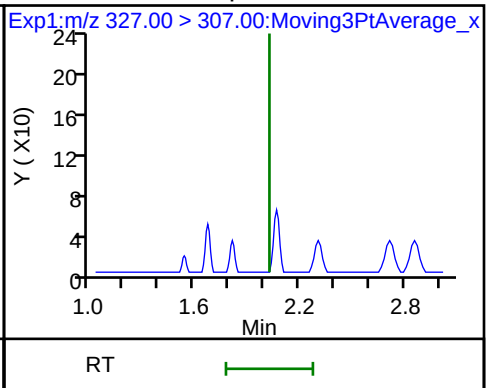
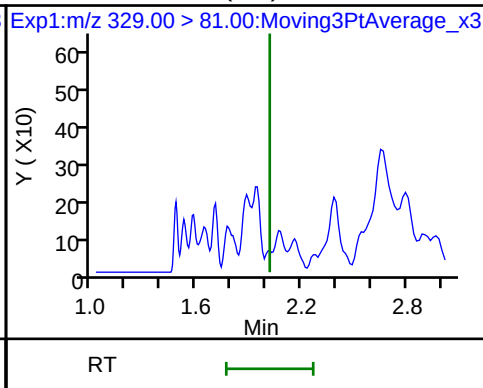
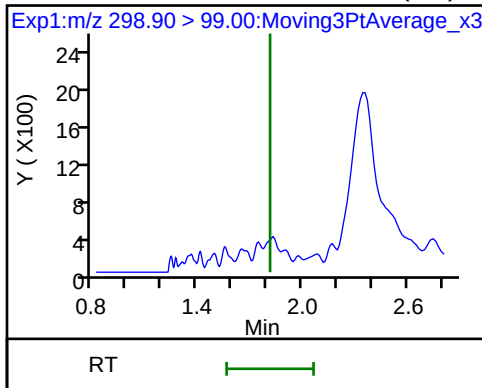
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 60 M2-4:2 FTS (ND)

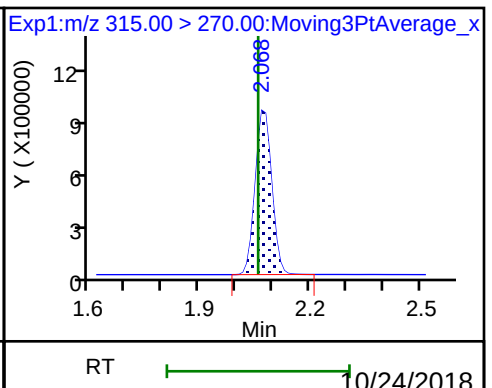
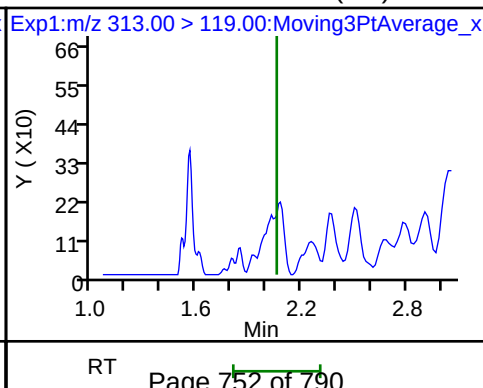
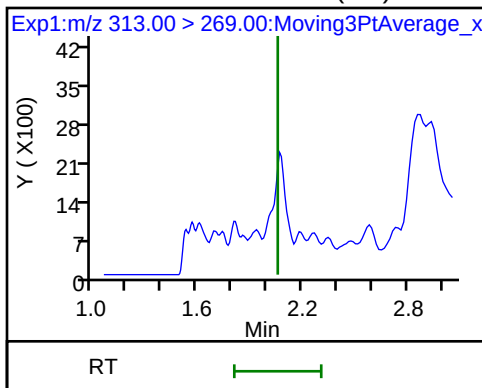
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



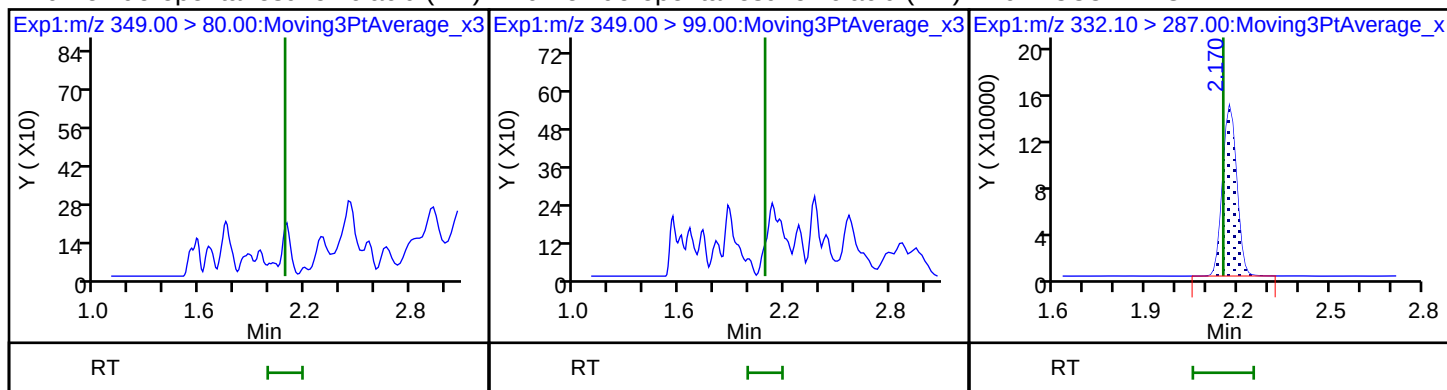
6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

D 7 13C2 PFHxA

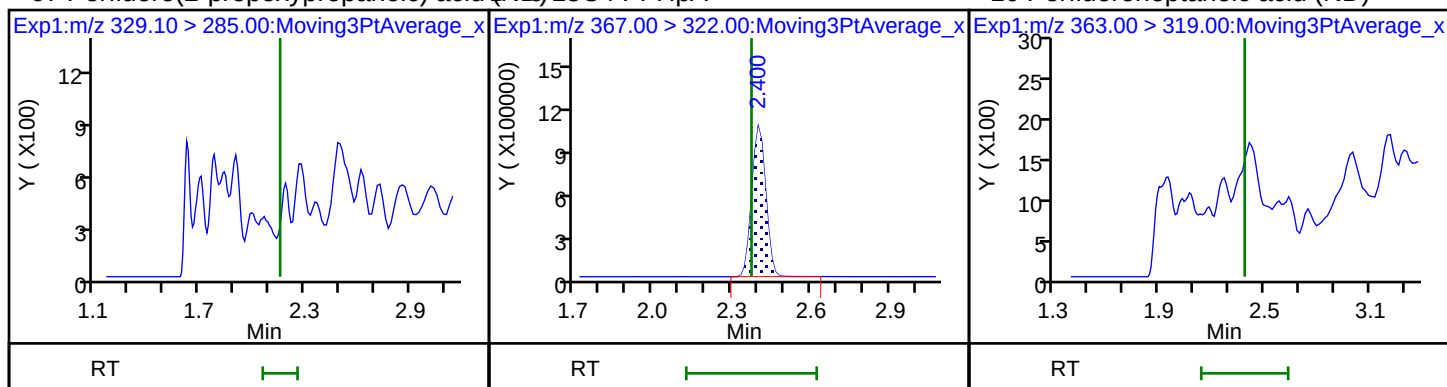


70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid (ND) 13C4 PFHpA

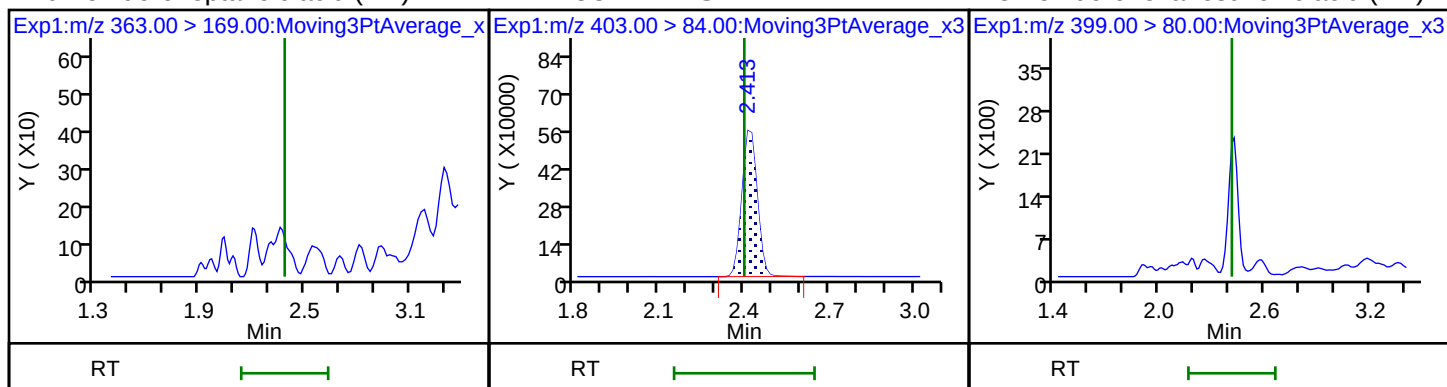
10 Perfluoroheptanoic acid (ND)



10 Perfluoroheptanoic acid (ND)

D 11 18O2 PFHxS

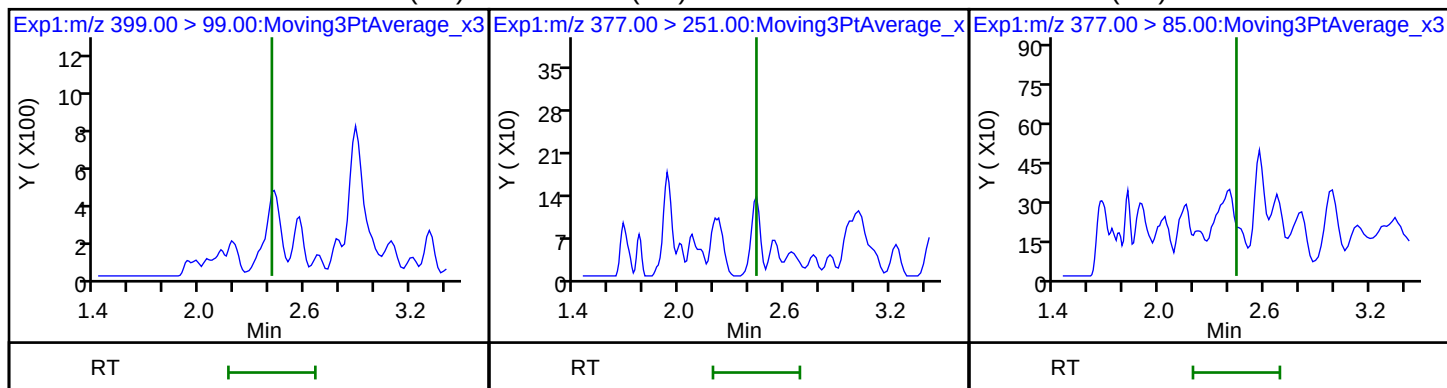
8 Perfluorohexanesulfonic acid (ND)



8 Perfluorohexanesulfonic acid (ND)

76 DONA (ND)

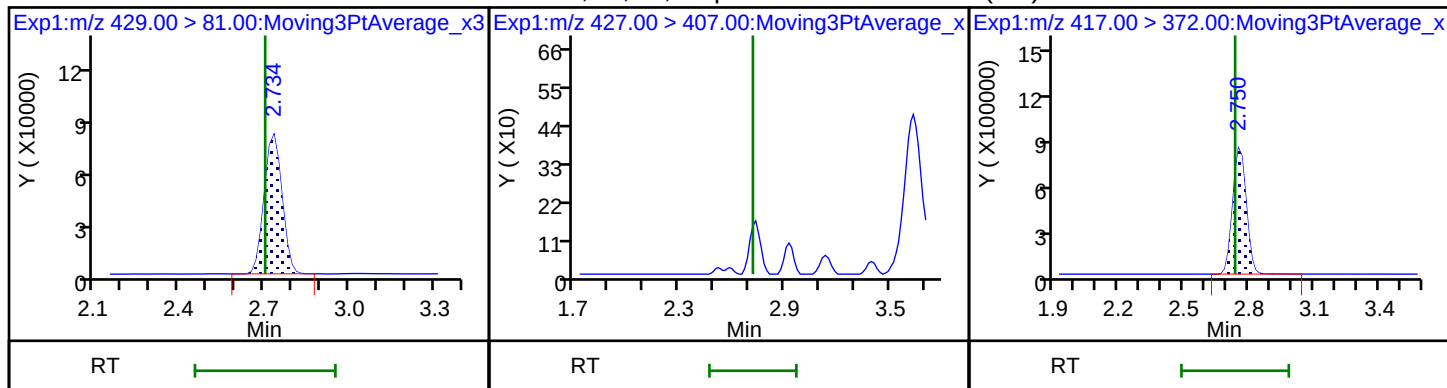
76 DONA (ND)



D 12 M2-6:2 FTS

13 1H,1H,2H,2H-perfluorooctanesulfonate (ND)

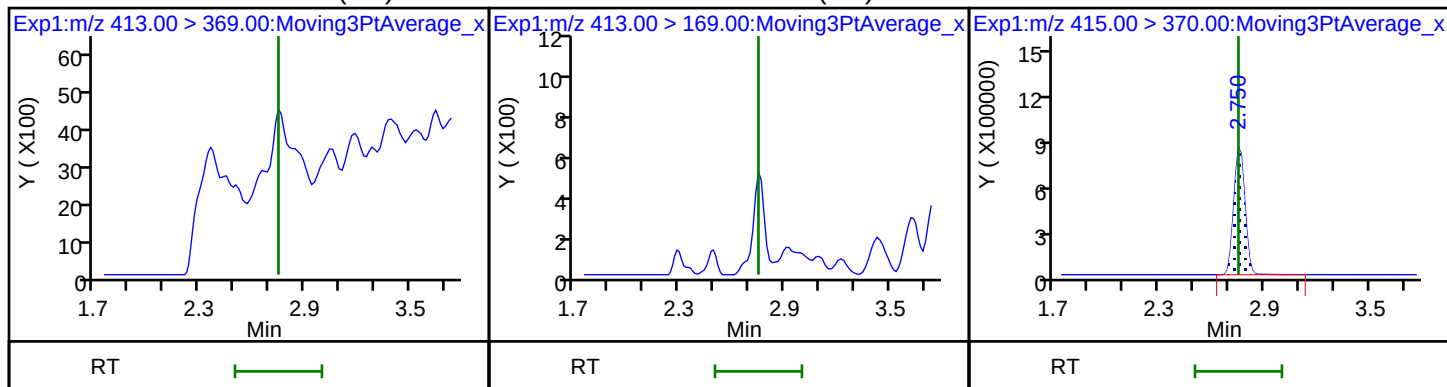
13C4 PFOA



15 Perfluorooctanoic acid (ND)

15 Perfluorooctanoic acid (ND)

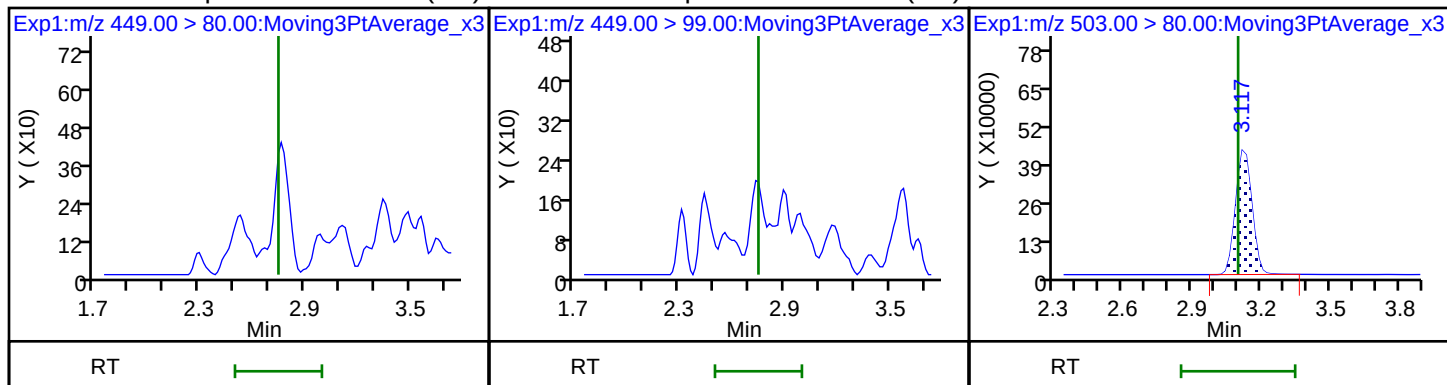
* 62 13C2 PFOA



16 Perfluoroheptanesulfonic acid (ND)

16 Perfluoroheptanesulfonic acid (ND)

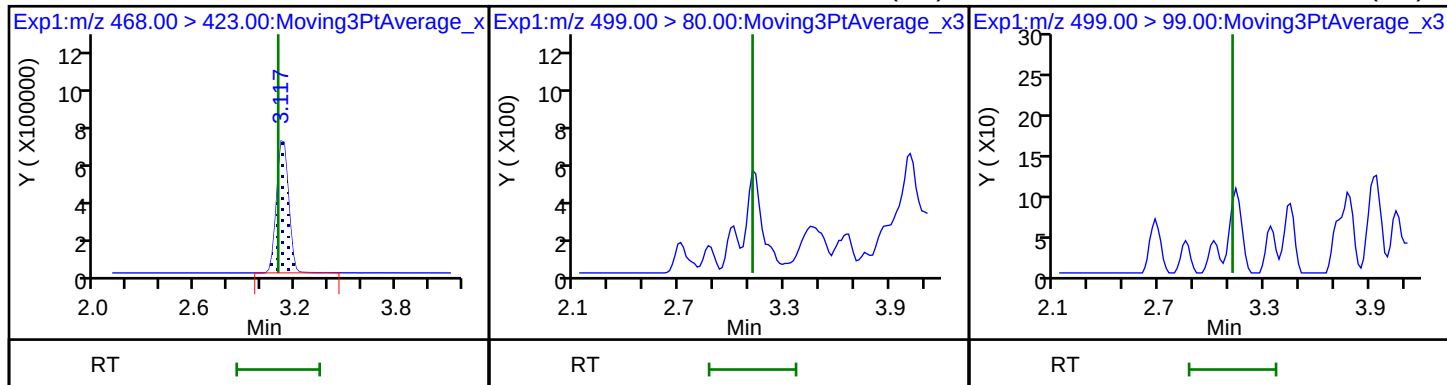
D 18 13C4 PFOS



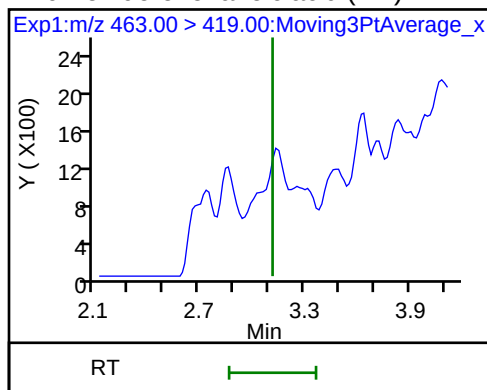
D 19 13C5 PFNA

17 Perfluorooctanesulfonic acid (ND)

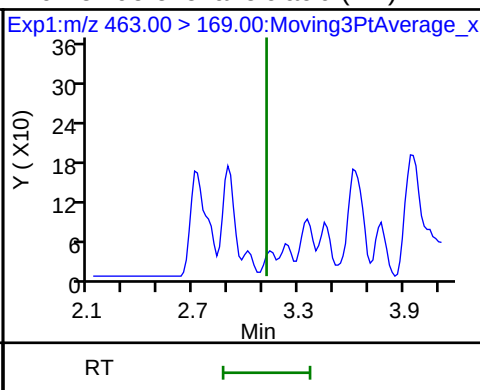
17 Perfluorooctanesulfonic acid (ND)



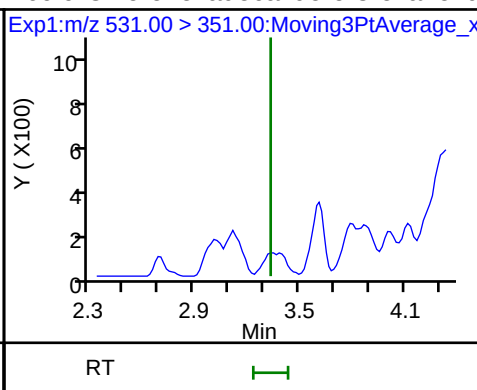
20 Perfluorononanoic acid (ND)



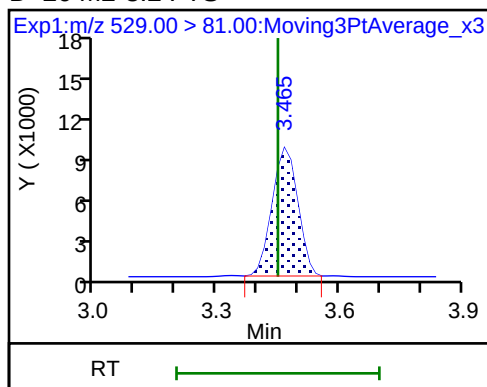
20 Perfluorononanoic acid (ND)



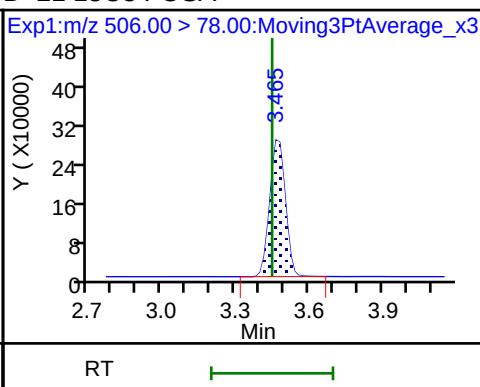
69 9-Chlorohexadecafluoro-3-oxanonane (ND)



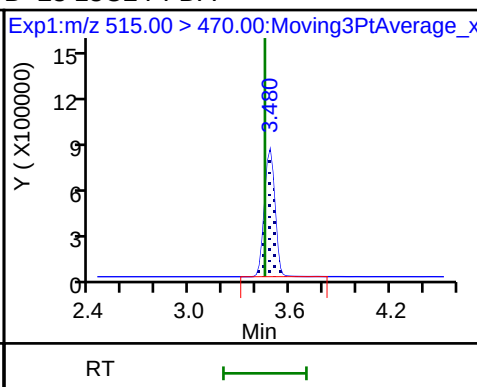
D 26 M2-8:2 FTS



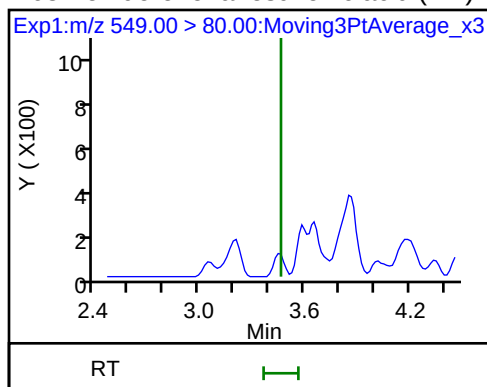
D 21 13C8 FOSA



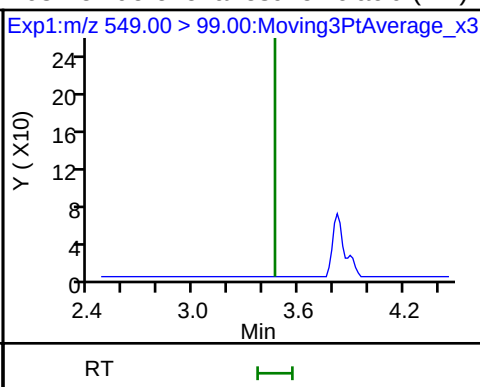
D 23 13C2 PFDA



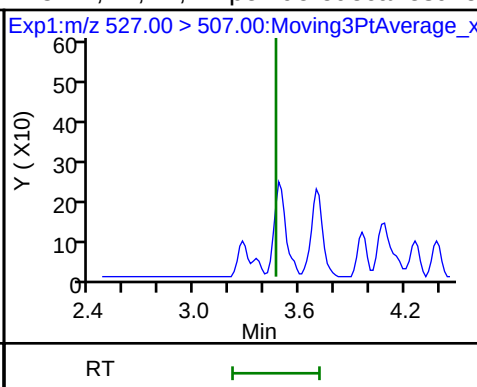
68 Perfluorononanesulfonic acid (ND)



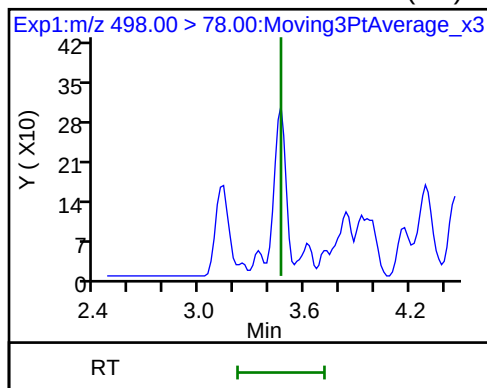
68 Perfluorononanesulfonic acid (ND)



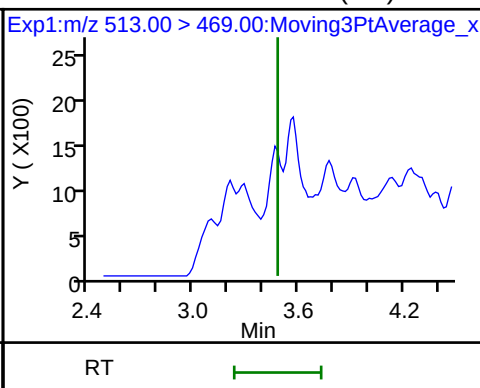
25 1H,1H,2H,2H-perfluorodecanesulfoni (ND)



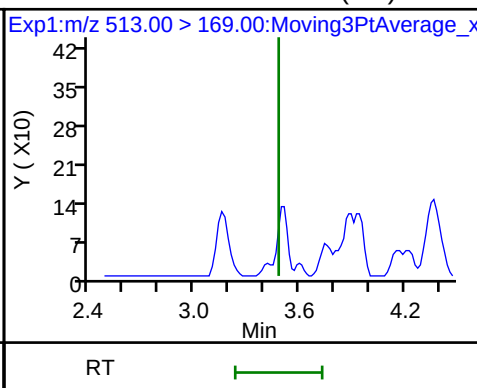
22 Perfluorooctanesulfonamide (ND)



24 Perfluorodecanoic acid (ND)

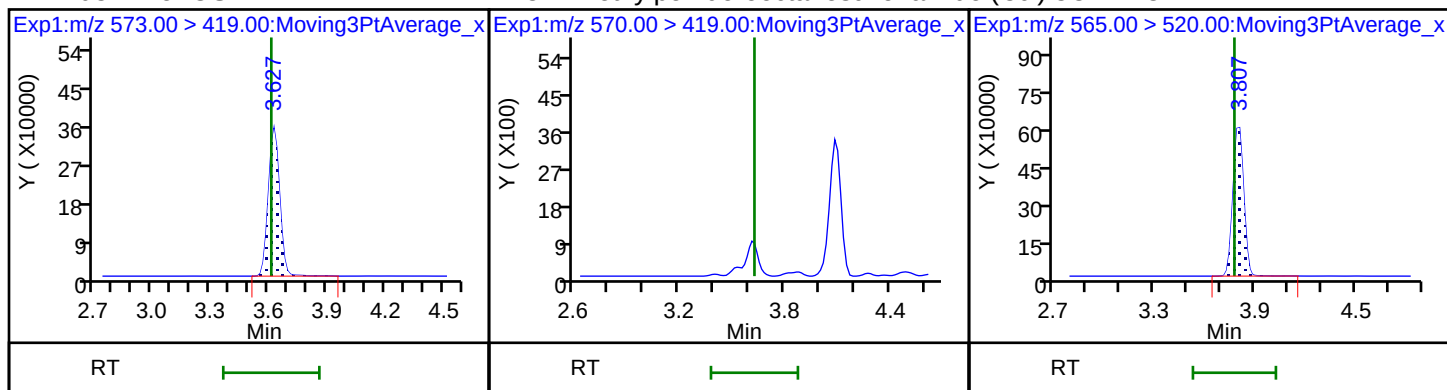


24 Perfluorodecanoic acid (ND)



D 27 d3-NMeFOSAA

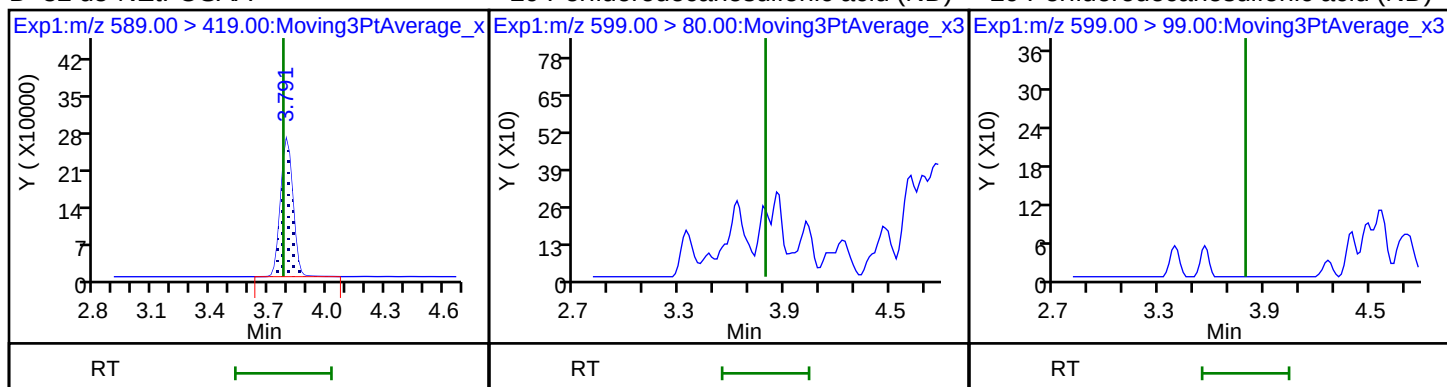
28 N-methylperfluorooctanesulfonamido (ND)



D 32 d5-NEtFOSAA

29 Perfluorodecanesulfonic acid (ND)

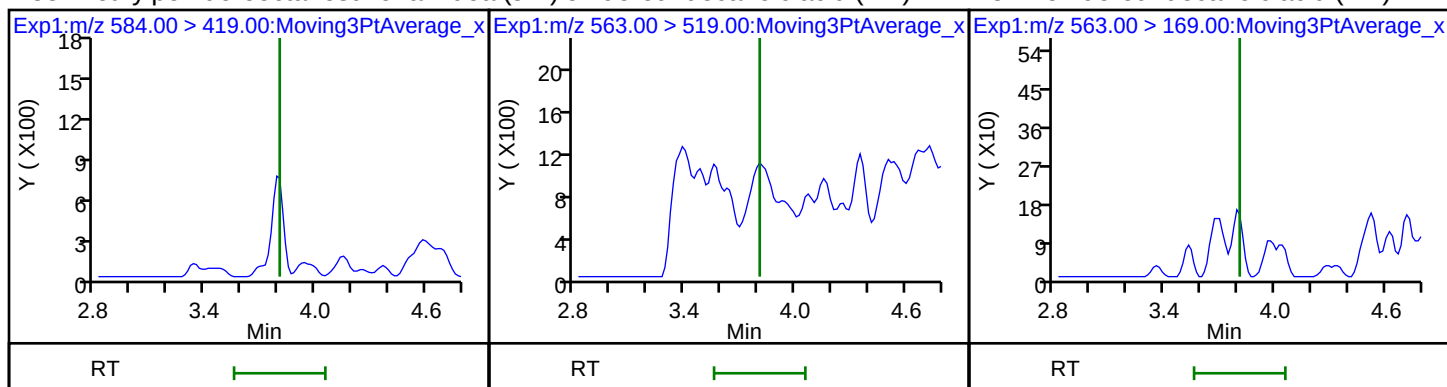
29 Perfluorodecanesulfonic acid (ND)



33 N-ethylperfluorooctanesulfonamido (ND)

30 Perfluoroundecanoic acid (ND)

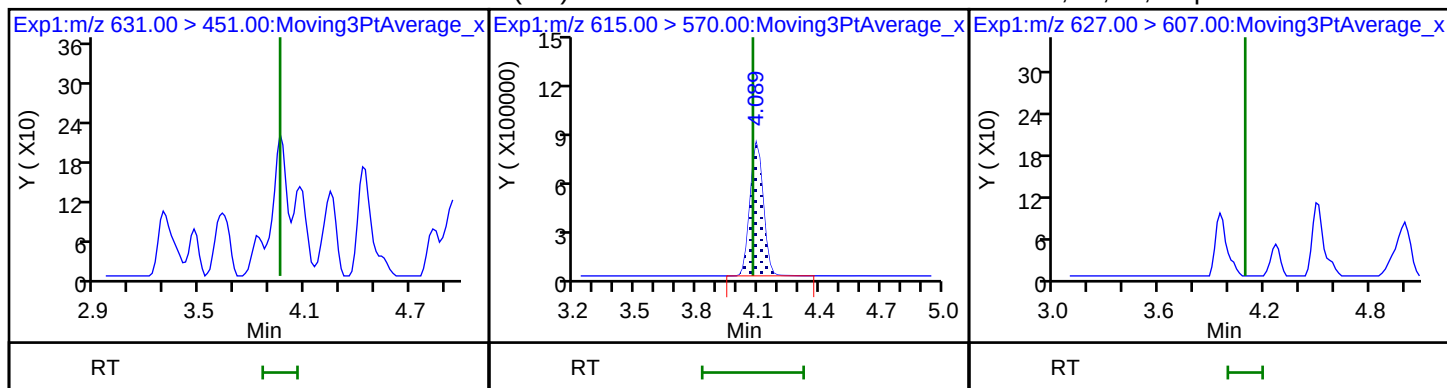
31 Perfluoroundecanoic acid (ND)

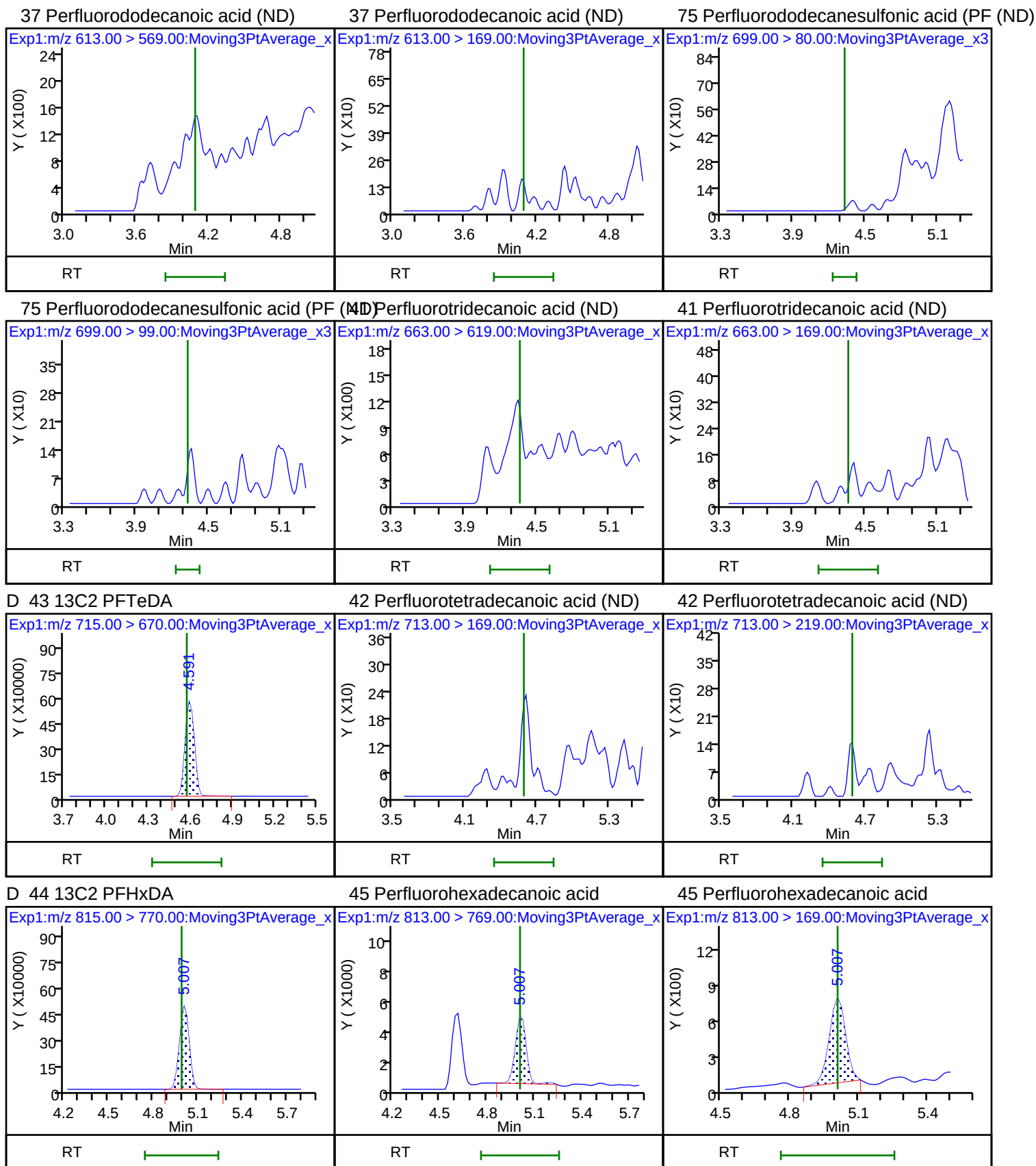


66 11-Chloroeicosafluoro-3-oxaundecanoic acid (ND)

32 13C2 PFDoA

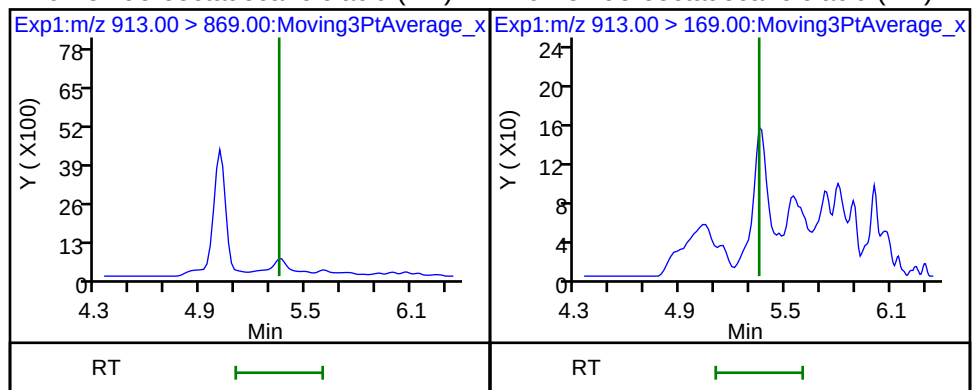
74 1H,1H,2H,2H-perfluorododecanesulfo (ND)





46 Perfluorooctadecanoic acid (ND)

46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-249876/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.17LLAA_033.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/18/2018 20:55</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>253242</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	38.0		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	39.8		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	37.4		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	34.6		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	37.0		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	39.9		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	36.7		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	38.2		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	36.5		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	37.1		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	35.6		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	30.5		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.5		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	34.9		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	32.4		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	35.7		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	36.8		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	38.7		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	37.4		20	1.9
27619-97-2	6:2 FTS	41.4		20	2.0
39108-34-4	8:2 FTS	36.9		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142290-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-249876/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.17LLAAA_033.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/05/2018 07:49</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/18/2018 20:55</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>253242</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	99		25-150
STL01893	13C5 PFPeA	96		25-150
STL00993	13C2 PFHxA	102		25-150
STL01892	13C4 PFHpA	100		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	100		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	96		25-150
STL00998	13C2 PFDoA	97		25-150
STL02116	13C2 PFTeDA	99		25-150
STL02337	13C3 PFBS	100		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	100		25-150
STL01056	13C8 FOSA	92		25-150
STL02118	d3-NMeFOSAA	94		25-150
STL02117	d5-NEtFOSAA	100		25-150
STL02279	M2-6:2 FTS	105		25-150
STL02280	M2-8:2 FTS	101		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_033.d
 Lims ID: LCS 320-249876/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 18-Oct-2018 20:55:40 ALS Bottle#: 17 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-249876/2-a
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Oct-2018 07:29:22 Calib Date: 17-Oct-2018 20:40:12
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66103.b\2018.10.17ICAL_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK013

First Level Reviewer: mongkols

Date: 22-Oct-2018 07:30:20

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.431	0.0	0.538	4297314	2.48		99.2	8040	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.431	1.434	-0.003	1.000	1465881	0.9491		94.9	117	
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.695	0.007	0.640	2691694	2.39		95.6	8731	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.700	0.002	1.000	1183021	1.00		99.6	163	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.732	0.010	1.005	1421371	0.7617		86.2	476	
298.90 > 99.00	1.742	1.732	0.010	1.005	595322		2.39(1.25-3.74)		337	
D 47 13C3 PFBS										
301.90 > 83.00	1.734	1.736	-0.002	0.653	53883	2.32		100	600	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.943	1.939	0.004	1.121	315295	0.8996		96.3	2658	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.976	-0.001	0.743	3117802	2.55		102	6450	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.975	1.980	-0.005	1.000	1181940	0.9350		93.5	244	
313.00 > 119.00	1.975	1.980	-0.005	1.000	106264		11.12(5.03-15.10)		233	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.996	2.001	-0.005	1.151	1489714	0.9554		102	4068	
349.00 > 99.00	2.006	2.001	0.005	1.157	530080		2.81(1.36-4.07)		1748	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.079	2.070	0.009	0.782	231968	2.48		99.1	1097	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.079	2.074	0.005	1.000	262510	0.9666		96.7	299	
D 9 13C4 PFHpA										
367.00 > 322.00	2.299	2.300	-0.001	0.865	2800240	2.49		99.6	5521	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.303	-0.004	1.000	1117497	0.8643		86.4	249	
363.00 > 169.00	2.299	2.303	-0.004	1.000	449085		2.49(1.13-3.40)		387	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.314	0.007	1.000	1219824	0.8372		92.0	1497	
399.00 > 99.00	2.321	2.314	0.007	1.000	386636		3.15(1.50-4.49)		461	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.323	-0.002	0.873	3122229	2.23		94.4	6348	
77 DONA										
377.00 > 251.00	2.344	2.347	-0.003	0.773	3203580	0.8955		95.1	4607	
377.00 > 85.00	2.344	2.347	-0.003	0.773	1889577		1.70(0.85-2.54)		4886	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.627	2.629	-0.001	0.988	540742	2.50		105	1860	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.627	2.630	-0.003	1.000	388728	1.03		109	1079	
D 14 13C4 PFOA										
417.00 > 372.00	2.658	2.652	0.006	1.000	2771006	2.53		101	4587	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.658	2.653	0.005	1.000	1172441	0.9246		92.4	126	
413.00 > 169.00	2.658	2.653	0.005	1.000	618033		1.90(0.84-2.52)		706	
* 62 13C2 PFOA										
415.00 > 370.00	2.658	2.653	0.005		2769482	2.50			5476	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.665	2.660	0.005	0.879	1016841	0.8735		91.7	2296	
449.00 > 99.00	2.665	2.660	0.005	0.879	271276		3.75(1.94-5.82)		1250	
D 19 13C5 PFNA										
468.00 > 423.00	3.031	3.025	0.006	1.140	2293268	2.49		99.7	5027	
D 18 13C4 PFOS										
503.00 > 80.00	3.031	3.025	0.006	1.140	2113175	2.38		99.6	4037	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.031	3.025	0.006	1.000	833932	0.8097		87.3	720	
499.00 > 99.00	3.031	3.025	0.006	1.000	178420		4.67(2.31-6.93)		584	
20 Perfluorononanoic acid										
463.00 > 419.00	3.031	3.025	0.006	1.000	918275	1.00		99.8	377	
463.00 > 169.00	3.031	3.025	0.006	1.000	215306		4.26(1.90-5.69)		1160	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.243	3.237	0.006	1.070	1495200	0.8640		92.7	2857	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.371	3.366	0.005	1.000	1084548	0.9196		92.0	2239	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.373	-0.002	1.268	2942326	2.30		91.9	4096	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.379	3.374	0.005	1.000	249092	0.9234		96.4	1227	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.379	3.380	-0.001	1.271	536354	2.41		101	1624	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.379	3.381	-0.002	1.115	622806	0.8784		91.5	1816	
549.00 > 99.00	3.379	3.381	-0.002	1.115	220226		2.83(1.33-3.97)		1227	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.388	-0.002	1.274	1939689	2.45		98.1	5086	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.386	3.388	-0.002	1.000	724456	0.9177		91.8	678	
513.00 > 169.00	3.386	3.388	-0.002	1.000	141776		5.11(2.36-7.09)		721	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.547	3.548	-0.001	1.334	937050	2.34		93.6	1729	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.555	3.549	0.006	1.002	349223	0.9685		96.9	241	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.709	3.705	0.004	1.224	500482	0.8927		92.6	1629	
599.00 > 99.00	3.701	3.705	-0.004	1.221	166673		3.00(1.39-4.16)		1004	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.718	3.713	0.005	1.399	1031783	2.51		100	1721	
D 30 13C2 PFUnA										
565.00 > 520.00	3.718	3.722	-0.004	1.399	1485434	2.40		96.1	3153	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.718	3.722	-0.004	1.000	323668	0.9358		93.6	710	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.718	3.722	-0.004	1.000	507014	0.9556		95.6	368	
563.00 > 169.00	3.718	3.722	-0.004	1.000	122754		4.13(2.12-6.36)		566	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.881	3.875	0.006	1.280	2184675	0.8536		90.6	5077	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.015	4.010	0.005	1.000	651972	0.9130		91.3	436	
613.00 > 169.00	4.015	4.010	0.005	1.000	164414		3.97(2.13-6.40)		839	
D 36 13C2 PFDaA										
615.00 > 570.00	4.015	4.018	-0.003	1.510	1614956	2.42		97.0	3896	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.023	4.019	0.004	1.191	171702	0.8486		88.0	1410	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.257	4.252	0.005	1.405	218452	0.8178		84.5	894	
699.00 > 99.00	4.257	4.252	0.005	1.405	336555		0.65(0.00-0.00)		1683	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.285	4.280	0.005	1.067	656171	0.9279		92.8	424	
663.00 > 169.00	4.285	4.280	0.005	1.067	224546		2.92(1.25-3.76)		1014	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.517	4.522	-0.005	1.699	2143684	2.49		99.5	4074	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.527	4.522	0.005	1.002	205053	0.8908		89.1	1172	
713.00 > 219.00	4.517	4.522	-0.005	1.000	143431		1.43(0.71-2.13)		1553	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.937	4.943	-0.006	1.857	3333251	2.14		85.5	4871	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.937	4.943	-0.006	1.000	1128704	0.9384		93.8	186	
813.00 > 169.00	4.937	4.943	-0.006	1.000	210940		5.35(2.86-8.58)		1061	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.288	5.293	-0.005	1.071	1310692	0.8757		87.6	197	
913.00 > 169.00	5.288	5.293	-0.005	1.071	170032		7.71(3.83-11.48)		906	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181018-66161.b\2018.10.17LLAAA_033.d

Injection Date: 18-Oct-2018 20:55:40

Instrument ID: A8_N

Lims ID: LCS 320-249876/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

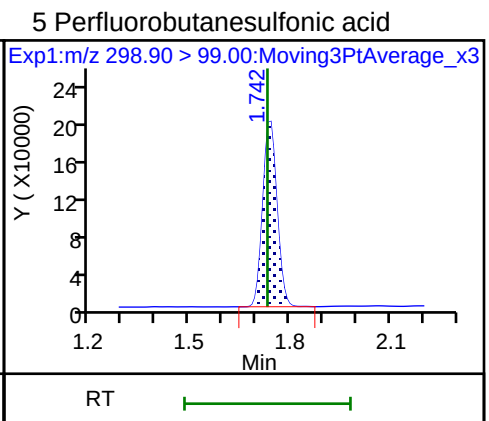
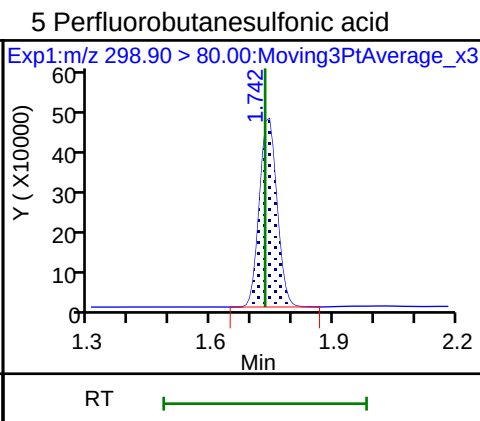
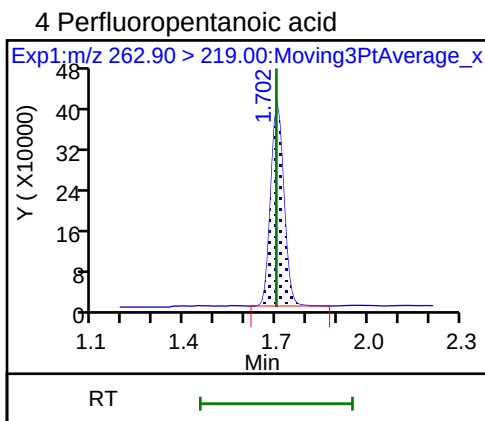
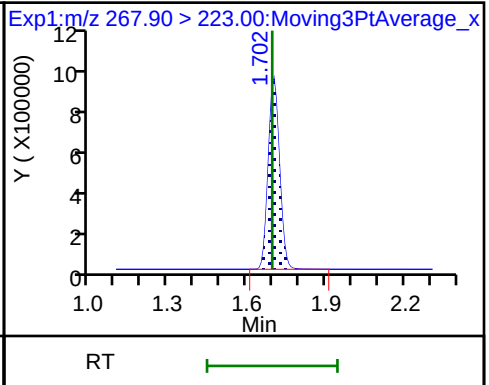
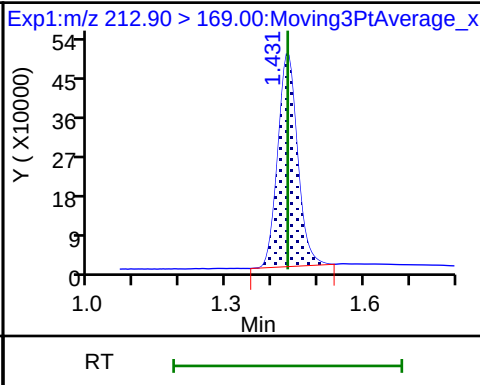
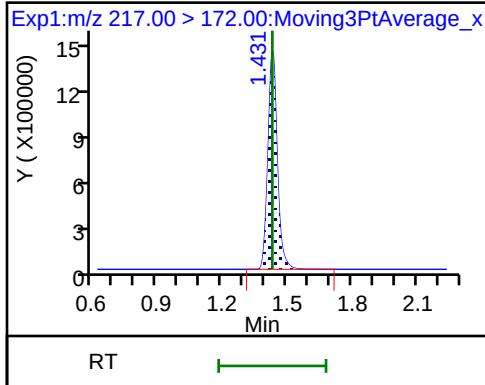
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

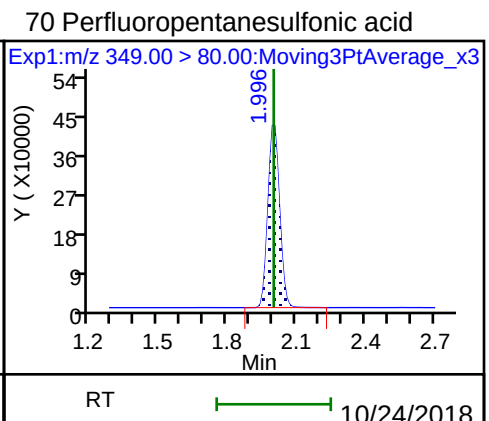
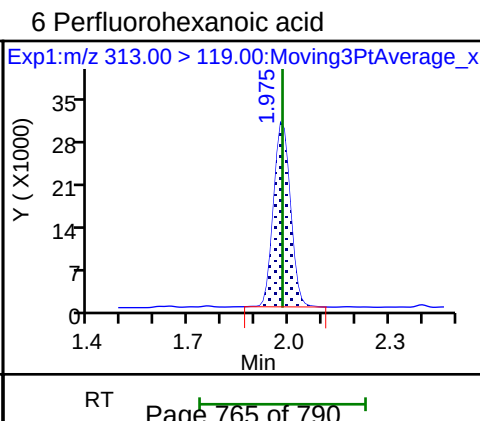
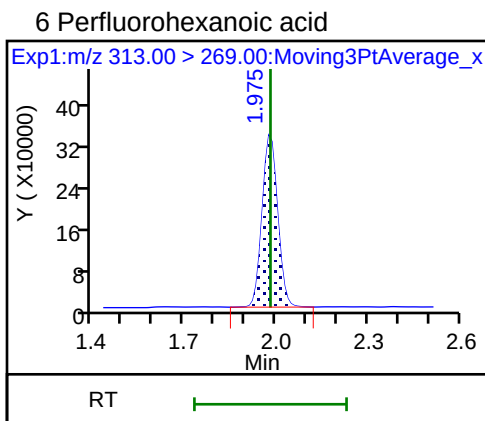
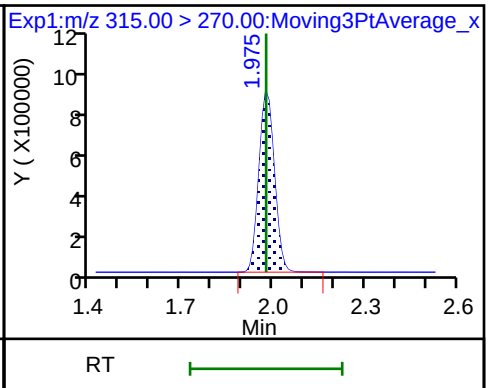
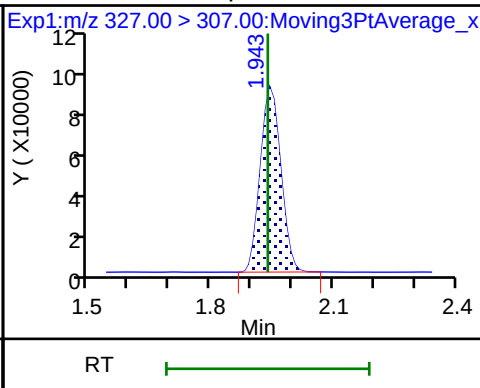
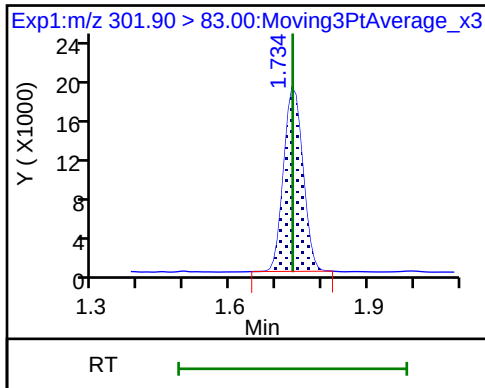
D 3 13C5 PFPeA

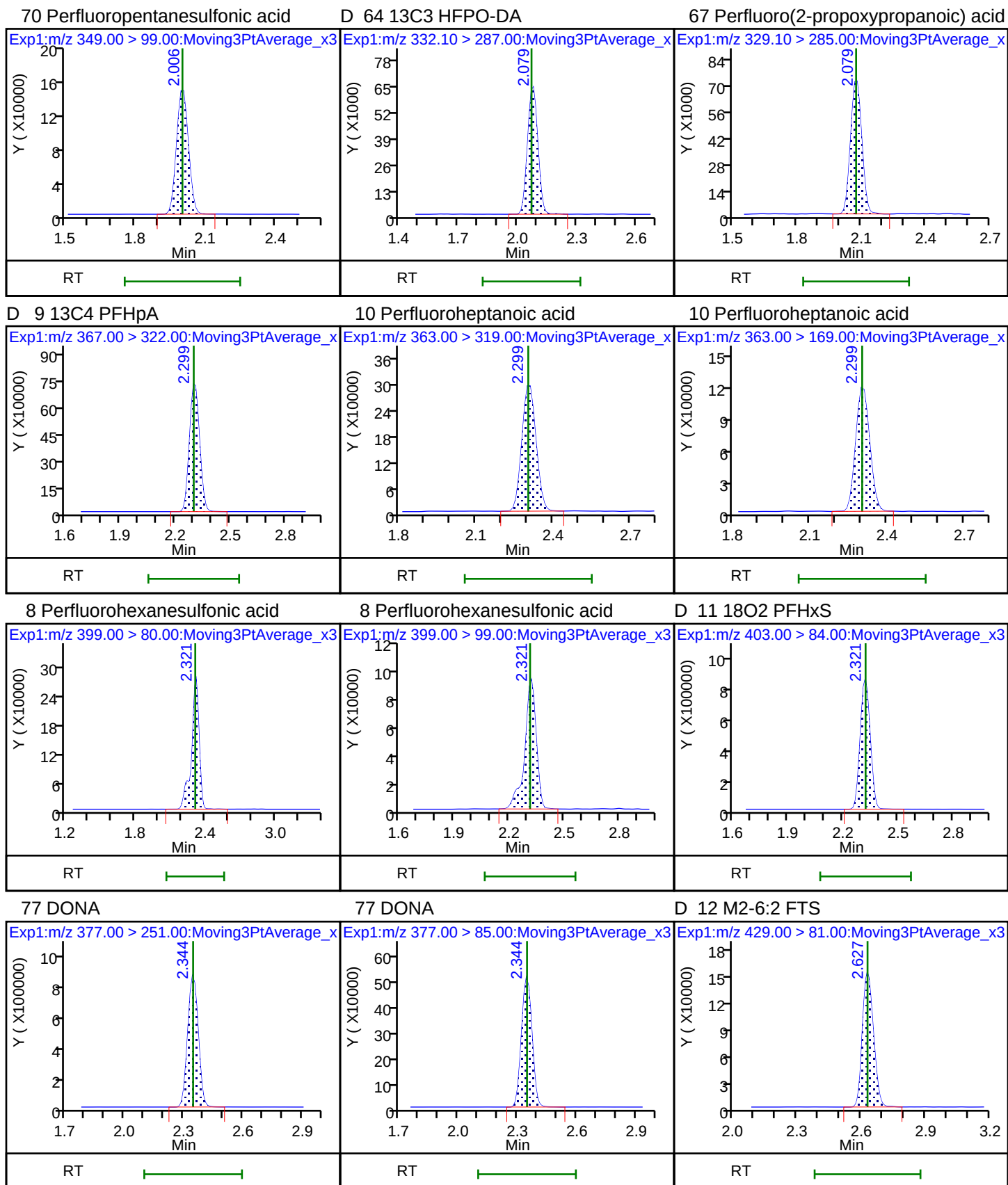


D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

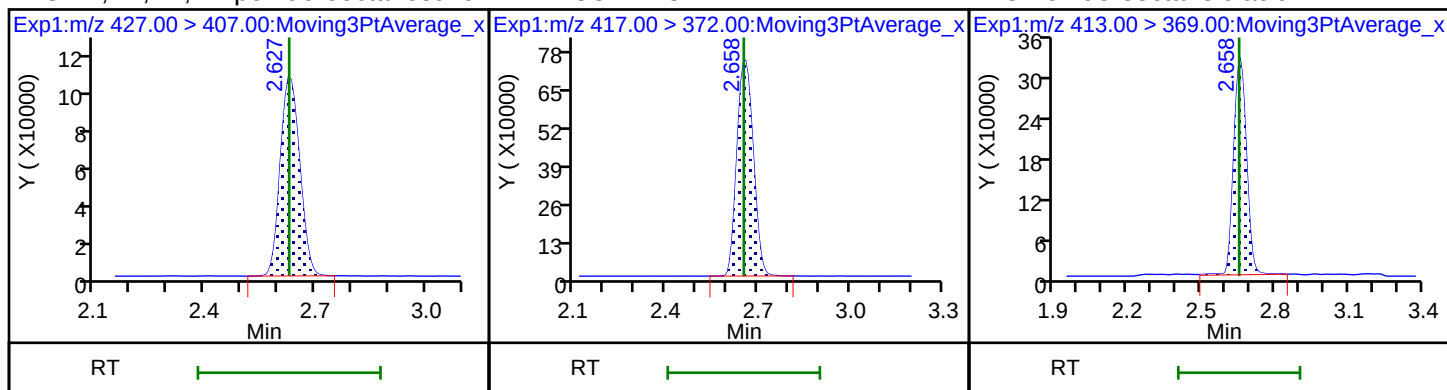
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA

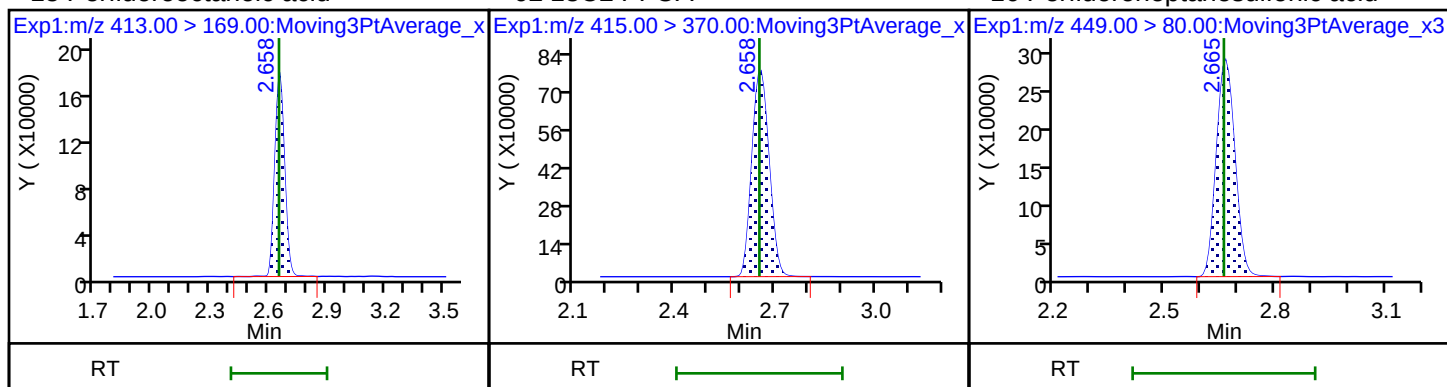
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

* 62 13C2 PFOA

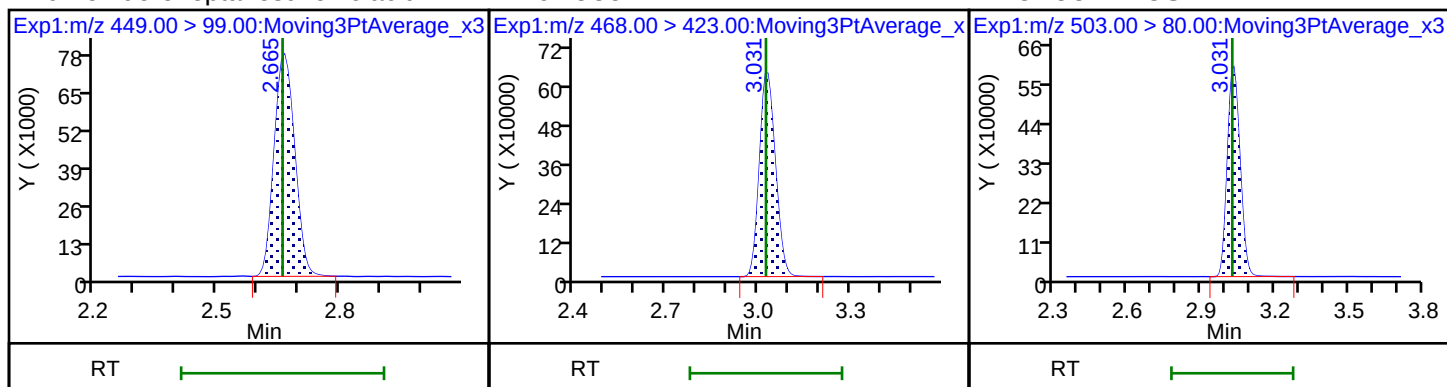
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

D 19 13C5 PFNA

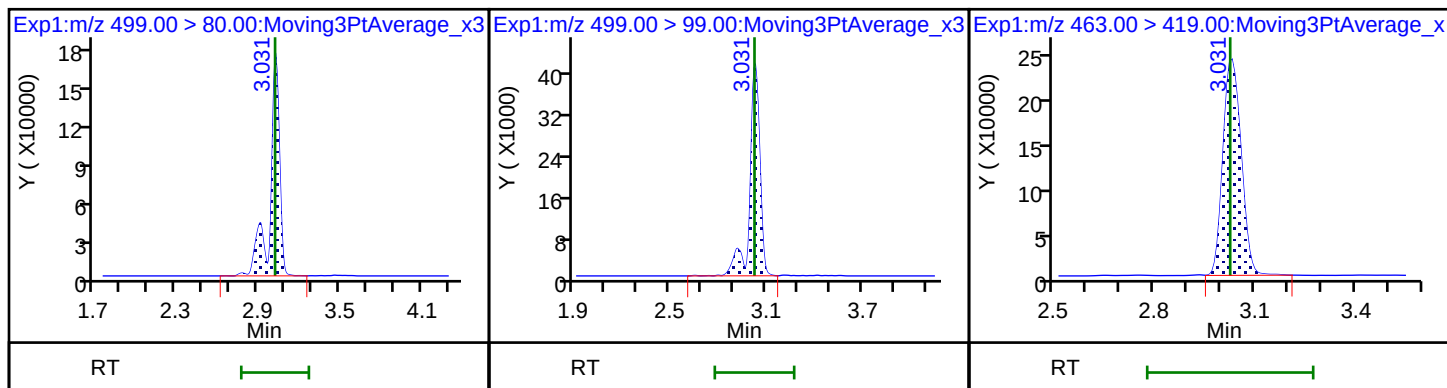
D 18 13C4 PFOS



17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

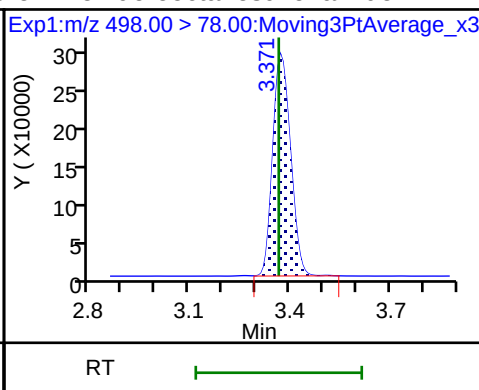
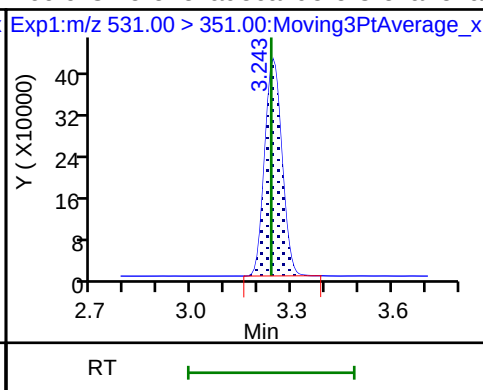
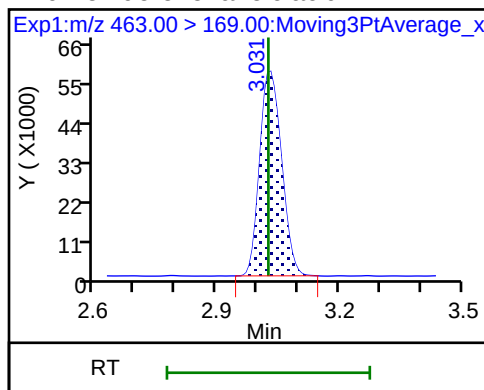
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan

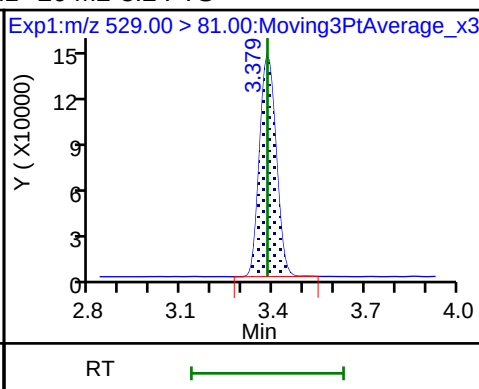
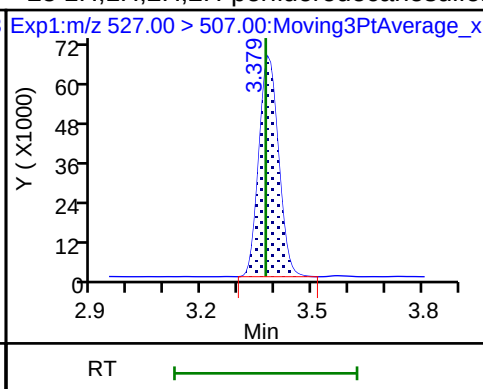
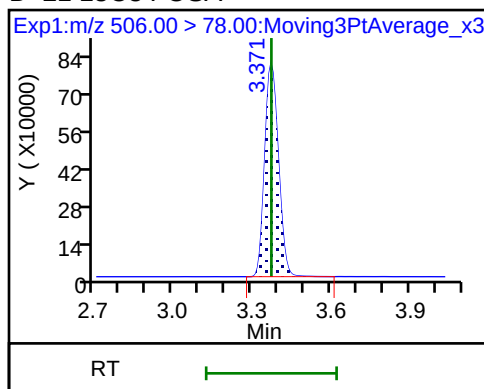
22 Perfluorooctanesulfonamide



D 21 13C8 FOSA

25 1H,1H,2H,2H-perfluorodecanesulfon

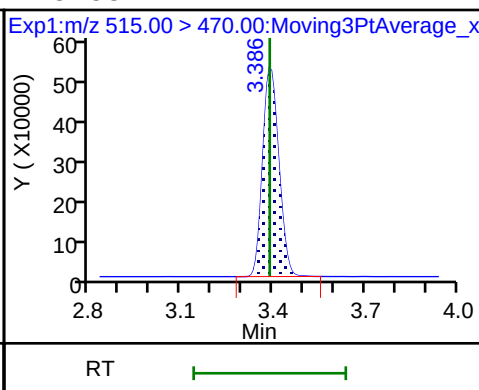
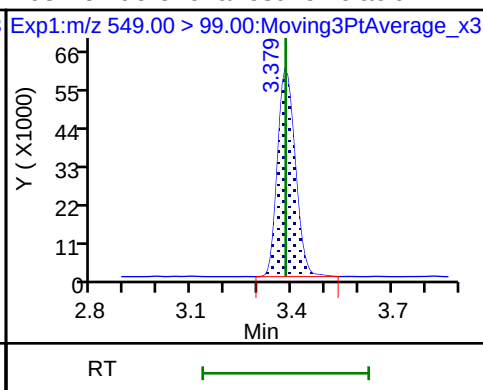
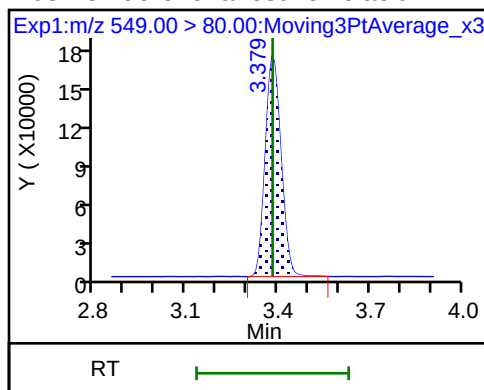
D 26 M2-8:2 FTS



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

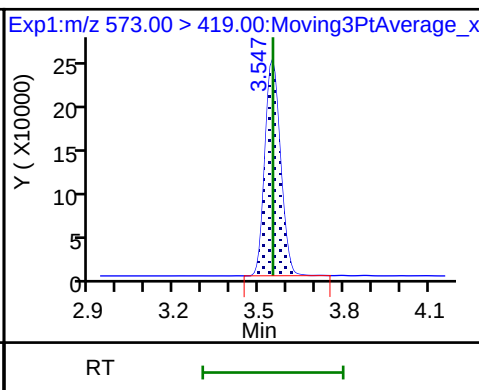
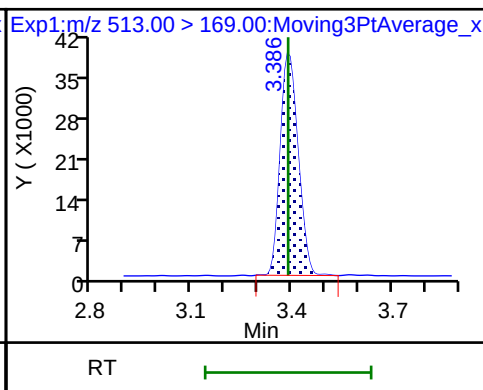
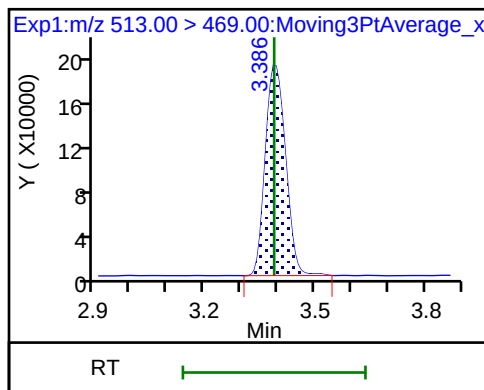
D 23 13C2 PFDA



24 Perfluorodecanoic acid

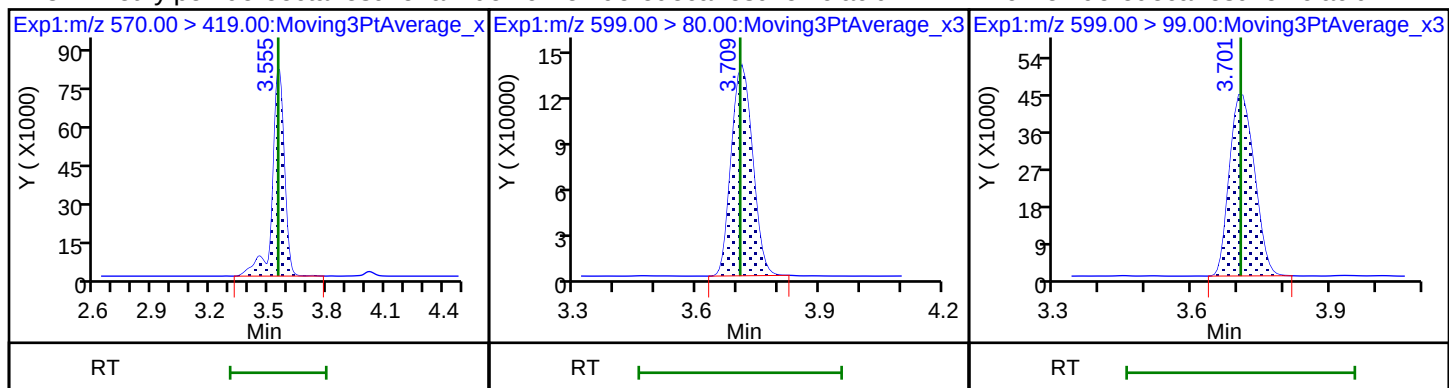
24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

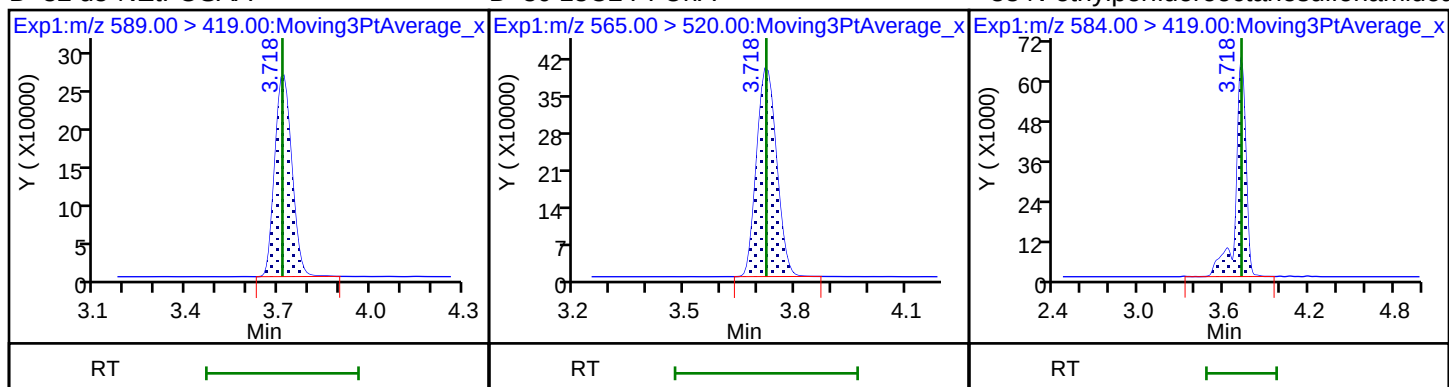
29 Perfluorodecanesulfonic acid



D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

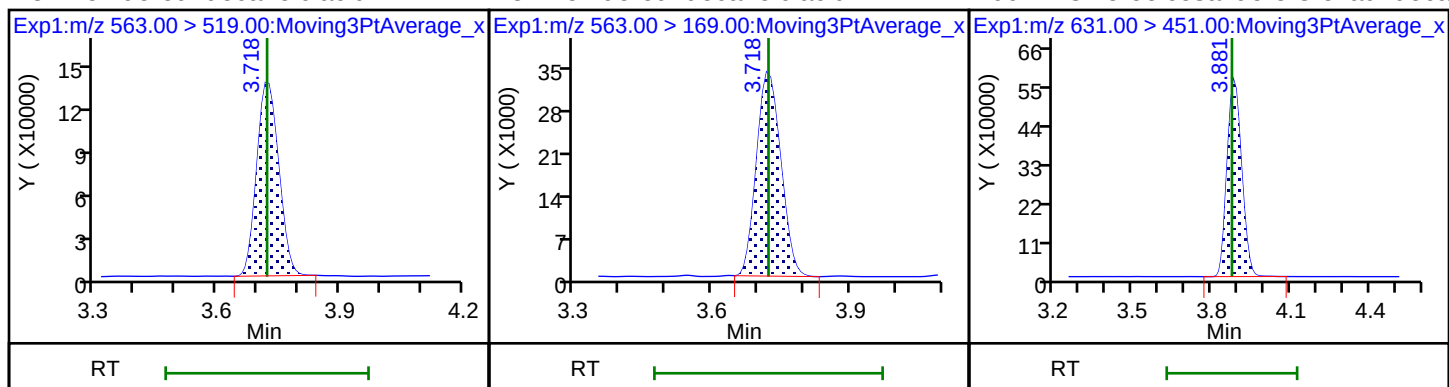
33 N-ethylperfluorooctanesulfonamidoa



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

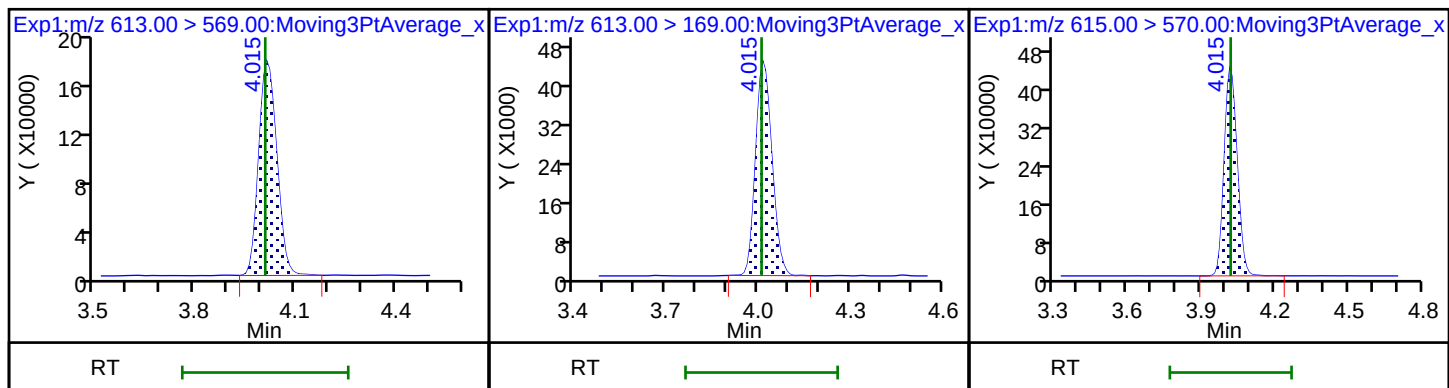
66 11-Chloroeicosafluoro-3-oxaundecan



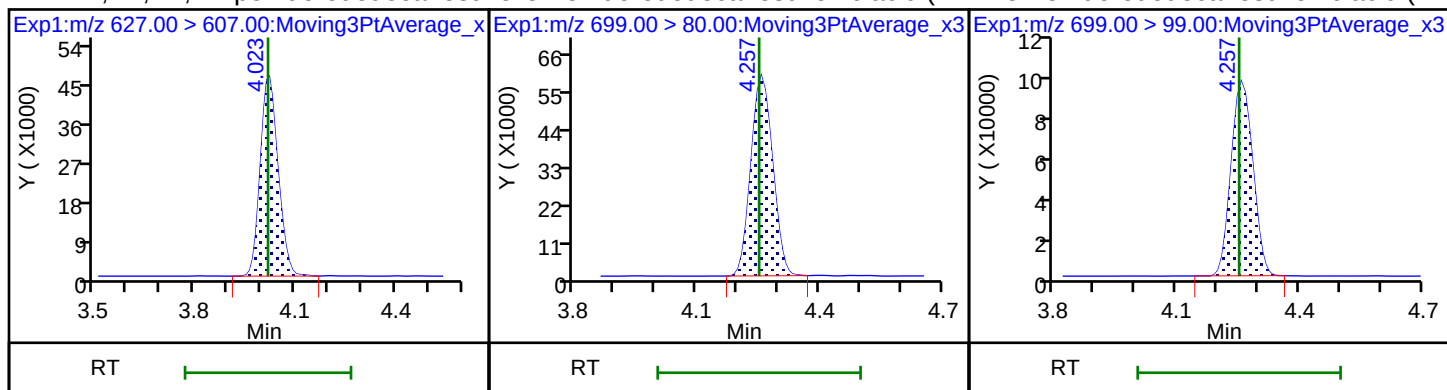
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



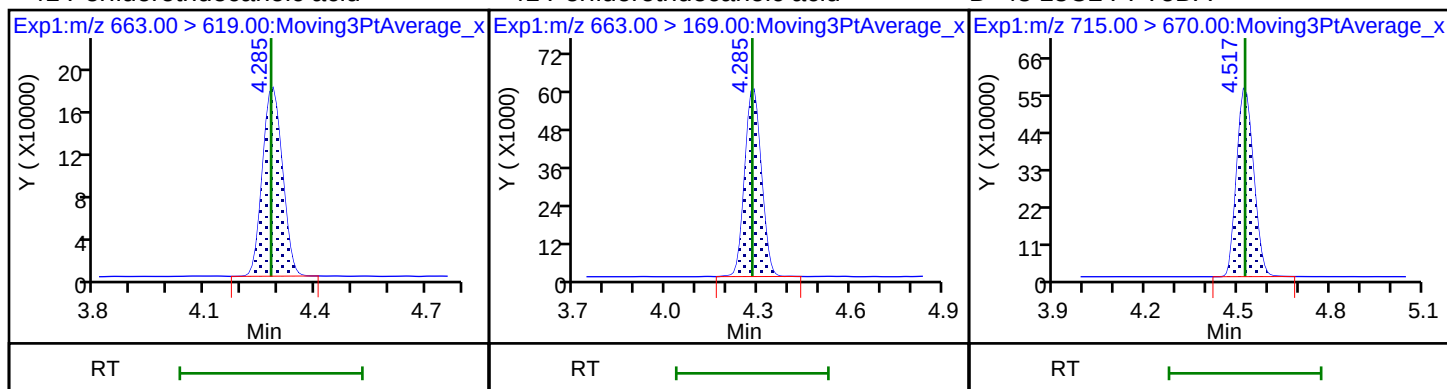
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

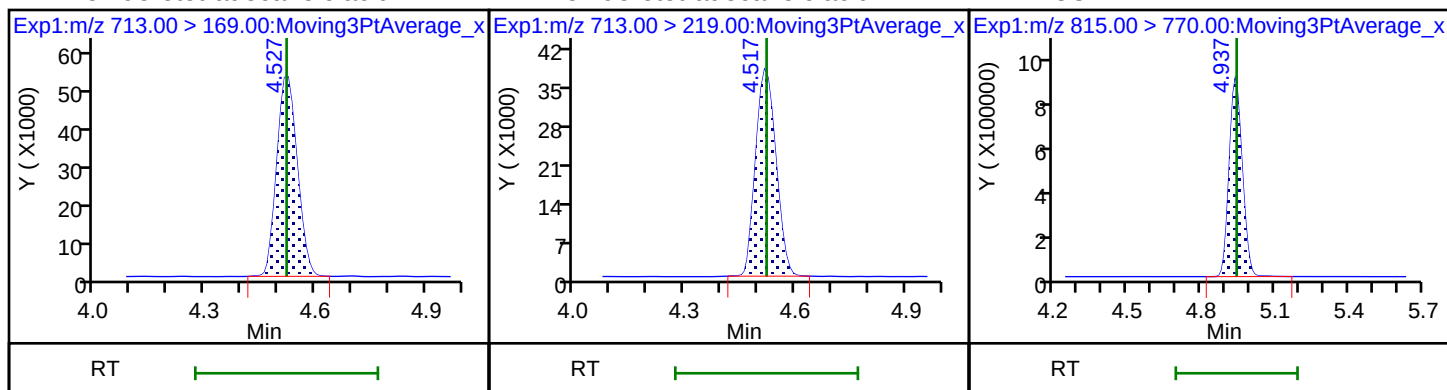
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

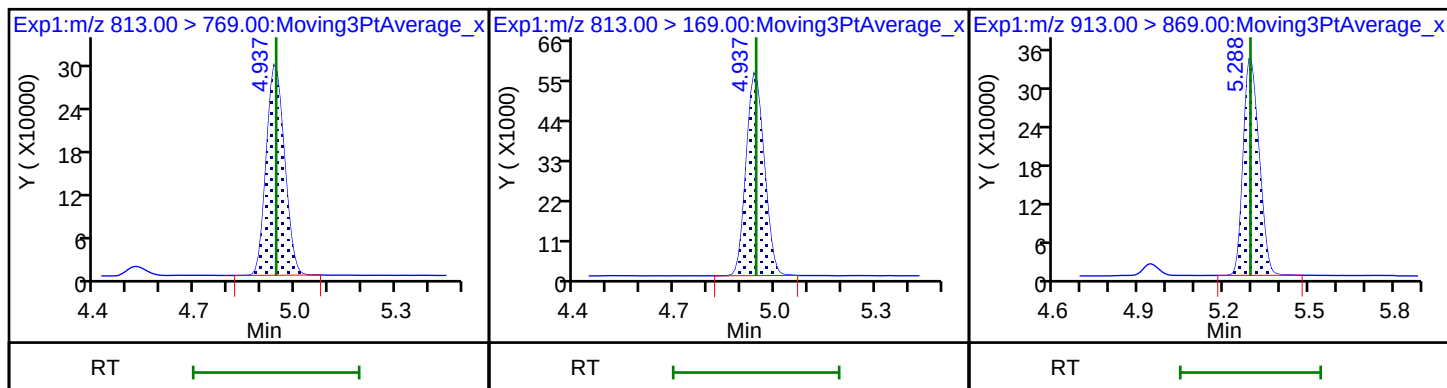
D 44 13C2 PFHxDA



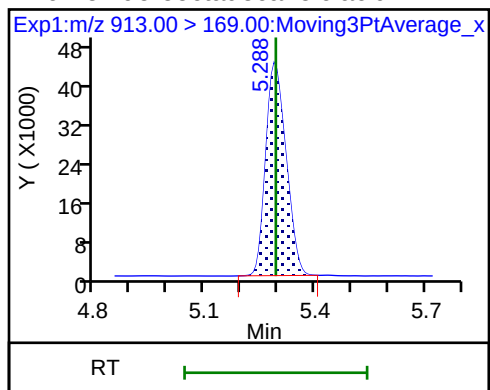
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Instrument ID: A8_N Start Date: 10/17/2018 19:55Analysis Batch Number: 253035 End Date: 10/17/2018 20:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-253035/2		10/17/2018 19:55	1	2018.10.17ICAL_ 005.d	GeminiC18 3x100 3(mm)
IC 320-253035/3		10/17/2018 20:03	1	2018.10.17ICAL_ 006.d	GeminiC18 3x100 3(mm)
IC 320-253035/4		10/17/2018 20:10	1	2018.10.17ICAL_ 007.d	GeminiC18 3x100 3(mm)
IC 320-253035/5 ICIS		10/17/2018 20:17	1	2018.10.17ICAL_ 008.d	GeminiC18 3x100 3(mm)
IC 320-253035/6		10/17/2018 20:25	1	2018.10.17ICAL_ 009.d	GeminiC18 3x100 3(mm)
IC 320-253035/7		10/17/2018 20:32	1	2018.10.17ICAL_ 010.d	GeminiC18 3x100 3(mm)
IC 320-253035/8		10/17/2018 20:40	1	2018.10.17ICAL_ 011.d	GeminiC18 3x100 3(mm)
ICB 320-253035/9		10/17/2018 20:47	1	2018.10.17ICAL_ 012.d	GeminiC18 3x100 3(mm)
ICV 320-253035/10		10/17/2018 20:55	1	2018.10.17ICAL_ 013.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Instrument ID: A8_N Start Date: 10/18/2018 14:58Analysis Batch Number: 253219 End Date: 10/18/2018 15:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-253219/1		10/18/2018 14:58	1	2018.10.17LLAA 004.d	GeminiC18 3x100 3(mm)
CCVL 320-253219/2		10/18/2018 15:06	1	2018.10.17LLAA 005.d	GeminiC18 3x100 3(mm)
CCV 320-253219/3 CCVIS		10/18/2018 15:13	1	2018.10.17LLAA 006.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/18/2018 15:20	10		GeminiC18 3x100 3(mm)
ZZZZZ		10/18/2018 15:28	10		GeminiC18 3x100 3(mm)
ZZZZZ		10/18/2018 15:35	10		GeminiC18 3x100 3(mm)
CCV 320-253219/7		10/18/2018 15:43	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Instrument ID: A8_N Start Date: 10/18/2018 20:48Analysis Batch Number: 253242 End Date: 10/18/2018 21:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-253242/1		10/18/2018 20:48	1	2018.10.17LLAA 032.d	GeminiC18 3x100 3(mm)
LCS 320-249876/2-A		10/18/2018 20:55	1	2018.10.17LLAA 033.d	GeminiC18 3x100 3(mm)
480-142290-2		10/18/2018 21:03	10	2018.10.17LLAA 034.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/18/2018 21:10	1		GeminiC18 3x100 3(mm)
CCV 320-253242/5		10/18/2018 21:17	1	2018.10.17LLAA 036.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Instrument ID: A9 Start Date: 10/11/2018 15:53Analysis Batch Number: 251474 End Date: 10/11/2018 16:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-251474/2		10/11/2018 15:53	1	2018.10.11LLICA LA 002.d	Acquity 2.1 (mm)
IC 320-251474/3		10/11/2018 16:01	1	2018.10.11LLICA LA 003.d	Acquity 2.1 (mm)
IC 320-251474/4		10/11/2018 16:09	1	2018.10.11LLICA LA 004.d	Acquity 2.1 (mm)
IC 320-251474/5 ICIS		10/11/2018 16:16	1	2018.10.11LLICA LA 005.d	Acquity 2.1 (mm)
IC 320-251474/6		10/11/2018 16:24	1	2018.10.11LLICA LA 006.d	Acquity 2.1 (mm)
IC 320-251474/7		10/11/2018 16:31	1	2018.10.11LLICA LA 007.d	Acquity 2.1 (mm)
IC 320-251474/8		10/11/2018 16:39	1	2018.10.11LLICA LA 008.d	Acquity 2.1 (mm)
ICB 320-251474/9		10/11/2018 16:46	1	2018.10.11LLICA LA 009.d	Acquity 2.1 (mm)
ICV 320-251474/10		10/11/2018 16:54	1	2018.10.11LLICA LA 010.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1
 SDG No.: _____
 Instrument ID: A9 Start Date: 10/11/2018 23:21
 Analysis Batch Number: 251568 End Date: 10/12/2018 01:36

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-251568/1		10/11/2018 23:21	1	2018.10.11LLAAX 043.d	Acquity 2.1 (mm)
ZZZZZ		10/11/2018 23:29	1		Acquity 2.1 (mm)
ZZZZZ		10/11/2018 23:36	1		Acquity 2.1 (mm)
480-142290-3		10/11/2018 23:44	1	2018.10.11LLAAX 046.d	Acquity 2.1 (mm)
ZZZZZ		10/11/2018 23:51	1		Acquity 2.1 (mm)
ZZZZZ		10/11/2018 23:59	1		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 00:06	1		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 00:14	10		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 00:21	1		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 00:29	1		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 00:36	1		Acquity 2.1 (mm)
CCV 320-251568/12		10/12/2018 00:44	1	2018.10.11LLAAX 054.d	Acquity 2.1 (mm)
ZZZZZ		10/12/2018 00:51	1		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 00:59	1		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 01:06	1		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 01:14	100		Acquity 2.1 (mm)
ZZZZZ		10/12/2018 01:21	10		Acquity 2.1 (mm)
CCV 320-251568/19		10/12/2018 01:36	1		Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Instrument ID: A9_NC Start Date: 10/08/2018 15:34Analysis Batch Number: 251040 End Date: 10/08/2018 16:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-251040/2		10/08/2018 15:34	1	2018.10.08LLICA L 002.d	Acquity 2.1 (mm)
IC 320-251040/3		10/08/2018 15:41	1	2018.10.08LLICA L 003.d	Acquity 2.1 (mm)
IC 320-251040/4		10/08/2018 15:49	1	2018.10.08LLICA L 004.d	Acquity 2.1 (mm)
IC 320-251040/5 ICIS		10/08/2018 15:56	1	2018.10.08LLICA L 005.d	Acquity 2.1 (mm)
IC 320-251040/6		10/08/2018 16:04	1	2018.10.08LLICA L 006.d	Acquity 2.1 (mm)
IC 320-251040/7		10/08/2018 16:11	1	2018.10.08LLICA L 007.d	Acquity 2.1 (mm)
IC 320-251040/8		10/08/2018 16:19	1	2018.10.08LLICA L 008.d	Acquity 2.1 (mm)
ICB 320-251040/9		10/08/2018 16:26	1	2018.10.08LLICA L 009.d	Acquity 2.1 (mm)
ICV 320-251040/10		10/08/2018 16:34	1	2018.10.08LLICA L 010.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 480-142290-1

SDG No.: _____

Instrument ID: A9_NCStart Date: 10/10/2018 08:29Analysis Batch Number: 251153End Date: 10/10/2018 12:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-251153/1		10/10/2018 08:29	1	2018.10.09LLC_04.d	Acquity 2.1 (mm)
CCVL 320-251153/2		10/10/2018 08:37	1	2018.10.09LLC_05.d	Acquity 2.1 (mm)
CCV 320-251153/3 CCVIS		10/10/2018 08:44	1	2018.10.09LLC_06.d	Acquity 2.1 (mm)
MB 320-249876/1-A		10/10/2018 08:52	1	2018.10.09LLC_07.d	Acquity 2.1 (mm)
ZZZZZ		10/10/2018 08:59	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 09:07	1		Acquity 2.1 (mm)
480-142290-1		10/10/2018 09:14	1	2018.10.09LLC_10.d	Acquity 2.1 (mm)
ZZZZZ		10/10/2018 09:22	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 09:29	1		Acquity 2.1 (mm)
480-142290-4		10/10/2018 09:37	1	2018.10.09LLC_13.d	Acquity 2.1 (mm)
480-142290-5		10/10/2018 09:44	1	2018.10.09LLC_14.d	Acquity 2.1 (mm)
480-142290-6		10/10/2018 09:52	1	2018.10.09LLC_15.d	Acquity 2.1 (mm)
480-142290-7		10/10/2018 09:59	1	2018.10.09LLC_16.d	Acquity 2.1 (mm)
CCV 320-251153/14		10/10/2018 10:07	1	2018.10.09LLC_17.d	Acquity 2.1 (mm)
ZZZZZ		10/10/2018 10:14	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 10:22	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 10:29	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 10:37	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 10:45	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 10:52	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 11:00	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 11:07	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 11:15	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 11:22	1		Acquity 2.1 (mm)
CCV 320-251153/25		10/10/2018 11:30	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 11:37	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 11:45	1		Acquity 2.1 (mm)
ZZZZZ		10/10/2018 11:52	1		Acquity 2.1 (mm)
CCV 320-251153/29		10/10/2018 12:00	1		Acquity 2.1 (mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Batch Number: 249876 Batch Start Date: 10/05/18 07:49 Batch Analyst: Kouchari, ShamiranBatch Method: 3535 Batch End Date: 10/05/18 14:47

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC ALL_SU 00116	LCPFC-IS 00083
MB 320-249876/1		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCS 320-249876/2		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
480-142290-A-1	EC-0004-01	3535, 537 (modified)	T	318.82 g	27.85 g	291 mL	10.00 mL	500 uL	500 uL
480-142290-A-2	EC-0004-02	3535, 537 (modified)	T	313.39 g	30.20 g	283.2 mL	10.00 mL	500 uL	500 uL
480-142290-A-3	EC-0004-03	3535, 537 (modified)	T	320.38 g	30.35 g	290 mL	10.00 mL	500 uL	500 uL
480-142290-A-4	EC-0004-04	3535, 537 (modified)	T	319.94 g	31.46 g	288.5 mL	10.00 mL	500 uL	500 uL
480-142290-A-5	EC-0004-05	3535, 537 (modified)	T	305.15 g	31.26 g	273.9 mL	10.00 mL	500 uL	500 uL
480-142290-A-6	EC-0004-06	3535, 537 (modified)	T	309.18 g	30.35 g	278.8 mL	10.00 mL	500 uL	500 uL
480-142290-A-7	EC-0004-07	3535, 537 (modified)	T	313.78 g	27.71 g	286.1 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00191	AnalysisComment				
MB 320-249876/1		3535, 537 (modified)							
LCS 320-249876/2		3535, 537 (modified)		500 uL					
480-142290-A-1	EC-0004-01	3535, 537 (modified)	T						
480-142290-A-2	EC-0004-02	3535, 537 (modified)	T		Yellow color after extraction.				
480-142290-A-3	EC-0004-03	3535, 537 (modified)	T		Yellow color after extraction.				
480-142290-A-4	EC-0004-04	3535, 537 (modified)	T		Yellow color after extraction.				
480-142290-A-5	EC-0004-05	3535, 537 (modified)	T		151.63g weight remaining. Yellow color after extraction.				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

Page 1 of 2

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-142290-1

SDG No.: _____

Batch Number: 249876 Batch Start Date: 10/05/18 07:49 Batch Analyst: Kouchari, ShamiranBatch Method: 3535 Batch End Date: 10/05/18 14:47

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00191	AnalysisComment				
480-142290-A-6	EC-0004-06	3535, 537 (modified)	T		Yellow color after extraction.				
480-142290-A-7	EC-0004-07	3535, 537 (modified)	T						

Batch Notes	
Balance ID	QA-078
Batch Comment	Client labels match TA labels, SKD 10/05/18
H2O ID	10-03-18
Hexane ID	1353801
Manifold ID	G, K
Methanol ID	1386532
Sodium Hydroxide ID	1370360
Analyst ID - Reagent Drop	SKD
Analyst ID - IS Reagent Drop	SKD
Analyst ID - IS Reagent Drop Witness	MA
Solvent Lot #	1383144
Solvent Name	0.3% NH4OH/MeOH
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003938109A

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

Page 2 of 2

Sample Dilution Record

Method ID

PFQ

Analyst (Print Name)

Janine M

Reagent ID

Lc-80-20-0007 4

Date

14/16/18

<u>Job #</u>	<u>Sample #</u>	<u>Original F.V. (uL)</u>	<u>Aliquot (uL)</u>	<u>Dilution F.V. (uL)</u>	<u>Dilution Factor</u>
480-142290	2	10,000	30	300	10
Jy 10/16/18					

Comments:

Subcontract Data

Shipping and Receiving Documents



480-142290 Field Sheet

Job: _____

Tracking # 4525 3504 5720 ☒ PO / FO / 2-Day / SAT / Ground / UPS / Courier /
Drop Off / GSO / OnTrac / Goldstreak / USPS / Other

Notes: _____

Therm. ID: AK-2 / AK-3 / AK-5 / AK-6 / HACCP / Other _____
(+0.7°C)

Ice ☒ Wet ☒ Gel ☐ Other ☐

Cooler Custody Seal: Seal

Sample Custody Seal: _____

Cooler ID: 1 of 2

Temp: Observed 0.6 Corrected 0.6

From: Temp Blank ☐ Sample ☒

NCM Filed: Yes ☐ No ☐

Yes No NA

Perchlorate has headspace? ☐ ☐ ☒

Alkalinity has no headspace? ☐ ☐ ☒

CoC is complete w/o discrepancies? ☒ ☐ ☐

Samples received within holding time? ☒ ☐ ☐

Sample preservatives verified? ☐ ☐ ☒

Cooler compromised/tampered with? ☐ ☒ ☐

Samples compromised/tampered with? ☐ ☒ ☐

Samples w/o discrepancies? ☒ ☐ ☐

Sample containers have legible labels? ☒ ☐ ☐

Containers are not broken or leaking? ☒ ☐ ☐

Sample date/times are provided.

Appropriate containers are used? ☒ ☐ ☐

Sample bottles are completely filled? ☒ ☐ ☐

Zero headspace?*

Multiphasic samples are not present? ☒ ☐ ☐

Sample temp OK? ☒ ☐ ☐

Sample out of temp? ☐ ☒ ☐

Initials: WJ Date: 9/29/18

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")





480-142290 Field Sheet

Job:

Tracking # 4525 3504 5720 SO ☒ PO / FO / 2-Day / SAT / Ground / UPS / Courier /
Drop Off / GSO / OnTrac / Goldstreak / USPS / Other

Notes:

Therm. ID: AK-2 / AK-3 / AK-5 / AK-6 / HACCP / Other _____
(+0.7°C)

Ice Wet Gel Other

Cooler Custody Seal: Seal

Sample Custody Seal: _____

Cooler ID: 1 of 2

Temp: Observed 0.6 Corrected 0.6

From: Temp Blank ☐ Sample ☒

NCM Filed: Yes ☐ No ☐

Yes No NA

Perchlorate has headspace? ☐ ☐ ☒

Alkalinity has no headspace? ☐ ☐ ☒

CoC is complete w/o discrepancies? ☒ ☐ ☐

Samples received within holding time? ☒ ☐ ☐

Sample preservatives verified? ☐ ☐ ☒

Cooler compromised/tampered with? ☐ ☒ ☐

Samples compromised/tampered with? ☐ ☒ ☐

Samples w/o discrepancies? ☒ ☐ ☐

Sample containers have legible labels? ☒ ☐ ☐

Containers are not broken or leaking? ☒ ☐ ☐

Sample date/times are provided.

Appropriate containers are used? ☒ ☐ ☐

Sample bottles are completely filled? ☒ ☐ ☐

Zero headspace?* ☐ ☐ ☒

Multiphasic samples are not present? ☒ ☐ ☐

Sample temp OK? ☒ ☐ ☐

Sample out of temp? ☐ ☒ ☐

Initials: WJ Date: 9/20/18

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-142290-1

Login Number: 142290

List Source: TestAmerica Buffalo

List Number: 1

Creator: Harper, Marcus D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	tab
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-142290-1

Login Number: 142290

List Number: 2

Creator: Her, David A

List Source: TestAmerica Sacramento

List Creation: 09/28/18 03:17 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Job Number: 480-142679-1

Job Description: Emerging Contaminates - Honeywell

For:

O'Brien & Gere Inc of North America
333 West Washington St.
PO BOX 4873
East Syracuse, NY 13221
Attention: Charles Sharpe



Approved for release.
Rebecca M Jones
Project Management Assistant I
10/30/2018 5:54 PM

Designee for
John R Schove, Project Manager II
10 Hazelwood Drive, Amherst, NY, 14228-2298
(716)504-9838
john.schove@testamericainc.com
10/30/2018

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Certifications: CADPH 01169CA, FLDOH E87672, ILEPA 200003, KSDOH E-10187, LADEQ 30708, MDH 036-999-337, NHELAP 2973, NJDEP NY455, NYDOH 10026, ORELAP NY200003, PADEP 68-00281, TXCEQ T-104704412-10-1

TestAmerica Laboratories, Inc.

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Job Narrative
480-142679-1

Comments

No additional comments.

Receipt

The samples were received on 10/2/2018 1:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

GC/MS Semi VOA

Method(s) 8270D SIM ID: The 1,4-Dioxane result reported for samples EC-0006-02 (480-142679-1[MS]) and EC-0006-03 (480-142679-1[MSD]) have an E flag qualifier indicating the results are over the calibration range on the raw data. The actual amounts are within the calibration range; however, the E flag is generated based upon the bias corrected concentration. The LIMS system calculates a bias correction based on the recovery of the 1,4-Dioxane-d8 isotope.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3535: The following samples: EC-0006-01 (480-142679-1), EC-0006-02 (480-142679-1[MS]) and EC-0006-03 (480-142679-1[MSD]) in preparation batch 320-251604 were observed to be a yellow color and contain sediment prior to extraction.

Method(s) 3535: The following sample had non-settleable particulate matter which plugged the SPE extraction disk. The amount of sample remaining plus the weight of the bottle are recorded in the "notes" field of the prep batch. The "tare weight" recorded is the weight of the emptied bottle: EC-0006-01 (480-142679-1), EC-0006-02 (480-142679-1[MS]) and EC-0006-03 (480-142679-1[MSD]). The reporting limits (RLs) have been adjusted proportionately.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: O'Brien & Gere Inc of North America

TestAmerica Job ID: 480-142679-1

Project/Site: Emerging Contaminates - Honeywell

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-142679-1	EC-0006-01	Water	10/01/18 12:25	10/02/18 01:00
480-142679-2	EC-0006-04	Water	10/01/18 12:30	10/02/18 01:00
480-142679-3	EC-0006-05	Water	10/01/18 13:50	10/02/18 01:00
480-142679-4	EC-0006-06	Water	10/01/18 00:00	10/02/18 01:00
480-142679-5	EC-0006-07	Water	10/01/18 15:00	10/02/18 01:00

Detection Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Client Sample ID: EC-0006-01

Lab Sample ID: 480-142679-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	0.59		0.20	0.10	ug/L	1			8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	2.8		1.9	0.33	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.86	J	1.9	0.46	ng/L	1			537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.90	J	1.9	0.55	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.58	J	1.9	0.24	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	2.1		1.9	0.81	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.41	J	1.9	0.19	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.57	J B	1.9	0.16	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0006-04

Lab Sample ID: 480-142679-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.9		1.9	0.34	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.31	J B	1.9	0.16	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0006-05

Lab Sample ID: 480-142679-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	0.14	J	0.20	0.10	ug/L	1			8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	4.7		2.0	0.35	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.70	J	2.0	0.49	ng/L	1			537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.0	J	2.0	0.58	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.38	J	2.0	0.25	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.0	J	2.0	0.85	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.81	J	2.0	0.20	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.1	J B	2.0	0.17	ng/L	1			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.6	J	2.0	0.54	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0006-06

Lab Sample ID: 480-142679-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	0.12	J	0.20	0.10	ug/L	1			8270D SIM ID	Total/NA
Perfluorobutanoic acid (PFBA)	4.5		1.9	0.34	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.72	J	1.9	0.47	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.38	J	1.9	0.24	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	1.0	J	1.9	0.82	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.33	J	1.9	0.19	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.2	J B	1.9	0.16	ng/L	1			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.5	J	1.9	0.52	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EC-0006-07

Lab Sample ID: 480-142679-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	0.17	J	0.20	0.10	ug/L	1			8270D SIM ID	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.28	J B	1.9	0.16	ng/L	1			537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Method Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
3535	Solid-Phase Extraction (SPE)	SW846	TAL SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Client Sample ID: EC-0006-01

Lab Sample ID: 480-142679-1

Date Collected: 10/01/18 12:25

Matrix: Water

Date Received: 10/02/18 01:00

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.59		0.20	0.10	ug/L		10/04/18 14:15	10/08/18 16:23	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	34		15 - 110				10/04/18 14:15	10/08/18 16:23	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.8		1.9	0.33	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluoropentanoic acid (PFPeA)	0.86	J	1.9	0.46	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorohexanoic acid (PFHxA)	0.90	J	1.9	0.55	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluoroheptanoic acid (PFHpA)	0.58	J	1.9	0.24	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorooctanoic acid (PFOA)	2.1		1.9	0.81	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.26	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.29	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.0	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.52	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.2	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.27	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorobutanesulfonic acid (PFBS)	0.41	J	1.9	0.19	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorohexanesulfonic acid (PFHxS)	0.57	J B	1.9	0.16	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorooctanesulfonic acid (PFOS)	1.9	U	1.9	0.51	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.30	ng/L		10/12/18 07:05	10/15/18 08:27	1
Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.33	ng/L		10/12/18 07:05	10/15/18 08:27	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	19	2.9	ng/L		10/12/18 07:05	10/15/18 08:27	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	19	1.8	ng/L		10/12/18 07:05	10/15/18 08:27	1
6:2 FTS	19	U	19	1.9	ng/L		10/12/18 07:05	10/15/18 08:27	1
8:2 FTS	19	U	19	1.9	ng/L		10/12/18 07:05	10/15/18 08:27	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	55		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C5 PFPeA	57		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C2 PFHxA	53		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C4 PFHpA	54		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C4 PFOA	56		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C5 PFNA	53		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C2 PFDA	48		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C2 PFUnA	43		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C2 PFDoA	38		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C2 PFTeDA	44		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C3 PFBS	61		25 - 150				10/12/18 07:05	10/15/18 08:27	1
18O2 PFHxS	56		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C4 PFOS	52		25 - 150				10/12/18 07:05	10/15/18 08:27	1
13C8 FOSA	48		25 - 150				10/12/18 07:05	10/15/18 08:27	1
d3-NMeFOSAA	51		25 - 150				10/12/18 07:05	10/15/18 08:27	1
d5-NEtFOSAA	53		25 - 150				10/12/18 07:05	10/15/18 08:27	1
M2-6:2 FTS	65		25 - 150				10/12/18 07:05	10/15/18 08:27	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Client Sample ID: EC-0006-01

Date Collected: 10/01/18 12:25

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-1

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-8:2 FTS	51		25 - 150	10/12/18 07:05	10/15/18 08:27	1

Client Sample ID: EC-0006-04

Date Collected: 10/01/18 12:30

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.9		1.9	0.34	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluoropentanoic acid (PFPeA)	1.9	U	1.9	0.47	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorohexanoic acid (PFHxA)	1.9	U	1.9	0.56	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluoroheptanoic acid (PFHpA)	1.9	U	1.9	0.24	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorooctanoic acid (PFOA)	1.9	U	1.9	0.82	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.26	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.30	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.1	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.53	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.3	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.28	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U	1.9	0.19	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorohexanesulfonic acid (PFHxS)	0.31	J B	1.9	0.16	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorooctanesulfonic acid (PFOS)	1.9	U	1.9	0.52	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.31	ng/L		10/12/18 07:05	10/15/18 08:50	1
Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.34	ng/L		10/12/18 07:05	10/15/18 08:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	19	3.0	ng/L		10/12/18 07:05	10/15/18 08:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	19	1.8	ng/L		10/12/18 07:05	10/15/18 08:50	1
6:2 FTS	19	U	19	1.9	ng/L		10/12/18 07:05	10/15/18 08:50	1
8:2 FTS	19	U	19	1.9	ng/L		10/12/18 07:05	10/15/18 08:50	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	93		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C5 PFPeA	101		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C2 PFHxA	95		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C4 PFHpA	100		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C4 PFOA	99		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C5 PFNA	98		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C2 PFDA	98		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C2 PFUnA	94		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C2 PFDoA	88		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C2 PFTeDA	92		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C3 PFBS	96		25 - 150				10/12/18 07:05	10/15/18 08:50	1
18O2 PFHxS	103		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C4 PFOS	99		25 - 150				10/12/18 07:05	10/15/18 08:50	1
13C8 FOSA	89		25 - 150				10/12/18 07:05	10/15/18 08:50	1
d3-NMeFOSAA	115		25 - 150				10/12/18 07:05	10/15/18 08:50	1
d5-NEtFOSAA	116		25 - 150				10/12/18 07:05	10/15/18 08:50	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Client Sample ID: EC-0006-04

Date Collected: 10/01/18 12:30

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-2

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	117		25 - 150	10/12/18 07:05	10/15/18 08:50	1
M2-8:2 FTS	107		25 - 150	10/12/18 07:05	10/15/18 08:50	1

Client Sample ID: EC-0006-05

Date Collected: 10/01/18 13:50

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-3

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.14	J	0.20	0.10	ug/L		10/04/18 14:15	10/08/18 17:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	28		15 - 110				10/04/18 14:15	10/08/18 17:33	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.7		2.0	0.35	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluoropentanoic acid (PFPeA)	0.70	J	2.0	0.49	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorohexanoic acid (PFHxA)	1.0	J	2.0	0.58	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluoroheptanoic acid (PFHpA)	0.38	J	2.0	0.25	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorooctanoic acid (PFOA)	1.0	J	2.0	0.85	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorononanoic acid (PFNA)	2.0	U	2.0	0.27	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorodecanoic acid (PFDA)	2.0	U	2.0	0.31	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluoroundecanoic acid (PFUnA)	2.0	U	2.0	1.1	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorododecanoic acid (PFDoA)	2.0	U	2.0	0.55	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorotridecanoic acid (PFTriA)	2.0	U	2.0	1.3	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorotetradecanoic acid (PFTeA)	2.0	U	2.0	0.29	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorobutanesulfonic acid (PFBS)	0.81	J	2.0	0.20	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorohexanesulfonic acid (PFHxS)	1.1	J B	2.0	0.17	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.0	U	2.0	0.19	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorooctanesulfonic acid (PFOS)	1.6	J	2.0	0.54	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorodecanesulfonic acid (PFDS)	2.0	U	2.0	0.32	ng/L		10/12/18 07:05	10/15/18 08:57	1
Perfluorooctanesulfonamide (FOSA)	2.0	U	2.0	0.35	ng/L		10/12/18 07:05	10/15/18 08:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20	U	20	3.1	ng/L		10/12/18 07:05	10/15/18 08:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20	U	20	1.9	ng/L		10/12/18 07:05	10/15/18 08:57	1
6:2 FTS	20	U	20	2.0	ng/L		10/12/18 07:05	10/15/18 08:57	1
8:2 FTS	20	U	20	2.0	ng/L		10/12/18 07:05	10/15/18 08:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	70		25 - 150				10/12/18 07:05	10/15/18 08:57	1
13C5 PFPeA	93		25 - 150				10/12/18 07:05	10/15/18 08:57	1
13C2 PFHxA	91		25 - 150				10/12/18 07:05	10/15/18 08:57	1
13C4 PFHpA	98		25 - 150				10/12/18 07:05	10/15/18 08:57	1
13C4 PFOA	101		25 - 150				10/12/18 07:05	10/15/18 08:57	1
13C5 PFNA	98		25 - 150				10/12/18 07:05	10/15/18 08:57	1
13C2 PFDA	101		25 - 150				10/12/18 07:05	10/15/18 08:57	1
13C2 PFUnA	92		25 - 150				10/12/18 07:05	10/15/18 08:57	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Client Sample ID: EC-0006-05

Date Collected: 10/01/18 13:50

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-3

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFDoA	88		25 - 150	10/12/18 07:05	10/15/18 08:57	1
13C2 PFTeDA	88		25 - 150	10/12/18 07:05	10/15/18 08:57	1
13C3 PFBS	102		25 - 150	10/12/18 07:05	10/15/18 08:57	1
18O2 PFHxS	101		25 - 150	10/12/18 07:05	10/15/18 08:57	1
13C4 PFOS	96		25 - 150	10/12/18 07:05	10/15/18 08:57	1
13C8 FOSA	89		25 - 150	10/12/18 07:05	10/15/18 08:57	1
d3-NMeFOSAA	110		25 - 150	10/12/18 07:05	10/15/18 08:57	1
d5-NEtFOSAA	108		25 - 150	10/12/18 07:05	10/15/18 08:57	1
M2-6:2 FTS	130		25 - 150	10/12/18 07:05	10/15/18 08:57	1
M2-8:2 FTS	113		25 - 150	10/12/18 07:05	10/15/18 08:57	1

Client Sample ID: EC-0006-06

Date Collected: 10/01/18 00:00

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-4

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.12	J	0.20	0.10	ug/L		10/04/18 14:15	10/08/18 17:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	27		15 - 110				10/04/18 14:15	10/08/18 17:57	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.5		1.9	0.34	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluoropentanoic acid (PFPeA)	0.72	J	1.9	0.47	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorohexanoic acid (PFHxA)	1.9	U	1.9	0.56	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluoroheptanoic acid (PFHpA)	0.38	J	1.9	0.24	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorooctanoic acid (PFOA)	1.0	J	1.9	0.82	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.26	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.30	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.1	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.53	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.3	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.28	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorobutanesulfonic acid (PFBS)	0.33	J	1.9	0.19	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorohexanesulfonic acid (PFHxS)	1.2	J B	1.9	0.16	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorooctanesulfonic acid (PFOS)	1.5	J	1.9	0.52	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.31	ng/L		10/12/18 07:05	10/15/18 09:04	1
Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.34	ng/L		10/12/18 07:05	10/15/18 09:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	19	3.0	ng/L		10/12/18 07:05	10/15/18 09:04	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	19	1.8	ng/L		10/12/18 07:05	10/15/18 09:04	1
6:2 FTS	19	U	19	1.9	ng/L		10/12/18 07:05	10/15/18 09:04	1
8:2 FTS	19	U	19	1.9	ng/L		10/12/18 07:05	10/15/18 09:04	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Client Sample ID: EC-0006-06

Date Collected: 10/01/18 00:00

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-4

Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	67		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C5 PFPeA	89		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C2 PFHxA	90		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C4 PFHpA	89		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C4 PFOA	94		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C5 PFNA	91		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C2 PFDA	88		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C2 PFUnA	86		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C2 PFDoA	83		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C2 PFTeDA	84		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C3 PFBS	101		25 - 150	10/12/18 07:05	10/15/18 09:04	1
18O2 PFHxS	93		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C4 PFOS	92		25 - 150	10/12/18 07:05	10/15/18 09:04	1
13C8 FOSA	88		25 - 150	10/12/18 07:05	10/15/18 09:04	1
d3-NMeFOSAA	111		25 - 150	10/12/18 07:05	10/15/18 09:04	1
d5-NEtFOSAA	103		25 - 150	10/12/18 07:05	10/15/18 09:04	1
M2-6:2 FTS	134		25 - 150	10/12/18 07:05	10/15/18 09:04	1
M2-8:2 FTS	96		25 - 150	10/12/18 07:05	10/15/18 09:04	1

Client Sample ID: EC-0006-07

Date Collected: 10/01/18 15:00

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-5

Matrix: Water

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.17	J	0.20	0.10	ug/L	—	10/04/18 14:15	10/08/18 18:20	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	35		15 - 110				10/04/18 14:15	10/08/18 18:20	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.9	U	1.9	0.33	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluoropentanoic acid (PFPeA)	1.9	U	1.9	0.47	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorohexanoic acid (PFHxA)	1.9	U	1.9	0.55	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluoroheptanoic acid (PFHpA)	1.9	U	1.9	0.24	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorooctanoic acid (PFOA)	1.9	U	1.9	0.81	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.26	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.30	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.0	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.52	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.2	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.28	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U	1.9	0.19	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorohexanesulfonic acid (PFHxS)	0.28	J B	1.9	0.16	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorooctanesulfonic acid (PFOS)	1.9	U	1.9	0.51	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.30	ng/L		10/12/18 07:05	10/15/18 09:12	1
Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.33	ng/L		10/12/18 07:05	10/15/18 09:12	1

TestAmerica Buffalo

Client Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Client Sample ID: EC-0006-07

Date Collected: 10/01/18 15:00

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-5

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	19	3.0	ng/L		10/12/18 07:05	10/15/18 09:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	19	1.8	ng/L		10/12/18 07:05	10/15/18 09:12	1
6:2 FTS	19	U	19	1.9	ng/L		10/12/18 07:05	10/15/18 09:12	1
8:2 FTS	19	U	19	1.9	ng/L		10/12/18 07:05	10/15/18 09:12	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C5 PFPeA	100		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C2 PFHxA	104		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C4 PFHpA	105		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C4 PFOA	97		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C5 PFNA	98		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C2 PFDA	99		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C2 PFUnA	100		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C2 PFDoA	98		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C2 PFTeDA	102		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C3 PFBS	102		25 - 150				10/12/18 07:05	10/15/18 09:12	1
18O2 PFHxS	103		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C4 PFOS	103		25 - 150				10/12/18 07:05	10/15/18 09:12	1
13C8 FOSA	96		25 - 150				10/12/18 07:05	10/15/18 09:12	1
d3-NMeFOSAA	127		25 - 150				10/12/18 07:05	10/15/18 09:12	1
d5-NEtFOSAA	119		25 - 150				10/12/18 07:05	10/15/18 09:12	1
M2-6:2 FTS	122		25 - 150				10/12/18 07:05	10/15/18 09:12	1
M2-8:2 FTS	114		25 - 150				10/12/18 07:05	10/15/18 09:12	1

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DXE (15-110)
480-142679-1	EC-0006-01	34
480-142679-1 MS	EC-0006-02	36
480-142679-1 MSD	EC-0006-03	34
480-142679-3	EC-0006-05	28
480-142679-4	EC-0006-06	27
480-142679-5	EC-0006-07	35
LCS 480-437732/2-A	Lab Control Sample	40
MB 480-437732/1-A	Method Blank	39

Surrogate Legend

DXE = 1,4-Dioxane-d8

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	PFHpA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
480-142679-1	EC-0006-01	55	57	53	54	56	53	48	43
480-142679-1 MS	EC-0006-02	56	62	59	61	59	55	52	46
480-142679-1 MSD	EC-0006-03	56	57	58	56	58	55	48	47
480-142679-2	EC-0006-04	93	101	95	100	99	98	98	94
480-142679-3	EC-0006-05	70	93	91	98	101	98	101	92
480-142679-4	EC-0006-06	67	89	90	89	94	91	88	86
480-142679-5	EC-0006-07	98	100	104	105	97	98	99	100
LCS 320-251604/2-A	Lab Control Sample	97	105	104	107	102	104	99	100
MB 320-251604/1-A	Method Blank	98	100	95	102	104	99	96	101

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	3C3-PFB (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS (25-150)	-NEtFOS/ (25-150)
480-142679-1	EC-0006-01	38	44	61	56	52	48	51	53
480-142679-1 MS	EC-0006-02	43	47	60	61	54	50	55	56
480-142679-1 MSD	EC-0006-03	42	44	62	61	50	49	54	54
480-142679-2	EC-0006-04	88	92	96	103	99	89	115	116
480-142679-3	EC-0006-05	88	88	102	101	96	89	110	108
480-142679-4	EC-0006-06	83	84	101	93	92	88	111	103
480-142679-5	EC-0006-07	98	102	102	103	103	96	127	119
LCS 320-251604/2-A	Lab Control Sample	104	103	102	108	102	97	123	122
MB 320-251604/1-A	Method Blank	98	105	98	102	103	93	115	115

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
480-142679-1	EC-0006-01	65	51
480-142679-1 MS	EC-0006-02	68	55
480-142679-1 MSD	EC-0006-03	64	49
480-142679-2	EC-0006-04	117	107
480-142679-3	EC-0006-05	130	113
480-142679-4	EC-0006-06	134	96
480-142679-5	EC-0006-07	122	114

TestAmerica Buffalo

Isotope Dilution Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)					
		M262FTS (25-150)	M282FTS (25-150)				
LCS 320-251604/2-A	Lab Control Sample	117	112				
MB 320-251604/1-A	Method Blank	116	114				

Surrogate Legend

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

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Method: 8270D SIM ID - Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)

Lab Sample ID: MB 480-437732/1-A
Matrix: Water
Analysis Batch: 438250

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 437732

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.20	U	0.20	0.10	ug/L		10/04/18 14:15	10/08/18 14:47	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	39		15 - 110				10/04/18 14:15	10/08/18 14:47	1

Lab Sample ID: LCS 480-437732/2-A
Matrix: Water
Analysis Batch: 438250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 437732

Analyte	LCS Result	LCS Qualifier	Spike Added	LCS Result	Unit	D	%Rec	Limits
1,4-Dioxane			1.00	1.07	ug/L		107	40 - 140
Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits					
1,4-Dioxane-d8	40		15 - 110					

Lab Sample ID: 480-142679-1 MS
Matrix: Water
Analysis Batch: 438250

Client Sample ID: EC-0006-02
Prep Type: Total/NA
Prep Batch: 437732

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	0.59		1.00	1.59	E	ug/L		100	40 - 140
Isotope Dilution	MS %Recovery	MS Qualifier	Limits						
1,4-Dioxane-d8	36		15 - 110						

Lab Sample ID: 480-142679-1 MSD
Matrix: Water
Analysis Batch: 438250

Client Sample ID: EC-0006-03
Prep Type: Total/NA
Prep Batch: 437732

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	0.59		1.00	1.58	E	ug/L		99	40 - 140	1	20
Isotope Dilution	MSD %Recovery	MSD Qualifier	Limits								
1,4-Dioxane-d8	34		15 - 110								

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-251604/1-A
Matrix: Water
Analysis Batch: 252245

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 251604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.0	U	2.0	0.35	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluoropentanoic acid (PFPeA)	2.0	U	2.0	0.49	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorohexanoic acid (PFHxA)	2.0	U	2.0	0.58	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluoroheptanoic acid (PFHpA)	2.0	U	2.0	0.25	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorooctanoic acid (PFOA)	2.0	U	2.0	0.85	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorononanoic acid (PFNA)	2.0	U	2.0	0.27	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorodecanoic acid (PFDA)	2.0	U	2.0	0.31	ng/L		10/12/18 07:05	10/15/18 08:12	1

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

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

Lab Sample ID: MB 320-251604/1-A

Matrix: Water

Analysis Batch: 252245

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 251604

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroundecanoic acid (PFUnA)	2.0	U	2.0	1.1	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorododecanoic acid (PFDoA)	2.0	U	2.0	0.55	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorotridecanoic acid (PFTriA)	2.0	U	2.0	1.3	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorotetradecanoic acid (PFTeA)	2.0	U	2.0	0.29	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.0	0.20	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorohexanesulfonic acid (PFHxS)	0.245	J	2.0	0.17	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.0	U	2.0	0.19	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorooctanesulfonic acid (PFOS)	2.0	U	2.0	0.54	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorodecanesulfonic acid (PFDS)	2.0	U	2.0	0.32	ng/L		10/12/18 07:05	10/15/18 08:12	1
Perfluorooctanesulfonamide (FOSA)	2.0	U	2.0	0.35	ng/L		10/12/18 07:05	10/15/18 08:12	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20	U	20	3.1	ng/L		10/12/18 07:05	10/15/18 08:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20	U	20	1.9	ng/L		10/12/18 07:05	10/15/18 08:12	1
6:2 FTS	20	U	20	2.0	ng/L		10/12/18 07:05	10/15/18 08:12	1
8:2 FTS	20	U	20	2.0	ng/L		10/12/18 07:05	10/15/18 08:12	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
¹³ C4 PFBA	98		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C5 PFPeA	100		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C2 PFHxA	95		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C4 PFHpA	102		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C4 PFOA	104		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C5 PFNA	99		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C2 PFDA	96		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C2 PFUnA	101		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C2 PFDoA	98		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C2 PFTeDA	105		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C3 PFBS	98		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹⁸ O2 PFHxS	102		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C4 PFOS	103		25 - 150	10/12/18 07:05	10/15/18 08:12	1
¹³ C8 FOSA	93		25 - 150	10/12/18 07:05	10/15/18 08:12	1
d3-NMeFOSAA	115		25 - 150	10/12/18 07:05	10/15/18 08:12	1
d5-NEtFOSAA	115		25 - 150	10/12/18 07:05	10/15/18 08:12	1
M2-6:2 FTS	116		25 - 150	10/12/18 07:05	10/15/18 08:12	1
M2-8:2 FTS	114		25 - 150	10/12/18 07:05	10/15/18 08:12	1

Lab Sample ID: LCS 320-251604/2-A

Matrix: Water

Analysis Batch: 252245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 251604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	41.2		ng/L		103	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	41.0		ng/L		102	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	40.1		ng/L		100	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	40.7		ng/L		102	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	40.7		ng/L		102	64 - 124
Perfluorononanoic acid (PFNA)	40.0	38.8		ng/L		97	68 - 128

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

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

Lab Sample ID: LCS 320-251604/2-A

Matrix: Water

Analysis Batch: 252245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 251604

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorodecanoic acid (PFDA)	40.0	42.2		ng/L		105	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	38.9		ng/L		97	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	37.7		ng/L		94	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	39.0		ng/L		97	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	39.7		ng/L		99	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	35.3		ng/L		100	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.2		ng/L		89	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.9		ng/L		102	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	35.1		ng/L		95	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	39.9		ng/L		103	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	40.6		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	37.7		ng/L		94	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.0		ng/L		92	65 - 125
6:2 FTS	37.9	38.9		ng/L		102	66 - 126
8:2 FTS	38.3	41.4		ng/L		108	67 - 127

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	97		25 - 150
13C5 PFPeA	105		25 - 150
13C2 PFHxA	104		25 - 150
13C4 PFHpA	107		25 - 150
13C4 PFOA	102		25 - 150
13C5 PFNA	104		25 - 150
13C2 PFDA	99		25 - 150
13C2 PFUnA	100		25 - 150
13C2 PFDoA	104		25 - 150
13C2 PFTeDA	103		25 - 150
13C3 PFBS	102		25 - 150
18O2 PFHxS	108		25 - 150
13C4 PFOS	102		25 - 150
13C8 FOSA	97		25 - 150
d3-NMeFOSAA	123		25 - 150
d5-NEtFOSAA	122		25 - 150
M2-6:2 FTS	117		25 - 150
M2-8:2 FTS	112		25 - 150

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

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

Lab Sample ID: 480-142679-1 MS

Matrix: Water

Analysis Batch: 252245

Client Sample ID: EC-0006-02

Prep Type: Total/NA

Prep Batch: 251604

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	2.8		38.0	40.4		ng/L		99	70 - 130
Perfluoropentanoic acid (PFPeA)	0.86	J	38.0	37.5		ng/L		96	66 - 126
Perfluorohexanoic acid (PFHxA)	0.90	J	38.0	37.1		ng/L		95	66 - 126
Perfluoroheptanoic acid (PFHpA)	0.58	J	38.0	38.3		ng/L		99	66 - 126
Perfluorooctanoic acid (PFOA)	2.1		38.0	39.0		ng/L		97	64 - 124
Perfluorononanoic acid (PFNA)	1.9	U	38.0	38.1		ng/L		100	68 - 128
Perfluorodecanoic acid (PFDA)	1.9	U	38.0	38.5		ng/L		101	69 - 129
Perfluoroundecanoic acid (PFUnA)	1.9	U	38.0	37.9		ng/L		100	60 - 120
Perfluorododecanoic acid (PFDoA)	1.9	U	38.0	38.2		ng/L		100	71 - 131
Perfluorotridecanoic acid (PFTriA)	1.9	U	38.0	38.9		ng/L		102	72 - 132
Perfluorotetradecanoic acid (PFTeA)	1.9	U	38.0	36.8		ng/L		97	68 - 128
Perfluorobutanesulfonic acid (PFBS)	0.41	J	33.6	33.6		ng/L		99	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	0.57	J B	34.6	31.3		ng/L		89	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	36.2	38.3		ng/L		106	68 - 128
Perfluorooctanesulfonic acid (PFOS)	1.9	U	35.3	33.7		ng/L		96	67 - 127
Perfluorodecanesulfonic acid (PFDS)	1.9	U	36.6	32.0		ng/L		87	68 - 128
Perfluorooctanesulfonamide (FOSA)	1.9	U	38.0	38.4		ng/L		101	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	38.0	32.7		ng/L		86	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	38.0	35.6		ng/L		94	65 - 125
6:2 FTS	19	U	36.0	34.5		ng/L		96	66 - 126
8:2 FTS	19	U	36.4	36.8		ng/L		101	67 - 127

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFBA	56		25 - 150
13C5 PFPeA	62		25 - 150
13C2 PFHxA	59		25 - 150
13C4 PFHpA	61		25 - 150
13C4 PFOA	59		25 - 150
13C5 PFNA	55		25 - 150
13C2 PFDA	52		25 - 150
13C2 PFUnA	46		25 - 150
13C2 PFDoA	43		25 - 150
13C2 PFTeDA	47		25 - 150
13C3 PFBS	60		25 - 150
18O2 PFHxS	61		25 - 150
13C4 PFOS	54		25 - 150
13C8 FOSA	50		25 - 150
d3-NMeFOSAA	55		25 - 150
d5-NEtFOSAA	56		25 - 150

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

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

Lab Sample ID: 480-142679-1 MS

Matrix: Water

Analysis Batch: 252245

Client Sample ID: EC-0006-02

Prep Type: Total/NA

Prep Batch: 251604

<i>Isotope Dilution</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
M2-6:2 FTS	68		25 - 150
M2-8:2 FTS	55		25 - 150

Lab Sample ID: 480-142679-1 MSD

Matrix: Water

Analysis Batch: 252245

Client Sample ID: EC-0006-03

Prep Type: Total/NA

Prep Batch: 251604

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Perfluorobutanoic acid (PFBA)	2.8		38.3	41.7		ng/L		102	70 - 130	3	30
Perfluoropentanoic acid (PFPeA)	0.86	J	38.3	41.1		ng/L		105	66 - 126	9	30
Perfluorohexanoic acid (PFHxA)	0.90	J	38.3	38.9		ng/L		99	66 - 126	5	30
Perfluoroheptanoic acid (PFHpA)	0.58	J	38.3	38.4		ng/L		99	66 - 126	0	30
Perfluorooctanoic acid (PFOA)	2.1		38.3	38.3		ng/L		95	64 - 124	2	30
Perfluorononanoic acid (PFNA)	1.9	U	38.3	37.5		ng/L		98	68 - 128	2	30
Perfluorodecanoic acid (PFDA)	1.9	U	38.3	41.2		ng/L		108	69 - 129	7	30
Perfluoroundecanoic acid (PFUnA)	1.9	U	38.3	35.2		ng/L		92	60 - 120	7	30
Perfluorododecanoic acid (PFDoA)	1.9	U	38.3	38.6		ng/L		101	71 - 131	1	30
Perfluorotridecanoic acid (PFTriA)	1.9	U	38.3	39.1		ng/L		102	72 - 132	1	30
Perfluorotetradecanoic acid (PFTeA)	1.9	U	38.3	40.4		ng/L		106	68 - 128	9	30
Perfluorobutanesulfonic acid (PFBS)	0.41	J	33.8	32.6		ng/L		95	73 - 133	3	30
Perfluorohexanesulfonic acid (PFHxS)	0.57	J B	34.8	31.4		ng/L		88	63 - 123	0	30
Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	36.4	41.6		ng/L		114	68 - 128	8	30
Perfluorooctanesulfonic acid (PFOS)	1.9	U	35.5	36.4		ng/L		102	67 - 127	8	30
Perfluorodecanesulfonic acid (PFDS)	1.9	U	36.9	32.5		ng/L		88	68 - 128	2	30
Perfluorooctanesulfonamide (FOSA)	1.9	U	38.3	37.5		ng/L		98	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	38.3	35.6		ng/L		93	67 - 127	9	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	38.3	36.0		ng/L		94	65 - 125	1	30
6:2 FTS	19	U	36.3	36.7		ng/L		101	66 - 126	6	30
8:2 FTS	19	U	36.7	39.5		ng/L		108	67 - 127	7	30

<i>Isotope Dilution</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
13C4 PFBA	56		25 - 150
13C5 PFPeA	57		25 - 150
13C2 PFHxA	58		25 - 150
13C4 PFHpA	56		25 - 150
13C4 PFOA	58		25 - 150
13C5 PFNA	55		25 - 150
13C2 PFDA	48		25 - 150
13C2 PFUnA	47		25 - 150

TestAmerica Buffalo

QC Sample Results

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

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

Lab Sample ID: 480-142679-1 MSD

Matrix: Water

Analysis Batch: 252245

Client Sample ID: EC-0006-03

Prep Type: Total/NA

Prep Batch: 251604

<i>Isotope Dilution</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C2 PFDoA	42		25 - 150
13C2 PFTeDA	44		25 - 150
13C3 PFBS	62		25 - 150
18O2 PFHxS	61		25 - 150
13C4 PFOS	50		25 - 150
13C8 FOSA	49		25 - 150
d3-NMeFOSAA	54		25 - 150
d5-NEtFOSAA	54		25 - 150
M2-6:2 FTS	64		25 - 150
M2-8:2 FTS	49		25 - 150

Definitions/Glossary

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

LCMS

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

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

QC Association Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

GC/MS Semi VOA

Prep Batch: 437732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142679-1	EC-0006-01	Total/NA	Water	3510C	
480-142679-3	EC-0006-05	Total/NA	Water	3510C	
480-142679-4	EC-0006-06	Total/NA	Water	3510C	
480-142679-5	EC-0006-07	Total/NA	Water	3510C	
MB 480-437732/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-437732/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-142679-1 MS	EC-0006-02	Total/NA	Water	3510C	
480-142679-1 MSD	EC-0006-03	Total/NA	Water	3510C	

Analysis Batch: 438250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142679-1	EC-0006-01	Total/NA	Water	8270D SIM ID	437732
480-142679-3	EC-0006-05	Total/NA	Water	8270D SIM ID	437732
480-142679-4	EC-0006-06	Total/NA	Water	8270D SIM ID	437732
480-142679-5	EC-0006-07	Total/NA	Water	8270D SIM ID	437732
MB 480-437732/1-A	Method Blank	Total/NA	Water	8270D SIM ID	437732
LCS 480-437732/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	437732
480-142679-1 MS	EC-0006-02	Total/NA	Water	8270D SIM ID	437732
480-142679-1 MSD	EC-0006-03	Total/NA	Water	8270D SIM ID	437732

LCMS

Prep Batch: 251604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142679-1	EC-0006-01	Total/NA	Water	3535	
480-142679-2	EC-0006-04	Total/NA	Water	3535	
480-142679-3	EC-0006-05	Total/NA	Water	3535	
480-142679-4	EC-0006-06	Total/NA	Water	3535	
480-142679-5	EC-0006-07	Total/NA	Water	3535	
MB 320-251604/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-251604/2-A	Lab Control Sample	Total/NA	Water	3535	
480-142679-1 MS	EC-0006-02	Total/NA	Water	3535	
480-142679-1 MSD	EC-0006-03	Total/NA	Water	3535	

Analysis Batch: 252245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142679-1	EC-0006-01	Total/NA	Water	537 (modified)	251604
480-142679-2	EC-0006-04	Total/NA	Water	537 (modified)	251604
480-142679-3	EC-0006-05	Total/NA	Water	537 (modified)	251604
480-142679-4	EC-0006-06	Total/NA	Water	537 (modified)	251604
480-142679-5	EC-0006-07	Total/NA	Water	537 (modified)	251604
MB 320-251604/1-A	Method Blank	Total/NA	Water	537 (modified)	251604
LCS 320-251604/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	251604
480-142679-1 MS	EC-0006-02	Total/NA	Water	537 (modified)	251604
480-142679-1 MSD	EC-0006-03	Total/NA	Water	537 (modified)	251604

Lab Chronicle

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Client Sample ID: EC-0006-01

Date Collected: 10/01/18 12:25

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			437732	10/04/18 14:15	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	438250	10/08/18 16:23	DMR	TAL BUF
Total/NA	Prep	3535			251604	10/12/18 07:05	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	252245	10/15/18 08:27	JRB	TAL SAC

Client Sample ID: EC-0006-04

Date Collected: 10/01/18 12:30

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251604	10/12/18 07:05	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	252245	10/15/18 08:50	JRB	TAL SAC

Client Sample ID: EC-0006-05

Date Collected: 10/01/18 13:50

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			437732	10/04/18 14:15	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	438250	10/08/18 17:33	DMR	TAL BUF
Total/NA	Prep	3535			251604	10/12/18 07:05	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	252245	10/15/18 08:57	JRB	TAL SAC

Client Sample ID: EC-0006-06

Date Collected: 10/01/18 00:00

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			437732	10/04/18 14:15	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	438250	10/08/18 17:57	DMR	TAL BUF
Total/NA	Prep	3535			251604	10/12/18 07:05	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	252245	10/15/18 09:04	JRB	TAL SAC

Client Sample ID: EC-0006-07

Date Collected: 10/01/18 15:00

Date Received: 10/02/18 01:00

Lab Sample ID: 480-142679-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			437732	10/04/18 14:15	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	438250	10/08/18 18:20	DMR	TAL BUF
Total/NA	Prep	3535			251604	10/12/18 07:05	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	252245	10/15/18 09:12	JRB	TAL SAC

Lab Chronicle

Client: O'Brien & Gere Inc of North America

TestAmerica Job ID: 480-142679-1

Project/Site: Emerging Contaminates - Honeywell

Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

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

Accreditation/Certification Summary

Client: O'Brien & Gere Inc of North America
Project/Site: Emerging Contaminates - Honeywell

TestAmerica Job ID: 480-142679-1

Laboratory: TestAmerica Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-19

Laboratory: TestAmerica Sacramento

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-020	01-20-21
ANAB	DoD ELAP		L2468	01-20-21
Arizona	State Program	9	AZ0708	08-11-19
Arkansas DEQ	State Program	6	88-0691	06-17-19
California	State Program	9	2897	01-31-19
Colorado	State Program	8	CA00044	08-31-19
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-19
Georgia	State Program	4	N/A	01-28-19
Hawaii	State Program	9	N/A	01-29-19
Illinois	NELAP	5	200060	03-17-19
Kansas	NELAP	7	E-10375	10-31-18 *
Louisiana	NELAP	6	30612	06-30-19
Maine	State Program	1	CA0004	04-14-20
Michigan	State Program	5	9947	01-31-20
Nevada	State Program	9	CA00044	07-31-19
New Hampshire	NELAP	1	2997	04-18-19
New Jersey	NELAP	2	CA005	06-30-19
New York	NELAP	2	11666	03-31-19
Oregon	NELAP	10	4040	01-29-19
Pennsylvania	NELAP	3	68-01272	03-31-19
Texas	NELAP	6	T104704399	05-31-19
US Fish & Wildlife	Federal		LE148388-0	07-31-19
USDA	Federal		P330-18-00239	01-17-21
USEPA UCMR	Federal	1	CA00044	12-31-20
Utah	NELAP	8	CA00044	02-28-19
Vermont	State Program	1	VT-4040	04-30-19
Virginia	NELAP	3	460278	03-14-19
Washington	State Program	10	C581	05-05-19
West Virginia (DW)	State Program	3	9930C	12-31-18
Wyoming	State Program	8	8TMS-L	01-28-19

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

TestAmerica Buffalo

Method 8270D

SIM-ID

Semivolatile Organic Compounds
(GC/MS SIM / Isotope Dilution) by
Method 8270D

FORM II
GC/MS SEMI VOA SURROGATE RECOVERY

Lab Name: TestAmerica Buffalo

Job No.: 480-142679-1

SDG No.: _____

Matrix: Water

Level: Low

GC Column (1): RXI-5Sil MS ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	DXE #
EC-0006-01	480-142679-1	34
EC-0006-05	480-142679-3	28
EC-0006-06	480-142679-4	27
EC-0006-07	480-142679-5	35
	MB 480-437732/1-A	39
	LCS 480-437732/2-A	40
EC-0006-02 MS	480-142679-1 MS	36
EC-0006-03 MSD	480-142679-1 MSD	34

DXE = 1,4-Dioxane-d8

QC LIMITS
15-110

Column to be used to flag recovery values

FORM II 8270D SIM ID

FORM III
GC/MS SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: U3312207.D
Lab ID: LCS 480-437732/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	1.07	107	40-140	
1,4-Dioxane-d8	10.0	3.97	40	15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: U3312208.D
Lab ID: 480-142679-1 MS Client ID: EC-0006-02 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	0.59	1.59	100	40-140	E
1,4-Dioxane-d8	10.0	3.4	3.62	36	15-110	

Column to be used to flag recovery and RPD values
FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: U3312209.D
 Lab ID: 480-142679-1 MSD Client ID: EC-0006-03 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,4-Dioxane	1.00	1.58	99	1	20	40-140	E
1,4-Dioxane-d8	10.0	3.45	34			15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM IV
GC/MS SEMI VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Lab File ID: U3312206.D Lab Sample ID: MB 480-437732/1-A
Matrix: Water Date Extracted: 10/04/2018 14:15
Instrument ID: HP5973U Date Analyzed: 10/08/2018 14:47
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-437732/2-A	U3312207.D	10/08/2018 15:11
EC-0006-02 MS	480-142679-1 MS	U3312208.D	10/08/2018 15:35
EC-0006-03 MSD	480-142679-1 MSD	U3312209.D	10/08/2018 15:59
EC-0006-01	480-142679-1	U3312210.D	10/08/2018 16:23
EC-0006-05	480-142679-3	U3312213.D	10/08/2018 17:33
EC-0006-06	480-142679-4	U3312214.D	10/08/2018 17:57
EC-0006-07	480-142679-5	U3312215.D	10/08/2018 18:20

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Lab File ID: U3312051.D DFTPP Injection Date: 10/05/2018
Instrument ID: HP5973U DFTPP Injection Time: 12:17
Analysis Batch No.: 437915

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	42.1
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	41.6
70	Less than 2% of mass 69	0.2 (0.4) 1
127	10-80% of Base Peak	50.3
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	7.2
275	10-60% of Base Peak	26.1
365	Greater than 1% of mass 198	3.2
441	present but less than 24% of mass 442	12.2 (17.0) 2
442	Greater than 50% of mass 198	71.6
443	15-24% of mass 442	14.0 (19.5) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 480-437915/3	U3312052.D	10/05/2018	13:16
	IC 480-437915/4	U3312053.D	10/05/2018	13:39
	ICIS 480-437915/5	U3312054.D	10/05/2018	14:03
	IC 480-437915/6	U3312055.D	10/05/2018	14:26
	IC 480-437915/7	U3312056.D	10/05/2018	14:49
	IC 480-437915/8	U3312057.D	10/05/2018	15:13

FORM V
GC/MS SEMI VOA INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Lab File ID: U3312204.D DFTPP Injection Date: 10/08/2018
Instrument ID: HP5973U DFTPP Injection Time: 13:55
Analysis Batch No.: 438250

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	42.4
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	42.1
70	Less than 2% of mass 69	0.3 (0.7) 1
127	10-80% of Base Peak	50.9
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	8.0
275	10-60% of Base Peak	28.1
365	Greater than 1% of mass 198	3.6
441	present but less than 24% of mass 442	13.1 (17.9) 2
442	Greater than 50% of mass 198	73.5
443	15-24% of mass 442	15.3 (20.8) 2

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 480-438250/3	U3312205.D	10/08/2018	14:23
	MB 480-437732/1-A	U3312206.D	10/08/2018	14:47
	LCS 480-437732/2-A	U3312207.D	10/08/2018	15:11
EC-0006-02 MS	480-142679-1 MS	U3312208.D	10/08/2018	15:35
EC-0006-03 MSD	480-142679-1 MSD	U3312209.D	10/08/2018	15:59
EC-0006-01	480-142679-1	U3312210.D	10/08/2018	16:23
EC-0006-05	480-142679-3	U3312213.D	10/08/2018	17:33
EC-0006-06	480-142679-4	U3312214.D	10/08/2018	17:57
EC-0006-07	480-142679-5	U3312215.D	10/08/2018	18:20

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
 SDG No.: _____
 Sample No.: ICIS 480-437915/5 Date Analyzed: 10/05/2018 14:03
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
 Lab File ID (Standard): U3312054.D Heated Purge: (Y/N) N
 Calibration ID: 35015

	DCBd4					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	650120	5.98				
UPPER LIMIT	1300240	6.48				
LOWER LIMIT	325060	5.48				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVIS 480-438250/3		955799	5.97			

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
GC/MS SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
 SDG No.: _____
 Sample No.: CCVIS 480-438250/3 Date Analyzed: 10/08/2018 14:23
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm)
 Lab File ID (Standard): U3312205.D Heated Purge: (Y/N) N
 Calibration ID: 35015

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		955799	5.97				
UPPER LIMIT		1911598	6.47				
LOWER LIMIT		477900	5.47				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-437732/1-A		903214	5.98				
LCS 480-437732/2-A		861264	5.98				
480-142679-1 MS	EC-0006-02 MS	851745	5.98				
480-142679-1 MSD	EC-0006-03 MSD	883487	5.98				
480-142679-1	EC-0006-01	872319	5.98				
480-142679-3	EC-0006-05	880588	5.98				
480-142679-4	EC-0006-06	894238	5.98				
480-142679-5	EC-0006-07	929174	5.98				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = $\pm$ 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Client Sample ID: EC-0006-01 Lab Sample ID: 480-142679-1
Matrix: Water Lab File ID: U3312210.D
Analysis Method: 8270D SIM ID Date Collected: 10/01/2018 12:25
Extract. Method: 3510C Date Extracted: 10/04/2018 14:15
Sample wt/vol: 1000 (mL) Date Analyzed: 10/08/2018 16:23
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 438250 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.59		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	34		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312210.D
 Lims ID: 480-142679-B-1-B
 Client ID: EC-0006-01
 Sample Type: Client
 Inject. Date: 08-Oct-2018 16:23:30 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-008
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 11:55:19

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.883	2.801	0.082	95	367016	3.40	34.0	a
3 1,4-Dioxane	88	2.928	2.846	0.082	92	23111	0.5868		
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.971	0.004	98	872319	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312210.D

Injection Date: 08-Oct-2018 16:23:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142679-B-1-B

Lab Sample ID: 480-142679-1

Worklist Smp#: 8

Client ID: EC-0006-01

Injection Vol: 1.0 ul

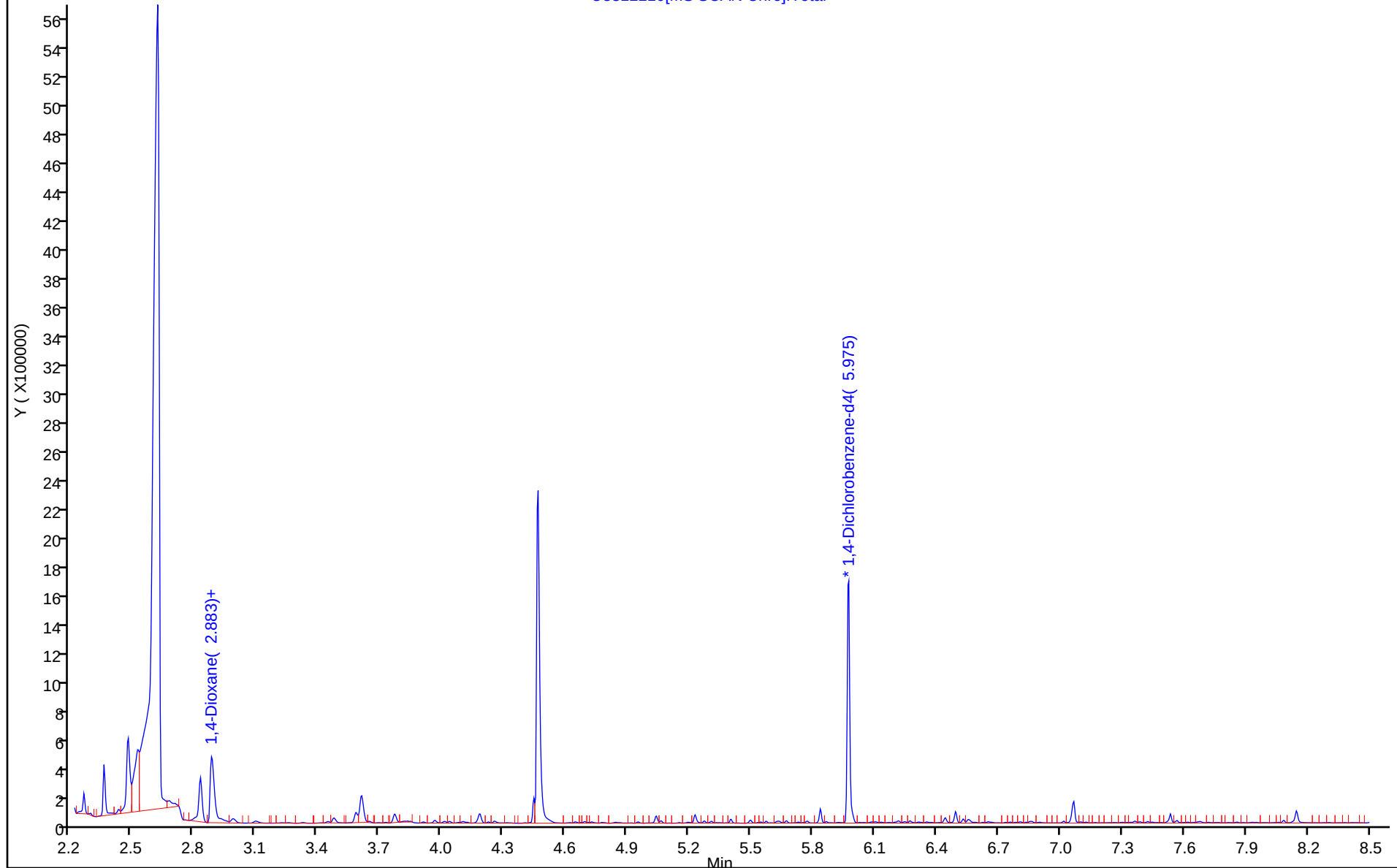
Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312210[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312210.D

Injection Date: 08-Oct-2018 16:23:30

Instrument ID: HP5973U

Lims ID: 480-142679-B-1-B

Lab Sample ID: 480-142679-1

Client ID: EC-0006-01

Operator ID: DR

ALS Bottle#: 8

Worklist Smp#: 8

Injection Vol: 1.0 ul

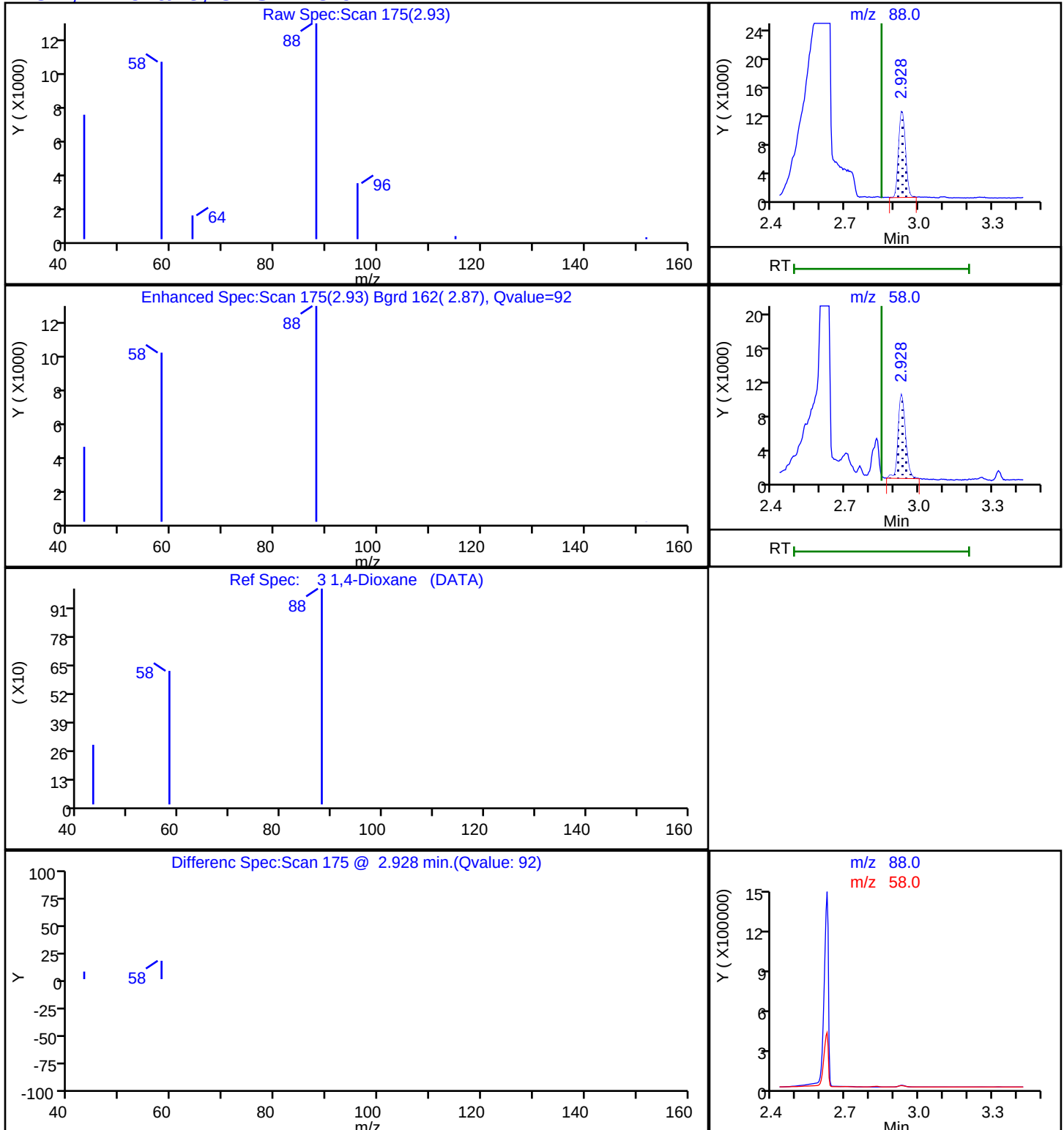
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

TestAmerica Buffalo

Data File: \\ChromNA\\Buffalo\\ChromData\\HP5973U\\20181008-75305.b\\U3312210.D

Injection Date: 08-Oct-2018 16:23:30

Instrument ID: HP5973U

Lims ID: 480-142679-B-1-B

Lab Sample ID: 480-142679-1

Client ID: EC-0006-01

Operator ID: DR

ALS Bottle#: 8

Worklist Smp#: 8

Injection Vol: 1.0 ul

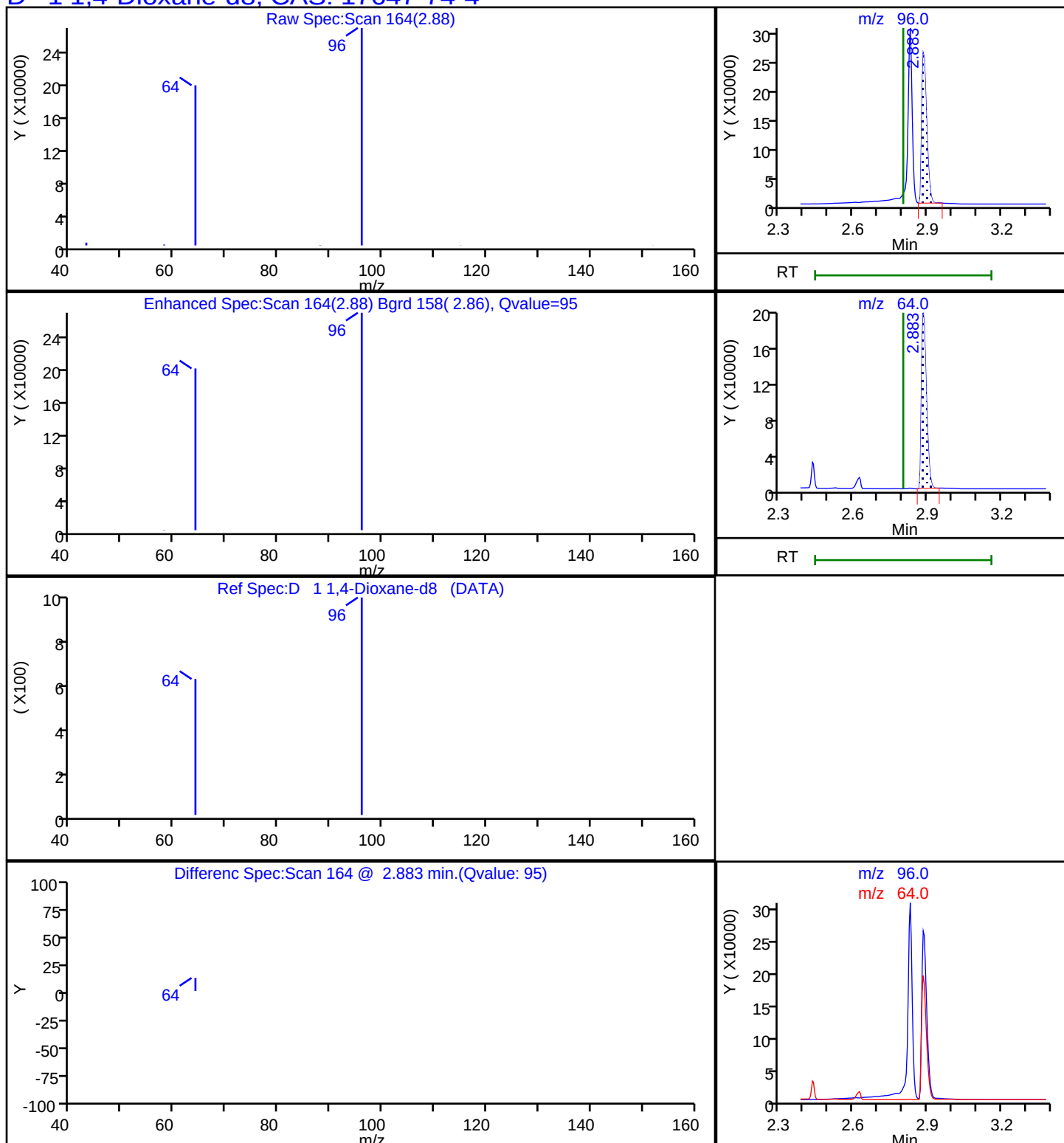
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312210.D

Injection Date: 08-Oct-2018 16:23:30

Instrument ID: HP5973U

Lims ID: 480-142679-B-1-B

Lab Sample ID: 480-142679-1

Client ID: EC-0006-01

Operator ID: DR

ALS Bottle#: 8 Worklist Smp#: 8

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

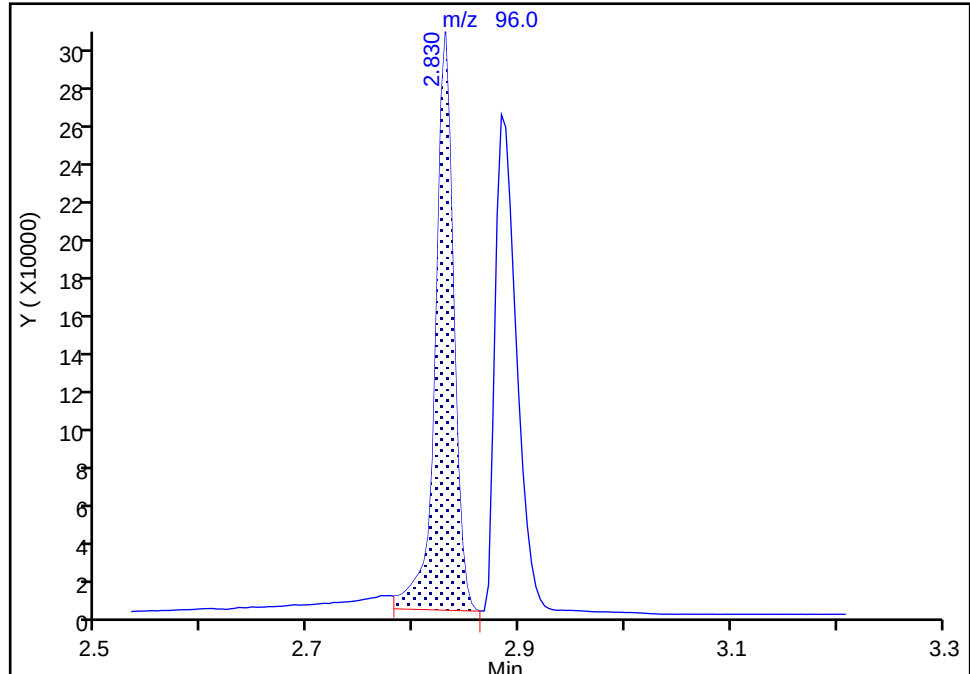
Detector: MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

Signal: 1

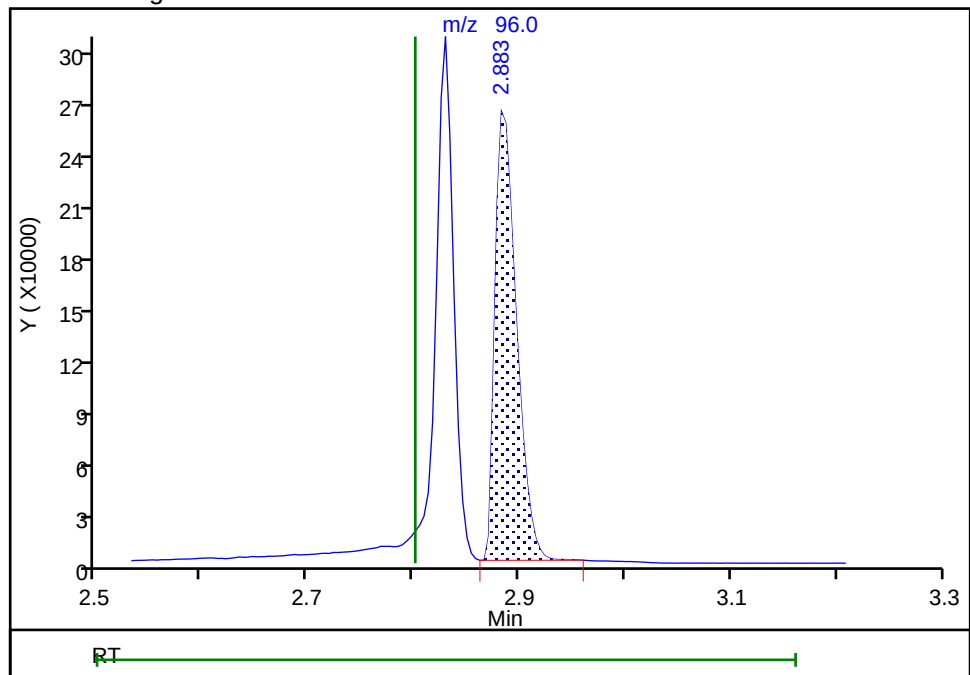
RT: 2.83
Area: 364886
Amount: 3.385047
Amount Units: ng/ul

Processing Integration Results



RT: 2.88
Area: 367016
Amount: 3.404807
Amount Units: ng/ul

Manual Integration Results



Reviewer: richardsd, 09-Oct-2018 11:55:18

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Client Sample ID: EC-0006-05 Lab Sample ID: 480-142679-3
Matrix: Water Lab File ID: U3312213.D
Analysis Method: 8270D SIM ID Date Collected: 10/01/2018 13:50
Extract. Method: 3510C Date Extracted: 10/04/2018 14:15
Sample wt/vol: 1000 (mL) Date Analyzed: 10/08/2018 17:33
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 438250 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.14	J	0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	28		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312213.D
 Lims ID: 480-142679-B-3-A
 Client ID: EC-0006-05
 Sample Type: Client
 Inject. Date: 08-Oct-2018 17:33:30 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-011
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 11:56:41

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.875	2.801	0.074	96	308590	2.84	28.4	
3 1,4-Dioxane	88	2.923	2.846	0.077	91	3999	0.1429		
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.971	0.004	98	880588	4.00		

Reagents:

MB_LLIS_WRK_00154 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312213.D

Injection Date: 08-Oct-2018 17:33:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142679-B-3-A

Lab Sample ID: 480-142679-3

Worklist Smp#: 11

Client ID: EC-0006-05

Injection Vol: 1.0 ul

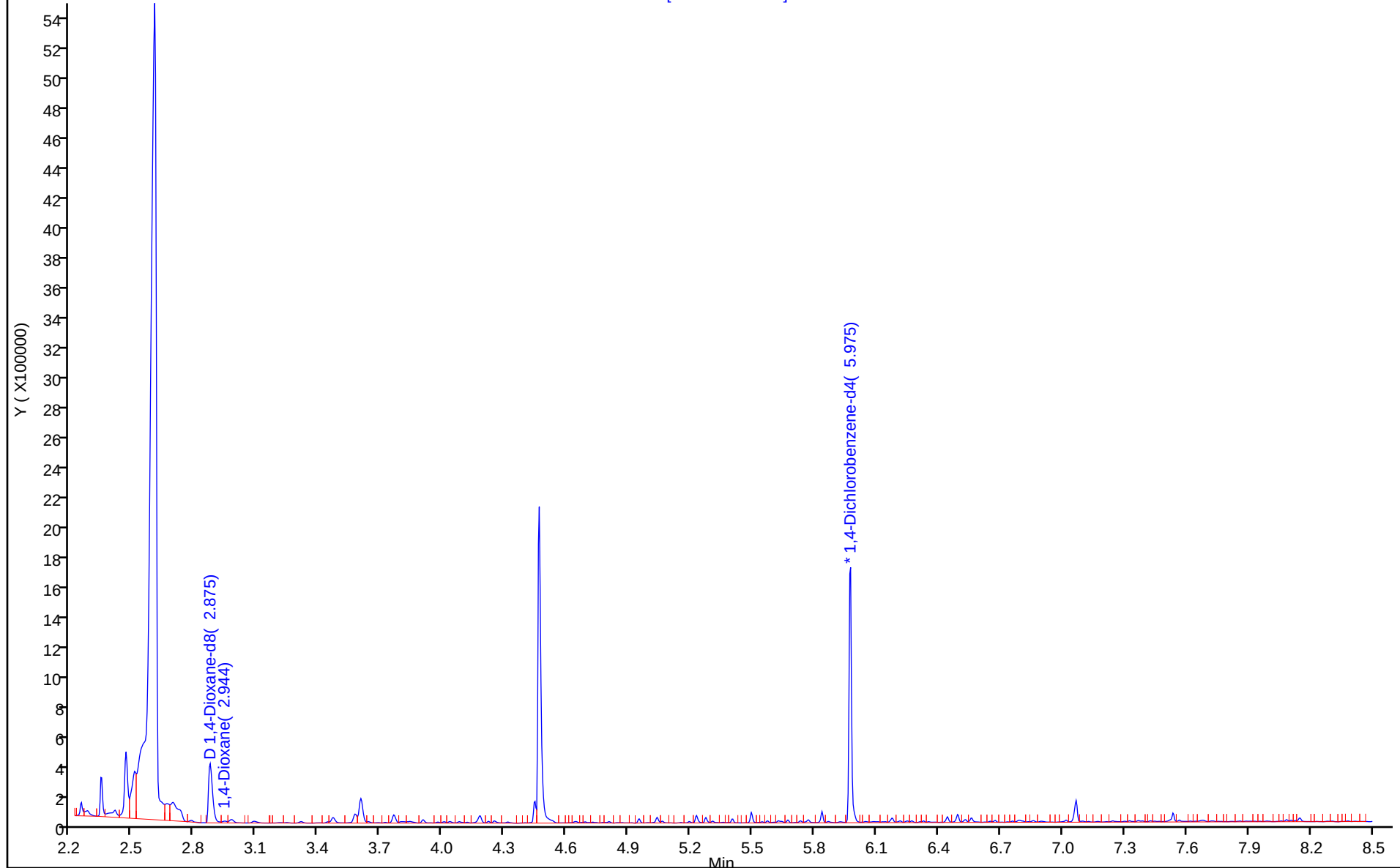
Dil. Factor: 1.0000

ALS Bottle#: 11

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312213[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312213.D

Injection Date: 08-Oct-2018 17:33:30

Instrument ID: HP5973U

Lims ID: 480-142679-B-3-A

Lab Sample ID: 480-142679-3

Client ID: EC-0006-05

Operator ID: DR

ALS Bottle#: 11

Worklist Smp#: 11

Injection Vol: 1.0 ul

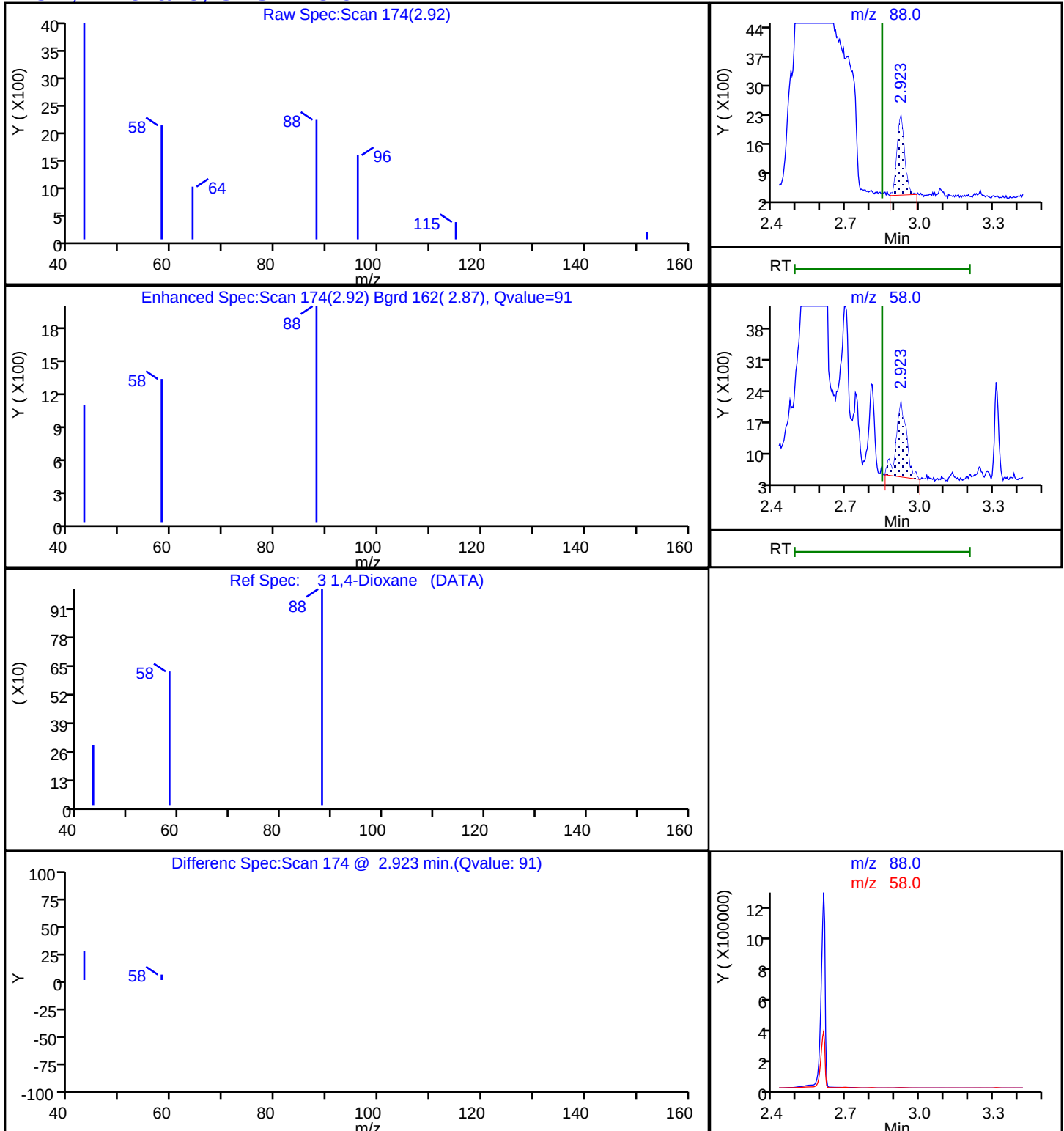
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312213.D

Injection Date: 08-Oct-2018 17:33:30

Instrument ID: HP5973U

Lims ID: 480-142679-B-3-A

Lab Sample ID: 480-142679-3

Client ID: EC-0006-05

Operator ID: DR

ALS Bottle#: 11

Worklist Smp#: 11

Injection Vol: 1.0 ul

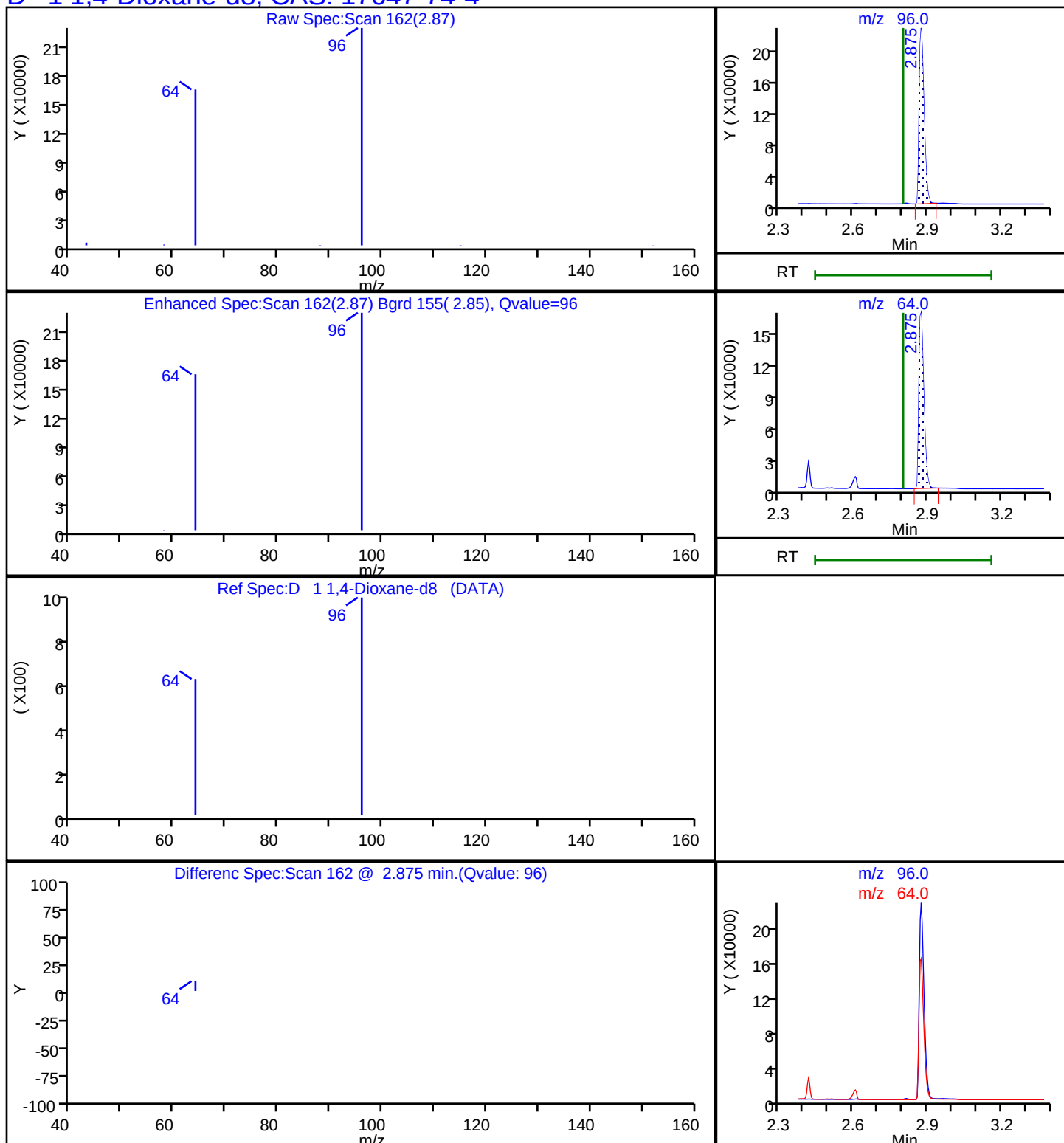
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Client Sample ID: EC-0006-06 Lab Sample ID: 480-142679-4
Matrix: Water Lab File ID: U3312214.D
Analysis Method: 8270D SIM ID Date Collected: 10/01/2018 00:00
Extract. Method: 3510C Date Extracted: 10/04/2018 14:15
Sample wt/vol: 1000 (mL) Date Analyzed: 10/08/2018 17:57
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 438250 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.12	J	0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	27		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312214.D
 Lims ID: 480-142679-B-4-A
 Client ID: EC-0006-06
 Sample Type: Client
 Inject. Date: 08-Oct-2018 17:57:30 ALS Bottle#: 12 Worklist Smp#: 12
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-012
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 11:56:44

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.874	2.801	0.073	95	302936	2.74	27.4	
3 1,4-Dioxane	88	2.927	2.846	0.081	84	3268	0.1236		
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.971	0.004	96	894238	4.00		

Reagents:

MB_LLIS_WRK_00154 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312214.D

Injection Date: 08-Oct-2018 17:57:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142679-B-4-A

Lab Sample ID: 480-142679-4

Worklist Smp#: 12

Client ID: EC-0006-06

Injection Vol: 1.0 ul

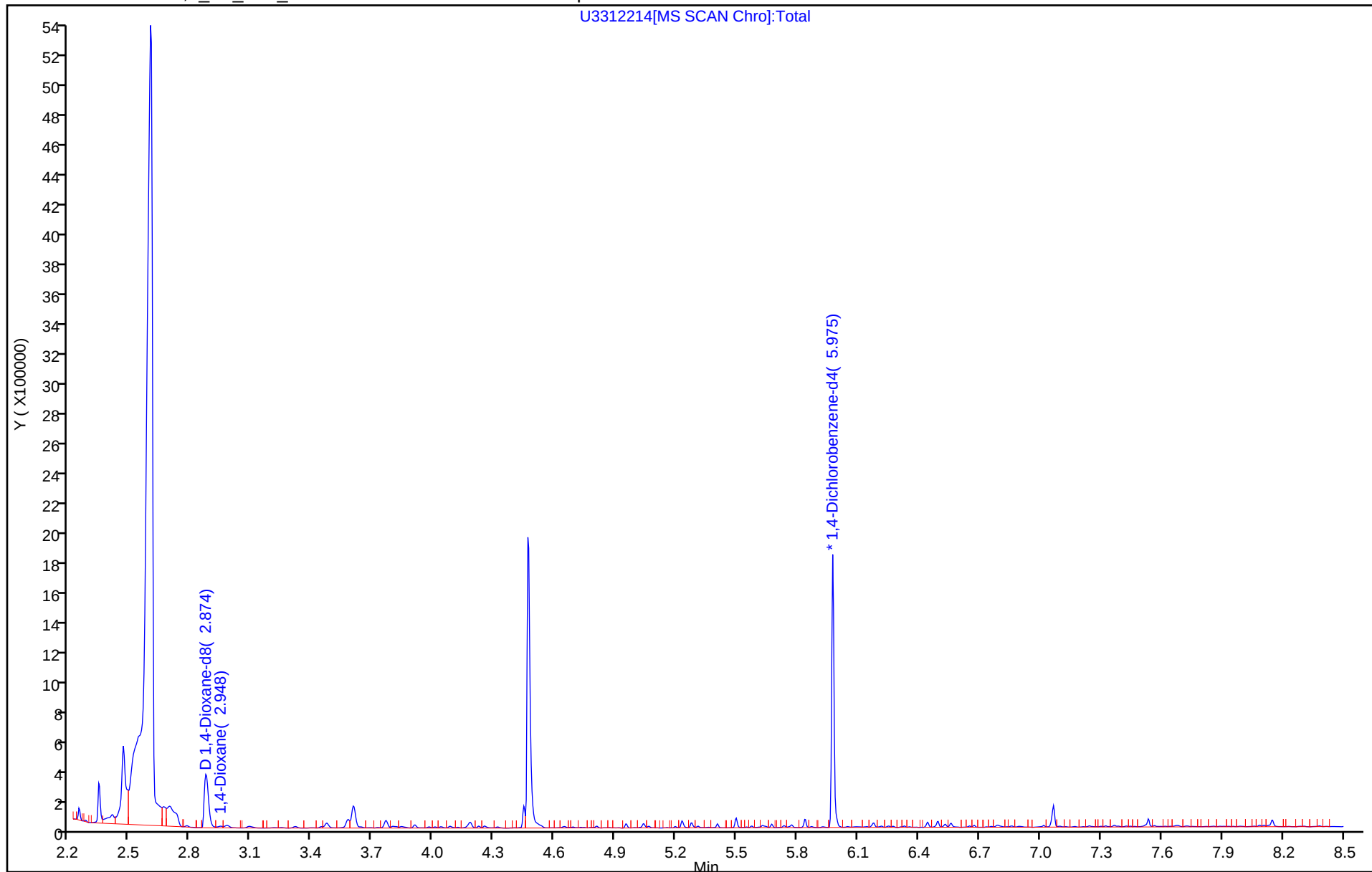
Dil. Factor: 1.0000

ALS Bottle#: 12

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312214[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312214.D

Injection Date: 08-Oct-2018 17:57:30

Instrument ID: HP5973U

Lims ID: 480-142679-B-4-A

Lab Sample ID: 480-142679-4

Client ID: EC-0006-06

Operator ID: DR

ALS Bottle#: 12

Worklist Smp#: 12

Injection Vol: 1.0 ul

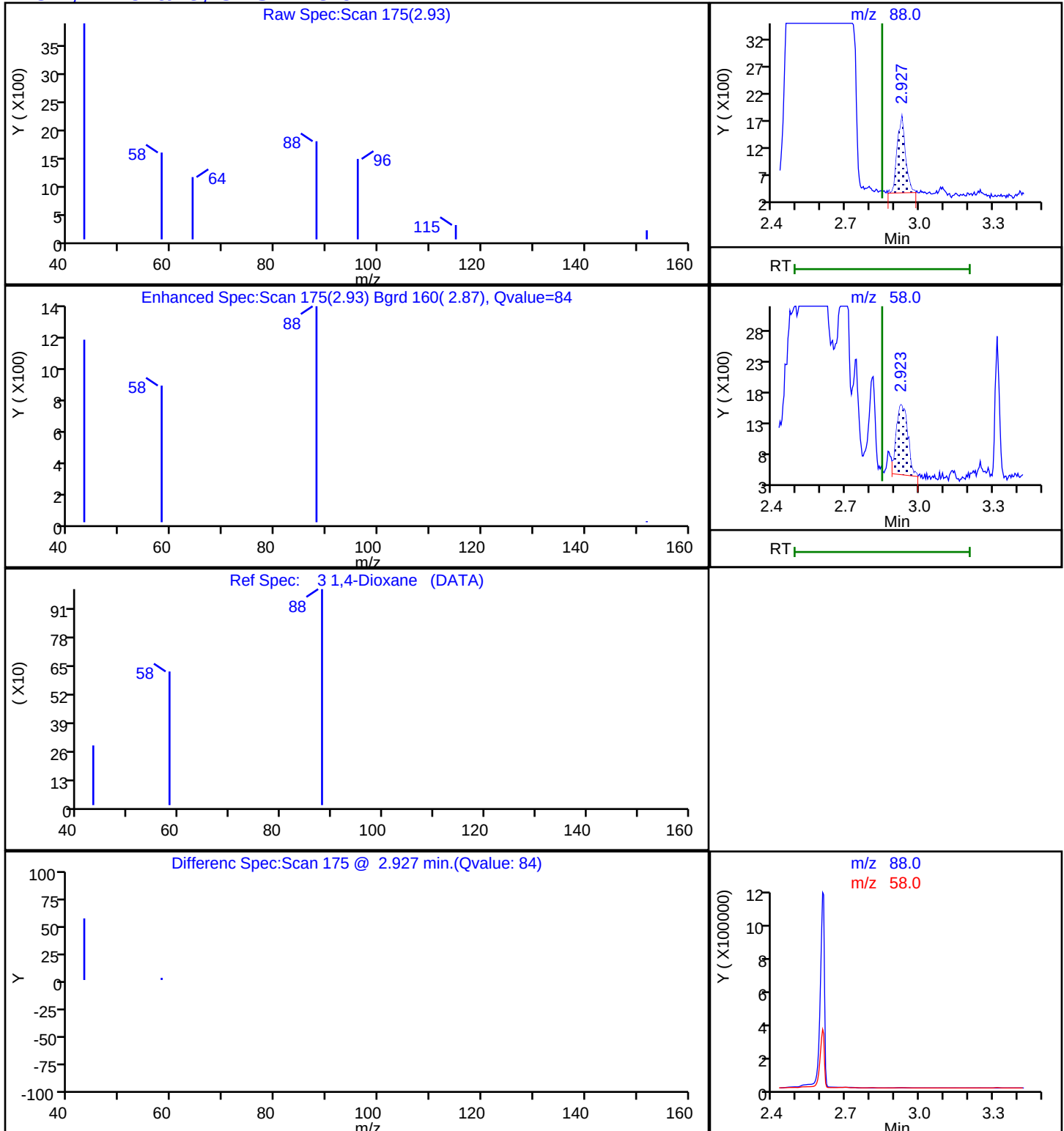
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312214.D

Injection Date: 08-Oct-2018 17:57:30

Instrument ID: HP5973U

Lims ID: 480-142679-B-4-A

Lab Sample ID: 480-142679-4

Client ID: EC-0006-06

Operator ID: DR

ALS Bottle#: 12

Worklist Smp#: 12

Injection Vol: 1.0 ul

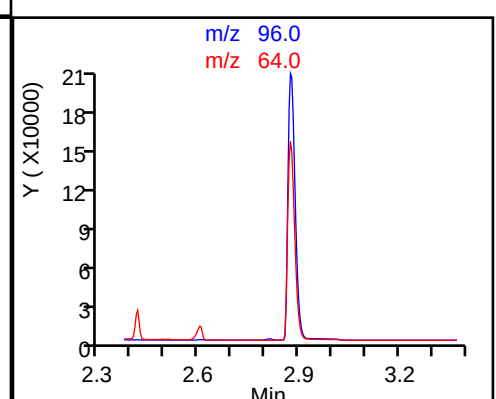
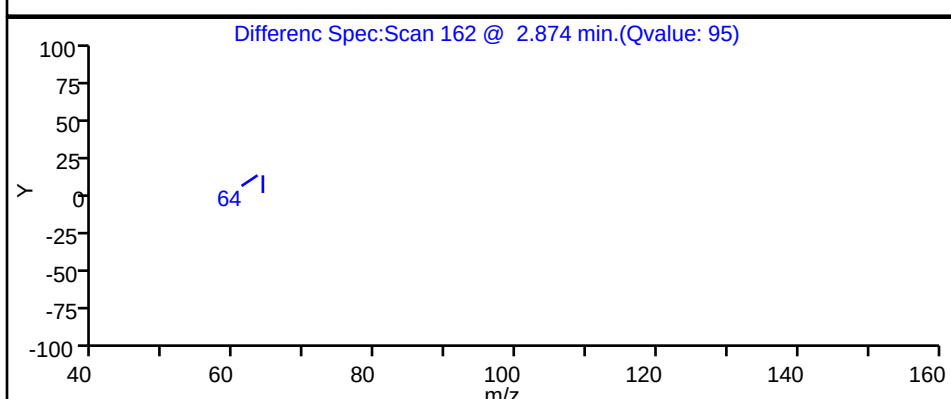
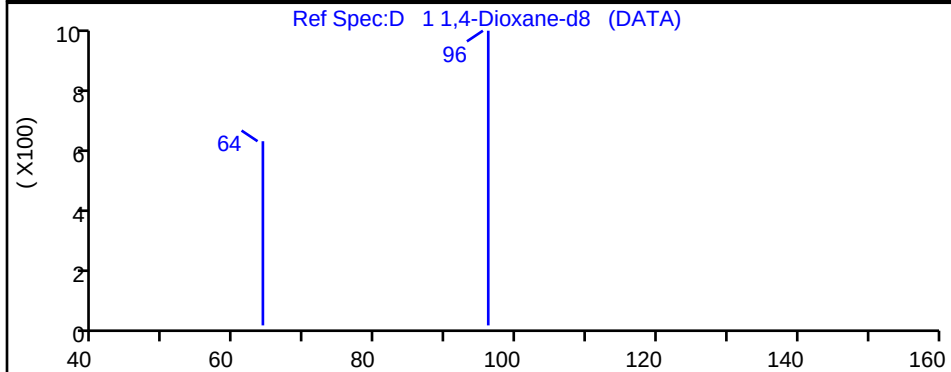
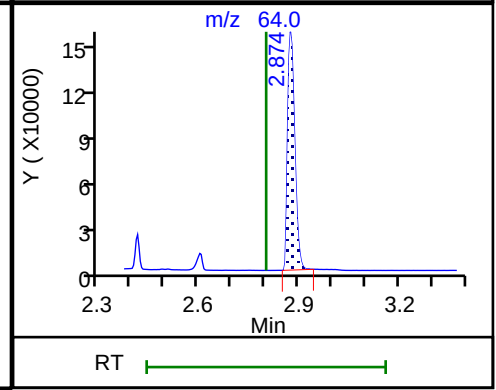
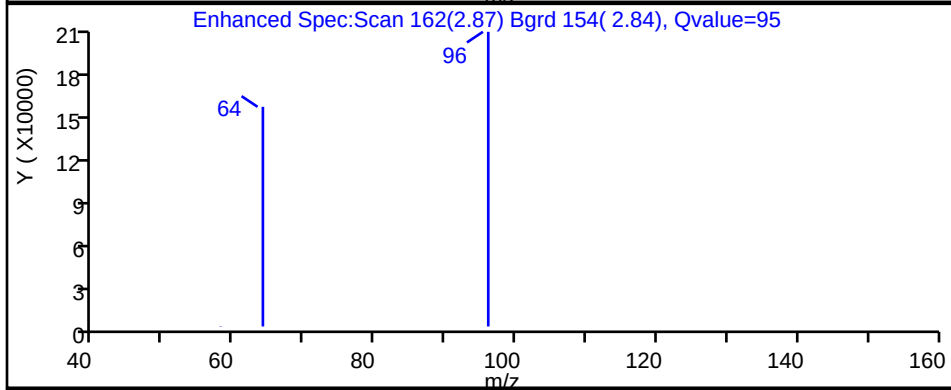
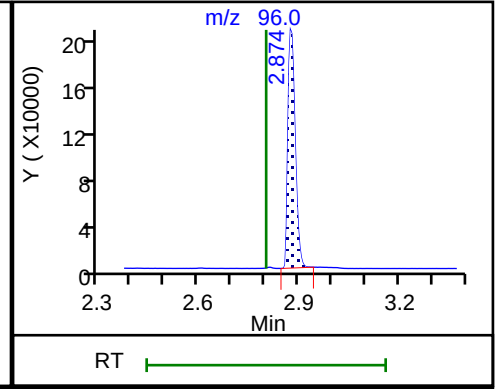
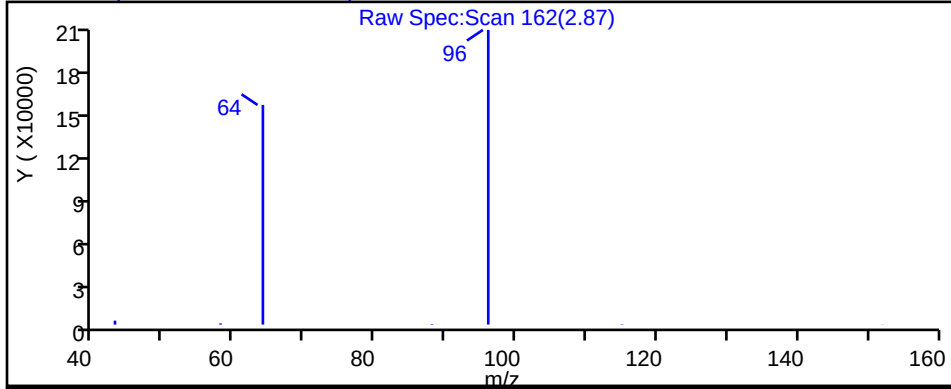
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
 SDG No.: _____
 Client Sample ID: EC-0006-07 Lab Sample ID: 480-142679-5
 Matrix: Water Lab File ID: U3312215.D
 Analysis Method: 8270D SIM ID Date Collected: 10/01/2018 15:00
 Extract. Method: 3510C Date Extracted: 10/04/2018 14:15
 Sample wt/vol: 1000 (mL) Date Analyzed: 10/08/2018 18:20
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 438250 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.17	J	0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	35		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312215.D
 Lims ID: 480-142679-A-5-A
 Client ID: EC-0006-07
 Sample Type: Client
 Inject. Date: 08-Oct-2018 18:20:30 ALS Bottle#: 13 Worklist Smp#: 13
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-013
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 11:56:45

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.891	2.801	0.090	96	398126	3.47	34.7	
3 1,4-Dioxane	88	2.940	2.846	0.094	99	6498	0.1727		
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.971	0.004	97	929174	4.00		

Reagents:

MB_LLIS_WRK_00154 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312215.D

Injection Date: 08-Oct-2018 18:20:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142679-A-5-A

Lab Sample ID: 480-142679-5

Worklist Smp#: 13

Client ID: EC-0006-07

Injection Vol: 1.0 ul

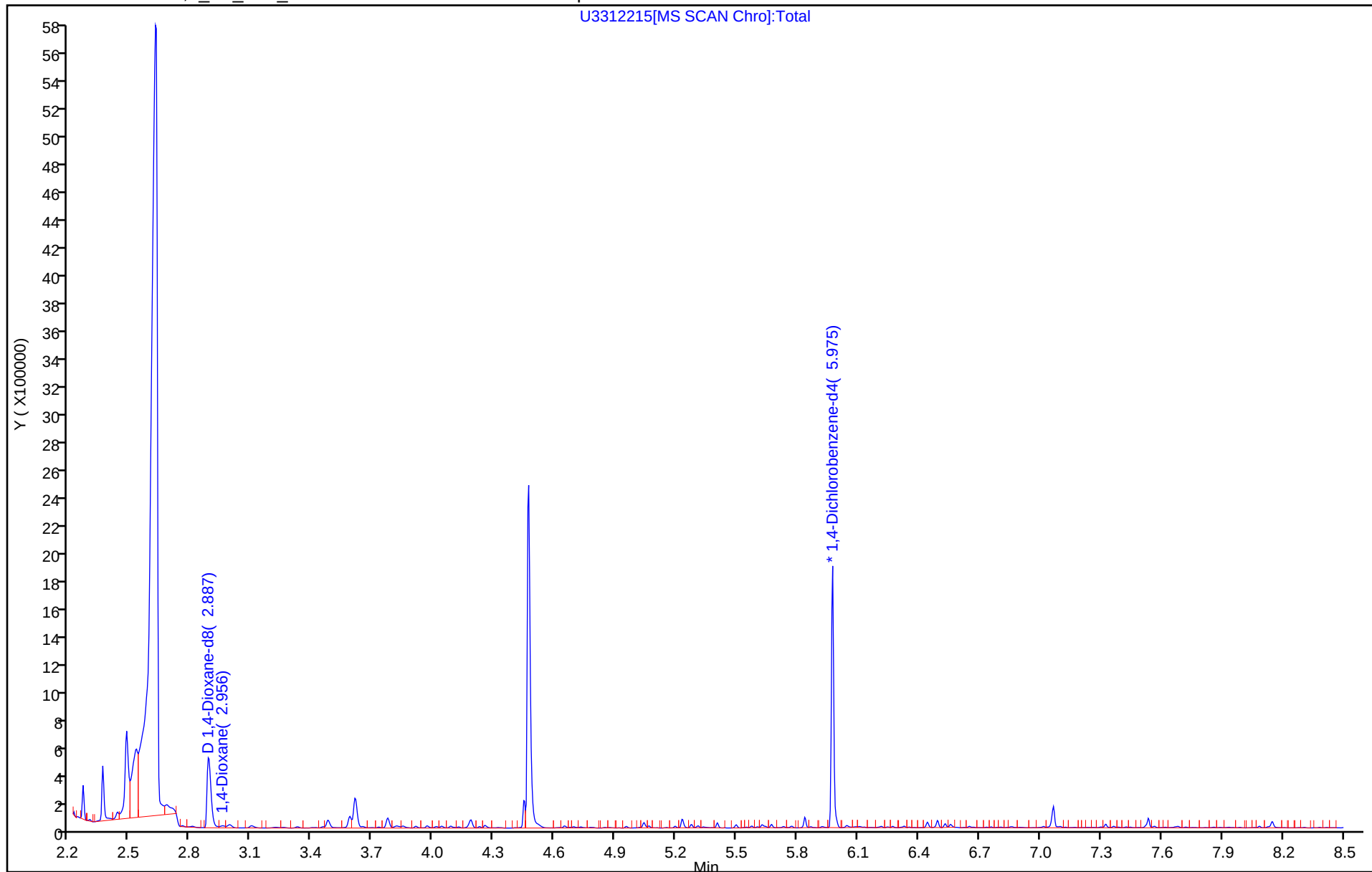
Dil. Factor: 1.0000

ALS Bottle#: 13

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312215[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312215.D

Injection Date: 08-Oct-2018 18:20:30

Instrument ID: HP5973U

Lims ID: 480-142679-A-5-A

Lab Sample ID: 480-142679-5

Client ID: EC-0006-07

Operator ID: DR

ALS Bottle#: 13

Worklist Smp#: 13

Injection Vol: 1.0 ul

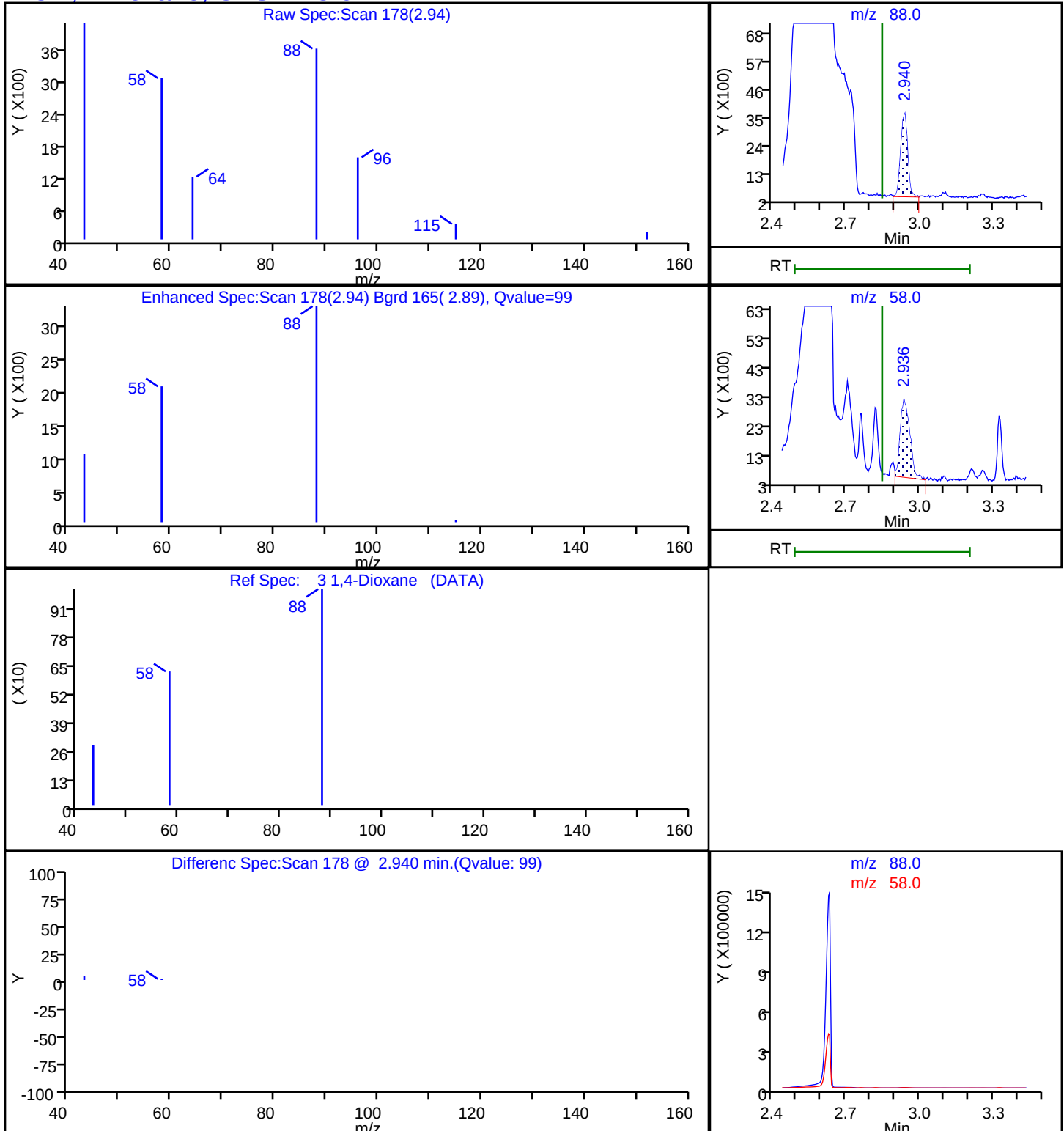
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312215.D

