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Emerging Contaminants Sampling Report

Site #961005 – ETE Sanitation and Landfill
Broughton Road
Gainesville, NY 14550

May 9, 2019

Version 1.1



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Prepared for:

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Date:

May 9, 2019

A handwritten signature in black ink, appearing to read 'Jennifer Clay'.

Digitally signed by
Jennifer Clay
Date: 2019.05.09
09:10:19 -04'00'

Jennifer Clay
Staff Geologist

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Acronyms

Bgs	Below ground surface
CY	Cubic yards
DO	Dissolved oxygen
DTW	Depth to water
DUSR	Data Usability Summary Report
EB	Equipment blank
Ft	feet
GES	Groundwater & Environmental Services, Inc.
HDPE	High density polyethylene
MS	Matrix spike
MSD	Matrix spike duplicate
ng/L	nanograms per liter
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
ORP	Oxidation reduction potential
PFAS	Per-and Polyfluoroalkyl Substances
PFBA	Perfluorobutanoic acid
PFPeA	Perfluoropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluoroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTriA	Perfluorotridecanoic acid
PFTeA	Perfluorotetradecanoic acid
PFBS	Perfluorobutanesulfonic acid
PFHxS	Perfluorohexanesulfonic acid
PFHpS	Perfluoroheptanesulfonic acid
PFOS	Perfluorooctanesulfonic acid
PFDS	Perfluorodecanesulfonic acid
FOSA	Perfluorooctane Sulfonamide
NMeFOSAA	N-methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-ethyl perfluorooctane sulfonamidoacetic acid
FTS	Fluorinated Telomer Sulfonates
PPE	Personal protective equipment
PSA	Preliminary Site Assessment
PVC	Polyvinyl chloride
ROD	Record of Decision
RI/FS	Remedial Investigation/Feasibility Study
Site	ETE Sanitation & Landfill
SVOCs	Semi-volatile organic compounds
TCA	1,1,1-Trichloroethane
TestAmerica	TestAmerica Laboratories, Inc.
USEPA	United States Environmental Protection Agency
VOCs	Volatile organic compounds

1 Introduction

Groundwater & Environmental Services, Inc. (GES) has prepared this report to summarize the groundwater sampling activities and conducted at Site #961005 – ETE Sanitation and Landfill (the Site) on September 18-20 and 27, 2018. Sampling activities were completed to analyze groundwater for the presence of emerging contaminants, including per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane.

2 Site Background

The Site is a part of New York State Department of Environmental Conservation's (NYSDEC) Inactive Hazardous Waste Disposal Site Remedial Program with the assigned Site #961005. The Site is an approximately 25.5 acre property located on Broughton Road approximately 2 miles west of Silver Springs and 1 mile north of the Village of Gainesville, New York as shown on the Site Location Map (**Figure 1**) and Site Map (**Figure 2**). The Site is located in a rural agricultural area with some surrounding residential and commercial properties.

Historically, the Site was owned and operated by ETE Corporation from 1972 to 1979; however, the Site may have been in operation prior to 1972. The ETE Landfill Site was a non-permitted private landfill which accepted municipal and industrial waste from surrounding towns in Wyoming County. Almor Corporation of Warsaw, New York, disposed approximately 150 tons of leaded paint sludge on-site. Plating wastes from Mallory Timers in Warsaw, New York, may also have been disposed on-site. Additional industrial waste included halite (salt), and possibly other salts may have been disposed at the Site and were produced by Morton Salt, located in the nearby community of Silver Springs.

During a NYSDEC site inspection, drums with waste containing chlorinated solvents were found exposed on-site. A drum removal action was completed in September 1991. New York State Department of Health (NYSDOH) sampled private wells near the Site. No drinking water standards were exceeded in the sampled wells. A Preliminary Site Assessment (PSA) was completed in May 1994. A Remedial Investigation/Feasibility Study (RI/FS) was completed under the State Superfund program in March, 1999. A Record of Decision (ROD) was signed on March 31, 1999. The selected remedy for the Site specified the elimination of an upgradient pond adjacent to the south face of the disposal area; consolidation and capping of wastes; design of a new drainage system around the landfill; permanent drainage of the former location of the south pond on the privately held landfill operations parcel that contributed to landfill leachate generation; and long-term monitoring of the Site. The Remedial Design started in September 1999 and was completed in July 2000. Remedial construction was hindered by property access issues to the privately held portion of the site. The property access issue was resolved by a court order in 2005. Construction began 2006 and was completed by September 2007. A total of approximately 10,595 cubic yards (CY) of contaminated soil and 42,000 CY of uncontaminated soil were excavated. A cover was installed in accordance with the Remedial Design. Nine (9) gas vents consisting of 6-inch diameter polyvinyl chloride (PVC) pipe extending a minimum of 8 feet (ft) into the waste were installed on the landfill prior to installation of the cover system components. Contaminated

materials remaining on-site are under a multi-layered geomembrane landfill cover system placed over the 7-acre landfill area to minimize the infiltration of precipitation, and prevent exposure to the Site waste. The cap covers approximately 18 ft of consolidated waste totaling an estimated 200,000 CY of remaining waste. The capped landfill represents the sole source area remaining at the Site. The Site is currently in the long-term monitoring phase.

There are no buildings, storage tanks (underground or aboveground), or other critical infrastructure. Additionally, there are no utilities (overhead or subsurface) located at the Site. The property is currently owned by ETE Corporation and David Kennan.

The geology consists primarily of fill material and glacial tills. Groundwater depth is approximately 3 ft below ground surface (bgs) flowing generally to the north. Bedrocks is reported at 8 to 25 ft bgs.

3 Emerging Contaminants

Chemicals used in consumer products are introduced to the environment through various sources such as municipal wastewater treatment plants, runoff from agricultural and urban land surfaces, septic systems, and some chemicals disposed of at hazardous waste sites.

NYSDEC has identified PFAS and 1,4-dioxane as emerging contaminants. PFAS are a group of chemicals used to make fluoropolymer coatings and products that resist heat, oil, stains, grease and water. Fluoropolymer coatings are blends of resins and lubricants used in products such as water-repellent clothing, furniture, adhesives, paint and varnish, food packaging, heat-resistant non-stick cooking surfaces and insulation of electric wires. 1,4-Dioxane is a synthetic industrial chemical that was most commonly used as a stabilizer for chlorinated solvents, particularly 1,1,1-trichloroethane (TCA). Additionally, 1,4-dioxane has been identified as a by-product found in consumer products such as detergents, deodorants, shampoos and cosmetics.

4 Groundwater Sampling Activities

4.1 Groundwater Elevation

On September 18-20 and 27, 2018, prior to sampling, groundwater depth-to-water (DTW) data was collected from monitoring wells MW-2SR, MW-3SR, MW-3DR, MW-6S, MW-6D, MW-7S, MW-7D, MW-9S, MW-9D, MW-11S and MW-11D. A well was located adjacent to MW-2SR, after a discussion with NYSDEC, it was been determined that this was a replacement well for MW-2D and was given the designation MW-2DR. MW-2DR was gauged however it was not sampled due to only having enough bottleware to sample the call-out listed wells. DTW measurements ranged from 8.61 ft bgs to 31.35 ft bgs. All monitoring well sample locations are shown on **Figure 3**. A summary of the groundwater elevation data is included in **Table 1**.

4.2 Sampling Collection

Due to potential sources of cross-contamination by equipment, materials, and consumer products during sampling, a specific sampling method must be followed when sampling for PFAS and 1,4-dioxane.

During the September 18-20 and 27, 2018, groundwater sampling event, GES personnel performed low flow sampling at monitoring wells MW-2SR, MW-3SR, MW-3DR, MW-6S, MW-6D, MW-7S, MW-7D, MW-9S, MW-9D, MW-11S and MW-11D. For each sample set, PFAS samples were collected first to minimize contact with other sample containers and packing materials.

During low-flow sampling, field parameters were collected using a multi-parameter instrument, YSI® 556 Multi-Probe System, with a flow-through-cell, and a LaMotte® 2020we turbidity meter. Field parameters included pH, oxidation/reduction potential (ORP), dissolved oxygen (DO), specific conductance, temperature and turbidity. A Geopump™ peristaltic pump with new high-density polyethylene (HDPE) and silicon tubing were used at each monitoring well, with the exception of MW-2SR and MW-11D which used a stainless steel Monsoon® pump due to access issues. Prior to purging, the monitoring well was gauged using an Solinst® Model 122 interface probe and after each well, the interface probe was decontaminated using Alconox® solution and PFA free water.

The groundwater sampling personnel wore personal protective equipment (PPE), field clothing and utilized personal hygiene products that are approved for PFA sampling.