Injection Date: 08-Oct-2018 18:20:30

Instrument ID: HP5973U

Lims ID: 480-142679-A-5-A

Lab Sample ID: 480-142679-5

Client ID: EC-0006-07

Operator ID: DR

ALS Bottle#: 13

Worklist Smp#: 13

Injection Vol: 1.0 ul

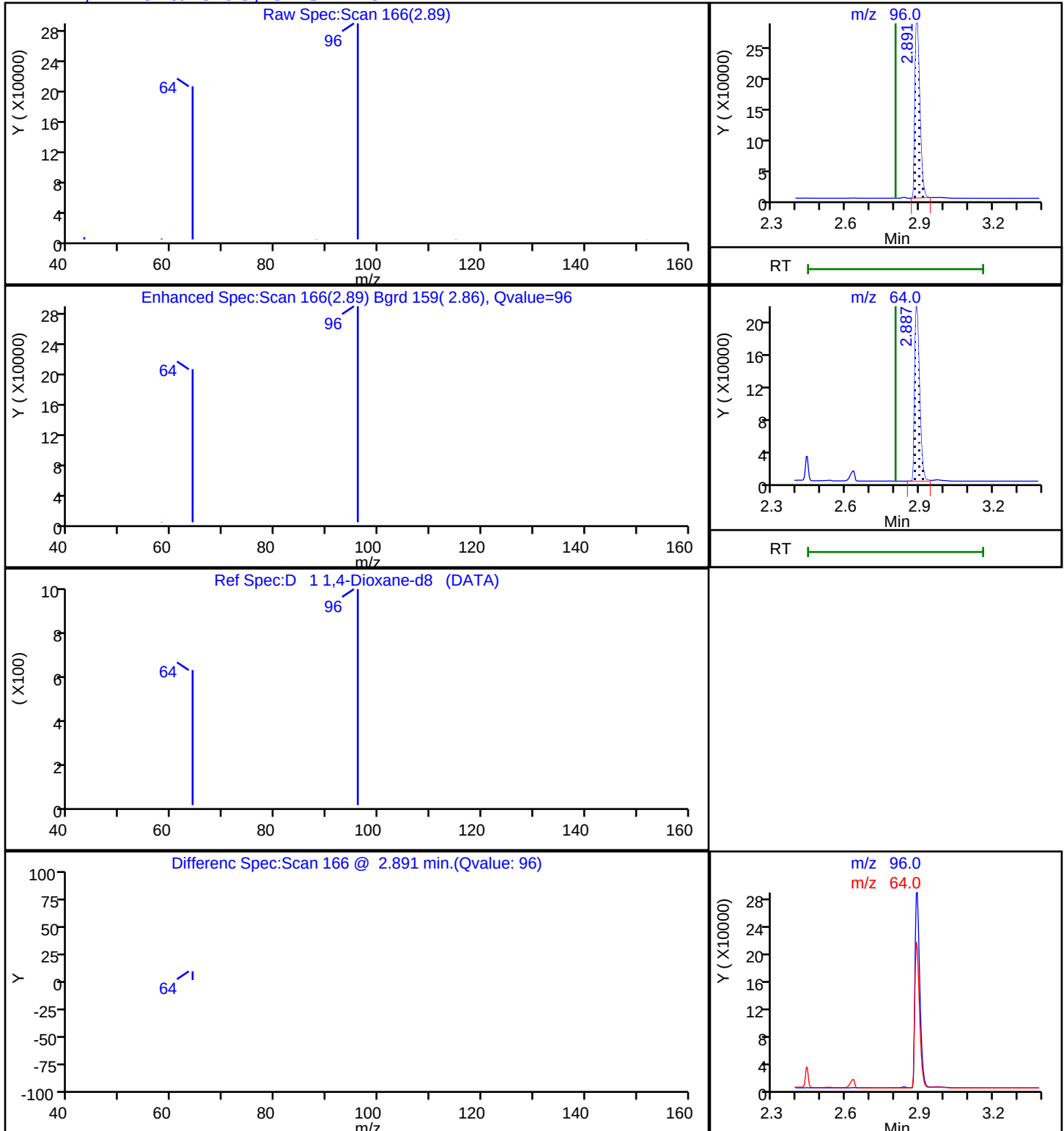
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1 Analy Batch No.: 437915

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2018 13:16 Calibration End Date: 10/05/2018 15:13 Calibration ID: 35015

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-437915/3	U3312052.D
Level 2	ICIS 480-437915/5	U3312054.D
Level 3	IC 480-437915/6	U3312055.D
Level 4	IC 480-437915/7	U3312056.D
Level 5	IC 480-437915/8	U3312057.D
Level 6	IC 480-437915/4	U3312053.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,4-Dioxane	0.9713 1.0439	1.0753	1.0815	1.1079	1.0948	L2ID	-0.031	1.1264			0.0100				1.0000		0.9900
1,4-Dioxane-d8	0.4886 0.4931	0.4712	0.5087	0.5033	0.5008	Ave		0.4943			0.0100	2.7		20.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1 Analy Batch No.: 437915

SDG No.: _____

Instrument ID: HP5973U GC Column: RXI-5Sil MS ID: 0.25 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/05/2018 13:16 Calibration End Date: 10/05/2018 15:13 Calibration ID: 35015

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-437915/3	U3312052.D
Level 2	ICIS 480-437915/5	U3312054.D
Level 3	IC 480-437915/6	U3312055.D
Level 4	IC 480-437915/7	U3312056.D
Level 5	IC 480-437915/8	U3312057.D
Level 6	IC 480-437915/4	U3312053.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/UL)				
			LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
1,4-Dioxane		L2ID	20183 38654	49416	103320	119064	125930	0.200 0.400	0.600	0.800	1.00	1.20
1,4-Dioxane-d8	DCBd 4	Ave	207798 370292	459551	955318	1074696	1150253	2.00 4.00	6.00	8.00	10.0	12.0

Curve Type Legend:

Ave = Average ISTD
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312052.D
 Lims ID: IC SIM 0.2
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 05-Oct-2018 13:16:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:41 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 14:10:22

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.809	2.801	0.008	96	207798	2.00	1.98	
3 1,4-Dioxane	88	2.850	2.846	0.004	91	20183	0.2000	0.2003	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	97	850524	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00053

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312052.D

Injection Date: 05-Oct-2018 13:16:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.2

Worklist Smp#: 3

Client ID:

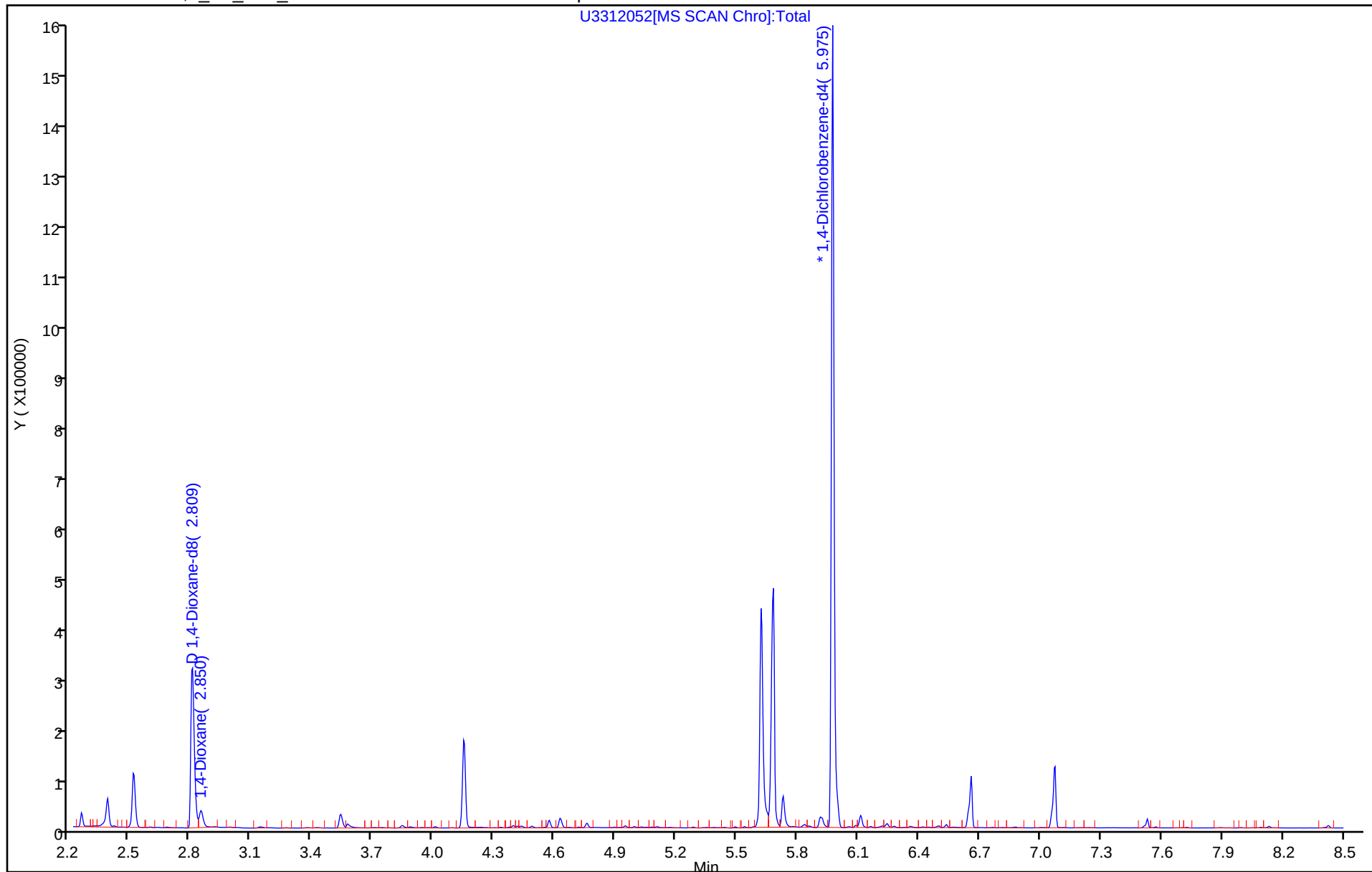
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312053.D
 Lims ID: IC SIM 0.4
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 05-Oct-2018 13:39:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-004
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:43 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 14:10:46

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.809	2.801	0.008	95	370292	4.00	3.99	
3 1,4-Dioxane	88	2.850	2.846	0.004	90	38654	0.4000	0.3985	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	98	751003	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00054

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312053.D

Injection Date: 05-Oct-2018 13:39:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.4

Worklist Smp#: 4

Client ID:

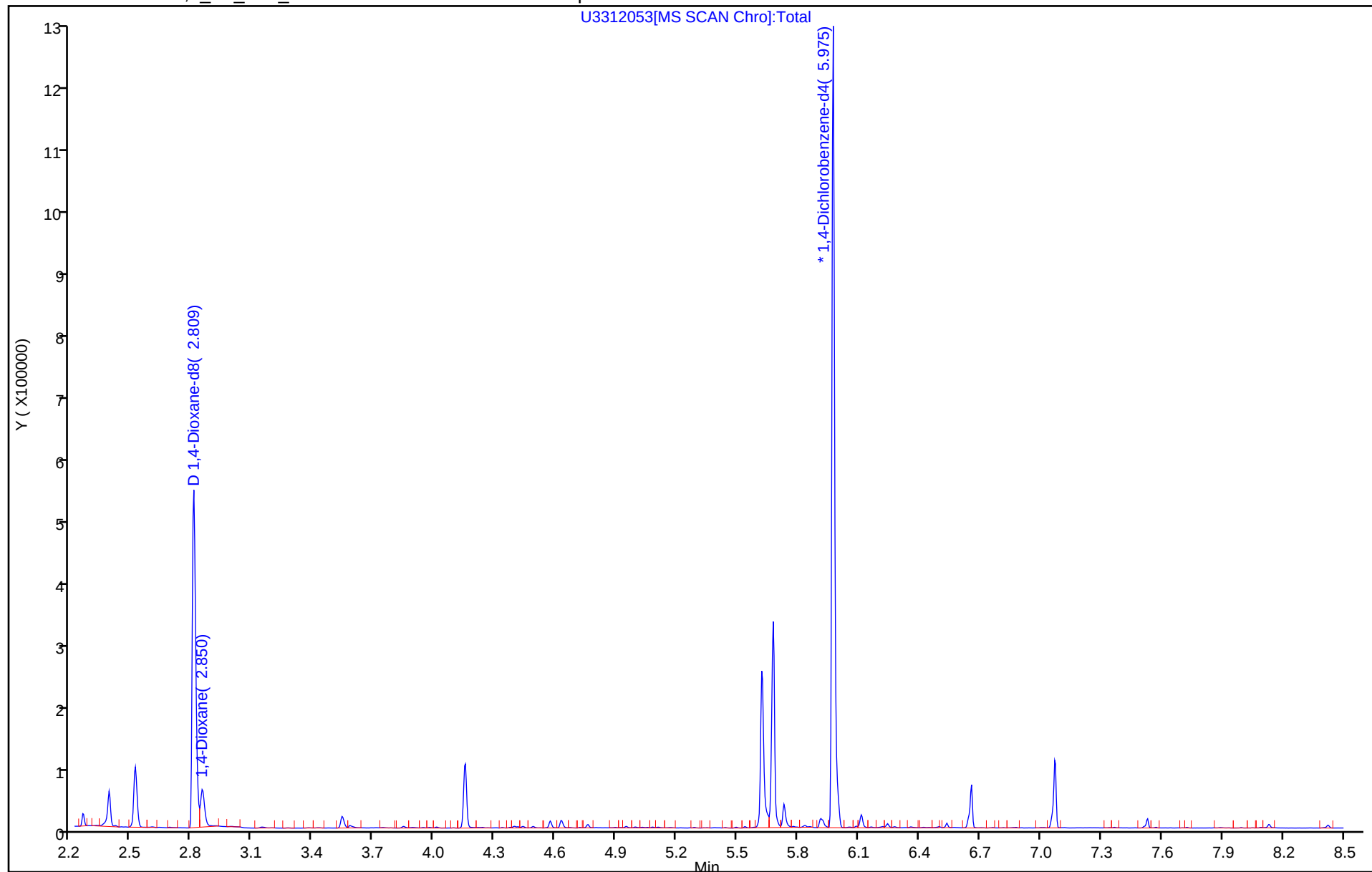
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312054.D
 Lims ID: ICIS SIM 0.6
 Client ID:
 Sample Type: ICIS Calib Level: 3
 Inject. Date: 05-Oct-2018 14:03:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-005
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:44 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 16:38:46

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.801	2.801	0.000	94	459551	6.00	5.72	
3 1,4-Dioxane	88	2.846	2.846	0.000	92	49416	0.6000	0.6006	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	98	650120	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312054.D

Injection Date: 05-Oct-2018 14:03:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: ICIS SIM 0.6

Worklist Smp#: 5

Client ID:

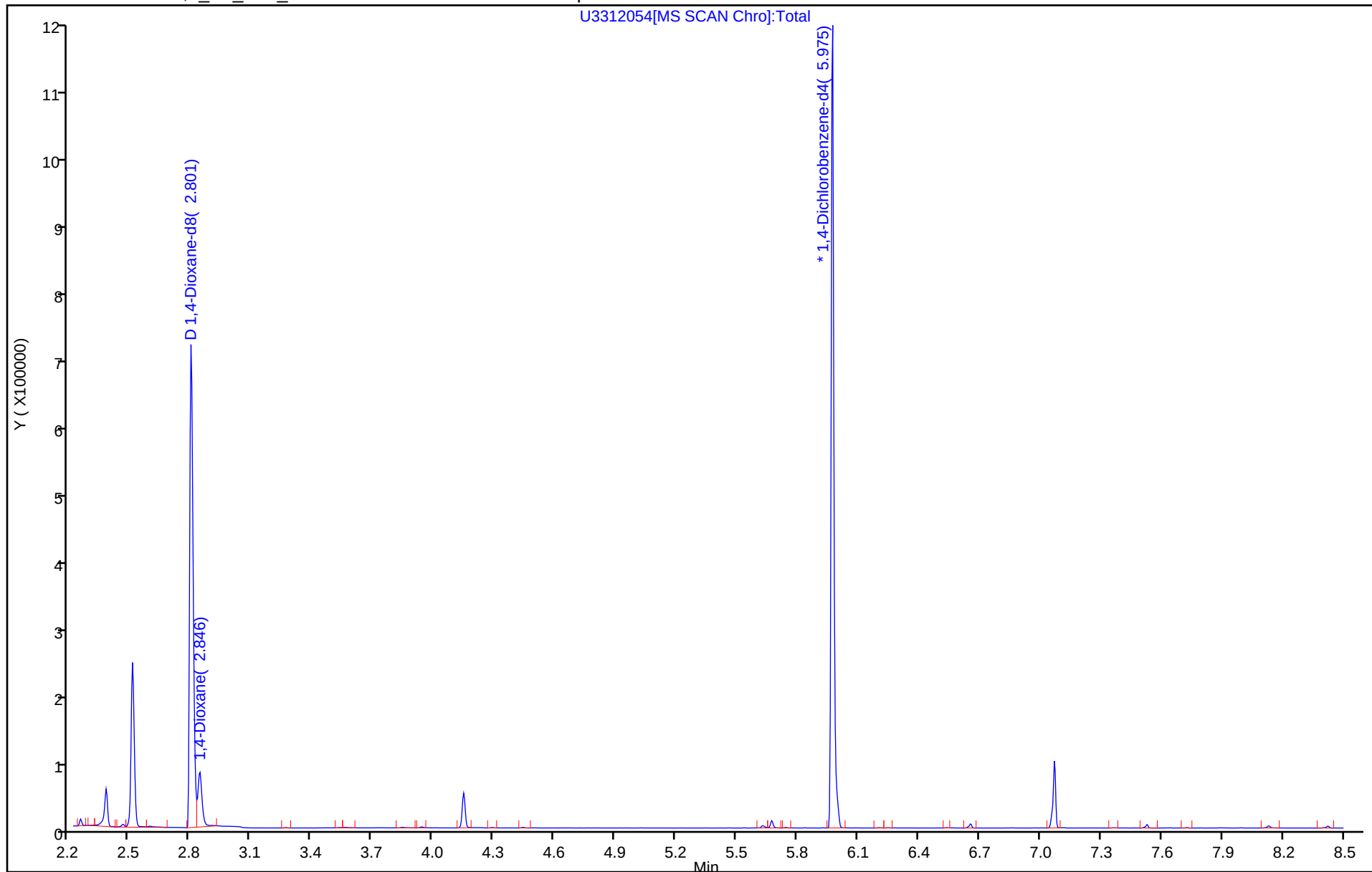
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312055.D
 Lims ID: IC SIM 0.8
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 05-Oct-2018 14:26:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-006
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:45 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 16:38:49

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.809	2.801	0.008	95	955318	8.00	8.23	
3 1,4-Dioxane	88	2.850	2.846	0.004	92	103320	0.8000	0.7959	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	97	939021	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00056

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312055.D

Injection Date: 05-Oct-2018 14:26:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.8

Worklist Smp#: 6

Client ID:

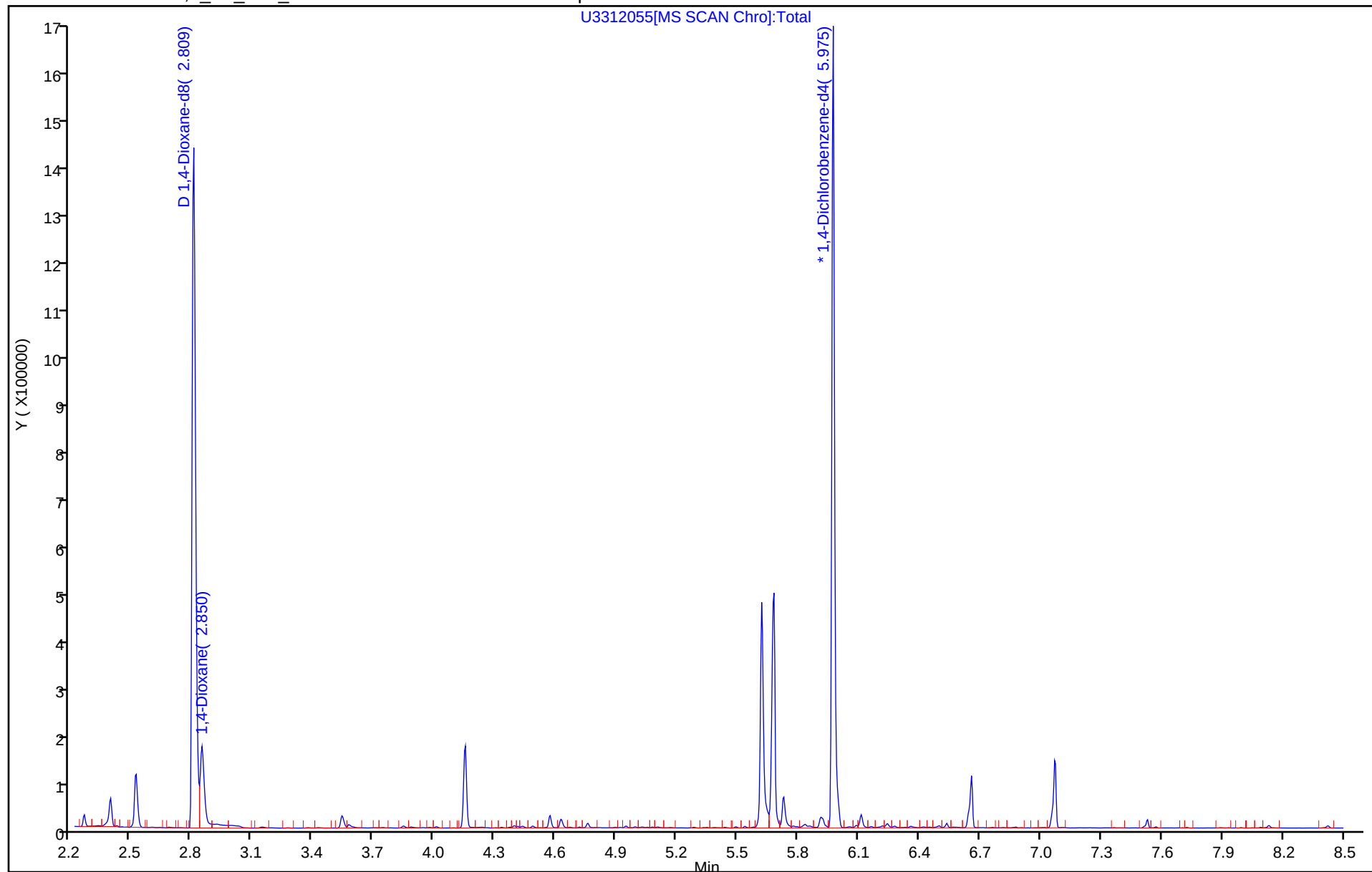
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312056.D
 Lims ID: IC SIM 1.0
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 05-Oct-2018 14:49:30 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-007
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:46 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 16:38:52

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.805	2.801	0.004	93	1074696	10.0	10.2	
3 1,4-Dioxane	88	2.846	2.846	0.000	90	119064	1.00	1.01	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	97	854136	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00057

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312056.D

Injection Date: 05-Oct-2018 14:49:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 1.0

Worklist Smp#: 7

Client ID:

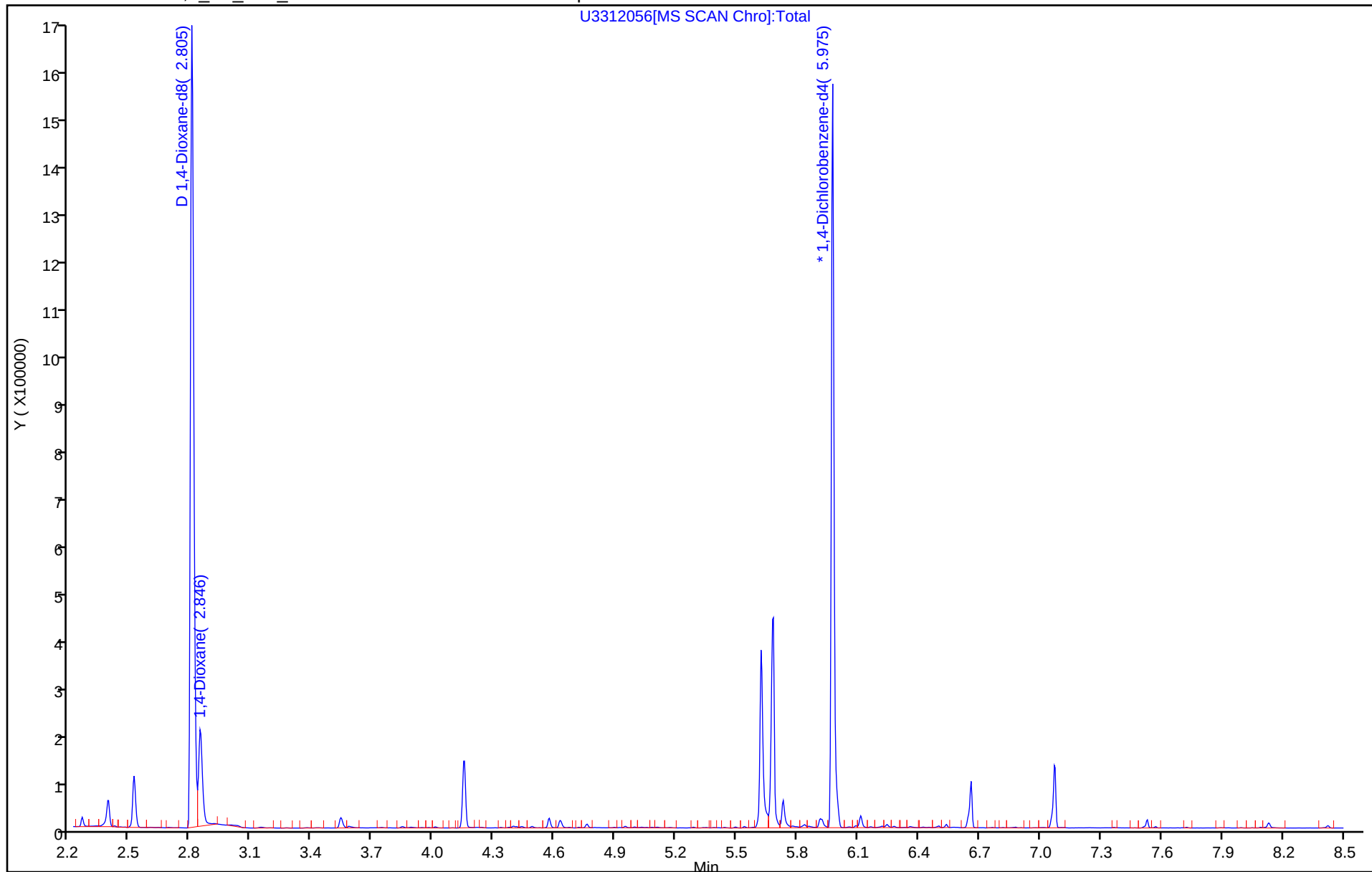
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 7

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Lims ID: IC SIM 1.2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 05-Oct-2018 15:13:30 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075235-008
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 08-Oct-2018 12:47:46 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK048

First Level Reviewer: richardsd

Date: 05-Oct-2018 16:39:22

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.805	2.801	0.004	94	1150253	12.0	12.2	
3 1,4-Dioxane	88	2.846	2.846	0.000	91	125930	1.20	1.19	
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.975	0.000	98	765619	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00058

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D

Injection Date: 05-Oct-2018 15:13:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 1.2

Worklist Smp#: 8

Client ID:

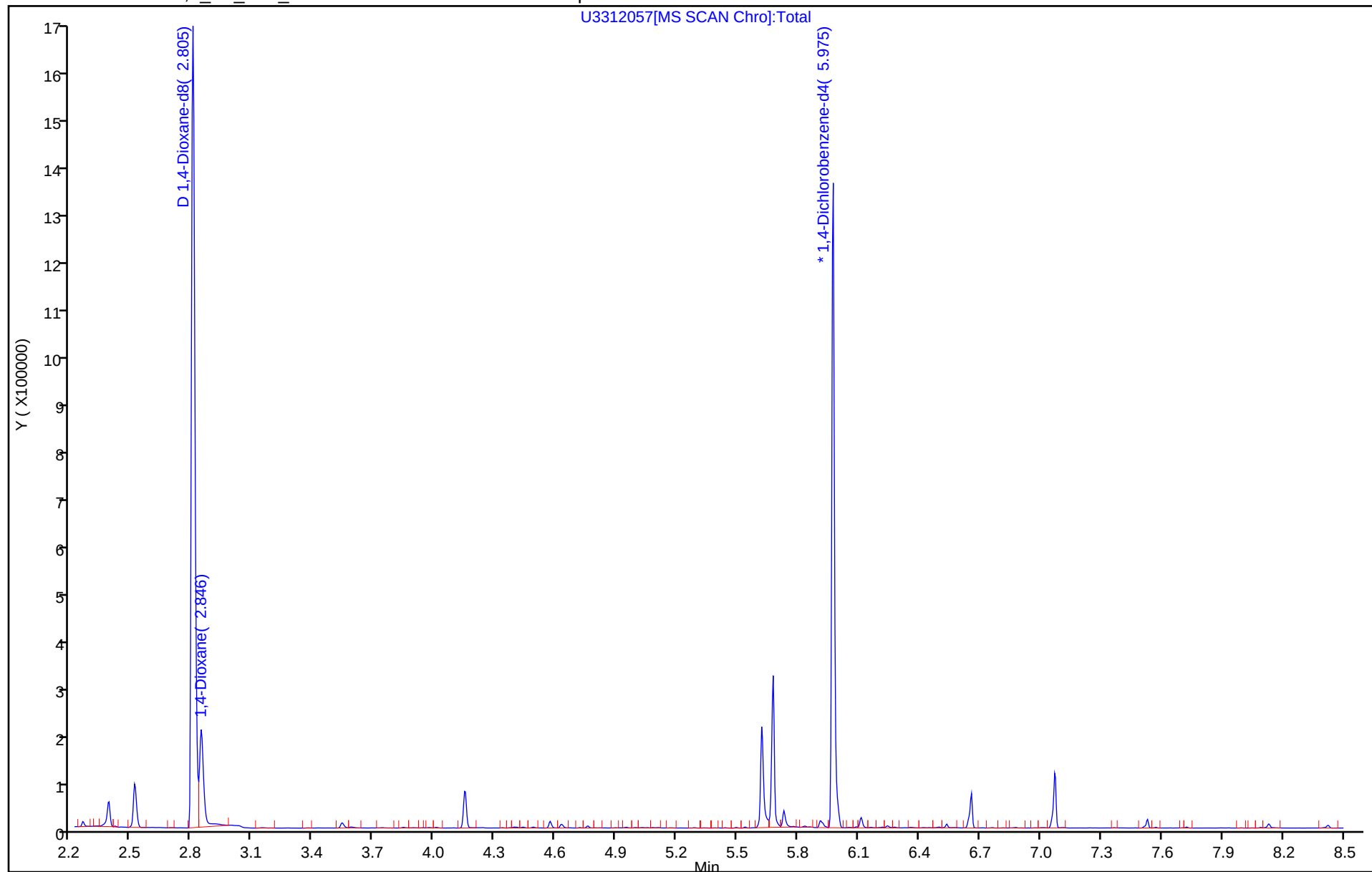
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Lab Sample ID: CCVIS 480-438250/3 Calibration Date: 10/08/2018 14:23
Instrument ID: HP5973U Calib Start Date: 10/05/2018 13:16
GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 10/05/2018 15:13
Lab File ID: U3312205.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	L2ID		1.091	0.0100	609	600	1.5	20.0
1,4-Dioxane-d8	Ave	0.4943	0.4818	0.0100	5850	6000	-2.5	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312205.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 08-Oct-2018 14:23:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 08-Oct-2018 16:38:03

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.801	2.801	0.000	95	690804	6.00	5.85	
3 1,4-Dioxane	88	2.846	2.846	0.000	94	75388	0.6000	0.6091	
* 2 1,4-Dichlorobenzene-d4	152	5.971	5.971	0.000	98	955799	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059
 MB_LLIS_WRK_00154

Amount Added: 1.00
 Amount Added: 20.00

Units: mL
 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312205.D

Injection Date: 08-Oct-2018 14:23:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: CCVIS

Worklist Smp#: 3

Client ID:

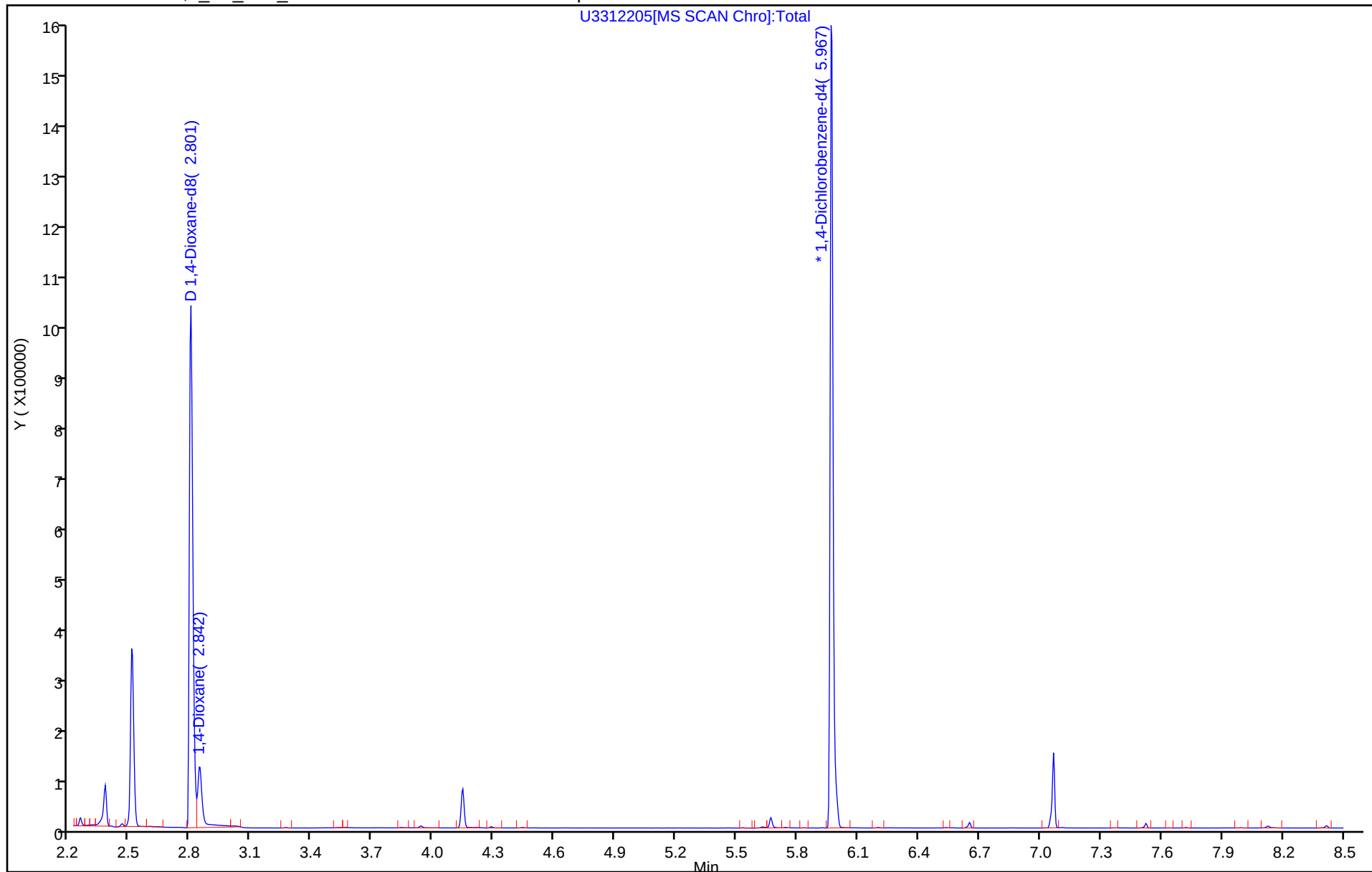
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 05-Oct-2018 12:17:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: DFTPP
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 05-Oct-2018 16:39:47 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0314

First Level Reviewer: richardsd

Date: 05-Oct-2018 12:50:21

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
* 2 1,4-Dichlorobenzene-d4	152		5.975				4.00	ND	
4 DFTPP									
7 4,4'-DDE	246	11.061	11.061	0.000	0	5972			NR
5 4,4'-DDD	235	11.355	11.355	0.000	96	21391			NR
6 4,4'-DDT	235	11.643	11.643	0.000	97	1185656	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MB_DFTPP_WRK_00341

Amount Added: 1.00

Units: mL

MB_LLIS_WRK_00153

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D

Injection Date: 05-Oct-2018 12:17:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 2.0 ul

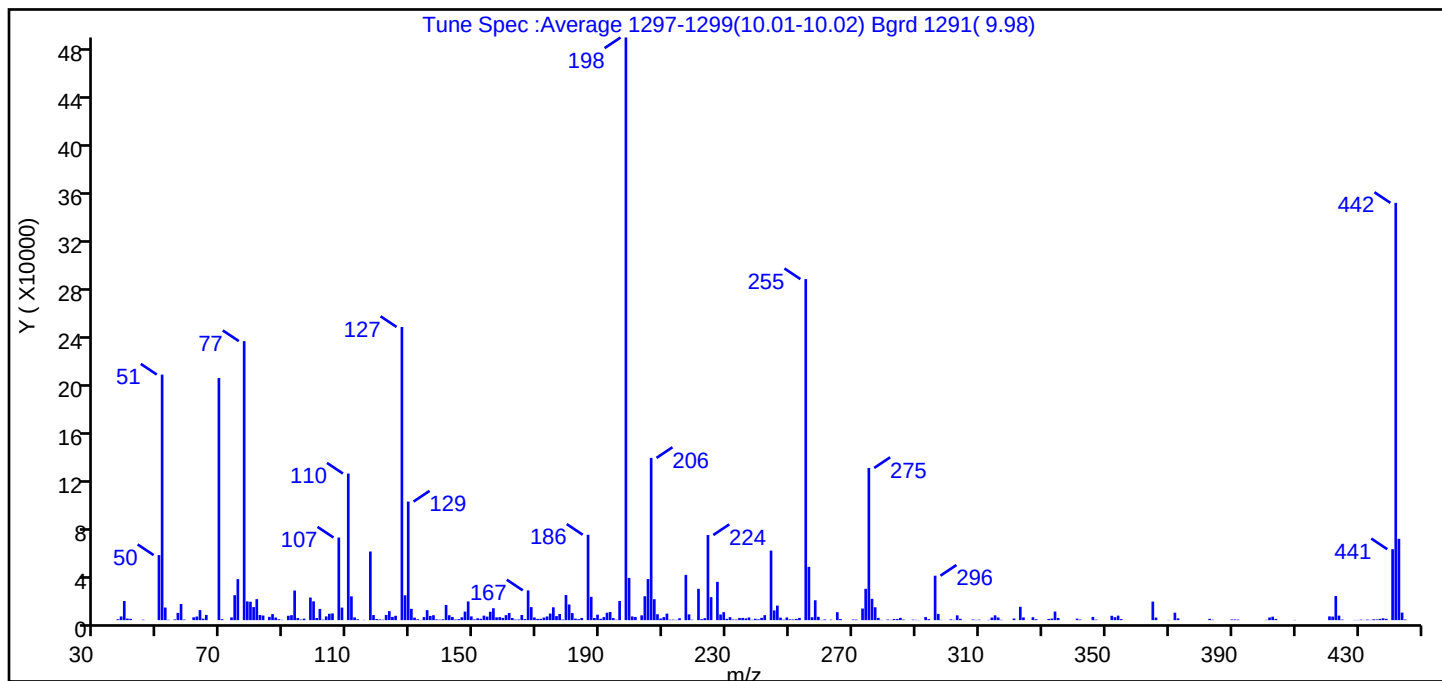
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (139.6)
51	10-80% of the base peak	42.1
68	<2% of mass 69	0.0 (0.0)
69	Present	41.6
70	<2% of mass 69	0.2 (0.4)
127	10-80% of the base peak	50.3
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.2
275	10-60% of the base peak	26.1
365	>1% of mass 198	3.2
441	present but <24% of mass 442	12.2 (17.0)
442	base peak, or >50% of 198	71.6
443	15-24% of mass 442	14.0 (19.5)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 05-Oct-2018 12:17:30
Spectrum: Tune Spec :Average 1297-1299(10.01-10.02) Bgrd 1291(9.98)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 285

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	741	132.00	711	207.00	17320	294.00	806
38.00	3024	133.00	185	208.00	4897	296.00	36760
39.00	15801	134.00	2479	209.00	1330	297.00	5190
40.00	1316	135.00	8278	210.00	2503	298.00	196
41.00	1093	136.00	3494	211.00	5402	301.00	606
44.00	19	137.00	4074	212.00	361	302.00	239
45.00	364	138.00	601	213.00	396	303.00	3958
50.00	53784	139.00	414	214.00	247	304.00	1106
51.00	203072	140.00	667	215.00	1560	308.00	517
52.00	10437	141.00	12565	217.00	37448	309.00	249
53.00	304	142.00	4039	218.00	4736	310.00	385
55.00	591	143.00	2626	219.00	331	313.00	224
56.00	6009	144.00	509	221.00	25904	314.00	2139
57.00	13346	145.00	805	222.00	826	315.00	3959
58.00	484	146.00	2378	223.00	1644	316.00	2184
61.00	2335	147.00	7062	224.00	70376	317.00	265
62.00	2983	148.00	15441	225.00	18984	321.00	1354
63.00	8307	149.00	3101	227.00	31688	323.00	11045
64.00	1204	150.00	618	228.00	4668	324.00	2277
65.00	4286	151.00	1553	229.00	6609	327.00	2424
69.00	200192	152.00	1146	230.00	1090	328.00	754
70.00	774	153.00	3710	231.00	2483	332.00	999
73.00	2284	154.00	2901	232.00	511	333.00	1315
74.00	20600	155.00	6966	233.00	439	334.00	7127
75.00	33896	156.00	9850	234.00	1832	335.00	1807
77.00	230720	157.00	2319	235.00	1842	341.00	1250
78.00	15468	158.00	2490	236.00	1431	342.00	450
79.00	15214	159.00	1839	237.00	2218	346.00	2691
80.00	10798	160.00	4134	238.00	310	347.00	445
81.00	17360	161.00	5948	239.00	1161	352.00	3589
82.00	4230	162.00	1754	240.00	670	353.00	2412
83.00	3798	163.00	476	241.00	1925	354.00	3724
85.00	2719	164.00	519	242.00	4099	355.00	851

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D\1,4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 05-Oct-2018 12:17:30

Spectrum: Tune Spec :Average 1297-1299(10.01-10.02) Bgrd 1291(9.98)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 285

m/z	Y	m/z	Y	m/z	Y	m/z	Y
86.00	4996	165.00	4282	244.00	57520	365.00	15349
87.00	2178	166.00	890	245.00	8061	366.00	2136
88.00	700	167.00	24608	246.00	12033	370.00	175
89.00	262	168.00	10773	247.00	2079	372.00	6178
91.00	3633	169.00	2189	248.00	381	373.00	1490
92.00	4093	170.00	1050	249.00	2215	383.00	1106
93.00	24496	171.00	1120	250.00	643	384.00	308
94.00	1738	172.00	2128	251.00	556	390.00	517
95.00	475	173.00	3052	252.00	1020	391.00	557
96.00	1232	174.00	5451	253.00	1858	392.00	463
98.00	18712	175.00	10611	255.00	281984	401.00	230
99.00	15556	176.00	3325	256.00	44072	402.00	2219
100.00	1787	177.00	5076	257.00	2446	403.00	2863
101.00	9289	178.00	515	258.00	16432	404.00	1003
102.00	436	179.00	20760	259.00	2750	410.00	173
103.00	3082	180.00	12933	260.00	187	421.00	3118
104.00	5289	181.00	5835	261.00	548	422.00	2942
105.00	5532	182.00	1271	263.00	416	423.00	20000
107.00	68320	183.00	782	265.00	6564	424.00	3722
108.00	10383	184.00	1807	266.00	933	425.00	465
110.00	121200	186.00	70608	270.00	508	429.00	172
111.00	19672	187.00	19288	271.00	460	430.00	174
112.00	2279	188.00	1821	273.00	9600	431.00	395
113.00	717	189.00	4508	274.00	25904	432.00	167
115.00	217	190.00	1114	275.00	125848	433.00	465
117.00	56760	191.00	2486	276.00	17648	434.00	213
118.00	4194	192.00	6130	277.00	10642	435.00	690
119.00	925	193.00	6711	278.00	1882	436.00	580
120.00	589	194.00	1684	279.00	190	437.00	1050
121.00	377	195.00	323	281.00	479	438.00	1531
122.00	4294	196.00	15873	282.00	253	439.00	1081
123.00	7438	198.00	481792	283.00	986	441.00	58648
124.00	2687	199.00	34920	284.00	899	442.00	345024
125.00	3606	200.00	3047	285.00	1885	443.00	67264

Report Date: 05-Oct-2018 16:39:48

Chrom Revision: 2.3 19-Jul-2018 15:14:50

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D\1,4_Dx_SIM_HP5973U.rslt\spe

Injection Date: 05-Oct-2018 12:17:30

Spectrum: Tune Spec :Average 1297-1299(10.01-10.02) Bgrd 1291(9.98)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 285

m/z	Y	m/z	Y	m/z	Y	m/z	Y
127.00	242432	201.00	2579	286.00	438	444.00	6250
128.00	20544	203.00	3988	289.00	407	445.00	506
129.00	98040	204.00	19760	290.00	239		
130.00	9367	205.00	33976	291.00	169		
131.00	2089	206.00	134144	293.00	2545		

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312051.D

Injection Date: 05-Oct-2018 12:17:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =

$$\left(\frac{\text{Area Breakdown Cpnds}}{\text{Total Area Breakdown Cpnds}} \right) * 100$$

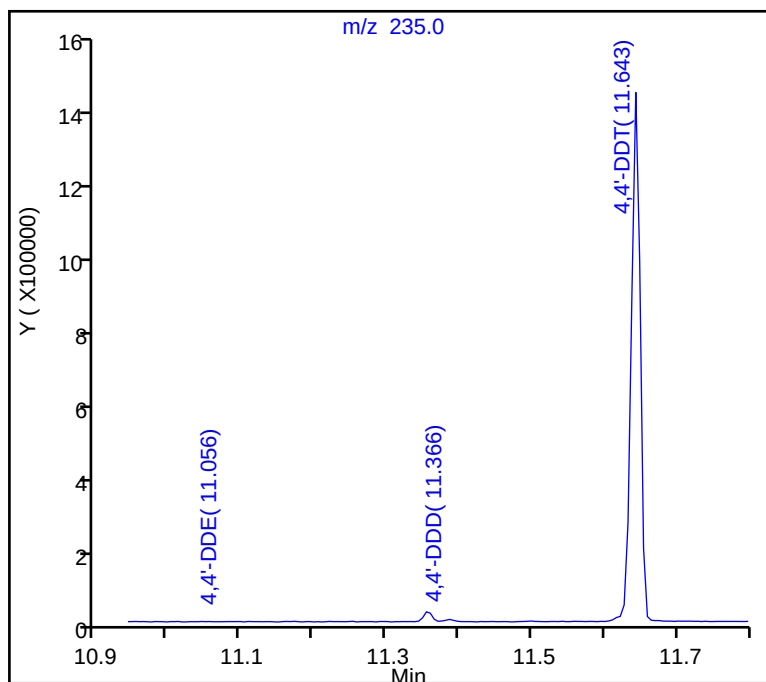
6 4,4'-DDT, Area = 1185656

5 4,4'-DDD, Area = 21391

7 4,4'-DDE, Area = 5972

%Breakdown: 2.26%, Max Limit: 20.00%

Passed



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312204.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 08-Oct-2018 13:55:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:08 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 08-Oct-2018 19:56:10

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
4 DFTPP									
7 4,4'-DDE	246	11.050	11.050	0.000	0	3623			NR
5 4,4'-DDD	235	11.349	11.349	0.000	95	8772			NR
6 4,4'-DDT	235	11.638	11.638	0.000	93	1752040	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

Reagents:

MB_DFTPP_WRK_00341

Amount Added: 1.00

Units: mL

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312204.D

Injection Date: 08-Oct-2018 13:55:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul

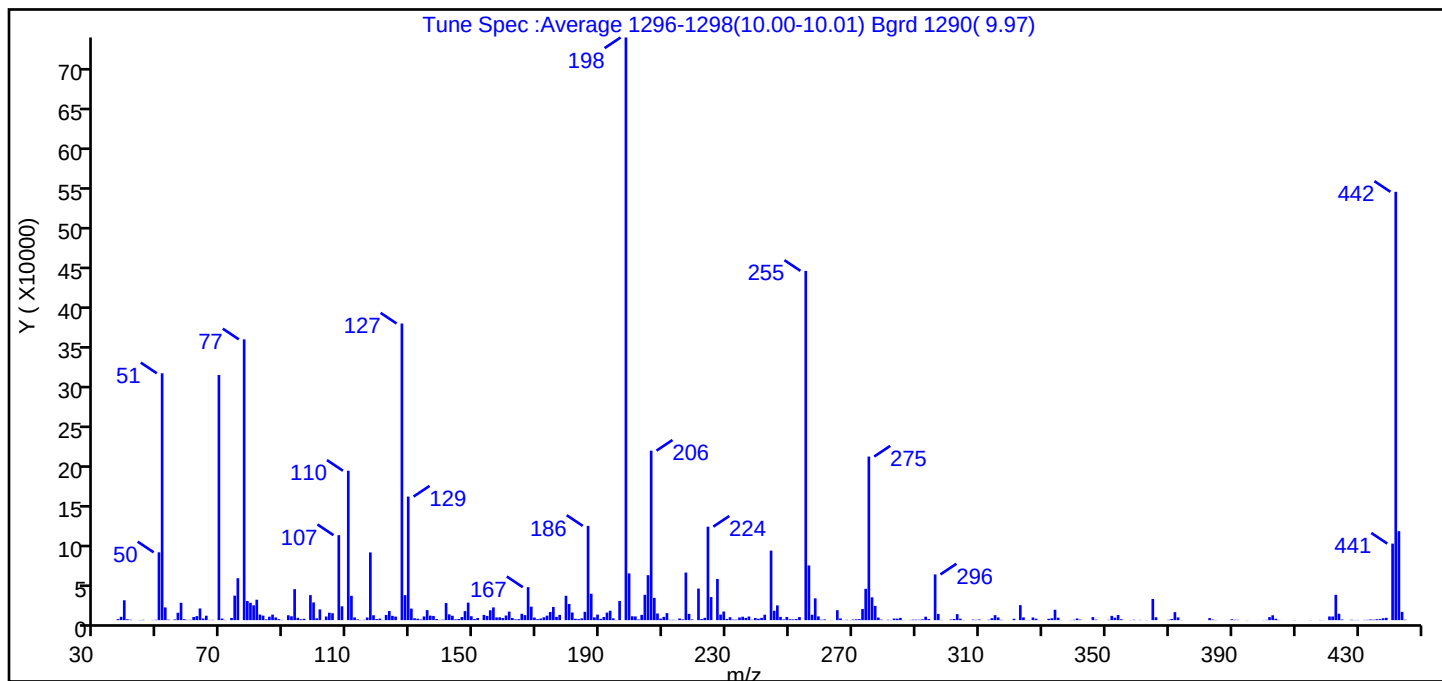
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (136.0)
51	10-80% of the base peak	42.4
68	<2% of mass 69	0.0 (0.0)
69	Present	42.1
70	<2% of mass 69	0.3 (0.7)
127	10-80% of the base peak	50.9
197	<2% of mass 198	0.0
199	5-9% of mass 198	8.0
275	10-60% of the base peak	28.1
365	>1% of mass 198	3.6
441	present but <24% of mass 442	13.1 (17.9)
442	base peak, or >50% of 198	73.5
443	15-24% of mass 442	15.3 (20.8)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312204.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 08-Oct-2018 13:55:30
Spectrum: Tune Spec :Average 1296-1298(10.00-10.01) Bgrd 1290(9.97)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 324

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	1307	131.00	2405	215.00	2120	308.00	654
38.00	4217	132.00	1802	216.00	940	309.00	401
39.00	25216	133.00	854	217.00	60312	310.00	837
40.00	1146	134.00	4697	218.00	7956	313.00	502
41.00	536	135.00	12722	219.00	900	314.00	2447
44.00	183	136.00	5709	221.00	40016	315.00	6342
45.00	404	137.00	5333	222.00	1385	316.00	3420
48.00	237	138.00	1416	223.00	2929	317.00	394
49.00	448	139.00	382	224.00	118504	321.00	1726
50.00	85992	140.00	568	225.00	29232	323.00	19048
51.00	313024	141.00	21696	227.00	52200	324.00	3494
52.00	16119	142.00	7292	228.00	7075	325.00	201
53.00	627	143.00	5512	229.00	10910	326.00	228
55.00	884	144.00	1032	230.00	1502	327.00	3379
56.00	9409	145.00	1532	231.00	3720	328.00	1860
57.00	22024	146.00	3971	232.00	722	329.00	183
58.00	1211	147.00	11441	233.00	634	332.00	1717
59.00	386	148.00	22208	234.00	3419	333.00	2454
60.00	428	149.00	4951	235.00	4339	334.00	13179
61.00	4015	150.00	1385	236.00	2841	335.00	3141
62.00	5121	151.00	2744	237.00	4576	336.00	170
63.00	14809	153.00	6626	238.00	505	339.00	232
64.00	2097	154.00	5347	239.00	2697	340.00	468
65.00	5619	155.00	12521	240.00	1744	341.00	2133
66.00	232	156.00	16135	241.00	2934	342.00	647
67.00	364	157.00	3452	242.00	6868	346.00	3877
69.00	310848	158.00	3605	244.00	88152	347.00	700
70.00	2028	159.00	2651	245.00	11872	351.00	371
71.00	323	160.00	5840	246.00	18728	352.00	5438
73.00	2804	161.00	10817	247.00	4105	353.00	3189
74.00	31064	162.00	2676	248.00	911	354.00	6532
75.00	53200	163.00	955	249.00	4056	355.00	1154
77.00	356032	164.00	1249	250.00	1139	358.00	170

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312204.D\1_4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 08-Oct-2018 13:55:30

Spectrum: Tune Spec :Average 1296-1298(10.00-10.01) Bgrd 1290(9.97)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 324

m/z	Y	m/z	Y	m/z	Y	m/z	Y
78.00	24336	165.00	8042	251.00	1018	359.00	478
79.00	22000	166.00	6330	252.00	1312	361.00	317
80.00	18808	167.00	41824	253.00	3886	363.00	170
81.00	25912	168.00	17128	255.00	442880	365.00	26840
82.00	7109	169.00	3314	256.00	69336	366.00	3689
83.00	5741	170.00	1264	257.00	6847	370.00	476
84.00	962	171.00	2067	258.00	27616	371.00	1461
85.00	4377	172.00	3609	259.00	4755	372.00	10149
86.00	7019	173.00	5737	260.00	560	373.00	3422
87.00	3469	174.00	10381	261.00	921	374.00	167
88.00	1250	175.00	16784	263.00	196	383.00	2588
89.00	354	176.00	4135	264.00	6	384.00	701
91.00	6205	177.00	6678	265.00	12611	385.00	203
92.00	4904	179.00	30872	266.00	2227	390.00	1064
93.00	39320	180.00	20504	267.00	192	391.00	542
94.00	2950	181.00	9698	268.00	459	392.00	395
95.00	1108	182.00	1705	269.00	169	395.00	183
96.00	1740	183.00	1319	270.00	792	400.00	169
98.00	31752	184.00	2260	271.00	1014	401.00	328
99.00	22440	185.00	10568	272.00	1245	402.00	3854
100.00	2352	186.00	119520	273.00	14114	403.00	6160
101.00	13617	187.00	33472	274.00	39712	404.00	1784
102.00	191	188.00	3549	275.00	207424	405.00	275
103.00	4607	189.00	7044	276.00	28928	410.00	167
104.00	9407	190.00	1677	277.00	18112	415.00	186
105.00	8794	191.00	4019	278.00	3274	418.00	252
107.00	107768	192.00	9590	279.00	642	419.00	168
108.00	17560	193.00	11951	281.00	453	421.00	4680
110.00	189440	194.00	2244	282.00	189	422.00	4632
111.00	30848	195.00	275	283.00	2044	423.00	32096
112.00	3463	196.00	24328	284.00	1917	424.00	8080
113.00	973	198.00	738816	285.00	2879	425.00	842
114.00	194	199.00	59280	286.00	189	428.00	512
115.00	399	200.00	4921	288.00	262	429.00	212

Report Date: 09-Oct-2018 11:59:08

Chrom Revision: 2.3 19-Jul-2018 15:14:50

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312204.D\1,4_Dx_SIM_HP5973U.rsltspe

Injection Date: 08-Oct-2018 13:55:30

Spectrum: Tune Spec :Average 1296-1298(10.00-10.01) Bgrd 1290(9.97)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 324

m/z	Y	m/z	Y	m/z	Y	m/z	Y
116.00	3380	201.00	4709	289.00	606	430.00	297
117.00	85880	202.00	914	290.00	641	432.00	310
118.00	6172	203.00	6715	291.00	463	433.00	432
119.00	1341	204.00	32120	292.00	1036	434.00	872
120.00	1919	205.00	57024	293.00	4383	435.00	581
121.00	226	206.00	214912	294.00	1346	436.00	1156
122.00	6556	207.00	28216	296.00	57984	437.00	1211
123.00	11599	208.00	8445	297.00	7905	438.00	2390
124.00	5419	209.00	1925	298.00	299	439.00	2947
125.00	4483	210.00	4144	301.00	755	441.00	97056
127.00	376128	211.00	8931	302.00	1361	442.00	543104
128.00	31696	212.00	410	303.00	7645	443.00	112816
129.00	156672	213.00	455	304.00	1833	444.00	10464
130.00	14614	214.00	195	305.00	180	445.00	561

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312204.D

Injection Date: 08-Oct-2018 13:55:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =

$$\left(\frac{\text{Area Breakdown Cpnds}}{\text{Total Area Breakdown Cpnds}} \right) * 100$$

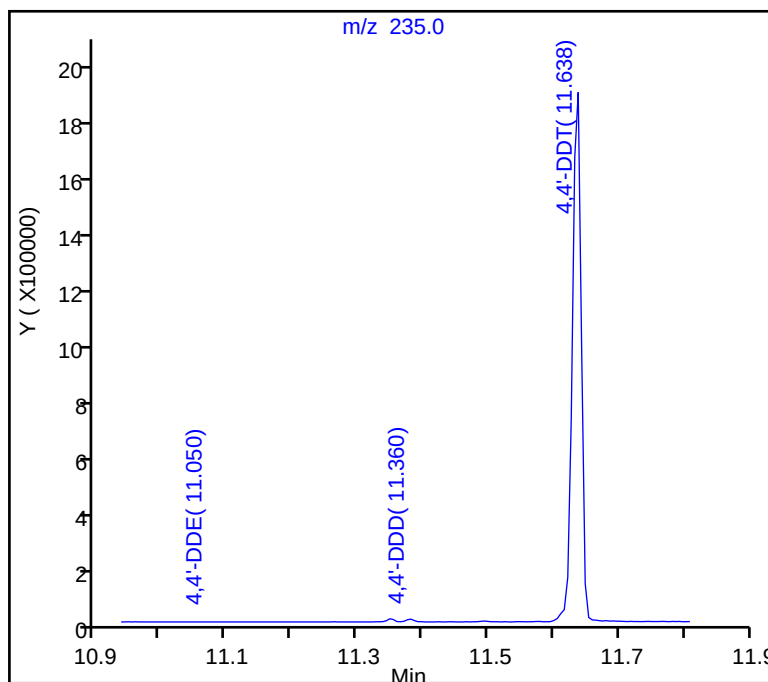
6 4,4'-DDT, Area = 1752040

5 4,4'-DDD, Area = 8772

7 4,4'-DDE, Area = 3623

%Breakdown: 0.70%, Max Limit: 20.00%

Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: MB 480-437732/1-A
Matrix: Water Lab File ID: U3312206.D
Analysis Method: 8270D SIM ID Date Collected: _____
Extract. Method: 3510C Date Extracted: 10/04/2018 14:15
Sample wt/vol: 1000 (mL) Date Analyzed: 10/08/2018 14:47
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 438250 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	0.20	U	0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	39		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312206.D
 Lims ID: MB 480-437732/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 08-Oct-2018 14:47:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-004
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 11:55:04

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.895	2.801	0.094	95	431783	10.0	3.87	
3 1,4-Dioxane	88		2.846					ND	U
* 2 1,4-Dichlorobenzene-d4	152	5.975	5.971	0.004	96	903214	4.00	4.00	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312206.D

Injection Date: 08-Oct-2018 14:47:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: MB 480-437732/1-A

Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul

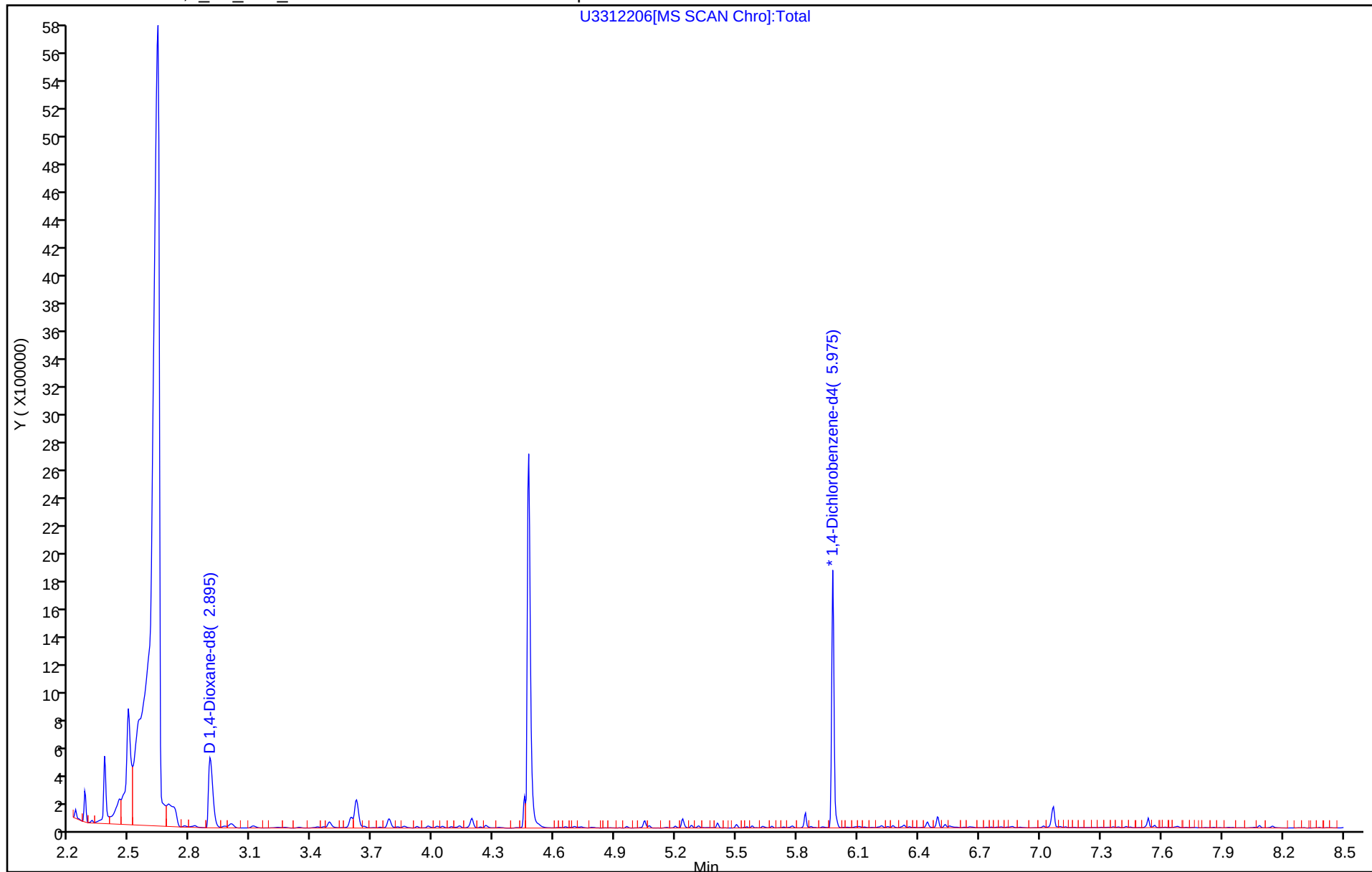
Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312206[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\\Buffalo\\ChromData\\HP5973U\\20181008-75305.b\\U3312206.D

Injection Date: 08-Oct-2018 14:47:30

Instrument ID: HP5973U

Lims ID: MB 480-437732/1-A

Client ID:

Operator ID: DR

ALS Bottle#: 4

Worklist Smp#: 4

Injection Vol: 1.0 ul

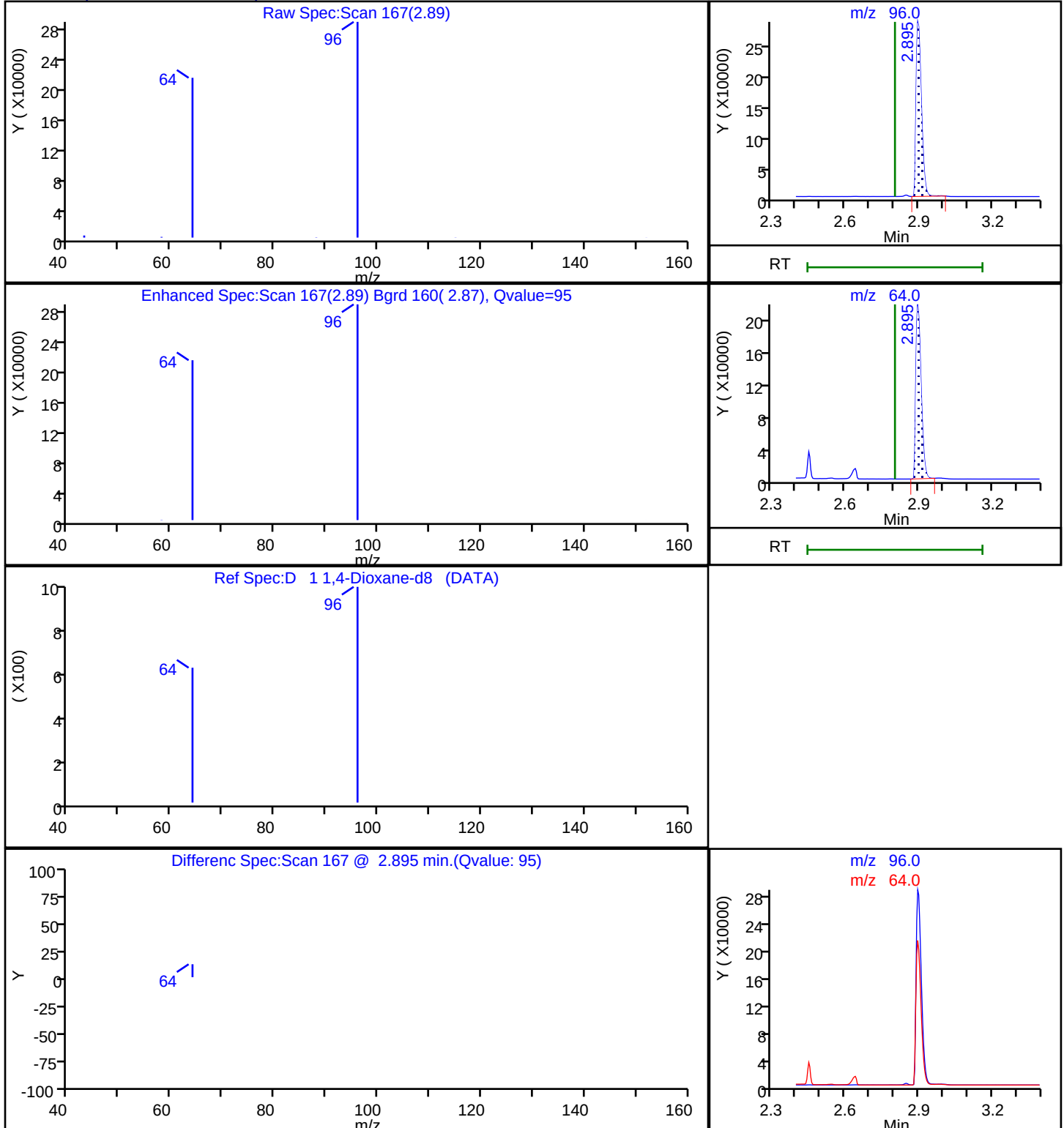
Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312206.D

Injection Date: 08-Oct-2018 14:47:30

Instrument ID: HP5973U

Lims ID: MB 480-437732/1-A

Client ID:

Operator ID: DR

ALS Bottle#:

4

Worklist Smp#: 4

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group:

MB - 8270D SIM ID ICAL

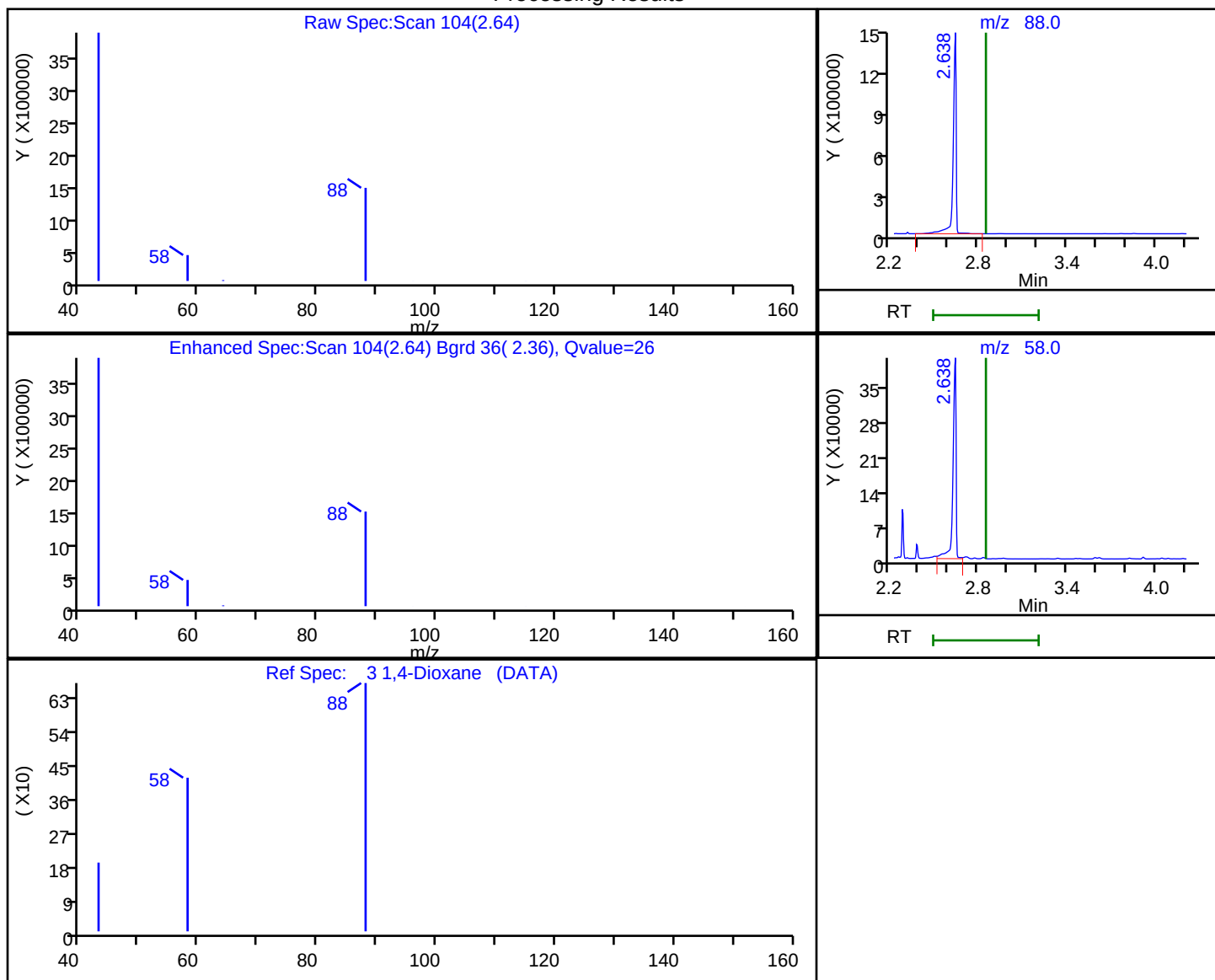
Column:

Detector

MS SCAN

3 1,4-Dioxane, CAS: 123-91-1

Processing Results



RT	Mass	Response	Amount
2.64	88.00	2031760	41.802052
2.64	58.00	591601	

Reviewer: richardsd, 09-Oct-2018 11:55:02

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: LCS 480-437732/2-A
Matrix: Water Lab File ID: U3312207.D
Analysis Method: 8270D SIM ID Date Collected: _____
Extract. Method: 3510C Date Extracted: 10/04/2018 14:15
Sample wt/vol: 1000 (mL) Date Analyzed: 10/08/2018 15:11
Con. Extract Vol.: 1 (mL) Dilution Factor: 1
Injection Volume: 1 (uL) Level: (low/med) Low
% Moisture: _____ GPC Cleanup: (Y/N) N
Analysis Batch No.: 438250 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.07		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	40		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312207.D
 Lims ID: LCS 480-437732/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 08-Oct-2018 15:11:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-005
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 11:55:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.944	2.801	0.143	94	422808	10.0	3.97	
3 1,4-Dioxane	88	2.989	2.846	0.142	94	49538	1.00	1.07	
* 2 1,4-Dichlorobenzene-d4	152	5.979	5.971	0.008	97	861264	4.00	4.00	

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312207.D

Injection Date: 08-Oct-2018 15:11:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: LCS 480-437732/2-A

Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul

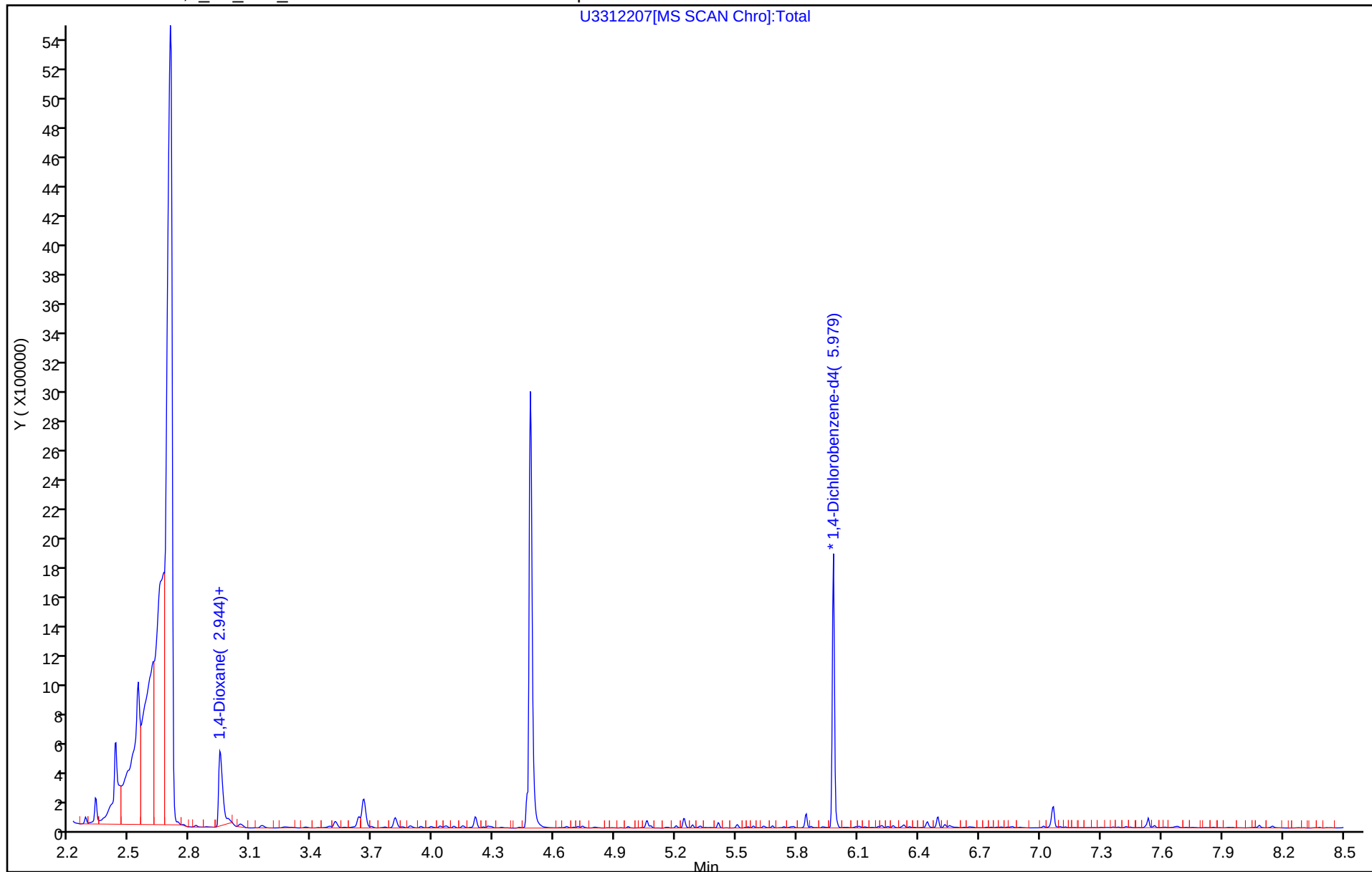
Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312207[MS SCAN Chro]:Total



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1

SDG No.: _____

Client Sample ID: EC-0006-02 MS Lab Sample ID: 480-142679-1 MS

Matrix: Water Lab File ID: U3312208.D

Analysis Method: 8270D SIM ID Date Collected: 10/01/2018 12:25

Extract. Method: 3510C Date Extracted: 10/04/2018 14:15

Sample wt/vol: 1000 (mL) Date Analyzed: 10/08/2018 15:35

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

Injection Volume: 1 (uL) Level: (low/med) Low

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

Analysis Batch No.: 438250 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.59		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	36		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312208.D
 Lims ID: 480-142679-B-1-A MS
 Client ID: EC-0006-02
 Sample Type: MS
 Inject. Date: 08-Oct-2018 15:35:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-006
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 11:55:12

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.935	2.801	0.134	88	380990	10.0	3.62	a
3 1,4-Dioxane	88	2.980	2.846	0.134	96	66993	1.00	1.59	E
* 2 1,4-Dichlorobenzene-d4	152	5.979	5.971	0.008	97	851745	4.00	4.00	
7 4,4'-DDE	246		11.050					ND	
5 4,4'-DDD	235		11.349					ND	
6 4,4'-DDT	235		11.638					ND	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312208.D

Injection Date: 08-Oct-2018 15:35:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142679-B-1-A MS

Worklist Smp#: 6

Client ID: EC-0006-02

Injection Vol: 1.0 ul

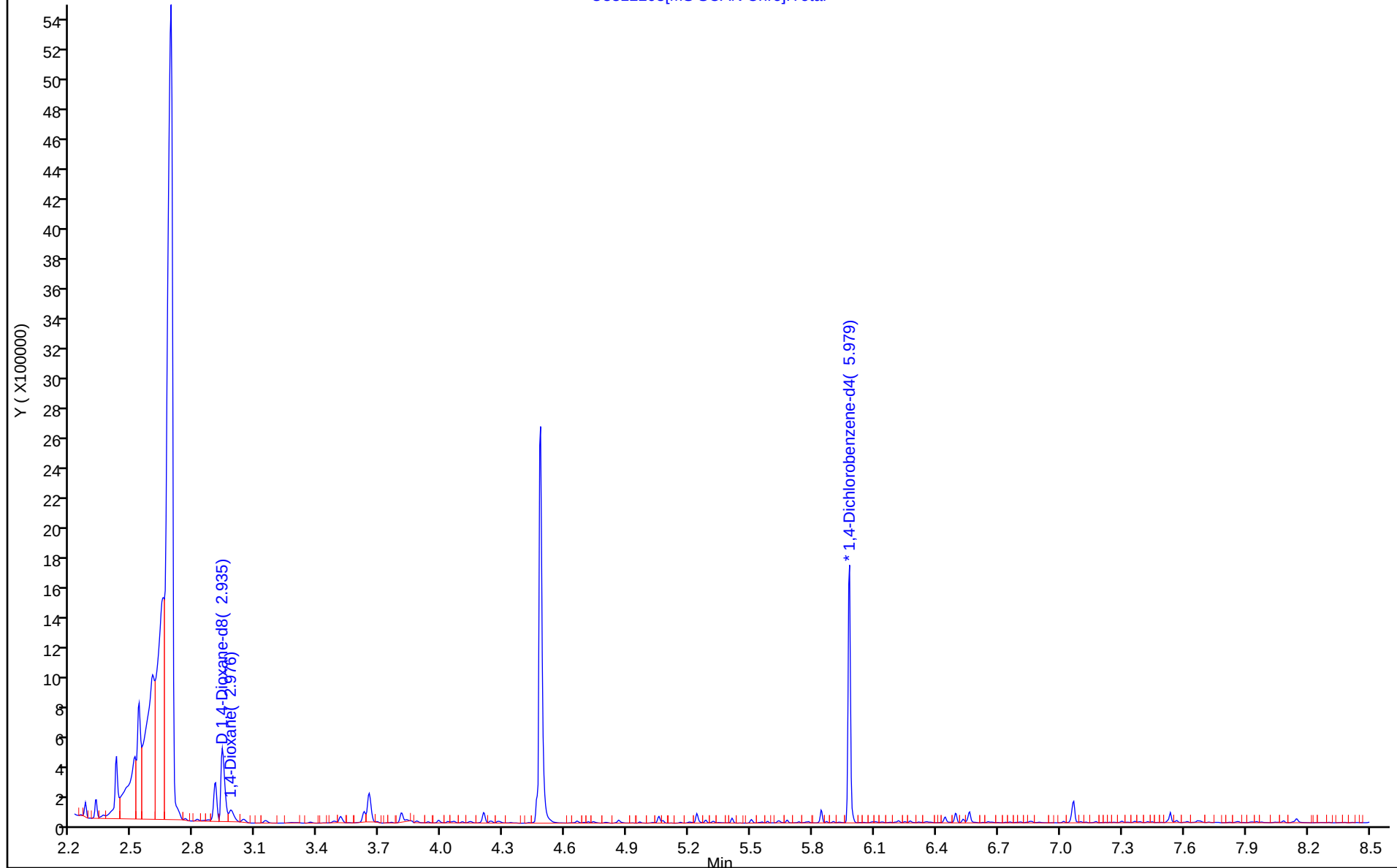
Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312208[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312208.D

Injection Date: 08-Oct-2018 15:35:30

Instrument ID: HP5973U

Lims ID: 480-142679-B-1-A MS

Client ID: EC-0006-02

Operator ID: DR

ALS Bottle#:

6

Worklist Smp#: 6

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

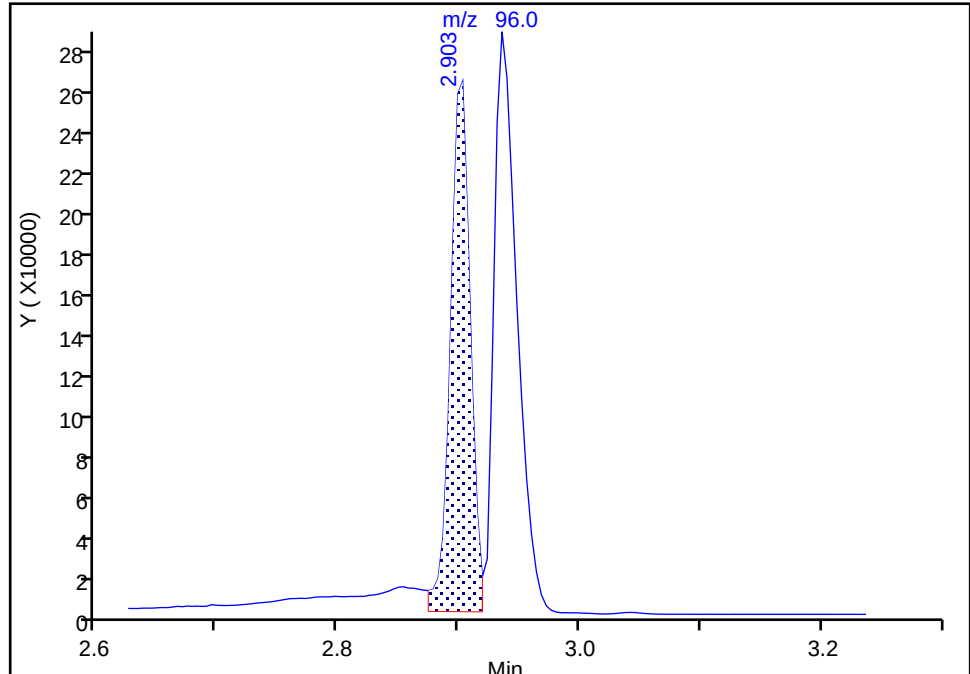
Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

Signal: 1

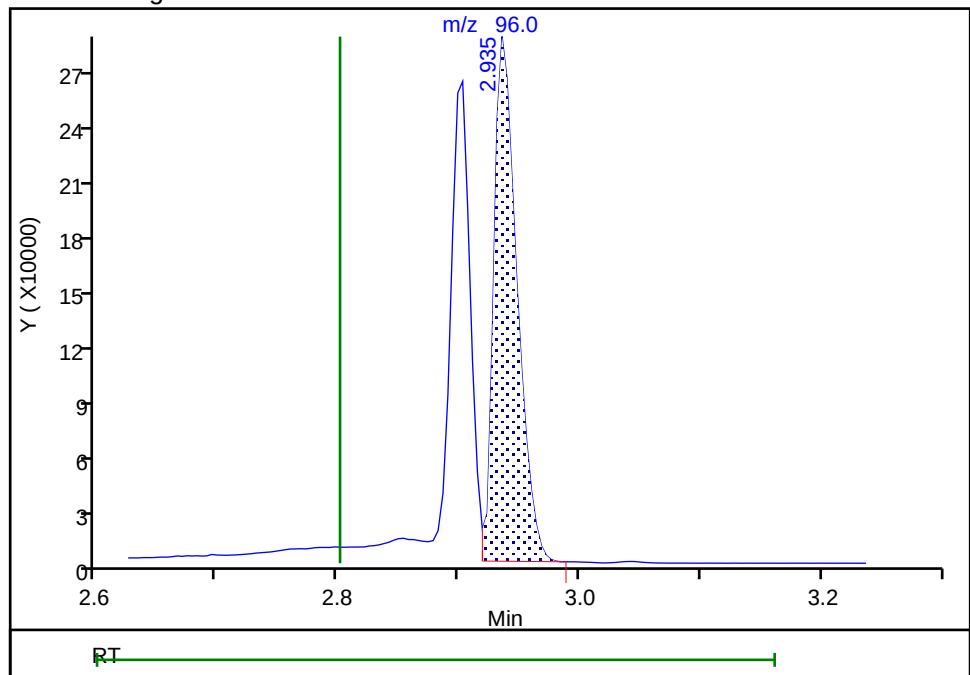
RT: 2.90
Area: 298548
Amount: 2.836530
Amount Units: ng/ul

Processing Integration Results



RT: 2.94
Area: 380990
Amount: 3.619819
Amount Units: ng/ul

Manual Integration Results



Reviewer: richardsd, 09-Oct-2018 11:55:09

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1
 SDG No.: _____
 Client Sample ID: EC-0006-03 MSD Lab Sample ID: 480-142679-1 MSD
 Matrix: Water Lab File ID: U3312209.D
 Analysis Method: 8270D SIM ID Date Collected: 10/01/2018 12:25
 Extract. Method: 3510C Date Extracted: 10/04/2018 14:15
 Sample wt/vol: 1000 (mL) Date Analyzed: 10/08/2018 15:59
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 438250 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.58		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	34		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312209.D
 Lims ID: 480-142679-A-1-A MSD
 Client ID: EC-0006-03
 Sample Type: MSD
 Inject. Date: 08-Oct-2018 15:59:30 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075305-007
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 09-Oct-2018 11:59:09 Calib Date: 05-Oct-2018 15:13:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20181005-75235.b\U3312057.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0312

First Level Reviewer: richardsd

Date: 09-Oct-2018 11:55:15

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ng/ul	OnCol Amt ng/ul	Flags
D 1 1,4-Dioxane-d8	96	2.936	2.801	0.135	89	376412	10.0	3.45	a
3 1,4-Dioxane	88	2.976	2.846	0.130	91	65729	1.00	1.58	E
* 2 1,4-Dichlorobenzene-d4	152	5.979	5.971	0.008	97	883487	4.00	4.00	
7 4,4'-DDE	246		11.050					ND	
5 4,4'-DDD	235		11.349					ND	
6 4,4'-DDT	235		11.638					ND	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00154

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312209.D

Injection Date: 08-Oct-2018 15:59:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142679-A-1-A MSD

Worklist Smp#: 7

Client ID: EC-0006-03

Injection Vol: 1.0 ul

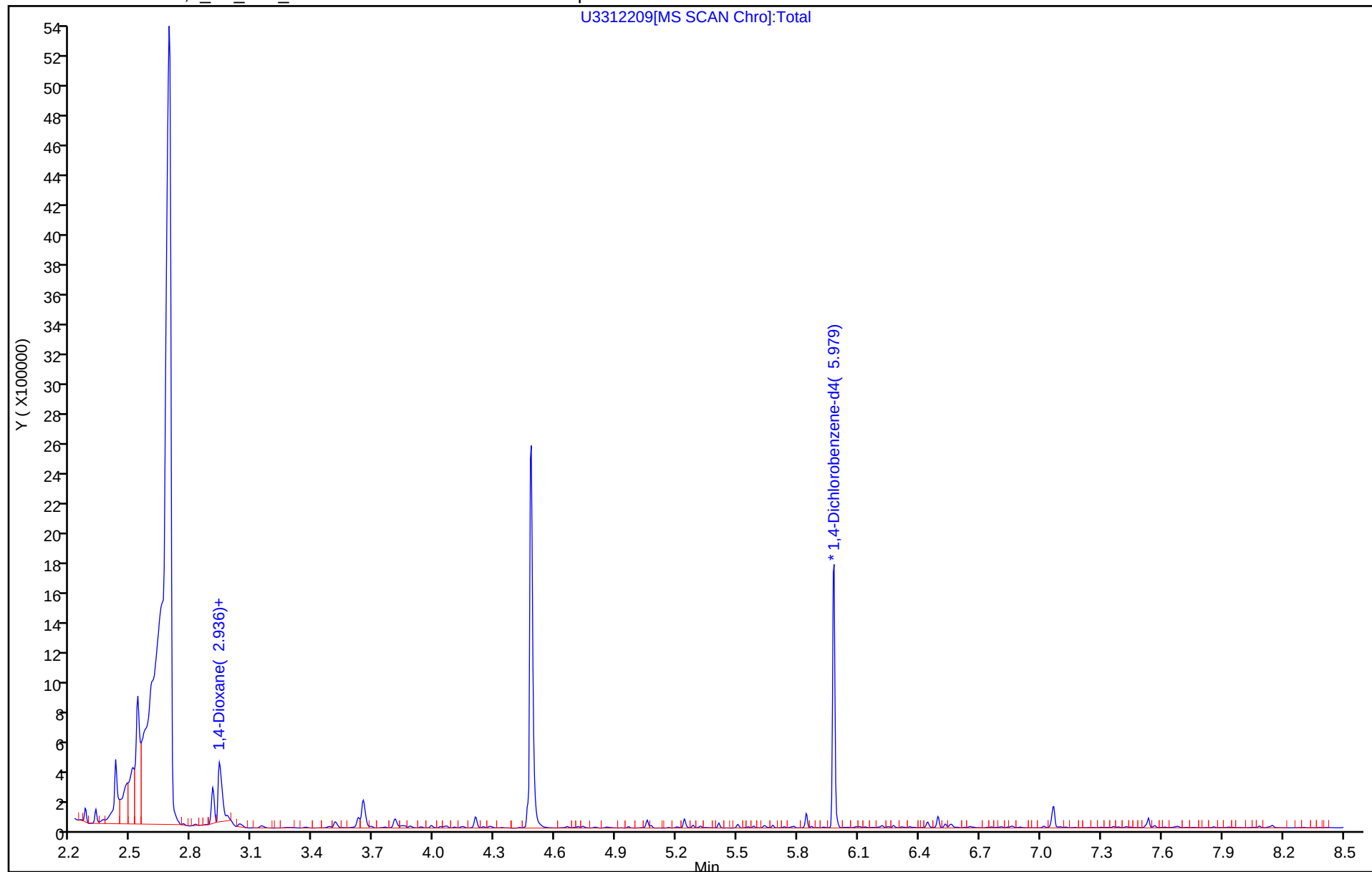
Dil. Factor: 1.0000

ALS Bottle#: 7

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3312209[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181008-75305.b\U3312209.D

Injection Date: 08-Oct-2018 15:59:30

Instrument ID: HP5973U

Lims ID: 480-142679-A-1-A MSD

Client ID: EC-0006-03

Operator ID: DR

ALS Bottle#:

7

Worklist Smp#: 7

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

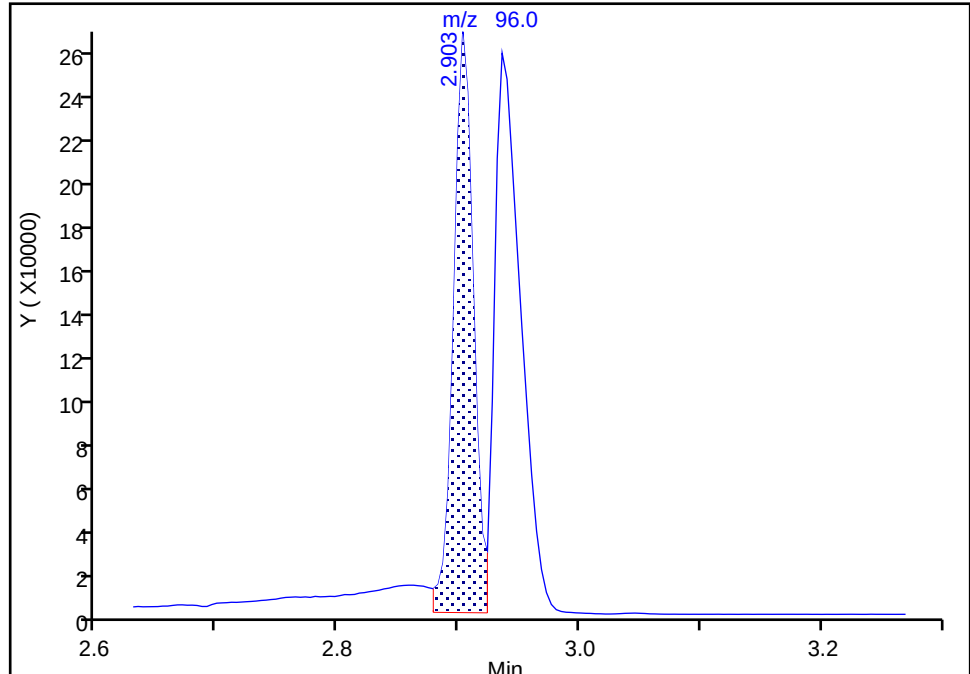
Detector MS SCAN

D 1 1,4-Dioxane-d8, CAS: 17647-74-4

Signal: 1

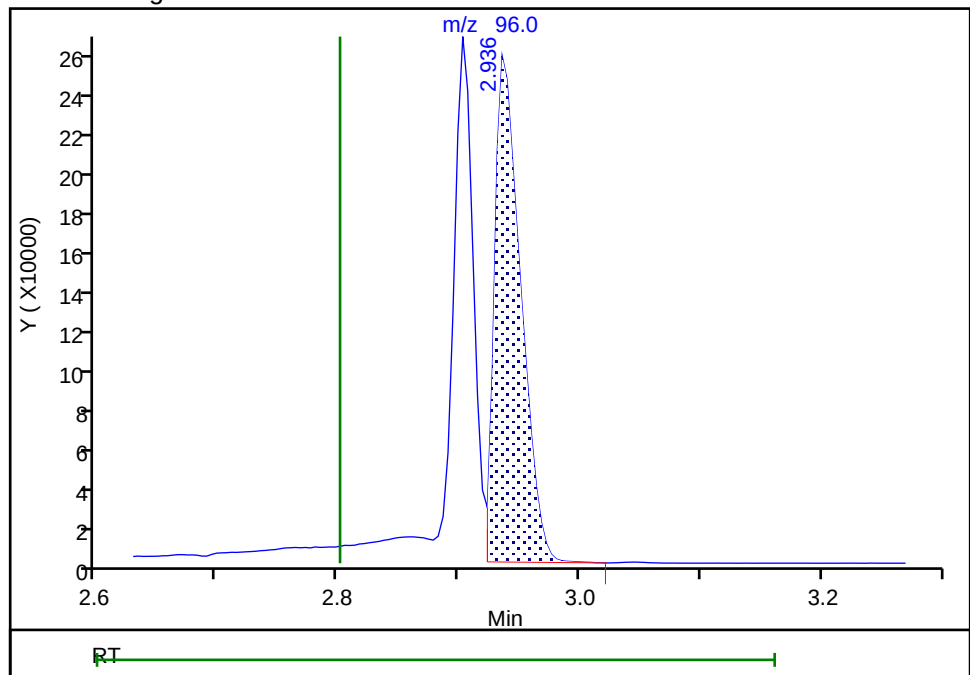
RT: 2.90
Area: 297834
Amount: 2.728079
Amount Units: ng/ul

Processing Integration Results



RT: 2.94
Area: 376412
Amount: 3.447832
Amount Units: ng/ul

Manual Integration Results



Reviewer: richardsd, 09-Oct-2018 11:55:15

Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-142679-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 10/05/2018 12:17Analysis Batch Number: 437915End Date: 10/05/2018 17:10

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-437915/2		10/05/2018 12:17	1	U3312051.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/3		10/05/2018 13:16	1	U3312052.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/4		10/05/2018 13:39	1	U3312053.D	RXI-5Sil MS(0.5 0.25 (mm))
ICIS 480-437915/5		10/05/2018 14:03	1	U3312054.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/6		10/05/2018 14:26	1	U3312055.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/7		10/05/2018 14:49	1	U3312056.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-437915/8		10/05/2018 15:13	1	U3312057.D	RXI-5Sil MS(0.5 0.25 (mm))
ICV 480-437915/9		10/05/2018 15:36	1		RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-437915/10		10/05/2018 16:00	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/05/2018 16:23	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/05/2018 16:46	100		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/05/2018 17:10	5		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-142679-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 10/08/2018 13:55Analysis Batch Number: 438250End Date: 10/09/2018 01:26

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-438250/2		10/08/2018 13:55	1	U3312204.D	RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-438250/3		10/08/2018 14:23	1	U3312205.D	RXI-5Sil MS(0.5 0.25 (mm))
MB 480-437732/1-A		10/08/2018 14:47	1	U3312206.D	RXI-5Sil MS(0.5 0.25 (mm))
LCS 480-437732/2-A		10/08/2018 15:11	1	U3312207.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142679-1 MS		10/08/2018 15:35	1	U3312208.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142679-1 MSD		10/08/2018 15:59	1	U3312209.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142679-1		10/08/2018 16:23	1	U3312210.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 16:46	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 17:10	1		RXI-5Sil MS(0.5 0.25 (mm))
480-142679-3		10/08/2018 17:33	1	U3312213.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142679-4		10/08/2018 17:57	1	U3312214.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142679-5		10/08/2018 18:20	1	U3312215.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 18:43	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 19:07	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 19:30	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 19:54	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 20:17	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 20:41	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 21:05	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 21:29	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 21:53	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 22:17	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 22:41	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 23:05	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 23:28	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/08/2018 23:52	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/09/2018 00:15	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/09/2018 00:39	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/09/2018 01:02	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		10/09/2018 01:26	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142679-1

SDG No.: _____

Batch Number: 437732 Batch Start Date: 10/04/18 14:15 Batch Analyst: Gruning, Anton TBatch Method: 3510C Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	OP_SIM_LCS 00004	OP_SimSurr 00010
MB 480-437732/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU		1 mL
LCS 480-437732/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-142679-B-1 MS	EC-0006-02	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-142679-A-1 MSD	EC-0006-03	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-142679-B-1	EC-0006-01	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-142679-B-3	EC-0006-05	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-142679-B-4	EC-0006-06	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-142679-A-5	EC-0006-07	3510C, 8270D SIM ID	T	1000 mL	1 mL	5 SU	<2 SU		1 mL

Batch Notes	
Acid Used for pH Adjustment ID	4885760
Analyst ID - Concentration	AG
Analyst ID - Extraction	AG
Method/Fraction	3510C/8270D_SIM_MS_ID
Na2SO4 ID	4895626
Prep Solvent ID	4897375
Prep Solvent Volume Used	360 mL
Analyst ID - Spike Analyst	AG
Analyst ID - Spike Witness Analyst	AG
Sufficient Volume for Batch QC	Yes
Vial Lot Number	1709111094

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

8270D SIM ID

Method PFC IDA

Fluorinated Hydrocarbons by Method
PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
EC-0006-01	480-142679-1	55	57	61	53	54	56	65	56
EC-0006-04	480-142679-2	93	101	96	95	100	103	117	99
EC-0006-05	480-142679-3	70	93	102	91	98	101	130	101
EC-0006-06	480-142679-4	67	89	101	90	89	93	134	94
EC-0006-07	480-142679-5	98	100	102	104	105	103	122	97
	MB 320-251604/1-A	98	100	98	95	102	102	116	104
	LCS 320-251604/2-A	97	105	102	104	107	108	117	102
EC-0006-02 MS	480-142679-1 MS	56	62	60	59	61	61	68	59
EC-0006-03 MSD	480-142679-1 MSD	56	57	62	58	56	61	64	58

QC LIMITS

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

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
EC-0006-01	480-142679-1	53	52	48	51	48	51	53	43
EC-0006-04	480-142679-2	98	99	89	107	98	115	116	94
EC-0006-05	480-142679-3	98	96	89	113	101	110	108	92
EC-0006-06	480-142679-4	91	92	88	96	88	111	103	86
EC-0006-07	480-142679-5	98	103	96	114	99	127	119	100
	MB 320-251604/1-A	99	103	93	114	96	115	115	101
	LCS 320-251604/2-A	104	102	97	112	99	123	122	100
EC-0006-02 MS	480-142679-1 MS	55	54	50	55	52	55	56	46
EC-0006-03 MSD	480-142679-1 MSD	55	50	49	49	48	54	54	47

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

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFD _o A #	PFTD _A #
EC-0006-01	480-142679-1	38	44
EC-0006-04	480-142679-2	88	92
EC-0006-05	480-142679-3	88	88
EC-0006-06	480-142679-4	83	84
EC-0006-07	480-142679-5	98	102
	MB 320-251604/1-A	98	105
	LCS 320-251604/2-A	104	103
EC-0006-02 MS	480-142679-1 MS	43	47
EC-0006-03 MSD	480-142679-1 MSD	42	44

PFD_oA = 13C2 PFD_oA
 PFTD_A = 13C2 PFTeD_A

QC LIMITS
25-150
 25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 2018.10.14LLB_062.d
Lab ID: LCS 320-251604/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	41.2	103	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	41.0	102	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	40.1	100	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	40.7	102	66-126	
Perfluorooctanoic acid (PFOA)	40.0	40.7	102	64-124	
Perfluorononanoic acid (PFNA)	40.0	38.8	97	68-128	
Perfluorodecanoic acid (PFDA)	40.0	42.2	105	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	38.9	97	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	37.7	94	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	39.0	97	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	39.7	99	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	35.3	100	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.2	89	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.9	102	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	35.1	95	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	39.9	103	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	40.6	102	70-130	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	37.7	94	67-127	
N-ethylperfluorooctanesulfonam idoacetic acid (NEtFOSAA)	40.0	37.0	92	65-125	
6:2 FTS	37.9	38.9	102	66-126	
8:2 FTS	38.3	41.4	108	67-127	
13C4 PFBA	100	97.1	97	25-150	
13C5 PFPeA	100	105	105	25-150	
13C2 PFHxA	100	104	104	25-150	
13C4 PFHpA	100	107	107	25-150	
13C4 PFOA	100	102	102	25-150	
13C5 PFNA	100	104	104	25-150	
13C2 PFDA	100	98.7	99	25-150	
13C2 PFUnA	100	100	100	25-150	
13C2 PFDoA	100	104	104	25-150	
13C2 PFTeDA	100	103	103	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.14LLB_062.d
 Lab ID: LCS 320-251604/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C3 PFBS	93.0	95.2	102	25-150	
18O2 PFHxS	94.6	102	108	25-150	
13C4 PFOS	95.6	97.7	102	25-150	
13C8 FOSA	100	96.8	97	25-150	
d3-NMeFOSAA	100	123	123	25-150	
d5-NEtFOSAA	100	122	122	25-150	
M2-6:2 FTS	95.0	111	117	25-150	
M2-8:2 FTS	95.8	107	112	25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 480-142679-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.10.14LLB_064.d

Lab ID: 480-142679-1 MS

Client ID: EC-0006-02 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	38.0	2.8	40.4	99	70-130	
Perfluoropentanoic acid (PFPeA)	38.0	0.86 J	37.5	96	66-126	
Perfluorohexanoic acid (PFHxA)	38.0	0.90 J	37.1	95	66-126	
Perfluoroheptanoic acid (PFHpA)	38.0	0.58 J	38.3	99	66-126	
Perfluorooctanoic acid (PFOA)	38.0	2.1	39.0	97	64-124	
Perfluorononanoic acid (PFNA)	38.0	1.9 U	38.1	100	68-128	
Perfluorodecanoic acid (PFDA)	38.0	1.9 U	38.5	101	69-129	
Perfluoroundecanoic acid (PFUnA)	38.0	1.9 U	37.9	100	60-120	
Perfluorododecanoic acid (PFDoA)	38.0	1.9 U	38.2	100	71-131	
Perfluorotridecanoic acid (PFTriA)	38.0	1.9 U	38.9	102	72-132	
Perfluorotetradecanoic acid (PFTeA)	38.0	1.9 U	36.8	97	68-128	
Perfluorobutanesulfonic acid (PFBS)	33.6	0.41 J	33.6	99	73-133	
Perfluorohexanesulfonic acid (PFHxS)	34.6	0.57 J	31.3	89	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	36.2	1.9 U	38.3	106	68-128	
Perfluorooctanesulfonic acid (PFOS)	35.3	1.9 U	33.7	96	67-127	
Perfluorodecanesulfonic acid (PFDS)	36.6	1.9 U	32.0	87	68-128	
Perfluorooctanesulfonamide (FOSA)	38.0	1.9 U	38.4	101	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	38.0	19 U	32.7	86	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	38.0	19 U	35.6	94	65-125	
6:2 FTS	36.0	19 U	34.5	96	66-126	
8:2 FTS	36.4	19 U	36.8	101	67-127	
13C4 PFBA	95.0	52	53.5	56	25-150	
13C5 PFPeA	95.0	54	58.8	62	25-150	
13C2 PFHxA	95.0	51	55.8	59	25-150	
13C4 PFHpA	95.0	51	57.6	61	25-150	
13C4 PFOA	95.0	53	56.1	59	25-150	
13C5 PFNA	95.0	50	51.8	55	25-150	
13C2 PFDA	95.0	45	49.2	52	25-150	
13C2 PFUnA	95.0	41	44.0	46	25-150	
13C2 PFDoA	95.0	36	40.6	43	25-150	
13C2 PFTeDA	95.0	42	44.4	47	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.14LLB_064.d
 Lab ID: 480-142679-1 MS Client ID: EC-0006-02 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
13C3 PFBS	88.4	54	53.4	60	25-150	
18O2 PFHxS	89.9	51	54.6	61	25-150	
13C4 PFOS	90.8	47	49.0	54	25-150	
13C8 FOSA	95.0	46	47.4	50	25-150	
d3-NMeFOSAA	95.0	48	52.2	55	25-150	
d5-NEtFOSAA	95.0	50	53.4	56	25-150	
M2-6:2 FTS	90.3	58	61.7	68	25-150	
M2-8:2 FTS	91.0	46	49.8	55	25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 480-142679-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.10.14LLB_065.d

Lab ID: 480-142679-1 MSD

Client ID: EC-0006-03 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	38.3	41.7	102	3	30	70-130	
Perfluoropentanoic acid (PFPeA)	38.3	41.1	105	9	30	66-126	
Perfluorohexanoic acid (PFHxA)	38.3	38.9	99	5	30	66-126	
Perfluoroheptanoic acid (PFHpA)	38.3	38.4	99	0	30	66-126	
Perfluorooctanoic acid (PFOA)	38.3	38.3	95	2	30	64-124	
Perfluorononanoic acid (PFNA)	38.3	37.5	98	2	30	68-128	
Perfluorodecanoic acid (PFDA)	38.3	41.2	108	7	30	69-129	
Perfluoroundecanoic acid (PFUnA)	38.3	35.2	92	7	30	60-120	
Perfluorododecanoic acid (PFDoA)	38.3	38.6	101	1	30	71-131	
Perfluorotridecanoic acid (PFTriA)	38.3	39.1	102	1	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	38.3	40.4	106	9	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	33.8	32.6	95	3	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	34.8	31.4	88	0	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	36.4	41.6	114	8	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	35.5	36.4	102	8	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	36.9	32.5	88	2	30	68-128	
Perfluorooctanesulfonamide (FOSA)	38.3	37.5	98	2	30	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	38.3	35.6	93	9	30	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	38.3	36.0	94	1	30	65-125	
6:2 FTS	36.3	36.7	101	6	30	66-126	
8:2 FTS	36.7	39.5	108	7	30	67-127	
13C4 PFBA	95.7	54.0	56			25-150	
13C5 PFPeA	95.7	54.3	57			25-150	
13C2 PFHxA	95.7	55.9	58			25-150	
13C4 PFHpA	95.7	54.1	56			25-150	
13C4 PFOA	95.7	55.5	58			25-150	
13C5 PFNA	95.7	52.9	55			25-150	
13C2 PFDA	95.7	46.1	48			25-150	
13C2 PFUnA	95.7	44.8	47			25-150	
13C2 PFDoA	95.7	40.6	42			25-150	
13C2 PFTeDA	95.7	41.7	44			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.14LLB_065.d
 Lab ID: 480-142679-1 MSD Client ID: EC-0006-03 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
13C3 PFBS	89.0	55.2	62			25-150	
18O2 PFHxS	90.5	55.4	61			25-150	
13C4 PFOS	91.5	45.8	50			25-150	
13C8 FOSA	95.7	47.1	49			25-150	
d3-NMeFOSAA	95.7	51.7	54			25-150	
d5-NEtFOSAA	95.7	51.7	54			25-150	
M2-6:2 FTS	90.9	58.3	64			25-150	
M2-8:2 FTS	91.7	45.3	49			25-150	

Column to be used to flag recovery and RPD values
 FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Lab File ID: 2018.10.14LLB_061.d Lab Sample ID: MB 320-251604/1-A
 Matrix: Water Date Extracted: 10/12/2018 07:05
 Instrument ID: A8_N Date Analyzed: 10/15/2018 08:12
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-251604/2-A	2018.10.14L LB 062.d	10/15/2018 08:20
EC-0006-01	480-142679-1	2018.10.14L LB 063.d	10/15/2018 08:27
EC-0006-02 MS	480-142679-1 MS	2018.10.14L LB 064.d	10/15/2018 08:35
EC-0006-03 MSD	480-142679-1 MSD	2018.10.14L LB 065.d	10/15/2018 08:42
EC-0006-04	480-142679-2	2018.10.14L LB 066.d	10/15/2018 08:50
EC-0006-05	480-142679-3	2018.10.14L LB 067.d	10/15/2018 08:57
EC-0006-06	480-142679-4	2018.10.14L LB 068.d	10/15/2018 09:04
EC-0006-07	480-142679-5	2018.10.14L LB 069.d	10/15/2018 09:12

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Sample No.: IC 320-251122/5 Date Analyzed: 10/10/2018 11:46
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.10.10LLICAL_00 Heated Purge: (Y/N) N
 Calibration ID: 41563

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	3228528	2.67				
UPPER LIMIT	4842792	2.87				
LOWER LIMIT	1614264	2.47				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-251122/9		2542784	2.67			
ICV 320-251122/10		2701256	2.65			
CCV 320-252228/3 CCVIS		2683004	2.67			

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Sample No.: CCV 320-252228/3 Date Analyzed: 10/15/2018 01:23
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.10.14LLB_006.d Heated Purge: (Y/N) N
 Calibration ID: 41563

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		2683004	2.67				
UPPER LIMIT		4024506	2.87				
LOWER LIMIT		1341502	2.47				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-252228/1		2912872	2.66				
CCVL 320-252228/2		2556718	2.67				
CCV 320-252245/1		1564173	2.65				
MB 320-251604/1-A		2411197	2.64				
LCS 320-251604/2-A		2425276	2.65				
480-142679-1	EC-0006-01	2454421	2.66				
480-142679-1 MS	EC-0006-02 MS	2746908	2.65				
480-142679-1 MSD	EC-0006-03 MSD	2456067	2.65				
480-142679-2	EC-0006-04	2705704	2.65				
480-142679-3	EC-0006-05	2555221	2.66				
480-142679-4	EC-0006-06	2556904	2.65				
480-142679-5	EC-0006-07	2452722	2.66				
CCV 320-252245/11		1807330	2.65				

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = $\pm$ 0.2 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-01</u>	Lab Sample ID: <u>480-142679-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_063.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>263.8 (mL)</u>	Date Analyzed: <u>10/15/2018 08:27</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.8		1.9	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.86	J	1.9	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	0.90	J	1.9	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.58	J	1.9	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	2.1		1.9	0.81
375-95-1	Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.0
307-55-1	Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.41	J	1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.57	J B	1.9	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.9	U	1.9	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	19	2.9
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	19	1.8
27619-97-2	6:2 FTS	19	U	19	1.9
39108-34-4	8:2 FTS	19	U	19	1.9

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-01</u>	Lab Sample ID: <u>480-142679-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_063.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>263.8 (mL)</u>	Date Analyzed: <u>10/15/2018 08:27</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	55		25-150
STL01893	13C5 PFPeA	57		25-150
STL00993	13C2 PFHxA	53		25-150
STL01892	13C4 PFHpA	54		25-150
STL00990	13C4 PFOA	56		25-150
STL00995	13C5 PFNA	53		25-150
STL00996	13C2 PFDA	48		25-150
STL00997	13C2 PFUnA	43		25-150
STL00998	13C2 PFDoA	38		25-150
STL02116	13C2 PFTeDA	44		25-150
STL02337	13C3 PFBS	61		25-150
STL00994	18O2 PFHxS	56		25-150
STL00991	13C4 PFOS	52		25-150
STL01056	13C8 FOSA	48		25-150
STL02118	d3-NMeFOSAA	51		25-150
STL02117	d5-NEtFOSAA	53		25-150
STL02279	M2-6:2 FTS	65		25-150
STL02280	M2-8:2 FTS	51		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_063.d
 Lims ID: 480-142679-C-1-A
 Client ID: EC-0006-01
 Sample Type: Client
 Inject. Date: 15-Oct-2018 08:27:39 ALS Bottle#: 48 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142679-c-1-a
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 14:56:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.434	0.002	0.540	2115976	1.37		54.9	4811	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.431	1.436	-0.005	0.997	56726	0.0748			4.7	
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.700	0.002	0.640	1447596	1.43		57.3	3106	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.704	-0.002	1.000	14105	0.0226			0.9	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.734	1.736	-0.002	1.000	10982	0.0109			1.8	
298.90 > 99.00	1.734	1.736	-0.002	1.000	4540		2.42(1.25-3.74)		1.6	
D 47 13C3 PFBS										
301.90 > 83.00	1.734	1.740	-0.006	0.653	29698	1.43		61.4	180	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.977	0.008	1.005	13884	0.0237			1.9	
313.00 > 119.00	1.975	1.977	-0.002	1.000	1538		9.03(5.03-15.10)		3.9	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.981	-0.006	0.743	1487303	1.33		53.3	6111	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.079	2.075	0.004	0.782	124342	1.55		61.9	726	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.301	0.009	1.000	8920	0.0154			2.1	
363.00 > 169.00	2.299	2.301	-0.002	0.995	3293		2.71(1.13-3.40)		4.0	
D 9 13C4 PFHpA										
367.00 > 322.00	2.310	2.303	0.007	0.869	1367958	1.34		53.7	3738	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.321	2.312	0.009	1.000	11455	0.0149			22.6	M
399.00 > 99.00	2.321	2.312	0.009	1.000	5181		2.21(1.50-4.49)		8.9	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.325	-0.004	0.873	1630327	1.33		56.4	4817	
13 1H,1H,2H,2H-perfluorooctanesulfoni										M
427.00 > 407.00	2.627	2.622	0.005	1.000	1849	0.009767			19.8	M
D 12 M2-6:2 FTS										
429.00 > 81.00	2.627	2.624	0.003	0.988	293838	1.54		64.7	1491	
D 73 13C8 PFOA										
421.00 > 376.00	2.643	2.647	-0.004	0.994	2267	0.001620		0.0	25.6	
* 62 13C2 PFOA										
415.00 > 370.00	2.658	2.653	0.005		2454421	2.50			5993	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.658	2.653	0.005	1.003	34141	0.0553			2.3	M
413.00 > 169.00	2.658	2.653	0.005	1.003	17227		1.98(0.84-2.52)		20.8	M
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.655	-0.004	0.997	1331092	1.39		55.8	5258	
D 18 13C4 PFOS										
503.00 > 80.00	3.030	3.028	0.002	1.140	1010497	1.24		51.9	2264	
D 19 13C5 PFNA										
468.00 > 423.00	3.030	3.028	0.002	1.140	1041658	1.31		52.5	3784	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.370	0.001	1.268	1430138	1.21		48.5	3042	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.378	3.377	0.001	1.271	244498	1.21		50.6	1653	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.392	-0.006	1.274	837918	1.20		47.9	2574	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.546	3.545	0.001	1.334	454009	1.27		50.9	1407	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.717	3.716	0.001	1.398	490194	1.31		52.6	901	
D 30 13C2 PFUnA										
565.00 > 520.00	3.717	3.724	-0.007	1.398	607646	1.08		43.2	1992	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.879	3.879	0.0	1.280	1188	0.000992			8.3	
D 36 13C2 PFDaA										
615.00 > 570.00	4.021	4.012	0.009	1.513	565282	0.9577		38.3	1062	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.525	4.523	0.002	1.702	792658	1.10		43.9	1965	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.944	4.936	0.008	1.000	13385	0.007152			4.0	
813.00 > 169.00	4.944	4.936	0.008	1.000	2443		5.48(2.86-8.58)		22.2	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.944	4.944	0.0	1.860	1187265	0.8895		35.6	2299	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_063.d

Injection Date: 15-Oct-2018 08:27:39

Instrument ID: A8_N

Lims ID: 480-142679-C-1-A

Lab Sample ID: 320-142679-1

Client ID: EC-0006-01

Operator ID: SACINSTLCMS01

ALS Bottle#: 48

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

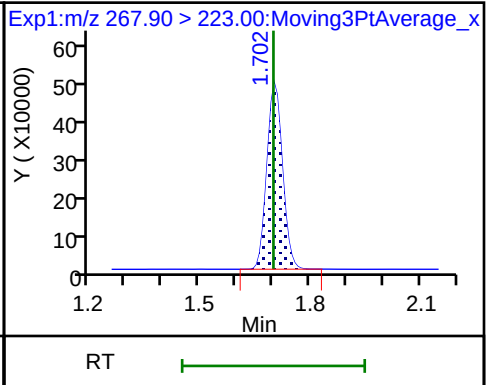
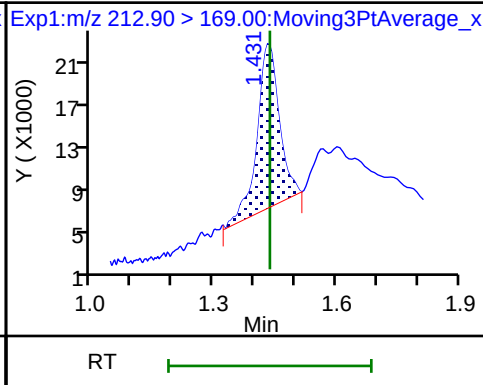
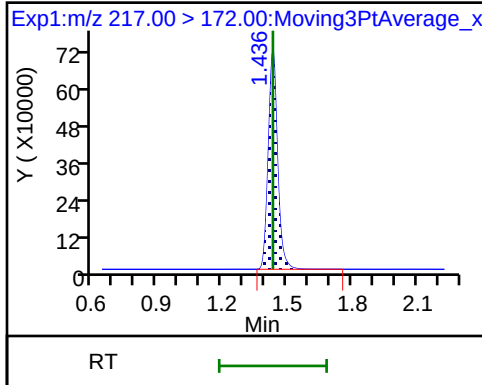
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

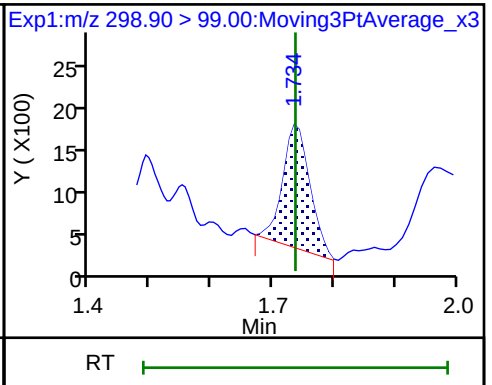
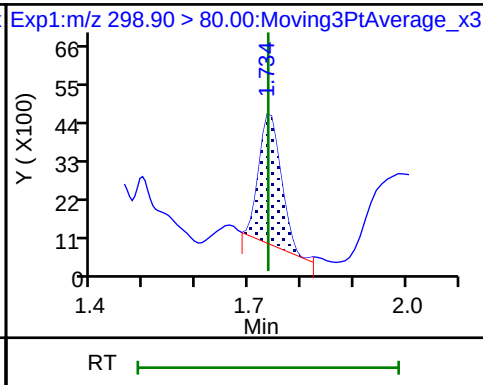
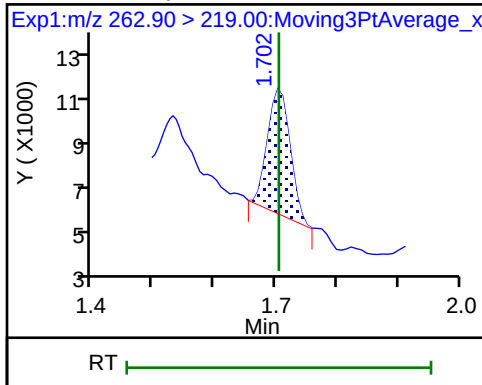
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

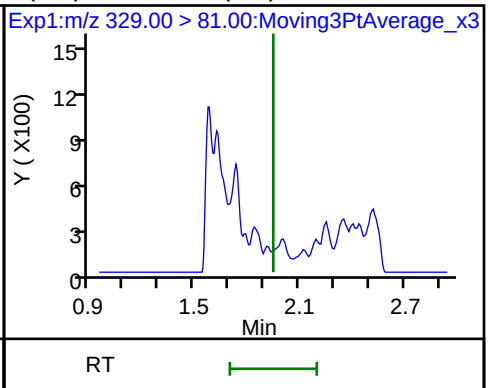
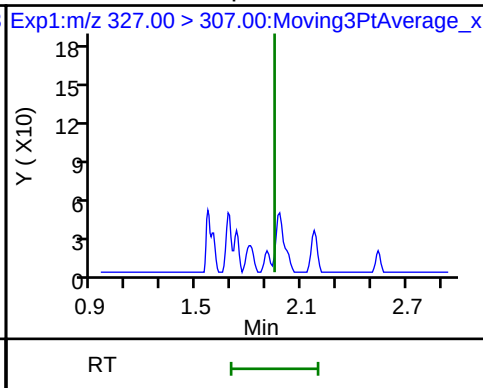
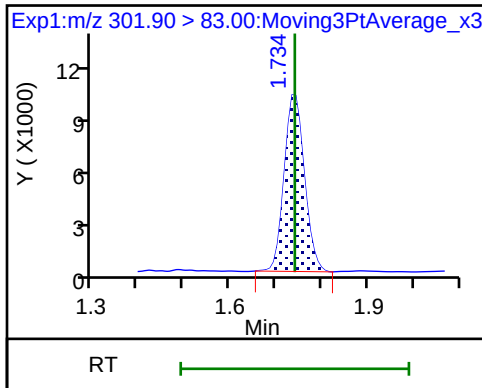
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate (ND)

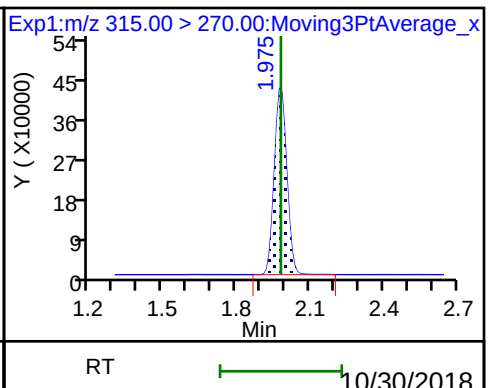
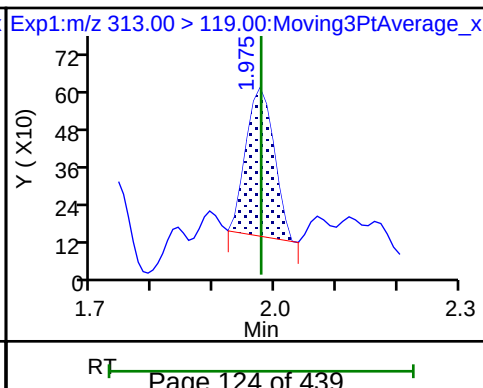
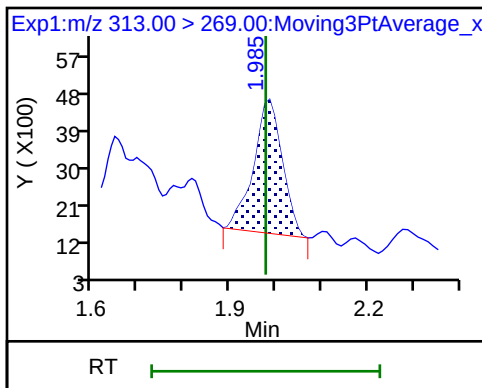
D 50 M2-4:2 FTS (ND)



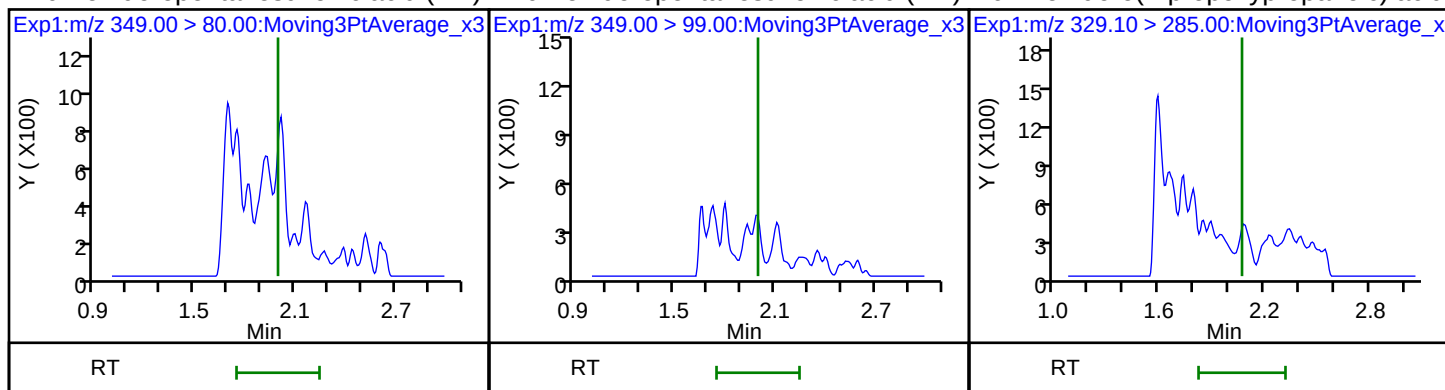
6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

D 7 13C2 PFHxA



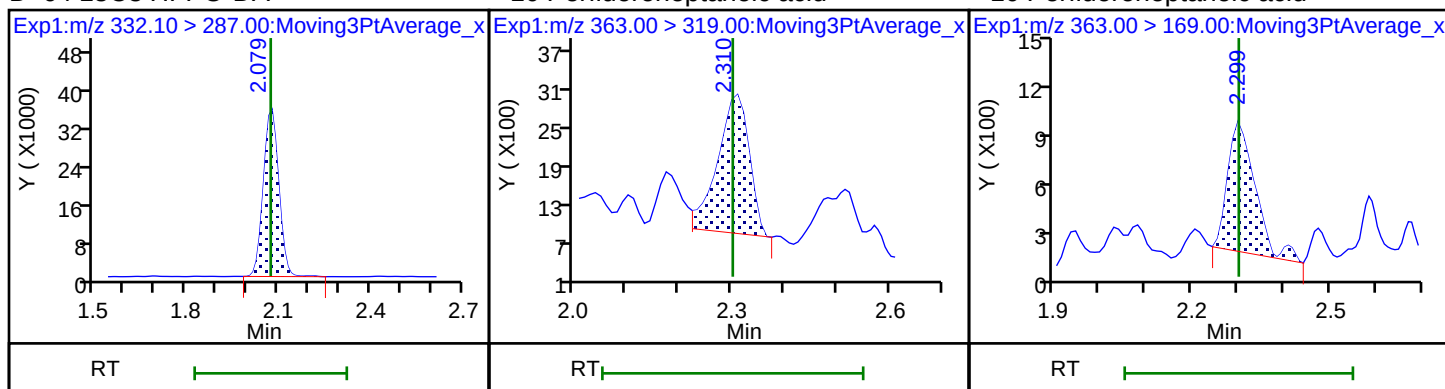
70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) 67 Perfluoro(2-propoxypropanoic) acid (ND)



D 64 13C3 HFPO-DA

10 Perfluoroheptanoic acid

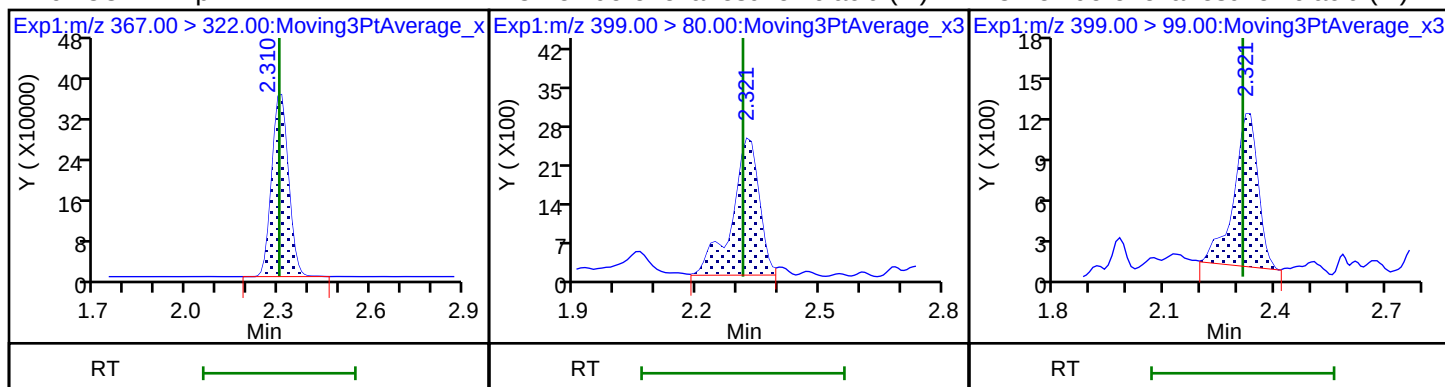
10 Perfluoroheptanoic acid



D 9 13C4 PFHpA

8 Perfluorohexanesulfonic acid (M)

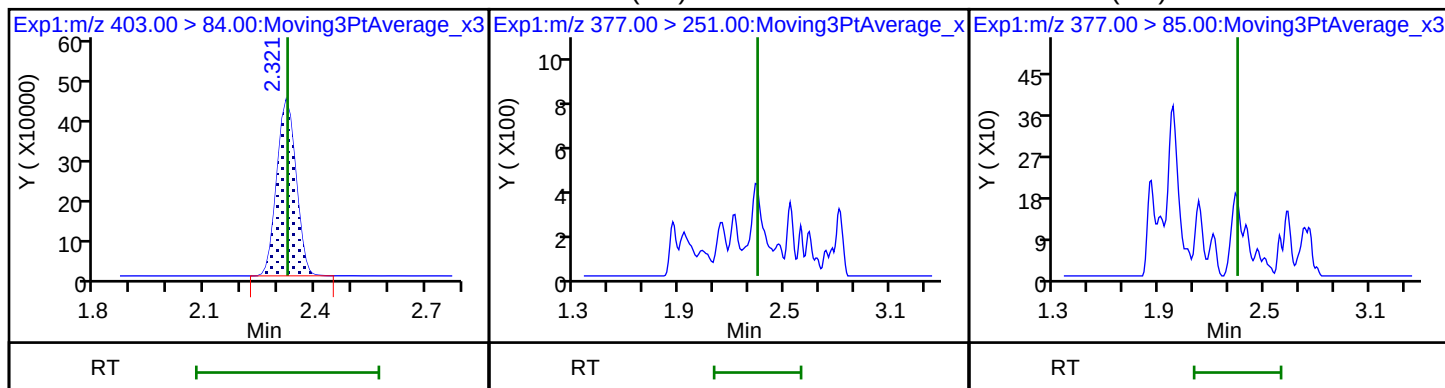
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

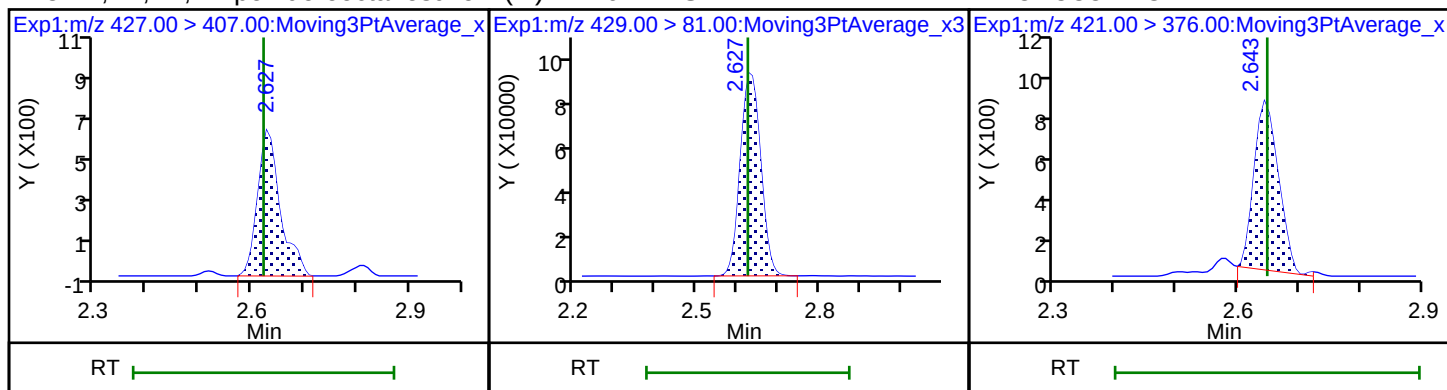
77 DONA (ND)

77 DONA (ND)



13 1H,1H,2H,2H-perfluorooctanesulfonate (M) M2-6:2 FTS

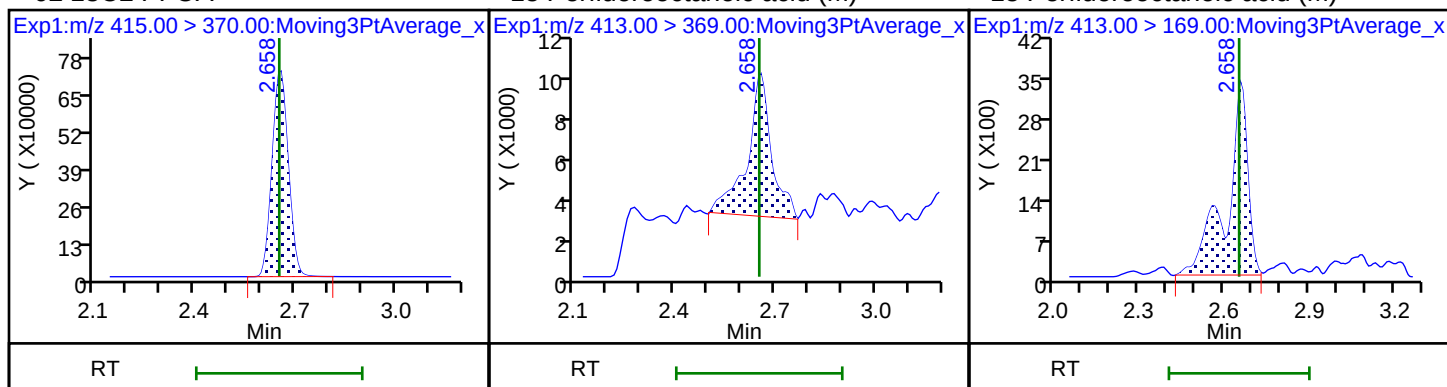
D 73 13C8 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid (M)

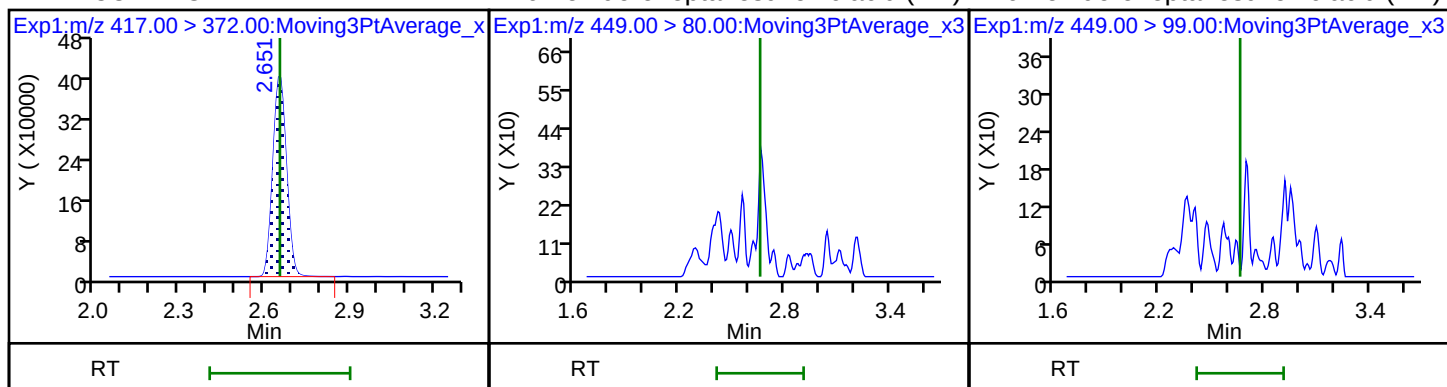
15 Perfluorooctanoic acid (M)



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid (ND)

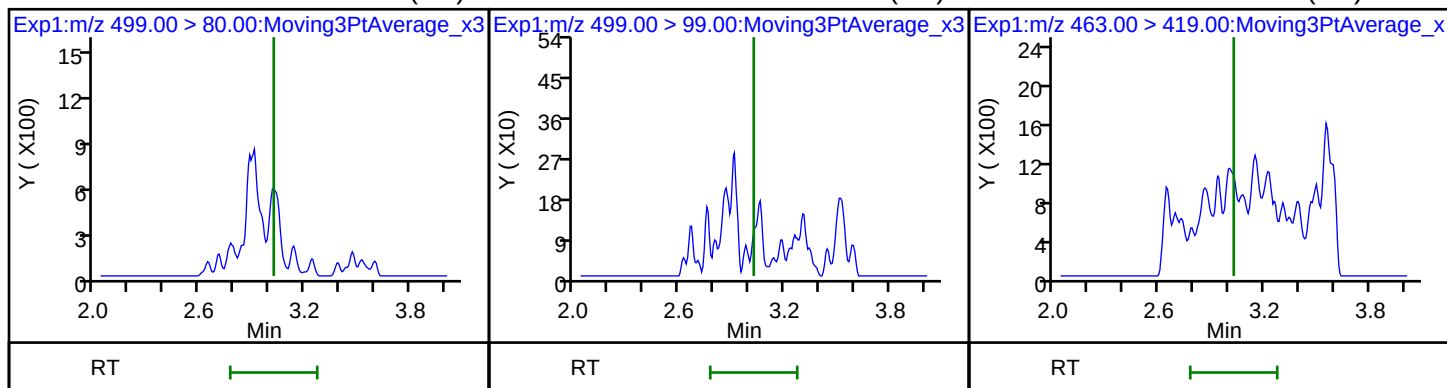
16 Perfluoroheptanesulfonic acid (ND)

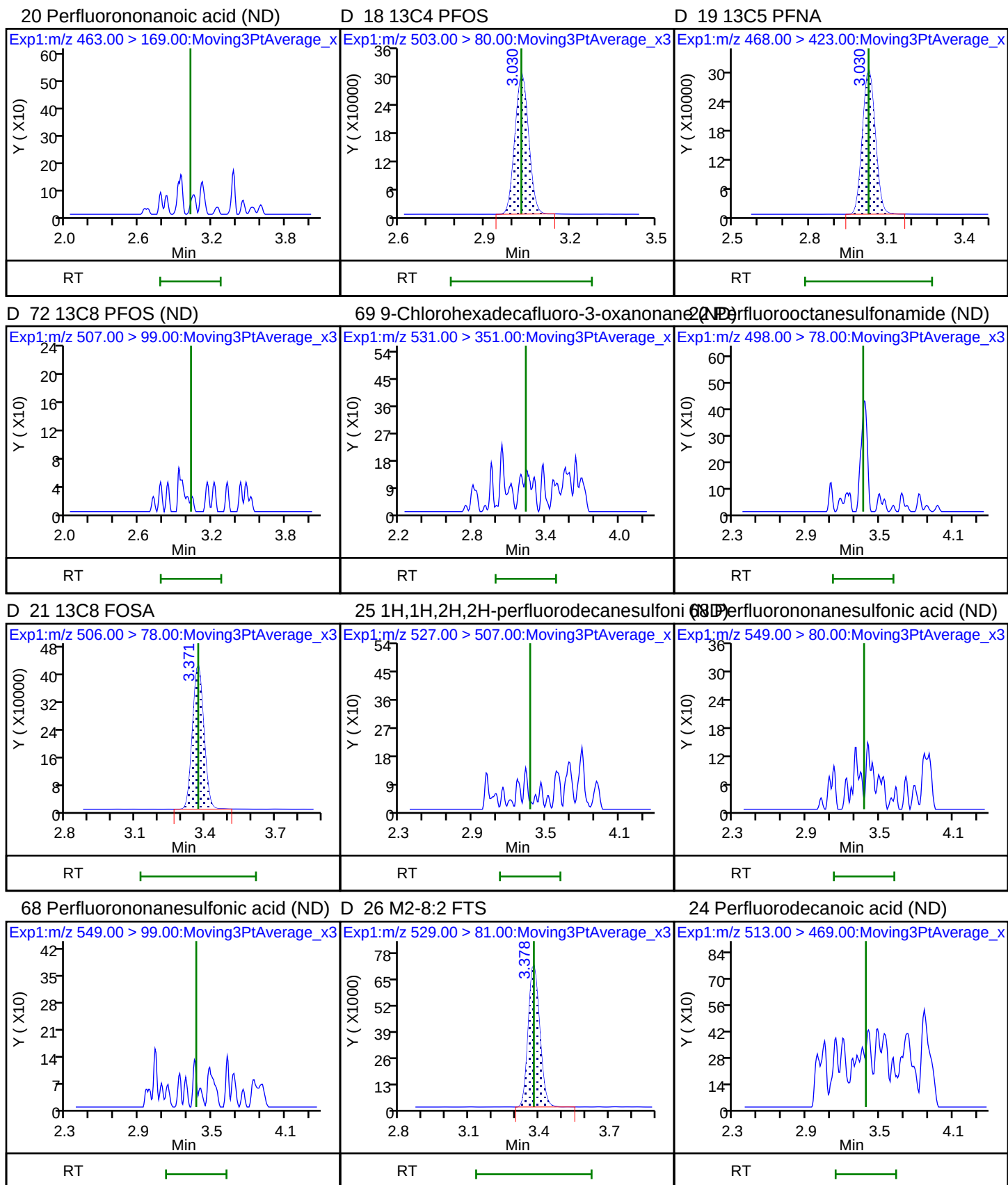


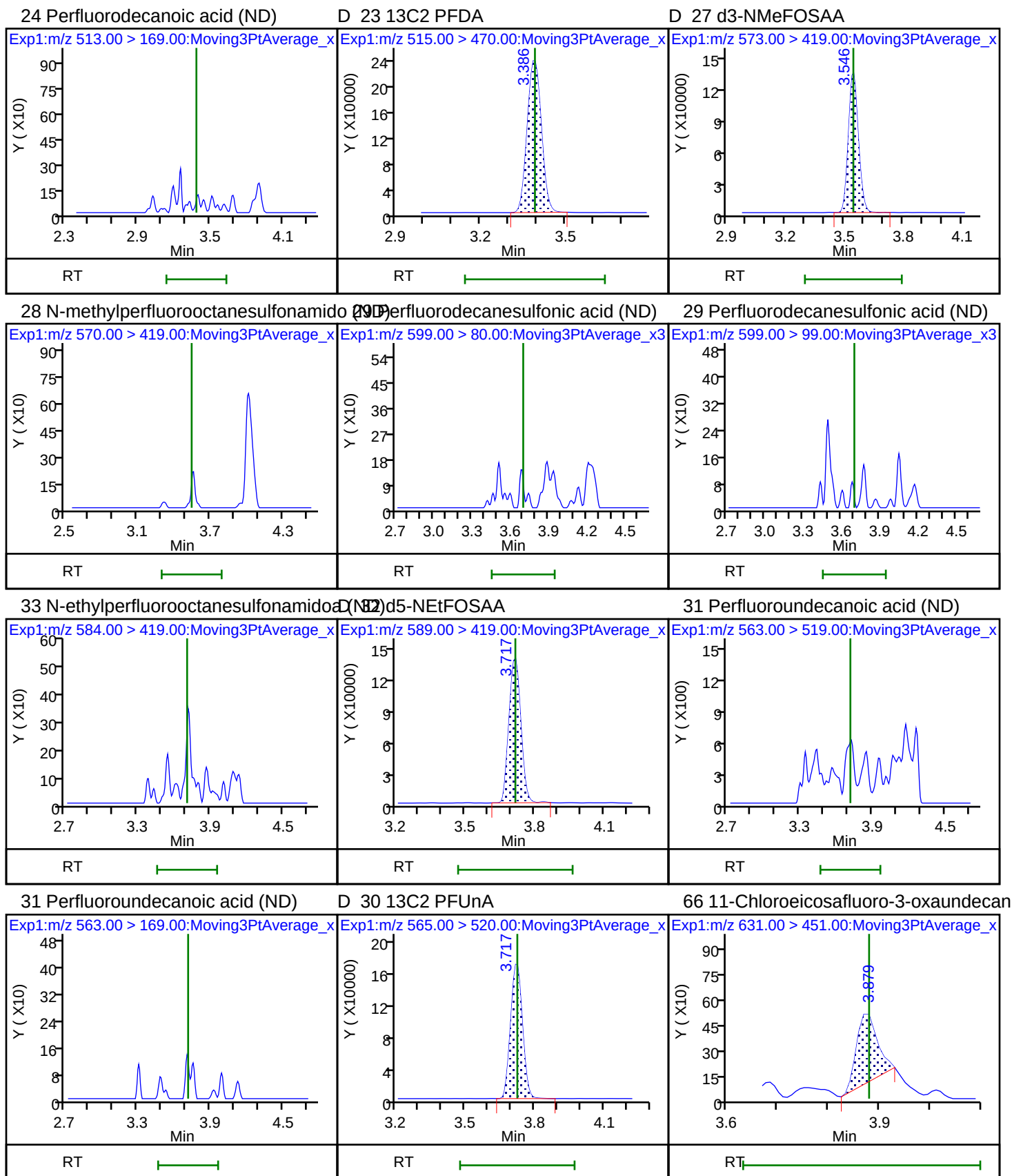
17 Perfluorooctanesulfonic acid (ND)

17 Perfluorooctanesulfonic acid (ND)

20 Perfluorononanoic acid (ND)



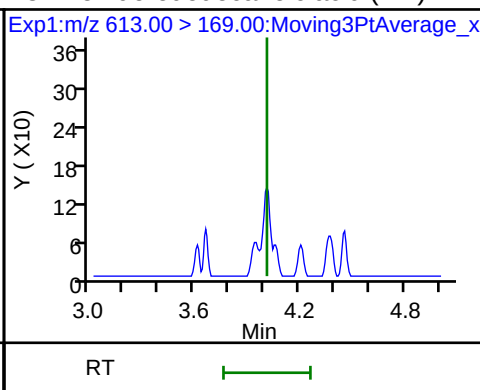
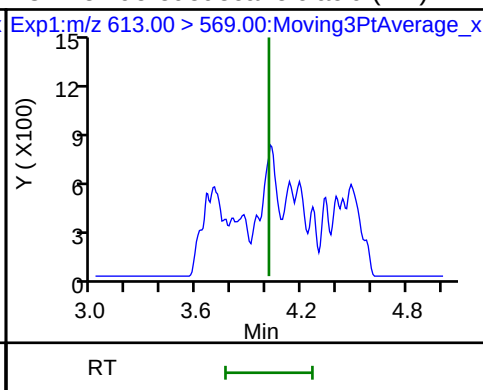
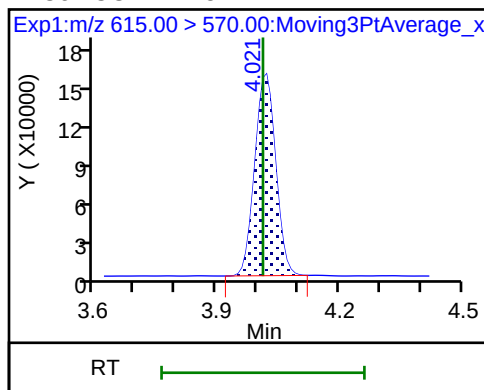




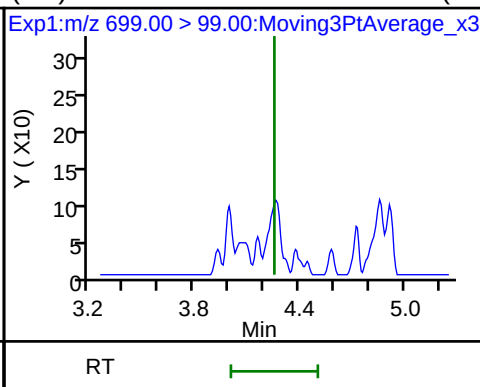
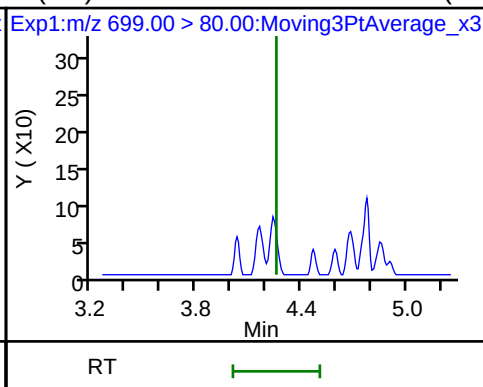
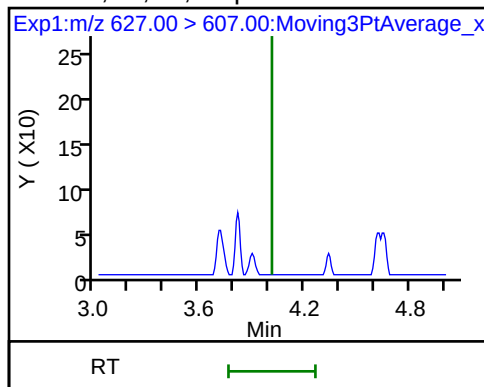
D 36 13C2 PFDaA

37 Perfluorododecanoic acid (ND)

37 Perfluorododecanoic acid (ND)



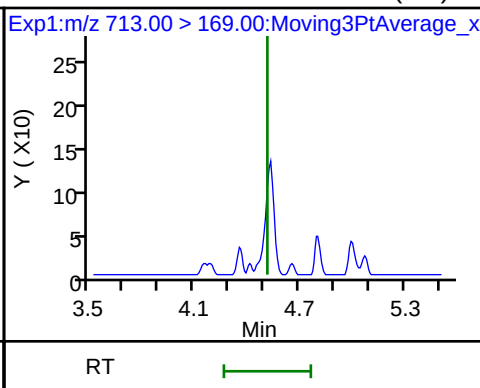
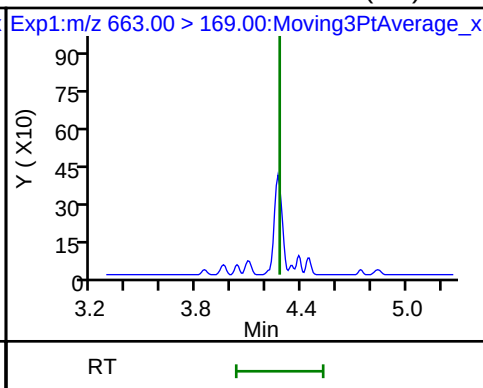
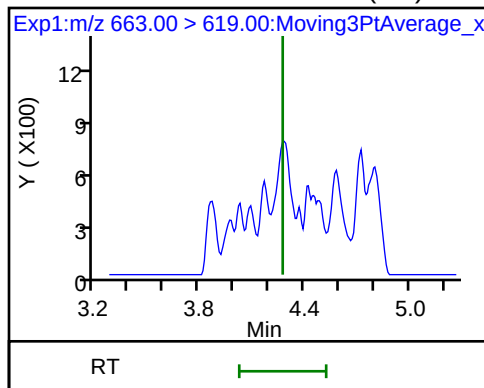
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) 75 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) 76 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

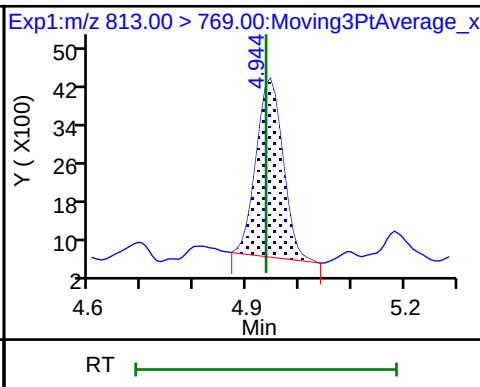
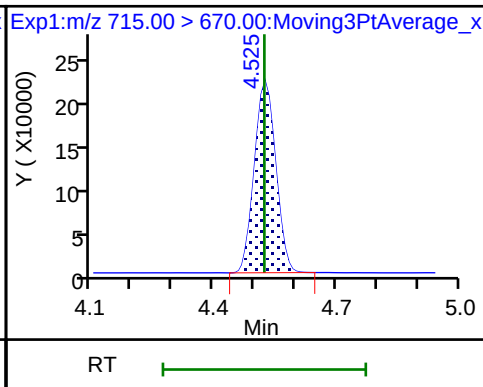
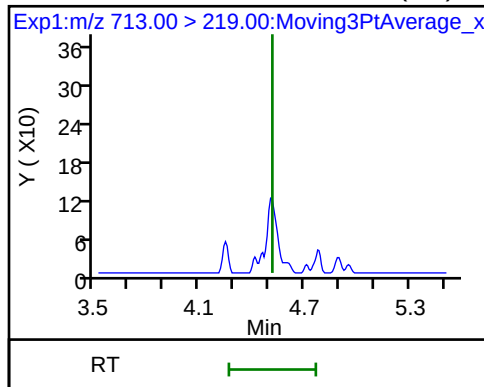
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)

D 43 13C2 PFTeDA

45 Perfluorohexadecanoic acid

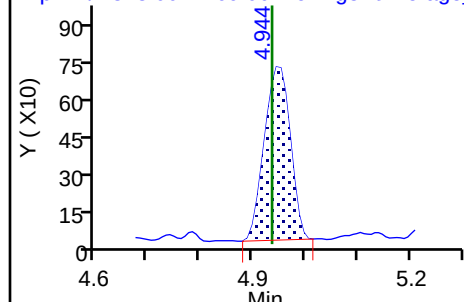


45 Perfluorohexadecanoic acid

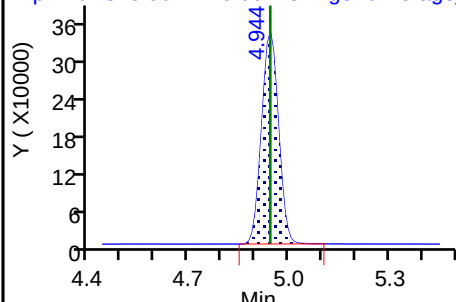
D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid (ND)

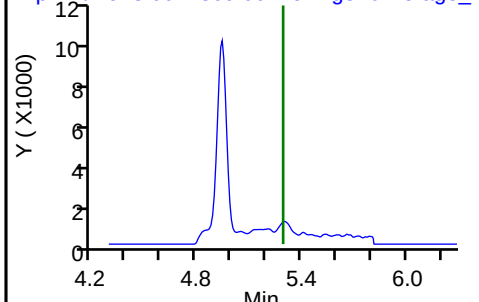
Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 815.00 > 770.00:Moving3PtAverage_x

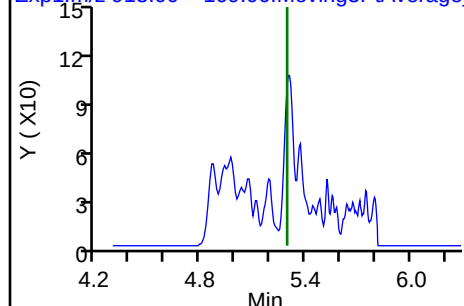


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid (ND)

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

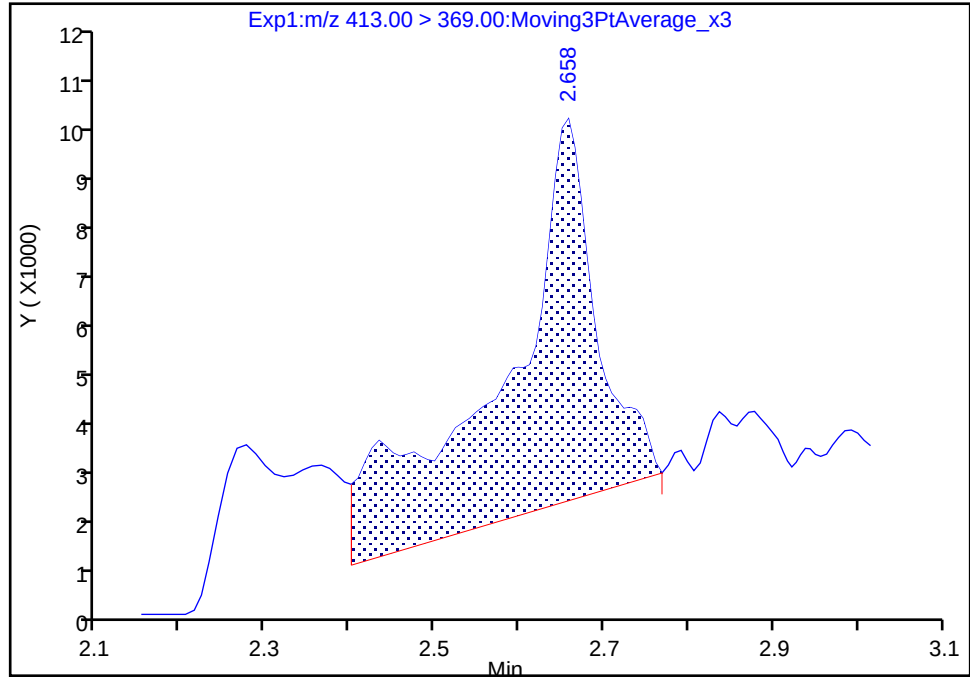
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_063.d				
Injection Date:	15-Oct-2018 08:27:39	Instrument ID:	A8_N		
Lims ID:	480-142679-C-1-A	Lab Sample ID:	320-142679-1		
Client ID:	EC-0006-01				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	48	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

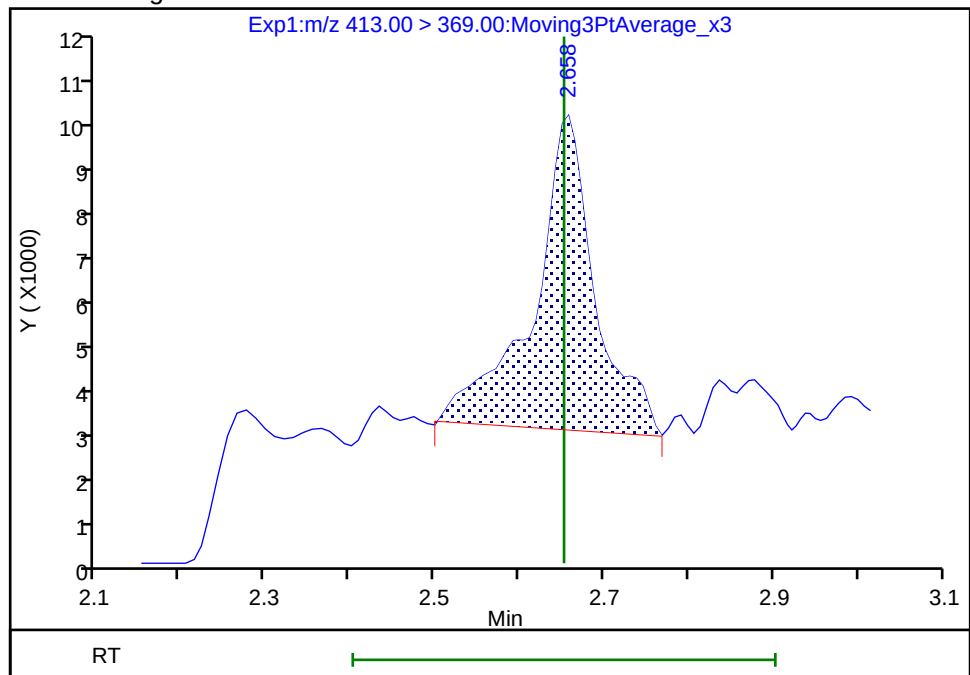
RT: 2.66
Area: 58074
Amount: 0.094089
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 34141
Amount: 0.055314
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:55:39
Audit Action: Manually Integrated

Audit Reason: Baseline
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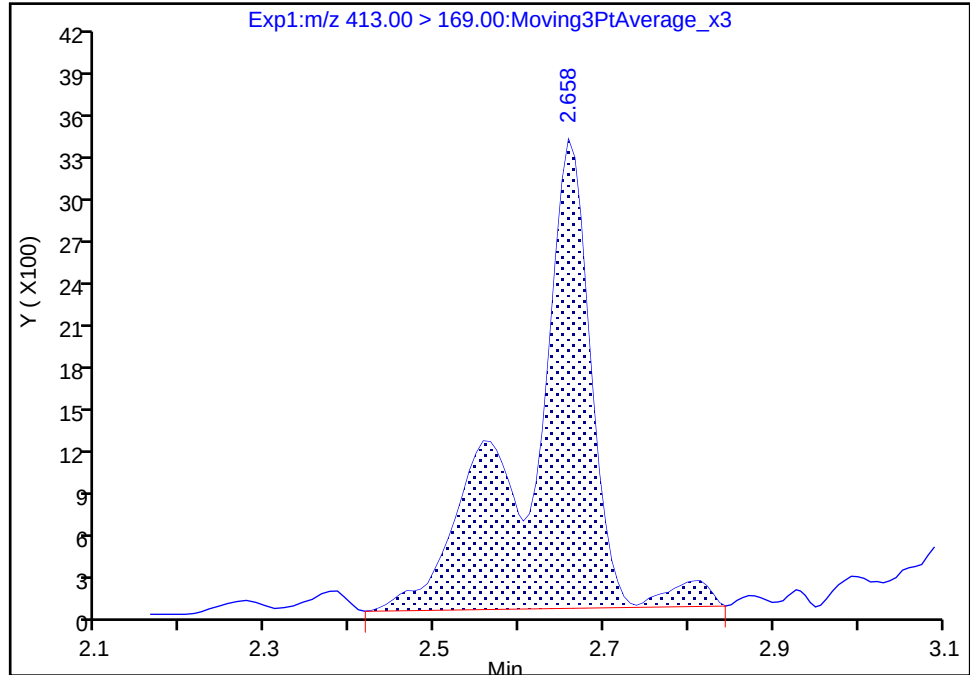
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_063.d				
Injection Date:	15-Oct-2018 08:27:39	Instrument ID:	A8_N		
Lims ID:	480-142679-C-1-A	Lab Sample ID:	320-142679-1		
Client ID:	EC-0006-01				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	48	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

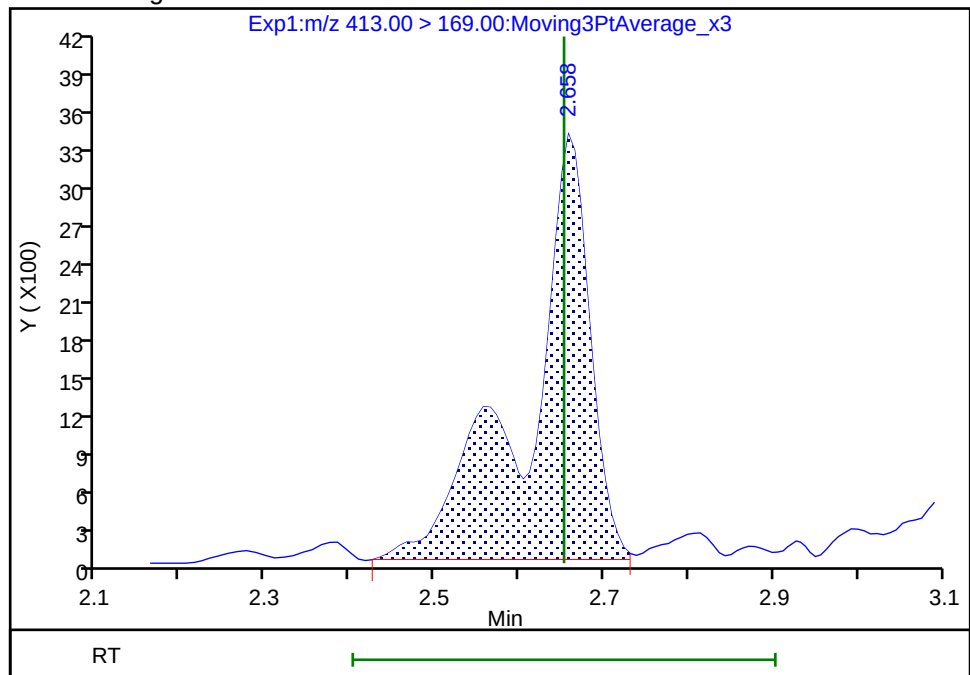
RT: 2.66
Area: 17777
Amount: 0.094089
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 17227
Amount: 0.055314
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:55:45

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

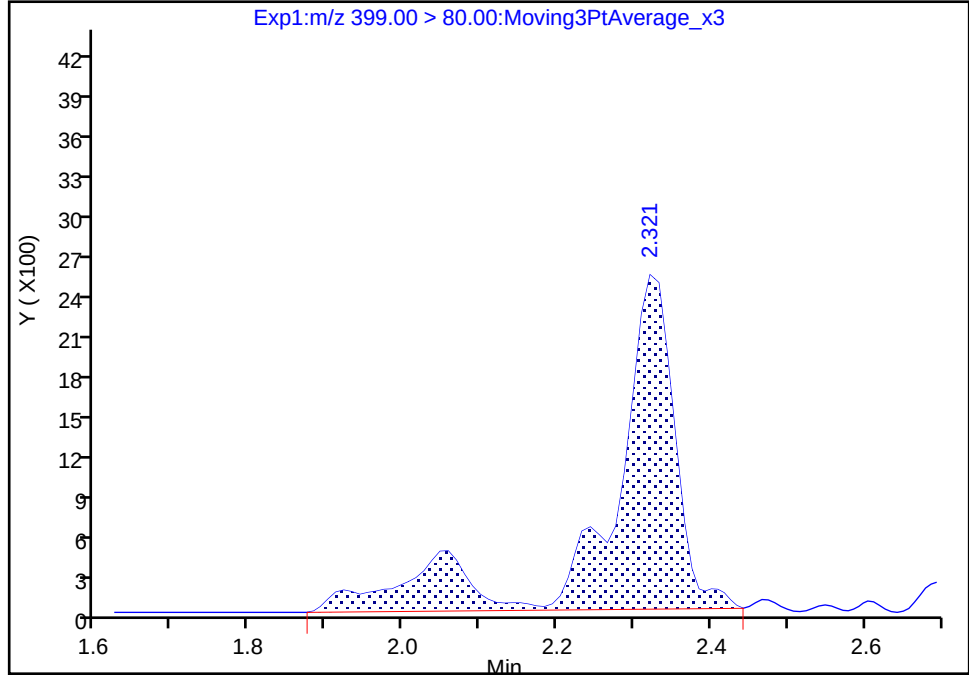
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_063.d				
Injection Date:	15-Oct-2018 08:27:39	Instrument ID:	A8_N		
Lims ID:	480-142679-C-1-A	Lab Sample ID:	320-142679-1		
Client ID:	EC-0006-01				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	48	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

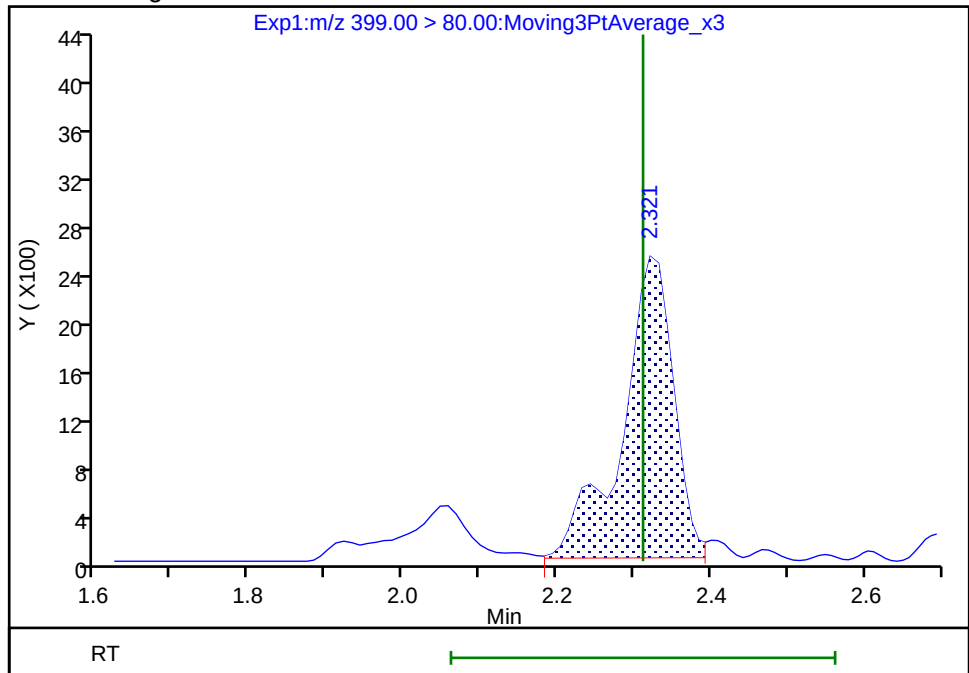
RT: 2.32
Area: 14860
Amount: 0.019374
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 11455
Amount: 0.014934
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:54:44
Audit Action: Manually Integrated

Audit Reason: Baseline
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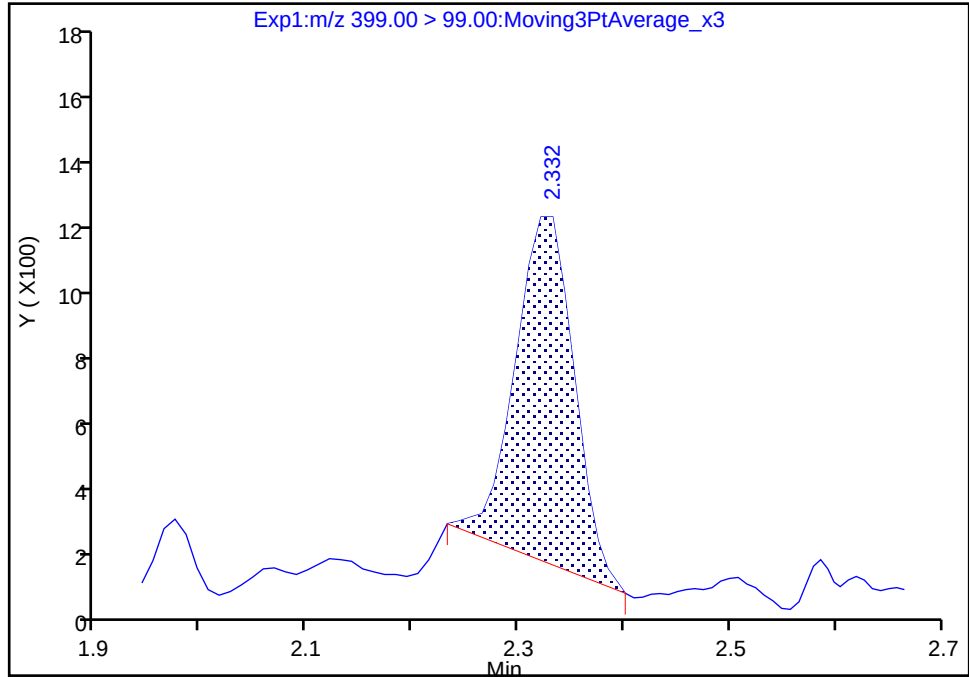
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_063.d				
Injection Date:	15-Oct-2018 08:27:39	Instrument ID:	A8_N		
Lims ID:	480-142679-C-1-A	Lab Sample ID:	320-142679-1		
Client ID:	EC-0006-01				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	48	Worklist Smp#:	4
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

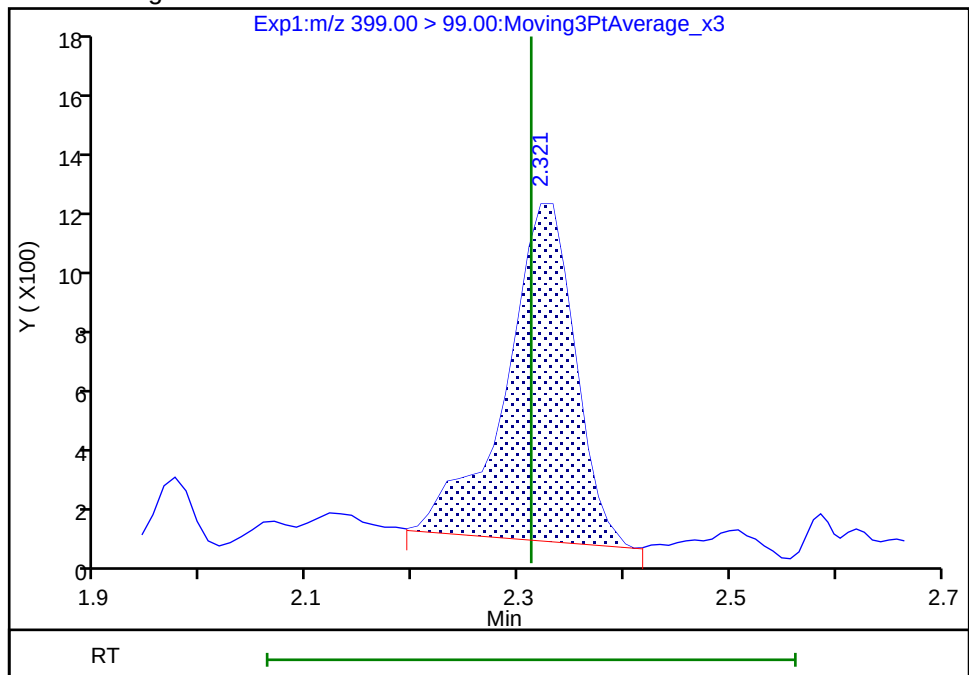
RT: 2.33
Area: 4076
Amount: 0.019374
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 5181
Amount: 0.014934
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:54:54

Audit Action: Manually Integrated

Audit Reason: Baseline
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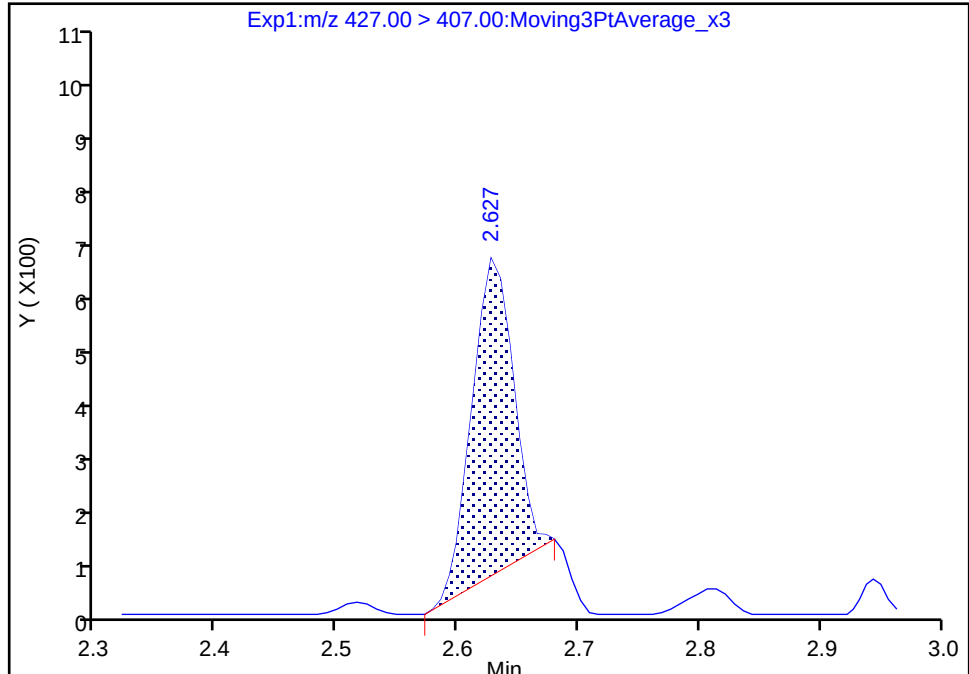
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_063.d
Injection Date: 15-Oct-2018 08:27:39 Instrument ID: A8_N
Lims ID: 480-142679-C-1-A Lab Sample ID: 320-142679-1
Client ID: EC-0006-01
Operator ID: SACINSTLCMS01 ALS Bottle#: 48 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

13 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

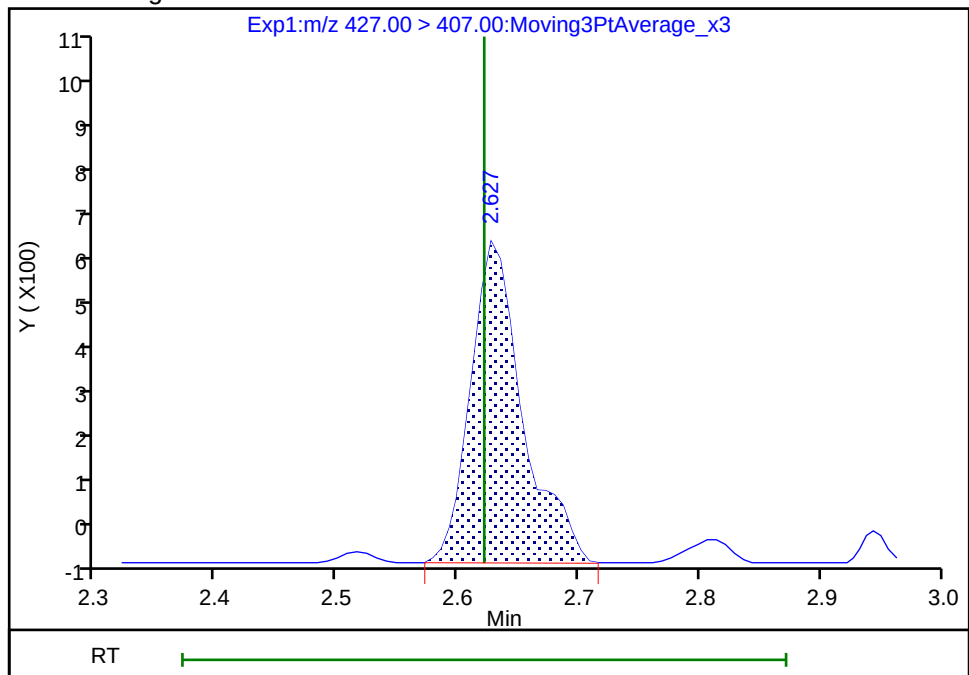
RT: 2.63
Area: 1312
Amount: 0.006930
Amount Units: ng/ml

Processing Integration Results



RT: 2.63
Area: 1849
Amount: 0.009767
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:55:16
Audit Action: Manually Integrated

Audit Reason: Baseline
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-04</u>	Lab Sample ID: <u>480-142679-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_066.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 12:30</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>257.9 (mL)</u>	Date Analyzed: <u>10/15/2018 08:50</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.9		1.9	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.9	U	1.9	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.9	U	1.9	0.56
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.9	U	1.9	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	1.9	U	1.9	0.82
375-95-1	Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.53
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.9	U	1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.31	J B	1.9	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.9	U	1.9	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.31
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.34
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	19	3.0
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	19	1.8
27619-97-2	6:2 FTS	19	U	19	1.9
39108-34-4	8:2 FTS	19	U	19	1.9

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-04</u>	Lab Sample ID: <u>480-142679-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_066.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 12:30</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>257.9 (mL)</u>	Date Analyzed: <u>10/15/2018 08:50</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	93		25-150
STL01893	13C5 PFPeA	101		25-150
STL00993	13C2 PFHxA	95		25-150
STL01892	13C4 PFHpA	100		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	94		25-150
STL00998	13C2 PFDoA	88		25-150
STL02116	13C2 PFTeDA	92		25-150
STL02337	13C3 PFBS	96		25-150
STL00994	18O2 PFHxS	103		25-150
STL00991	13C4 PFOS	99		25-150
STL01056	13C8 FOSA	89		25-150
STL02118	d3-NMeFOSAA	115		25-150
STL02117	d5-NEtFOSAA	116		25-150
STL02279	M2-6:2 FTS	117		25-150
STL02280	M2-8:2 FTS	107		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_066.d
 Lims ID: 480-142679-C-2-A
 Client ID: EC-0006-04
 Sample Type: Client
 Inject. Date: 15-Oct-2018 08:50:01 ALS Bottle#: 51 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142679-c-2-a
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 14:47:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.434	-0.003	0.540	3970085	2.33		93.4	7800	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.466	1.436	0.030	1.024	70961	0.0499			6.0	
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.700	0.002	0.642	2826805	2.54		101	7628	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.704	-0.002	1.000	7706	0.006318			0.9	
D 47 13C3 PFBS										
301.90 > 83.00	1.734	1.740	-0.006	0.654	51309	2.24		96.3	492	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.981	-0.006	0.745	2919300	2.37		94.9	7401	
D 9 13C4 PFHpA										
367.00 > 322.00	2.299	2.303	-0.004	0.867	2818101	2.51		100	7642	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.312	0.009	1.000	12542	0.008096			32.7	
399.00 > 99.00	2.321	2.312	0.009	1.000	3822		3.28(1.50-4.49)		8.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.325	-0.004	0.876	3292662	2.44		103	11285	
13 1H,1H,2H,2H-perfluorooctanesulfoni										M
427.00 > 407.00	2.635	2.622	0.013	1.003	2323	0.006179			15.9	M
D 12 M2-6:2 FTS										
429.00 > 81.00	2.627	2.624	0.003	0.991	583525	2.77		117	3943	
* 62 13C2 PFOA										
415.00 > 370.00	2.651	2.653	-0.002		2705704	2.50			7287	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.651	2.653	-0.002	1.000	18203	0.0151			1.3	M
413.00 > 169.00	2.651	2.653	-0.002	1.000	8446		2.16(0.84-2.52)		11.9	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.655	-0.004	1.000	2603136	2.47		99.0	7722	
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.028	-0.005	1.140	2126911	2.37		99.0	4230	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.028	-0.005	1.140	2133244	2.44		97.6	7821	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.371	3.364	0.007	1.000	1935	0.001729			18.7	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.370	0.001	1.272	2883330	2.22		88.6	3452	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.379	3.377	0.002	1.274	569068	2.56		107	2455	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.392	-0.006	1.277	1880449	2.44		97.5	3902	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.539	3.545	-0.006	1.335	1129682	2.87		115	1345	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.709	3.716	-0.007	1.399	1196492	2.91		116	1960	
D 30 13C2 PFUnA										
565.00 > 520.00	3.718	3.724	-0.006	1.402	1462608	2.36		94.4	4344	
D 36 13C2 PFDoA										
615.00 > 570.00	4.015	4.012	0.002	1.514	1436975	2.21		88.3	2463	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.516	4.523	-0.007	1.704	1837713	2.31		92.3	4540	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_066.d

Injection Date: 15-Oct-2018 08:50:01

Instrument ID: A8_N

Lims ID: 480-142679-C-2-A

Lab Sample ID: 320-142679-2

Client ID: EC-0006-04

Operator ID: SACINSTLCMS01

ALS Bottle#: 51

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

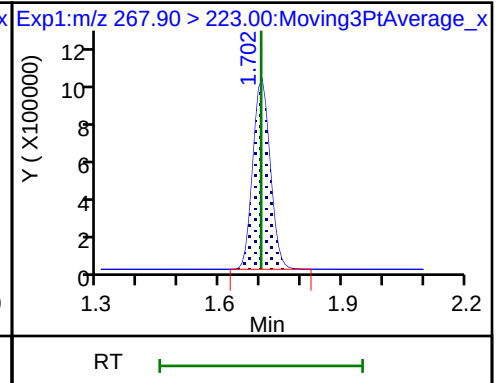
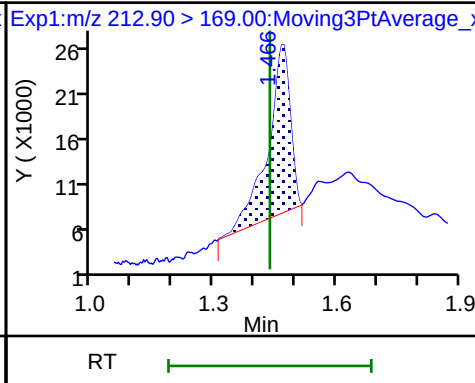
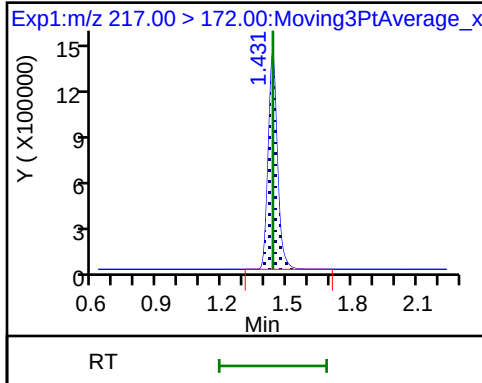
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

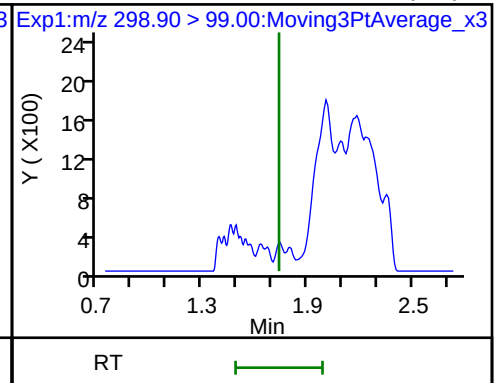
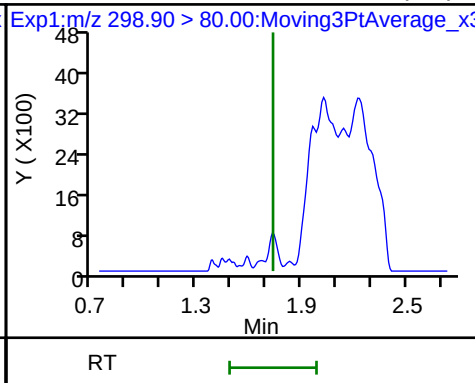
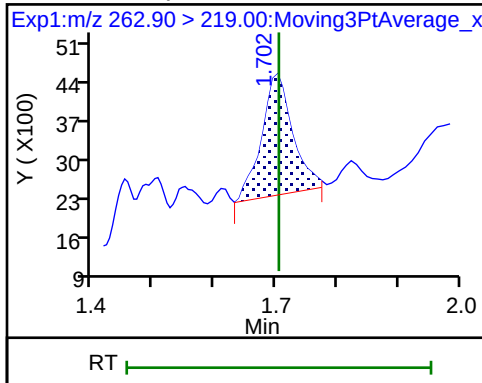
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid (ND)

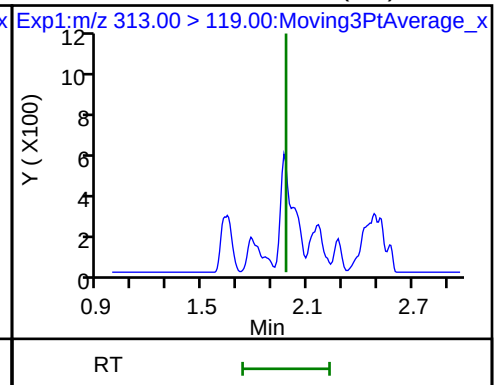
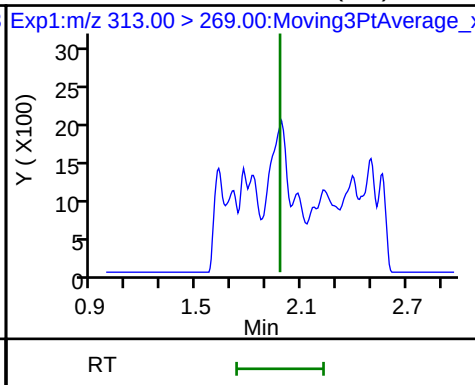
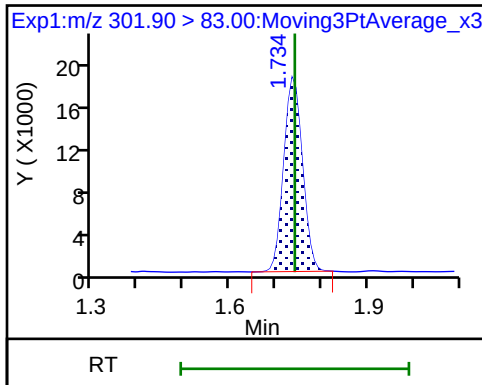
5 Perfluorobutanesulfonic acid (ND)



D 47 13C3 PFBS

6 Perfluorohexanoic acid (ND)

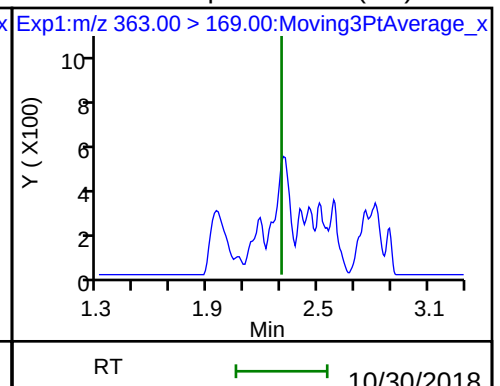
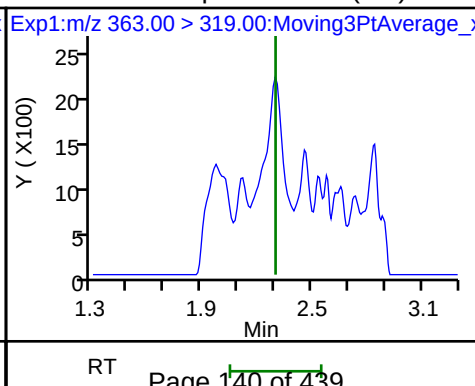
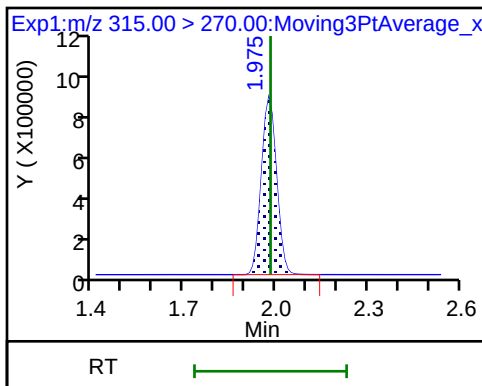
6 Perfluorohexanoic acid (ND)



D 7 13C2 PFHxA

10 Perfluoroheptanoic acid (ND)

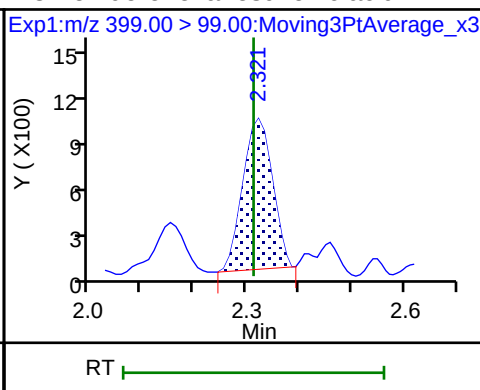
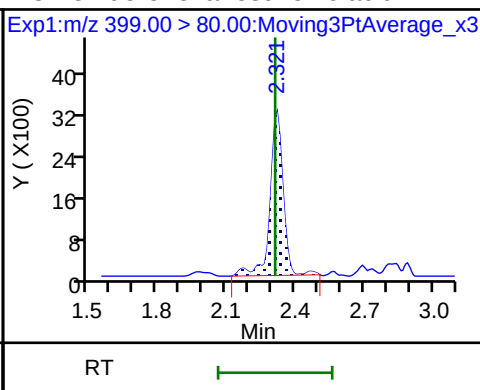
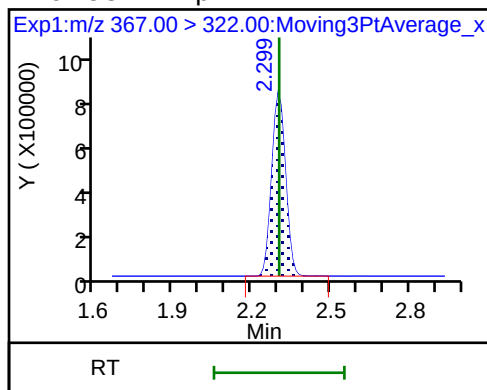
10 Perfluoroheptanoic acid (ND)



D 9 13C4 PFHpA

8 Perfluorohexanesulfonic acid

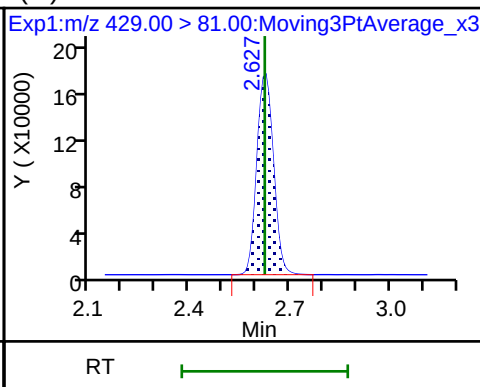
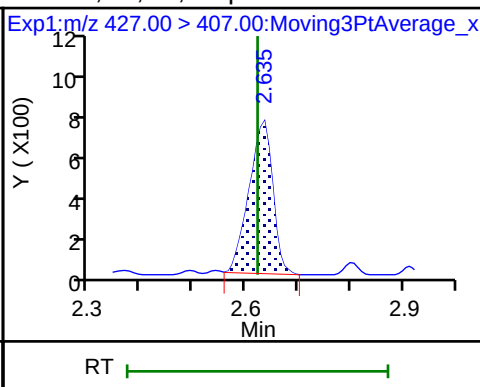
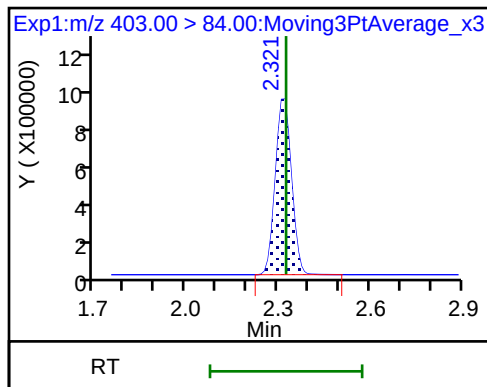
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 1H,1H,2H,2H-perfluorooctanesulfonic acid (M)

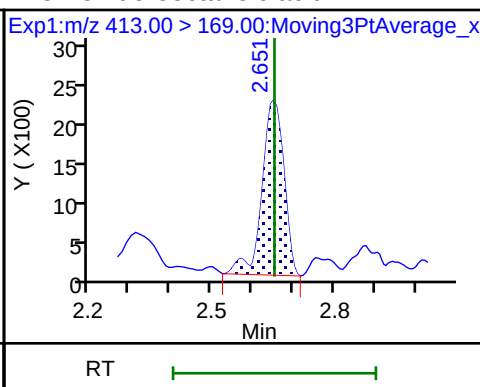
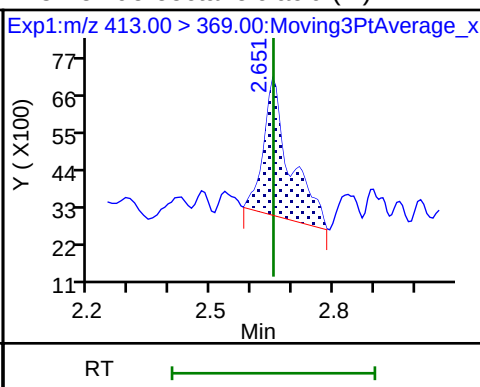
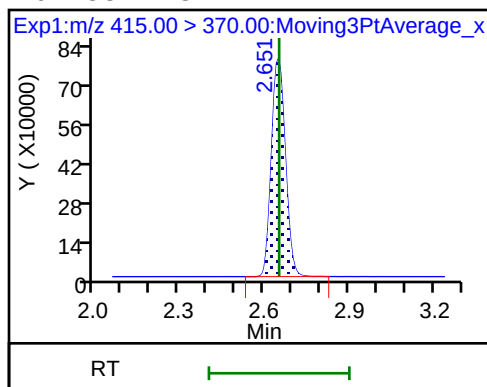
D 11 18O2 PFHxS



* 62 13C2 PFOA

15 Perfluorooctanoic acid (M)

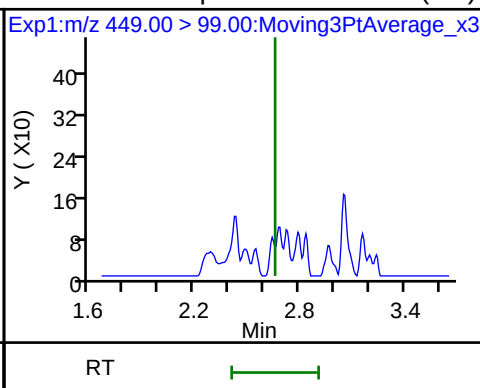
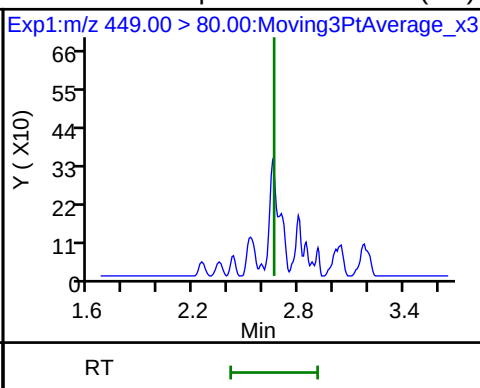
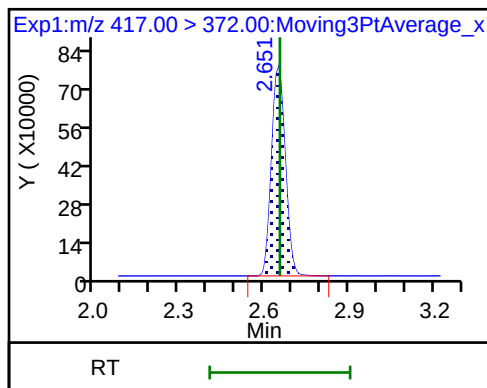
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid (ND)