Nitrile gloves were worn at all times during the sampling event and changed frequently. An Alconox® solution was used to decontaminate equipment prior to field sampling activities and after sampling at each monitoring well.

Recovered groundwater was sampled using laboratory supplied bottleware with a dedicated cooler for PFA samples. Upon completion of sampling activities, samples were placed on ice in laboratory supplied coolers and were delivered via courier under chain of custody to TestAmerica Laboratories, Inc. Buffalo (TestAmerica) located in Amherst, New York. All samples were analyzed for volatile organic compounds (VOCs) via United States Environmental Protection Agency (USEPA) Method 8260C, semi-volatile organic compounds (SVOCs) via USEPA Method 8270D, metals with mercury via USEPA Method 6010C/7470A and cyanide via USEPA Method 9012B. In addition, MW-2SR, MW-7S and MW-11S were analyzed for emerging contaminants 1,4-dioxane via USEPA Method 8270D SIM and PFAs via USEPA Method 537 Modified.

4.3 Sample Analysis

TestAmerica provided a full category B deliverable for the analysis of PFAS and 1,4-dioxane included as **Appendix A**. The analytical data included in the full category B deliverable is summarized in **Table 1**. Additionally, a Quality Assessment Data Usability Summary Report (DUSR) was performed by RemVer of Colchester, Connecticut and is included as **Appendix B**. The validator reported all results for PFAS and 1,4-Dioxane included in the laboratory reports to be acceptable for use, though some analytes are flagged based on the validator's review.

Samples submitted to TestAmerica for emerging contaminant analysis (MW-2R, MW-7S, MW-11S, MW-11S DUP and EB [equipment blank]) were analyzed using the USEPA Method 537 Modified and USEPA Method 8270 SIM. The analytes reported include:

- Perfluorobutanoic acid (PFBA)
- Perfluoropentanoic acid (PFPeA)
- Perfluorohexanoic acid (PFHxA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorooctanoic acid (PFOA)
- Perfluorononanoic acid (PFNA)
- Perfluorodecanoic acid (PFDA)
- Perfluoroundecanoic acid (PFUnA)
- Perfluorododecanoic acid (PFDoA)
- Perfluorotridecanoic acid (PFTriA)
- Perfluorotetradecanoic acid (PFTeA)
- Perfluorobutanesulfonic acid (PFBS)
- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanesulfonic acid (PFHpS)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorodecanesulfonic acid (PFDS)
- Perfluorooctane Sulfonamide (FOSA)
- N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)
- N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)
- 6:2 Fluorinated Telomer Sulfonates (FTS)
- 8:2 Fluorinated Telomer Sulfonates (FTS)
- 1,4-Dioxane

The following PFAS analytes had concentrations at or above the laboratory reporting limit at one or more sample location:

- PFBA
- PFOA
- PFOS

All detections were at MW-7S and the maximum PFAS concentration detected was 7.8 nanograms per liter (ng/L) of PFOA at MW-7S.

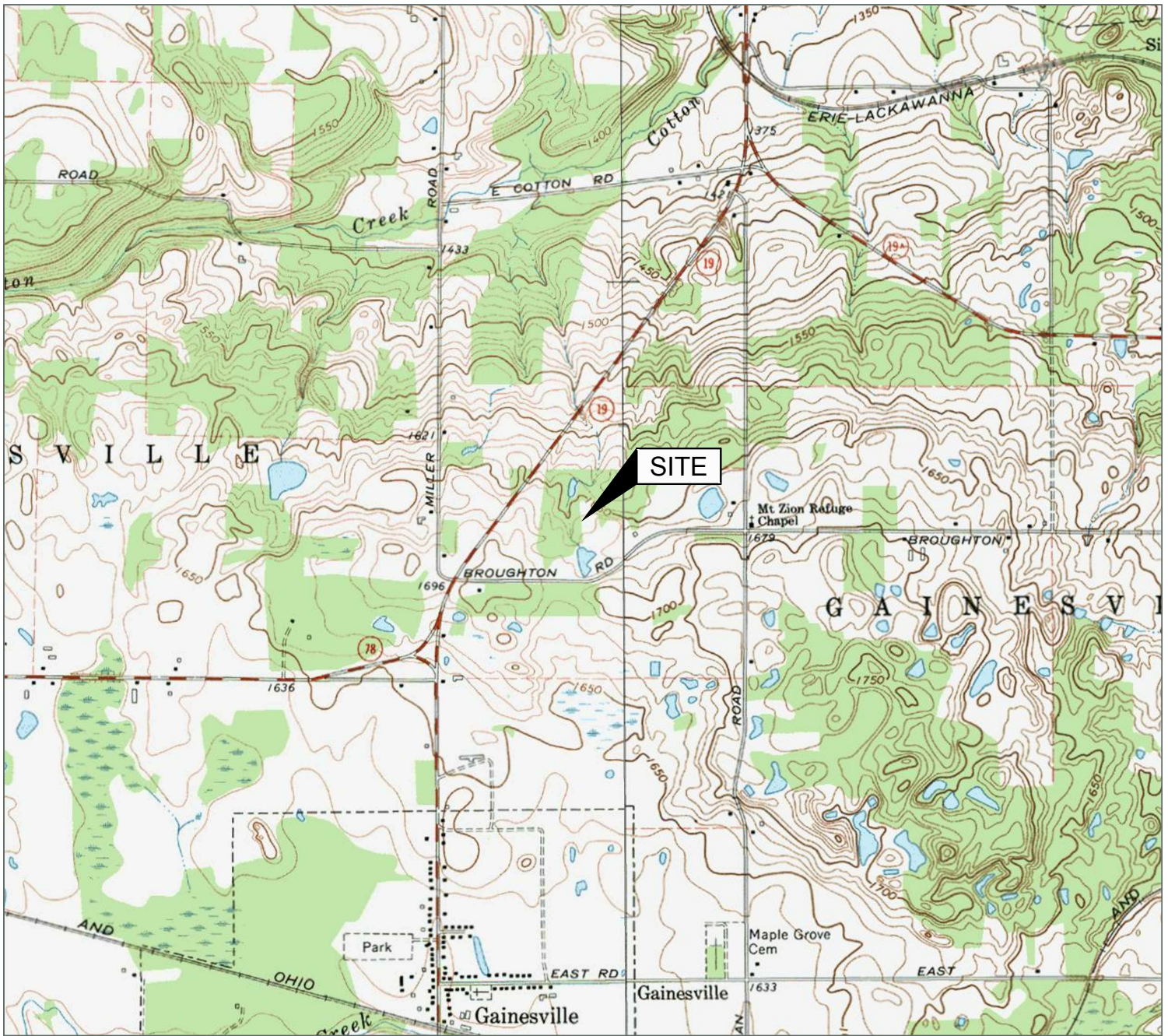
No other sample has concentrations for emerging contaminants had detections at or above the laboratory method detection limit for this sampling event.

Samples were also analyzed for VOCs, SVOCs, metals with mercury and cyanide. Analytical results for these and the emerging contaminants are shown on **Table 1** (PFAs), **Table 2** (VOCs), **Table 3** (SVOCs) and **Table 4** (metals). Analytical reports are provided in **Appendix A**.

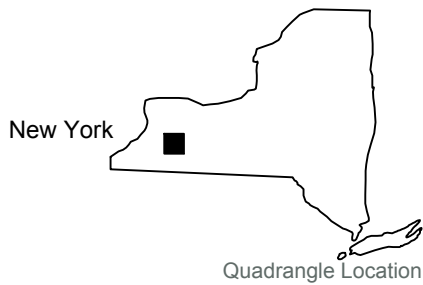
4.4 Quality Assurance/Quality Control

Care was taken during all aspects of the sample collection to ensure that high quality data was obtained. Equipment blanks, duplicate samples, and matrix spike and matrix spike duplicate (MS/MSD) samples were collected and submitted for analysis for quality assurance of both the sample collection procedure and the laboratory method. All samples were submitted via courier to the necessary laboratories for analysis under proper chain of custody. Based on the DUSR provided by RemVer, no results were rejected though some were flagged based on sample handling or laboratory accuracy/precision issues. The DUSR is provided in **Appendix B**.

Figures



Source:
 USGS 7.5 Minute Series
 Topographic Quadrangle, 1976
 Warsaw, New York
 Contour Interval = 10'



Site Location Map

NYSDEC
 ETE Sanitation and Landfill Site #961005
 Broughton Road
 Gainesville, New York

Drawn
 W.G.S.
 Designed
 J.K.C.
 Approved
 E.P.