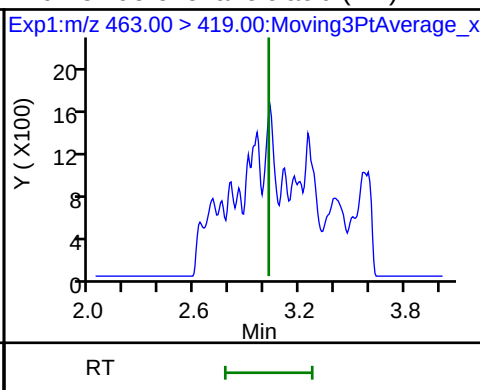
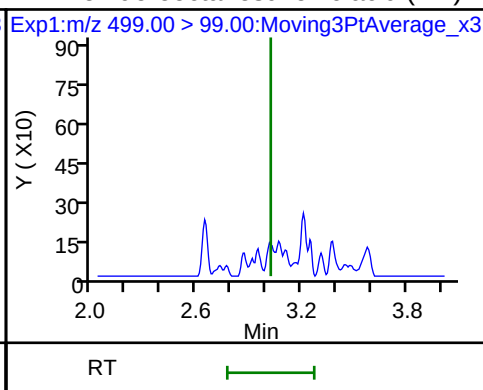
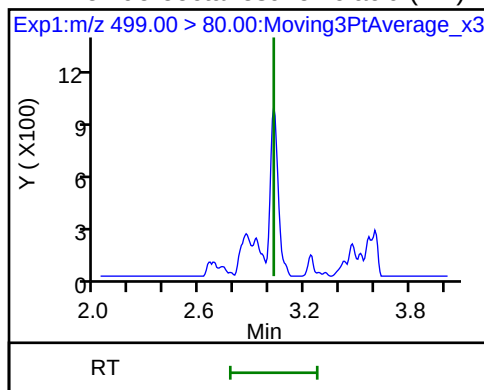
16 Perfluoroheptanesulfonic acid (ND)



17 Perfluorooctanesulfonic acid (ND)

17 Perfluorooctanesulfonic acid (ND)

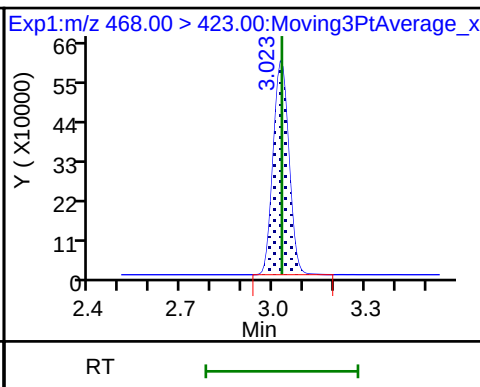
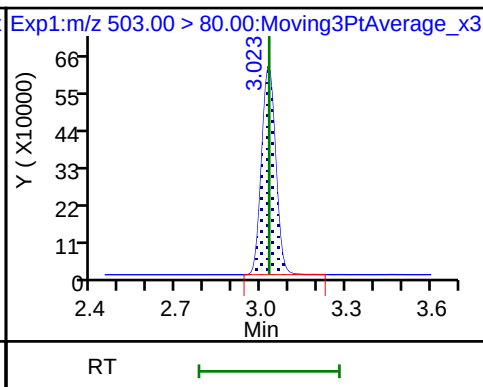
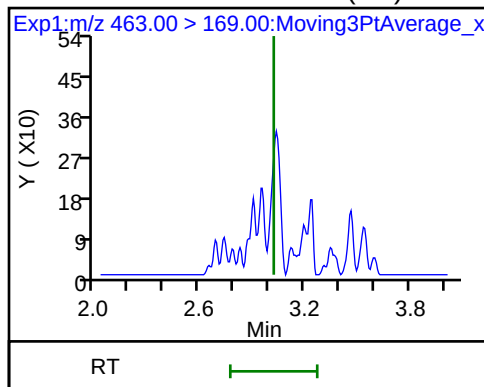
20 Perfluorononanoic acid (ND)



20 Perfluorononanoic acid (ND)

D 18 13C4 PFOS

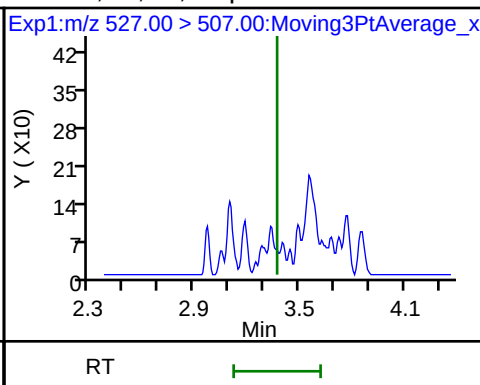
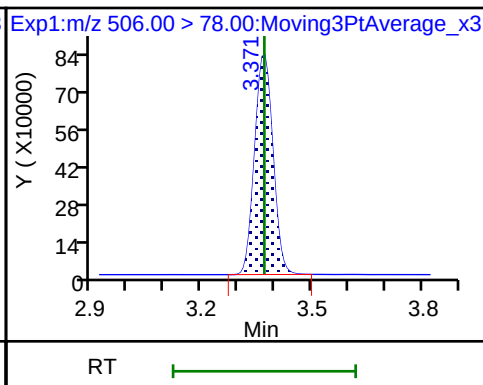
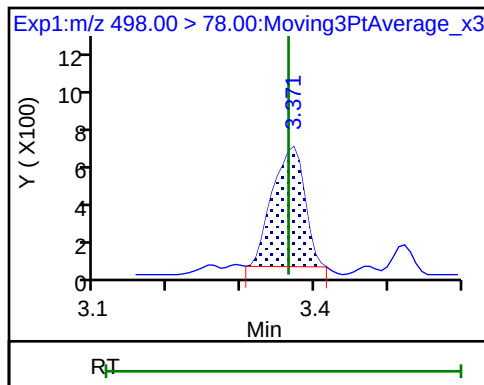
D 19 13C5 PFNA



22 Perfluorooctanesulfonamide

D 21 13C8 FOSA

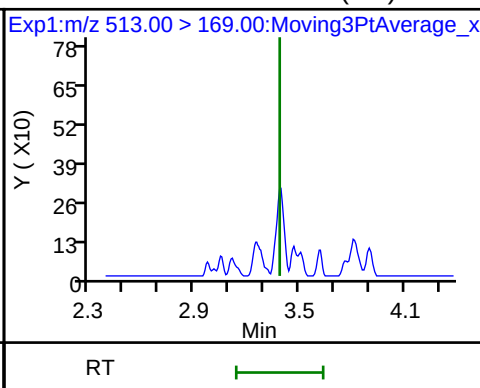
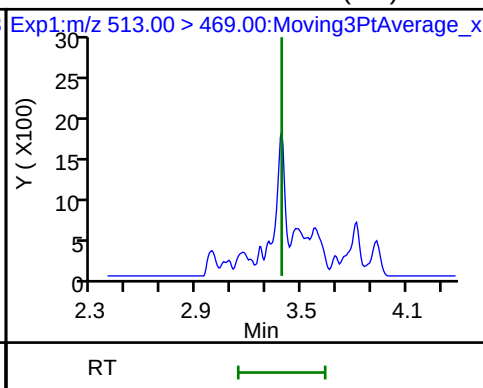
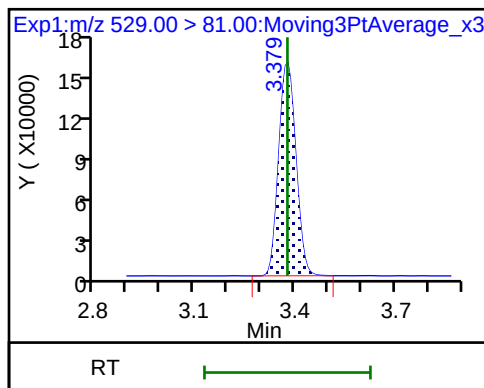
25 1H,1H,2H,2H-perfluorodecanesulfoni (ND)



D 26 M2-8:2 FTS

24 Perfluorodecanoic acid (ND)

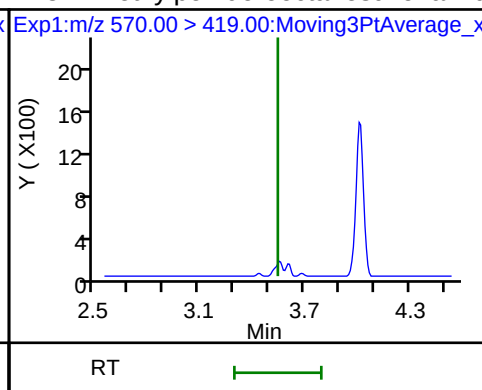
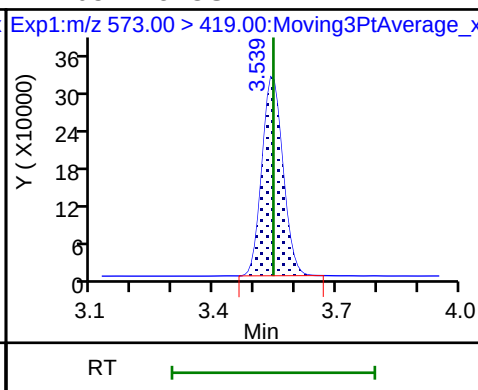
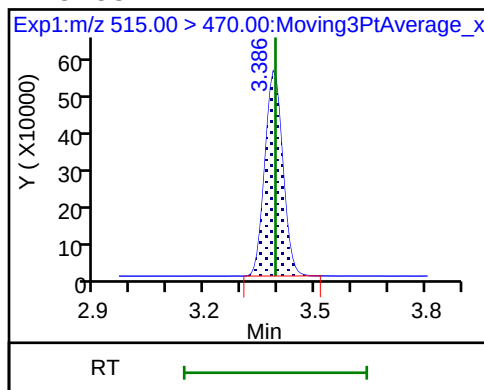
24 Perfluorodecanoic acid (ND)



D 23 13C2 PFDA

D 27 d3-NMeFOSAA

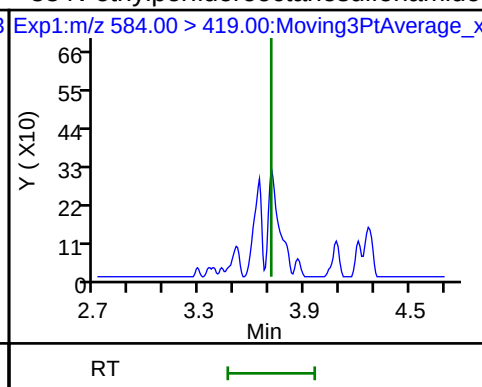
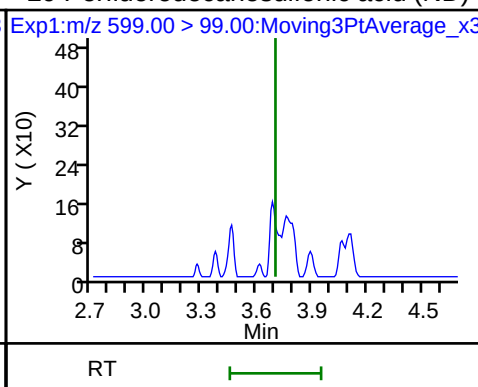
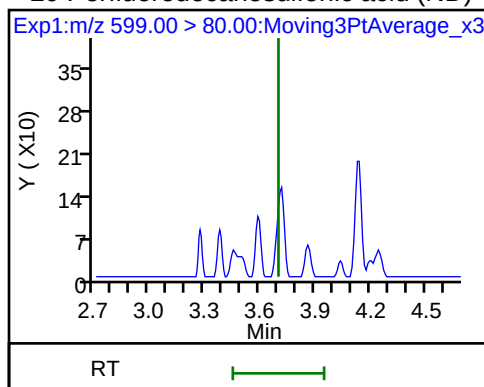
28 N-methylperfluorooctanesulfonamido (ND)



29 Perfluorodecanesulfonic acid (ND)

29 Perfluorodecanesulfonic acid (ND)

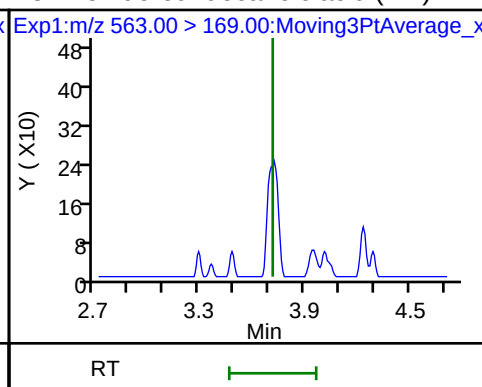
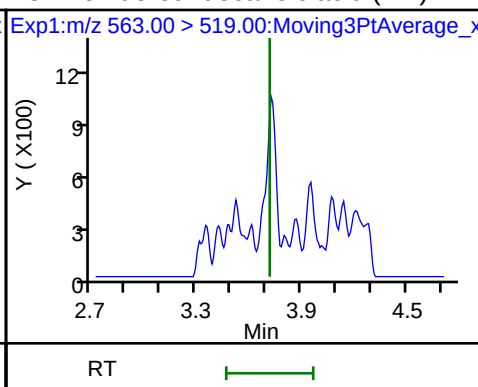
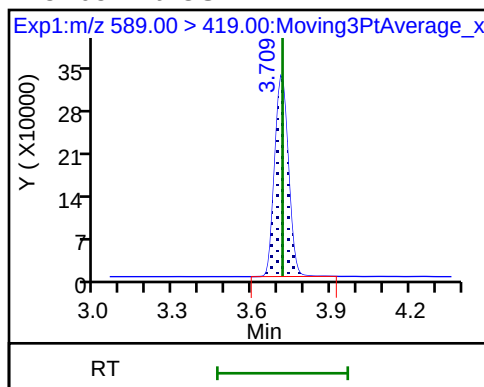
33 N-ethylperfluorooctanesulfonamidoa (ND)



D 32 d5-NEtFOSAA

31 Perfluoroundecanoic acid (ND)

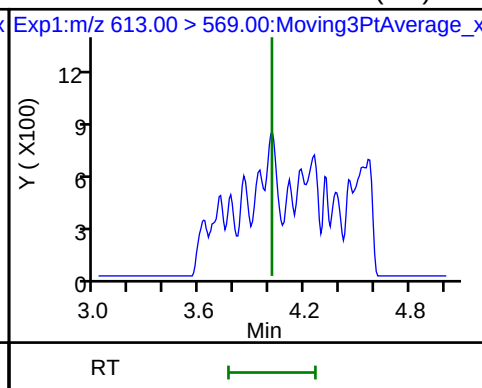
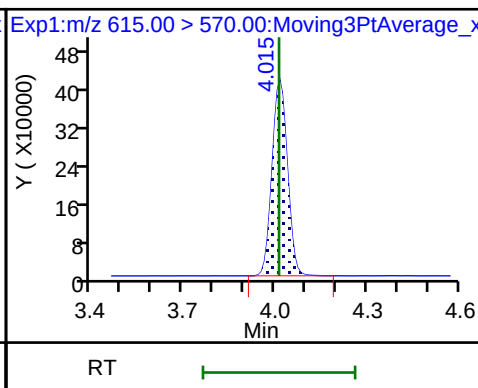
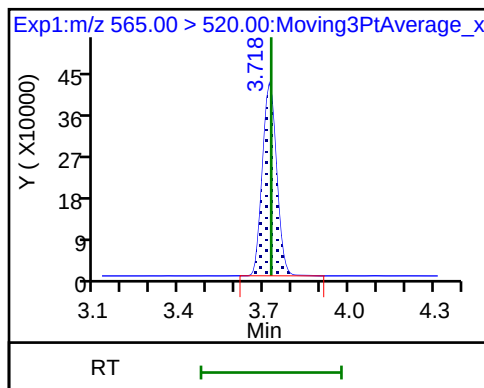
31 Perfluoroundecanoic acid (ND)



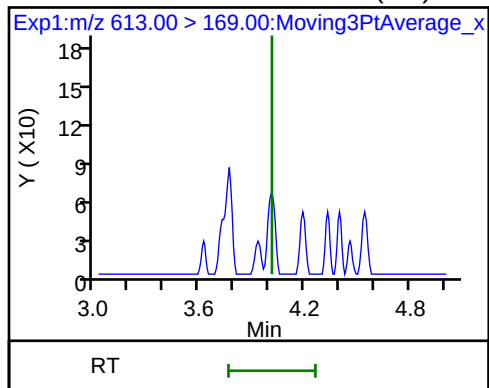
D 30 13C2 PFUnA

D 36 13C2 PFDaA

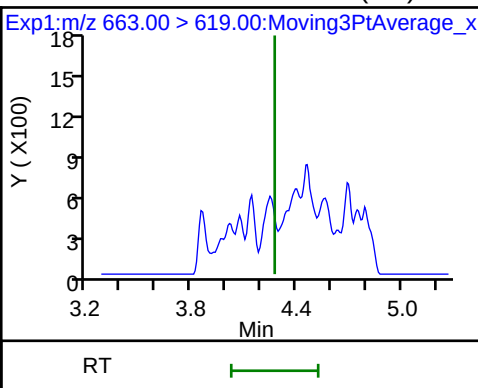
37 Perfluorododecanoic acid (ND)



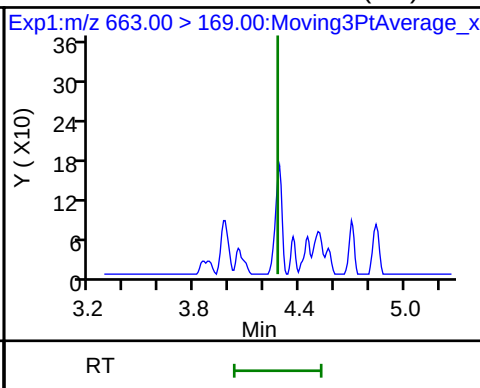
37 Perfluorododecanoic acid (ND)



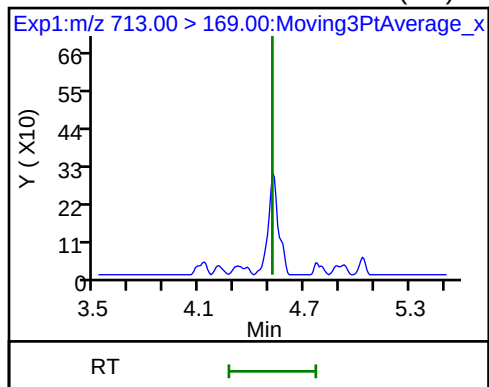
41 Perfluorotridecanoic acid (ND)



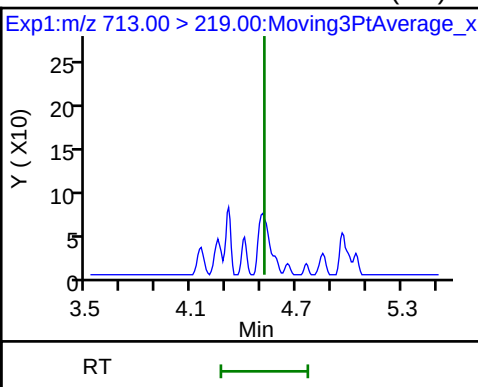
41 Perfluorotridecanoic acid (ND)



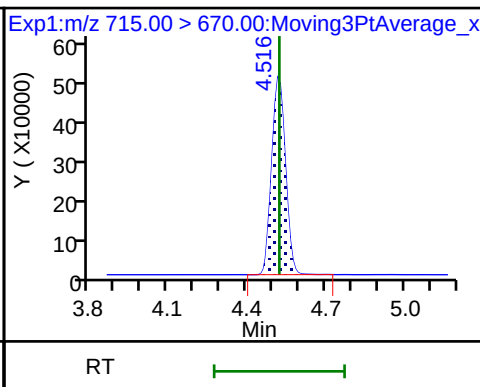
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2 PFTeDA



TestAmerica Sacramento

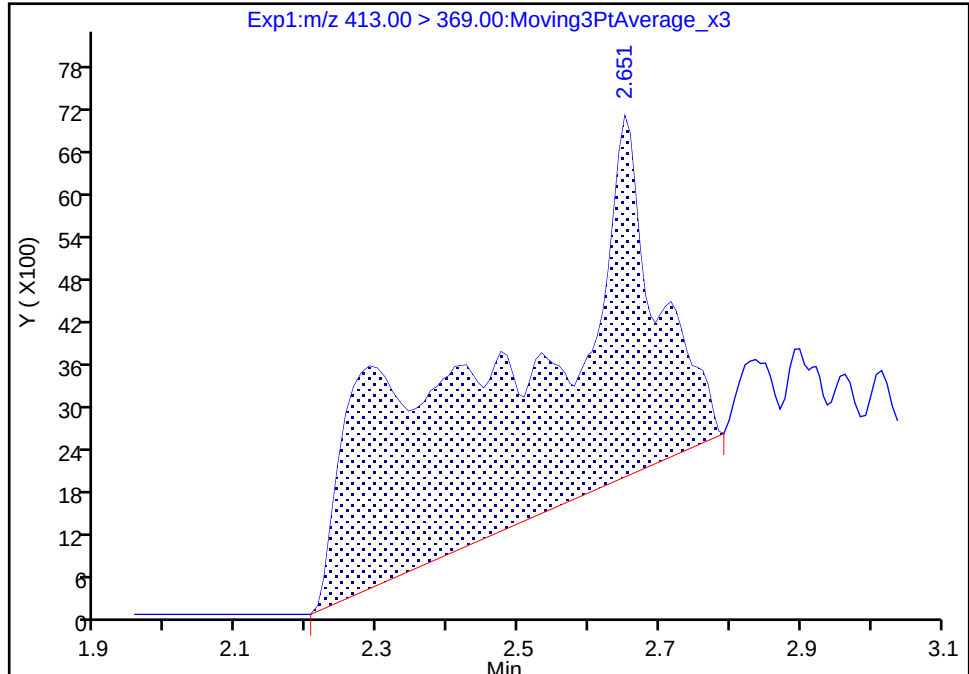
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Injection Date:	15-Oct-2018 08:50:01	Instrument ID:	A8_N
Lims ID:	480-142679-C-2-A	Lab Sample ID:	320-142679-2
Client ID:	EC-0006-04		
Operator ID:	SACINSTLCMS01	ALS Bottle#:	51
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	A8_N	Limit Group:	LC PFC ICAL
Column:		Detector:	EXP1
		Worklist Smp#:	7

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

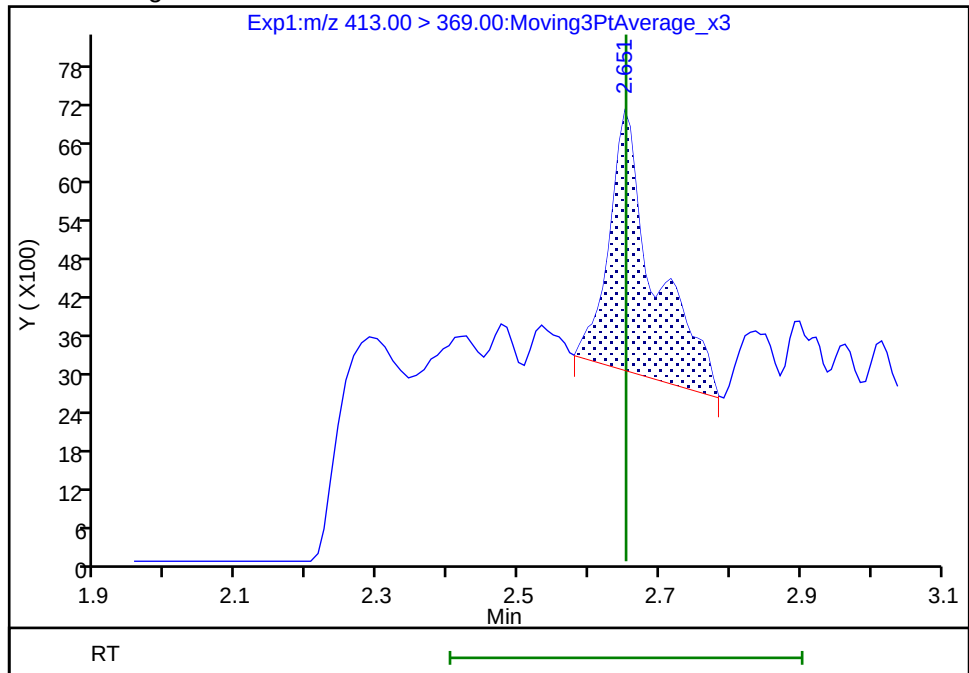
RT: 2.65
Area: 77741
Amount: 0.064405
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 18203
Amount: 0.015080
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:47:30
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/30/2018

TestAmerica Sacramento

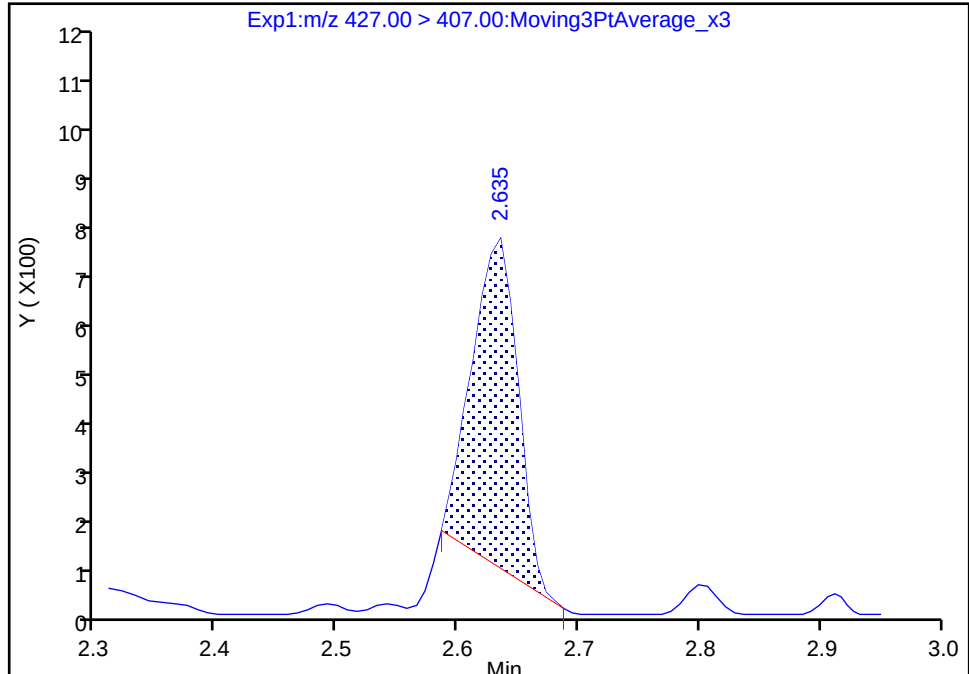
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Lims ID:	480-142679-C-2-A	Lab Sample ID:	320-142679-2
Client ID:	EC-0006-04		
Operator ID:	SACINSTLCMS01	ALS Bottle#:	51
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	A8_N	Limit Group:	LC PFC ICAL
Column:		Detector:	EXP1
		Worklist Smp#:	7

13 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

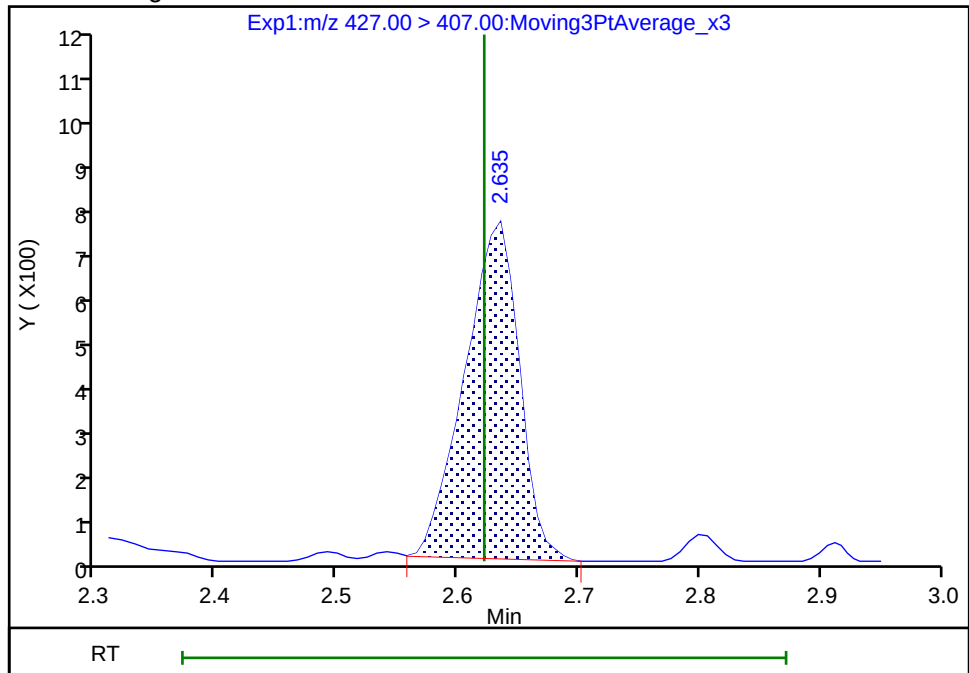
RT: 2.64
Area: 1718
Amount: 0.004570
Amount Units: ng/ml

Processing Integration Results



RT: 2.64
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Amount: 0.006179
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:47:02
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/30/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-05</u>	Lab Sample ID: <u>480-142679-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_067.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 13:50</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>251.4 (mL)</u>	Date Analyzed: <u>10/15/2018 08:57</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	4.7		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.70	J	2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	1.0	J	2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.38	J	2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	1.0	J	2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.0	U	2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.0	U	2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.0	U	2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	2.0	U	2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.0	U	2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.0	U	2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.81	J	2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.1	J B	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.0	U	2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.6	J	2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.0	U	2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.0	U	2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20	U	20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20	U	20	1.9
27619-97-2	6:2 FTS	20	U	20	2.0
39108-34-4	8:2 FTS	20	U	20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-05</u>	Lab Sample ID: <u>480-142679-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_067.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 13:50</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>251.4 (mL)</u>	Date Analyzed: <u>10/15/2018 08:57</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	70		25-150
STL01893	13C5 PFPeA	93		25-150
STL00993	13C2 PFHxA	91		25-150
STL01892	13C4 PFHpA	98		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	92		25-150
STL00998	13C2 PFDoA	88		25-150
STL02116	13C2 PFTeDA	88		25-150
STL02337	13C3 PFBS	102		25-150
STL00994	18O2 PFHxS	101		25-150
STL00991	13C4 PFOS	96		25-150
STL01056	13C8 FOSA	89		25-150
STL02118	d3-NMeFOSAA	110		25-150
STL02117	d5-NEtFOSAA	108		25-150
STL02279	M2-6:2 FTS	130		25-150
STL02280	M2-8:2 FTS	113		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_067.d
 Lims ID: 480-142679-C-3-A
 Client ID: EC-0006-05
 Sample Type: Client
 Inject. Date: 15-Oct-2018 08:57:27 ALS Bottle#: 52 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142679-c-3-a
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 15:03:10

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
--------	----	-----------	-----------	-----------	----------	-----------------	---------------	------	-----	-------

D 1 13C4 PFBA

217.00 > 172.00 1.434 1.434 0.0 0.540 2811870 1.75 70.0 5457

2 Perfluorobutanoic acid

212.90 > 169.00 1.434 1.436 -0.002 1.000 118896 0.1180 8.5 M

D 3 13C5 PFPeA

267.90 > 223.00 1.700 1.700 0.0 0.640 2450645 2.33 93.1 2045

4 Perfluoropentanoic acid

262.90 > 219.00 1.700 1.704 -0.004 1.000 18541 0.0175 0.3 M

5 Perfluorobutanesulfonic acid

298.90 > 80.00 1.740 1.736 0.004 1.000 35532 0.0205 1.0

298.90 > 99.00 1.740 1.736 0.004 1.000 9501 3.74(1.25-3.74) 1.5

D 47 13C3 PFBS

301.90 > 83.00 1.740 1.740 0.0 0.655 51380 2.37 102 82.7

6 Perfluorohexanoic acid

313.00 > 269.00 1.981 1.977 0.004 1.000 26784 0.0256 0.9 R

313.00 > 119.00 1.981 1.977 0.004 1.000 1198 22.36(5.03-15.10) 1.9

D 7 13C2 PFHxA

315.00 > 270.00 1.981 1.981 0.0 0.746 2653182 2.28 91.3 7155

10 Perfluoroheptanoic acid

363.00 > 319.00 2.304 2.301 0.003 1.000 10466 0.009525 1.1 RM

363.00 > 169.00 2.315 2.301 0.014 1.005 3014 3.47(1.13-3.40) 3.5

D 9 13C4 PFHpA

367.00 > 322.00 2.304 2.303 0.001 0.867 2588041 2.44 97.5 7450

8 Perfluorohexanesulfonic acid

399.00 > 80.00 2.326 2.312 0.014 1.000 38661 0.0270 7.5 M

399.00 > 99.00 2.315 2.312 0.003 0.995 11901 3.25(1.50-4.49) 11.0 M

D 11 18O2 PFHxS

403.00 > 84.00 2.326 2.325 0.001 0.876 3047411 2.39 101 8195

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2 FTS										
429.00 > 81.00	2.632	2.624	0.008	0.991	614383	3.09		130	556	
* 62 13C2 PFOA										
415.00 > 370.00	2.656	2.653	0.003		2555221	2.50			6182	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.656	2.653	0.003	1.000	30102	0.0259			2.7	M
413.00 > 169.00	2.663	2.653	0.010	1.003	24938		1.21(0.84-2.52)		26.6	
D 14 13C4 PFOA										
417.00 > 372.00	2.656	2.655	0.001	1.000	2507036	2.52		101	7719	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	2.904	3.023	-0.119	0.959	36054	0.0395			30.5	
499.00 > 99.00	3.014	3.023	-0.009	0.995	7111		5.07(2.31-6.93)		13.8	M
D 18 13C4 PFOS										
503.00 > 80.00	3.029	3.028	0.001	1.141	1945782	2.29		95.9	2539	
D 19 13C5 PFNA										
468.00 > 423.00	3.029	3.028	0.001	1.141	2016265	2.44		97.6	5169	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.377	3.364	0.013	1.002	2961	0.002782			25.0	
D 21 13C8 FOSA										
506.00 > 78.00	3.369	3.370	-0.001	1.269	2742572	2.23		89.3	5561	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.377	3.377	0.0	1.272	570007	2.71		113	2130	
D 23 13C2 PFDA										
515.00 > 470.00	3.392	3.392	0.0	1.277	1833837	2.52		101	5297	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.545	3.545	0.0	1.335	1025165	2.76		110	2847	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.715	3.716	-0.001	1.399	1046642	2.70		108	1768	
D 30 13C2 PFUnA										
565.00 > 520.00	3.715	3.724	-0.009	1.399	1341789	2.29		91.7	3853	
D 36 13C2 PFDoA										
615.00 > 570.00	4.012	4.012	0.0	1.511	1346491	2.19		87.7	2699	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.522	4.523	-0.001	1.703	1655293	2.20		88.0	2912	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_067.d

Injection Date: 15-Oct-2018 08:57:27

Instrument ID: A8_N

Lims ID: 480-142679-C-3-A

Lab Sample ID: 320-142679-3

Client ID: EC-0006-05

Operator ID: SACINSTLCMS01

ALS Bottle#: 52

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

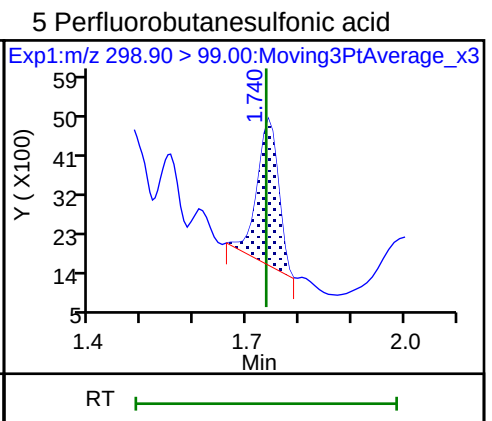
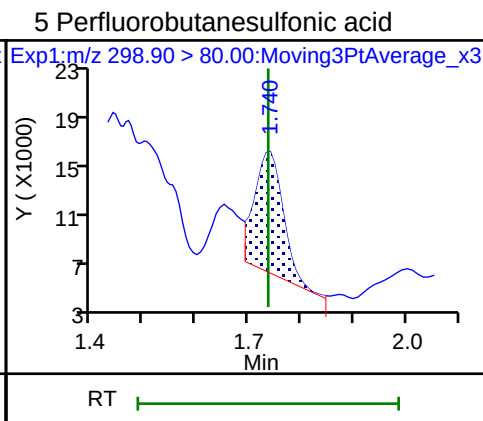
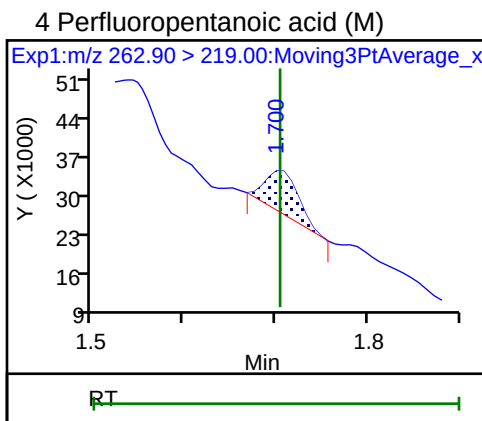
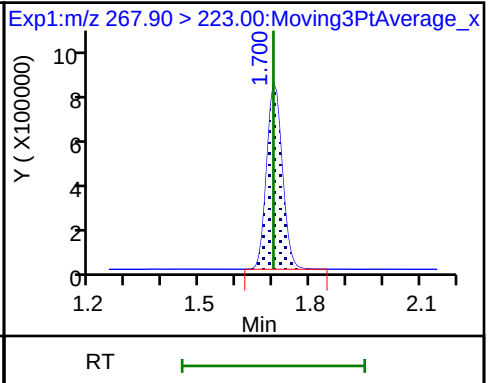
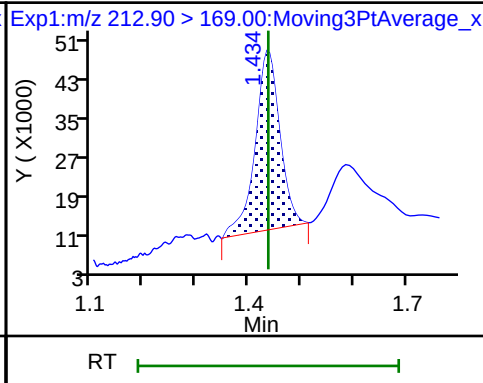
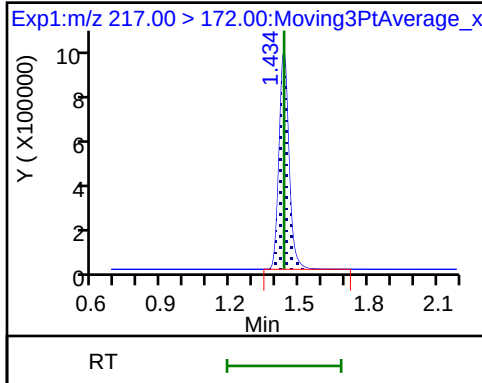
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

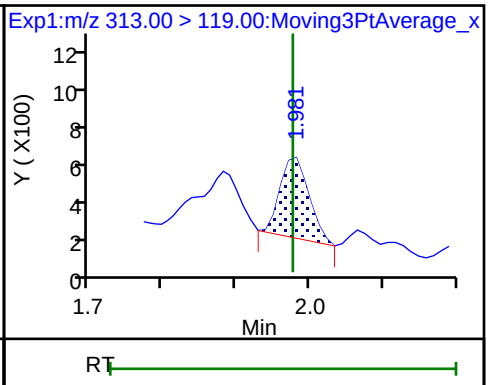
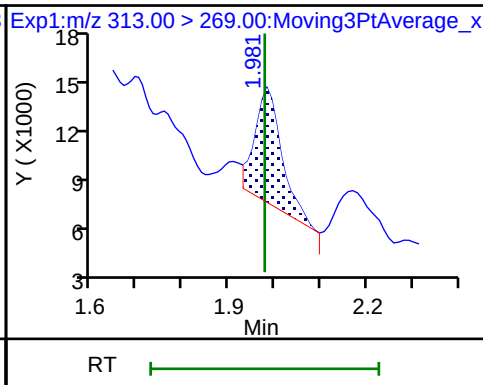
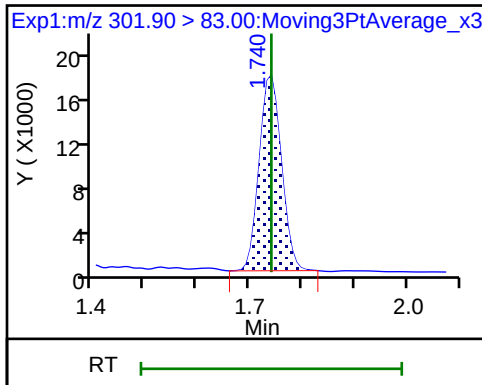
D 3 13C5 PFPeA



D 47 13C3 PFBS

6 Perfluorohexanoic acid

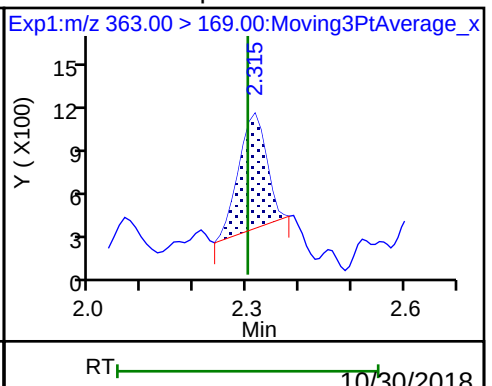
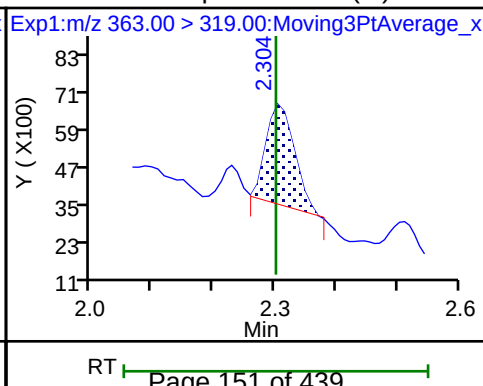
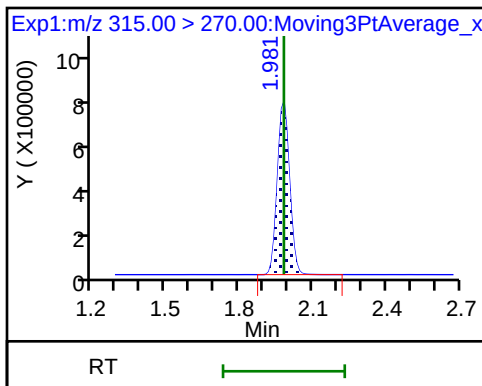
6 Perfluorohexanoic acid



D 7 13C2 PFHxA

10 Perfluoroheptanoic acid (M)

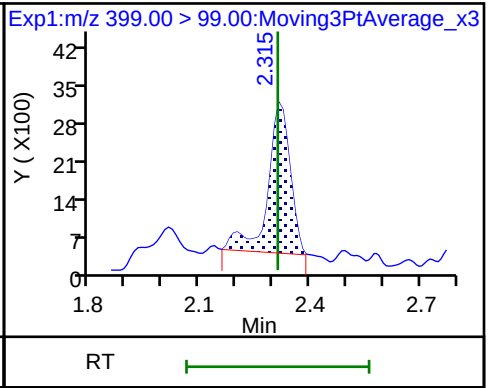
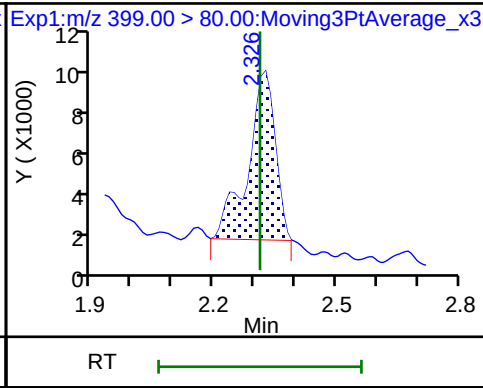
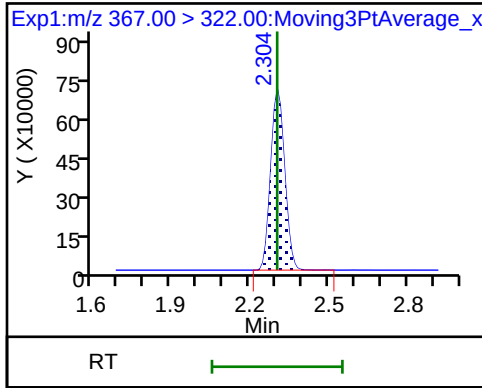
10 Perfluoroheptanoic acid



D 9 13C4 PFHpA

8 Perfluorohexanesulfonic acid (M)

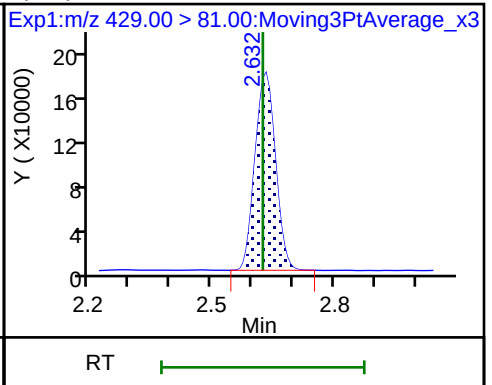
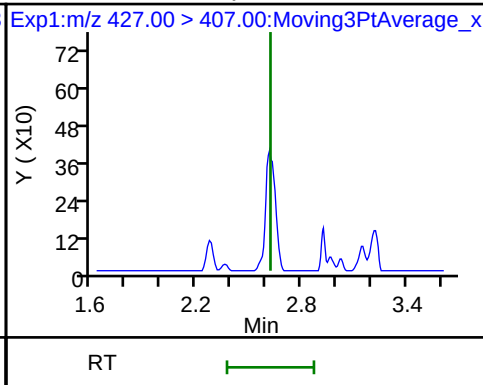
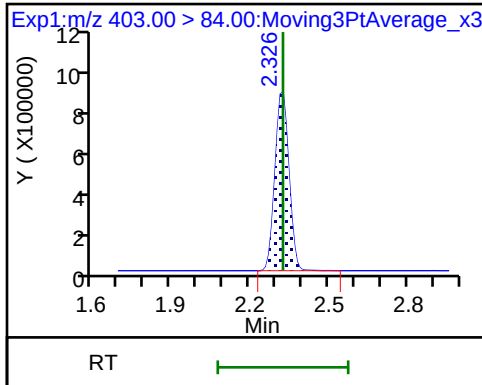
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

13 1H,1H,2H,2H-perfluorooctanesulfonic acid (M)

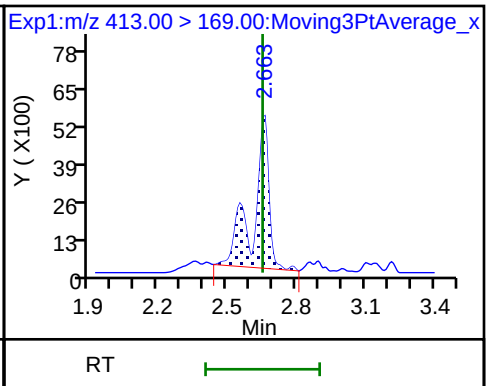
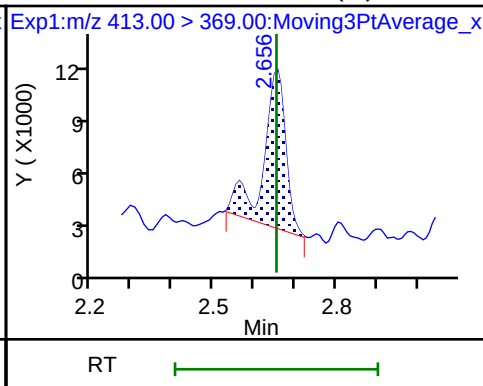
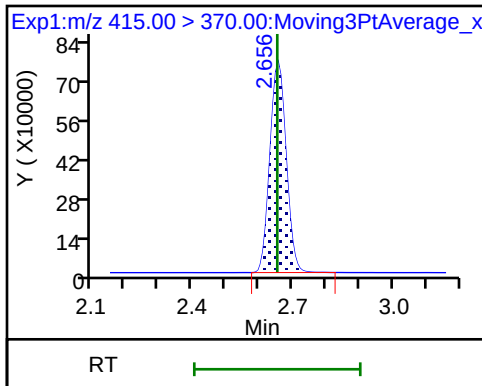
D (M2)M2-6:2 FTS



* 62 13C2 PFOA

15 Perfluorooctanoic acid (M)

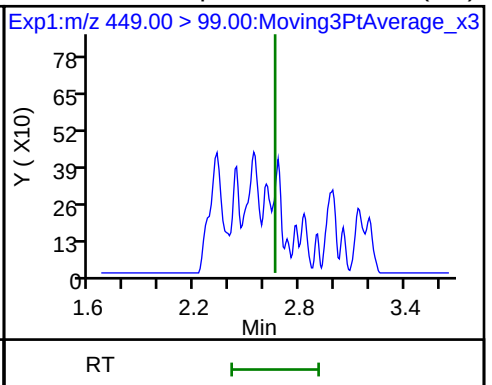
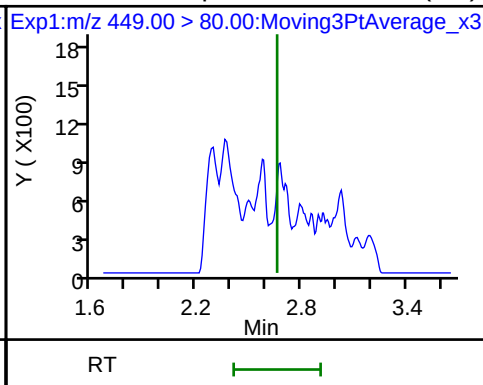
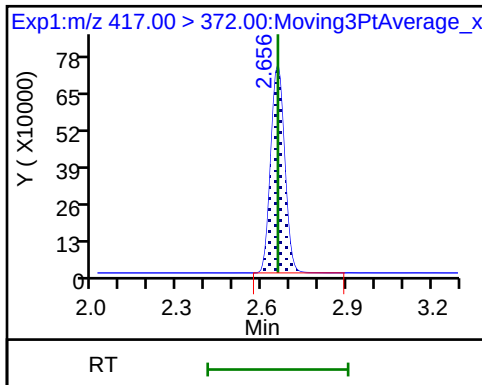
15 Perfluorooctanoic acid

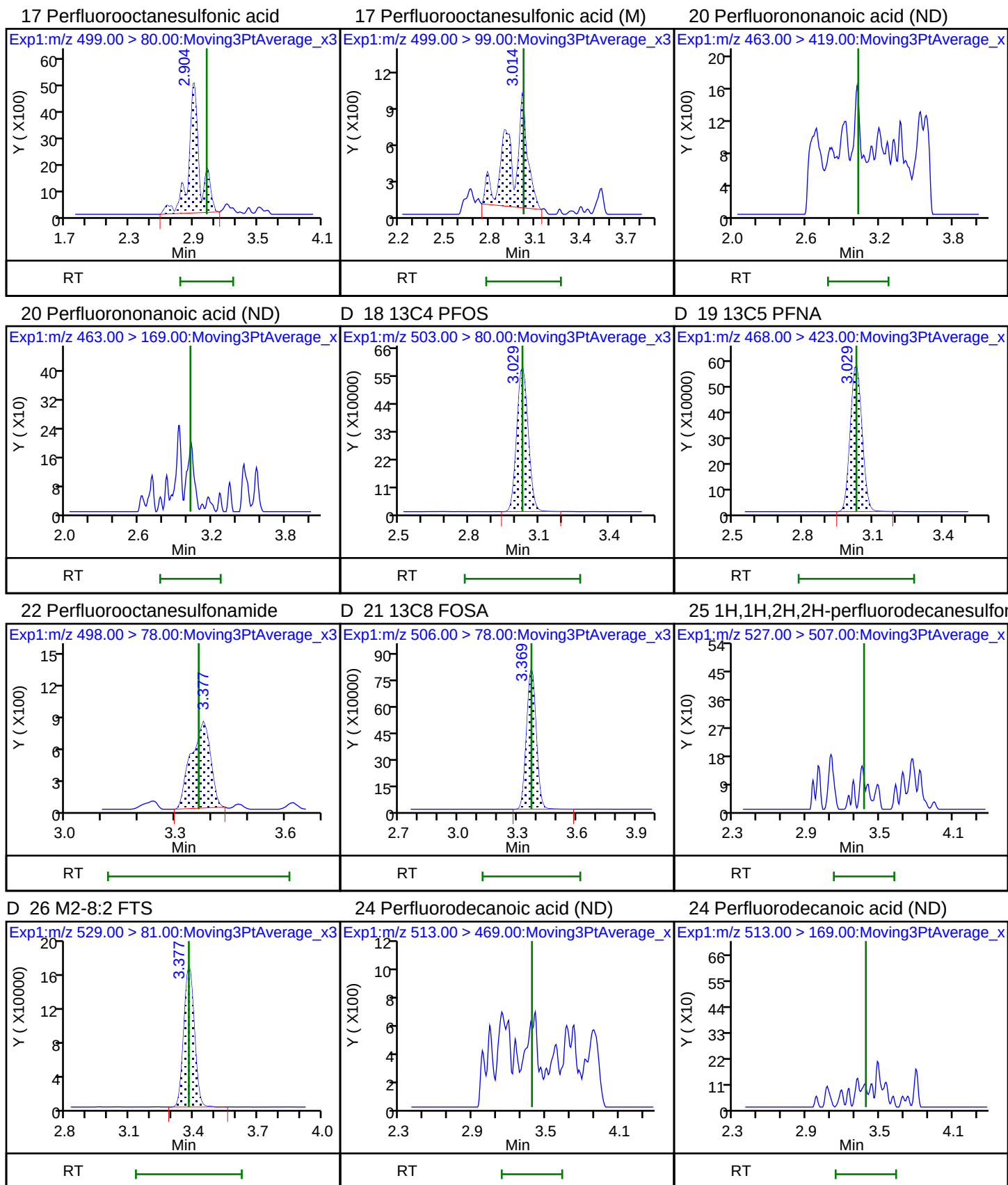


D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid (ND)

16 Perfluoroheptanesulfonic acid (ND)

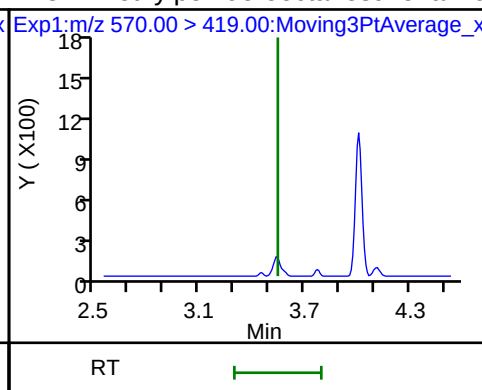
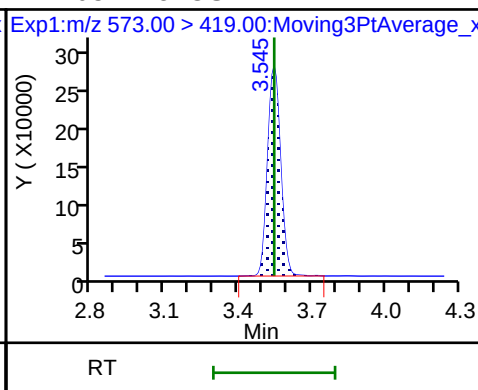
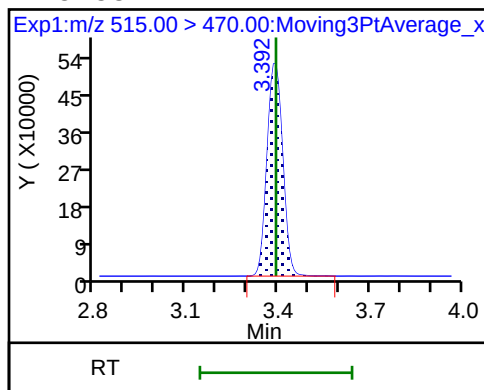




D 23 13C2 PFDA

D 27 d3-NMeFOSAA

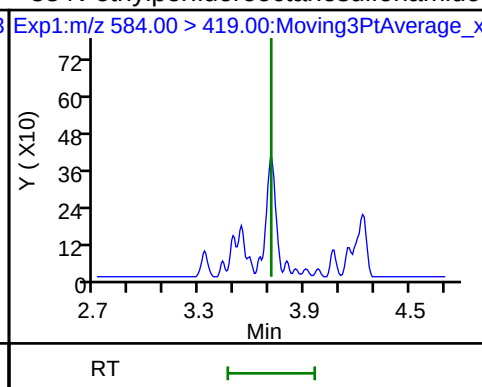
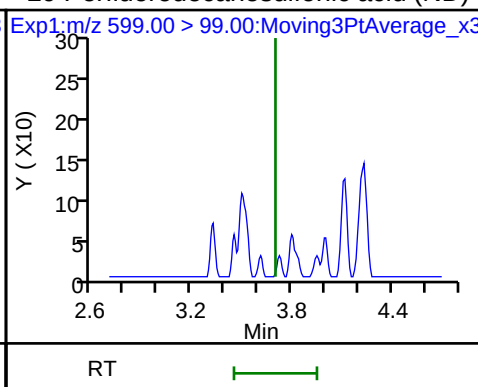
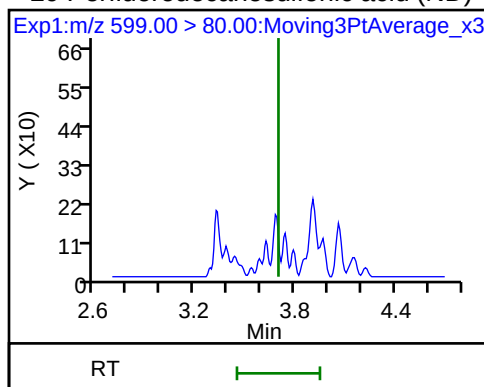
28 N-methylperfluorooctanesulfonamido (ND)



29 Perfluorodecanesulfonic acid (ND)

29 Perfluorodecanesulfonic acid (ND)

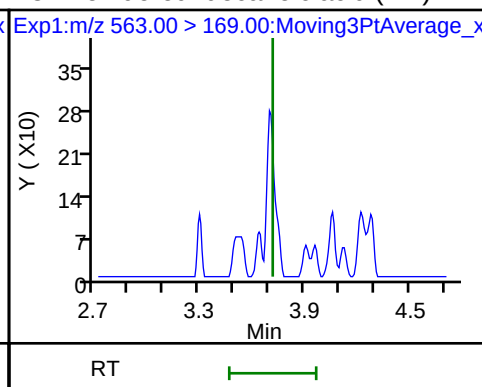
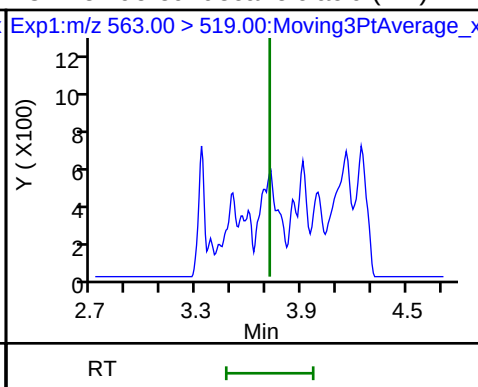
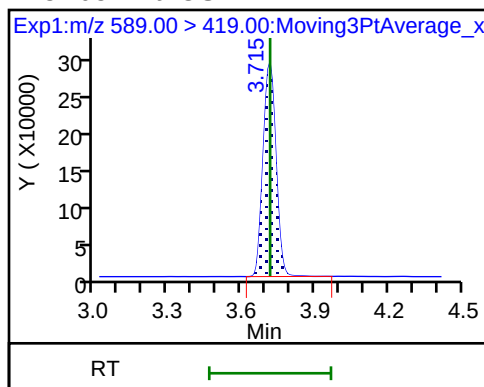
33 N-ethylperfluorooctanesulfonamidoa (ND)



D 32 d5-NEtFOSAA

31 Perfluoroundecanoic acid (ND)

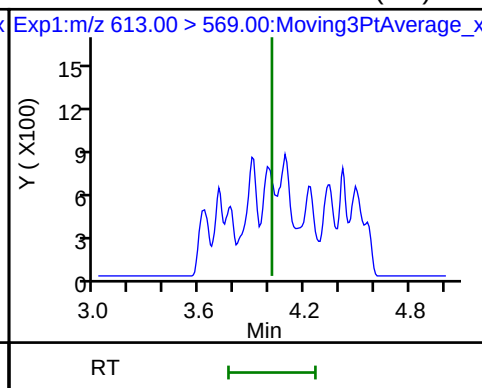
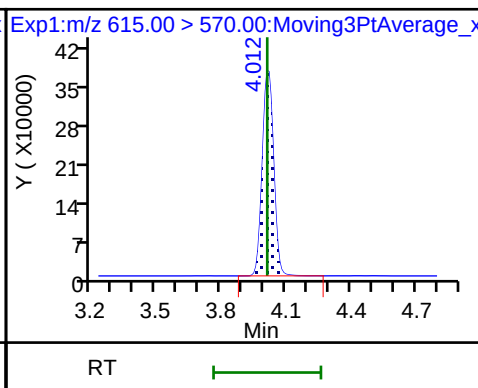
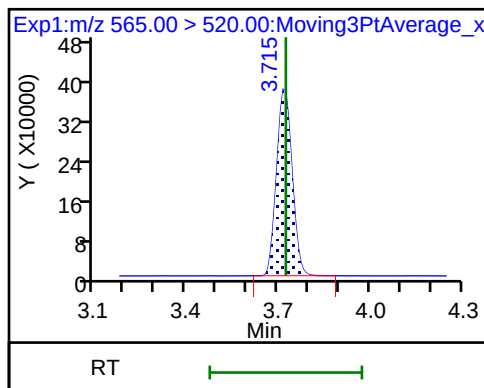
31 Perfluoroundecanoic acid (ND)



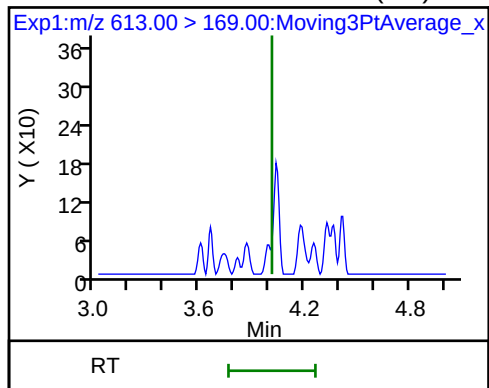
D 30 13C2 PFUnA

D 36 13C2 PFDaA

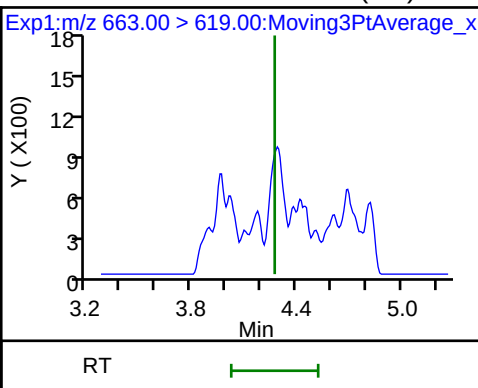
37 Perfluorododecanoic acid (ND)



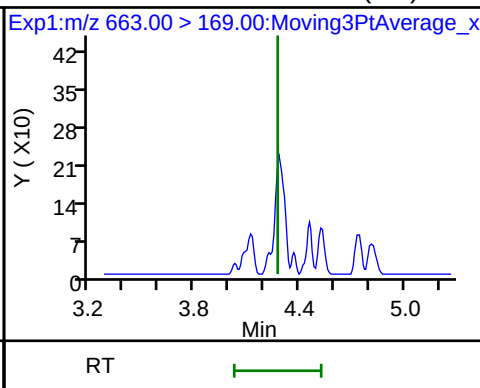
37 Perfluorododecanoic acid (ND)



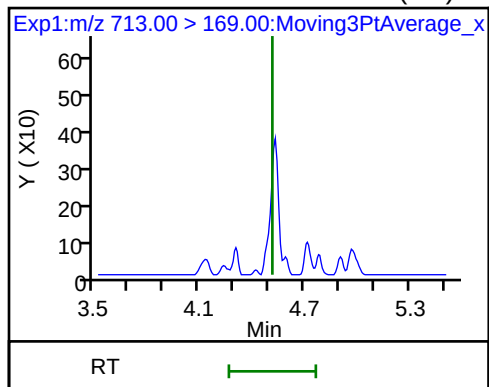
41 Perfluorotridecanoic acid (ND)



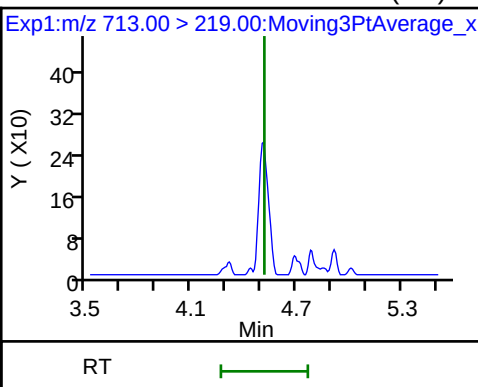
41 Perfluorotridecanoic acid (ND)



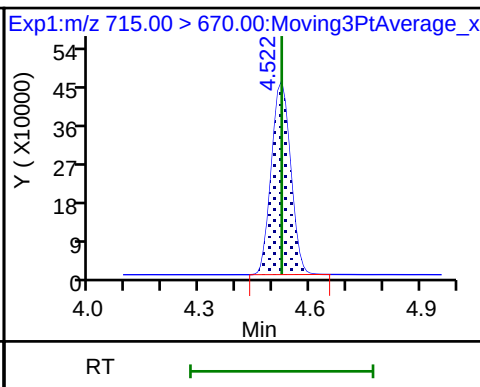
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2 PFTeDA



TestAmerica Sacramento

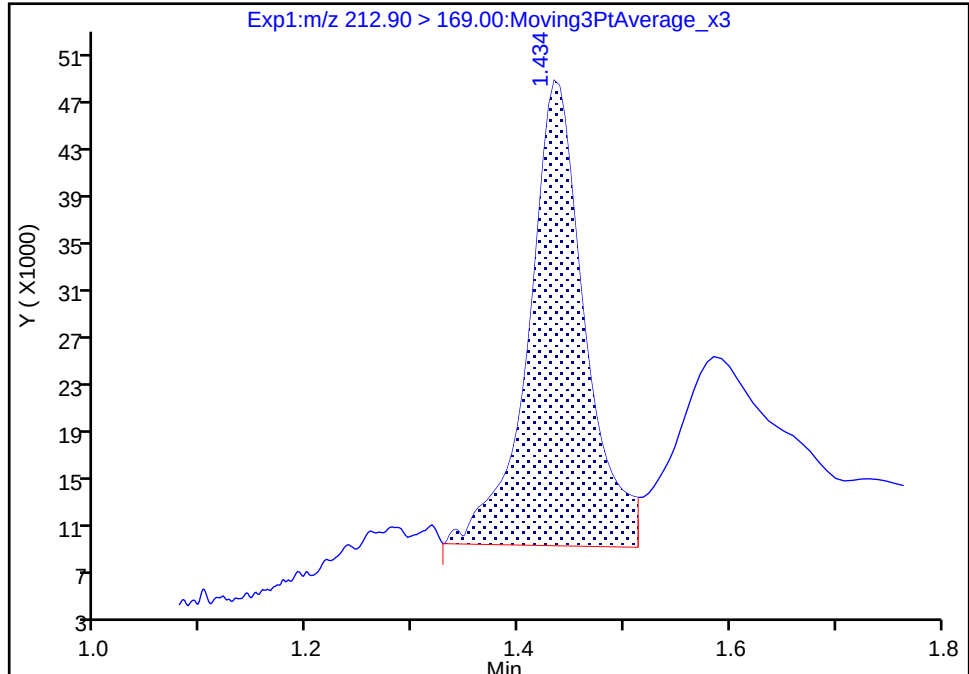
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Injection Date:	15-Oct-2018 08:57:27	Instrument ID:	A8_N		
Lims ID:	480-142679-C-3-A	Lab Sample ID:	320-142679-3		
Client ID:	EC-0006-05				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	52	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

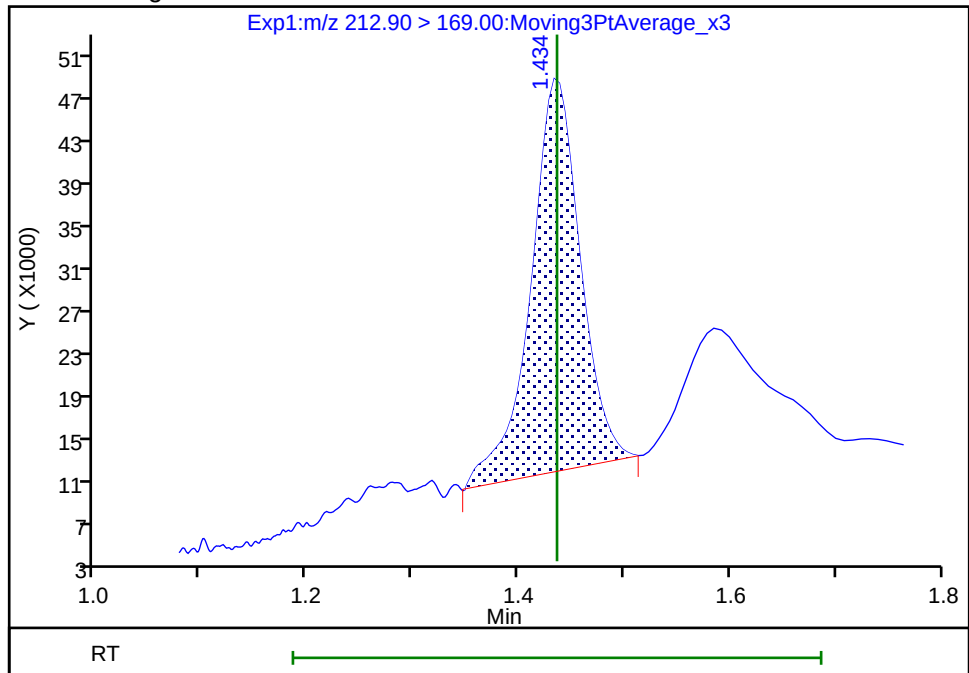
RT: 1.43
Area: 144408
Amount: 0.143273
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 118896
Amount: 0.117961
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:00:09
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 156 of 439

10/30/2018

TestAmerica Sacramento

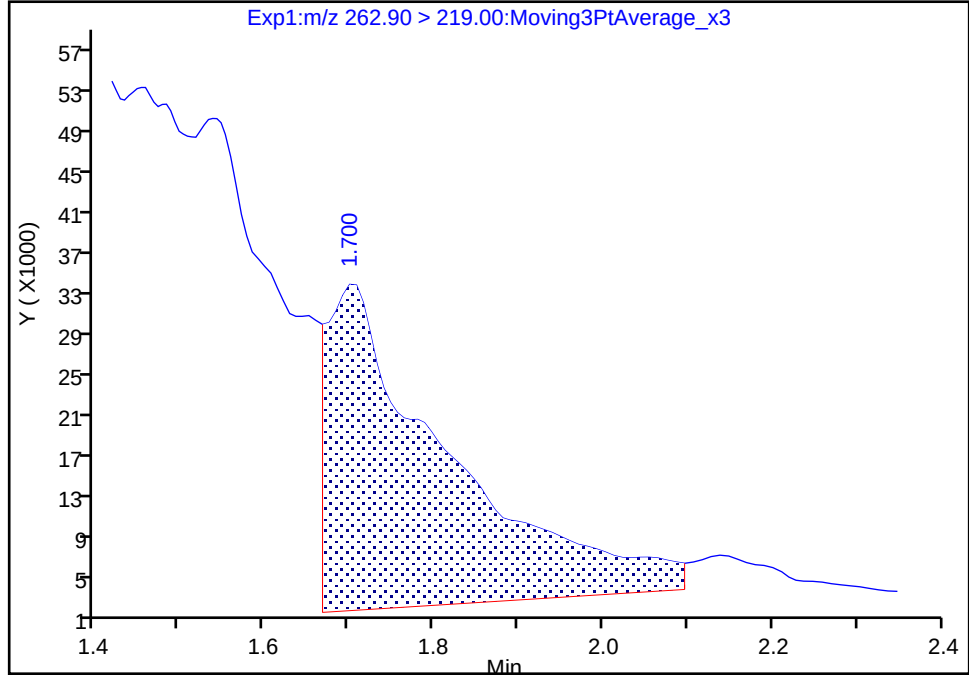
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_067.d				
Injection Date:	15-Oct-2018 08:57:27	Instrument ID:	A8_N		
Lims ID:	480-142679-C-3-A	Lab Sample ID:	320-142679-3		
Client ID:	EC-0006-05				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	52	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

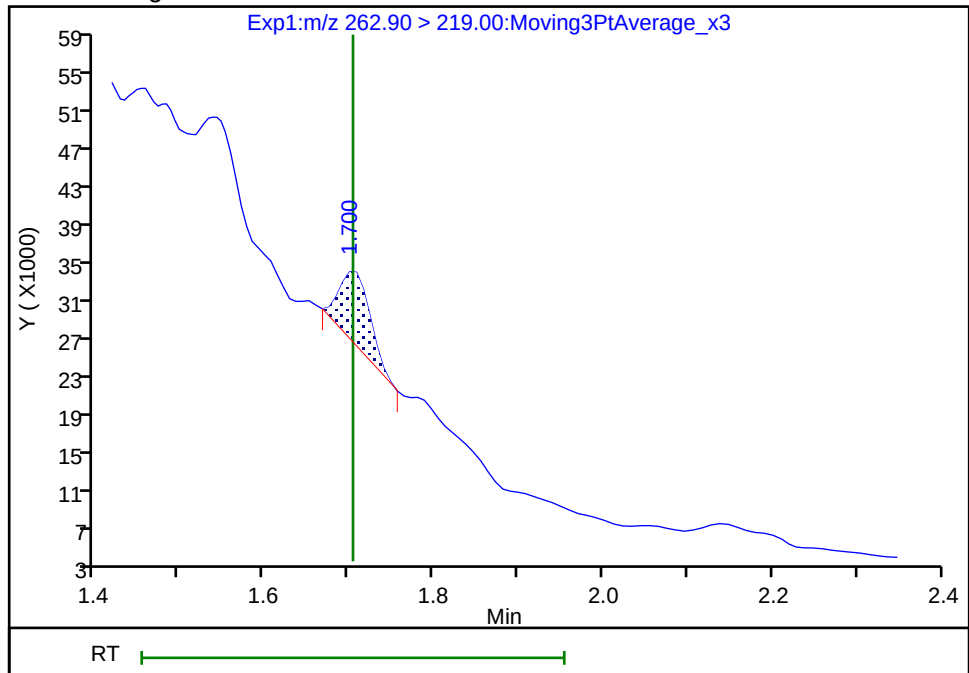
RT: 1.70
Area: 315801
Amount: 0.298671
Amount Units: ng/ml

Processing Integration Results



RT: 1.70
Area: 18541
Amount: 0.017535
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:00:29
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

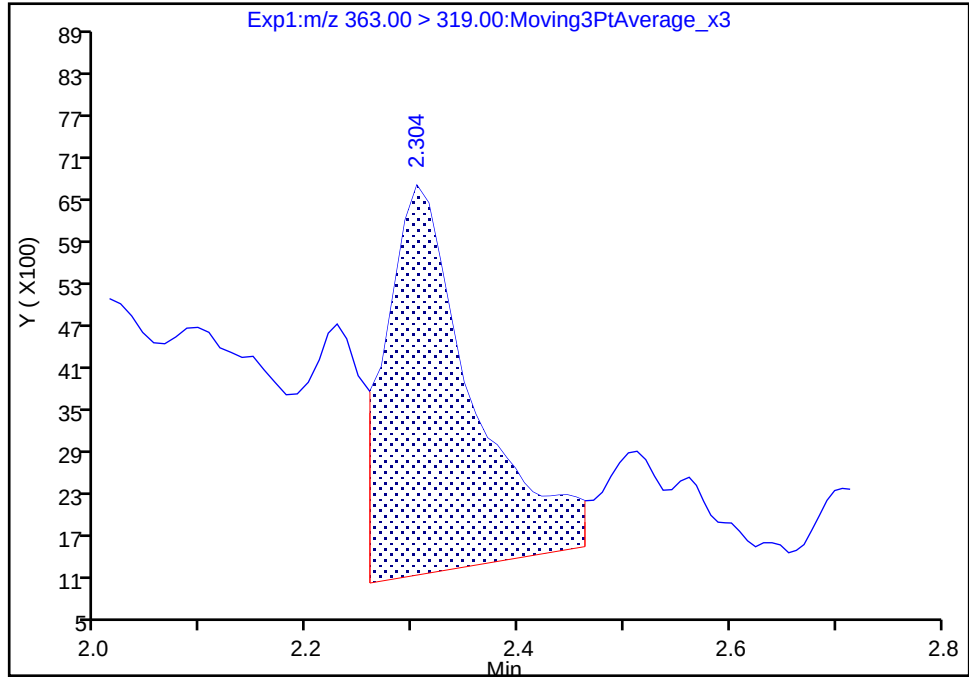
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_067.d				
Injection Date:	15-Oct-2018 08:57:27	Instrument ID:	A8_N		
Lims ID:	480-142679-C-3-A	Lab Sample ID:	320-142679-3		
Client ID:	EC-0006-05				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	52	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

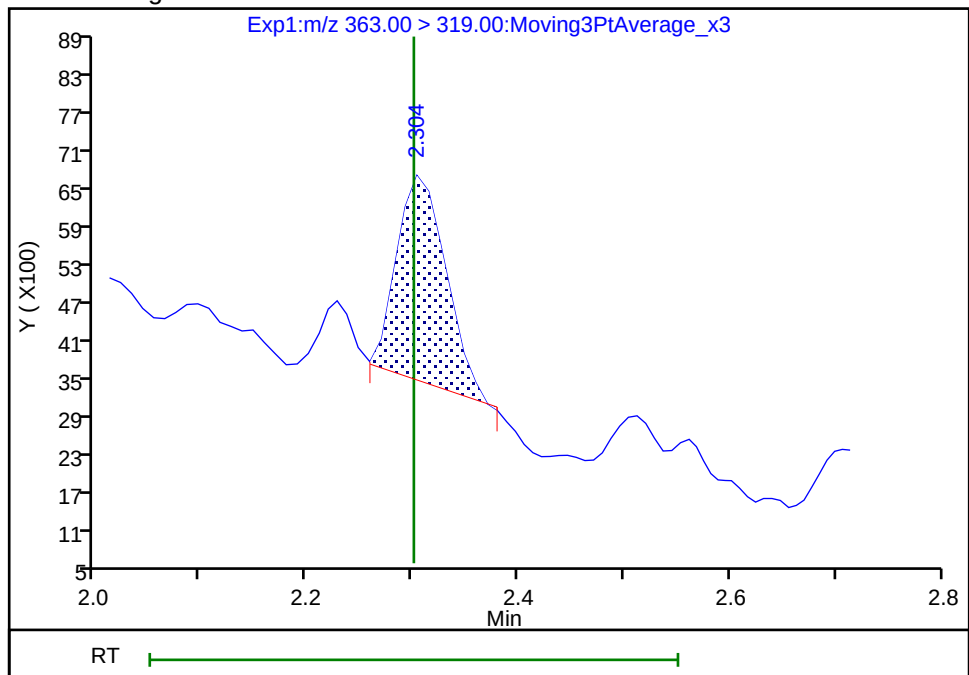
RT: 2.30
Area: 31337
Amount: 0.028521
Amount Units: ng/ml

Processing Integration Results



RT: 2.30
Area: 10466
Amount: 0.009525
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:02:01
Audit Action: Manually Integrated

Audit Reason: Isomers
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TestAmerica Sacramento

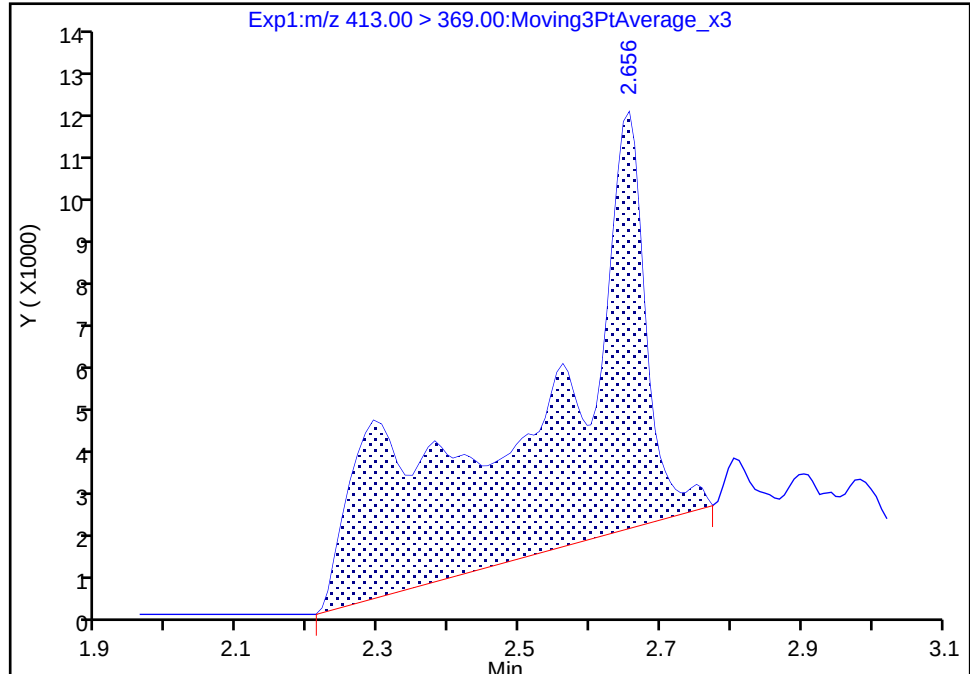
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_067.d				
Injection Date:	15-Oct-2018 08:57:27	Instrument ID:	A8_N		
Lims ID:	480-142679-C-3-A	Lab Sample ID:	320-142679-3		
Client ID:	EC-0006-05				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	52	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

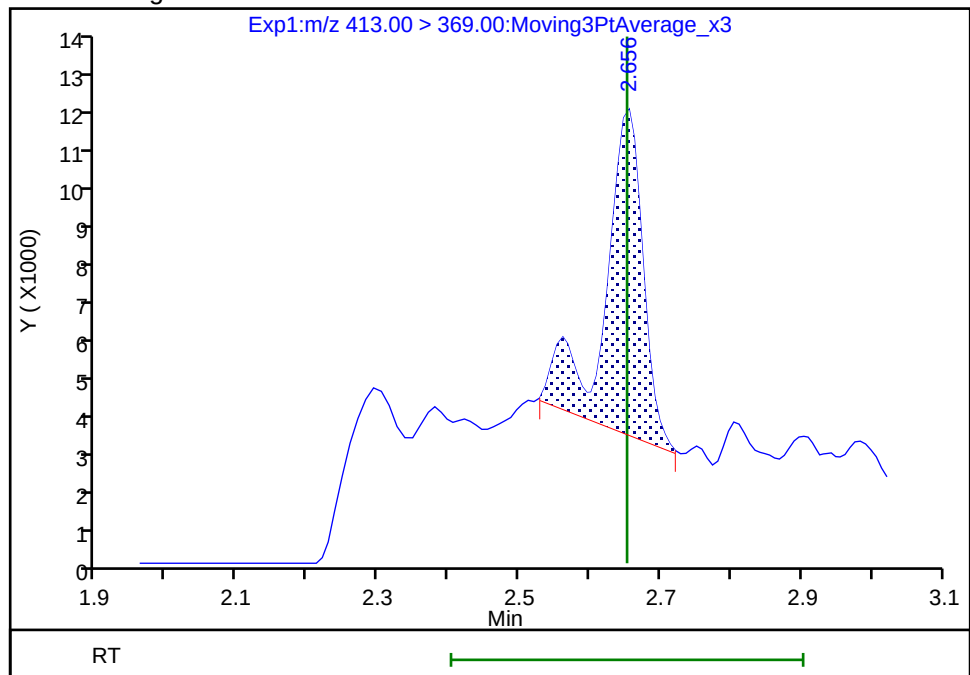
RT: 2.66
Area: 98943
Amount: 0.085112
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 30102
Amount: 0.025894
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:02:21
Audit Action: Manually Integrated

Audit Reason: Isomers
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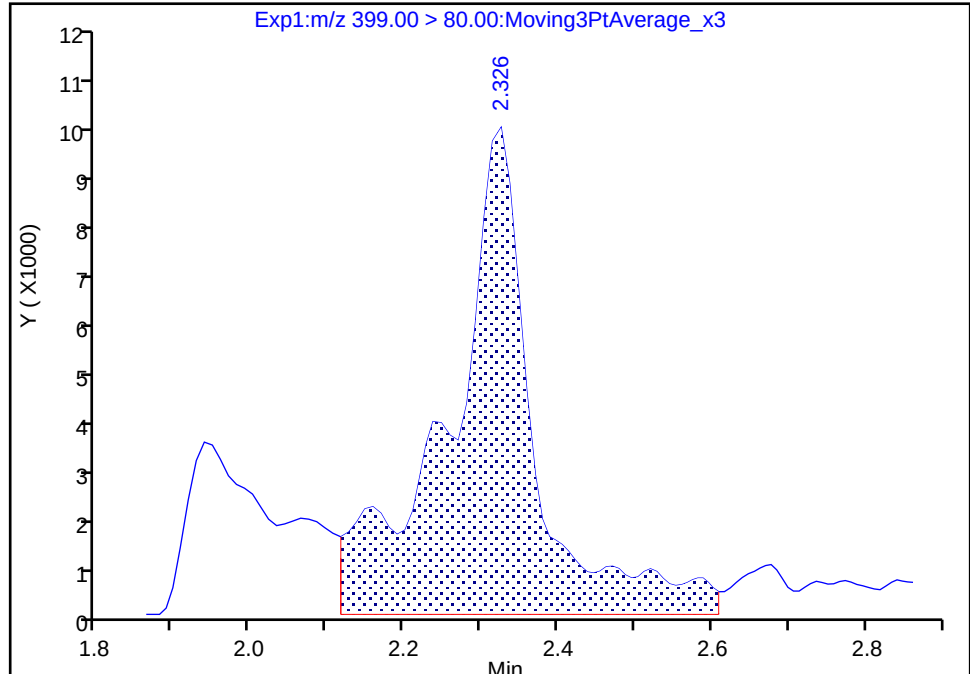
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Injection Date:	15-Oct-2018 08:57:27	Instrument ID:	A8_N		
Lims ID:	480-142679-C-3-A	Lab Sample ID:	320-142679-3		
Client ID:	EC-0006-05				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	52	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

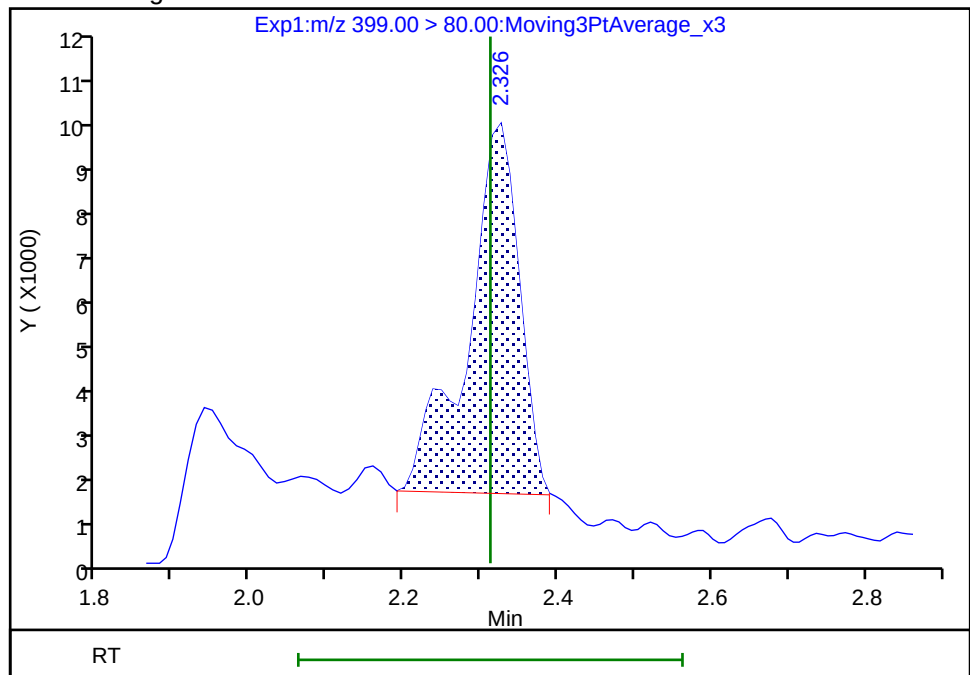
RT: 2.33
Area: 77439
Amount: 0.054013
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 38661
Amount: 0.026966
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:01:06
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

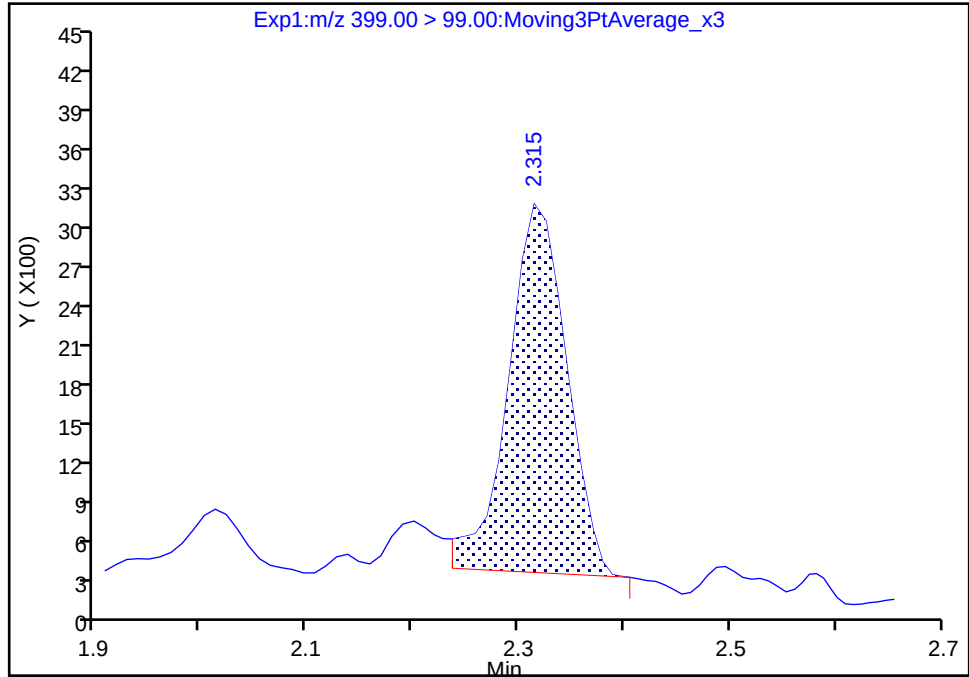
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_067.d
Injection Date: 15-Oct-2018 08:57:27 Instrument ID: A8_N
Lims ID: 480-142679-C-3-A Lab Sample ID: 320-142679-3
Client ID: EC-0006-05
Operator ID: SACINSTLCMS01 ALS Bottle#: 52 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

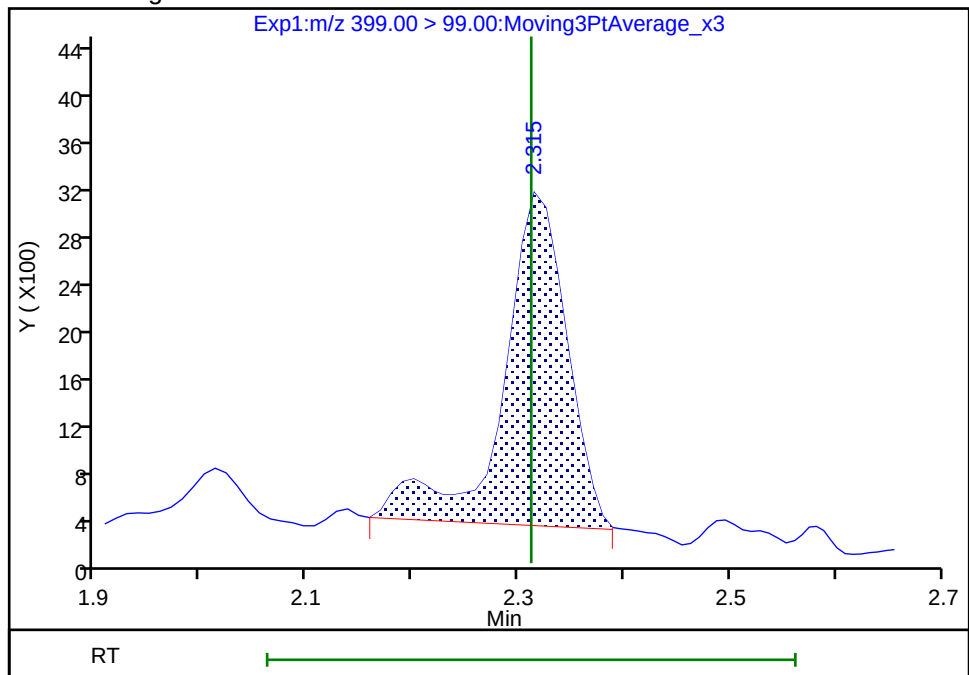
RT: 2.31
Area: 10812
Amount: 0.054013
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 11901
Amount: 0.026966
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:01:30

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

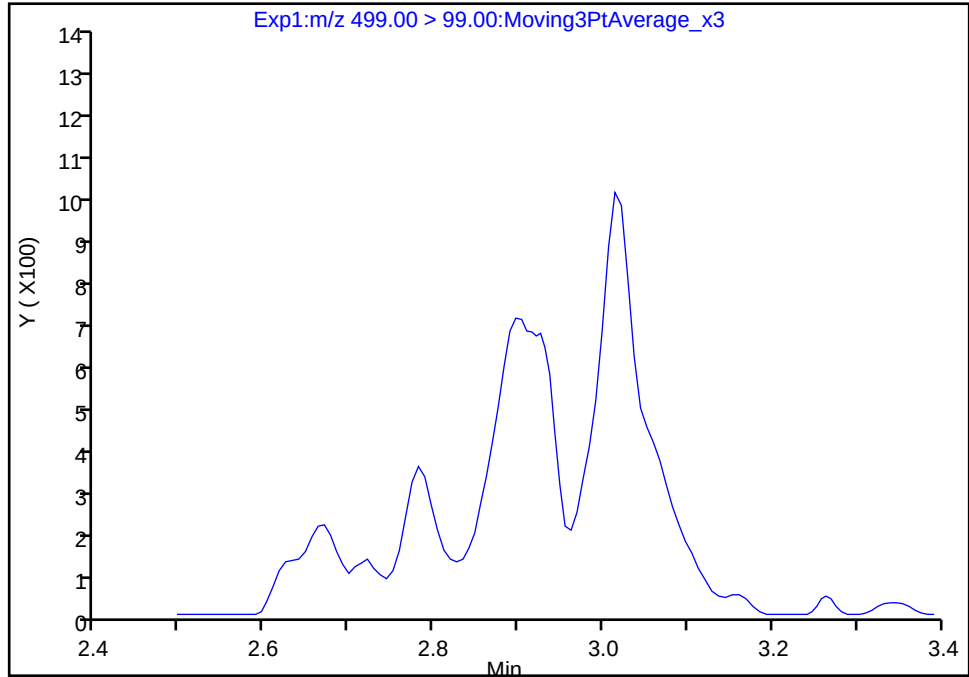
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Injection Date:	15-Oct-2018 08:57:27	Instrument ID:	A8_N		
Lims ID:	480-142679-C-3-A	Lab Sample ID:	320-142679-3		
Client ID:	EC-0006-05				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	52	Worklist Smp#:	8
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

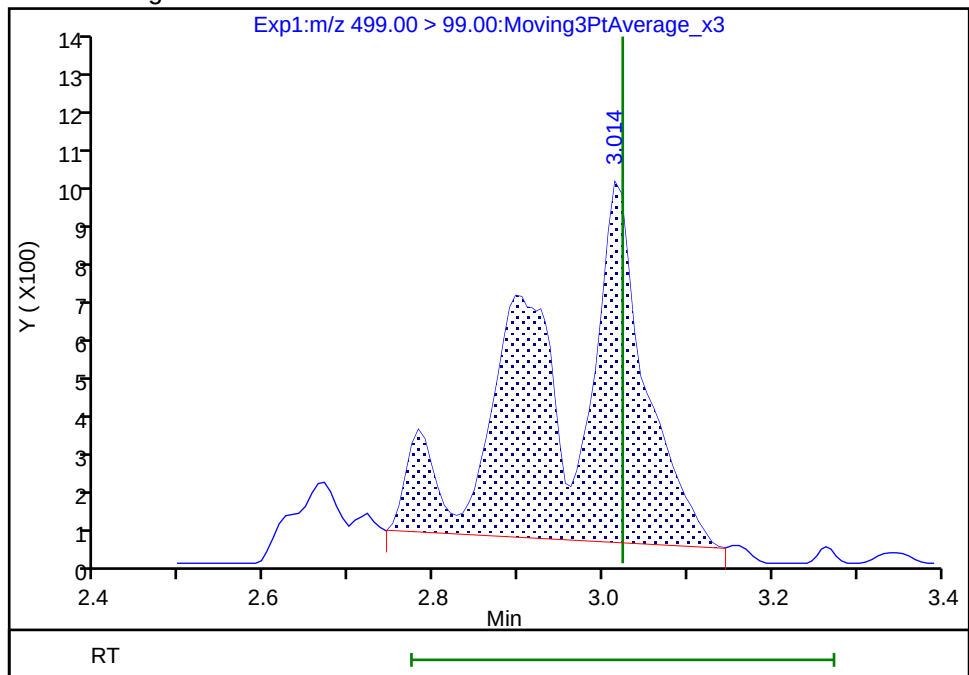
RT: 3.02
Area: 0
Amount: 0.039453
Amount Units: ng/ml

Processing Integration Results



RT: 3.01
Area: 7111
Amount: 0.039453
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:02:50
Audit Action: Manually Integrated

Audit Reason: Missed Peak
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-06</u>	Lab Sample ID: <u>480-142679-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_068.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 00:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>258.1 (mL)</u>	Date Analyzed: <u>10/15/2018 09:04</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	4.5		1.9	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.72	J	1.9	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.9	U	1.9	0.56
375-85-9	Perfluoroheptanoic acid (PFHpA)	0.38	J	1.9	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	1.0	J	1.9	0.82
375-95-1	Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.53
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.33	J	1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.2	J B	1.9	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.5	J	1.9	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.31
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.34
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	19	3.0
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	19	1.8
27619-97-2	6:2 FTS	19	U	19	1.9
39108-34-4	8:2 FTS	19	U	19	1.9

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-06</u>	Lab Sample ID: <u>480-142679-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_068.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 00:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>258.1 (mL)</u>	Date Analyzed: <u>10/15/2018 09:04</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	67		25-150
STL01893	13C5 PFPeA	89		25-150
STL00993	13C2 PFHxA	90		25-150
STL01892	13C4 PFHpA	89		25-150
STL00990	13C4 PFOA	94		25-150
STL00995	13C5 PFNA	91		25-150
STL00996	13C2 PFDA	88		25-150
STL00997	13C2 PFUnA	86		25-150
STL00998	13C2 PFDoA	83		25-150
STL02116	13C2 PFTeDA	84		25-150
STL02337	13C3 PFBS	101		25-150
STL00994	18O2 PFHxS	93		25-150
STL00991	13C4 PFOS	92		25-150
STL01056	13C8 FOSA	88		25-150
STL02118	d3-NMeFOSAA	111		25-150
STL02117	d5-NEtFOSAA	103		25-150
STL02279	M2-6:2 FTS	134		25-150
STL02280	M2-8:2 FTS	96		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d
 Lims ID: 480-142679-C-4-A
 Client ID: EC-0006-06
 Sample Type: Client
 Inject. Date: 15-Oct-2018 09:04:52 ALS Bottle#: 53 Worklist Smp#: 9
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142679-c-4-a
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 15:07:06

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.428	1.434	-0.006	0.540	2695369	1.68		67.1	5095	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.428	1.436	-0.008	1.000	113131	0.1171			8.9	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.692	1.700	-0.008	0.639	2345875	2.23		89.1	2410	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.684	1.704	-0.020	0.995	18885	0.0187			0.3	M
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.732	1.736	-0.004	1.000	14581	0.008441			0.6	M
298.90 > 99.00	1.732	1.736	-0.004	1.000	9150		1.59(1.25-3.74)		1.4	
D 47 13C3 PFBS										
301.90 > 83.00	1.732	1.740	-0.008	0.654	51106	2.36		101	88.8	
D 7 13C2 PFHxA										
315.00 > 270.00	1.970	1.981	-0.011	0.744	2606552	2.24		89.7	6753	
10 Perfluoroheptanoic acid										M
363.00 > 319.00	2.292	2.301	-0.009	0.995	9704	0.009686			0.9	M
363.00 > 169.00	2.292	2.301	-0.009	0.995	4079		2.38(1.13-3.40)		3.2	M
D 9 13C4 PFHpA										
367.00 > 322.00	2.303	2.303	0.0	0.870	2359750	2.22		88.9	5716	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.314	2.312	0.002	1.000	40106	0.0306			7.8	M
399.00 > 99.00	2.314	2.312	0.002	1.000	13333		3.01(1.50-4.49)		12.8	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.314	2.325	-0.011	0.874	2788483	2.19		92.6	6228	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.624	2.622	0.002	1.000	1782	0.004364			15.3	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.624	2.624	0.0	0.991	633807	3.18		134	707	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2 PFOA										
415.00 > 370.00	2.647	2.653	-0.006		2556904	2.50			7151	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.647	2.653	-0.006	1.000	29038	0.0269			2.4	M
413.00 > 169.00	2.647	2.653	-0.006	1.000	27098		1.07(0.84-2.52)		25.5	M
D 14 13C4 PFOA										
417.00 > 372.00	2.647	2.655	-0.008	1.000	2330698	2.34		93.8	6727	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	2.889	3.023	-0.134	0.957	33137	0.0378			29.4	
499.00 > 99.00	3.023	3.023	0.0	1.001	0		0.00(2.31-6.93)			
D 18 13C4 PFOS										
503.00 > 80.00	3.020	3.028	-0.008	1.141	1866685	2.20		92.0	2208	
D 19 13C5 PFNA										
468.00 > 423.00	3.020	3.028	-0.008	1.141	1871098	2.26		90.5	5710	
D 21 13C8 FOSA										
506.00 > 78.00	3.362	3.370	-0.008	1.270	2720056	2.21		88.5	5705	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.370	3.377	-0.007	1.273	481238	2.29		95.5	1631	
D 23 13C2 PFDA										
515.00 > 470.00	3.384	3.392	-0.008	1.278	1611726	2.21		88.5	3790	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.537	3.545	-0.008	1.336	1027708	2.76		111	2200	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.707	3.716	-0.009	1.400	995479	2.56		103	1343	
D 30 13C2 PFUnA										
565.00 > 520.00	3.716	3.724	-0.008	1.404	1261008	2.15		86.1	3077	
D 36 13C2 PFDoA										
615.00 > 570.00	4.012	4.012	0.0	1.516	1283231	2.09		83.5	2700	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.513	4.523	-0.010	1.705	1579751	2.10		84.0	3454	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d

Injection Date: 15-Oct-2018 09:04:52

Instrument ID: A8_N

Lims ID: 480-142679-C-4-A

Lab Sample ID: 320-142679-4

Client ID: EC-0006-06

Operator ID: SACINSTLCMS01

ALS Bottle#: 53

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

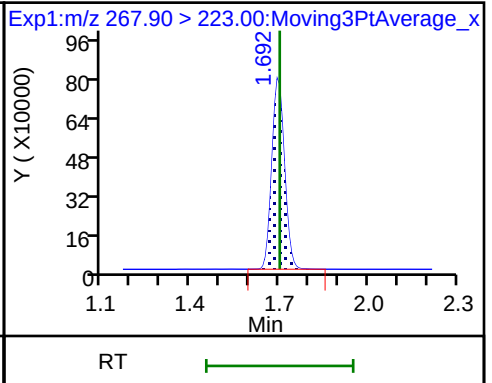
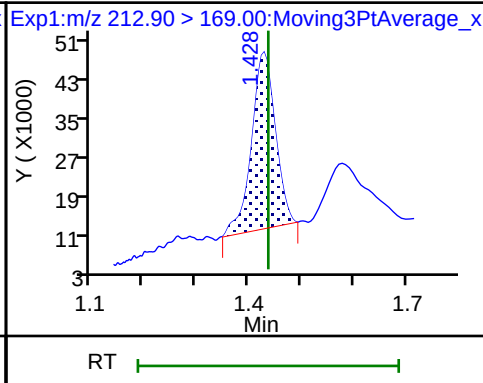
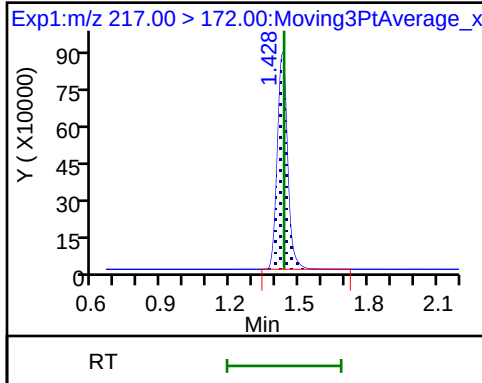
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

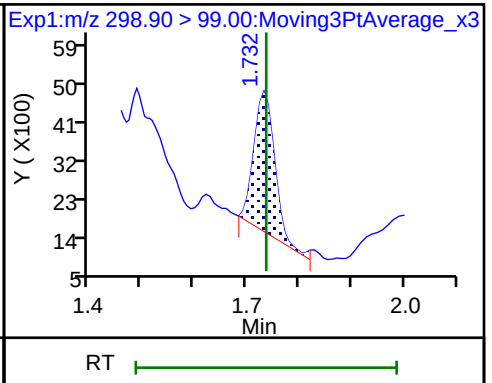
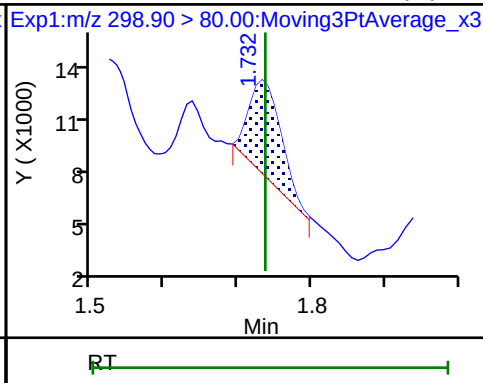
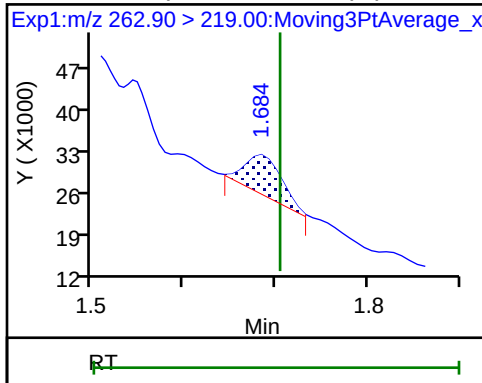
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

5 Perfluorobutanesulfonic acid (M)

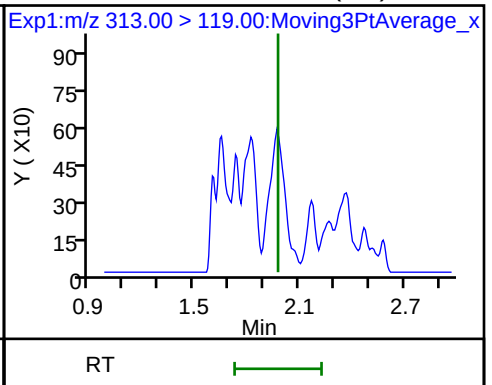
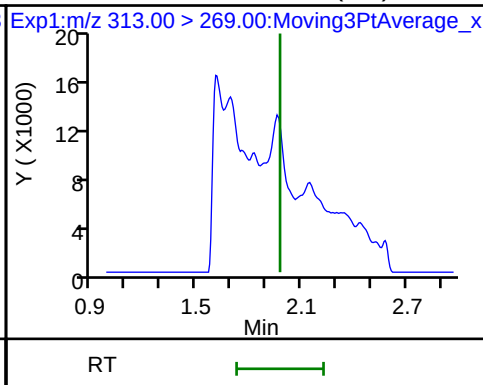
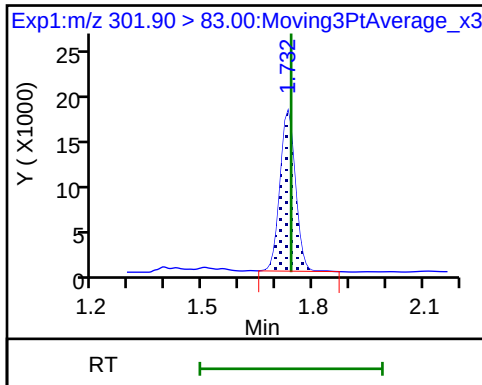
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

6 Perfluorohexanoic acid (ND)

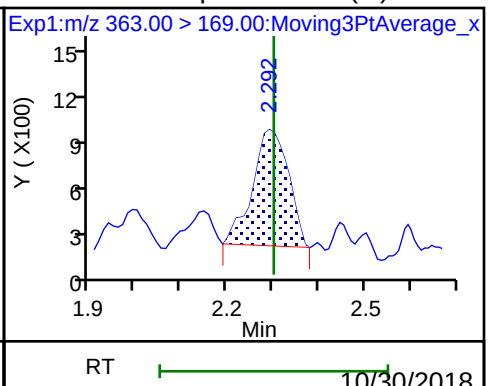
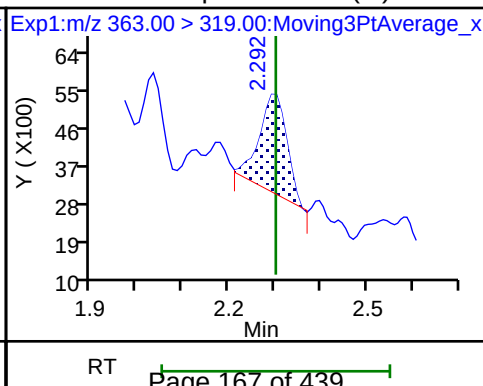
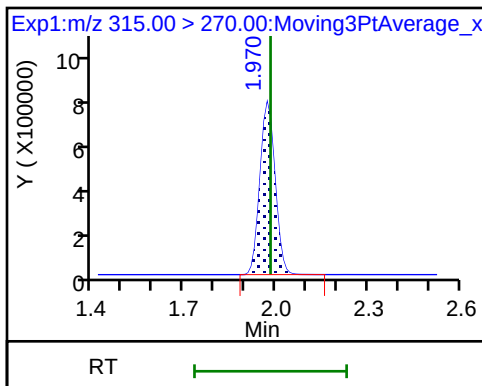
6 Perfluorohexanoic acid (ND)



D 7 13C2 PFHxA

10 Perfluoroheptanoic acid (M)

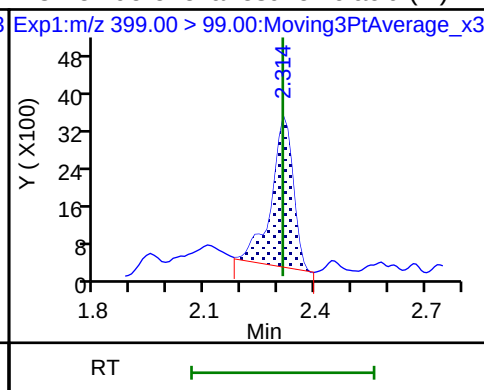
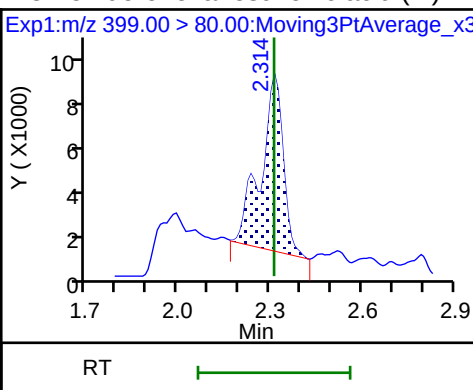
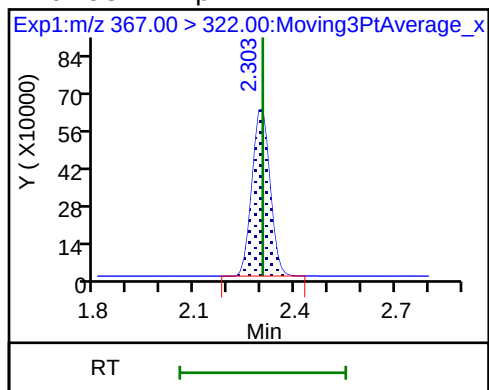
10 Perfluoroheptanoic acid (M)



D 9 13C4 PFHpA

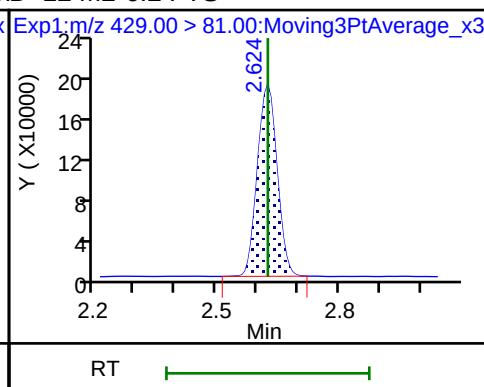
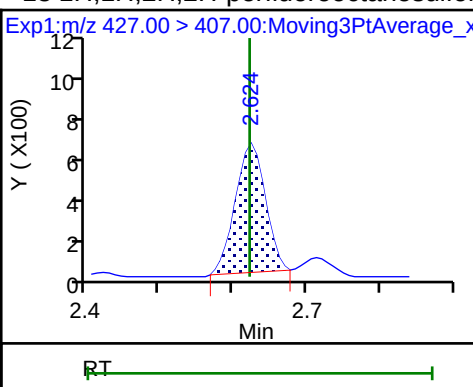
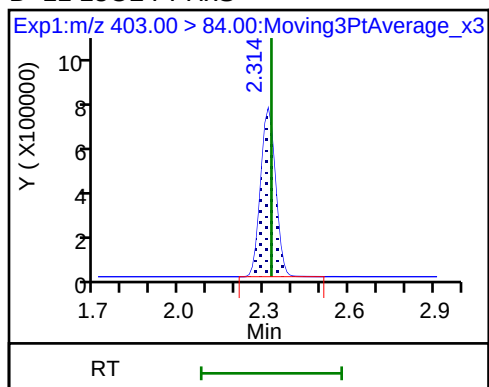
8 Perfluorohexanesulfonic acid (M)

8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

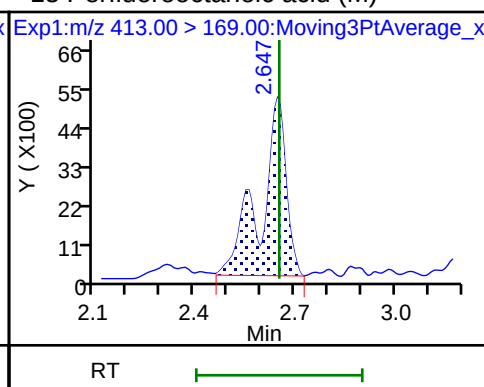
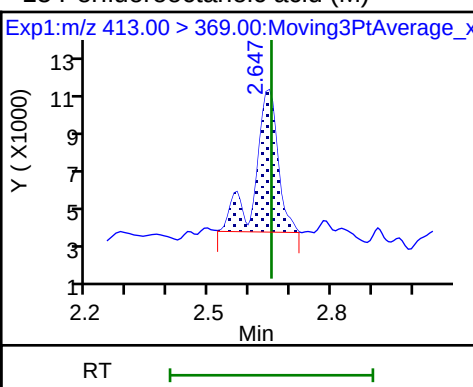
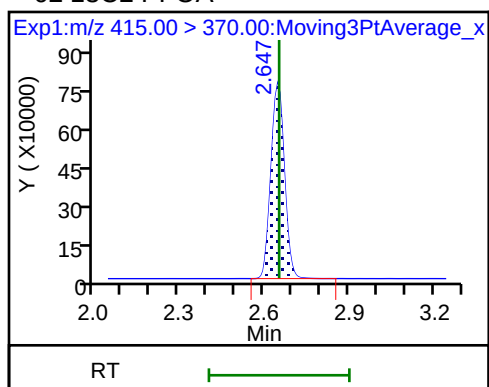
13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS



* 62 13C2 PFOA

15 Perfluorooctanoic acid (M)

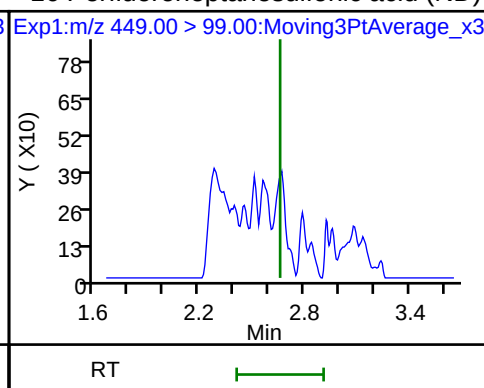
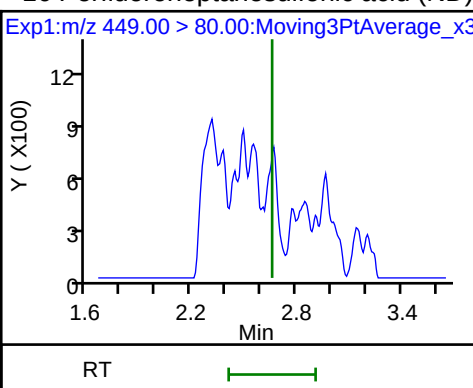
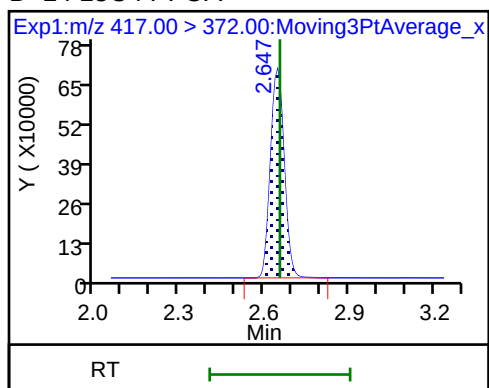
15 Perfluorooctanoic acid (M)

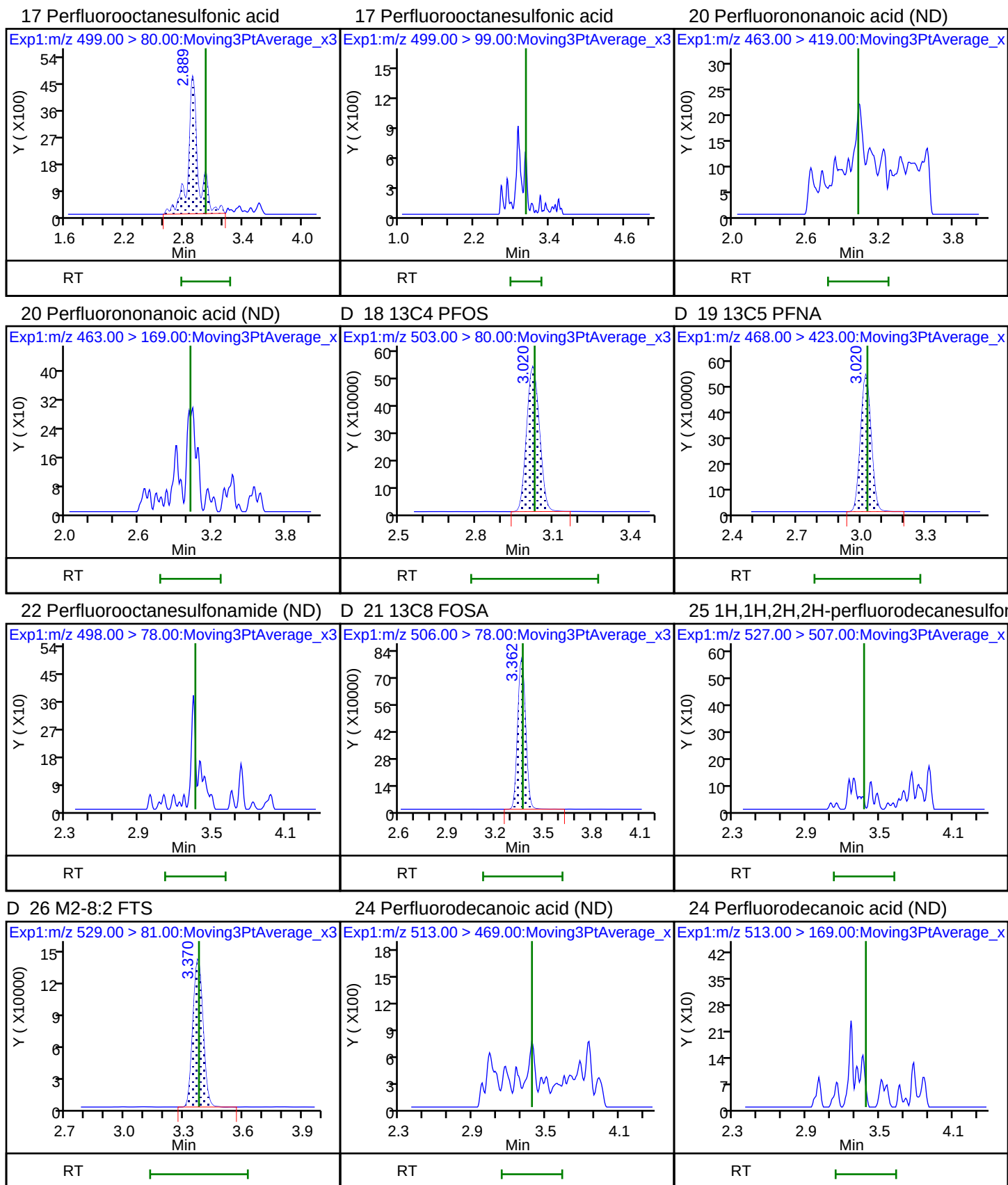


D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid (ND)

16 Perfluoroheptanesulfonic acid (ND)

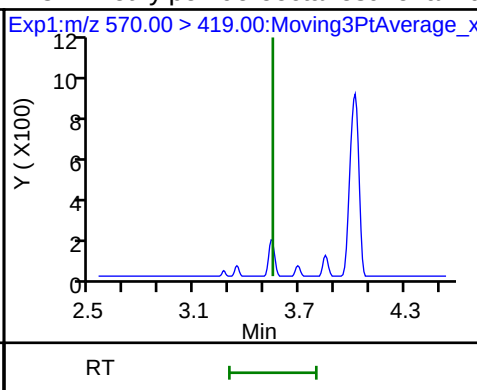
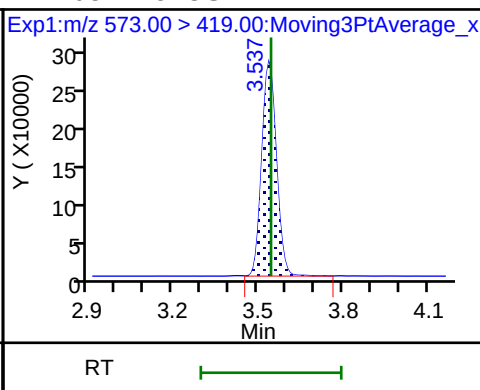
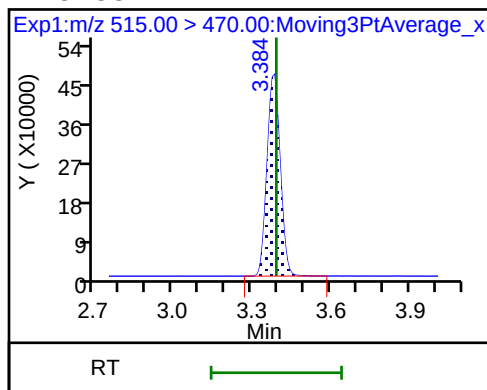




D 23 13C2 PFDA

D 27 d3-NMeFOSAA

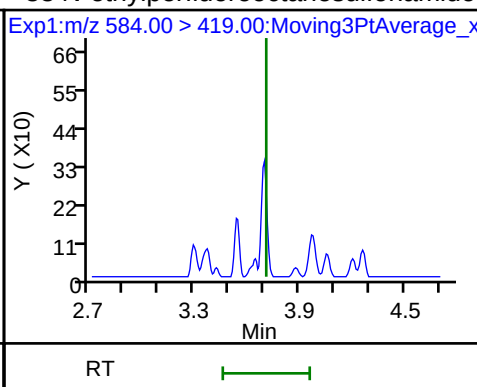
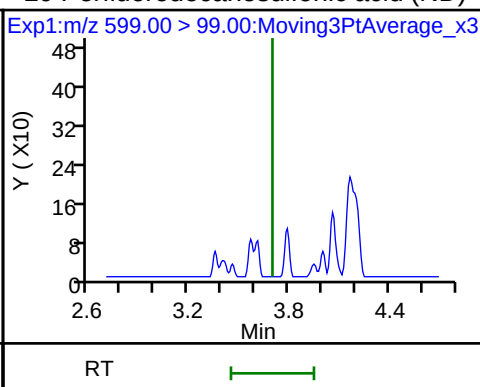
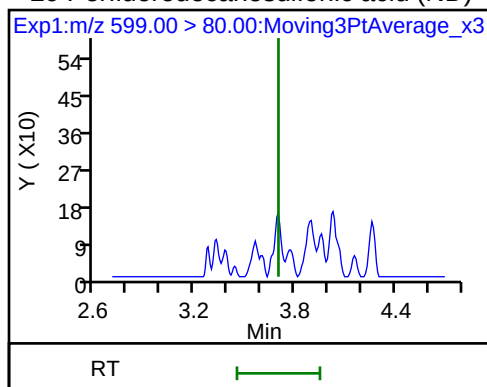
28 N-methylperfluorooctanesulfonamido (ND)



29 Perfluorodecanesulfonic acid (ND)

29 Perfluorodecanesulfonic acid (ND)

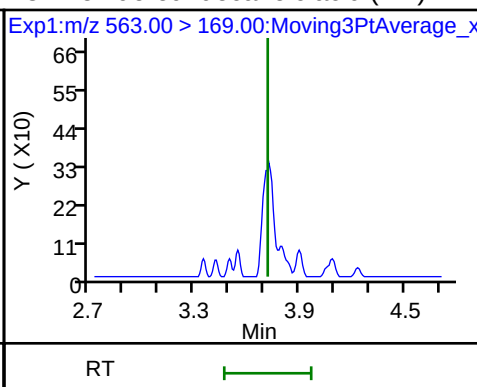
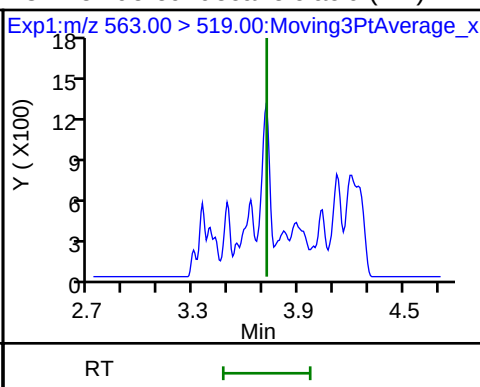
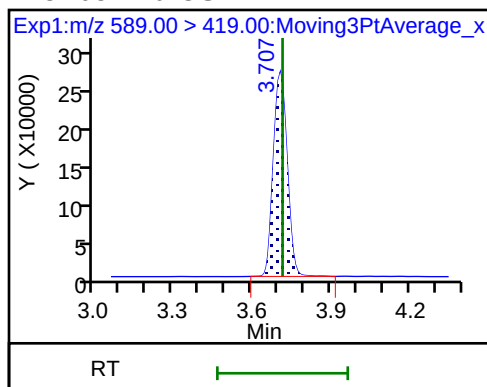
33 N-ethylperfluorooctanesulfonamidoa (ND)



D 32 d5-NEtFOSAA

31 Perfluoroundecanoic acid (ND)

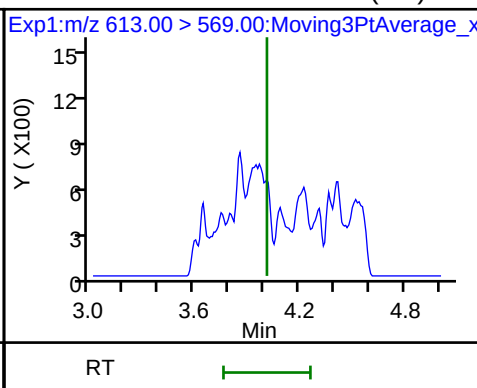
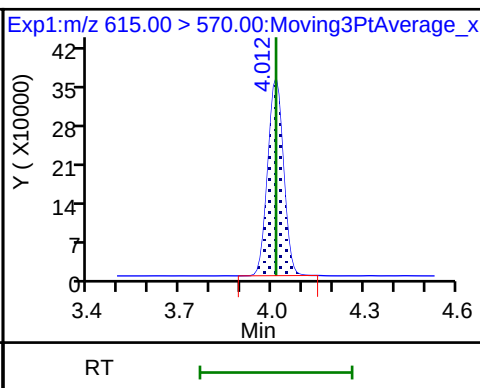
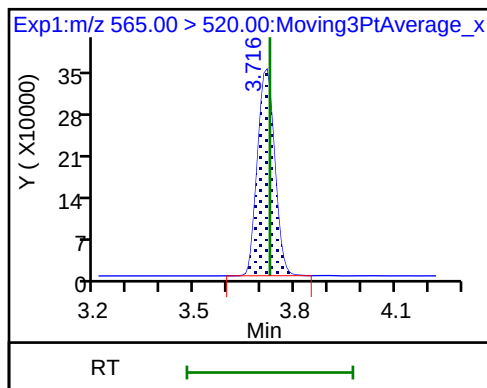
31 Perfluoroundecanoic acid (ND)



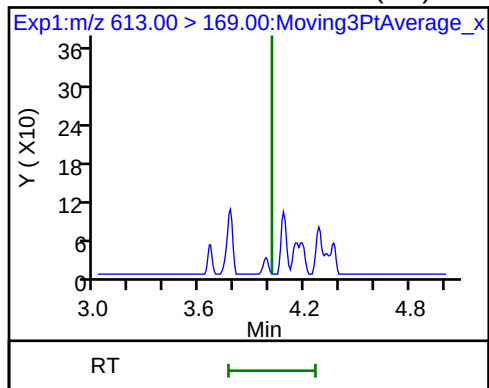
D 30 13C2 PFUnA

D 36 13C2 PFDaA

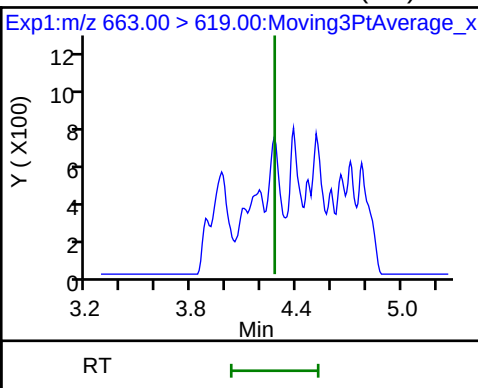
37 Perfluorododecanoic acid (ND)



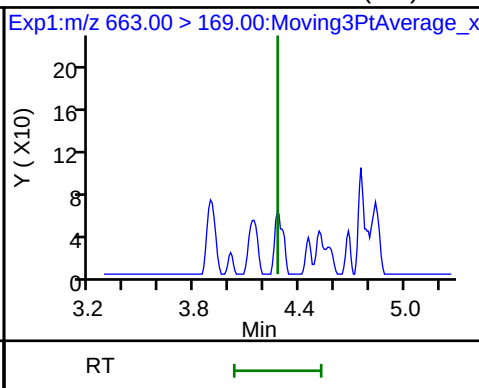
37 Perfluorododecanoic acid (ND)



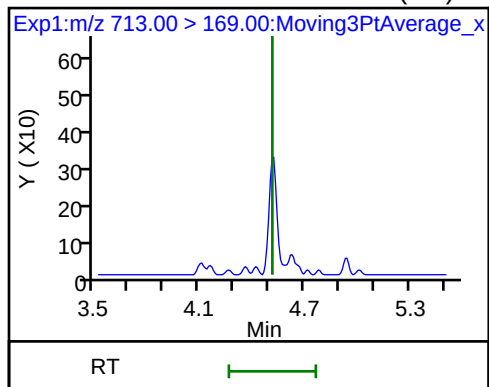
41 Perfluorotridecanoic acid (ND)



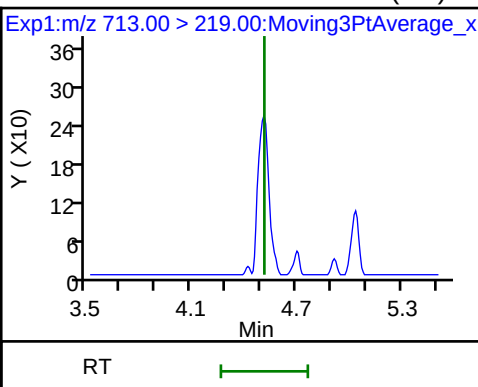
41 Perfluorotridecanoic acid (ND)



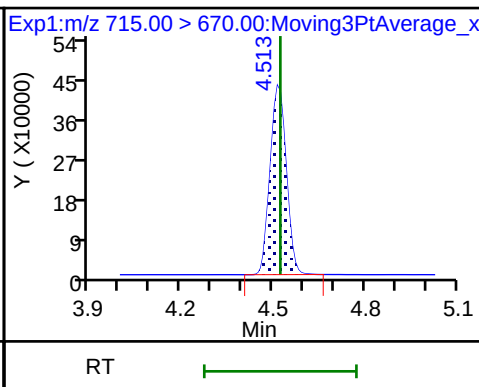
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2 PFTeDA



TestAmerica Sacramento

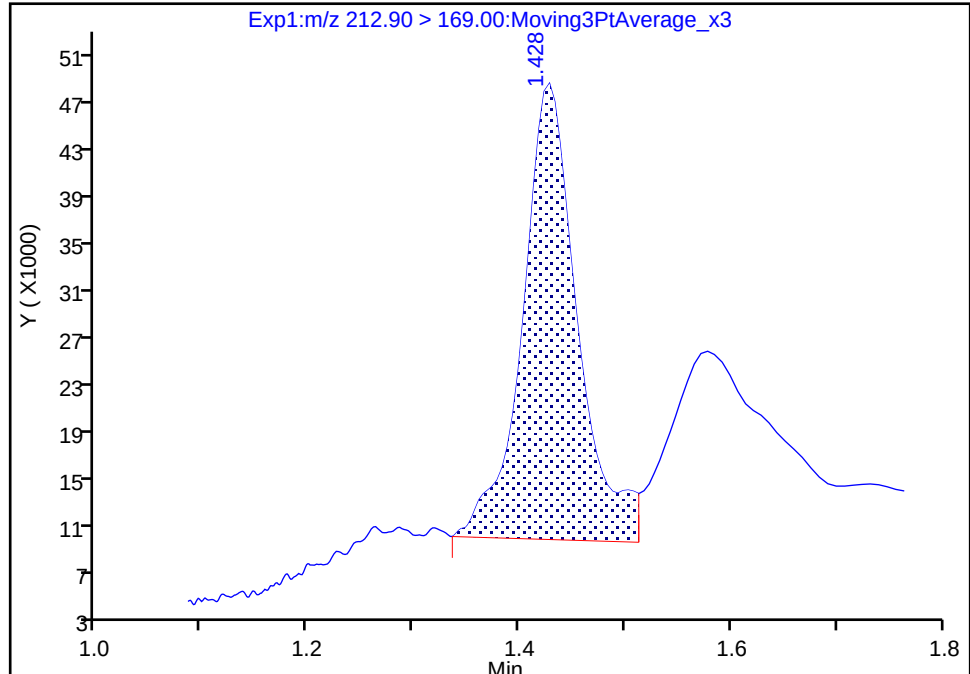
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d				
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N		
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4		
Client ID:	EC-0006-06				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

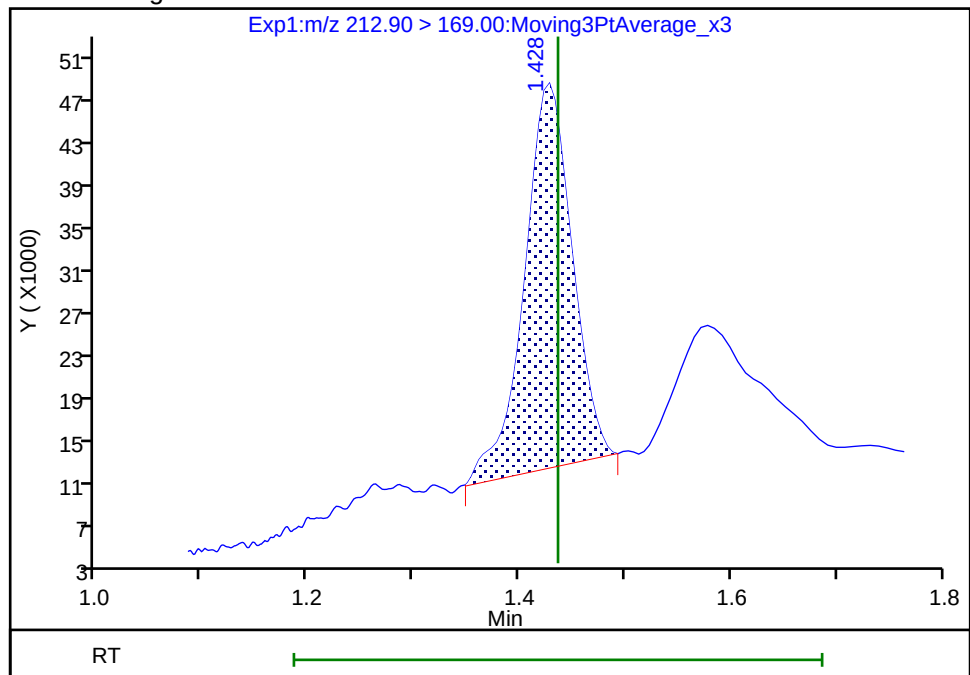
RT: 1.43
Area: 139329
Amount: 0.144209
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 113131
Amount: 0.117093
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:04:09

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

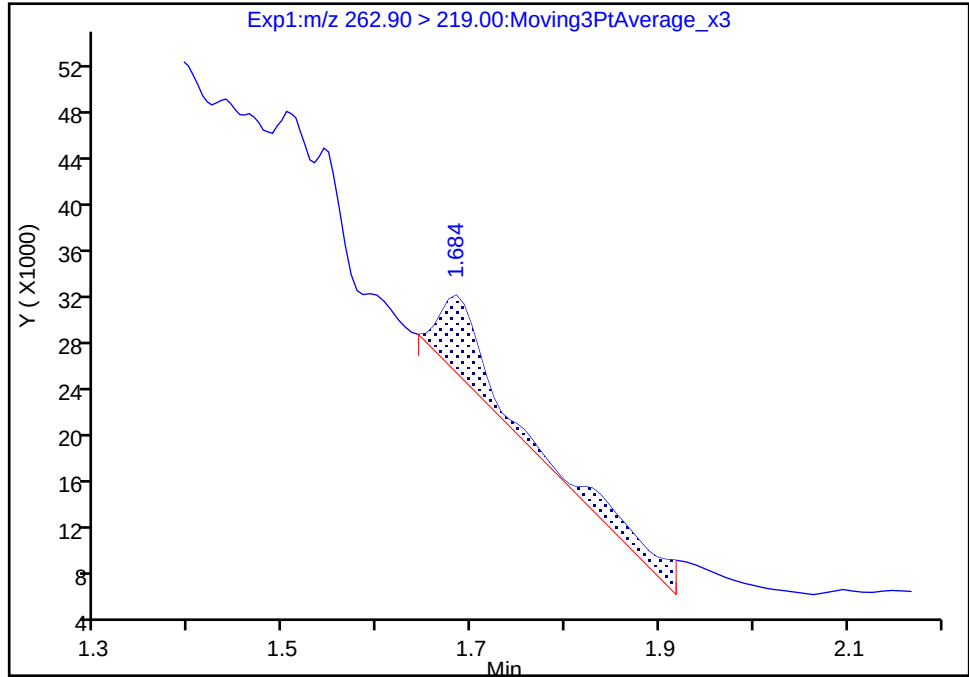
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d				
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N		
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4		
Client ID:	EC-0006-06				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

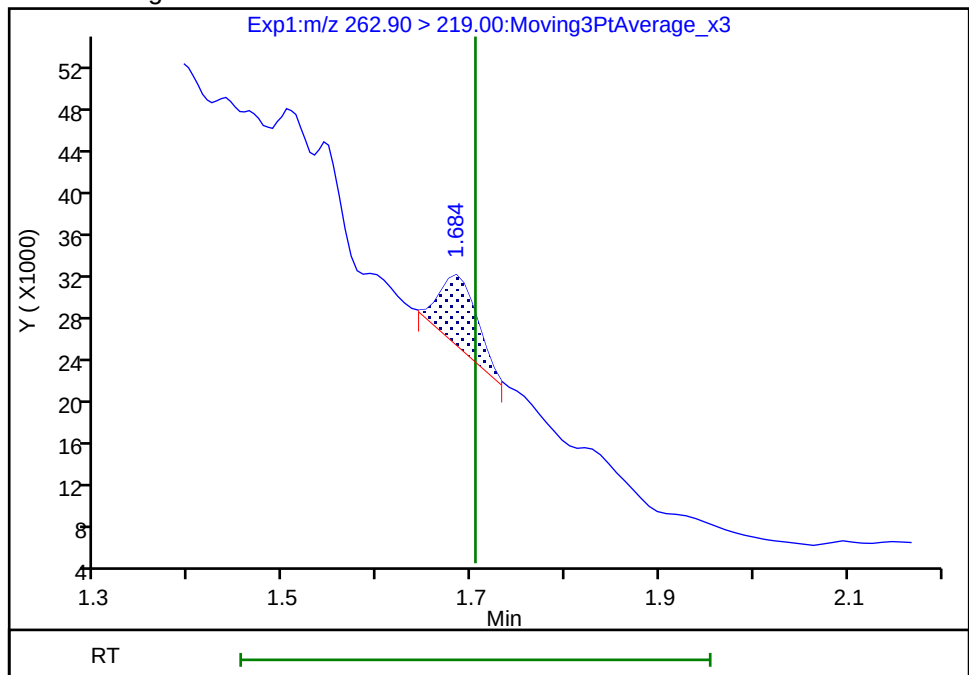
RT: 1.68
Area: 32373
Amount: 0.031984
Amount Units: ng/ml

Processing Integration Results



RT: 1.68
Area: 18885
Amount: 0.018658
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:04:28
Audit Action: Manually Integrated

Audit Reason: Baseline
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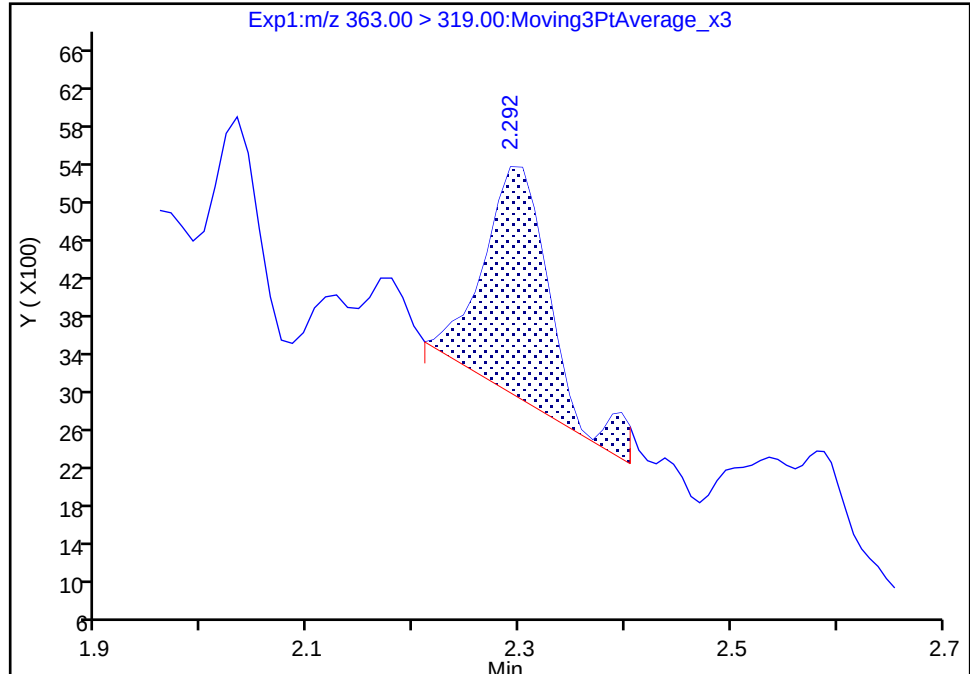
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d				
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N		
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4		
Client ID:	EC-0006-06				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

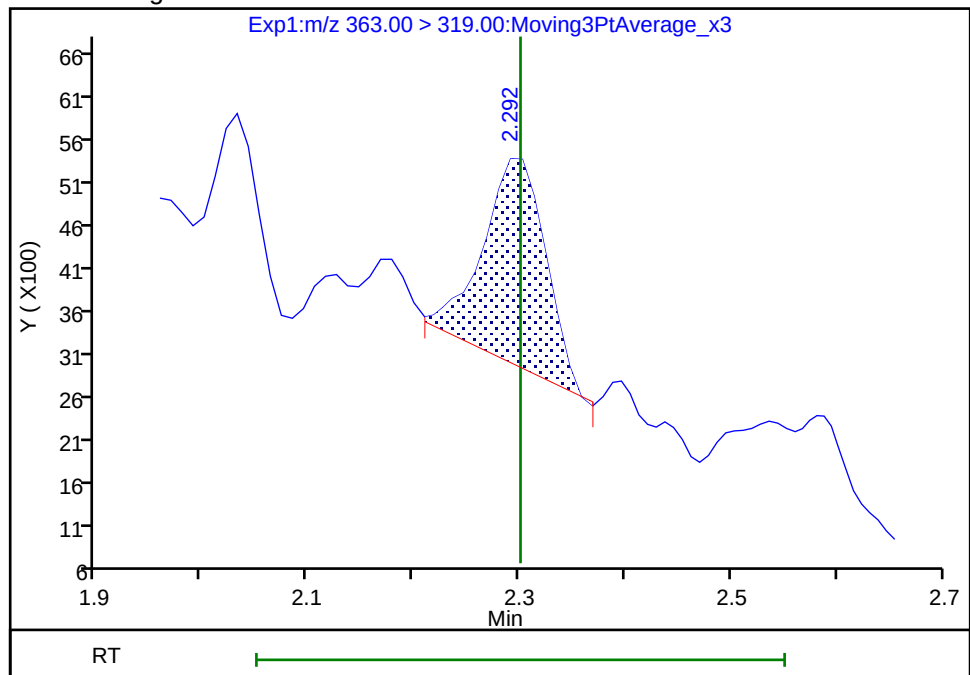
RT: 2.29
Area: 10380
Amount: 0.010361
Amount Units: ng/ml

Processing Integration Results



RT: 2.29
Area: 9704
Amount: 0.009686
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:06:01
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

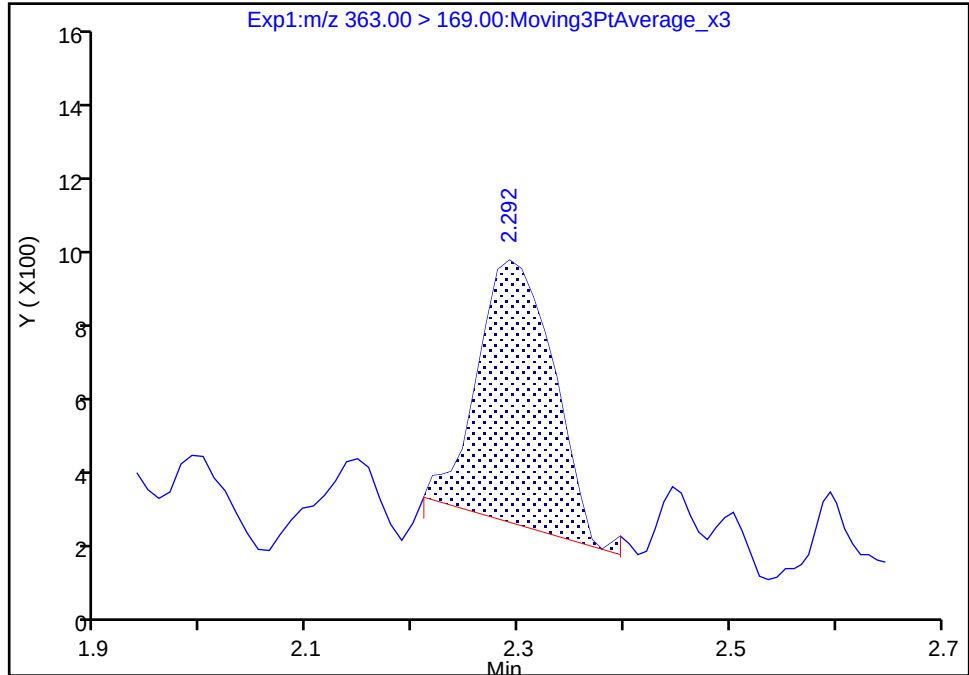
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d		
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4
Client ID:	EC-0006-06		
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	A8_N	Limit Group:	LC PFC ICAL
Column:		Detector:	EXP1
		Worklist Smp#:	9

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

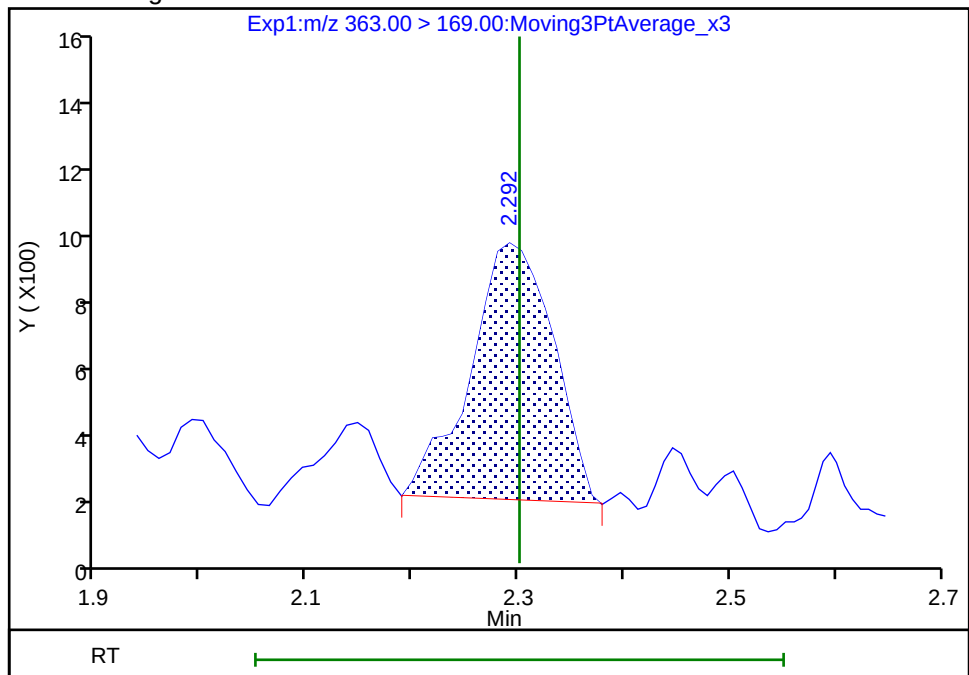
RT: 2.29
Area: 3487
Amount: 0.010361
Amount Units: ng/ml

Processing Integration Results



RT: 2.29
Area: 4079
Amount: 0.009686
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:06:14

Audit Action: Manually Integrated

Audit Reason: Baseline
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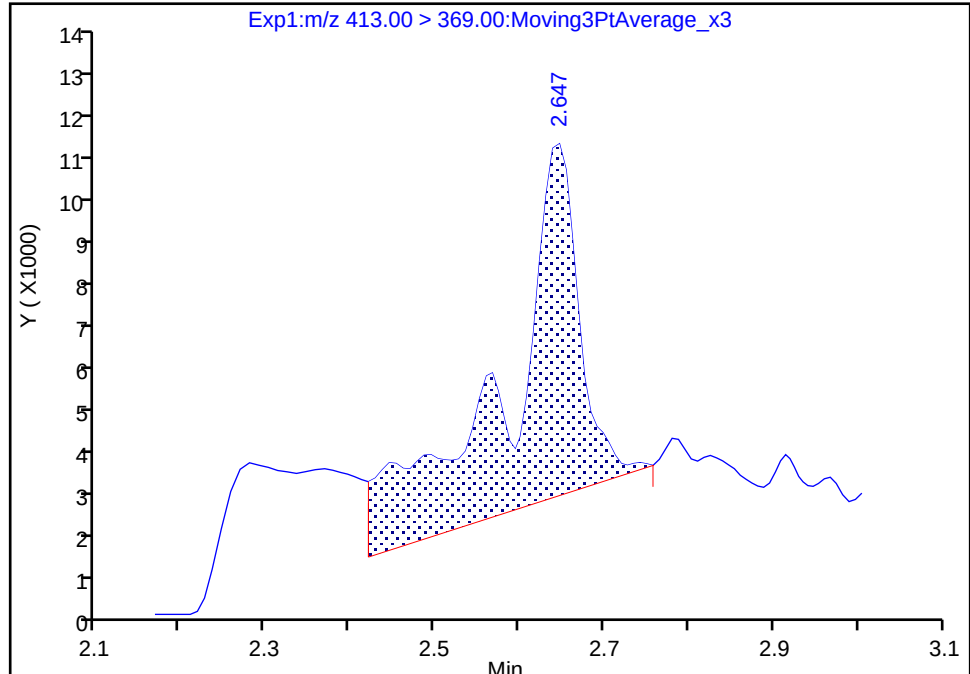
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d				
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N		
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4		
Client ID:	EC-0006-06				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

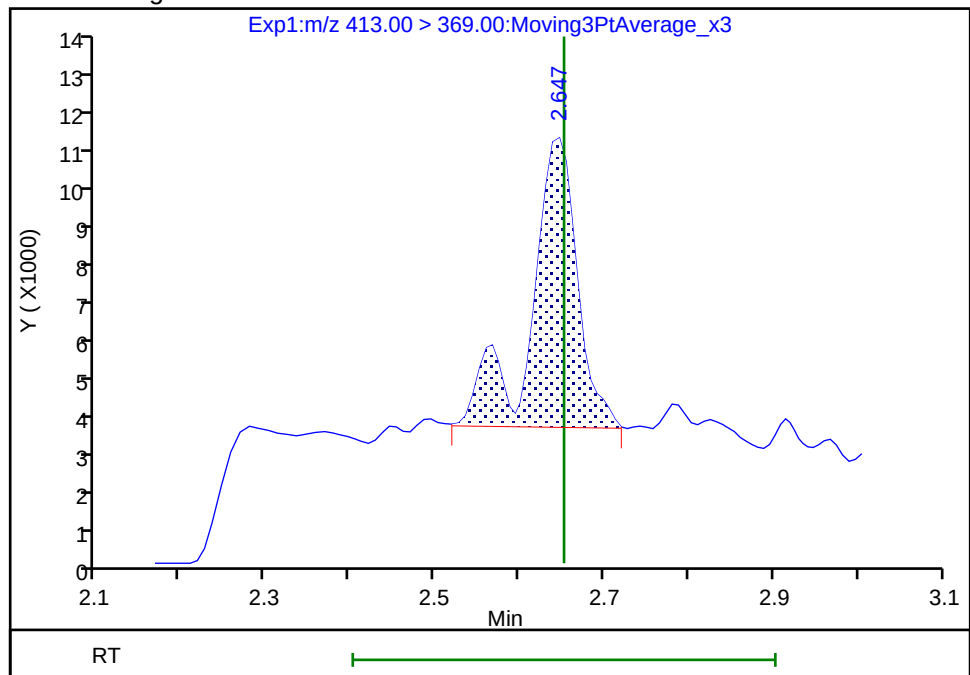
RT: 2.65
Area: 51790
Amount: 0.047921
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 29038
Amount: 0.026869
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:06:34
Audit Action: Manually Integrated

Audit Reason: Baseline
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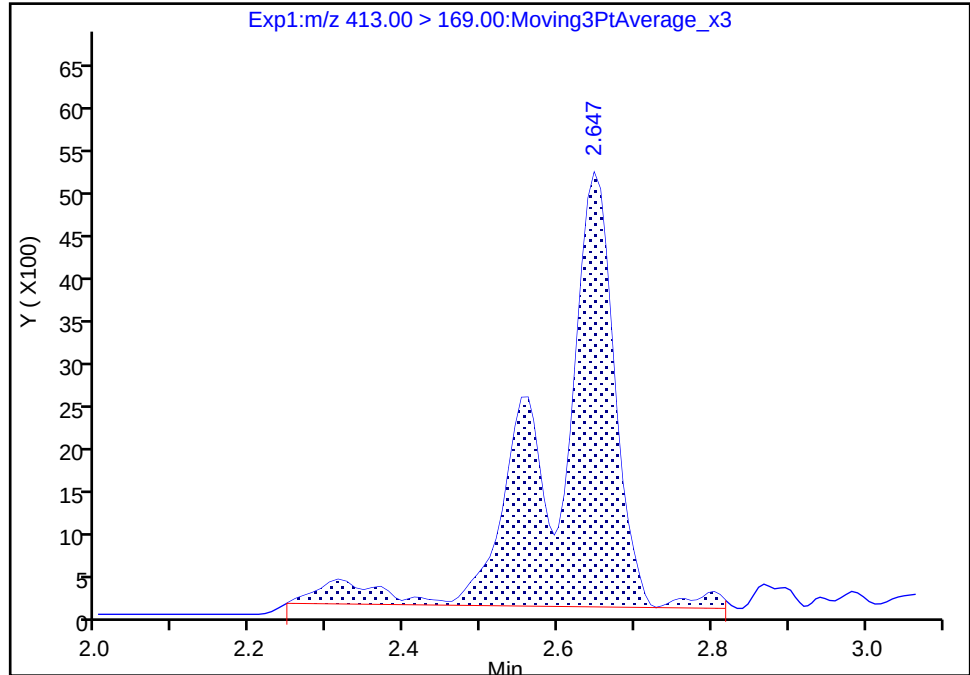
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d		
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4
Client ID:	EC-0006-06		
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	A8_N	Limit Group:	LC PFC ICAL
Column:		Detector:	EXP1
		Worklist Smp#:	9

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

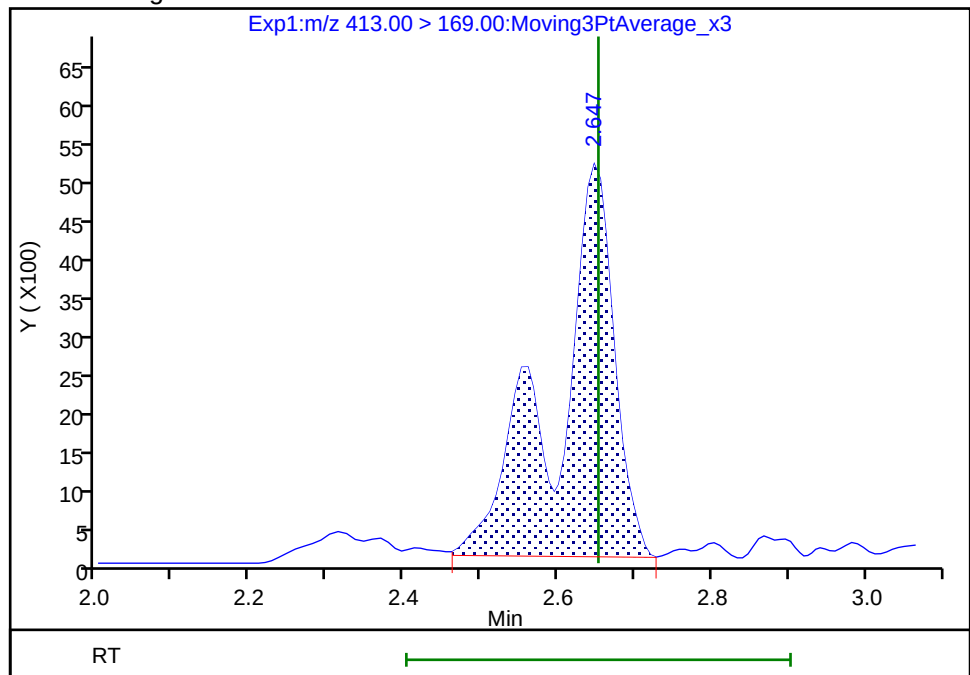
RT: 2.65
Area: 29330
Amount: 0.047921
Amount Units: ng/ml

Processing Integration Results



RT: 2.65
Area: 27098
Amount: 0.026869
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:06:40

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

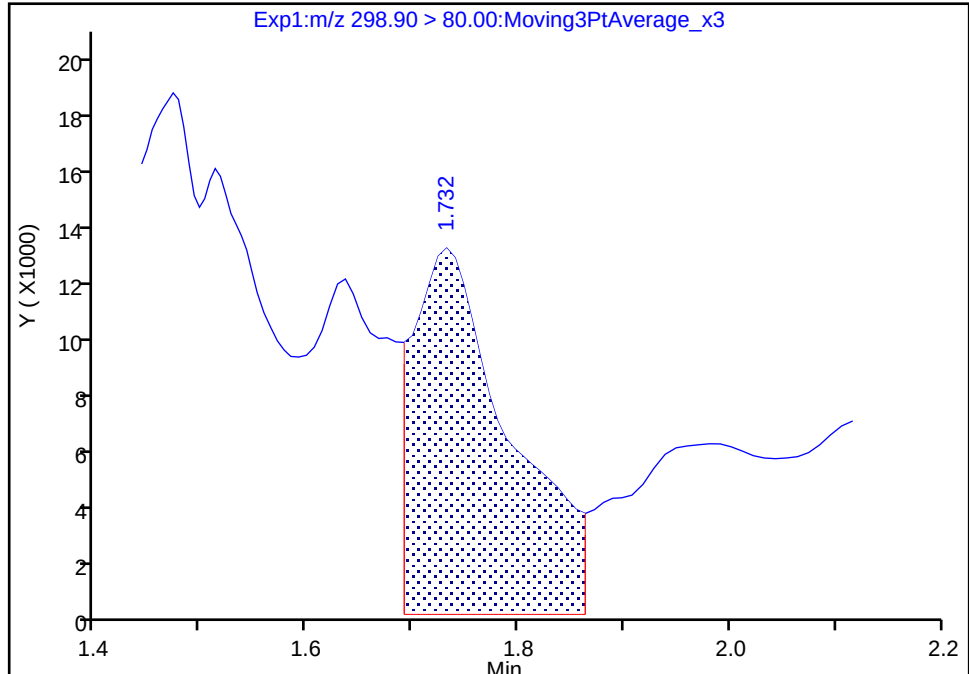
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d				
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N		
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4		
Client ID:	EC-0006-06				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

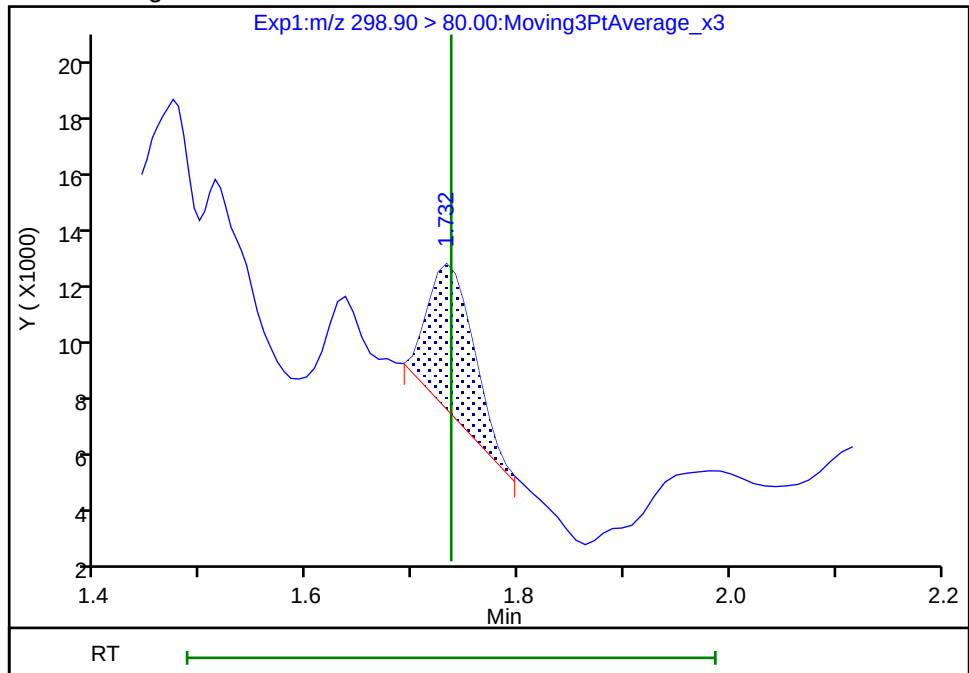
RT: 1.73
Area: 79668
Amount: 0.046122
Amount Units: ng/ml

Processing Integration Results



RT: 1.73
Area: 14581
Amount: 0.008441
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:05:00
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

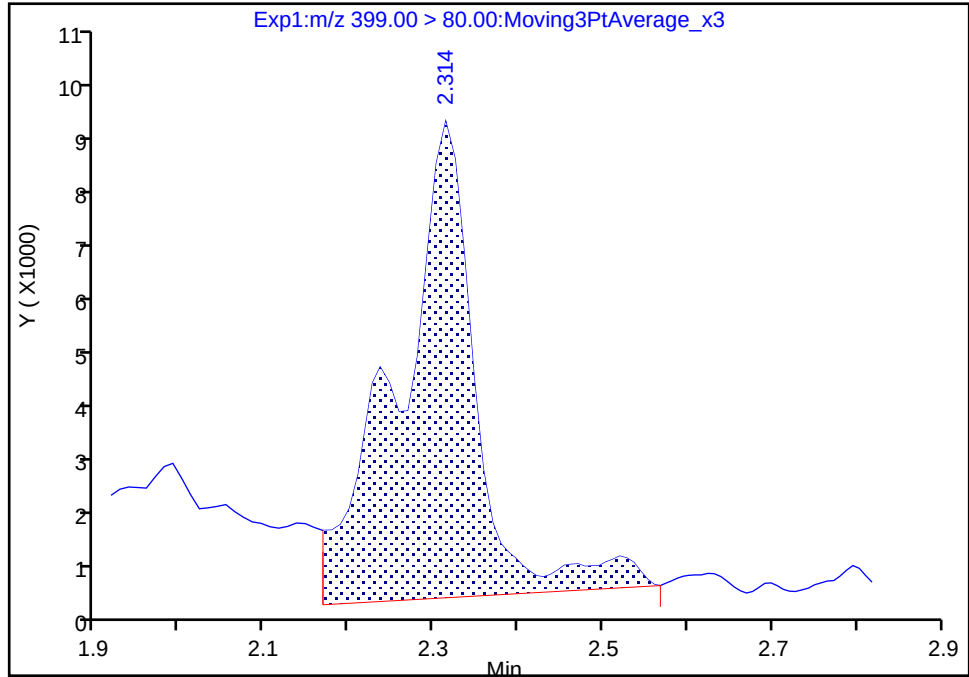
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d				
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N		
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4		
Client ID:	EC-0006-06				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

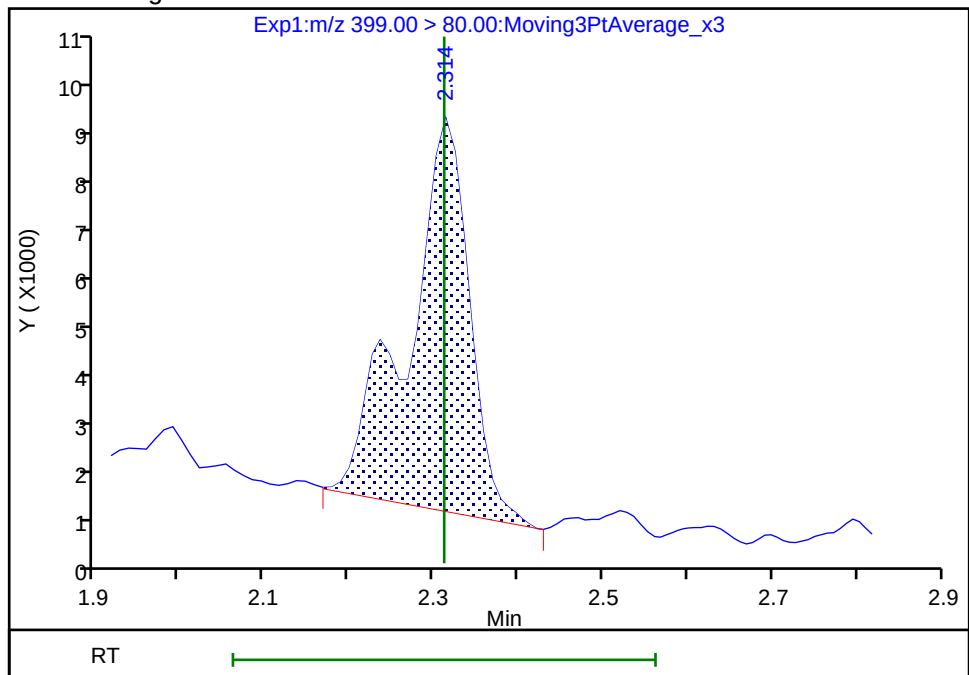
RT: 2.31
Area: 55859
Amount: 0.042579
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 40106
Amount: 0.030571
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:05:23
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

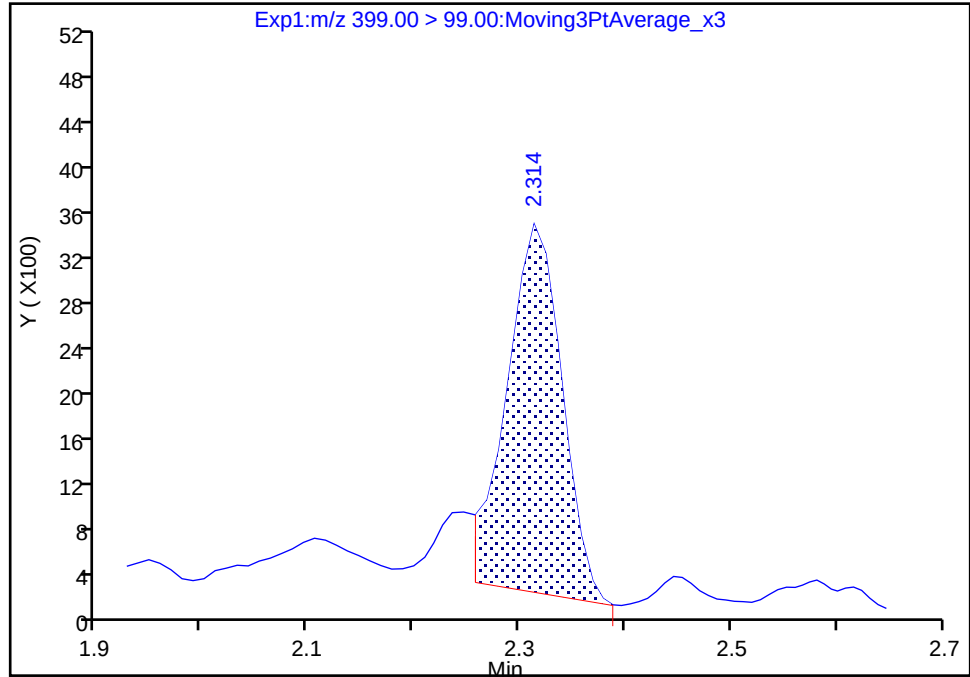
Data File:	\\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_068.d				
Injection Date:	15-Oct-2018 09:04:52	Instrument ID:	A8_N		
Lims ID:	480-142679-C-4-A	Lab Sample ID:	320-142679-4		
Client ID:	EC-0006-06				
Operator ID:	SACINSTLCMS01	ALS Bottle#:	53	Worklist Smp#:	9
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	A8_N	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

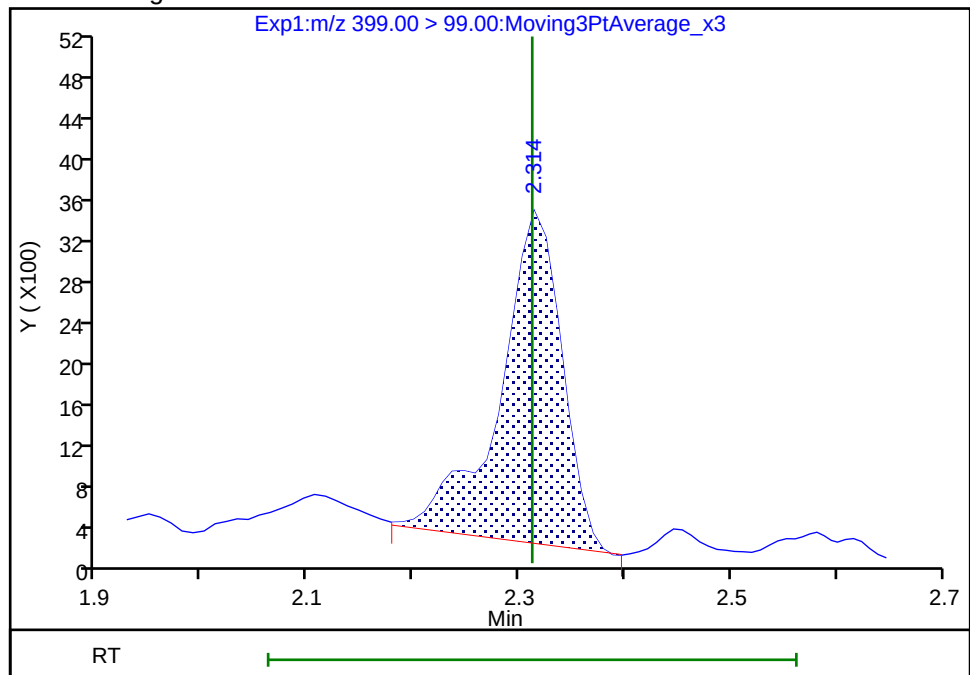
RT: 2.31
Area: 11784
Amount: 0.042579
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 13333
Amount: 0.030571
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:05:43

Audit Action: Manually Integrated

Audit Reason: Isomers
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-07</u>	Lab Sample ID: <u>480-142679-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_069.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 15:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>262.7 (mL)</u>	Date Analyzed: <u>10/15/2018 09:12</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.9	U	1.9	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.9	U	1.9	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.9	U	1.9	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.9	U	1.9	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	1.9	U	1.9	0.81
375-95-1	Perfluorononanoic acid (PFNA)	1.9	U	1.9	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.9	U	1.9	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.9	U	1.9	1.0
307-55-1	Perfluorododecanoic acid (PFDoA)	1.9	U	1.9	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.9	U	1.9	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.9	U	1.9	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.9	U	1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.28	J B	1.9	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.9	U	1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.9	U	1.9	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.9	U	1.9	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.9	U	1.9	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19	U	19	3.0
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19	U	19	1.8
27619-97-2	6:2 FTS	19	U	19	1.9
39108-34-4	8:2 FTS	19	U	19	1.9

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-07</u>	Lab Sample ID: <u>480-142679-5</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_069.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 15:00</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>262.7 (mL)</u>	Date Analyzed: <u>10/15/2018 09:12</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	98		25-150
STL01893	13C5 PFPeA	100		25-150
STL00993	13C2 PFHxA	104		25-150
STL01892	13C4 PFHpA	105		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	99		25-150
STL00997	13C2 PFUnA	100		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2 PFTeDA	102		25-150
STL02337	13C3 PFBS	102		25-150
STL00994	18O2 PFHxS	103		25-150
STL00991	13C4 PFOS	103		25-150
STL01056	13C8 FOSA	96		25-150
STL02118	d3-NMeFOSAA	127		25-150
STL02117	d5-NEtFOSAA	119		25-150
STL02279	M2-6:2 FTS	122		25-150
STL02280	M2-8:2 FTS	114		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_069.d
 Lims ID: 480-142679-C-5-A
 Client ID: EC-0006-07
 Sample Type: Client
 Inject. Date: 15-Oct-2018 09:12:18 ALS Bottle#: 54 Worklist Smp#: 10
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142679-c-5-a
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 15:08:35

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA

217.00 > 172.00 1.431 1.434 -0.003 0.538 3773327 2.45 97.9 9408

2 Perfluorobutanoic acid

212.90 > 169.00 1.436 1.436 0.0 1.003 8408 0.006216 1.0 M

D 3 13C5 PFPeA

267.90 > 223.00 1.702 1.700 0.002 0.640 2519789 2.49 99.8 8663

4 Perfluoropentanoic acid

262.90 > 219.00 1.710 1.704 0.006 1.005 5501 0.005060 0.6

D 47 13C3 PFBS

301.90 > 83.00 1.734 1.740 -0.006 0.652 49472 2.38 102 423

D 7 13C2 PFHxA

315.00 > 270.00 1.975 1.981 -0.006 0.743 2897584 2.60 104 8527

D 9 13C4 PFHpA

367.00 > 322.00 2.310 2.303 0.007 0.869 2675175 2.63 105 6764

8 Perfluorohexanesulfonic acid

399.00 > 80.00 2.321 2.312 0.009 1.000 10186 0.007293 49.1

399.00 > 99.00 2.321 2.312 0.009 1.000 3844 2.65(1.50-4.49) 11.1

D 11 18O2 PFHxS

403.00 > 84.00 2.321 2.325 -0.004 0.873 2968520 2.43 103 7172

13 1H,1H,2H,2H-perfluorooctanesulfoni

427.00 > 407.00 2.628 2.622 0.006 1.000 1781 0.005016 16.0 M

D 12 M2-6:2 FTS

429.00 > 81.00 2.628 2.624 0.004 0.988 551122 2.89 122 2826

* 62 13C2 PFOA

415.00 > 370.00 2.658 2.653 0.005 2452722 2.50 7224

D 14 13C4 PFOA

417.00 > 372.00 2.658 2.655 0.003 1.000 2319973 2.43 97.3 7614

D 18 13C4 PFOS

503.00 > 80.00 3.031 3.028 0.003 1.140 2010708 2.47 103 4150

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 19 13C5 PFNA										
468.00 > 423.00	3.031	3.028	0.003	1.140	1936790	2.44		97.7	5345	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.379	3.364	0.015	1.002	3144	0.002876			23.0	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.370	0.001	1.268	2817099	2.39		95.5	5263	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.379	3.377	0.002	1.271	548843	2.72		114	2846	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.392	-0.006	1.274	1735096	2.48		99.3	6490	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.547	3.545	0.002	1.334	1130719	3.17		127	1829	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.709	3.716	-0.007	1.395	1106762	2.97		119	1685	
D 30 13C2 PFUnA										
565.00 > 520.00	3.718	3.724	-0.006	1.399	1409431	2.51		100	3067	
D 36 13C2 PFDaA										
615.00 > 570.00	4.015	4.012	0.003	1.510	1446696	2.45		98.1	2588	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.527	4.523	0.004	1.703	1837830	2.55		102	3794	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_069.d

Injection Date: 15-Oct-2018 09:12:18

Instrument ID: A8_N

Lims ID: 480-142679-C-5-A

Lab Sample ID: 320-142679-5

Client ID: EC-0006-07

Operator ID: SACINSTLCMS01

ALS Bottle#: 54

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

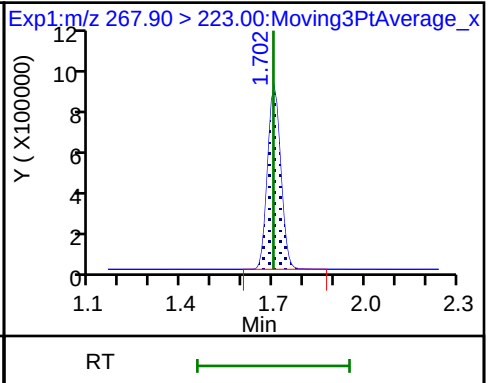
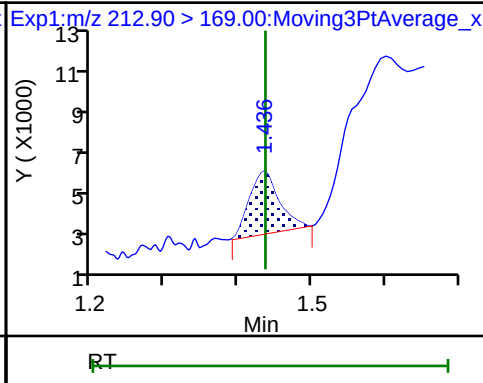
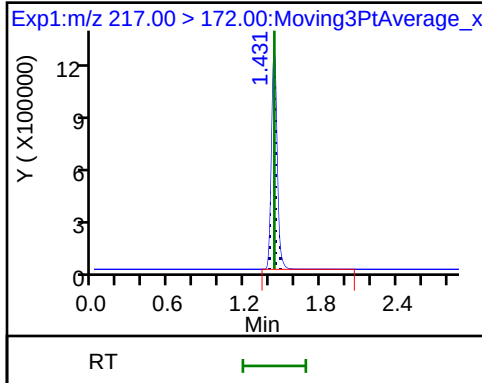
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

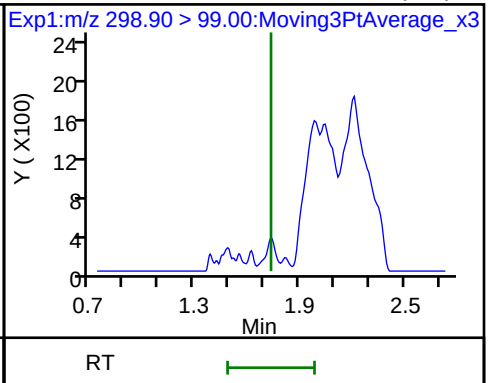
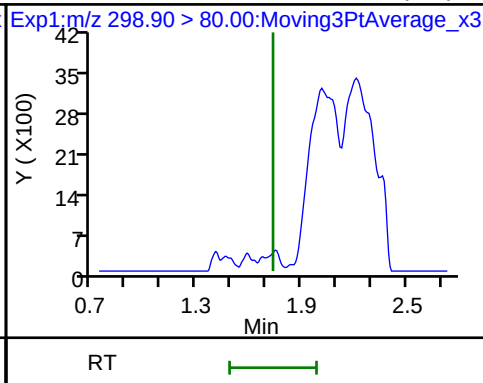
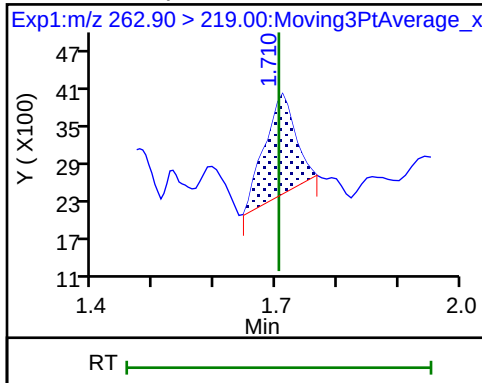
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid (ND)

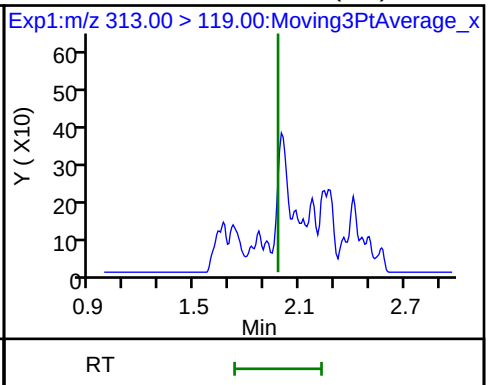
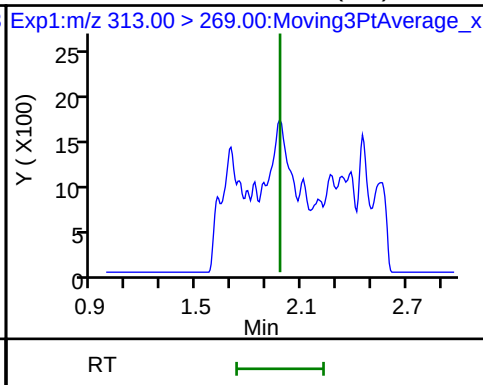
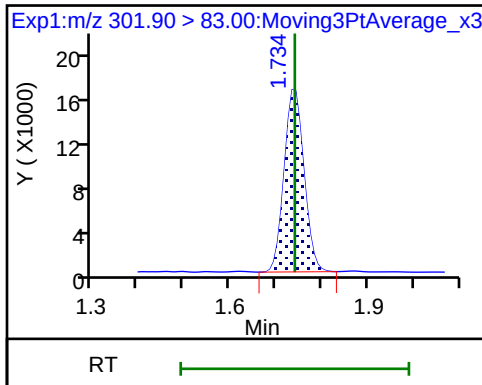
5 Perfluorobutanesulfonic acid (ND)



D 47 13C3 PFBS

6 Perfluorohexanoic acid (ND)

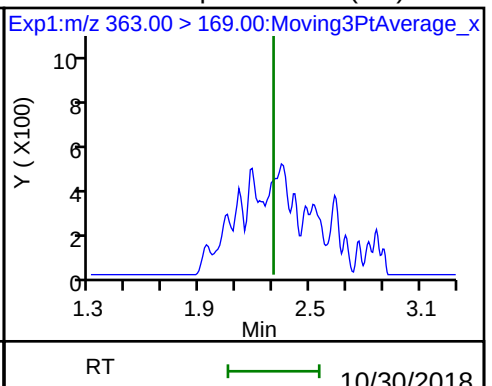
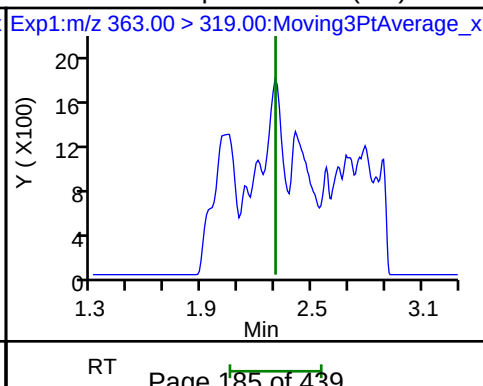
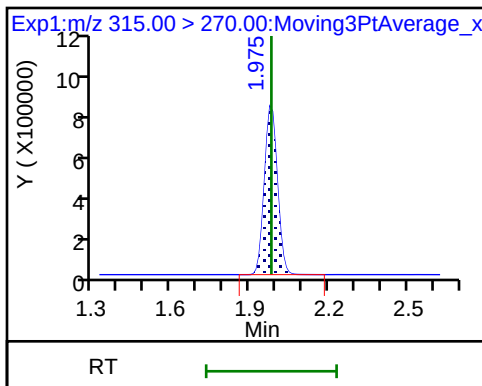
6 Perfluorohexanoic acid (ND)



D 7 13C2 PFHxA

10 Perfluoroheptanoic acid (ND)

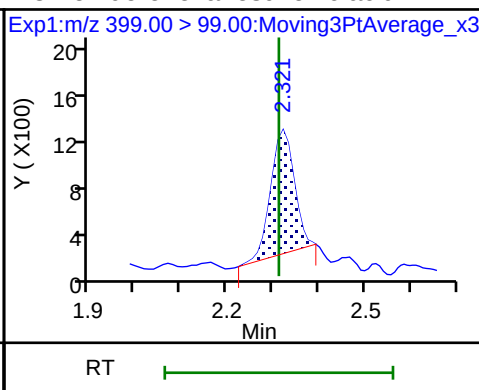
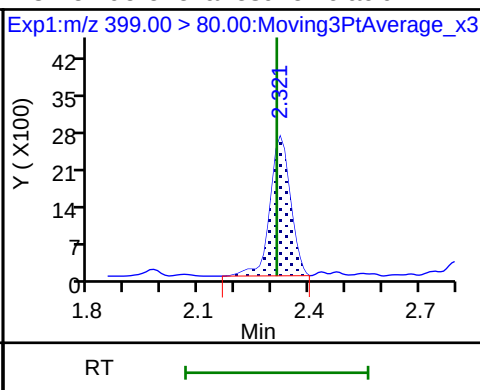
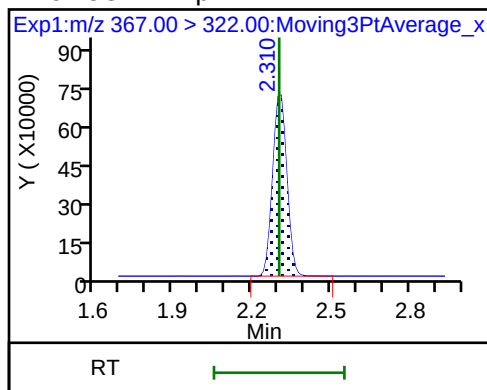
10 Perfluoroheptanoic acid (ND)



D 9 13C4 PFHpA

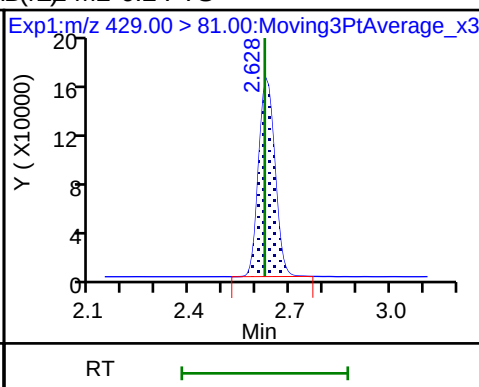
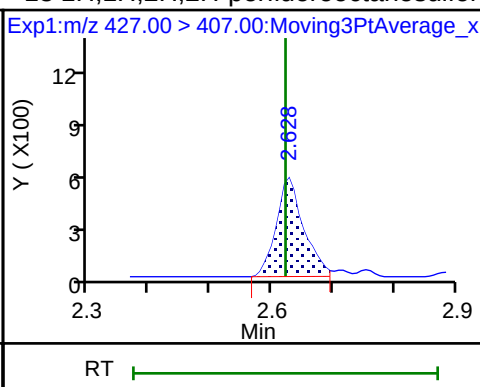
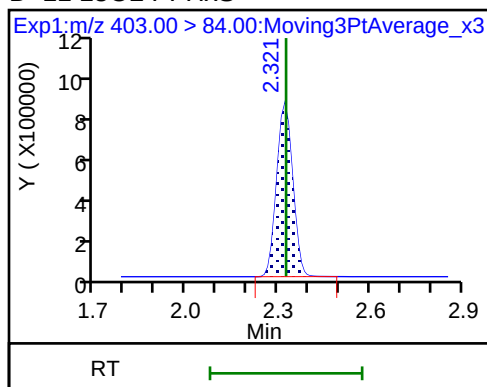
8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

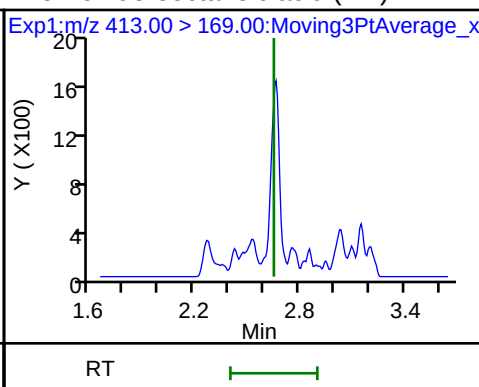
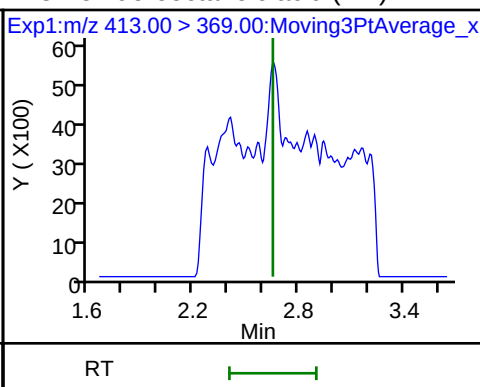
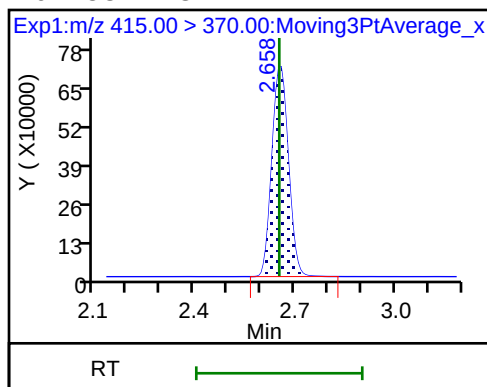
13 1H,1H,2H,2H-perfluorooctanesulfonic acid (M) M2-6:2 FTS



* 62 13C2 PFOA

15 Perfluorooctanoic acid (ND)

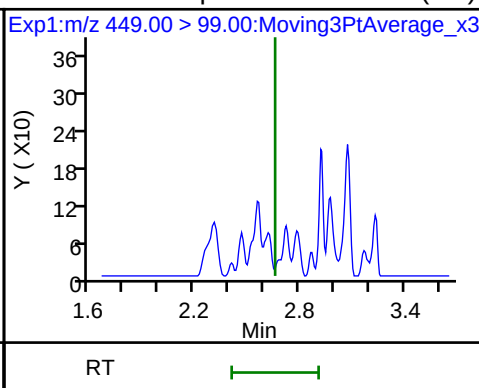
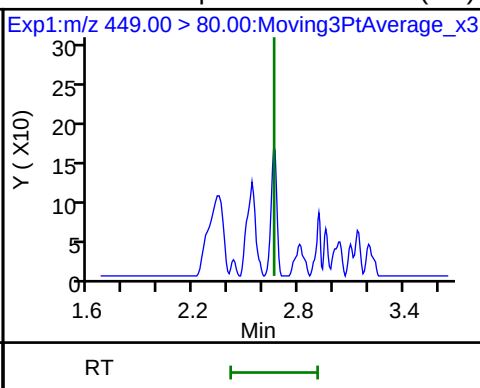
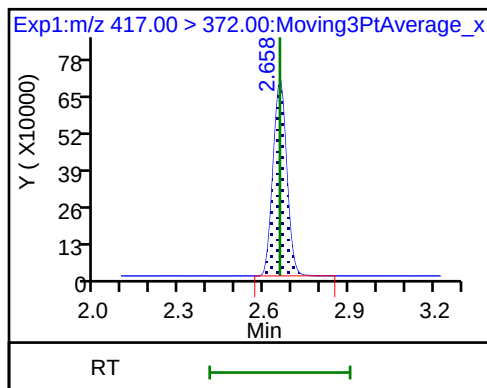
15 Perfluorooctanoic acid (ND)



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid (ND)

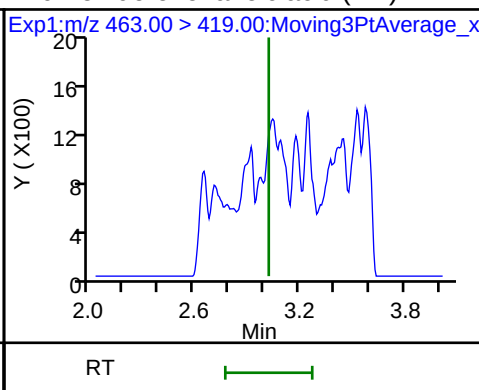
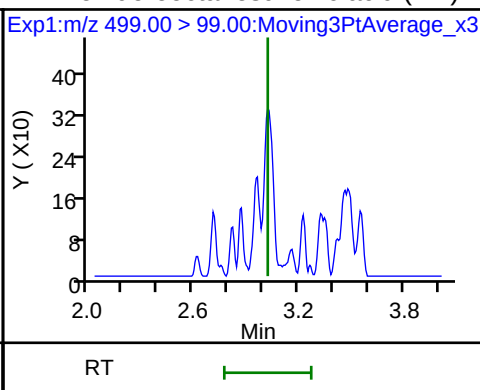
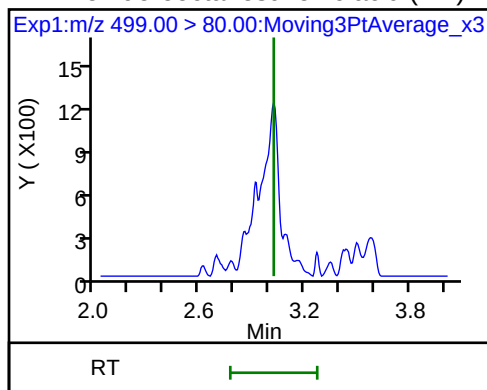
16 Perfluoroheptanesulfonic acid (ND)



17 Perfluorooctanesulfonic acid (ND)

17 Perfluorooctanesulfonic acid (ND)

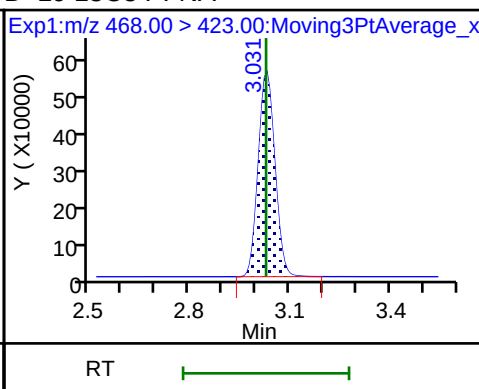
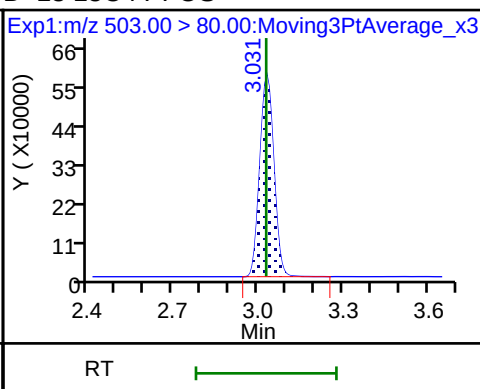
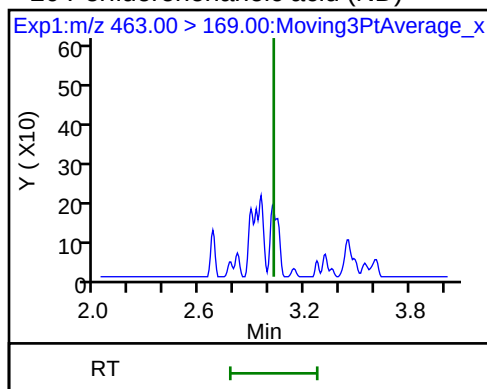
20 Perfluorononanoic acid (ND)



20 Perfluorononanoic acid (ND)

D 18 13C4 PFOS

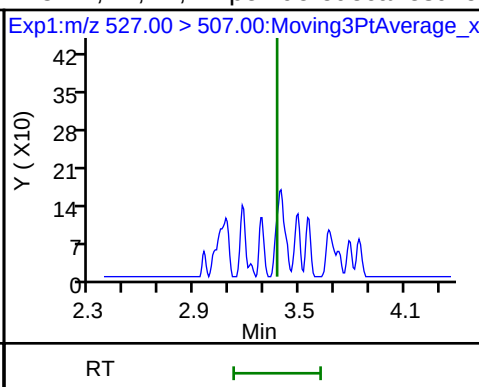
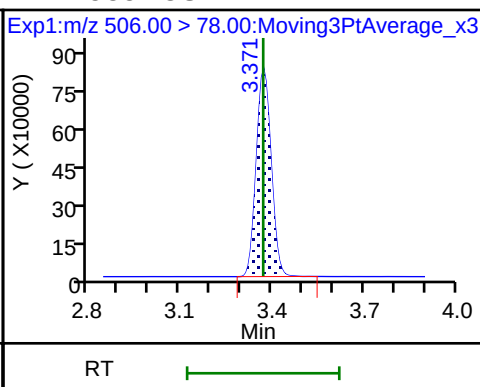
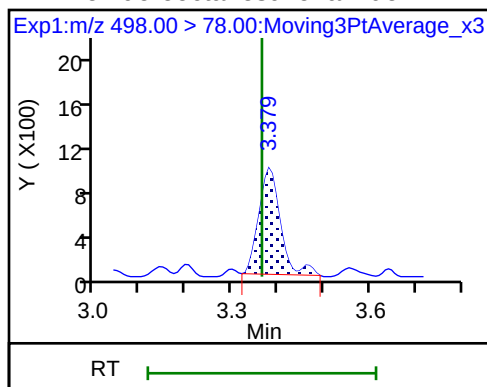
D 19 13C5 PFNA



22 Perfluorooctanesulfonamide

D 21 13C8 FOSA

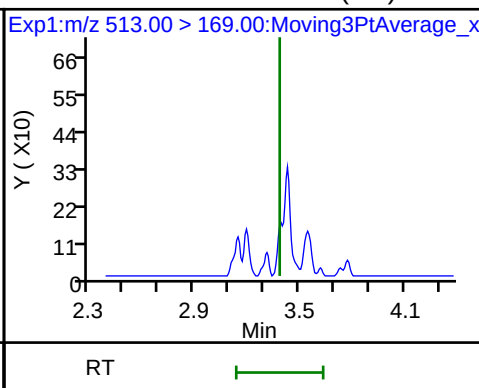
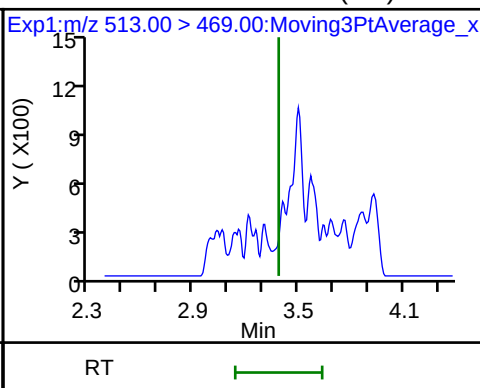
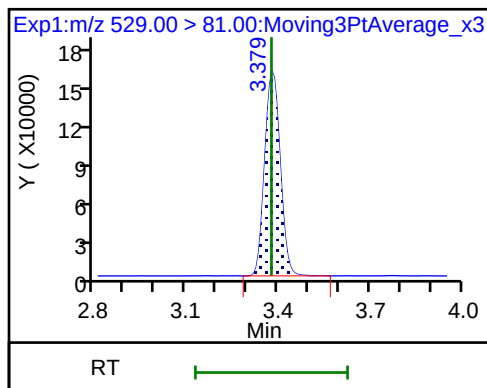
25 1H,1H,2H,2H-perfluorodecanesulfoni (ND)



D 26 M2-8:2 FTS

24 Perfluorodecanoic acid (ND)

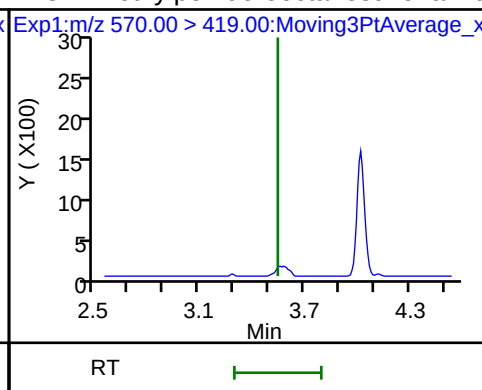
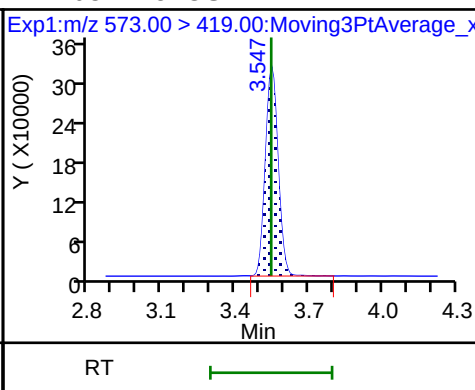
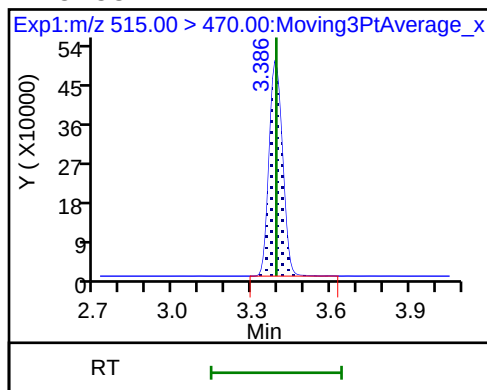
24 Perfluorodecanoic acid (ND)



D 23 13C2 PFDA

D 27 d3-NMeFOSAA

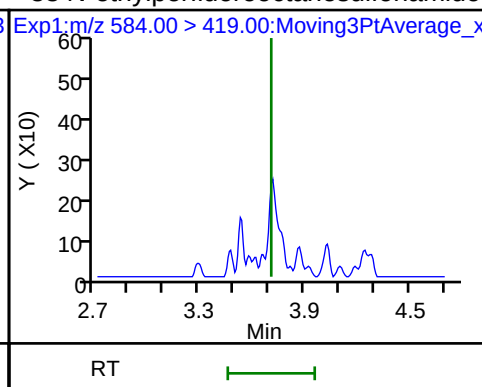
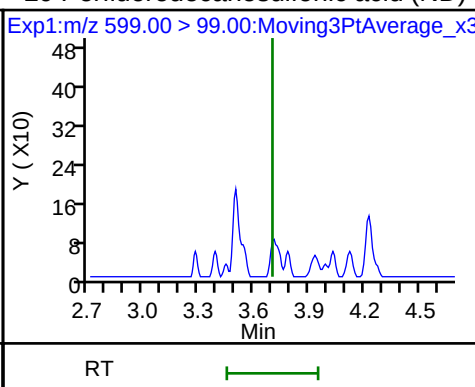
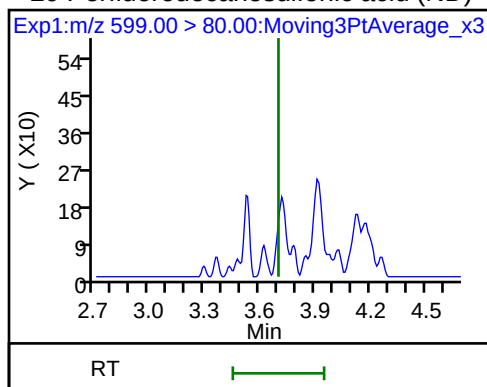
28 N-methylperfluorooctanesulfonamido (ND)



29 Perfluorodecanesulfonic acid (ND)

29 Perfluorodecanesulfonic acid (ND)

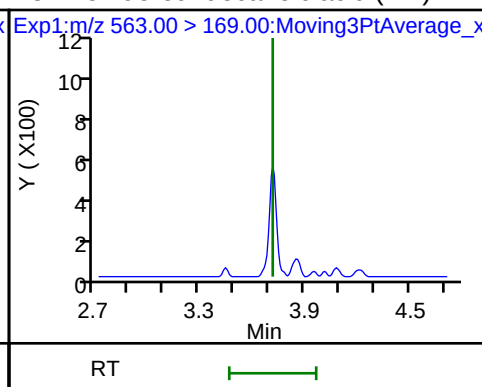
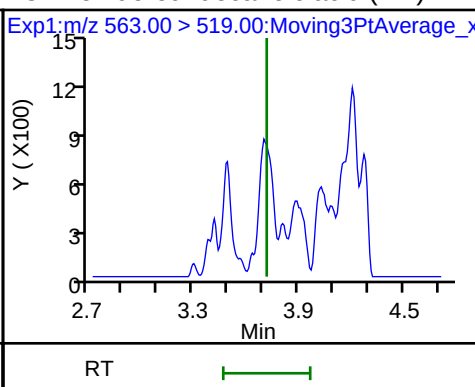
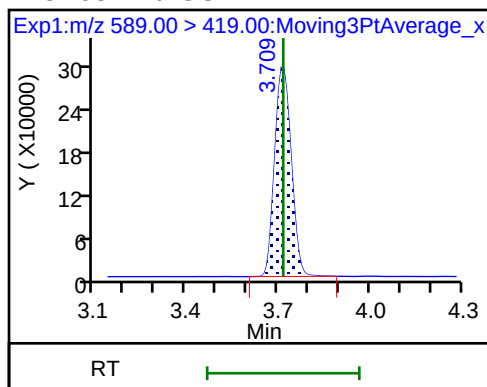
33 N-ethylperfluorooctanesulfonamidoa (ND)



D 32 d5-NEtFOSAA

31 Perfluoroundecanoic acid (ND)

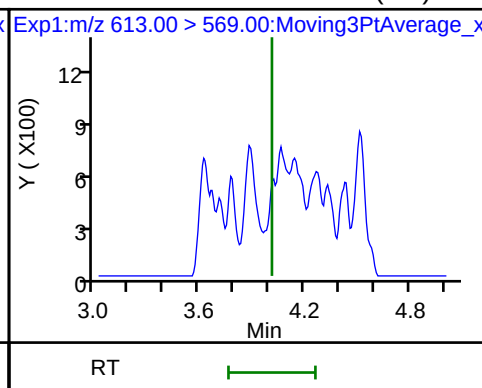
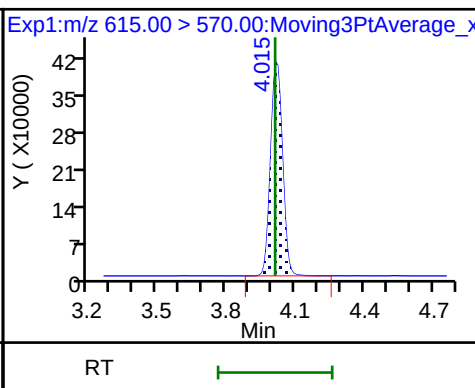
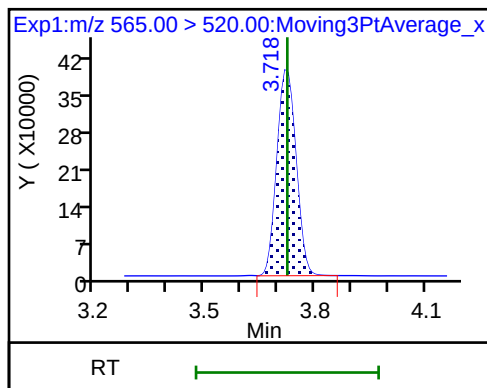
31 Perfluoroundecanoic acid (ND)



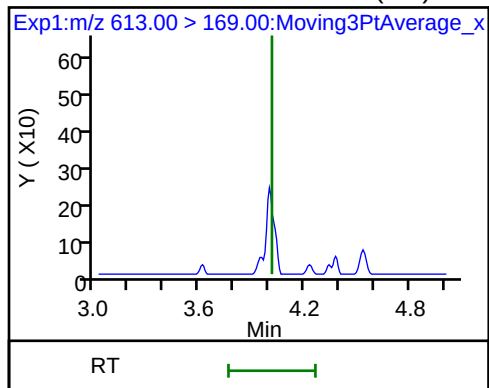
D 30 13C2 PFUnA

D 36 13C2 PFDaA

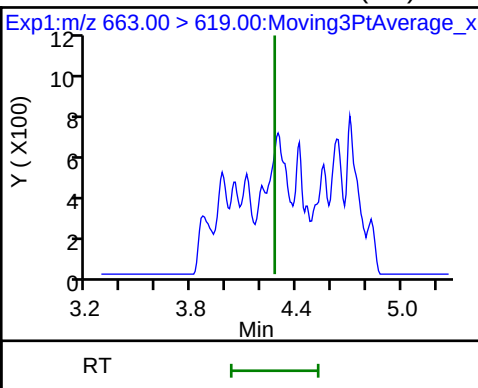
37 Perfluorododecanoic acid (ND)



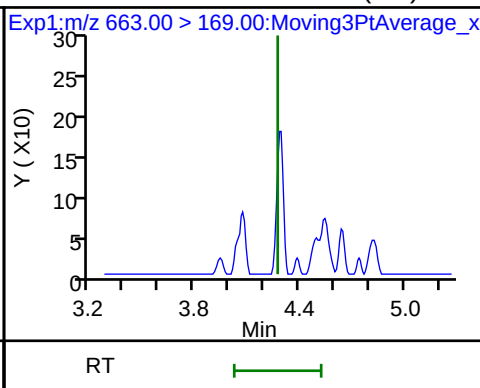
37 Perfluorododecanoic acid (ND)



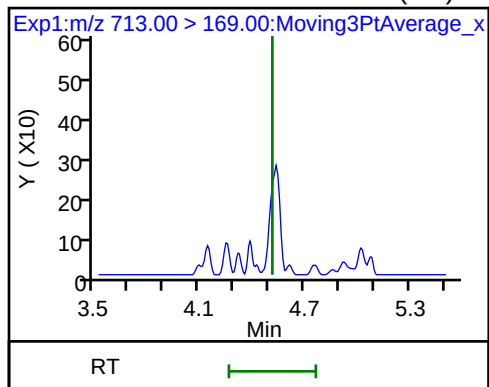
41 Perfluorotridecanoic acid (ND)



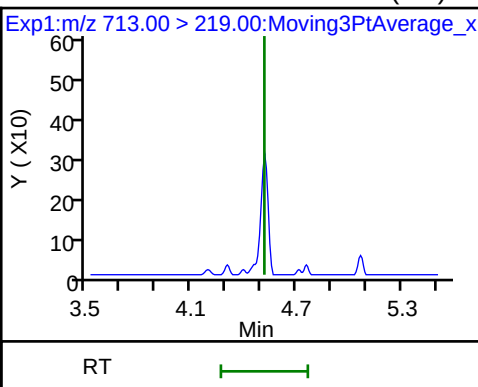
41 Perfluorotridecanoic acid (ND)



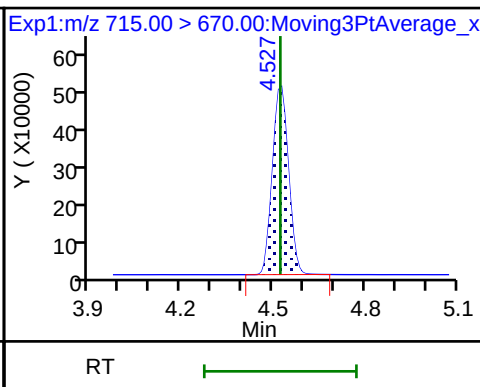
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



D 43 13C2 PFTeDA



TestAmerica Sacramento

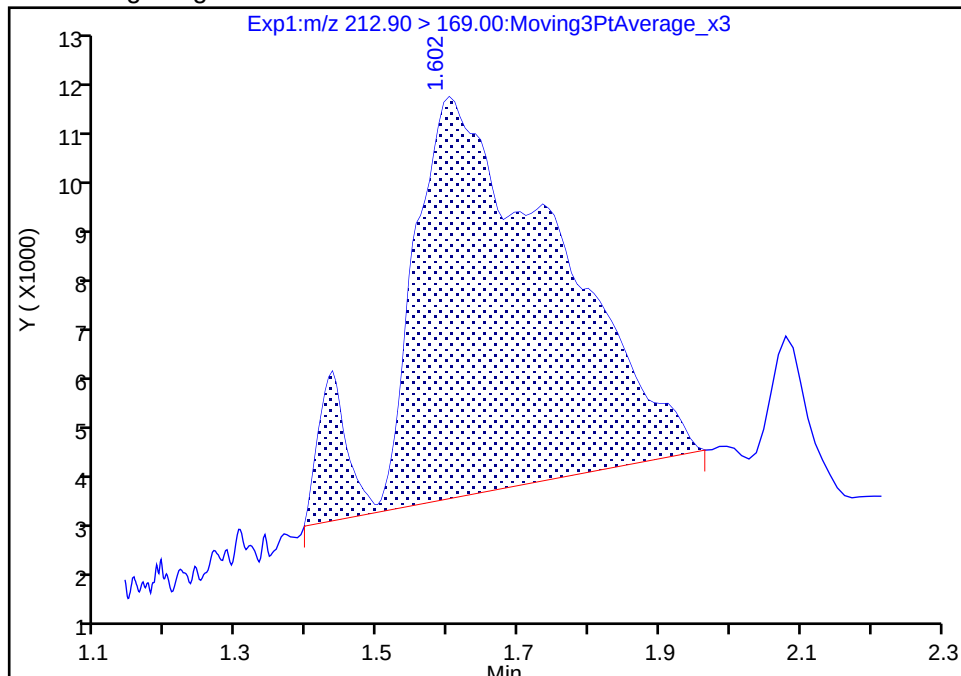
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_069.d
Injection Date: 15-Oct-2018 09:12:18 Instrument ID: A8_N
Lims ID: 480-142679-C-5-A Lab Sample ID: 320-142679-5
Client ID: EC-0006-07
Operator ID: SACINSTLCMS01 ALS Bottle#: 54 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

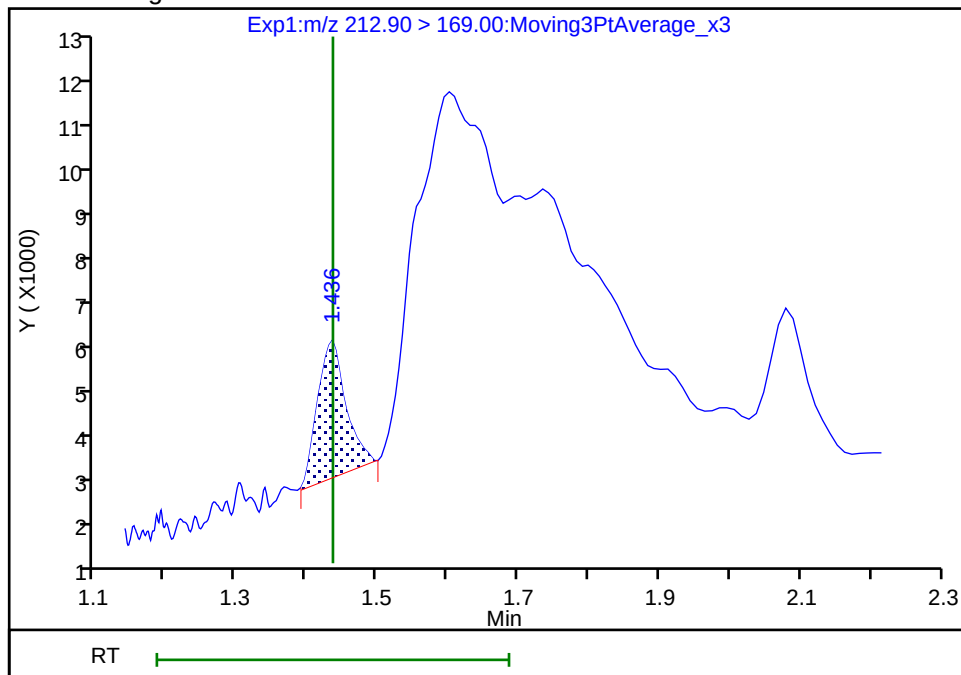
RT: 1.60
Area: 117513
Amount: 0.086882
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 8408
Amount: 0.006216
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:07:41
Audit Action: Manually Integrated

Audit Reason: Split Peak
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TestAmerica Sacramento

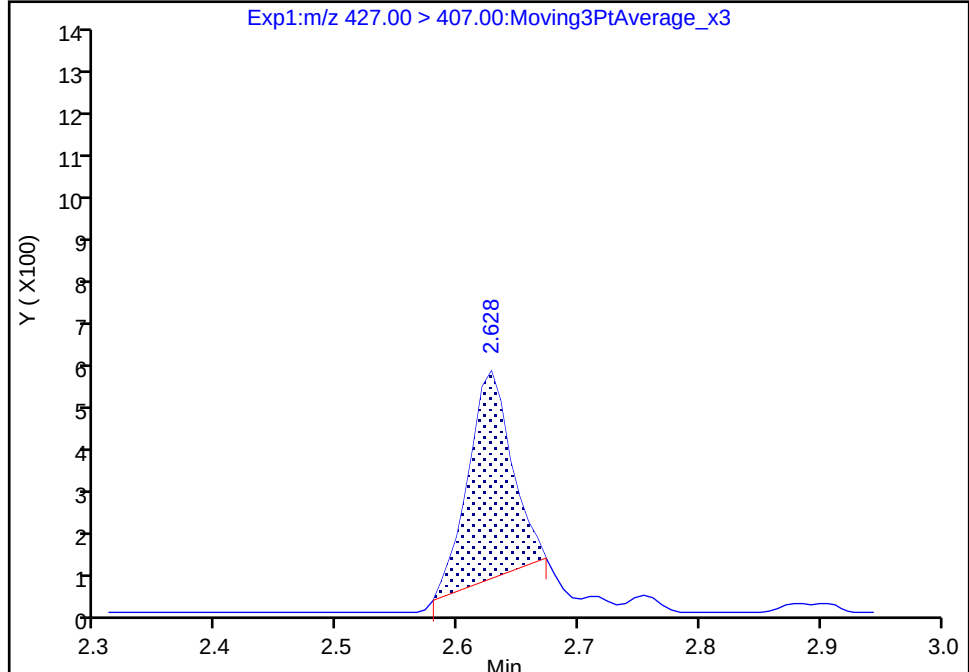
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_069.d
Injection Date: 15-Oct-2018 09:12:18 Instrument ID: A8_N
Lims ID: 480-142679-C-5-A Lab Sample ID: 320-142679-5
Client ID: EC-0006-07
Operator ID: SACINSTLCMS01 ALS Bottle#: 54 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

13 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

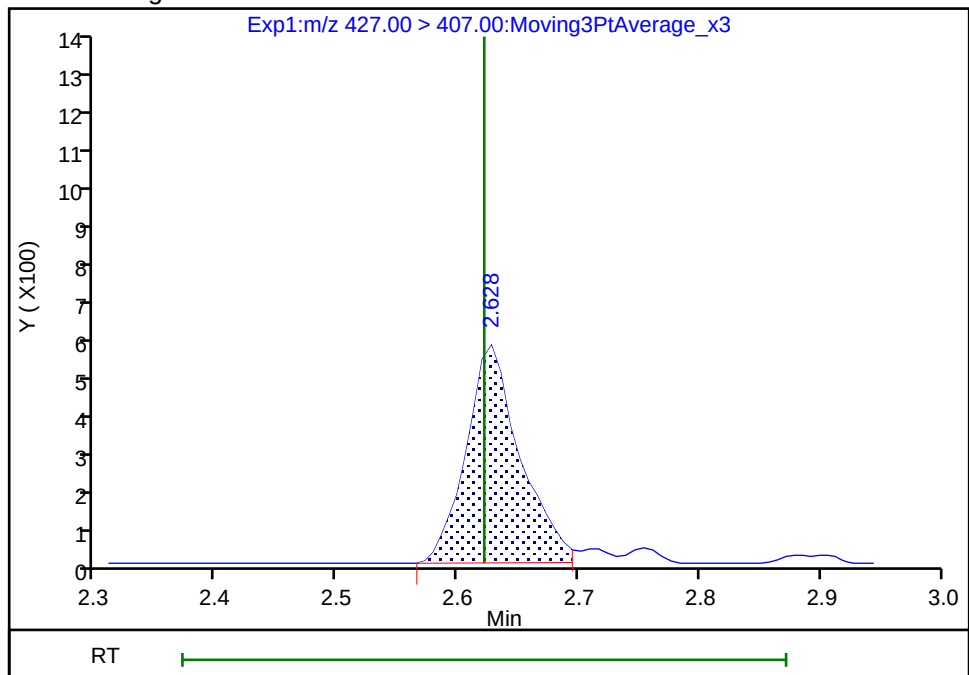
RT: 2.63
Area: 1236
Amount: 0.003481
Amount Units: ng/ml

Processing Integration Results



RT: 2.63
Area: 1781
Amount: 0.005016
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 15:08:09
Audit Action: Manually Integrated

Audit Reason: Baseline
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FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1 Analy Batch No.: 251122

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/10/2018 11:24 Calibration End Date: 10/10/2018 12:08 Calibration ID: 41563

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-251122/2	2018.10.10LLICAL_005.d
Level 2	IC 320-251122/3	2018.10.10LLICAL_006.d
Level 3	IC 320-251122/4	2018.10.10LLICAL_007.d
Level 4	IC 320-251122/5	2018.10.10LLICAL_008.d
Level 5	IC 320-251122/6	2018.10.10LLICAL_009.d
Level 6	IC 320-251122/7	2018.10.10LLICAL_010.d
Level 7	IC 320-251122/8	2018.10.10LLICAL_011.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8468 0.9398	0.8996 0.8903	0.8839	0.9041	0.9085	AveID		0.8961				3.1		35.0			
Perfluoropentanoic acid (PFPeA)	1.1539 1.0671	1.0893 1.0254	1.0922	1.0361	1.0865	AveID		1.0786				3.9		35.0			
Perfluorobutanesulfonic acid (PFBS)	79.800 76.477	80.624 69.199	80.312	78.819	84.844	AveID		78.582				6.2		50.0			
4:2 FTS	14.052 14.494	15.643 15.226	14.449	14.166	15.871	AveID		14.843				4.9		50.0			
Perfluorohexanoic acid (PFHxA)	1.1566 1.0189	0.9389 0.9399	0.9249	0.9445	0.9770	AveID		0.9858				8.3		35.0			
Perfluoropentanesulfonic acid (PFPeS)	66.746 66.273	68.099 61.491	66.794	67.430	75.843	AveID		67.525				6.3		50.0			
HFPO-DA (GenX)	2.9730 2.9835	2.5315 2.9899	2.7315	3.0303	3.3597	AveID		2.9428				8.8		35.0			
Perfluoroheptanoic acid (PFHpA)	+++++ 1.0683	1.0982 1.0400	1.0921	0.9975	1.0722	AveID		1.0614				3.5		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3978 1.0619	1.1720 1.0283	0.9909	1.0566	1.0813	AveID		1.1127				12.4		35.0			
DONA	4.2072 3.8326	3.9110 3.2536	3.7434	3.9445	3.8537	AveID		3.8209				7.6		50.0			
6:2 FTS	1.6788 1.4469	1.5434 1.4809	1.5455	1.4442	1.5717	AveID		1.5302				5.4		35.0			
Perfluorooctanoic acid (PFOA)	1.3206 1.1219	1.1532 1.0599	1.1064	1.1907	1.1619	AveID		1.1592				7.1		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.3035 1.3839	1.3589 1.2595	1.2662	1.2767	1.2578	AveID		1.3009				3.9		50.0			
Perfluorononanoic acid (PFNA)	1.1238 1.0718	0.9833 1.0320	1.0729	1.1257	1.0458	AveID		1.0650				4.8		35.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1 Analy Batch No.: 251122
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/10/2018 11:24 Calibration End Date: 10/10/2018 12:08 Calibration ID: 41563

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorooctanesulfonic acid (PFOS)	1.1134 1.1292	1.2500 1.1200	1.0751	1.0882	1.0815	AveID		1.1225				5.3		35.0			
F-53B Major	1.8121 2.0536	1.8299 1.8676	1.8127	1.8964	1.8643	AveID		1.8767				4.5		50.0			
Perfluorooctanesulfonamide (FOSA)	0.9585 1.0040	0.9105 0.9535	0.9679	0.9869	1.0096	AveID		0.9701				3.5		35.0			
8:2 FTS	1.1065 1.1727	1.3041 1.2093	1.2728	1.2235	1.1854	AveID		1.2106				5.4		35.0			
Perfluorononanesulfonic acid (PFNS)	0.7133 0.8148	0.8427 0.8182	0.7921	0.7535	0.7742	AveID		0.7870				5.6		50.0			
Perfluorodecanoic acid (PFDA)	0.8991 0.9916	0.8881 1.0281	1.0330	1.0081	1.0269	AveID		0.9821				6.3		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.0200 0.9121	1.0160 0.9614	0.9051	0.9076	0.9701	AveID		0.9561				5.2		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.5917 0.6566	0.6158 0.6627	0.6065	0.6021	0.6449	AveID		0.6258				4.6		50.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.7561 0.8335	0.8526 0.8641	0.8955	0.8466	0.8299	AveID		0.8397				5.1		35.0			
Perfluoroundecanoic acid (PFUnA)	1.1332 0.8318	0.9935 0.8944	0.7566	0.8111	0.8371	AveID		0.8940				14.4		35.0			
F-53B Minor	2.8443 2.9676	2.7793 2.5703	2.8271	2.7751	3.0650	AveID		2.8327				5.5		50.0			
Perfluorododecanoic acid (PFDoA)	1.1728 1.1332	1.1405 1.0690	1.1124	1.0383	1.0593	AveID		1.1036				4.5		35.0			
10:2 FTS	0.6856 0.8617	0.7621 0.8772	1.0112	0.9178	0.8089	AveID		0.8464				12.6		50.0			
Perfluorododecanesulfonic acid (PFDoS)	0.2803 0.2930	0.3054 0.2973	0.2969	0.2869	0.2917	AveID		0.2931				2.7		50.0			
Perfluorotridecanoic acid (PFTriA)	1.0118 1.0672	1.0416 1.0380	1.0156	1.0135	1.1371	AveID		1.0464				4.3		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.2916 0.2639	0.2926 0.2624	0.2557	0.2483	0.2556	AveID		0.2672				6.7		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7470 0.9069	1.3565 0.8648	0.9235	0.9053	0.9294	L2ID	0.0219	0.8854							0.9980		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	1.2356 1.1773	1.2255 1.1203	1.1896	1.1517	1.1616	AveID		1.1802				3.5		50.0			
13C4 PFBA	1.5586 1.5813	1.5111 1.6797	1.5482	1.5747	1.5485	Ave		1.5717				3.4		50.0			
13C5 PFPeA	1.0139 1.0271	0.9850 1.1001	1.0335	1.0354	1.0143	Ave		1.0299				3.4		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1 Analy Batch No.: 251122
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/10/2018 11:24 Calibration End Date: 10/10/2018 12:08 Calibration ID: 41563

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C3 PFBS	0.0209 0.0223	0.0205 0.0224	0.0211	0.0216	0.0195	Ave		0.0212				4.9		50.0			
M2-4:2 FTS	0.1318 0.1402	0.1419 0.1403	0.1434	0.1407	0.1451	Ave		0.1405				3.0		50.0			
13C2 PFHxA	1.1151 1.1489	1.1590 1.1774	1.1041	1.1374	1.1173	Ave		1.1370				2.3		50.0			
13C3 HFPO-DA	0.0841 0.0826	0.0877 0.0926	0.0824	0.0745	0.0694	Ave		0.0819				9.5		50.0			
13C4 PFHpA	1.0128 1.0543	1.0153 1.0601	1.0095	1.0753	1.0436	Ave		1.0387				2.5		50.0			
18O2 PFHxS	1.2533 1.2163	1.2251 1.2635	1.2970	1.2412	1.2220	Ave		1.2455				2.3		50.0			
M2-6:2 FTS	0.2014 0.1947	0.1971 0.2042	0.1925	0.1883	0.1843	Ave		0.1946				3.6		50.0			
13C8 PFOA	1.4598 1.4254	1.3525 1.5037	1.4166	1.4236	1.3988	Ave		1.4258				3.3		50.0			
13C4 PFOA	0.9641 0.9699	0.9972 1.0031	0.9698	0.9297	0.9715	Ave		0.9722				2.5		50.0			
13C8 PFOS	0.4198 0.4287	0.4210 0.4369	0.4394	0.4184	0.4135	Ave		0.4254				2.3		50.0			
13C5 PFNA	0.8146 0.8147	0.8196 0.8394	0.7952	0.7595	0.8144	Ave		0.8082				3.1		50.0			
13C4 PFOS	0.8604 0.8170	0.7968 0.8482	0.8341	0.8241	0.8327	Ave		0.8305				2.5		50.0			
13C8 FOSA	1.1824 1.2186	1.2041 1.2579	1.1903	1.1950	1.1698	Ave		1.2026				2.4		50.0			
M2-8:2 FTS	0.2120 0.2120	0.1903 0.2220	0.1917	0.1961	0.2156	Ave		0.2057				6.2		50.0			
13C2 PFDA	0.7406 0.7373	0.6656 0.7338	0.7250	0.7009	0.6849	Ave		0.7126				4.1		50.0			
d3-NMeFOSAA	0.3522 0.3772	0.3523 0.3784	0.3617	0.3633	0.3600	Ave		0.3636				2.9		50.0			
d5-NEtFOSAA	0.4033 0.3749	0.3653 0.3863	0.3892	0.3717	0.3678	Ave		0.3798				3.6		50.0			
13C2 PFUnA	0.5643 0.5847	0.5559 0.5688	0.5816	0.5922	0.5622	Ave		0.5728				2.3		50.0			
13C2 PFDoA	0.6014 0.5860	0.6118 0.6142	0.6103	0.6178	0.5670	Ave		0.6012				3.1		50.0			
13C2 PFTeDA	0.7605 0.7302	0.7187 0.7570	0.7383	0.7264	0.7196	Ave		0.7358				2.3		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1 Analy Batch No.: 251122
 SDG No.: _____
 Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N
 Calibration Start Date: 10/10/2018 11:24 Calibration End Date: 10/10/2018 12:08 Calibration ID: 41563

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
13C2 PFHxDA	1.3883 1.3764	1.2962 1.3773	1.3647	1.3732	1.3410	Ave		1.3596				2.3		50.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1 Analy Batch No.: 251122

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/10/2018 11:24 Calibration End Date: 10/10/2018 12:08 Calibration ID: 41563

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-251122/2	2018.10.10LLICAL_005.d
Level 2	IC 320-251122/3	2018.10.10LLICAL_006.d
Level 3	IC 320-251122/4	2018.10.10LLICAL_007.d
Level 4	IC 320-251122/5	2018.10.10LLICAL_008.d
Level 5	IC 320-251122/6	2018.10.10LLICAL_009.d
Level 6	IC 320-251122/7	2018.10.10LLICAL_010.d
Level 7	IC 320-251122/8	2018.10.10LLICAL_011.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	33785 7875887	90156 18553373	376595	1838577	3939875	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	29948 5808424	71165 13995500	310639	1385310	3086360	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	37674 8005354	96887 16986048	412058	1940219	4095661	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	7009 1602981	19861 3948929	78326	368449	809495	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	33014 6204050	72170 13729045	281033	1387326	3057164	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	33436 7361028	86834 16016122	363636	1761259	3884799	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	6403 1305928	14722 3433753	61939	291397	653442	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	++++ 5968994	73950 13677861	303413	1385195	3133714	++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	40806 6228941	86655 14667565	321866	1541141	3367390	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	87289 15631955	194696 32252712	809505	3954313	8465488	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	8205 1415351	19126 3557288	77610	332908	769048	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	32625 5772591	76344 13203994	295579	1431012	3164694	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	27331 5704325	68365 12617872	276730	1293490	2792420	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorononanoic acid (PFNA)		AveID	23434 4627612	53452 10747039	234786	1104139	2385318	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	22757 4537168	61304 10936917	229035	1074691	2340381	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1 Analy Batch No.: 251122

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/10/2018 11:24 Calibration End Date: 10/10/2018 12:08 Calibration ID: 41563

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	37198 8287131	90131 18316641	387832	1880958	4051860	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	29010 6484092	72717 14879763	317061	1523064	3307576	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	5753 1262309	15772 3191297	64335	296832	685557	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorononanesulfonic acid (PFNS)		AveID	15081 3386873	42751 8265647	174573	769836	1733224	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	17045 3875142	39205 9360476	206122	912404	1969687	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	9195 1823529	23737 4513956	90103	425834	978098	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	12563 2740613	31371 6722574	134221	617741	1449684	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	7805 1656325	20657 4141347	95915	406329	854793	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	16370 2577510	36628 6311052	121104	620287	1318094	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	59012 12104011	138359 25478525	611371	2782012	6732817	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	18054 3519022	46274 8145527	186835	828383	1682078	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	3587 933310	9274 2329420	51430	224063	470771	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	5977 1228091	15622 3028367	65966	295541	658422	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	15576 3314099	42261 7909521	170585	808673	1805474	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	5676 1021138	13946 2464539	51956	232928	515191	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	62085 6615795	116618 14776352	346851	1605389	3490780	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	43909 8587714	105352 19142747	446799	2042343	4362842	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	3989730 4190214	5011000 5209807	4260789	5084116	4336689	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	2595326 2721646	3266435 3412160	2844208	3342660	2840609	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	49667 55062	63212 64560	53977	64743	50785	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	315031 346926	439546 406458	368565	424416	379466	2.34 2.34	2.34 2.34	2.34	2.34	2.34

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1 Analy Batch No.: 251122
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/10/2018 11:24 Calibration End Date: 10/10/2018 12:08 Calibration ID: 41563

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C2 PFHxA	13PF OA	Ave	2854512 3044528	3843292 3651904	3038494	3672152	3129027	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	215374 218860	290772 287117	226759	240406	194494	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	2592488 2793759	3367026 3288104	2778239	3471553	2922607	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	3034874 3049082	3843289 3707135	3376716	3790742	3237507	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	489770 490143	620932 601815	503222	577498	490345	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C8 PFOA	13PF OA	Ave	3658281 3697981	4390986 4565884	3816866	4499581	3835253	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C4 PFOA	13PF OA	Ave	2467915 2570124	3306843 3111187	2668939	3001538	2720897	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOS	13PF OA	Ave	1027353 1085964	1334654 1295531	1156094	1291288	1107237	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	2085247 2158801	2717992 2603338	2188396	2452047	2280897	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	2105584 2069653	2526082 2515040	2194649	2543466	2229352	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C8 FOSA	13PF OA	Ave	3026667 3229091	3993046 3901488	3275871	3858151	3276186	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	519906 538199	604699 659745	505445	606529	578356	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	1895691 1953895	2207202 2276113	1995283	2262788	1918077	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	901454 999618	1168203 1173752	995467	1172962	1008224	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1032324 993563	1211377 1198187	1071076	1199942	1030045	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	1444546 1549356	1843443 1764075	1600595	1911905	1574598	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	1539391 1552732	2028667 1904912	1679602	1994657	1587844	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	1946733 1934970	2383298 2348064	2031769	2345171	2015257	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	3553706 3647313	4298426 4271737	3755737	4433308	3755756	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1 Analy Batch No.: 251122
SDG No.: _____
Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N
Calibration Start Date: 10/10/2018 11:24 Calibration End Date: 10/10/2018 12:08 Calibration ID: 41563

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 10-Oct-2018 11:24:17 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 1
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:09:03 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:48:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.434	0.002	0.536	3989730	2.48		99.2	9285	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.441	1.437	0.004	1.003	33785	0.0236		94.5	4.0	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.710	1.705	0.005	0.638	2595326	2.46		98.4	10024	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.710	1.706	0.004	1.000	29948	0.0267		107	5.1	M
D 47 13C3 PFBS										
301.90 > 83.00	1.743	1.740	0.003	0.650	49667	2.29		98.5	404	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.743	1.742	0.001	1.000	37674	0.0224		102	8.0	
298.90 > 99.00	1.743	1.742	0.001	1.000	16958		2.22(1.25-3.74)	102	8.2	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.955	1.950	0.005	0.729	315031	2.19		93.8	532	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.955	1.951	0.004	1.122	7009	0.0221		94.7	90.0	
D 7 13C2 PFHxA										
315.00 > 270.00	1.987	1.986	0.001	0.741	2854512	2.45		98.1	8894	
6 Perfluorohexanoic acid										R
313.00 > 269.00	1.997	1.989	0.008	1.005	33014	0.0293		117	15.9	R
313.00 > 119.00	1.987	1.989	-0.002	1.000	2139		15.43(5.03-15.10)	117	8.1	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.018	2.013	0.005	1.158	33436	0.0232		98.8	249	
349.00 > 99.00	2.018	2.013	0.005	1.158	11072		3.02(1.36-4.07)	98.8	56.5	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.091	2.086	0.005	0.780	215374	2.57		103	763	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.091	2.086	0.005	1.000	6403	0.0253		101	9.8	
D 9 13C4 PFHpA										
367.00 > 322.00	2.323	2.318	0.005	0.866	2592488	2.44		97.5	8799	
10 Perfluoroheptanoic acid										RM
363.00 > 319.00	2.323	2.318	0.005	1.000	44825	0.0407		163	18.3	RM
363.00 > 169.00	2.323	2.318	0.005	1.000	11326		3.96(1.13-3.40)	163	26.6	M
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.345	2.336	0.009	1.000	40806	0.0286		126	95.6	
399.00 > 99.00	2.345	2.336	0.009	1.000	13637		2.99(1.50-4.49)	126	34.2	
D 11 18O2 PFHxS										
403.00 > 84.00	2.345	2.337	0.008	0.875	3034874	2.38		101	8174	
77 DONA										
377.00 > 251.00	2.367	2.361	0.006	0.772	87289	0.0259		110	232	
377.00 > 85.00	2.367	2.361	0.006	0.772	42502		2.05(0.85-2.54)	110	253	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.660	2.649	0.011	0.992	489770	2.46		103	2849	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.660	2.650	0.010	1.000	8205	0.0260		110	44.5	
D 73 13C8 PFOA										
421.00 > 376.00	2.681	2.670	0.011	1.000	3658281	2.51		102	6190	
D 14 13C4 PFOA										
417.00 > 372.00	2.681	2.673	0.008	1.000	2467915	2.48		99.2	5171	
* 62 13C2 PFOA										
415.00 > 370.00	2.681	2.674	0.007		2559824	2.50			6271	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.681	2.674	0.007	1.000	32625	0.0285		114	3.5	M
413.00 > 169.00	2.688	2.674	0.014	1.003	21072		1.55(0.84-2.52)	114	51.4	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.696	2.684	0.012	0.879	27331	0.0238		100	208	
449.00 > 99.00	2.696	2.684	0.012	0.879	7780		3.51(1.94-5.82)	100	46.1	
D 72 13C8 PFOS										
507.00 > 99.00	3.061	3.049	0.012	1.142	1027353	2.36		98.7	3804	
D 19 13C5 PFNA										
468.00 > 423.00	3.061	3.051	0.010	1.142	2085247	2.52		101	7241	
D 18 13C4 PFOS										
503.00 > 80.00	3.068	3.053	0.015	1.144	2105584	2.48		104	5055	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.068	3.054	0.014	1.000	22757	0.0230		99.2	58.9	
499.00 > 99.00	3.061	3.054	0.007	0.998	6351		3.58(2.31-6.93)	99.2	50.6	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.068	3.054	0.014	1.002	23434	0.0264		106	10.3	
463.00 > 169.00	3.068	3.054	0.014	1.002	7037		3.33(1.90-5.69)	106	50.1	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.277	3.266	0.011	1.068	37198	0.0225		96.6	192	
D 21 13C8 FOSA										
506.00 > 78.00	3.378	3.373	0.005	1.260	3026667	2.46		98.3	5882	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide	498.00 > 78.00	3.378	3.374	0.004	1.000	29010	0.0247	98.8	267	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.416	3.407	0.009	0.998	5753	0.0219	91.4	51.5	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.416	3.408	0.008	1.113	15081	0.0218	90.6	151	
	549.00 > 99.00	3.423	3.408	0.015	1.116	5343	2.82(1.33-3.97)	90.6	60.0	
D 26 M2-8:2 FTS	529.00 > 81.00	3.423	3.408	0.015	1.277	519906	2.47	103	1915	
D 23 13C2 PFDA	515.00 > 470.00	3.430	3.416	0.014	1.279	1895691	2.60	104	4411	
24 Perfluorodecanoic acid	513.00 > 469.00	3.438	3.417	0.021	1.002	17045	0.0229	91.5	20.7	
	513.00 > 169.00	3.438	3.417	0.021	1.002	2943	5.79(2.36-7.09)	91.5	17.9	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.587	3.574	0.013	1.338	901454	2.42	96.9	1919	
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	3.596	3.580	0.016	1.002	9195	0.0267	107	9.3	
29 Perfluorodecanesulfonic acid	599.00 > 80.00	3.750	3.736	0.014	1.222	12563	0.0228	94.6	73.8	
	599.00 > 99.00	3.758	3.736	0.022	1.225	5422	2.32(1.39-4.16)	94.6	49.8	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.758	3.744	0.014	1.402	1032324	2.65	106	1227	
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	3.767	3.751	0.016	1.002	7805	0.0225	90.0	39.0	Ma M
D 30 13C2 PFUnA	565.00 > 520.00	3.767	3.751	0.016	1.405	1444546	2.46	98.5	3431	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.767	3.751	0.016	1.000	16370	0.0317	127	15.5	
	563.00 > 169.00	3.767	3.751	0.016	1.000	4499	3.64(2.12-6.36)	127	38.8	
35 MeFOSA	512.00 > 169.00	3.889	3.880	0.009		7821	NC		88.1	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.930	3.913	0.017	1.281	59012	0.0236	100	206	
37 Perfluorododecanoic acid	613.00 > 569.00	4.062	4.048	0.014	1.000	18054	0.0266	106	15.7	
	613.00 > 169.00	4.062	4.048	0.014	1.000	4825	3.74(2.13-6.40)	106	31.3	
D 36 13C2 PFDaA	615.00 > 570.00	4.062	4.050	0.012	1.515	1539391	2.50	100	3481	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.062	4.054	0.008	1.187	3587	0.0195	81.0	52.5	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.307	4.295	0.012	1.404	5977	0.0231	95.7	36.0	
	699.00 > 99.00	4.307	4.295	0.012	1.404	10049	0.59(0.00-0.00)	95.7	91.5	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.338	4.320	0.018	1.068	15576	0.0242	96.7	13.9	
	663.00 > 169.00	4.331	4.320	0.011	1.066	6076	2.56(1.25-3.76)	96.7	87.0	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.583	4.565	0.018	1.709	1946733	2.58		103	4525	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.583	4.565	0.018	1.000	5676	0.0273		109	74.9	
713.00 > 219.00	4.574	4.565	0.009	0.998	3696		1.54(0.71-2.13)	109	73.1	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.005	4.989	0.016	1.867	3553706	2.55		102	5223	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.005	4.993	0.012	1.000	62085	0.0246		98.6	12.4	
813.00 > 169.00	5.005	4.993	0.012	1.000	11940		5.20(2.86-8.58)	98.6	123	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.385	5.363	0.022	1.076	43909	0.0262		105	7.6	
913.00 > 169.00	5.385	5.363	0.022	1.076	5537		7.93(3.83-11.48)	105	56.9	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d

Injection Date: 10-Oct-2018 11:24:17

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

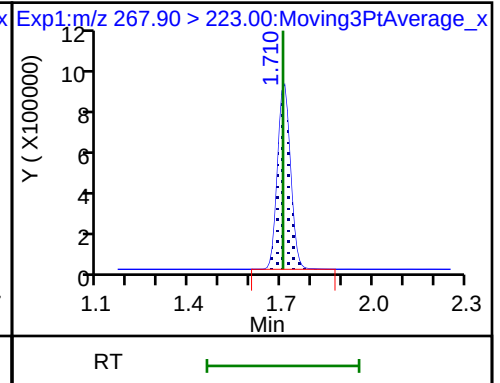
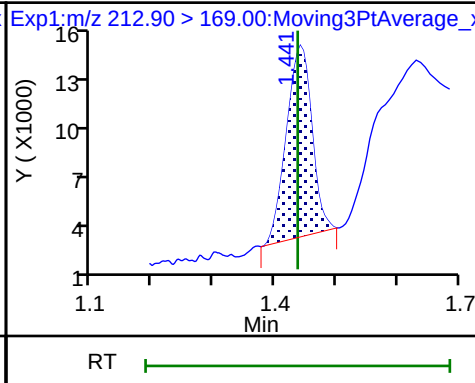
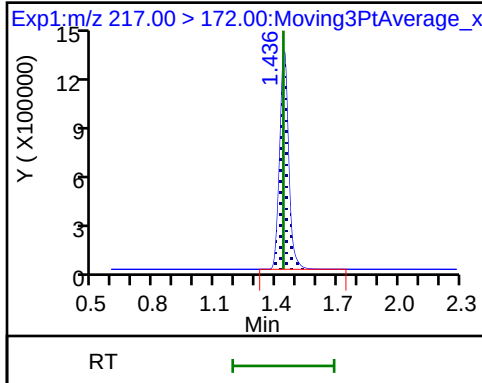
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

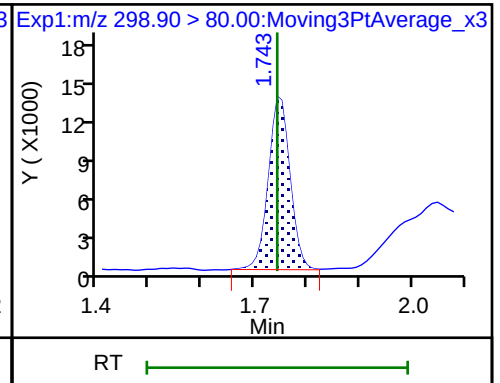
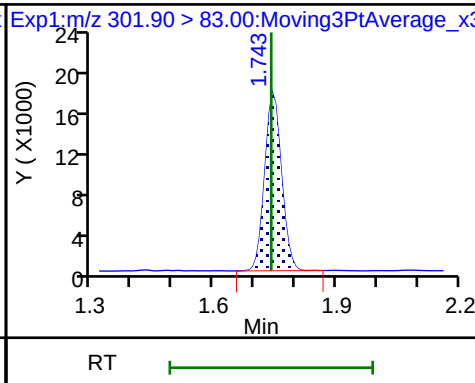
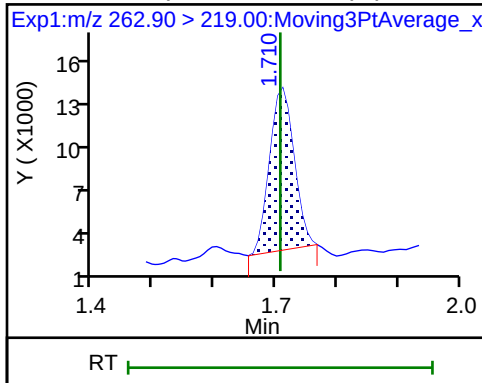
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3 PFBS

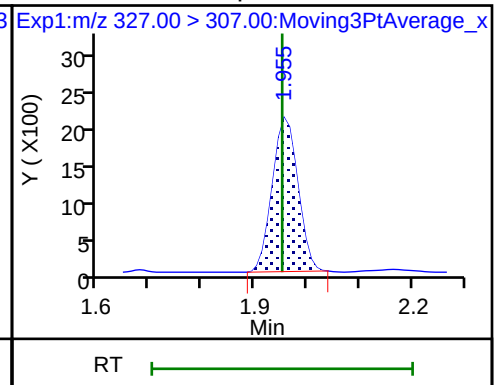
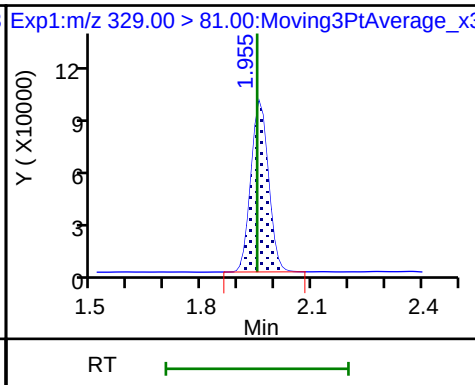
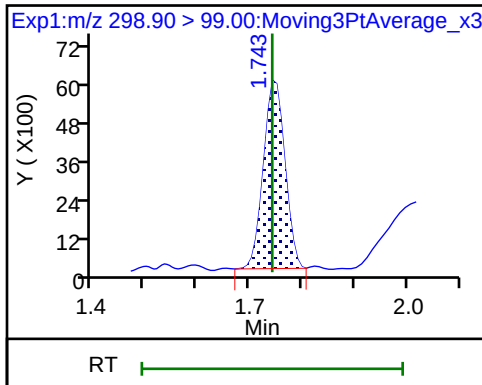
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

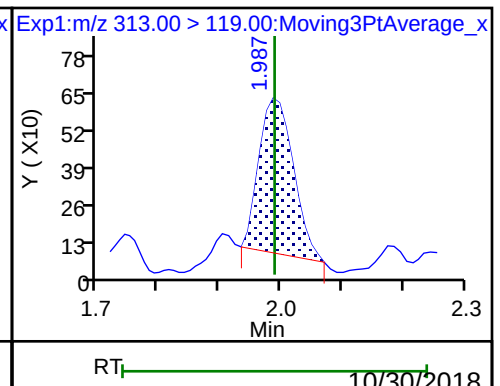
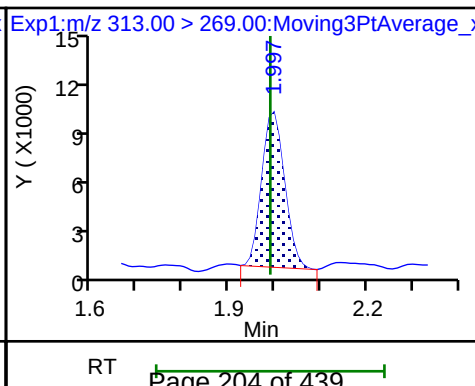
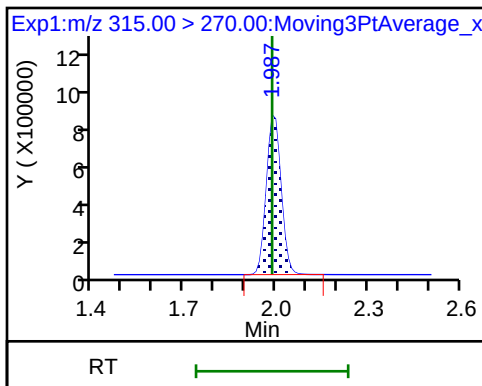
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

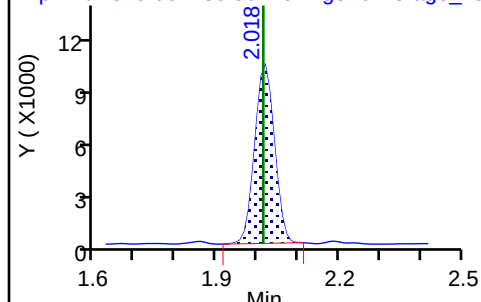


70 Perfluoropentanesulfonic acid

70 Perfluoropentanesulfonic acid

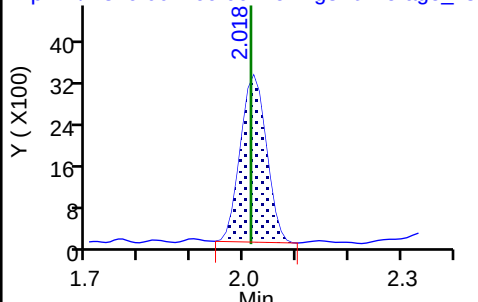
D 64 13C3 HFPO-DA

Exp1:m/z 349.00 > 80.00:Moving3PtAverage_x3



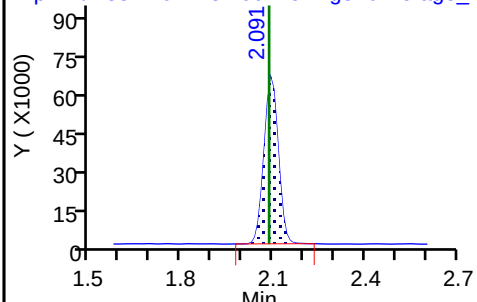
RT

Exp1:m/z 349.00 > 99.00:Moving3PtAverage_x3



RT

Exp1:m/z 332.10 > 287.00:Moving3PtAverage_x3

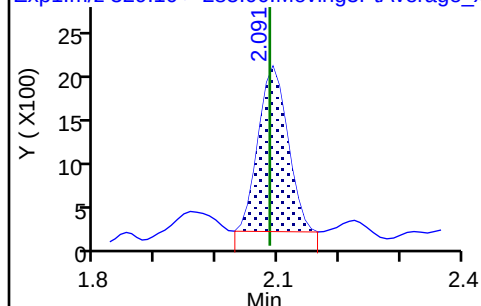


RT

67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

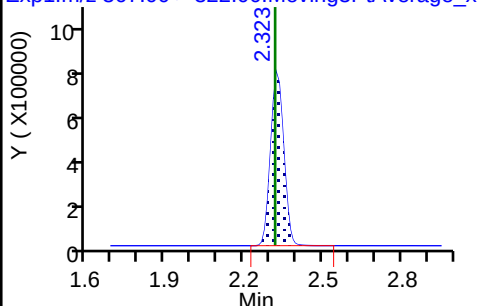
10 Perfluoroheptanoic acid (M)

Exp1:m/z 329.10 > 285.00:Moving3PtAverage_x3



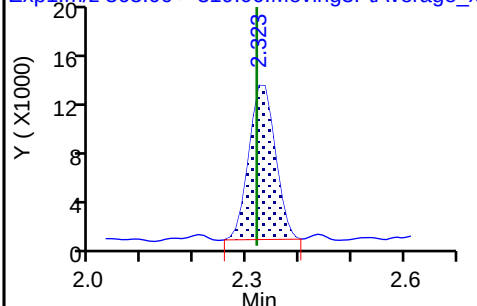
RT

Exp1:m/z 367.00 > 322.00:Moving3PtAverage_x3



RT

Exp1:m/z 363.00 > 319.00:Moving3PtAverage_x3



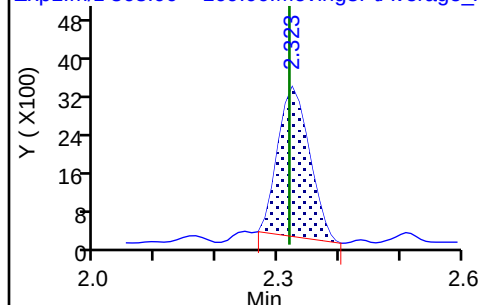
RT

10 Perfluoroheptanoic acid (M)

8 Perfluorohexanesulfonic acid

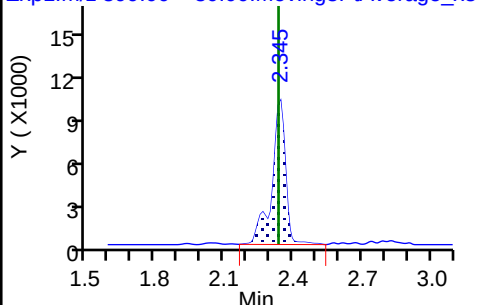
8 Perfluorohexanesulfonic acid

Exp1:m/z 363.00 > 169.00:Moving3PtAverage_x3



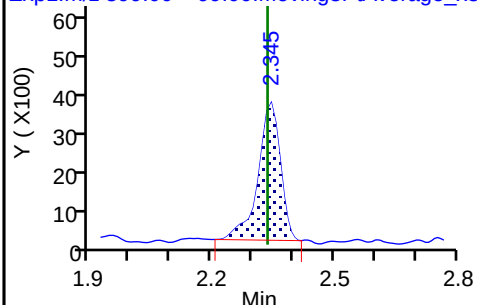
RT

Exp1:m/z 399.00 > 80.00:Moving3PtAverage_x3



RT

Exp1:m/z 399.00 > 99.00:Moving3PtAverage_x3



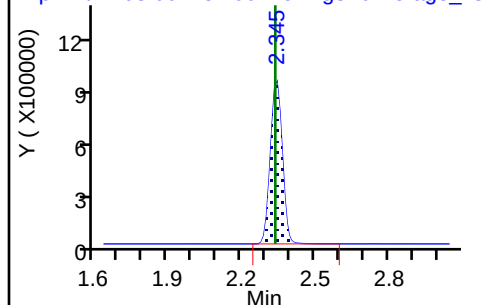
RT

D 11 18O2 PFHxS

77 DONA

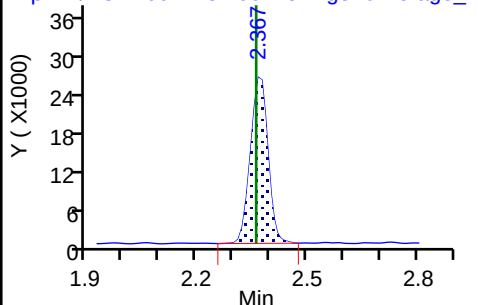
77 DONA

Exp1:m/z 403.00 > 84.00:Moving3PtAverage_x3



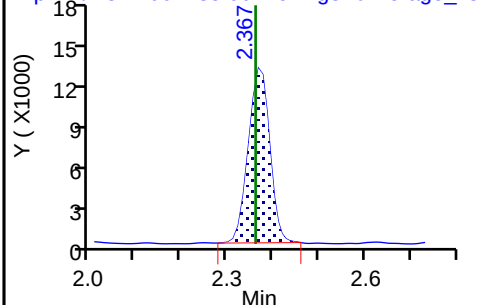
RT

Exp1:m/z 377.00 > 251.00:Moving3PtAverage_x3



RT

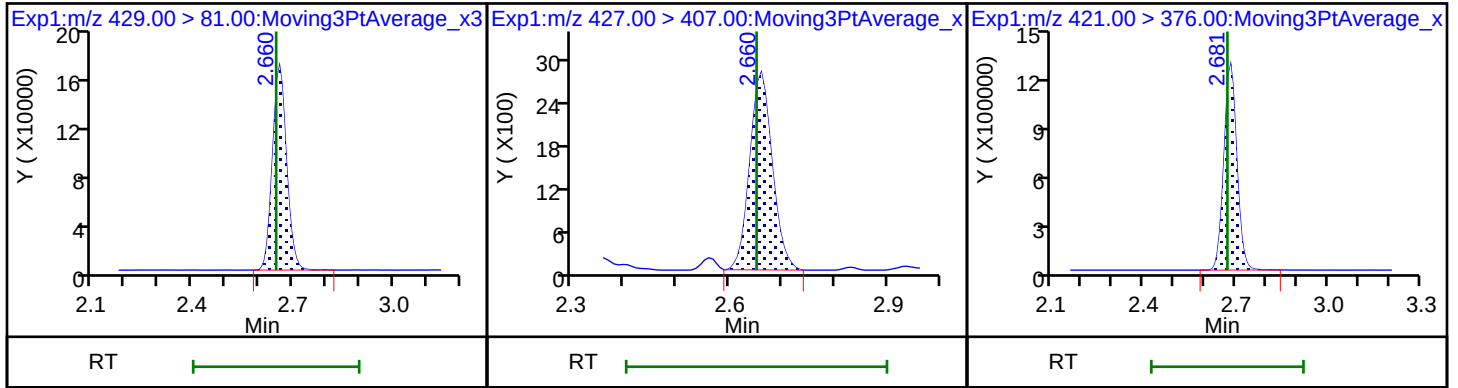
Exp1:m/z 377.00 > 85.00:Moving3PtAverage_x3



RT

D 12 M2-6:2 FTS

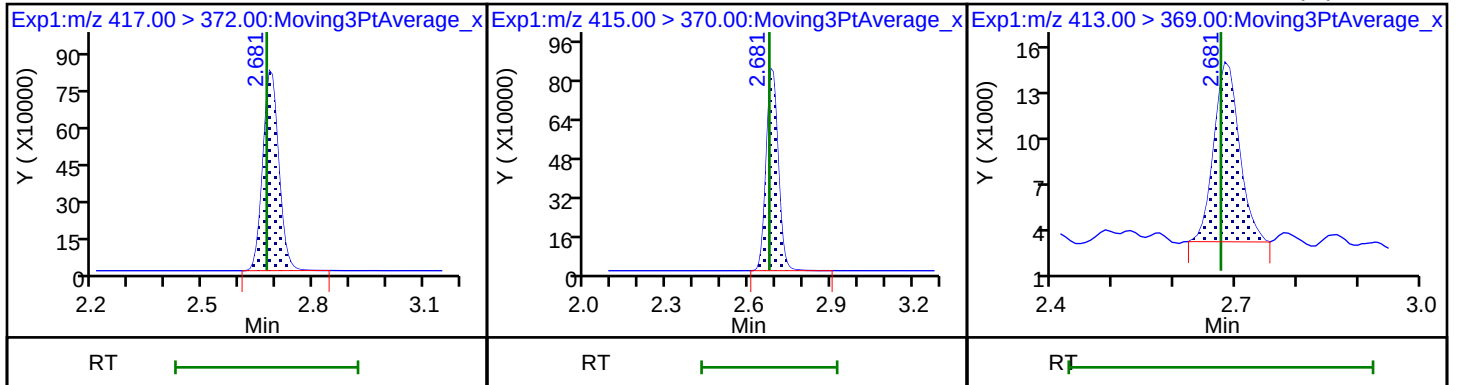
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

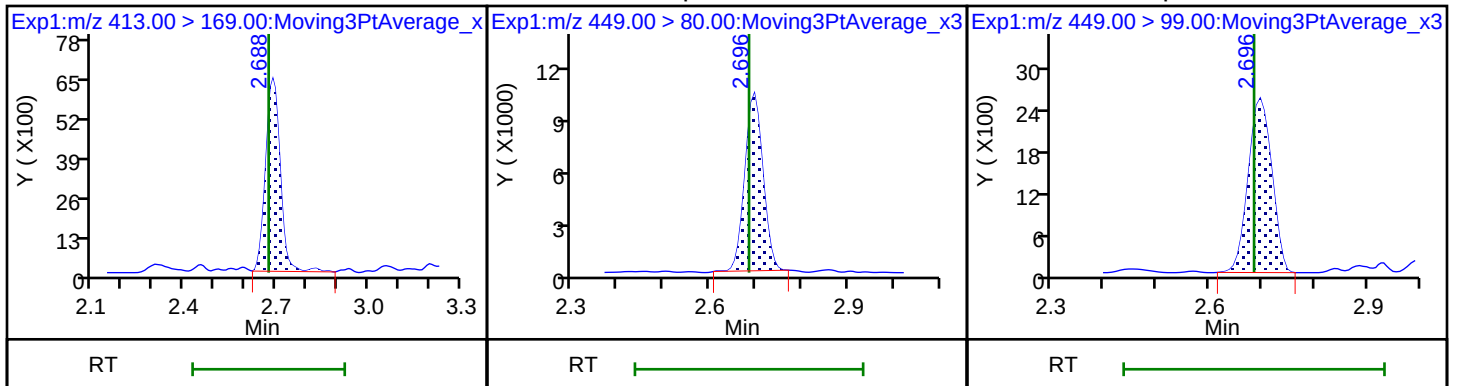
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

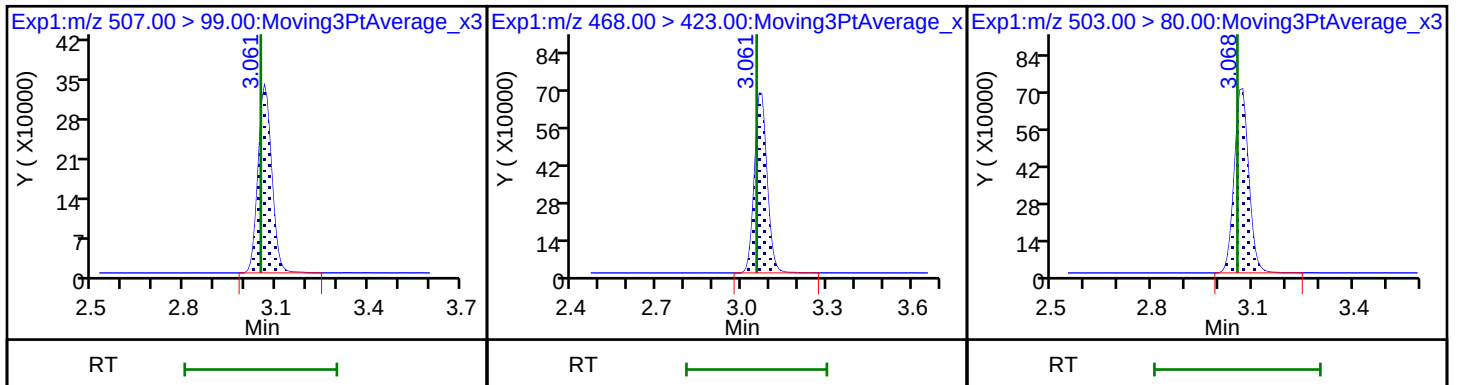
16 Perfluoroheptanesulfonic acid

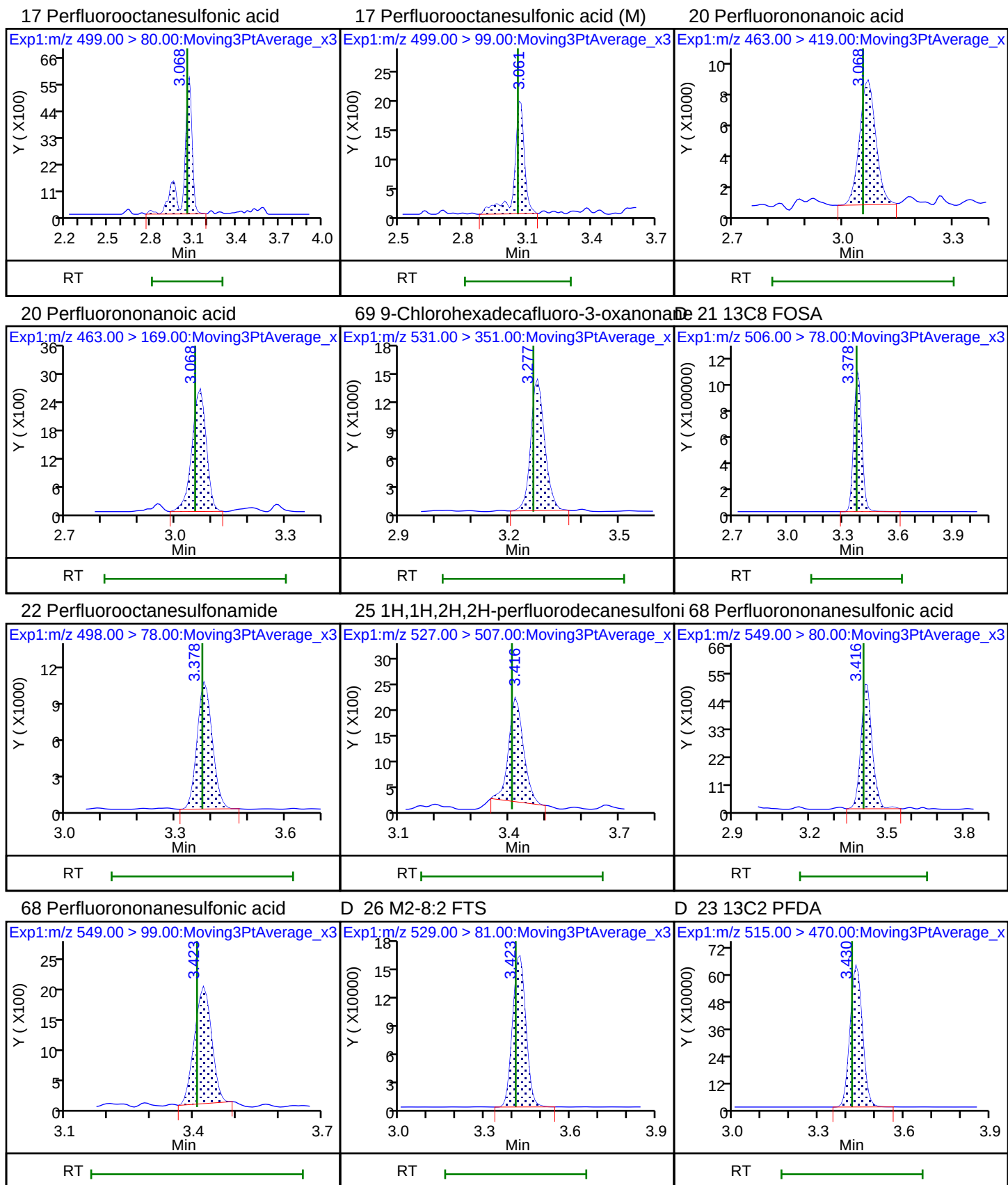


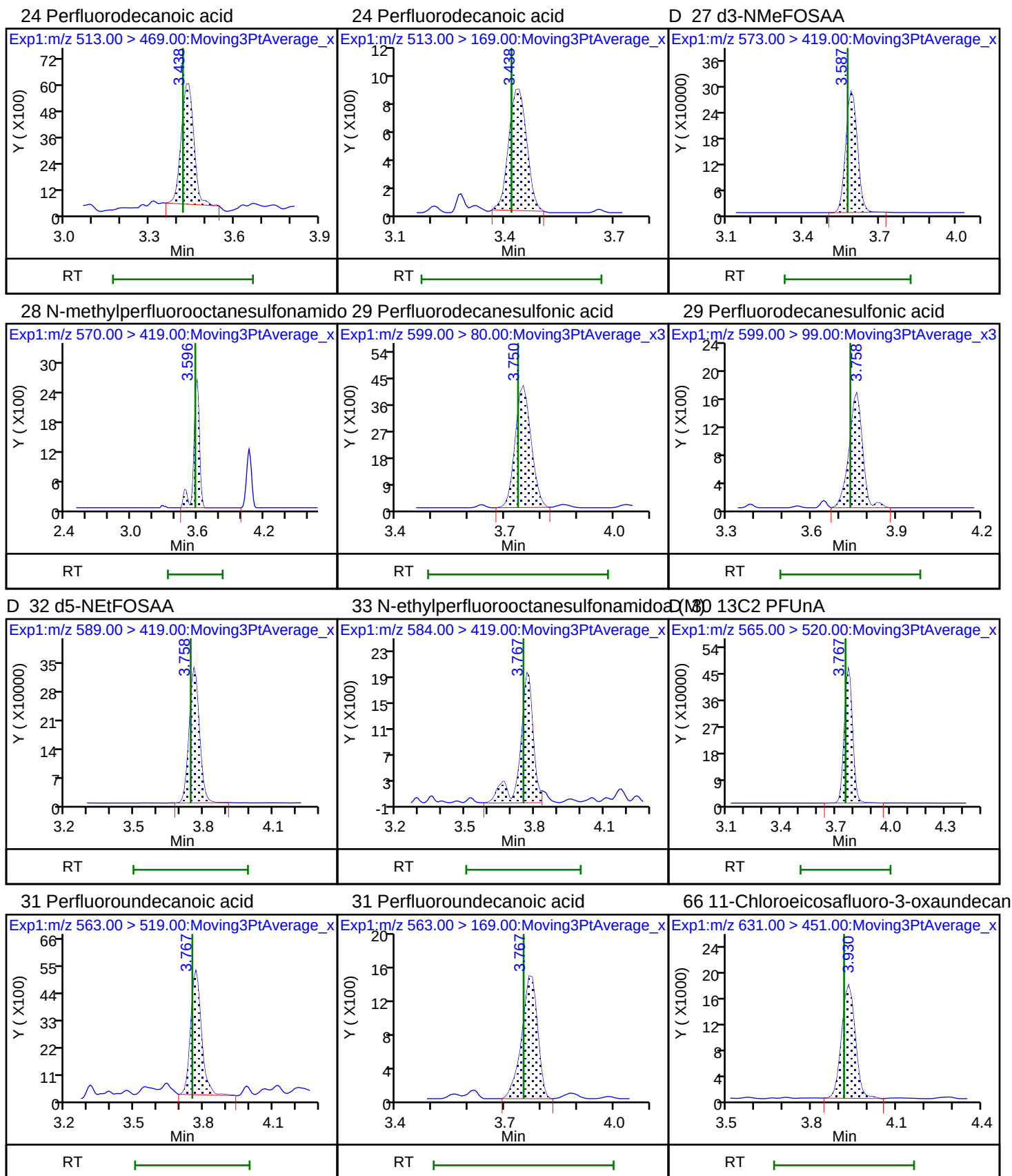
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



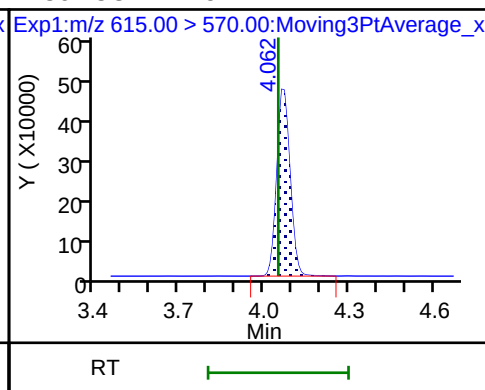
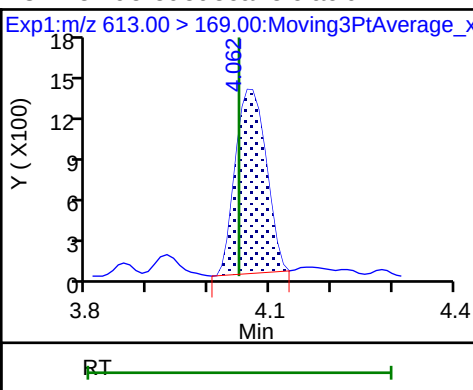
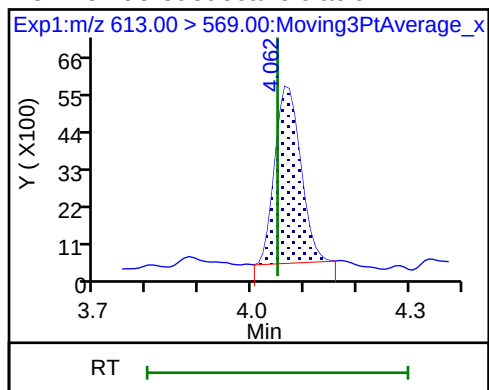




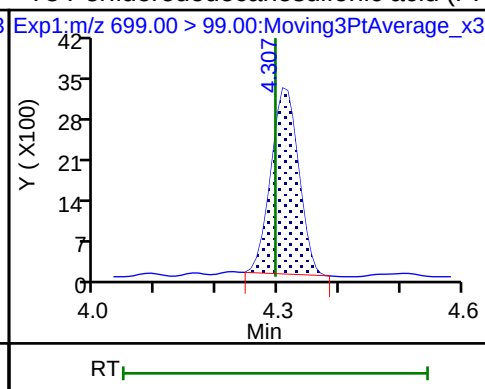
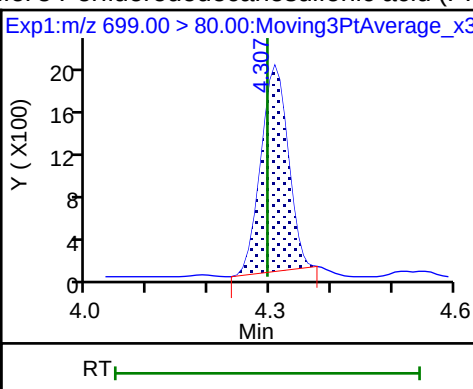
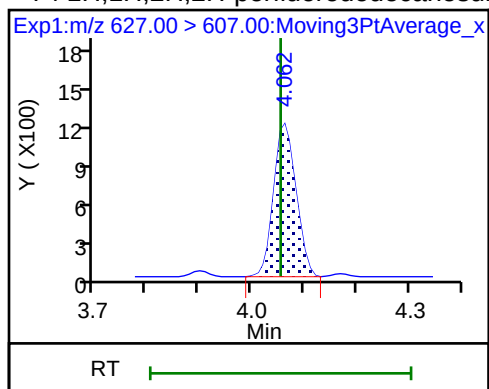
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



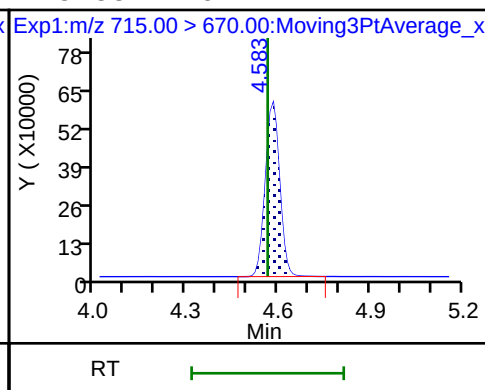
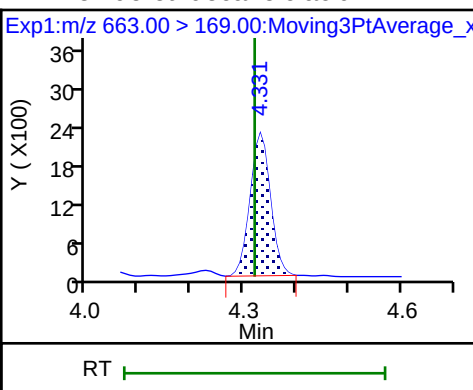
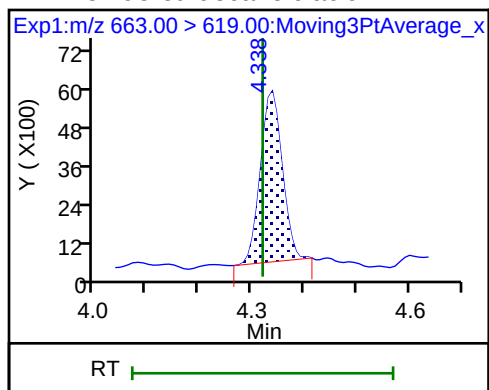
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

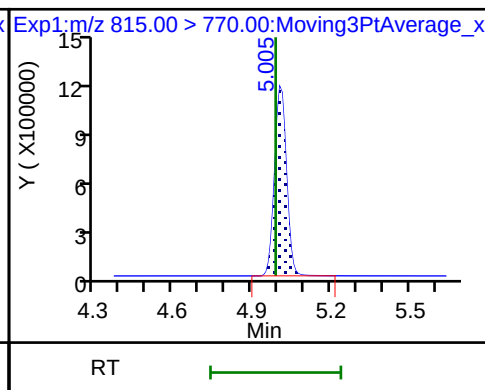
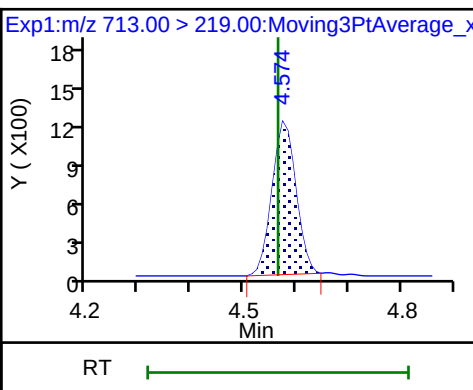
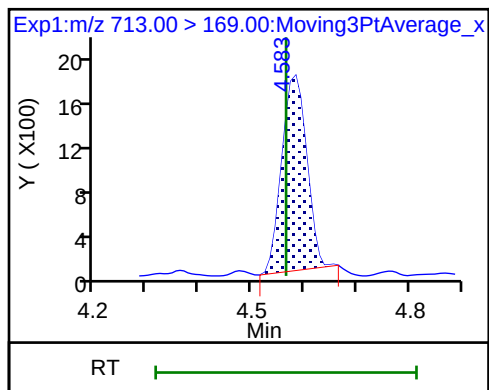
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

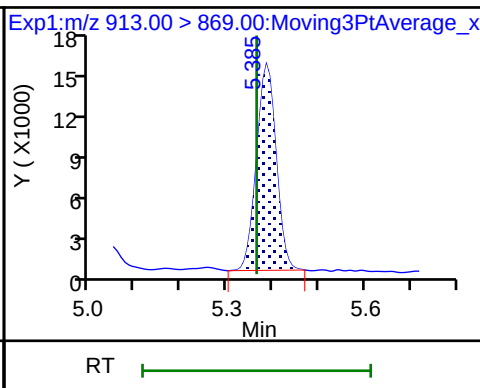
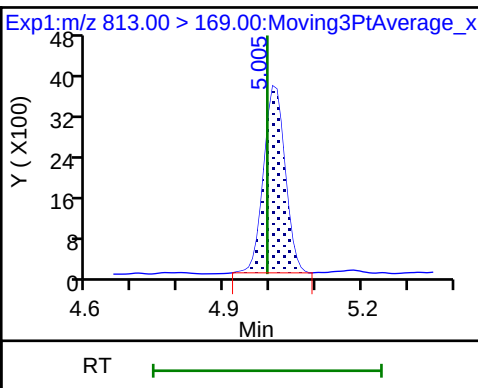
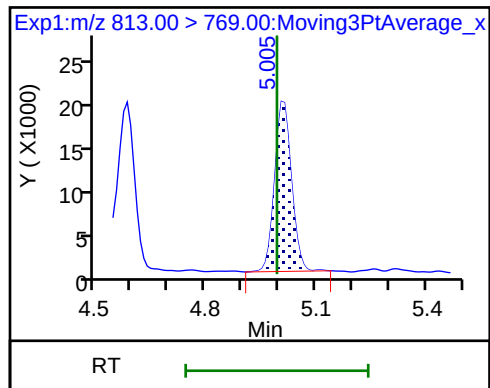
D 44 13C2 PFHxDA



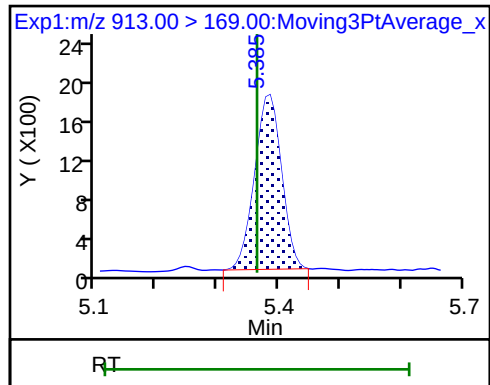
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



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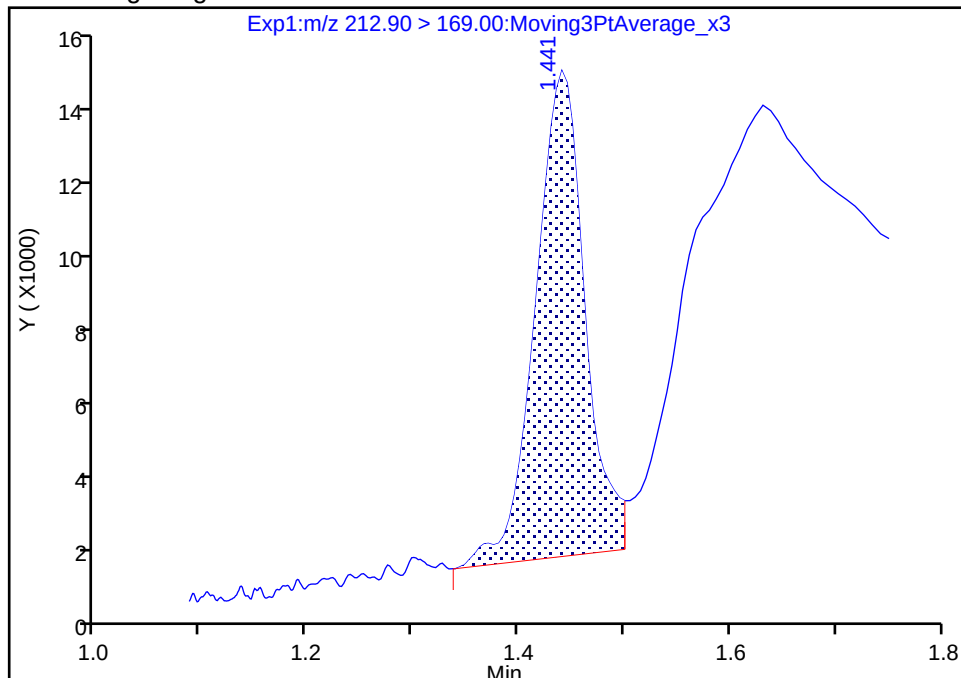
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d
Injection Date: 10-Oct-2018 11:24:17 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

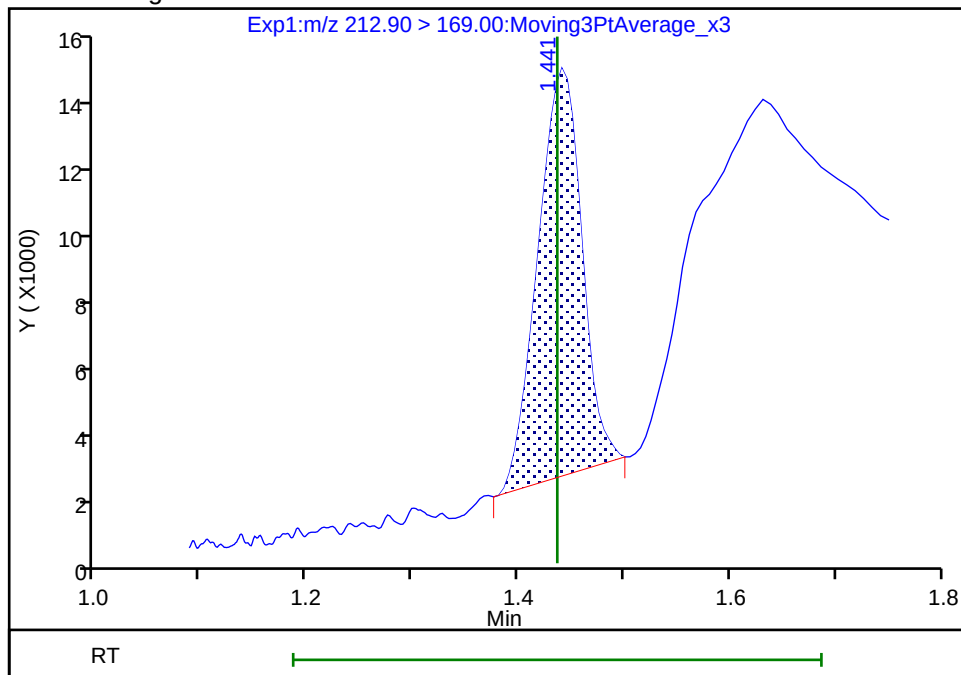
RT: 1.44
Area: 41028
Amount: 0.027069
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 33785
Amount: 0.023624
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:46:09
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d

Injection Date: 10-Oct-2018 11:24:17

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

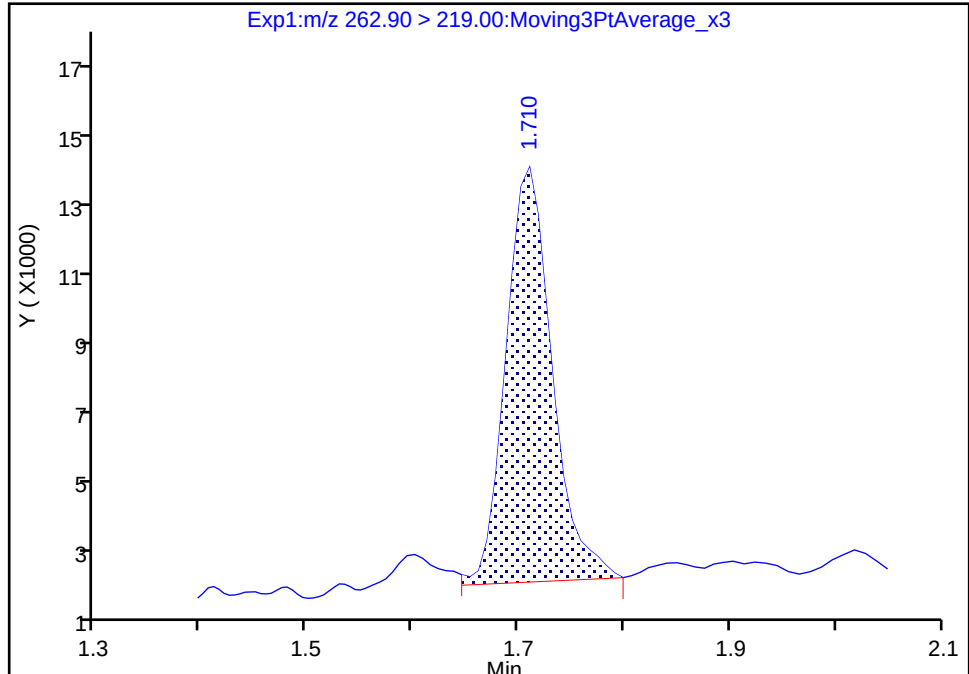
Detector: EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

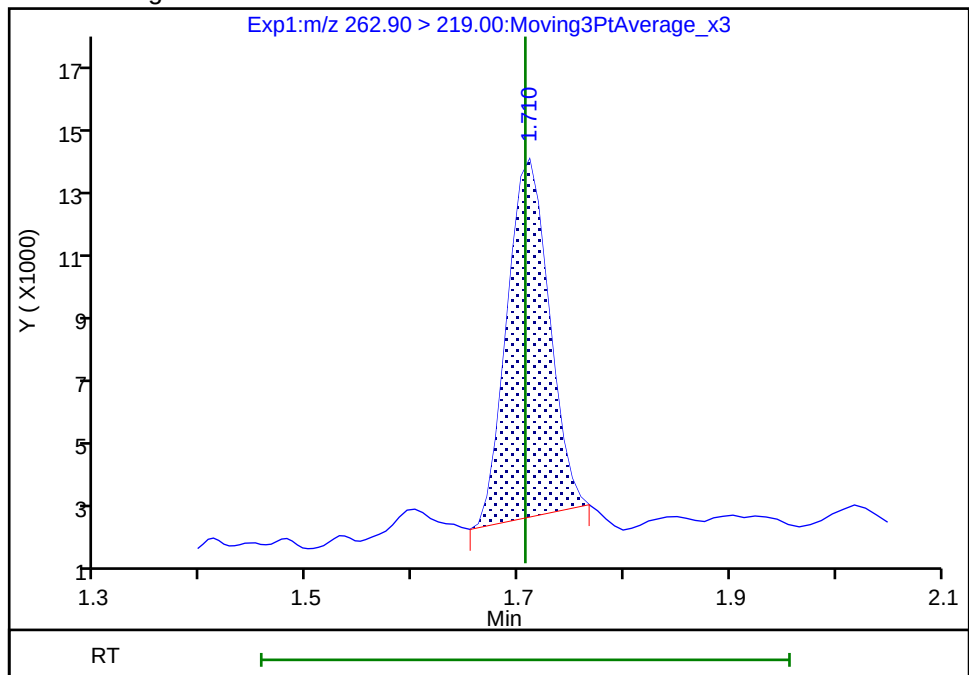
RT: 1.71
Area: 34260
Amount: 0.029626
Amount Units: ng/ml

Processing Integration Results



RT: 1.71
Area: 29948
Amount: 0.026745
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:46:17

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

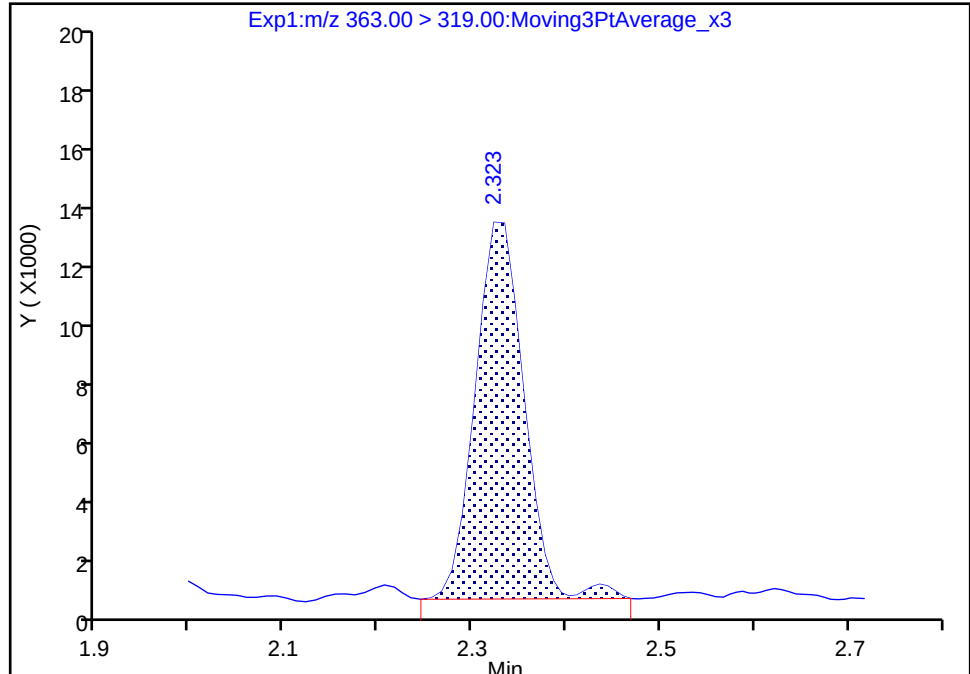
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d
Injection Date: 10-Oct-2018 11:24:17 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

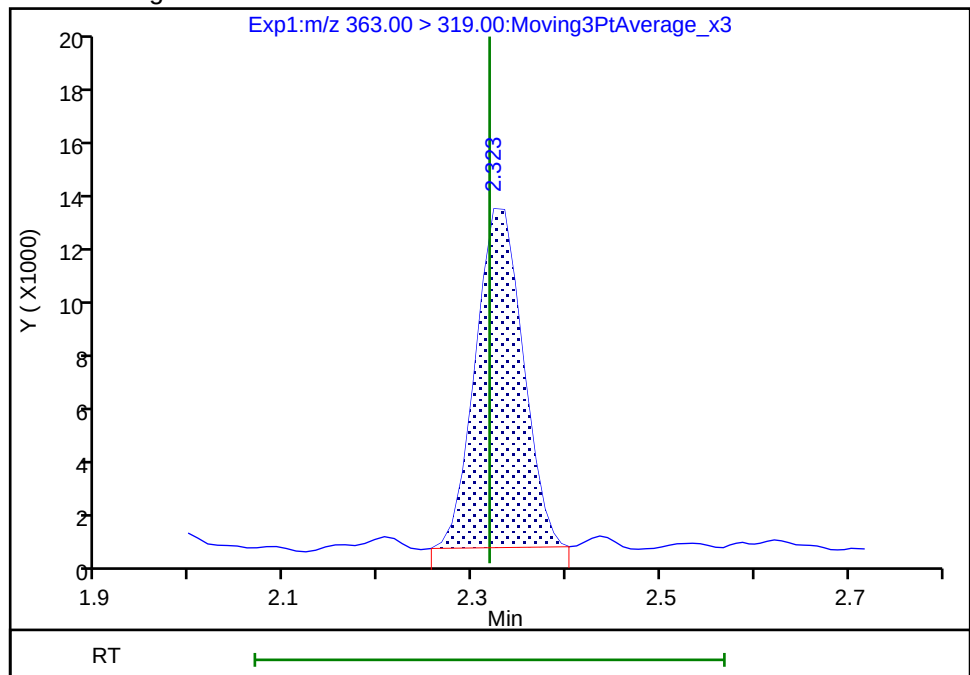
RT: 2.32
Area: 46461
Amount: 0.038433
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 44825
Amount: 0.040726
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:46:36
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

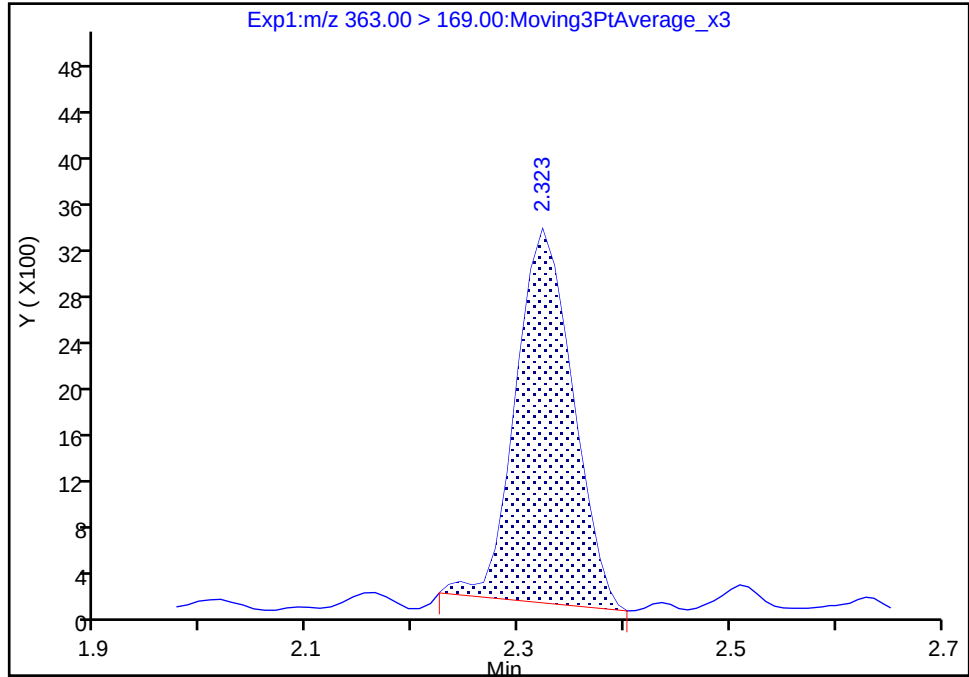
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d
Injection Date: 10-Oct-2018 11:24:17 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

10 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 2

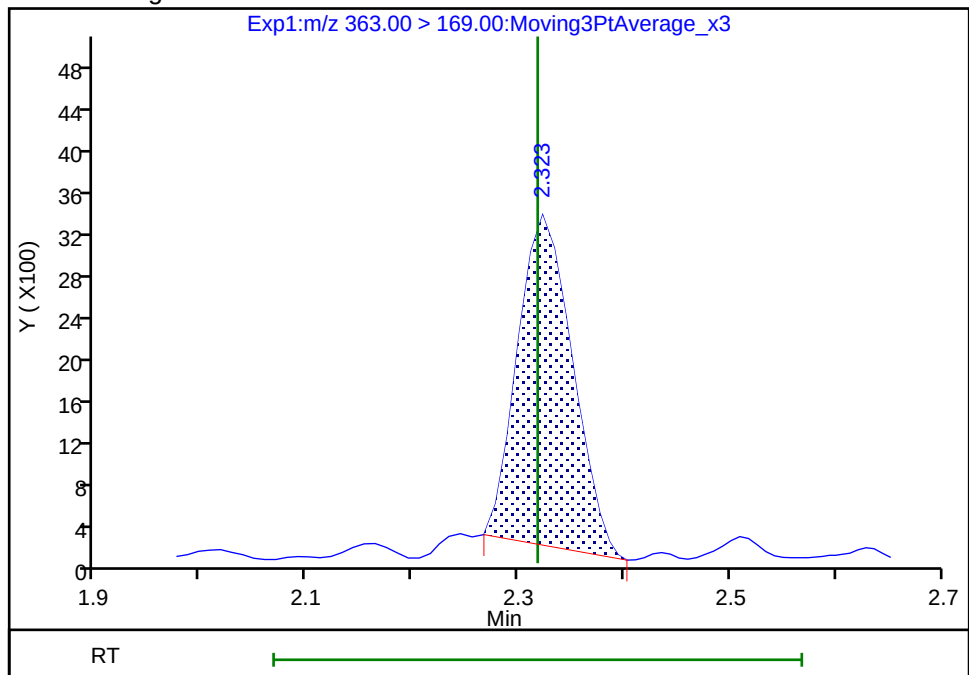
RT: 2.32
Area: 12059
Amount: 0.038433
Amount Units: ng/ml

Processing Integration Results



RT: 2.32
Area: 11326
Amount: 0.040726
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:46:41

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

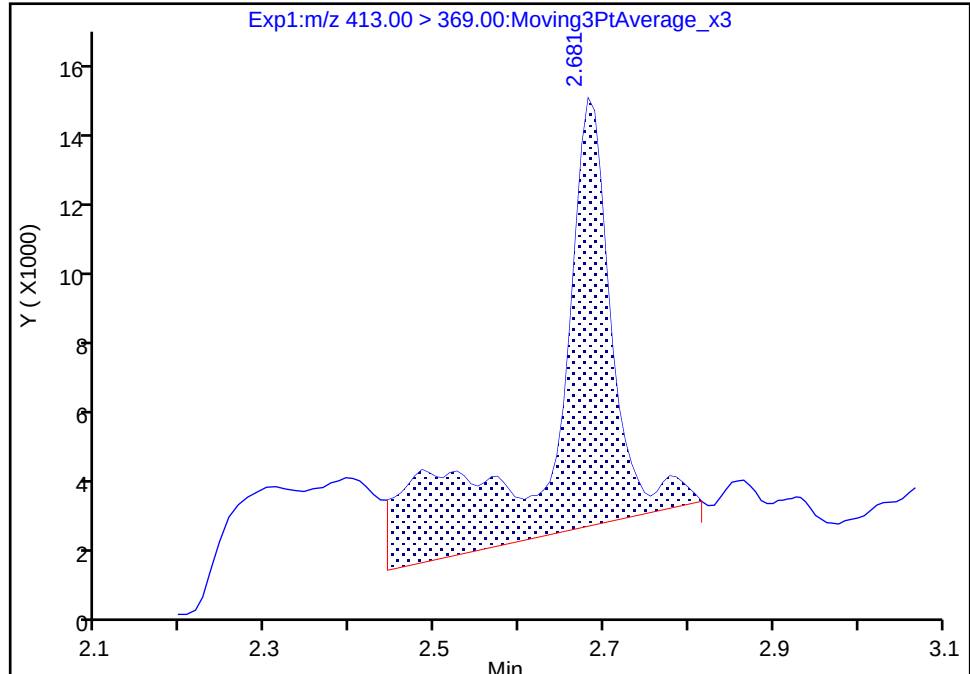
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d
Injection Date: 10-Oct-2018 11:24:17 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

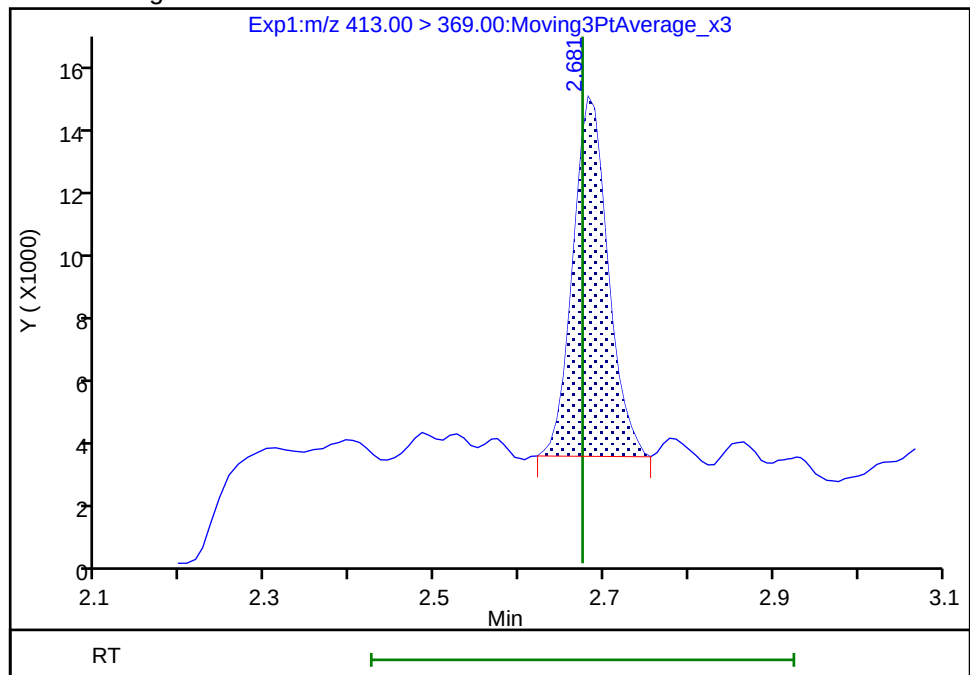
RT: 2.68
Area: 62701
Amount: 0.029789
Amount Units: ng/ml

Processing Integration Results



RT: 2.68
Area: 32625
Amount: 0.028509
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:46:54
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d

Injection Date: 10-Oct-2018 11:24:17

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

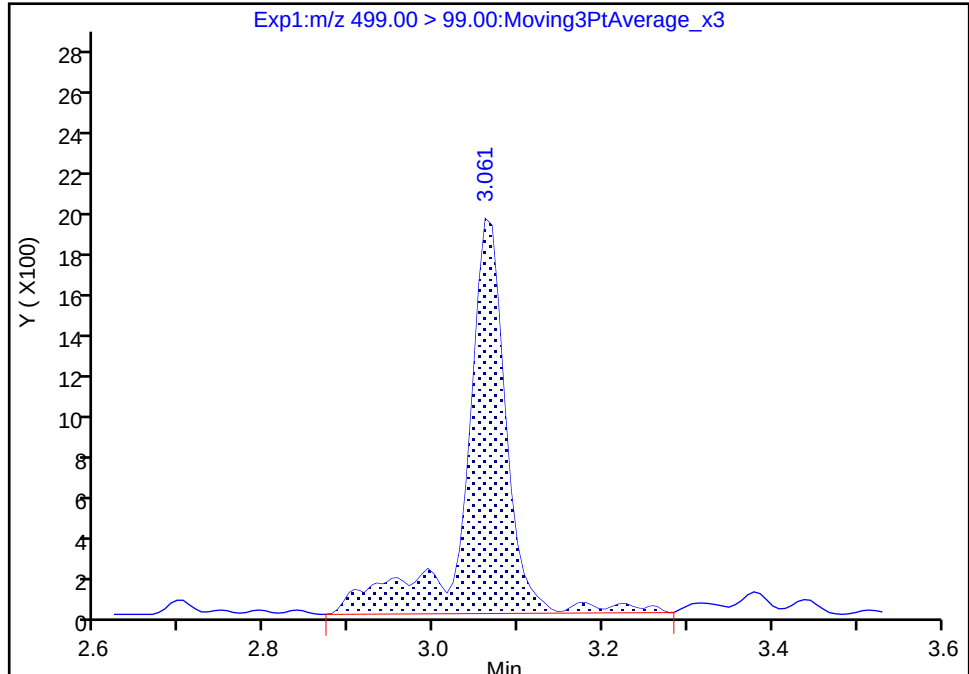
Detector: EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

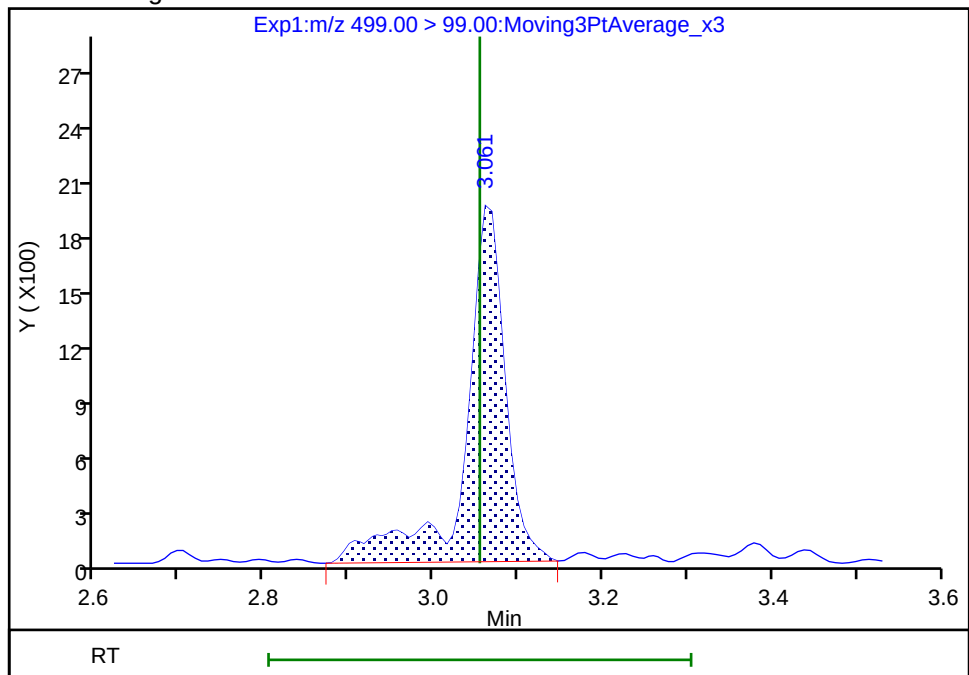
RT: 3.06
Area: 6623
Amount: 0.023847
Amount Units: ng/ml

Processing Integration Results



RT: 3.06
Area: 6351
Amount: 0.023012
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:47:02

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

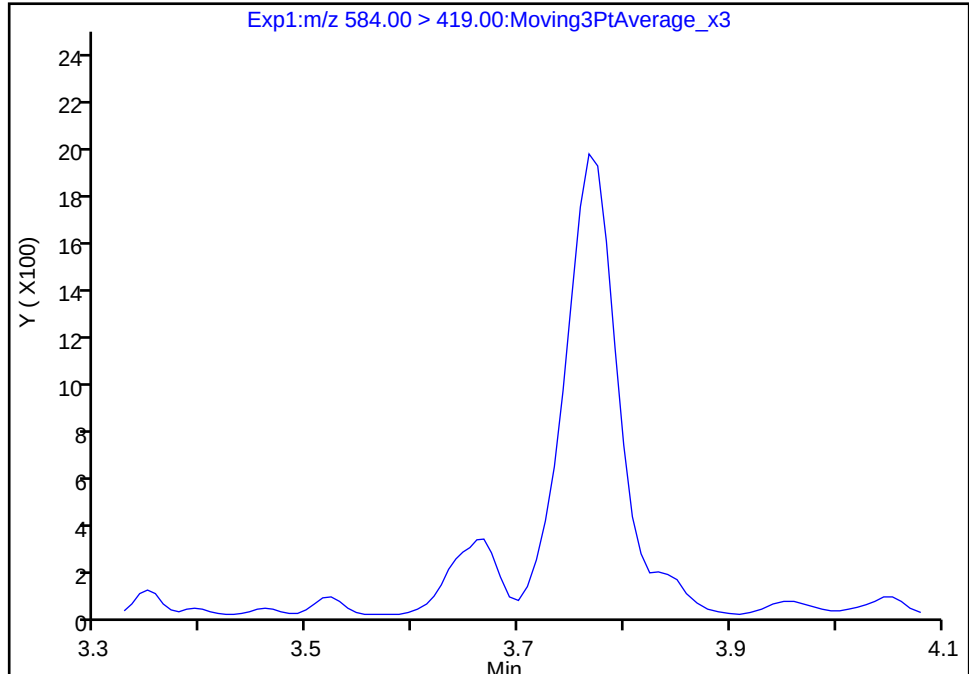
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_005.d
Injection Date: 10-Oct-2018 11:24:17 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

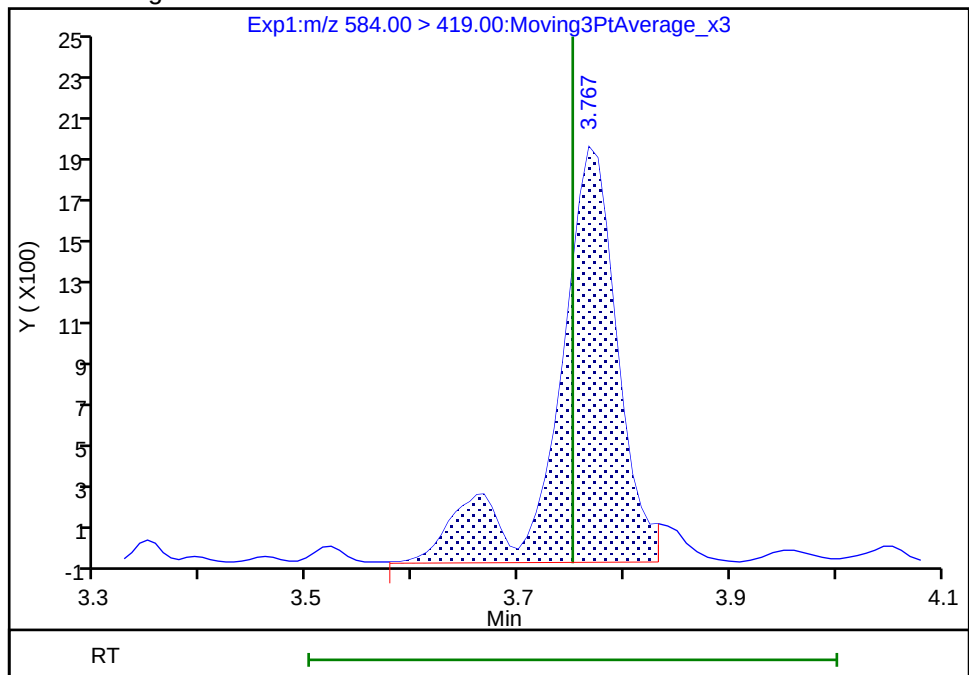
Not Detected
Expected RT: 3.75

Processing Integration Results



RT: 3.77
Area: 7805
Amount: 0.022509
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:47:47
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_006.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 10-Oct-2018 11:31:42 ALS Bottle#: 11 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:09:11 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:49:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.434	0.002	0.536	5011000	2.40		96.1	11609	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.436	1.437	-0.001	1.000	90156	0.0502		100	10.6	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.710	1.705	0.005	0.638	3266435	2.39		95.6	10559	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.710	1.706	0.004	1.000	71165	0.0505		101	11.1	M
D 47 13C3 PFBS										
301.90 > 83.00	1.742	1.740	0.002	0.650	63212	2.25		96.8	579	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.742	0.0	1.000	96887	0.0453		103	19.6	
298.90 > 99.00	1.750	1.742	0.008	1.005	42594		2.27(1.25-3.74)	103	19.6	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.954	1.950	0.004	0.729	439546	2.36		101	632	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.954	1.951	0.003	1.121	19861	0.0492		105	430	
D 7 13C2 PFHxA										
315.00 > 270.00	1.996	1.986	0.010	0.745	3843292	2.55		102	11068	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.996	1.989	0.007	1.000	72170	0.0476		95.2	31.2	
313.00 > 119.00	1.996	1.989	0.007	1.000	7523		9.59(5.03-15.10)	95.2	29.1	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.017	2.013	0.004	1.157	86834	0.0473		101	473	
349.00 > 99.00	2.017	2.013	0.004	1.157	30860		2.81(1.36-4.07)	101	164	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.090	2.086	0.004	0.780	290772	2.68		107	1569	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.090	2.086	0.004	1.000	14722	0.0430		86.0	21.1	
D 9 13C4 PFHpA										
367.00 > 322.00	2.321	2.318	0.003	0.866	3367026	2.44		97.8	7311	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.318	0.003	1.000	73950	0.0517		103	28.8	
363.00 > 169.00	2.321	2.318	0.003	1.000	31884		2.32(1.13-3.40)	103	76.3	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.344	2.336	0.008	1.000	86655	0.0479		105	217	
399.00 > 99.00	2.332	2.336	-0.004	0.995	25590		3.39(1.50-4.49)	105	77.1	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.344	2.337	0.007	0.874	3843289	2.33		98.4	5216	
77 DONA										
377.00 > 251.00	2.366	2.361	0.005	0.775	194696	0.0482		102	426	
377.00 > 85.00	2.366	2.361	0.005	0.775	116585		1.67(0.85-2.54)	102	633	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.651	2.649	0.002	0.989	620932	2.40		101	4482	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.658	2.650	0.008	1.003	19126	0.0478		101	102	
D 73 13C8 PFOA										
421.00 > 376.00	2.673	2.670	0.003	0.997	4390986	2.32		94.9	6998	
D 14 13C4 PFOA										
417.00 > 372.00	2.680	2.673	0.007	1.000	3306843	2.56		103	8106	
* 62 13C2 PFOA										
415.00 > 370.00	2.680	2.674	0.006		3316136	2.50			6471	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.680	2.674	0.006	1.000	76344	0.0498		99.5	7.6	M
413.00 > 169.00	2.680	2.674	0.006	1.000	40790		1.87(0.84-2.52)	99.5	104	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.687	2.684	0.003	0.880	68365	0.0497		104	472	
449.00 > 99.00	2.687	2.684	0.003	0.880	17400		3.93(1.94-5.82)	104	98.7	
D 72 13C8 PFOS										
507.00 > 99.00	3.053	3.049	0.004	1.139	1334654	2.37		99.0	3120	
D 19 13C5 PFNA										
468.00 > 423.00	3.053	3.051	0.002	1.139	2717992	2.54		101	5743	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.053	0.0	1.139	2526082	2.29		95.9	4974	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.061	3.054	0.007	1.002	61304	0.0517		111	144	
499.00 > 99.00	3.061	3.054	0.007	1.002	12467		4.92(2.31-6.93)	111	118	
20 Perfluorononanoic acid										
463.00 > 419.00	3.061	3.054	0.007	1.002	53452	0.0462		92.3	20.6	
463.00 > 169.00	3.061	3.054	0.007	1.002	14011		3.82(1.90-5.69)	92.3	166	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.271	3.266	0.005	1.071	90131	0.0454		97.5	653	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.373	-0.002	1.258	3993046	2.50		100	7051	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide	498.00 > 78.00	3.379	3.374	0.005	1.002	72717	0.0469	93.9	462	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.417	3.407	0.010	1.000	15772	0.0516	108	84.3	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.417	3.408	0.009	1.119	42751	0.0514	107	418	
	549.00 > 99.00	3.417	3.408	0.009	1.119	12773	3.35(1.33-3.97)	107	88.6	
D 26 M2-8:2 FTS	529.00 > 81.00	3.417	3.408	0.009	1.275	604699	2.22	92.5	3067	
D 23 13C2 PFDA	515.00 > 470.00	3.424	3.416	0.008	1.278	2207202	2.34	93.4	3967	
24 Perfluorodecanoic acid	513.00 > 469.00	3.424	3.417	0.007	1.000	39205	0.0452	90.4	47.9	
	513.00 > 169.00	3.424	3.417	0.007	1.000	7927	4.95(2.36-7.09)	90.4	47.9	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.580	3.574	0.006	1.336	1168203	2.42	96.9	1766	
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	3.589	3.580	0.009	1.002	23737	0.0531	106	19.2	
29 Perfluorodecanesulfonic acid	599.00 > 80.00	3.744	3.736	0.008	1.226	31371	0.0474	98.4	201	
	599.00 > 99.00	3.744	3.736	0.008	1.226	11182	2.81(1.39-4.16)	98.4	94.3	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.753	3.744	0.009	1.400	1211377	2.40	96.2	1629	
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	3.753	3.751	0.002	1.000	20657	0.0508	102	135	
D 30 13C2 PFUnA	565.00 > 520.00	3.753	3.751	0.002	1.400	1843443	2.43	97.0	6477	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.753	3.751	0.002	1.000	36628	0.0556	111	47.9	
	563.00 > 169.00	3.761	3.751	0.010	1.002	7607	4.82(2.12-6.36)	111	67.6	
35 MeFOSA	512.00 > 169.00	3.873	3.880	-0.007		18496	NC		139	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.924	3.913	0.011	1.285	138359	0.0462	98.1	556	
37 Perfluorododecanoic acid	613.00 > 569.00	4.049	4.048	0.001	0.998	46274	0.0517	103	40.2	
	613.00 > 169.00	4.058	4.048	0.010	1.000	10978	4.22(2.13-6.40)	103	143	
D 36 13C2 PFDaA	615.00 > 570.00	4.058	4.050	0.008	1.514	2028667	2.54	102	3596	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.058	4.054	0.004	1.188	9274	0.0434	90.0	96.2	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.303	4.295	0.008	1.409	15622	0.0504	104	177	
	699.00 > 99.00	4.303	4.295	0.008	1.409	21362	0.73(0.00-0.00)	104	199	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.327	4.320	0.007	1.066	42261	0.0498	99.5	36.7	
	663.00 > 169.00	4.327	4.320	0.007	1.066	12819	3.30(1.25-3.76)	99.5	120	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.570	4.565	0.005	1.705	2383298	2.44		97.7	5330	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.570	4.565	0.005	1.000	13946	0.0548		110	164	
713.00 > 219.00	4.570	4.565	0.005	1.000	8409		1.66(0.71-2.13)	110	170	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.005	4.989	0.016	1.867	4298426	2.38		95.3	5403	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.005	4.993	0.012	1.000	116618	0.0519		104	20.9	
813.00 > 169.00	5.005	4.993	0.012	1.000	20355		5.73(2.86-8.58)	104	158	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.377	5.363	0.014	1.074	105352	0.0519		104	15.5	
913.00 > 169.00	5.370	5.363	0.007	1.073	13788		7.64(3.83-11.48)	104	147	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_006.d

Injection Date: 10-Oct-2018 11:31:42

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 11

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

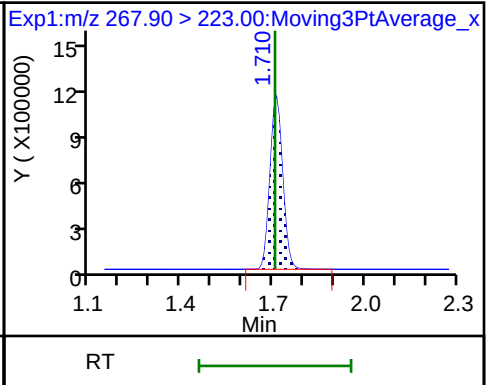
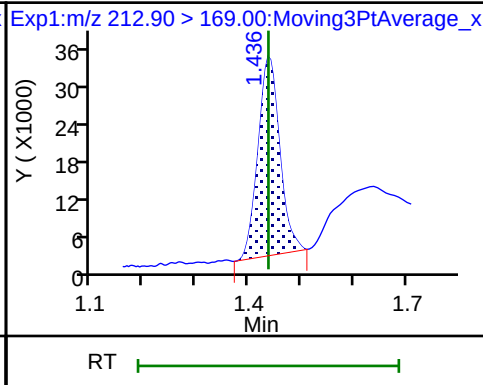
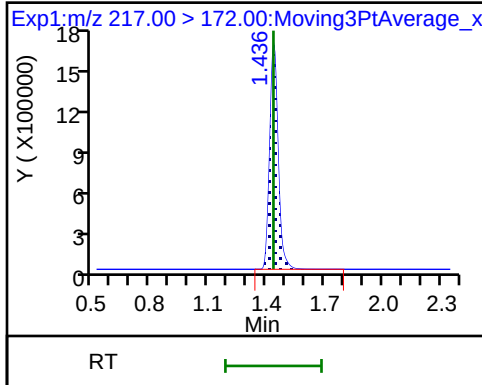
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

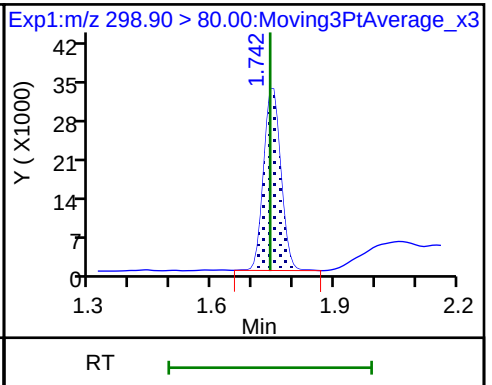
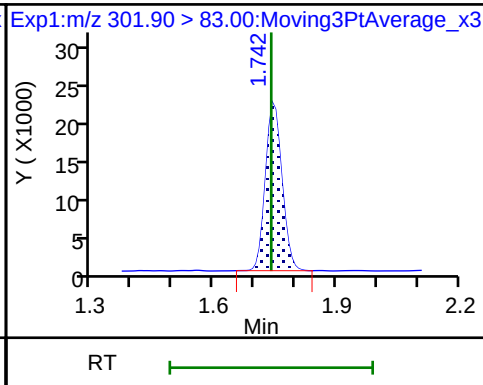
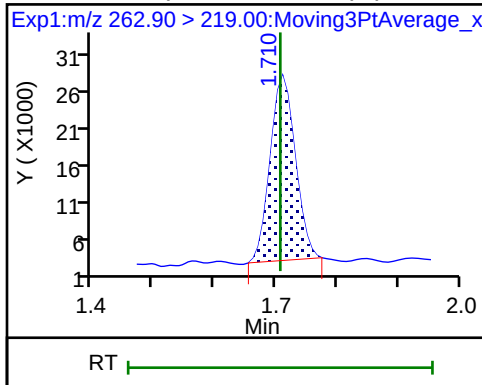
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3 PFBS

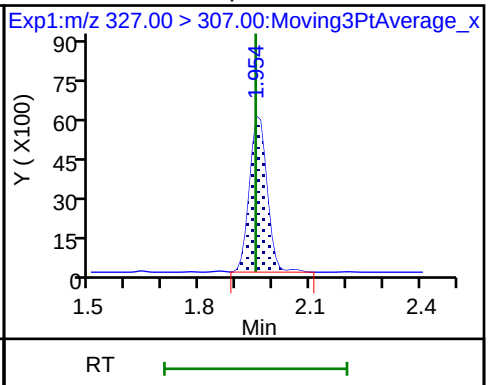
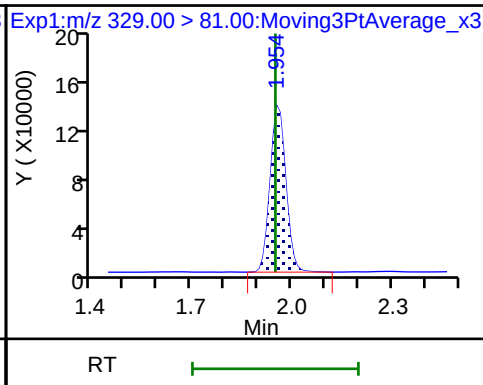
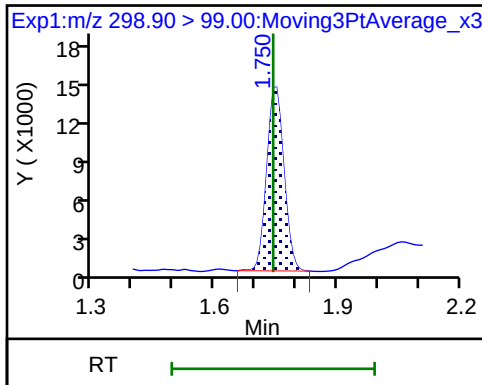
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

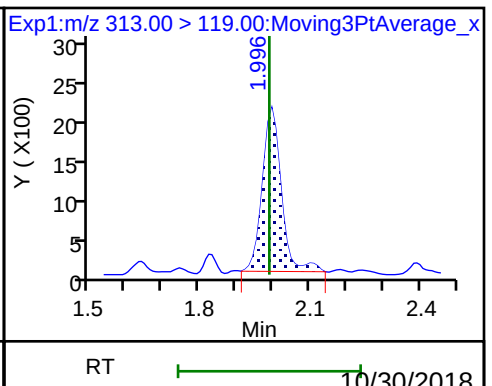
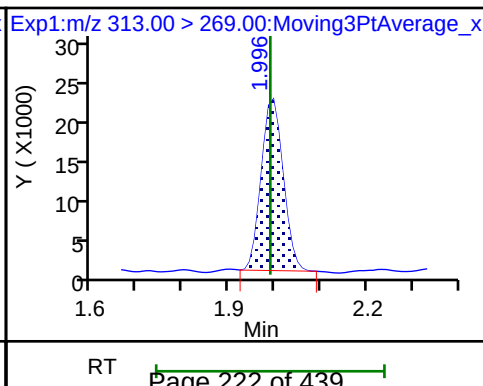
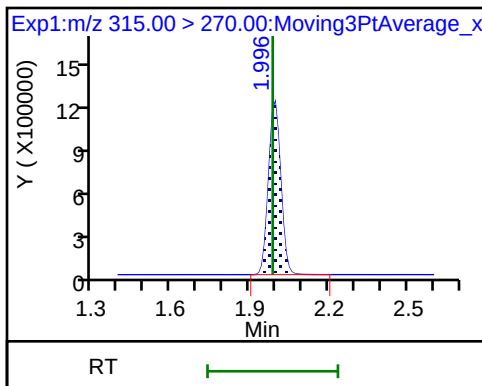
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

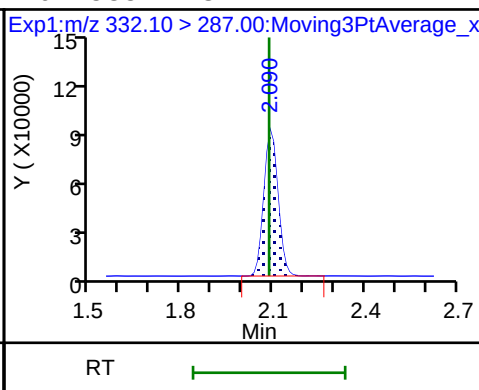
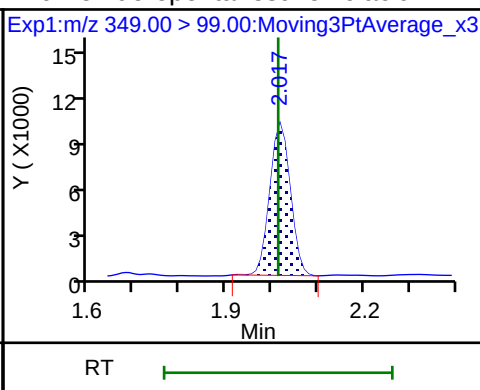
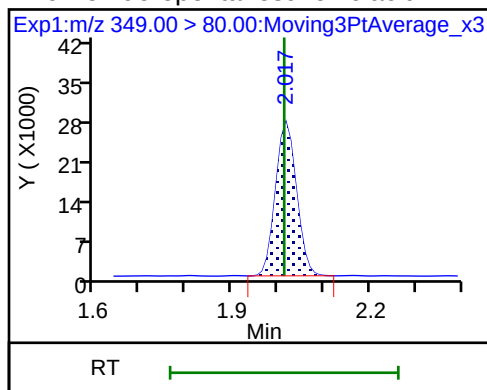
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

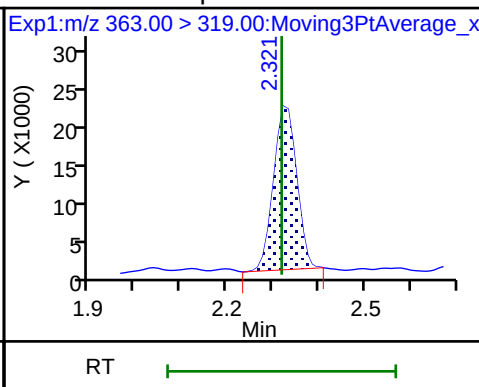
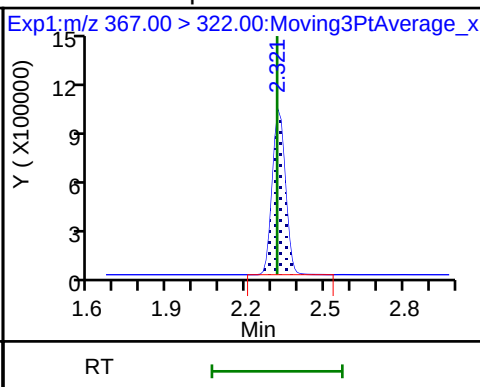
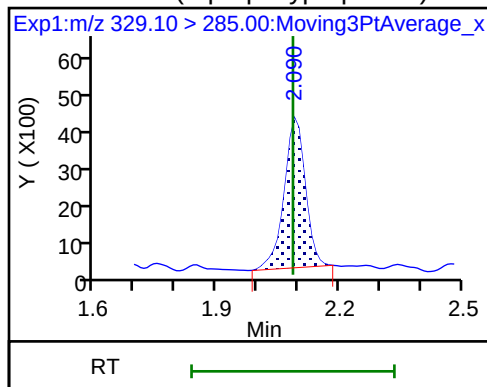
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

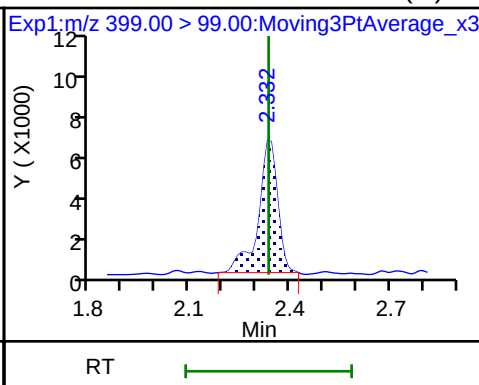
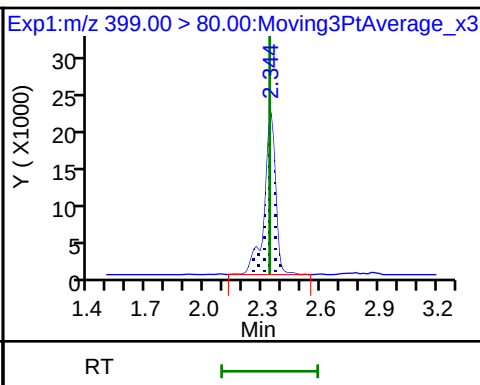
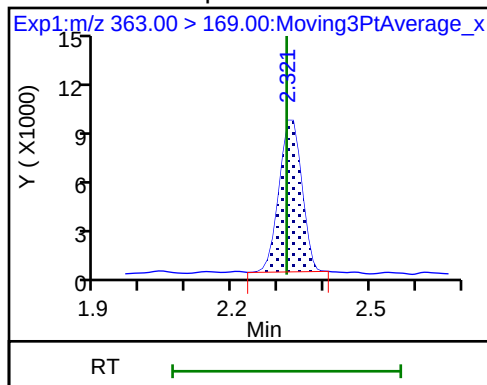
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

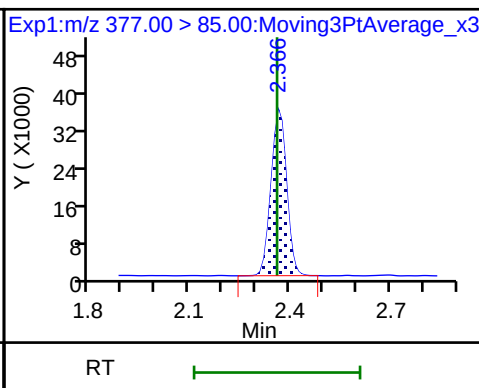
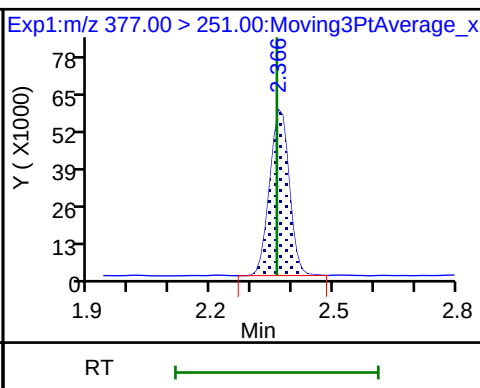
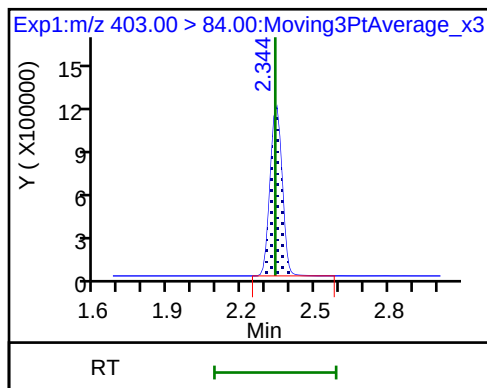
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

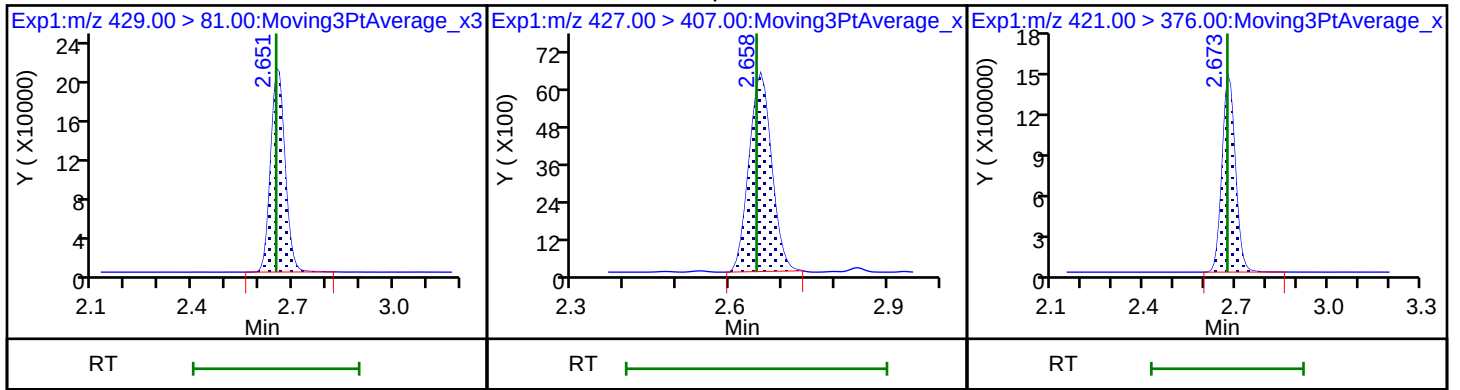
77 DONA

77 DONA



D 12 M2-6:2 FTS

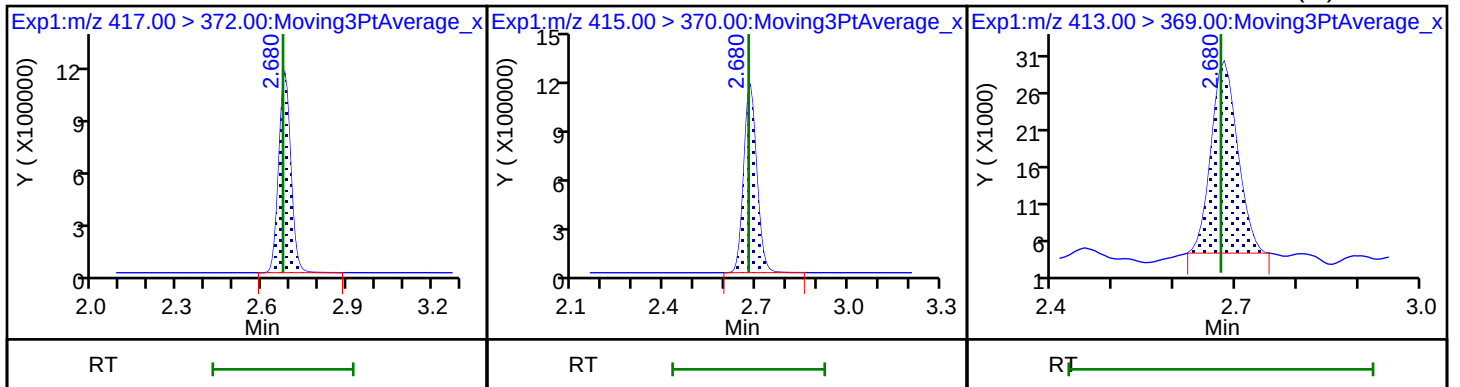
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D 14 13C4 PFOA

* 62 13C2 PFOA

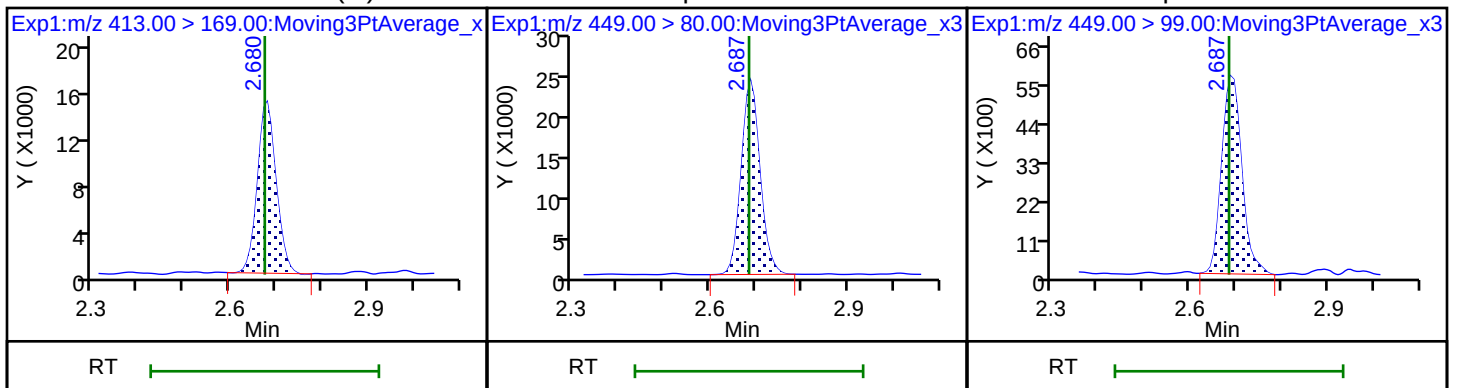
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid (M)

16 Perfluoroheptanesulfonic acid

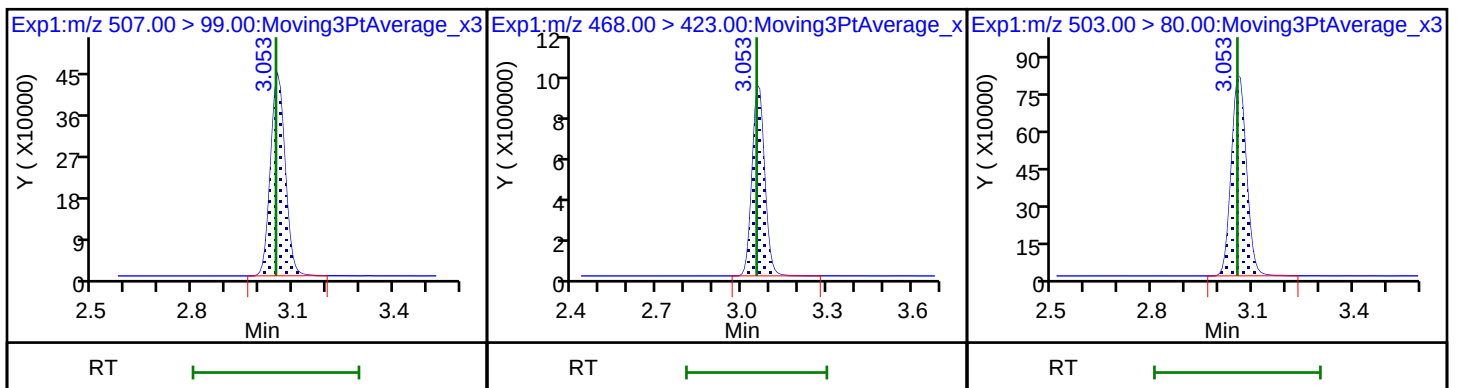
16 Perfluoroheptanesulfonic acid

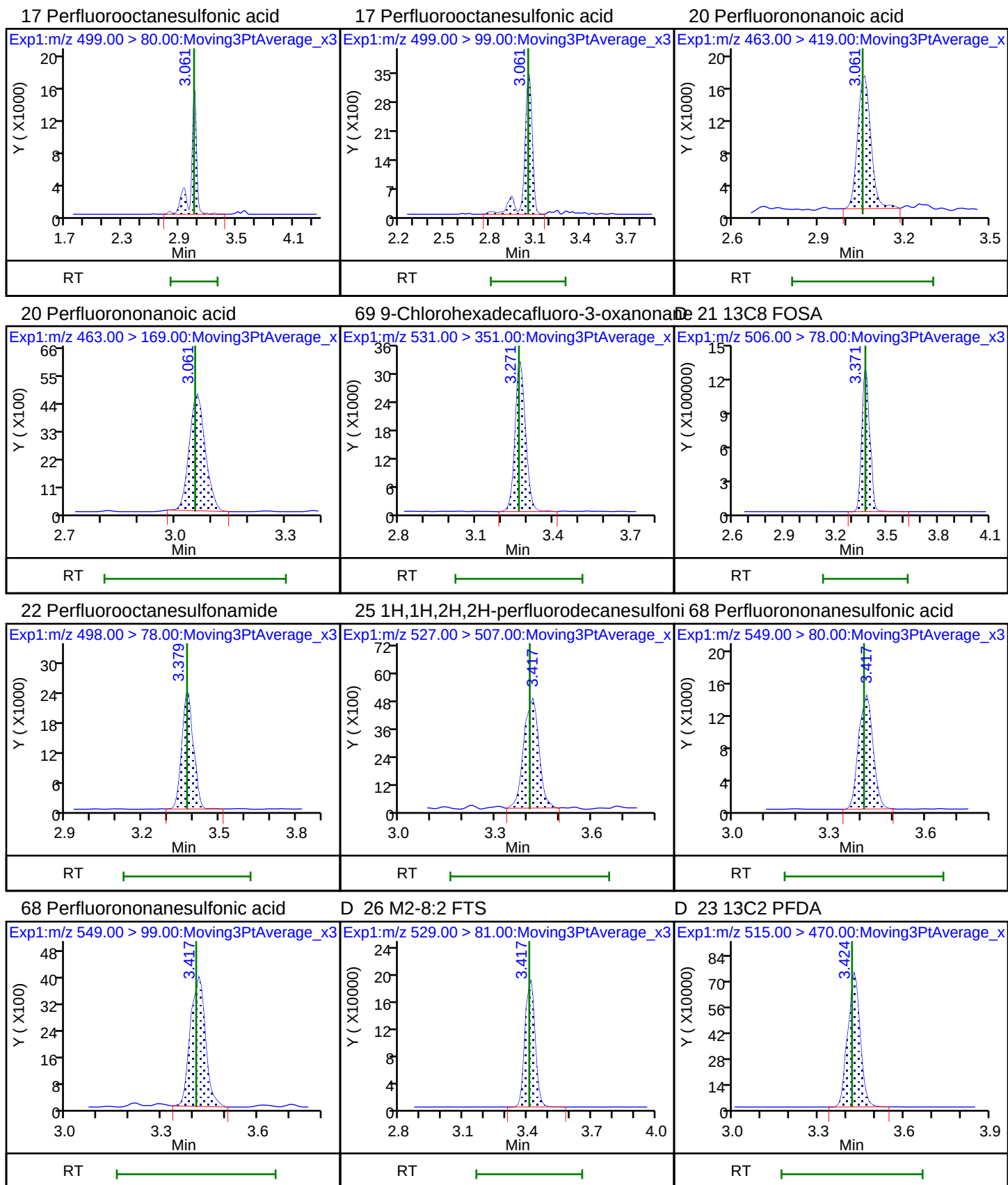


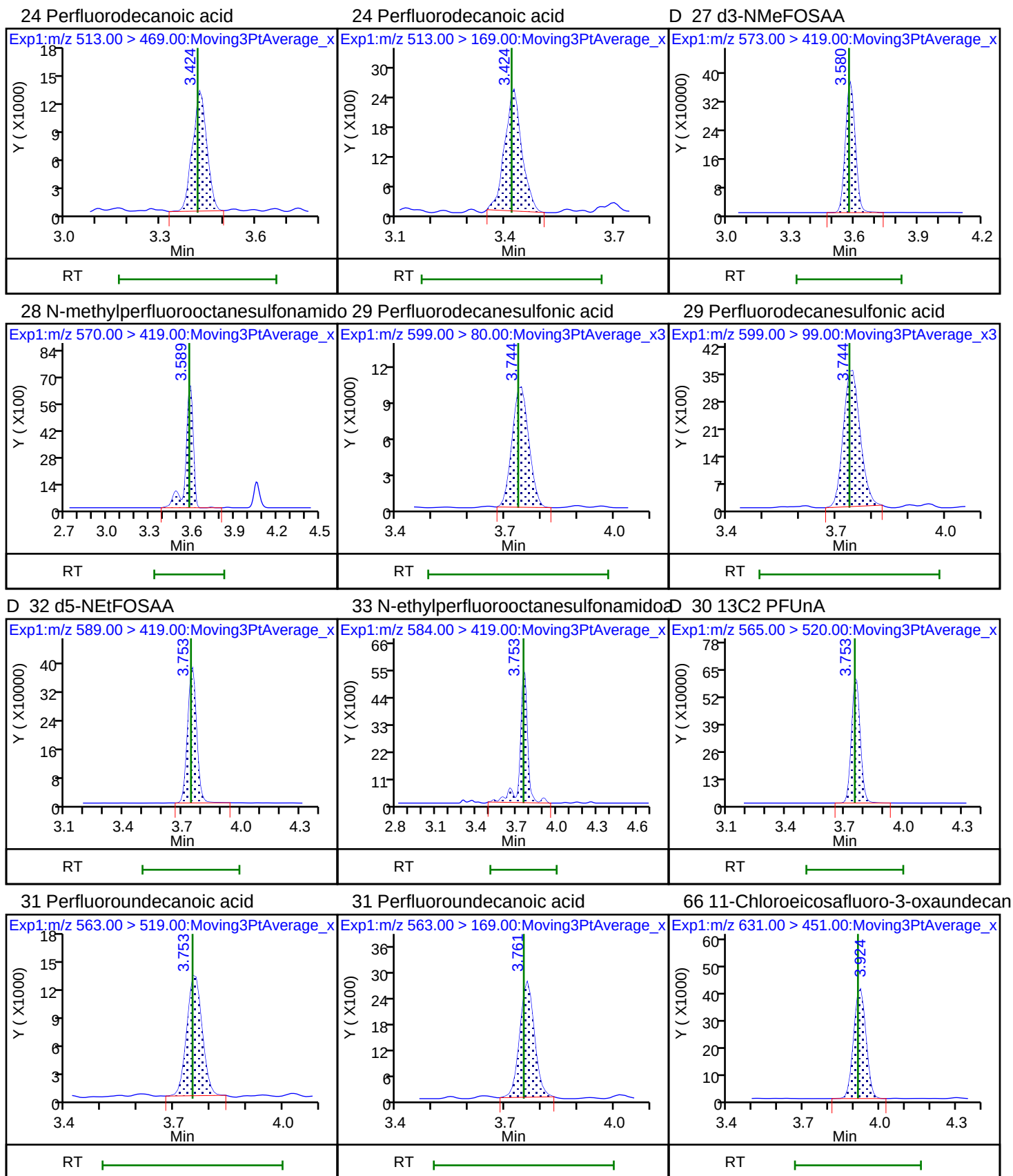
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D 19 13C5 PFNA

D 18 13C4 PFOS



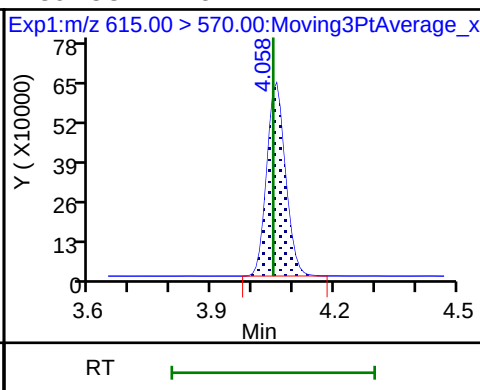
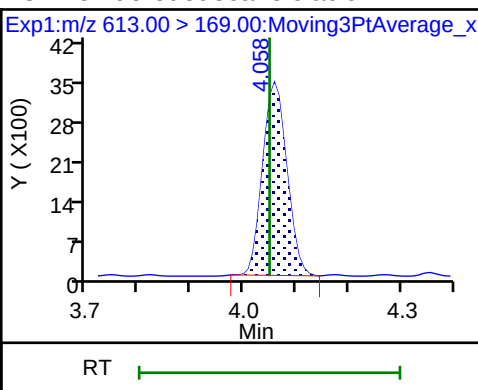
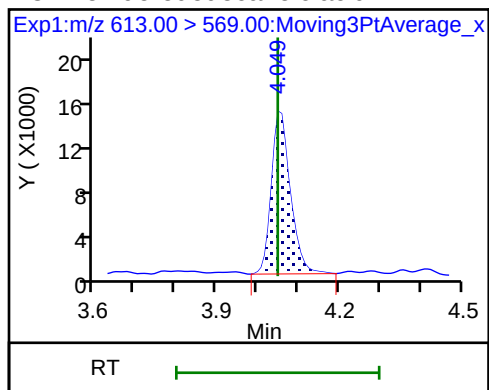




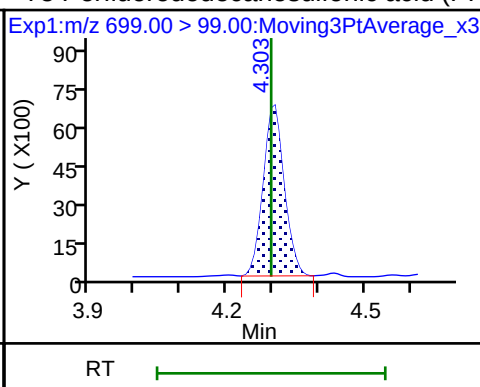
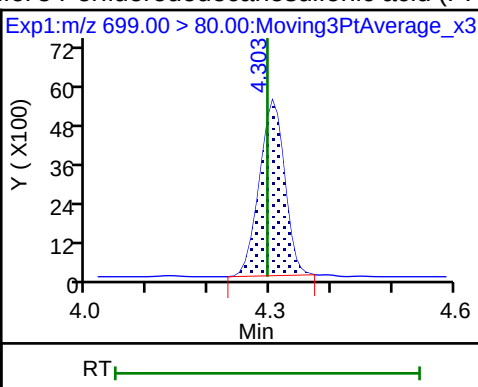
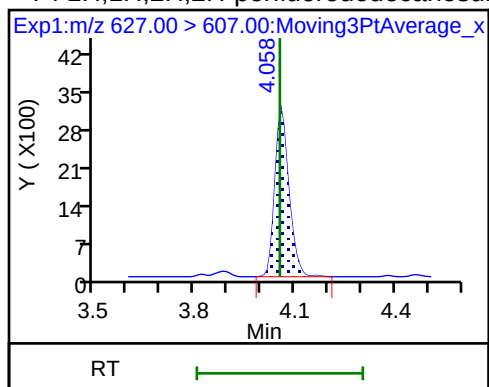
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



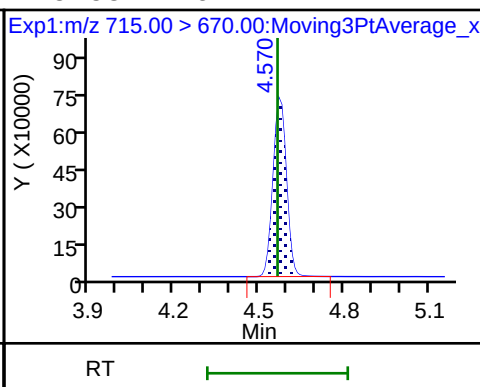
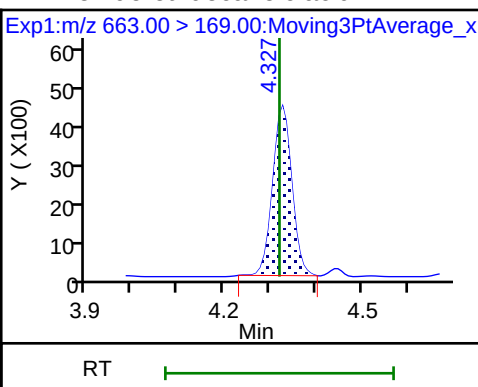
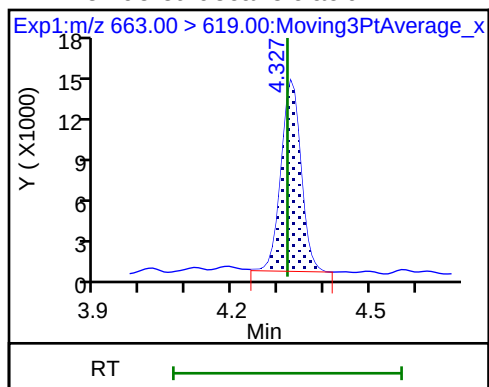
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

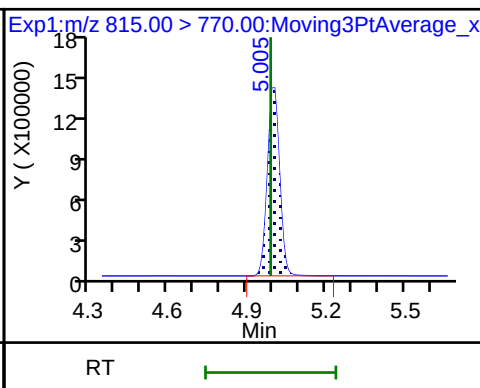
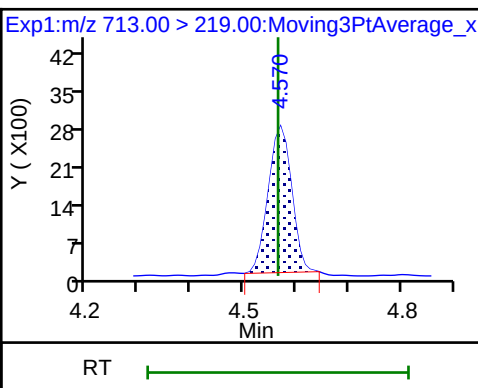
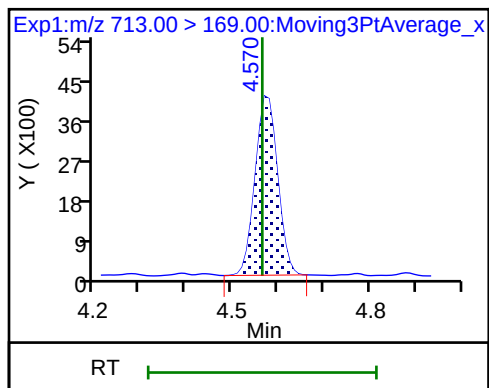
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2 PFHxDA



45 Perfluorohexadecanoic acid

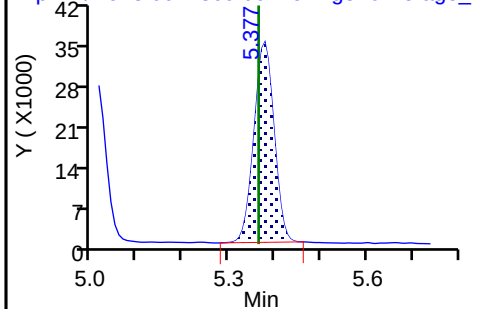
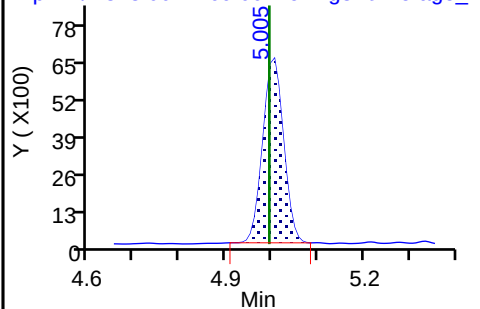
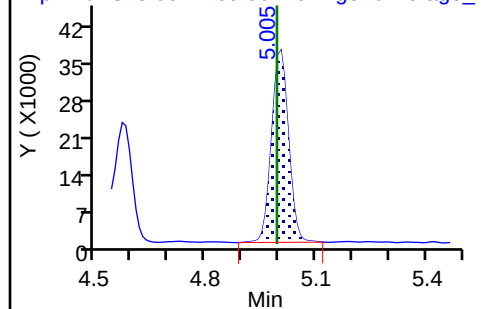
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x

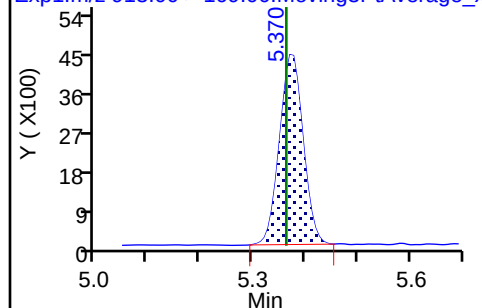
Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

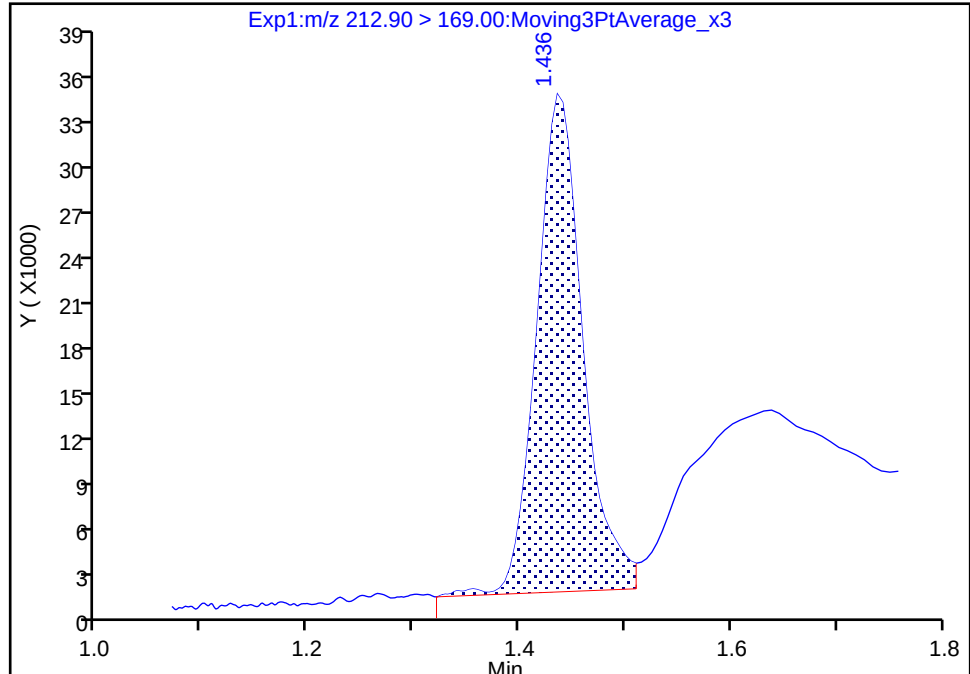
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_006.d
Injection Date: 10-Oct-2018 11:31:42 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

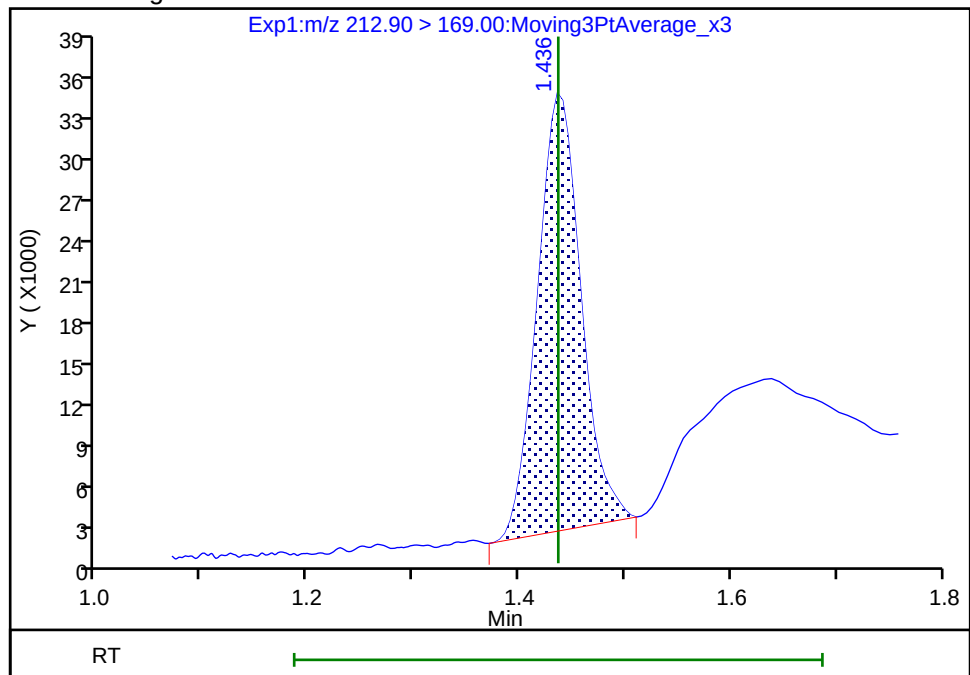
RT: 1.44
Area: 98440
Amount: 0.053162
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 90156
Amount: 0.050192
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:49:00
Audit Action: Manually Integrated

Audit Reason: Baseline
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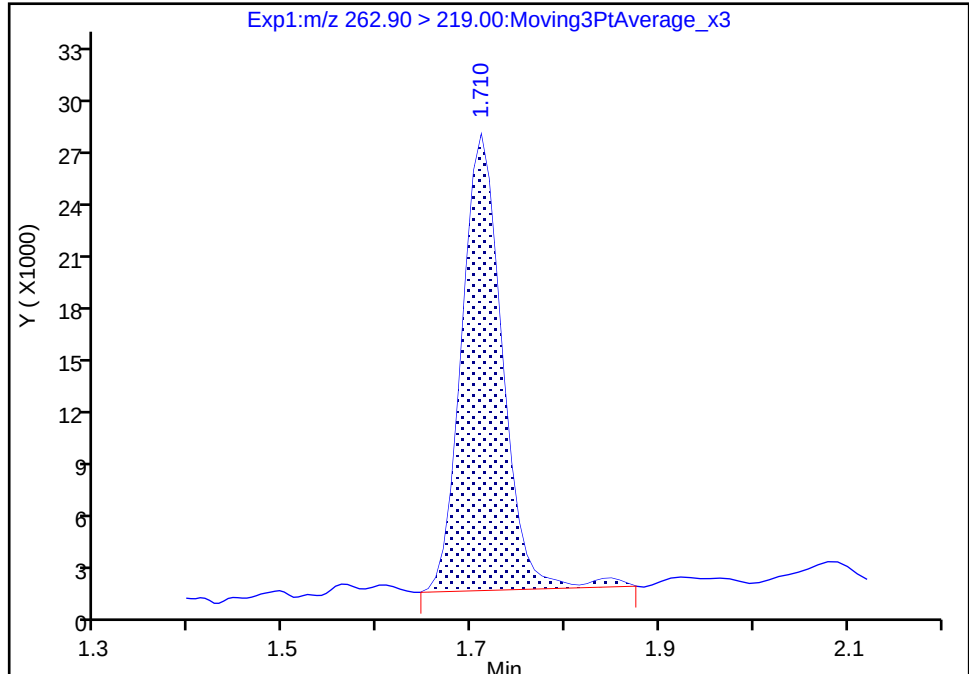
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_006.d
Injection Date: 10-Oct-2018 11:31:42 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

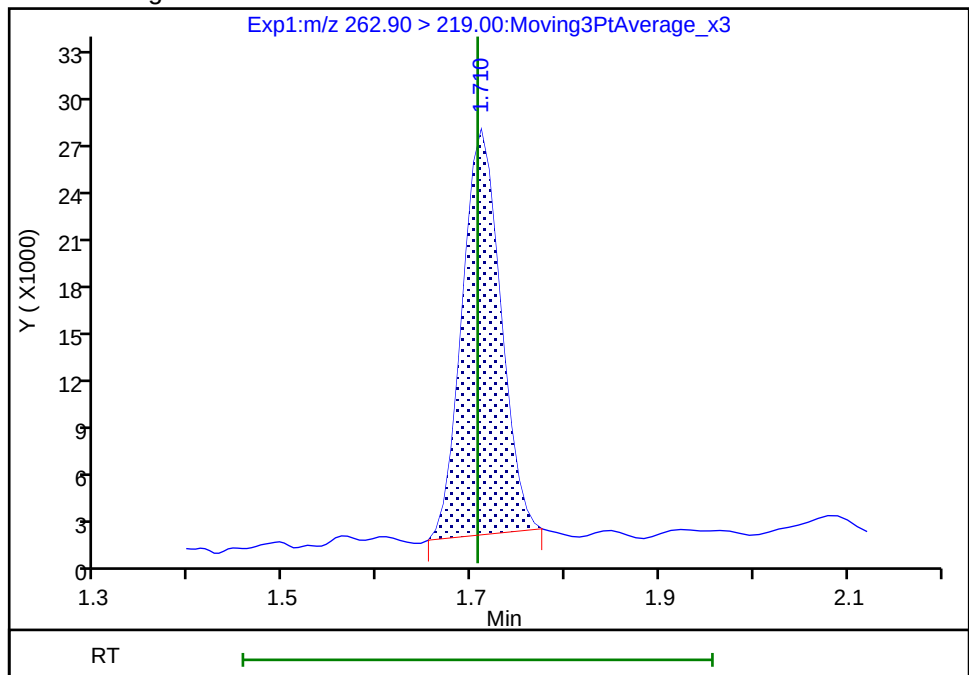
RT: 1.71
Area: 76450
Amount: 0.053671
Amount Units: ng/ml

Processing Integration Results



RT: 1.71
Area: 71165
Amount: 0.050496
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:49:07
Audit Action: Manually Integrated

Audit Reason: Baseline
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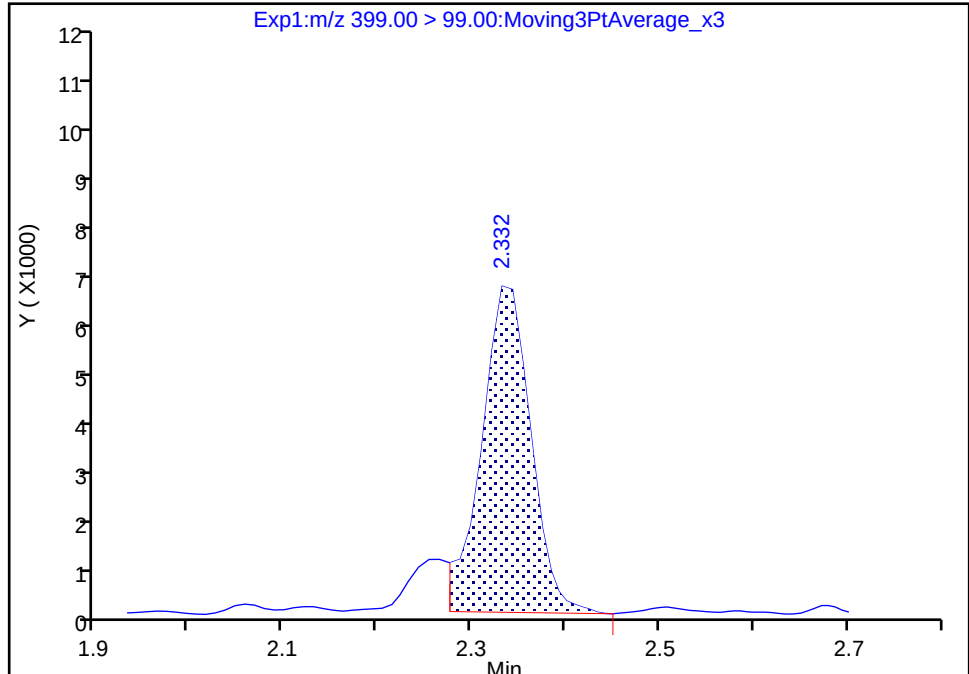
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_006.d
Injection Date: 10-Oct-2018 11:31:42 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

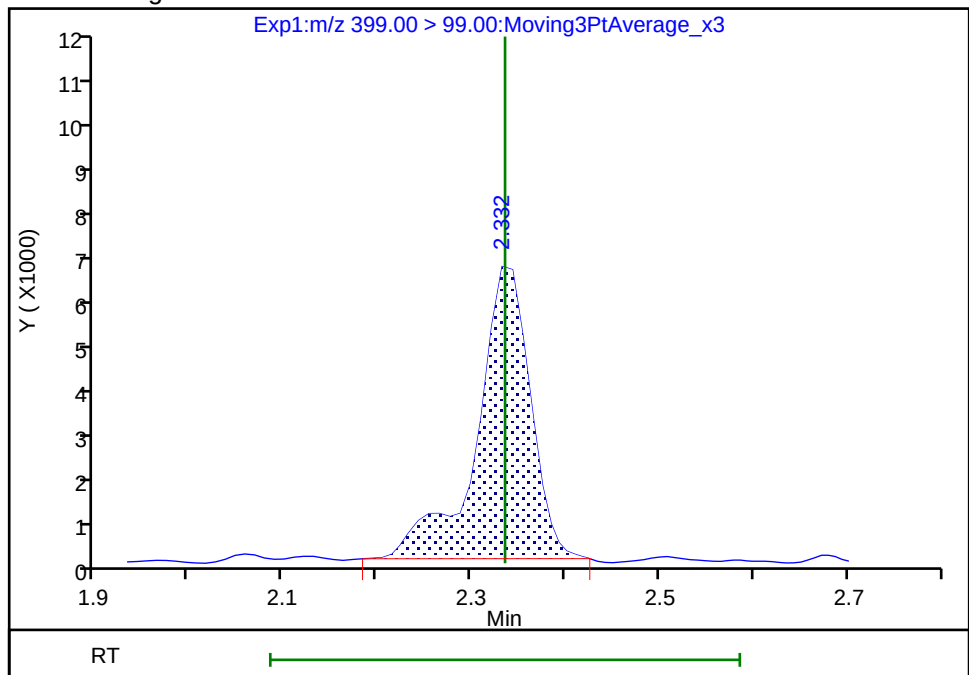
RT: 2.33
Area: 23449
Amount: 0.047925
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 25590
Amount: 0.047925
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:49:23
Audit Action: Manually Integrated

Audit Reason: Isomers
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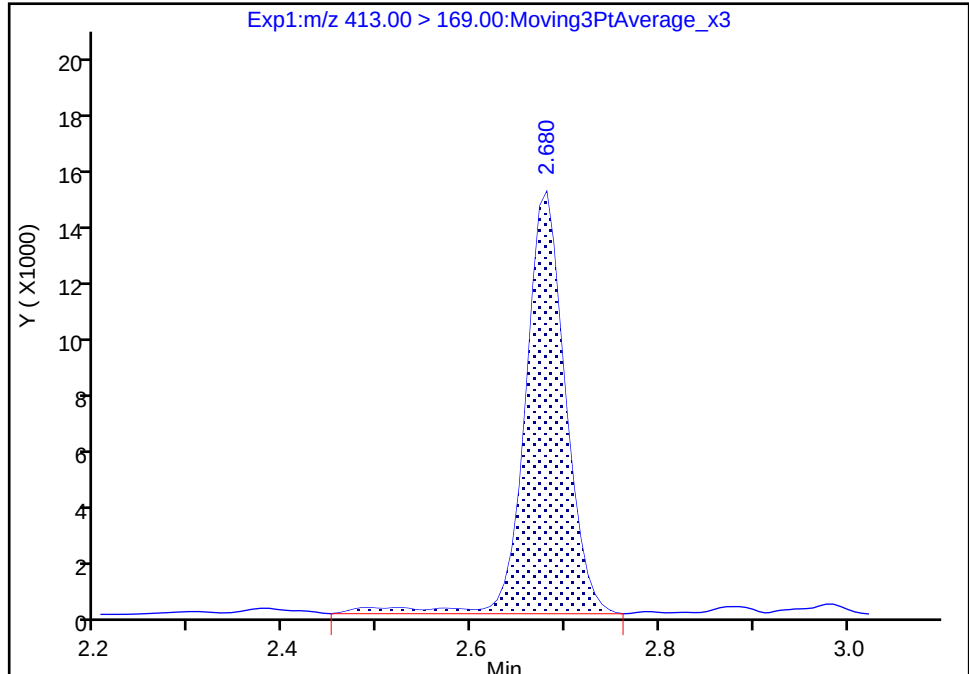
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_006.d
Injection Date: 10-Oct-2018 11:31:42 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

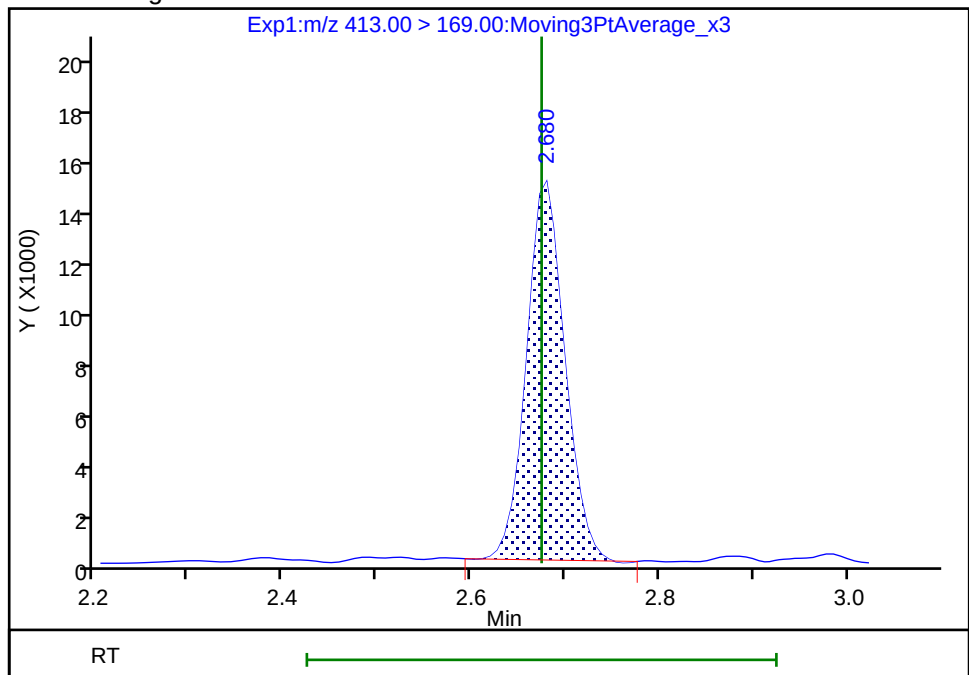
RT: 2.68
Area: 43192
Amount: 0.055926
Amount Units: ng/ml

Processing Integration Results



RT: 2.68
Area: 40790
Amount: 0.049788
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:49:32
Audit Action: Manually Integrated

Audit Reason: Isomers
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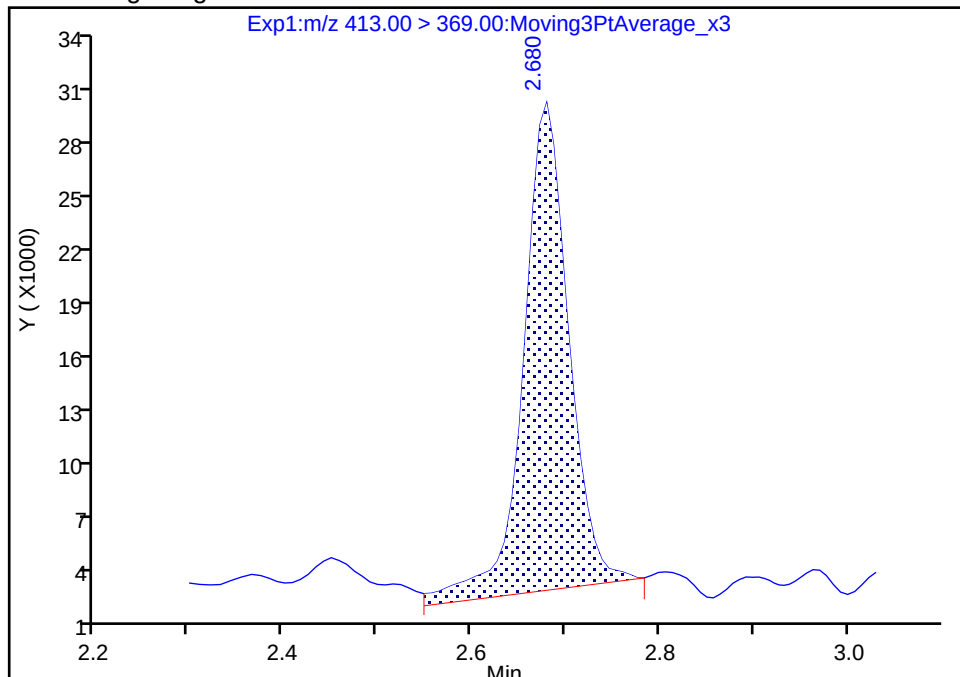
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_006.d
Injection Date: 10-Oct-2018 11:31:42 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

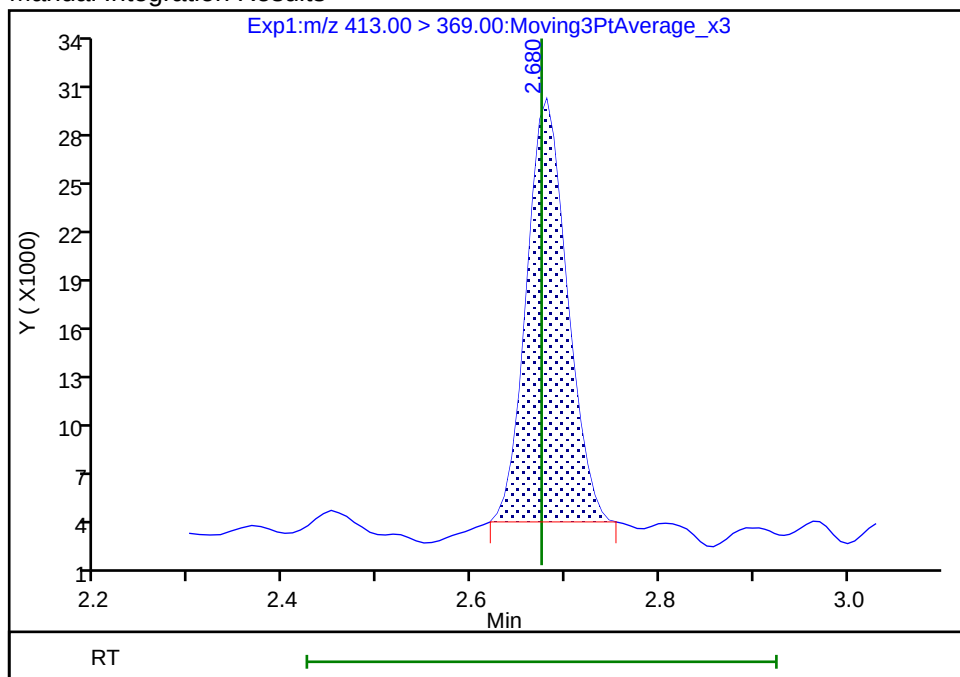
RT: 2.68
Area: 89334
Amount: 0.055926
Amount Units: ng/ml

Processing Integration Results



RT: 2.68
Area: 76344
Amount: 0.049788
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:50:12

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_007.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 10-Oct-2018 11:39:08 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:09:18 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:52:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.434	-0.003	0.535	4260789	2.46		98.5	8445	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.436	1.437	-0.001	1.003	376595	0.2466		98.6	43.2	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.703	1.705	-0.002	0.637	2844208	2.51		100	12278	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.706	-0.003	1.000	310639	0.2531		101	49.2	
D 47 13C3 PFBS										
301.90 > 83.00	1.735	1.740	-0.005	0.649	53977	2.32		99.6	418	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.743	1.742	0.001	1.005	412058	0.2259		102	86.9	
298.90 > 99.00	1.743	1.742	0.001	1.005	171829		2.40(1.25-3.74)	102	76.0	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.944	1.950	-0.006	0.727	368565	2.38		102	578	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.954	1.951	0.003	1.127	78326	0.2273		97.3	1027	
D 7 13C2 PFHxA										
315.00 > 270.00	1.986	1.986	0.0	0.743	3038494	2.43		97.1	10867	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.986	1.989	-0.003	1.000	281033	0.2346		93.8	119	
313.00 > 119.00	1.986	1.989	-0.003	1.000	26592		10.57(5.03-15.10)	93.8	151	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.006	2.013	-0.007	1.157	363636	0.2320		98.9	2743	
349.00 > 99.00	2.006	2.013	-0.007	1.157	141597		2.57(1.36-4.07)	98.9	554	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.080	2.086	-0.006	0.778	226759	2.52		101	951	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.080	2.086	-0.006	1.000	61939	0.2321		92.8	101	
D 9 13C4 PFHpA										
367.00 > 322.00	2.322	2.318	0.004	0.869	2778239	2.43		97.2	6932	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.322	2.318	0.004	1.000	303413	0.2572		103	108	
363.00 > 169.00	2.322	2.318	0.004	1.000	119643		2.54(1.13-3.40)	103	240	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.333	2.336	-0.003	1.000	321866	0.2026		89.1	703	
399.00 > 99.00	2.333	2.336	-0.003	1.000	113399		2.84(1.50-4.49)	89.1	392	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.337	-0.004	0.873	3376716	2.46		104	7487	
77 DONA										
377.00 > 251.00	2.355	2.361	-0.006	0.771	809505	0.2307		98.0	1699	
377.00 > 85.00	2.355	2.361	-0.006	0.771	485808		1.67(0.85-2.54)	98.0	2022	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.651	2.649	0.002	0.992	503222	2.35		98.9	2371	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.651	2.650	0.001	1.000	77610	0.2394		101	322	
D 73 13C8 PFOA										
421.00 > 376.00	2.666	2.670	-0.004	0.997	3816866	2.43		99.4	11275	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.673	0.0	1.000	2668939	2.49		99.8	7404	
* 62 13C2 PFOA										
415.00 > 370.00	2.673	2.674	-0.001		2752097	2.50			10658	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.673	2.674	-0.001	1.000	295579	0.2388		95.4	30.3	M
413.00 > 169.00	2.673	2.674	-0.001	1.000	167749		1.76(0.84-2.52)	95.4	461	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.680	2.684	-0.004	0.878	276730	0.2317		97.3	1009	
449.00 > 99.00	2.680	2.684	-0.004	0.878	79977		3.46(1.94-5.82)	97.3	534	
D 72 13C8 PFOS										
507.00 > 99.00	3.046	3.049	-0.003	1.140	1156094	2.47		103	3589	
D 19 13C5 PFNA										
468.00 > 423.00	3.046	3.051	-0.005	1.140	2188396	2.46		98.4	8037	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.053	0.0	1.142	2194649	2.40		100	4321	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.053	3.054	-0.001	1.000	229035	0.2222		95.8	660	
499.00 > 99.00	3.053	3.054	-0.001	1.000	54152		4.23(2.31-6.93)	95.8	251	
20 Perfluorononanoic acid										
463.00 > 419.00	3.053	3.054	-0.001	1.002	234786	0.2518		101	102	
463.00 > 169.00	3.053	3.054	-0.001	1.002	56734		4.14(1.90-5.69)	101	522	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.265	3.266	-0.001	1.069	387832	0.2251		96.6	1428	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.373	-0.002	1.261	3275871	2.47		99.0	7488	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide	498.00 > 78.00	3.371	3.374	-0.003	1.000	317061	0.2494	99.8	1620	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.408	3.407	0.001	1.000	64335	0.2518	105	384	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.408	3.408	0.0	1.116	174573	0.2416	101	1271	
	549.00 > 99.00	3.408	3.408	0.0	1.116	62103	2.81(1.33-3.97)	101	444	
D 26 M2-8:2 FTS	529.00 > 81.00	3.408	3.408	0.0	1.275	505445	2.23	93.2	3100	
D 23 13C2 PFDA	515.00 > 470.00	3.416	3.416	0.0	1.278	1995283	2.54	102	7352	
24 Perfluorodecanoic acid	513.00 > 469.00	3.416	3.417	-0.001	1.000	206122	0.2630	105	248	
	513.00 > 169.00	3.416	3.417	-0.001	1.000	40561	5.08(2.36-7.09)	105	192	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.570	3.574	-0.004	1.336	995467	2.49	99.5	2413	
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	3.578	3.580	-0.002	1.002	90103	0.2367	94.7	122	
29 Perfluorodecanesulfonic acid	599.00 > 80.00	3.735	3.736	-0.001	1.223	134221	0.2336	96.9	783	
	599.00 > 99.00	3.735	3.736	-0.001	1.223	47784	2.81(1.39-4.16)	96.9	412	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.743	3.744	-0.001	1.400	1071076	2.56	102	1379	
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	3.751	3.751	0.0	1.002	95915	0.2666	107	508	
D 30 13C2 PFUnA	565.00 > 520.00	3.751	3.751	0.0	1.403	1600595	2.54	102	4285	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.751	3.751	0.0	1.000	121104	0.2116	84.6	132	
	563.00 > 169.00	3.751	3.751	0.0	1.000	34059	3.56(2.12-6.36)	84.6	328	
35 MeFOSA	512.00 > 169.00	3.881	3.880	0.001		92144	NC		292	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.911	3.913	-0.002	1.281	611371	0.2350	99.8	1623	
37 Perfluorododecanoic acid	613.00 > 569.00	4.048	4.048	0.0	1.000	186835	0.2520	101	174	
	613.00 > 169.00	4.048	4.048	0.0	1.000	43268	4.32(2.13-6.40)	101	306	
D 36 13C2 PFDaA	615.00 > 570.00	4.048	4.050	-0.002	1.514	1679602	2.54	102	3431	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.056	4.054	0.002	1.190	51430	0.2879	119	349	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.294	4.295	-0.001	1.406	65966	0.2451	101	975	
	699.00 > 99.00	4.294	4.295	-0.001	1.406	103376	0.64(0.00-0.00)	101	1186	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.317	4.320	-0.003	1.067	170585	0.2426	97.1	126	
	663.00 > 169.00	4.317	4.320	-0.003	1.067	55676	3.06(1.25-3.76)	97.1	608	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.566	4.565	0.001	1.708	2031769	2.51		100	5696	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.566	4.565	0.001	1.000	51956	0.2393		95.7	721	
713.00 > 219.00	4.556	4.565	-0.009	0.998	36182		1.44(0.71-2.13)	95.7	674	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.991	4.989	0.002	1.867	3755737	2.51		100	5571	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.991	4.993	-0.002	1.000	346851	0.2361		94.4	71.5	
813.00 > 169.00	4.991	4.993	-0.002	1.000	67376		5.15(2.86-8.58)	94.4	463	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.367	5.363	0.004	1.075	446799	0.2520		101	70.8	
913.00 > 169.00	5.367	5.363	0.004	1.075	57986		7.71(3.83-11.48)	101	493	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_007.d

Injection Date: 10-Oct-2018 11:39:08

Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 12

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

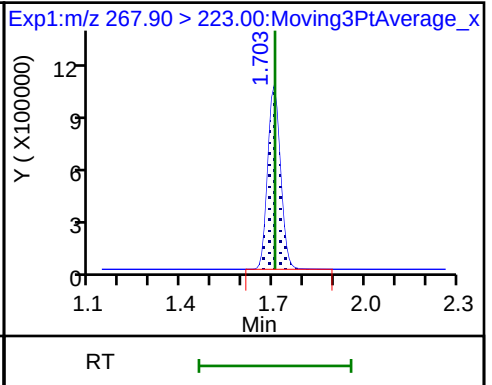
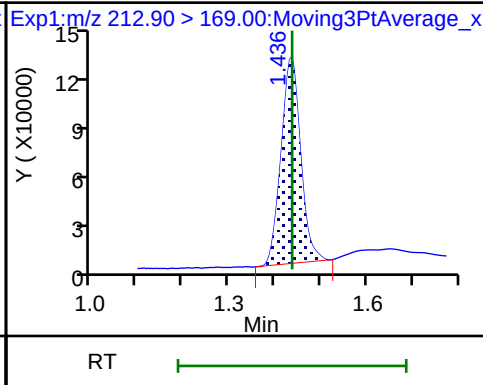
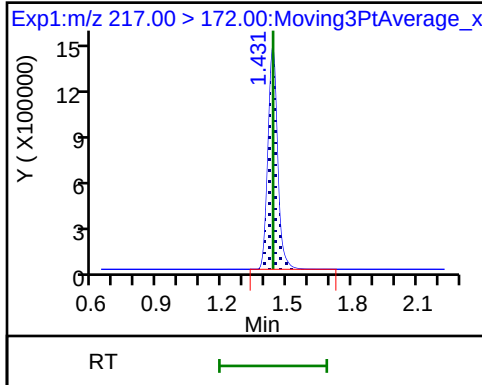
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

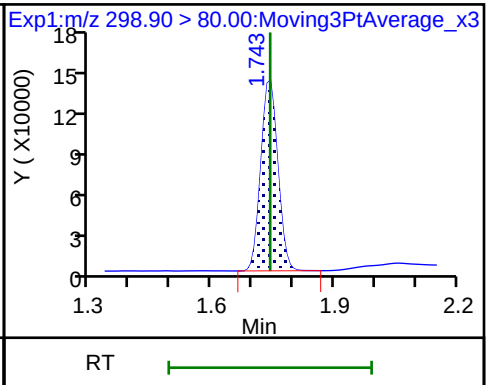
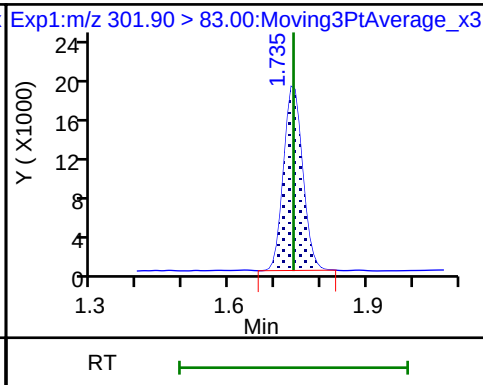
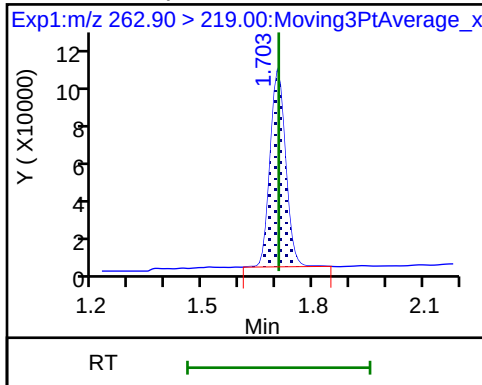
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

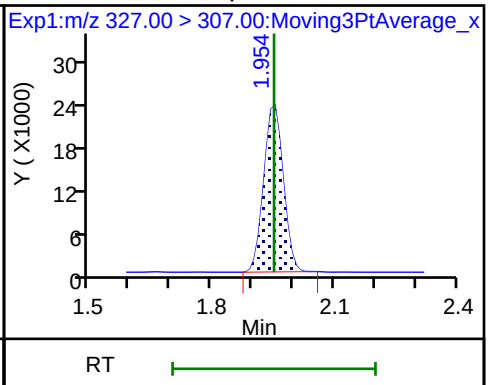
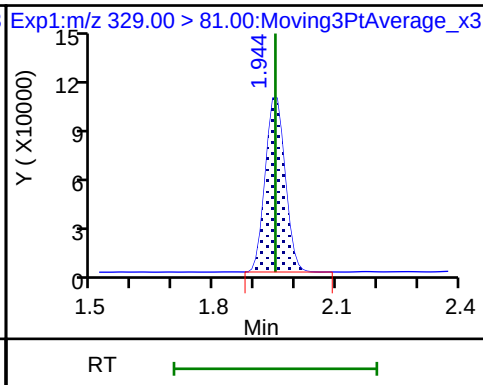
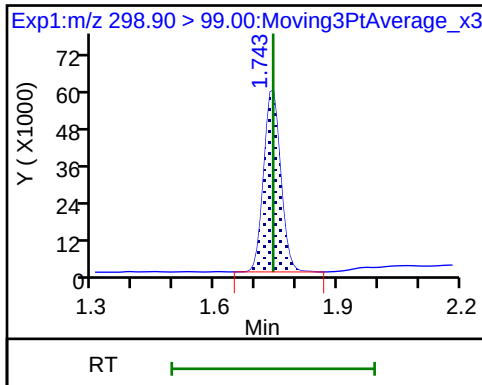
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

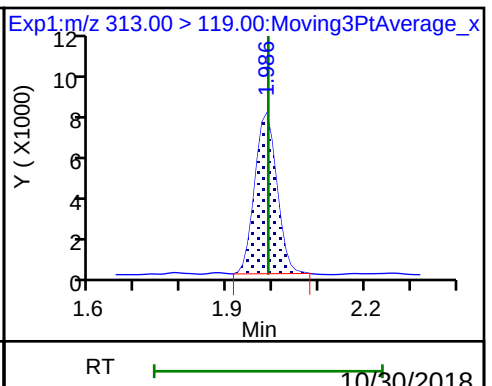
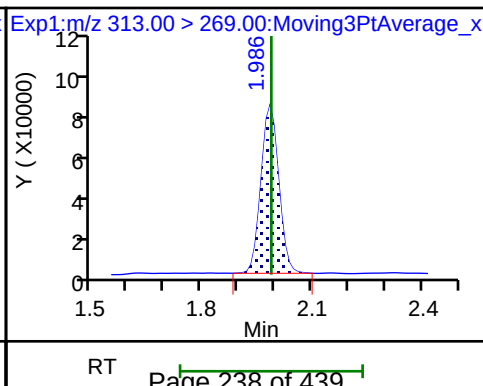
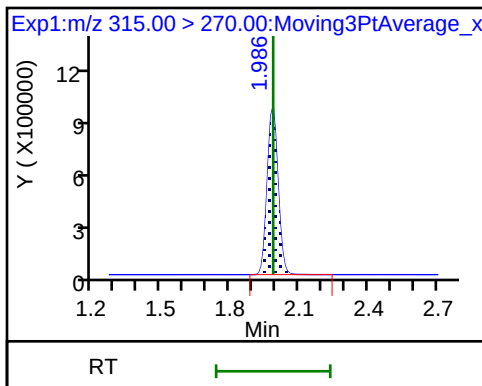
61 1H,1H,2H,2H-perfluorohexanesulfoni

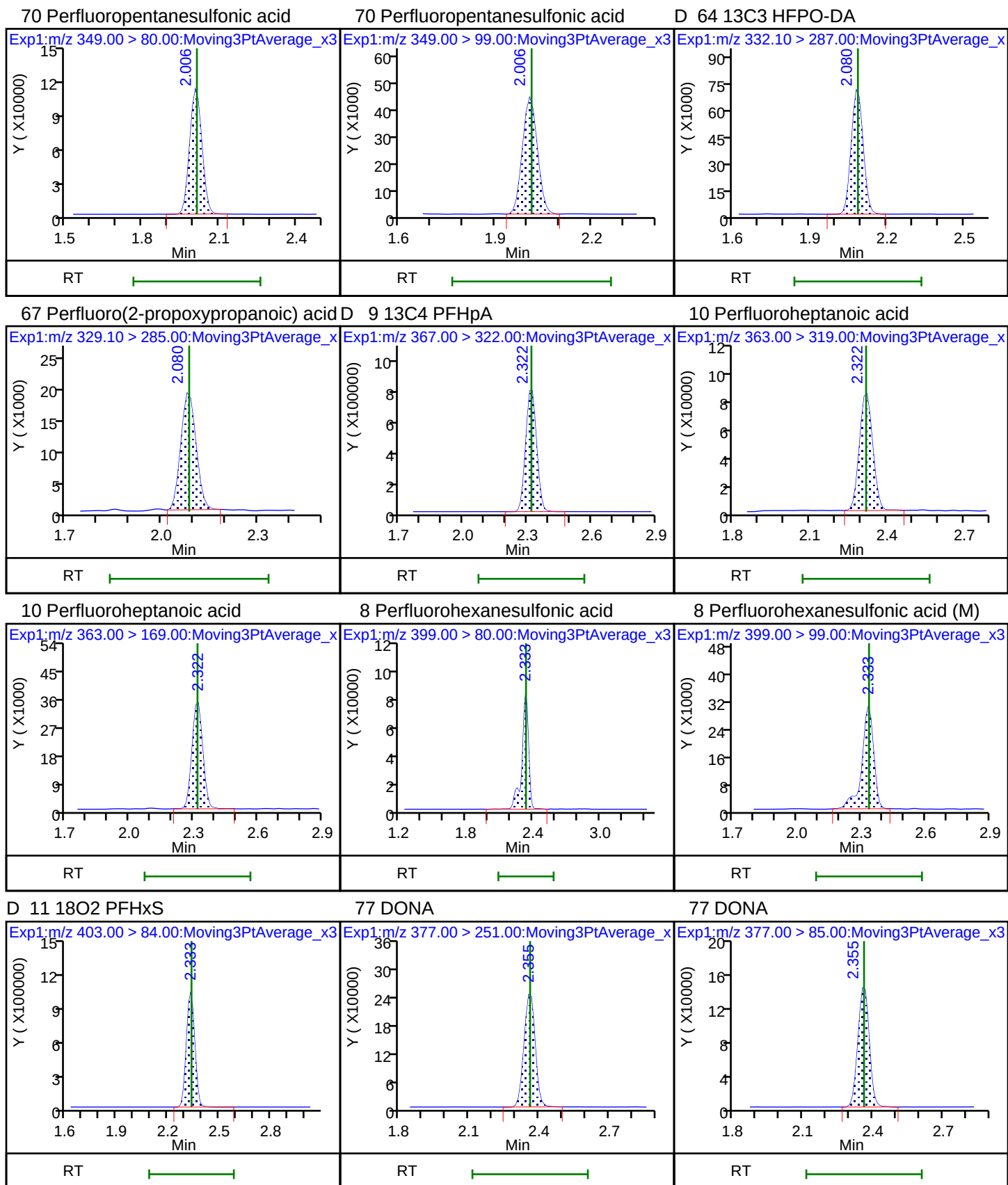


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

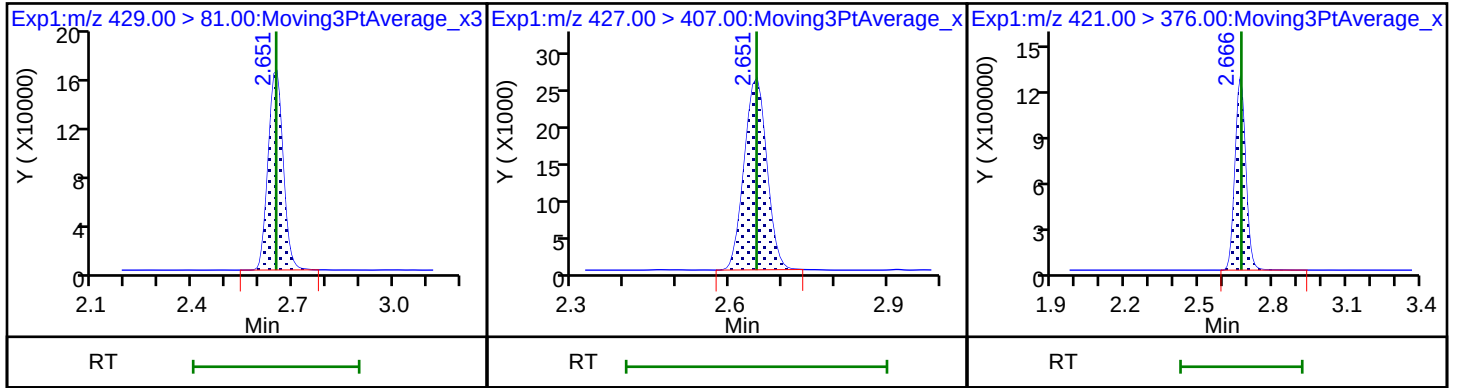
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

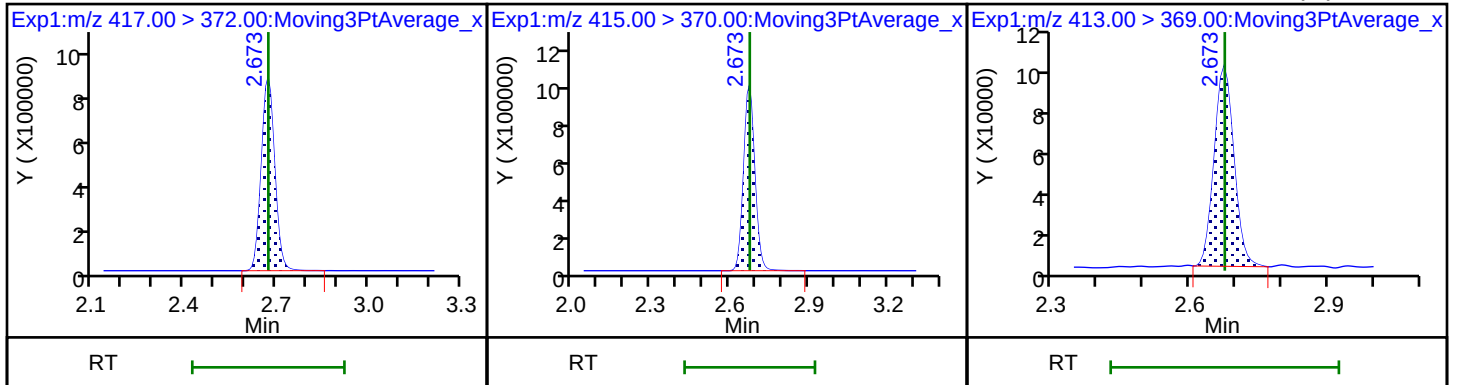
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