Date
 4/29/19
 Figure
 1

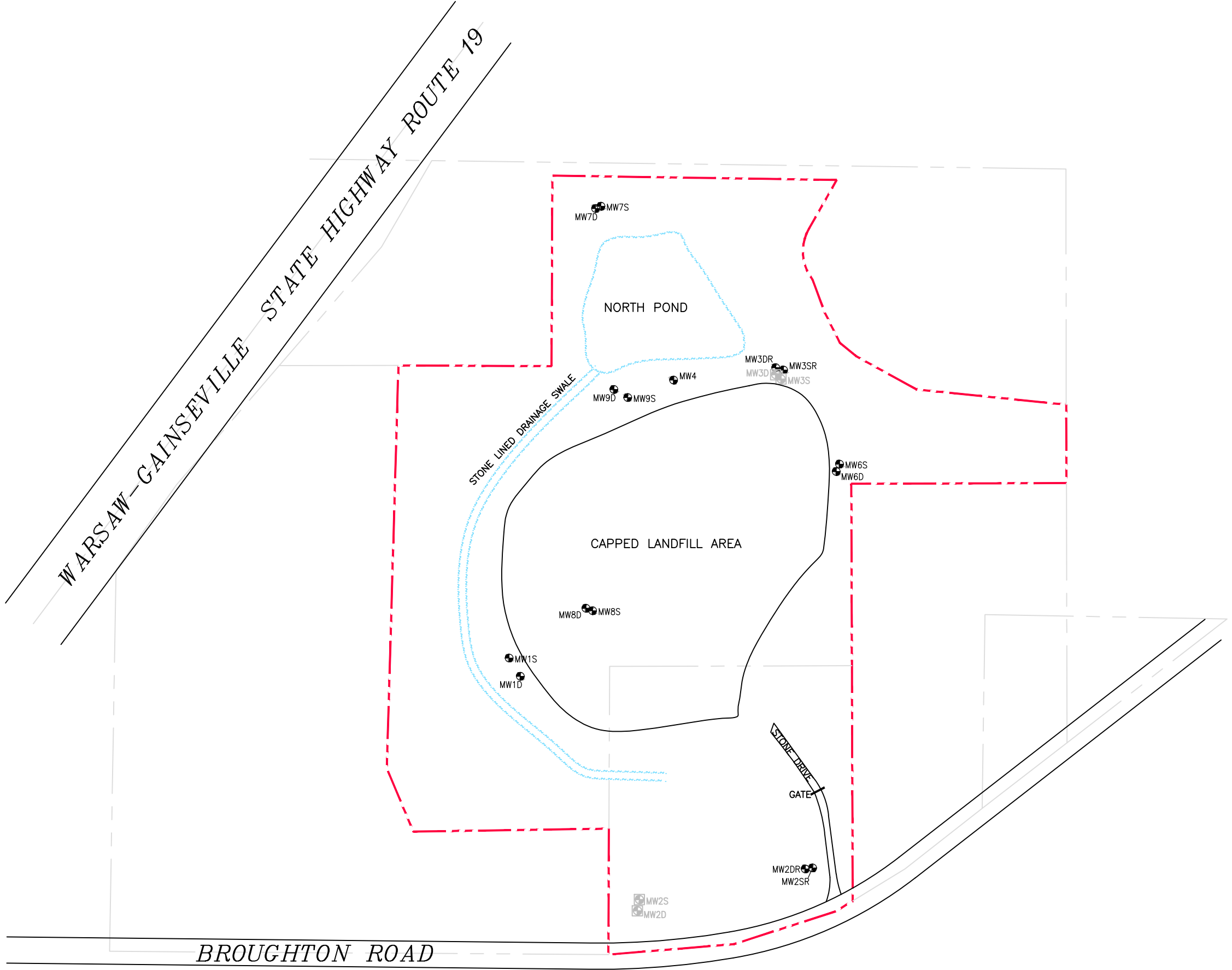


Scale In Feet

0 2000



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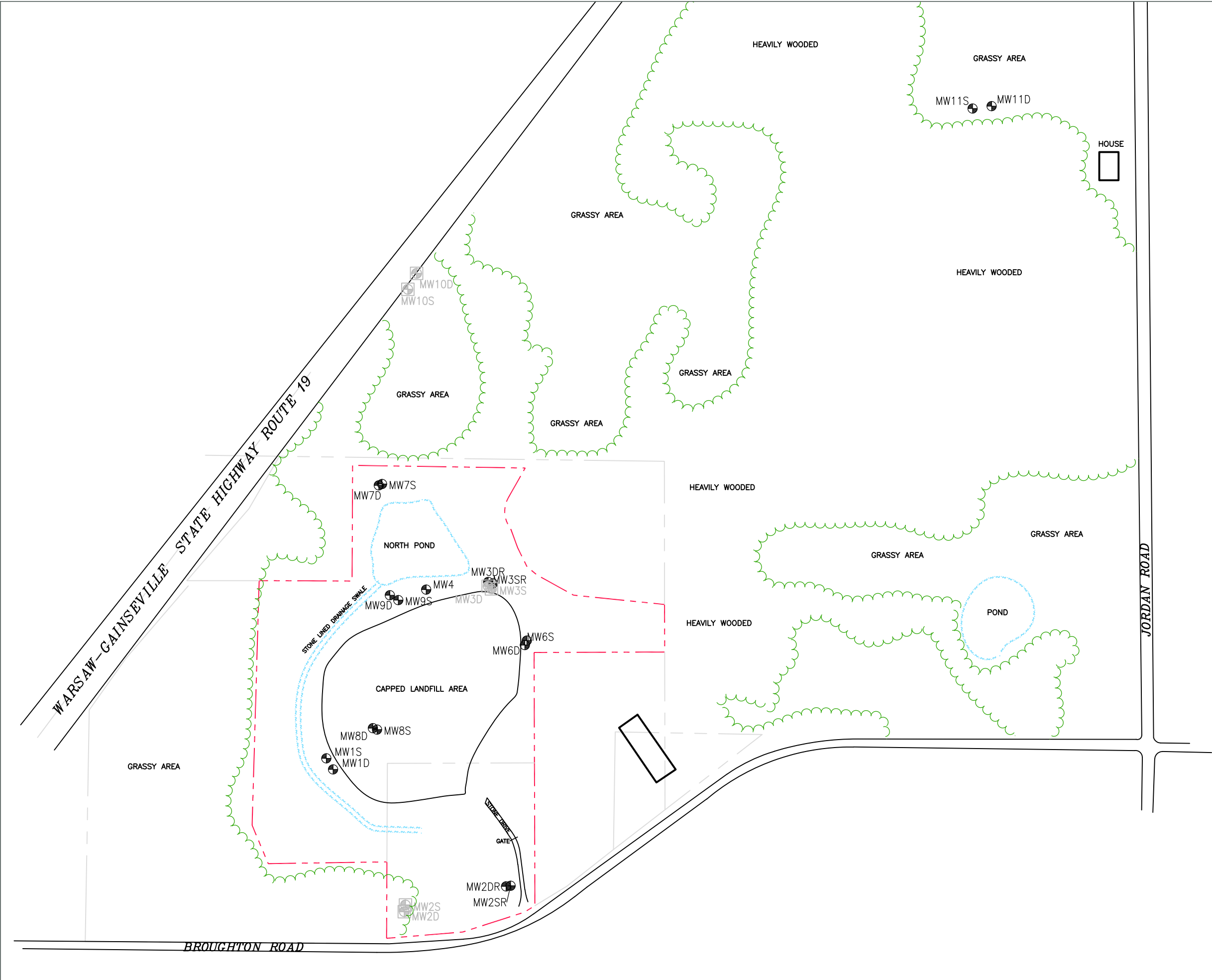


LEGEND

- PROPERTY BOUNDARY
- MONITORING WELL
- ◻ DESTROYED MONITORING WELL

Site Map	
NYSDEC ETE Sanitation and Landfill Site #961005 Broughton Road Gainesville, New York	
Drawn W.G.S. Designed J.K.C. Approved E.P.	Date 4/30/19 Figure 2
 Scale In Feet 0 200 	

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LEGEND

- PROPERTY BOUNDARY
- MONITORING WELL
- DESTROYED MONITORING WELL

Expanded Site Map		
NYSDEC ETE Sanitation and Landfill Site #961005 Broughton Road Gainesville, New York		
Drawn W.G.S. Designed J.K.C. Approved E.P.	 Scale In Feet 0 Approximate 300  Groundwater & Environmental Services, Inc.	Date 5/8/19 Figure 3

Tables

Table 1
PFAS and 1,4-Dioxane Groundwater Data Summary

Group	CAS No.	Emerging Contaminant	Abbreviation	Sample ID:	MW-2R	MW-7S	MW-11S	MW-11S DUP	EB	
				Lab Sample ID:	480-142503-1 & 320-43696-1	480-142274-1	480-142274-2	480-142274-3	480-142274-4	
					Date Sampled:	09/27/2018	09/18/2018	09/20/2018	09/20/2018	9/20/2018
					DTW (ft btoc)	14.00	9.17	8.67	8.67	NA
Perfluoroalkyl carboxylates	375-22-4	Perfluorobutanoic Acid	PFBA	(ng/L)	ND<1.8 UJ	4.5	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	2706-90-3	Perfluoropentanoic Acid	PFPeA	(ng/L)	ND<1.8 U	ND<1.9 UJ	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	307-24-4	Perfluorohexanoic Acid	PFHxA	(ng/L)	ND<1.8 U	ND<1.9 UJ	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	375-85-9	Perfluoroheptanoic Acid	PFHpA	(ng/L)	ND<1.8 U	ND<1.9 UJ	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	335-67-1	Perfluorooctanoic Acid	PFOA	(ng/L)	ND<1.8 U	7.8	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	375-95-1	Perfluorononanoic Acid	PFNA	(ng/L)	ND<1.8 UJ	ND<1.9 UJ	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	335-76-2	Perfluorodecanoic Acid	PFDA	(ng/L)	ND<1.8 UJ	ND<1.9 U	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	2058-94-8	Perfluoroundecanoic Acid	PFUnA	(ng/L)	ND<1.8 U	ND<1.9 U	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	307-55-1	Perfluorododecanoic Acid	PFDoA	(ng/L)	ND<1.8 U	ND<1.9 U	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	72629-94-8	Perfluorotridecanoic Acid	PFTriA	(ng/L)	ND<1.8 U	ND<1.9 U	ND<2.0 U	ND<1.9 U	ND<2.0 U	
376-06-7	Perfluorotetradecanoic Acid	PFTeA	(ng/L)	ND<1.8 U	ND<1.9 U	ND<2.0 U	ND<1.9 U	ND<2.0 U		
Perfluoroalkyl sulfonates	375-73-5	Perfluorobutanesulfonic Acid	PFBS	(ng/L)	ND<1.8 U	ND<1.9 UJ	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	355-46-4	Perfluorohexanesulfonic Acid	PFHxS	(ng/L)	ND<1.8 UJB	ND<1.9 UJB	ND<2.0 UJB	ND<1.9 UJB	ND<2.0 UJB	
	375-92-8	Perfluoroheptanesulfonic Acid	PFHpS	(ng/L)	ND<1.8 U	ND<1.9 U	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	1763-23-1	Perfluorooctanesulfonic Acid	PFOS	(ng/L)	ND<1.8 U	7.2	ND<2.0 U	ND<1.9 U	ND<2.0 U	
	335-77-3	Perfluorodecanesulfonic Acid	PFDS	(ng/L)	ND<1.8 UJ	ND<1.9 U	ND<2.0 U	ND<1.9 U	ND<2.0 U	
Perfluorooctane-sulfonamides	754-91-6	Perfluorooctane Sulfonamide	FOSA	(ng/L)	ND<1.8 U	ND<1.9 U	ND<2.0 U	ND<1.9 U	ND<2.0 U	
Perfluorooctane-sulfonamidoacetic	2355-31-9	N-methyl Perfluorooctane Sulfonamidoacetic Acid	NMeFOSAA	(ng/L)	ND<1.8 U	ND<19 U	ND<20 U	ND<19 U	ND<20 U	
	2991-50-6	N-ethyl Perfluorooctane Sulfonamidoacetic Acid	NEtFOSAA	(ng/L)	ND<1.8 U	ND<19 U	ND<20 U	ND<19 U	ND<20 U	
Fluorinated	27619-97-2	6:2FTS	6:2FTS	(ng/L)	ND<18 U	ND<19 U	ND<20 UJ	ND<19 U	ND<20 UJ	
Telomer Sulfonates	39108-34-4	8:2FTS	8:2FTS	(ng/L)	ND<18 U	ND<19 U	ND<20 U	ND<19 U	ND<20 U	
1,4-Dioxane	123-91-1	1,4-Dioxane	1,4-Dioxane	(µg/L)	ND<0.20 U	ND<0.20 U	ND<0.20 U	ND<0.20 U	ND<0.20 U	

Notes:

ft btoc = Feet below top of casing

µg/L = Micrograms per liter

ng/L = Nanograms per liter

NA = Not applicable

ND<# = Not detected at or above indicated laboratory reporting limit.

U = Analyte analyzed for, but not detected above the sample's reported quantitation limit

B = An analyte identified in method blank

UJ = Analyte not detected above the sample quantitation limit; the associated quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample



Table 2
VOCs Groundwater Data Summary

COMPOUND	NYSDEC TOGS 1.1.1 Class GA AWQS	Location ID:	MW-2SR	MW-2DR	MW-3SR	MW-3DR	MW-6S	MW-6D	MW-7S	MW-7D	MW-9S	MW-9D	MW-11S	MW-11S DUP	MW-11D	EB
		Lab Sample ID:	480-142273-1	NA	480-142273-1	480-142273-2	480-142273-3	480-142273-4	480-142273-5	480-142273-6	480-142273-7	480-142273-8	480-142273-9	480-142273-10	480-142503-2	480-142273-11
		Depth to Water (ft btoc):	14.00	27.65	14.24	19.31	19.20	21.33	9.17	16.28	8.61	11.70	8.67	8.67	31.35	NA
		Matrix:	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG
		Date Sampled:	9/27/2018	9/27/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/20/2018	9/21/2018	9/27/2018
UNITS:																
VOLATILE ORGANIC COMPOUNDS (VOCs)																
1,1,1-Trichloroethane	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,1,2,2-Tetrachloroethane	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	(µg/L)	ND (<1.0) UJ	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) UJ	ND (<1.0) U
1,1,2-Trichloroethane	1	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,1-Dichloroethane	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) UJ	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,1-Dichloroethene	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,2,4-Trichlorobenzene	NS	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,2-Dibromo-3-chloropropane	0.04	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,2-Dibromoethane	NS	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,2-Dichlorobenzene	3	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,2-Dichloroethane	0.6	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,2-Dichloropropane	1	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,3-Dichlorobenzene	3	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
1,4-Dichlorobenzene	3	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
2-Butanone (MEK)	NS	(µg/L)	ND (<10) U	NA	ND (<10) UB	ND (<10) UB	ND (<10) UB	ND (<10) UB	ND (<10) UB	ND (<10) UB	ND (<40) UB	ND (<10) UB	ND (<10) UB	ND (<10) UB	ND (<10) U	ND (<10) UJB
2-Hexanone	50	(µg/L)	ND (<5) U	NA	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<20) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U
4-Methyl-2-pentanone (MIBK)	NS	(µg/L)	ND (<5) U	NA	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<20) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U	ND (<5) U
Acetone	50	(µg/L)	ND (<10) U	NA	ND (<10) UB	ND (<10) UB	ND (<10) UJB	ND (<10) UB	ND (<10) UJB	ND (<10) UJB	ND (<40) UJB	ND (<10) UB	ND (<10) UB	ND (<10) UB	ND (<10) U	ND (<10) UJB
Benzene	1	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Bromodichloromethane	50	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Bromoform	50	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Bromomethane	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Carbon Disulfide	60	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Carbon tetrachloride	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Chlorobenzene	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Chloroethane	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) UJ	ND (<1.0) UJ	ND (<1.0) UJ	ND (<1.0) UJ	ND (<1.0) UJ	ND (<4.0) UJ	ND (<1.0) UJ	ND (<1.0) UJ	ND (<1.0) UJ	ND (<1.0) U	ND (<1.0) U
Chloroform	7	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Chloromethane	NS	(µg/L)	ND (<1.0) U	NA	ND (<1.0) UJ	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
cis-1,2-Dichloroethene	5	(µg/L)	ND (<1.0) U	NA	16	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
cis-1,3-Dichloropropene	NS	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Cyclohexane	NS	(µg/L)	ND (<1.0) UJ	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) UJ	ND (<1.0) U
Dibromochloromethane	50	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Dichlorodifluoromethane	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) UJ
Ethylbenzene	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Isopropylbenzene	5	(µg/L)	ND (<1.0) UJ	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) UJ	ND (<1.0) U
Methyl acetate	NS	(µg/L)	ND (<2.5) U	NA	ND (<2.5) U	ND (<2.5) U	ND (<2.5) U	ND (<2.5) U	ND (<2.5) U	ND (<2.5) U	ND (<10) U	ND (<2.5) U	ND (<2.5) U	ND (<2.5) U	ND (<2.5) U	ND (<2.5) U
Methyl tert-butyl ether	10	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Methylcyclohexane	NS	(µg/L)	ND (<1.0) UJ	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) UJ	ND (<1.0) U
Methylene chloride	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<4.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U	ND (<1.0) U
Styrene	5	(µg/L)	ND (<1.0) U	NA	ND (<1.0) U											

Notes:
µg/L = micrograms per liter
NYSDEC June 1998 Ambient Water Quality Standards and Guidance Values for Groundwater Class GA.
Bold values exceed the NYSDEC Class GA groundwater standard/guidance value.
NM = Not Measured
NS = No Standard
NA = Not Applicable/Analyzed
ND (<#) = Indicates compound was analyzed for, but not detected at or above the reporting limit.
(J) = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit. The concentration is an approximate value.