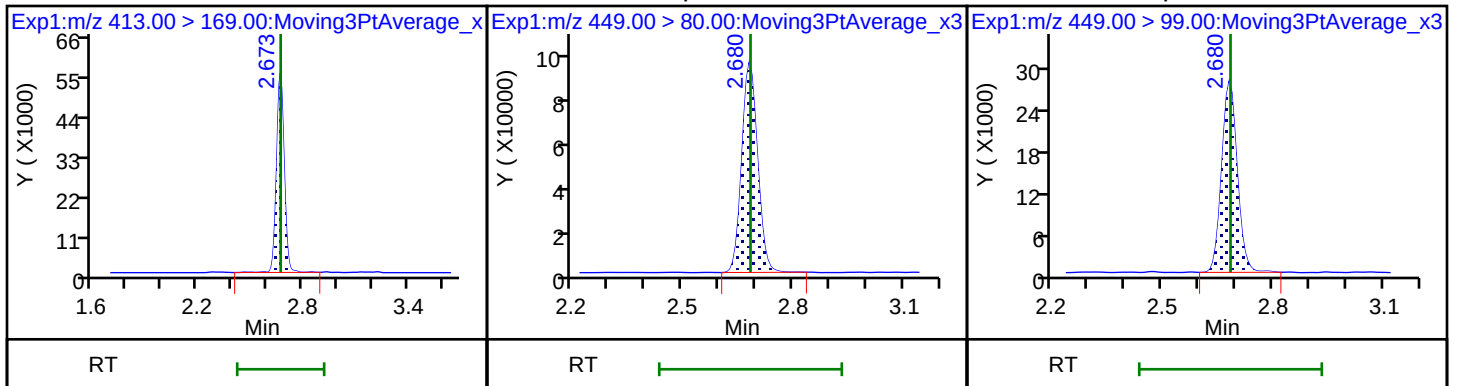
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

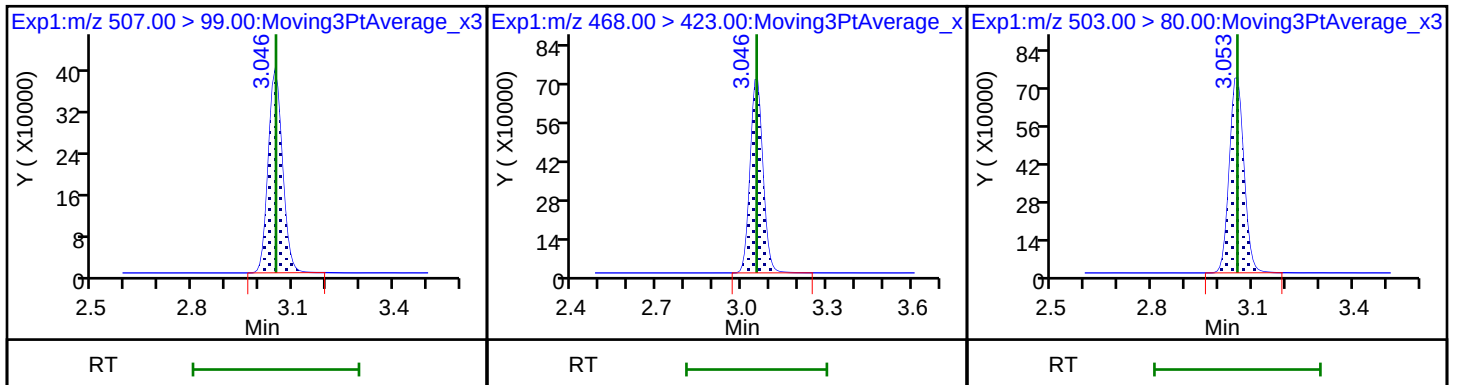
16 Perfluoroheptanesulfonic acid

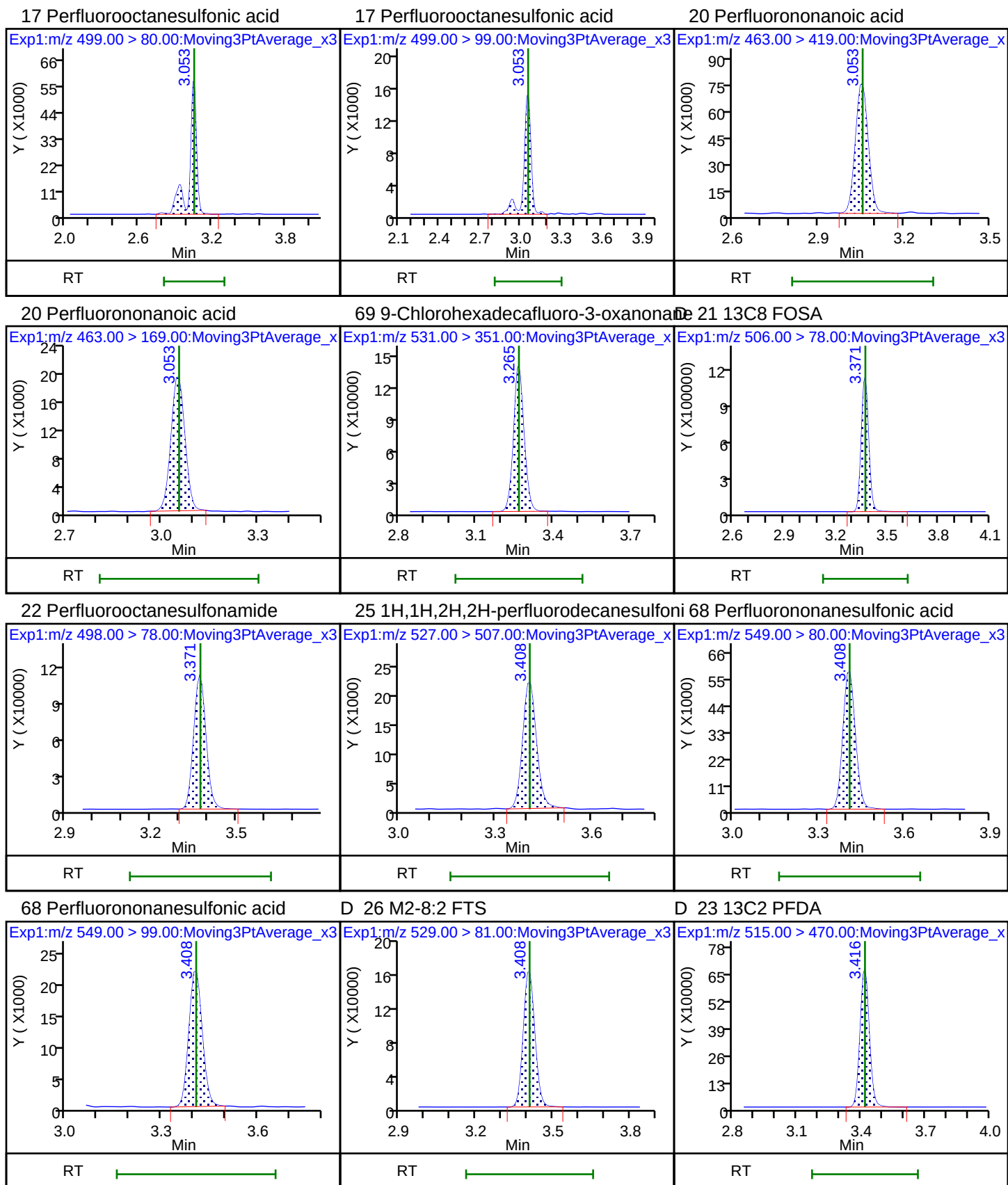


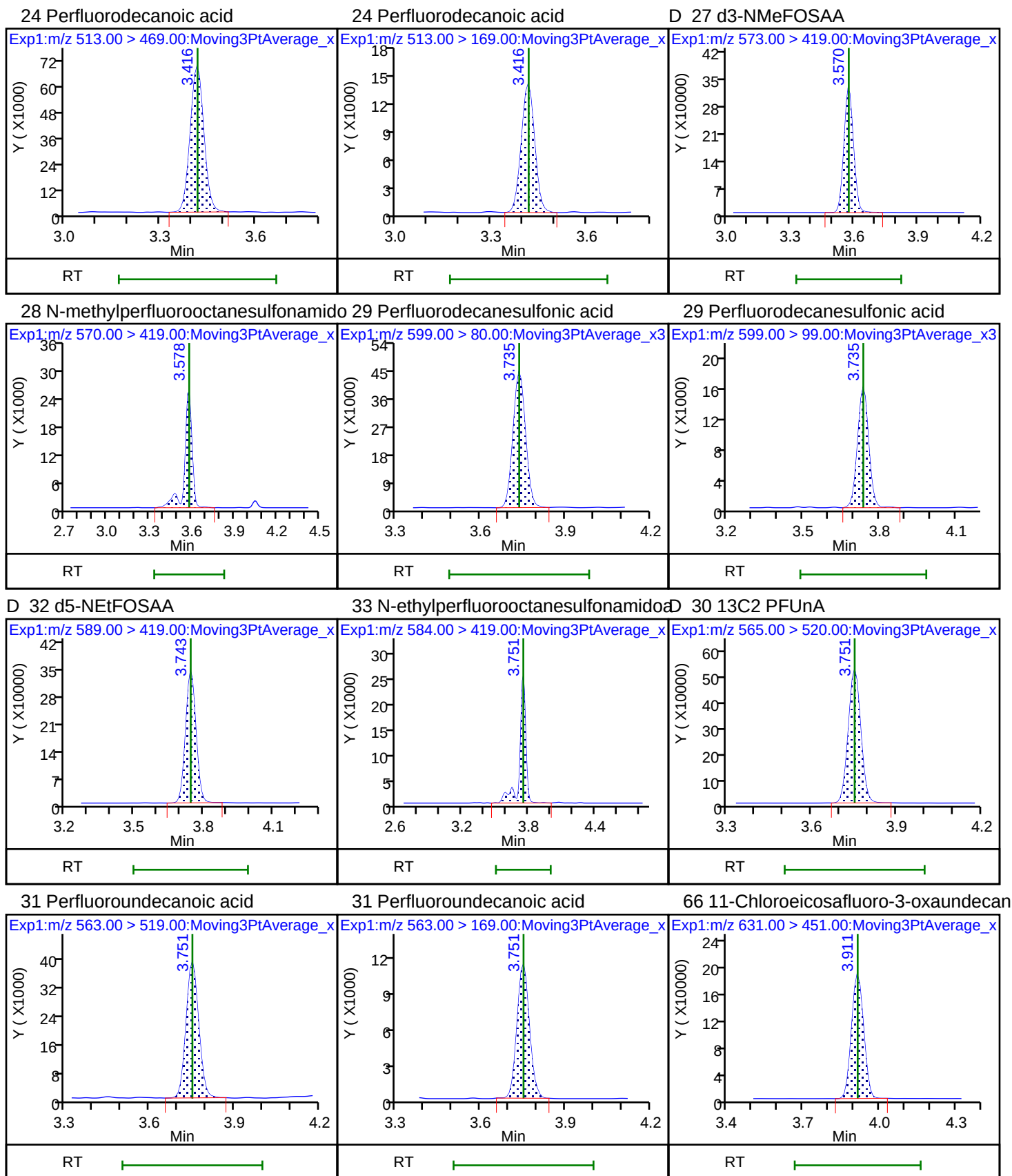
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



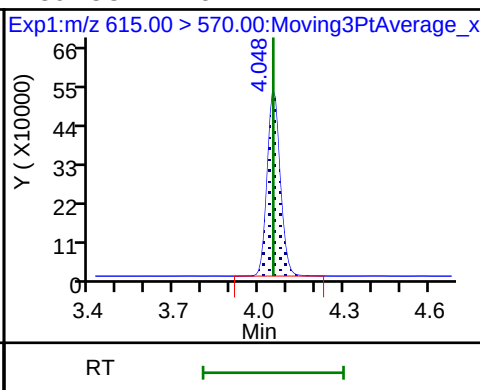
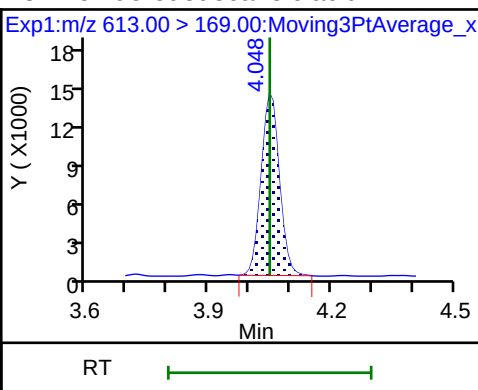
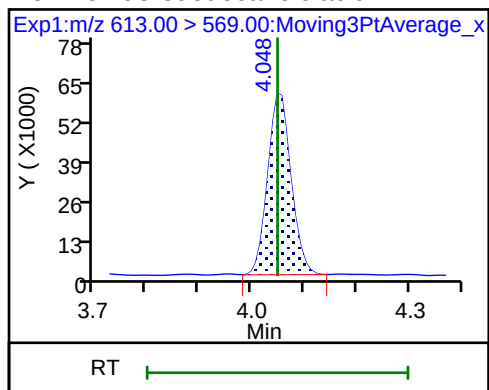




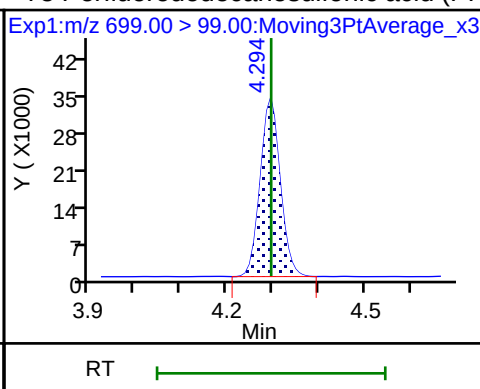
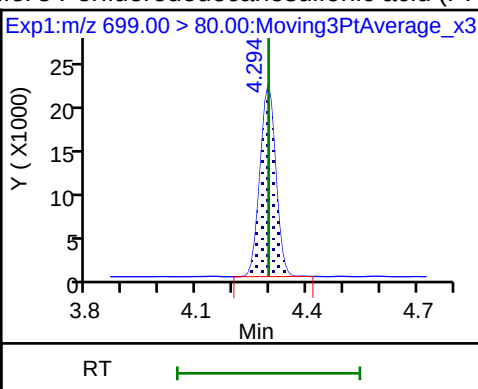
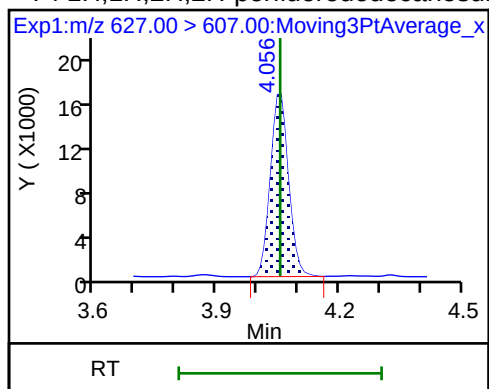
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



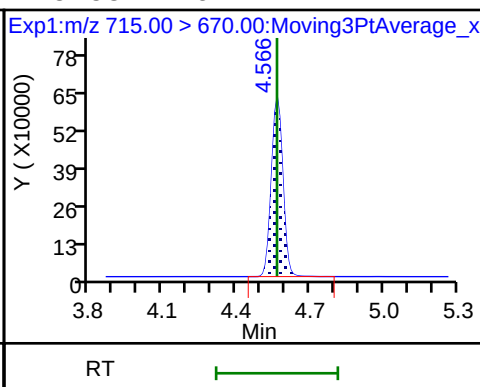
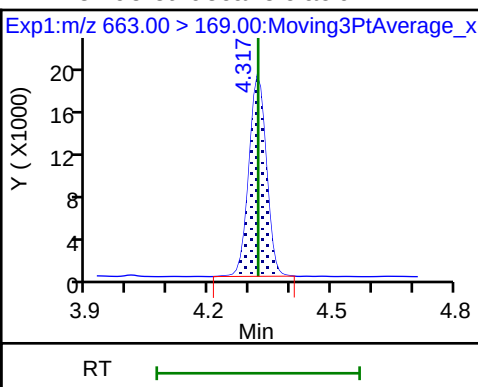
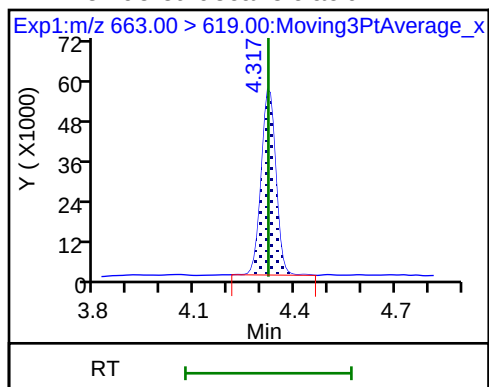
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

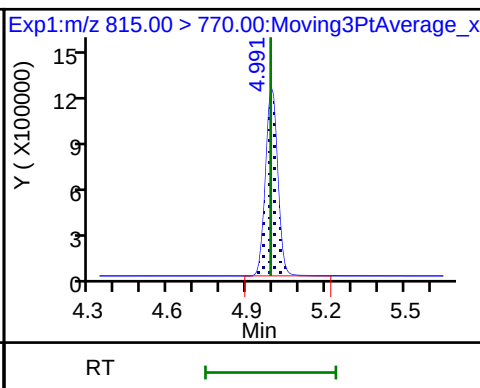
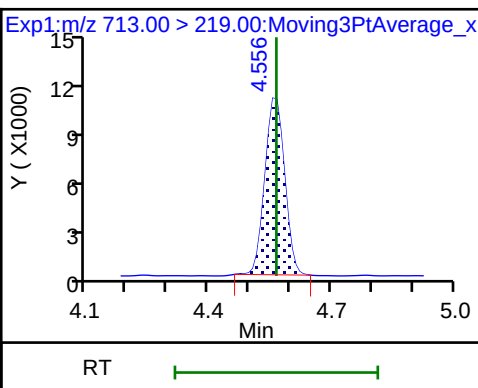
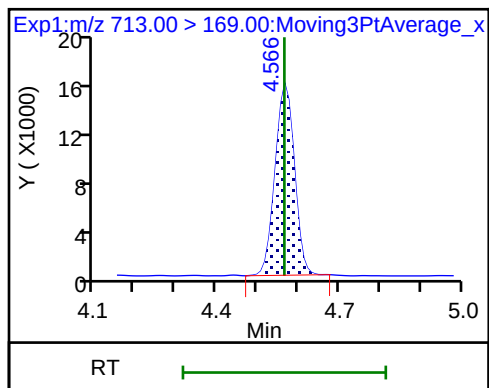
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2 PFHxDA

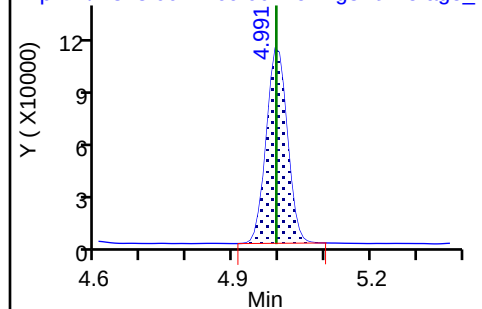


45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

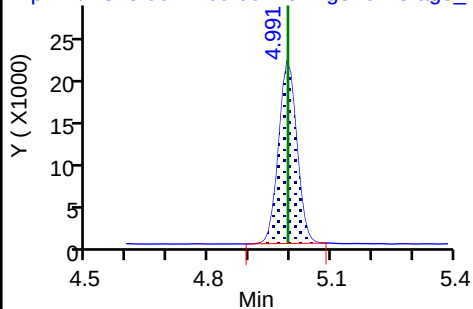
46 Perfluorooctadecanoic acid

Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



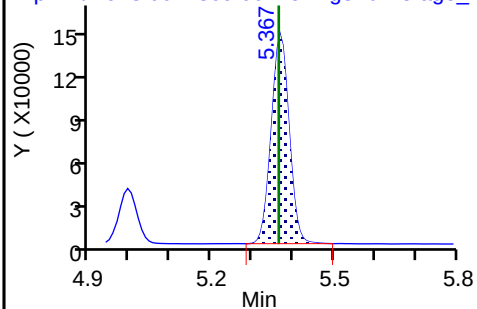
RT

Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



RT

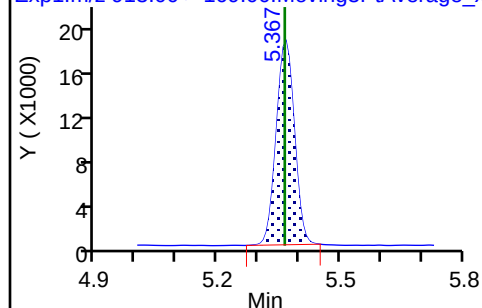
Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



RT

46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

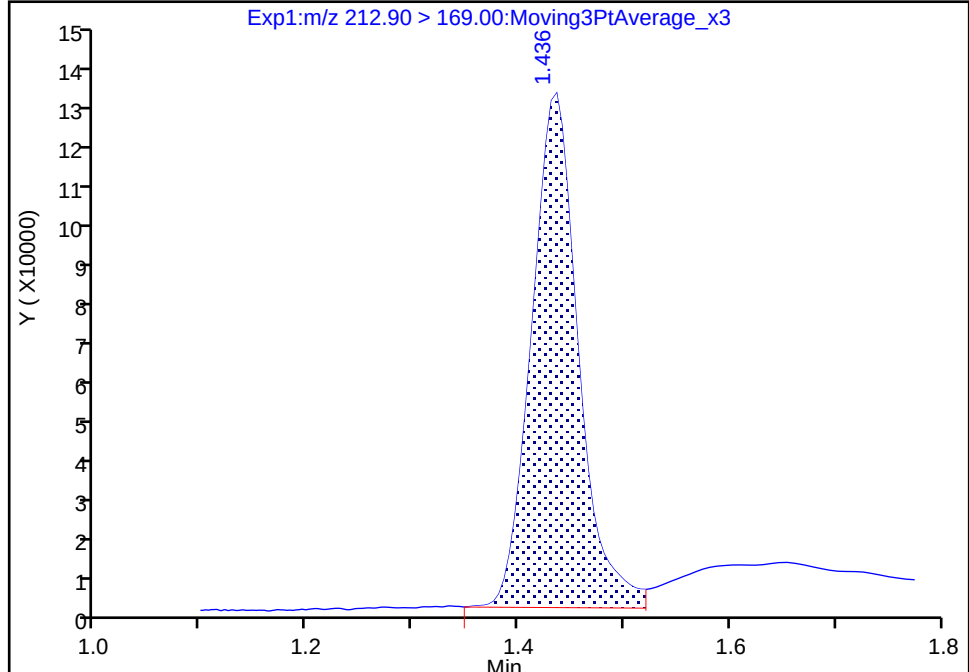
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_007.d
Injection Date: 10-Oct-2018 11:39:08 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

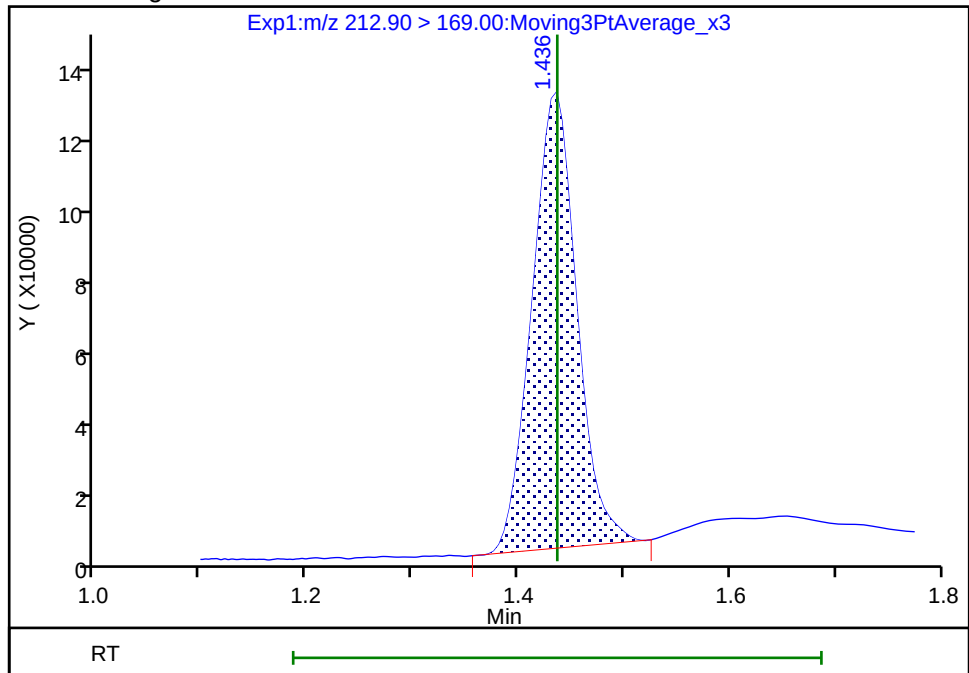
RT: 1.44
Area: 401641
Amount: 0.258399
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 376595
Amount: 0.246577
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:51:18
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

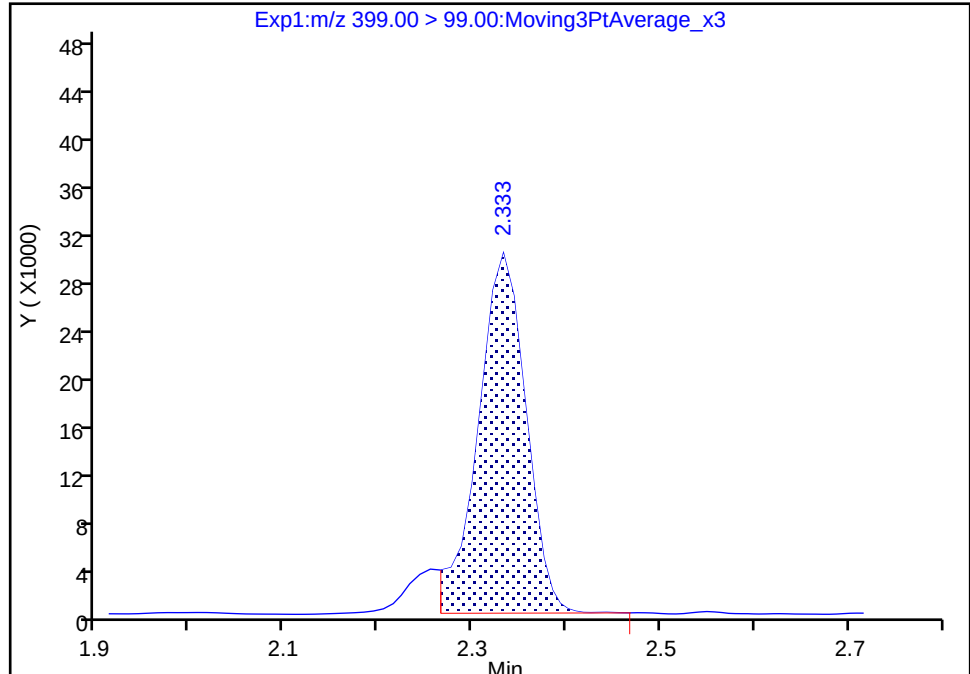
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_007.d
Injection Date: 10-Oct-2018 11:39:08 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

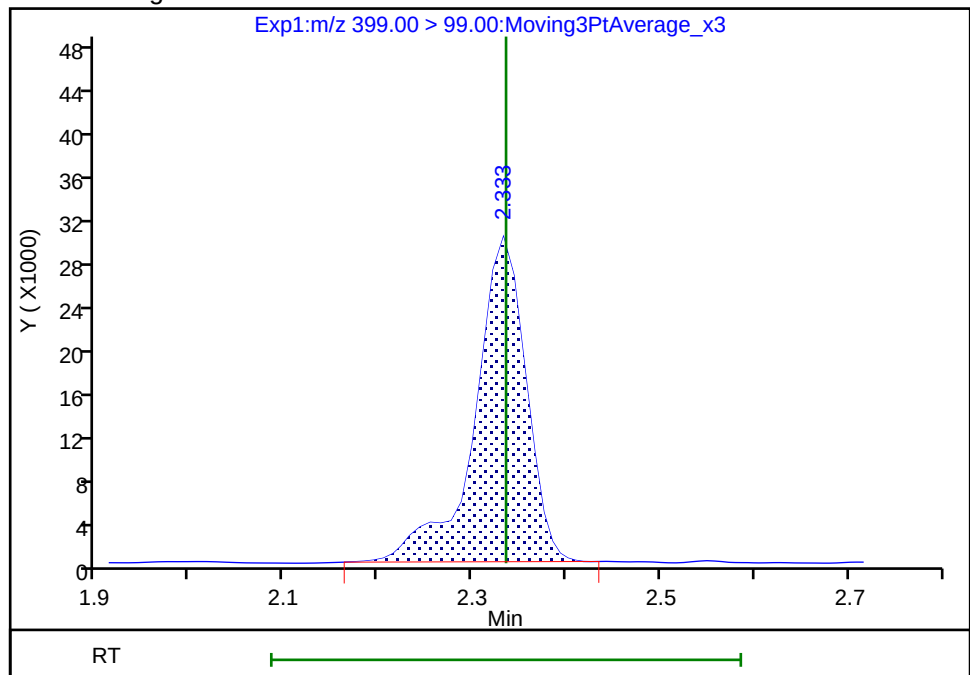
RT: 2.33
Area: 105088
Amount: 0.202605
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 113399
Amount: 0.202605
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:51:31
Audit Action: Manually Integrated

Audit Reason: Isomers
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TestAmerica Sacramento

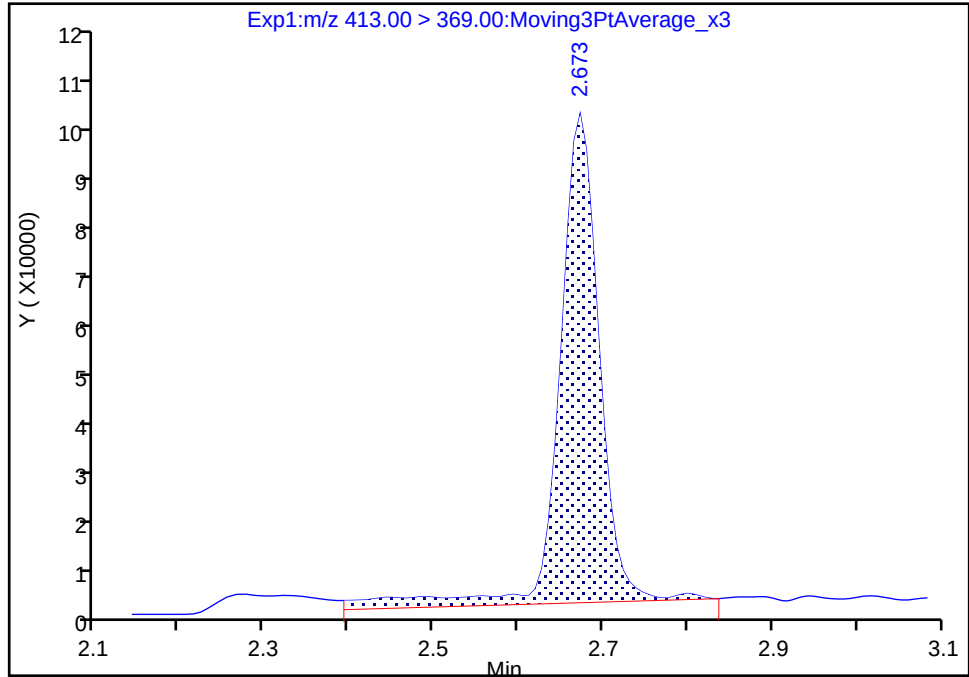
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_007.d
Injection Date: 10-Oct-2018 11:39:08 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

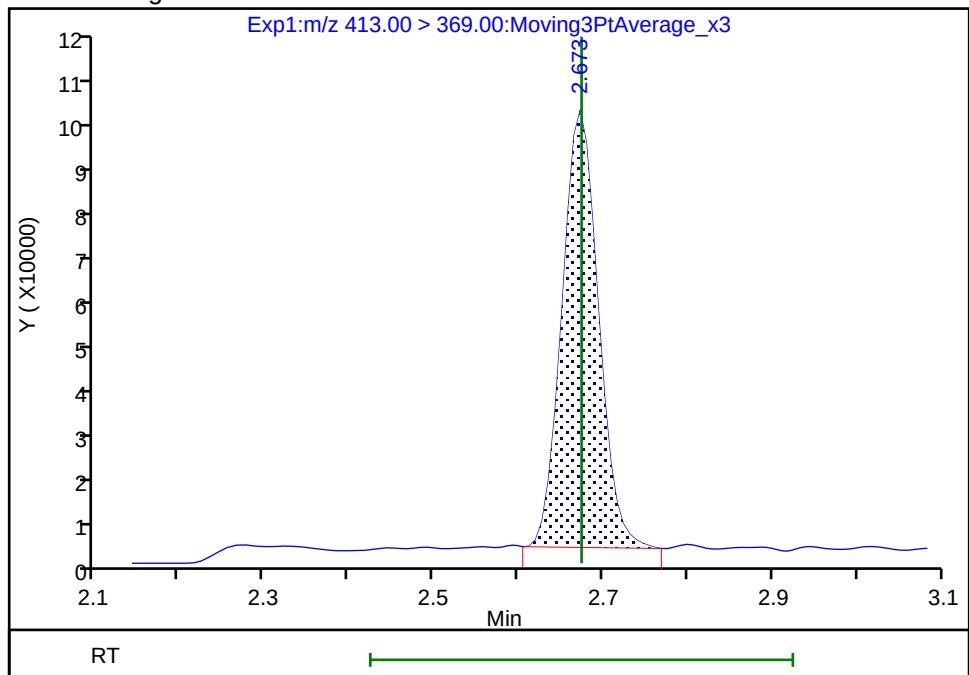
RT: 2.67
Area: 333614
Amount: 0.264922
Amount Units: ng/ml

Processing Integration Results



RT: 2.67
Area: 295579
Amount: 0.238837
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:51:50
Audit Action: Manually Integrated

Audit Reason: Assign Peak
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TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_008.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 10-Oct-2018 11:46:35 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:08:54 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 10-Oct-2018 15:08:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.434	0.002	0.537	5084116	2.50		100	12049	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.436	1.437	-0.001	1.000	1838577	1.01		101	213	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.705	-0.003	0.637	3342660	2.51		101	11753	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.710	1.706	0.004	1.005	1385310	0.9605		96.1	214	
D 47 13C3 PFBS										
301.90 > 83.00	1.742	1.740	0.002	0.652	64743	2.37		102	597	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.742	0.0	1.000	1940219	0.8867		100	372	
298.90 > 99.00	1.742	1.742	0.0	1.000	813770		2.38(1.25-3.74)	100	345	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.954	1.950	0.004	0.731	424416	2.34		100	700	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.954	1.951	0.003	1.121	368449	0.8914		95.4	4156	
D 7 13C2 PFHxA										
315.00 > 270.00	1.985	1.986	-0.001	0.743	3672152	2.50		100	12268	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.989	-0.004	1.000	1387326	0.9581		95.8	588	
313.00 > 119.00	1.985	1.989	-0.004	1.000	136665		10.15(5.03-15.10)	95.8	563	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.017	2.013	0.004	1.157	1761259	0.9367		99.9	6221	
349.00 > 99.00	2.006	2.013	-0.007	1.151	650684		2.71(1.36-4.07)	99.9	2565	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.090	2.086	0.004	1.000	291397	1.03		103	408	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.090	2.086	0.004	0.782	240406	2.27		90.9	893	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.321	2.318	0.003	1.000	1385195	0.9399		94.0	508	
363.00 > 169.00	2.321	2.318	0.003	1.000	554587		2.50(1.13-3.40)	94.0	905	
D 9 13C4 PFHpA										
367.00 > 322.00	2.321	2.318	0.003	0.869	3471553	2.59		104	13363	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.333	2.336	-0.003	1.000	1541141	0.8641		95.0	2454	M
399.00 > 99.00	2.333	2.336	-0.003	1.000	486748		3.17(1.50-4.49)	95.0	1345	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.333	2.337	-0.004	0.873	3790742	2.36		99.7	6424	
77 DONA										
377.00 > 251.00	2.366	2.361	0.005	0.774	3954313	0.9725		103	7378	
377.00 > 85.00	2.366	2.361	0.005	0.774	2426560		1.63(0.85-2.54)	103	7283	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.651	2.649	0.002	0.992	577498	2.30		96.7	2725	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.651	2.650	0.001	1.000	332908	0.8947		94.4	1334	
D 73 13C8 PFOA										
421.00 > 376.00	2.673	2.670	0.003	1.000	4499581	2.44		99.8	11559	
D 14 13C4 PFOA										
417.00 > 372.00	2.673	2.673	0.0	1.000	3001538	2.39		95.6	7401	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.673	2.674	-0.001	1.000	1431012	1.03		103	134	
413.00 > 169.00	2.673	2.674	-0.001	1.000	751024		1.91(0.84-2.52)	103	1569	
* 62 13C2 PFOA										
415.00 > 370.00	2.673	2.674	-0.001		3228528	2.50			4784	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.687	2.684	0.003	0.879	1293490	0.9343		98.1	2893	
449.00 > 99.00	2.680	2.684	-0.004	0.877	350316		3.69(1.94-5.82)	98.1	1820	
D 72 13C8 PFOS										
507.00 > 99.00	3.049	3.049	0.0	1.141	1291288	2.35		98.3	3858	
D 19 13C5 PFNA										
468.00 > 423.00	3.056	3.051	0.005	1.144	2452047	2.35		94.0	4400	
D 18 13C4 PFOS										
503.00 > 80.00	3.056	3.053	0.003	1.144	2543466	2.37		99.2	4541	
20 Perfluorononanoic acid										
463.00 > 419.00	3.056	3.054	0.002	1.000	1104139	1.06		106	462	
463.00 > 169.00	3.056	3.054	0.002	1.000	275054		4.01(1.90-5.69)	106	1977	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.056	3.054	0.002	1.000	1074691	0.8997		96.9	1286	
499.00 > 99.00	3.056	3.054	0.002	1.000	233114		4.61(2.31-6.93)	96.9		
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.268	3.266	0.002	1.069	1880958	0.9418		101	6228	
D 21 13C8 FOSA										
506.00 > 78.00	3.374	3.373	0.001	1.262	3858151	2.48		99.4	7745	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.374	3.374	0.0	1.000	1523064	1.02		102	3118	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.404	3.407	-0.003	0.998	296832	0.9682		101	1435	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.411	3.408	0.003	1.116	769836	0.9192		95.8	3107	
549.00 > 99.00	3.411	3.408	0.003	1.116	282253		2.73(1.33-3.97)	95.8	1292	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.411	3.408	0.003	1.276	606529	2.28		95.3	2218	
D 23 13C2 PFDA										
515.00 > 470.00	3.418	3.416	0.002	1.279	2262788	2.46		98.4	5565	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.418	3.417	0.001	1.000	912404	1.03		103	1028	
513.00 > 169.00	3.418	3.417	0.001	1.000	170848		5.34(2.36-7.09)	103	421	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.573	3.574	-0.001	1.337	1172962	2.50		99.9	2710	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.582	3.580	0.002	1.002	425834	0.9493		94.9	354	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.739	3.736	0.003	1.223	617741	0.9276		96.2	2452	
599.00 > 99.00	3.739	3.736	0.003	1.223	211940		2.91(1.39-4.16)	96.2	1746	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.747	3.744	0.003	1.402	1199942	2.45		97.9	1604	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.756	3.751	0.005	1.000	620287	0.9073		90.7	681	
563.00 > 169.00	3.756	3.751	0.005	1.000	158458		3.91(2.12-6.36)	90.7	1114	
D 30 13C2 PFUnA										
565.00 > 520.00	3.756	3.751	0.005	1.405	1911905	2.58		103	5930	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.756	3.751	0.005	1.002	406329	1.01		101	1059	
35 MeFOSA										
512.00 > 169.00	3.885	3.880	0.005		432258	NC			442	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.916	3.913	0.003	1.281	2782012	0.9229		98.0	6407	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.052	4.048	0.004	1.000	828383	0.9408		94.1	628	
613.00 > 169.00	4.052	4.048	0.004	1.000	218053		3.80(2.13-6.40)	94.1	1167	
D 36 13C2 PFDaA										
615.00 > 570.00	4.052	4.050	0.002	1.516	1994657	2.57		103	4681	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.061	4.054	0.007	1.190	224063	1.05		108	1636	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.297	4.295	0.002	1.406	295541	0.9476		97.9	1908	
699.00 > 99.00	4.297	4.295	0.002	1.406	457573		0.65(0.00-0.00)	97.9	3062	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.321	4.320	0.001	1.066	808673	0.9686		96.9	600	
663.00 > 169.00	4.321	4.320	0.001	1.066	282931		2.86(1.25-3.76)	96.9	2019	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.564	4.565	-0.001	1.000	232928	0.9294		92.9	1749	
713.00 > 219.00	4.564	4.565	-0.001	1.000	170118		1.37(0.71-2.13)	92.9	1412	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.564	4.565	-0.001	1.708	2345171	2.47		98.7	5661	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.988	4.989	-0.001	1.866	4433308	2.52		101	4201	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.997	4.993	0.004	1.002	1605389	1.00		99.8	274	
813.00 > 169.00	4.997	4.993	0.004	1.002	302353		5.31(2.86-8.58)	99.8	1465	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.364	5.363	0.001	1.075	2042343	0.9758		97.6	250	
913.00 > 169.00	5.364	5.363	0.001	1.075	265383		7.70(3.83-11.48)	97.6	1252	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_008.d

Injection Date: 10-Oct-2018 11:46:35

Instrument ID: A8_N

Lims ID: IC L4 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

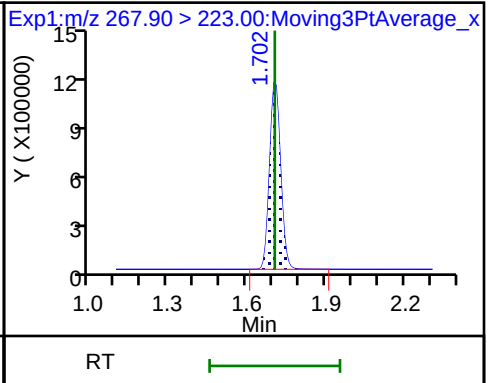
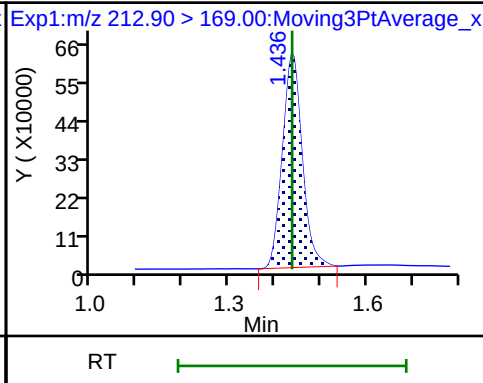
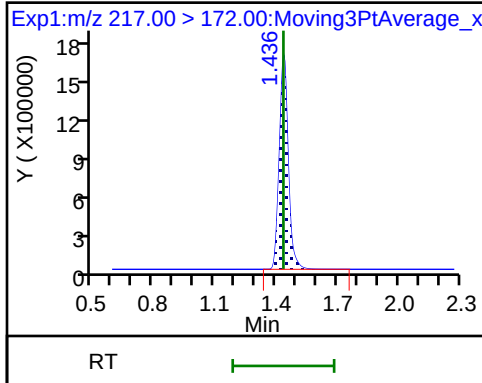
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

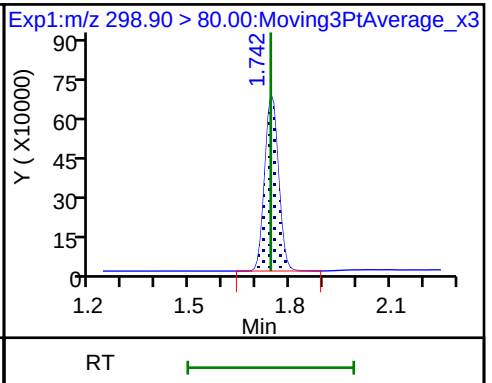
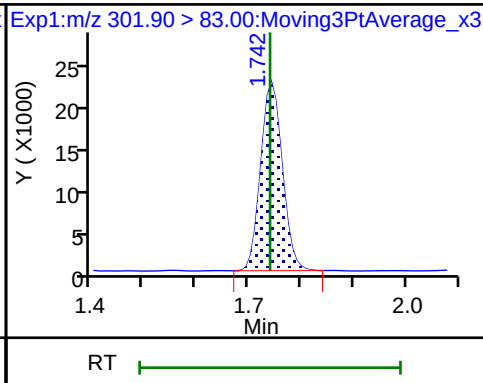
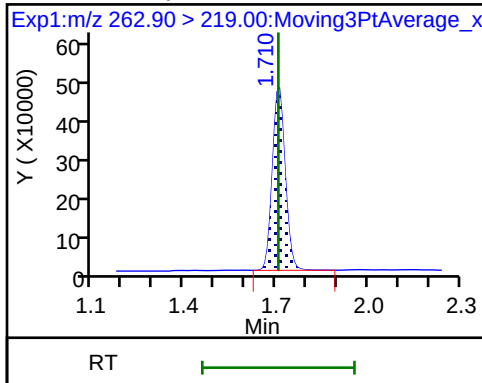
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

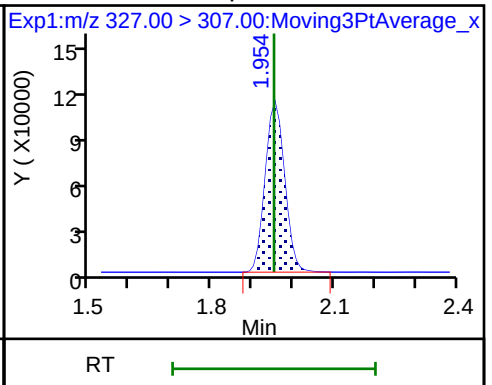
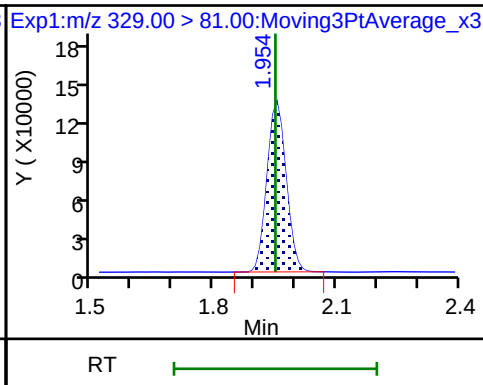
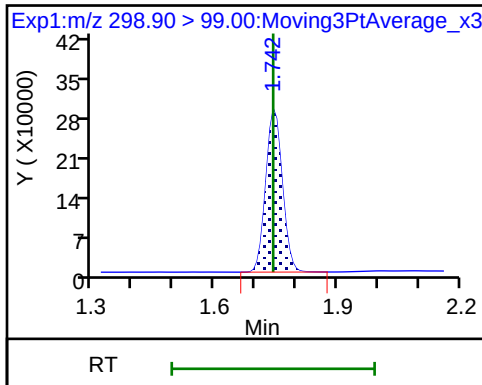
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

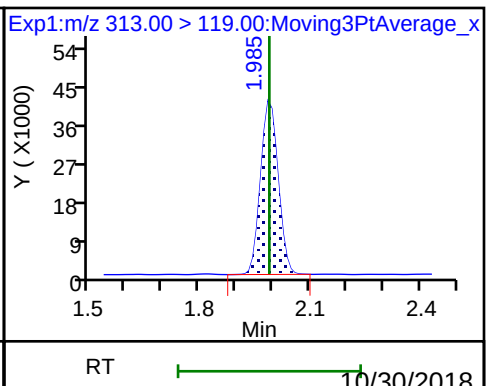
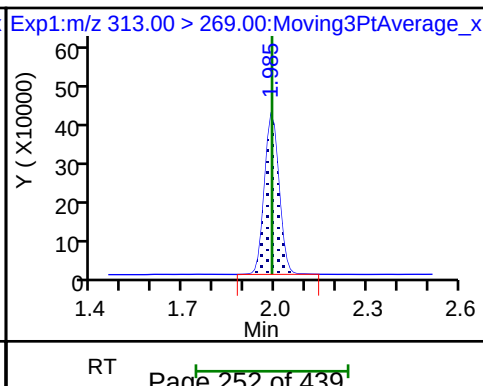
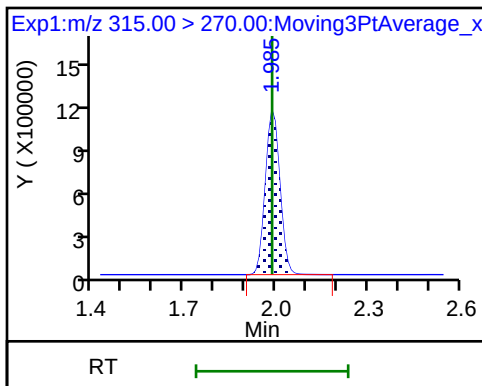
61 1H,1H,2H,2H-perfluorohexanesulfoni

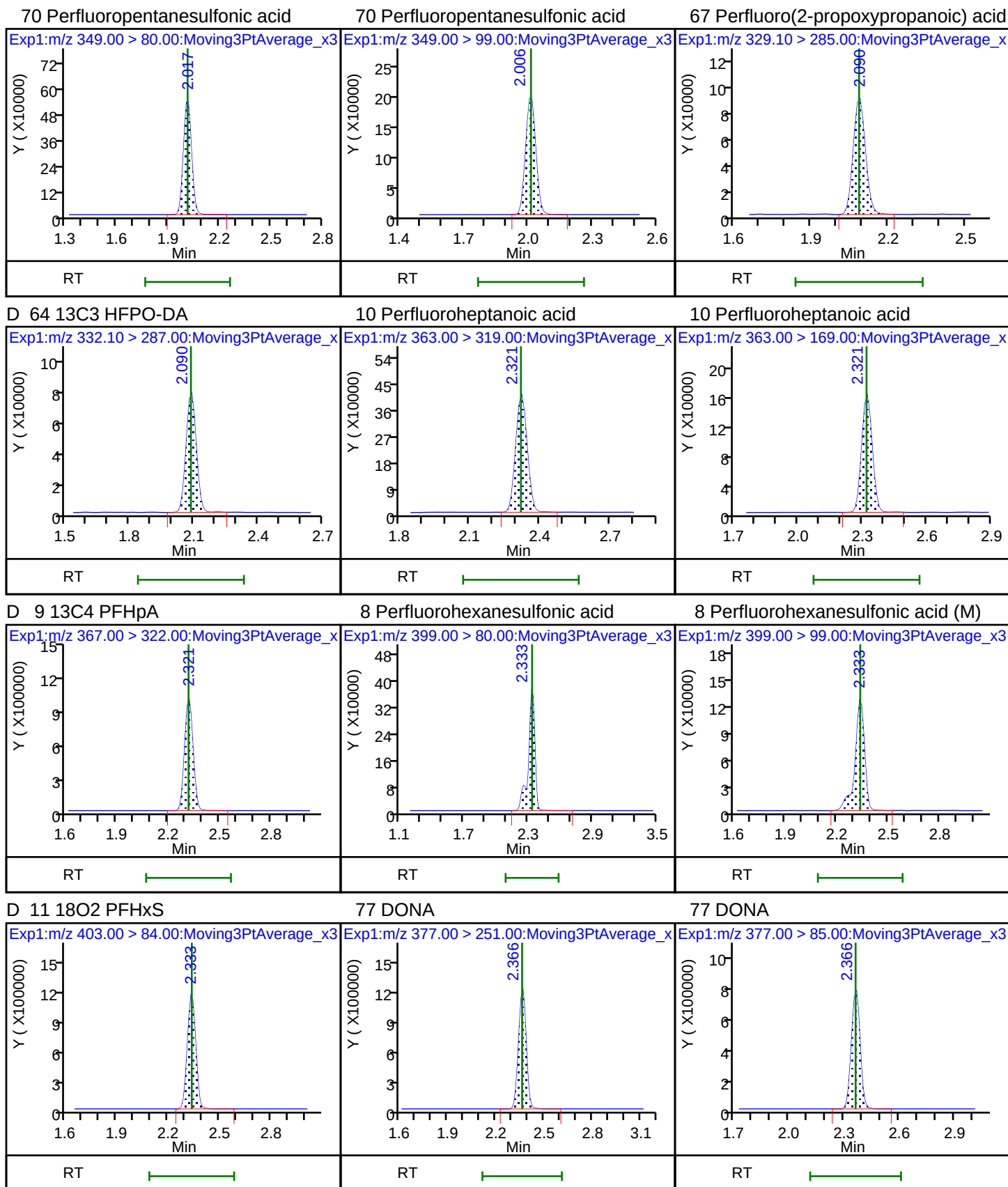


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

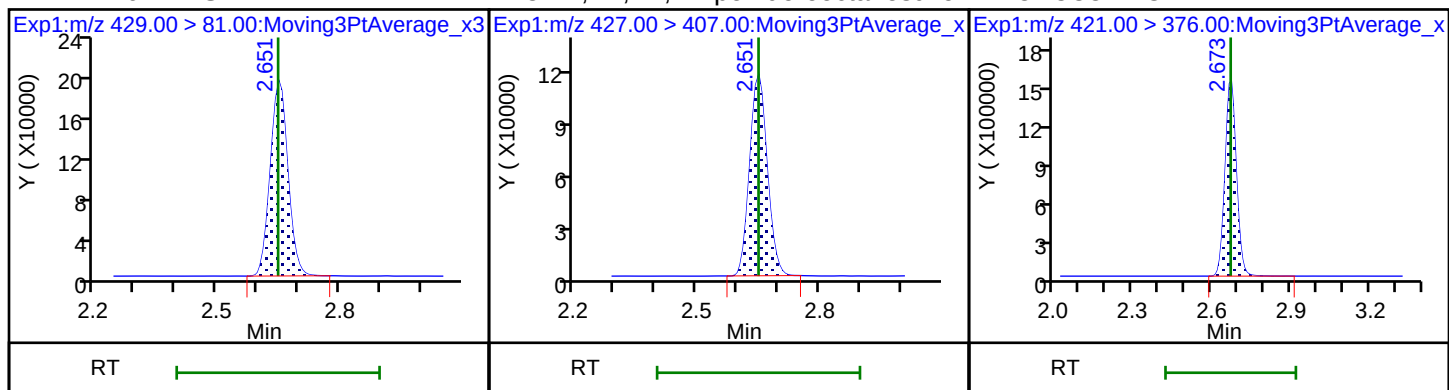
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

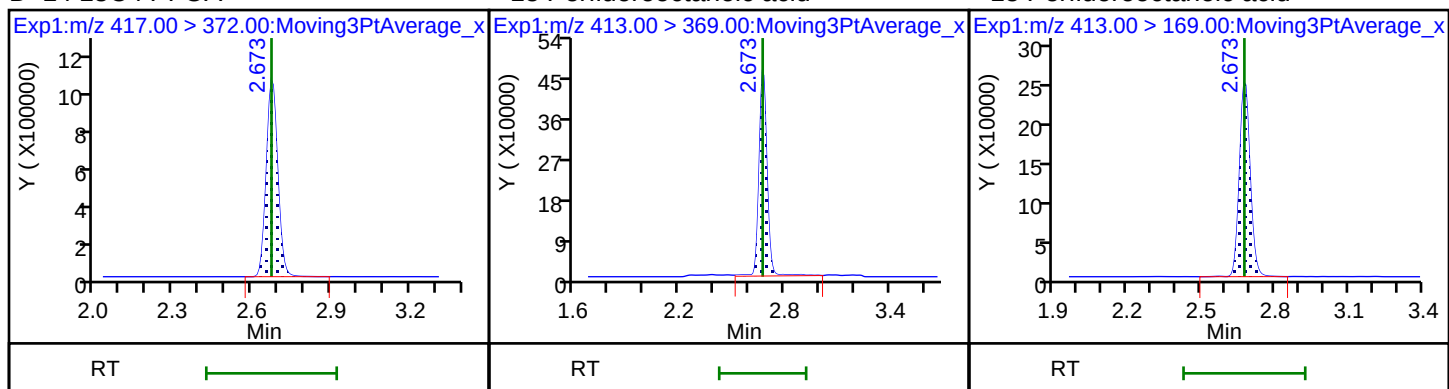
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

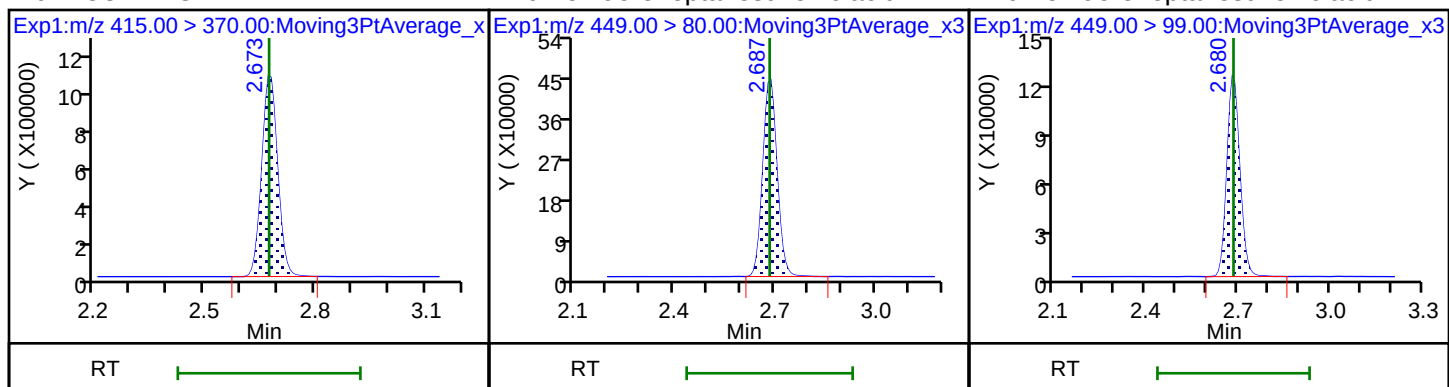
15 Perfluorooctanoic acid



* 62 13C2 PFOA

16 Perfluoroheptanesulfonic acid

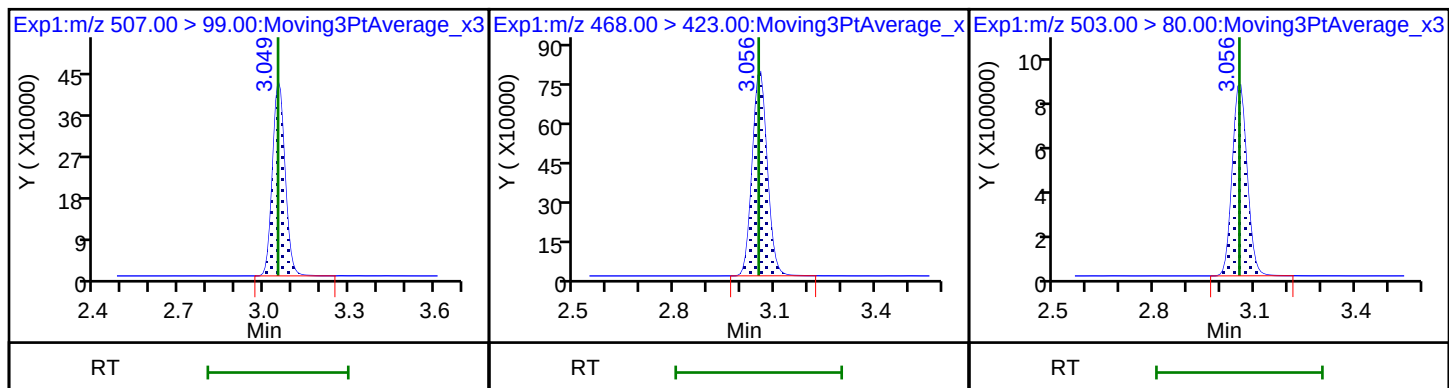
16 Perfluoroheptanesulfonic acid

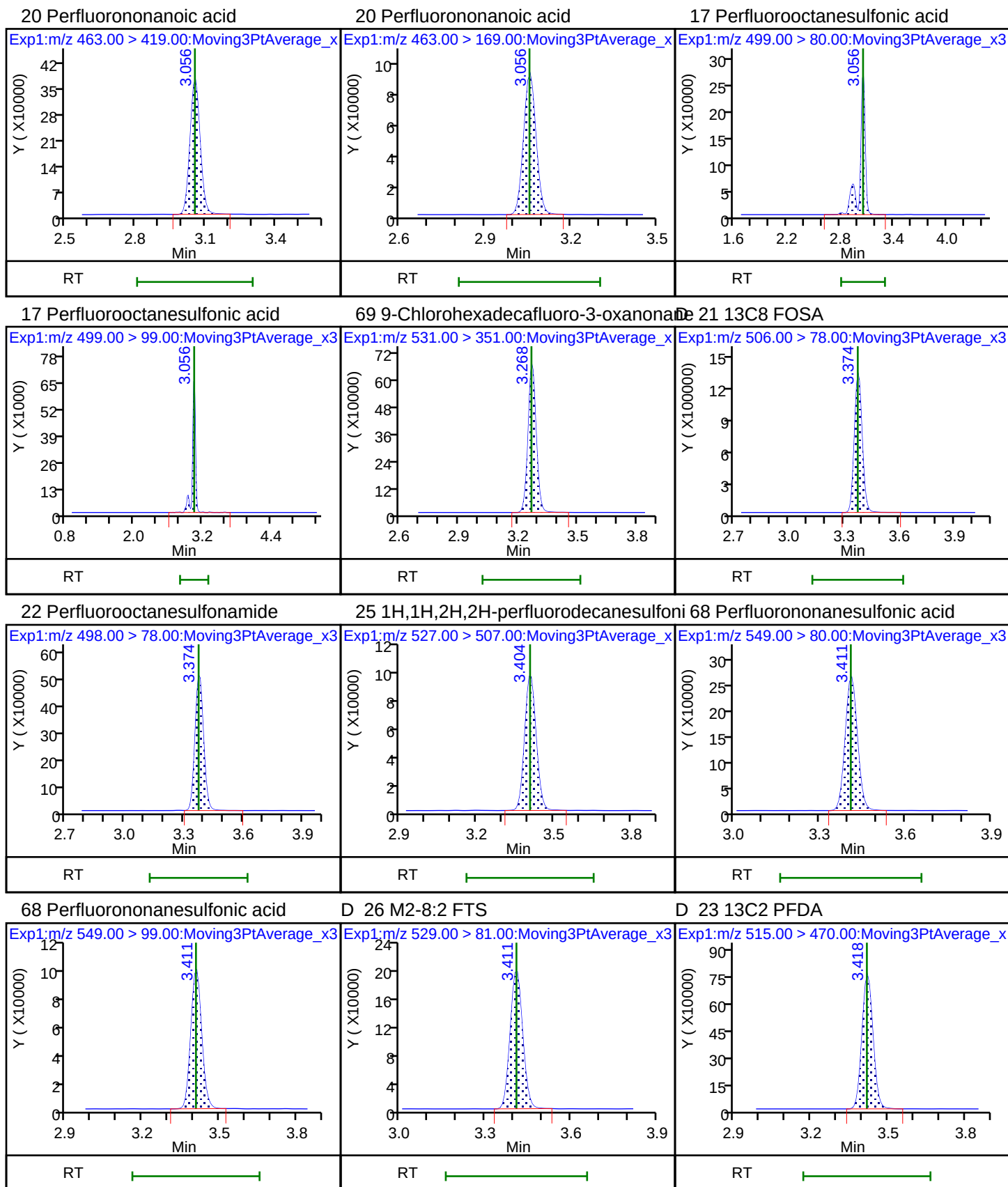


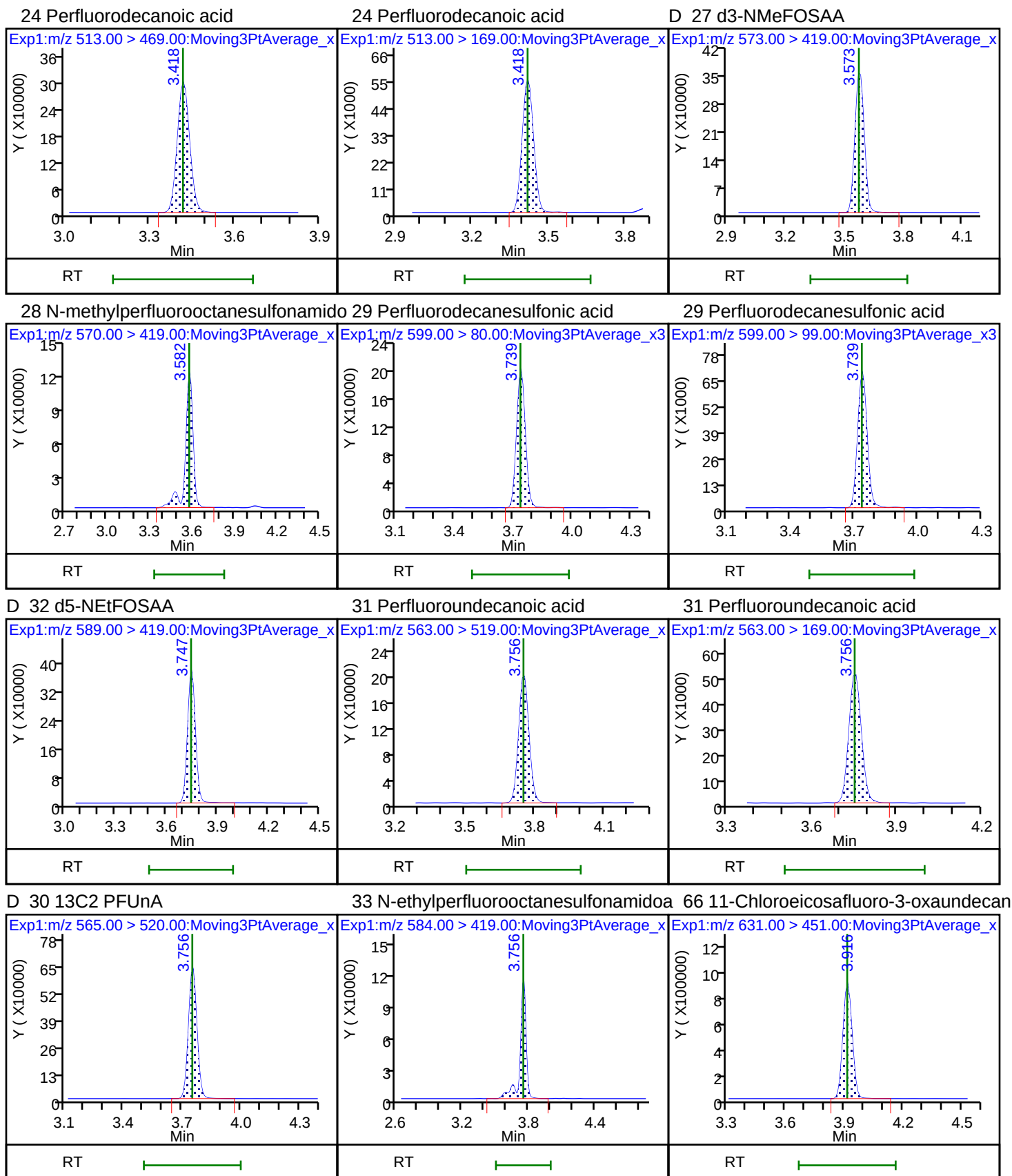
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



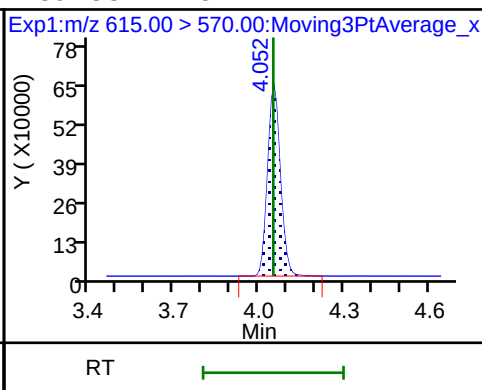
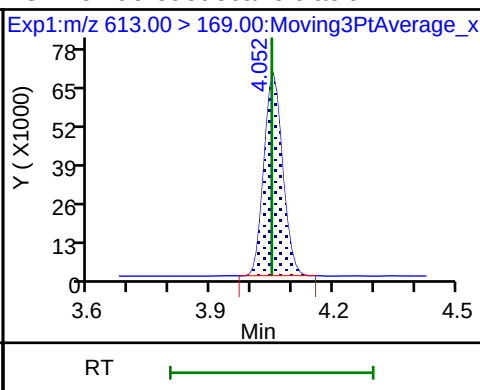
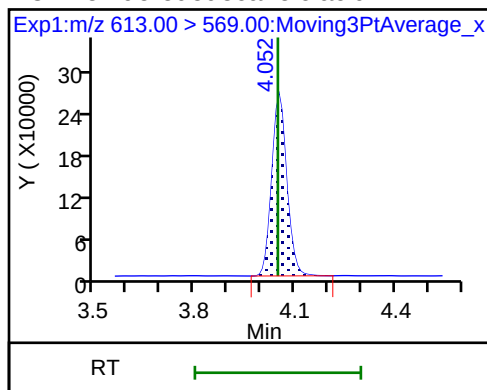




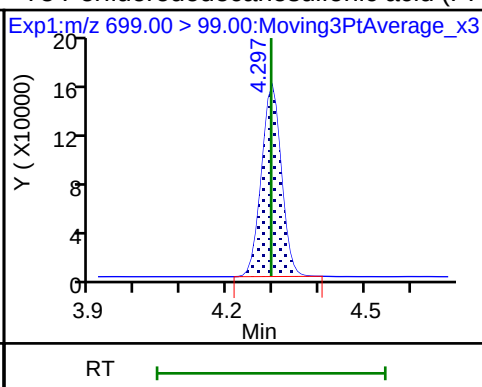
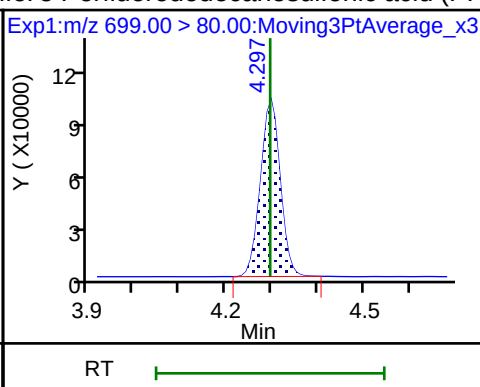
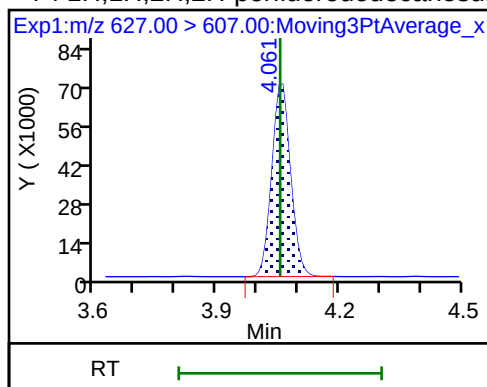
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



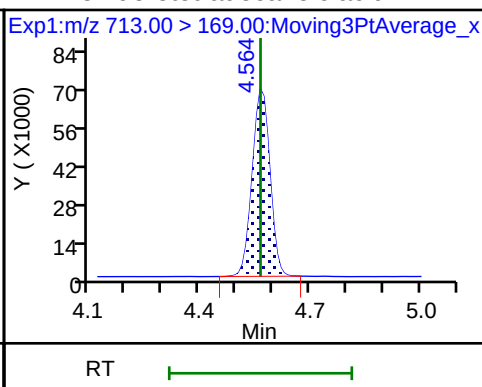
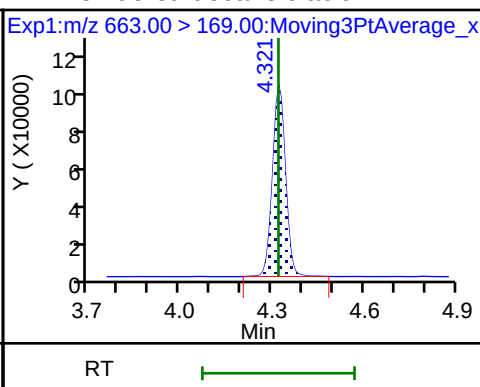
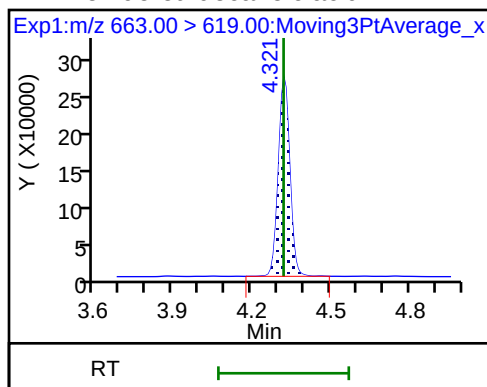
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

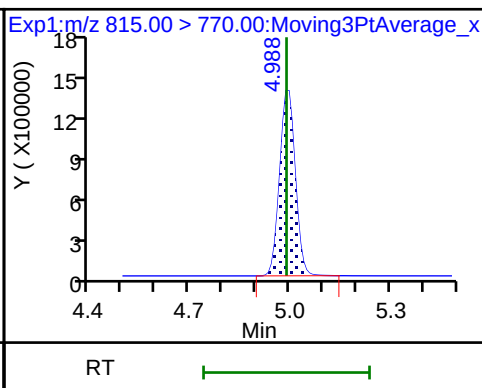
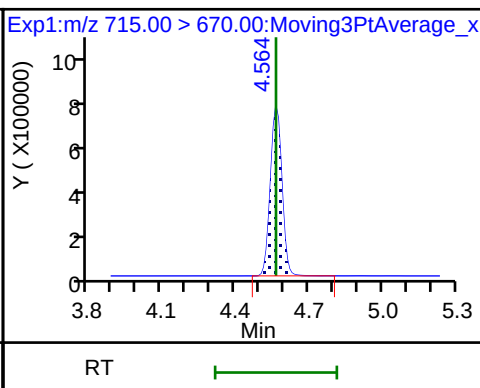
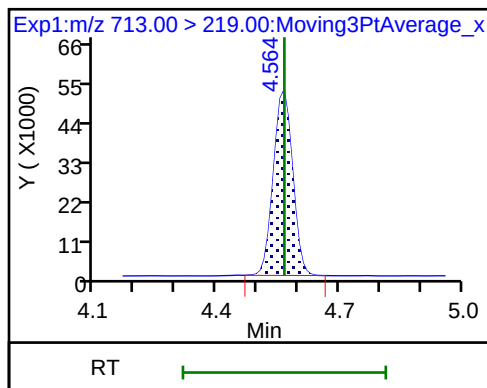
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

D 44 13C2 PFHxDA

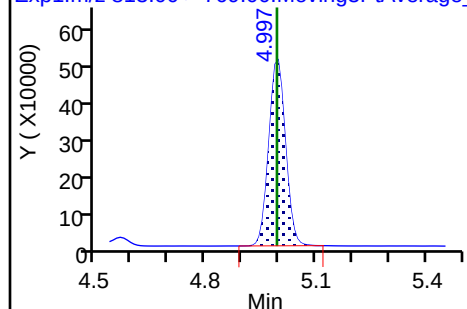


45 Perfluorohexadecanoic acid

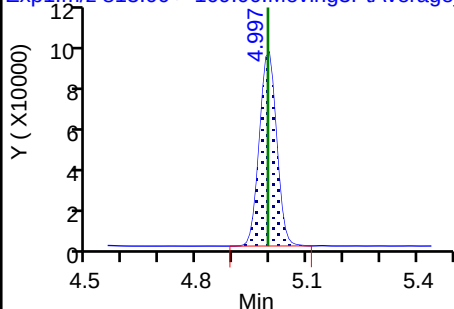
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

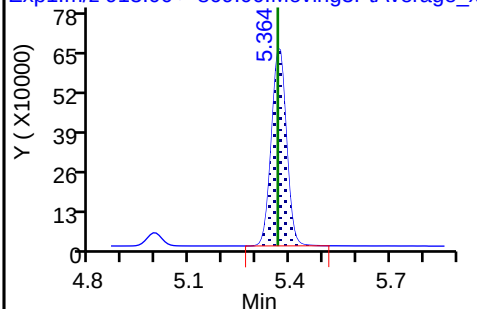
Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

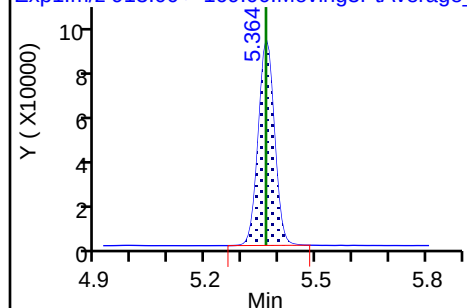


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

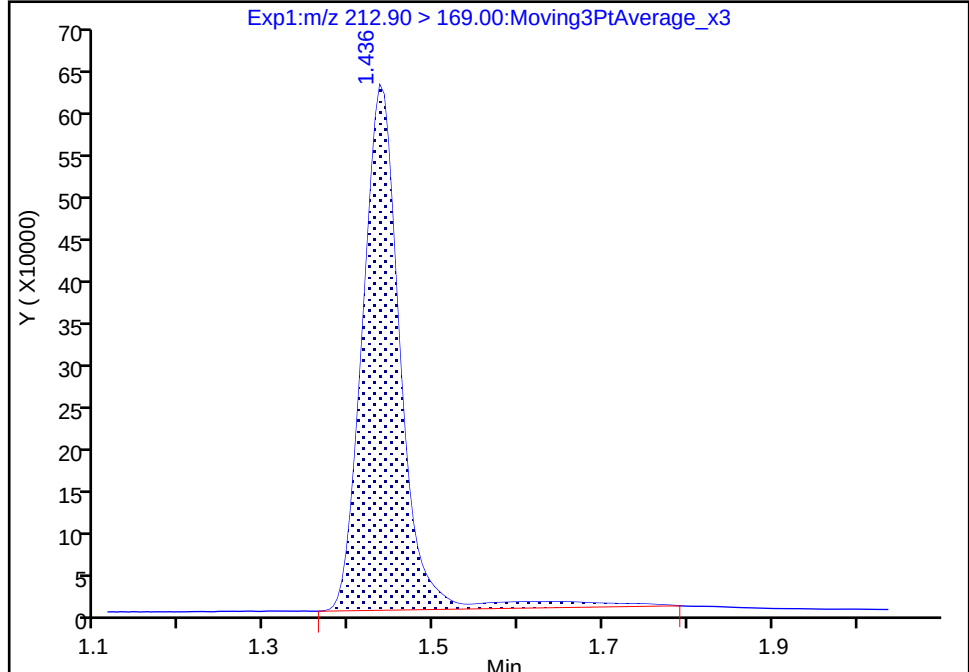
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_008.d
Injection Date: 10-Oct-2018 11:46:35 Instrument ID: A8_N
Lims ID: IC L4 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

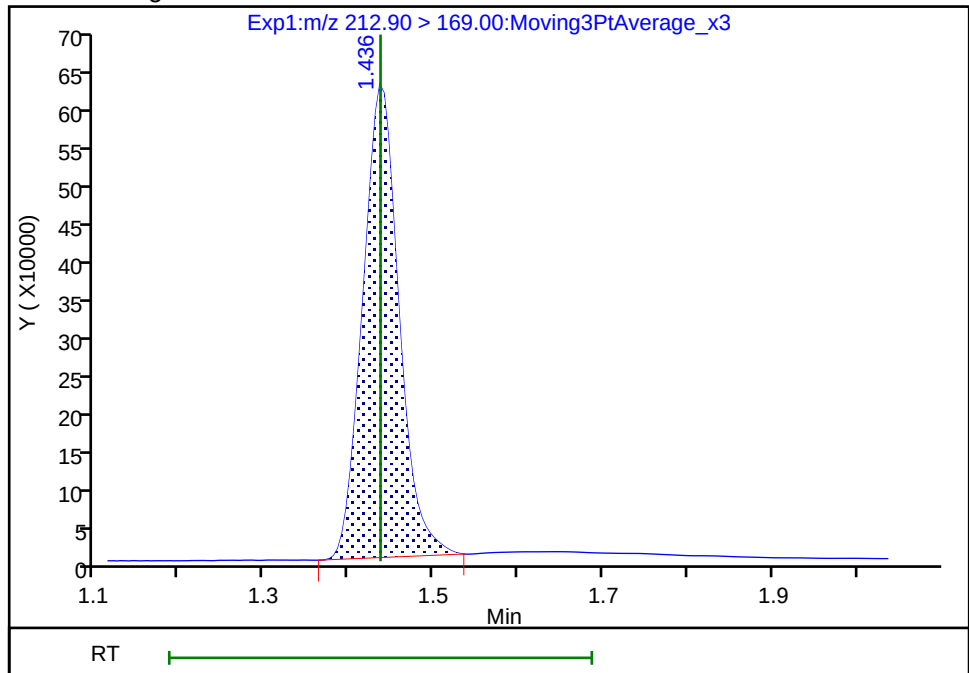
RT: 1.44
Area: 1944987
Amount: 1.058429
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 1838577
Amount: 1.008868
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:52:35
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/30/2018

TestAmerica Sacramento

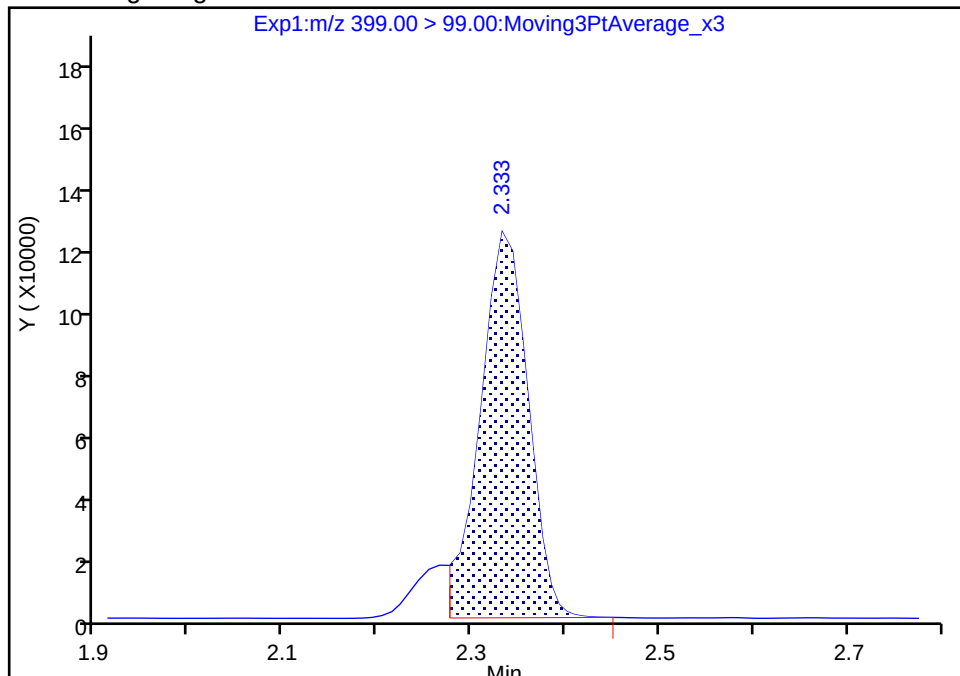
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_008.d
Injection Date: 10-Oct-2018 11:46:35 Instrument ID: A8_N
Lims ID: IC L4 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

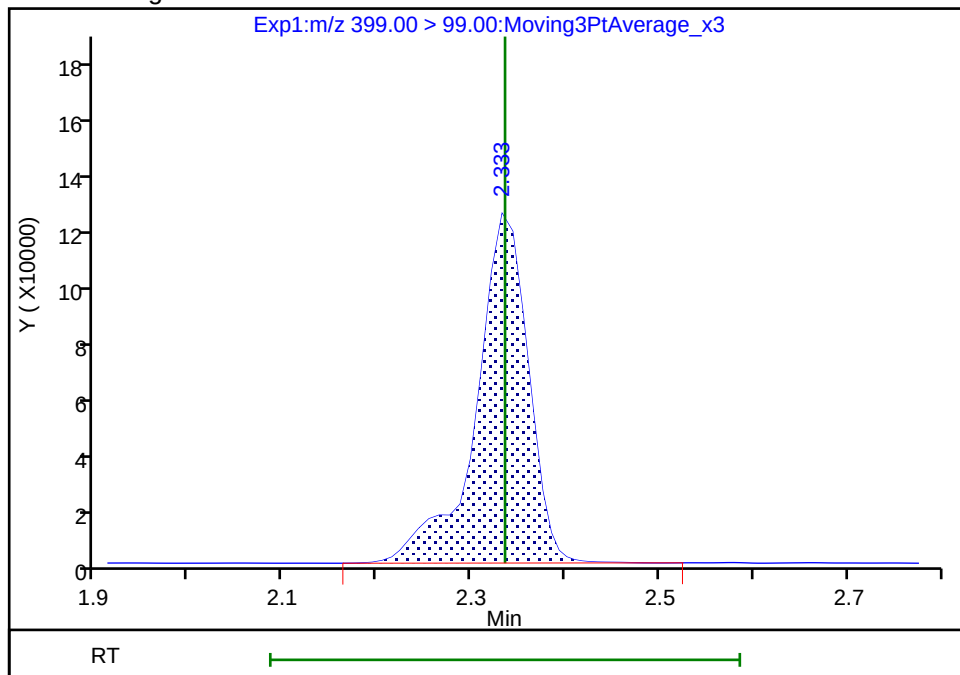
RT: 2.33
Area: 440152
Amount: 0.864147
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 486748
Amount: 0.864147
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:52:47

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_009.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 10-Oct-2018 11:54:00 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:09:26 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:54:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.433	1.434	-0.001	0.537	4336689	2.46		98.5	10638	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.433	1.437	-0.004	1.000	3939875	2.53		101	465	
D 3 13C5 PFPeA										
267.90 > 223.00	1.700	1.705	-0.005	0.637	2840609	2.46		98.5	10971	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.706	-0.006	1.000	3086360	2.52		101	481	
D 47 13C3 PFBS										
301.90 > 83.00	1.740	1.740	0.0	0.652	50785	2.14		92.1	371	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.742	-0.002	1.000	4095661	2.39		108	815	
298.90 > 99.00	1.740	1.742	-0.002	1.000	1720765		2.38(1.25-3.74)	108	741	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.949	1.950	-0.001	0.730	379466	2.41		103	528	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.949	1.951	-0.002	1.120	809495	2.50		107	6006	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.986	-0.005	0.742	3129027	2.46		98.3	10600	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.989	-0.008	1.000	3057164	2.48		99.1	1288	
313.00 > 119.00	1.981	1.989	-0.008	1.000	286497		10.67(5.03-15.10)	99.1	1030	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.012	2.013	-0.001	1.156	3884799	2.63		112	7472	
349.00 > 99.00	2.012	2.013	-0.001	1.156	1375305		2.82(1.36-4.07)	112	3985	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.085	2.086	-0.001	0.781	194494	2.12		84.8	798	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.085	2.086	-0.001	1.000	653442	2.85		114	921	
D 9 13C4 PFHpA										
367.00 > 322.00	2.314	2.318	-0.004	0.867	2922607	2.51		100	7459	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.318	-0.004	1.000	3133714	2.53		101	1098	
363.00 > 169.00	2.314	2.318	-0.004	1.000	1267077		2.47(1.13-3.40)	101	2293	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.325	2.336	-0.011	0.995	3367390	2.21		97.2	3486	
399.00 > 99.00	2.336	2.336	0.0	1.000	1101440		3.06(1.50-4.49)	97.2	2062	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.337	-0.001	0.875	3237507	2.32		98.1	5987	
77 DONA										
377.00 > 251.00	2.358	2.361	-0.003	0.774	8465488	2.38		101	9463	
377.00 > 85.00	2.358	2.361	-0.003	0.774	5052524		1.68(0.85-2.54)	101	9518	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.647	2.649	-0.002	0.992	490345	2.25		94.7	2751	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.647	2.650	-0.003	1.000	769048	2.43		103	2302	
D 73 13C8 PFOA										
421.00 > 376.00	2.670	2.670	0.0	1.000	3835253	2.40		98.1	7011	
D 14 13C4 PFOA										
417.00 > 372.00	2.670	2.673	-0.003	1.000	2720897	2.50		99.9	6677	
* 62 13C2 PFOA										
415.00 > 370.00	2.670	2.674	-0.004		2800627	2.50			6658	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.670	2.674	-0.004	1.000	3164694	2.51		100	342	
413.00 > 169.00	2.670	2.674	-0.004	1.000	1684906		1.88(0.84-2.52)	100	2642	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.677	2.684	-0.007	0.879	2792420	2.30		96.7	3777	
449.00 > 99.00	2.677	2.684	-0.007	0.879	741335		3.77(1.94-5.82)	96.7	3424	
D 72 13C8 PFOS										
507.00 > 99.00	3.046	3.049	-0.003	1.141	1107237	2.32		97.2	3896	
D 19 13C5 PFNA										
468.00 > 423.00	3.046	3.051	-0.005	1.141	2280897	2.52		101	5600	
D 18 13C4 PFOS										
503.00 > 80.00	3.046	3.053	-0.007	1.141	2229352	2.40		100	4279	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.046	3.054	-0.008	1.000	2340381	2.24		96.3	2089	
499.00 > 99.00	3.046	3.054	-0.008	1.000	513622		4.56(2.31-6.93)	96.3	2592	
20 Perfluorononanoic acid										
463.00 > 419.00	3.046	3.054	-0.008	1.000	2385318	2.45		98.2	942	
463.00 > 169.00	3.046	3.054	-0.008	1.000	595768		4.00(1.90-5.69)	98.2	2867	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.260	3.266	-0.006	1.070	4051860	2.31		99.3	7630	
D 21 13C8 FOSA										
506.00 > 78.00	3.371	3.373	-0.002	1.263	3276186	2.43		97.3	6874	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide	498.00 > 78.00	3.371	3.374	-0.003	1.000	3307576	2.60	104	3268	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.401	3.407	-0.006	1.000	685557	2.35	97.9	2583	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.401	3.408	-0.007	1.117	1733224	2.36	98.4	3770	
549.00 > 99.00	3.401	3.408	-0.007	1.117	605407		2.86(1.33-3.97)	98.4	2915	
D 26 M2-8:2 FTS	529.00 > 81.00	3.401	3.408	-0.007	1.274	578356	2.51	105	3009	
D 23 13C2 PFDA	515.00 > 470.00	3.408	3.416	-0.008	1.277	1918077	2.40	96.1	6076	
24 Perfluorodecanoic acid	513.00 > 469.00	3.408	3.417	-0.009	1.000	1969687	2.61	105	2021	
513.00 > 169.00	3.408	3.417	-0.009	1.000	376284		5.23(2.36-7.09)	105	385	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.570	3.574	-0.004	1.337	1008224	2.48	99.0	1871	
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	3.570	3.580	-0.010	1.000	978098	2.54	101	975	M
29 Perfluorodecanesulfonic acid	599.00 > 80.00	3.726	3.736	-0.010	1.223	1449684	2.48	103	3048	
599.00 > 99.00	3.726	3.736	-0.010	1.223	456134		3.18(1.39-4.16)	103	2632	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.735	3.744	-0.009	1.399	1030045	2.42	96.8	1281	
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	3.743	3.751	-0.008	1.002	854793	2.47	98.8	1969	
D 30 13C2 PFUnA	565.00 > 520.00	3.743	3.751	-0.008	1.402	1574598	2.45	98.2	4806	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.743	3.751	-0.008	1.000	1318094	2.34	93.6	1158	
563.00 > 169.00	3.743	3.751	-0.008	1.000	345643		3.81(2.12-6.36)	93.6	1030	
35 MeFOSA	512.00 > 169.00	3.873	3.880	-0.007		961591	NC		565	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.903	3.913	-0.010	1.281	6732817	2.55	108	10121	
37 Perfluorododecanoic acid	613.00 > 569.00	4.041	4.048	-0.007	1.000	1682078	2.40	96.0	1545	
613.00 > 169.00	4.041	4.048	-0.007	1.000	453741		3.71(2.13-6.40)	96.0	3899	
D 36 13C2 PFDaA	615.00 > 570.00	4.041	4.050	-0.009	1.514	1587844	2.36	94.3	3475	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.050	4.054	-0.004	1.191	470771	2.30	95.6	2997	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.287	4.295	-0.008	1.408	658422	2.41	99.5	3238	
699.00 > 99.00	4.287	4.295	-0.008	1.408	987889		0.67(0.00-0.00)	99.5	3809	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.311	4.320	-0.009	1.067	1805474	2.72	109	1209	
663.00 > 169.00	4.311	4.320	-0.009	1.067	607583		2.97(1.25-3.76)	109	4191	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.553	4.565	-0.012	1.705	2015257	2.44		97.8	3942	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.553	4.565	-0.012	1.000	515191	2.39		95.7	4168	
713.00 > 219.00	4.553	4.565	-0.012	1.000	368464		1.40(0.71-2.13)	95.7	1681	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.979	4.989	-0.010	1.865	3755756	2.47		98.6	6038	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.988	4.993	-0.005	1.002	3490780	2.60		104	599	
813.00 > 169.00	4.979	4.993	-0.014	1.000	627121		5.57(2.86-8.58)	104	2113	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.350	5.363	-0.013	1.074	4362842	2.46		98.4	633	
913.00 > 169.00	5.350	5.363	-0.013	1.074	561431		7.77(3.83-11.48)	98.4	1898	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_009.d

Injection Date: 10-Oct-2018 11:54:00

Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

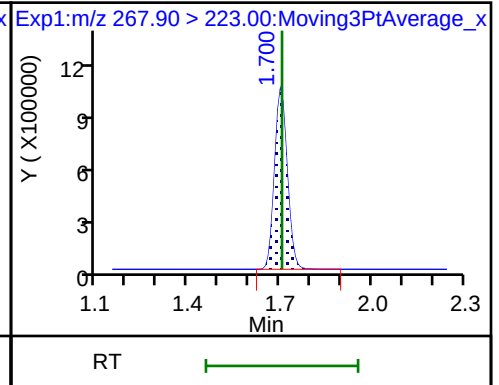
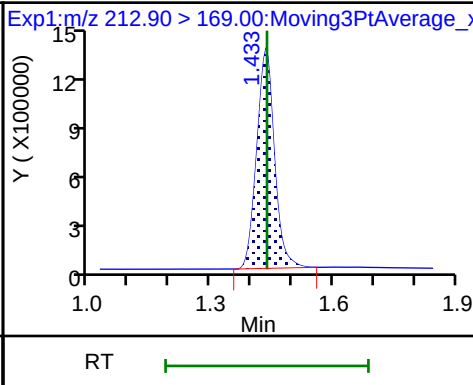
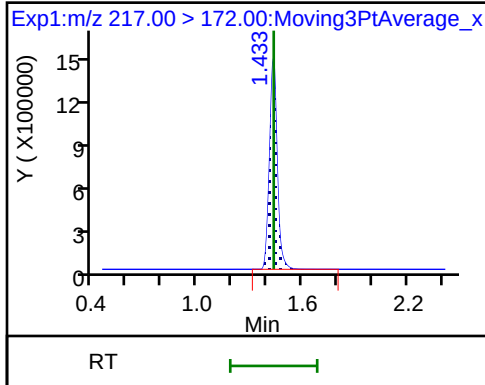
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

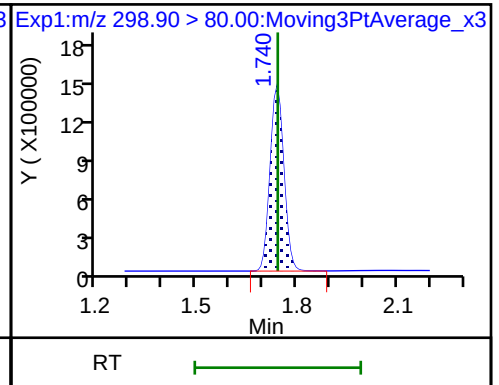
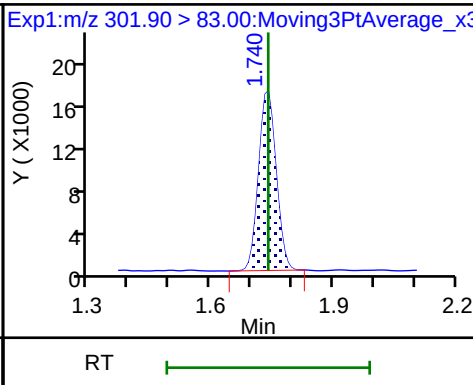
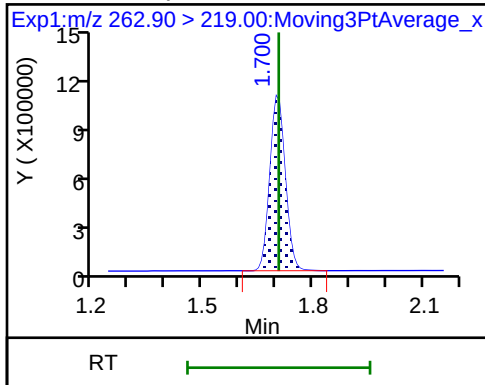
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

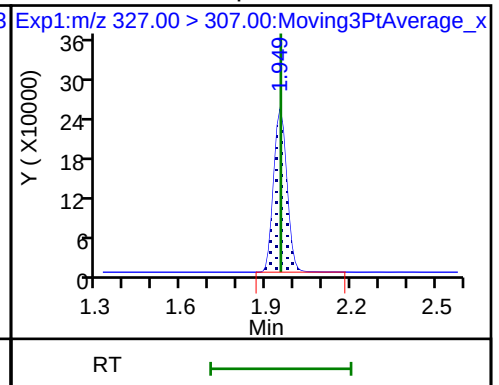
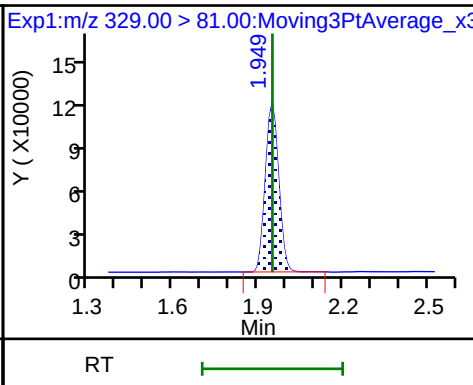
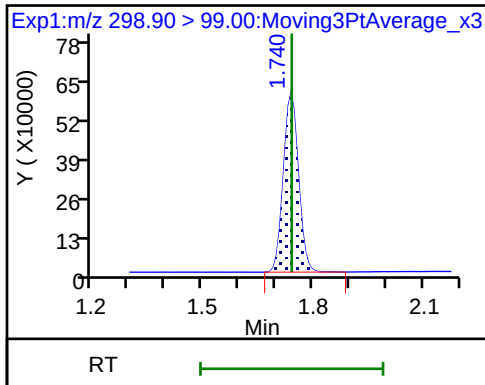
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

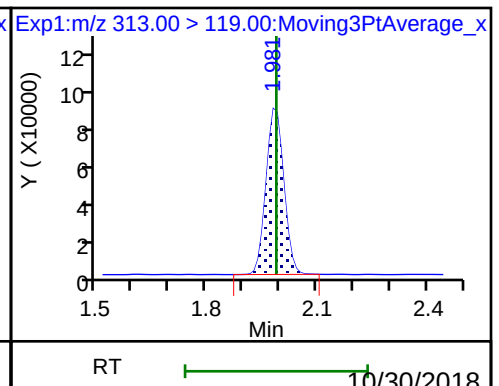
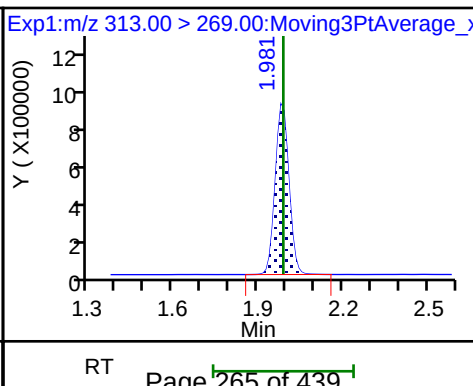
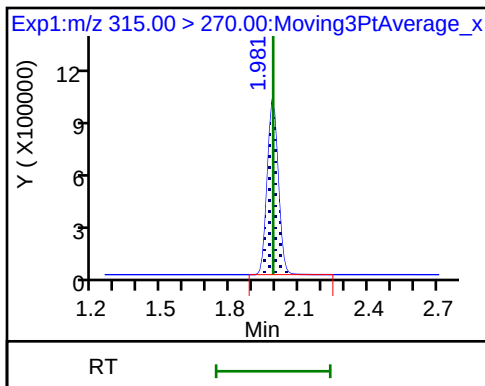
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

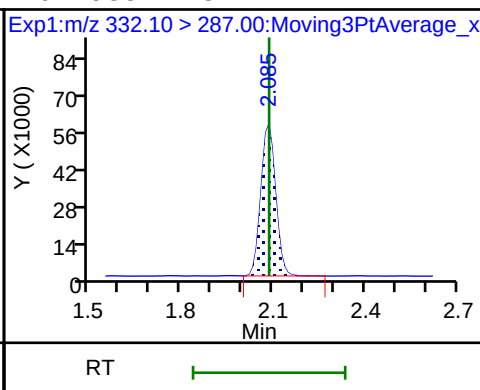
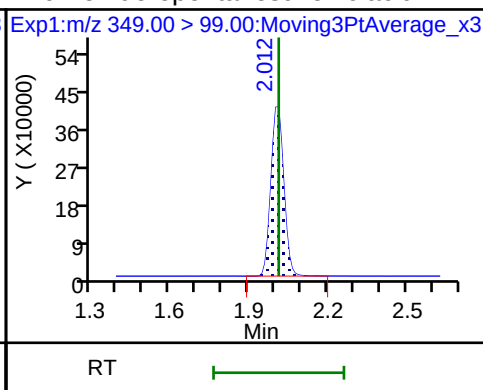
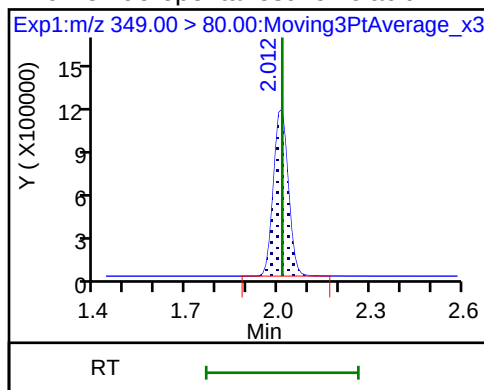
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

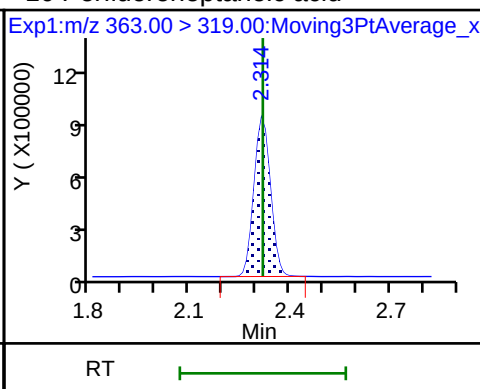
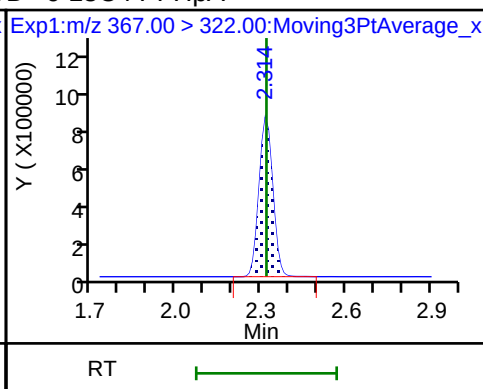
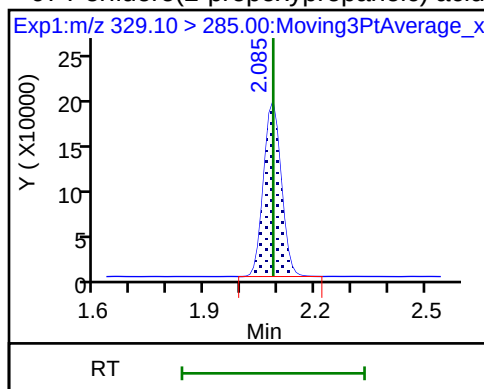
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

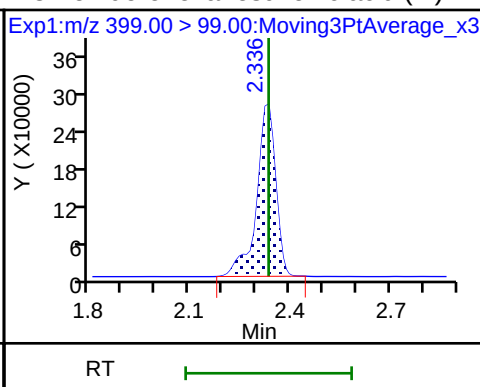
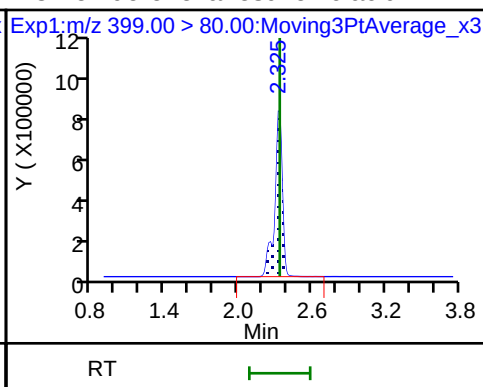
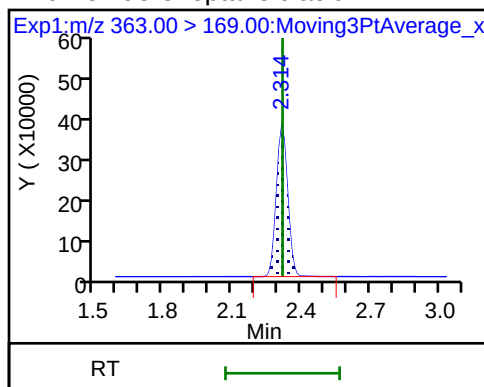
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

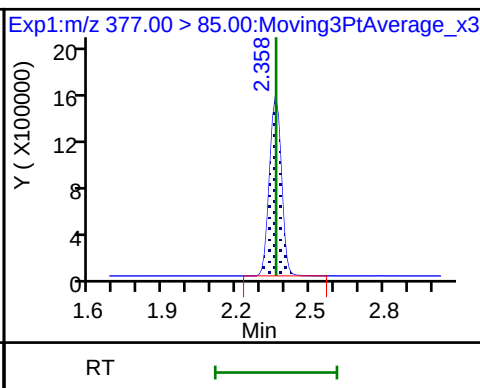
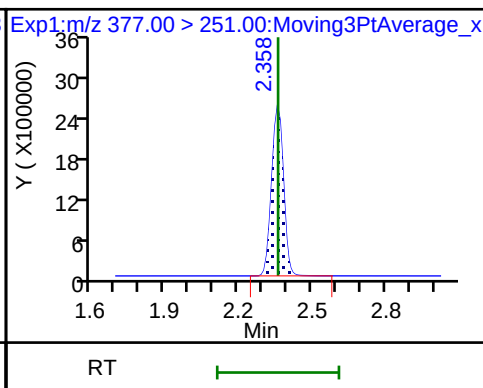
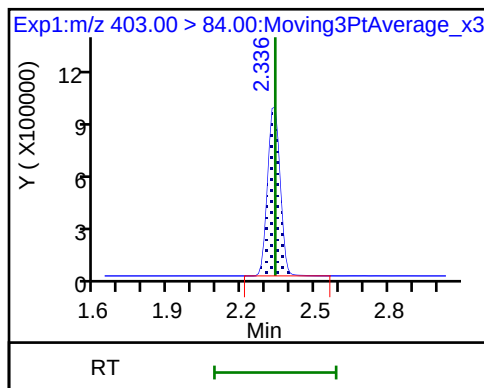
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

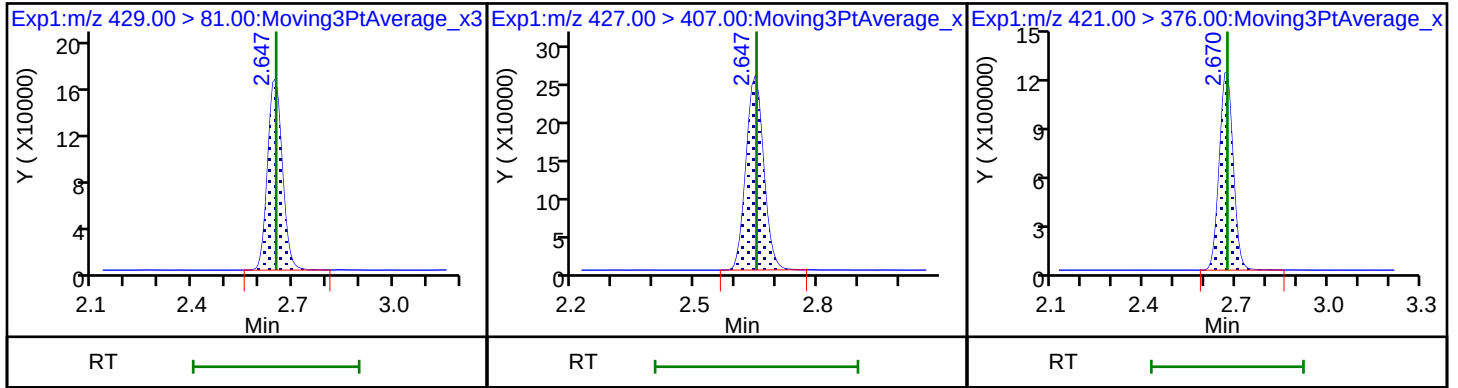
77 DONA

77 DONA



D 12 M2-6:2 FTS

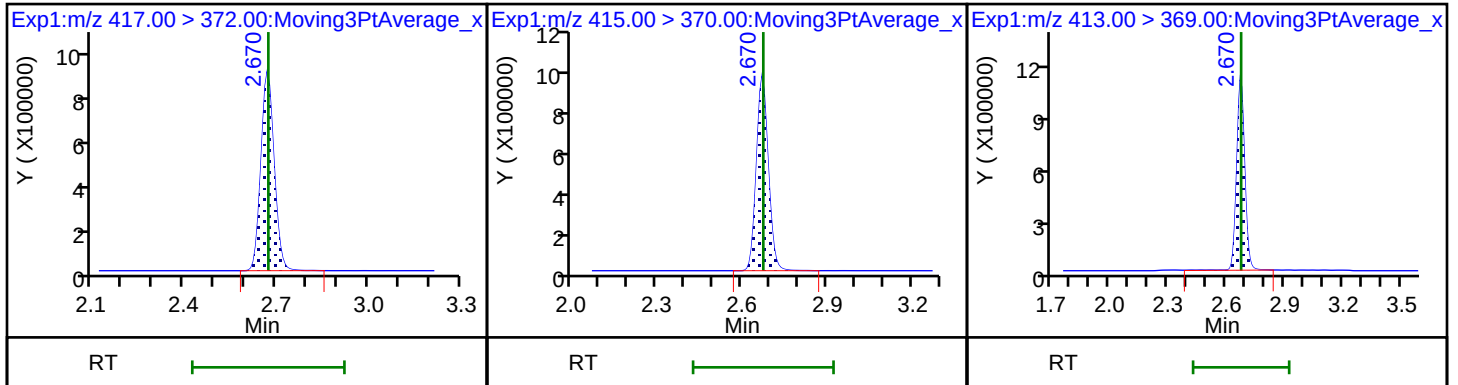
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

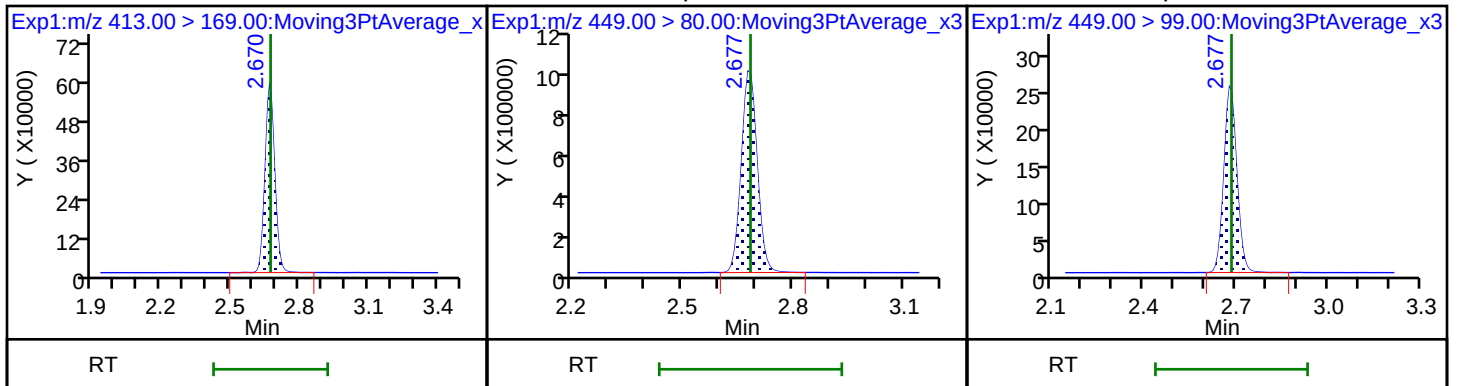
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

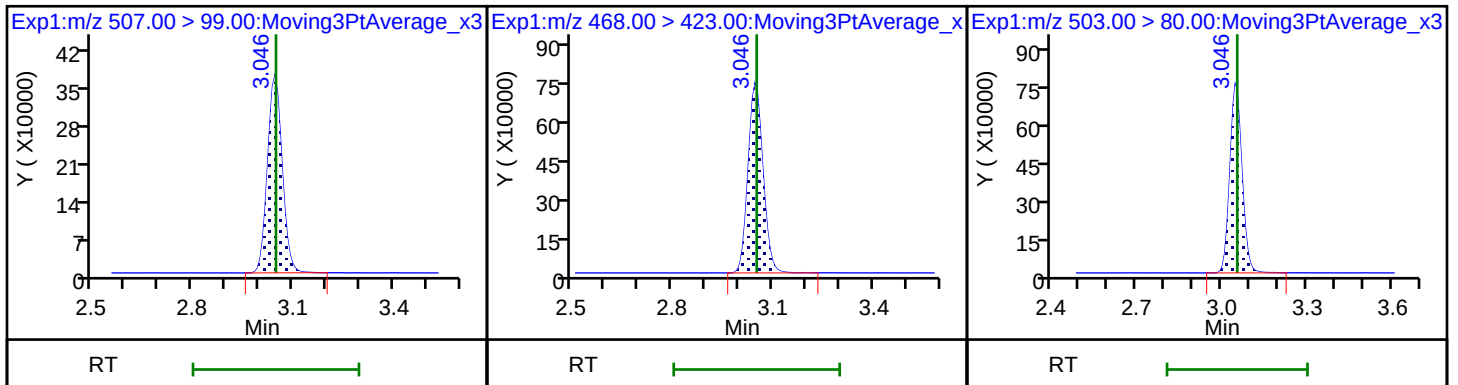
16 Perfluoroheptanesulfonic acid

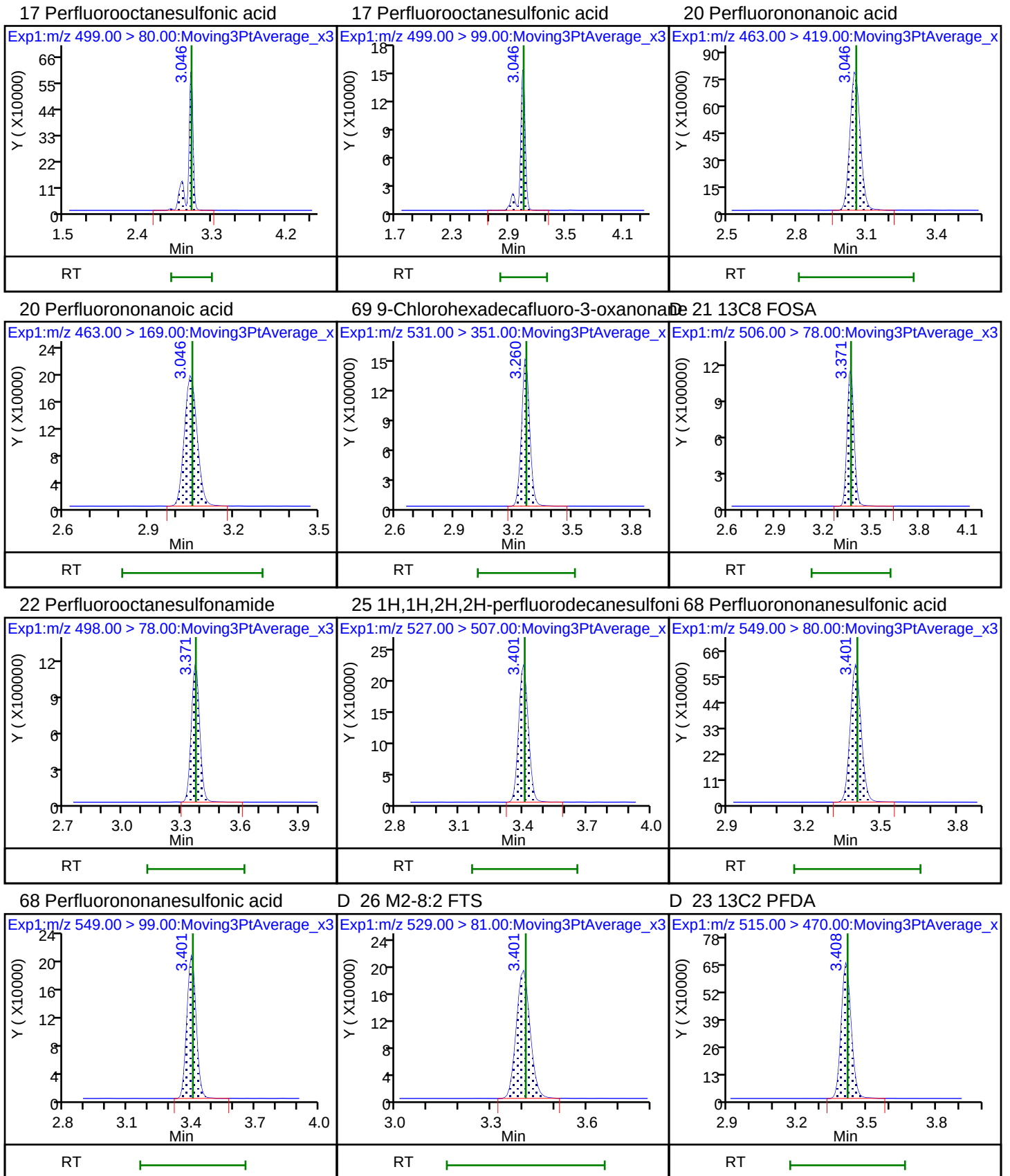


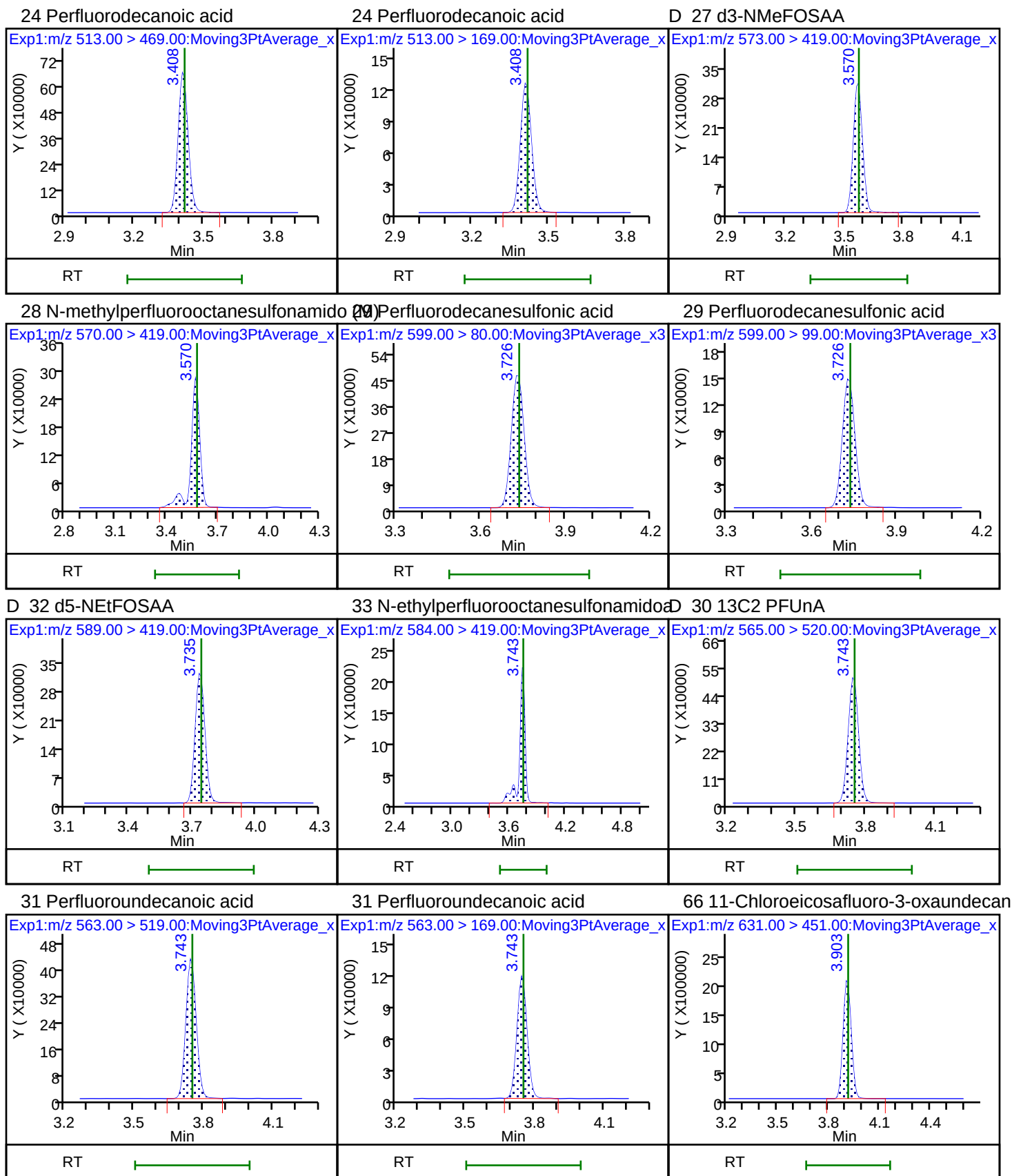
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



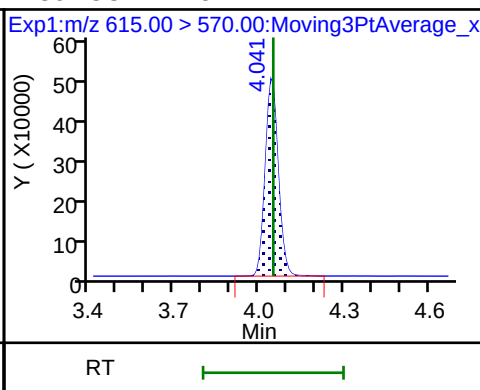
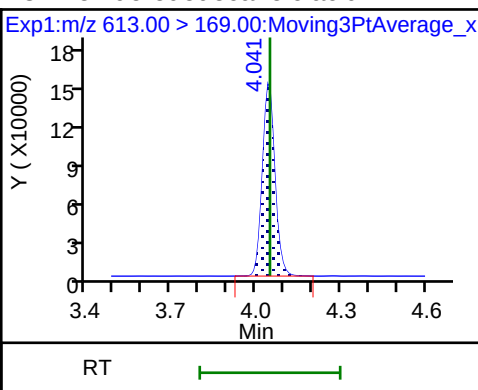
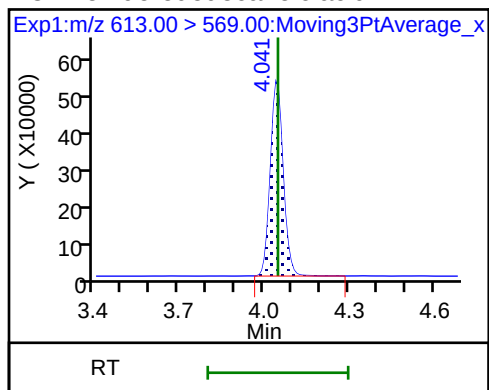




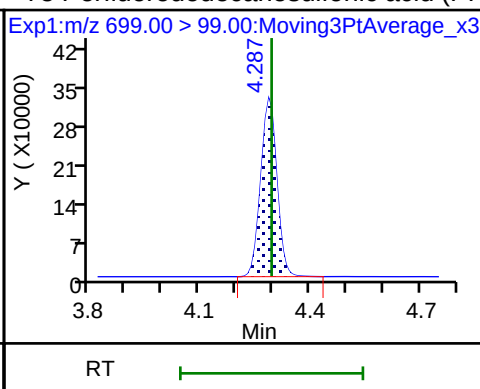
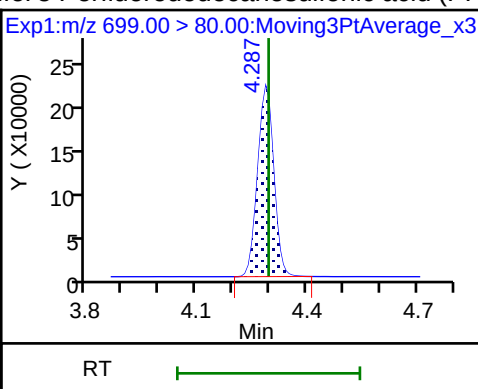
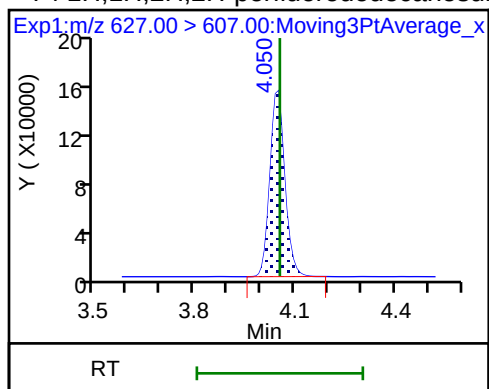
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



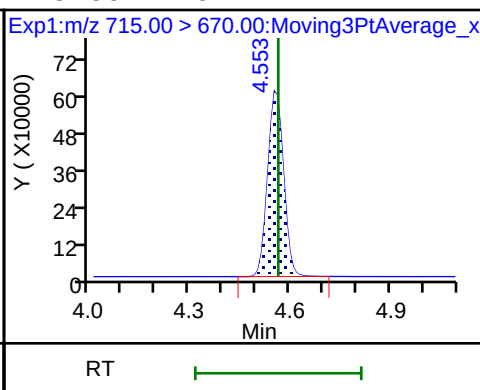
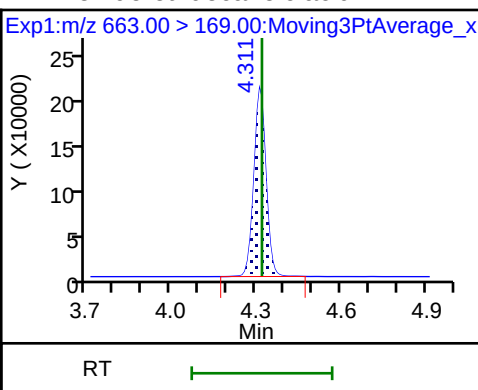
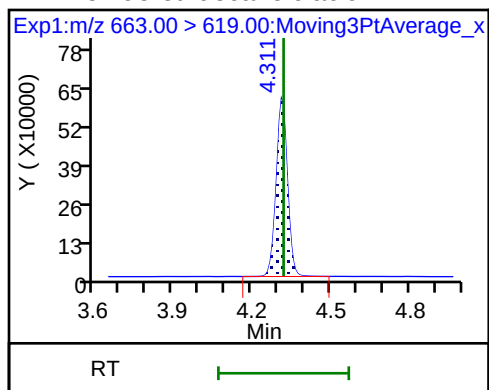
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

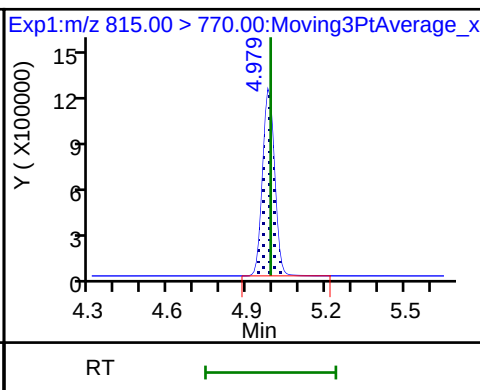
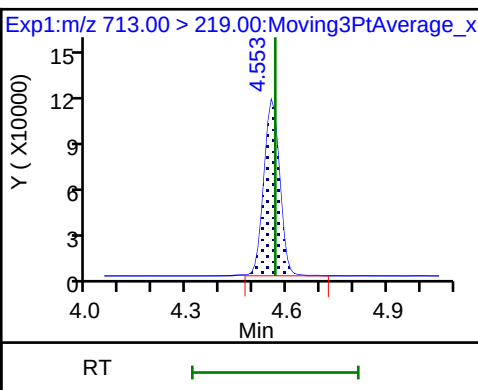
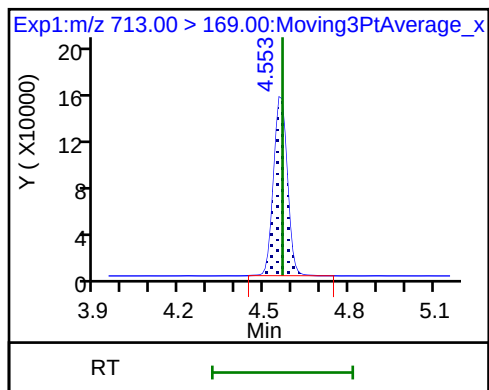
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

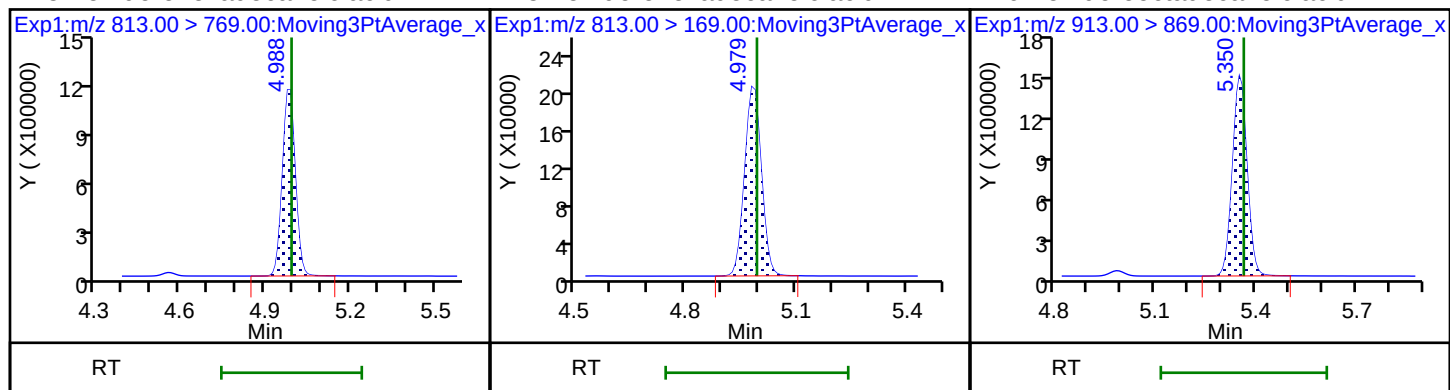
D 44 13C2 PFHxDA



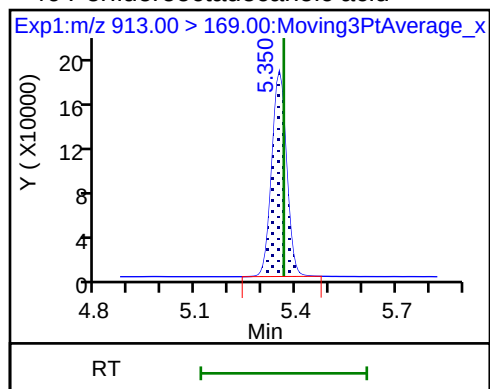
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



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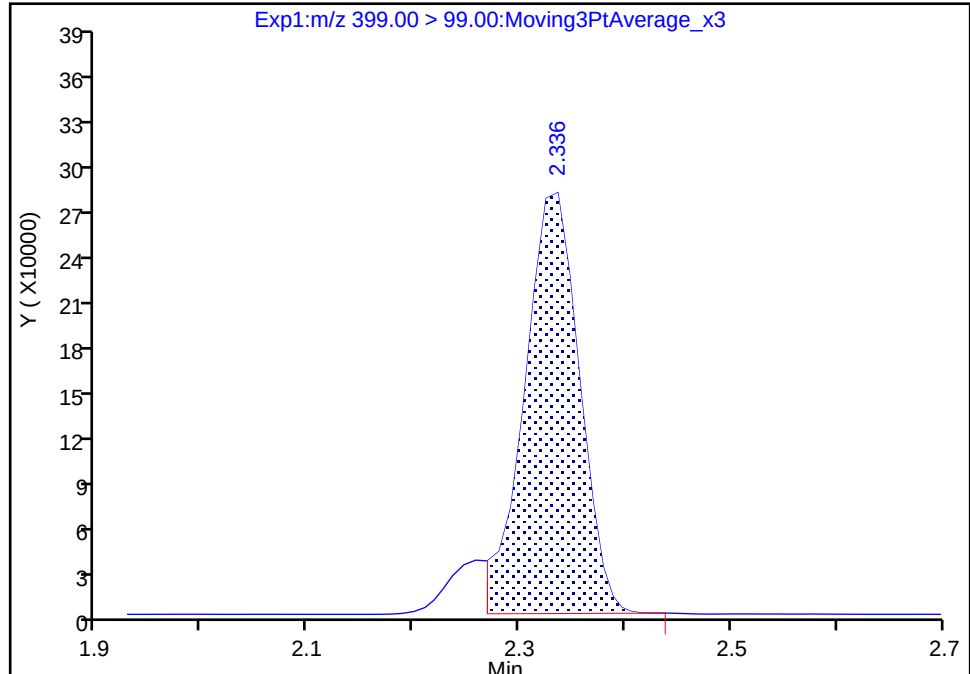
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Injection Date: 10-Oct-2018 11:54:00 Instrument ID: A8_N
Lims ID: IC L5 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

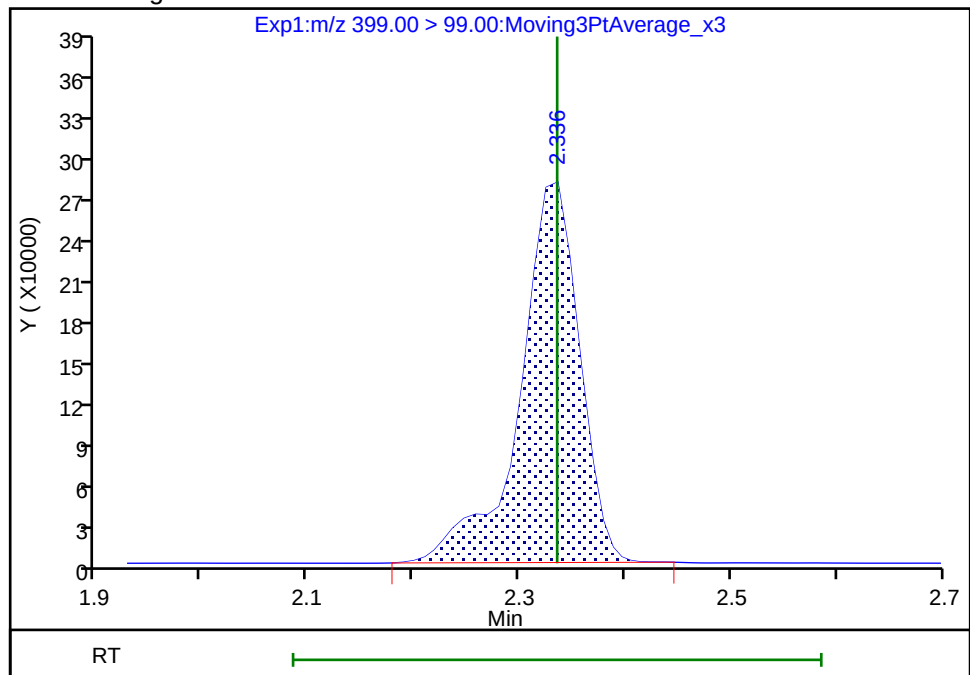
RT: 2.34
Area: 1011653
Amount: 2.210814
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 1101440
Amount: 2.210814
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:53:36
Audit Action: Manually Integrated

Audit Reason: Isomers
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10/30/2018

TestAmerica Sacramento

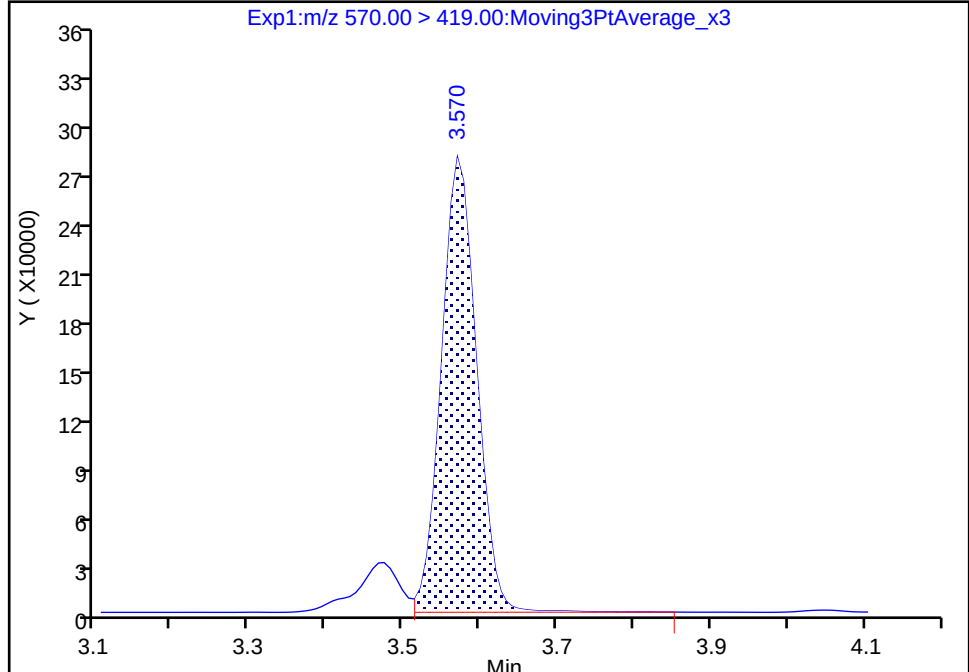
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Injection Date: 10-Oct-2018 11:54:00 Instrument ID: A8_N
Lims ID: IC L5 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

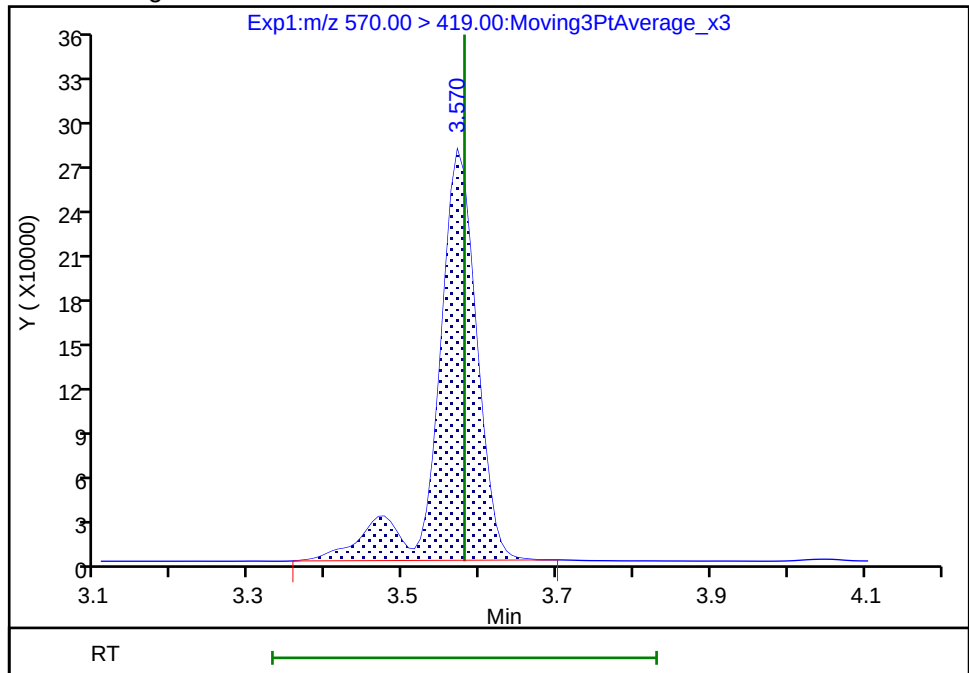
RT: 3.57
Area: 874487
Amount: 2.340312
Amount Units: ng/ml

Processing Integration Results



RT: 3.57
Area: 978098
Amount: 2.536777
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:53:48
Audit Action: Manually Integrated

Audit Reason: Isomers
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10/30/2018

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_010.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 10-Oct-2018 12:01:26 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 6
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:09:33 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:54:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.438	1.434	0.004	0.538	4190214	2.52		101	8995	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.438	1.437	0.001	1.000	7875887	5.24		105	974	
D 3 13C5 PFPeA										
267.90 > 223.00	1.708	1.705	0.003	0.639	2721646	2.49		99.7	9699	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.708	1.706	0.002	1.000	5808424	4.95		98.9	931	
D 47 13C3 PFBS										
301.90 > 83.00	1.740	1.740	0.0	0.651	55062	2.45		106	404	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.748	1.742	0.006	1.005	8005354	4.30		97.3	1497	
298.90 > 99.00	1.748	1.742	0.006	1.005	3310351		2.42(1.25-3.74)	97.3	1349	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.949	1.950	-0.001	0.729	346926	2.33		99.8	590	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.949	1.951	-0.002	1.120	1602981	4.56		97.6	9601	
D 7 13C2 PFHxA										
315.00 > 270.00	1.991	1.986	0.005	0.744	3044528	2.53		101	10014	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.991	1.989	0.002	1.000	6204050	5.17		103	2690	
313.00 > 119.00	1.991	1.989	0.002	1.000	543329		11.42(5.03-15.10)	103	1893	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.012	2.013	-0.001	1.156	7361028	4.60		98.1	7546	
349.00 > 99.00	2.012	2.013	-0.001	1.156	2751128		2.68(1.36-4.07)	98.1	5173	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.085	2.086	-0.001	0.779	218860	2.52		101	817	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.085	2.086	-0.001	1.000	1305928	5.07		101	1770	
D 9 13C4 PFHpA										
367.00 > 322.00	2.314	2.318	-0.004	0.865	2793759	2.54		102	8248	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.314	2.318	-0.004	1.000	5968994	5.03		101	2010	
363.00 > 169.00	2.314	2.318	-0.004	1.000	2444733		2.44(1.13-3.40)	101	3362	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.336	2.336	0.0	1.000	6228941	4.34		95.4	5278	M
399.00 > 99.00	2.336	2.336	0.0	1.000	2037090		3.06(1.50-4.49)	95.4	2049	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.336	2.337	-0.001	0.873	3049082	2.31		97.7	4507	
77 DONA										
377.00 > 251.00	2.358	2.361	-0.003	0.773	15631955	4.72		100	10926	
377.00 > 85.00	2.358	2.361	-0.003	0.773	9755961		1.60(0.85-2.54)	100	11767	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.645	2.649	-0.004	0.989	490143	2.38		100	2036	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.645	2.650	-0.005	1.000	1415351	4.48		94.6	4647	
D 73 13C8 PFOA										
421.00 > 376.00	2.667	2.670	-0.003	0.997	3697981	2.45		100.0	9956	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.673	0.002	1.000	2570124	2.49		99.8	5824	
* 62 13C2 PFOA										
415.00 > 370.00	2.675	2.674	0.001		2649925	2.50			7406	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.674	0.001	1.000	5772591	4.84		96.8	582	
413.00 > 169.00	2.675	2.674	0.001	1.000	3293157		1.75(0.84-2.52)	96.8	4909	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.682	2.684	-0.002	0.879	5704325	5.06		106	5142	
449.00 > 99.00	2.682	2.684	-0.002	0.879	1449215		3.94(1.94-5.82)	106	2746	
D 72 13C8 PFOS										
507.00 > 99.00	3.045	3.049	-0.004	1.138	1085964	2.41		101	3755	
D 19 13C5 PFNA										
468.00 > 423.00	3.053	3.051	0.002	1.141	2158801	2.52		101	5713	
D 18 13C4 PFOS										
503.00 > 80.00	3.053	3.053	0.0	1.141	2069653	2.35		98.4	4234	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.053	3.054	-0.001	1.000	4537168	4.67		101	4147	
499.00 > 99.00	3.053	3.054	-0.001	1.000	984669		4.61(2.31-6.93)	101	3417	
20 Perfluorononanoic acid										
463.00 > 419.00	3.053	3.054	-0.001	1.000	4627612	5.03		101	1758	
463.00 > 169.00	3.053	3.054	-0.001	1.000	1155809		4.00(1.90-5.69)	101	5018	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.264	3.266	-0.002	1.069	8287131	5.10		109	10045	
D 21 13C8 FOSA										
506.00 > 78.00	3.377	3.373	0.004	1.263	3229091	2.53		101	4936	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.377	3.374	0.003	1.000	6484092	5.17		103	3887	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.407	3.407	0.0	1.002	1262309	4.64		96.9	4472	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.407	3.408	-0.001	1.116	3386873	4.97		104	5814	
549.00 > 99.00	3.407	3.408	-0.001	1.116	1191125		2.84(1.33-3.97)	104	3773	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.400	3.408	-0.008	1.271	538199	2.47		103	3149	
D 23 13C2 PFDA										
515.00 > 470.00	3.415	3.416	-0.001	1.277	1953895	2.59		103	5526	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.415	3.417	-0.002	1.000	3875142	5.05		101	4320	
513.00 > 169.00	3.415	3.417	-0.002	1.000	739730		5.24(2.36-7.09)	101	431	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.569	3.574	-0.005	1.334	999618	2.59		104	1842	
28 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	3.577	3.580	-0.003	1.002	1823529	4.77		95.4	1010	M
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.733	3.736	-0.003	1.223	2740613	5.06		105	4866	
599.00 > 99.00	3.733	3.736	-0.003	1.223	925572		2.96(1.39-4.16)	105	4671	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.742	3.744	-0.002	1.399	993563	2.47		98.7	1239	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.750	3.751	-0.001	1.002	1656325	4.96		99.3	2017	
D 30 13C2 PFUnA										
565.00 > 520.00	3.750	3.751	-0.001	1.402	1549356	2.55		102	4134	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.750	3.751	-0.001	1.000	2577510	4.65		93.0	1982	
563.00 > 169.00	3.750	3.751	-0.001	1.000	671776		3.84(2.12-6.36)	93.0	1856	
35 MeFOSA										
512.00 > 169.00	3.881	3.880	0.001		1887142	NC			560	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.912	3.913	-0.001	1.281	12104011	4.93		105	11677	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.048	4.048	0.0	1.000	3519022	5.13		103	2746	
613.00 > 169.00	4.048	4.048	0.0	1.000	872626		4.03(2.13-6.40)	103	2828	
D 36 13C2 PFDaA										
615.00 > 570.00	4.048	4.050	-0.002	1.514	1552732	2.44		97.5	3799	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.048	4.054	-0.006	1.191	933310	4.91		102	4489	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.294	4.295	-0.001	1.407	1228091	4.84		100.0	4369	
699.00 > 99.00	4.294	4.295	-0.001	1.407	1897406		0.65(0.00-0.00)	100.0	7485	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.318	4.320	-0.002	1.067	3314099	5.10		102	2171	
663.00 > 169.00	4.318	4.320	-0.002	1.067	1114035		2.97(1.25-3.76)	102	3363	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.562	4.565	-0.003	1.706	1934970	2.48		99.2	5621	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.562	4.565	-0.003	1.000	1021138	4.94		98.8	3480	
713.00 > 219.00	4.562	4.565	-0.003	1.000	731094		1.40(0.71-2.13)	98.8	2011	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.987	4.989	-0.002	1.864	3647313	2.53		101	5510	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.987	4.993	-0.006	1.000	6615795	5.10		102	1048	
813.00 > 169.00	4.987	4.993	-0.006	1.000	1208376		5.47(2.86-8.58)	102	3052	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.356	5.363	-0.007	1.074	8587714	4.99		99.7	1082	
913.00 > 169.00	5.356	5.363	-0.007	1.074	1094784		7.84(3.83-11.48)	99.7	2346	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL6_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_010.d

Injection Date: 10-Oct-2018 12:01:26

Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

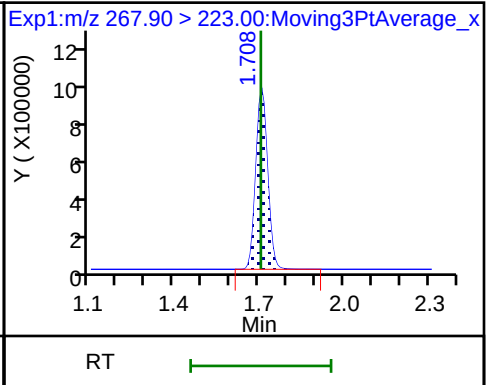
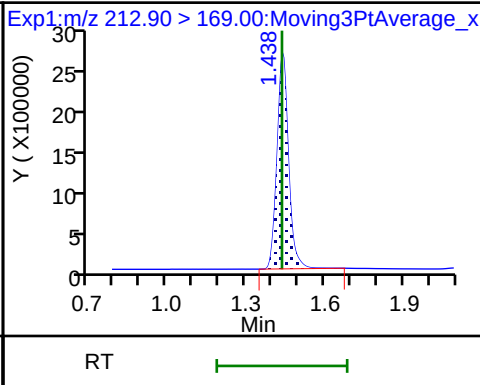
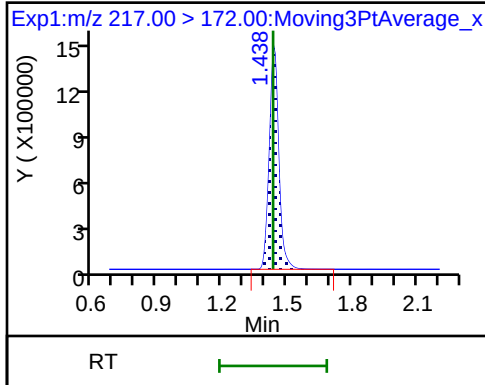
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

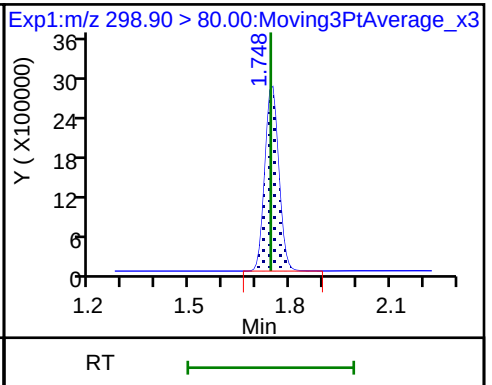
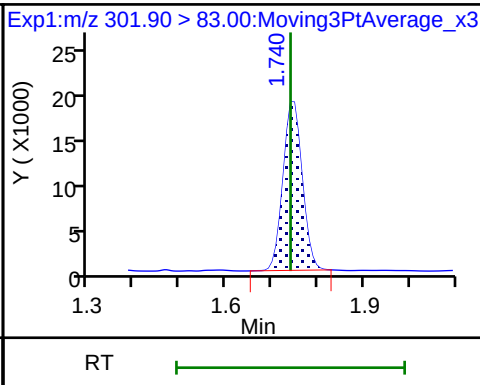
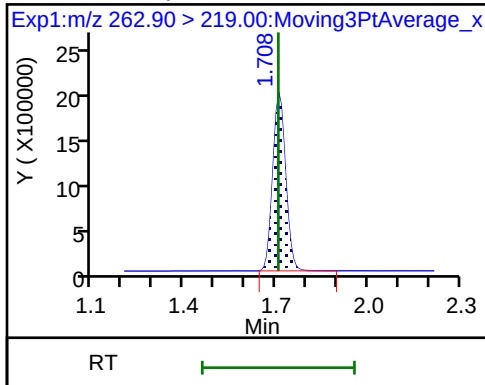
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

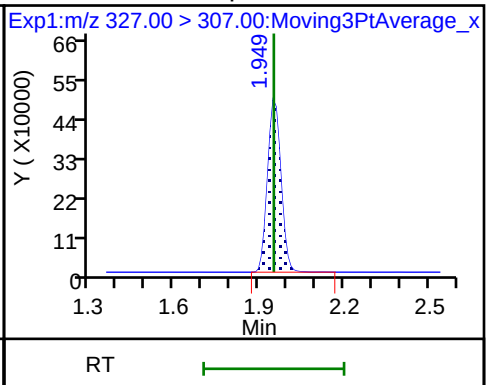
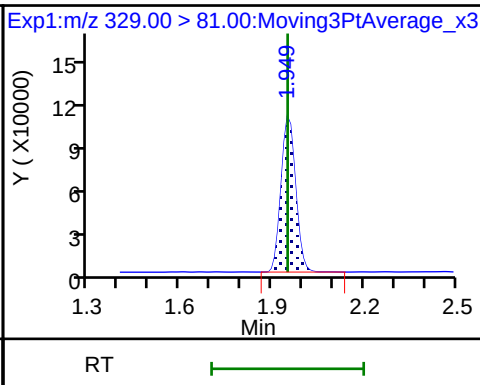
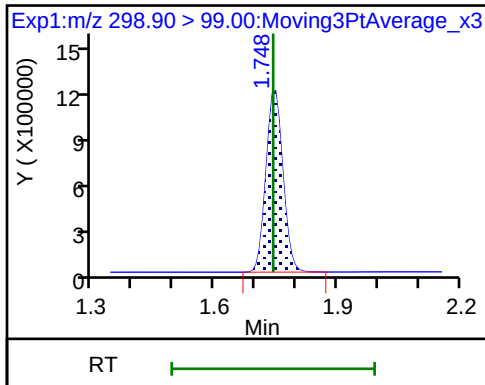
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

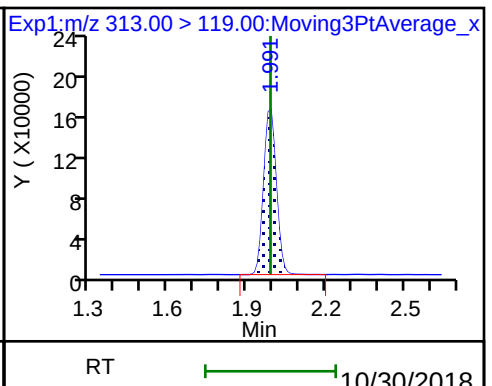
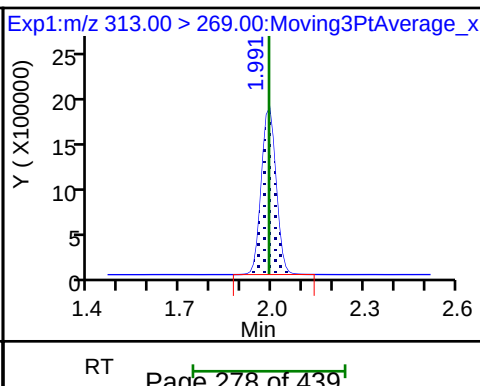
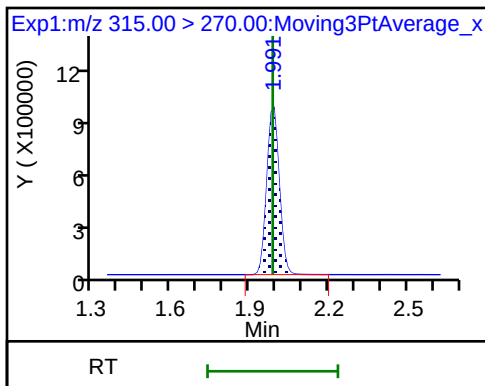
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

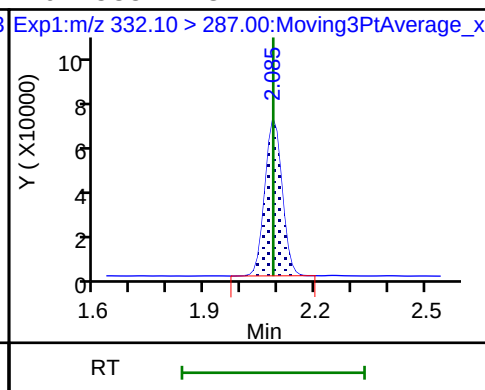
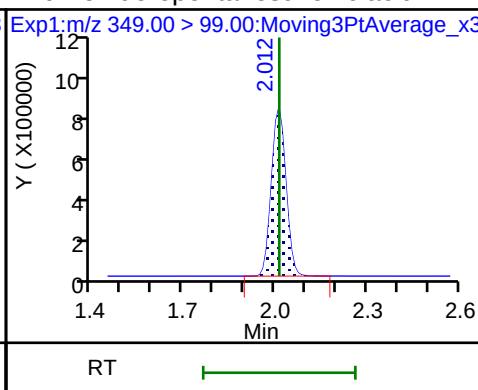
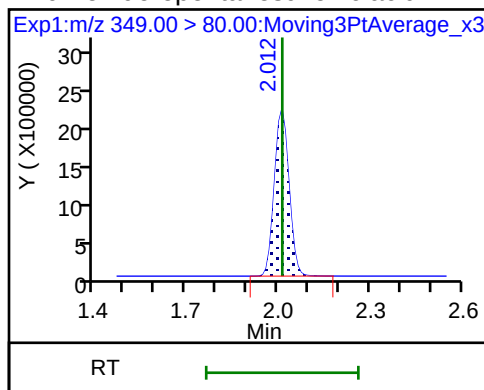
6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

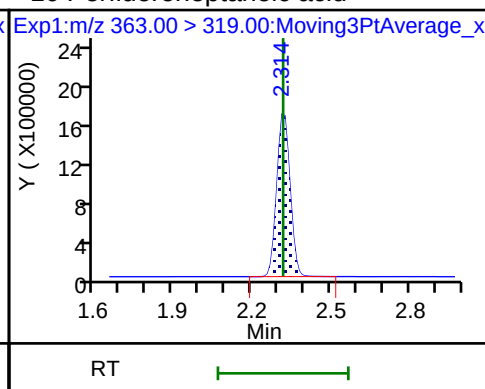
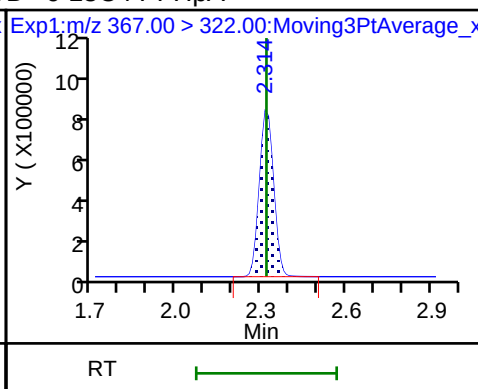
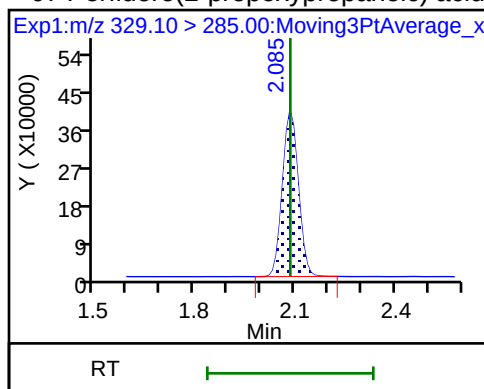
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

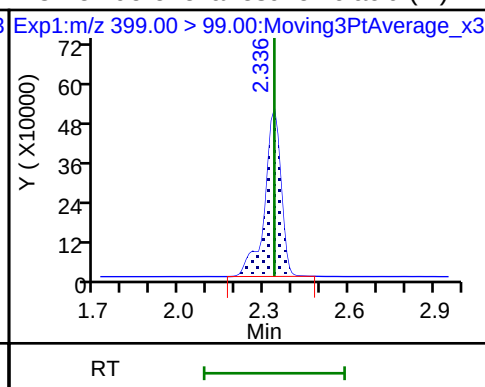
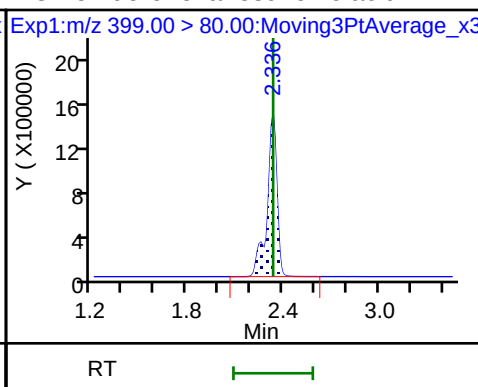
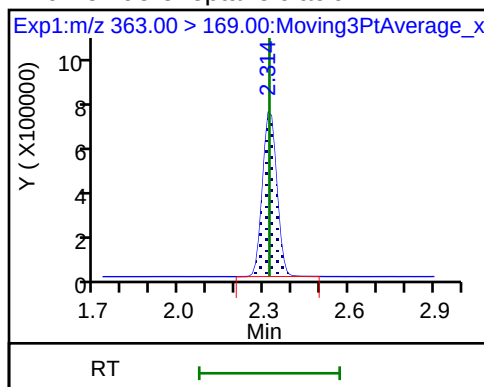
10 Perfluoroheptanoic acid



10 Perfluoroheptanoic acid

8 Perfluorohexanesulfonic acid

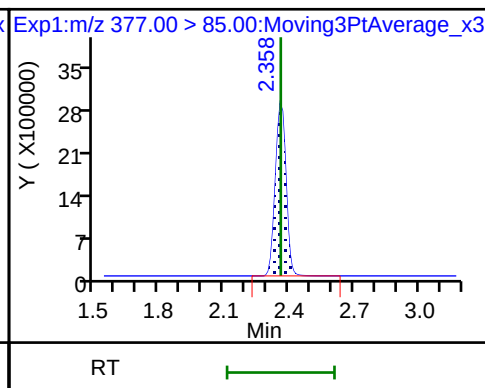
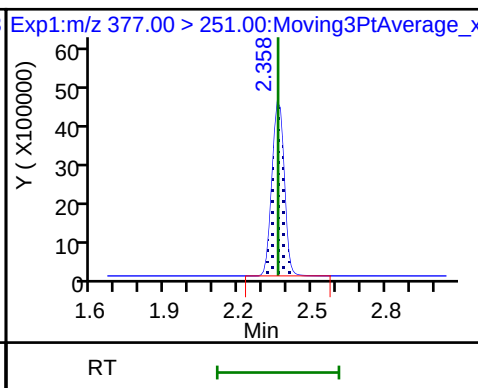
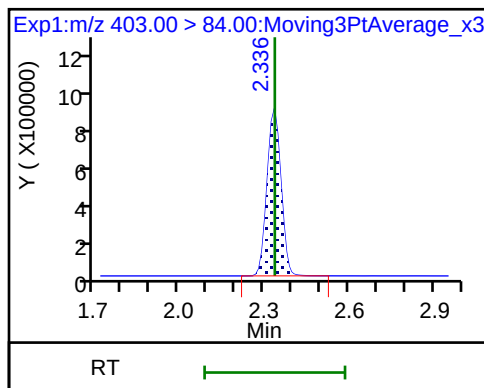
8 Perfluorohexanesulfonic acid (M)



D 11 18O2 PFHxS

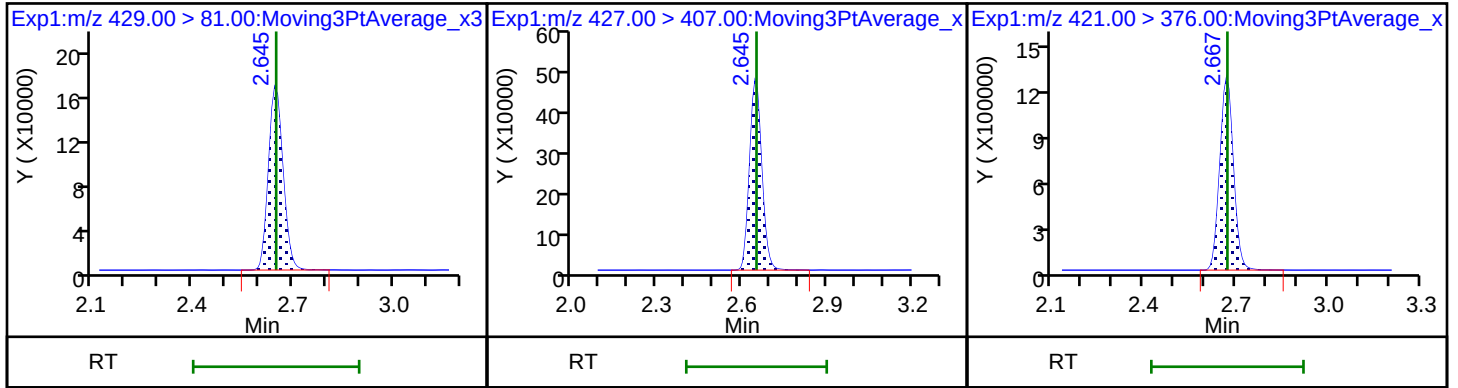
77 DONA

77 DONA



D 12 M2-6:2 FTS

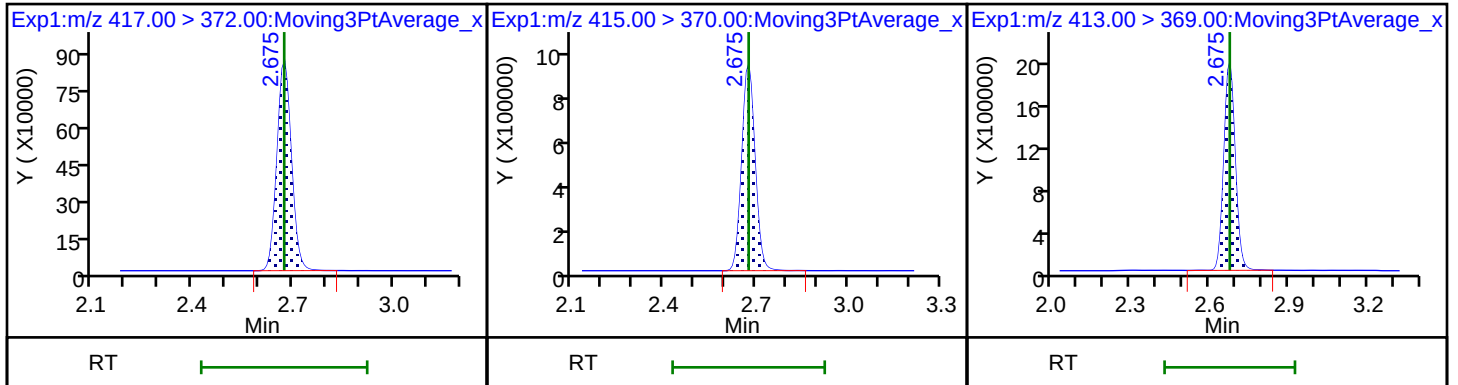
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D 14 13C4 PFOA

* 62 13C2 PFOA

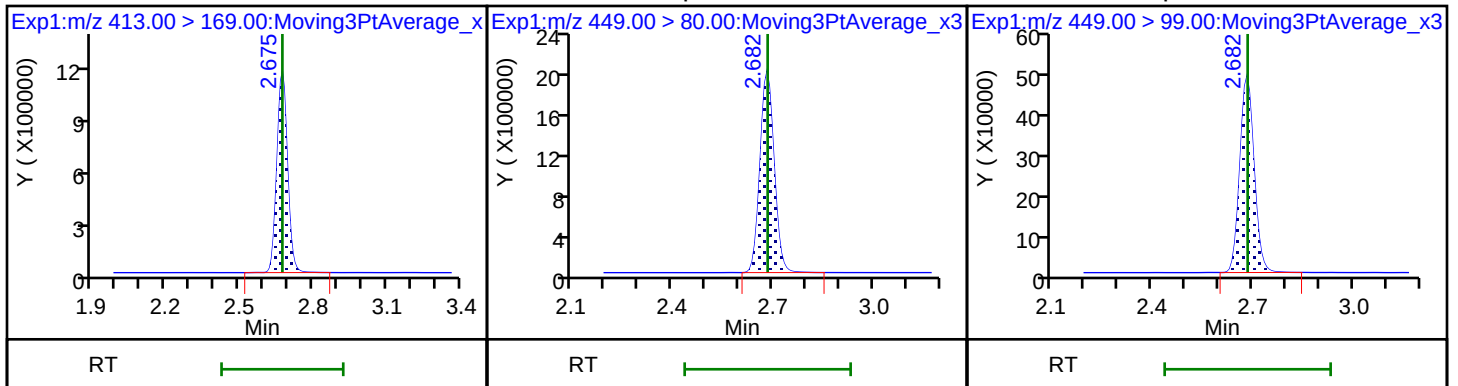
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

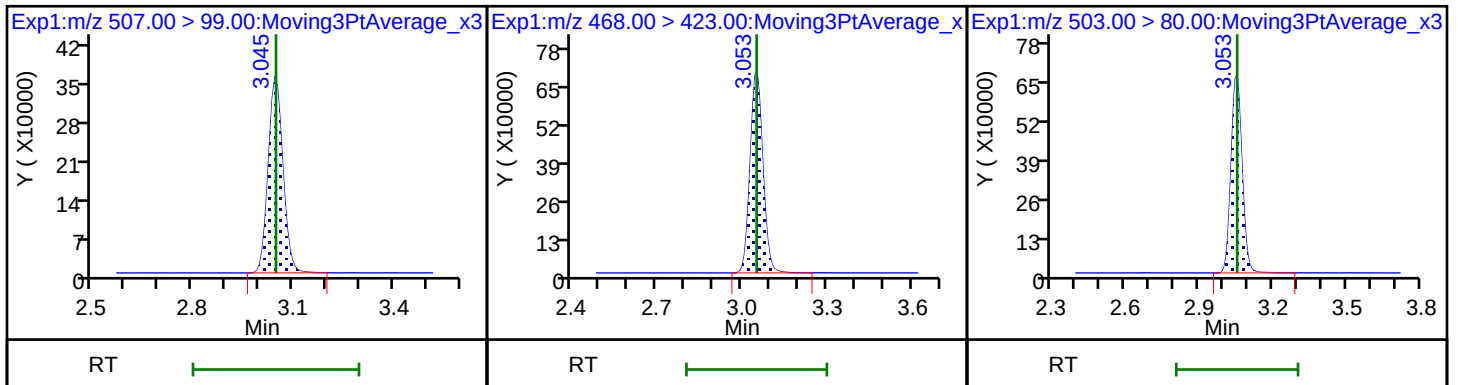
16 Perfluoroheptanesulfonic acid

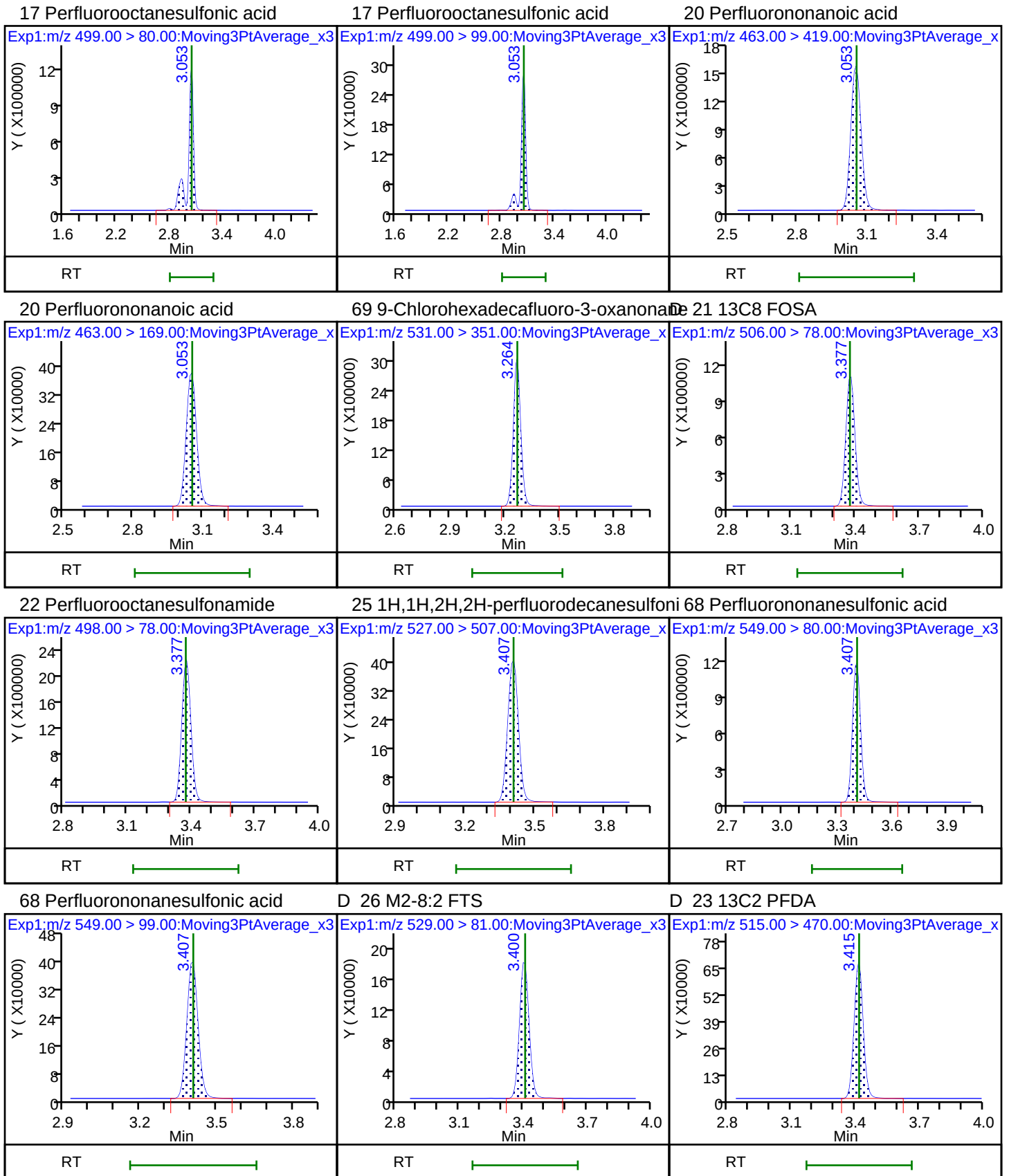


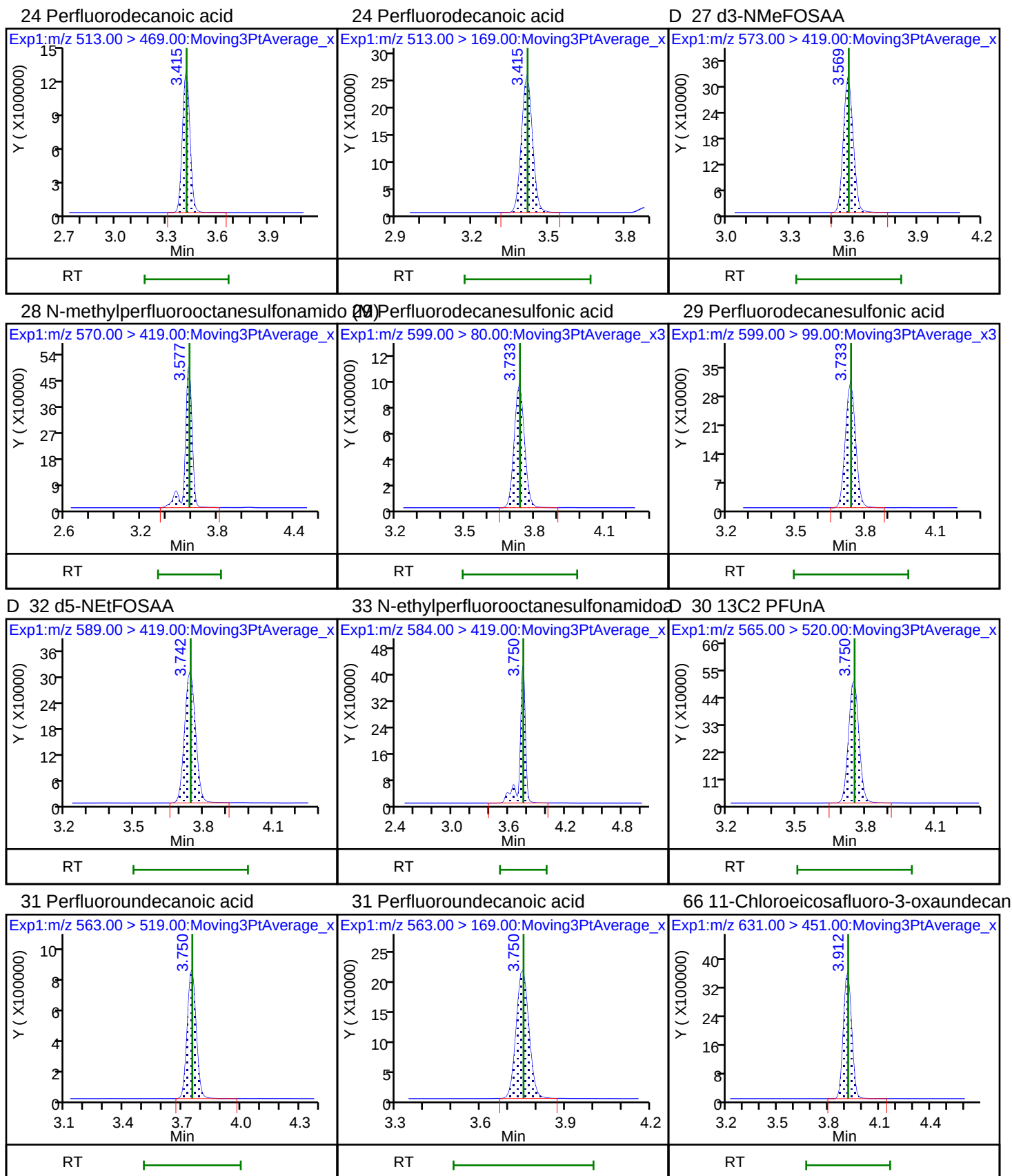
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



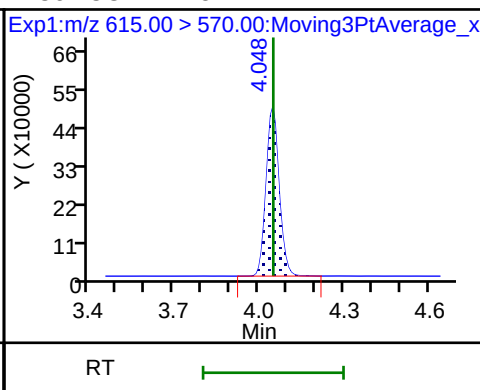
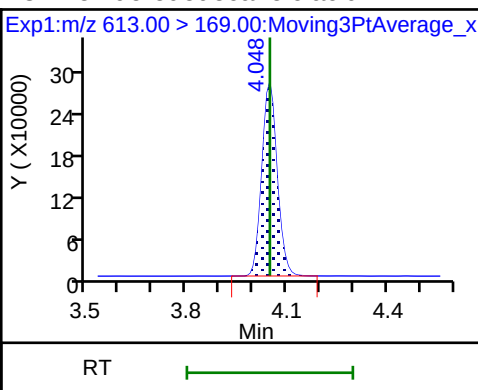
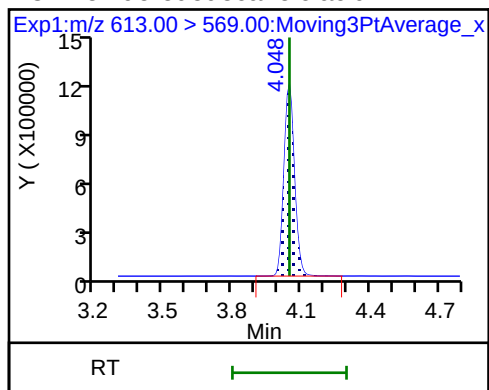




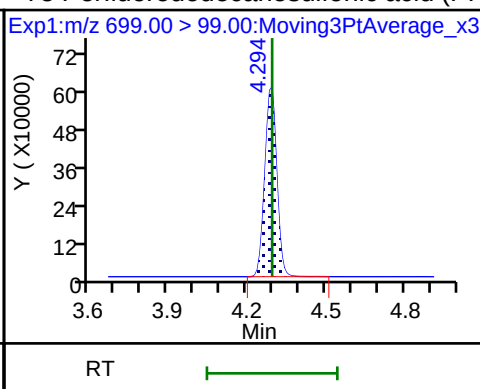
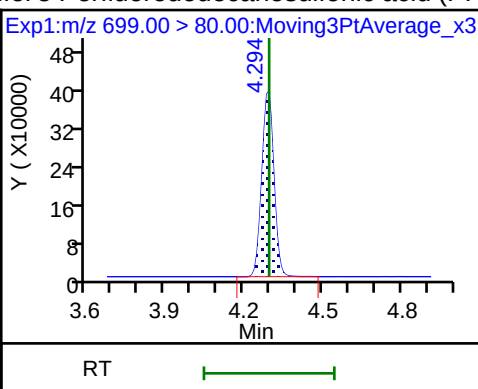
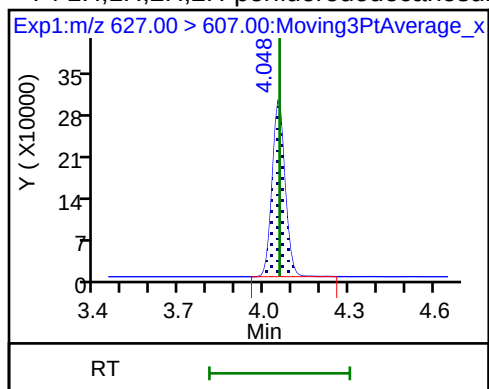
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



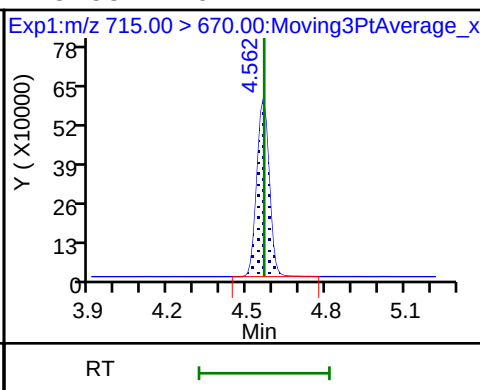
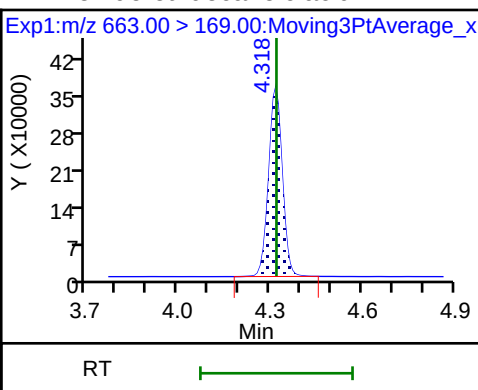
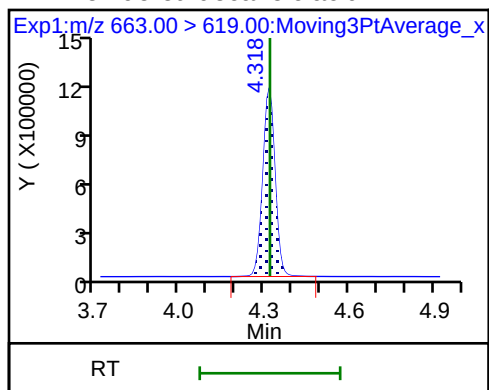
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

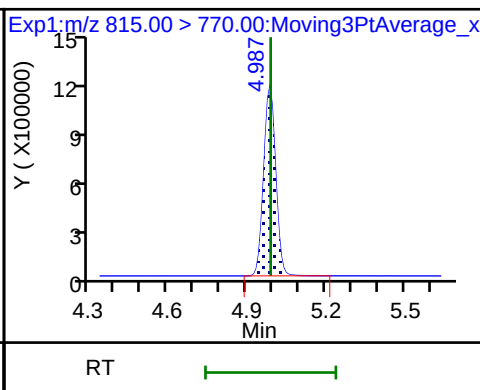
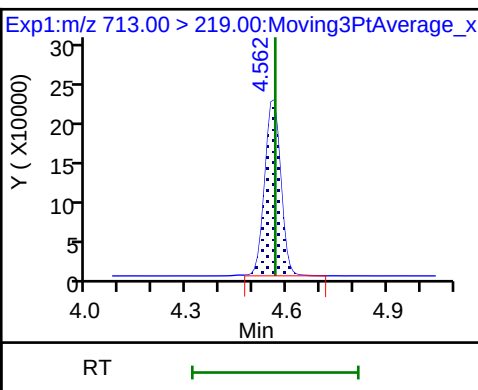
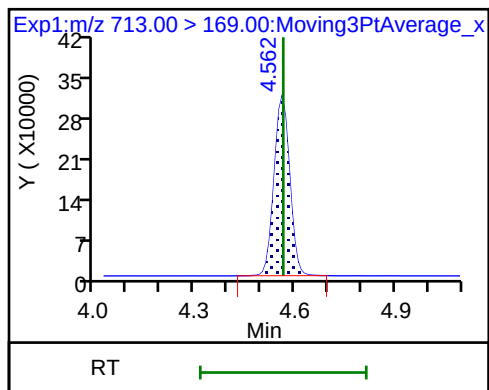
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

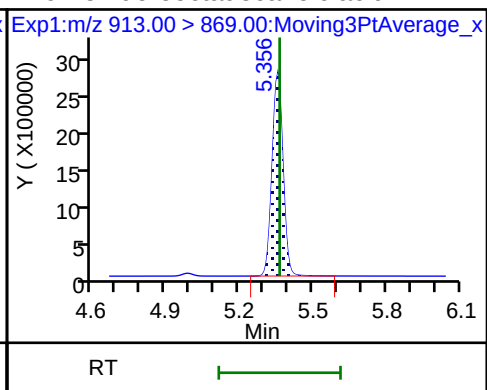
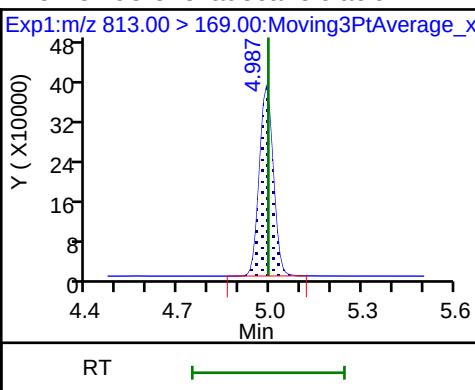
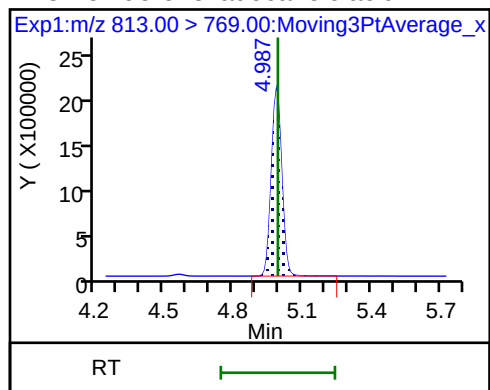
D 44 13C2 PFHxDA



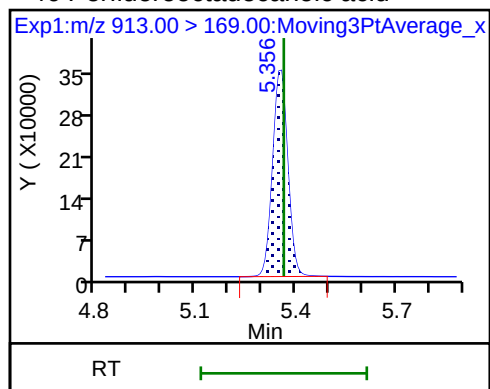
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



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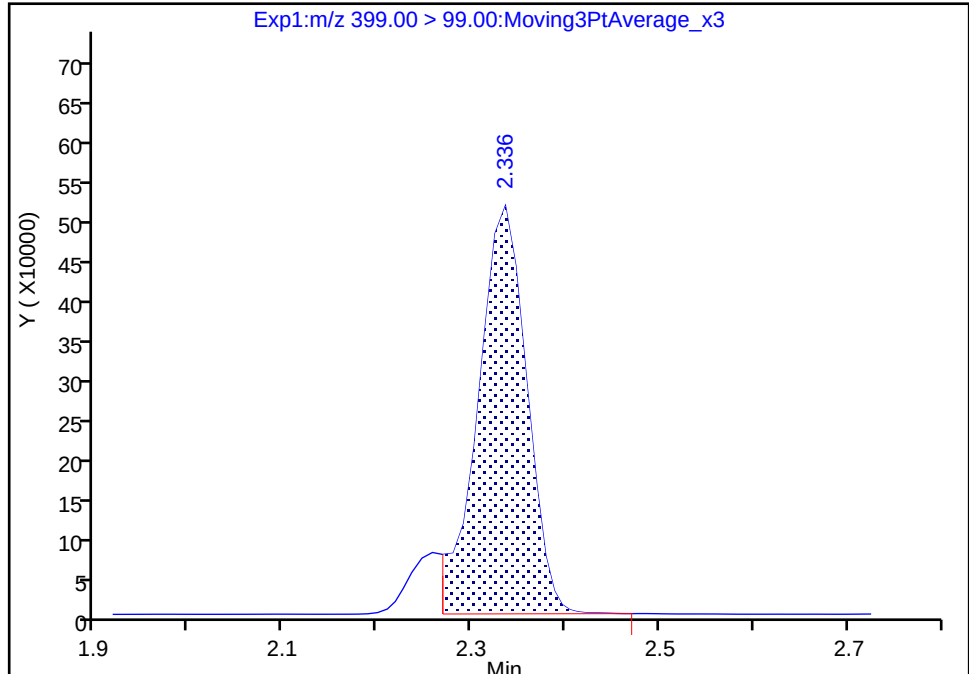
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_010.d
Injection Date: 10-Oct-2018 12:01:26 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

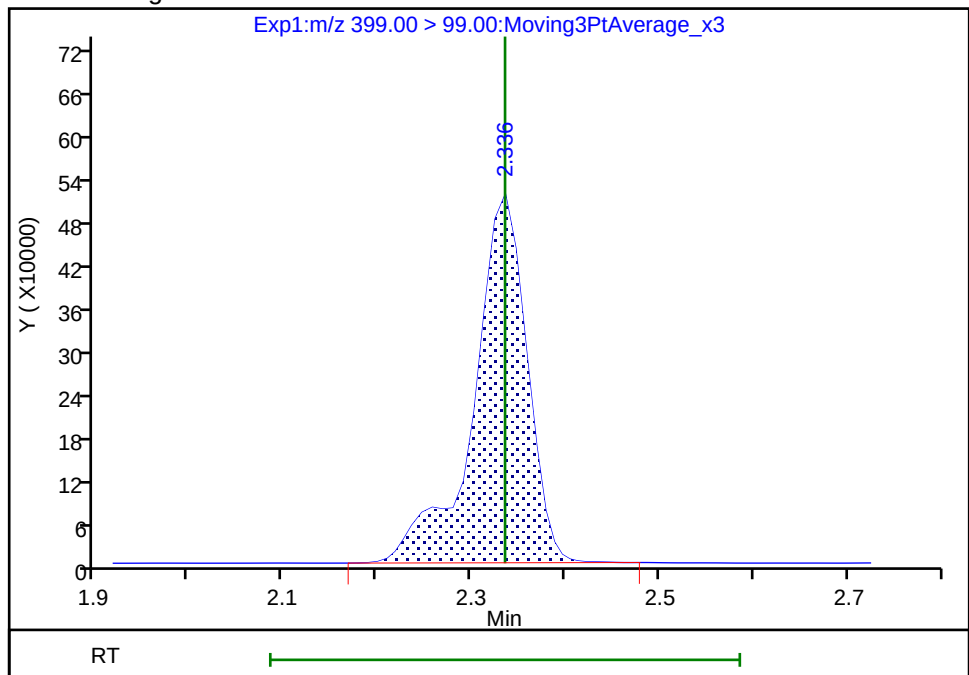
RT: 2.34
Area: 1852680
Amount: 4.342248
Amount Units: ng/ml

Processing Integration Results



RT: 2.34
Area: 2037090
Amount: 4.342248
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:54:30
Audit Action: Manually Integrated

Audit Reason: Isomers
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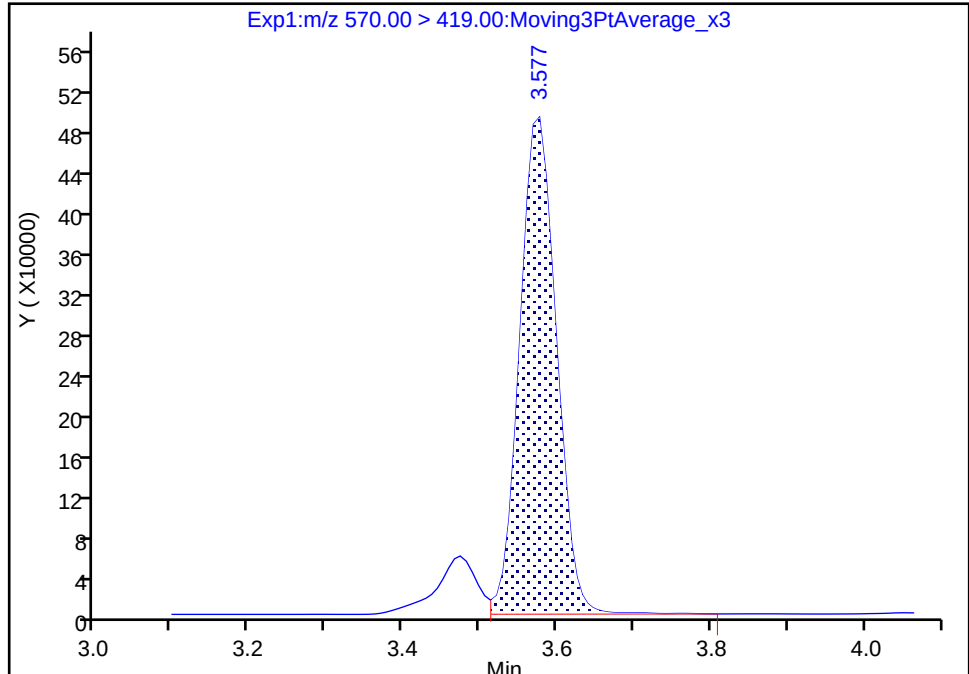
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Injection Date: 10-Oct-2018 12:01:26 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

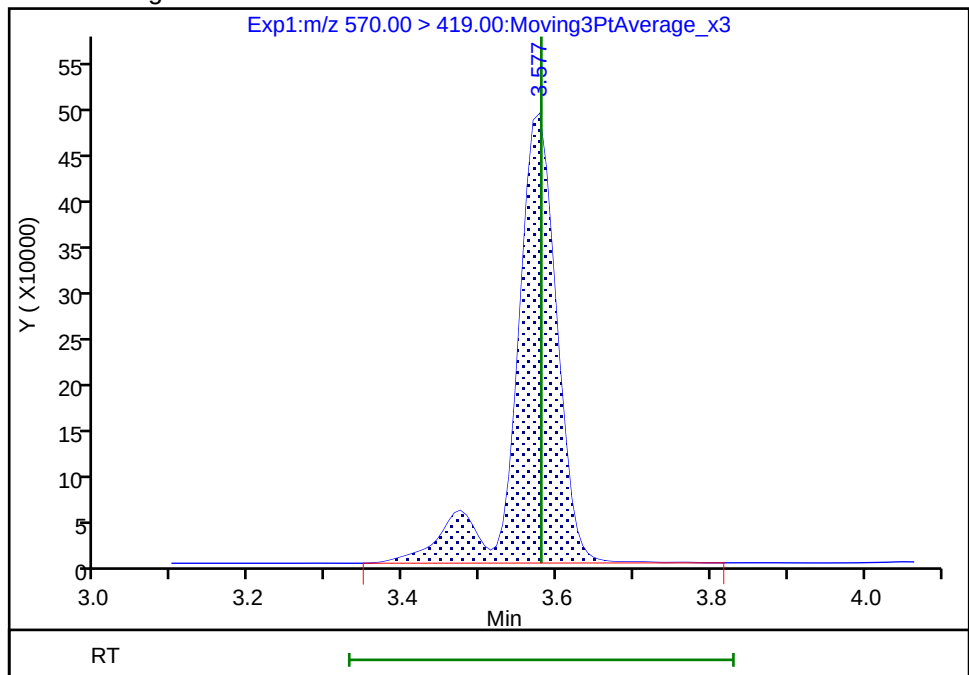
RT: 3.58
Area: 1615875
Amount: 4.293622
Amount Units: ng/ml

Processing Integration Results



RT: 3.58
Area: 1823529
Amount: 4.770189
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:54:41
Audit Action: Manually Integrated

Audit Reason: Isomers
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TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
 Lims ID: IC L7 Full
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 10-Oct-2018 12:08:52 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 7
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:09:41 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:55:46

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.431	1.434	-0.003	0.536	5209807	2.67		107	13028	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.436	1.437	-0.001	1.003	18553373	9.94		99.4	2271	
D 3 13C5 PFPeA										
267.90 > 223.00	1.703	1.705	-0.002	0.638	3412160	2.67		107	14128	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.703	1.706	-0.003	1.000	13995500	9.51		95.1	2084	
D 47 13C3 PFBS										
301.90 > 83.00	1.736	1.740	-0.004	0.650	64560	2.46		106	457	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.742	-0.006	1.000	16986048	7.78		88.1	2862	
298.90 > 99.00	1.736	1.742	-0.006	1.000	8138521		2.09(1.25-3.74)	88.1	3061	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.945	1.950	-0.005	0.728	406458	2.33		99.9	707	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.945	1.951	-0.006	1.120	3948929	9.58		103	15405	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.986	-0.010	0.740	3651904	2.59		104	10019	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.987	1.989	-0.002	1.005	13729045	9.53		95.3	5128	
313.00 > 119.00	1.976	1.989	-0.013	1.000	1286669		10.67(5.03-15.10)	95.3	3139	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.008	2.013	-0.006	1.157	16016122	8.54		91.1	13389	
349.00 > 99.00	2.008	2.013	-0.006	1.157	6670690		2.40(1.36-4.07)	91.1	9913	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.081	2.086	-0.005	0.779	287117	2.83		113	1150	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.081	2.086	-0.005	1.000	3433753	10.2		102	4335	
D 9 13C4 PFHpA										
367.00 > 322.00	2.312	2.318	-0.006	0.866	3288104	2.55		102	5028	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.312	2.318	-0.006	1.000	13677861	9.80		98.0	3465	
363.00 > 169.00	2.312	2.318	-0.006	1.000	5759510		2.37(1.13-3.40)	98.0	6520	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.334	2.336	-0.002	1.000	14667565	8.41		92.4	8463	
399.00 > 99.00	2.334	2.336	-0.002	1.000	5124843		2.86(1.50-4.49)	92.4	4706	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.334	2.337	-0.003	0.874	3707135	2.40		101	4564	
77 DONA										
377.00 > 251.00	2.356	2.361	-0.005	0.775	32252712	8.02		85.2	17448	
377.00 > 85.00	2.356	2.361	-0.005	0.775	20875392		1.55(0.85-2.54)	85.2	19305	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.640	2.649	-0.009	0.989	601815	2.49		105	2494	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.640	2.650	-0.010	1.000	3557288	9.17		96.8	7833	
D 73 13C8 PFOA										
421.00 > 376.00	2.663	2.670	-0.007	0.997	4565884	2.58		105	9819	
D 14 13C4 PFOA										
417.00 > 372.00	2.663	2.673	-0.010	0.997	3111187	2.58		103	7271	
* 62 13C2 PFOA										
415.00 > 370.00	2.670	2.674	-0.004		3101607	2.50			6297	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.670	2.674	-0.004	1.003	13203994	9.15		91.4	1183	
413.00 > 169.00	2.670	2.674	-0.004	1.003	7542027		1.75(0.84-2.52)	91.4	5549	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.677	2.684	-0.007	0.880	12617872	9.22		96.8	6483	
449.00 > 99.00	2.677	2.684	-0.007	0.880	3471798		3.63(1.94-5.82)	96.8	5079	
D 72 13C8 PFOS										
507.00 > 99.00	3.041	3.049	-0.008	1.139	1295531	2.45		103	3585	
D 19 13C5 PFNA										
468.00 > 423.00	3.041	3.051	-0.010	1.139	2603338	2.60		104	6898	
D 18 13C4 PFOS										
503.00 > 80.00	3.041	3.053	-0.012	1.139	2515040	2.44		102	3480	
17 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.041	3.054	-0.013	1.000	10936917	9.26		99.8	3228	M
499.00 > 99.00	3.041	3.054	-0.013	1.000	2415092		4.53(2.31-6.93)	99.8	4138	
20 Perfluorononanoic acid										
463.00 > 419.00	3.041	3.054	-0.013	1.000	10747039	9.69		96.9	3629	
463.00 > 169.00	3.041	3.054	-0.013	1.000	2834040		3.79(1.90-5.69)	96.9	5260	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.256	3.266	-0.010	1.071	18316641	9.27		99.5	23910	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.373	-0.007	1.261	3901488	2.61		105	7111	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.366	3.374	-0.008	1.000	14879763	9.83		98.3	4535	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.396	3.407	-0.011	1.000	3191297	9.57		99.9	7952	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.396	3.408	-0.012	1.117	8265647	9.98		104	9581	
549.00 > 99.00	3.396	3.408	-0.012	1.117	2906085		2.84(1.33-3.97)	104	7638	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.396	3.408	-0.012	1.272	659745	2.59		108	2925	
D 23 13C2 PFDA										
515.00 > 470.00	3.403	3.416	-0.013	1.275	2276113	2.57		103	5383	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.403	3.417	-0.014	1.000	9360476	10.5		105	5870	
513.00 > 169.00	3.403	3.417	-0.014	1.000	1779403		5.26(2.36-7.09)	105	454	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.565	3.574	-0.009	1.335	1173752	2.60		104	1870	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.565	3.580	-0.015	1.000	4513956	10.1		101	1650	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.722	3.736	-0.014	1.224	6722574	10.2		106	14315	
599.00 > 99.00	3.722	3.736	-0.014	1.224	2183174		3.08(1.39-4.16)	106	8187	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.731	3.744	-0.013	1.397	1198187	2.54		102	1673	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.739	3.751	-0.012	1.002	4141347	10.3		103	2511	
D 30 13C2 PFUnA										
565.00 > 520.00	3.739	3.751	-0.012	1.400	1764075	2.48		99.3	5180	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.739	3.751	-0.012	1.000	6311052	10.0		100	4426	
563.00 > 169.00	3.739	3.751	-0.012	1.000	1555718		4.06(2.12-6.36)	100	4343	
35 MeFOSA										
512.00 > 169.00	3.878	3.880	-0.002		4918877	NC			614	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.898	3.913	-0.015	1.282	25478525	8.55		90.7	10213	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.037	4.048	-0.011	1.000	8145527	9.69		96.9	4752	
613.00 > 169.00	4.037	4.048	-0.011	1.000	2184286		3.73(2.13-6.40)	96.9	5549	
D 36 13C2 PFDaA										
615.00 > 570.00	4.037	4.050	-0.013	1.512	1904912	2.55		102	4489	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.045	4.054	-0.009	1.191	2329420	10.0		104	4041	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.282	4.295	-0.013	1.408	3028367	9.82		101	7626	
699.00 > 99.00	4.282	4.295	-0.013	1.408	4576410		0.66(0.00-0.00)	101	11681	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.306	4.320	-0.014	1.067	7909521	9.92		99.2	3855	
663.00 > 169.00	4.306	4.320	-0.014	1.067	2620584		3.02(1.25-3.76)	99.2	7466	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.555	4.565	-0.010	1.706	2348064	2.57		103	5774	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.555	4.565	-0.010	1.000	2464539	9.82		98.2	4177	
713.00 > 219.00	4.546	4.565	-0.019	0.998	1736949		1.42(0.71-2.13)	98.2	1720	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.972	4.989	-0.017	1.862	4271737	2.53		101	5429	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.980	4.993	-0.013	1.002	14776352	9.74		97.4	1664	
813.00 > 169.00	4.972	4.993	-0.021	1.000	2883729		5.12(2.86-8.58)	97.4	4460	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.344	5.363	-0.019	1.075	19142747	9.49		94.9	1612	
913.00 > 169.00	5.344	5.363	-0.019	1.075	2622122		7.30(3.83-11.48)	94.9	2986	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Injection Date: 10-Oct-2018 12:08:52