Table 3
SVOCs Groundwater Data Summary

	NYSDEC TOGS 1.1.1 Class GA AWQS	Sample ID:	MW-2SR	MW-2DR	MW-3SR	MW-3DR	MW-6S	MW-6D	MW-7S	MW-7D	MW-9S	MW-9D	MW-11S	MW-11S DUP	WM-11D	EB
		Lab Sample ID:	480-142503-1	NA	480-142273-1	480-142273-2	480-142273-3	480-142273-4	480-142273-5	480-142273-6	480-142273-7	480-142273-8	480-142273-9	480-142273-10	480-142503-2	480-142273-11
		Depth to Water (ft btoc):	14.00	27.65	14.24	19.33	19.20	21.33	9.17	16.28	8.61	11.70	8.67			
		Matrix:	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG
		Date Sampled:	9/27/2018	9/27/2018	9/18/2018	9/18/2018	9/19/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/20/2018	9/21/2018	9/27/2018
COMPOUND		UNITS:														
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)																
1,1'-Biphenyl	5	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2,4,5-Trichlorophenol	1 ¹	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2,4,6-Trichlorophenol	1 ¹	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2,4-Dichlorophenol	1 ¹	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2,4-Dimethylphenol	50	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2,4-Dinitrophenol	10	(µg/L)	ND (<10) U	NA	ND (<10) U	ND (<10) U	ND (<50) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U
2,4-Dinitrotoluene	5	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2,6-Dinitrotoluene	5	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2-Chloronaphthalene	10	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2-Chlorophenol	1 ¹	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2-Methylnaphthalene	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2-Methylphenol (o-cresol)	1 ¹	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
2-Nitroaniline	5	(µg/L)	ND (<5.0) U	NA	ND (<10) U	ND (<10) U	ND (<50) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U
2-Nitrophenol	1 ¹	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
3,3'-Dichlorobenzidine	5	(µg/L)	ND (<5.0) UJ	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) UJ	ND (<5.0) UJ	ND (<5.0) UJ
3-Nitroaniline	5	(µg/L)	ND (<10) U	NA	ND (<10) U	ND (<10) U	ND (<50) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U
4,6-Dinitro-2-methylphenol	NS	(µg/L)	ND (<10) U	NA	ND (<10) U	ND (<10) U	ND (<50) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U
4-Bromophenyl phenyl ether	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
4-Chloro-3-methylphenol	1 ¹	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
4-Chloroaniline	5	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
4-Chlorophenyl phenyl ether	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
4-Methylphenol (p-cresol)	1 ¹	(µg/L)	ND (<10) U	NA	ND (<10) U	ND (<10) U	ND (<50) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U
4-Nitroaniline	5	(µg/L)	ND (<10) U	NA	ND (<10) U	ND (<10) U	ND (<50) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U
4-Nitrophenol	1 ¹	(µg/L)	ND (<10) U	NA	ND (<10) U	ND (<10) U	ND (<50) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ
Acenaphthene	20	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Acenaphthylene	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Acetophenone	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Anthracene	50	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Atrazine	7.5	(µg/L)	ND (<5.0) UJ	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) UJ	ND (<5.0) UJ	ND (<5.0) UJ	ND (<5.0) UJ
Benzaldehyde	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Benzo[a]anthracene	0.002	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Benzo[a]pyrene	0	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Benzo(b)fluoranthene	0.002	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Benzo(g,h,i)perylene	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Benzo(k)fluoranthene	0.002	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Benzyl butyl phthalate	50	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
bis(2-Chloroethoxy)methane	5	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
bis(2-Chloroethyl) ether	1.0	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
bis(2-Chloroisopropyl) ether [2,2'-oxybis(2-chloropropane)]	5	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
bis(2-Ethylhexyl) phthalate	5	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Caprolactam	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Carbazole	NS	(µg/L)	ND (<5.0) UJ	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) UJ	ND (<5.0) UJ	ND (<5.0) UJ
Chrysene	0.002	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Dibenz[a,h]anthracene	NS	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Dibenzofuran	NS	(µg/L)	ND (<10) U	NA	ND (<10) U	ND (<10) U	ND (<50) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U
Diethyl phthalate	50	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Dimethyl phthalate	50	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Di-n-butyl phthalate	50	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) UJ	ND (<25) UJ	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) UJ	ND (<5.0) UJ	0.35	ND (<5.0) U
Di-n-octyl phthalate	50	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Fluoranthene	50	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Fluorene	50	(µg/L)	ND (<5.0) UJ	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) UJ	ND (<5.0) UJ	ND (<5.0) U
Hexachlorobenzene	0.04	(µg/L)	ND (<5.0) U	NA	ND (<5.0) U	ND (<5.0) U	ND (<25) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U	ND (<5.0) U
Hexachlorobutadiene	0.5	(µg/L)	ND (&lt													

ug/L = micrograms per liter

NYSDEC TOGS 1.1.1 Class GA AWQS = New York State Department of Environmental Conservation Technical and Operation Guidance Series Ambient Water Quality Standards and Guidance Values for Groundwater Class GA.

Bold values exceed the NYSDEC Class GA groundwater standard/guidance value.

NM = Not Measured

NS = No Standard

NA = Not Applicable/Analyzed

ND (<#) = Indicates compound was analyzed for, but not detected at or above the reporting limit.

(J) = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit. The

(c) $\bar{C}$ is the concentration of the sample that is not reporting an error, but greater than or equal to the median detection limit. The concentration is an approximate value.



Table 4
Metals Groundwater Data Summary

COMPOUND	NYSDEC TOGS 1.1.1 Class GA AWQS	Sample ID:	MW-2R	MW-2DR	MW-3S	MW-3D	MW-6S	MW-6D	MW-7S	MW-7D	MW-9S	MW-9D	MW-11S	MW-11S DUP	MW-11D	EB
		Lab Sample ID:	480-142503-1	NA	480-142273-1	480-142273-2	480-142273-3	480-142273-4	480-142273-5	480-142273-6	480-142273-7	480-142273-8	480-142273-9	480-142273-10	480-142503-2	480-142273-11
		Depth to Water (ft btoc):	14.00	27.65	14.24	19.31	19.20	21.33	9.17	16.28	8.61	11.70	8.67	8.67	31.35	NA
		Matrix:	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG	WG
		Date Sampled:	9/27/2018	9/27/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/18/2018	9/19/2018	9/19/2018	9/20/2018	9/21/2018	9/27/2018	9/21/2018
Metals		UNITS:														
Aluminium	-	(µg/L)	2500	NA	ND (<200) U	ND (<200) UJ	5000	1300	1900	1300	ND (<200) U	200	ND (<200) U	ND (<200) U	4400	ND (<200) U
Antimony	6	(µg/L)	ND (<20) UJ	NA	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ
Arsenic	50	(µg/L)	ND (<15) UJ	NA	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ	ND (<15) UJ
Barium	2,000	(µg/L)	220 J	NA	340 J	1100 J	160 J	190 J	32 J	1500 J	620 J	390 J	8.7 J	8.6 J	140 J	ND (<2) UJ
Beryllium	3.0	(µg/L)	ND (<20) UJ	NA	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ
Cadmium	10.0	(µg/L)	ND (<20) UJ	NA	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ	ND (<2) UJ
Calcium	-	(µg/L)	127000	NA	95100 J	237000 J	143000 J	55800 J	34700 J	153000 J	50400 J	78900 J	28100 J	27800 J	72600	ND (<500) UJ
Chromium, Total	100	(µg/L)	4.4 J	NA	ND (<4) UJ	ND (<4) UJ	28 J	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	6.5 J	ND (<4) UJ
Cobalt	-	(µg/L)	ND (<4.0) UJ	NA	ND (<4) UJ	ND (<4) UJ	30 J	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	ND (<4) UJ	0.24 J	ND (<4) UJ
Copper	1,000	(µg/L)	ND (<10) UJ	NA	ND (<10) UJ	ND (<10) UJ	10 J	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	6.6 J	ND (<10) UJ
Cyanide, Total	200	(µg/L)	ND (<10) UJ	NA	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) U	ND (<10) UJ	ND (<10) U	ND (<10) UJ	ND (<10) U
Iron	600	(µg/L)	3400	NA	2100	2400	16700	2400	1800	3900	2400	2300	ND (<50) UJ	ND (<50) UJ	10500	ND (<50) U
Lead	50	(µg/L)	ND (<10) UJ	NA	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	5.0 J	ND (<10) UJ
Magnesium	35,000	(µg/L)	32700	NA	23500 J	63900 J	20000 J	15100 J	4100 J	39700 J	8100 J	17300 J	5500 J	5400 J	17800	ND (<200) UJ
Manganese	600	(µg/L)	640 JB	NA	940 JB	120 B	8000 B	54 B	70 B	100 B	130 B	100 B	ND (<3) UJB	ND (<3) UJB	170 B	ND (<3) UJB
Mercury	1.4	(µg/L)	ND (<0.2) U	NA	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U	ND (<0.2) U
Nickel	200	(µg/L)	ND (<10) UJ	NA	ND (<10) UJ	ND (<10) UJ	13 J	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	13 J	ND (<10) UJ	ND (<10) UJ	ND (<10) UJ	6.6 J	ND (<10) UJ
Potassium	-	(µg/L)	2500	NA	2000	2500	1900	1200	2700	3400	21400	1200	ND (<500) UJ	ND (<500) UJ	2100	ND (<500) U
Selenium	20.0	(µg/L)	ND (<25) U	NA	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ	ND (<25) UJ
Silver	100	(µg/L)	ND (<6) U	NA	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ	ND (<6) UJ
Sodium	-	(µg/L)	134000	NA	67500 J	199000 J	3600 J	5400 J	97800 J	1520000 J	3760000 J	8500 J	1800 J	1700 J	14300	ND (<1000) UJ
Thallium	0.5	(µg/L)	ND (<20) UJ	NA	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ	ND (<20) UJ
Vanadium	-	(µg/L)	ND (<5) UJ	NA	ND (<5) UJ	ND (<5) UJ	9.5 J	ND (<5) UJ	ND (<5) UJ	ND (<5) UJ	ND (<5) UJ	ND (<5) UJ	ND (<5) UJ	ND (<5) UJ	7.2 J	ND (<5) UJ
Zinc	5,000	(µg/L)	18 JB	NA	ND (<10) UJB	ND (<10) UJB	34 JB	ND (<10) UJB	15 JB	170 JB	ND (<10) UJB	ND (<10) UJB	ND (<10) UJB	ND (<10) UJB	19 B	ND (<10) UJB

Bold values indicate analytical result exceeds TOGS 1.1.1 WQS
TOGS 1.1.1 WQS = Ambient Water Quality Standards Guidance Values and Groundwater Effluent Limitations, amended April 2000
µg/L = micrograms per liter
- = no published regulatory standard
J = Analyte positively identified at a numerical value that is the approximate concentration of the analyte in the sample or Analyte not detected above the sample quantitation limit; the associated quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample
B = An analyte identified in method blank (B), aqueous equipment (EB), trip (TB), or bottle blanks (BB) used to assess field contamination associated with soil or sediment samples mandates these qualifiers for only soil and sediment sample results.
F1= MS and or MSD Recovery is outside acceptable limits
NA = not analyzed

Appendix A – Laboratory Analytical Reports

ANALYTICAL REPORT

Job Number: 320-43696-1

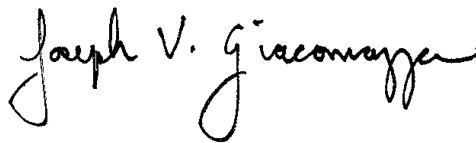
Job Description: ETE Sanitation & Landfill Site# 961005

Contract Number: C100700

For:

New York State D.E.C.
270 Michigan Avenue
Buffalo, NY 14203

Attention: Mr. Dave Szymanski



Approved for release.
Joe V Giacomazza
Project Management Assistant II
10/25/2018 4:14 PM

Designee for
Orlette S Johnson, Senior Project Manager
10 Hazelwood Drive, Amherst, NY, 14228-2298
(484)685-0864
orlette.johnson@testamericainc.com
10/25/2018

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TestAmerica Laboratories, Inc.

TestAmerica Sacramento 880 Riverside Parkway, West Sacramento, CA 95605

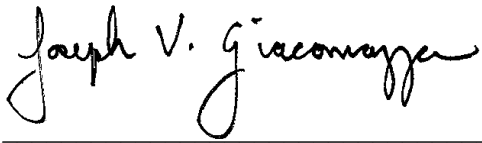
Tel (916) 373-5600 Fax (916) 372-1059 www.testamericainc.com



Job Number: 320-43696-1

Job Description: ETE Sanitation & Landfill Site# 961005

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



Approved for release.
Joe V Giacomazza
Project Management Assistant II
10/25/2018 4:14 PM

Designee for
Orlette S Johnson

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Job Narrative
320-43696-1

Comments

No additional comments.

Receipt

The samples were received on 9/29/2018 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.3° C.

Receipt Exceptions

A Trip Blank sample was not received for the following; TRIP BLANK (320-43696-2). The client was notified.

LCMS

Method(s) 537 (modified): The matrix spike duplicate (MSD) recoveries for Perfluorodecanesulfonic acid (PFDS) preparation batch 320-251297 and analytical batch 320-252302 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

Organic Prep

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

Definitions/Glossary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

Qualifiers

LCMS

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.
F1	MS and/or MSD Recovery is outside acceptance limits.
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)

Sample Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-43696-1	MW-2R	Water	09/27/18 11:20	09/29/18 09:20

Detection Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

Client Sample ID: MW-2R

Lab Sample ID: 320-43696-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	1.0	J	1.8	0.31	ng/L	1			537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.39	J	1.8	0.24	ng/L	1			537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.49	J	1.8	0.28	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	1.8	0.15	ng/L	1			537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

Client Sample ID: MW-2R

Date Collected: 09/27/18 11:20

Date Received: 09/29/18 09:20

Lab Sample ID: 320-43696-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.0	J	1.8	0.31	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.44	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorononanoic acid (PFNA)	0.39	J	1.8	0.24	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorodecanoic acid (PFDA)	0.49	J	1.8	0.28	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	1.8	0.15	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorodecanesulfonic acid (PFDS)	ND	F1	1.8	0.29	ng/L		10/11/18 07:31	10/15/18 05:19	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.31	ng/L		10/11/18 07:31	10/15/18 05:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L		10/11/18 07:31	10/15/18 05:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7	ng/L		10/11/18 07:31	10/15/18 05:19	1
6:2 FTS	ND		18	1.8	ng/L		10/11/18 07:31	10/15/18 05:19	1
8:2 FTS	ND		18	1.8	ng/L		10/11/18 07:31	10/15/18 05:19	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	77		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C5 PFPeA	81		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C2 PFHxA	83		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C4 PFHpA	84		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C4 PFOA	91		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C5 PFNA	85		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C2 PFDA	79		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C2 PFUnA	65		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C2 PFDoA	58		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C2 PFTeDA	48		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C3 PFBS	86		25 - 150				10/11/18 07:31	10/15/18 05:19	1
18O2 PFHxS	84		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C4 PFOS	79		25 - 150				10/11/18 07:31	10/15/18 05:19	1
13C8 FOSA	80		25 - 150				10/11/18 07:31	10/15/18 05:19	1
d3-NMeFOSAA	71		25 - 150				10/11/18 07:31	10/15/18 05:19	1
d5-NEtFOSAA	72		25 - 150				10/11/18 07:31	10/15/18 05:19	1
M2-6:2 FTS	105		25 - 150				10/11/18 07:31	10/15/18 05:19	1
M2-8:2 FTS	88		25 - 150				10/11/18 07:31	10/15/18 05:19	1

TestAmerica Sacramento

Isotope Dilution Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

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)
320-43696-1	MW-2R	77	81	83	84	91	85	79	65
320-43696-1 MS	MW-2R	91	85	88	93	93	95	82	70
320-43696-1 MSD	MW-2R	86	91	91	96	98	98	86	75
LCS 320-251297/2-A	Lab Control Sample	101	102	98	103	107	104	103	106
MB 320-251297/1-A	Method Blank	102	109	103	105	107	111	114	103

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	3C3-PFBs (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS (25-150)	-NEtFOS/ (25-150)
320-43696-1	MW-2R	58	48	86	84	79	80	71	72
320-43696-1 MS	MW-2R	61	57	90	89	88	79	70	71
320-43696-1 MSD	MW-2R	67	56	96	95	95	91	74	69
LCS 320-251297/2-A	Lab Control Sample	102	94	106	101	105	105	115	104
MB 320-251297/1-A	Method Blank	101	95	110	110	115	102	109	120

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
320-43696-1	MW-2R	105	88
320-43696-1 MS	MW-2R	125	79
320-43696-1 MSD	MW-2R	120	90
LCS 320-251297/2-A	Lab Control Sample	127	121
MB 320-251297/1-A	Method Blank	132	134

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: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-251297/1-A