Instrument ID: A8_N

Lims ID: IC L7 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

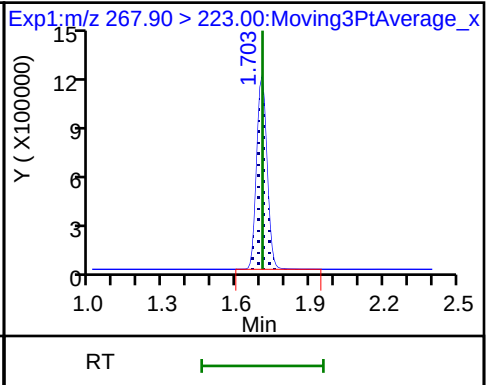
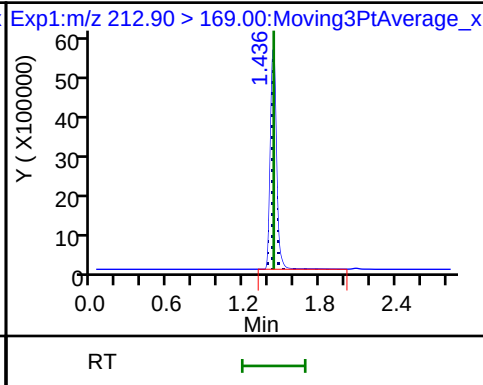
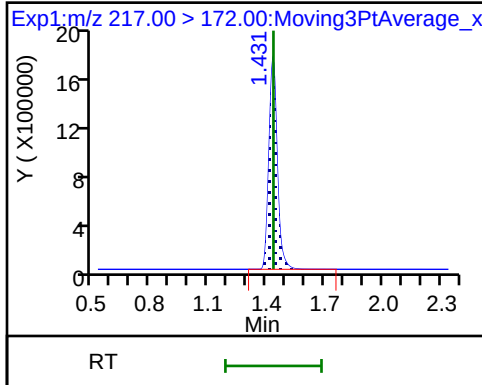
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

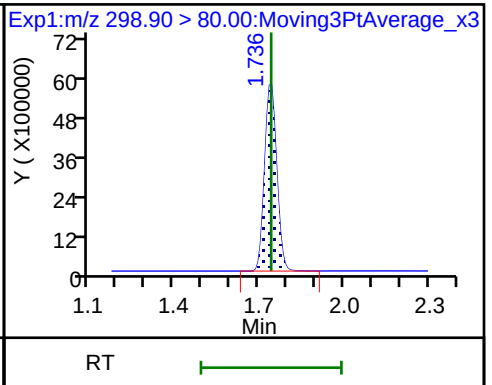
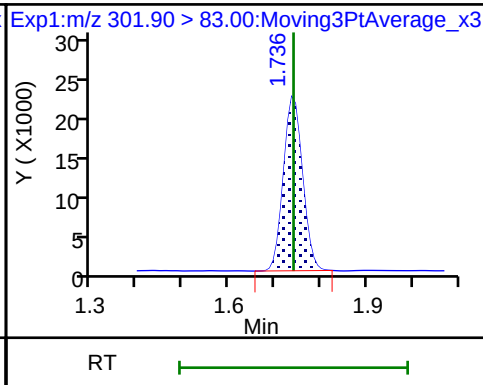
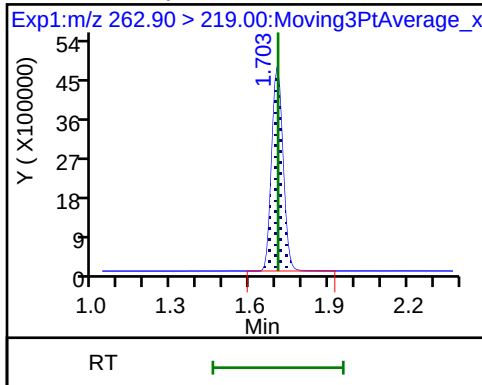
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

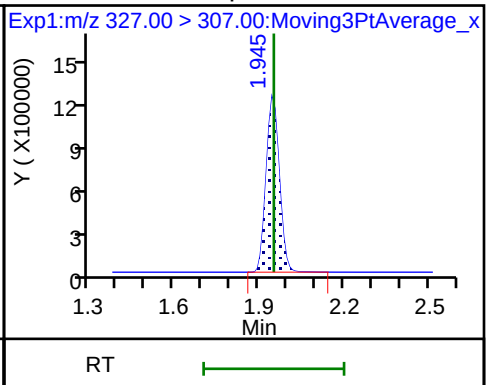
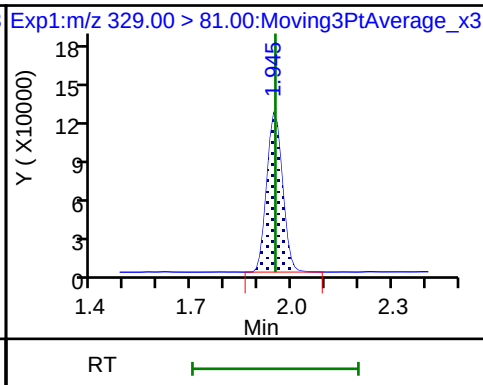
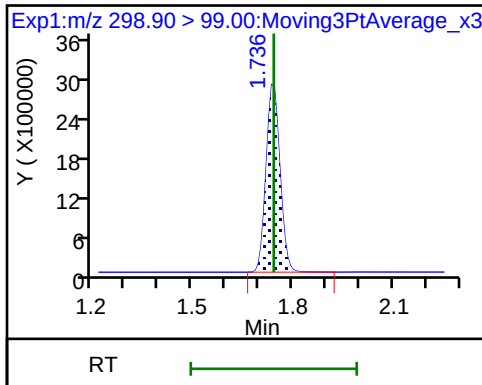
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

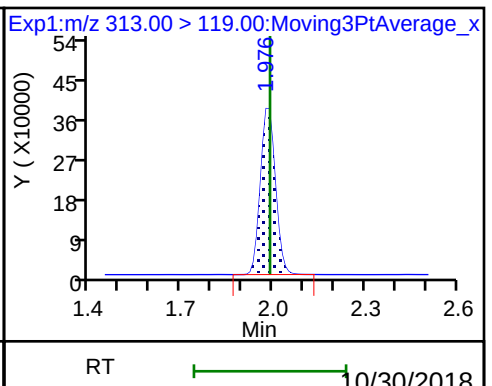
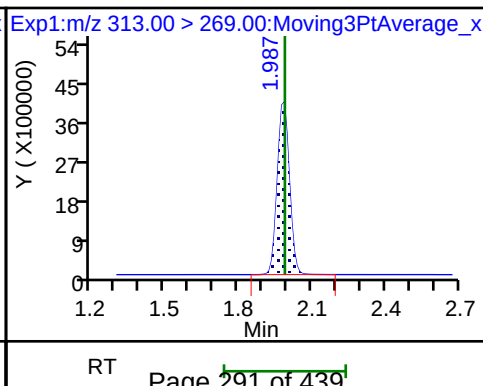
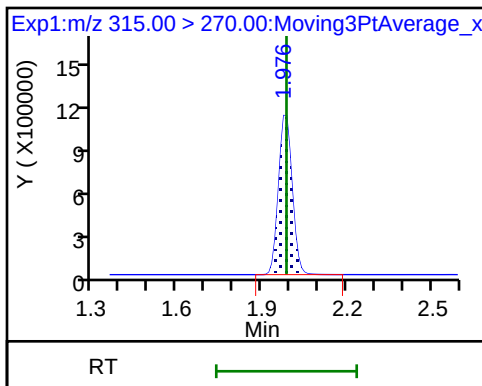
61 1H,1H,2H,2H-perfluorohexanesulfoni

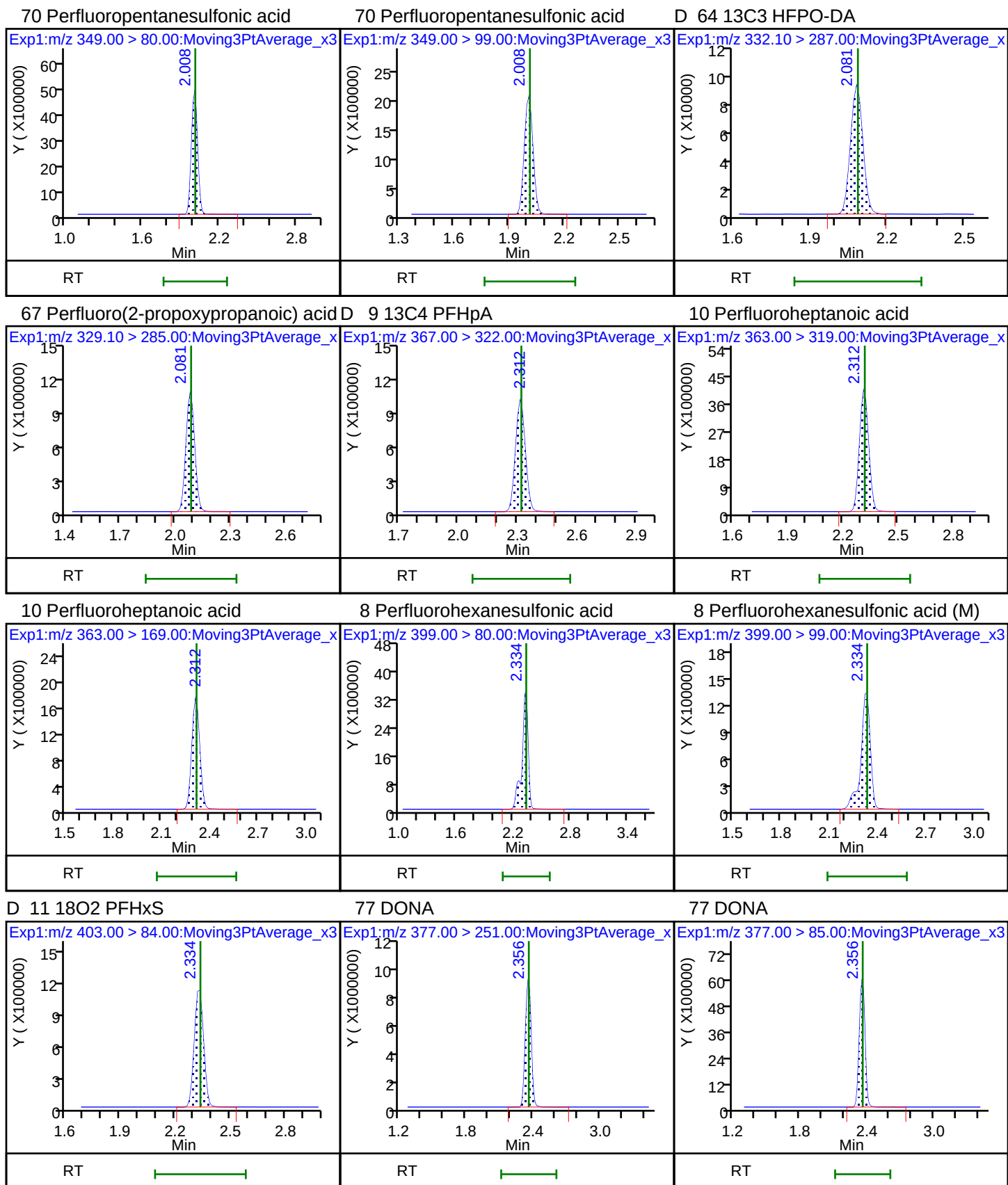


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

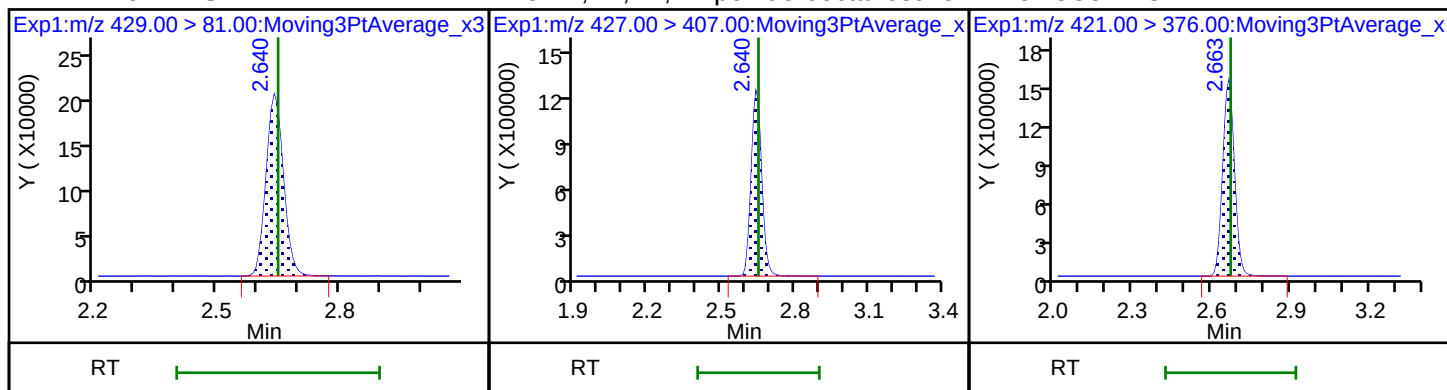
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

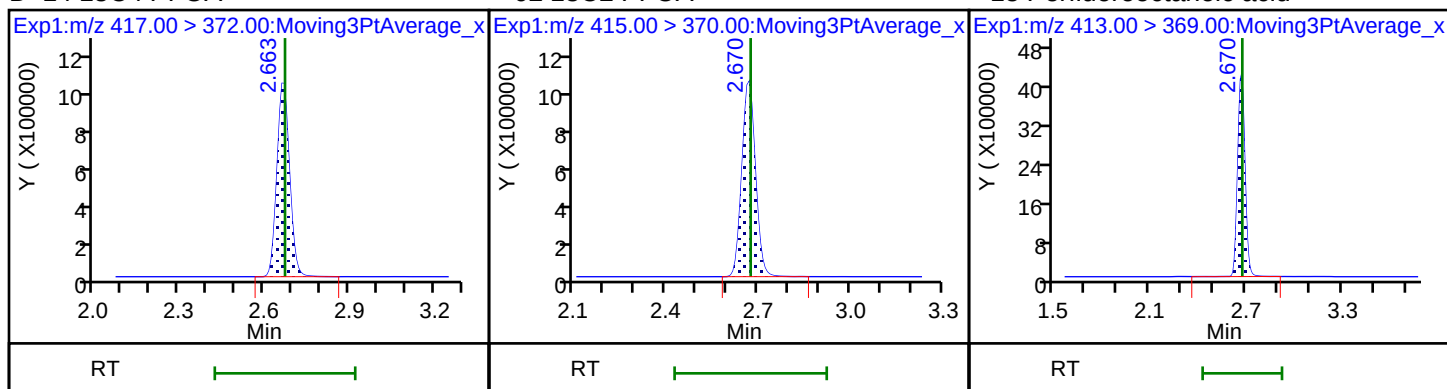
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

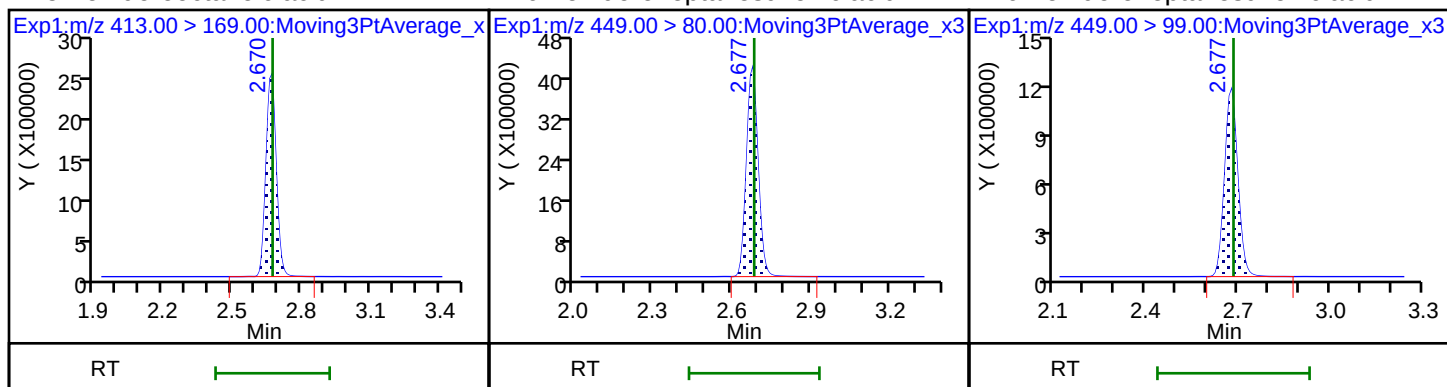
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

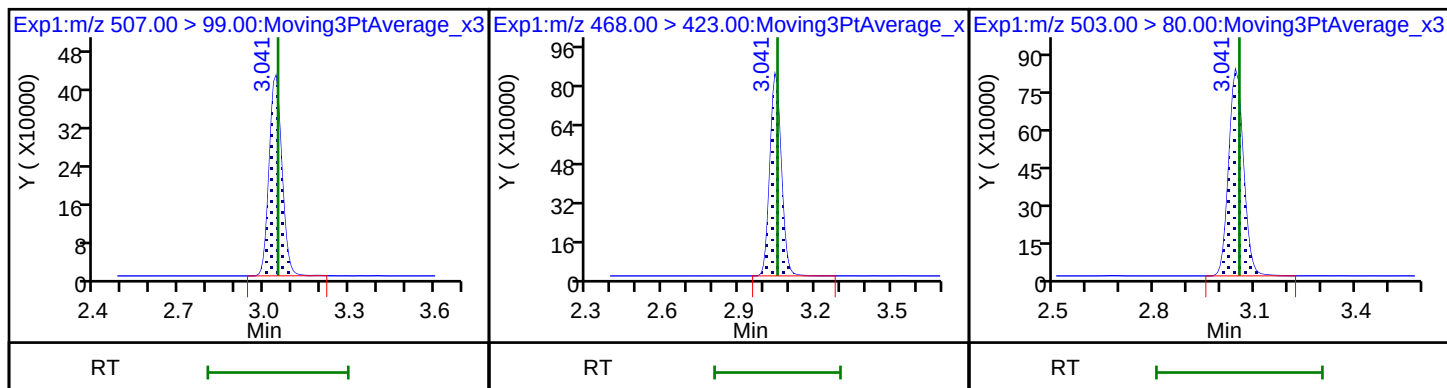
16 Perfluoroheptanesulfonic acid

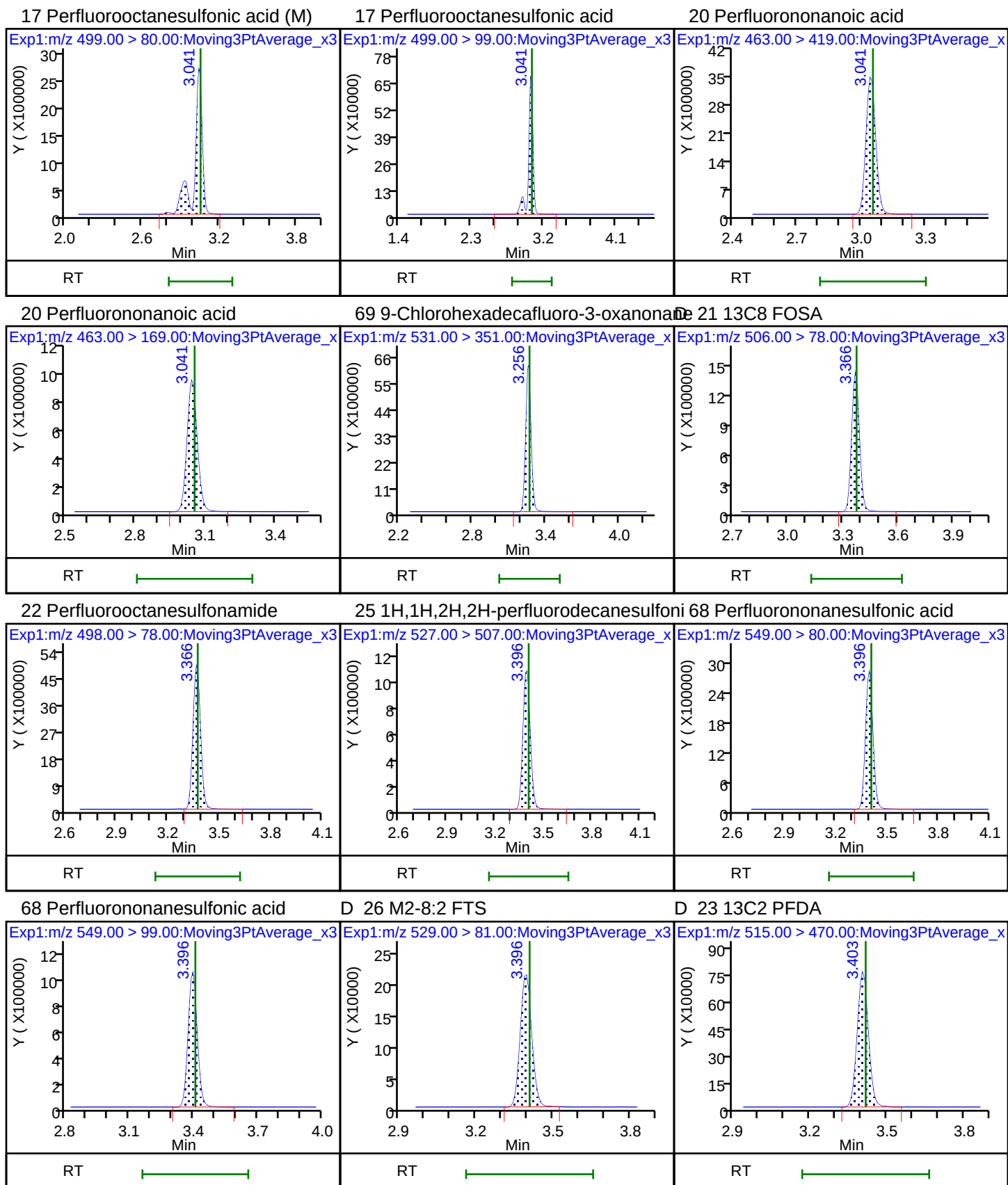


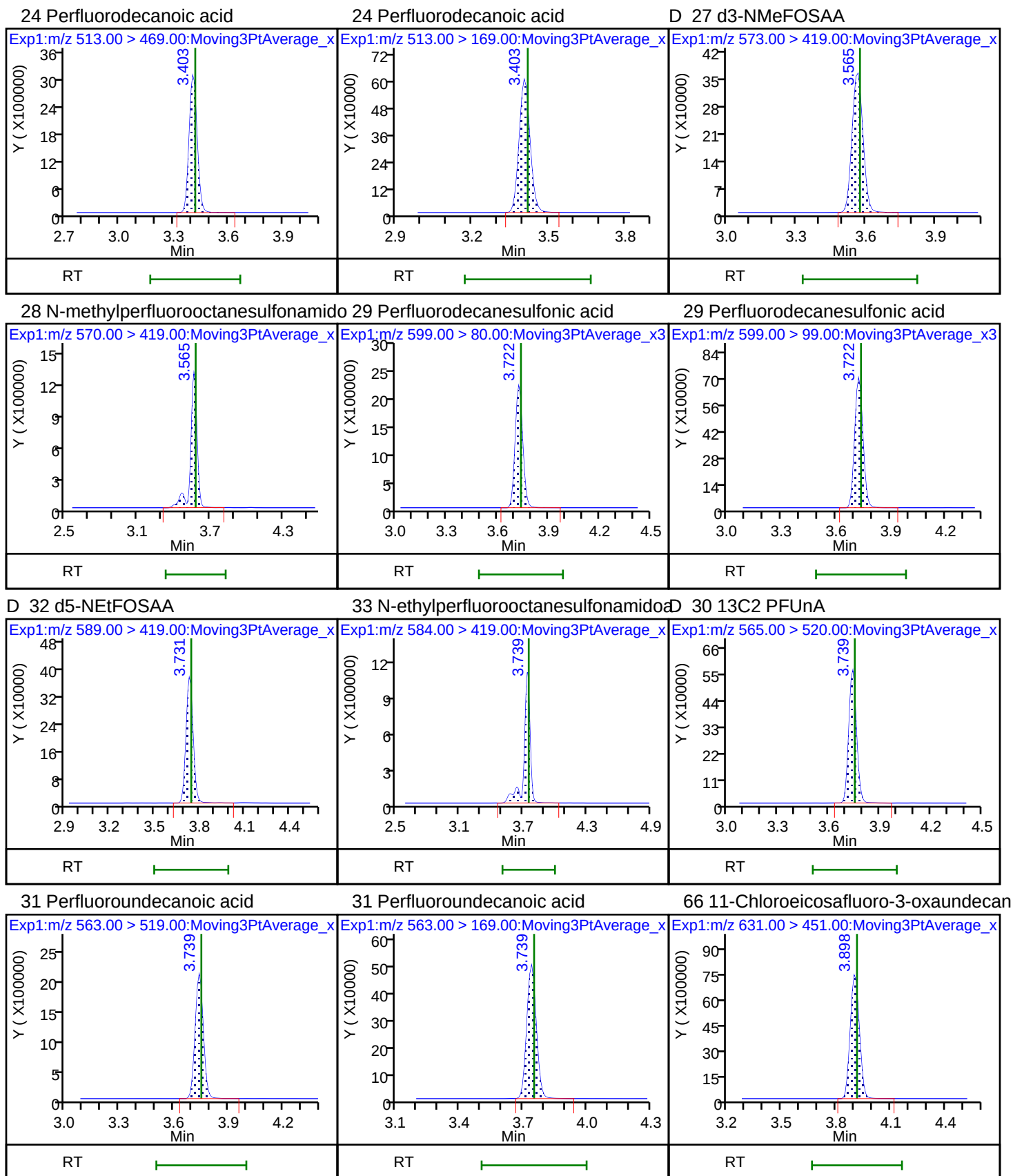
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



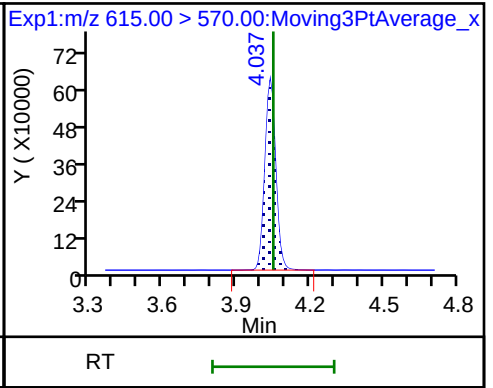
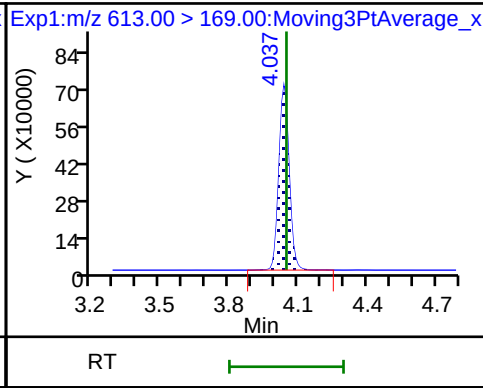
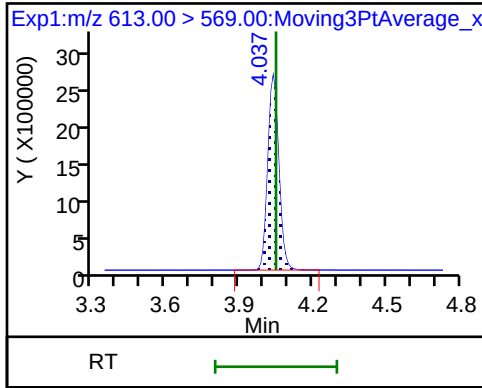




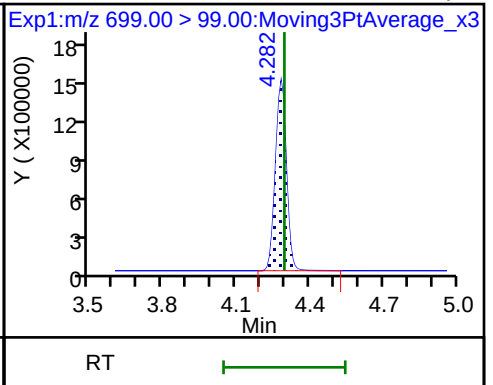
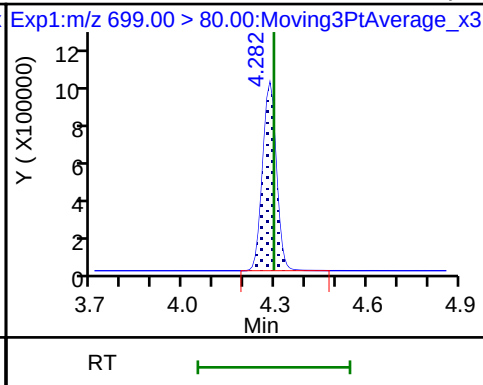
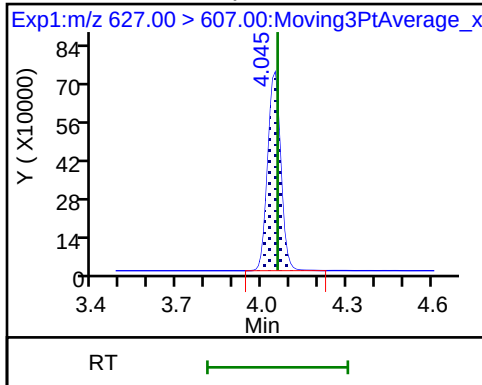
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

D 36 13C2 PFDaA



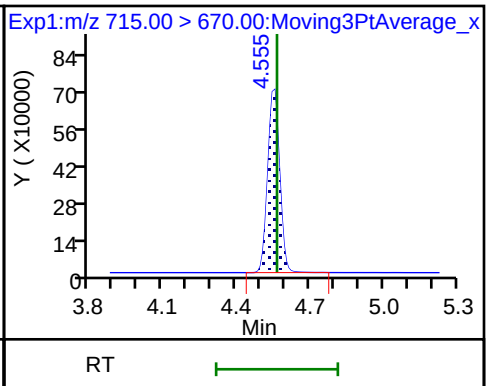
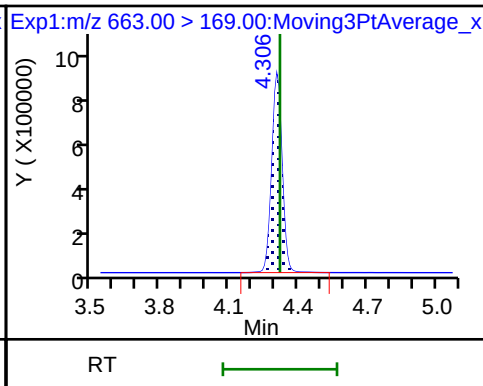
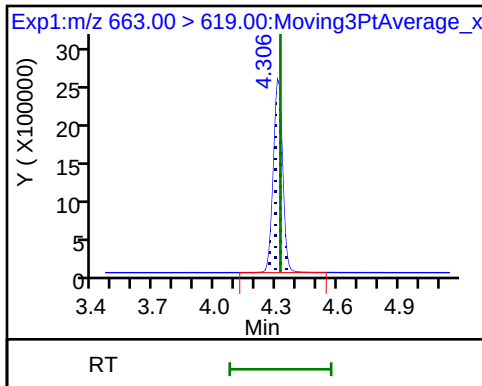
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

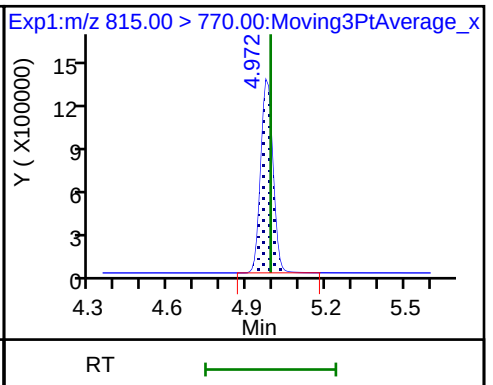
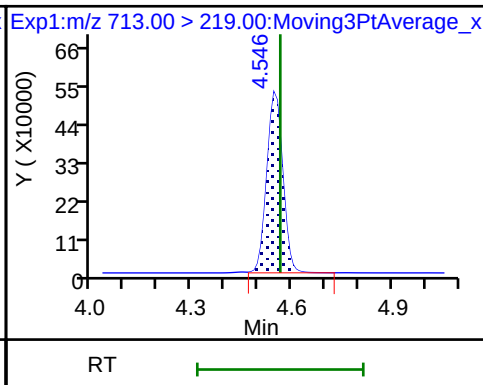
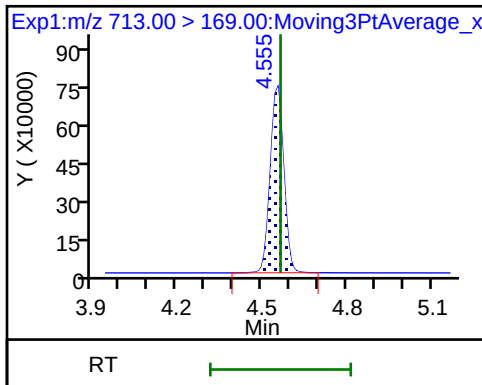
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

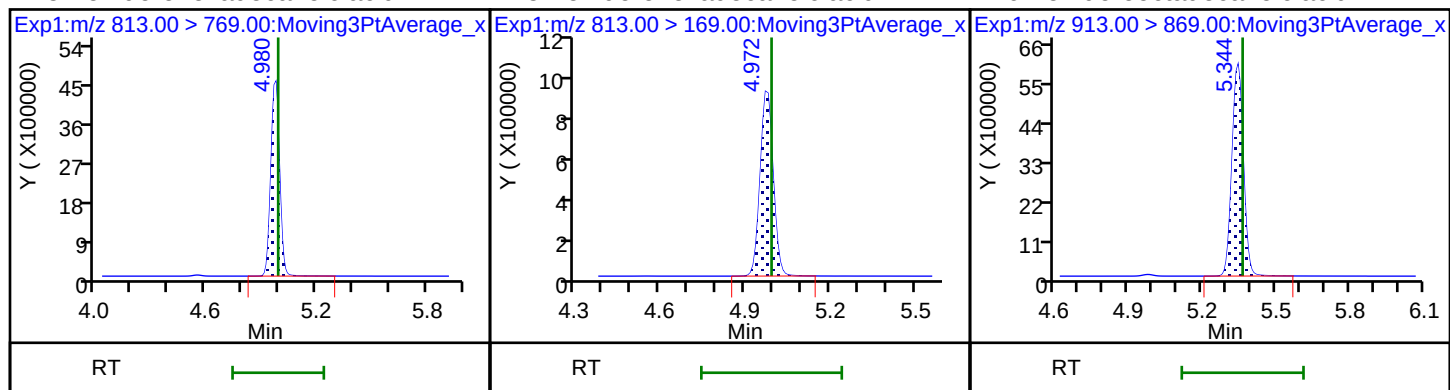
D 44 13C2 PFHxDA



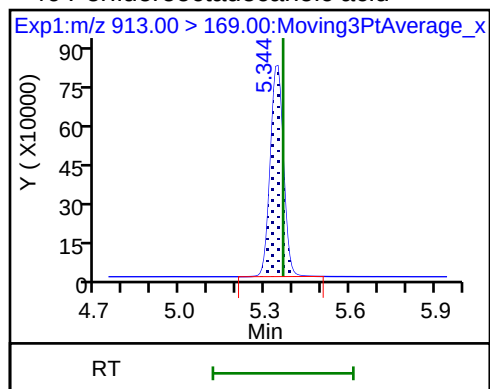
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

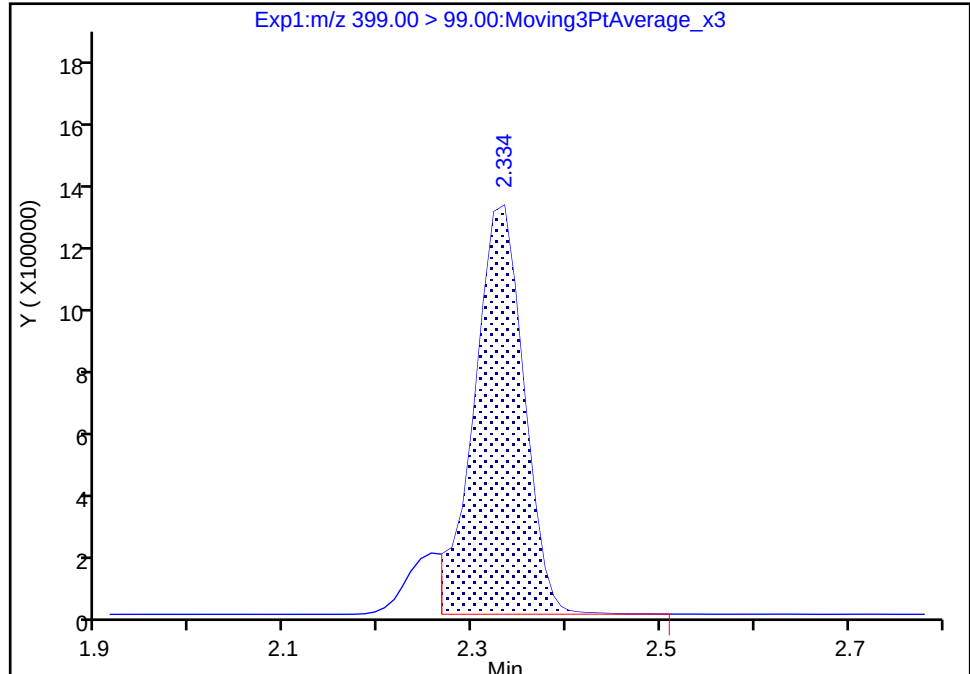
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
Injection Date: 10-Oct-2018 12:08:52 Instrument ID: A8_N
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

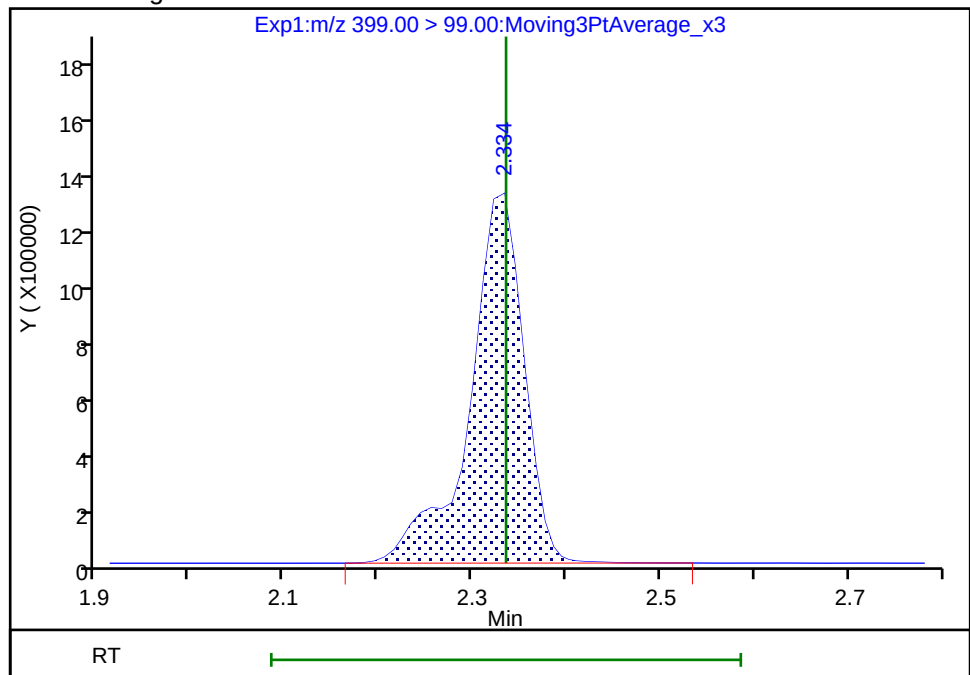
RT: 2.33
Area: 4651506
Amount: 8.409867
Amount Units: ng/ml

Processing Integration Results



RT: 2.33
Area: 5124843
Amount: 8.409867
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:55:24
Audit Action: Manually Integrated

Audit Reason: Isomers
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10/30/2018

TestAmerica Sacramento

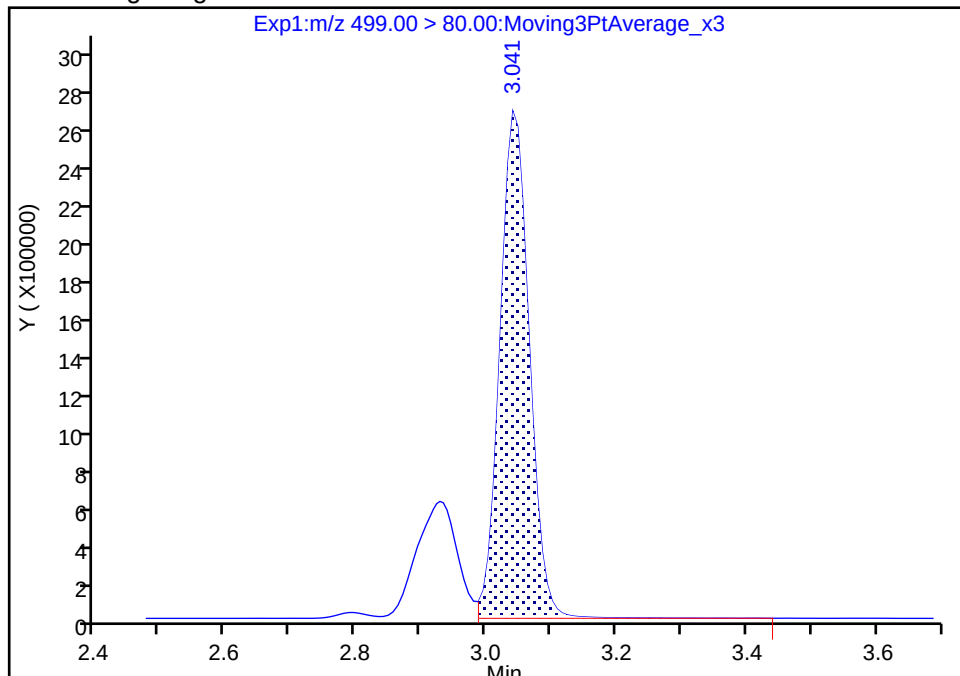
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
Injection Date: 10-Oct-2018 12:08:52 Instrument ID: A8_N
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

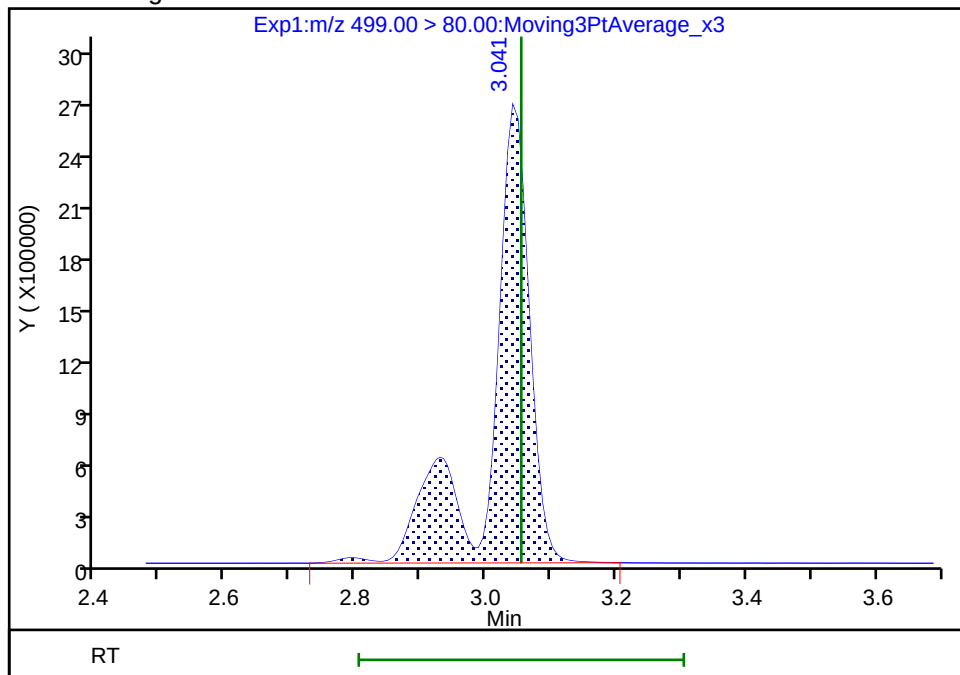
RT: 3.04
Area: 8252966
Amount: 7.240159
Amount Units: ng/ml

Processing Integration Results



RT: 3.04
Area: 10936917
Amount: 9.259124
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:55:32

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Lab Sample ID: ICV 320-251122/10 Calibration Date: 10/10/2018 12:23

Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08

Lab File ID: 2018.10.10LLICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8961	0.9558		2.67	2.50	6.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.079	1.106		2.56	2.50	2.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.58	83.38		2.35	2.21	6.1	50.0
4:2 FTS	AveID	14.84	16.23		2.56	2.34	9.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9858	0.9840		2.50	2.50	-0.2	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.53	72.55		2.52	2.35	7.4	50.0
HFPO-DA (GenX)	AveID	2.943	2.947		2.50	2.50	0.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.061	1.082		2.55	2.50	2.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.004		2.06	2.28	-9.7	40.0
DONA	AveID	3.821	4.081		2.52	2.36	6.8	50.0
6:2 FTS	AveID	1.530	1.560		2.42	2.38	2.0	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.159	1.115		2.41	2.50	-3.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.301	1.335		2.44	2.38	2.6	50.0
Perfluorononanoic acid (PFNA)	AveID	1.065	1.018		2.39	2.50	-4.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.122	1.104		2.27	2.31	-1.7	40.0
F-53B Major	AveID	1.877	1.988		2.47	2.33	5.9	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9701	1.026		2.64	2.50	5.8	40.0
8:2 FTS	AveID	1.211	1.240		2.46	2.40	2.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7870	0.8342		2.54	2.40	6.0	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9821	0.9852		2.51	2.50	0.3	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9561	1.073		2.81	2.50	12.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6258	0.6173		2.38	2.41	-1.4	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8397	0.9555		2.84	2.50	13.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8940	0.8392		2.35	2.50	-6.1	40.0
F-53B Minor	AveID	2.833	2.914		2.42	2.36	2.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.104	1.082		2.45	2.50	-1.9	40.0
10:2 FTS	AveID	0.8464	0.8423		2.40	2.41	-0.5	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2931	0.2867		2.37	2.42	-2.2	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.046	1.043		2.49	2.50	-0.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2672	0.2544		2.38	2.50	-4.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9144		2.56	2.50	2.3	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Lab Sample ID: ICV 320-251122/10 Calibration Date: 10/10/2018 12:23
 Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08
 Lab File ID: 2018.10.10LLICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.180	1.147		2.43	2.50	-2.8	50.0
13C4 PFBA	Ave	1.572	1.522		2.42	2.50	-3.2	50.0
13C5 PFPeA	Ave	1.030	1.002		2.43	2.50	-2.7	50.0
13C3 PFBS	Ave	0.0212	0.0202		2.22	2.33	-4.6	50.0
M2-4:2 FTS	Ave	0.1405	0.1436		2.39	2.34	2.2	50.0
13C2 PFHxA	Ave	1.137	1.084		2.38	2.50	-4.7	50.0
13C3 HFPO-DA	Ave	0.0819	0.0841		2.57	2.50	2.7	50.0
13C4 PFHpA	Ave	1.039	0.9894		2.38	2.50	-4.7	50.0
18O2 PFHxS	Ave	1.245	1.240		2.35	2.37	-0.5	50.0
M2-6:2 FTS	Ave	0.1946	0.1935		2.36	2.38	-0.6	40.0
13C8 PFOA	Ave	1.426	1.499		2.57	2.45	5.1	50.0
13C4 PFOA	Ave	0.9722	0.9539		2.45	2.50	-1.9	50.0
13C4 PFOS	Ave	0.8305	0.8055		2.32	2.39	-3.0	50.0
13C5 PFNA	Ave	0.8082	0.7986		2.47	2.50	-1.2	50.0
13C8 PFOS	Ave	0.4254	0.4347		2.44	2.39	2.2	50.0
13C8 FOSA	Ave	1.203	1.128		2.34	2.50	-6.2	50.0
M2-8:2 FTS	Ave	0.2057	0.2049		2.39	2.40	-0.4	40.0
13C2 PFDA	Ave	0.7126	0.6960		2.44	2.50	-2.3	50.0
d3-NMeFOSAA	Ave	0.3636	0.3372		2.32	2.50	-7.3	50.0
13C2 PFUnA	Ave	0.5728	0.5345		2.33	2.50	-6.7	50.0
d5-NEtFOSAA	Ave	0.3798	0.3619		2.38	2.50	-4.7	50.0
13C2 PFDoA	Ave	0.6012	0.5747		2.39	2.50	-4.4	50.0
13C2 PFTeDA	Ave	0.7358	0.6833		2.32	2.50	-7.1	50.0
13C2 PFHxDA	Ave	1.360	1.328		2.44	2.50	-2.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_013.d
 Lims ID: ICV FULL
 Client ID:
 Sample Type: ICV
 Inject. Date: 10-Oct-2018 12:23:44 ALS Bottle#: 17 Worklist Smp#: 10
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: ICV
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist:
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 10-Oct-2018 15:14:12 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK050

First Level Reviewer: hannigana

Date: 10-Oct-2018 14:57:46

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.434	1.434	0.0	0.542	4111633	2.42		96.8	9657	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.434	1.437	-0.003	1.000	3929695	2.67			459	
D 3 13C5 PFPeA										
267.90 > 223.00	1.700	1.705	-0.005	0.642	2706879	2.43		97.3	8737	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.700	1.706	-0.006	1.000	2993618	2.56			455	
D 47 13C3 PFBS										
301.90 > 83.00	1.740	1.740	0.0	0.657	50727	2.22		95.4	355	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.740	1.742	-0.002	1.000	4024893	2.35			789	
298.90 > 99.00	1.740	1.742	-0.002	1.000	1625228		2.48(1.25-3.74)		657	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.949	1.950	-0.001	0.736	362188	2.39		102	585	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.949	1.951	-0.002	1.120	827794	2.56			7238	
D 7 13C2 PFHxA										
315.00 > 270.00	1.981	1.986	-0.005	0.748	2927916	2.38		95.3	14022	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.981	1.989	-0.008	1.000	2881111	2.50			1172	
313.00 > 119.00	1.981	1.989	-0.008	1.000	275440		10.46(5.03-15.10)		1033	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.002	2.013	-0.011	1.150	3719687	2.52			8761	
349.00 > 99.00	2.002	2.013	-0.011	1.150	1318020		2.82(1.36-4.07)		5381	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.075	2.086	-0.011	0.784	227253	2.57		103	755	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.075	2.086	-0.011	1.000	669783	2.50			873	
D 9 13C4 PFHpA										
367.00 > 322.00	2.303	2.318	-0.015	0.870	2672711	2.38		95.3	6910	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.303	2.318	-0.015	1.000	2893075	2.55			1004	
363.00 > 169.00	2.303	2.318	-0.015	1.000	1171450		2.47(1.13-3.40)		1778	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.314	2.336	-0.022	1.000	3066440	2.06			11584	
399.00 > 99.00	2.314	2.336	-0.022	1.000	1013732		3.02(1.50-4.49)		2000	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.314	2.337	-0.023	0.874	3167535	2.35		99.5	4185	
77 DONA										
377.00 > 251.00	2.336	2.361	-0.025	0.773	8365604	2.52			10764	
377.00 > 85.00	2.347	2.361	-0.014	0.777	5031670		1.66(0.85-2.54)		7466	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.624	2.649	-0.025	0.991	496663	2.36		99.4	2268	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.624	2.650	-0.026	1.000	774895	2.42			2432	
D 73 13C8 PFOA										
421.00 > 376.00	2.639	2.670	-0.031	0.997	3963863	2.57		105	7994	
D 14 13C4 PFOA										
417.00 > 372.00	2.647	2.673	-0.026	1.000	2576700	2.45		98.1	6990	
* 62 13C2 PFOA										
415.00 > 370.00	2.647	2.674	-0.027		2701256	2.50			6993	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.647	2.674	-0.027	1.000	2873980	2.41			285	
413.00 > 169.00	2.647	2.674	-0.027	1.000	1549981		1.85(0.84-2.52)		2758	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.655	2.684	-0.029	0.879	2758651	2.44			4118	
449.00 > 99.00	2.655	2.684	-0.029	0.879	694910		3.97(1.94-5.82)		2027	
D 72 13C8 PFOS										
507.00 > 99.00	3.022	3.049	-0.027	1.142	1122449	2.44		102	4243	
D 19 13C5 PFNA										
468.00 > 423.00	3.022	3.051	-0.029	1.142	2157161	2.47		98.8	4323	
D 18 13C4 PFOS										
503.00 > 80.00	3.022	3.053	-0.031	1.142	2080130	2.32		97.0	4252	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.022	3.054	-0.032	1.000	2222330	2.27			1977	
499.00 > 99.00	3.022	3.054	-0.032	1.000	482010		4.61(2.31-6.93)		1391	
20 Perfluorononanoic acid										
463.00 > 419.00	3.022	3.054	-0.032	1.000	2194938	2.39			956	
463.00 > 169.00	3.022	3.054	-0.032	1.000	574375		3.82(1.90-5.69)		3732	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.235	3.266	-0.031	1.070	4030934	2.47			9493	
D 21 13C8 FOSA										
506.00 > 78.00	3.348	3.373	-0.025	1.265	3046966	2.34		93.8	5297	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide	498.00 > 78.00	3.348	3.374	-0.026	1.000	3126020	2.64		3229	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.370	3.407	-0.037	1.000	658888	2.46		2499	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.378	3.408	-0.030	1.118	1742516	2.54		6233	
	549.00 > 99.00	3.378	3.408	-0.030	1.118	597129	2.92(1.33-3.97)		3817	
D 26 M2-8:2 FTS	529.00 > 81.00	3.370	3.408	-0.038	1.273	530265	2.39	99.6	2310	
D 23 13C2 PFDA	515.00 > 470.00	3.385	3.416	-0.031	1.279	1880194	2.44	97.7	6159	
24 Perfluorodecanoic acid	513.00 > 469.00	3.385	3.417	-0.032	1.000	1852268	2.51		1833	
	513.00 > 169.00	3.385	3.417	-0.032	1.000	340183	5.44(2.36-7.09)		1259	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.538	3.574	-0.036	1.336	910914	2.32	92.7	2062	
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	3.546	3.580	-0.034	1.002	977219	2.81		15242	
29 Perfluorodecanesulfonic acid	599.00 > 80.00	3.708	3.736	-0.028	1.227	1296142	2.38		3783	
	599.00 > 99.00	3.708	3.736	-0.028	1.227	459506	2.82(1.39-4.16)		2947	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.716	3.744	-0.028	1.404	977661	2.38	95.3	1185	
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	3.716	3.751	-0.035	1.000	934167	2.84		1623	
D 30 13C2 PFUnA	565.00 > 520.00	3.716	3.751	-0.035	1.404	1443736	2.33	93.3	3361	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.725	3.751	-0.026	1.002	1211608	2.35		1065	
	563.00 > 169.00	3.725	3.751	-0.026	1.002	303682	3.99(2.12-6.36)		1659	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.879	3.913	-0.034	1.283	5973163	2.42		8562	
37 Perfluorododecanoic acid	613.00 > 569.00	4.021	4.048	-0.027	1.000	1680116	2.45		1363	
	613.00 > 169.00	4.021	4.048	-0.027	1.000	425561	3.95(2.13-6.40)		2562	
D 36 13C2 PFDaA	615.00 > 570.00	4.021	4.050	-0.029	1.519	1552425	2.39	95.6	4268	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.029	4.054	-0.025	1.195	449423	2.40		4374	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.265	4.295	-0.030	1.411	603795	2.37		3213	
	699.00 > 99.00	4.265	4.295	-0.030	1.411	931280	0.65(0.00-0.00)		6826	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.292	4.320	-0.028	1.067	1619918	2.49		1041	
	663.00 > 169.00	4.292	4.320	-0.028	1.067	556385	2.91(1.25-3.76)		2545	
D 43 13C2 PFTeDA	715.00 > 670.00	4.536	4.565	-0.029	1.714	1845622	2.32	92.9	4216	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.536	4.565	-0.029	1.000	469571	2.38			2983	
713.00 > 219.00	4.536	4.565	-0.029	1.000	342686		1.37(0.71-2.13)		2373	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.963	4.989	-0.026	1.875	3586470	2.44		97.7	4097	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.963	4.993	-0.030	1.000	3279561	2.56			595	
813.00 > 169.00	4.963	4.993	-0.030	1.000	621887		5.27(2.86-8.58)		2739	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.330	5.363	-0.033	1.074	4113282	2.43			560	
913.00 > 169.00	5.323	5.363	-0.040	1.073	533723		7.71(3.83-11.48)		1836	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_013.d

Injection Date: 10-Oct-2018 12:23:44

Instrument ID: A8_N

Lims ID: ICV FULL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

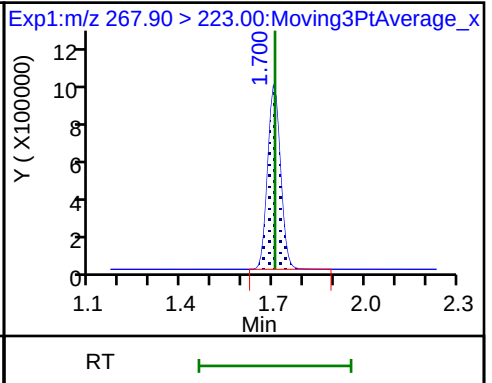
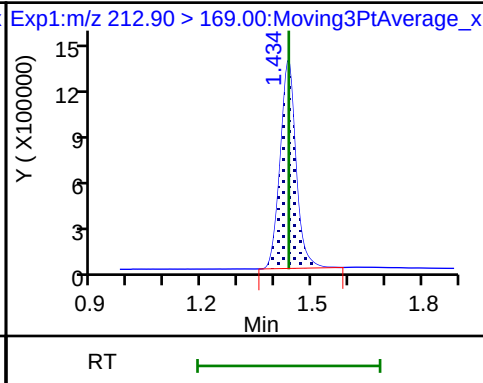
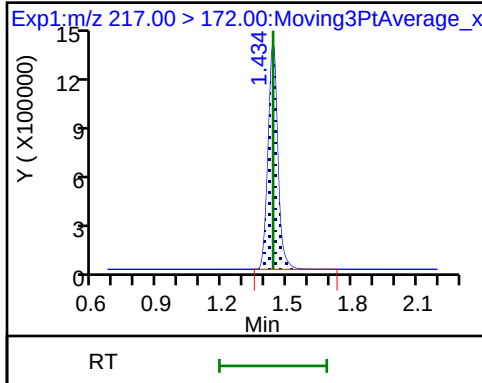
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

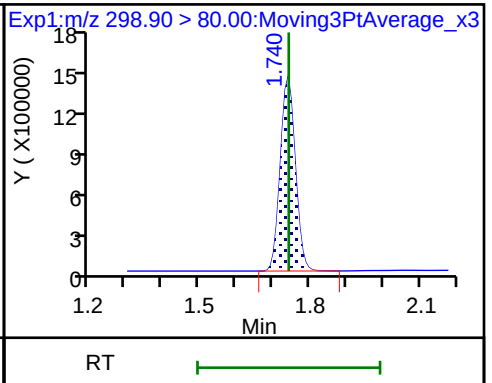
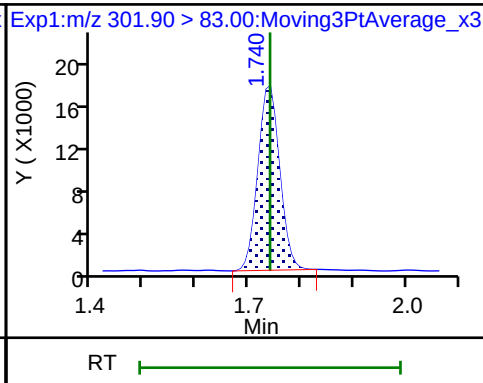
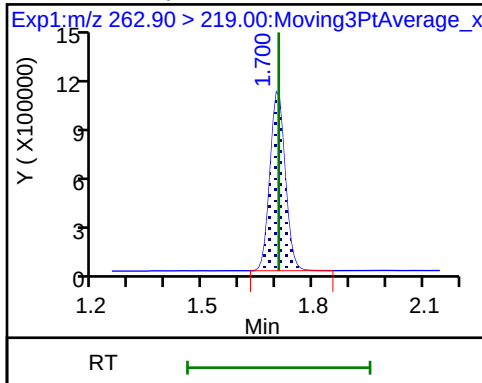
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

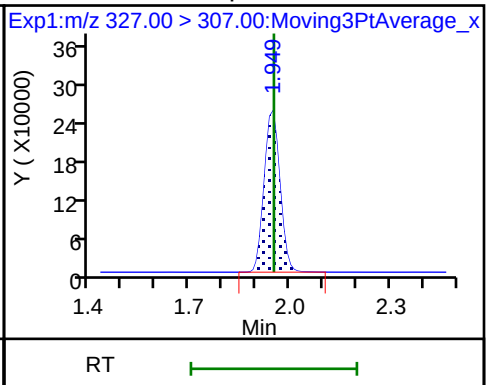
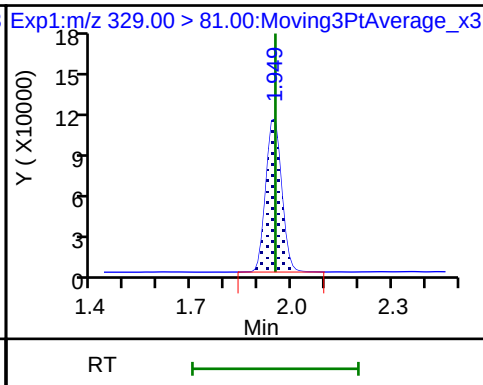
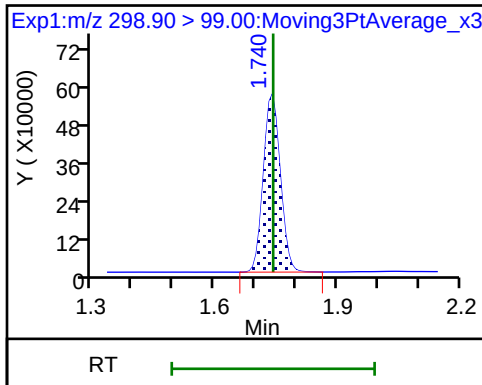
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

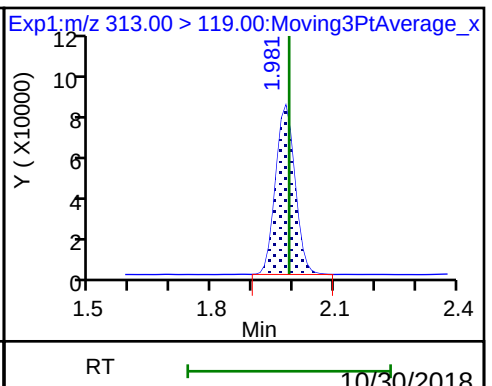
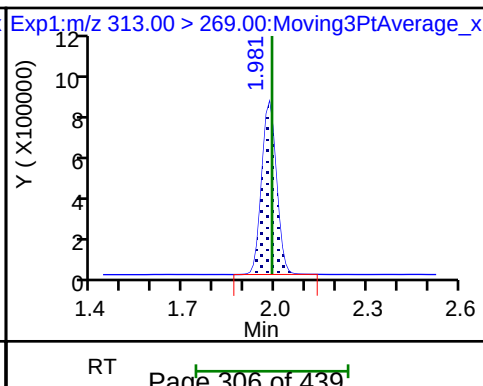
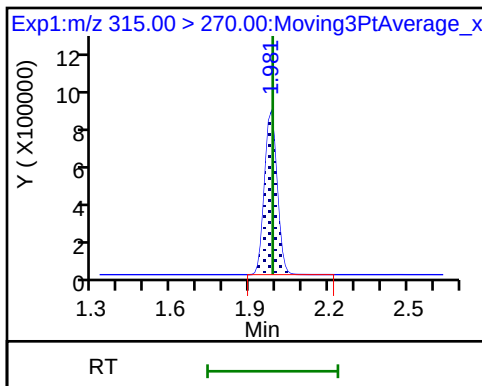
61 1H,1H,2H,2H-perfluorohexanesulfoni



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

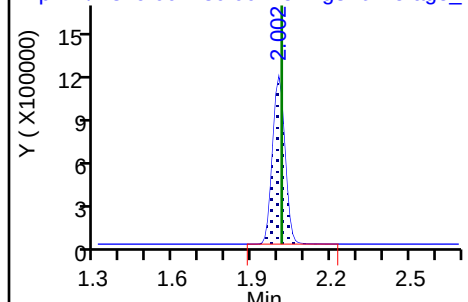


70 Perfluoropentanesulfonic acid

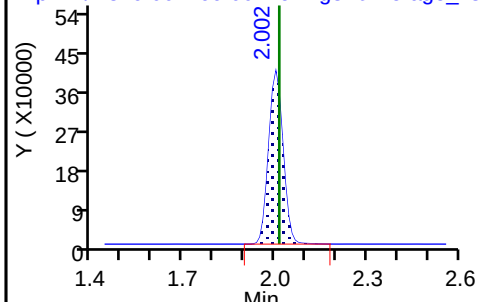
70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA

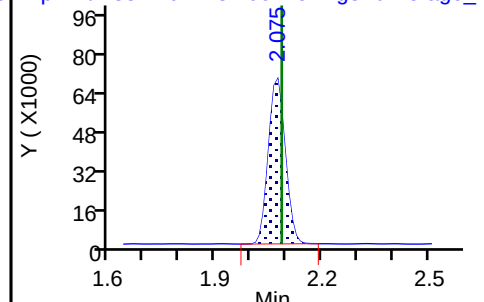
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Exp1:m/z 349.00 > 99.00:Moving3PtAverage_x3



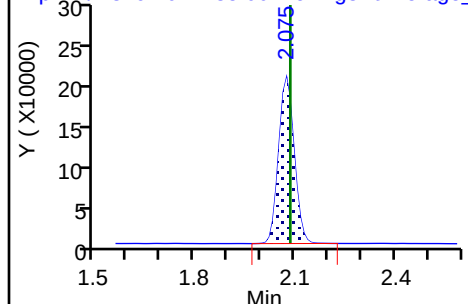
Exp1:m/z 332.10 > 287.00:Moving3PtAverage_x3



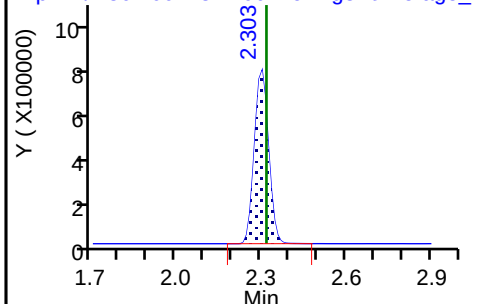
67 Perfluoro(2-propoxypropanoic) acid D 9 13C4 PFHpA

10 Perfluoroheptanoic acid

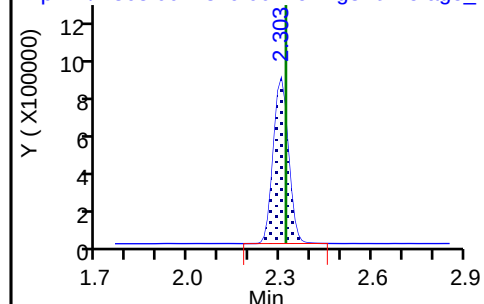
Exp1:m/z 329.10 > 285.00:Moving3PtAverage_x3



Exp1:m/z 367.00 > 322.00:Moving3PtAverage_x3



Exp1:m/z 363.00 > 319.00:Moving3PtAverage_x3

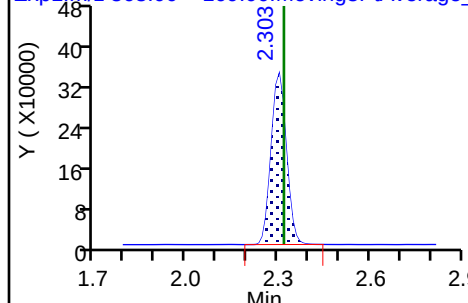


10 Perfluoroheptanoic acid

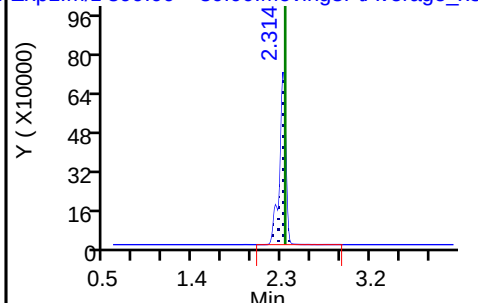
8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid (M)

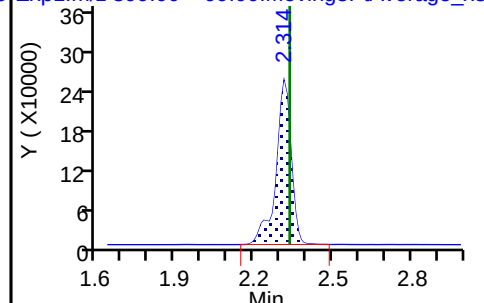
Exp1:m/z 363.00 > 169.00:Moving3PtAverage_x3



Exp1:m/z 399.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 399.00 > 99.00:Moving3PtAverage_x3

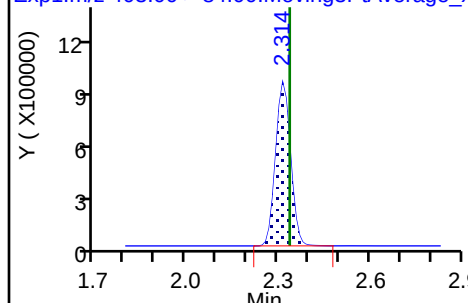


D 11 18O2 PFHxS

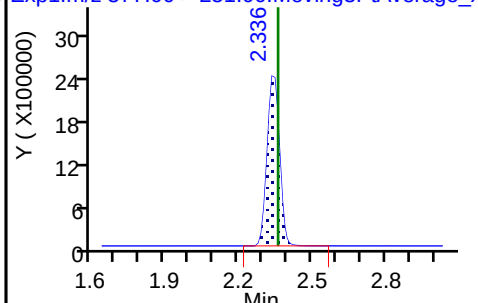
77 DONA

77 DONA

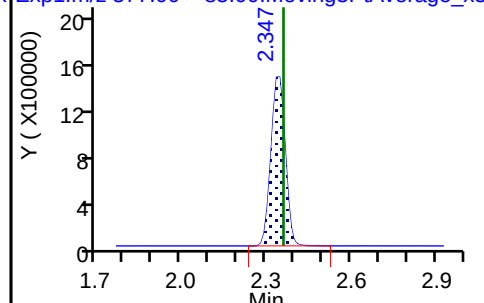
Exp1:m/z 403.00 > 84.00:Moving3PtAverage_x3



Exp1:m/z 377.00 > 251.00:Moving3PtAverage_x3

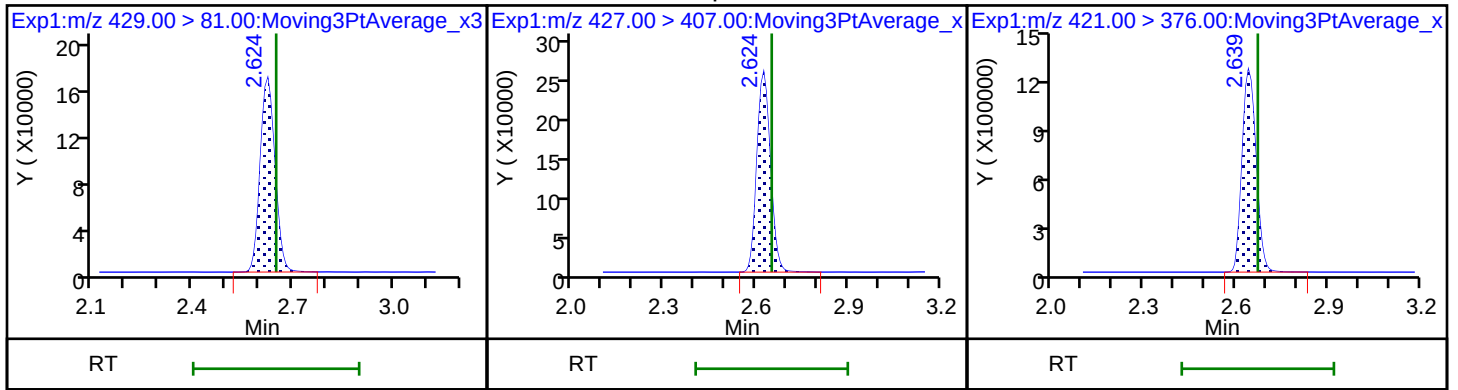


Exp1:m/z 377.00 > 85.00:Moving3PtAverage_x3



D 12 M2-6:2 FTS

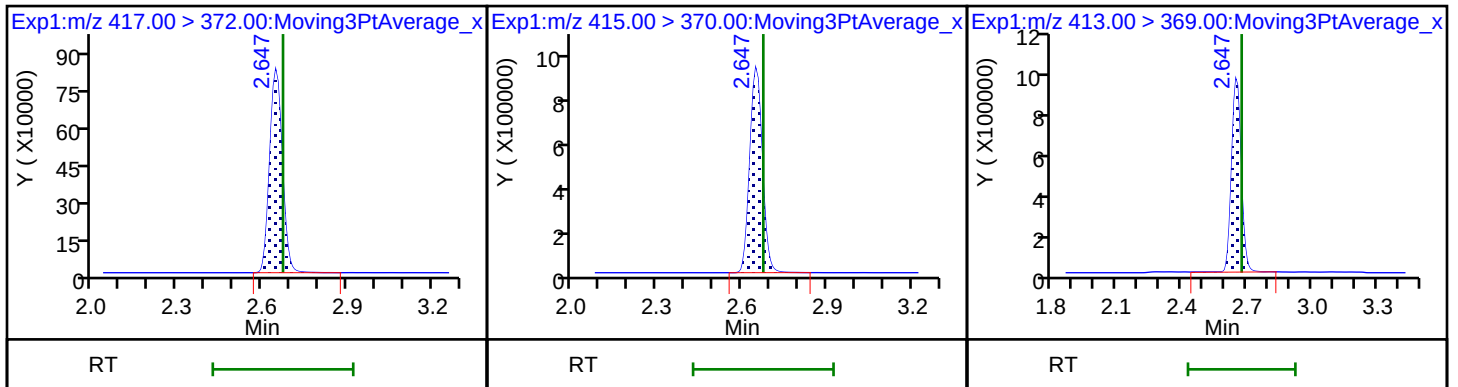
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

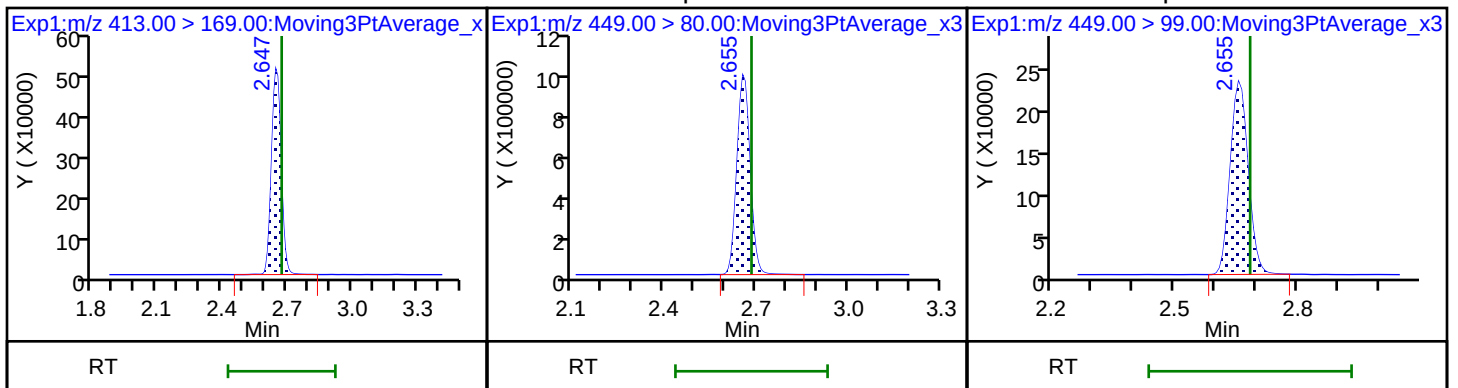
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

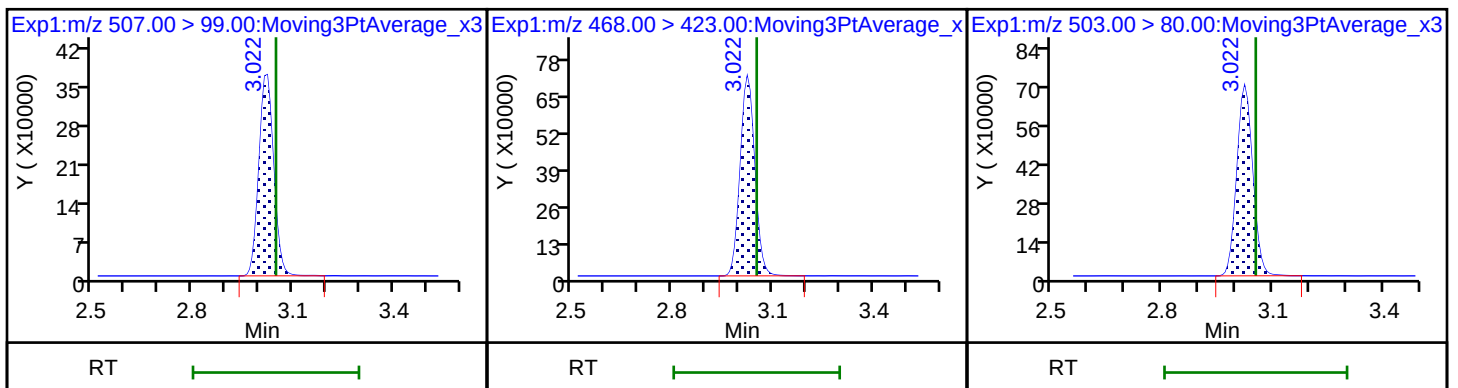
16 Perfluoroheptanesulfonic acid

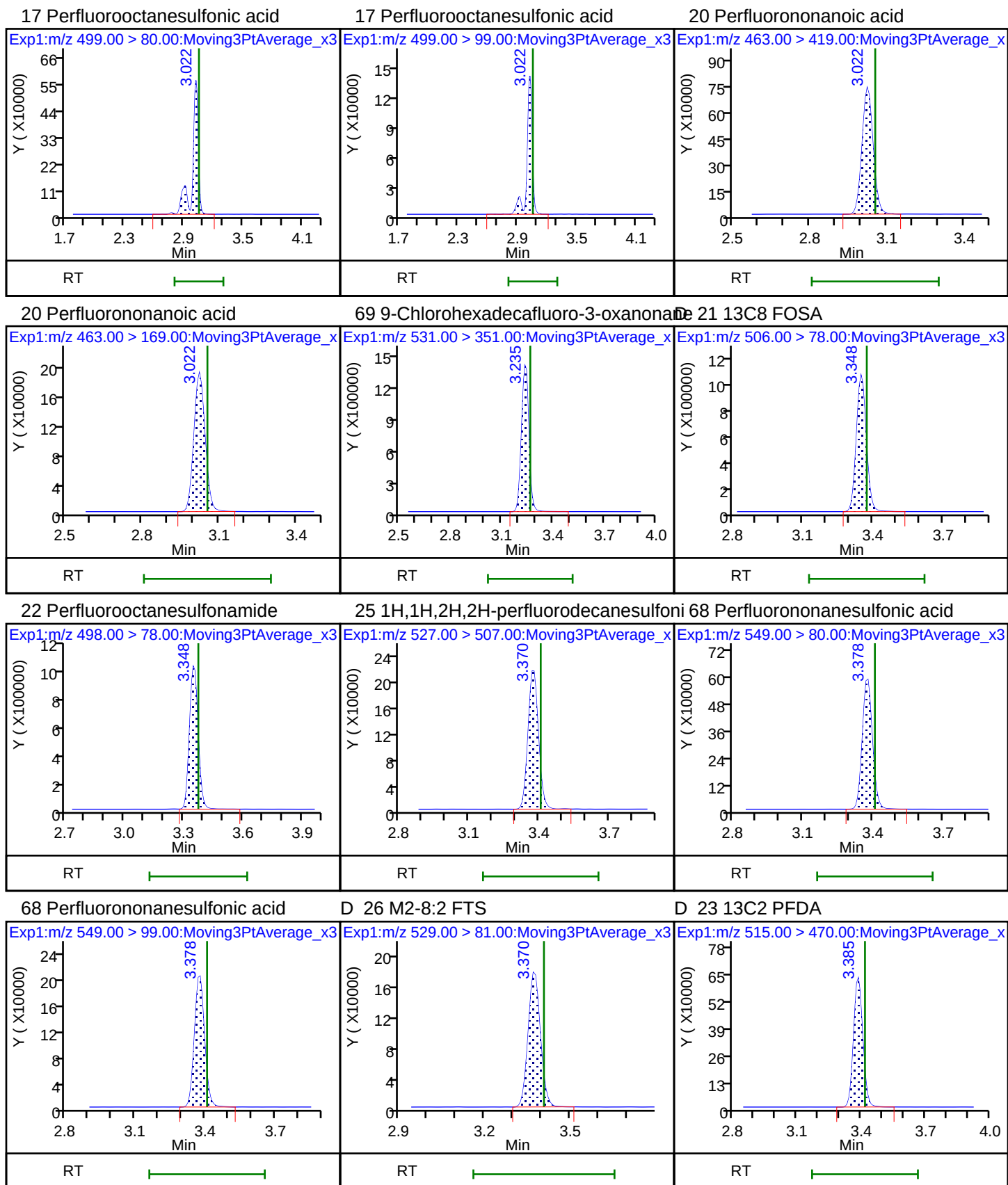


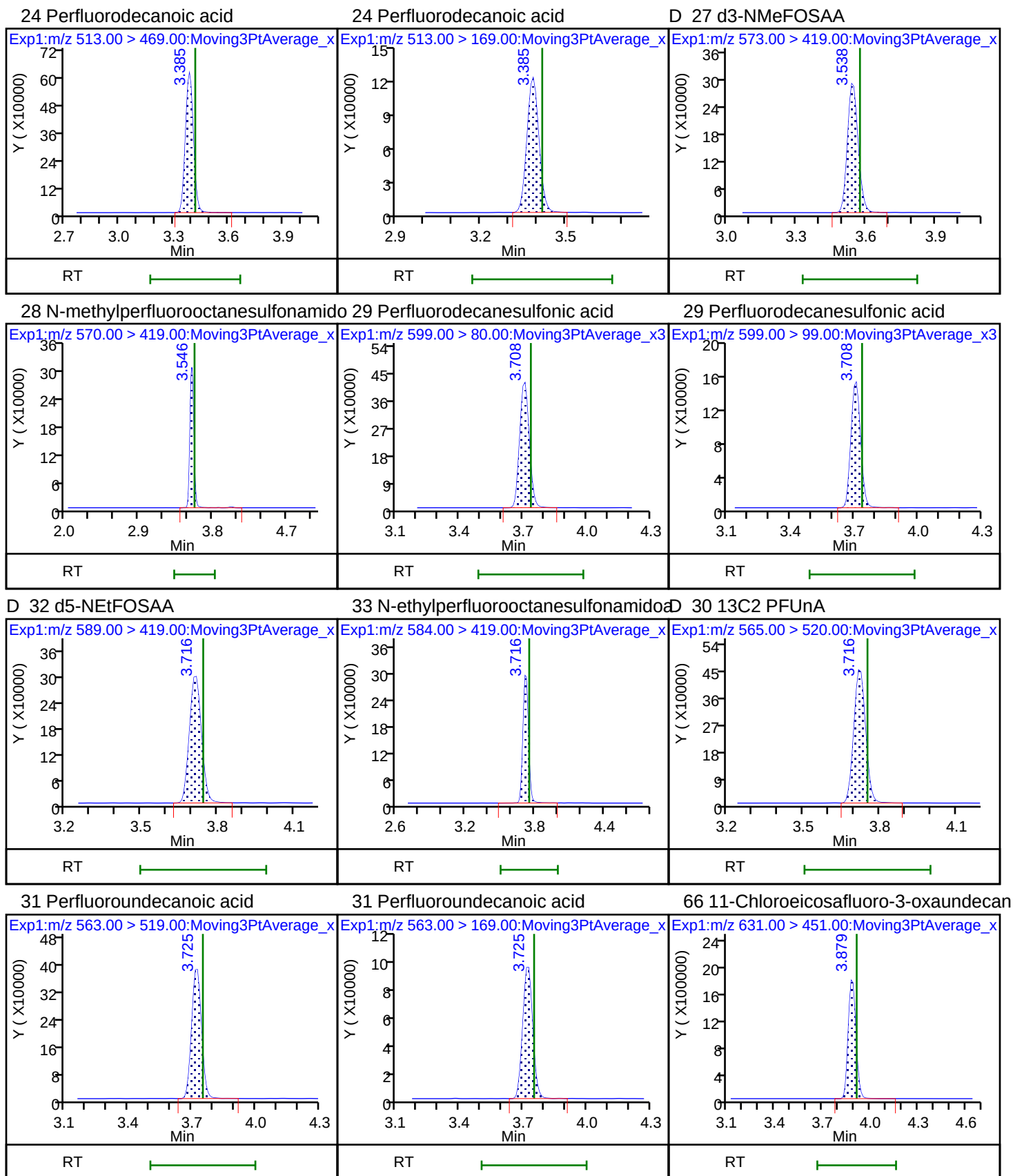
D 72 13C8 PFOS

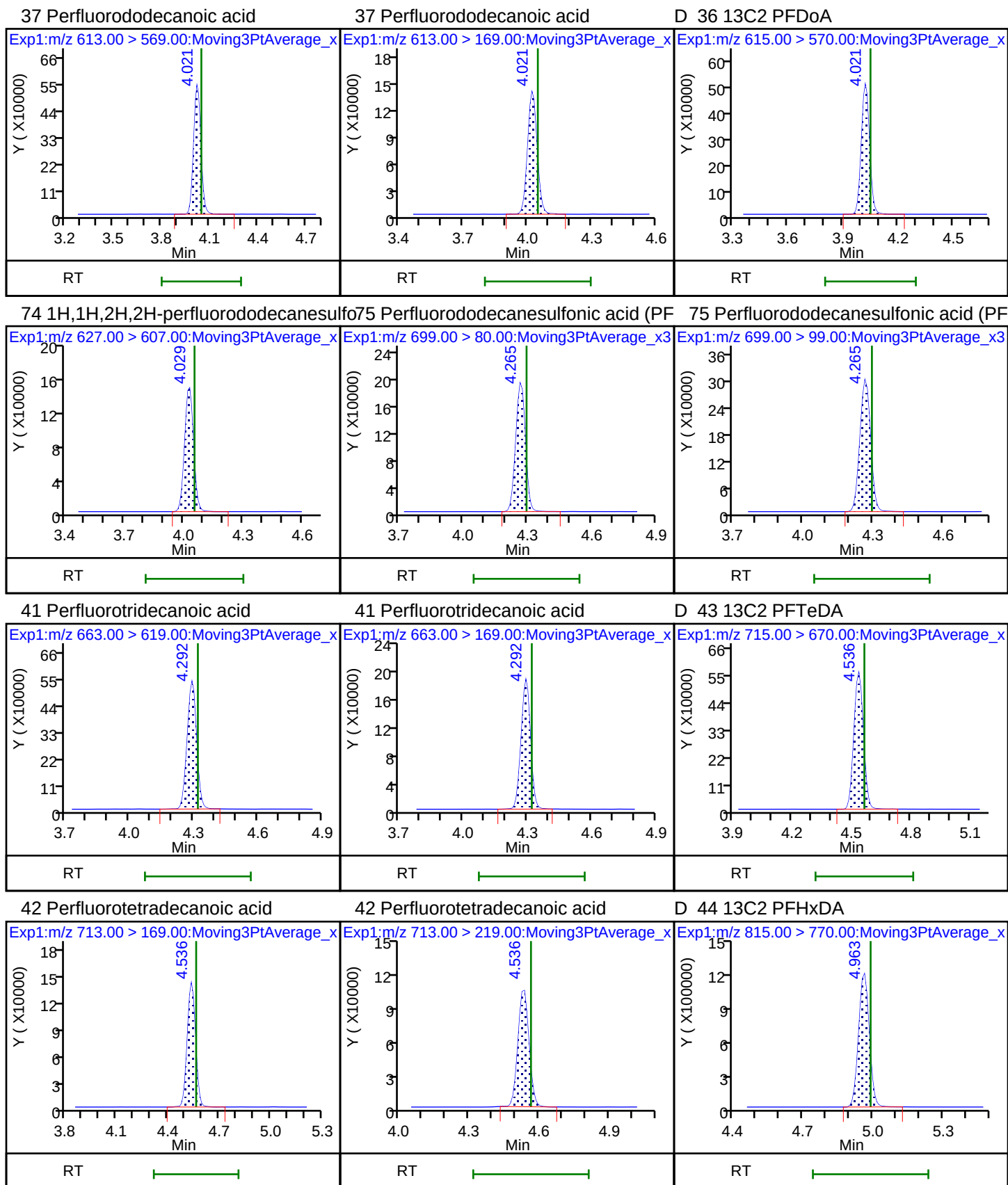
D 19 13C5 PFNA

D 18 13C4 PFOS





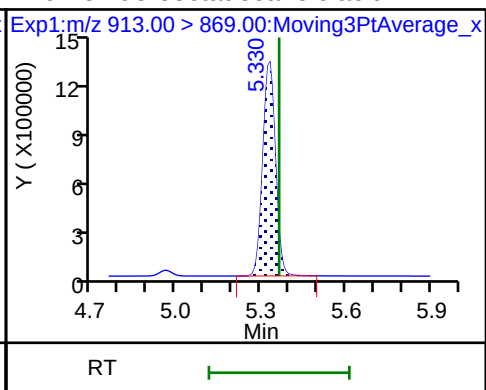
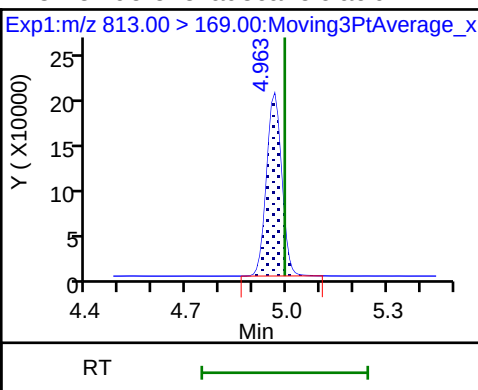
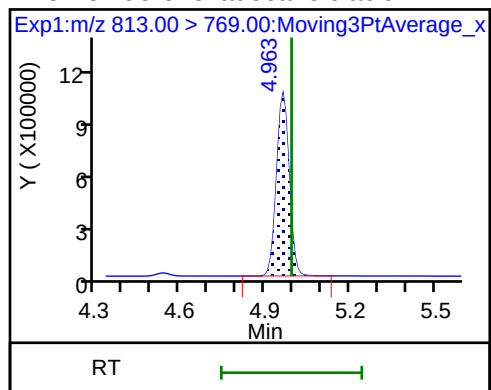




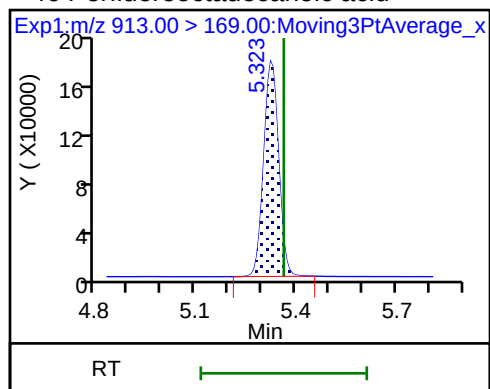
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_013.d

Injection Date: 10-Oct-2018 12:23:44

Instrument ID: A8_N

Lims ID: ICV FULL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 17 Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

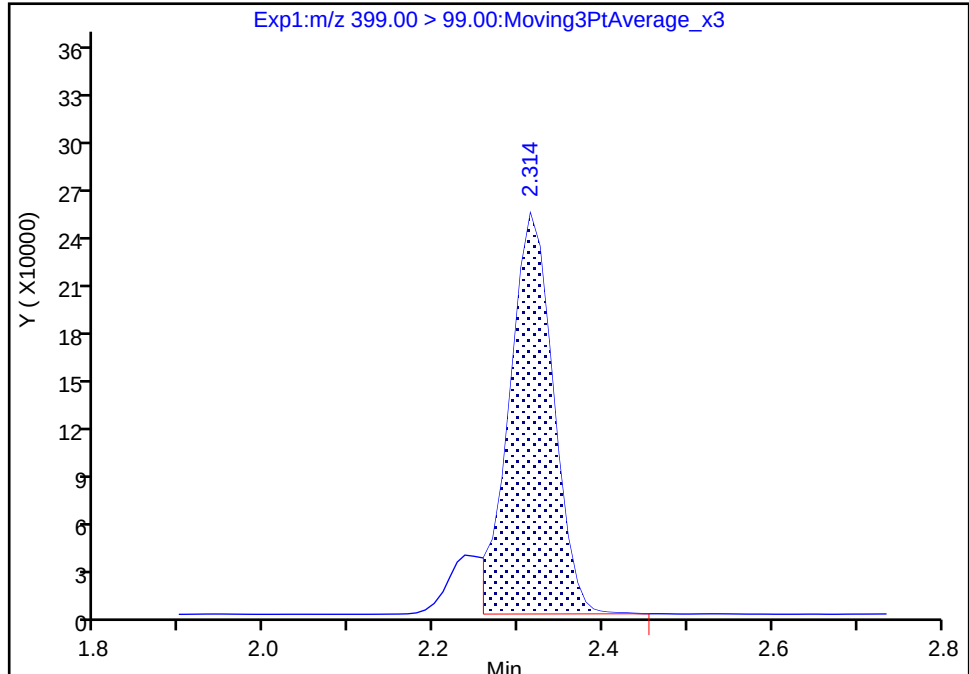
Detector: EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

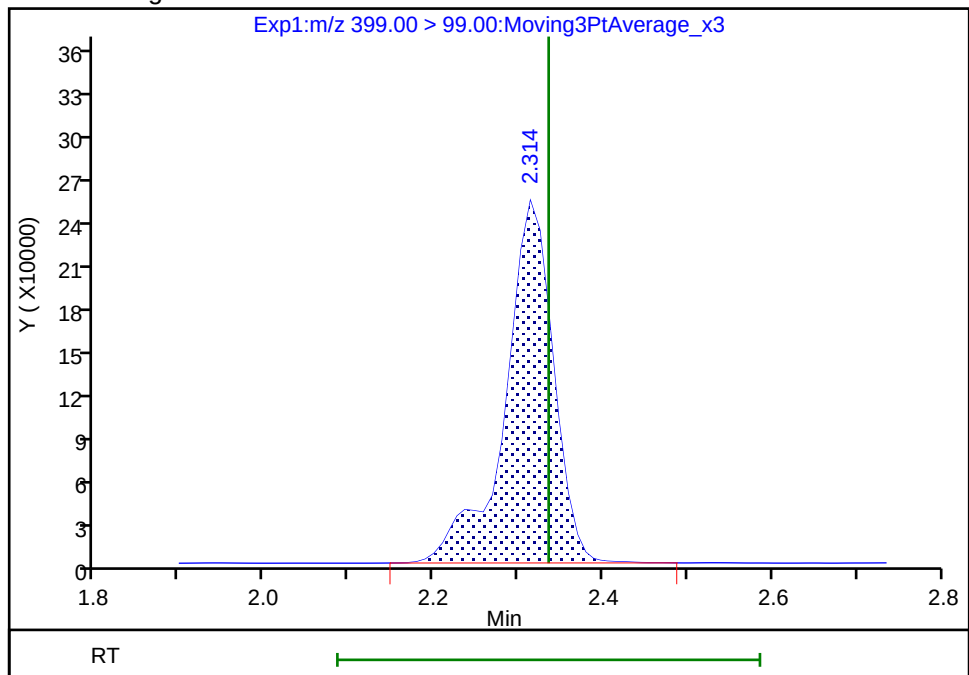
RT: 2.31
Area: 910419
Amount: 2.057702
Amount Units: ng/ml

Processing Integration Results



RT: 2.31
Area: 1013732
Amount: 2.057702
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 10-Oct-2018 14:57:34

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Lab Sample ID: CCVL 320-252228/2 Calibration Date: 10/15/2018 01:16

Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08

Lab File ID: 2018.10.14LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8961	0.8501		0.0474	0.0500	-5.1	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.079	1.062		0.0492	0.0500	-1.5	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.58	82.31		0.0463	0.0442	4.7	50.0
4:2 FTS	AveID	14.84	16.24		0.511	0.467	9.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9858	0.8987		0.0456	0.0500	-8.8	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.53	71.14		0.0494	0.0469	5.4	50.0
HFPO-DA (GenX)	AveID	2.943	3.140		0.0533	0.0500	6.7	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.061	1.166		0.0549	0.0500	9.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.128		0.0461	0.0455	1.3	50.0
DONA	AveID	3.821	3.550		0.0438	0.0471	-7.1	50.0
6:2 FTS	AveID	1.530	1.459		0.452	0.474	-4.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.159	1.439		0.0621	0.0501	24.1	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.301	1.212		0.0443	0.0476	-6.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.065	1.072		0.0503	0.0500	0.6	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.122	0.9415		0.0389	0.0464	-16.1	50.0
F-53B Major	AveID	1.877	1.769		0.0439	0.0466	-5.7	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9701	0.8999		0.0464	0.0500	-7.2	50.0
8:2 FTS	AveID	1.211	1.269		0.502	0.479	4.9	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7870	0.7246		0.0442	0.0480	-7.9	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9821	1.000		0.0509	0.0500	1.8	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9561	0.9740		0.509	0.500	1.9	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6258	0.5933		0.0457	0.0482	-5.2	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8397	0.8093		0.482	0.500	-3.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8940	0.8354		0.0467	0.0500	-6.5	50.0
F-53B Minor	AveID	2.833	2.706		0.0450	0.0471	-4.5	50.0
10:2 FTS	AveID	0.8464	0.7626		0.0434	0.0482	-9.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.104	0.9744		0.0441	0.0500	-11.7	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2931	0.2656		0.0439	0.0484	-9.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.046	1.098		0.0524	0.0500	4.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2672	0.2524		0.0472	0.0500	-5.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.299		0.0486	0.0500	-2.7	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-252228/2 Calibration Date: 10/15/2018 01:16
 Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08
 Lab File ID: 2018.10.14LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.180	1.144		0.0485	0.0500	-3.0	50.0
13C4 PFBA	Ave	1.572	1.498		2.38	2.50	-4.7	50.0
13C5 PFPeA	Ave	1.030	1.031		2.50	2.50	0.1	50.0
13C3 PFBS	Ave	0.0212	0.0200		2.20	2.33	-5.4	50.0
M2-4:2 FTS	Ave	0.1405	0.1385		2.30	2.34	-1.4	50.0
13C2 PFHxA	Ave	1.137	1.106		2.43	2.50	-2.7	50.0
13C3 HFPO-DA	Ave	0.0819	0.0763		2.33	2.50	-6.8	50.0
13C4 PFHpA	Ave	1.039	0.9734		2.34	2.50	-6.3	50.0
18O2 PFHxS	Ave	1.245	1.262		2.40	2.37	1.4	50.0
M2-6:2 FTS	Ave	0.1946	0.2057		2.51	2.38	5.7	50.0
13C8 PFOA	Ave	1.426	1.480		2.54	2.45	3.8	50.0
13C4 PFOA	Ave	0.9722	0.9619		2.47	2.50	-1.1	50.0
13C4 PFOS	Ave	0.8305	0.8209		2.36	2.39	-1.2	50.0
13C5 PFNA	Ave	0.8082	0.8072		2.50	2.50	-0.1	50.0
13C8 PFOS	Ave	0.4254	0.4201		2.36	2.39	-1.3	50.0
13C8 FOSA	Ave	1.203	1.167		2.43	2.50	-3.0	50.0
M2-8:2 FTS	Ave	0.2057	0.2094		2.44	2.40	1.8	50.0
13C2 PFDA	Ave	0.7126	0.6891		2.42	2.50	-3.3	50.0
d3-NMeFOSAA	Ave	0.3636	0.3654		2.51	2.50	0.5	50.0
d5-NEtFOSAA	Ave	0.3798	0.3922		2.58	2.50	3.3	50.0
13C2 PFUnA	Ave	0.5728	0.5697		2.49	2.50	-0.5	50.0
13C2 PFDoA	Ave	0.6012	0.5647		2.35	2.50	-6.1	50.0
13C2 PFTeDA	Ave	0.7358	0.6838		2.32	2.50	-7.1	50.0
13C2 PFHxDA	Ave	1.360	1.221		2.25	2.50	-10.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65894.b\2018.10.14LLB_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 15-Oct-2018 01:16:32 ALS Bottle#: 38 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCVL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub38
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65894.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 16-Oct-2018 08:33:09 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: mongkols

Date: 16-Oct-2018 08:33:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.441	1.436	0.005	1.003	65108	0.0474		94.9	7.8	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.438	-0.002	0.539	3829324	2.38		95.3	8907	
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.708	-0.006	0.639	2636668	2.50		100	8785	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.710	1.710	0.0	1.005	56008	0.0492		98.5	7.9	
D 47 13C3 PFBS										
301.90 > 83.00	1.742	1.740	0.002	0.654	47623	2.20		94.6	427	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.742	0.0	1.000	74515	0.0463		105	19.0	
298.90 > 99.00	1.742	1.742	0.0	1.000	31934		2.33(1.25-3.74)		19.5	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.943	1.949	-0.006	0.729	330642	2.30		98.6	567	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.954	1.954	0.0	1.121	155316	0.5109		109	1295	
D 7 13C2 PFHxA										
315.00 > 270.00	1.985	1.981	0.004	0.745	2827514	2.43		97.3	8992	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.985	0.0	1.000	50821	0.0456		91.2	16.8	
313.00 > 119.00	1.985	1.985	0.0	1.000	4266		11.91(5.03-15.10)		17.4	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.006	2.006	0.0	1.151	68339	0.0494		105	355	
349.00 > 99.00	2.006	2.006	0.0	1.151	23437		2.92(1.36-4.07)		131	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.079	2.075	0.004	0.780	195085	2.33		93.2	848	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.079	2.079	0.0	1.000	12250	0.0533		107	18.0	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.310	0.0	1.000	58017	0.0549		110	17.9	
363.00 > 169.00	2.310	2.310	0.0	1.000	20978		2.77(1.13-3.40)		28.4	
D 9 13C4 PFHpA										
367.00 > 322.00	2.310	2.314	-0.004	0.867	2488661	2.34		93.7	6518	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.325	-0.004	0.871	3053173	2.40		101	4616	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.332	0.0	1.005	66233	0.0461		101	136	
399.00 > 99.00	2.332	2.332	0.0	1.005	21320		3.11(1.50-4.49)		62.1	
77 DONA										
377.00 > 251.00	2.354	2.355	-0.001	0.775	140356	0.0438		92.9	224	
377.00 > 85.00	2.354	2.355	-0.001	0.775	88956		1.58(0.85-2.54)		517	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.635	2.631	0.004	0.989	499722	2.51		106	2908	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.635	2.635	0.0	1.000	145470	0.4518		95.3	695	
D 73 13C8 PFOA										
421.00 > 376.00	2.651	2.655	-0.004	0.995	3703599	2.54		104	6726	
D 14 13C4 PFOA										
417.00 > 372.00	2.658	2.662	-0.004	0.997	2459359	2.47		98.9	10620	
* 62 13C2 PFOA										
415.00 > 370.00	2.665	2.665	0.0		2556718	2.50			5464	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.658	2.665	-0.007	1.000	70860	0.0621		124	6.3	M
413.00 > 169.00	2.665	2.665	0.0	1.003	32960		2.15(0.84-2.52)		60.4	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.672	2.672	0.0	0.880	48432	0.0443		93.2	293	
449.00 > 99.00	2.665	2.672	-0.007	0.877	13586		3.56(1.94-5.82)		87.8	
D 72 13C8 PFOS										
507.00 > 99.00	3.038	3.029	0.009	1.140	1026709	2.36		98.7	3304	
20 Perfluorononanoic acid										
463.00 > 419.00	3.038	3.033	0.005	1.000	44239	0.0503		101	17.9	
463.00 > 169.00	3.038	3.033	0.005	1.000	10448		4.23(1.90-5.69)		101	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.038	3.033	0.005	1.000	36675	0.0389		83.9	114	
499.00 > 99.00	3.030	3.033	-0.003	0.998	10008		3.66(2.31-6.93)		57.0	
D 18 13C4 PFOS										
503.00 > 80.00	3.038	3.037	0.001	1.140	2006443	2.36		98.8	3409	
D 19 13C5 PFNA										
468.00 > 423.00	3.038	3.037	0.001	1.140	2063846	2.50		99.9	6126	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.254	3.251	0.003	1.071	69212	0.0439		94.3	397	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.378	3.374	0.004	1.000	53697	0.0464		92.8	483	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.378	3.377	0.001	1.268	2983655	2.43		97.0	3821	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.386	3.381	0.005	1.000	130200	0.5022		105	649	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.386	3.384	0.002	1.270	512849	2.44		102	2500	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.393	3.388	0.005	1.117	29198	0.0442		92.1	241	
549.00 > 99.00	3.393	3.388	0.005	1.117	11253		2.59(1.33-3.97)		166	
D 23 13C2 PFDA										
515.00 > 470.00	3.401	3.392	0.009	1.276	1761887	2.42		96.7	3799	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.401	3.396	0.005	1.000	35220	0.0509		102	45.1	
513.00 > 169.00	3.401	3.396	0.005	1.000	5821		6.05(2.36-7.09)		28.7	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.554	3.553	0.001	1.334	934177	2.51		100	1611	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.562	3.557	0.005	1.002	181981	0.5094		102	152	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.717	3.714	0.003	1.223	24009	0.0457		94.8	201	
599.00 > 99.00	3.717	3.714	0.003	1.223	9374		2.56(1.39-4.16)		72.3	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.725	3.716	0.009	1.398	1002830	2.58		103	963	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.725	3.722	0.003	1.000	162320	0.4819		96.4	439	
D 30 13C2 PFUnA										
565.00 > 520.00	3.734	3.724	0.010	1.401	1456613	2.49		99.5	4173	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.725	3.731	-0.006	0.998	24338	0.0467		93.5	27.4	
563.00 > 169.00	3.734	3.731	0.003	1.000	7769		3.13(2.12-6.36)		95.9	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.889	3.885	0.004	1.280	106984	0.0450		95.5	487	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.029	4.019	0.010	1.000	28135	0.0441		88.3	21.8	
613.00 > 169.00	4.021	4.019	0.002	0.998	7887		3.57(2.13-6.40)		64.5	
D 36 13C2 PFDaA										
615.00 > 570.00	4.029	4.020	0.009	1.512	1443774	2.35		93.9	2570	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.029	4.027	0.002	1.190	7871	0.0434		90.1	98.4	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.265	4.262	0.003	1.404	10793	0.0439		90.6	81.9	
699.00 > 99.00	4.265	4.262	0.003	1.404	17167		0.63(0.00-0.00)		147	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.292	4.289	0.003	1.065	31694	0.0524		105	26.5	
663.00 > 169.00	4.292	4.289	0.003	1.065	9945		3.19(1.25-3.76)		110	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.534	4.522	0.012	1.002	8826	0.0472		94.5	106	
713.00 > 219.00	4.515	4.522	-0.007	0.998	7819		1.13(0.71-2.13)		135	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.524	4.523	0.001	1.698	1748171	2.32		92.9	2739	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.944	4.943	0.001	1.000	81102	0.0486		97.3	17.6	
813.00 > 169.00	4.944	4.943	0.001	1.000	16104		5.04(2.86-8.58)		152	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.944	4.944	0.0	1.855	3122884	2.25		89.8	4088	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.301	5.300	0.001	1.072	71476	0.0485		97.0	12.9	
913.00 > 169.00	5.301	5.300	0.001	1.072	9788		7.30(3.83-11.48)		104	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65894.b\2018.10.14LLB_005.d

Injection Date: 15-Oct-2018 01:16:32

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 38

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

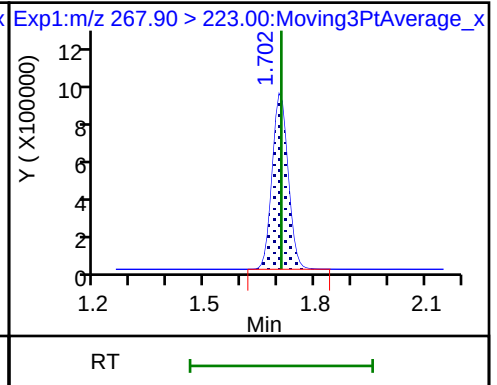
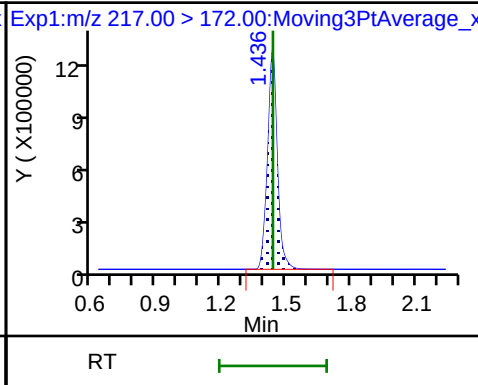
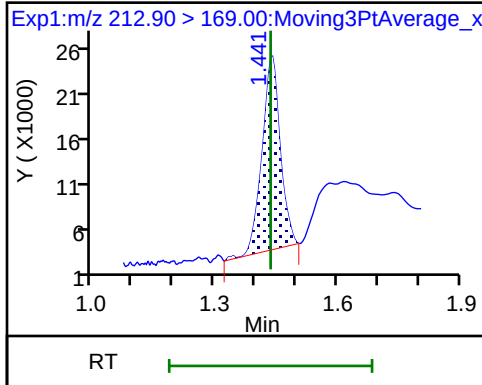
Method: A8_N

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

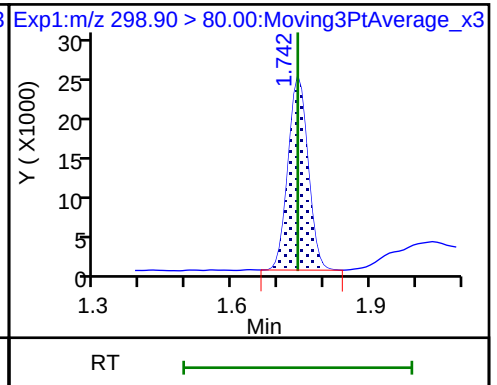
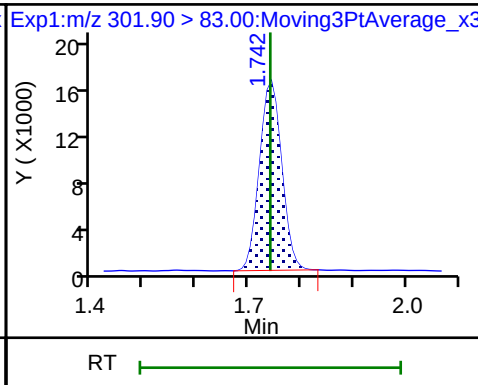
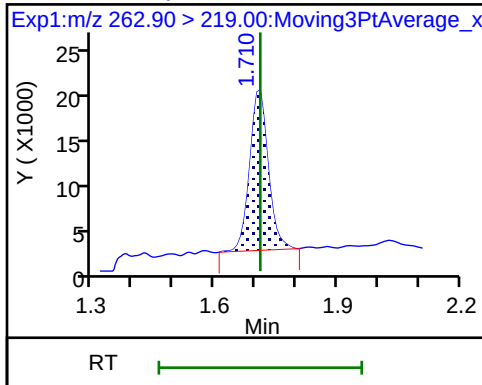
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

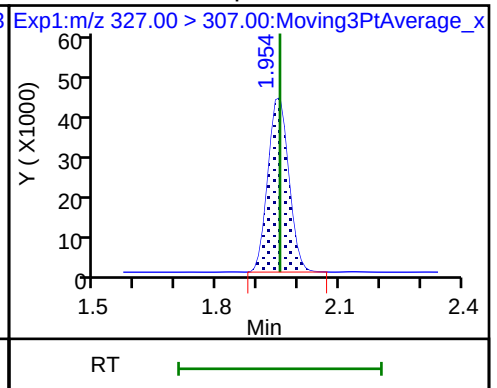
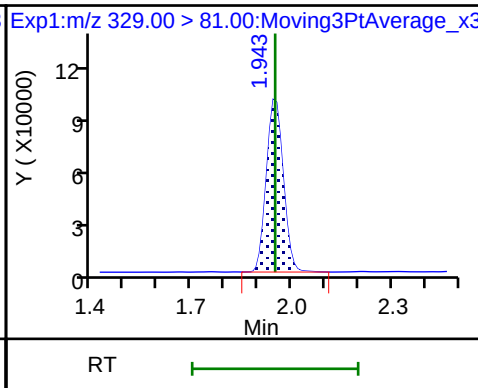
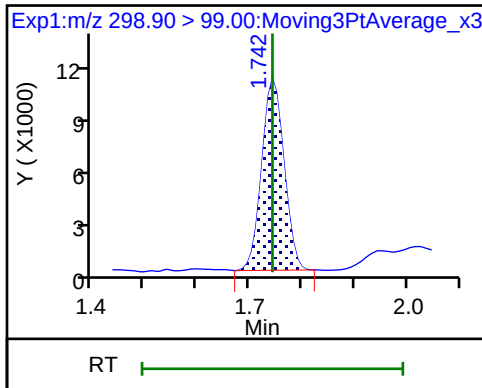
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

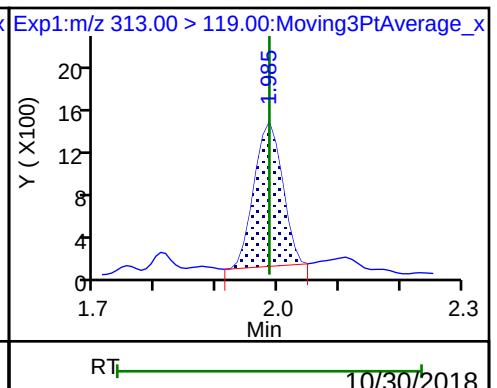
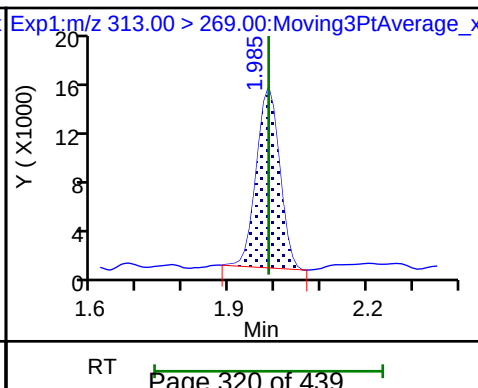
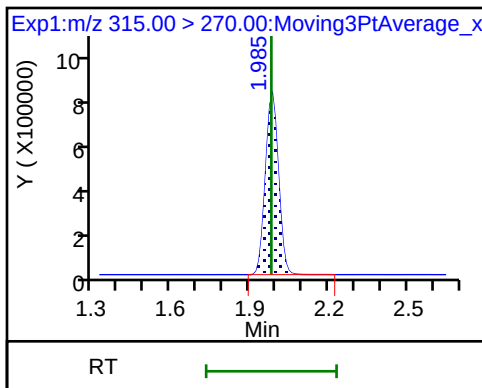
61 1H,1H,2H,2H-perfluorohexanesulfoni

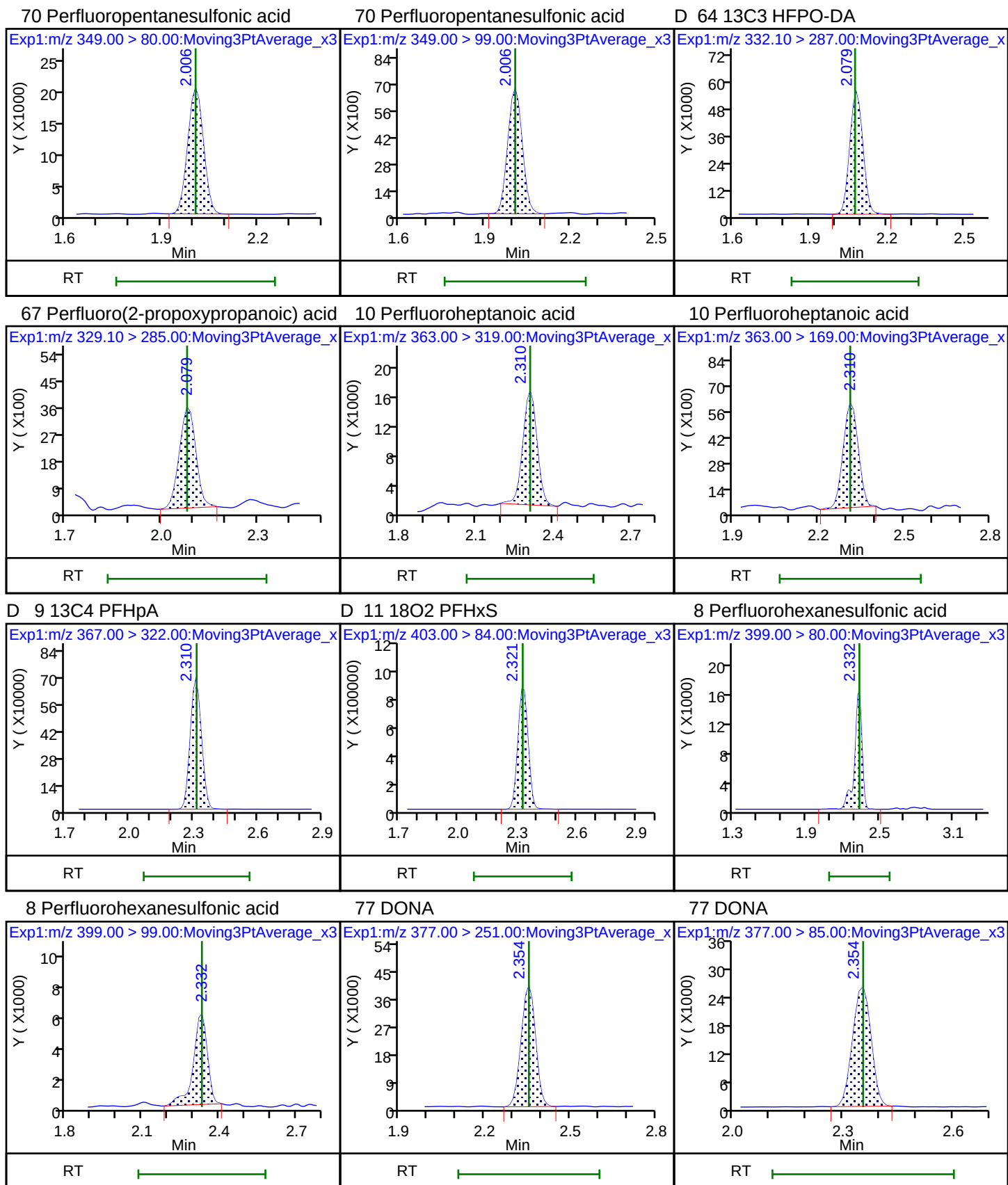


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

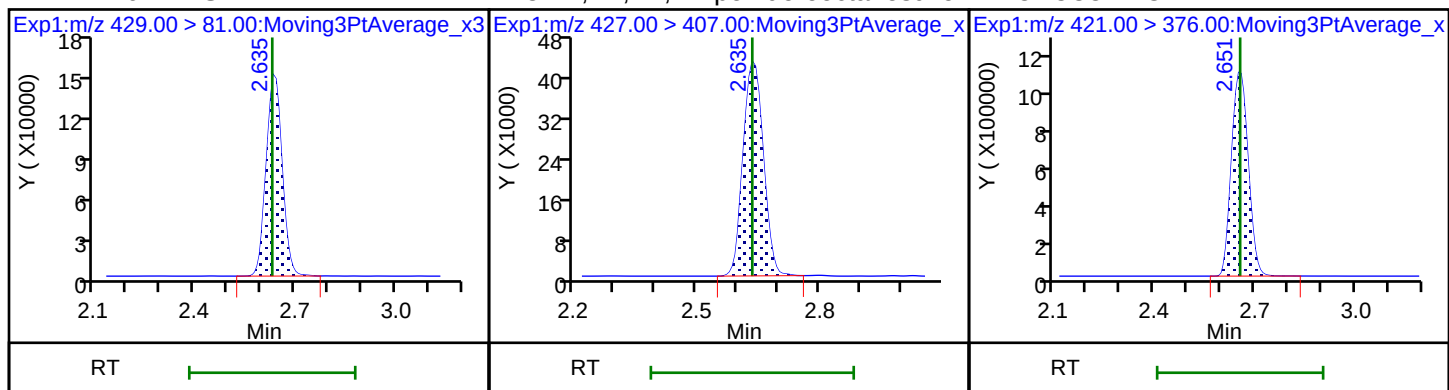
6 Perfluorohexanoic acid





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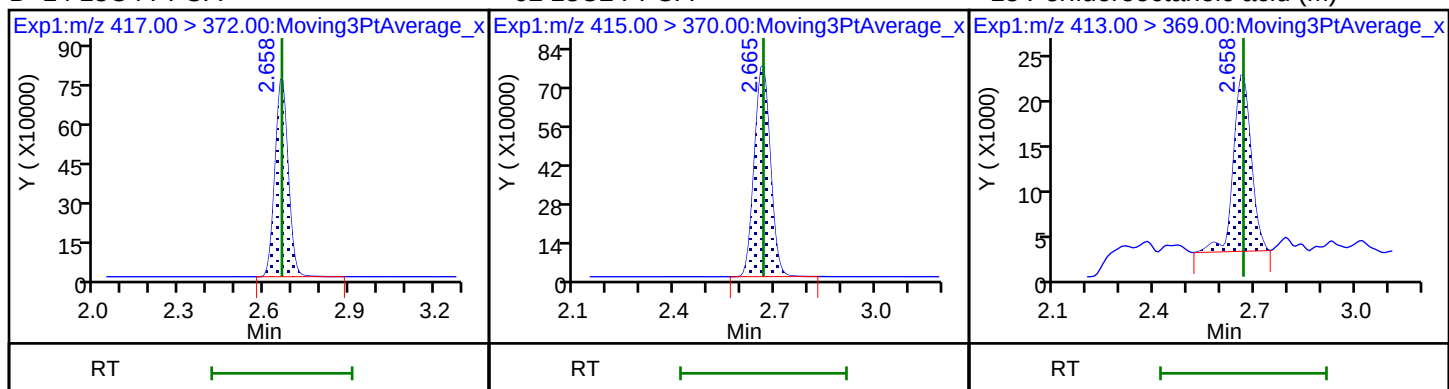
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D 14 13C4 PFOA

* 62 13C2 PFOA

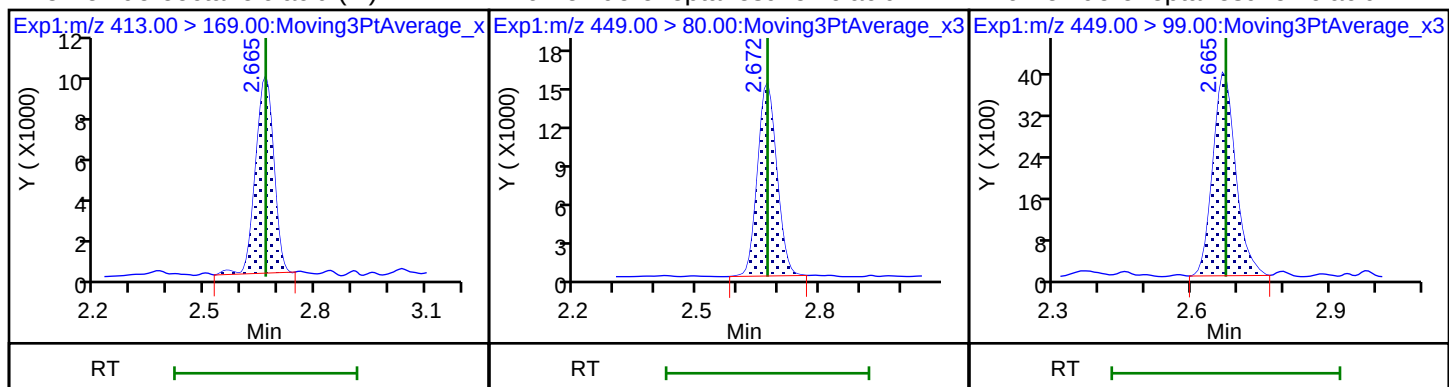
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid (M)

16 Perfluoroheptanesulfonic acid

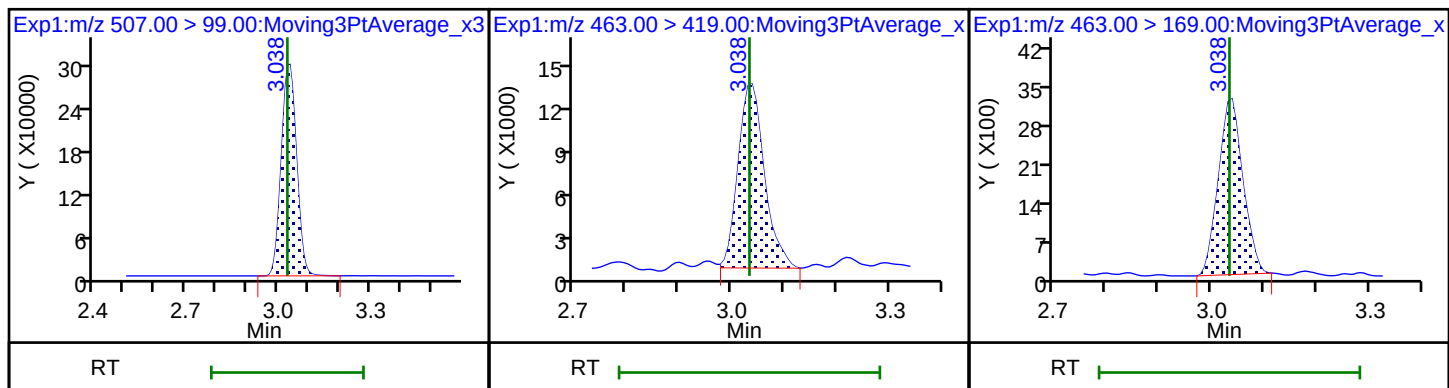
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

20 Perfluorononanoic acid

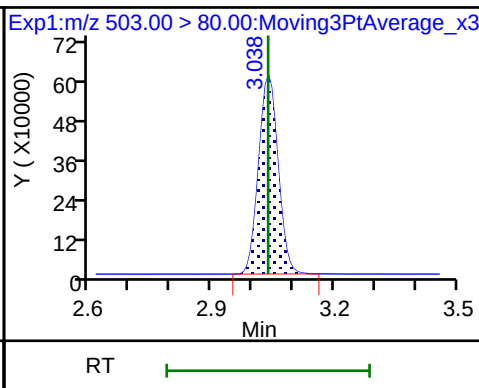
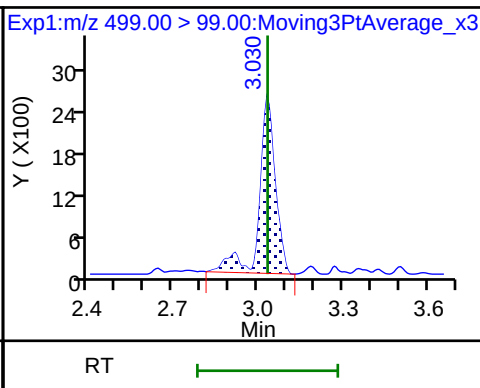
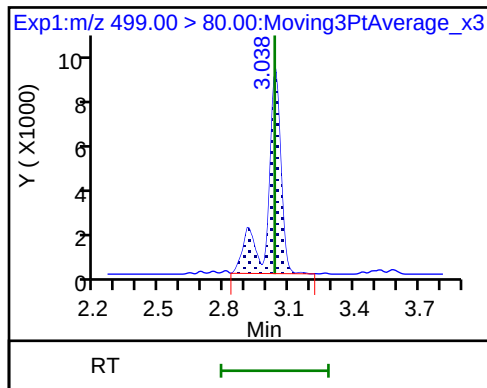
20 Perfluorononanoic acid



17 Perfluorooctanesulfonic acid

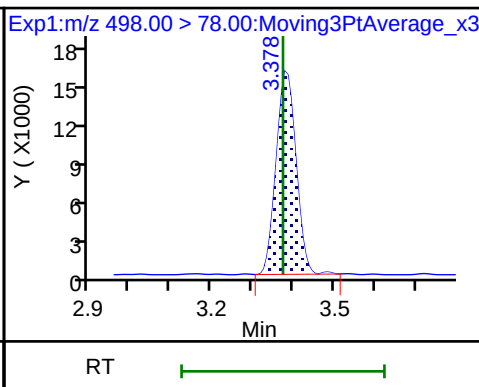
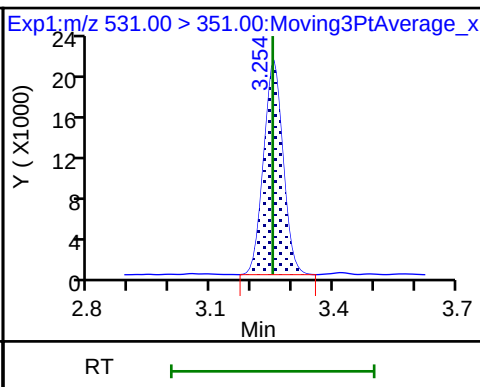
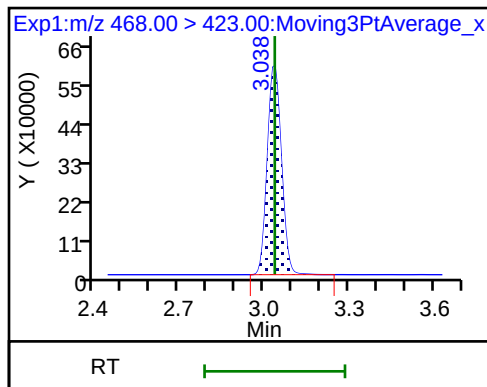
17 Perfluorooctanesulfonic acid

D 18 13C4 PFOS



D 19 13C5 PFNA

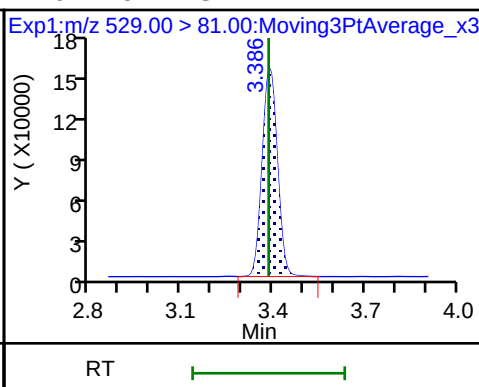
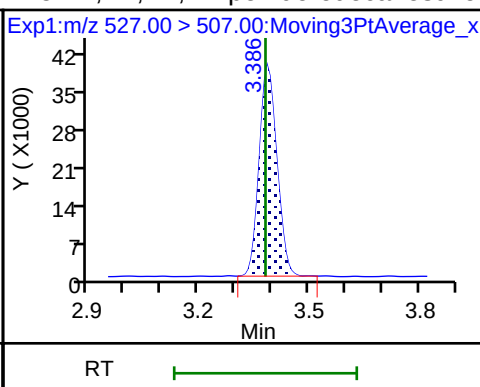
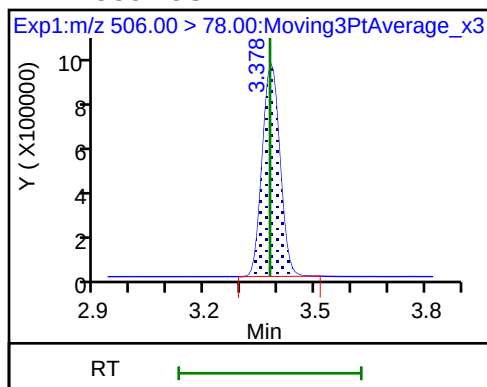
69 9-Chlorohexadecafluoro-3-oxanonan-2 Perfluorooctanesulfonamide



D 21 13C8 FOSA

25 1H,1H,2H,2H-perfluorodecanesulfonamide

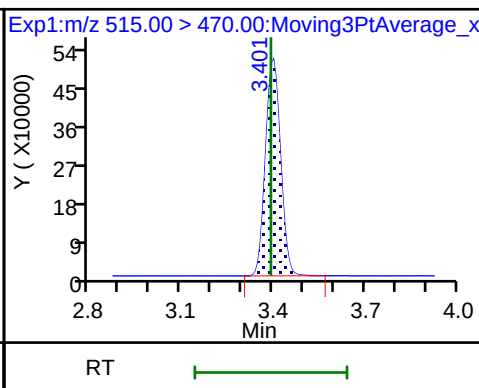
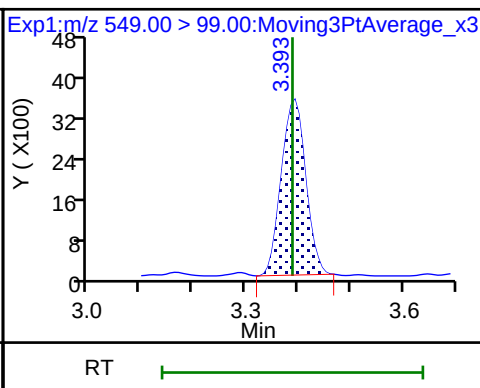
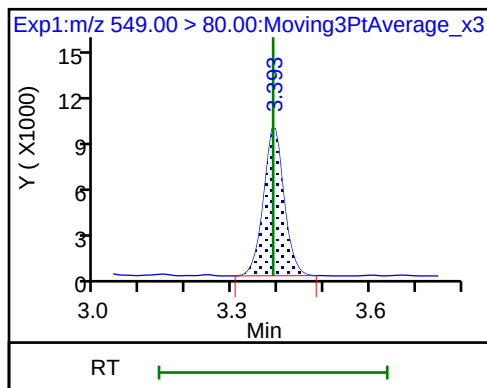
D 26 M2-8:2 FTS

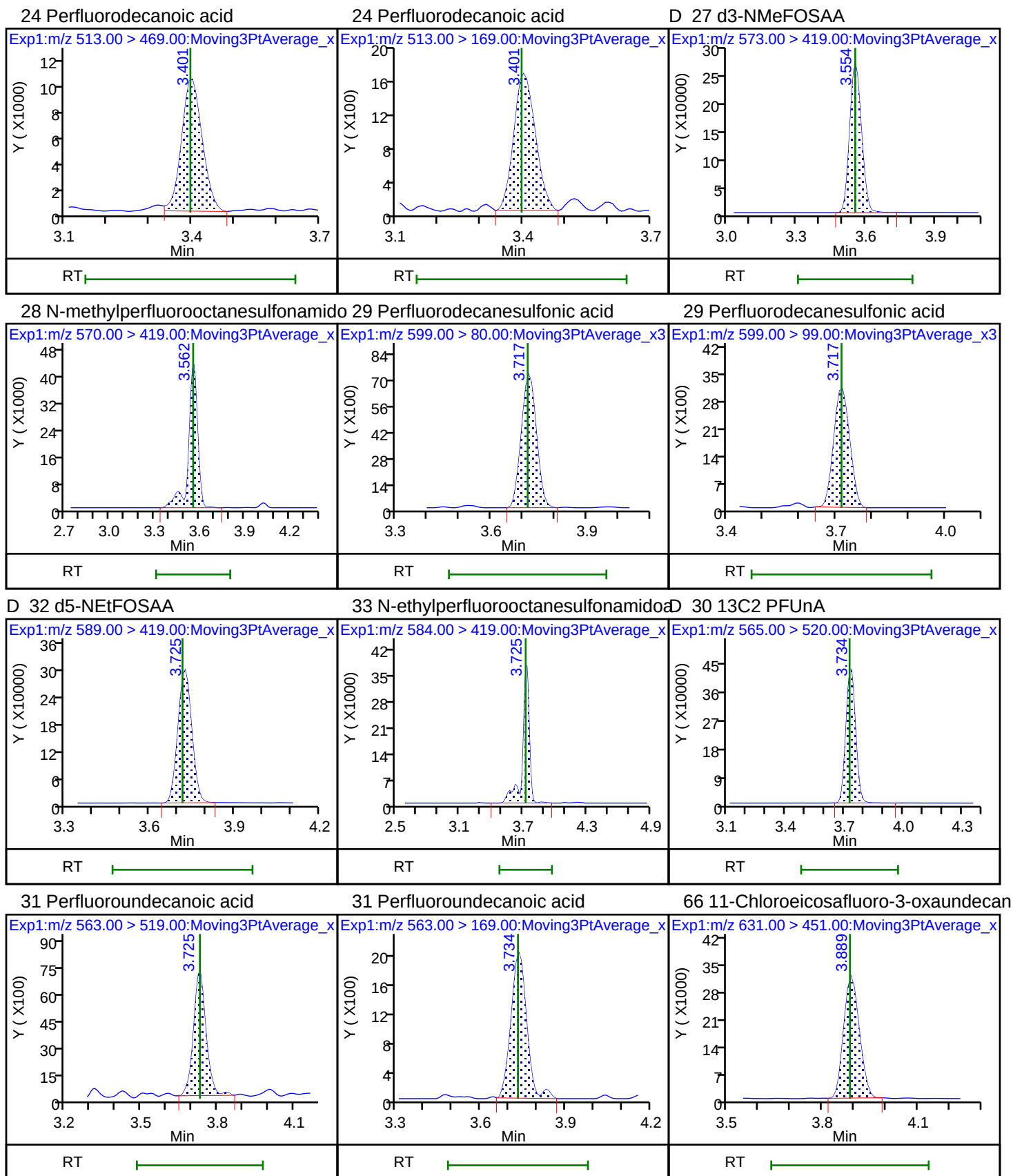


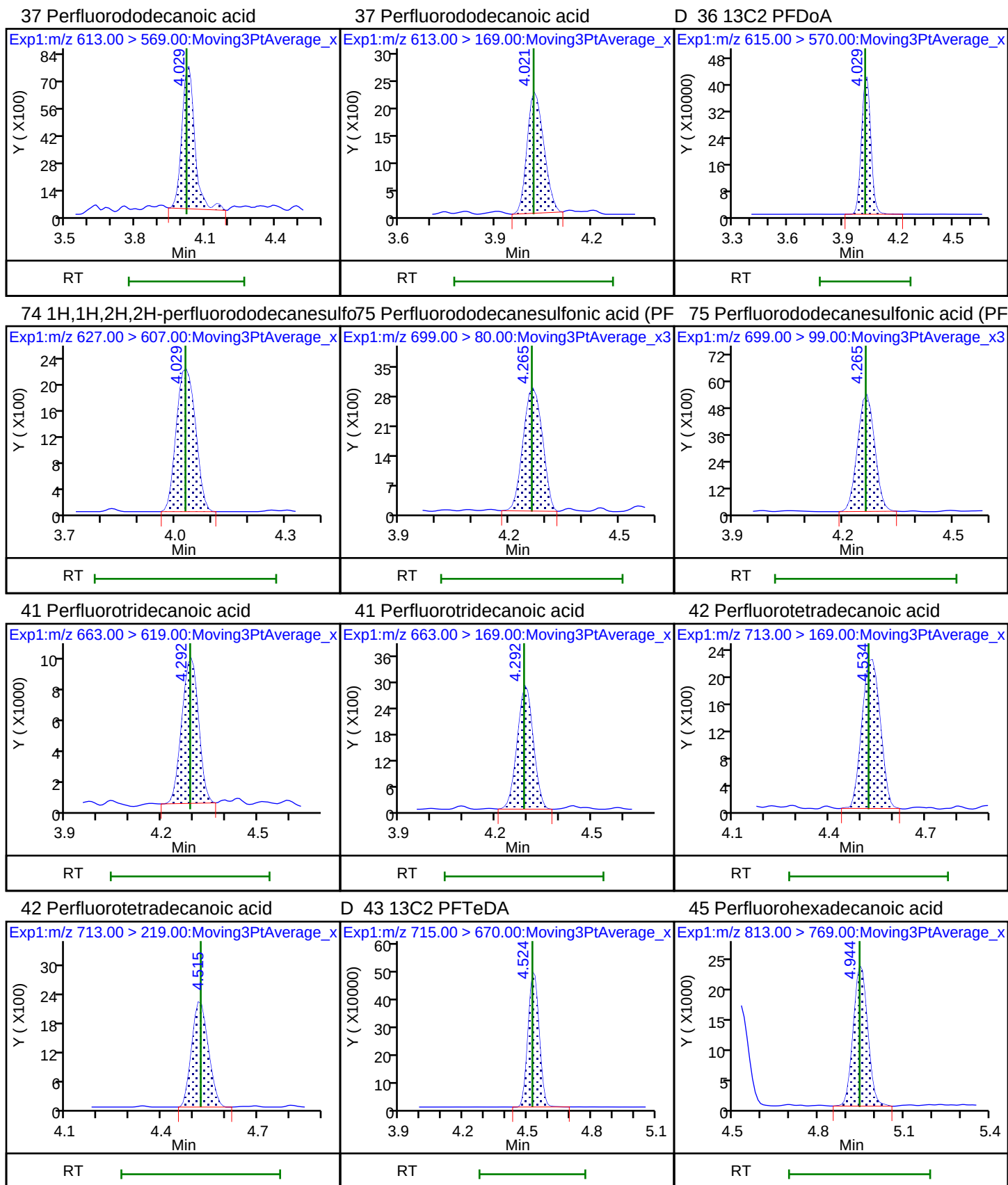
68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

D 23 13C2 PFDA



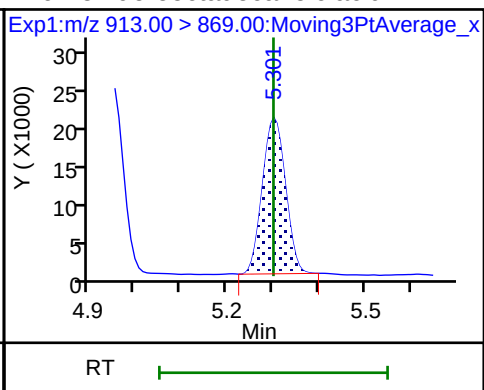
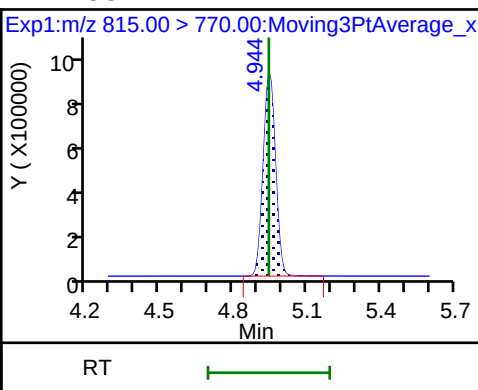
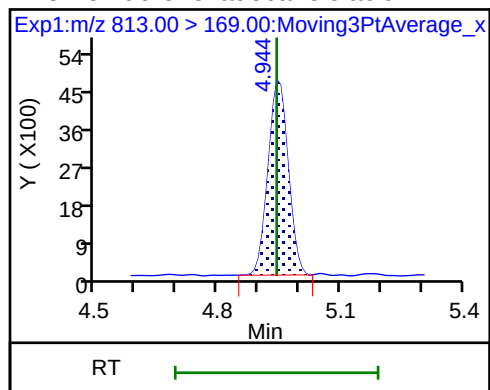




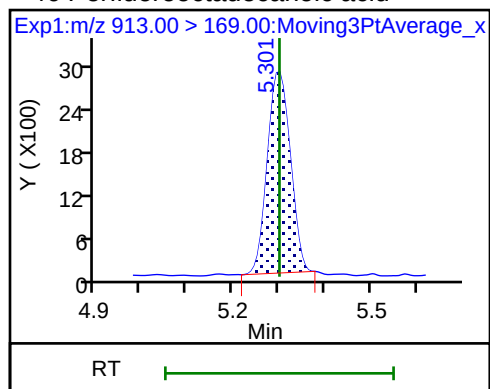
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

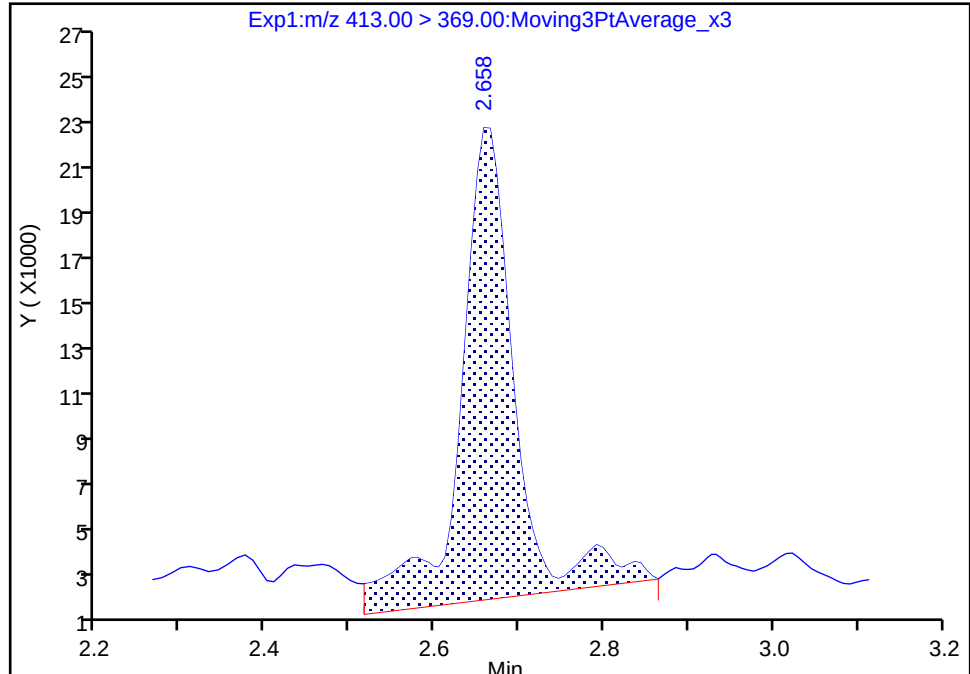
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65894.b\2018.10.14LLB_005.d
Injection Date: 15-Oct-2018 01:16:32 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

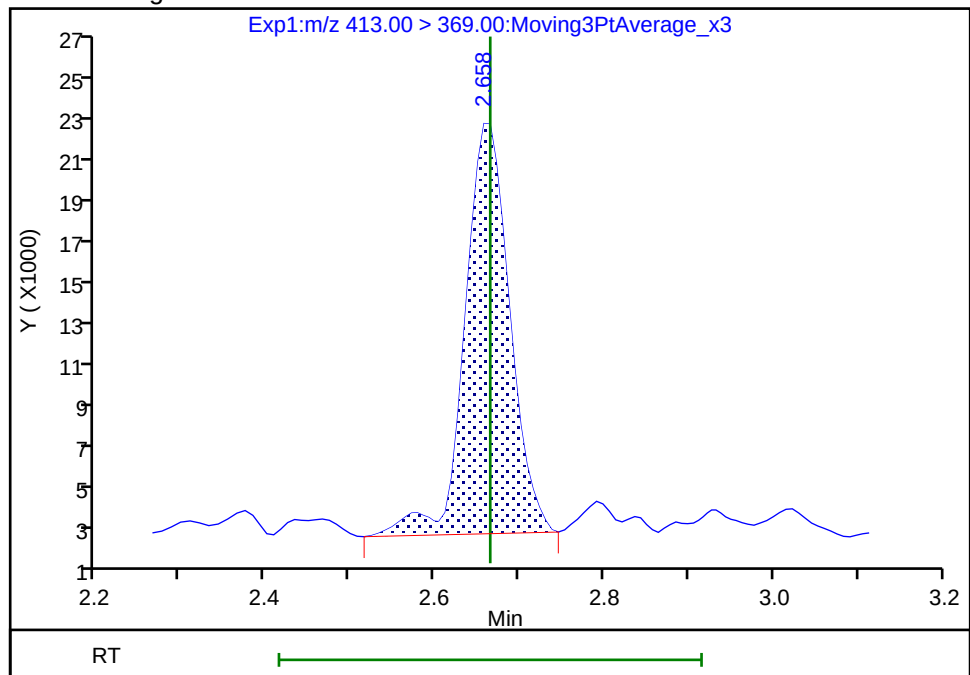
RT: 2.66
Area: 90007
Amount: 0.078926
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 70860
Amount: 0.062136
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 16-Oct-2018 08:32:43

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

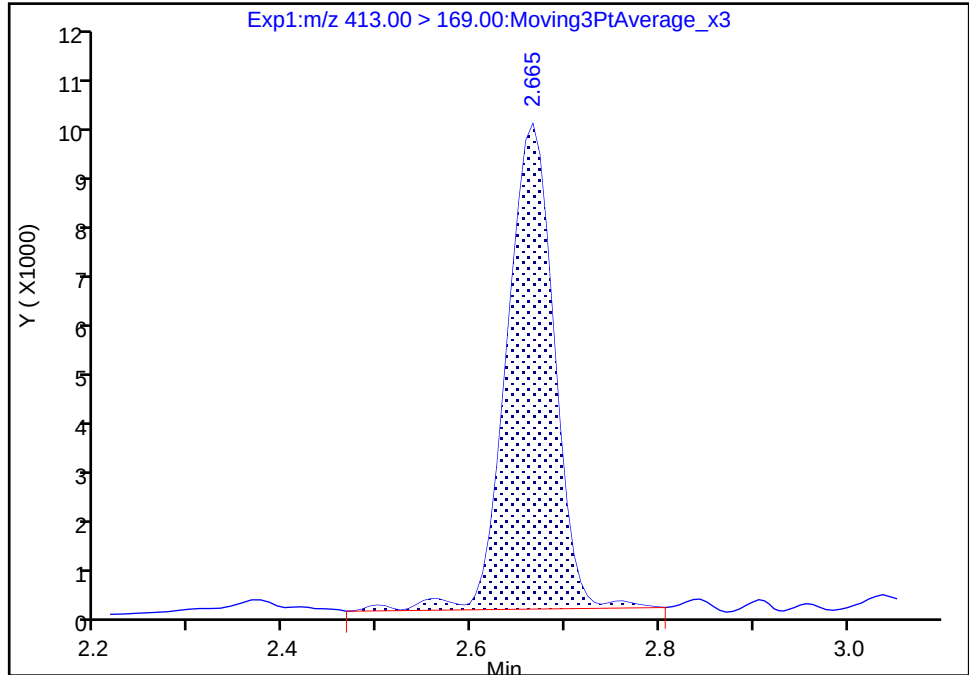
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65894.b\2018.10.14LLB_005.d
Injection Date: 15-Oct-2018 01:16:32 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 38 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

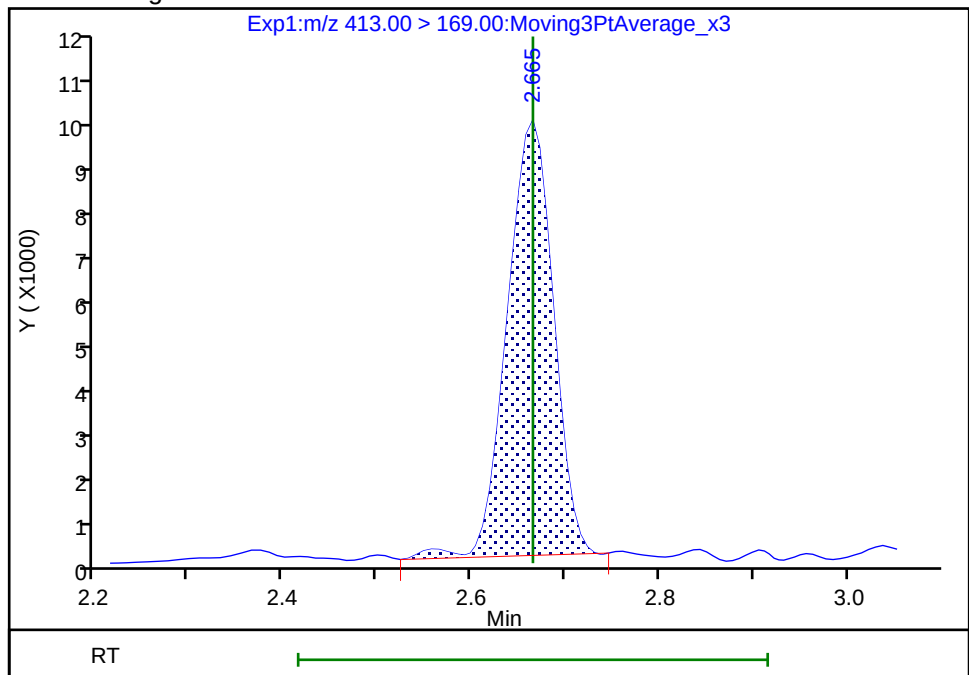
RT: 2.67
Area: 34146
Amount: 0.078926
Amount Units: ng/ml

Processing Integration Results



RT: 2.67
Area: 32960
Amount: 0.062136
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 16-Oct-2018 08:32:46

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Lab Sample ID: CCV 320-252228/3 Calibration Date: 10/15/2018 01:23

Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08

Lab File ID: 2018.10.14LLB_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8961	0.9130		1.02	1.00	1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.079	1.070		0.992	1.00	-0.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.58	76.64		0.862	0.884	-2.5	50.0
4:2 FTS	AveID	14.84	14.65		0.922	0.934	-1.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9858	0.8995		0.912	1.00	-8.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.53	66.82		0.928	0.938	-1.0	50.0
HFPO-DA (GenX)	AveID	2.943	2.961		1.01	1.00	0.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.061	1.112		1.05	1.00	4.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.003		0.821	0.910	-9.8	40.0
DONA	AveID	3.821	3.924		0.967	0.942	2.7	50.0
6:2 FTS	AveID	1.530	1.490		0.923	0.948	-2.6	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.159	1.148		0.991	1.00	-1.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.301	1.344		0.983	0.952	3.3	50.0
Perfluorononanoic acid (PFNA)	AveID	1.065	1.066		1.00	1.00	0.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.122	1.092		0.903	0.928	-2.7	40.0
F-53B Major	AveID	1.877	1.909		0.948	0.932	1.7	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9701	0.9884		1.02	1.00	1.9	40.0
8:2 FTS	AveID	1.211	1.312		1.04	0.958	8.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7870	0.7862		0.959	0.960	-0.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9821	0.9747		0.992	1.00	-0.8	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9561	0.8899		0.931	1.00	-6.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6258	0.6412		0.988	0.964	2.5	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8397	0.8263		0.984	1.00	-1.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8940	0.8608		0.963	1.00	-3.7	40.0
F-53B Minor	AveID	2.833	2.825		0.939	0.942	-0.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.104	1.066		0.966	1.00	-3.4	40.0
10:2 FTS	AveID	0.8464	0.8836		1.01	0.964	4.4	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2931	0.2938		0.971	0.968	0.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.046	0.9747		0.931	1.00	-6.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2672	0.2653		0.993	1.00	-0.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8982		0.990	1.00	-1.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Lab Sample ID: CCV 320-252228/3 Calibration Date: 10/15/2018 01:23
 Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08
 Lab File ID: 2018.10.14LLB_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.180	1.083		0.918	1.00	-8.2	50.0
13C4 PFBA	Ave	1.572	1.570		2.50	2.50	-0.1	50.0
13C5 PFPeA	Ave	1.030	1.029		2.50	2.50	-0.0	50.0
13C3 PFBS	Ave	0.0212	0.0218		2.40	2.33	3.1	50.0
M2-4:2 FTS	Ave	0.1405	0.1481		2.46	2.34	5.4	50.0
13C2 PFHxA	Ave	1.137	1.175		2.58	2.50	3.4	50.0
13C3 HFPO-DA	Ave	0.0819	0.0815		2.49	2.50	-0.4	50.0
13C4 PFHpA	Ave	1.039	1.026		2.47	2.50	-1.2	50.0
18O2 PFHxS	Ave	1.245	1.250		2.37	2.37	0.4	50.0
M2-6:2 FTS	Ave	0.1946	0.2055		2.51	2.38	5.6	40.0
13C8 PFOA	Ave	1.426	1.493		2.56	2.45	4.7	50.0
13C4 PFOA	Ave	0.9722	0.9548		2.46	2.50	-1.8	50.0
13C4 PFOS	Ave	0.8305	0.8123		2.34	2.39	-2.2	50.0
13C5 PFNA	Ave	0.8082	0.7906		2.45	2.50	-2.2	50.0
13C8 PFOS	Ave	0.4254	0.4336		2.44	2.39	1.9	50.0
13C8 FOSA	Ave	1.203	1.167		2.43	2.50	-3.0	50.0
M2-8:2 FTS	Ave	0.2057	0.2149		2.50	2.40	4.5	40.0
13C2 PFDA	Ave	0.7126	0.6929		2.43	2.50	-2.8	50.0
d3-NMeFOSAA	Ave	0.3636	0.3986		2.74	2.50	9.6	50.0
13C2 PFUnA	Ave	0.5728	0.5574		2.43	2.50	-2.7	50.0
d5-NEtFOSAA	Ave	0.3798	0.4034		2.66	2.50	6.2	50.0
13C2 PFDoA	Ave	0.6012	0.5933		2.47	2.50	-1.3	50.0
13C2 PFTeDA	Ave	0.7358	0.6932		2.36	2.50	-5.8	50.0
13C2 PFHxDA	Ave	1.360	1.013		1.86	2.50	-25.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65894.b\2018.10.14LLB_006.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 15-Oct-2018 01:23:58 ALS Bottle#: 28 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65894.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 16-Oct-2018 08:34:01 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK001

First Level Reviewer: mongkols

Date: 16-Oct-2018 08:34:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	1537909	1.02		102	191	
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.438	-0.002	0.539	4211115	2.50		99.9	11191	
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.708	-0.006	0.639	2761975	2.50		100.0	8659	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.710	1.710	0.0	1.005	1181972	0.99		99.2	172	
D 47 13C3 PFBS										
301.90 > 83.00	1.742	1.740	0.002	0.654	54496	2.40		103	489	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.742	0.0	1.000	1587923	0.8621		97.5	401	
298.90 > 99.00	1.742	1.742	0.0	1.000	663100		2.39(1.25-3.74)		388	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.954	1.949	0.005	0.733	371124	2.46		105	702	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.954	1.954	0.0	1.121	320735	0.9219		98.7	2847	
D 7 13C2 PFHxA										
315.00 > 270.00	1.985	1.981	0.004	0.745	3153640	2.58		103	10426	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.985	0.0	1.000	1134695	0.9125		91.2	357	
313.00 > 119.00	1.985	1.985	0.0	1.000	104153		10.89(5.03-15.10)		299	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.006	2.006	0.0	1.151	1469088	0.9282		99.0	4633	
349.00 > 99.00	2.006	2.006	0.0	1.151	538047		2.73(1.36-4.07)		2795	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.079	2.075	0.004	0.780	218749	2.49		99.6	1024	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.079	2.079	0.0	1.000	259093	1.01		101	324	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.310	0.0	1.000	1225001	1.05		105	381	
363.00 > 169.00	2.310	2.310	0.0	1.000	483246		2.53(1.13-3.40)		559	
D 9 13C4 PFHpA										
367.00 > 322.00	2.310	2.314	-0.004	0.867	2753166	2.47		98.8	7040	
D 11 18O2 PFHxS										
403.00 > 84.00	2.332	2.325	0.007	0.875	3173069	2.37		100	5213	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.332	2.332	0.0	1.000	1224891	0.8205		90.2	1907	
399.00 > 99.00	2.332	2.332	0.0	1.000	424246		2.89(1.50-4.49)		919	
77 DONA										
377.00 > 251.00	2.355	2.355	0.0	0.776	3222109	0.9674		103	3760	
377.00 > 85.00	2.355	2.355	0.0	0.776	1981762		1.63(0.85-2.54)		6224	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.635	2.631	0.004	0.989	523695	2.51		106	1901	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.635	2.635	0.0	1.000	311537	0.9233		97.4	1556	
D 73 13C8 PFOA										
421.00 > 376.00	2.658	2.655	0.003	0.997	3921879	2.56		105	8039	
D 14 13C4 PFOA										
417.00 > 372.00	2.665	2.662	0.003	1.000	2561691	2.46		98.2	4306	
* 62 13C2 PFOA										
415.00 > 370.00	2.665	2.665	0.0		2683004	2.50			4598	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.665	2.665	0.0	1.000	1177088	0.99		99.0	119	
413.00 > 169.00	2.665	2.665	0.0	1.000	641740		1.83(0.84-2.52)		860	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.672	2.672	0.0	0.881	1115288	0.9835		103	3138	
449.00 > 99.00	2.672	2.672	0.0	0.881	281212		3.97(1.94-5.82)		1307	
D 72 13C8 PFOS										
507.00 > 99.00	3.033	3.029	0.004	1.138	1112209	2.44		102	4732	
20 Perfluorononanoic acid										
463.00 > 419.00	3.033	3.033	0.0	1.000	904651	1.00		100	351	
463.00 > 169.00	3.033	3.033	0.0	1.000	231613		3.91(1.90-5.69)		1583	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.033	3.033	0.0	1.000	883690	0.9031		97.3	1556	
499.00 > 99.00	3.033	3.033	0.0	1.000	210137		4.21(2.31-6.93)		999	
D 18 13C4 PFOS										
503.00 > 80.00	3.033	3.037	-0.004	1.138	2083399	2.34		97.8	3885	
D 19 13C5 PFNA										
468.00 > 423.00	3.033	3.037	-0.004	1.138	2121105	2.45		97.8	5511	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.251	3.251	0.0	1.072	1551291	0.9483		102	3935	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.374	3.374	0.0	1.000	1237922	1.02		102	2653	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.374	3.377	-0.003	1.266	3131201	2.43		97.0	5762	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.381	3.381	0.0	0.998	289840	1.04		108	1148	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.388	3.384	0.004	1.271	552412	2.50		104	2863	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.388	3.388	0.0	1.117	657923	0.9590		99.9	2683	
549.00 > 99.00	3.388	3.388	0.0	1.117	235248		2.80(1.33-3.97)		1476	
D 23 13C2 PFDA										
515.00 > 470.00	3.396	3.392	0.004	1.274	1858973	2.43		97.2	5320	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.396	3.396	0.0	1.000	724784	0.99		99.2	793	
513.00 > 169.00	3.396	3.396	0.0	1.000	154195		4.70(2.36-7.09)		285	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.549	3.553	-0.004	1.332	1069533	2.74		110	2274	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.557	3.557	0.0	1.002	380727	0.9308		93.1	429	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.714	3.714	0.0	1.225	538823	0.9878		102	2130	
599.00 > 99.00	3.714	3.714	0.0	1.225	178695		3.02(1.39-4.16)		1243	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.722	3.716	0.006	1.397	1082335	2.66		106	1581	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.722	3.722	0.0	1.000	357735	0.9840		98.4	1567	
D 30 13C2 PFUnA										
565.00 > 520.00	3.722	3.724	-0.002	1.397	1495588	2.43		97.3	3284	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.731	3.731	0.0	1.002	514928	0.9629		96.3	562	
563.00 > 169.00	3.731	3.731	0.0	1.002	134477		3.83(2.12-6.36)		732	
35 MeFOSA										
512.00 > 169.00	3.885	3.885	0.0		369820	NC			462	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.885	3.885	0.0	1.281	2319767	0.9395		99.7	5477	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.019	4.019	0.0	1.000	678831	0.9660		96.6	587	
613.00 > 169.00	4.019	4.019	0.0	1.000	176556		3.84(2.13-6.40)		2383	
D 36 13C2 PFDaA										
615.00 > 570.00	4.019	4.020	-0.001	1.508	1591838	2.47		98.7	2830	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.027	4.027	0.0	1.189	196473	1.01		104	1745	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.262	4.262	0.0	1.405	247940	0.9705		100	1606	
699.00 > 99.00	4.262	4.262	0.0	1.405	376358		0.66(0.00-0.00)		1896	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.289	4.289	0.0	1.067	620627	0.9315		93.1	446	
663.00 > 169.00	4.289	4.289	0.0	1.067	214824		2.89(1.25-3.76)		1144	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.522	0.0	1.000	197357	0.99		99.3	1228	
713.00 > 219.00	4.522	4.522	0.0	1.000	136161		1.45(0.71-2.13)		817	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.522	4.523	-0.001	1.697	1859898	2.36		94.2	3790	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.943	4.943	0.0	1.000	976924	0.9898		99.0	197	
813.00 > 169.00	4.943	4.943	0.0	1.000	203461		4.80(2.86-8.58)		1553	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.943	4.944	-0.001	1.855	2719114	1.86		74.5	3318	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.300	5.300	0.0	1.072	1178085	0.9177		91.8	198	
913.00 > 169.00	5.293	5.300	-0.007	1.071	160372		7.35(3.83-11.48)		1071	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65894.b\2018.10.14LLB_006.d

Injection Date: 15-Oct-2018 01:23:58

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 28

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

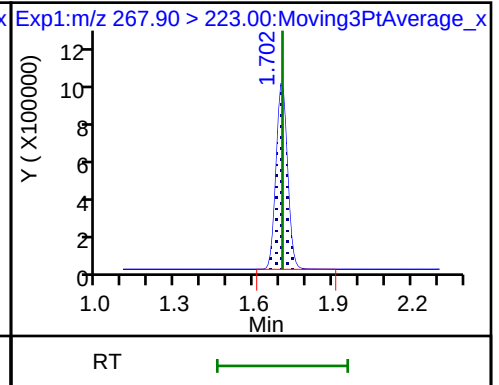
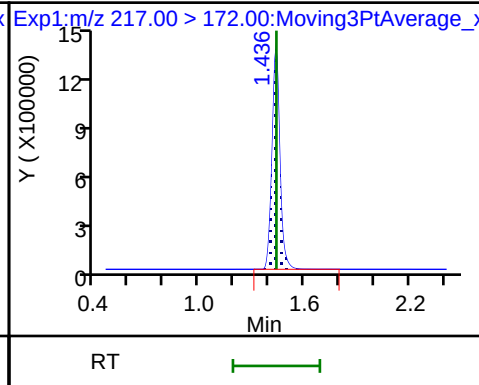
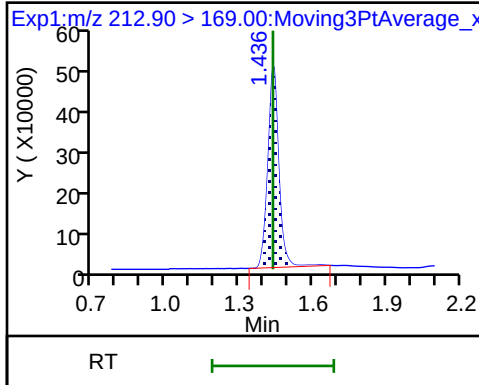
Method: A8_N

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

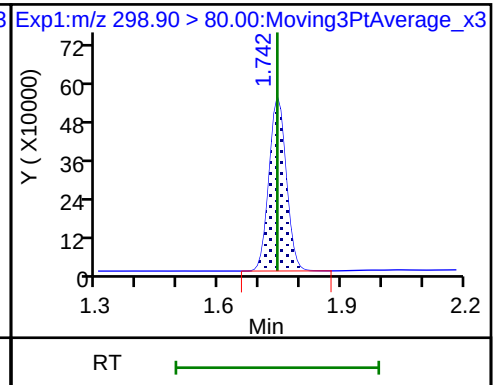
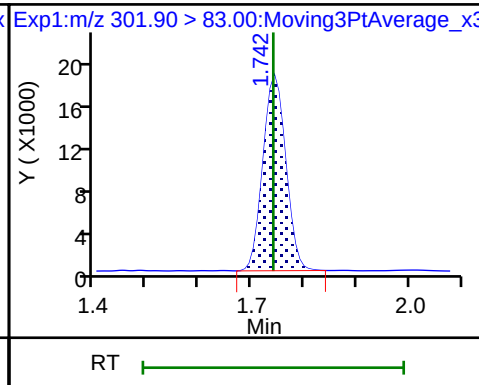
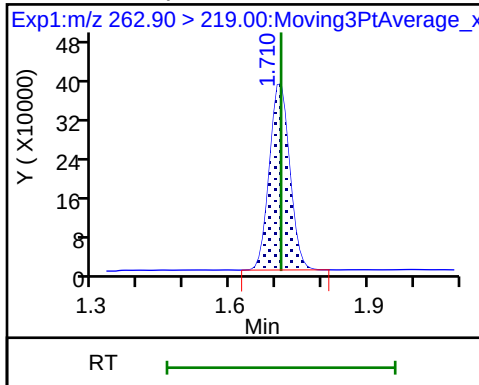
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

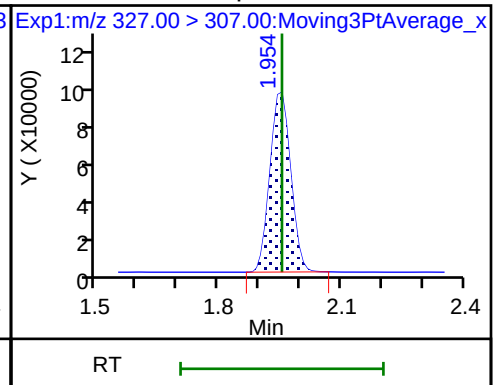
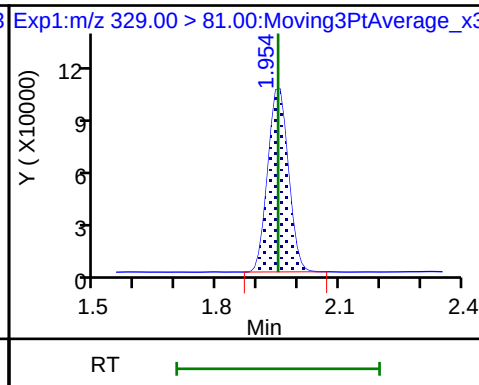
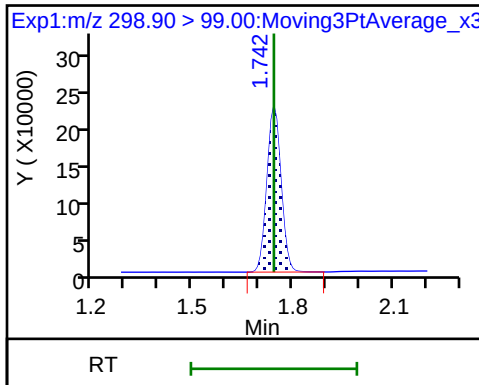
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

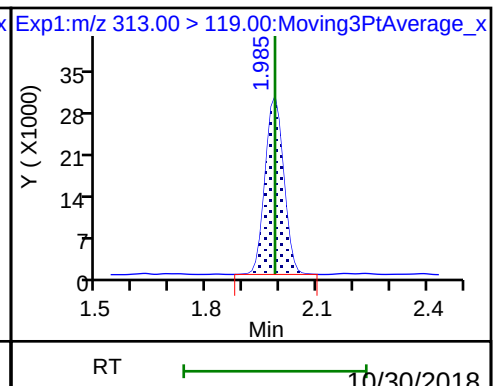
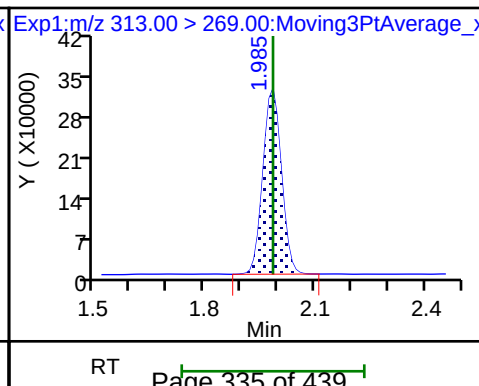
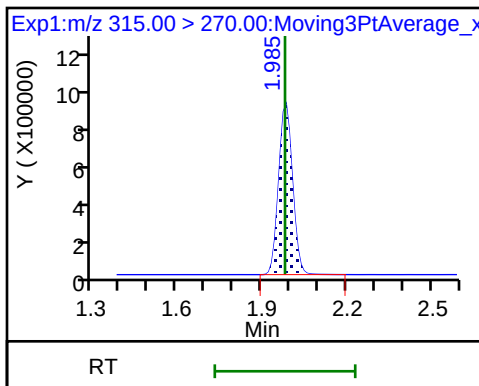
61 1H,1H,2H,2H-perfluorohexanesulfoni

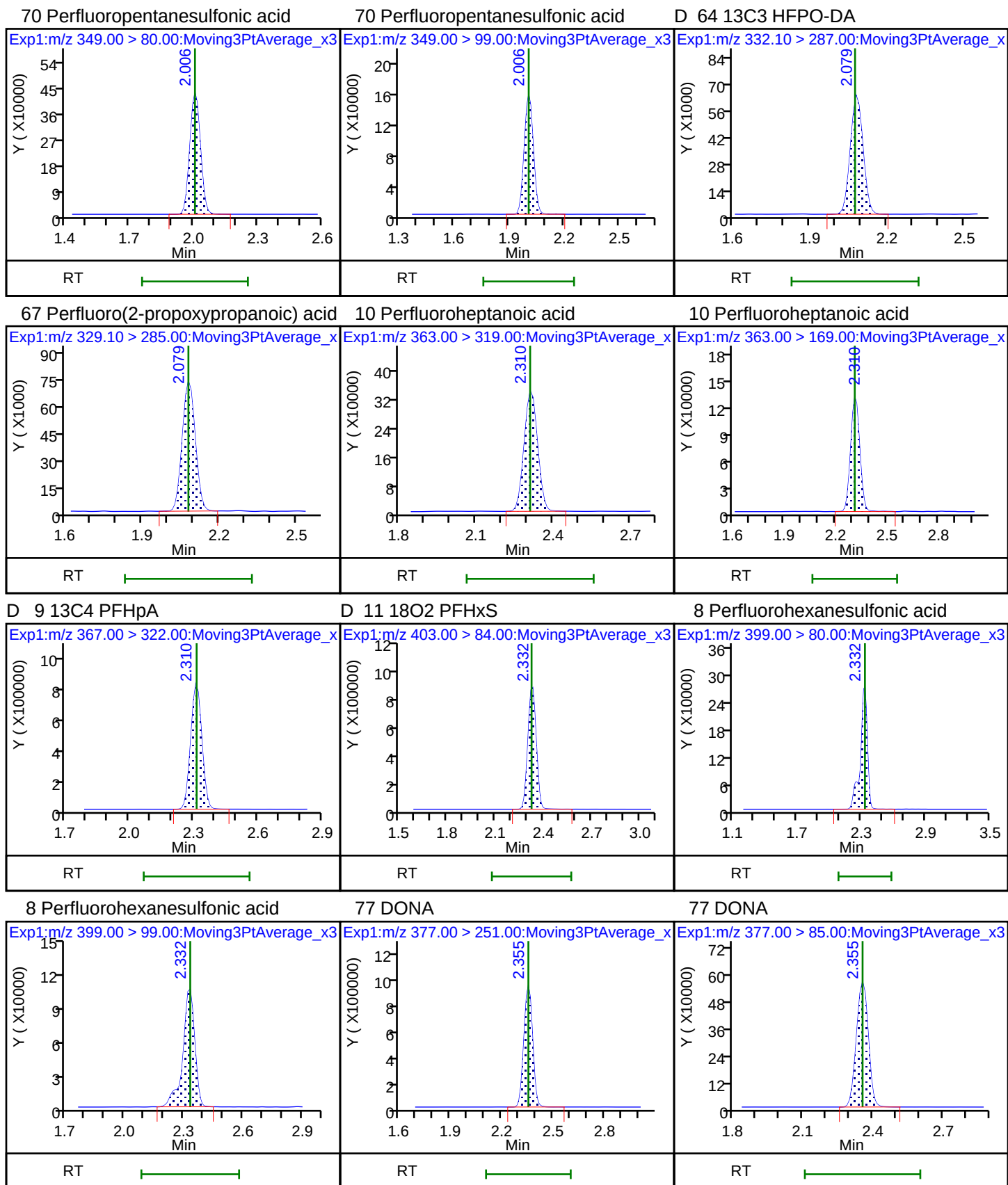


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

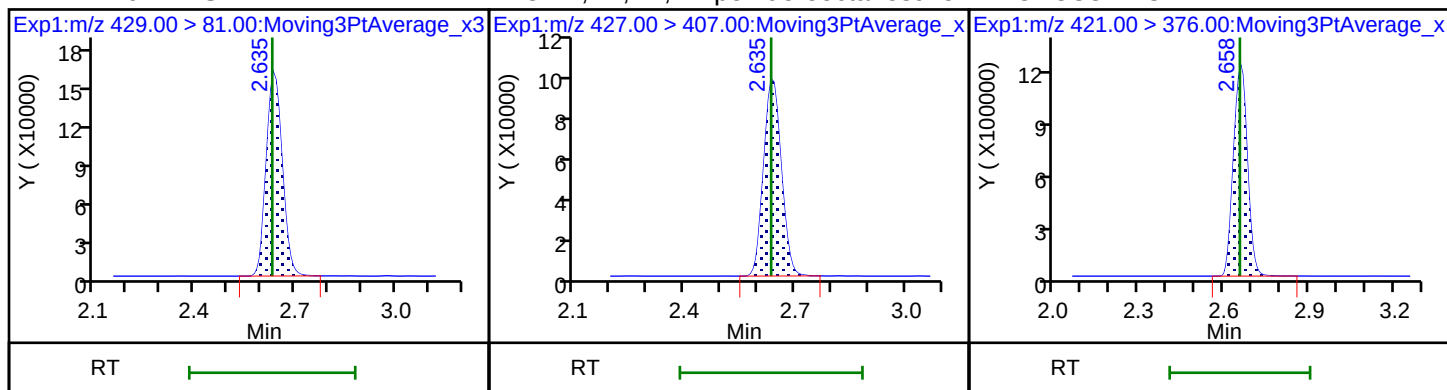
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

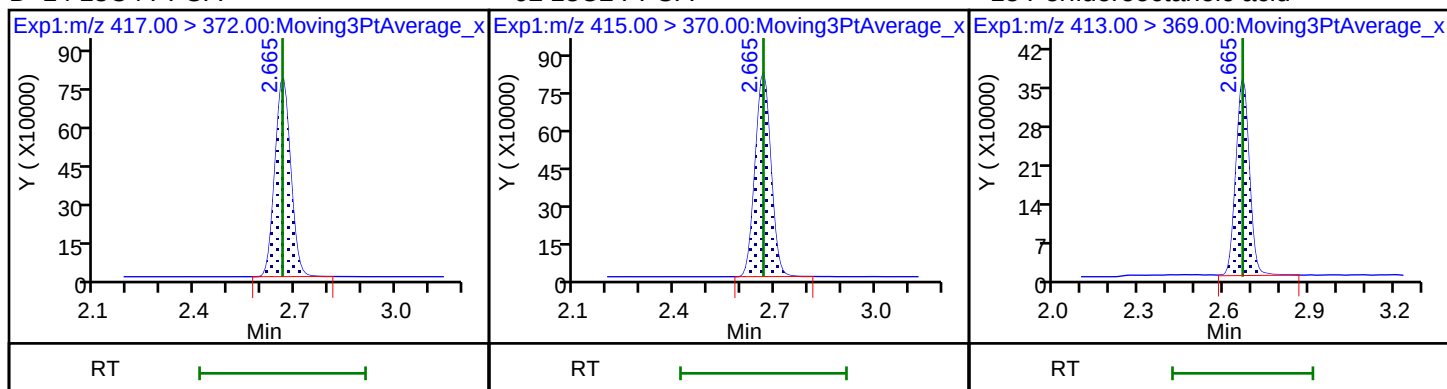
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

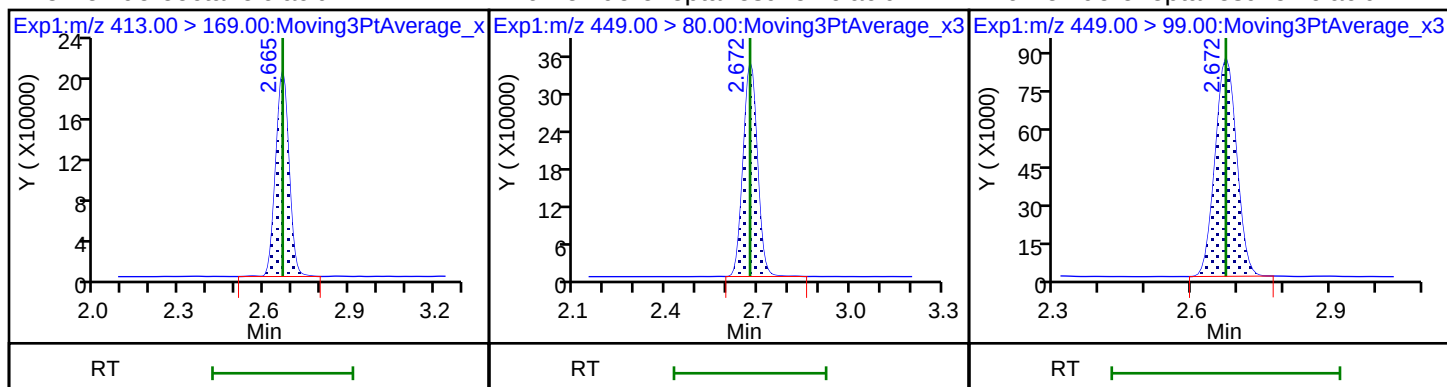
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

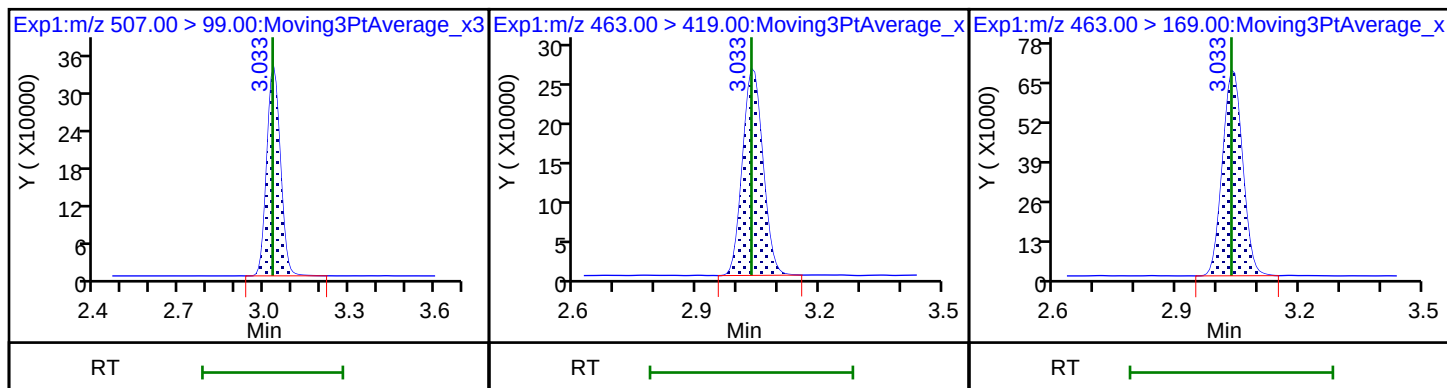
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

20 Perfluorononanoic acid

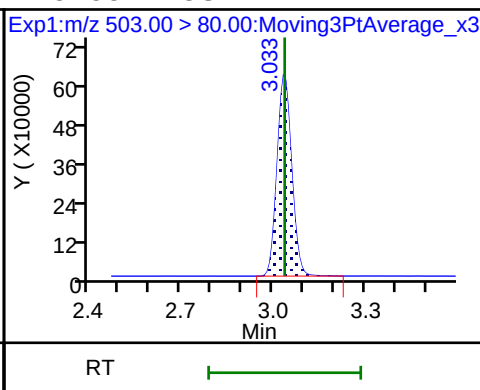
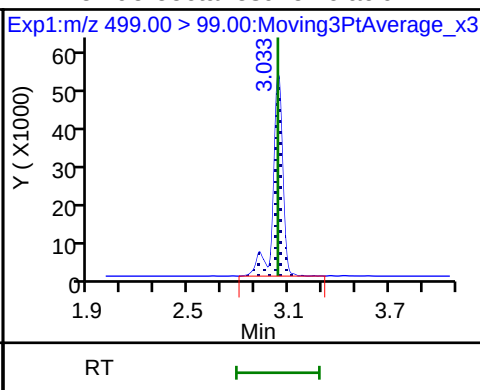
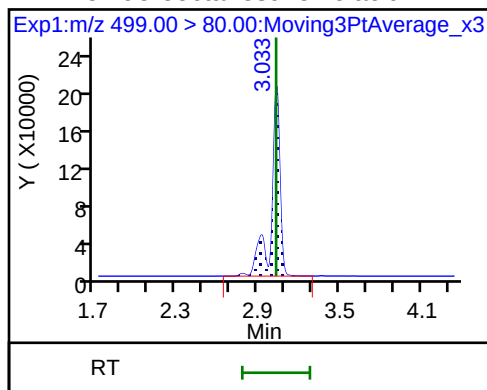
20 Perfluorononanoic acid



17 Perfluorooctanesulfonic acid

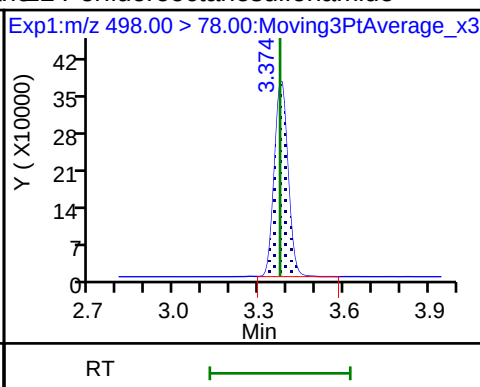
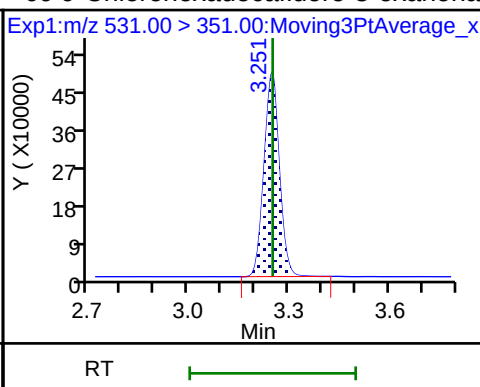
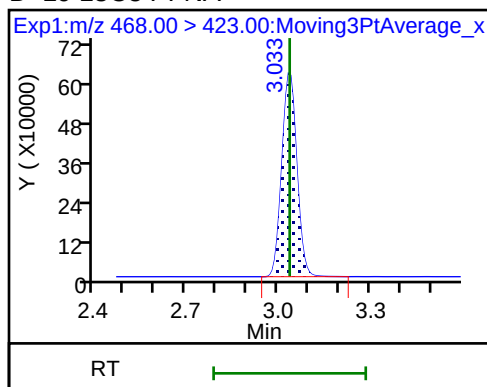
17 Perfluorooctanesulfonic acid

D 18 13C4 PFOS



D 19 13C5 PFNA

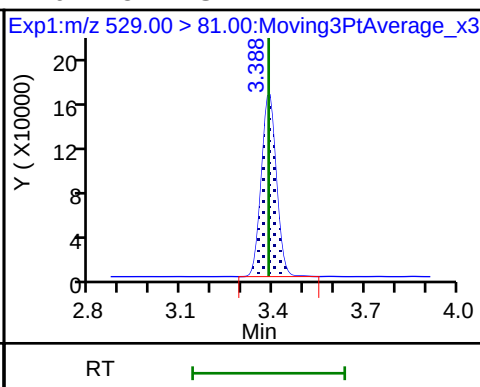
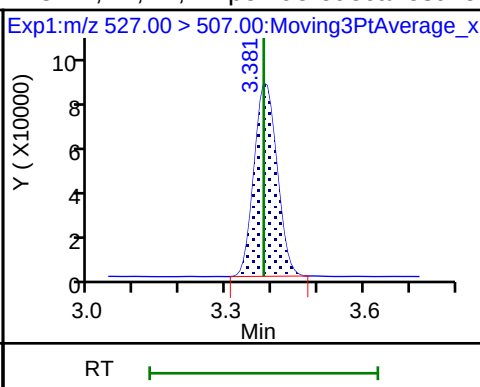
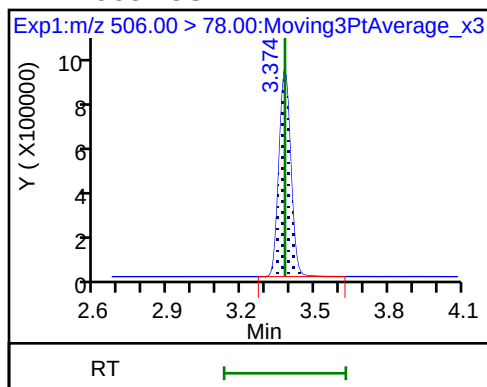
69 9-Chlorohexadecafluoro-3-oxanonan-2 Perfluorooctanesulfonamide



D 21 13C8 FOSA

25 1H,1H,2H,2H-perfluorodecanesulfonamide

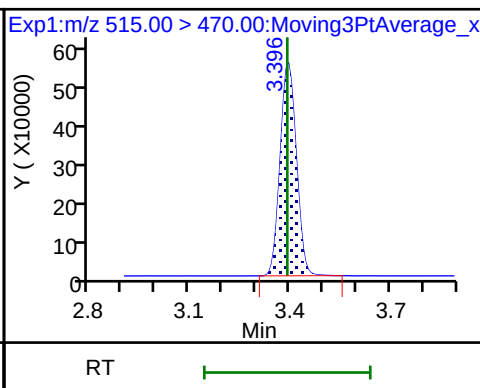
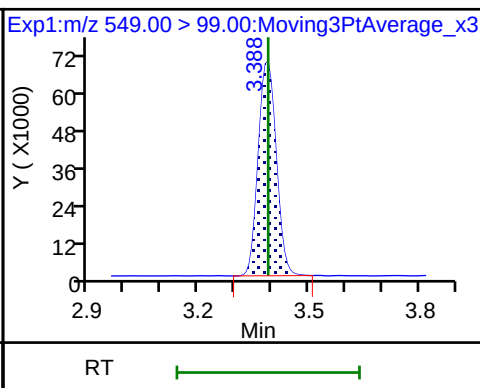
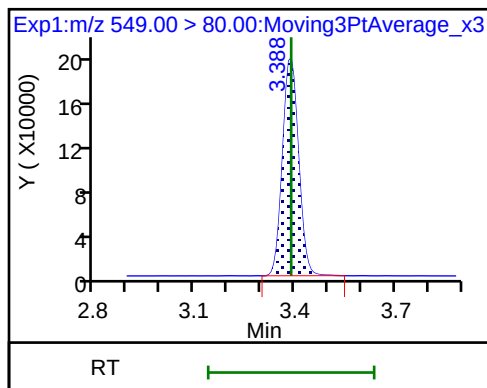
D 26 M2-8:2 FTS

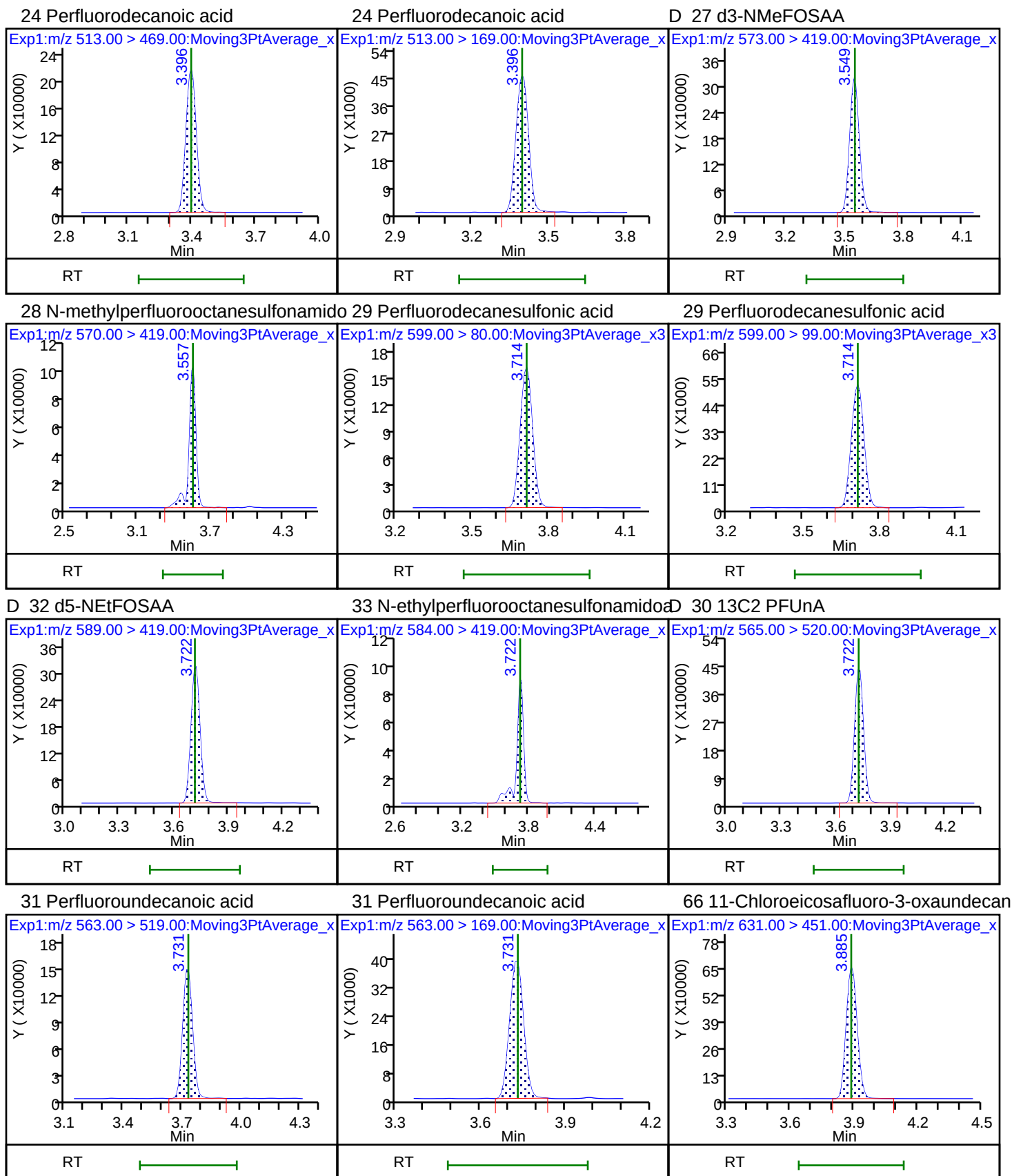


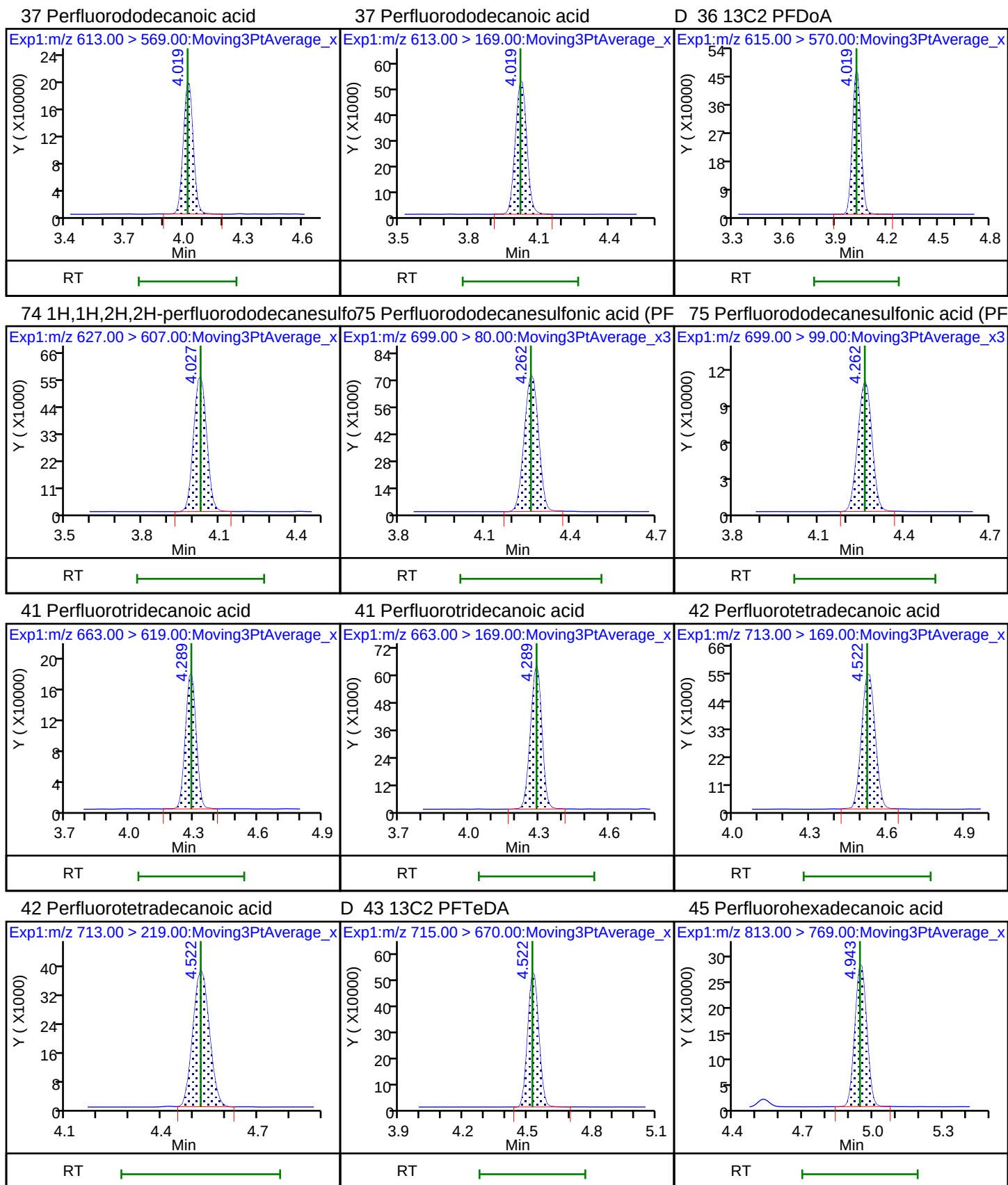
68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

D 23 13C2 PFDA



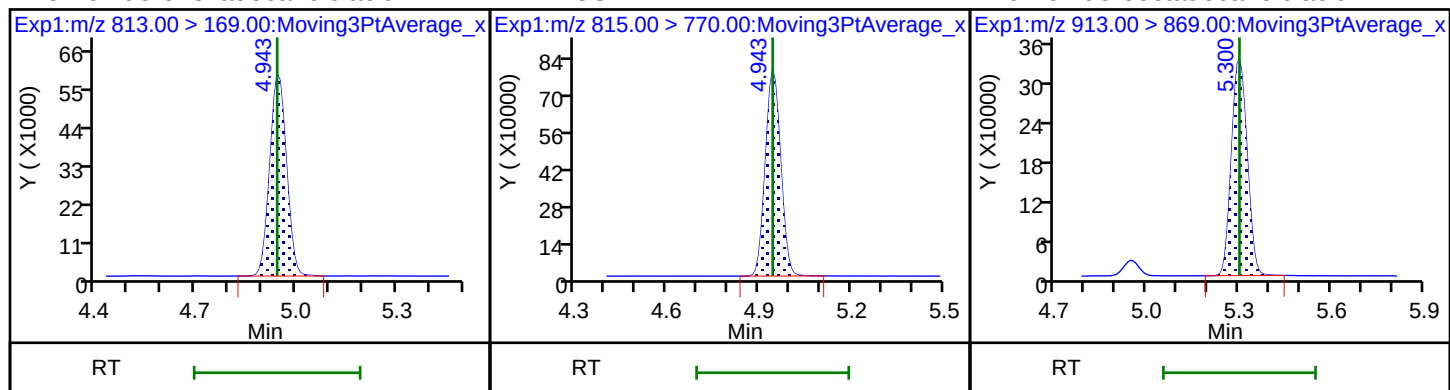




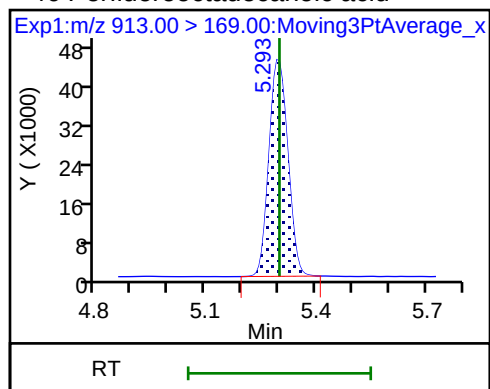
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Lab Sample ID: CCV 320-252245/1 Calibration Date: 10/15/2018 08:05

Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08

Lab File ID: 2018.10.14LLB_060.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8961	0.8986		1.00	1.00	0.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.079	1.099		1.02	1.00	1.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.58	75.87		0.854	0.884	-3.5	50.0
4:2 FTS	AveID	14.84	15.70		0.988	0.934	5.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9858	0.9885		1.00	1.00	0.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.53	64.61		0.897	0.938	-4.3	50.0
HFPO-DA (GenX)	AveID	2.943	2.879		0.978	1.00	-2.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.061	1.113		1.05	1.00	4.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	1.026		0.839	0.910	-7.7	40.0
DONA	AveID	3.821	4.202		1.04	0.942	10.0	50.0
6:2 FTS	AveID	1.530	1.551		0.961	0.948	1.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.159	1.127		0.973	1.00	-2.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.301	1.263		0.924	0.952	-2.9	50.0
Perfluorononanoic acid (PFNA)	AveID	1.065	1.133		1.06	1.00	6.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.122	1.097		0.907	0.928	-2.3	40.0
F-53B Major	AveID	1.877	1.868		0.928	0.932	-0.5	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9701	0.9892		1.02	1.00	2.0	40.0
8:2 FTS	AveID	1.211	1.212		0.959	0.958	0.1	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7870	0.8011		0.977	0.960	1.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9821	1.000		1.02	1.00	1.8	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9561	0.9236		0.966	1.00	-3.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6258	0.6568		1.01	0.964	5.0	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8397	0.8135		0.969	1.00	-3.1	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8940	0.8225		0.920	1.00	-8.0	40.0
F-53B Minor	AveID	2.833	2.834		0.942	0.942	0.0	50.0
10:2 FTS	AveID	0.8464	0.8240		0.939	0.964	-2.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.104	1.146		1.04	1.00	3.8	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2931	0.2823		0.932	0.968	-3.7	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.046	1.046		0.999	1.00	-0.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2672	0.2648		0.991	1.00	-0.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9375		1.03	1.00	3.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Lab Sample ID: CCV 320-252245/1 Calibration Date: 10/15/2018 08:05
 Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08
 Lab File ID: 2018.10.14LLB_060.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.180	1.081		0.916	1.00	-8.4	50.0
13C4 PFBA	Ave	1.572	1.503		2.39	2.50	-4.3	50.0
13C5 PFPeA	Ave	1.030	1.035		2.51	2.50	0.5	50.0
13C3 PFBS	Ave	0.0212	0.0222		2.43	2.33	4.7	50.0
M2-4:2 FTS	Ave	0.1405	0.1546		2.57	2.34	10.1	50.0
13C2 PFHxA	Ave	1.137	1.073		2.36	2.50	-5.6	50.0
13C3 HFPO-DA	Ave	0.0819	0.0865		2.64	2.50	5.6	50.0
13C4 PFHpA	Ave	1.039	1.020		2.46	2.50	-1.8	50.0
18O2 PFHxS	Ave	1.245	1.254		2.38	2.37	0.7	50.0
M2-6:2 FTS	Ave	0.1946	0.2190		2.67	2.38	12.5	40.0
13C8 PFOA	Ave	1.426	1.671		2.87	2.45	17.2	50.0
13C4 PFOA	Ave	0.9722	1.005		2.58	2.50	3.4	50.0
13C4 PFOS	Ave	0.8305	0.8166		2.35	2.39	-1.7	50.0
13C5 PFNA	Ave	0.8082	0.7860		2.43	2.50	-2.7	50.0
13C8 PFOS	Ave	0.4254	0.4033		2.27	2.39	-5.2	50.0
13C8 FOSA	Ave	1.203	1.144		2.38	2.50	-4.9	50.0
M2-8:2 FTS	Ave	0.2057	0.2208		2.57	2.40	7.3	40.0
13C2 PFDA	Ave	0.7126	0.7014		2.46	2.50	-1.6	50.0
d3-NMeFOSAA	Ave	0.3636	0.4045		2.78	2.50	11.3	50.0
d5-NEtFOSAA	Ave	0.3798	0.4188		2.76	2.50	10.3	50.0
13C2 PFUnA	Ave	0.5728	0.5699		2.49	2.50	-0.5	50.0
13C2 PFDoA	Ave	0.6012	0.5564		2.31	2.50	-7.4	50.0
13C2 PFTeDA	Ave	0.7358	0.7152		2.43	2.50	-2.8	50.0
13C2 PFHxDA	Ave	1.360	1.066		1.96	2.50	-21.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_060.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-Oct-2018 08:05:22 ALS Bottle#: 28 Worklist Smp#: 1
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 14:49:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.434	0.002	0.541	2351570	2.39		95.7	4900	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	845225	1.00		100	94.4	
D 3 13C5 PFPeA										
267.90 > 223.00	1.704	1.700	0.004	0.642	1618741	2.51		100	5045	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.704	1.704	0.0	1.000	711673	1.02		102	96.6	
D 47 13C3 PFBS										
301.90 > 83.00	1.736	1.740	-0.004	0.655	32238	2.43		105	260	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.736	1.736	0.0	1.000	929978	0.8535		96.5	240	
298.90 > 99.00	1.736	1.736	0.0	1.000	406375		2.29(1.25-3.74)		230	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.945	1.945	0.0	1.120	203294	0.9878		106	3933	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.945	1.949	-0.004	0.733	225911	2.57		110	381	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.977	1.977	0.0	1.000	663506	1.00		100	206	
313.00 > 119.00	1.977	1.977	0.0	1.000	61790		10.74(5.03-15.10)		160	
D 7 13C2 PFHxA										
315.00 > 270.00	1.977	1.981	-0.004	0.745	1678058	2.36		94.4	4551	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	1.997	1.997	0.0	1.150	840298	0.8975		95.7	2600	
349.00 > 99.00	1.997	1.997	0.0	1.150	352212		2.39(1.36-4.07)		1272	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.071	2.071	0.0	1.000	155723	0.9782		97.8	262	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.071	2.075	-0.004	0.781	135238	2.64		106	533	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.301	2.301	0.0	1.000	710307	1.05		105	209	
363.00 > 169.00	2.301	2.301	0.0	1.000	270420		2.63(1.13-3.40)		310	
D 9 13C4 PFHpA										
367.00 > 322.00	2.301	2.303	-0.002	0.867	1595567	2.46		98.2	5307	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.312	2.312	0.0	1.000	732823	0.8395		92.3	1447	
399.00 > 99.00	2.312	2.312	0.0	1.000	254110		2.88(1.50-4.49)		603	
D 11 18O2 PFHxS										
403.00 > 84.00	2.312	2.325	-0.013	0.872	1855445	2.38		101	3158	
77 DONA										
377.00 > 251.00	2.345	2.345	0.0	0.776	2022684	1.04		110	3724	
377.00 > 85.00	2.345	2.345	0.0	0.776	1142803		1.77(0.85-2.54)		4331	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.622	2.624	-0.002	0.988	325371	2.67		112	1728	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.622	2.622	0.0	1.000	201482	0.9611		101	1283	
D 73 13C8 PFOA										
421.00 > 376.00	2.637	2.647	-0.010	0.994	2558732	2.87		117	7899	
* 62 13C2 PFOA										
415.00 > 370.00	2.653	2.653	0.0		1564173	2.50			3494	
D 14 13C4 PFOA										
417.00 > 372.00	2.645	2.655	-0.010	0.997	1572147	2.58		103	5504	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.653	2.653	0.0	1.003	709669	0.9735		97.3	63.2	
413.00 > 169.00	2.653	2.653	0.0	1.003	375297		1.89(0.84-2.52)		512	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.660	2.660	0.0	0.880	614353	0.9242		97.1	2312	
449.00 > 99.00	2.660	2.660	0.0	0.880	171924		3.57(1.94-5.82)		705	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.023	3.023	0.0	1.000	520140	0.9069		97.7	1130	
499.00 > 99.00	3.023	3.023	0.0	1.000	112963		4.60(2.31-6.93)		360	
20 Perfluorononanoic acid										
463.00 > 419.00	3.023	3.023	0.0	1.000	557110	1.06		106	208	
463.00 > 169.00	3.023	3.023	0.0	1.000	133498		4.17(1.90-5.69)		997	
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.028	-0.005	1.140	1221158	2.35		98.3	2186	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.028	-0.005	1.140	1229417	2.43		97.3	4185	
D 72 13C8 PFOS										
507.00 > 99.00	3.023	3.028	-0.005	1.140	603087	2.27		94.8	2306	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.235	3.235	0.0	1.070	889567	0.9277		99.5	2805	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.364	3.364	0.0	1.000	708183	1.02		102	1893	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.364	3.370	-0.006	1.268	1789810	2.38		95.1	2384	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.371	3.371	0.0	1.000	160350	0.9590		100	583	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.371	3.371	0.0	1.115	392928	0.9772		102	1623	
549.00 > 99.00	3.371	3.371	0.0	1.115	138413		2.84(1.33-3.97)		951	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.371	3.377	-0.006	1.271	330793	2.57		107	1527	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.386	3.386	0.0	1.000	438692	1.02		102	497	
513.00 > 169.00	3.379	3.386	-0.007	0.998	88899		4.93(2.36-7.09)		222	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.392	-0.006	1.277	1097063	2.46		98.4	3232	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.547	3.547	0.0	1.002	233740	0.9660		96.6	315	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.539	3.545	-0.006	1.334	632723	2.78		111	2156	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.700	3.700	0.0	1.224	323483	1.01		105	2005	
599.00 > 99.00	3.700	3.700	0.0	1.224	107113		3.02(1.39-4.16)		857	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.709	3.709	0.0	1.000	213151	0.9688		96.9	784	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.717	3.717	0.0	1.000	293259	0.9201		92.0	286	
563.00 > 169.00	3.717	3.717	0.0	1.000	73498		3.99(2.12-6.36)		389	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.709	3.716	-0.007	1.398	655010	2.76		110	881	
D 30 13C2 PFUnA										
565.00 > 520.00	3.717	3.724	-0.007	1.401	891348	2.49		99.5	2411	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.879	3.879	0.0	1.283	1363969	0.9424		100	2389	
35 MeFOSA										
512.00 > 169.00	3.879	3.879	0.0		218950	NC			377	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.013	4.013	0.0	1.000	399004	1.04		104	343	
613.00 > 169.00	4.004	4.013	-0.009	0.998	103070		3.87(2.13-6.40)		1056	
D 36 13C2 PFDaA										
615.00 > 570.00	4.013	4.012	0.001	1.513	870355	2.31		92.6	2496	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.013	4.013	0.0	1.190	109717	0.9386		97.4	665	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.256	4.256	0.0	1.408	139611	0.9324		96.3	836	
699.00 > 99.00	4.256	4.256	0.0	1.408	205463		0.68(0.00-0.00)		926	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.275	4.275	0.0	1.065	364002	1.00		99.9	279	
663.00 > 169.00	4.275	4.275	0.0	1.065	130445		2.79(1.25-3.76)		685	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 43 13C2 PFTeDA										
715.00 > 670.00	4.515	4.523	-0.008	1.702	1118698	2.43		97.2	3155	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.515	4.515	0.0	1.000	118490	0.99		99.1	1269	
713.00 > 219.00	4.505	4.515	-0.010	0.998	77170		1.54(0.71-2.13)		1319	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.936	4.944	-0.008	1.861	1667984	1.96		78.4	2964	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.936	4.936	0.0	1.000	625512	1.03		103	177	
813.00 > 169.00	4.936	4.936	0.0	1.000	122427		5.11(2.86-8.58)		1053	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.294	5.294	0.0	1.073	721376	0.9161		91.6	186	
913.00 > 169.00	5.287	5.294	-0.007	1.071	98145		7.35(3.83-11.48)		671	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_060.d

Injection Date: 15-Oct-2018 08:05:22

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 28

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

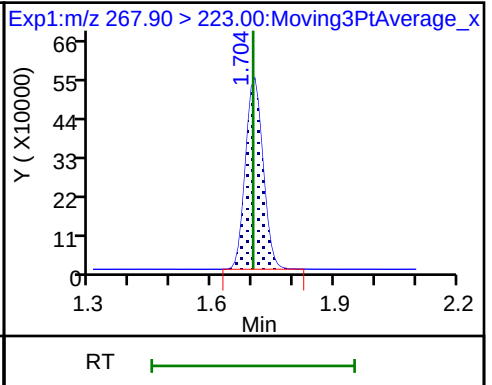
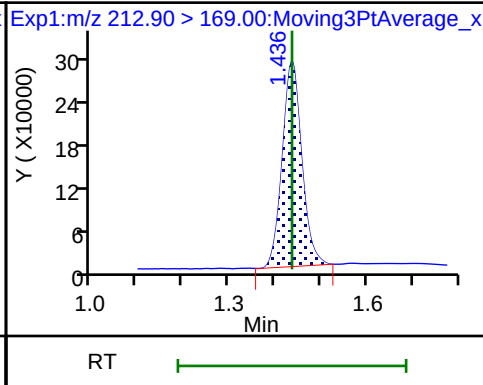
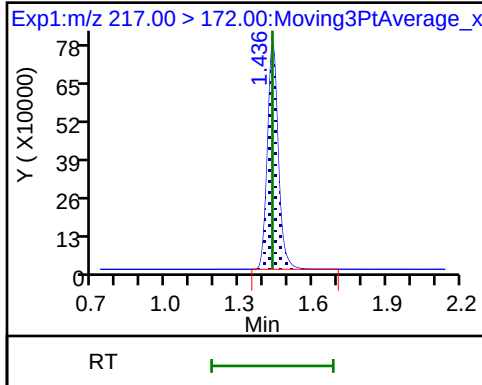
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

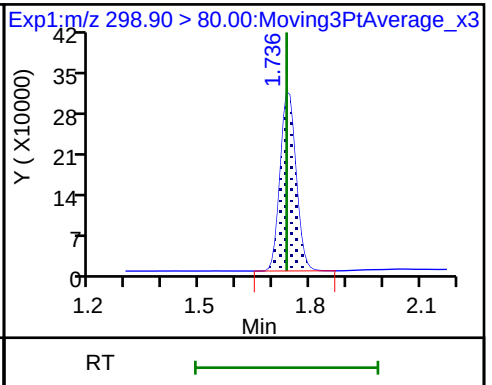
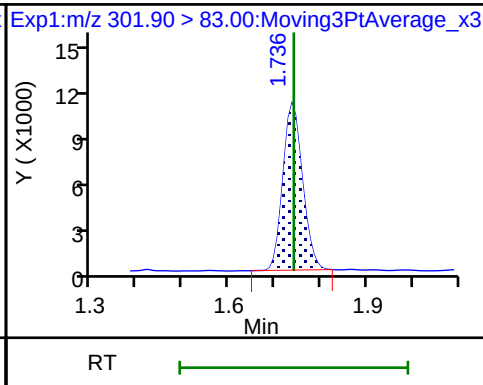
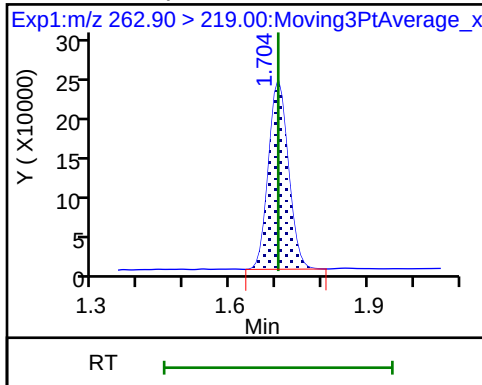
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

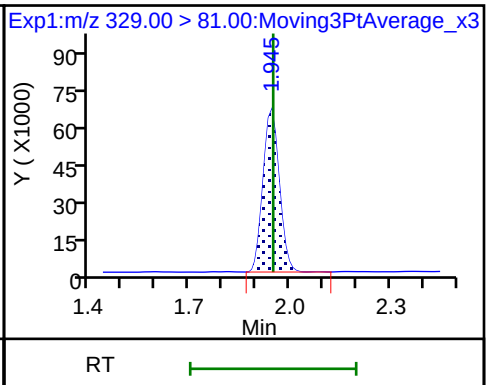
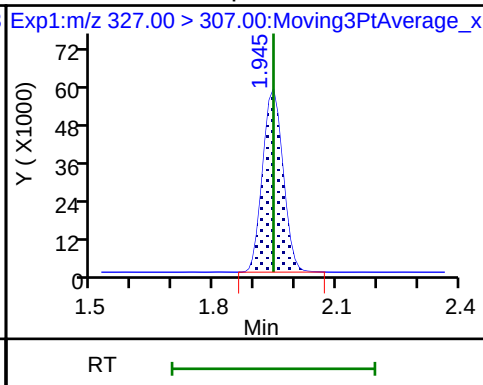
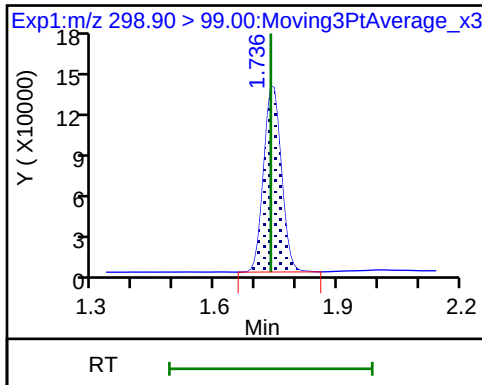
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

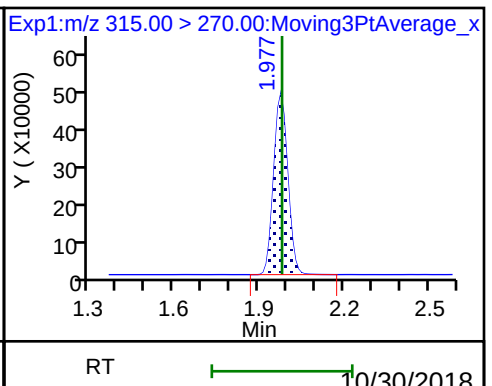
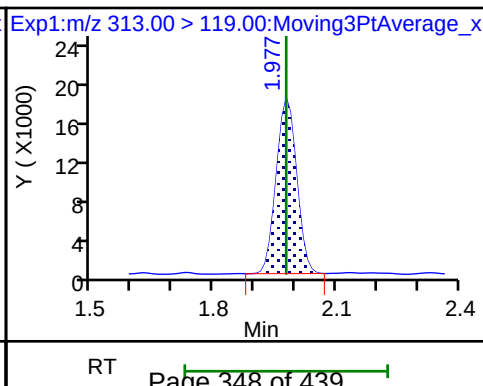
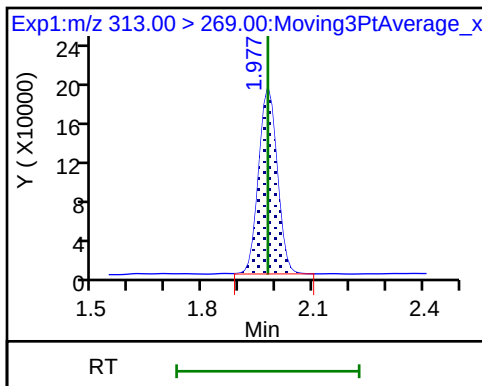
D 60 M2-4:2 FTS

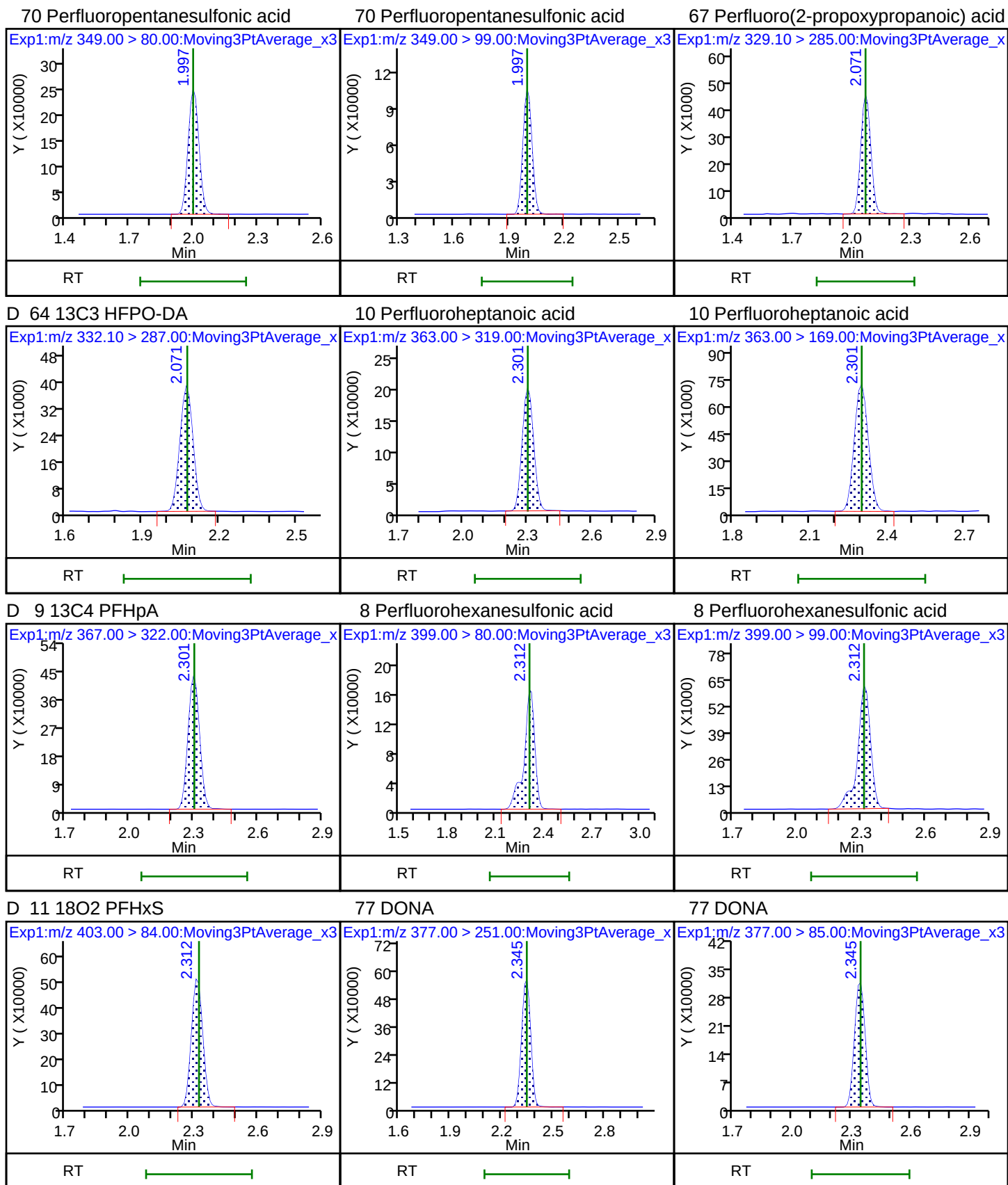


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

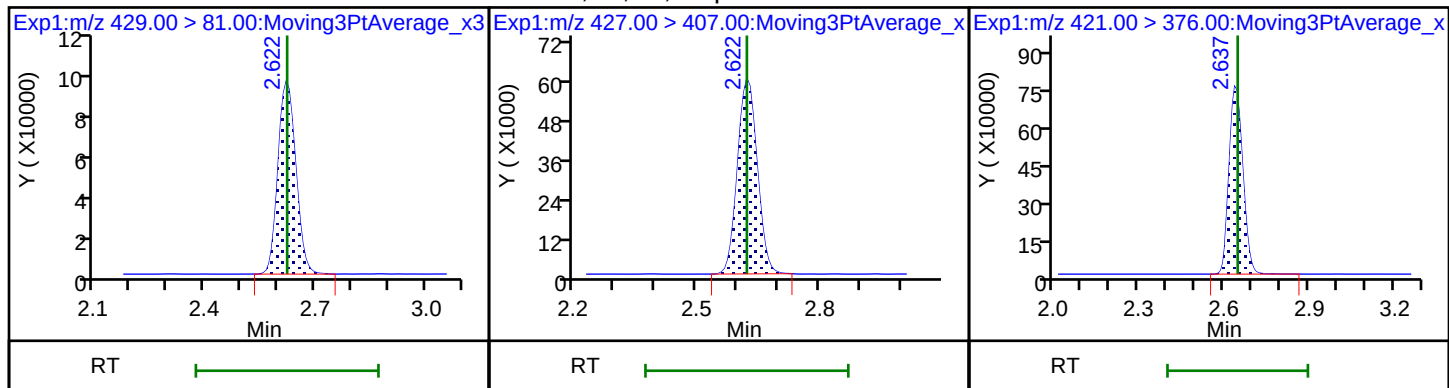
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

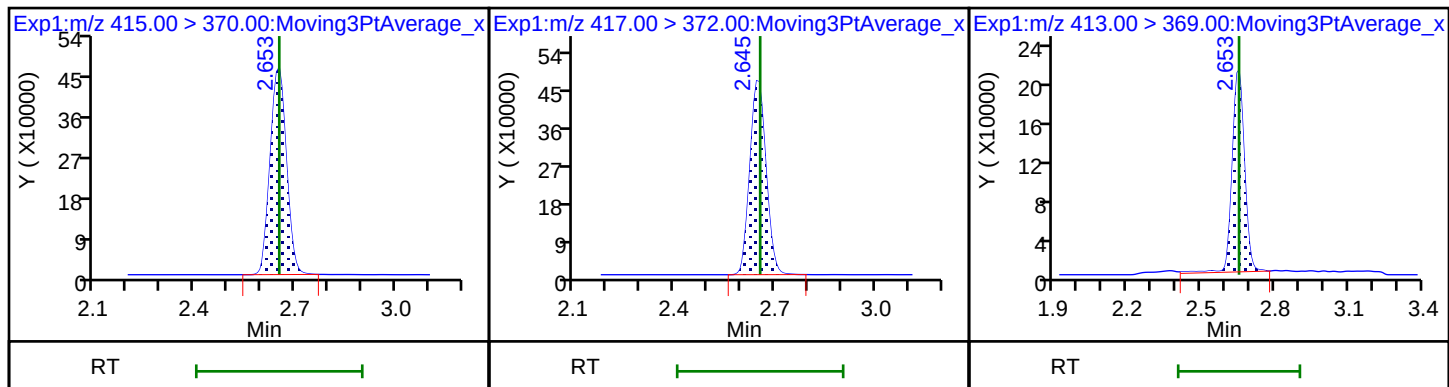
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2 PFOA

D 14 13C4 PFOA

15 Perfluorooctanoic acid



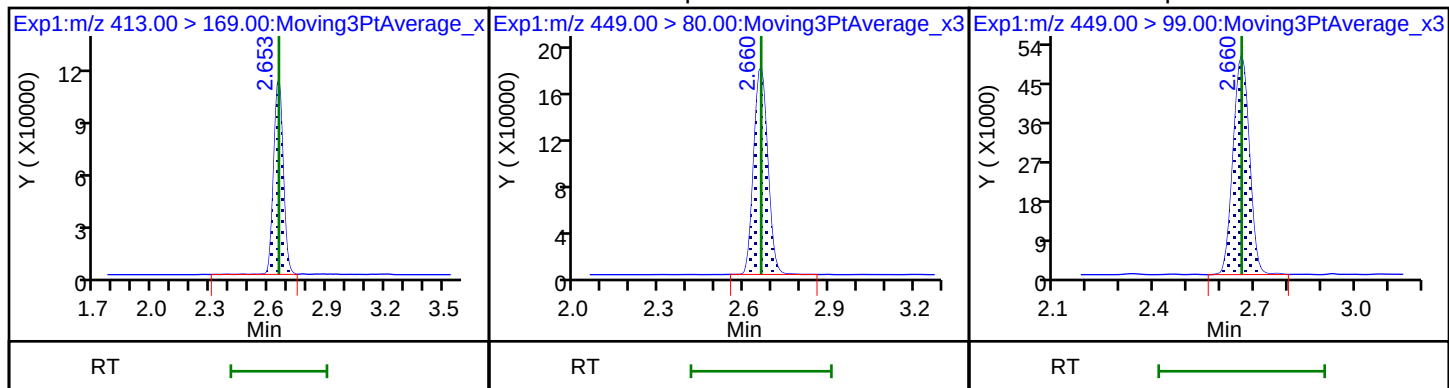
Exp1:m/z 417.00 > 372.00:Moving3PtAverage_x3

Exp1:m/z 413.00 > 369.00:Moving3PtAverage_x3

15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid



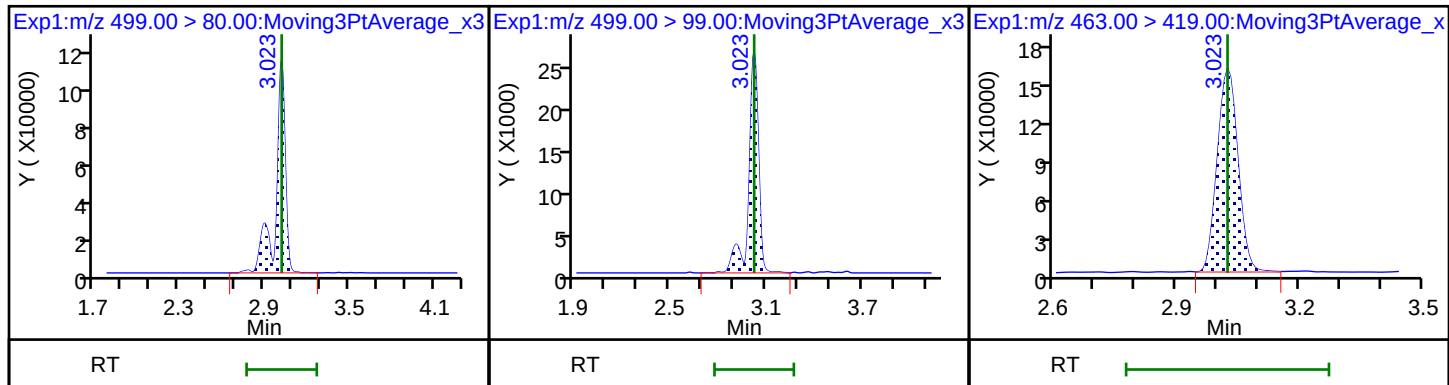
Exp1:m/z 449.00 > 80.00:Moving3PtAverage_x3

Exp1:m/z 449.00 > 99.00:Moving3PtAverage_x3

17 Perfluorooctanesulfonic acid

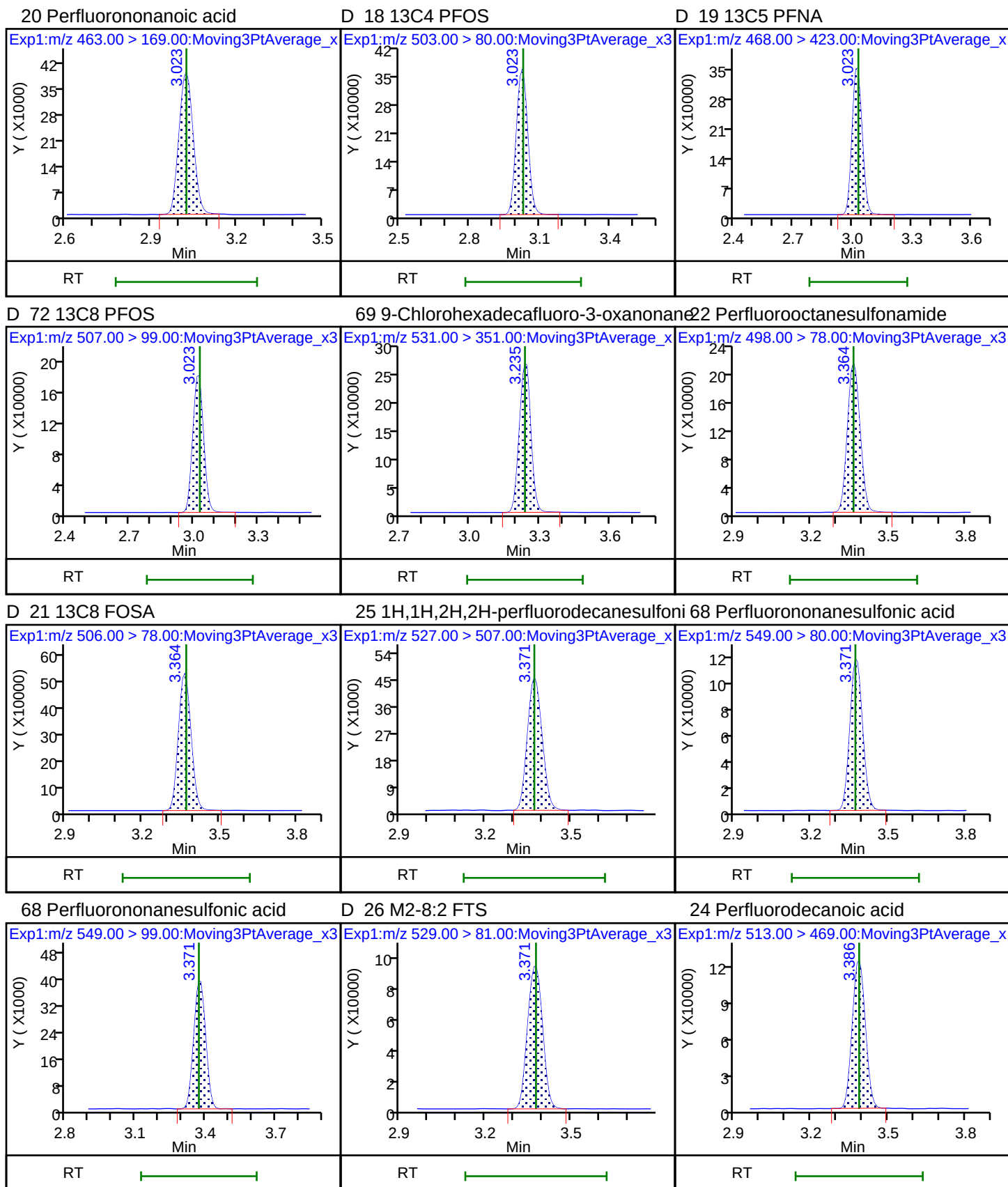
17 Perfluorooctanesulfonic acid

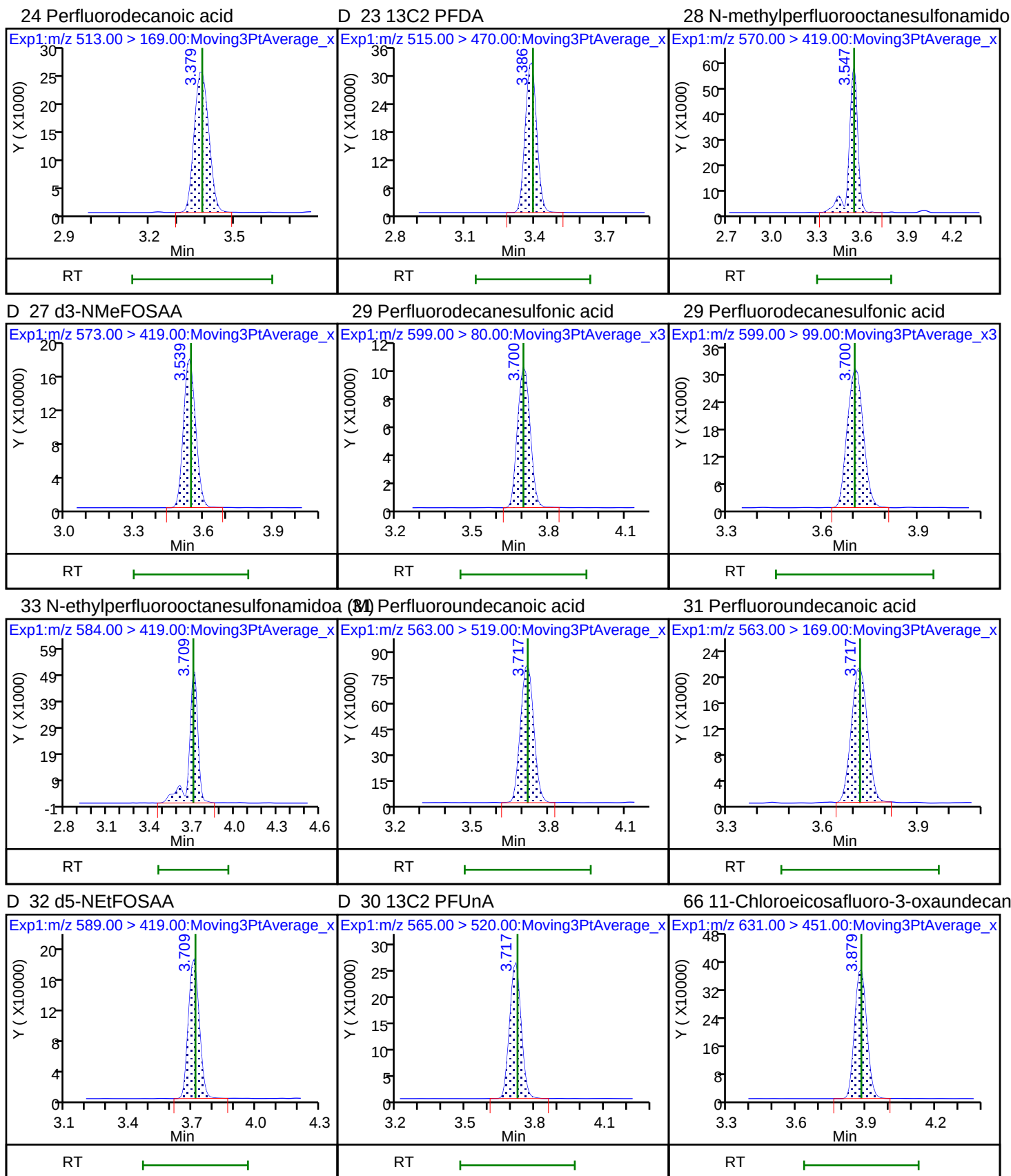
20 Perfluorononanoic acid

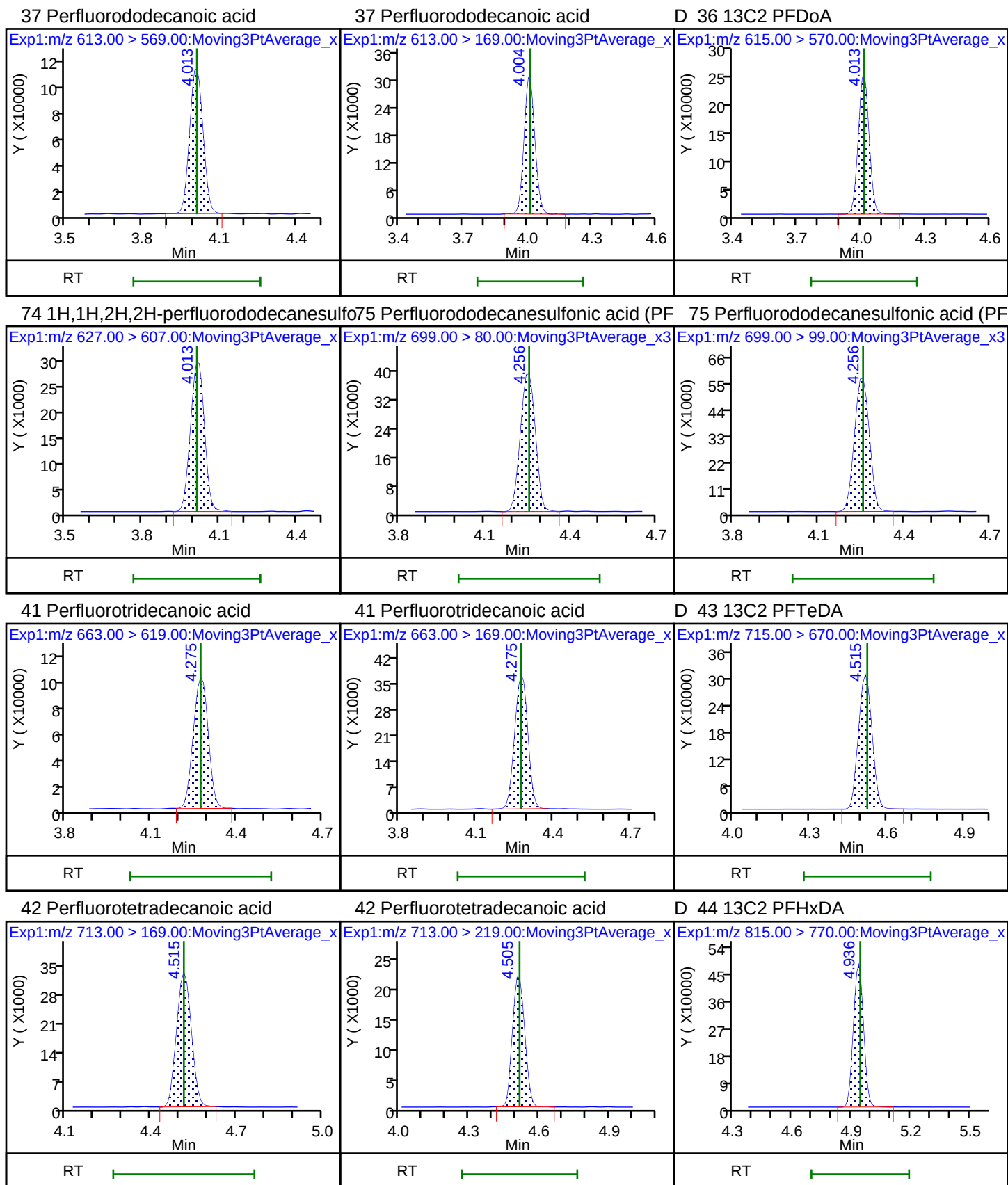


Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x3

Exp1:m/z 463.00 > 419.00:Moving3PtAverage_x3



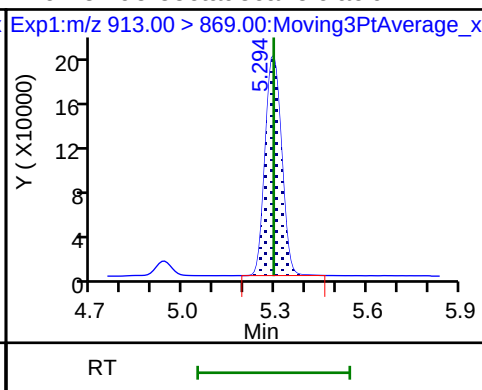
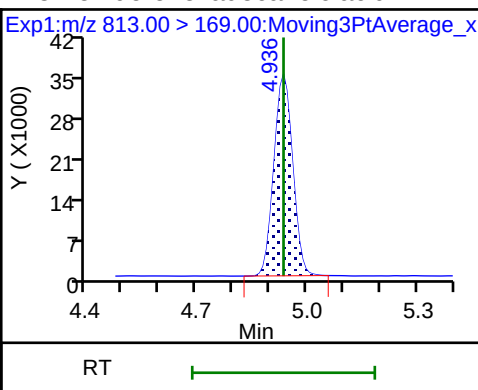
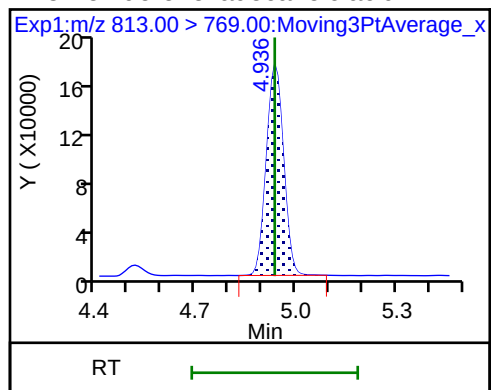




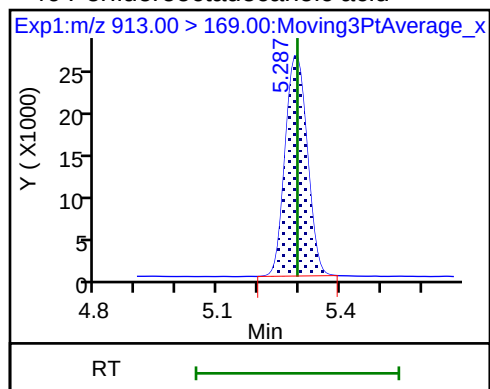
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

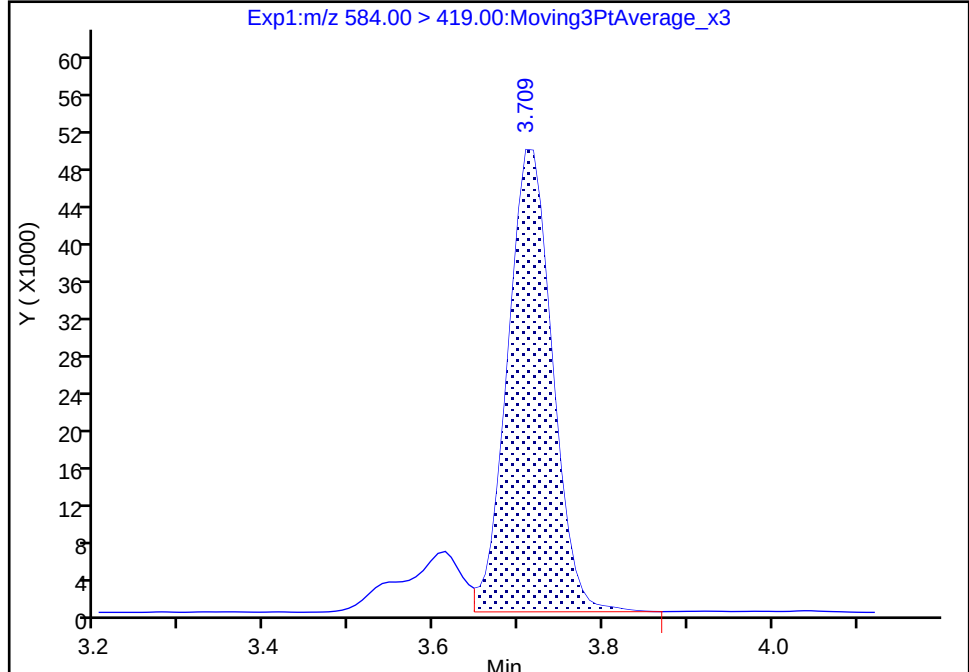
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Injection Date: 15-Oct-2018 08:05:22 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 28 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

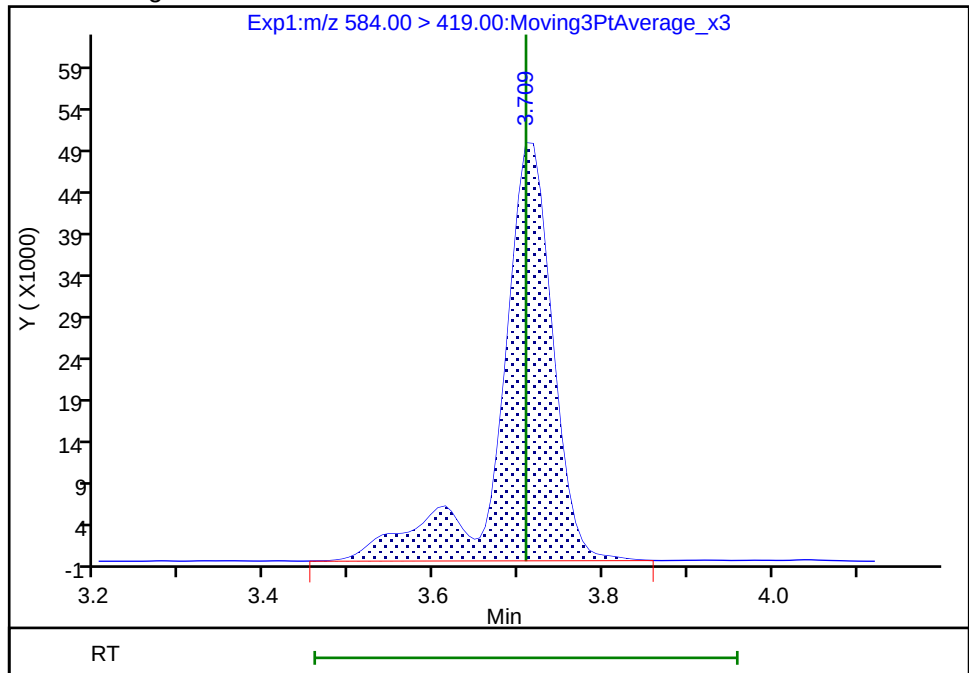
RT: 3.71
Area: 180766
Amount: 0.821601
Amount Units: ng/ml

Processing Integration Results



RT: 3.71
Area: 213151
Amount: 0.968794
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:49:17
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 355 of 439

10/30/2018

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Lab Sample ID: CCV 320-252245/11 Calibration Date: 10/15/2018 09:19

Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24

GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08

Lab File ID: 2018.10.14LLB_070.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.8961	0.9472		2.64	2.50	5.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.079	1.122		2.60	2.50	4.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	78.58	82.23		2.31	2.21	4.6	50.0
4:2 FTS	AveID	14.84	15.41		2.42	2.34	3.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9858	1.002		2.54	2.50	1.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	67.53	69.71		2.42	2.35	3.2	50.0
HFPO-DA (GenX)	AveID	2.943	2.881		2.45	2.50	-2.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.061	1.122		2.64	2.50	5.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.113	0.9600		1.96	2.28	-13.7	40.0
DONA	AveID	3.821	4.170		2.57	2.36	9.1	50.0
6:2 FTS	AveID	1.530	1.494		2.31	2.37	-2.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.159	1.101		2.38	2.50	-5.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.301	1.345		2.46	2.38	3.4	50.0
Perfluorononanoic acid (PFNA)	AveID	1.065	1.053		2.47	2.50	-1.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.122	1.079		2.23	2.32	-3.9	40.0
F-53B Major	AveID	1.877	1.830		2.27	2.33	-2.5	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9701	1.000		2.58	2.50	3.0	40.0
8:2 FTS	AveID	1.211	1.228		2.43	2.40	1.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7870	0.8289		2.53	2.40	5.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9821	1.019		2.59	2.50	3.8	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9561	0.9090		2.38	2.50	-4.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6258	0.6423		2.47	2.41	2.6	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8397	0.8184		2.44	2.50	-2.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8940	0.8684		2.43	2.50	-2.9	40.0
F-53B Minor	AveID	2.833	2.782		2.31	2.36	-1.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.104	1.069		2.42	2.50	-3.1	40.0
10:2 FTS	AveID	0.8464	0.8340		2.37	2.41	-1.5	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2931	0.2891		2.39	2.42	-1.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.046	1.064		2.54	2.50	1.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2672	0.2552		2.39	2.50	-4.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8850		2.47	2.50	-1.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1
 SDG No.: _____
 Lab Sample ID: CCV 320-252245/11 Calibration Date: 10/15/2018 09:19
 Instrument ID: A8_N Calib Start Date: 10/10/2018 11:24
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 10/10/2018 12:08
 Lab File ID: 2018.10.14LLB_070.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.180	0.996		2.11	2.50	-15.6	50.0
13C4 PFBA	Ave	1.572	1.544		2.46	2.50	-1.7	50.0
13C5 PFPeA	Ave	1.030	1.031		2.50	2.50	0.1	50.0
13C3 PFBS	Ave	0.0212	0.0219		2.40	2.33	3.4	50.0
M2-4:2 FTS	Ave	0.1405	0.1538		2.56	2.34	9.5	50.0
13C2 PFHxA	Ave	1.137	1.113		2.45	2.50	-2.1	50.0
13C3 HFPO-DA	Ave	0.0819	0.0808		2.47	2.50	-1.3	50.0
13C4 PFHpA	Ave	1.039	1.012		2.44	2.50	-2.6	50.0
18O2 PFHxS	Ave	1.245	1.345		2.55	2.37	8.0	50.0
M2-6:2 FTS	Ave	0.1946	0.2085		2.54	2.38	7.1	40.0
13C8 PFOA	Ave	1.426	1.590		2.73	2.45	11.5	50.0
13C4 PFOA	Ave	0.9722	1.017		2.62	2.50	4.6	50.0
13C4 PFOS	Ave	0.8305	0.8346		2.40	2.39	0.5	50.0
13C5 PFNA	Ave	0.8082	0.8017		2.48	2.50	-0.8	50.0
13C8 PFOS	Ave	0.4254	0.4473		2.51	2.39	5.1	50.0
13C8 FOSA	Ave	1.203	1.198		2.49	2.50	-0.4	50.0
M2-8:2 FTS	Ave	0.2057	0.2169		2.53	2.40	5.5	40.0
13C2 PFDA	Ave	0.7126	0.7007		2.46	2.50	-1.7	50.0
d3-NMeFOSAA	Ave	0.3636	0.4093		2.81	2.50	12.6	50.0
d5-NEtFOSAA	Ave	0.3798	0.4156		2.74	2.50	9.4	50.0
13C2 PFUnA	Ave	0.5728	0.5553		2.42	2.50	-3.1	50.0
13C2 PFDoA	Ave	0.6012	0.5737		2.39	2.50	-4.6	50.0
13C2 PFTeDA	Ave	0.7358	0.6978		2.37	2.50	-5.2	50.0
13C2 PFHxDA	Ave	1.360	1.216		2.24	2.50	-10.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_070.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-Oct-2018 09:19:44 ALS Bottle#: 29 Worklist Smp#: 11
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:11:09 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d

Column 1 : Det: EXP1

Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 14:50:22

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.434	0.002	0.542	2791384	2.46		98.3	6153	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.436	1.436	0.0	1.000	2644079	2.64		106	297	
D 3 13C5 PFPeA										
267.90 > 223.00	1.704	1.700	0.004	0.642	1863262	2.50		100	7824	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.704	1.704	0.0	1.000	2091127	2.60		104	281	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.744	1.744	0.0	1.005	2875686	2.31		105	785	
298.90 > 99.00	1.744	1.744	0.0	1.005	1192171		2.41(1.25-3.74)		745	
D 47 13C3 PFBS										
301.90 > 83.00	1.736	1.740	-0.004	0.655	36791	2.40		103	388	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.945	1.945	0.0	1.120	569561	2.42		104	4624	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.945	1.949	-0.004	0.733	259634	2.56		109	437	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.976	1.976	0.0	1.000	2015151	2.54		102	758	
313.00 > 119.00	1.976	1.976	0.0	1.000	178687		11.28(5.03-15.10)		554	
D 7 13C2 PFHxA										
315.00 > 270.00	1.976	1.981	-0.005	0.745	2011315	2.45		97.9	8579	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.008	2.008	0.0	1.157	2586911	2.42		103	5101	
349.00 > 99.00	2.008	2.008	0.0	1.157	953013		2.71(1.36-4.07)		4124	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.070	2.070	0.0	1.000	420786	2.45		97.9	681	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.070	2.075	-0.005	0.781	146075	2.47		98.7	667	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.301	2.301	0.0	1.000	2052442	2.64		106	669	
363.00 > 169.00	2.301	2.301	0.0	1.000	807356		2.54(1.13-3.40)		953	
D 9 13C4 PFHpA										
367.00 > 322.00	2.301	2.303	-0.002	0.867	1828726	2.44		97.4	4795	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.323	2.323	0.0	1.000	2123648	1.96		86.3	2512	
399.00 > 99.00	2.323	2.323	0.0	1.000	750020		2.83(1.50-4.49)		1336	
D 11 18O2 PFHxS										
403.00 > 84.00	2.323	2.325	-0.002	0.876	2299582	2.55		108	3165	
77 DONA										
377.00 > 251.00	2.345	2.345	0.0	0.775	5926063	2.57		109	5577	
377.00 > 85.00	2.345	2.345	0.0	0.775	3438886		1.72(0.85-2.54)		5917	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.629	2.629	0.0	1.000	533573	2.31		97.6	2342	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.629	2.624	0.005	0.991	357957	2.54		107	2413	
D 73 13C8 PFOA										
421.00 > 376.00	2.644	2.647	-0.003	0.997	2813491	2.73		112	6473	
* 62 13C2 PFOA										
415.00 > 370.00	2.652	2.652	0.0		1807330	2.50			4079	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.659	2.659	0.0	1.003	2025930	2.38		95.0	195	
413.00 > 169.00	2.652	2.659	-0.007	1.000	1057541		1.92(0.84-2.52)		1299	
D 14 13C4 PFOA										
417.00 > 372.00	2.652	2.655	-0.003	1.000	1838423	2.62		105	4929	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.667	2.667	0.0	0.881	1931315	2.46		103	3390	
449.00 > 99.00	2.667	2.667	0.0	0.881	516698		3.74(1.94-5.82)		1789	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.027	3.027	0.0	1.000	1509882	2.23		96.1	1925	
499.00 > 99.00	3.027	3.027	0.0	1.000	340851		4.43(2.31-6.93)		766	
20 Perfluorononanoic acid										
463.00 > 419.00	3.027	3.027	0.0	1.000	1526111	2.47		98.9	574	
463.00 > 169.00	3.027	3.027	0.0	1.000	376912		4.05(1.90-5.69)		1950	
D 18 13C4 PFOS										
503.00 > 80.00	3.027	3.028	-0.001	1.141	1442102	2.40		101	2751	
D 19 13C5 PFNA										
468.00 > 423.00	3.027	3.028	-0.001	1.141	1448929	2.48		99.2	4695	
D 72 13C8 PFOS										
507.00 > 99.00	3.027	3.028	-0.001	1.141	772783	2.51		105	3103	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.239	3.239	0.0	1.070	2573456	2.27		97.5	4600	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.368	3.368	0.0	1.000	2164507	2.58		103	2274	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 21 13C8 FOSA										
506.00 > 78.00	3.368	3.370	-0.002	1.270	2165346	2.49		99.6	4085	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.376	3.376	0.0	1.000	461064	2.43		101	1678	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.376	3.376	0.0	1.115	1200401	2.53		105	3457	
549.00 > 99.00	3.376	3.376	0.0	1.115	424783		2.83(1.33-3.97)		2234	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.376	3.377	-0.001	1.273	375594	2.53		105	2090	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.383	3.383	0.0	1.000	1290792	2.59		104	1575	
513.00 > 169.00	3.383	3.383	0.0	1.000	236809		5.45(2.36-7.09)		283	
D 23 13C2 PFDA										
515.00 > 470.00	3.383	3.392	-0.009	1.276	1266344	2.46		98.3	3349	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.544	3.545	-0.001	1.336	739733	2.81		113	2204	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.544	3.544	0.0	1.000	672388	2.38		95.1	573	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.706	3.706	0.0	1.224	933936	2.47		103	2393	
599.00 > 99.00	3.697	3.706	-0.009	1.222	296640		3.15(1.39-4.16)		1895	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.714	3.714	0.0	1.002	614681	2.44		97.5	1297	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.706	3.716	-0.010	1.397	751111	2.74		109	1071	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.714	3.714	0.0	1.000	871461	2.43		97.1	866	
563.00 > 169.00	3.714	3.714	0.0	1.000	218537		3.99(2.12-6.36)		1094	
D 30 13C2 PFUnA										
565.00 > 520.00	3.714	3.724	-0.010	1.401	1003549	2.42		96.9	2298	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.876	3.876	0.0	1.280	3953138	2.31		98.2	5676	
35 MeFOSA										
512.00 > 169.00	3.876	3.876	0.0		637595	NC			608	
D 36 13C2 PFDaA										
615.00 > 570.00	4.011	4.012	-0.001	1.512	1036867	2.39		95.4	1910	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.011	4.011	0.0	1.000	1108916	2.42		96.9	850	
613.00 > 169.00	4.011	4.011	0.0	1.000	291148		3.81(2.13-6.40)		1213	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.020	4.020	0.0	1.191	315187	2.37		98.5	2404	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.253	4.253	0.0	1.405	422182	2.39		98.7	2167	
699.00 > 99.00	4.253	4.253	0.0	1.405	605839		0.70(0.00-0.00)		2452	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.281	0.0	1.067	1102739	2.54		102	732	
663.00 > 169.00	4.281	4.281	0.0	1.067	380915		2.89(1.25-3.76)		2562	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.525	4.525	0.0	1.000	321848	2.39		95.5	2027	
713.00 > 219.00	4.515	4.525	-0.010	0.998	232167		1.39(0.71-2.13)		1778	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.525	4.523	0.002	1.706	1261057	2.37		94.8	2606	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.944	4.944	0.0	1.002	1944765	2.47		99.0	427	
813.00 > 169.00	4.944	4.944	0.0	1.002	382893		5.08(2.86-8.58)		1973	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.935	4.944	-0.009	1.861	2197452	2.24		89.4	2981	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.301	5.301	0.0	1.074	2187651	2.11		84.4	381	
913.00 > 169.00	5.294	5.301	-0.007	1.073	297513		7.35(3.83-11.48)		1420	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_070.d

Injection Date: 15-Oct-2018 09:19:44

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 29

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

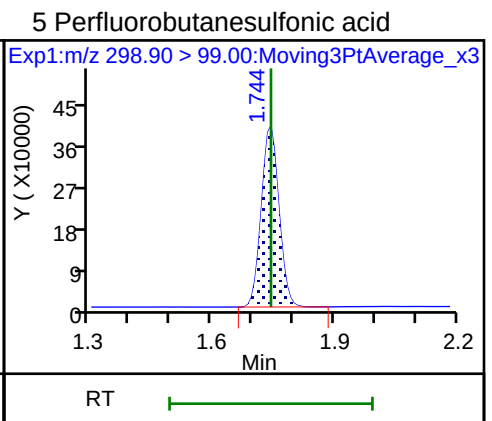
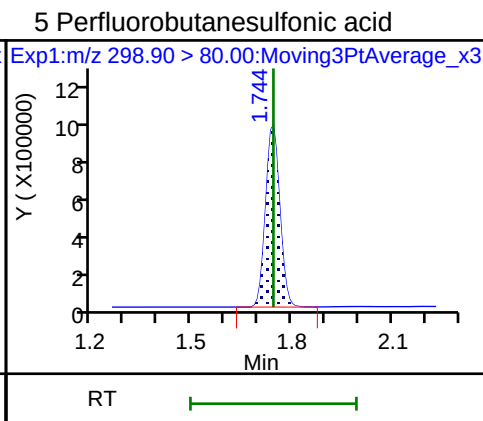
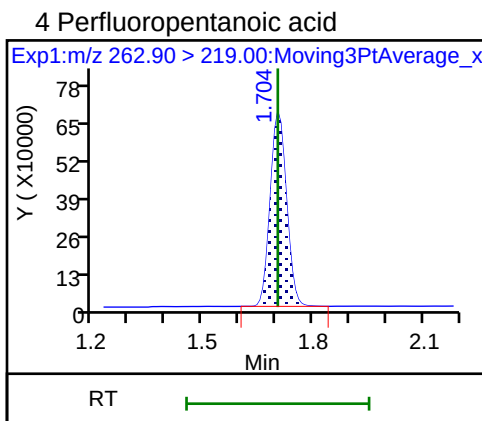
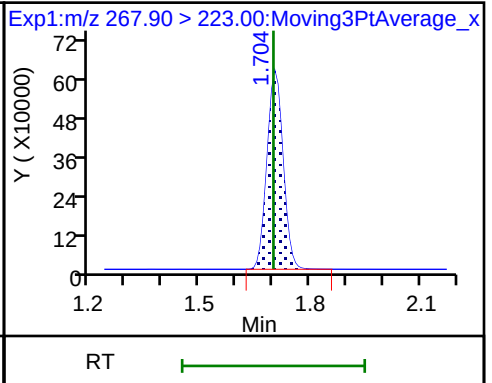
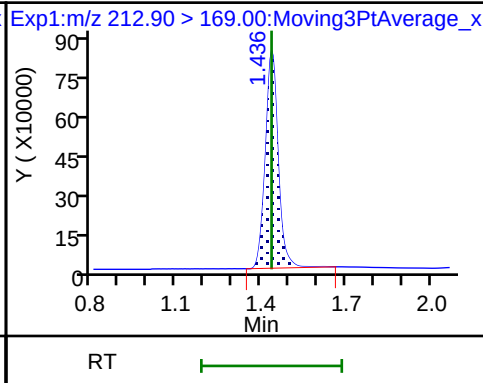
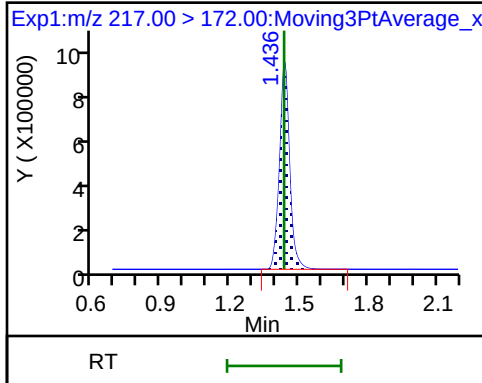
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

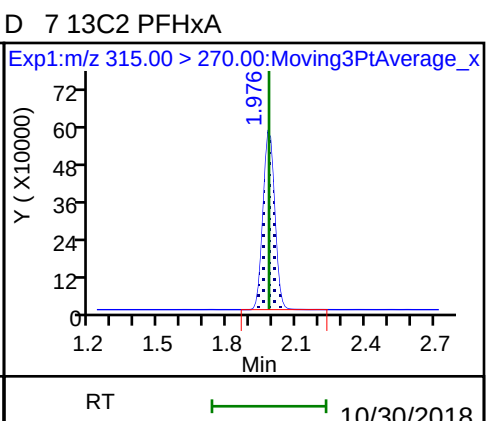
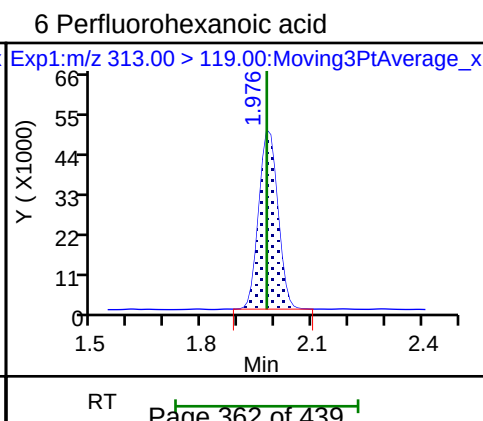
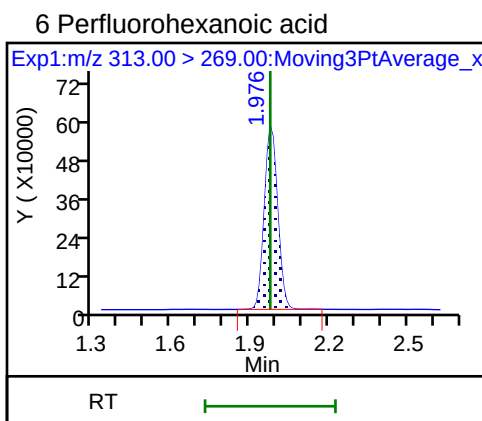
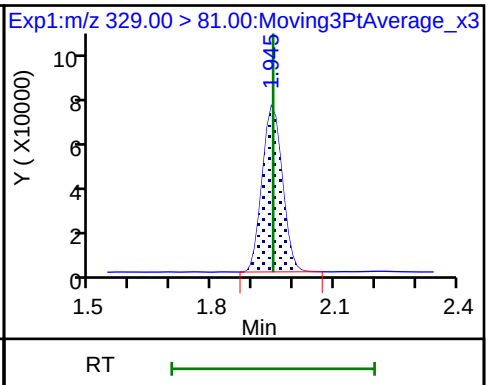
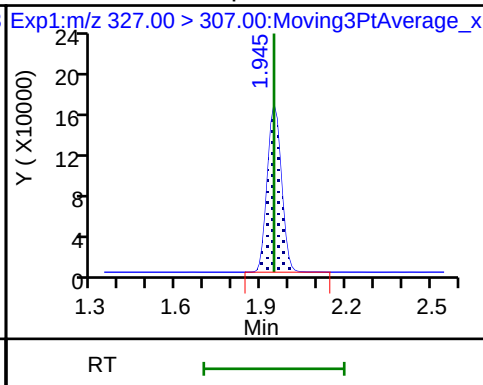
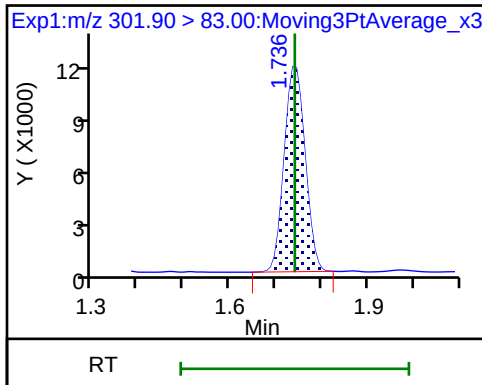
D 3 13C5 PFPeA

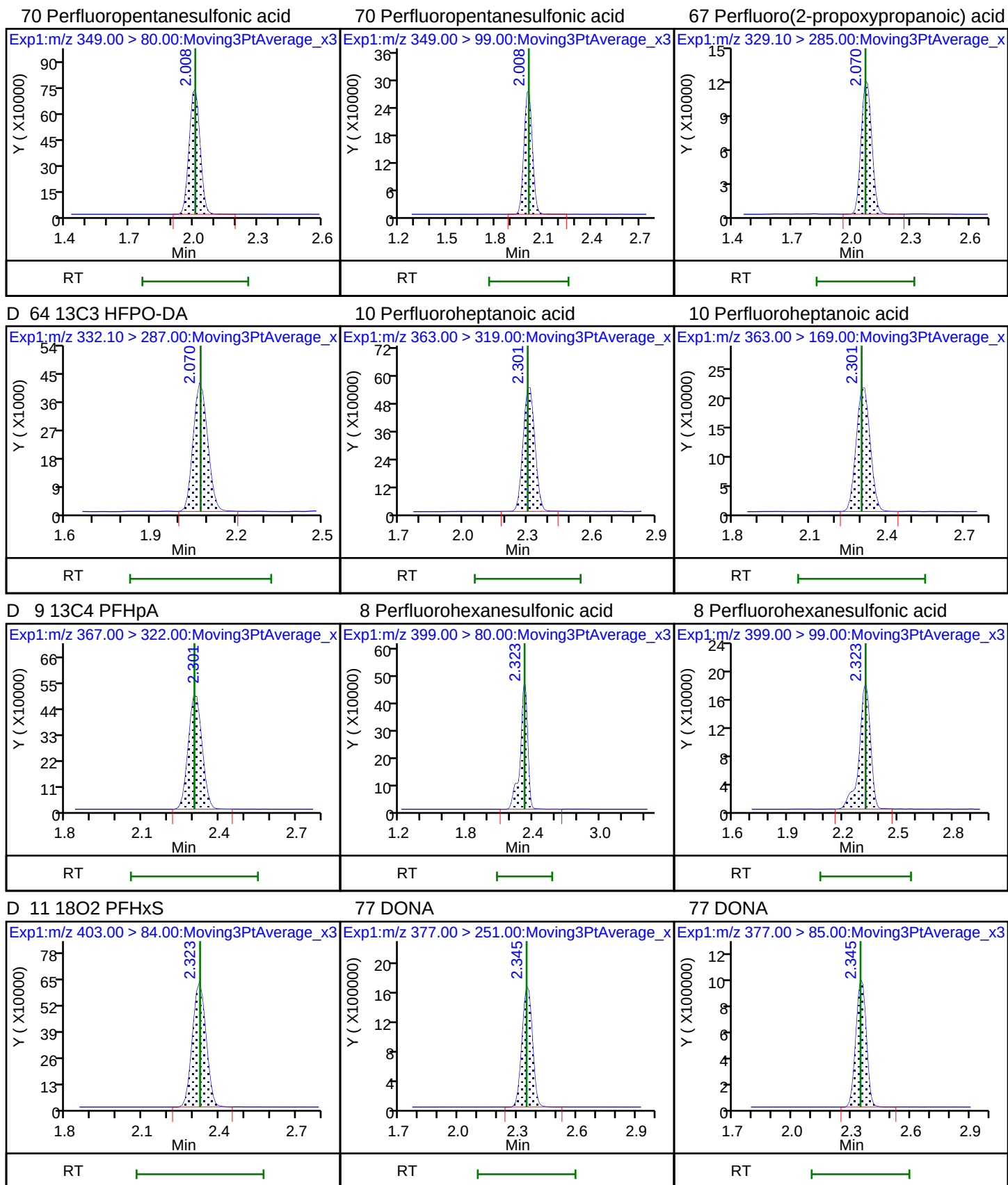


D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

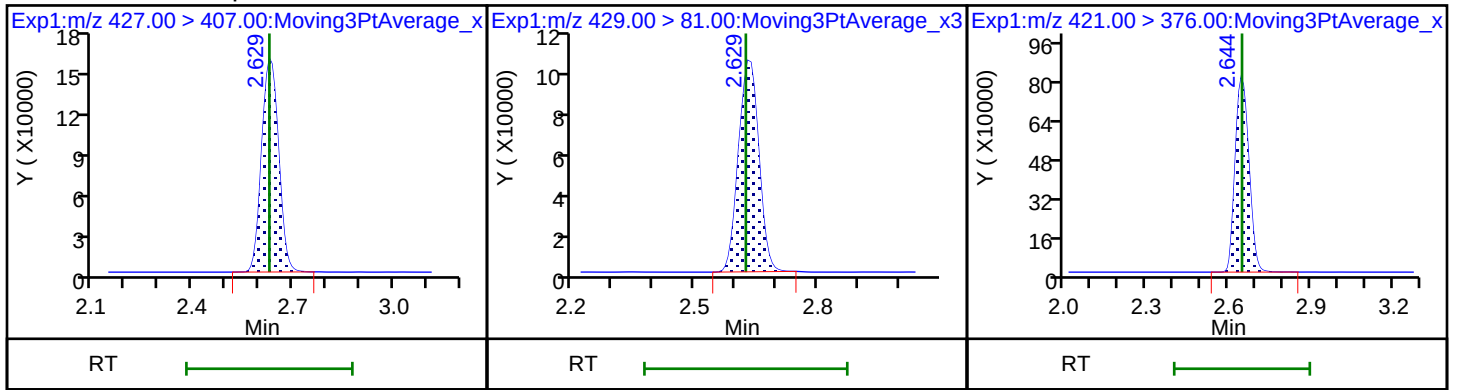
D 60 M2-4:2 FTS





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

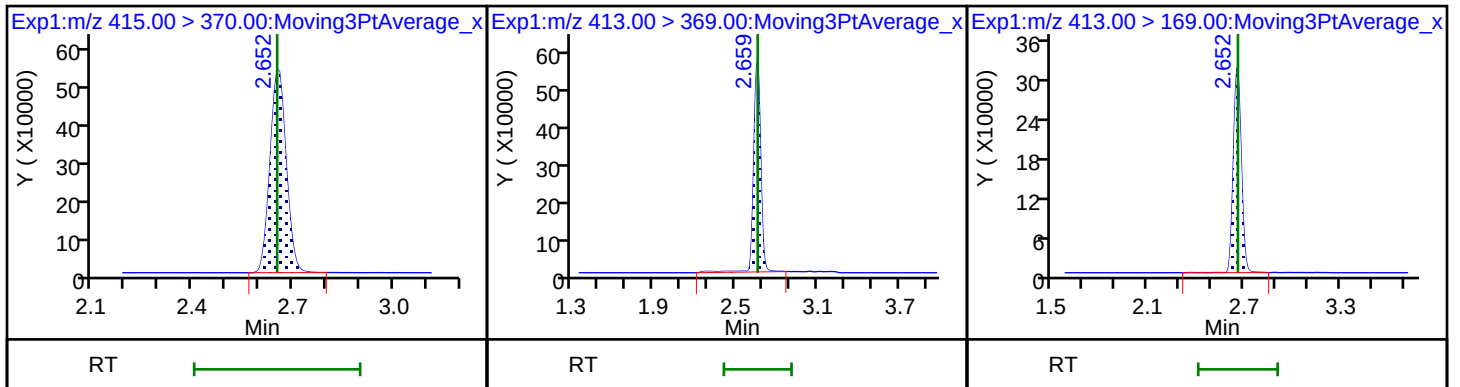
D 73 13C8 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid

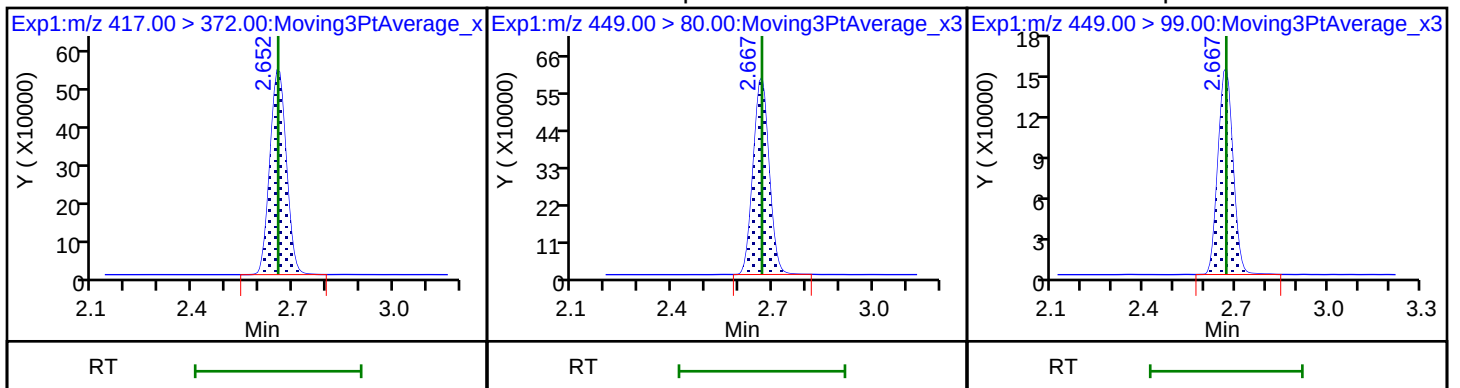
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

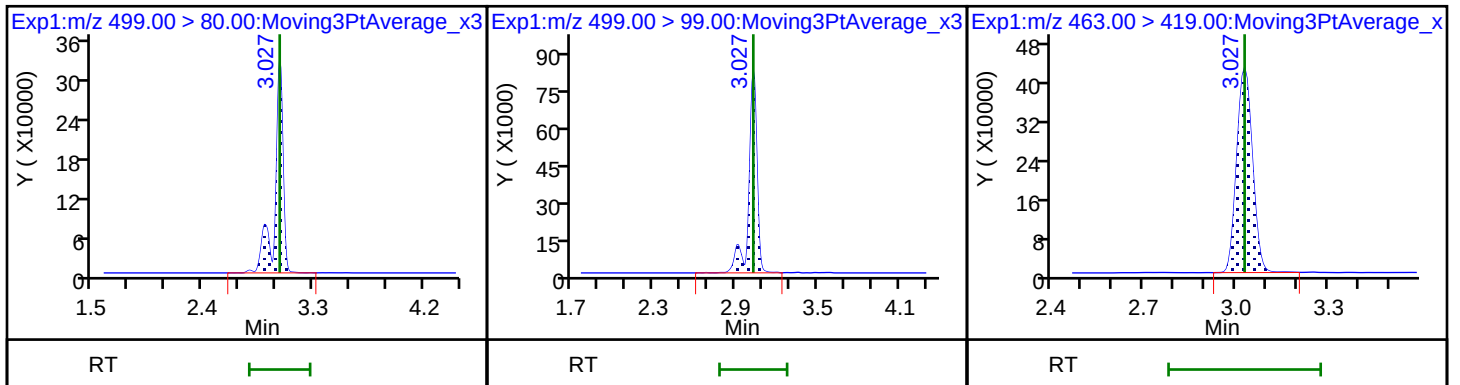
16 Perfluoroheptanesulfonic acid



17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

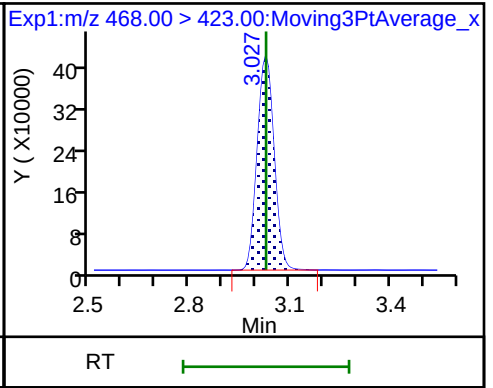
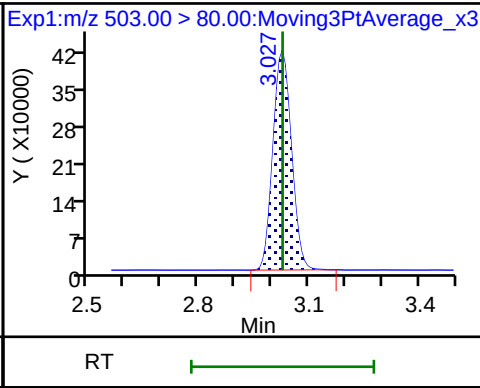
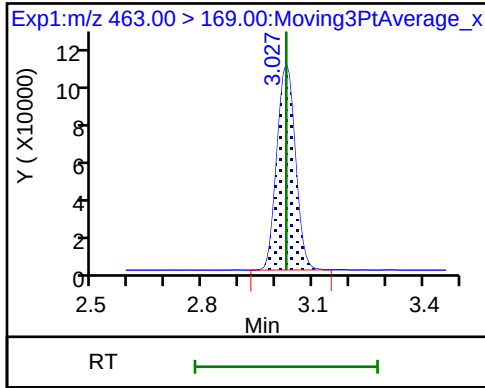
20 Perfluorononanoic acid



20 Perfluorononanoic acid

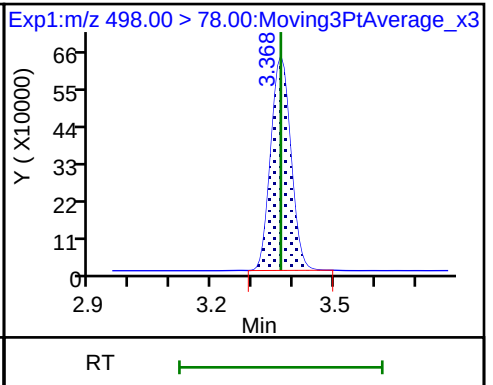
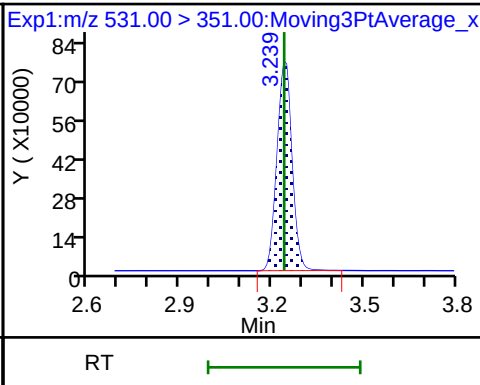
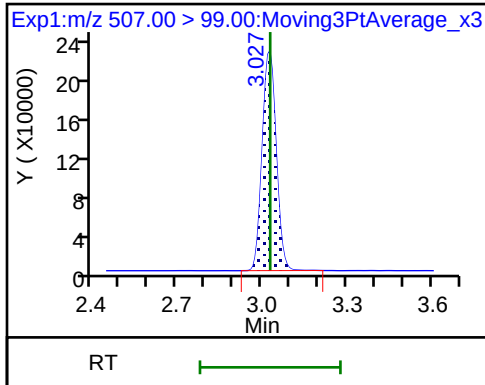
D 18 13C4 PFOS

D 19 13C5 PFNA



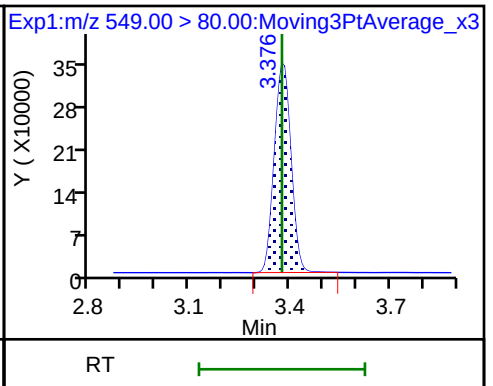
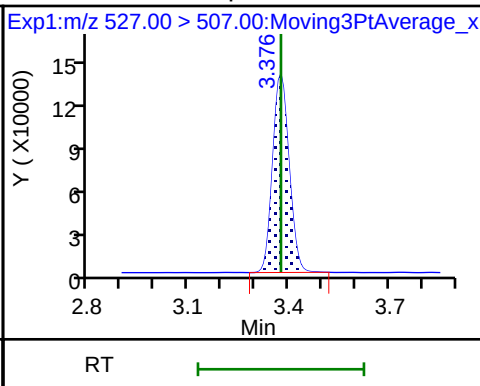
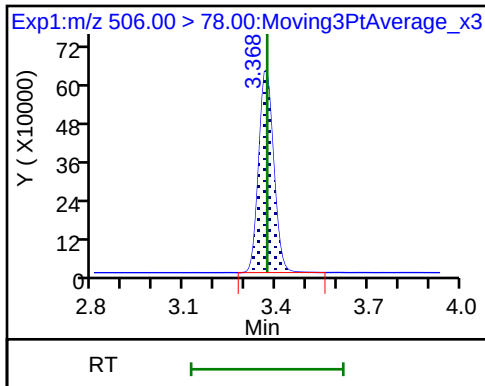
D 72 13C8 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan



D 21 13C8 FOSA

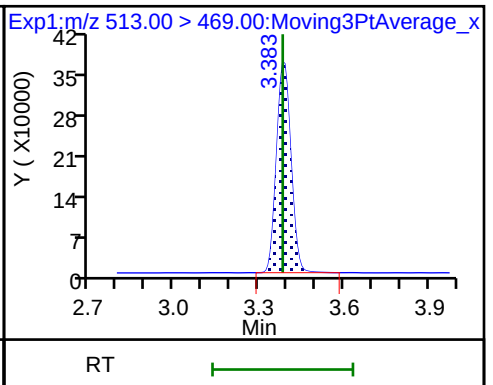
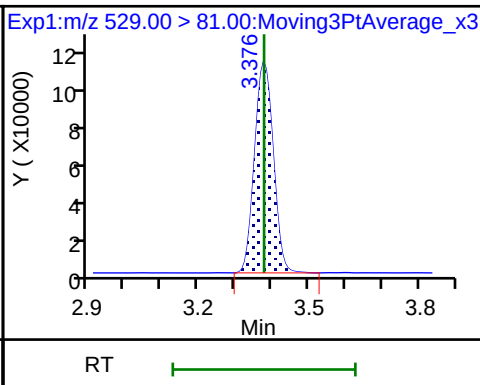
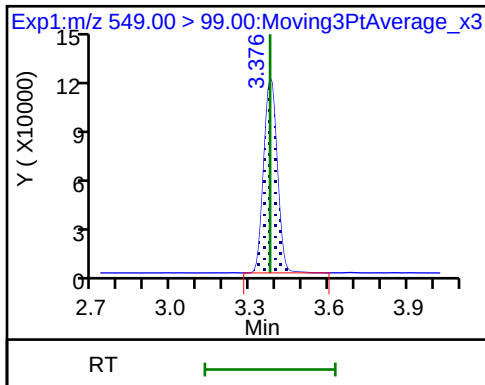
25 1H,1H,2H,2H-perfluorodecanesulfoni

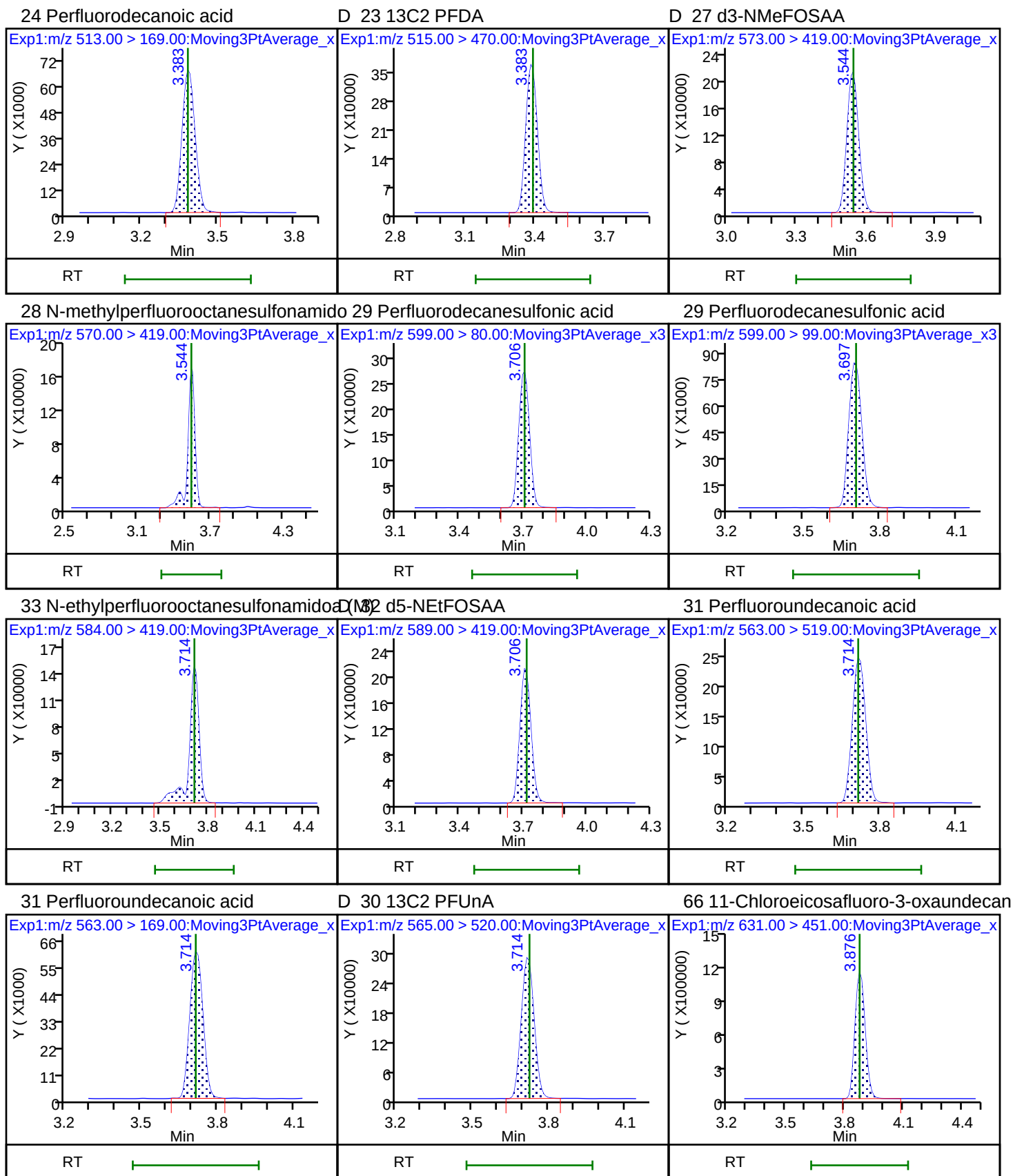


68 Perfluorononanesulfonic acid

D 26 M2-8:2 FTS

24 Perfluorodecanoic acid

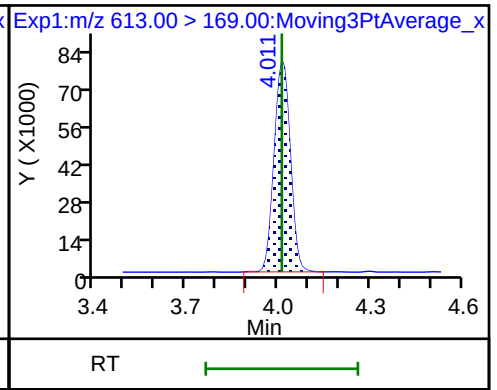
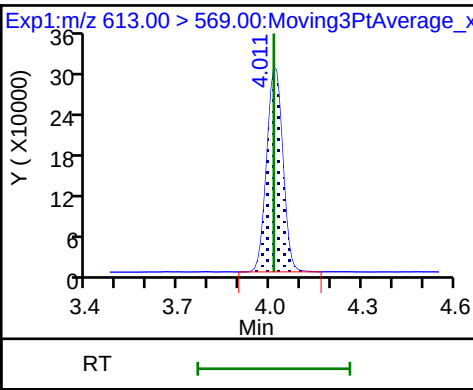
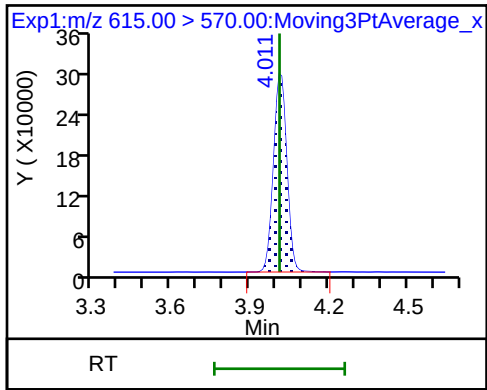




D 36 13C2 PFDaA

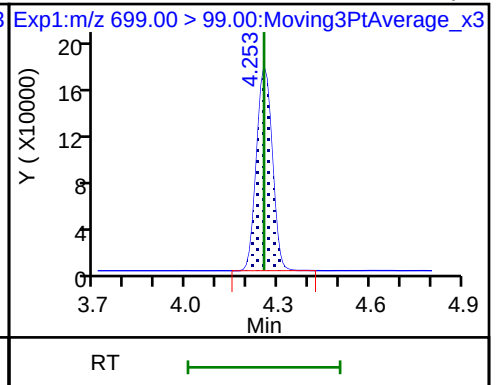
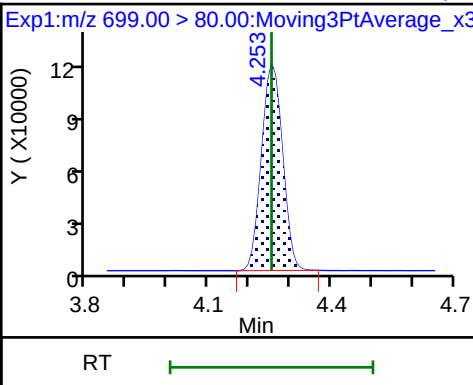
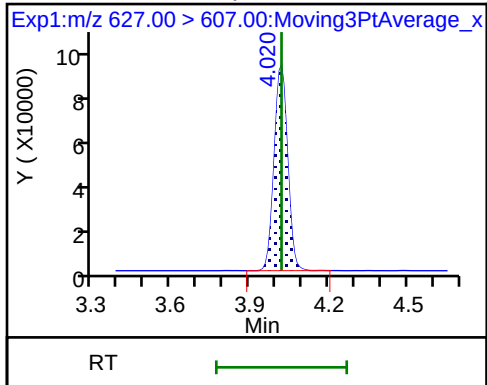
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

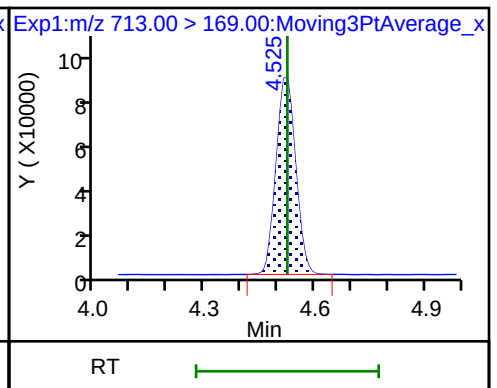
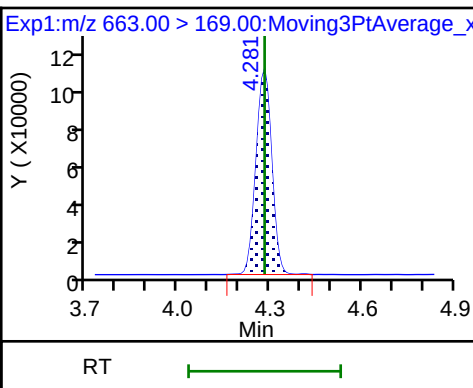
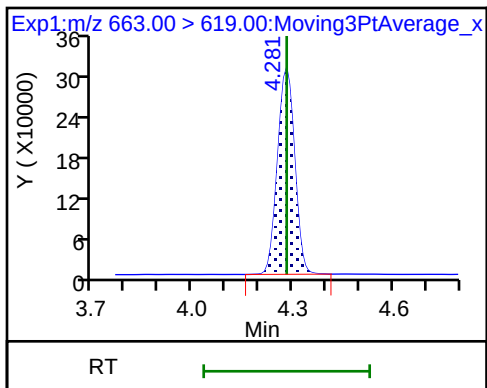
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

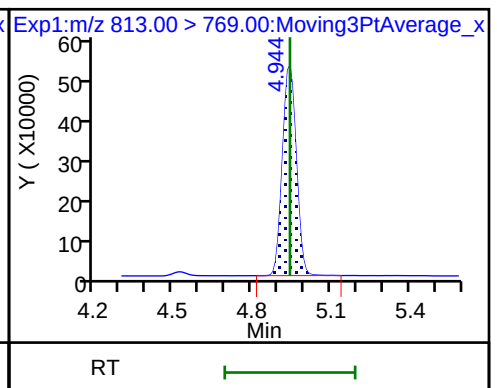
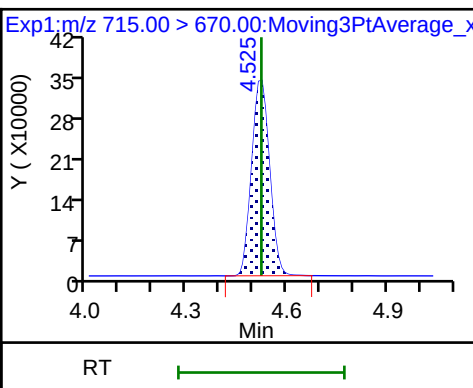
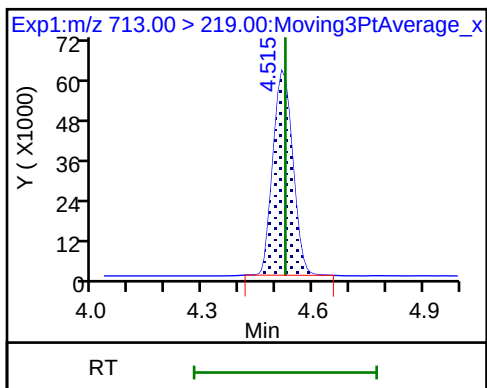
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

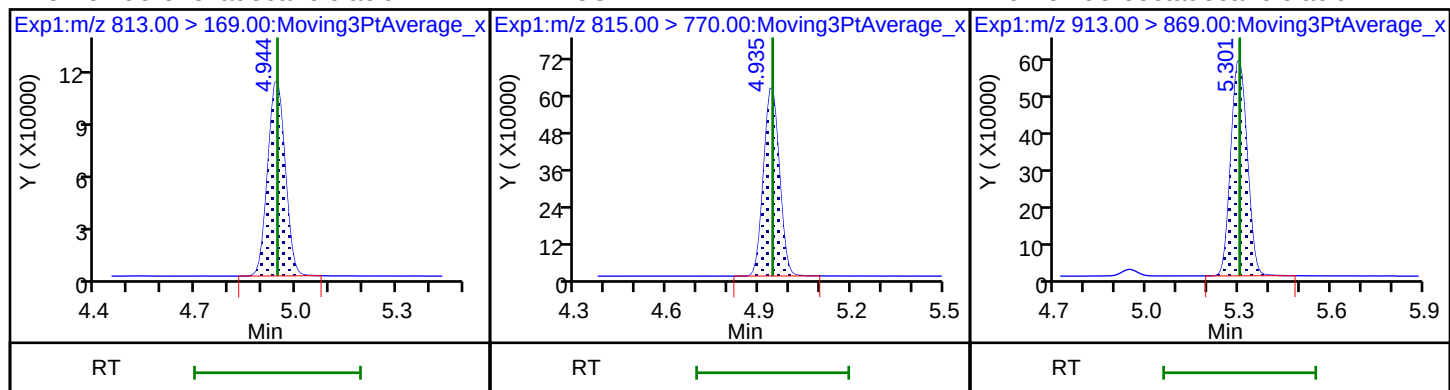
45 Perfluorohexadecanoic acid



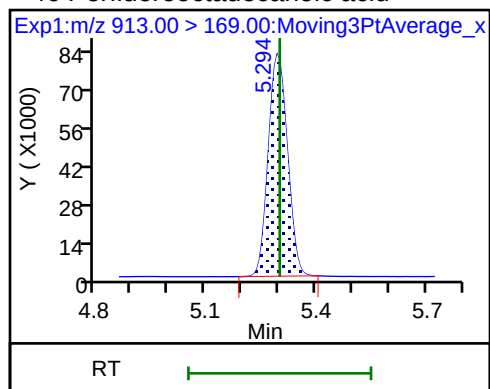
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

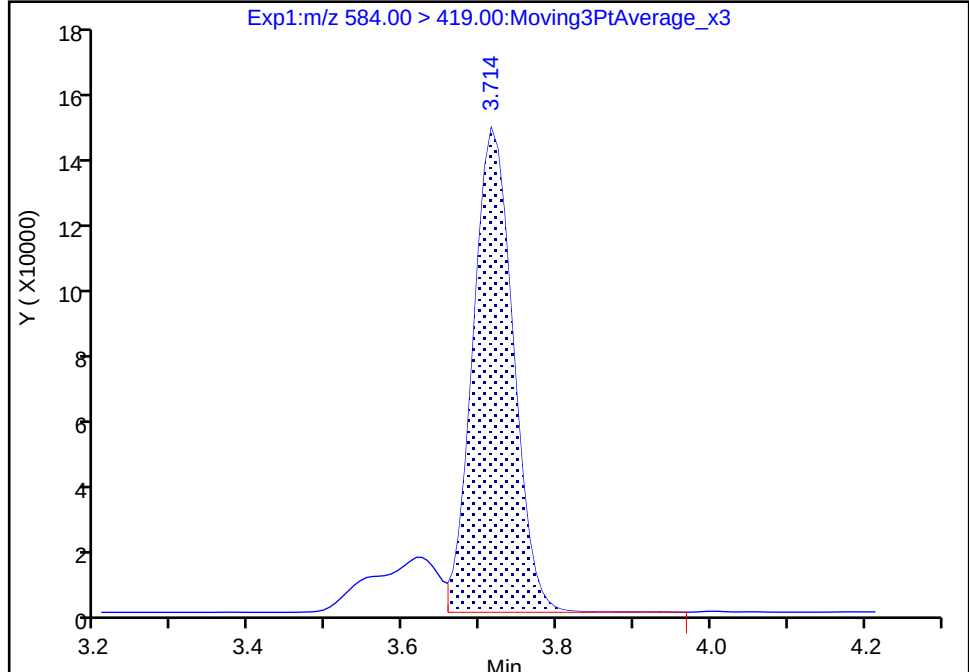
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Injection Date: 15-Oct-2018 09:19:44 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 29 Worklist Smp#: 11
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

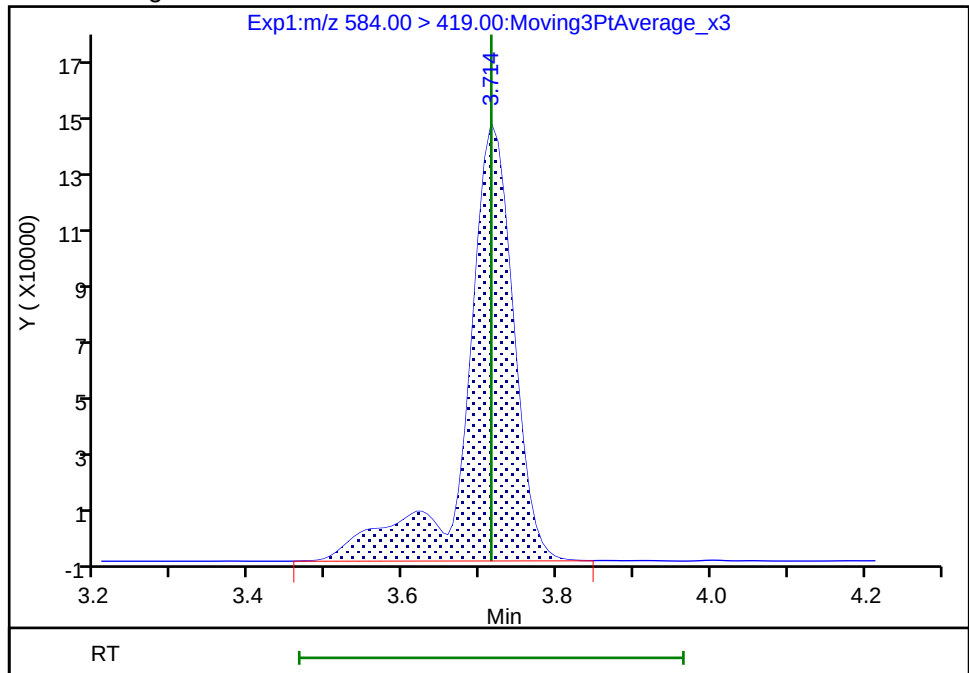
RT: 3.71
Area: 518276
Amount: 2.054230
Amount Units: ng/ml

Processing Integration Results



RT: 3.71
Area: 614681
Amount: 2.436340
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:50:13
Audit Action: Manually Integrated

Audit Reason: Isomers
Page 369 of 439

10/30/2018

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-251604/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_061.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/15/2018 08:12</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.0	U	2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.0	U	2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	2.0	U	2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.0	U	2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	2.0	U	2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.0	U	2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.0	U	2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.0	U	2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	2.0	U	2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.0	U	2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.0	U	2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.245	J	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.0	U	2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.0	U	2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.0	U	2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.0	U	2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20	U	20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20	U	20	1.9
27619-97-2	6:2 FTS	20	U	20	2.0
39108-34-4	8:2 FTS	20	U	20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-251604/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_061.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/15/2018 08:12</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	98		25-150
STL01893	13C5 PFPeA	100		25-150
STL00993	13C2 PFHxA	95		25-150
STL01892	13C4 PFHpA	102		25-150
STL00990	13C4 PFOA	104		25-150
STL00995	13C5 PFNA	99		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	101		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2 PFTeDA	105		25-150
STL02337	13C3 PFBS	98		25-150
STL00994	18O2 PFHxS	102		25-150
STL00991	13C4 PFOS	103		25-150
STL01056	13C8 FOSA	93		25-150
STL02118	d3-NMeFOSAA	115		25-150
STL02117	d5-NEtFOSAA	115		25-150
STL02279	M2-6:2 FTS	116		25-150
STL02280	M2-8:2 FTS	114		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_061.d
 Lims ID: MB 320-251604/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 15-Oct-2018 08:12:46 ALS Bottle#: 46 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-251604/1-a
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 14:51:49

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.426	1.434	-0.008	0.539	3699304	2.44		97.6	7762	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.426	1.436	-0.010	1.000	5692	0.004293			0.7	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.694	1.700	-0.006	0.641	2472629	2.49		99.6	7010	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.694	1.704	-0.010	1.000	7553	0.007080			0.7	
D 47 13C3 PFBS										
301.90 > 83.00	1.734	1.740	-0.006	0.656	46478	2.28		97.9	424	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.981	-0.007	0.747	2602115	2.37		94.9	6588	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.069	2.075	-0.006	0.782	211905	2.68		107	903	
D 9 13C4 PFHpA										
367.00 > 322.00	2.299	2.303	-0.004	0.869	2544196	2.54		102	8763	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.310	2.312	-0.002	1.000	8369	0.006132			29.7	
399.00 > 99.00	2.310	2.312	-0.002	1.000	3165		2.64(1.50-4.49)		12.0	
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.325	-0.015	0.874	2900918	2.41		102	8791	
77 DONA										
377.00 > 251.00	2.343	2.345	-0.002	0.777	2358	0.000749			5.0	
377.00 > 85.00	2.332	2.345	-0.013	0.773	1206		1.96(0.85-2.54)		8.4	
13 1H,1H,2H,2H-perfluorooctanesulfoni										M
427.00 > 407.00	2.621	2.622	-0.001	1.003	2206	0.006637			14.3	M
D 12 M2-6:2 FTS										
429.00 > 81.00	2.614	2.624	-0.010	0.988	515909	2.75		116	3211	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 73 13C8 PFOA										
421.00 > 376.00	2.629	2.647	-0.018	0.994	9398	0.006834		0.0	86.8	
* 62 13C2 PFOA										
415.00 > 370.00	2.644	2.653	-0.009		2411197	2.50			4971	
D 14 13C4 PFOA										
417.00 > 372.00	2.644	2.655	-0.011	1.000	2426557	2.59		104	8586	
D 18 13C4 PFOS										
503.00 > 80.00	3.018	3.028	-0.010	1.141	1969689	2.46		103	5308	
D 19 13C5 PFNA										
468.00 > 423.00	3.010	3.028	-0.018	1.138	1922498	2.47		98.7	4253	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.351	3.364	-0.013	1.000	3197	0.003062			26.6	
D 21 13C8 FOSA										
506.00 > 78.00	3.351	3.370	-0.019	1.267	2690597	2.32		92.8	4082	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.366	3.377	-0.011	1.273	539954	2.72		114	2597	
D 23 13C2 PFDA										
515.00 > 470.00	3.374	3.392	-0.018	1.276	1641089	2.39		95.5	4822	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.533	3.545	-0.012	1.336	1010374	2.88		115	1612	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.696	3.716	-0.020	1.398	1055394	2.88		115	1294	
D 30 13C2 PFUnA										
565.00 > 520.00	3.705	3.724	-0.019	1.401	1396468	2.53		101	4259	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.865	3.879	-0.014	1.281	2329	0.000998			6.7	
D 36 13C2 PFDaA										
615.00 > 570.00	4.005	4.012	-0.008	1.514	1417978	2.45		97.8	2306	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.505	4.523	-0.018	1.704	1858411	2.62		105	4182	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.927	4.936	-0.009	1.000	29852	0.003191			6.3	
813.00 > 169.00	4.927	4.936	-0.009	1.000	5460		5.47(2.86-8.58)		64.7	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.927	4.944	-0.017	1.863	3024270	2.31		92.3	3604	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_061.d

Injection Date: 15-Oct-2018 08:12:46

Instrument ID: A8_N

Lims ID: MB 320-251604/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 46

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

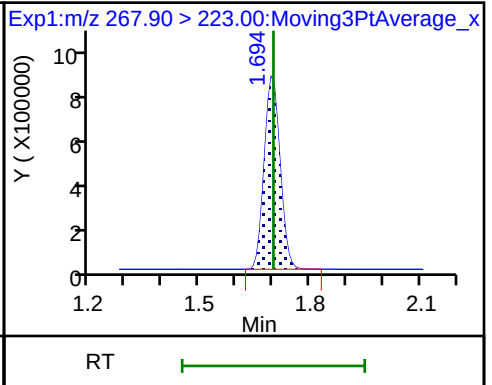
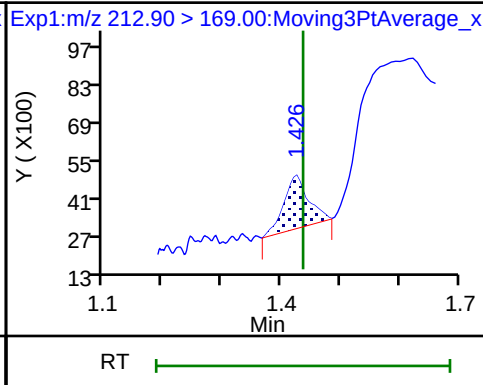
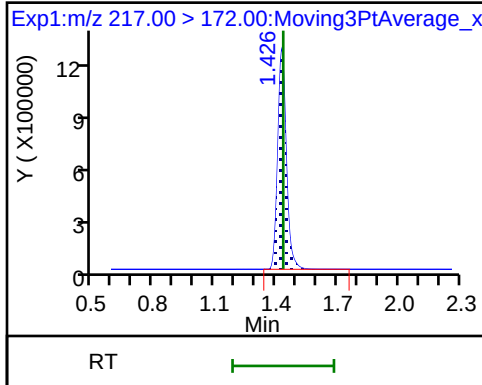
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

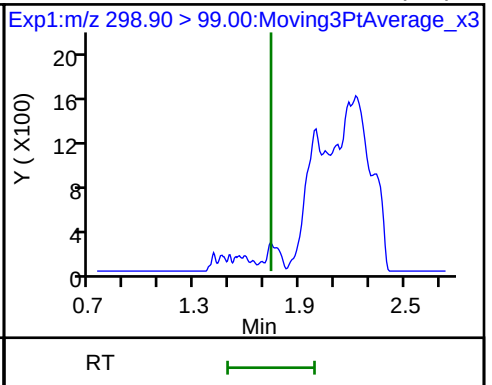
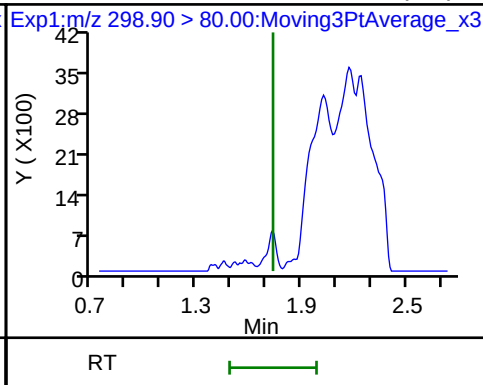
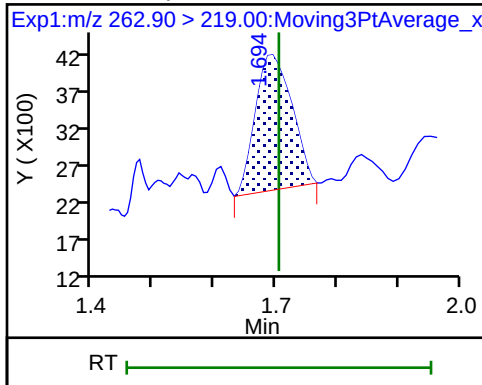
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid (ND)

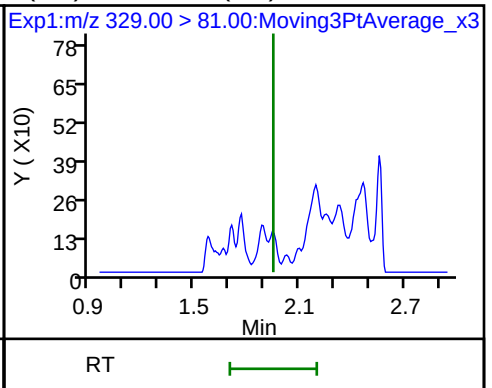
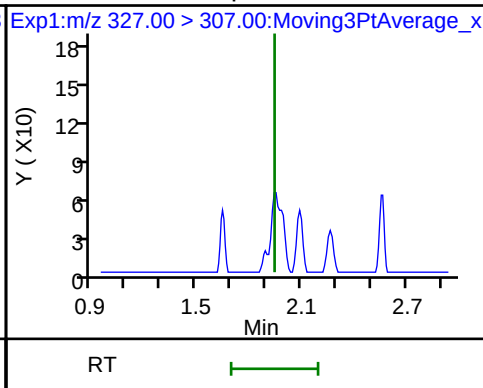
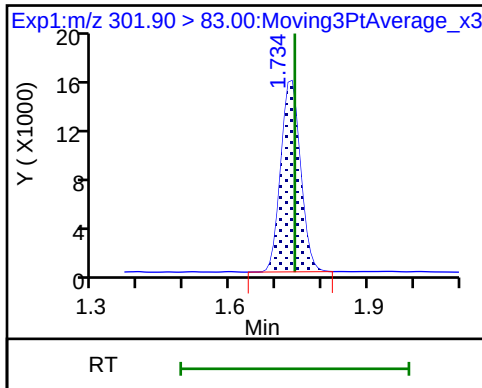
5 Perfluorobutanesulfonic acid (ND)



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonic acid (ND)

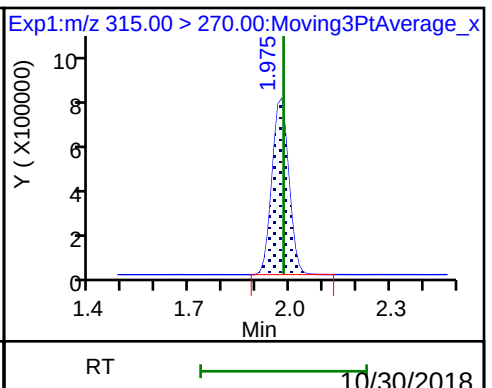
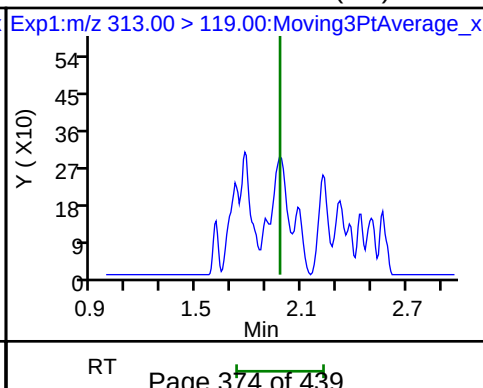
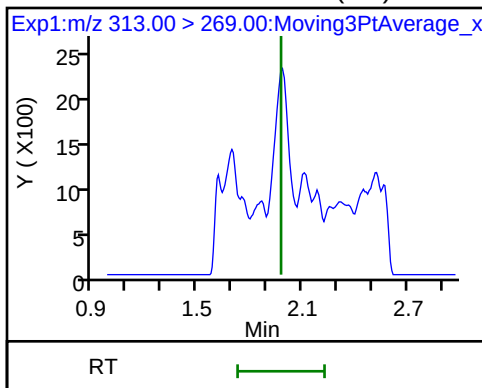
D 50 M2-4:2 FTS (ND)



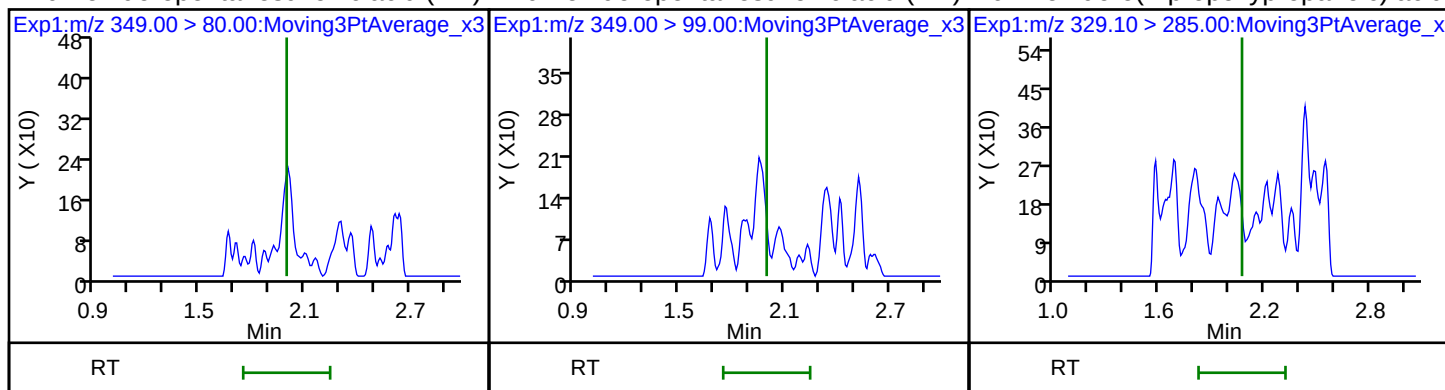
6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

D 7 13C2 PFHxA



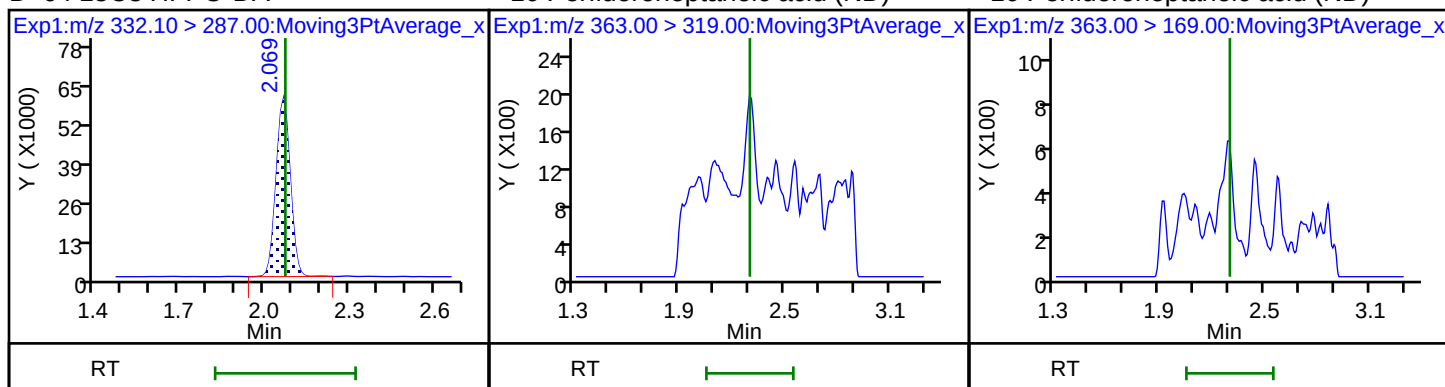
70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) 67 Perfluoro(2-propoxypropanoic) acid (ND)



D 64 13C3 HFPO-DA

10 Perfluoroheptanoic acid (ND)

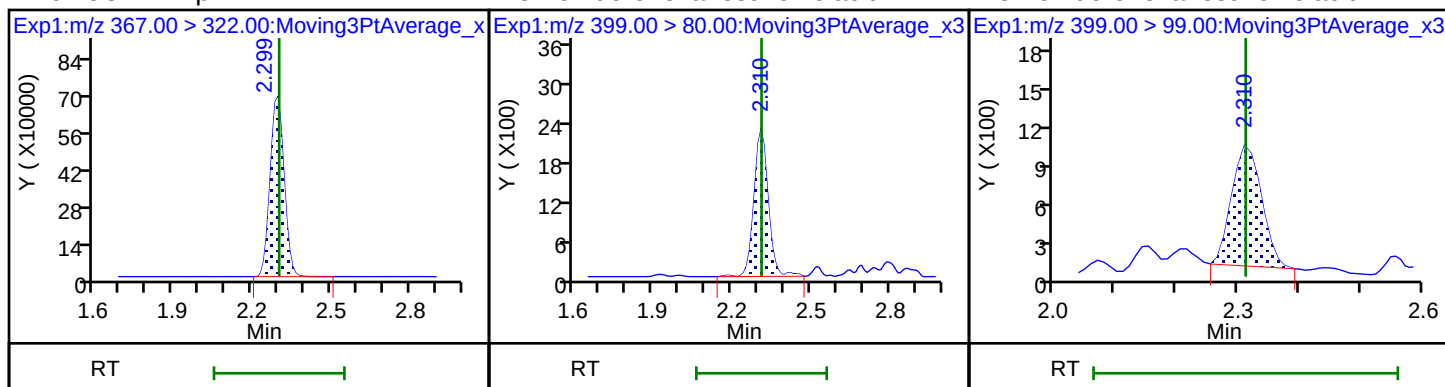
10 Perfluoroheptanoic acid (ND)



D 9 13C4 PFHpA

8 Perfluorohexanesulfonic acid

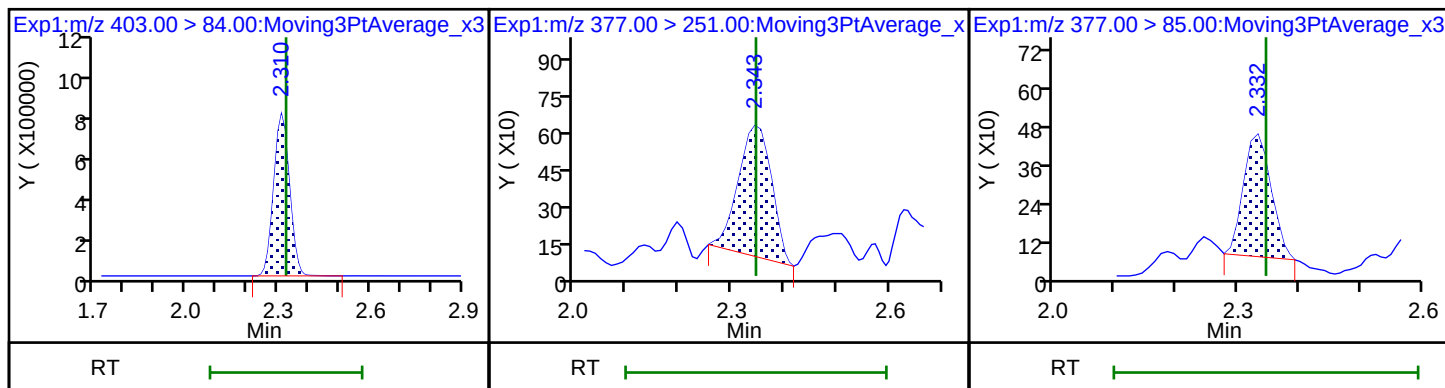
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

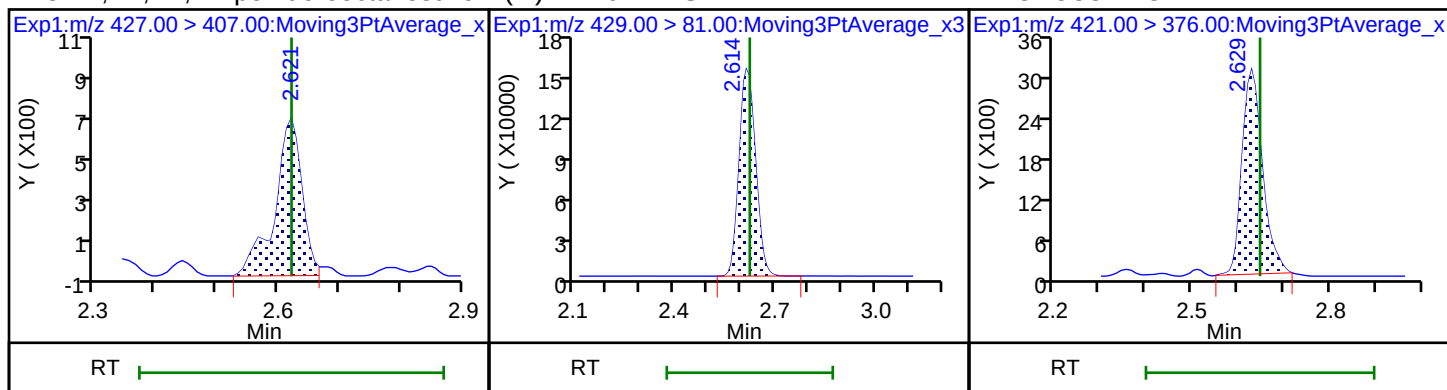
77 DONA

77 DONA



13 1H,1H,2H,2H-perfluorooctanesulfonate (M) M2-6:2 FTS

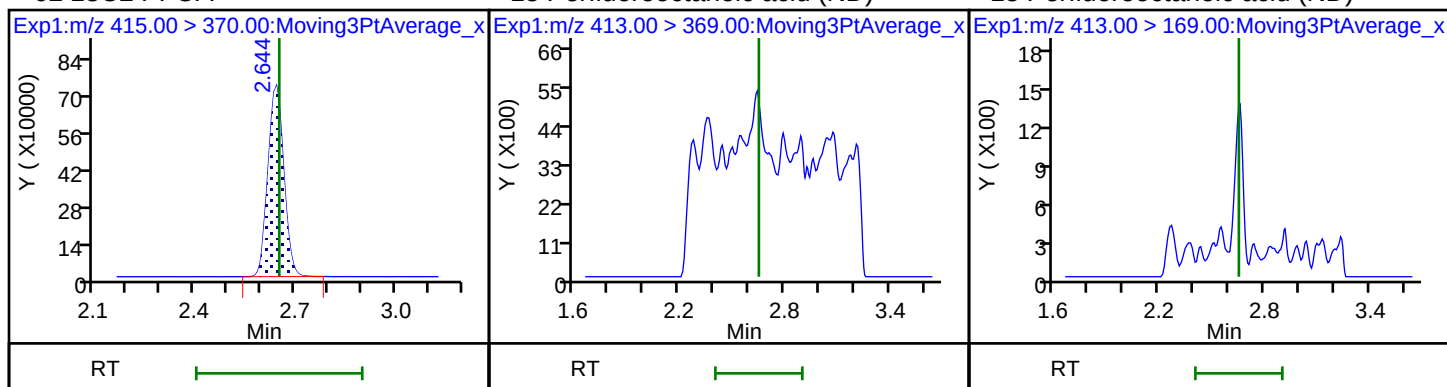
D 73 13C8 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid (ND)

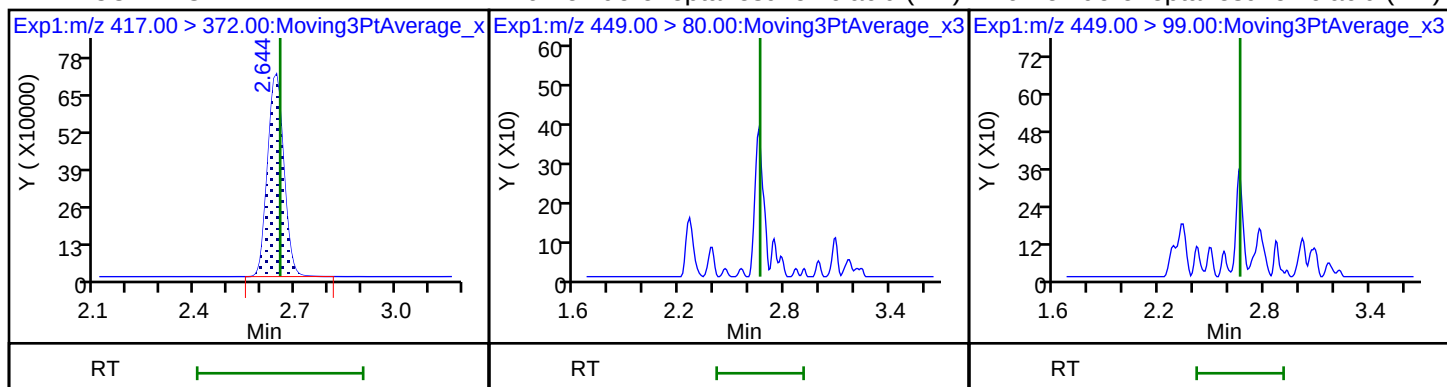
15 Perfluorooctanoic acid (ND)



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid (ND)

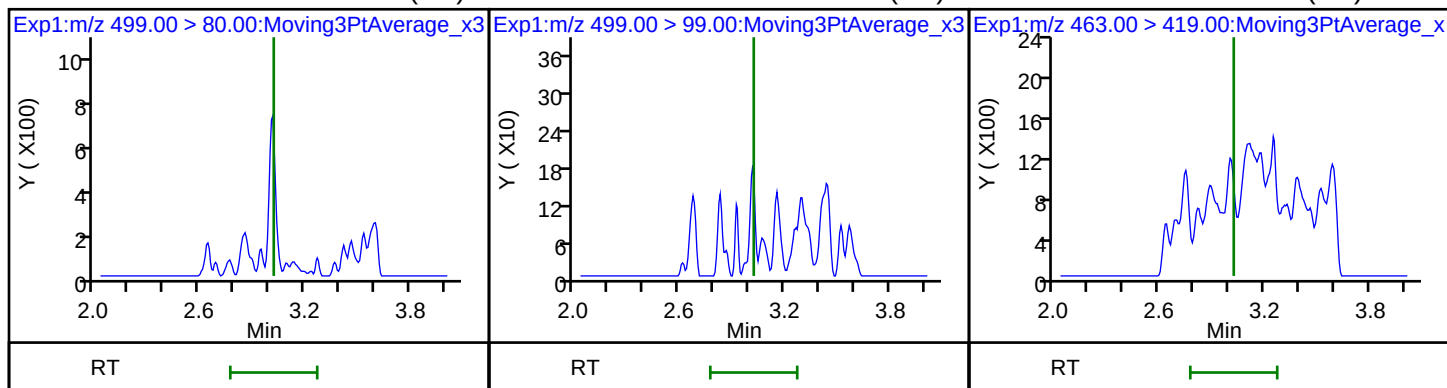
16 Perfluoroheptanesulfonic acid (ND)



17 Perfluorooctanesulfonic acid (ND)

17 Perfluorooctanesulfonic acid (ND)

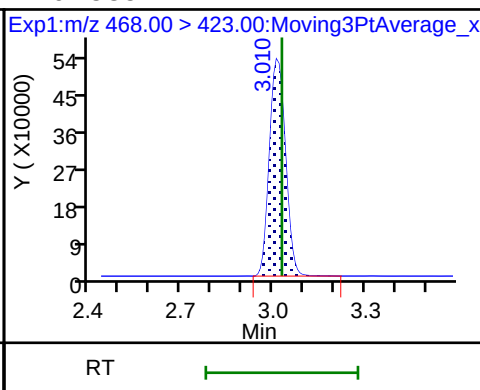
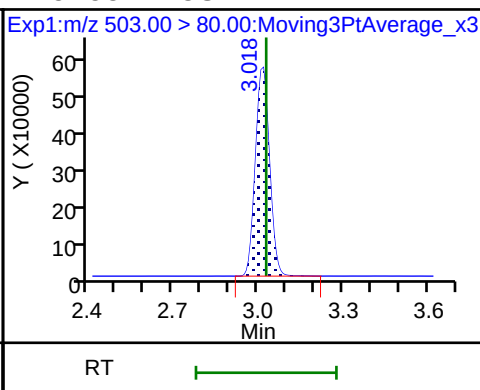
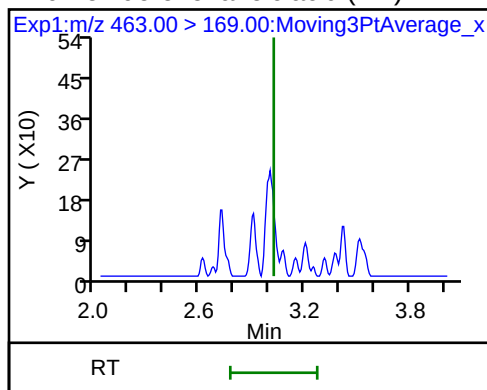
20 Perfluorononanoic acid (ND)



20 Perfluorononanoic acid (ND)

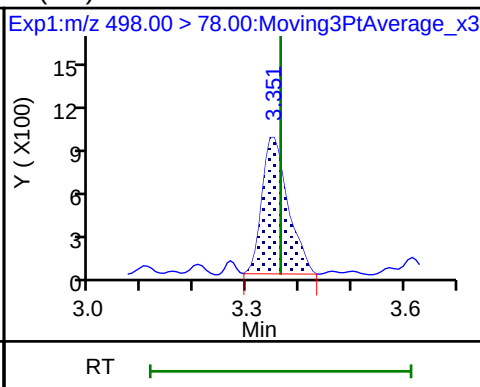
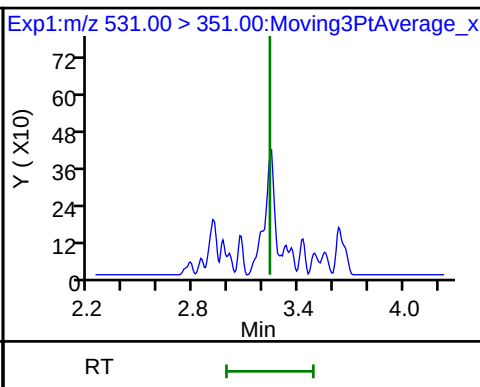
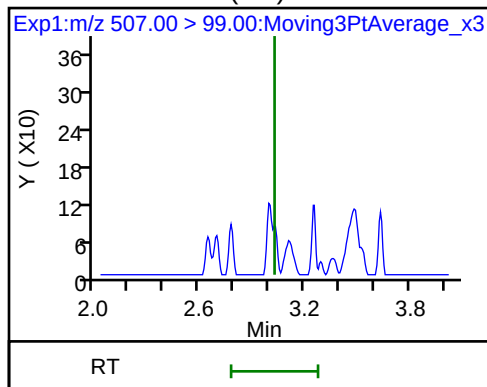
D 18 13C4 PFOS

D 19 13C5 PFNA



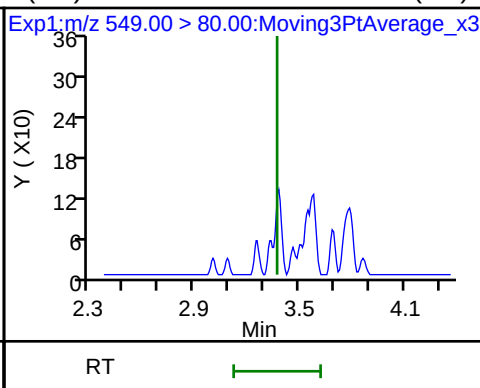
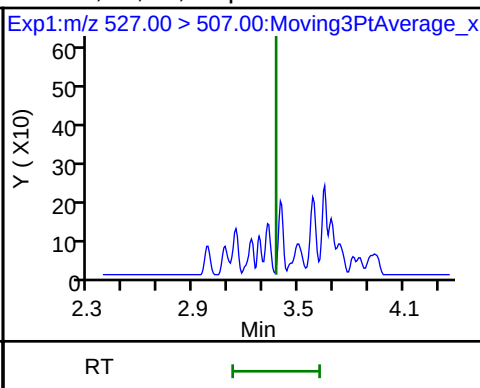
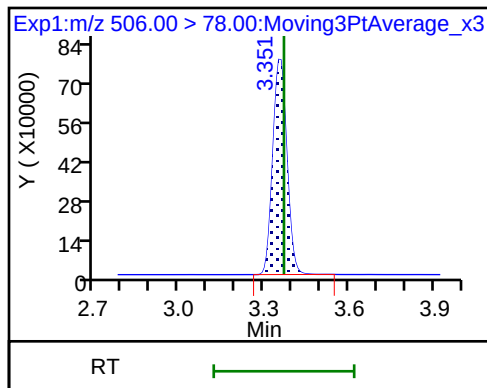
D 72 13C8 PFOS (ND)

69 9-Chlorohexadecafluoro-3-oxanonan-2-ylperfluorooctanesulfonamide



D 21 13C8 FOSA

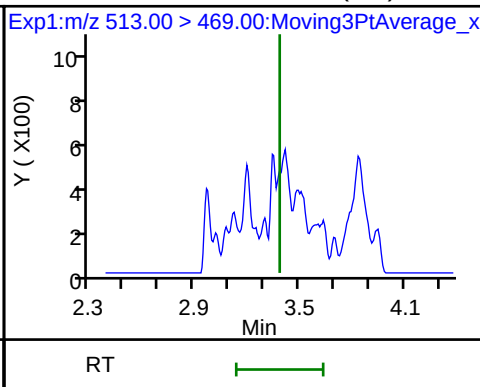
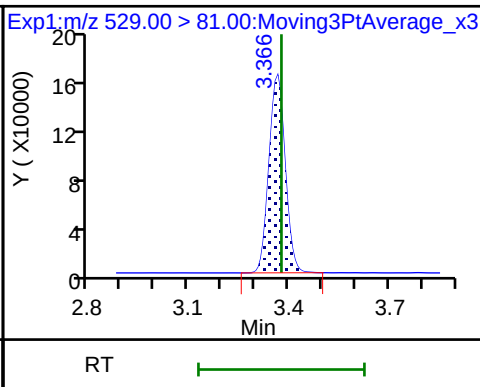
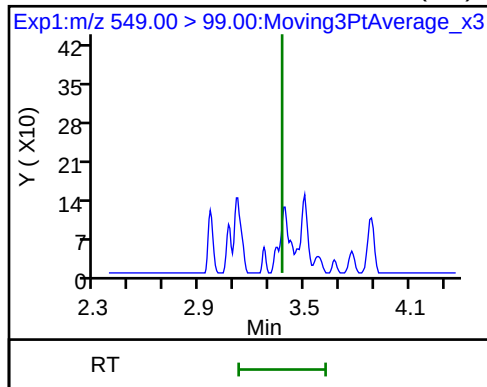
25 1H,1H,2H,2H-perfluorodecanesulfonic acid (ND)

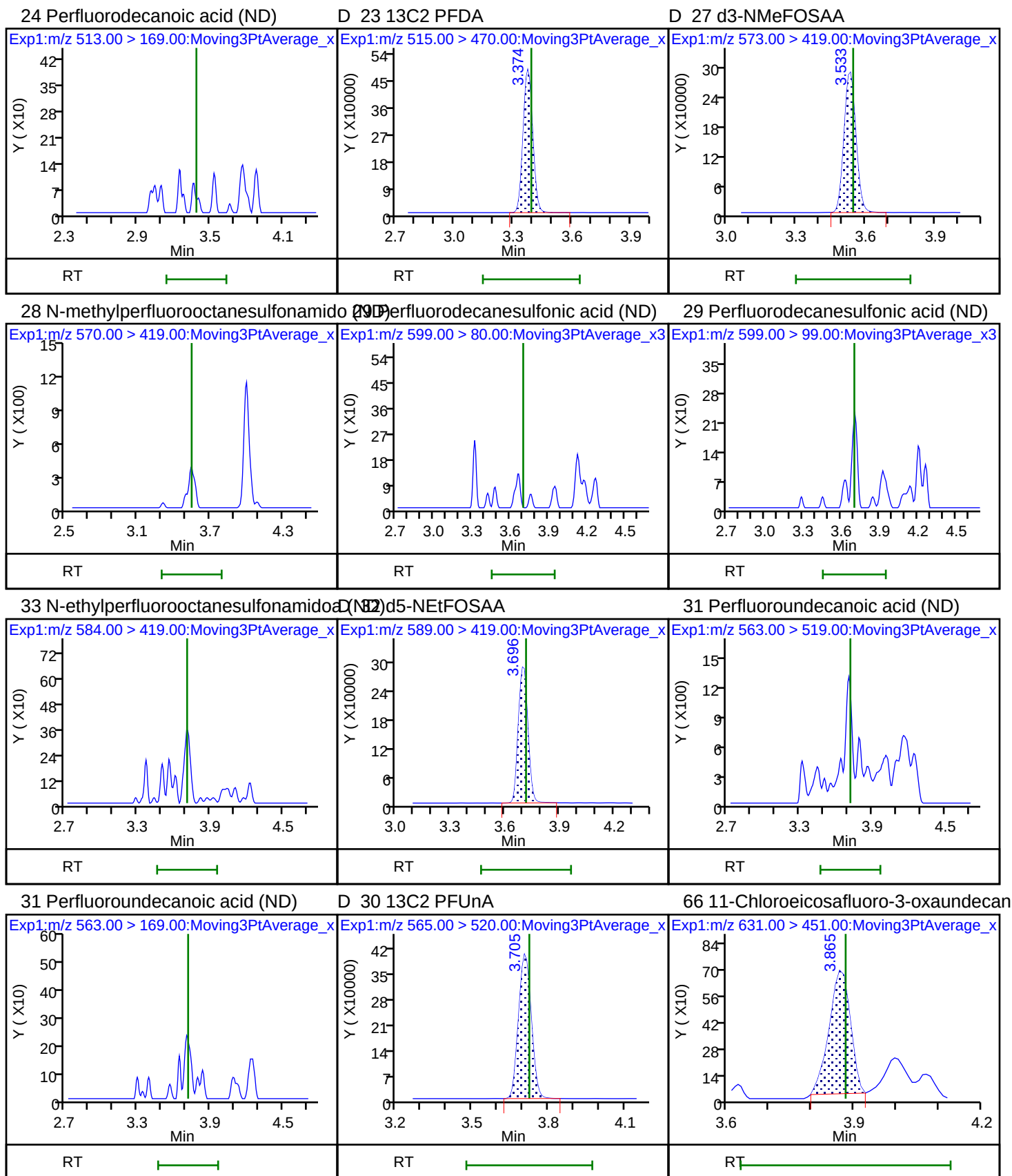


68 Perfluorononanesulfonic acid (ND)

D 26 M2-8:2 FTS

24 Perfluorodecanoic acid (ND)

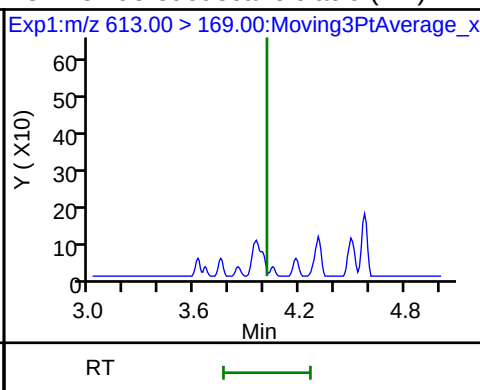
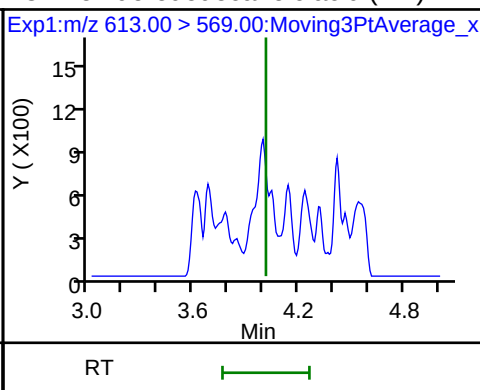
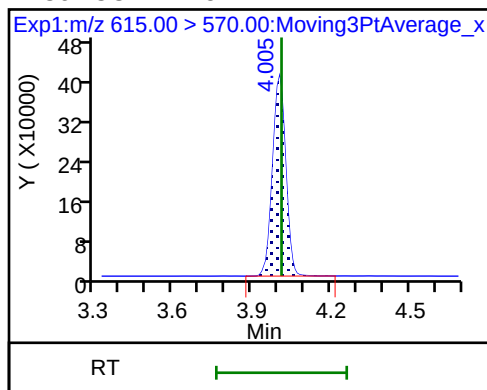




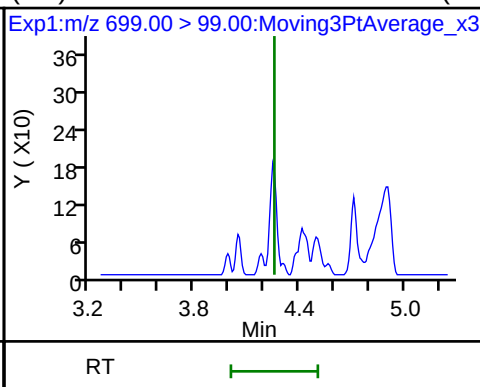
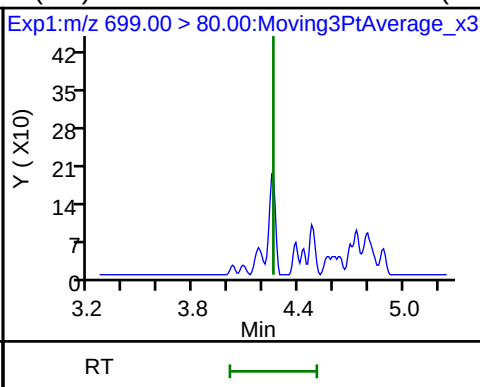
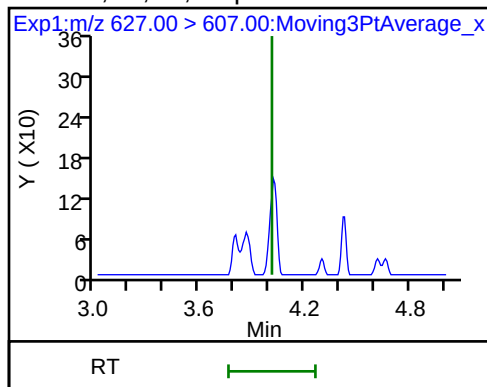
D 36 13C2 PFDa

37 Perfluorododecanoic acid (ND)

37 Perfluorododecanoic acid (ND)



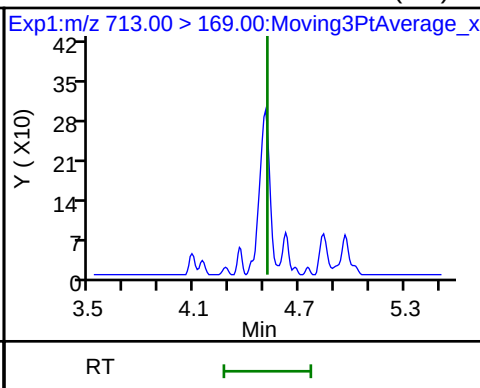
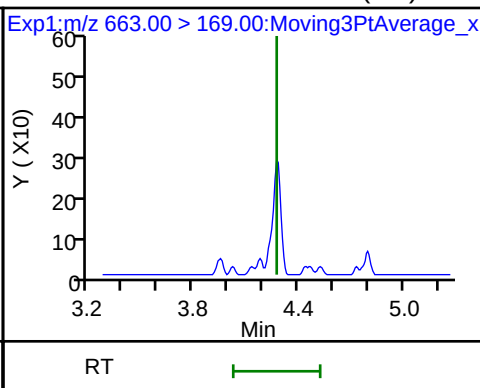
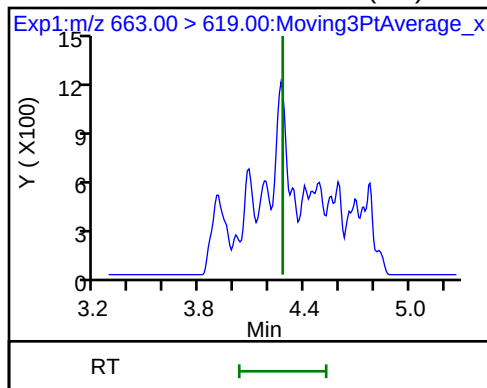
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) 75 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) 76 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

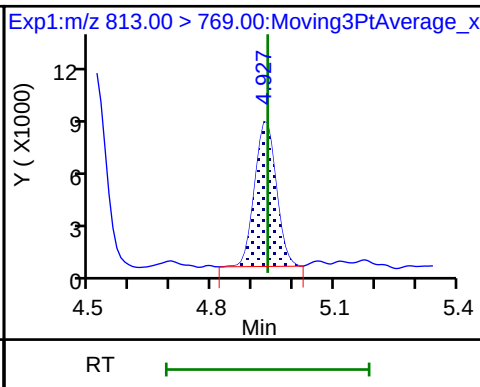
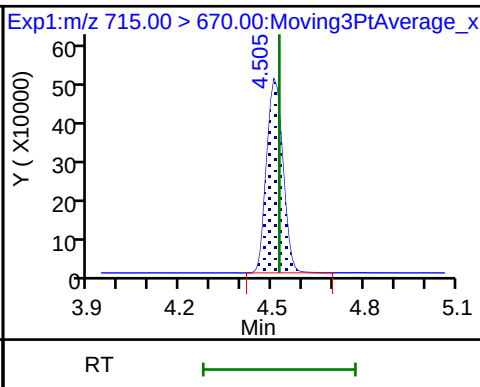
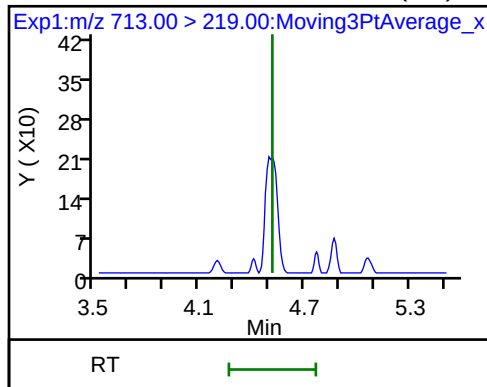
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)

D 43 13C2 PFTeDA

45 Perfluorohexadecanoic acid

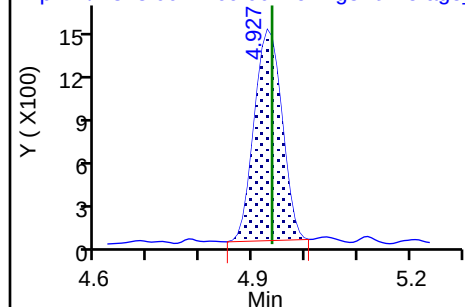


45 Perfluorohexadecanoic acid

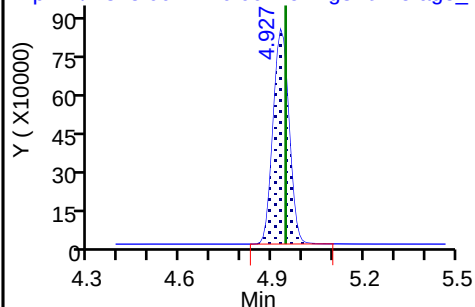
D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid (ND)

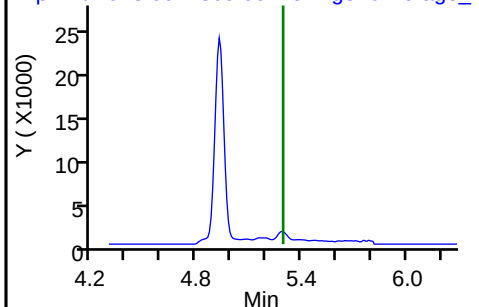
Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 815.00 > 770.00:Moving3PtAverage_x

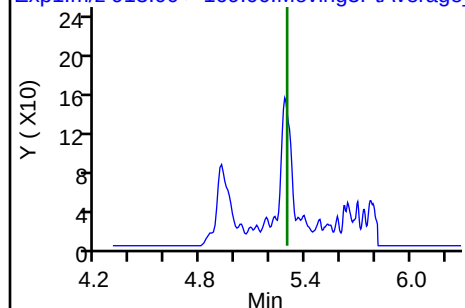


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid (ND)

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

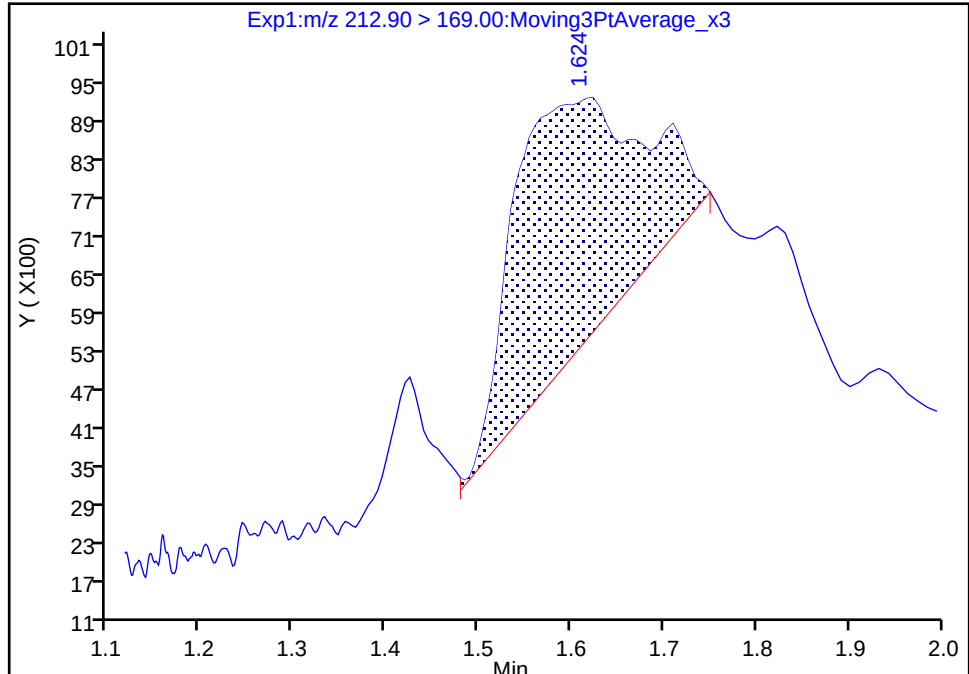
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_061.d
Injection Date: 15-Oct-2018 08:12:46 Instrument ID: A8_N
Lims ID: MB 320-251604/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 46 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

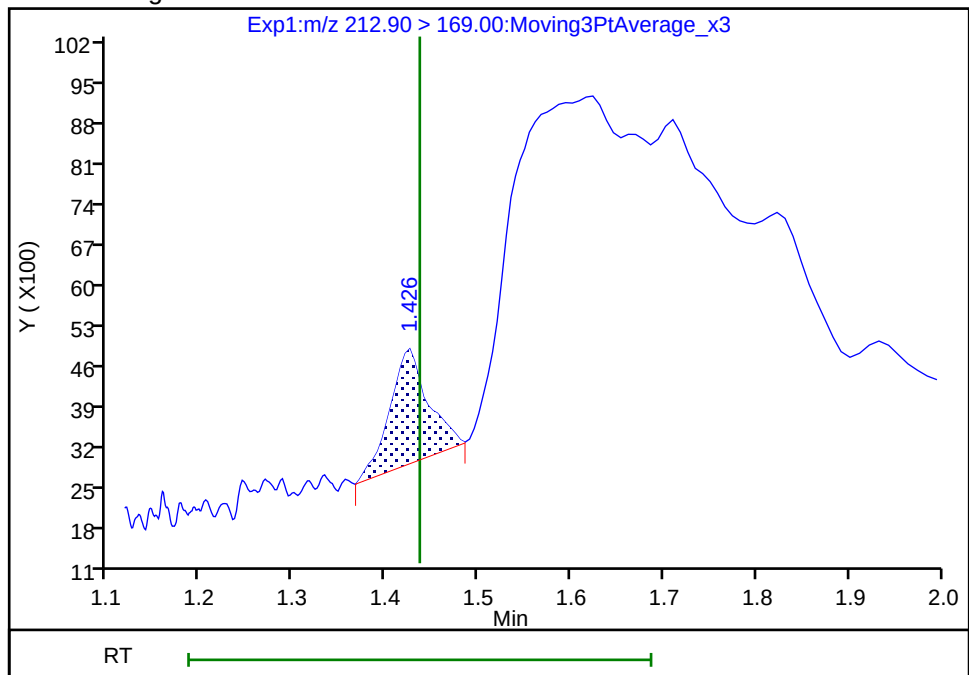
RT: 1.62
Area: 38657
Amount: 0.029153
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 5692
Amount: 0.004293
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:50:54
Audit Action: Manually Integrated

Audit Reason: Wrong peak
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10/30/2018

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_061.d

Injection Date: 15-Oct-2018 08:12:46

Instrument ID: A8_N

Lims ID: MB 320-251604/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

46

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

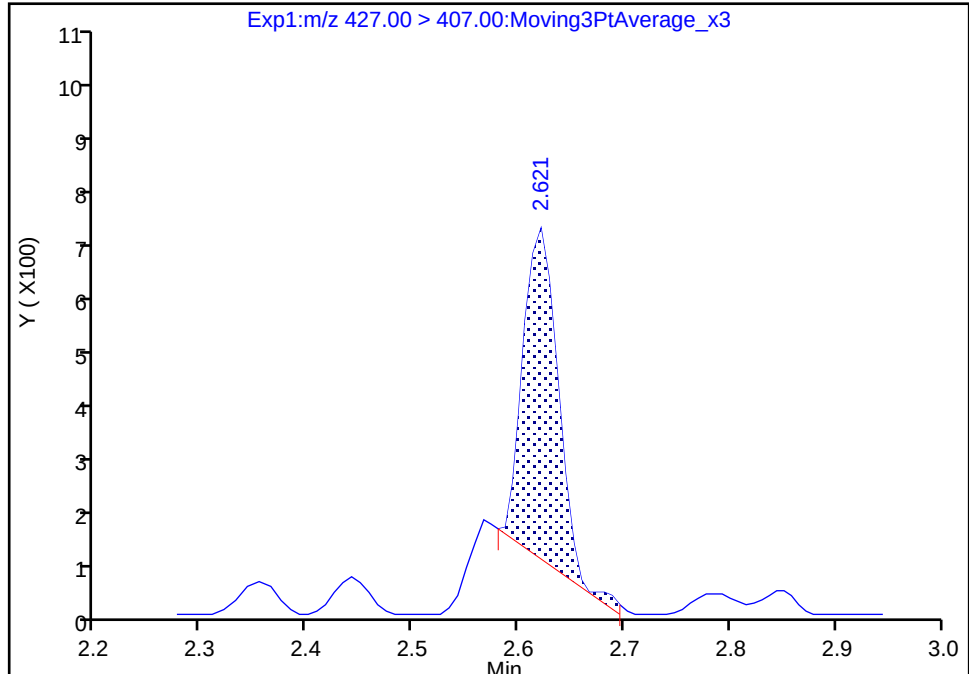
Detector EXP1

13 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

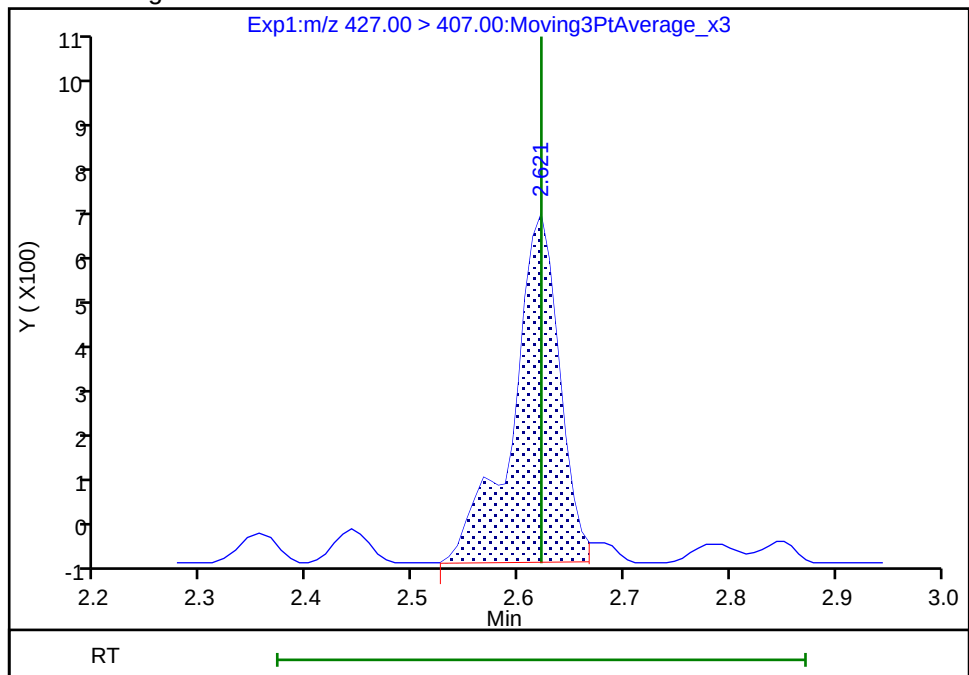
RT: 2.62
Area: 1412
Amount: 0.004248
Amount Units: ng/ml

Processing Integration Results



RT: 2.62
Area: 2206
Amount: 0.006637
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:51:24

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-251604/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_062.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/15/2018 08:20</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.2		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	41.0		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	40.1		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	40.7		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	40.7		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	38.8		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	42.2		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	38.9		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	37.7		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	39.0		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	39.7		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35.3		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	32.2		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	38.9		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	35.1		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	39.9		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	40.6		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	37.7		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	37.0		20	1.9
27619-97-2	6:2 FTS	38.9		20	2.0
39108-34-4	8:2 FTS	41.4		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-251604/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_062.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/15/2018 08:20</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	97		25-150
STL01893	13C5 PFPeA	105		25-150
STL00993	13C2 PFHxA	104		25-150
STL01892	13C4 PFHpA	107		25-150
STL00990	13C4 PFOA	102		25-150
STL00995	13C5 PFNA	104		25-150
STL00996	13C2 PFDA	99		25-150
STL00997	13C2 PFUnA	100		25-150
STL00998	13C2 PFDoA	104		25-150
STL02116	13C2 PFTeDA	103		25-150
STL02337	13C3 PFBS	102		25-150
STL00994	18O2 PFHxS	108		25-150
STL00991	13C4 PFOS	102		25-150
STL01056	13C8 FOSA	97		25-150
STL02118	d3-NMeFOSAA	123		25-150
STL02117	d5-NEtFOSAA	122		25-150
STL02279	M2-6:2 FTS	117		25-150
STL02280	M2-8:2 FTS	112		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_062.d
 Lims ID: LCS 320-251604/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 15-Oct-2018 08:20:11 ALS Bottle#: 47 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-251604/2-a
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 14:53:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA

217.00 > 172.00 1.426 1.434 -0.008 0.538 3699589 2.43 97.1 8325

2 Perfluorobutanoic acid

212.90 > 169.00 1.431 1.436 -0.005 1.003 1365662 1.03 103 158 M

D 3 13C5 PFPeA

267.90 > 223.00 1.694 1.700 -0.006 0.639 2611502 2.61 105 8531

4 Perfluoropentanoic acid

262.90 > 219.00 1.694 1.704 -0.010 1.000 1154593 1.02 102 154

5 Perfluorobutanesulfonic acid

298.90 > 80.00 1.735 1.736 -0.001 1.000 1457964 0.8822 99.8 442

298.90 > 99.00 1.735 1.736 -0.001 1.000 597501 2.44(1.25-3.74) 361

D 47 13C3 PFBS

301.90 > 83.00 1.735 1.740 -0.005 0.654 48897 2.38 102 428

61 1H,1H,2H,2H-perfluorohexanesulfoni

327.00 > 307.00 1.944 1.945 -0.001 1.121 340402 1.09 117 4452

6 Perfluorohexanoic acid

313.00 > 269.00 1.975 1.977 -0.002 1.000 1135950 1.00 100 331

313.00 > 119.00 1.975 1.977 -0.002 1.000 105821 10.73(5.03-15.10) 344

D 7 13C2 PFHxA

315.00 > 270.00 1.975 1.981 -0.006 0.745 2870367 2.60 104 7464

70 Perfluoropentanesulfonic acid

349.00 > 80.00 1.996 1.997 -0.001 1.151 1392947 0.9809 105 5048

349.00 > 99.00 1.996 1.997 -0.001 1.151 530930 2.62(1.36-4.07) 2980

67 Perfluoro(2-propoxypropanoic) acid

329.10 > 285.00 2.069 2.071 -0.002 1.000 241482 0.9147 91.5 421

D 64 13C3 HFPO-DA

332.10 > 287.00 2.069 2.075 -0.006 0.780 224290 2.82 113 853

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.301	-0.002	1.000	1164796	1.02		102	334	
363.00 > 169.00	2.299	2.301	-0.002	1.000	477011		2.44(1.13-3.40)		560	
D 9 13C4 PFHpA										
367.00 > 322.00	2.299	2.303	-0.004	0.867	2693728	2.67		107	6583	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.310	2.312	-0.002	1.000	1166904	0.8054		88.5	1630	
399.00 > 99.00	2.310	2.312	-0.002	1.000	423036		2.76(1.50-4.49)		944	
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.325	-0.015	0.872	3079447	2.55		108	6737	
77 DONA										
377.00 > 251.00	2.344	2.345	-0.001	0.775	3270929	1.04		110	4611	
377.00 > 85.00	2.344	2.345	-0.001	0.775	1803133		1.81(0.85-2.54)		4143	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.620	2.622	-0.002	1.000	327527	0.9716		102	1342	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.620	2.624	-0.004	0.988	523209	2.77		117	3085	
* 62 13C2 PFOA										
415.00 > 370.00	2.651	2.653	-0.002		2425276	2.50			4375	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.651	2.653	-0.002	1.000	1138750	1.02		102	96.6	
413.00 > 169.00	2.651	2.653	-0.002	1.000	613064		1.86(0.84-2.52)		935	
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.655	-0.004	1.000	2410736	2.56		102	7725	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.658	2.660	-0.002	0.879	1042545	0.9728		102	4776	
449.00 > 99.00	2.658	2.660	-0.002	0.879	287733		3.62(1.94-5.82)		1748	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.025	3.023	0.002	1.000	812252	0.8784		94.7	1203	
499.00 > 99.00	3.025	3.023	0.002	1.000	182478		4.45(2.31-6.93)		823	
20 Perfluorononanoic acid										
463.00 > 419.00	3.025	3.023	0.002	1.000	842988	0.9692		96.9	318	
463.00 > 169.00	3.025	3.023	0.002	1.000	209227		4.03(1.90-5.69)		712	
D 18 13C4 PFOS										
503.00 > 80.00	3.025	3.028	-0.003	1.141	1968777	2.44		102	5780	
D 19 13C5 PFNA										
468.00 > 423.00	3.025	3.028	-0.003	1.141	2041656	2.60		104	6008	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.237	3.235	0.002	1.070	1381153	0.8934		95.9	4387	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.366	3.364	0.002	1.000	1112416	1.02		102	2738	
D 21 13C8 FOSA										
506.00 > 78.00	3.366	3.370	-0.004	1.270	2822180	2.42		96.8	3827	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.373	3.371	0.002	1.000	279941	1.03		108	1090	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.381	3.371	0.010	1.118	638399	0.9848		103	2756	
549.00 > 99.00	3.373	3.371	0.002	1.115	235048		2.72(1.33-3.97)		1327	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2 FTS										
529.00 > 81.00	3.373	3.377	-0.004	1.272	535305	2.68		112	2121	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.388	3.386	0.002	1.000	706294	1.05		105	833	
513.00 > 169.00	3.381	3.386	-0.005	0.998	132092		5.35(2.36-7.09)		641	
D 23 13C2 PFDA										
515.00 > 470.00	3.388	3.392	-0.004	1.278	1705109	2.47		98.7	5363	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.541	3.545	-0.004	1.336	1082559	3.07		123	1821	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.549	3.547	0.002	1.002	389999	0.9420		94.2	331	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.705	3.700	0.005	1.225	514287	1.00		103	1946	
599.00 > 99.00	3.705	3.700	0.005	1.225	180295		2.85(1.39-4.16)		956	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.722	3.709	0.013	1.002	348241	0.9249		92.5	662	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.713	3.716	-0.003	1.401	1120970	3.04		122	1325	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.713	3.717	-0.004	0.998	485194	0.9730		97.3	488	
563.00 > 169.00	3.713	3.717	-0.004	0.998	124500		3.90(2.12-6.36)		761	
D 30 13C2 PFUnA										
565.00 > 520.00	3.722	3.724	-0.002	1.404	1394472	2.51		100	3526	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.875	3.879	-0.004	1.281	2254164	0.9660		103	4442	
D 36 13C2 PFDaA										
615.00 > 570.00	4.010	4.012	-0.002	1.513	1517334	2.60		104	2486	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.010	4.013	-0.003	1.000	630755	0.9417		94.2	482	
613.00 > 169.00	4.010	4.013	-0.003	1.000	158721		3.97(2.13-6.40)		1433	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.018	4.013	0.005	1.191	187337	0.99		103	2721	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.252	4.256	-0.004	1.406	243907	1.01		104	1367	
699.00 > 99.00	4.252	4.256	-0.004	1.406	352662		0.69(0.00-0.00)		2407	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.280	4.275	0.005	1.067	618450	0.9738		97.4	423	
663.00 > 169.00	4.280	4.275	0.005	1.067	204016		3.03(1.25-3.76)		1265	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.522	4.515	0.007	1.000	195296	0.99		99.2	1424	
713.00 > 219.00	4.512	4.515	-0.003	0.998	138398		1.41(0.71-2.13)		691	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.522	4.523	-0.001	1.706	1843087	2.58		103	5226	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.943	4.936	0.007	1.002	1102053	1.04		104	201	
813.00 > 169.00	4.934	4.936	-0.002	1.000	211246		5.22(2.86-8.58)		1308	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.934	4.944	-0.010	1.861	2915833	2.21		88.4	3307	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.293	5.294	-0.001	1.073	1362520	0.9898		99.0	214	
913.00 > 169.00	5.293	5.294	-0.001	1.073	187594		7.26(3.83-11.48)		1033	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_062.d

Injection Date: 15-Oct-2018 08:20:11

Instrument ID: A8_N

Lims ID: LCS 320-251604/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 47

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

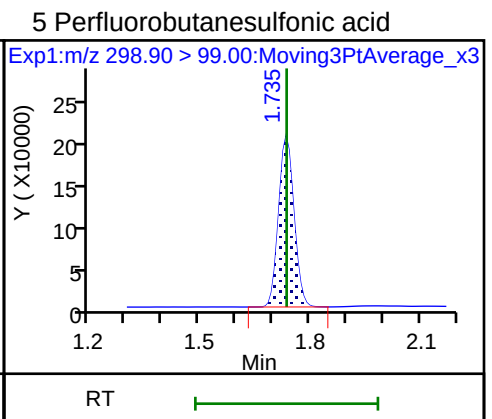
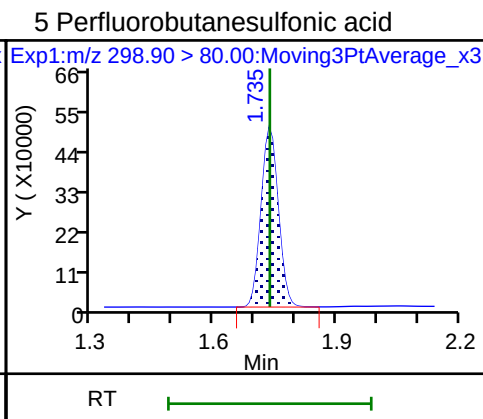
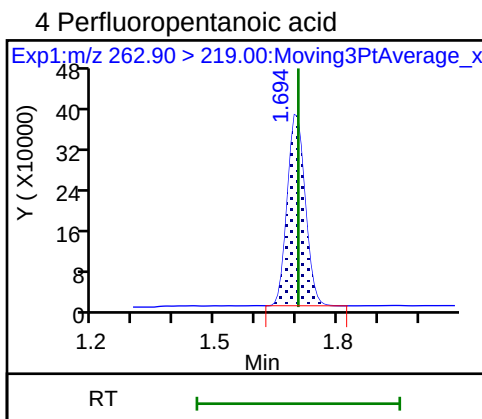
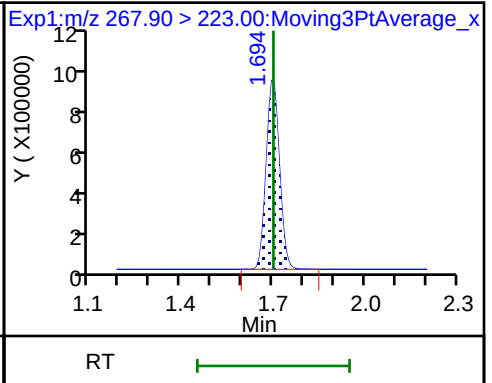
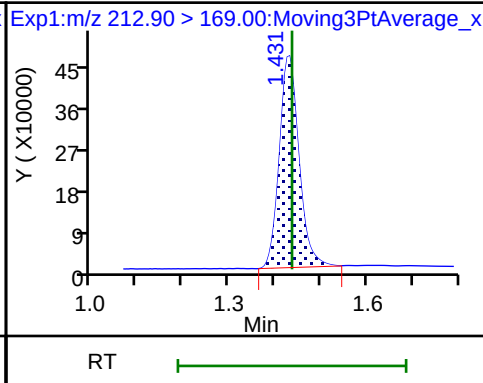
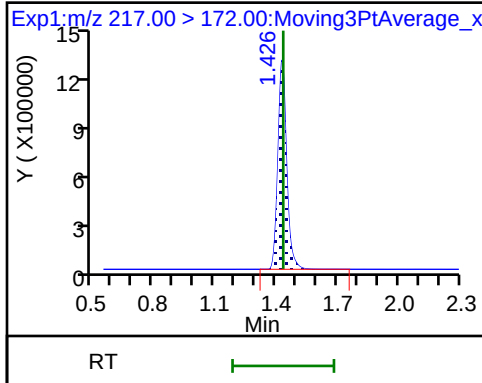
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

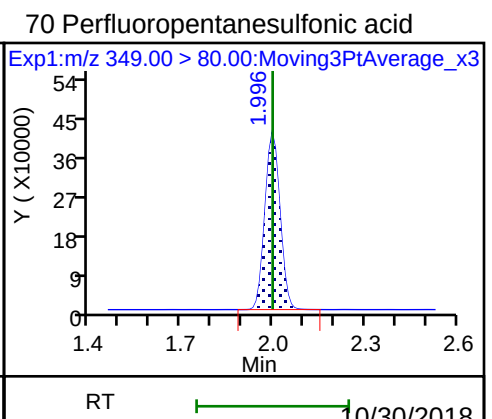
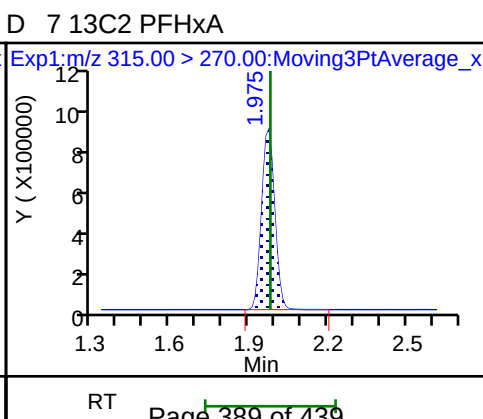
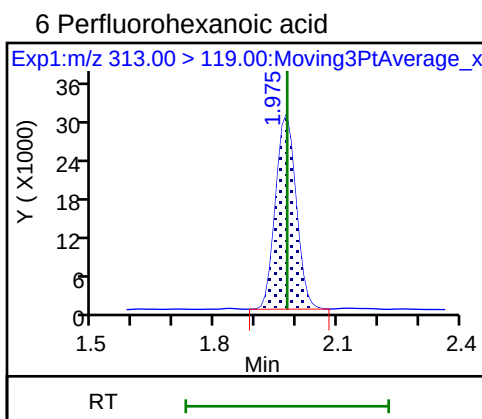
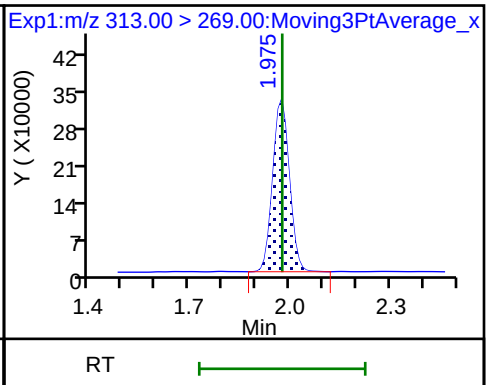
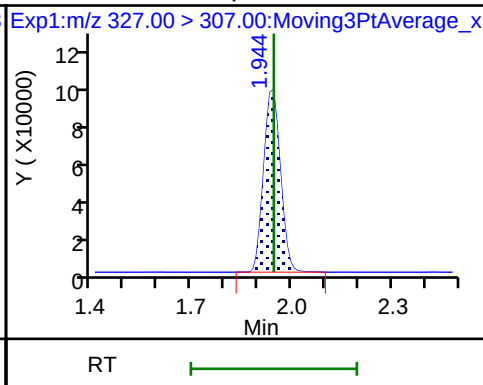
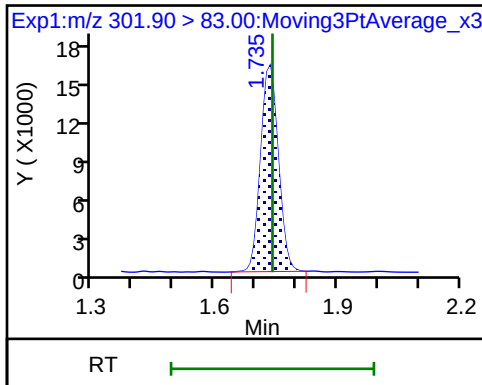
D 3 13C5 PFPeA



D 47 13C3 PFBS

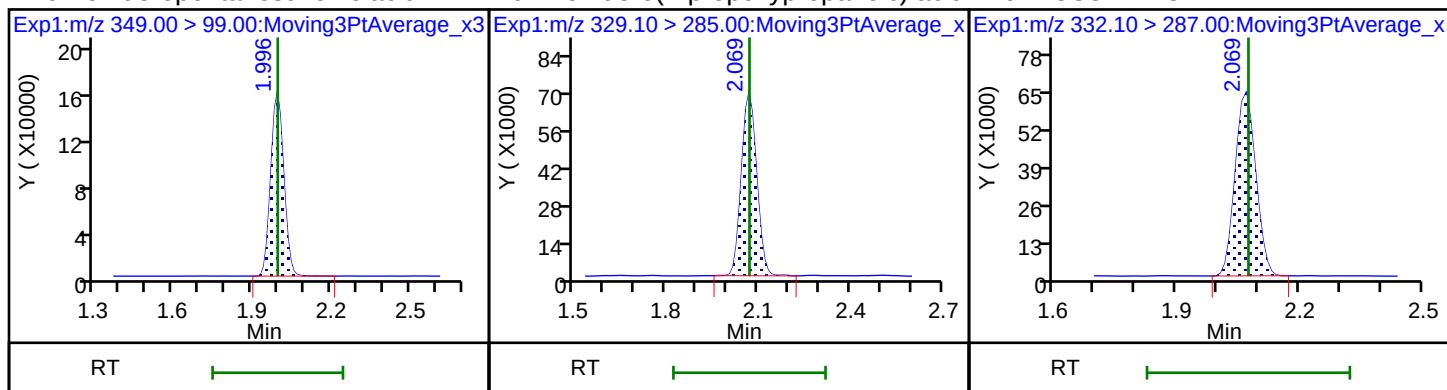
61 1H,1H,2H,2H-perfluorohexanesulfoni

6 Perfluorohexanoic acid



70 Perfluoropentanesulfonic acid

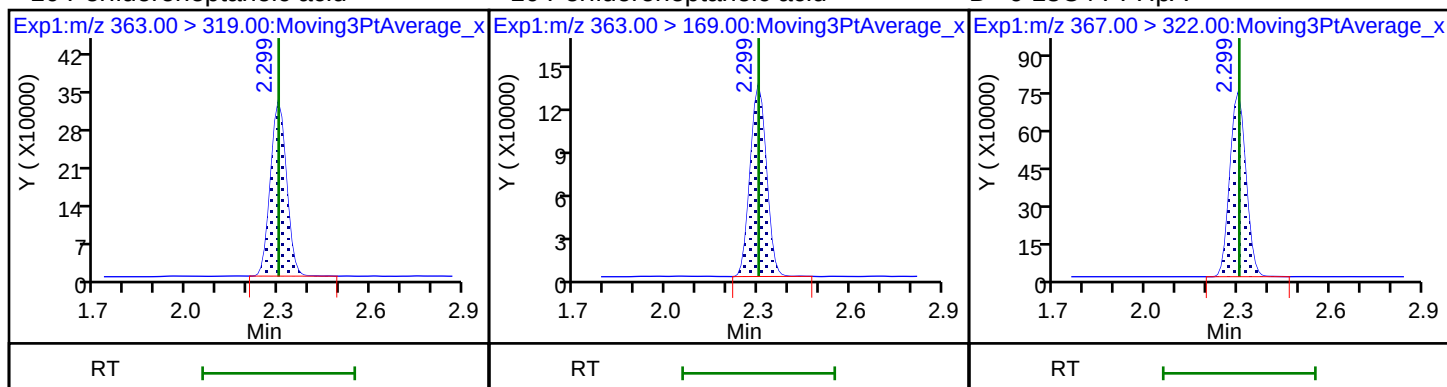
67 Perfluoro(2-propoxypropanoic) acid D 64 13C3 HFPO-DA



10 Perfluoroheptanoic acid

10 Perfluoroheptanoic acid

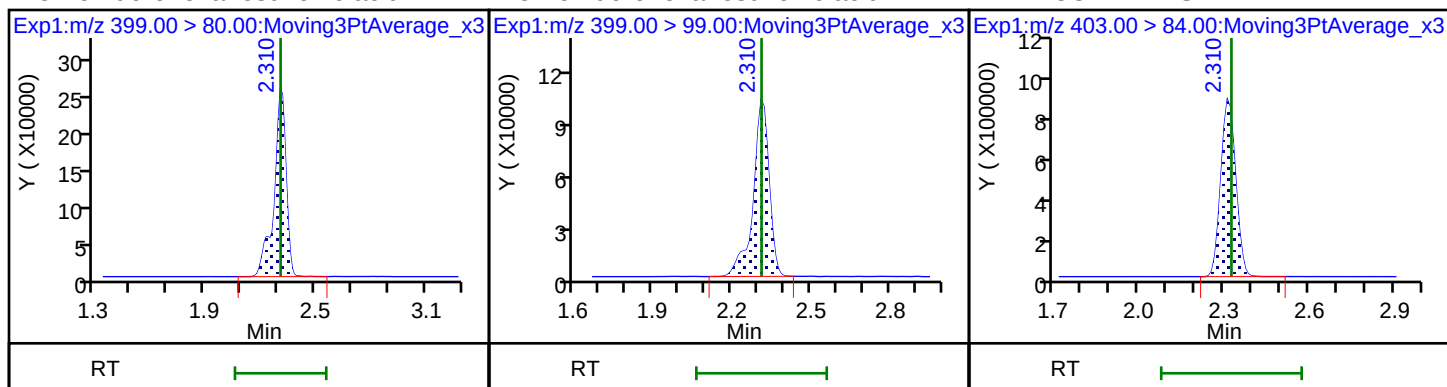
D 9 13C4 PFHpA



8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid

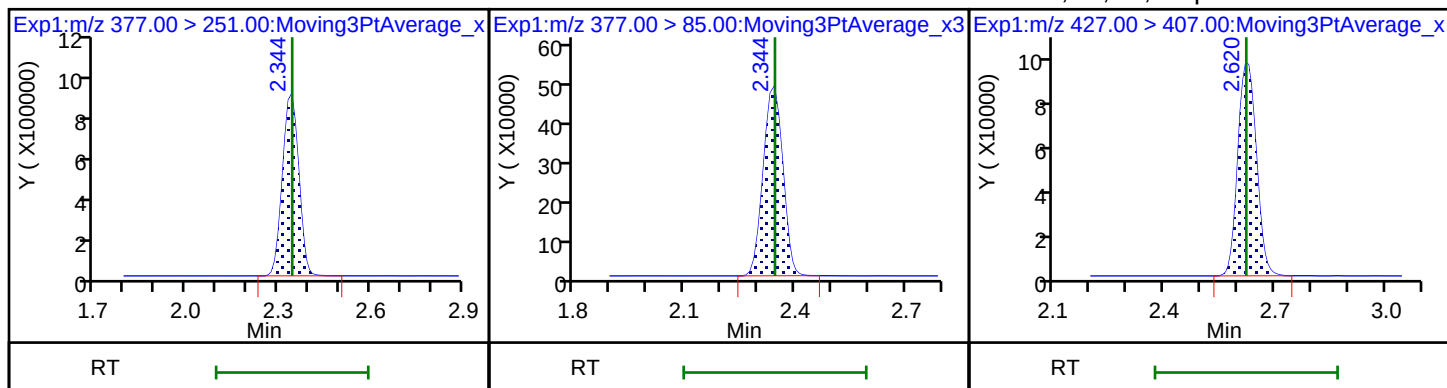
D 11 18O2 PFHxS



77 DONA

77 DONA

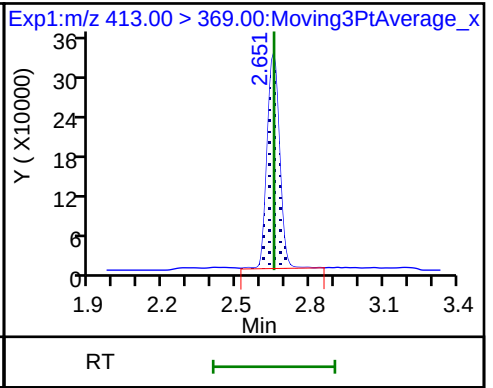
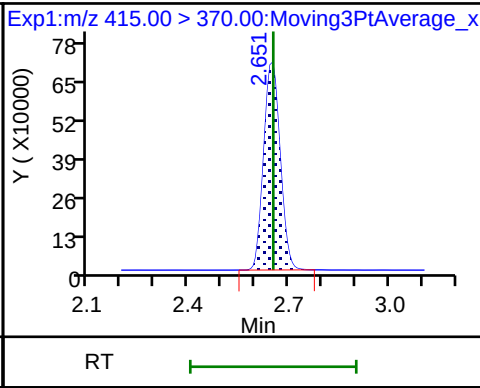
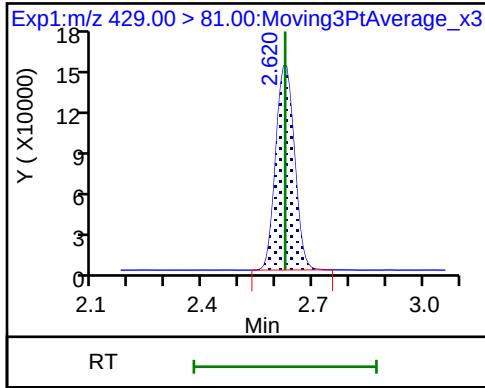
13 1H,1H,2H,2H-perfluorooctanesulfoni



D 12 M2-6:2 FTS

* 62 13C2 PFOA

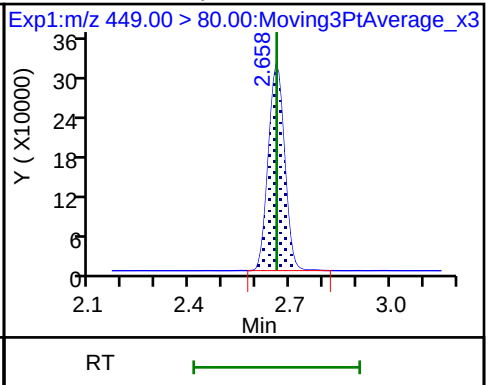
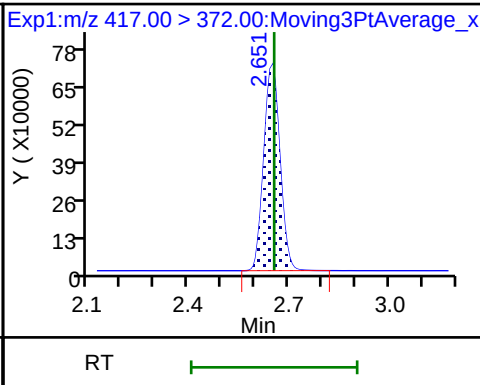
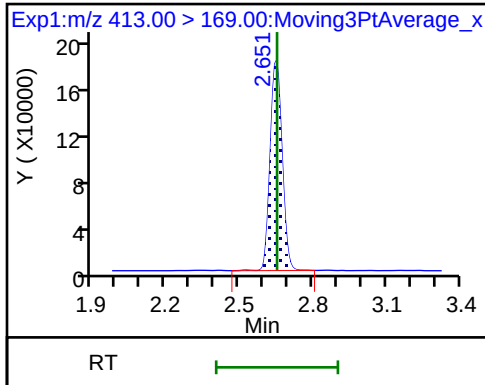
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

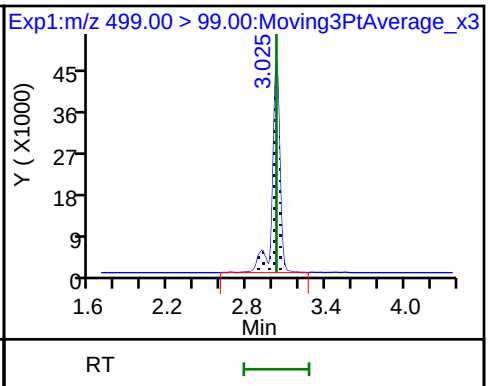
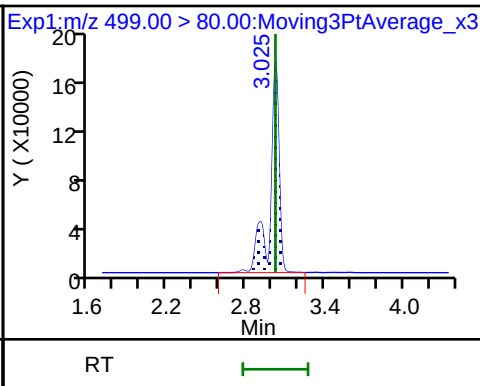
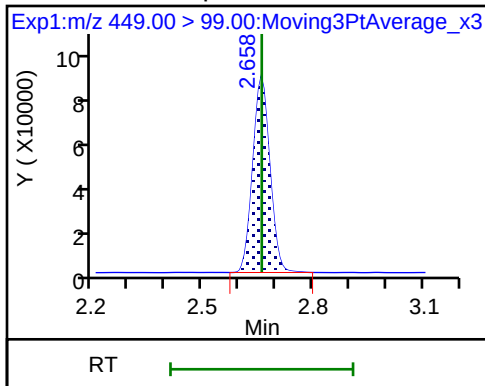
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

17 Perfluorooctanesulfonic acid

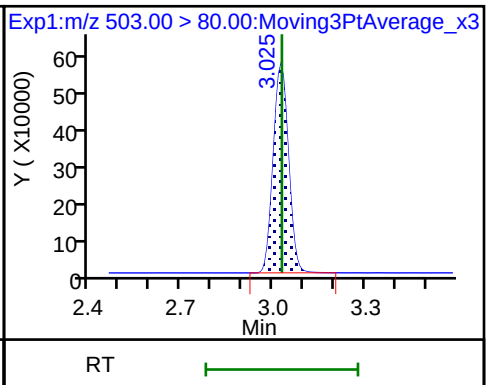
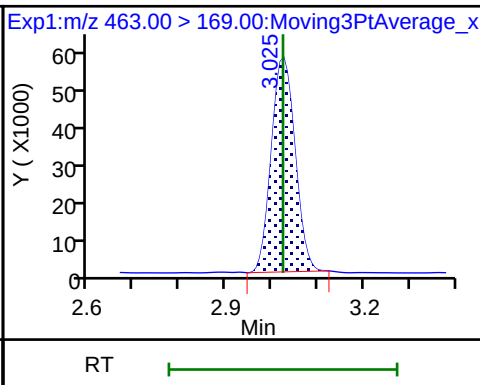
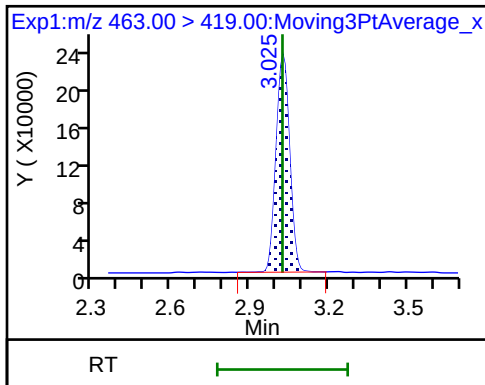
17 Perfluorooctanesulfonic acid



20 Perfluorononanoic acid

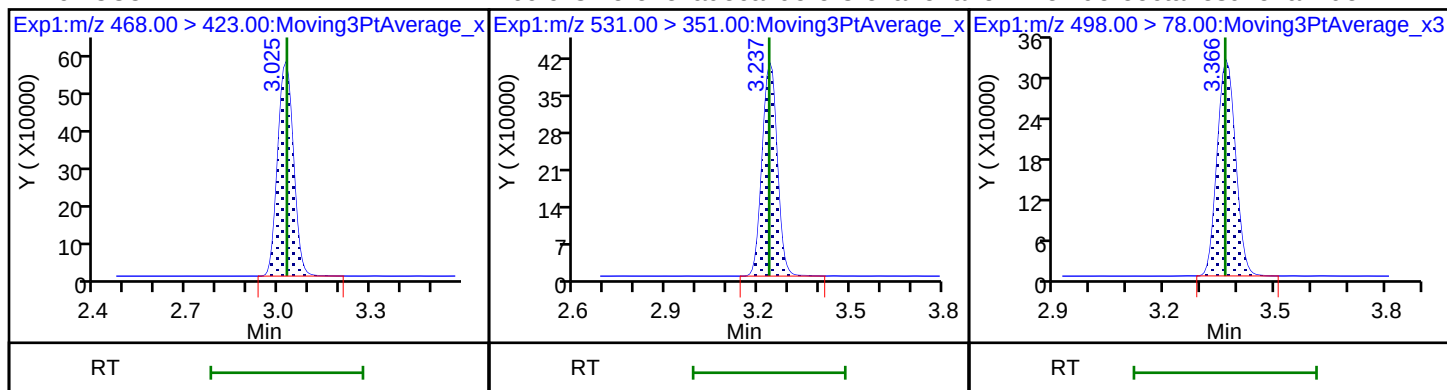
20 Perfluorononanoic acid

D 18 13C4 PFOS



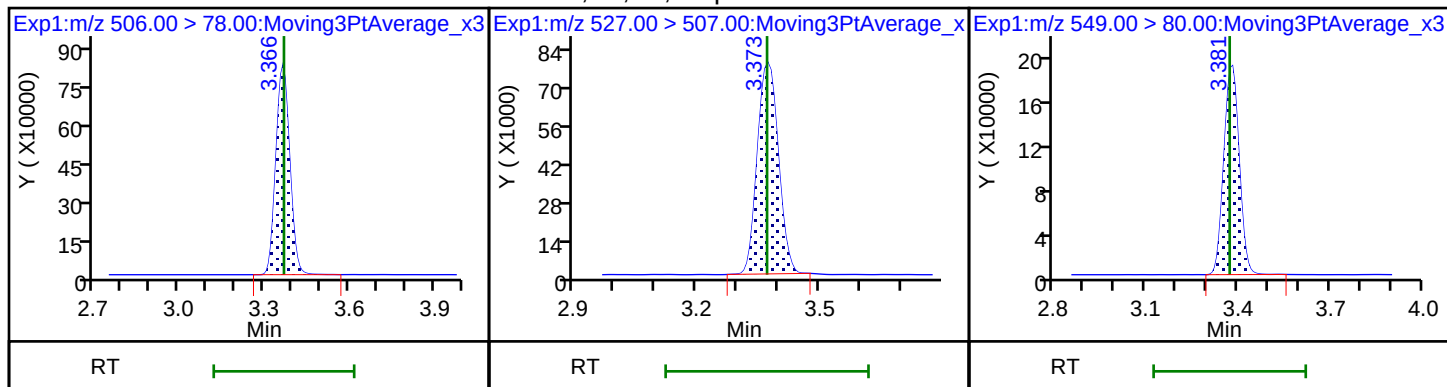
D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonanamide 22 Perfluorooctanesulfonamide



D 21 13C8 FOSA

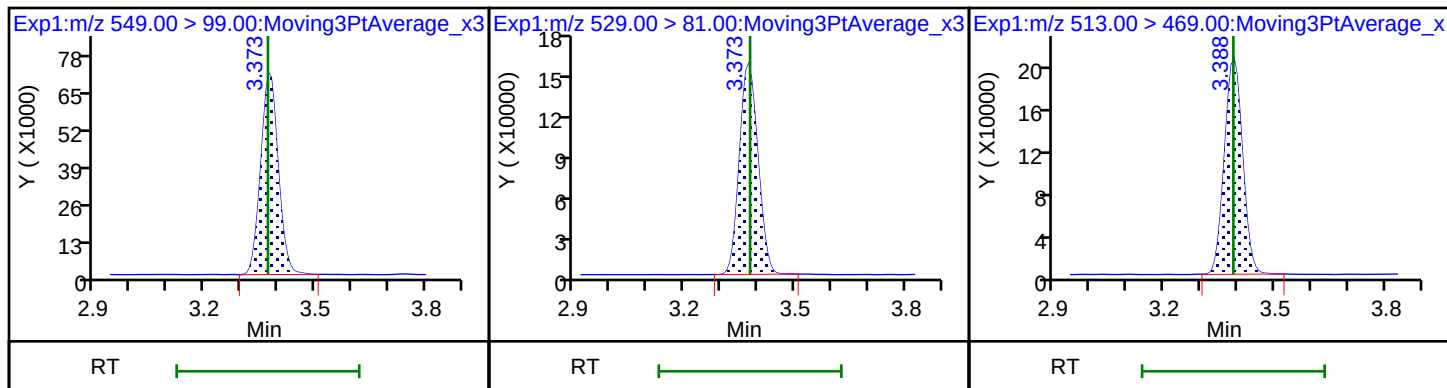
25 1H,1H,2H,2H-perfluorodecanesulfoni 68 Perfluorononanesulfonic acid



68 Perfluorononanesulfonic acid

D 26 M2-8:2 FTS

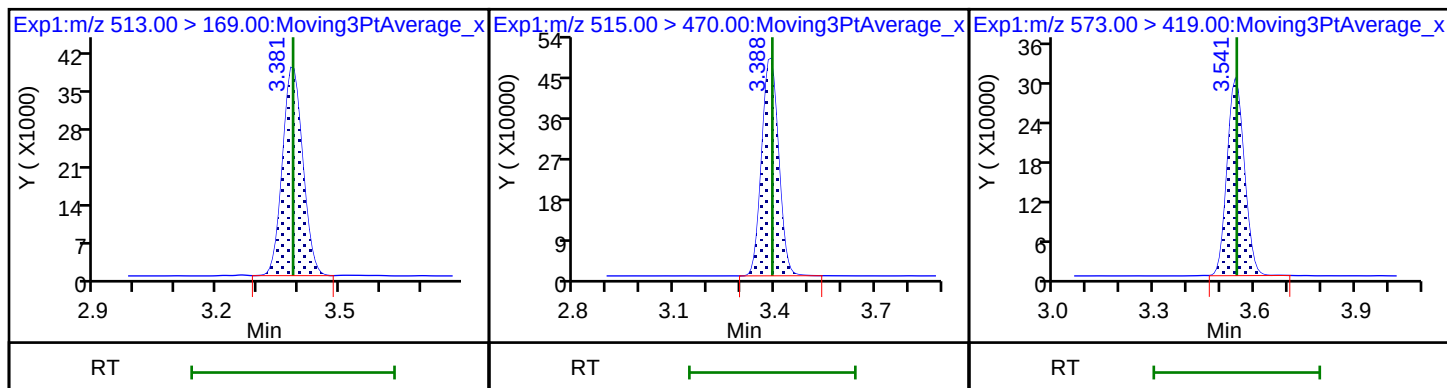
24 Perfluorodecanoic acid



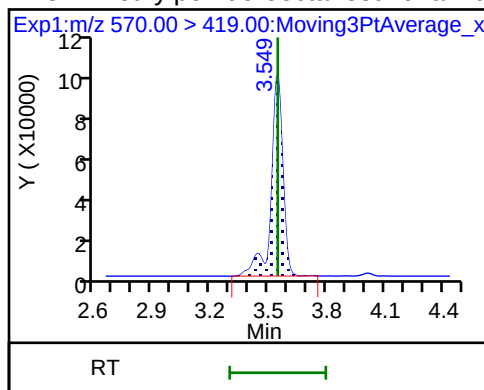
24 Perfluorodecanoic acid

D 23 13C2 PFDA

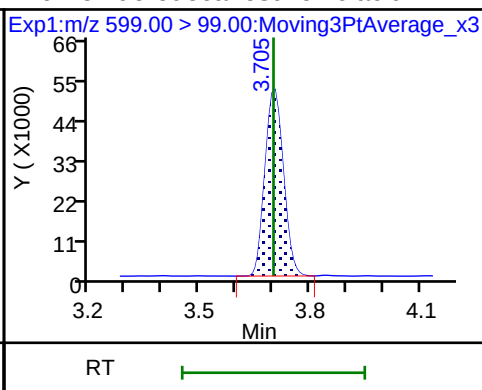
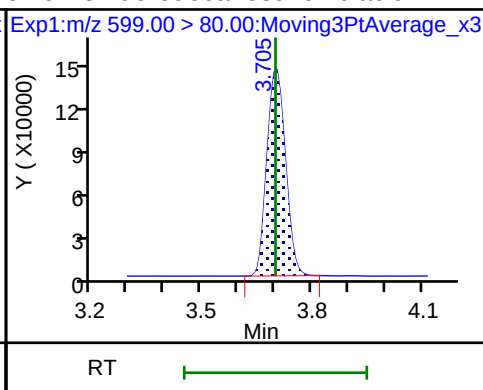
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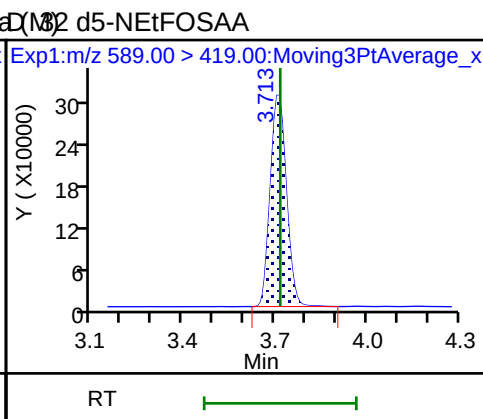
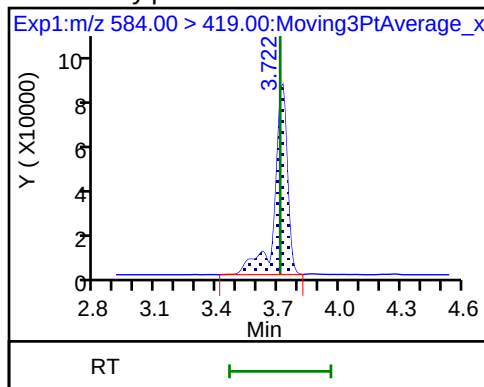
28 N-methylperfluorooctanesulfonamido