Matrix: Water

Analysis Batch: 252302

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 251297

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorohexanesulfonic acid (PFHxS)	0.278	J	2.0	0.17	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		10/11/18 07:31	10/15/18 03:19	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35	ng/L		10/11/18 07:31	10/15/18 03:19	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		10/11/18 07:31	10/15/18 03:19	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		10/11/18 07:31	10/15/18 03:19	1
6:2 FTS	ND		20	2.0	ng/L		10/11/18 07:31	10/15/18 03:19	1
8:2 FTS	ND		20	2.0	ng/L		10/11/18 07:31	10/15/18 03:19	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	102		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C5 PFPeA	109		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C2 PFHxA	103		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C4 PFHpA	105		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C4 PFOA	107		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C5 PFNA	111		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C2 PFDA	114		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C2 PFUnA	103		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C2 PFDoA	101		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C2 PFTeDA	95		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C3 PFBS	110		25 - 150	10/11/18 07:31	10/15/18 03:19	1
18O2 PFHxS	110		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C4 PFOS	115		25 - 150	10/11/18 07:31	10/15/18 03:19	1
13C8 FOSA	102		25 - 150	10/11/18 07:31	10/15/18 03:19	1
d3-NMeFOSAA	109		25 - 150	10/11/18 07:31	10/15/18 03:19	1
d5-NEtFOSAA	120		25 - 150	10/11/18 07:31	10/15/18 03:19	1
M2-6:2 FTS	132		25 - 150	10/11/18 07:31	10/15/18 03:19	1
M2-8:2 FTS	134		25 - 150	10/11/18 07:31	10/15/18 03:19	1

TestAmerica Sacramento

QC Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

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

Lab Sample ID: LCS 320-251297/2-A

Matrix: Water

Analysis Batch: 252302

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 251297

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid (PFBA)	40.0	38.1		ng/L		95	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	38.9		ng/L		97	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.7		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.4		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	38.0		ng/L		95	64 - 124
Perfluorononanoic acid (PFNA)	40.0	40.2		ng/L		101	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	42.6		ng/L		106	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.0		ng/L		97	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	38.7		ng/L		97	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	36.9		ng/L		92	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	38.4		ng/L		96	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	31.8		ng/L		90	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.0		ng/L		91	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.1		ng/L		108	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	33.7		ng/L		91	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8		ng/L		93	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	40.6		ng/L		102	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	35.1		ng/L		88	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	40.3		ng/L		101	65 - 125
6:2 FTS	37.9	32.7		ng/L		86	66 - 126
8:2 FTS	38.3	34.1		ng/L		89	67 - 127

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	101		25 - 150
13C5 PFPeA	102		25 - 150
13C2 PFHxA	98		25 - 150
13C4 PFHpA	103		25 - 150
13C4 PFOA	107		25 - 150
13C5 PFNA	104		25 - 150
13C2 PFDA	103		25 - 150
13C2 PFUnA	106		25 - 150
13C2 PFDoA	102		25 - 150
13C2 PFTeA	94		25 - 150
13C3 PFBS	106		25 - 150
18O2 PFHxS	101		25 - 150
13C4 PFOS	105		25 - 150
13C8 FOSA	105		25 - 150
d3-NMeFOSAA	115		25 - 150
d5-NEtFOSAA	104		25 - 150

TestAmerica Sacramento

QC Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

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

Lab Sample ID: LCS 320-251297/2-A

Matrix: Water

Analysis Batch: 252302

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 251297

<i>Isotope Dilution</i>	<i>LCS %Recovery</i>	<i>LCS Qualifier</i>	<i>Limits</i>
M2-6:2 FTS	127		25 - 150
M2-8:2 FTS	121		25 - 150

Lab Sample ID: 320-43696-1 MS

Matrix: Water

Analysis Batch: 252302

Client Sample ID: MW-2R

Prep Type: Total/NA

Prep Batch: 251297

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec. Limits</i>
Perfluorobutanoic acid (PFBA)	1.0	J	35.0	40.9		ng/L		114	70 - 130
Perfluoropentanoic acid (PFPeA)	ND		35.0	40.5		ng/L		115	66 - 126
Perfluorohexanoic acid (PFHxA)	ND		35.0	37.4		ng/L		107	66 - 126
Perfluoroheptanoic acid (PFHpA)	ND		35.0	38.7		ng/L		110	66 - 126
Perfluorooctanoic acid (PFOA)	ND		35.1	38.0		ng/L		108	64 - 124
Perfluorononanoic acid (PFNA)	0.39	J	35.0	36.4		ng/L		103	68 - 128
Perfluorodecanoic acid (PFDA)	0.49	J	35.0	36.7		ng/L		103	69 - 129
Perfluoroundecanoic acid (PFUnA)	ND		35.0	37.3		ng/L		106	60 - 120
Perfluorododecanoic acid (PFDoA)	ND		35.0	36.8		ng/L		105	71 - 131
Perfluorotridecanoic acid (PFTriA)	ND		35.0	33.5		ng/L		96	72 - 132
Perfluorotetradecanoic acid (PFTeA)	ND		35.0	40.0		ng/L		114	68 - 128
Perfluorobutanesulfonic acid (PFBS)	ND		31.0	35.8		ng/L		116	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	31.9	34.4		ng/L		107	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	ND		33.3	39.9		ng/L		120	68 - 128
Perfluorooctanesulfonic acid (PFOS)	ND		32.5	34.5		ng/L		106	67 - 127
Perfluorodecanesulfonic acid (PFDS)	ND	F1	33.8	26.4		ng/L		78	68 - 128
Perfluorooctanesulfonamide (FOSA)	ND		35.0	44.4		ng/L		127	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		35.0	39.1		ng/L		112	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		35.0	36.6		ng/L		104	65 - 125
6:2 FTS	ND		33.2	39.5		ng/L		119	66 - 126
8:2 FTS	ND		33.6	38.9		ng/L		116	67 - 127

<i>Isotope Dilution</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
13C4 PFBA	91		25 - 150
13C5 PFPeA	85		25 - 150
13C2 PFHxA	88		25 - 150
13C4 PFHpA	93		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	95		25 - 150
13C2 PFDA	82		25 - 150
13C2 PFUnA	70		25 - 150

TestAmerica Sacramento

QC Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

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

Lab Sample ID: 320-43696-1 MS

Matrix: Water

Analysis Batch: 252302

Client Sample ID: MW-2R

Prep Type: Total/NA

Prep Batch: 251297

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C2 PFDoA	61		25 - 150
13C2 PFTeDA	57		25 - 150
13C3 PFBS	90		25 - 150
18O2 PFHxS	89		25 - 150
13C4 PFOS	88		25 - 150
13C8 FOSA	79		25 - 150
d3-NMeFOSAA	70		25 - 150
d5-NEtFOSAA	71		25 - 150
M2-6:2 FTS	125		25 - 150
M2-8:2 FTS	79		25 - 150

Lab Sample ID: 320-43696-1 MSD

Matrix: Water

Analysis Batch: 252302

Client Sample ID: MW-2R

Prep Type: Total/NA

Prep Batch: 251297

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	1.0	J	35.8	36.0		ng/L		98	70 - 130	13	30
Perfluoropentanoic acid (PFPeA)	ND		35.8	32.7		ng/L		91	66 - 126	21	30
Perfluorohexanoic acid (PFHxA)	ND		35.8	32.8		ng/L		92	66 - 126	13	30
Perfluoroheptanoic acid (PFHpA)	ND		35.8	32.9		ng/L		92	66 - 126	16	30
Perfluorooctanoic acid (PFOA)	ND		35.8	32.6		ng/L		91	64 - 124	15	30
Perfluorononanoic acid (PFNA)	0.39	J	35.8	32.7		ng/L		90	68 - 128	11	30
Perfluorodecanoic acid (PFDA)	0.49	J	35.8	32.4		ng/L		89	69 - 129	13	30
Perfluoroundecanoic acid (PFUnA)	ND		35.8	32.1		ng/L		90	60 - 120	15	30
Perfluorododecanoic acid (PFDoA)	ND		35.8	31.3		ng/L		87	71 - 131	16	30
Perfluorotridecanoic acid (PFTriA)	ND		35.8	30.3		ng/L		85	72 - 132	10	30
Perfluorotetradecanoic acid (PFTeA)	ND		35.8	37.5		ng/L		105	68 - 128	6	30
Perfluorobutanesulfonic acid (PFBS)	ND		31.6	29.1		ng/L		92	73 - 133	21	30
Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	32.6	29.2		ng/L		89	63 - 123	16	30
Perfluoroheptanesulfonic Acid (PFHpS)	ND		34.1	33.1		ng/L		97	68 - 128	18	30
Perfluorooctanesulfonic acid (PFOS)	ND		33.2	28.4		ng/L		85	67 - 127	20	30
Perfluorodecanesulfonic acid (PFDS)	ND	F1	34.5	21.3	F1	ng/L		62	68 - 128	21	30
Perfluorooctanesulfonamide (FOSA)	ND		35.8	36.0		ng/L		101	70 - 130	21	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		35.8	35.8		ng/L		100	67 - 127	9	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		35.8	35.3		ng/L		99	65 - 125	4	30
6:2 FTS	ND		33.9	32.2		ng/L		95	66 - 126	21	30
8:2 FTS	ND		34.3	30.1		ng/L		88	67 - 127	26	30

TestAmerica Sacramento

QC Sample Results

Client: New York State D.E.C.