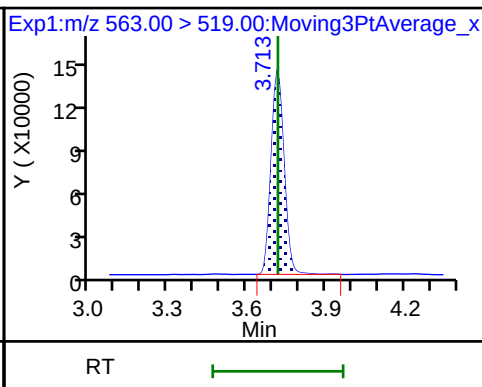
29 Perfluorodecanesulfonic acid



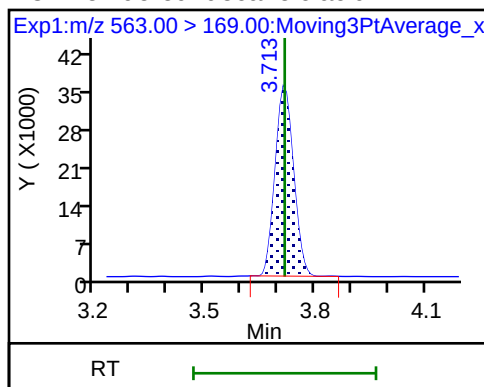
33 N-ethylperfluorooctanesulfonamido



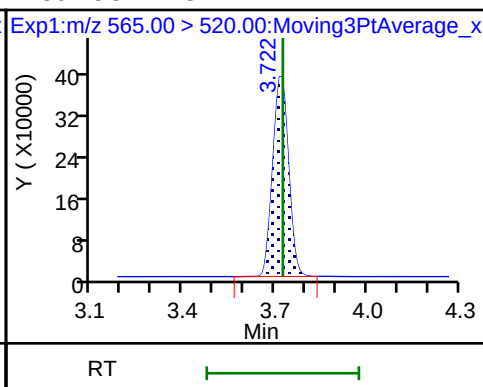
31 Perfluoroundecanoic acid



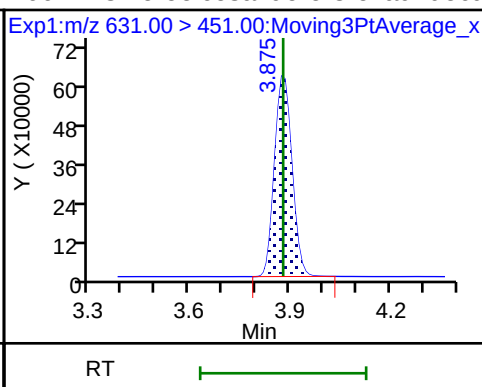
31 Perfluoroundecanoic acid



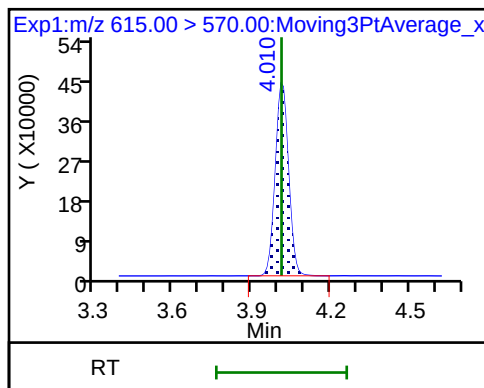
D 30 13C2 PFUnA



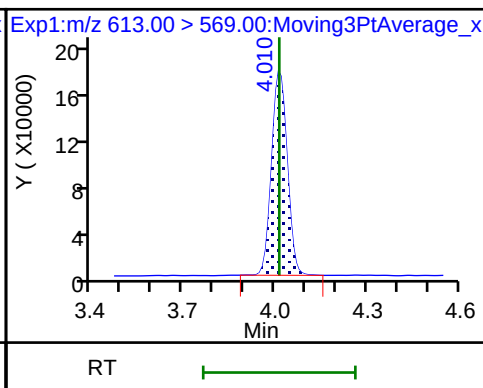
66 11-Chloroeicosafluoro-3-oxaundecan



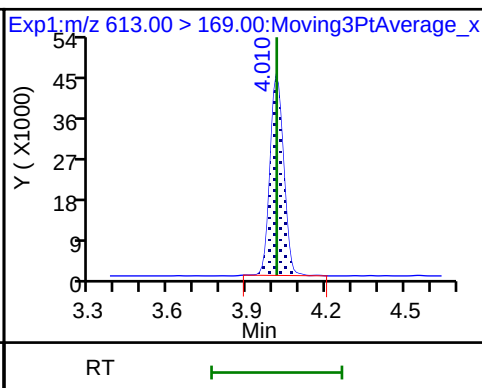
D 36 13C2 PFDaA



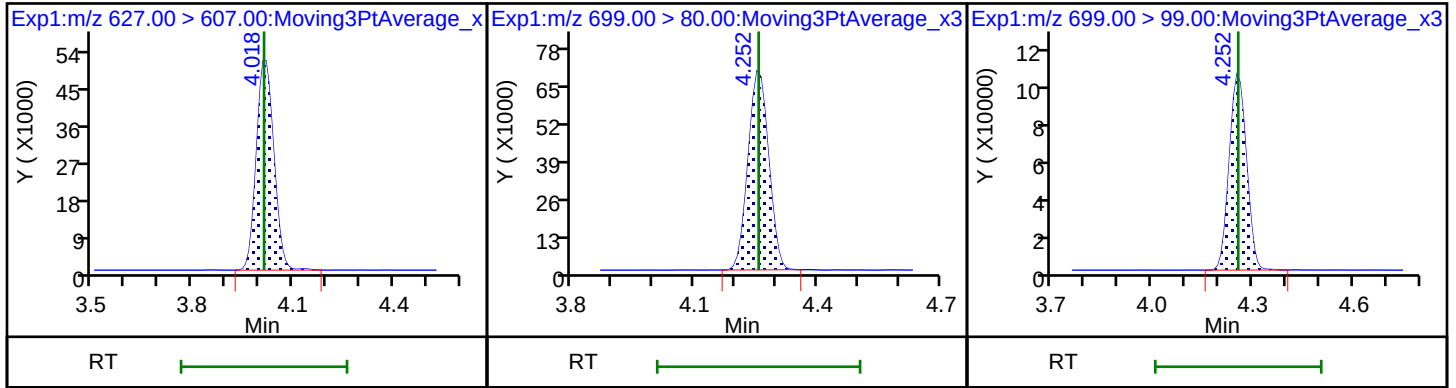
37 Perfluorododecanoic acid



37 Perfluorododecanoic acid



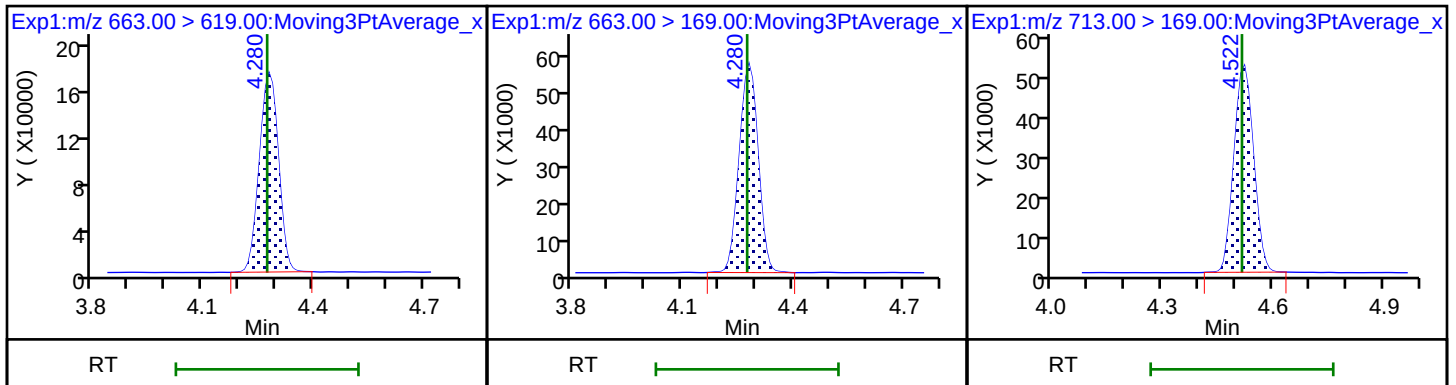
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

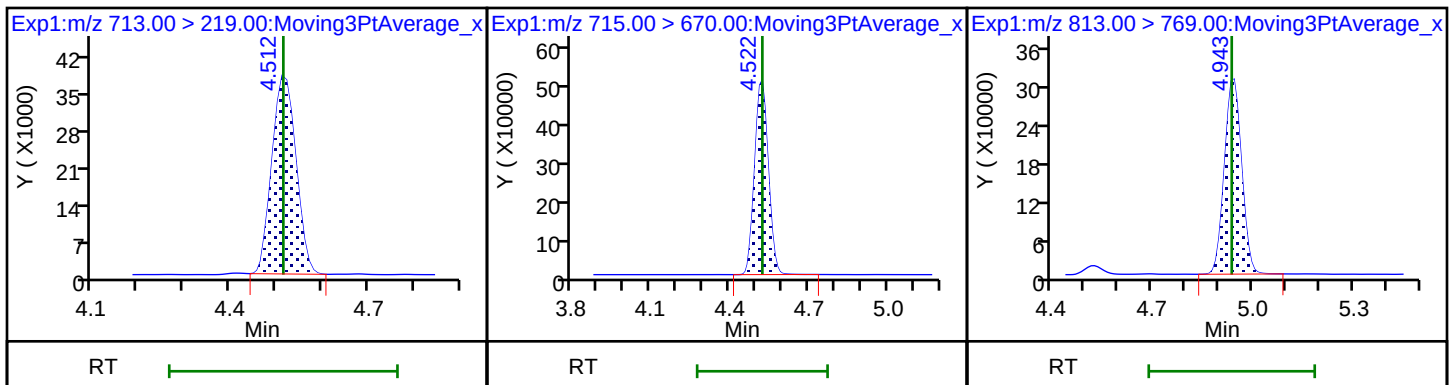
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

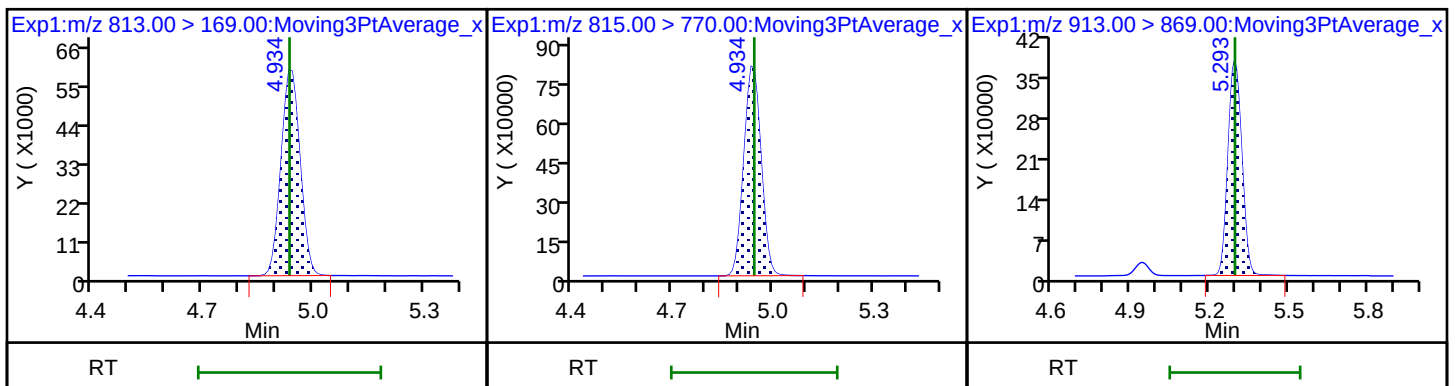
45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid

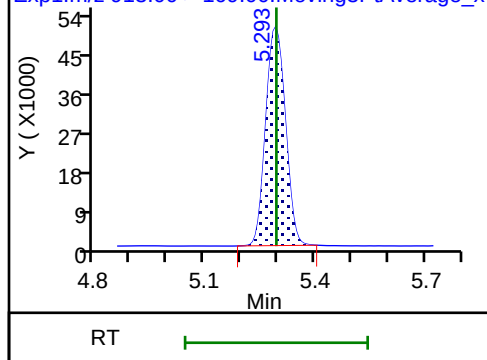
D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

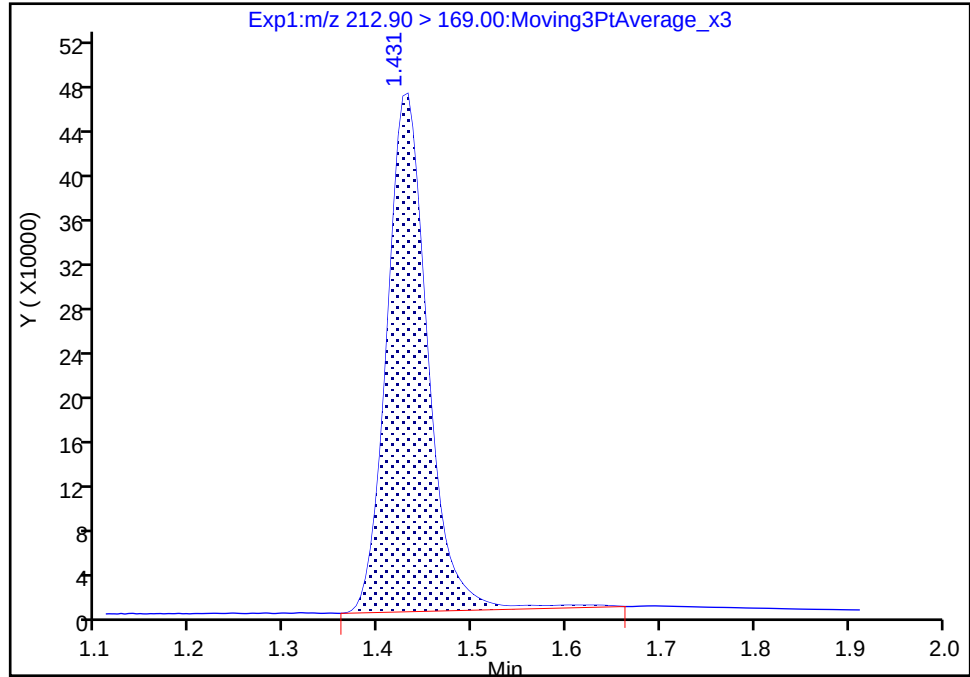
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Injection Date: 15-Oct-2018 08:20:11 Instrument ID: A8_N
Lims ID: LCS 320-251604/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 47 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

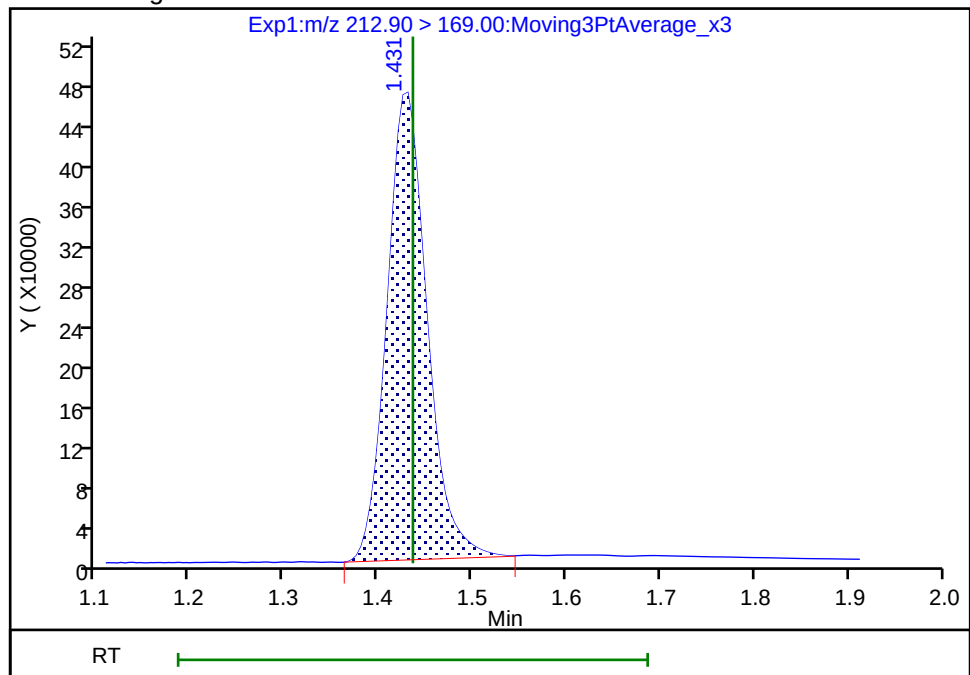
RT: 1.43
Area: 1393351
Amount: 1.050691
Amount Units: ng/ml

Processing Integration Results



RT: 1.43
Area: 1365662
Amount: 1.029811
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:52:32
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 396 of 439

10/30/2018

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_062.d

Injection Date: 15-Oct-2018 08:20:11

Instrument ID: A8_N

Lims ID: LCS 320-251604/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#:

47

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8_N

Limit Group: LC PFC ICAL

Column:

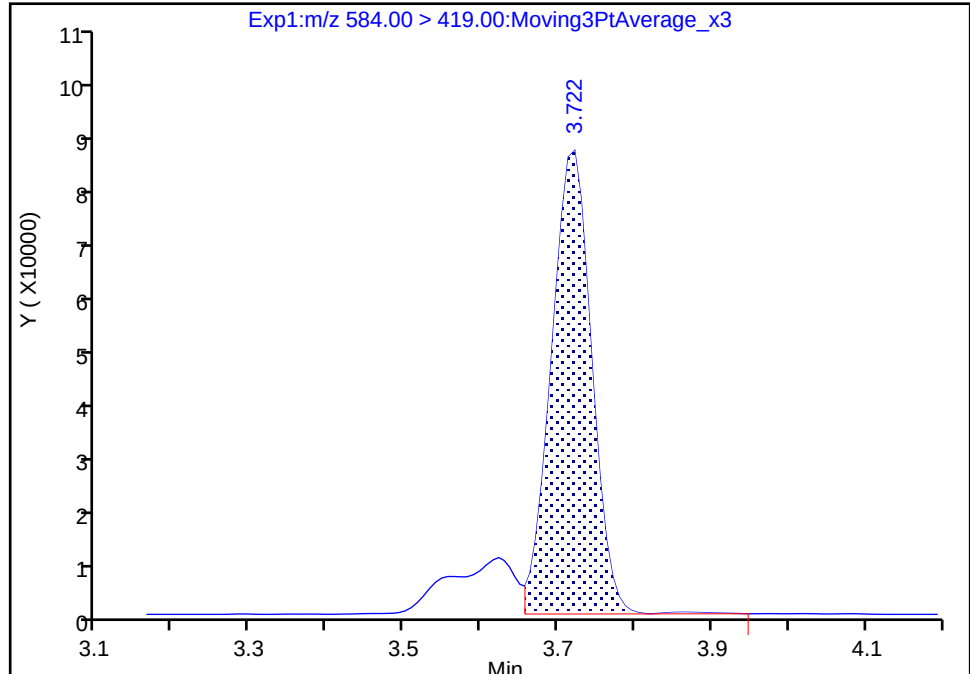
Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

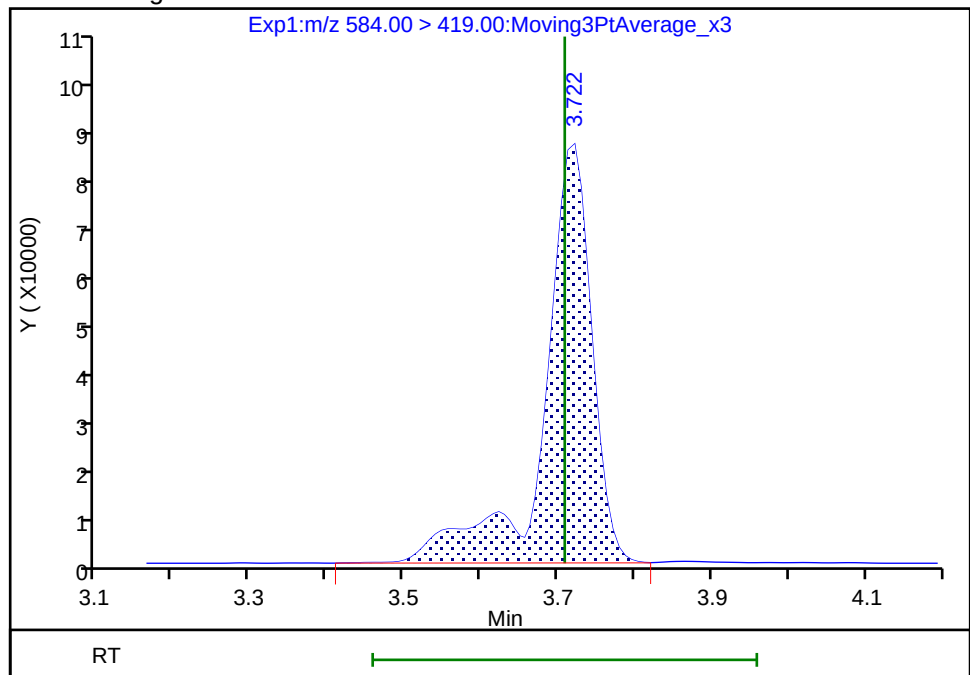
RT: 3.72
Area: 291699
Amount: 0.774699
Amount Units: ng/ml

Processing Integration Results



RT: 3.72
Area: 348241
Amount: 0.924864
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:53:12

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-02 MS</u>	Lab Sample ID: <u>480-142679-1 MS</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_064.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>263.1 (mL)</u>	Date Analyzed: <u>10/15/2018 08:35</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	40.4		1.9	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	37.5		1.9	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	37.1		1.9	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	38.3		1.9	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	39.0		1.9	0.81
375-95-1	Perfluorononanoic acid (PFNA)	38.1		1.9	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	38.5		1.9	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	37.9		1.9	1.0
307-55-1	Perfluorododecanoic acid (PFDoA)	38.2		1.9	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	38.9		1.9	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	36.8		1.9	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33.6		1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	31.3		1.9	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	38.3		1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	33.7		1.9	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	32.0		1.9	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	38.4		1.9	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	32.7		19	2.9
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	35.6		19	1.8
27619-97-2	6:2 FTS	34.5		19	1.9
39108-34-4	8:2 FTS	36.8		19	1.9

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-02 MS</u>	Lab Sample ID: <u>480-142679-1 MS</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_064.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>263.1 (mL)</u>	Date Analyzed: <u>10/15/2018 08:35</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	56		25-150
STL01893	13C5 PFPeA	62		25-150
STL00993	13C2 PFHxA	59		25-150
STL01892	13C4 PFHpA	61		25-150
STL00990	13C4 PFOA	59		25-150
STL00995	13C5 PFNA	55		25-150
STL00996	13C2 PFDA	52		25-150
STL00997	13C2 PFUnA	46		25-150
STL00998	13C2 PFDoA	43		25-150
STL02116	13C2 PFTeDA	47		25-150
STL02337	13C3 PFBS	60		25-150
STL00994	18O2 PFHxS	61		25-150
STL00991	13C4 PFOS	54		25-150
STL01056	13C8 FOSA	50		25-150
STL02118	d3-NMeFOSAA	55		25-150
STL02117	d5-NEtFOSAA	56		25-150
STL02279	M2-6:2 FTS	68		25-150
STL02280	M2-8:2 FTS	55		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_064.d
 Lims ID: 480-142679-C-1-B MS
 Client ID: EC-0006-02
 Sample Type: MS
 Inject. Date: 15-Oct-2018 08:35:06 ALS Bottle#: 49 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142679-c-1-b ms
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 14:57:43

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.434	0.002	0.542	2432494	1.41		56.3	5558	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.436	1.436	0.0	1.000	926719	1.06		106	99.1	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.700	0.002	0.642	1751280	1.55		61.9	3881	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.702	1.704	-0.002	1.000	745927	0.9872		98.7	36.4	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.742	1.736	0.006	1.000	976112	0.8828		99.9	139	
298.90 > 99.00	1.742	1.736	0.006	1.000	407823		2.39(1.25-3.74)		153	
D 47 13C3 PFBS										
301.90 > 83.00	1.742	1.740	0.002	0.657	32713	1.41		60.5	176	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.943	1.945	-0.002	1.115	225898	1.08		116	2102	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.975	1.977	-0.002	1.000	707094	0.9770		97.7	104	
313.00 > 119.00	1.975	1.977	-0.002	1.000	69101		10.23(5.03-15.10)		139	
D 7 13C2 PFHxA										
315.00 > 270.00	1.975	1.981	-0.006	0.745	1835454	1.47		58.8	7337	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.006	1.997	0.009	1.151	948186	1.00		106	932	
349.00 > 99.00	2.006	1.997	0.009	1.151	357642		2.65(1.36-4.07)		599	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.069	2.071	-0.002	0.995	152016	0.99		99.3	92.5	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.079	2.075	0.004	0.784	130040	1.45		57.8	476	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.299	2.301	-0.002	1.000	739972	1.01		101	186	
363.00 > 169.00	2.299	2.301	-0.002	1.000	292914		2.53(1.13-3.40)		329	
D 9 13C4 PFHpA										
367.00 > 322.00	2.299	2.303	-0.004	0.867	1730257	1.52		60.6	4998	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.312	0.009	1.000	761224	0.8225		90.4	1334	
399.00 > 99.00	2.321	2.312	0.009	1.000	256439		2.97(1.50-4.49)		509	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.325	-0.004	0.876	1967303	1.44		60.8	6181	
77 DONA										
377.00 > 251.00	2.343	2.345	-0.002	0.777	1971235	1.05		111	3661	
377.00 > 85.00	2.343	2.345	-0.002	0.777	1160405		1.70(0.85-2.54)		2796	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.620	2.622	-0.002	0.997	202838	0.9066		95.6	841	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.627	2.624	0.003	0.991	347278	1.62		68.4	1602	
D 73 13C8 PFOA										
421.00 > 376.00	2.635	2.647	-0.012	0.994	4256	0.002717		0.0	54.8	
* 62 13C2 PFOA										
415.00 > 370.00	2.651	2.653	-0.002		2746908	2.50			8576	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.651	2.653	-0.002	1.000	750410	1.03		102	72.5	
413.00 > 169.00	2.651	2.653	-0.002	1.000	412787		1.82(0.84-2.52)		598	
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.655	-0.004	1.000	1577647	1.48		59.1	5084	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.658	2.660	-0.002	0.881	645211	1.01		106	1899	
449.00 > 99.00	2.658	2.660	-0.002	0.881	175951		3.67(1.94-5.82)		704	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.023	3.023	0.0	1.003	490004	0.8869		95.6	808	
499.00 > 99.00	3.015	3.023	-0.008	1.000	103136		4.75(2.31-6.93)		342	
20 Perfluorononanoic acid										
463.00 > 419.00	3.015	3.023	-0.008	1.000	516821	1.00		100	185	
463.00 > 169.00	3.015	3.023	-0.008	1.000	128042		4.04(1.90-5.69)		837	
D 18 13C4 PFOS										
503.00 > 80.00	3.015	3.028	-0.013	1.138	1176417	1.29		53.9	3161	
D 19 13C5 PFNA										
468.00 > 423.00	3.015	3.028	-0.013	1.138	1211105	1.36		54.6	4430	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.235	3.235	0.0	1.073	755181	0.8175		87.7	2732	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.356	3.364	-0.008	1.000	646208	1.01		101	2104	
D 21 13C8 FOSA										
506.00 > 78.00	3.356	3.370	-0.014	1.266	1646604	1.25		49.8	4917	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.371	3.371	0.0	1.000	144677	0.9670		101	722	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.371	3.371	0.0	1.118	352018	0.9087		94.7	1308	
549.00 > 99.00	3.363	3.371	-0.008	1.116	119185		2.95(1.33-3.97)		590	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.371	3.377	-0.006	1.272	295975	1.31		54.7	1602	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.378	3.386	-0.008	1.000	403174	1.01		101	396	
513.00 > 169.00	3.378	3.386	-0.008	1.000	76800		5.25(2.36-7.09)		363	
D 23 13C2 PFDA										
515.00 > 470.00	3.378	3.392	-0.014	1.275	1012619	1.29		51.7	2845	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.538	3.545	-0.007	1.335	548672	1.37		54.9	993	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.538	3.547	-0.009	1.000	180324	0.8594		85.9	339	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.700	3.700	0.0	1.227	259156	0.8414		87.3	1311	
599.00 > 99.00	3.700	3.700	0.0	1.227	91323		2.84(1.39-4.16)		640	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.708	3.709	-0.001	1.002	184719	0.9376		93.8	490	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.700	3.716	-0.016	1.396	586508	1.41		56.2	854	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.708	3.717	-0.009	1.000	259664	1.00		99.6	223	
563.00 > 169.00	3.708	3.717	-0.009	1.000	61041		4.25(2.12-6.36)		415	
D 30 13C2 PFUnA										
565.00 > 520.00	3.708	3.724	-0.016	1.399	728915	1.16		46.3	3839	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.869	3.879	-0.010	1.283	1199729	0.8604		91.3	3595	
D 36 13C2 PFDaA										
615.00 > 570.00	4.012	4.012	0.0	1.514	705185	1.07		42.7	1472	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.012	4.013	-0.001	1.000	312547	1.00		100	251	
613.00 > 169.00	4.012	4.013	-0.001	1.000	77642		4.03(2.13-6.40)		493	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.012	4.013	-0.001	1.190	83020	0.7937		82.3	614	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.255	4.256	-0.001	1.411	111862	0.7755		80.1	738	
699.00 > 99.00	4.255	4.256	-0.001	1.411	164186		0.68(0.00-0.00)		876	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.274	4.275	-0.001	1.065	302333	1.02		102	233	
663.00 > 169.00	4.274	4.275	-0.001	1.065	110411		2.74(1.25-3.76)		1217	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.515	4.515	0.0	1.000	97708	0.9685		96.8	1008	
713.00 > 219.00	4.515	4.515	0.0	1.000	68351		1.43(0.71-2.13)		577	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.515	4.523	-0.008	1.703	944104	1.17		46.7	2276	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.935	4.936	-0.001	1.000	441803	1.00		100	118	
813.00 > 169.00	4.935	4.936	-0.001	1.000	86967		5.08(2.86-8.58)		782	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.935	4.944	-0.009	1.862	1217484	0.8150		32.6	2322	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.294	5.294	0.0	1.073	524022	0.9117		91.2	148	
913.00 > 169.00	5.294	5.294	0.0	1.073	72760		7.20(3.83-11.48)		639	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_064.d

Injection Date: 15-Oct-2018 08:35:06

Instrument ID: A8_N

Lims ID: 480-142679-C-1-B MS

Client ID: EC-0006-02

Operator ID: SACINSTLCMS01

ALS Bottle#: 49

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

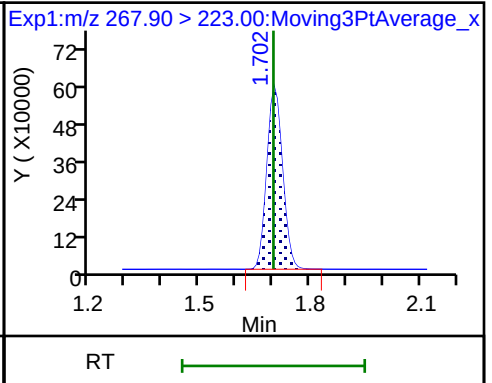
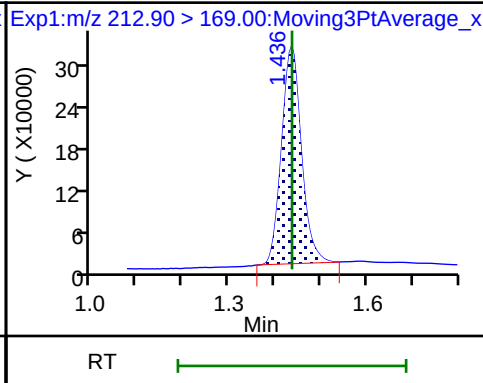
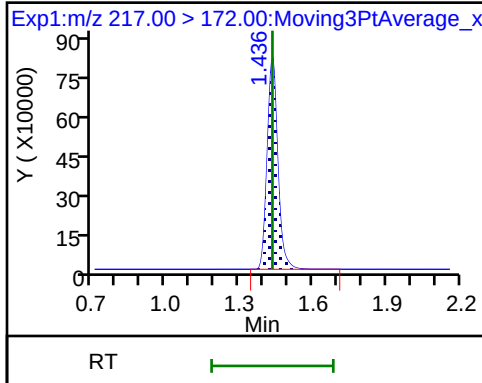
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

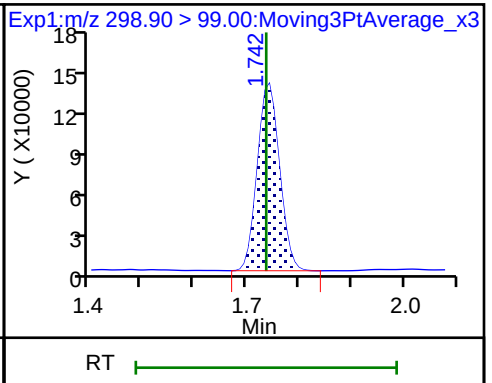
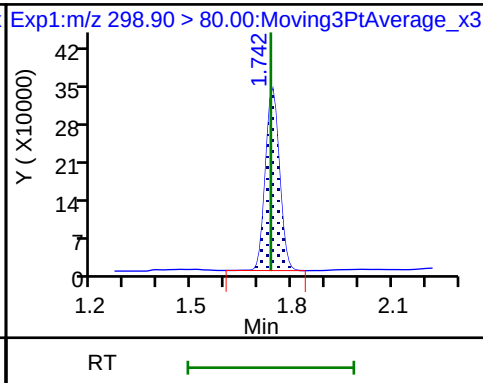
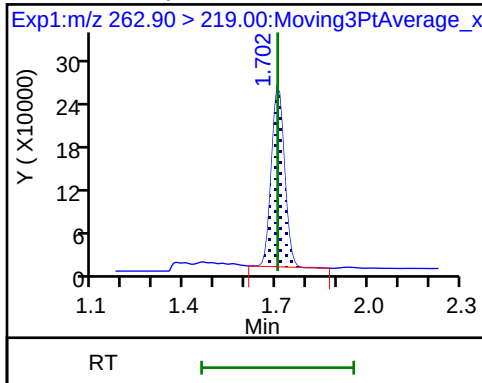
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

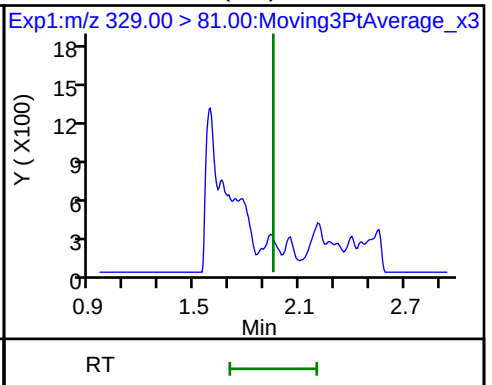
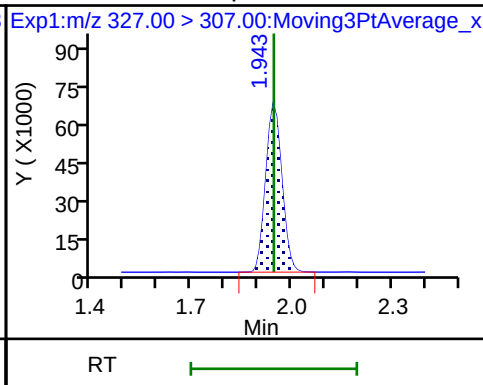
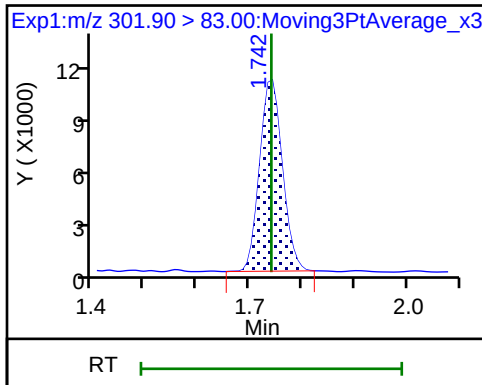
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

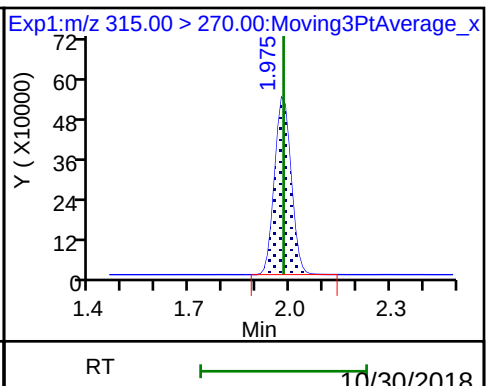
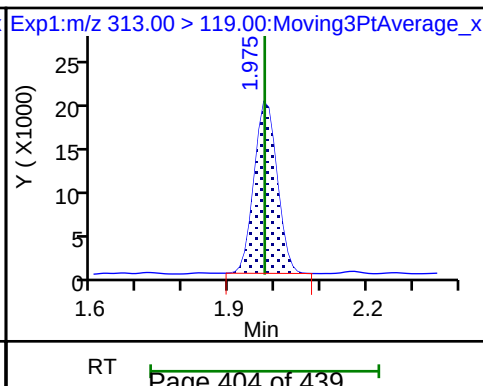
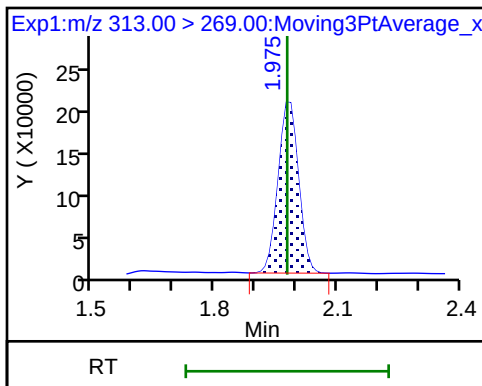
D 60 M2-4:2 FTS (ND)

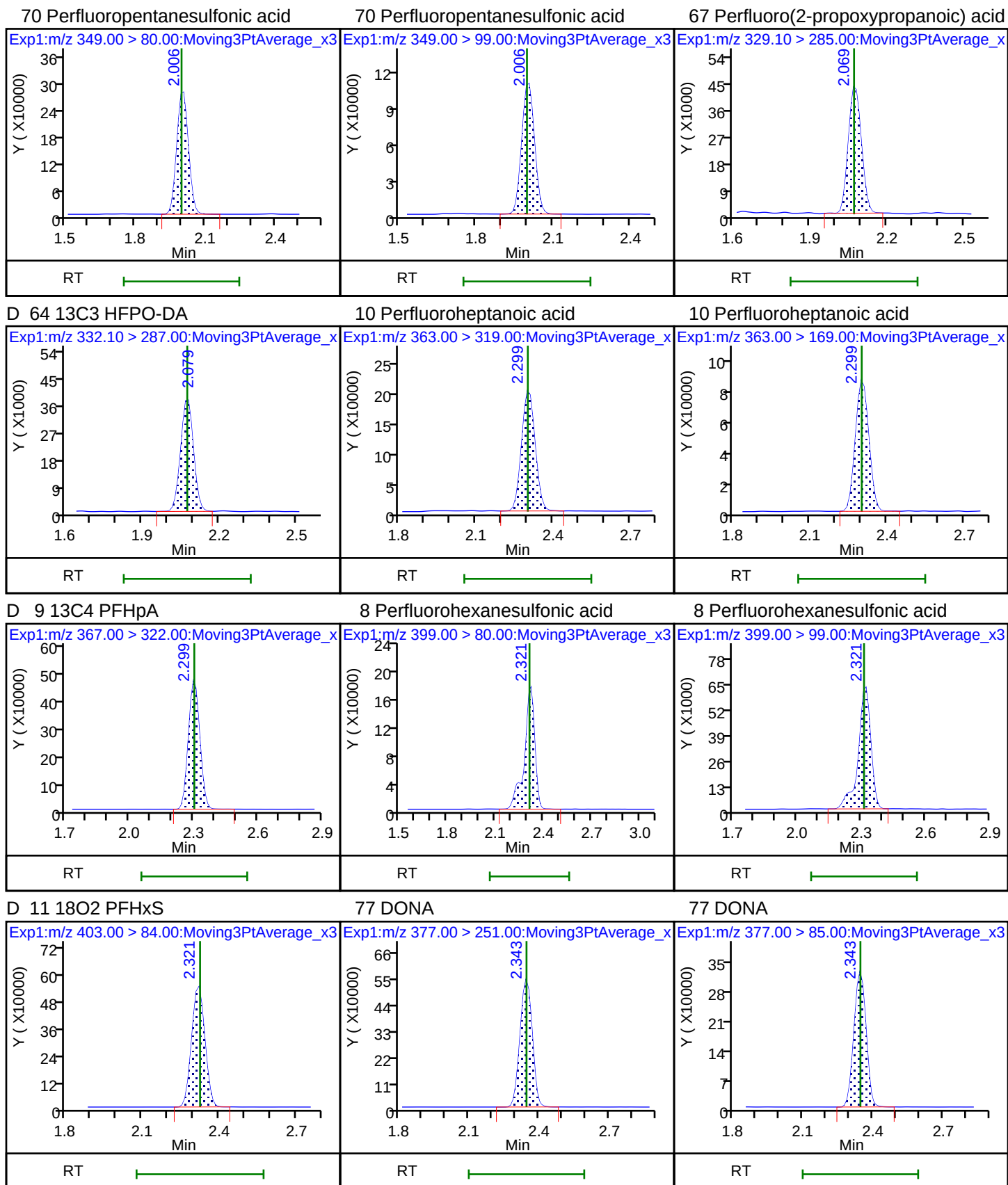


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

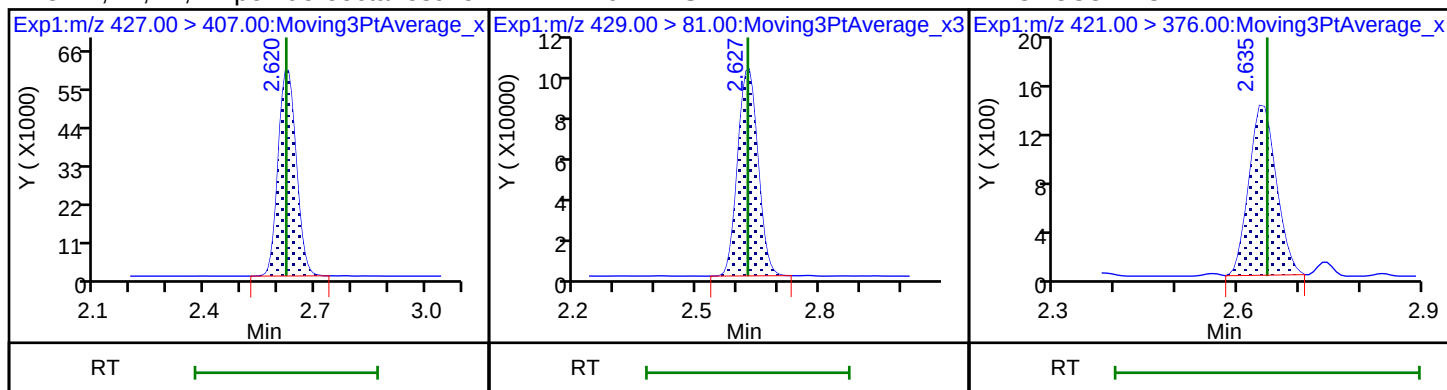
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

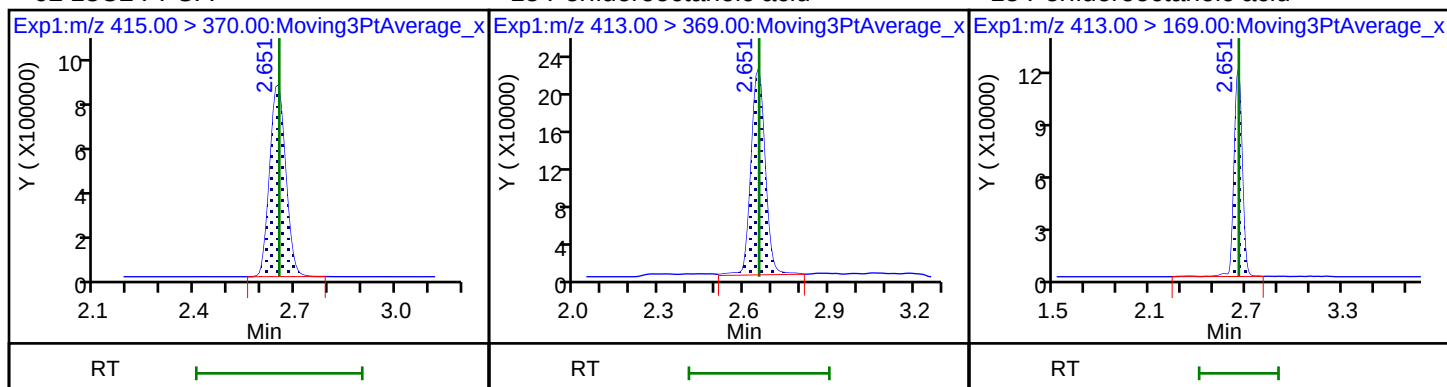
D 73 13C8 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid

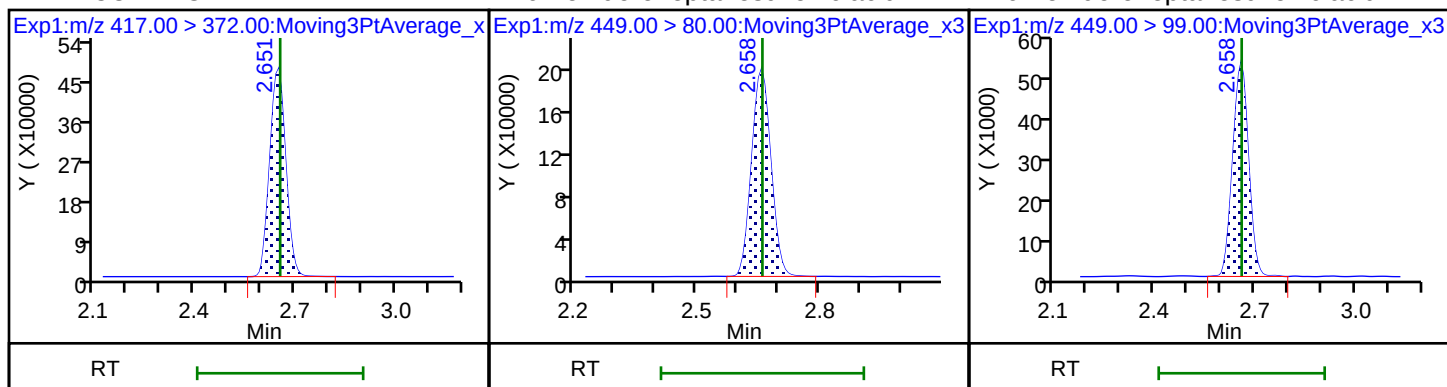
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

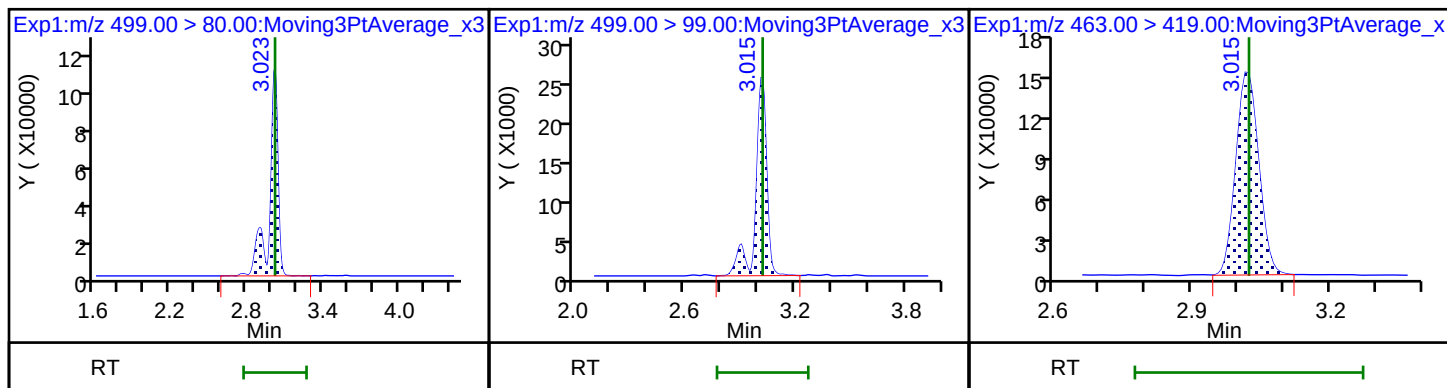
16 Perfluoroheptanesulfonic acid

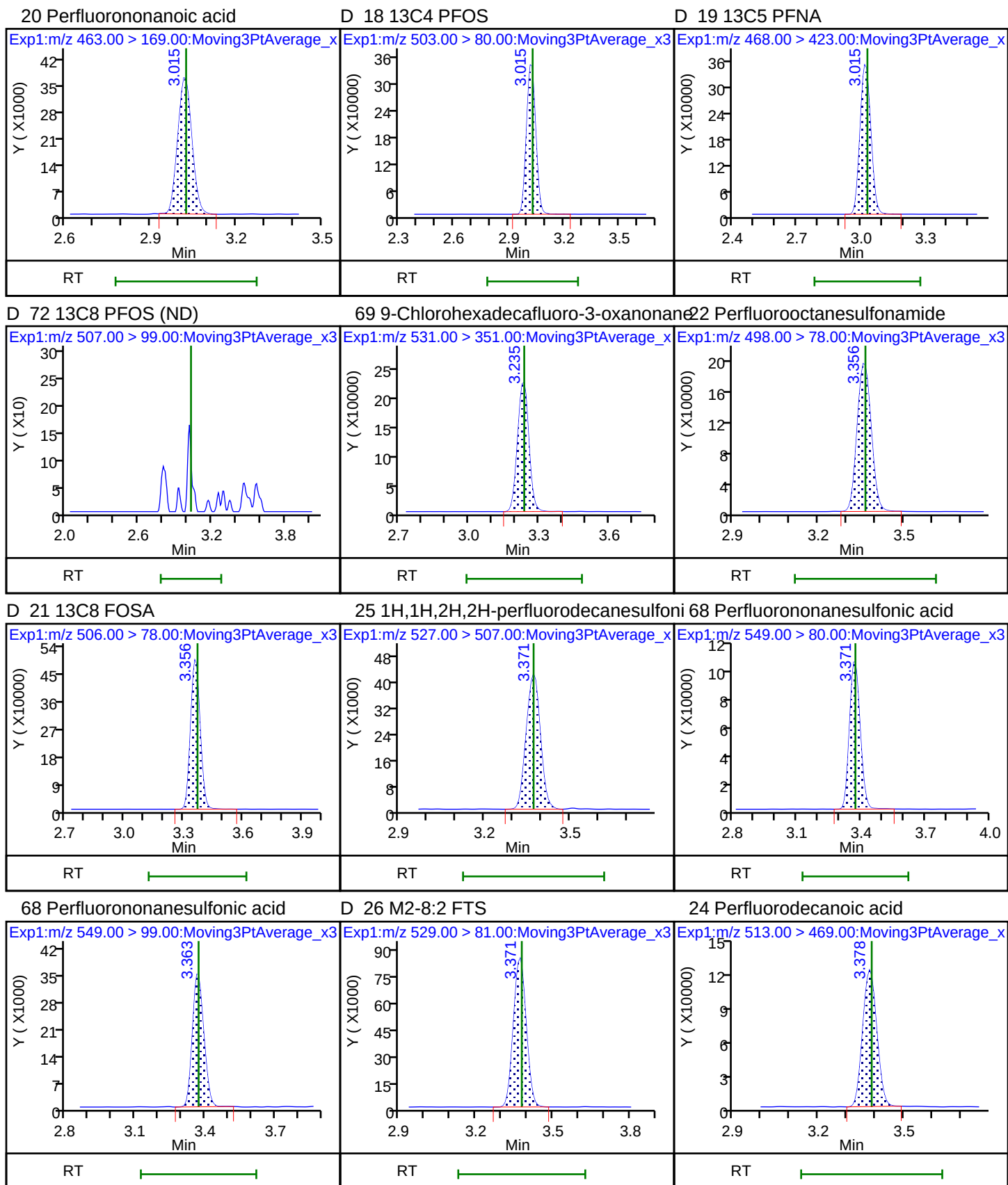


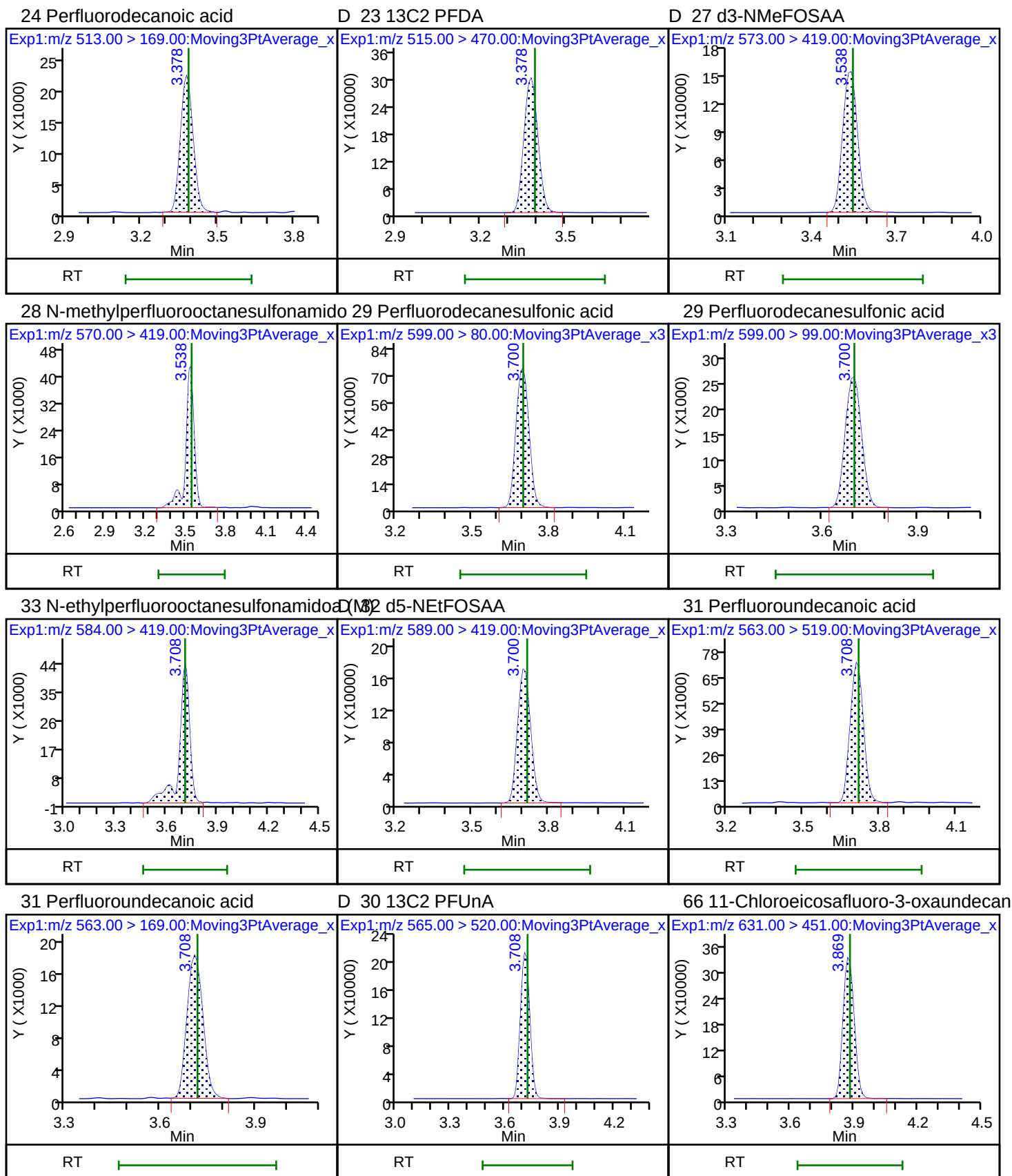
17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

20 Perfluorononanoic acid



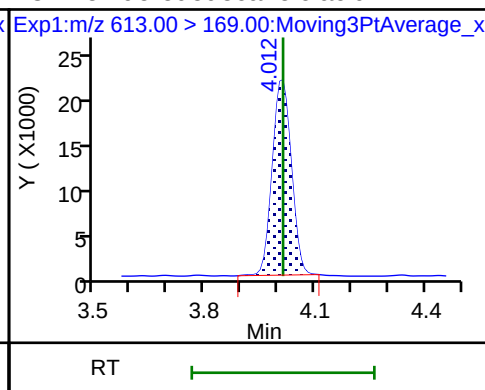
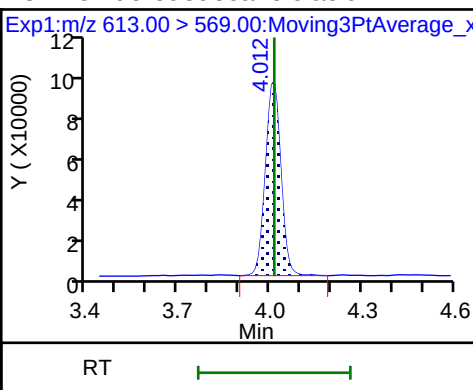
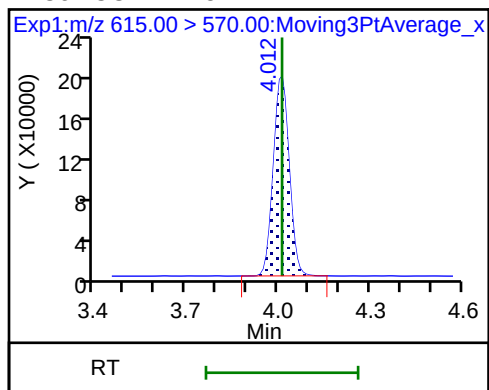




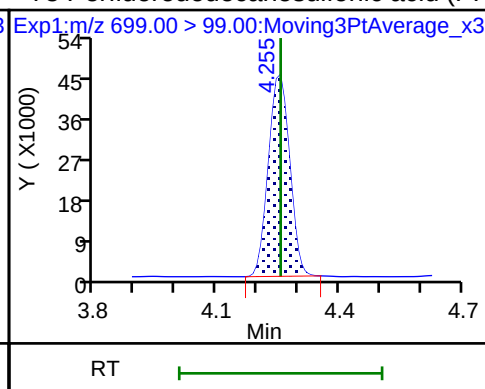
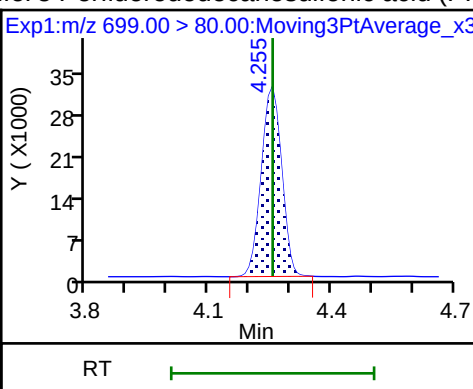
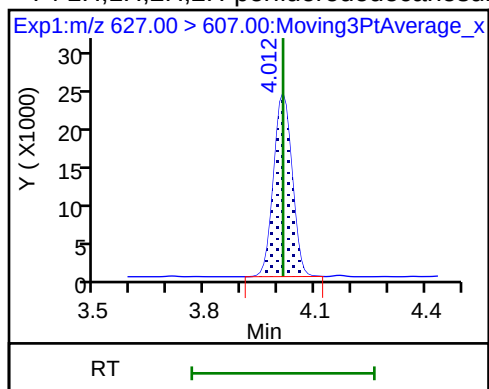
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



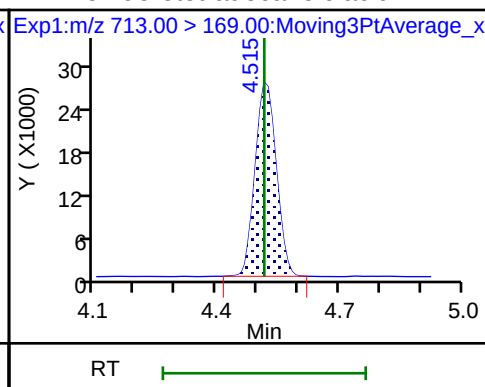
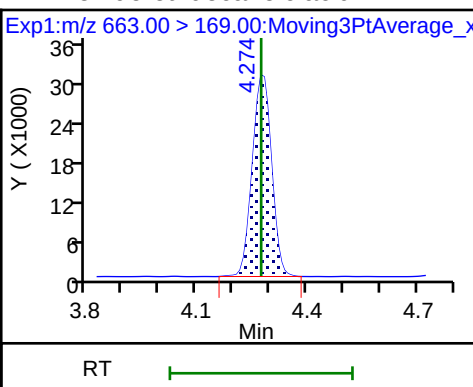
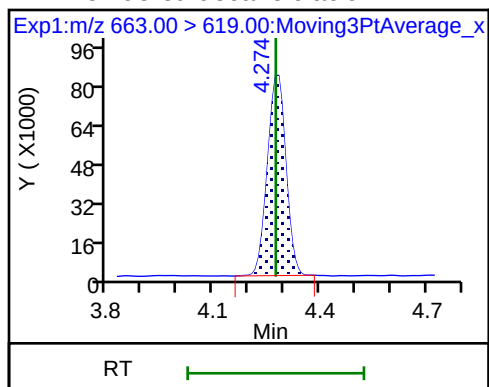
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

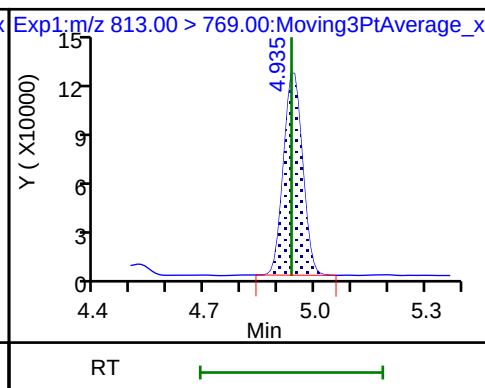
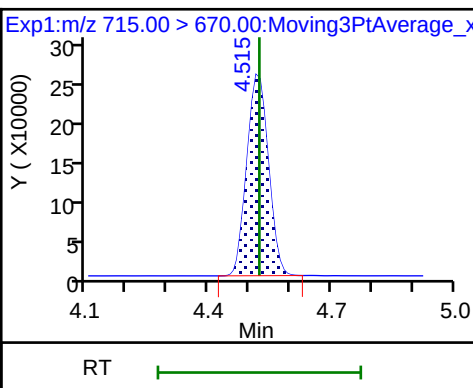
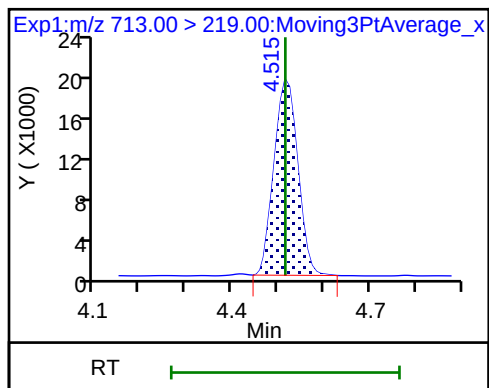
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

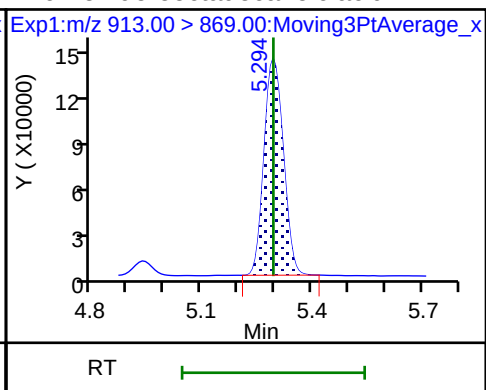
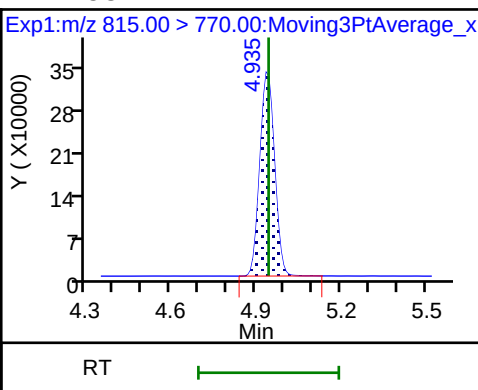
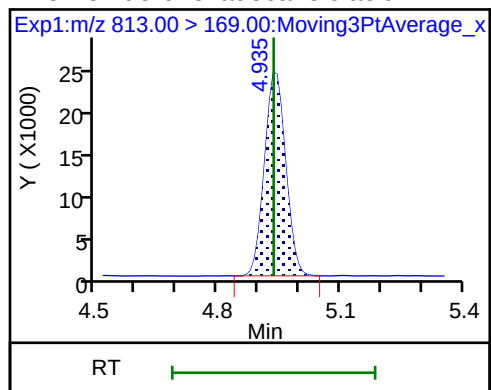
45 Perfluorohexadecanoic acid



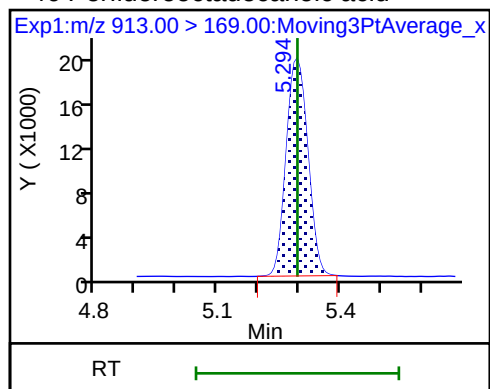
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

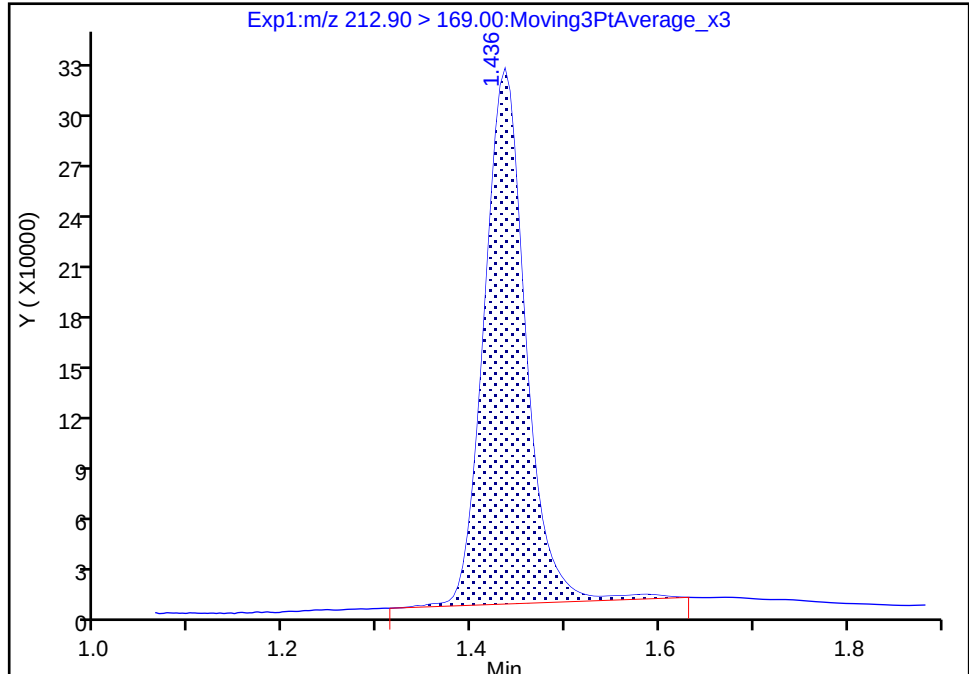
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_064.d
Injection Date: 15-Oct-2018 08:35:06 Instrument ID: A8_N
Lims ID: 480-142679-C-1-B MS
Client ID: EC-0006-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 49 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

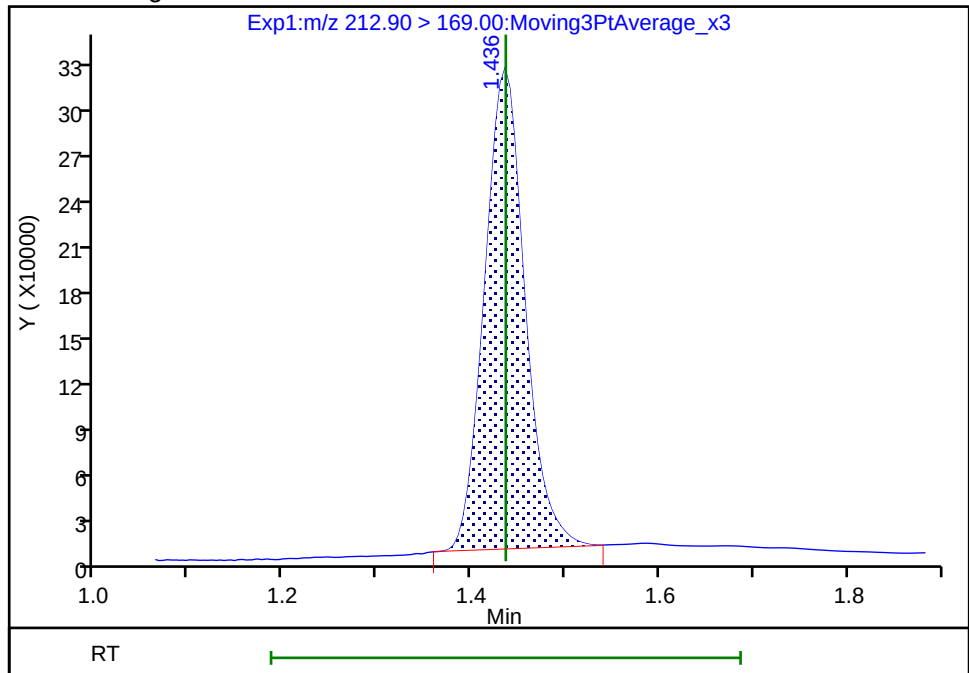
RT: 1.44
Area: 959108
Amount: 1.099977
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 926719
Amount: 1.062831
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:56:45
Audit Action: Manually Integrated

Audit Reason: Baseline
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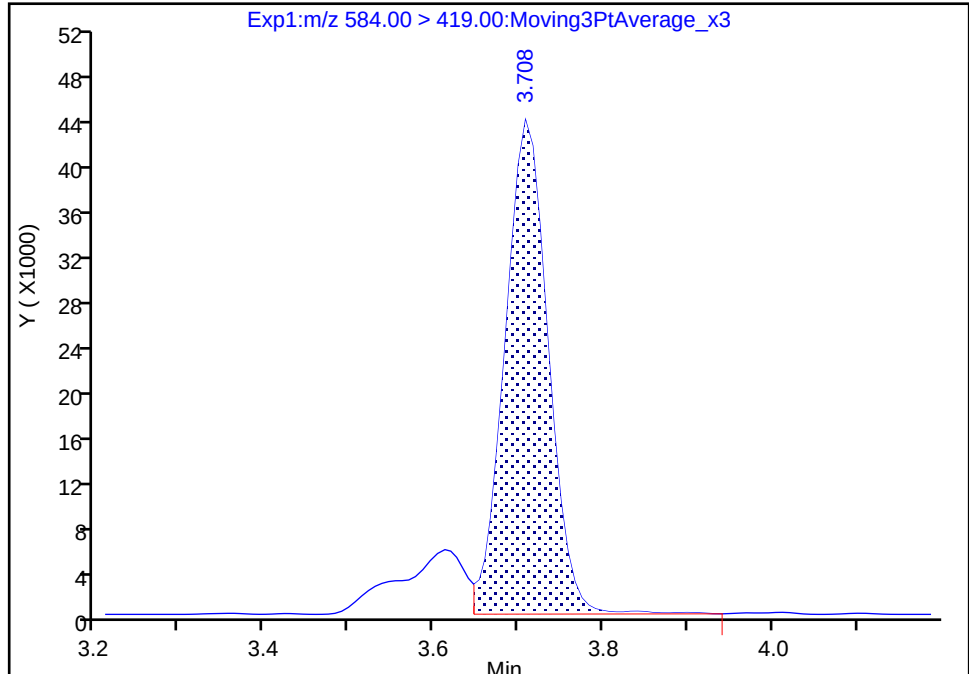
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_064.d
Injection Date: 15-Oct-2018 08:35:06 Instrument ID: A8_N
Lims ID: 480-142679-C-1-B MS
Client ID: EC-0006-02
Operator ID: SACINSTLCMS01 ALS Bottle#: 49 Worklist Smp#: 5
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

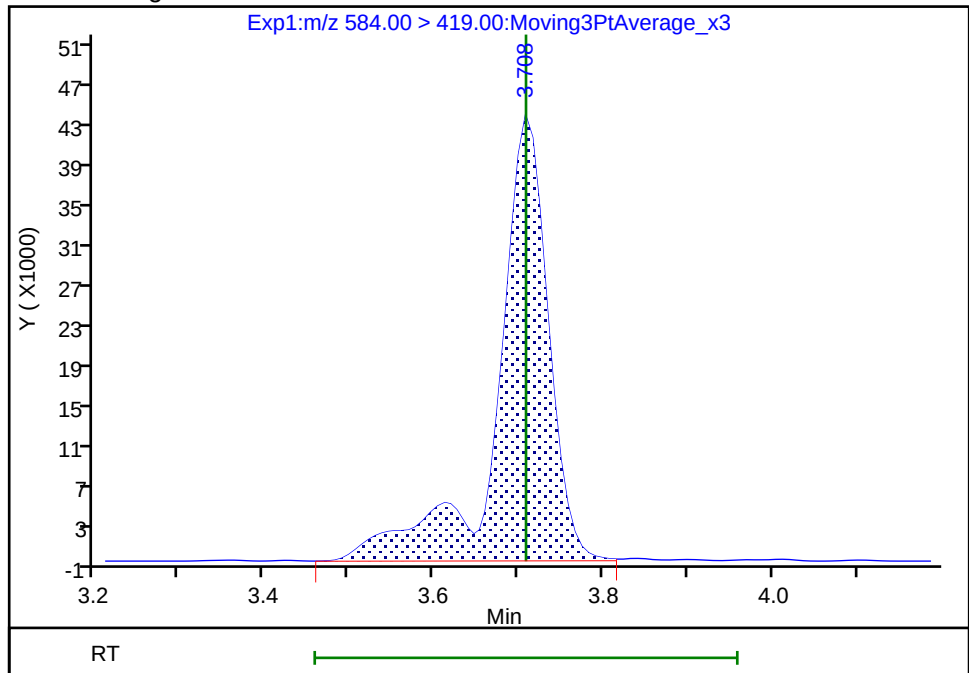
RT: 3.71
Area: 154935
Amount: 0.786444
Amount Units: ng/ml

Processing Integration Results



RT: 3.71
Area: 184719
Amount: 0.937626
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:57:27
Audit Action: Manually Integrated

Audit Reason: Isomers
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-03 MSD</u>	Lab Sample ID: <u>480-142679-1 MSD</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_065.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>261.3 (mL)</u>	Date Analyzed: <u>10/15/2018 08:42</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.7		1.9	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	41.1		1.9	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	38.9		1.9	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	38.4		1.9	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	38.3		1.9	0.81
375-95-1	Perfluorononanoic acid (PFNA)	37.5		1.9	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	41.2		1.9	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	35.2		1.9	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	38.6		1.9	0.53
72629-94-8	Perfluorotridecanoic acid (PFTriA)	39.1		1.9	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	40.4		1.9	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	32.6		1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	31.4		1.9	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	41.6		1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	36.4		1.9	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	32.5		1.9	0.31
754-91-6	Perfluorooctanesulfonamide (FOSA)	37.5		1.9	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	35.6		19	3.0
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	36.0		19	1.8
27619-97-2	6:2 FTS	36.7		19	1.9
39108-34-4	8:2 FTS	39.5		19	1.9

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142679-1</u>
SDG No.: _____	
Client Sample ID: <u>EC-0006-03 MSD</u>	Lab Sample ID: <u>480-142679-1 MSD</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_065.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>10/01/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/12/2018 07:05</u>
Sample wt/vol: <u>261.3 (mL)</u>	Date Analyzed: <u>10/15/2018 08:42</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>2 (uL)</u>	GC Column: <u>GeminiC18 3x100</u> ID: <u>3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>252245</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	56		25-150
STL01893	13C5 PFPeA	57		25-150
STL00993	13C2 PFHxA	58		25-150
STL01892	13C4 PFHpA	56		25-150
STL00990	13C4 PFOA	58		25-150
STL00995	13C5 PFNA	55		25-150
STL00996	13C2 PFDA	48		25-150
STL00997	13C2 PFUnA	47		25-150
STL00998	13C2 PFDoA	42		25-150
STL02116	13C2 PFTeDA	44		25-150
STL02337	13C3 PFBS	62		25-150
STL00994	18O2 PFHxS	61		25-150
STL00991	13C4 PFOS	50		25-150
STL01056	13C8 FOSA	49		25-150
STL02118	d3-NMeFOSAA	54		25-150
STL02117	d5-NEtFOSAA	54		25-150
STL02279	M2-6:2 FTS	64		25-150
STL02280	M2-8:2 FTS	49		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_065.d
 Lims ID: 480-142679-C-1-C MSD
 Client ID: EC-0006-03
 Sample Type: MSD
 Inject. Date: 15-Oct-2018 08:42:34 ALS Bottle#: 50 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142679-c-1-c msd
 Misc. Info.: Plate: 1 Rack: 4
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 15:10:39 Calib Date: 10-Oct-2018 12:08:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNa\Sacramento\ChromData\A8_N\20181010-65621.b\2018.10.10LLICAL_011.d
 Column 1 : Det: EXP1
 Process Host: XAWRK020

First Level Reviewer: barnettj

Date: 17-Oct-2018 14:59:31

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA										
217.00 > 172.00	1.436	1.434	0.002	0.542	2180124	1.41		56.5	4810	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.436	1.436	0.0	1.000	851245	1.09		109	89.3	M
D 3 13C5 PFPeA										
267.90 > 223.00	1.702	1.700	0.002	0.642	1436820	1.42		56.8	3535	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.710	1.704	0.006	1.005	665600	1.07		107	34.9	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.743	1.736	0.007	1.000	864906	0.8530		96.5	134	
298.90 > 99.00	1.743	1.736	0.007	1.000	365511		2.37(1.25-3.74)		133	
D 47 13C3 PFBS										
301.90 > 83.00	1.743	1.740	0.003	0.657	30000	1.44		62.0	143	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	1.954	1.945	0.009	1.121	213422	1.11		119	2230	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.985	1.977	0.008	1.000	653421	1.02		102	107	
313.00 > 119.00	1.985	1.977	0.008	1.000	61864		10.56(5.03-15.10)		126	
D 7 13C2 PFHxA										
315.00 > 270.00	1.985	1.981	0.004	0.749	1631752	1.46		58.4	5533	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.006	1.997	0.009	1.151	829424	0.9519		101	1158	
349.00 > 99.00	2.006	1.997	0.009	1.151	301298		2.75(1.36-4.07)		597	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.080	2.071	0.009	1.000	136700	0.9322		93.2	91.7	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.080	2.075	0.005	0.784	124576	1.55		61.9	499	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.310	2.301	0.009	1.000	614775	1.00		100	158	
363.00 > 169.00	2.310	2.301	0.009	1.000	256233		2.40(1.13-3.40)		309	
D 9 13C4 PFHpA										
367.00 > 322.00	2.310	2.303	0.007	0.872	1441332	1.41		56.5	3539	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.322	2.312	0.010	1.000	682782	0.8196		90.1	1151	
399.00 > 99.00	2.322	2.312	0.010	1.000	232506		2.94(1.50-4.49)		483	
D 11 18O2 PFHxS										
403.00 > 84.00	2.322	2.325	-0.003	0.876	1770789	1.45		61.2	5779	
77 DONA										
377.00 > 251.00	2.355	2.345	0.010	0.779	1826009	1.17		124	3377	
377.00 > 85.00	2.344	2.345	-0.001	0.775	1077925		1.69(0.85-2.54)		2079	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.628	2.622	0.006	1.000	180111	0.9598		101	1008	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.628	2.624	0.004	0.991	291246	1.52		64.1	931	
D 73 13C8 PFOA										
421.00 > 376.00	2.635	2.647	-0.012	0.994	1148	0.000820		0.0	11.6	
* 62 13C2 PFOA										
415.00 > 370.00	2.651	2.653	-0.002		2456067	2.50			5712	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.658	2.653	0.005	1.003	643386	1.00		100	60.2	M
413.00 > 169.00	2.658	2.653	0.005	1.003	358154		1.80(0.84-2.52)		568	M
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.655	-0.004	1.000	1385034	1.45		58.0	6697	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.666	2.660	0.006	0.882	577825	1.09		114	1785	
449.00 > 99.00	2.666	2.660	0.006	0.882	155192		3.72(1.94-5.82)		588	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.023	3.023	0.0	1.000	435887	0.9507		102	986	
499.00 > 99.00	3.031	3.023	0.008	1.003	106825		4.08(2.31-6.93)		505	
20 Perfluorononanoic acid										
463.00 > 419.00	3.023	3.023	0.0	1.000	458599	0.9800		98.0	175	
463.00 > 169.00	3.031	3.023	0.008	1.003	115809		3.96(1.90-5.69)		691	
D 18 13C4 PFOS										
503.00 > 80.00	3.023	3.028	-0.005	1.140	976269	1.20		50.1	3178	
D 19 13C5 PFNA										
468.00 > 423.00	3.023	3.028	-0.005	1.140	1098431	1.38		55.3	4995	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.243	3.235	0.008	1.073	629288	0.8209		88.1	1762	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.364	3.364	0.0	1.000	552647	0.9796		98.0	2276	
D 21 13C8 FOSA										
506.00 > 78.00	3.364	3.370	-0.006	1.269	1453753	1.23		49.2	4127	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.371	3.371	0.0	1.000	124886	1.03		108	786	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.371	3.371	0.0	1.115	285985	0.8896		92.7	1398	
549.00 > 99.00	3.379	3.371	0.008	1.118	102927		2.78(1.33-3.97)		649	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.371	3.377	-0.006	1.272	239356	1.18		49.5	1261	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.386	3.386	0.0	1.000	356436	1.08		108	372	
513.00 > 169.00	3.386	3.386	0.0	1.000	64184		5.55(2.36-7.09)		353	
D 23 13C2 PFDA										
515.00 > 470.00	3.386	3.392	-0.006	1.277	843379	1.20		48.2	3462	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.539	3.545	-0.006	1.335	482103	1.35		54.0	1233	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.547	3.547	0.0	1.002	171617	0.9308		93.1	322	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.700	3.700	0.0	1.224	217178	0.8496		88.1	878	
599.00 > 99.00	3.700	3.700	0.0	1.224	72796		2.98(1.39-4.16)		430	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.717	3.709	0.008	1.002	159440	0.9414		94.1	699	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.709	3.716	-0.007	1.399	504223	1.35		54.1	1064	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.717	3.717	0.0	1.000	216679	0.9193		91.9	216	
563.00 > 169.00	3.717	3.717	0.0	1.000	59651		3.63(2.12-6.36)		444	
D 30 13C2 PFUnA										
565.00 > 520.00	3.717	3.724	-0.007	1.402	659156	1.17		46.9	2185	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.879	3.879	0.0	1.283	962093	0.8315		88.3	2411	
D 36 13C2 PFDaA										
615.00 > 570.00	4.013	4.012	0.001	1.514	626094	1.06		42.4	1534	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.013	4.013	0.0	1.000	278874	1.01		101	217	
613.00 > 169.00	4.013	4.013	0.0	1.000	71130		3.92(2.13-6.40)		530	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.013	4.013	0.0	1.190	78063	0.9229		95.7	1020	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.255	4.256	-0.001	1.408	106105	0.8863		91.6	545	
699.00 > 99.00	4.255	4.256	-0.001	1.408	148384		0.72(0.00-0.00)		1189	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.275	4.275	0.0	1.065	268075	1.02		102	215	
663.00 > 169.00	4.275	4.275	0.0	1.065	84783		3.16(1.25-3.76)		517	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.515	4.515	0.0	1.000	88934	1.06		106	1084	
713.00 > 219.00	4.515	4.515	0.0	1.000	59969		1.48(0.71-2.13)		615	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.515	4.523	-0.008	1.703	787912	1.09		43.6	1619	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.944	4.936	0.008	1.002	418268	1.04		104	118	
813.00 > 169.00	4.936	4.936	0.0	1.000	81044		5.16(2.86-8.58)		733	
D 44 13C2 PFHxDA										
815.00 > 770.00	4.936	4.944	-0.008	1.862	1106539	0.8284		33.1	2511	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.294	5.294	0.0	1.073	505906	0.9684		96.8	163	
913.00 > 169.00	5.294	5.294	0.0	1.073	71527		7.07(3.83-11.48)		600	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_065.d

Injection Date: 15-Oct-2018 08:42:34

Instrument ID: A8_N

Lims ID: 480-142679-C-1-C MSD

Client ID: EC-0006-03

Operator ID: SACINSTLCMS01

ALS Bottle#: 50

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

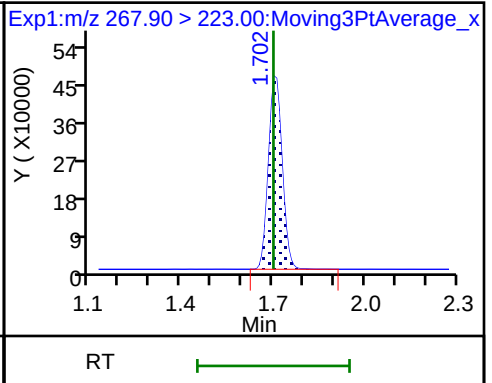
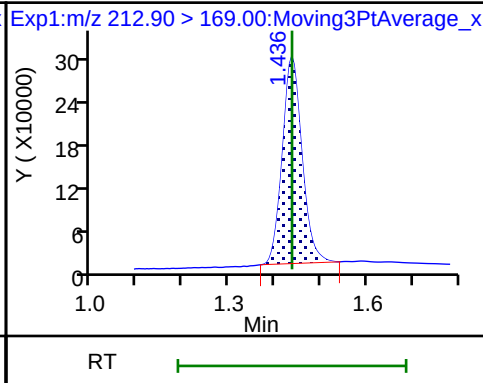
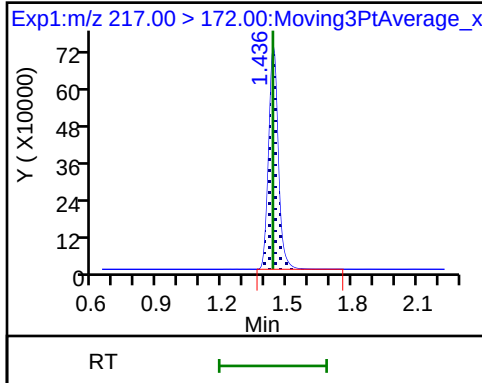
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

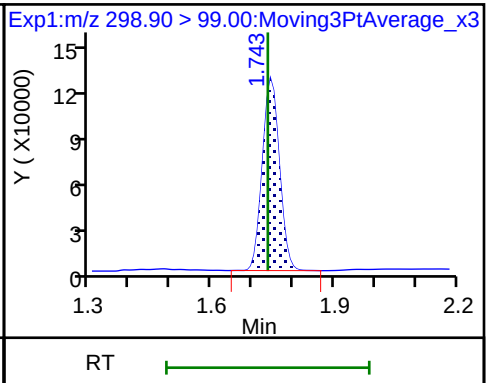
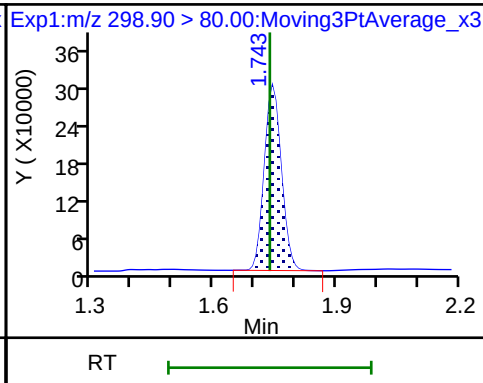
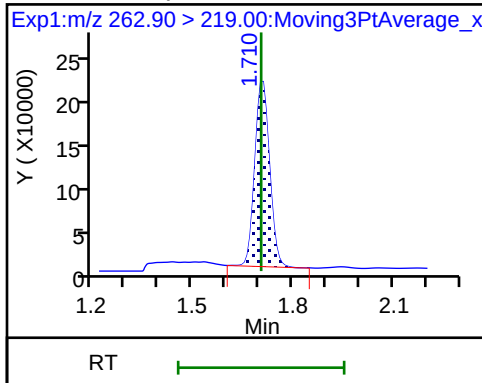
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

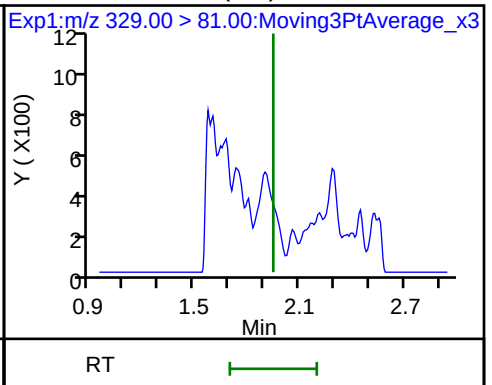
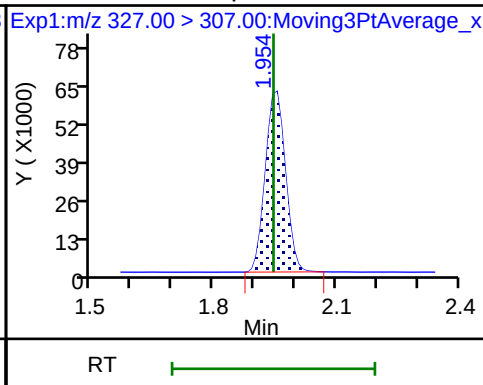
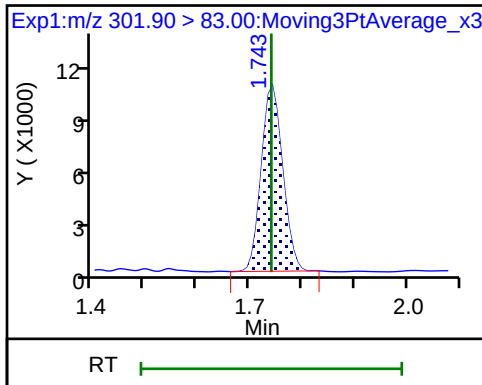
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

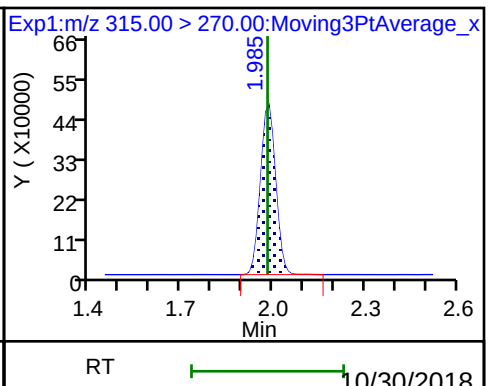
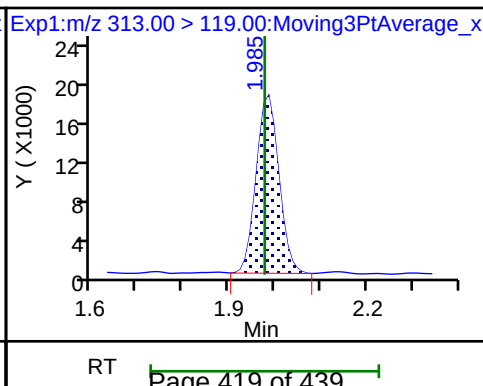
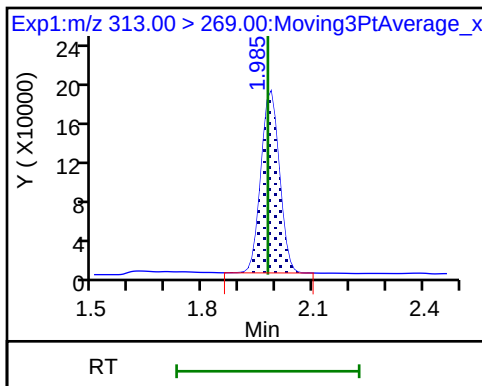
D 60 M2-4:2 FTS (ND)

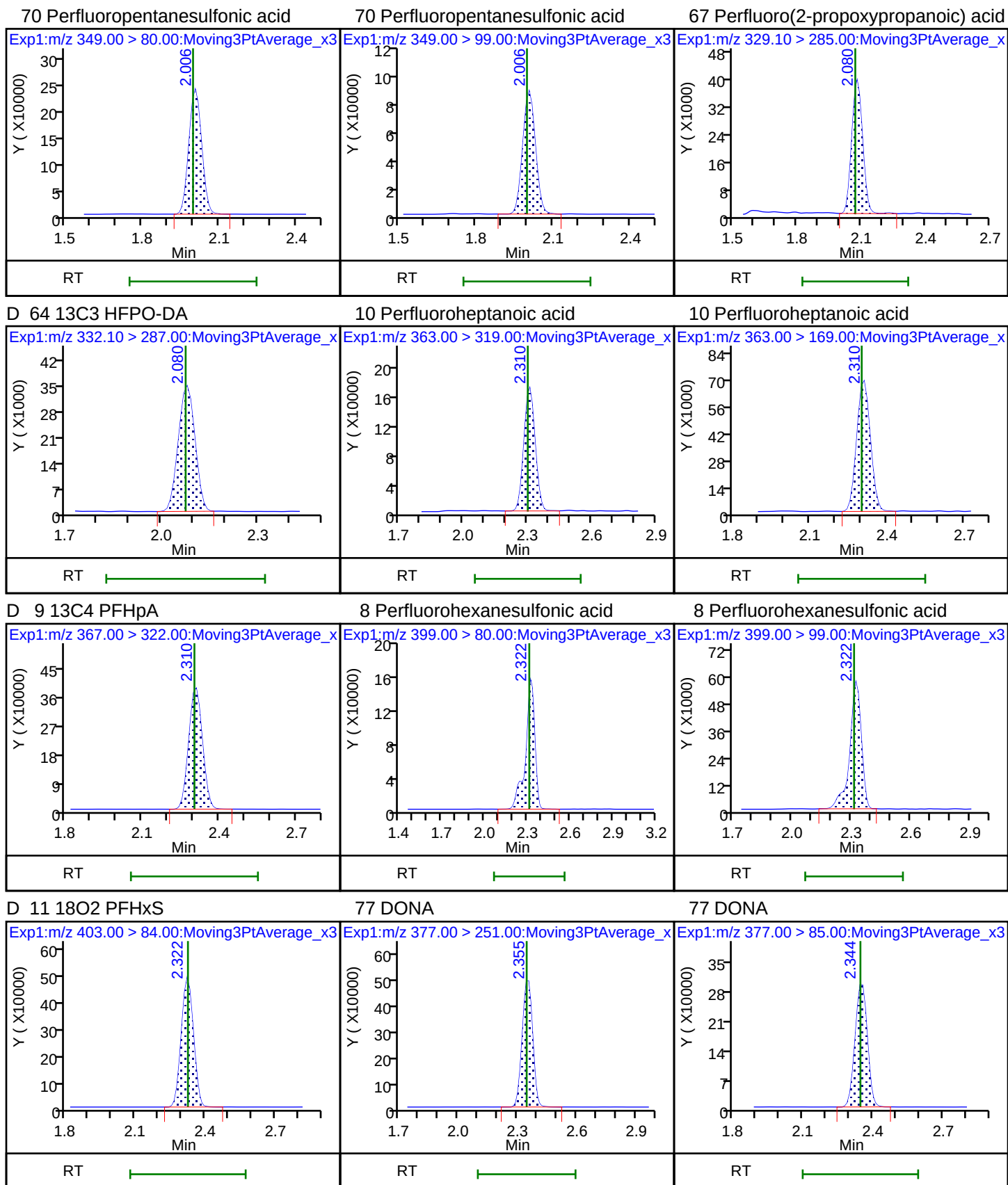


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

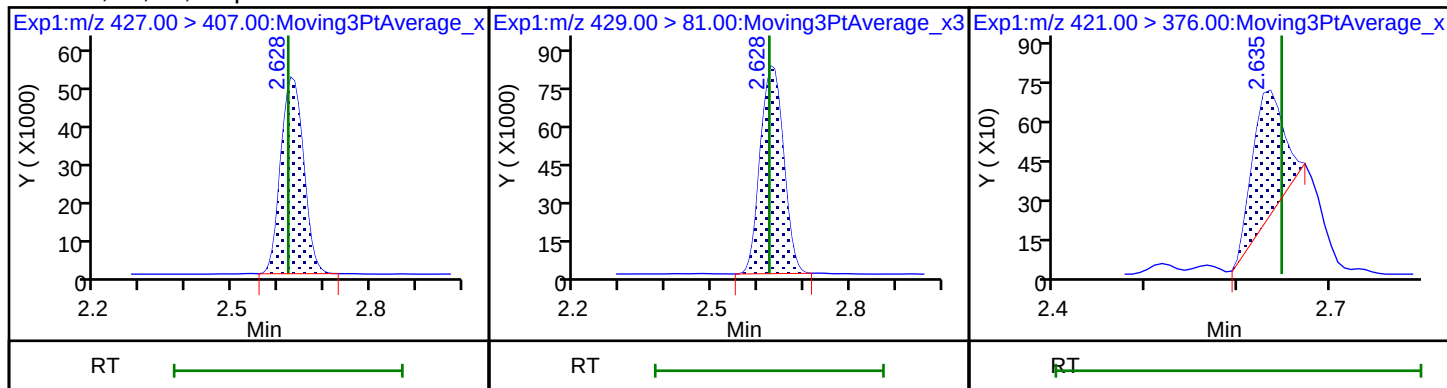
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

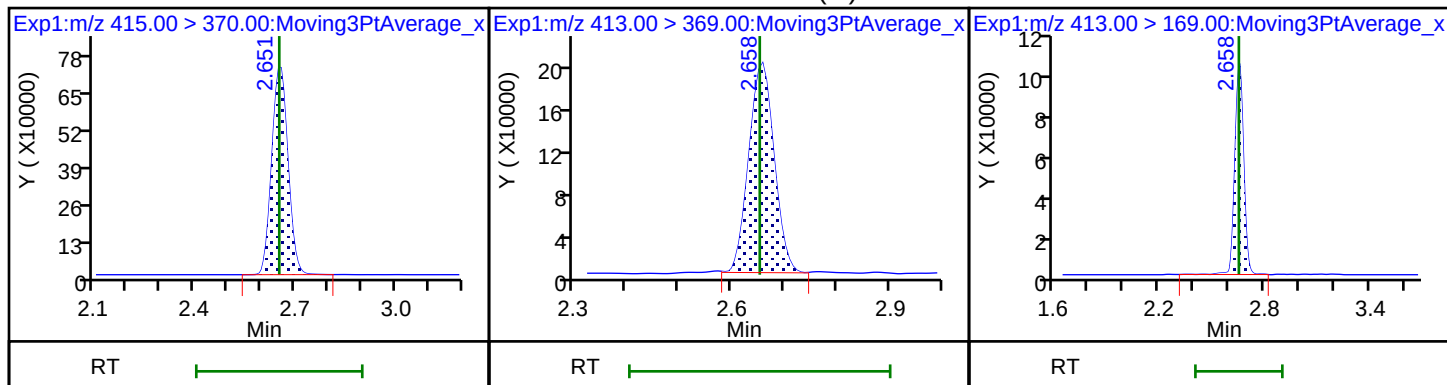
D 73 13C8 PFOA



* 62 13C2 PFOA

15 Perfluorooctanoic acid (M)

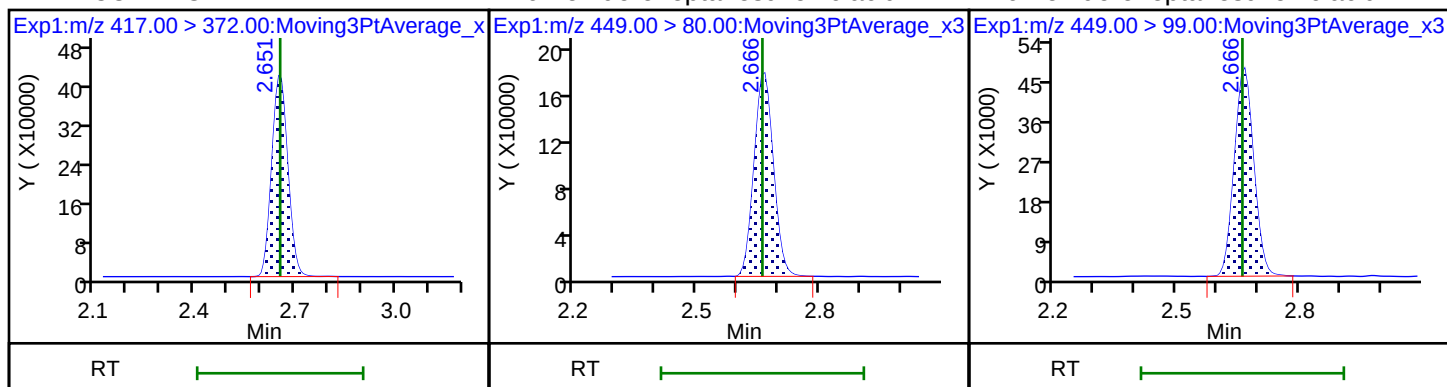
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

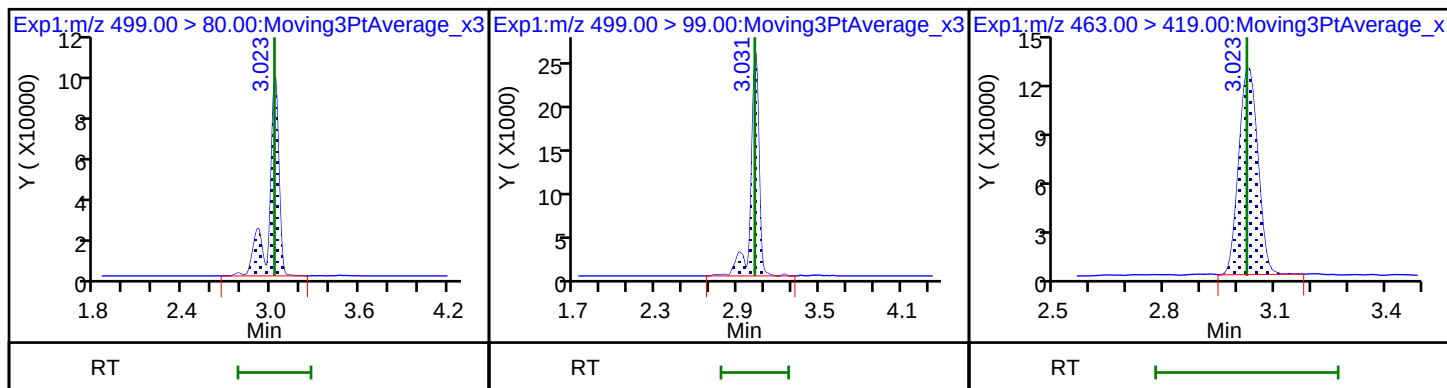
16 Perfluoroheptanesulfonic acid

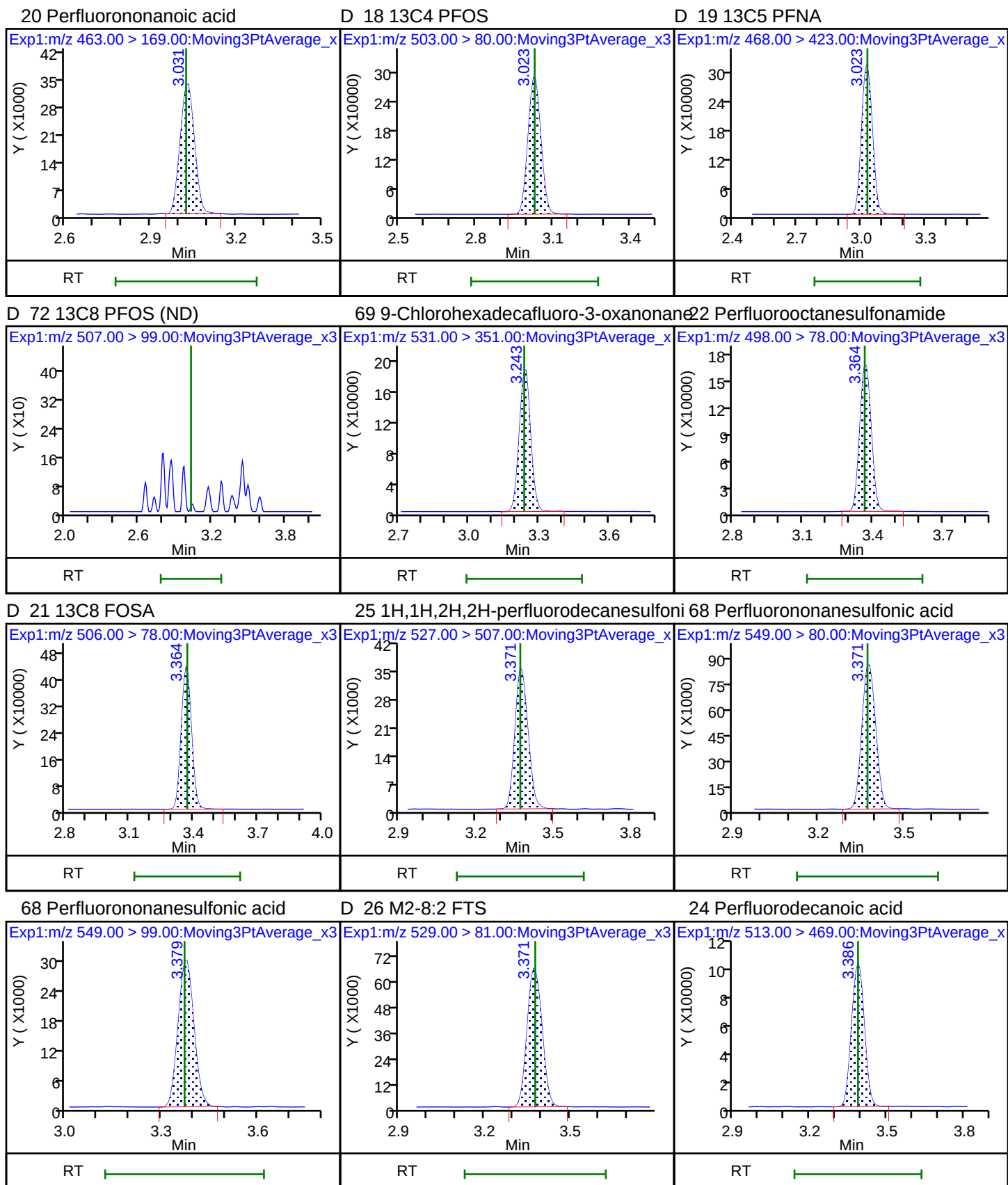


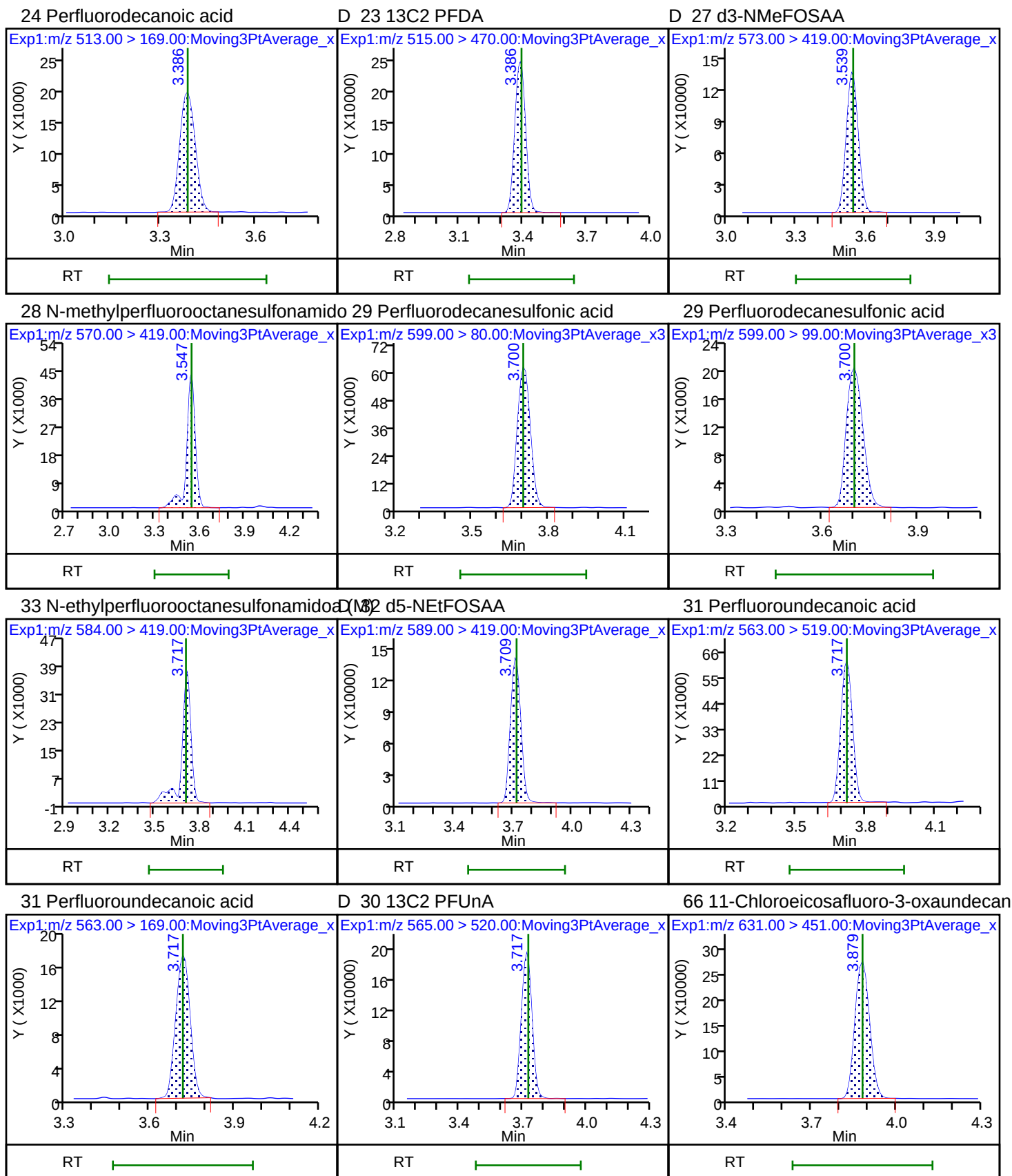
17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

20 Perfluorononanoic acid



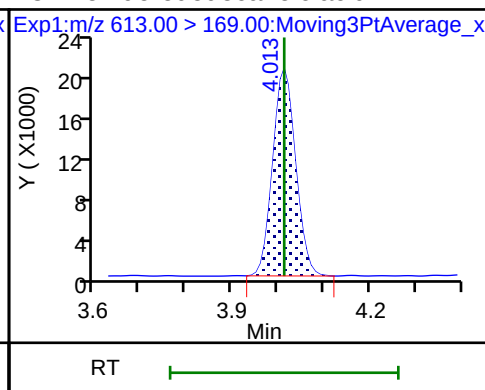
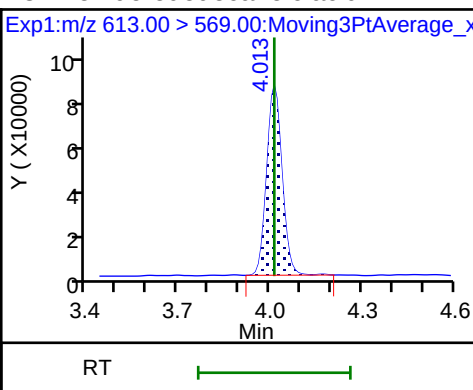
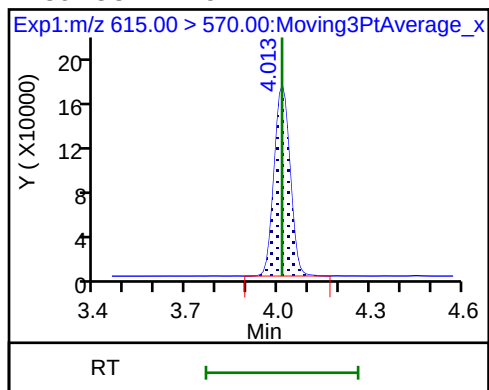




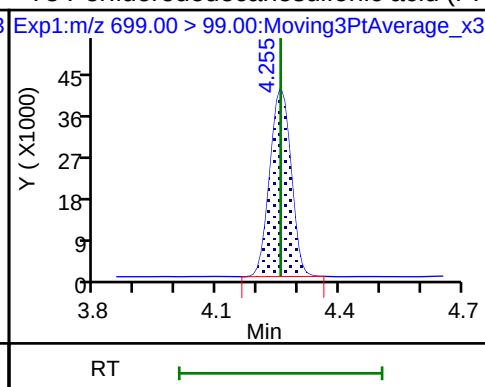
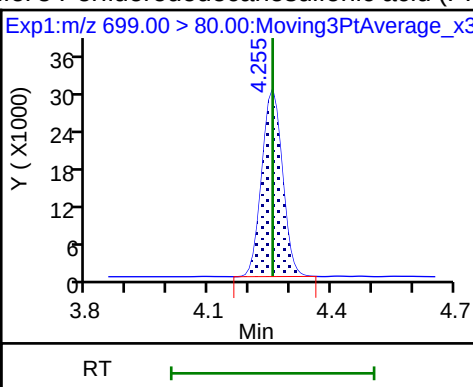
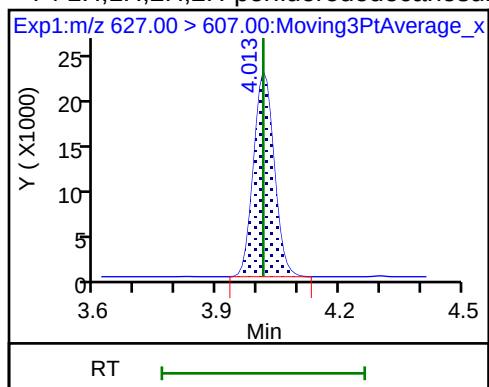
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



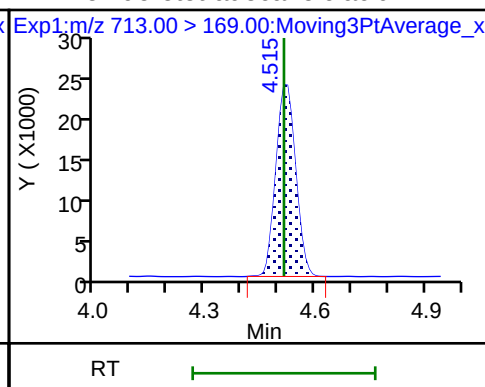
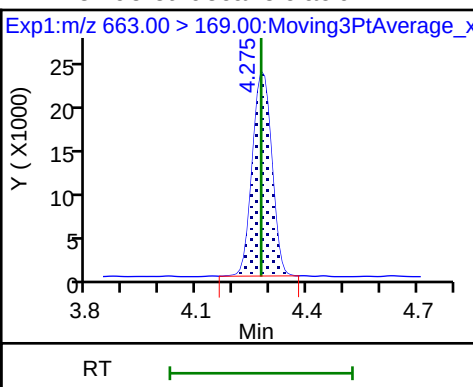
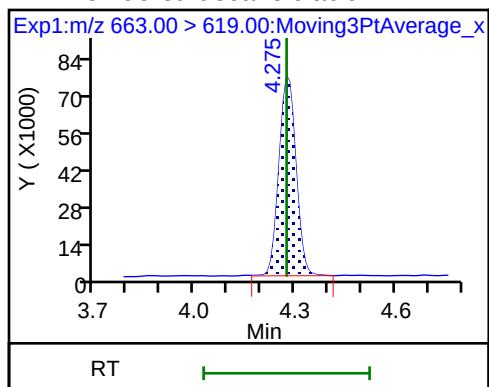
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

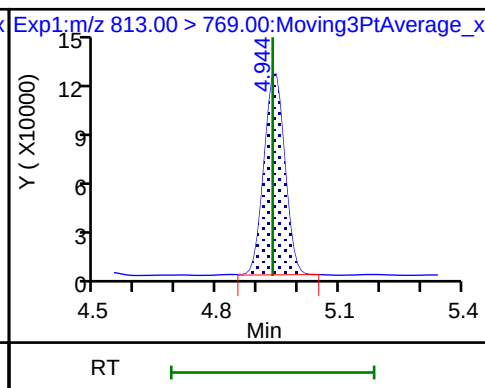
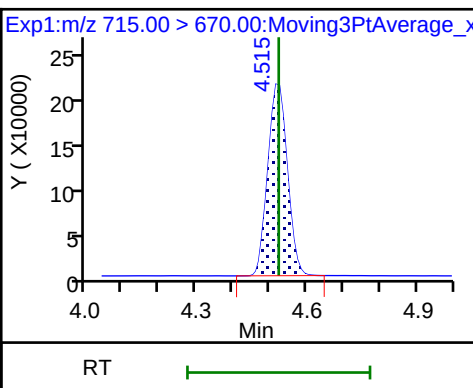
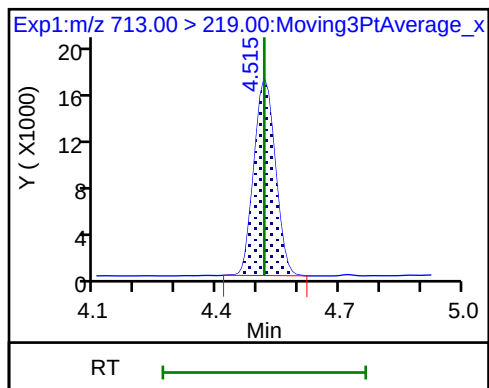
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

45 Perfluorohexadecanoic acid

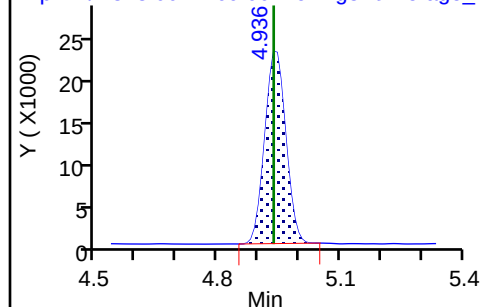


45 Perfluorohexadecanoic acid

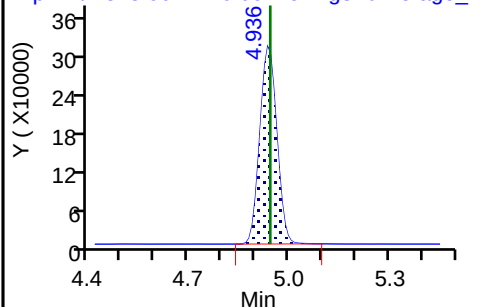
D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid

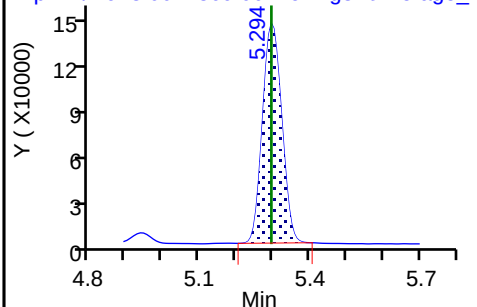
Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 815.00 > 770.00:Moving3PtAverage_x

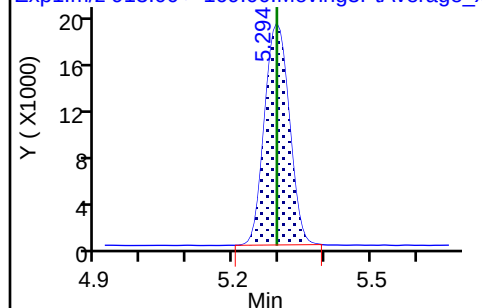


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

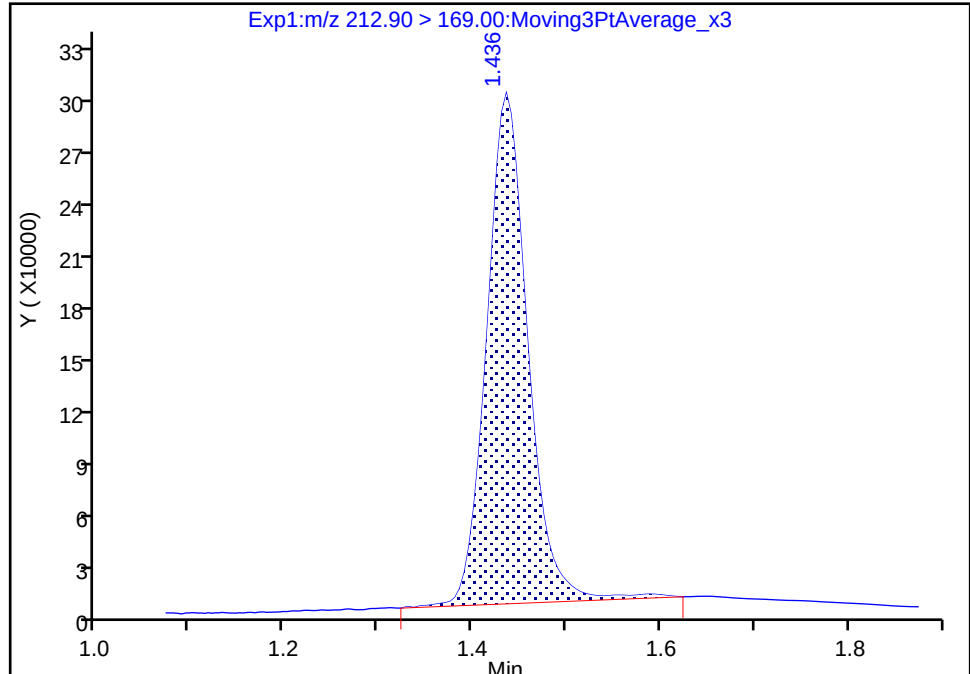
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_065.d
Injection Date: 15-Oct-2018 08:42:34 Instrument ID: A8_N
Lims ID: 480-142679-C-1-C MSD
Client ID: EC-0006-03
Operator ID: SACINSTLCMS01 ALS Bottle#: 50 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

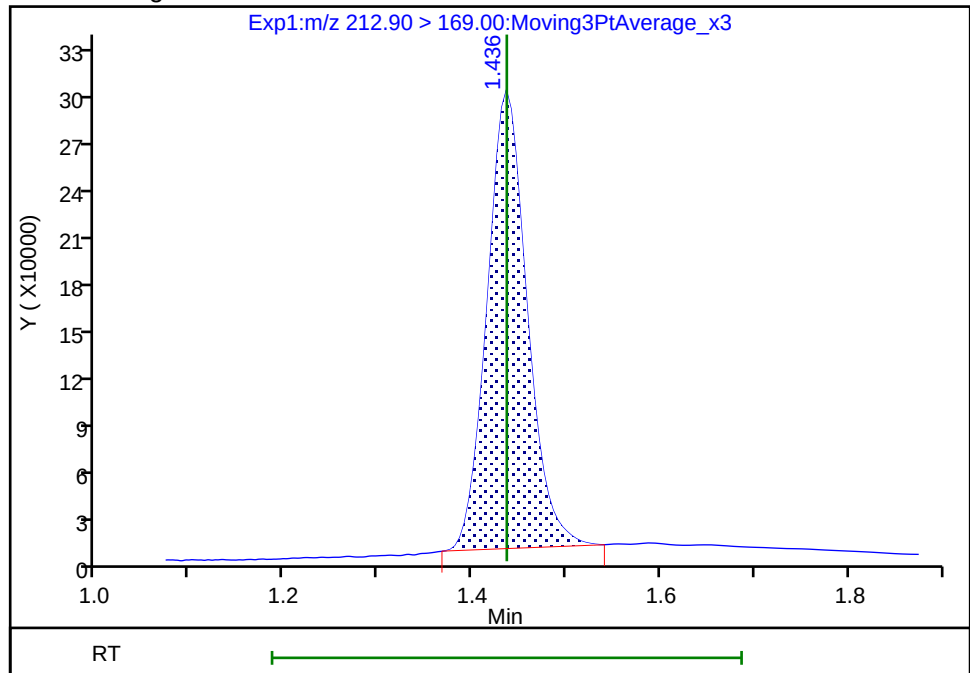
RT: 1.44
Area: 882832
Amount: 1.129704
Amount Units: ng/ml

Processing Integration Results



RT: 1.44
Area: 851245
Amount: 1.089285
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:58:21
Audit Action: Manually Integrated

Audit Reason: Baseline
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10/30/2018

TestAmerica Sacramento

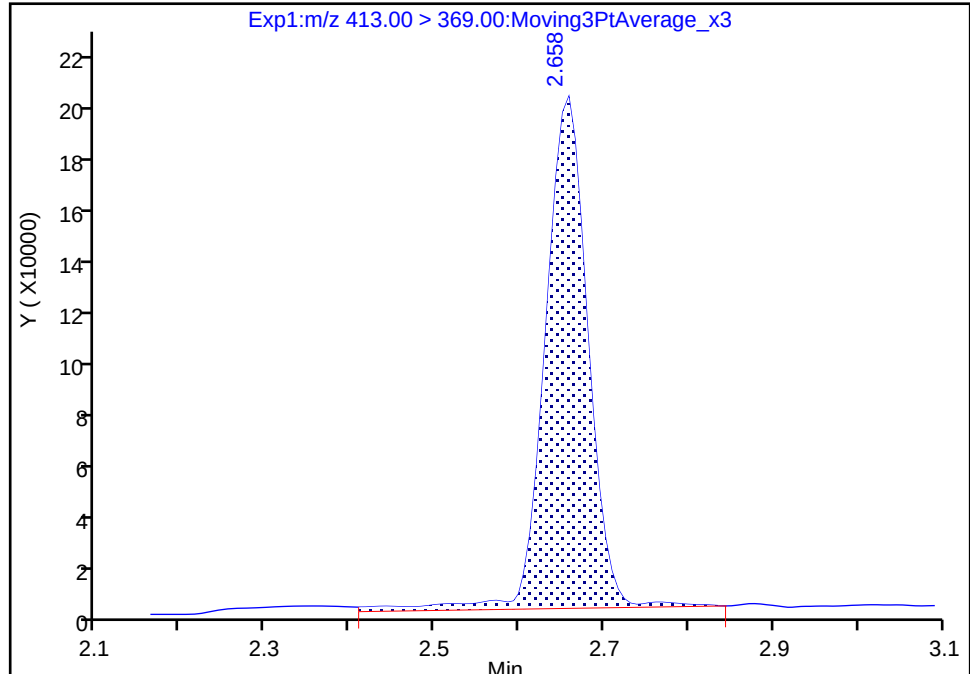
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_065.d
Injection Date: 15-Oct-2018 08:42:34 Instrument ID: A8_N
Lims ID: 480-142679-C-1-C MSD
Client ID: EC-0006-03
Operator ID: SACINSTLCMS01 ALS Bottle#: 50 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

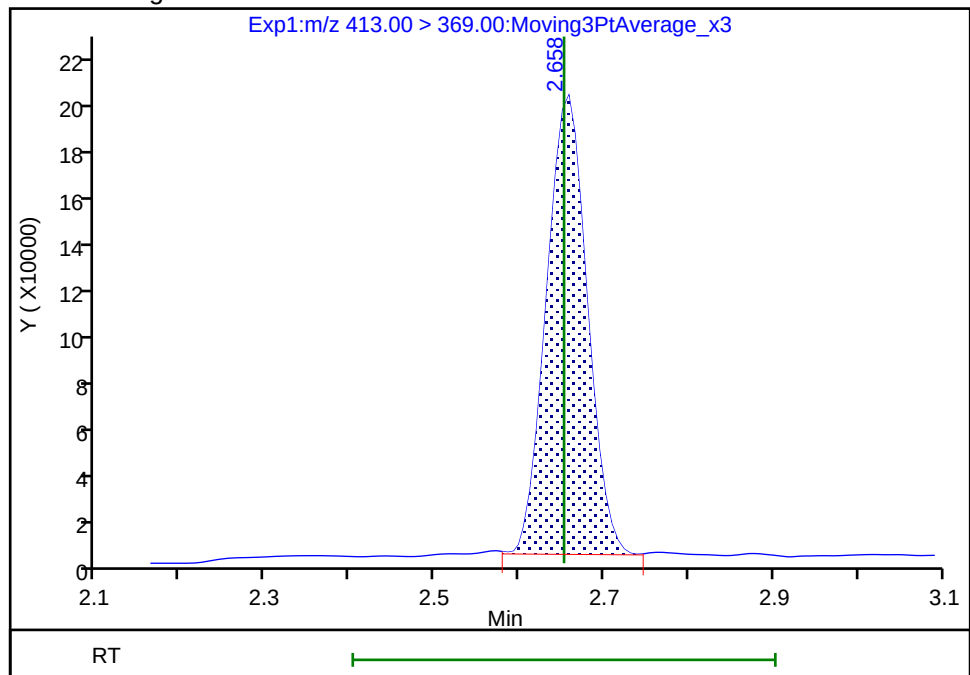
RT: 2.66
Area: 684835
Amount: 1.066329
Amount Units: ng/ml

Processing Integration Results



RT: 2.66
Area: 643386
Amount: 1.001791
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:58:44
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

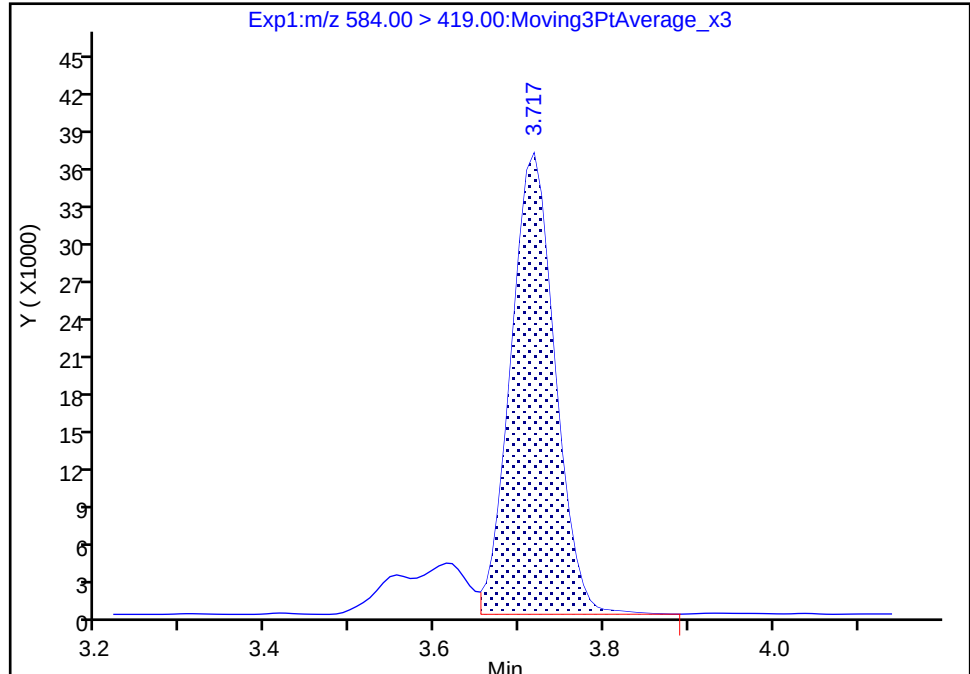
Data File: \\ChromNa\Sacramento\ChromData\A8_N\20181015-65898.b\2018.10.14LLB_065.d
Injection Date: 15-Oct-2018 08:42:34 Instrument ID: A8_N
Lims ID: 480-142679-C-1-C MSD
Client ID: EC-0006-03
Operator ID: SACINSTLCMS01 ALS Bottle#: 50 Worklist Smp#: 6
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

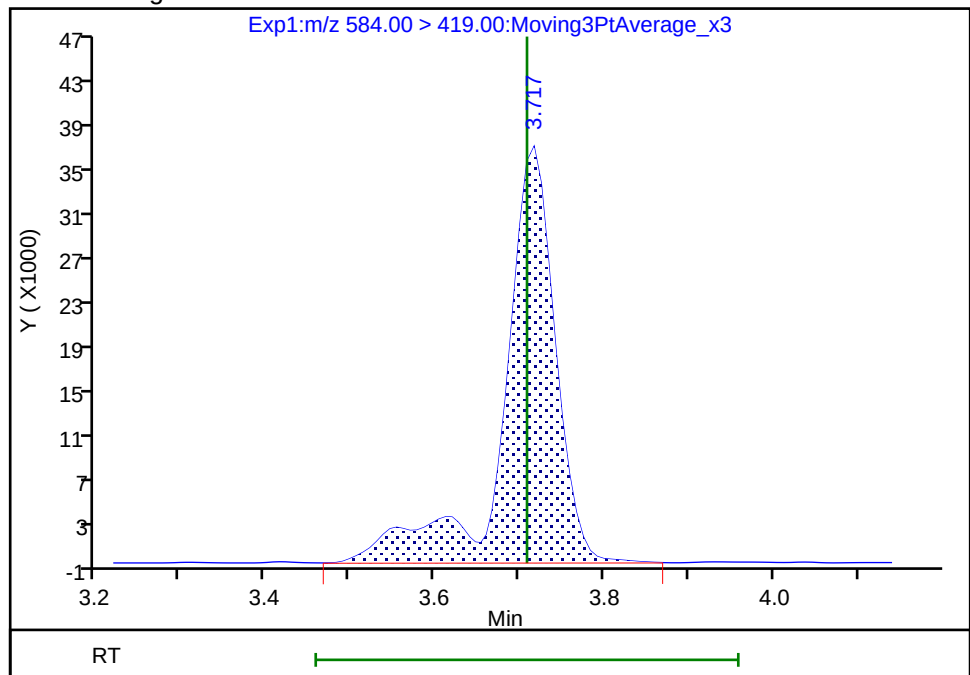
RT: 3.72
Area: 134060
Amount: 0.791532
Amount Units: ng/ml

Processing Integration Results



RT: 3.72
Area: 159440
Amount: 0.941384
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 17-Oct-2018 14:59:18
Audit Action: Manually Integrated

Audit Reason: Isomers
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10/30/2018

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Instrument ID: A8_N Start Date: 10/10/2018 11:24Analysis Batch Number: 251122 End Date: 10/10/2018 12:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-251122/2		10/10/2018 11:24	1	2018.10.10LLICA L 005.d	GeminiC18 3x100 3(mm)
IC 320-251122/3		10/10/2018 11:31	1	2018.10.10LLICA L 006.d	GeminiC18 3x100 3(mm)
IC 320-251122/4		10/10/2018 11:39	1	2018.10.10LLICA L 007.d	GeminiC18 3x100 3(mm)
IC 320-251122/5 ICIS		10/10/2018 11:46	1	2018.10.10LLICA L 008.d	GeminiC18 3x100 3(mm)
IC 320-251122/6		10/10/2018 11:54	1	2018.10.10LLICA L 009.d	GeminiC18 3x100 3(mm)
IC 320-251122/7		10/10/2018 12:01	1	2018.10.10LLICA L 010.d	GeminiC18 3x100 3(mm)
IC 320-251122/8		10/10/2018 12:08	1	2018.10.10LLICA L 011.d	GeminiC18 3x100 3(mm)
ICB 320-251122/9		10/10/2018 12:16	1	2018.10.10LLICA L 012.d	GeminiC18 3x100 3(mm)
ICV 320-251122/10		10/10/2018 12:23	1	2018.10.10LLICA L 013.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Instrument ID: A8_N Start Date: 10/15/2018 01:09Analysis Batch Number: 252228 End Date: 10/15/2018 02:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-252228/1		10/15/2018 01:09	1	2018.10.14LLB_0 04.d	GeminiC18 3x100 3(mm)
CCVL 320-252228/2		10/15/2018 01:16	1	2018.10.14LLB_0 05.d	GeminiC18 3x100 3(mm)
CCV 320-252228/3 CCVIS		10/15/2018 01:23	1	2018.10.14LLB_0 06.d	GeminiC18 3x100 3(mm)
ZZZZZ		10/15/2018 01:31	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/15/2018 01:38	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/15/2018 01:46	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/15/2018 01:53	1		GeminiC18 3x100 3(mm)
ZZZZZ		10/15/2018 02:01	1		GeminiC18 3x100 3(mm)
CCV 320-252228/9		10/15/2018 02:08	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 480-142679-1

SDG No.: _____

Instrument ID: A8_NStart Date: 10/15/2018 08:05Analysis Batch Number: 252245End Date: 10/15/2018 09:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-252245/1		10/15/2018 08:05	1	2018.10.14LLB_0 60.d	GeminiC18 3x100 3(mm)
MB 320-251604/1-A		10/15/2018 08:12	1	2018.10.14LLB_0 61.d	GeminiC18 3x100 3(mm)
LCS 320-251604/2-A		10/15/2018 08:20	1	2018.10.14LLB_0 62.d	GeminiC18 3x100 3(mm)
480-142679-1		10/15/2018 08:27	1	2018.10.14LLB_0 63.d	GeminiC18 3x100 3(mm)
480-142679-1 MS		10/15/2018 08:35	1	2018.10.14LLB_0 64.d	GeminiC18 3x100 3(mm)
480-142679-1 MSD		10/15/2018 08:42	1	2018.10.14LLB_0 65.d	GeminiC18 3x100 3(mm)
480-142679-2		10/15/2018 08:50	1	2018.10.14LLB_0 66.d	GeminiC18 3x100 3(mm)
480-142679-3		10/15/2018 08:57	1	2018.10.14LLB_0 67.d	GeminiC18 3x100 3(mm)
480-142679-4		10/15/2018 09:04	1	2018.10.14LLB_0 68.d	GeminiC18 3x100 3(mm)
480-142679-5		10/15/2018 09:12	1	2018.10.14LLB_0 69.d	GeminiC18 3x100 3(mm)
CCV 320-252245/11		10/15/2018 09:19	1	2018.10.14LLB_0 70.d	GeminiC18 3x100 3(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Batch Number: 251604 Batch Start Date: 10/12/18 07:03 Batch Analyst: Kouchari, ShamiranBatch Method: 3535 Batch End Date: 10/12/18 15:15

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC ALL_SU 00120	LCPFC-IS 00096
MB 320-251604/1		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCS 320-251604/2		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
480-142679-C-1	EC-0006-01	3535, 537 (modified)	T	292.20 g	28.44 g	263.8 mL	10.00 mL	500 uL	500 uL
480-142679-C-1 MS	EC-0006-02	3535, 537 (modified)	T	291.62 g	28.56 g	263.1 mL	10.00 mL	500 uL	500 uL
480-142679-C-1 MSD	EC-0006-03	3535, 537 (modified)	T	289.66 g	28.38 g	261.3 mL	10.00 mL	500 uL	500 uL
480-142679-C-2	EC-0006-04	3535, 537 (modified)	T	286.74 g	28.86 g	257.9 mL	10.00 mL	500 uL	500 uL
480-142679-C-3	EC-0006-05	3535, 537 (modified)	T	279.98 g	28.62 g	251.4 mL	10.00 mL	500 uL	500 uL
480-142679-C-4	EC-0006-06	3535, 537 (modified)	T	286.34 g	28.25 g	258.1 mL	10.00 mL	500 uL	500 uL
480-142679-C-5	EC-0006-07	3535, 537 (modified)	T	291.73 g	29.02 g	262.7 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00191	AnalysisComment				
MB 320-251604/1		3535, 537 (modified)							
LCS 320-251604/2		3535, 537 (modified)		500 uL					
480-142679-C-1	EC-0006-01	3535, 537 (modified)	T		114.36g weight remaining.				
480-142679-C-1 MS	EC-0006-02	3535, 537 (modified)	T	500 uL	98.43g weight remaining.				
480-142679-C-1 MSD	EC-0006-03	3535, 537 (modified)	T	500 uL	104.17g weight remaining.				
480-142679-C-2	EC-0006-04	3535, 537 (modified)	T						
480-142679-C-3	EC-0006-05	3535, 537 (modified)	T						
480-142679-C-4	EC-0006-06	3535, 537 (modified)	T						
480-142679-C-5	EC-0006-07	3535, 537 (modified)	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

537 (modified)

Page 1 of 2

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-142679-1

SDG No.: _____

Batch Number: 251604 Batch Start Date: 10/12/18 07:03 Batch Analyst: Kouchari, ShamiranBatch Method: 3535 Batch End Date: 10/12/18 15:15

Batch Notes	
Balance ID	QA-078
Batch Comment	Client labels match TA label, SKD 10/12/18.
H2O ID	10/10/2018
Hexane ID	1353802
Manifold ID	O, J
Methanol ID	1394531
Sodium Hydroxide ID	1390821
Analyst ID - Reagent Drop	SKD
Analyst ID - IS Reagent Drop	SKD
Analyst ID - IS Reagent Drop Witness	MNV
Solvent Lot #	1394825
Solvent Name	0.3% NH4OH/MeOH
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003938109a

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Subcontract Data

Shipping and Receiving Documents

PFAS → SAC From Syr. - RE

Test America Buffalo

10 Hazelwood Drive
Amherst, NY 14228
(p) (716) 504-9838

Chain Of Custody / Analysis Request

Privileged & Confidential ADD To: Chuck Sharpe, Mike Miller, Chris Hoy		Site Name: Portfolio - Emerging Contaminants Location of Site: LCP (Solvay, NY)		Job No. 480-142679 COC i #			
Client Contact (name, co., address) John McAuliffe@Honeywell.com Honeywell International 301 Plainfield Road, Suite 330 Syracuse, New York 13212		Sampler: CAH P O # Analysis Turnaround Time: Standard - Y Rush Charges Authorized for - N 2 weeks - 1 week - Next Day -		Preservative Field Filtered Sample: PFAS (Modified USEPA Method 537) Grab/Composite 1,4 Dioxane (SW820 SIM)			
Hardcopy Report To: Chuck Sharpe Invoice To: John McAuliffe		Sample Identification Location ID Start Depth (ft) End Depth (ft) Field Sample ID		Units G N X X G N X X G N X X - - X G N X X G N X X - - X X - - X X			
483325 - Syracuse SC		1 CP-PZ-02BD 10/1/2018 12:25 GW-MW Water INT Reg 4 2 CP-PZ-02BD 10/1/2018 12:25 QC Water INT MS 4 3 CP-PZ-02BD 10/1/2018 12:25 QC Water INT MSD 4 4 C-FRB-0006 10/1/2018 12:30 QC Water - FB 2 5 CP-PZ-06BS 10/1/2018 13:50 GW-MW Water PERI Reg 4 6 EC-FD-0006 10/1/2018 - QC Water - FD 4 7 EC-EB-water level probe-0006 10/1/2018 15:00 QC Water - EB 4		Lab Sample Numbers		Lab Sample Numbers	

#1 3.5

Special Instructions: 1,4 Dioxane to Buffalo, PFAS to Sacramento.

Relinquished by	Company	Received by	Company	Condition	Custody Seals Intact
10-1-18 1537	10-1-18 1537	10-1-18 1537	10-1-18 1537	Condition	Custody Seals Intact
Relinquished by	Company	Received by	Company	Condition	Custody Seals Intact
10-1-18 19:00	10-1-18 19:00	10-1-18 19:00	10-1-18 19:00	Condition	Custody Seals Intact

Preservatives: 0 = None; 1 = HCL; 2 = HNO3; 3 = H2SO4; 4 = NaOH; 5 = Zn. Acetate; 6 = MeOH; 7 = NaHSO4; 8 = Other (specify):

PFAS → SAC from SYP - DE

Chain Of Custody / Analysis Request										AESI Ref: 38609.59845																																																																																																	
Test America Buffalo										COC #: EC-0006																																																																																																	
10 Hazelwood Drive Amherst, NY 14228 (p) (716) 504-9838										Lab Use Only																																																																																																	
										Lab Proj #																																																																																																	
										Lab ID																																																																																																	
Client Contact: (name, co., address) John McAuliffe@honeywell.com Honeywell International 301 Plainfield Road, Suite 330 Syracuse, New York 13212										Job No.																																																																																																	
Sample Identification										Preservative																																																																																																	
<table border="1"> <thead> <tr> <th>Location ID</th> <th>Start Depth (ft)</th> <th>End Depth (ft)</th> <th>Field Sample ID</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type</th> <th>Sample Matrix</th> <th>Sample Method</th> <th>Sample Purpose</th> <th># of Cont.</th> <th>Units</th> </tr> </thead> <tbody> <tr> <td>LCP-PZ-02BD</td> <td></td> <td></td> <td>EC-0006-01</td> <td>10/1/2018</td> <td>12:25</td> <td>GW-MW</td> <td>Water</td> <td>INT</td> <td>Reg</td> <td>4</td> <td>G N X</td> </tr> <tr> <td>LCP-PZ-02BD</td> <td></td> <td></td> <td>EC-0006-02</td> <td>10/1/2018</td> <td>12:25</td> <td>QC</td> <td>Water</td> <td>INT</td> <td>MS</td> <td>4</td> <td>G N X</td> </tr> <tr> <td>LCP-PZ-02BD</td> <td></td> <td></td> <td>EC-0006-03</td> <td>10/1/2018</td> <td>12:25</td> <td>QC</td> <td>Water</td> <td>INT</td> <td>MSD</td> <td>4</td> <td>G N X</td> </tr> <tr> <td>EC-FRB-0006</td> <td></td> <td></td> <td>EC-0006-04</td> <td>10/1/2018</td> <td>12:30</td> <td>QC</td> <td>Water</td> <td>-</td> <td>FB</td> <td>2</td> <td>- X</td> </tr> <tr> <td>LCP-PZ-06BS</td> <td></td> <td></td> <td>EC-0006-05</td> <td>10/1/2018</td> <td>13:50</td> <td>GW-MW</td> <td>Water</td> <td>PERI</td> <td>Reg</td> <td>4</td> <td>G N X</td> </tr> <tr> <td>EC-FD-0006</td> <td></td> <td></td> <td>EC-0006-06</td> <td>10/1/2018</td> <td>-</td> <td>QC</td> <td>Water</td> <td>-</td> <td>FD</td> <td>4</td> <td>G N X</td> </tr> <tr> <td>EC-EB-water level probe-0006</td> <td></td> <td></td> <td>EC-0006-07</td> <td>10/1/2018</td> <td>15:00</td> <td>QC</td> <td>Water</td> <td>-</td> <td>EB</td> <td>4</td> <td>- X</td> </tr> </tbody> </table>										Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Method	Sample Purpose	# of Cont.	Units	LCP-PZ-02BD			EC-0006-01	10/1/2018	12:25	GW-MW	Water	INT	Reg	4	G N X	LCP-PZ-02BD			EC-0006-02	10/1/2018	12:25	QC	Water	INT	MS	4	G N X	LCP-PZ-02BD			EC-0006-03	10/1/2018	12:25	QC	Water	INT	MSD	4	G N X	EC-FRB-0006			EC-0006-04	10/1/2018	12:30	QC	Water	-	FB	2	- X	LCP-PZ-06BS			EC-0006-05	10/1/2018	13:50	GW-MW	Water	PERI	Reg	4	G N X	EC-FD-0006			EC-0006-06	10/1/2018	-	QC	Water	-	FD	4	G N X	EC-EB-water level probe-0006			EC-0006-07	10/1/2018	15:00	QC	Water	-	EB	4	- X	1,4 Dioxane (SW8270 SIM) PFAS (Modified USEPA Method 537) Field Filtered Sample 7 Genb/Composite	
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Method	Sample Purpose	# of Cont.	Units																																																																																																
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EC-FD-0006			EC-0006-06	10/1/2018	-	QC	Water	-	FD	4	G N X																																																																																																
EC-EB-water level probe-0006			EC-0006-07	10/1/2018	15:00	QC	Water	-	EB	4	- X																																																																																																
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Relinquished by <i>Reynolds</i> Date/Time <i>10-1-18 19:00</i> Company <i>TA-Sac</i>										Received by <i>[Signature]</i> Date/Time <i>10-2-18 935</i> Company <i>TA-Sac</i>																																																																																																	



480-142679 Chain of Custody

Special Instructions: 1-4 Dioxane to Buffalo, PFAS to Sacramento.

Preservatives: 0 = None; 1 = HCL; 2 = HNO3; 3 = H2SO4; 4 = NaOH; 5 = Zn, Acetate; 6 = MeOH; 7 = NaHSO4; 8 = Other (specify):

Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-142679-1

Login Number: 142679

List Source: TestAmerica Buffalo

List Number: 1

Creator: Wallace, Cameron

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: O'Brien & Gere Inc of North America

Job Number: 480-142679-1

Login Number: 142679

List Number: 2

Creator: Hytrek, Cheryl

List Source: TestAmerica Sacramento

List Creation: 10/03/18 05:06 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Attachment B
Data Usability Summary
Report

TO: T. Conklin
FROM: KA Storne
RE: Honeywell Syracuse Portfolio
 Emerging Contaminants Investigation
FILE: 1163.70038
DATE: January 31, 2019

This report presents the results of data validation performed for samples collected as the part of the Honeywell Emerging Contaminants Investigation for the Honeywell Syracuse Portfolio Sites in Solvay, New York. Sample collection activities were conducted in September and October 2018.

TestAmerica Laboratories, Inc. of Sacramento, California (TA Sacramento) and TestAmerica Laboratories, Inc. of Amherst, New York (TA Buffalo) performed the laboratory analyses for the sampling event. The laboratory packages contain summary forms for quality control analysis and supportive raw data.

Table 1-1 below summarizes the sample analysis submitted for data validation.

Table 1-1. Analytical Methods and References

Analysis and Laboratory	Method	Reference
Pre- and Polyfluorinated Substances (PFAS) performed by TA Sacramento	Laboratory SOP based on Modified USEPA Method 537, Version 1.1 (TestAmerica Sacramento. 2017. Per- and Polyfluorinated Substances (PFAS) in Water, Soils, Sediments and Tissue (Method 537 Modified), SOP No. WS-LC-0025, Rev 2.2, 02/02/2017)	1
1,4-Dioxane performed by TA Buffalo	USEPA Methods 3510C/8000C/8270D-SIM (Isotopic Dilution Method)	2, 3
Notes:		
1. USEPA. 2009. <i>Modified - Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction (SPE) and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)</i> , Version 1.1, Cincinnati, Ohio.		
2. USEPA. 2007. <i>Test Methods for Evaluating Solid Waste: Physical/Chemical Methods</i> , SW-846, 3rd Edition, Update IV. Washington D.C.		
3. ALS Rochester (2018). <i>Analytical Methods for GC/MS Semivolatile Samples by SW846 8270D</i> , SOP Number BF-MB-010, Revision 4.		

The samples submitted for data validation are summarized in the **Table 1**. **Table 2** presents the specific data validation approach applied to data generated for this investigation. **Table 3** presents the laboratory quality assurance/quality control (QA/QC) analyses definitions.

Full validation was performed on the samples collected for this investigation. The analytical data generated for this investigation were evaluated using the QA/QC criteria established in the laboratory standard operating procedures (SOPs), the methods, and professional judgement.

Since data validation guidelines for USEPA Method 537 are not available, application of qualifiers for excursions from the laboratory SOP and the method was based on the general approach used to qualify samples described in the following document.

- USEPA. 2016. *National Functional Guidelines for High Resolution Superfund Methods Data Review*. EPA-542-B-16-001. Washington, D.C.

Application of qualifiers to the 1,4-dioxane data affected by excursions from the method criteria was based on guidance provided in the following document and professional judgment.

- USEPA. 2010. *USEPA Region II Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D*, SOP HW-22 Revision 5.

The following qualifiers are used in this type of data validation:

- "R" – Indicates that the reporting limit (RL) or sample result has been identified as unusable due to a major deficiency in the data generation process. The data were rejected and should not be used for any qualitative or quantitative purposes.
- "U" – Indicates that the analyte was not detected and the sample RL is presented. This qualifier is also used to signify blank excursions.
- "J" – Indicates that the concentration should be considered approximate. The target analyte was positively identified and the associated numerical value is the approximate concentration; either the data quality criteria were not met or the concentration of the target analyte was greater than the method detection limit (MDL) and below the RL.
- "UJ" – Indicates that the analyte was analyzed for and was not detected; however, the RL is presented and should be considered approximate. This qualifier is used when data quality criteria were not met.
- "JN" – Indicates that the target analyte has been "tentatively identified" as present and the associated numerical value is the estimated concentration in the sample. This qualifier may be applied due to data interpretation issues.

The data quality evaluation results in only one type of qualifier for each analyte. In a case when several qualifiers are applicable to the same analyte, the cumulative effect of the various QA/QC excursions is employed in assigning the final data qualifiers. For example, the final data qualifier is the "R" qualifier if a sample result is affected by low LCS recovery for which the "UJ" qualifier is applied but low MS/MSD recoveries result in the rejection of the sample result. The QA/QC excursions that do not result in the qualification of an analyte are not discussed, with the exception of those excursions that provide useful information to the data user.

The data validation included an evaluation of the following parameters, where applicable:

- Chain-of-custody records
- Sample collection and sample preservation
- Holding times
- Instrument performance
- Calibration
- Blank analysis
- Surrogate recovery
- Matrix spike (MS)/matrix spike duplicate (MSD) analysis
- Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) analysis
- Field duplicate samples analysis
- Isotopic Dilution Analyte (IDA) performance
- Internal standards performance
- Target compound identification, quantitation, and reporting limits (RLs)
- Documentation completeness

The following sections of this memorandum present the results of the comparison of the analytical data to the QA/QC criteria specified above.

CHAIN OF CUSTODY RECORD AND SAMPLE COLLECTION

Samples submitted for PFAS and 1,4-dioxane analyses were collected at the sampling location using containers which were provided by TA. TA shipped the samples to TA Sacramento and TA Buffalo for sample analysis after receiving the samples.

For the samples collected for this sampling event, the sample transfers from the TA service center to the courier and from the courier to TA Sacramento and to TA Buffalo were incomplete on the chain-of-custody records because the courier name and tracking numbers were not listed on the records.

For samples submitted for PFAS analysis, the laboratory indicated that the following samples were yellow or brown in color prior to extraction.

- EC-0001-02, EC-0001-06, EC-0001-07, EC-0002-03, EC-0002-04, EC-0004-02, EC-0004-04, EC-0004-05, EC-0004-06, EC-0004-03, EC-0006-01, EC-0007-02, EC-0007-03, EC-0007-04, and EC-0008-03

For samples submitted for PFAS analysis, the laboratory indicated that the following samples contained sediment prior to extraction.

- EC-0001-06, EC-0001-07, EC-0002-03, EC-0002-04, EC-0004-05, EC-0006-01, EC-0007-02, EC-0007-03, and EC-0007-04

For samples submitted for PFAS analysis, the laboratory indicated that samples contained non-settleable particulate matter that plugged the Solid Phase Extraction (SPE) disk. The aqueous portion of the sample that passed through the SPE extraction disk was analyzed and reported; RLs were adjusted where appropriate. The following samples were impacted:

- EC-0001-05, EC-0001-06, EC-0001-07, EC-0002-03, EC-0002-04, EC-0003-02, EC-0003-04, EC-0004-05, EC-0006-01, EC-0007-02, EC-0007-03, EC-0007-04, EC-0005-05, and EC-0009-03

For samples submitted for PFAS analysis, the laboratory indicated that the following samples were yellow in color after extraction.

- EC-0001-02, EC-0001-06, EC-0001-07, EC-0003-02, EC-0003-05, EC-0004-02, EC-0004-03, EC-0004-04, EC-0004-05, EC-0004-06, and EC-0007-02

The laboratory did not contact OBG although laboratory policy includes contacting the client to discuss the actions to be taken when particulates are found in samples.

The analysis for sample EC-0002-01, which was submitted for 1,4-dioxane analysis, was canceled by OBG.

PFAS DATA EVALUATION SUMMARY

The following QA/QC parameters were found to meet validation criteria or did not result in additional qualification of sample results.

- Sample preservation
- Holding times
- Instrument performance
- Calibration
- LCS /LCSD analysis
- Internal standards performance

Deviations from QA/QC criteria that resulted in qualified data and additional observations are summarized below.

I. Blank Analysis

Target analytes were detected in the field blank (FRB-050218), equipment blank (EB-050218), and method blanks for PFAS. The following samples were qualified as non-detected (U) for the minor representativeness blank excursions.

- Perfluorohexanesulfonic acid (PFHxS) in samples EC-0001-07, EC-0002-03, EC-0002-04, EC-0003-03, EC-0003-07, EC-0004-03, EC-0006-01, EC-0006-05, EC-0006-06, EC-0007-04, EC-0008-04, EC-0008-05, EC-0005-04, EC-0005-06, and EC-0009-03
- Perfluorooctane sulfonic acid (PFOS) in samples EC-0001-02, EC-0001-05, EC-0008-04, EC-0008-05, EC-0005-04, EC-0005-05, and EC-0005-06
- 6:2 FTS in samples EC-0003-02, EC-0003-03, EC-0003-04, EC-0003-05, EC-0003-06, EC-0003-08, EC-0005-04, and EC-0005-05
- Perfluorobutanoic acid (PFBA) in samples EC-0006-01, EC-0006-05, and EC-0006-06

II. IDA Performance

IDA results were outside of the laboratory control limits of 25 to 150 percent recovery. As a result, target analytes impacted by the minor recovery excursions were qualified as approximate (UJ, J, J+) in the following samples.

- PFBA in samples EC-0001-02, EC-0001-05, EC-0001-06, EC-0001-07, EC-0002-04, EC-0003-02, EC-0003-03, EC-0003-04, EC-0004-02, EC-0004-04, EC-0004-05, EC-0007-03, EC-0007-04, EC-0008-03, EC-0005-02, EC-0005-03, EC-0005-05, and EC-0009-03
- 6:2 FTS in samples EC-0003-03, EC-0003-04, EC-0003-05, EC-0003-06, EC-0003-08, and EC-0005-05
- Perfluorotetradecanoic acid (PFTeA) in samples EC-0004-02, EC-0007-03, and EC-0009-03
- Perfluoropentanoic acid (PFPeA) in samples EC-0004-05 and EC-0008-03
- Perfluorododecanoic acid (PFDoA) in sample EC-0007-03
- Perfluorotridecanoic acid (PFTriA) in sample EC-0007-03

III. MS/MSD Analysis

The following sample was qualified as approximate (J-) for a minor MS/MSD accuracy excursion:

- PFHxS in sample EC-0001-02

IV. Field Duplicate Analysis

The following samples were qualified as approximate (UJ, J) for minor field duplicate precision excursions.

- Perfluorohexanoic acid (PFHxA) and PFHxS in samples EC-0001-06 and EC-0001-07 (EC-0001-06)
- Perfluorobutanesulfonic acid (PFBS) in samples EC-0006-05 and EC-0006-06 (EC-0006-05)
- PFPeA in samples EC-0005-02 and EC-0005-03 (EC-0005-02)

V. Target Analyte Quantitation, Identification and RLs

The validation approach utilized for this data set is presented in **Table 2**. The following observations pertain to the laboratory target analyte quantitation and identification process applied to data.

- The laboratory analyst's experience and judgement are used to evaluate and report target analyte identification and concentrations, based on interpretation of target analyte peak shape, the chromatography baseline, target analyte retention time, and signal strength.
- During data validation, peak integration and identification interpretation performed by the laboratory analysts was reviewed. Validation qualifiers were applied to sample results when chromatography, retention times, or peak shapes may have impacted sample identifications and/or concentrations.
- For this analysis, the isotope dilution technique is applied, which includes the utilization of IDAs that are added to samples in the sample extraction process. Since IDAs respond in the same manner as target analytes, the IDA is used for target analyte identification and for calculating sample concentrations for the volume of sample analyzed.
- Although generated and reported by the laboratory for some target analytes, the laboratory did not utilize the results for ion ratios in identifying detected target analytes. Ion ratio results were evaluated during data validation for target analyte identification and confirmation.
- For this method, branched-chain isomers may be identified for perfluorooctanoic acid (PFOA), PFHxS, PFOS, PFBS, n-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA), and n-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA).
- The laboratory indicated that reference data is inconsistent as to whether PFBS will have both branched and linear isomers present in the environment.
- The laboratory only processes and evaluates PFOS, PFHxS, NMeFOSAA, and NEtFOSAA for both linear and branched isomers based on the linear and branched isomers in the calibration standards.
- The laboratory does not have established retention times for branched isomers. Areas for target analytes in samples with linear and branched isomers are integrated as the total response and quantitated against the associated labeled linear isomer. The calibration standard retention time is evaluated for the beginning of the branched through the linear isomer as a visual tool to use in target analyte identification.
- The results for PFBS are quantitated based on a single linear isomer peak as defined by the calibration solutions.
- The laboratory utilized a qualitative/technical mixture for the PFOA standard to determine retention times only for the PFOA branch-chain isomers. A separate, certified quantitation/calibration-quality standard source, which only includes the linear isomer, was used for calibration.
- Samples results are qualified as approximate (JN), but bias is not assigned to sample results with branch-chain isomers when quantitated using linear calibration standards or standards with chromatography that may differ from the branch chromatography present in the samples or matrix interference is identified.
- Dilutions were utilized by the laboratory for the following samples due to elevated target analyte detections and matrix interferences: EC-0004-02, EC-0005-02, and EC-0005-03.
- Although peak fronting was observed for PFBA chromatography in several samples, sample results were not qualified. The laboratory indicated that the peak shape in the samples is consistent with the peak shape in the associated calibration standards.

Revised Laboratory Data

During validation, excursions from the signal-to-noise ratio criterion of 3:1 were identified for target analytes originally reported as detected by TA Sacramento. As a result of re-evaluation of these signal-to-noise excursions, sample results were revised to non-detected values by TA Sacramento as presented in **Table 1-2** below. Additionally, selected detection limits were raised by TA Sacramento due to matrix interference.

Table 1-2. Revised Sample Results Due To Signal-To-Noise Excursions

Sample Identification	Target Analyte	Original Reported Detected Concentration	Revised Non-detected Concentration	Validation Qualifier
EC-0001-02	PFPeA	0.67 ng/L J	4.0 ng/L*	U#
EC-0001-02	PFBS	0.90 ng/L J	4.0 ng/L*	U#
EC-0001-02	PFHxA	2.4 ng/L J	2.4 ng/L*	U#
EC-0001-05	PFPeA	6.2 ng/L	6.2 ng/L*	U#
EC-0001-05	PFNA	0.26 ng/L J	1.7 ng/L	U#
EC-0001-06	PFBA	24 ng/L J	24 ng/L*	U#
EC-0001-06	PFBS	2.3 ng/L	2.3 ng/L*	U#
EC-0001-06	PFHxA	3.0 ng/L	3.0 ng/L*	U#
EC-0001-06	PFHpA	1.5 ng/L J	2.0 ng/L*	U#
EC-0001-06	PFHxS	9.2 ng/L J	9.2 ng/L*	U#
EC-0001-06	PFHpS	0.73 ng/L J	2.0 ng/L	U#
EC-0001-07	PFBA	17 ng/L	17 ng/L*	U#
EC-0001-07	PFBS	2.1 ng/L	2.1 ng/L*	U#
EC-0001-07	PFHpA	1.0 ng/L J	2.0 ng/L	U#
EC-0001-07	PFHxS	0.81 ng/L J	2.0 ng/L	U#
EC-0001-07	PFHpS	0.98 ng/L J	2.0 ng/L	U#
EC-0001-08	PFBA	0.34 ng/L J	2.0 ng/L	U#
EC-0002-04	PFPeA	2.8 ng/L	4.0 ng/L*	U#
EC-0002-04	PFHxA	1.4 ng/L J	4.0 ng/L*	U#
EC-0002-04	PFHpA	1.2 ng/L J	4.0 ng/L*	U#
EC-0003-02	PFHpA	2.4 ng/L	2.4 ng/L	U#
EC-0003-03	PFPeA	0.79 ng/L J	2.0 ng/L	U#
EC-0003-04	PFBA	12 ng/L	12 ng/L	U#
EC-0003-04	PFPeA	2.0 ng/L	6.0 ng/L	U#
EC-0003-04	PFHpA	1.8 ng/L J	3.0 ng/L	U#
EC-0003-04	PFBS	1.5 ng/L J	4.0 ng/L	U#
EC-0003-04	PFHxS	15 ng/L	15 ng/L	U#
EC-0003-05	PFBS	2.3 ng/L	4.0 ng/L	U#
EC-0003-07	PFBA	3.0 ng/L	4.0 ng/L	U#
EC-0003-07	PFHxA	0.84 ng/L J	2.0 ng/L	U#
EC-0003-07	PFHpA	0.41 ng/L J	2.0 ng/L	U#
EC-0003-07	PFBS	0.53 ng/L J	2.0 ng/L	U#
EC-0004-01	PFBA	0.36 ng/L J	2.0 ng/L	U#
EC-0004-02	PFBA	60 ng/L	60 ng/L*	U#
EC-0004-02	PFPeA	17 ng/L J	20 ng/L	U#
EC-0004-02	PFHxA	10 ng/L J	20 ng/L	U#
EC-0004-02	PFHpA	3.9 ng/L J	20 ng/L	U#
EC-0004-02	PFHxS	6.9 ng/L J	20 ng/L	U#
EC-0004-03	PFPeA	1.4 ng/L J	4.0 ng/L*	U#
EC-0004-03	PFHxA	1.1 ng/L J	2.0 ng/L	U#

MEMORANDUM

Sample Identification	Target Analyte	Original Reported Detected Concentration	Revised Non-detected Concentration	Validation Qualifier
EC-0004-03	PFHpA	1.5 ng/L J	2.0 ng/L	U#
EC-0004-03	PFOA	3.1 ng/L	3.1 ng/L	U#
EC-0004-03	PFNA	1.1 ng/L J	2.0 ng/L	U#
EC-0004-03	PFDA	0.42 ng/L J	2.0 ng/L	U#
EC-0004-03	PFBS	0.63 ng/L J	2.0 ng/L	U#
EC-0004-03	PFHpS	0.34 ng/L J	2.0 ng/L	U#
EC-0004-04	PFPeA	2.4 ng/L	4.0 ng/L*	U#
EC-0004-04	PFHxA	0.79 ng/L J	2.0 ng/L	U#
EC-0004-04	PFHpA	1.1 ng/L J	2.0 ng/L	U#
EC-0004-04	PFOA	3.3 ng/L	3.3 ng/L	U#
EC-0004-04	PFBS	0.54 ng/L J	2.0 ng/L	U#
EC-0004-05	PFBA	23 ng/L	23 ng/L*	U#
EC-0004-05	PFHxS	2.9 ng/L	2.9 ng/L*	U#
EC-0004-06	PFBS	1.2 ng/L J	10 ng/L*	U#
EC-0005-02DL	PFPeA	52 ng/L	52 ng/L*	U#
EC-0005-03	PFBS	17 ng/L	17 ng/L*	U#
EC-0005-04	PFBS	0.8 ng/L J	1.8 ng/L	U#
EC-0005-05	PFPeA	4.2 ng/L	4.2 ng/L*	U#
EC-0005-05	PFHxA	1.3 ng/L J	1.7 ng/L	U#
EC-0005-05	PFNA	0.59 ng/L J	1.7 ng/L	U#
EC-0005-05	PFBS	0.99 ng/L J	1.7 ng/L	U#
EC-0005-06	PFPeA	1.0 ng/L J	3.0 ng/L*	U#
EC-0005-06	PFHxA	0.55 ng/L J	4.0 ng/L*	U#
EC-0005-06	PFHpA	0.92 ng/L J	4.0 ng/L*	U#
EC-0005-06	PFNA	0.22 ng/L J	1.6 ng/L	U#
EC-0005-06	PFBS	0.39 ng/L J	3.0 ng/L*	U#
EC-0005-06	PFHxS	1.0 ng/L J	6.0 ng/L*	U#
EC-0006-01	PFPeA	0.86 ng/L J	1.9 ng/L	U#
EC-0006-05	PFPeA	0.70 ng/L J	4.0 ng/L*	U#
EC-0006-05	PFHpA	0.38 ng/L J	2.0 ng/L	U#
EC-0006-06	PFPeA	0.72 ng/L J	4.0 ng/L*	U#
EC-0006-06	PFHpA	0.38 ng/L J	1.9 ng/L	U#
EC-0006-06	PFBS	0.33 ng/L J	1.9 ng/L	U#
EC-0006-06	PFOS	1.5 ng/L J	1.9 ng/L	U#
EC-0007-02	PFDA	0.35 ng/L J	2.0 ng/L	U#
EC-0007-03	PFHxA	3.3 ng/L	6.0 ng/L*	U#
EC-0007-03	PFHpA	1.4 ng/L J	2.0 ng/L	U#
EC-0007-03	PFNA	1.6 ng/L J	2.0 ng/L	U#
EC-0007-03	PFBS	1.2 ng/L J	2.0 ng/L	U#
EC-0007-03	PFHpS	0.21 ng/L J	2.0 ng/L	U#
EC-0007-04	PFHxA	0.93 ng/L J	2.0 ng/L	U#
EC-0007-04	PFDA	0.5 ng/L J	2.0 ng/L	U#
EC-0007-04	PFBS	1.4 ng/L J	2.0 ng/L	U#

MEMORANDUM

Sample Identification	Target Analyte	Original Reported Detected Concentration	Revised Non-detected Concentration	Validation Qualifier
EC-0007-04	PFHxS	0.79 ng/L J	2.0 ng/L	U#
EC-0007-04	PFHpS	0.2 ng/L J	2.0 ng/L	U#
EC-0008-03	PFBA	2.6 ng/L	2.6 ng/L*	U#
EC-0008-03	PFPeA	8.0 ng/L	8.0 ng/L*	U#
EC-0008-03	PFHxA	3.4 ng/L	6.0 ng/L*	U#
EC-0008-03	PFHpA	7.7 ng/L	7.7 ng/L*	U#
EC-0008-03	PFOA	5.6 ng/L	5.6 ng/L*	U#
EC-0008-03	PFBS	1.2 ng/L J	1.8 ng/L	U#
EC-0008-03	PFHxS	88 ng/L	88 ng/L*	U#
EC-0008-04	PFPeA	1.1 ng/L J	3.0 ng/L*	U#
EC-0008-04	PFHxA	0.82 ng/L J	3.0 ng/L*	U#
EC-0008-04	PFHpA	2.2 ng/L	3.0 ng/L*	U#
EC-0008-04	PFOA	3.0 ng/L	1.7 ng/L	U#
EC-0008-04	PFDA	0.37 ng/L	1.7 ng/L	U#
EC-0008-04	PFBS	0.71 ng/L J	1.7 ng/L	U#
EC-0008-04	PFHxS	0.82 ng/L J	1.7 ng/L	U#
EC-0008-04	PFOS	3.9 ng/L	1.7 ng/L	U#
EC-0008-05	PFPeA	1.2 ng/L J	1.7 ng/L	U#
EC-0008-05	PFHxA	0.73 ng/L J	4.0 ng/L*	U#
EC-0008-05	PFHpA	0.45 ng/L J	4.0 ng/L*	U#
EC-0009-03	PFHxA	1.5 ng/L J	10 ng/L*	U#
EC-0009-03	PFHpA	0.27 ng/L J	10 ng/L*	U#

Notes:

PFDA indicates perfluorodecanoic acid.

PFHpA indicates perfluoroheptanoic acid.

PFHpS indicates perfluoroheptanesulfonic acid.

PFNA indicates perfluorononanoic acid.

* Indicates detection limit value was raised due to matrix interference.

Data validation qualifiers were applied to the following sample results.

Ion Ratio Excursion

- The results for PFHxS in the following samples were qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0001-02, EC-0001-06, EC-0001-07, EC-0003-04, EC-0004-06, EC-0004-05, EC-0007-02, EC-0008-03, EC-0008-05, EC-0005-02, EC-0005-03, EC-0005-05, and EC-0005-06.
- The results for PFOA in the following samples were qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0001-02, EC-0001-06, EC-0004-02, and EC-0001-07.
- The results for PFHpS in the following samples were qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0001-05, EC-0001-06, EC-0001-07, EC-0007-02, and EC-0007-04.
- The result for PFNA in the following samples were qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0001-05, EC-0003-04, and EC-0007-03.

- The results for PFHxA in the following sample was qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0001-06, EC-0006-05, EC-0005-05, EC-0009-03, and EC-0007-04.
- The results for PFHpA in the following samples were qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0001-06, EC-0004-02, EC-0006-05, EC-0008-03, EC-0008-04, and EC-0005-05.
- The results for PFOS in the following samples were qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0001-05, EC-0003-04, EC-0007-03, EC-0008-01, EC-0008-04, EC-0005-04, EC-0005-05, EC-0006-06, and EC-0005-09.
- The results for PFBS in the following samples were qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0003-04, EC-0007-04, EC-0008-03, EC-0008-05, EC-0005-03, and EC-0005-05.
- The results for PFDA in the following samples were qualified as approximate (JN) since the reported ion ratios were outside of the laboratory control limits: EC-0004-03, EC-0007-04, and EC-0008-04.

Linear and Branched Isomers

- The laboratory utilized a qualitative/technical mixture for the PFOA standard to determine retention times only for the PFOA branch-chain isomers. A separate, certified quantitation/calibration-quality standard source, which only includes the linear isomer, was used for calibration. The results for PFOA in the following samples were qualified as approximate (JN) since a PFOA branched-chain isomer was identified in the samples and the associated PFOA calibration standard did not include the branched isomer or interferences may be present: EC-0001-02, EC-0001-05, EC-0001-06, EC-0001-07, EC-0002-03, EC-0002-04, EC-0003-02, EC-0003-03, EC-0003-04, EC-0003-05, EC-0003-06, EC-0003-07, EC-0003-08, EC-0004-02, EC-0004-03, EC-0004-04, EC-0004-06, EC-0006-01, EC-0006-05, EC-0006-06, EC-0007-02, EC-0007-03, EC-0007-04, EC-0008-03, EC-0008-05, EC-0005-04, EC-0005-06, EC-0005-05, and EC-0009-03.
- The results for PFOS in the following samples were qualified as approximate (JN) since a PFOS branched-chain isomer was identified in the samples and the chromatography in the associated calibration standard differs from the branch chromatography present in the samples or interferences may be present: EC-0001-02, EC-0001-05, EC-0002-04, EC-0003-02, EC-0003-03, EC-0003-04, EC-0003-05, EC-0003-06, EC-0003-07, EC-0003-08, EC-0004-02, EC-0004-03, EC-0006-05, EC-0007-02, EC-0007-03, EC-0007-04, EC-0008-01, EC-0008-04, EC-0008-05, EC-0005-06, EC-0005-04, and EC-0005-05.
- The results for PFHxS in the following samples were qualified as approximate (JN) since a PFHxS branched-chain isomer was identified in the samples and the chromatography in the associated calibration standard differs from the branch chromatography present in the samples or interferences may be present: EC-0001-02 and EC-0001-06.

Peak Integration and Matrix Interference

- The results for PFHxA in the following samples were qualified as approximate (JN) based on peak data interpretation: EC-0003-03 and EC-0007-04.
- The result for PFBA in the following samples were qualified as approximate (JN) based on peak integration evaluation or possible matrix interference: EC-0004-02, EC-0004-06, EC-0006-04, EC-0007-02, and EC-0005-09.
- The RLs for PFBA in samples EC-0001-06, EC-0001-07, EC-0007-03, EC-0007-04, and EC-0008-03 were elevated due to chromatographic or matrix interference in the samples.
- The result for PFPeA in sample EC-0005-02 was qualified as approximate (JN) based on peak integration evaluation or possible matrix interference.

Document Completeness

Supplemental laboratory information and clarifications addressing the laboratory analysis and data interpretation were requested during the validation process. The supplemental laboratory information was necessary to complete the validation process. Data were revised by TA Sacramento as a result of requests during data validation.

1,4-DIOXANE DATA EVALUATION SUMMARY

The following QA/QC parameters were found to meet validation criteria or did not require additional comments:

- Sample preservation
- Instrument performance
- Calibration
- Surrogate recovery
- MS/MSD analysis
- LCS /LCSD analysis
- Field duplicate samples analysis
- Internal standards performance
- Documentation completeness

Deviations from QA/QC criteria that resulted in qualified data and additional observations are summarized below.

I. Holding Times

The following sample was qualified as approximate (J) for a minor representativeness holding time excursion.

- 1,4-Dioxane in sample EC-0005-04RE.

II. Blank Analysis

The following samples were qualified as non-detected (U) for minor representativeness blank excursions.

- 1,4-Dioxane in samples EC-0006-05 and EC-0006-06 (EC-0006-05)

III. Target compound identification, quantitation and RLs

Dilutions were utilized by the laboratory for the following samples due to matrix interferences: EC-0001-02, EC-0001-06 and EC-0001-07(FD; EC-0001-06).

DATA USABILITY

The data from the samples presented in **Table 1** were evaluated based on QA/QC criteria established by the laboratory SOP and methods. Data validation qualifiers were applied to data based on the general approach presented in **Table 2**.

Major deficiencies which would have resulted in rejected data were not identified for data from this sampling event. Minor deficiencies in the data generation process resulted in approximation of some sample data and data qualified as non-detected.

This section summarizes the adherence of the analytical data to precision, accuracy, representativeness, comparability, completeness, and sensitivity data quality objectives. Data quality was evaluated using percent usability, defined as the percentage of sample results that are usable for qualitative and quantitative purposes.

Precision: Data usability with respect to precision is 100%.

Sensitivity: Sensitivity is established by RLs, which represent measurable concentrations of analytes that can be quantified with a designated level of confidence and are less than the project action limits established for the project. Dilutions were performed for sample analyses. Data usability with respect to sensitivity is 100%.

Accuracy: Data usability with respect to accuracy is 100%.

Representativeness: Data usability with respect to representativeness is 100%.

Comparability: Comparability is not compromised provided that the analytical method approach did not change over time. A major component of comparability is the use of standard reference materials for calibration and QC. The comparability criteria for the analytical data were met since the modified analytical method approach and reporting procedures were consistently used by the laboratory.

Completeness: Overall, considering the complete data set, 100% of the data were usable for quantitative and quantitative purposes based on the data validation performed.

Table 1. Sample Cross Reference Table

Samples collected and submitted for data validation

Laboratory Name	Sample Delivery Group	Date Collected	Laboratory Identification	Client Identification	Matrix	Analysis Requested
TA Buffalo/TA Sacramento	480-142097-1	9/19/2018	480-142097-1	EC-0001-01 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142097-1	9/19/2018	480-142097-2, MS/MSD	EC-0001-02, 03, 04 MS/MSD	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142097-1	9/19/2018	480-142097-3	EC-0001-05	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142097-1	9/19/2018	480-142097-4	EC-0001-06	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142097-1	9/19/2018	480-142097-5	EC-0001-07 (FD; 06)	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142097-1	9/19/2018	480-142097-6	EC-0001-08 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142204-1	9/20/2018	480-142204-1	EC-0002-01	Groundwater	1,4-Dioxane
TA Buffalo/TA Sacramento	480-142204-1	9/20/2018	480-142204-2	EC-0002-02 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142204-1	9/20/2018	480-142204-3	EC-0002-03	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142204-1	9/20/2018	480-142204-4	EC-0002-04	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142204-1	9/20/2018	480-142204-5	EC-0002-05 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-1	EC-0003-01 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-2	EC-0003-02	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-3	EC-0003-03	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-4	EC-0003-04	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-5	EC-0003-05	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-6	EC-0003-06	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-7	EC-0003-07	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-8	EC-0003-08	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142207-1	9/21/2018	480-142207-9	EC-0003-09 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142290-1	9/24/2018	480-142290-1	EC-0004-01 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142290-1	9/24/2018	480-142290-2	EC-0004-02	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142290-1	9/24/2018	480-142290-3	EC-0004-03	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142290-1	9/24/2018	480-142290-4	EC-0004-04	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142290-1	9/24/2018	480-142290-5	EC-0004-05	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142290-1	9/24/2018	480-142290-6	EC-0004-06	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142290-1	9/24/2018	480-142290-7	EC-0004-07 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142550-1	9/27/2018	480-142550-1	EC-0005-01 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142550-1	9/28/2018	480-142550-2	EC-0005-02	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142550-1	9/29/2018	480-142550-3	EC-0005-03 (FD; 02)	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142550-1	9/30/2018	480-142550-4	EC-0005-04	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142550-1	10/1/2018	480-142550-5	EC-0005-05	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142550-1	10/2/2018	480-142550-6, MS/MSD	EC-0005-06, 07, 08 MS/MSD	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142550-1	10/5/2018	480-142550-7	EC-0005-09 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142679-1	10/1/2018	480-142679-1, MS/MSD	EC-0006-01, 02, 03 MS/MSD	Groundwater	1,4-Dioxane and PFAS*

Table 1. Sample Cross Reference Table						
Samples collected and submitted for data validation						
Laboratory Name	Sample Delivery Group	Date Collected	Laboratory Identification	Client Identification	Matrix	Analysis Requested
TA Buffalo/TA Sacramento	480-142679-1	10/1/2018	480-142679-2	EC-0006-04 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142679-1	10/1/2018	480-142679-3	EC-0006-05	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142679-1	10/1/2018	480-142679-4	EC-0006-06 (FD; 05)	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142679-1	10/1/2018	480-142679-5	EC-0006-07 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142769-1	10/2/2018	480-142769-1	EC-0007-01 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142769-1	10/2/2018	480-142769-2	EC-0007-02	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142769-1	10/2/2018	480-142769-3	EC-0007-03	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142769-1	10/2/2018	480-142769-4	EC-0007-04	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142769-1	10/2/2018	480-142769-5	EC-0007-05 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142892-1	10/3/2018	480-142892-1	EC-0008-01 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142892-1	10/3/2018	480-142892-2	EC-0008-02 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142892-1	10/3/2018	480-142892-3	EC-0008-03	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142892-1	10/3/2018	480-142892-4	EC-0008-04	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142892-1	10/3/2018	480-142892-5	EC-0008-05	Groundwater	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142996-1	10/4/2018	480-142996-1	EC-0009-01 (EB)	Aqueous	1,4-Dioxane and PFAS*
TA Buffalo/TA Sacramento	480-142996-1	10/4/2018	480-142996-2	EC-0009-02 (FB)	Aqueous	PFAS*
TA Buffalo/TA Sacramento	480-142996-1	10/4/2018	480-142996-3	EC-0009-03	Groundwater	1,4-Dioxane and PFAS*
Notes: TA Buffalo indicates TestAmerica Laboratory located in Buffalo, New York. TA Sacramento indicates TestAmerica-Sacramento located in Sacramento California. PFAS* indicates perfluoroalkyl and polyfluoroalkyl substances; analyses were performed by TA Sacramento. FB indicates field blank (field reagent blank). EB indicates equipment blank. MS/MSD indicates matrix spike/matrix spike duplicate. FD indicates field duplicate. The sample identification utilized for field duplicate is shown in brackets.						

OBG Data validation approach for PFAS in Aqueous Samples by TestAmerica Sacramento Laboratory - Modified USEPA Method 537 and SW-846 analytical methods including SVOCs (8270D SIM)

General Validation Approach	The validation approach taken by OBG is a conservative one; qualifiers are applied to sample data to indicate both major and minor excursions so that data associated with any type of excursion are identified to the data user. Major excursions result in data being rejected (R) indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor excursions result in sample data being qualified as approximate (J, UJ, JN) or non-detected (U) that is otherwise usable for quantitative or qualitative purposes. Excursions are subdivided into excursions that are within the laboratory's control and those that are out of the laboratory's control. Excursions involving laboratory control sample recovery, calibration response, method blank excursions, low or high spike recovery due to inaccurate spiking solutions or poor instrument response, holding times, interpretation errors, and quantitation errors are within the control of the laboratory. Excursions resulting from poor spike recovery due to interference from the sample matrix is an example of an excursion that is not within the laboratory's control if the laboratory has followed proper method procedures, including applying appropriate sample preparation techniques.
Applying Professional Judgment	USEPA data validation directs professional judgment to be used when applying qualifiers in some cases, considering the laboratory analysis approach and method requirements.
Validation Guidelines - PFAS	TestAmerica Sacramento's Laboratory standard operating procedure (SOP) reflects a modified version of USEPA Method 537, since Method 537 applies to only drinking water sample matrices. Therefore, evaluation of other aqueous and solid data is based on the laboratory SOP's requirements. Since data validation guidelines for Method 537 are not available at this time, application of qualifiers for excursions from the laboratory SOP is based on the general approach used to qualify data described in the National Functional Guidelines for High Resolution Superfund Methods Data Review (April 2016).
Validation Guidelines- Remaining Analyses	OBG data validation approach for the remaining analyses is based on current Region II guidelines for SW-846 methods. Since Region II guidelines available for metals apply only to the CLP method, only the general approach to applying qualifiers is utilized for metals and inorganics.
Validation Qualifiers	R = Indicates that the reporting limit (RL) or sample result has been identified as unusable due to a major deficiency in the data generation process. The data were rejected and should not be used for any qualitative or quantitative purposes. U = Indicates that the analyte was not detected and the sample RL is presented. This qualifier is also used to signify blank excursions. J = Indicates that the concentration should be considered approximate. The target analyte was positively identified and the associated numerical value is the approximate concentration; either the data quality criteria were not met or the concentration of the target analyte was greater than the method detection limit (MDL) and below the RL. J+ or J- = Indicates that the concentration should be considered approximate and biased high or low (respectively). This qualifier identifies a deficiency in the data generation process. UJ = Indicates that the analyte was analyzed for and was not detected; however, the RL is presented and should be considered approximate. This qualifier is used when data quality criteria were not met. JN = Indicates that the target analyte has been "tentatively identified" as present and the associated numerical value is the estimated concentration in the sample. This qualifier may be applied due to data interpretation issues.

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	U# = Excursions from the signal-to-noise ratio criterion of 3:1 were identified for target analytes.
Overall PFAS Method Summary	The TA Sacramento SOP, based on a modified Method 537, utilizes liquid chromatography/tandem mass spectrometry (LC/MS/MS) and isotope dilution technique to analyze environmental samples for per- and polyfluorinated substances (PFAS). This includes the utilization of Isotope Dilution Analytes (IDAs) which are added to samples in the sample extraction process. Since IDAs respond in the same manner as target analytes, the IDA is used for target analyte identification and for calculating sample concentrations.
Cooler Temperature	Results for samples submitted analyses that are impacted by coolers that did not contain ice, or if the ice melted upon receipt and the cooler temperatures are greater than 10°C, are qualified as approximate (UJ, J). If samples are delivered to the laboratory the same day as sample collection and samples did not have sufficient time to reach 10°C, samples are not qualified unless proper preservation was not provided for samples between sample collection and sample receipt at the laboratory. Results for samples received at ambient temperature involved in extended shipment-day issues may be rejected applying professional judgment.
Holding Time for PFAS	Samples are stored at 4±2°C. Aqueous samples must be extracted within 14 days of collection and extracts analyzed within 40 days of extraction. Results for samples properly preserved and analyzed outside of but less than two times the holding time window for preparation and/or analysis are qualified as approximate (UJ, J). Non-detected results for samples properly preserved and analyzed greater than two times the holding time window for preparation and/or analysis are rejected (R). Detected results for samples properly preserved and analyzed greater than two times the holding time window for preparation and/or analysis are qualified as approximate (J).
Holding Time for Organics	Results for samples properly preserved and analyzed outside of but less than two times the holding time window established in the QAPP for preparation and/or analysis are qualified as approximate (UJ, J). Non-detected results for samples properly preserved and analyzed greater than two times the holding time window for preparation and/or analysis are rejected (R). Detected results for samples properly preserved and analyzed greater than two times the holding time window for preparation and/or analysis are qualified as approximate (J). The entire sample target list for a VOC sample impacted by a holding time excursion is qualified.
Calibration Evaluation for PFAS	A minimum of five to six calibration standards are analyzed to generate average response factors, linear or quadratic fit calibration curves. The calibrations are evaluated using the criteria of less than 35 percent relative standard deviation (%RSD) for target analytes quantitated by isotope dilution analytes (IDAs), less than 50 %RSD for target analytes quantitated by internal standards (without IDAs) or a correlation coefficient (r) greater than 0.995 for a linear fit. Initial calibration verification (ICV) mid-range standard (from a separate source) must be within 60 to 140 percent recovery (%R) for target analytes associated with IDAs and within 50%R to 150%R for target analytes without IDAs. IDAs in the ICV must be greater than or equal to 50%R and less than or equal to 150%R. Mid-level continuing calibration verifications (CCVs) are analyzed at the beginning of the analysis sequence, at the end, and after every 10 samples. The CCV recovery must be within 60%R to 140%R for target analytes associated with IDAs and within 50%R to 150%R

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	for target analytes without IDAs. IDAs must be greater than or equal to 50%R and less than or equal to 150%R.
Calibration Actions for PFAS	Due to relative standard deviation (RSD) calibration excursions, detected results for analytes in samples associated with the calibration are qualified as approximate (J). Non-detected results associated with RSD excursions may be qualified as approximate (UJ) based on professional judgment. If the RSD calibration excursion is greater than 90, detected results for analytes in samples associated with the calibration are qualified as approximate (J) and non-detected results may be rejected (R), applying professional judgment. For ICV excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ). Due to %D CCV excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ).
Calibration Evaluation for SVOCs	SVOC target analytes are evaluated using the criteria of <20 %RSD or correlation coefficient of 0.990 for initial calibration curves. Calibration verifications are evaluated using a criterion of 20 %D for the target analytes. Initial calibrations and calibration verifications are also evaluated using the criterion for RFs listed in the method. ICV recoveries are evaluated using laboratory control limits if available or 70% to 130%.
Calibration Actions for Organics	Due to relative standard deviation (RSD) calibration excursions, detected results for analytes in samples associated with the calibration are qualified as approximate (J). Non-detected results associated with RSD excursions may be qualified as approximate (UJ) based on professional judgment. If the RSD calibration excursion is greater than 90, detected results for analytes in samples associated with the calibration are qualified as approximate (J) and non-detected results may be rejected (R), applying professional judgment. Due to %D calibration verification excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ). The response direction and detection of target analytes in associated sample may be considered in applying qualifiers. For response factor excursions, detected results are qualified as approximate (J) and non-detected results are rejected (R). For initial calibration verifications (ICV) excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ). The response direction and detection of target analytes in associated sample may be considered in applying qualifiers.
Associating samples with Field and Laboratory QC Samples	Equipment blanks (rinsate blanks) are associated with samples collected in the same day (or sampling event) using the same sample collection equipment and decontamination solutions. When sampling equipment or decontamination solutions are changed, a new equipment blank should be collected. Each sample should be associated with one equipment blank, which is collected as close to the sample collection date/time as possible. Field blanks are associated with the sample containers used to collect samples. When sampling container lots are changed, a new field blank should be collected. Method blanks are associated with samples prepared at the same time as the samples. Method blanks should reflect the sample matrix type. Laboratory Control Samples (LCSs) are solutions containing known amounts of target analytes, analyzed within the laboratory to evaluate recovery of target analytes without

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	sample matrix impacts. The LCSs are associated with samples prepared at the same time as the samples. MS/MSD samples are collected in the field and spiked with known amounts of target analytes, analyzed in the laboratory to evaluate recovery and precision of target analytes. MS/MSDs measure the impact of matrix interference on target analytes. The MS/MSDs must be prepared using project samples and are associated with samples prepared at the same time with the same matrix type. Field duplicates and collocated samples are duplicate samples collected in the field to measure field precision and are associated with samples of the same matrix type. In the case that insufficient QC samples are provided due to field or laboratory problems, professional judgment is used to associate each sample with a QC sample that reflects the sample matrix and analysis conditions.
Evaluation and Actions for MS/MSD, LCS, Surrogate and Field Duplicate for Organic Data	The laboratory control limit (CL) provided in the laboratory SOP is used to assess MS/MSD, LCS, surrogate, and IDA data. In the case that excursions are identified in more than one quality control sample of the same matrix within one sample delivery group, samples are batched according to sample preparation or analysis date and qualified accordingly. In general, if percent recoveries are less than laboratory CLs but greater than 10%, non-detected and detected results are qualified as approximate (UJ, J). If percent recoveries are greater than laboratory CLs, detected results are qualified as approximate (J). If percent recoveries are less than 10%, detected results are qualified as approximate (J) and non-detected results may be rejected (R) applying professional judgement. If RPDs for MSDs are outside of laboratory CLs, detected results are qualified as approximate (J). Non-detected results may not be qualified applying professional judgment. Qualification is performed only when both MS and MSD recoveries are outside of laboratory CLs. Qualification is not performed for MS/MSD results if the sample concentration is greater than 4 times the MS or MSD spike concentration. Non-detect data are rejected (R) in the case that both MS/MSD recoveries are less than 10%. Qualification is not performed if MS/MSD are outside of laboratory CLs if the analysis was performed using a dilution factor of 10 times or more applying professional judgment. Qualification of data associated with MS/MSD or field duplicate excursions is limited to the un-spiked sample or the field duplicate pair, respectively. Field duplicate data are evaluated against relative percent difference (RPD) criteria of less than 50% for aqueous samples and less than 100% for soils when results are greater than or equal to five times the RL. When a field duplicate result is less than five times the RL, a control limit of plus or minus two times the RL (difference criterion) is applied. If RPDs or differences are outside of criterion, detected and non-detected results are qualified as approximate (UJ, J).
Evaluation Field Duplicate Data for PFAS	Field duplicate data are evaluated against relative percent difference (RPD) criteria of less than 30 percent when results are greater than or equal to five times the RL. A control limit of 50 RPD is applied when a field duplicate result is less than two times the RL. If RPDs are outside of criterion, detected and non-detected results are qualified as approximate (UJ, J).

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Evaluation and Actions for Blank Results (Method, Field, Equipment) for PFAS	If a PFAS target analyte is detected in a blank at a concentration greater than the MDL, for samples with concentrations less than five times the blank concentration, the sample is qualified as non-detected (U) and reported or reported at the RL.
Evaluation and Actions for Blank Results (Trip, Method, Field, Equipment)	Blanks are analyzed to evaluate laboratory and/or field contamination of project samples. Method blanks evaluate potential laboratory contamination and field and equipment blanks evaluate potential field contamination. Blanks are not qualified due to contamination of another blank. Sample results qualified as non-detected (U) are treated as detected results when qualifying for other excursions. 1. For blank results less than the RL, samples with concentrations less than the RL are reported at the RL and qualified as non-detected (U). Samples with concentrations greater than or equal to the RL are not qualified or the Blank Rule Option may be applied. 2. For blank results greater than the RL, samples with concentrations less than the RL are reported at the RL and qualified as non-detected (U). Samples with concentrations greater than or equal to the RL and less than the blank contamination level are reported and qualified as non-detected (U). Samples with concentrations greater than or equal to the RL and greater than or equal to the blank contamination level are not qualified or the Blank Rule Option may be applied. 3. For blank results equal to the RL, sample concentrations less than the RL are reported at the RL value and qualified as non-detected (U). Samples greater than or equal to the RL are not qualified or the Blank Rule Option may be applied. 4. For gross contamination in blanks (interference peaks, poor baselines), all associated sample detected results may be rejected (R) or qualified as non-detected (U) applying professional judgment. Blank Rule Option - If a target analyte is detected in a blank at a concentration greater than the MDL, for samples with concentrations less than five times the blank concentration, the sample is qualified as non-detected (U) and reported at the RL. If methylene chloride, acetone, 2-butanone, or phthalates are detected in the sample at a concentration that is less than ten times the concentration in the associated blank, the sample result is qualified as "U". If other target analytes are detected in the sample at a concentration that is less than five times the concentration detected in the associated blank, the sample result is qualified as "U".
Evaluation of Isotope Dilution Analytes (IDAs) and Internal Standards for PFAS	The isotope dilution technique includes the utilization of IDAs, which are carbon-13 labeled analogs, oxygen-18 labeled analogs, or deuterated analogs of target analytes that are added to samples in the sample extraction process. Since IDAs respond in the same manner as target analytes, the IDA is used for target analyte identification and for calculating sample concentrations. The IDAs are evaluated in sample results using control limits of 25% to 150%. Based on the laboratory SOP, low recoveries of IDAs are acceptable as long as the signal-to-noise (S/N) ratio is greater than 10:1. The Internal Standard (IS) used is ¹³C₂ PFOA. Results for target analytes associated with IDAs/IS with recoveries greater than or less than 10% with a S/N of greater than 10:1 are qualified as approximate (J, UJ). Results for target analytes associated with IDA/IS with recoveries less than 10% with a S/N of less than 10:1 are rejected (R) using professional judgment.

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Evaluation of Internal Standards for Organics	Internal standard recoveries are evaluated using control limits of from 50% of the lower standard area to 100% of the upper standard area of the associated calibration verification standard. The results associated with internal standard area recoveries 25% or greater but less than 50% are qualified as approximate (J, UJ). Non-detected results associated with internal standard area recoveries less than 25% are rejected (R), using professional judgment.
Target Analyte Identifications	If incorrect target analyte identifications were made due to laboratory errors, the associated result will be corrected or rejected (R), applying professional judgment.
Target Analyte Identification and Quantitation for PFAS (TA Sacramento SOP)	1. The laboratory is performing identification and quantitation for sample data using the guidance presented in the USEPA Technical Advisory – Laboratory Analysis of Drinking Water Samples for PFOA using EPA Method 537 Rev. 1.1. 2. The laboratory analyst's experience and judgement are used to report both target analyte identification and concentrations, which are based on interpretation of peak shape, chromatography baseline, retention time and signal strength. The laboratory did not utilize ion ratios for target analyte identification for this method. 3. During data validation, peak integration and identification interpretation performed by the laboratory analysts is reviewed. Validation qualifiers are applied to sample results when overall chromatography, retention times or peak shapes may have impacted sample identifications and/or concentrations. 4. IDAs are utilized to identify target analytes (TAs), where certified quantitation/ calibration - quality IDA standards are available for inclusion in the calibration. For target analytes without IDAs, an IDA is assigned for retention time identification and quantitation and are presented in the laboratory SOP. 5. Branched-chain isomers for perfluorooctanoic acid (PFOA), perfluorohexanesulfonic acid (PFHxS) perfluorooctane sulfonic acid (PFOS), perfluorobutanesulfonic acid (PFBS), n-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA), and n-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA) may be identified in samples. The calibration standards used by the laboratory includes linear and branched isomers for only these target analytes based on current literature. Other target analytes are quantitated based on a single linear isomer peak, defined by the calibration solutions in the initial calibration. 6. The laboratory may utilize a qualitative/technical mixture for the PFOA standard to determine retention times only for the PFOA branch-chain isomers. A separate, certified quantitation/calibration-quality standard source, which only includes the linear isomer, may be used for calibration. 7. Samples results are qualified as approximate (J) but bias is not assigned to sample results with branch-chain isomers when quantitated using linear calibration standards or standards that do not include the branches present in the samples. 8. Target analytes are identified using TA and IDA comparisons of retention time (RT) and relative retention time (RRT - defined as the RT of the target analyte/RT of the IDA), as applicable based on laboratory experience. 9. Target analytes are identified as detected using the signal-to-noise ratio criterion of 3:1. 10. According to the laboratory, the data system's integration parameters are optimized for minimal manual intervention. Laboratory analyst's experience and judgement are used to evaluate TA peaks. Should there be any issue with the data system's integration the analyst will overwrite the data report with a manual integration. This

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	manual integration will take into account TA signal strength, overall chromatography and baseline determinations, which can vary from sample to sample, especially for low level detections.
Target Analyte Identifications for Organics	If incorrect target analyte identifications were made due to data interpretation or laboratory transcription errors, the associated result will be corrected or rejected (R), applying professional judgment.
Source: OBG Part of Ramboll	

Laboratory QA/QC analyses definitions	
QA/QC Term	Definition
Reporting Limit (RL) or Quantitation Limit (QL)	The level above which numerical results may be obtained with a specified degree of confidence; the minimum concentration of an analyte in a specific matrix that can be identified and quantified above the method detection limit and within specified limits of precision and bias during routine analytical operating conditions.
Method Detection Limit (MDL)	The minimum concentration of an analyte that undergoes preparation similar to the environmental samples and can be reported with a stated level of confidence that the analyte concentration is greater than zero.
Calibration	Compliance requirements for satisfactory instrument calibration are established to verify that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of analysis and calibration verifications document satisfactory maintenance and adjustment of the instrument on a day-to-day basis.
Relative Standard Deviation (RSD)	The standard deviation divided by the mean; a unit-free measure of variability.
Correlation coefficient	A measure of the strength of the relationship between two variables.
Relative Percent Difference (RPD)	Used to compare two values; the RPD is based on the mean of the two values and is reported as an absolute value (<i>i.e.</i> , always expressed as a positive number or zero).
Percent Difference (%D)	Used to compare two values; the percent difference indicates both the direction and the magnitude of the comparison (<i>i.e.</i> , the percent difference may be either negative, positive, or zero).
Percent Recovery (%R)	The act of determining whether or not the methodology measures all of the target analytes contained in a sample.
Calibration blank	Consists of acids and reagent water used to prepare samples for analysis. This type of blank is analyzed to evaluate whether contamination is occurring during the preparation and analysis of the sample.
Method blank	A water or soil blank that undergoes the preparation procedures applied to a sample (<i>e.g.</i> , extraction, digestion, clean-up). These samples are analyzed to examine whether sample preparation, clean-up, and analysis techniques result in sample contamination.
Field/Equipment Blank	Collected and submitted for laboratory analysis, where appropriate. Field/equipment blanks are handled in the same manner as environmental samples. Equipment/field blanks are analyzed to assess contamination introduced during field sampling procedures.
Internal Standards Performance	Compounds not found in environmental samples which are spiked into samples and quality control samples at the time of sample preparation for organic analyses. Internal standards must meet retention time and recovery criteria specified in the analytical method. Internal standards are used as the basis for quantitation of the target analytes.
Surrogate Recovery	Compounds similar in nature to the target analytes but not expected to be detected in the environmental media which are spiked into environmental samples, blanks, and quality control samples prior to sample preparation for organic analyses. Surrogates are used to evaluate analytical efficiency by measuring recovery.

Laboratory QA/QC analyses definitions	
QA/QC Term	Definition
Laboratory Control Sample (LCS)	Standard solutions that consist of known concentrations of the target analytes spiked into laboratory analyte-free water or sand. They are prepared or purchased from a certified manufacturer from a source independent from the calibration standards to provide an independent verification of the calibration procedure. They are prepared and analyzed following the same procedures employed for environmental sample analysis to assess method accuracy independently of sample matrix effects.
Matrix	The material of which the sample is composed or the substrate containing the analyte of interest, such as drinking water, waste water, air, soil/sediment, and biological material.
Retention time (RT)	The time a target analyte is retained on a chromatography column before elution. The identification of a target analyte is dependent on a target compound's retention time falling within the specified retention time window established for that compound.
Relative Retention Time (RRT)	The ratio of the retention time of a compound to that of a standard.
Source: OBG Part of Ramboll	

Attachment C
Low-Flow Groundwater
Sampling Logs

Low Flow Groundwater Sampling Log