TestAmerica Job ID: 320-43696-1

Project/Site: ETE Sanitation & Landfill Site# 961005

<i>Isotope Dilution</i>	<i>MSD MSD</i>		<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
13C4 PFBA	86		25 - 150
13C5 PFPeA	91		25 - 150
13C2 PFHxA	91		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	98		25 - 150
13C5 PFNA	98		25 - 150
13C2 PFDA	86		25 - 150
13C2 PFUnA	75		25 - 150
13C2 PFDoA	67		25 - 150
13C2 PFTeDA	56		25 - 150
13C3 PFBS	96		25 - 150
18O2 PFHxS	95		25 - 150
13C4 PFOS	95		25 - 150
13C8 FOSA	91		25 - 150
d3-NMeFOSAA	74		25 - 150
d5-NEtFOSAA	69		25 - 150
M2-6:2 FTS	120		25 - 150
M2-8:2 FTS	90		25 - 150

QC Association Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

LCMS

Prep Batch: 251297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-43696-1	MW-2R	Total/NA	Water	3535	
MB 320-251297/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-251297/2-A	Lab Control Sample	Total/NA	Water	3535	
320-43696-1 MS	MW-2R	Total/NA	Water	3535	
320-43696-1 MSD	MW-2R	Total/NA	Water	3535	

Analysis Batch: 252302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-43696-1	MW-2R	Total/NA	Water	537 (modified)	251297
MB 320-251297/1-A	Method Blank	Total/NA	Water	537 (modified)	251297
LCS 320-251297/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	251297
320-43696-1 MS	MW-2R	Total/NA	Water	537 (modified)	251297
320-43696-1 MSD	MW-2R	Total/NA	Water	537 (modified)	251297

Lab Chronicle

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

Client Sample ID: MW-2R

Date Collected: 09/27/18 11:20

Date Received: 09/29/18 09:20

Lab Sample ID: 320-43696-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251297	10/11/18 07:31	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	252302	10/15/18 05:19	AAR	TAL SAC

Laboratory References:

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

Method Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	TAL SAC
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 SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 320-43696-1

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

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

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

TestAmerica Sacramento

Method PFC IDA

Fluorinated Hydrocarbons by Method
PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1

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 #
MW-2R	320-43696-1	77	81	86	83	84	84	105	91
	MB 320-251297/1-A	102	109	110	103	105	110	132	107
	LCS 320-251297/2-A	101	102	106	98	103	101	127	107
MW-2R MS	320-43696-1 MS	91	85	90	88	93	89	125	93
MW-2R MSD	320-43696-1 MSD	86	91	96	91	96	95	120	98

	<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.: 320-43696-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	M282FTS #	PFDA #	PFOSA #	d3NMFOS #	d5NEFOS #	PFUnA #
MW-2R	320-43696-1	85	79	88	79	80	71	72	65
	MB 320-251297/1-A	111	115	134	114	102	109	120	103
	LCS 320-251297/2-A	104	105	121	103	105	115	104	106
MW-2R MS	320-43696-1 MS	95	88	79	82	79	70	71	70
MW-2R MSD	320-43696-1 MSD	98	95	90	86	91	74	69	75

	<u>QC LIMITS</u>
PFNA = 13C5 PFNA	25-150
PFOS = 13C4 PFOS	25-150
M282FTS = M2-8:2 FTS	25-150
PFDA = 13C2 PFDA	25-150
PFOSA = 13C8 FOSA	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.: 320-43696-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFD _o A #	PFTD _A #
MW-2R	320-43696-1	58	48
	MB 320-251297/1-A	101	95
	LCS 320-251297/2-A	102	94
MW-2R MS	320-43696-1 MS	61	57
MW-2R MSD	320-43696-1 MSD	67	56

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.: 320-43696-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.14LLB_022.d
 Lab ID: LCS 320-251297/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	38.1	95	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	38.9	97	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	39.7	99	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	39.4	98	66-126	
Perfluorooctanoic acid (PFOA)	40.0	38.0	95	64-124	
Perfluorononanoic acid (PFNA)	40.0	40.2	101	68-128	
Perfluorodecanoic acid (PFDA)	40.0	42.6	106	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	39.0	97	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	38.7	97	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	36.9	92	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	38.4	96	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	31.8	90	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.0	91	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.1	108	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	33.7	91	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	35.8	93	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	40.6	102	70-130	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	35.1	88	67-127	
N-ethylperfluorooctanesulfonam idoacetic acid (NEtFOSAA)	40.0	40.3	101	65-125	
6:2 FTS	37.9	32.7	86	66-126	
8:2 FTS	38.3	34.1	89	67-127	
13C4 PFBA	100	101	101	25-150	
13C5 PFPeA	100	102	102	25-150	
13C2 PFHxA	100	98.5	98	25-150	
13C4 PFHpA	100	103	103	25-150	
13C4 PFOA	100	107	107	25-150	
13C5 PFNA	100	104	104	25-150	
13C2 PFDA	100	103	103	25-150	
13C2 PFUnA	100	106	106	25-150	
13C2 PFDoA	100	102	102	25-150	
13C2 PFTeDA	100	94.3	94	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.: 320-43696-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.14LLB_022.d
 Lab ID: LCS 320-251297/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C3 PFBS	93.0	98.4	106	25-150	
18O2 PFHxS	94.6	95.5	101	25-150	
13C4 PFOS	95.6	100	105	25-150	
13C8 FOSA	100	105	105	25-150	
d3-NMeFOSAA	100	115	115	25-150	
d5-NEtFOSAA	100	104	104	25-150	
M2-6:2 FTS	95.0	121	127	25-150	
M2-8:2 FTS	95.8	116	121	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.: 320-43696-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.10.14LLB_038.d

Lab ID: 320-43696-1 MS

Client ID: MW-2R MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	35.0	1.0 J	40.9	114	70-130	
Perfluoropentanoic acid (PFPeA)	35.0	ND	40.5	115	66-126	
Perfluorohexanoic acid (PFHxA)	35.0	ND	37.4	107	66-126	
Perfluoroheptanoic acid (PFHpA)	35.0	ND	38.7	110	66-126	
Perfluorooctanoic acid (PFOA)	35.1	ND	38.0	108	64-124	
Perfluorononanoic acid (PFNA)	35.0	0.39 J	36.4	103	68-128	
Perfluorodecanoic acid (PFDA)	35.0	0.49 J	36.7	103	69-129	
Perfluoroundecanoic acid (PFUnA)	35.0	ND	37.3	106	60-120	
Perfluorododecanoic acid (PFDoA)	35.0	ND	36.8	105	71-131	
Perfluorotridecanoic acid (PFTriA)	35.0	ND	33.5	96	72-132	
Perfluorotetradecanoic acid (PFTeA)	35.0	ND	40.0	114	68-128	
Perfluorobutanesulfonic acid (PFBS)	31.0	ND	35.8	116	73-133	
Perfluorohexanesulfonic acid (PFHxS)	31.9	0.26 J	34.4	107	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	33.3	ND	39.9	120	68-128	
Perfluorooctanesulfonic acid (PFOS)	32.5	ND	34.5	106	67-127	
Perfluorodecanesulfonic acid (PFDS)	33.8	ND	26.4	78	68-128	
Perfluorooctanesulfonamide (FOSA)	35.0	ND	44.4	127	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	35.0	ND	39.1	112	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	35.0	ND	36.6	104	65-125	
6:2 FTS	33.2	ND	39.5	119	66-126	
8:2 FTS	33.6	ND	38.9	116	67-127	
13C4 PFBA	87.6	69	79.6	91	25-150	
13C5 PFPeA	87.6	73	74.2	85	25-150	
13C2 PFHxA	87.6	74	76.7	88	25-150	
13C4 PFHpA	87.6	75	81.5	93	25-150	
13C4 PFOA	87.6	82	81.4	93	25-150	
13C5 PFNA	87.6	76	83.5	95	25-150	
13C2 PFDA	87.6	71	72.0	82	25-150	
13C2 PFUnA	87.6	58	60.9	70	25-150	
13C2 PFDoA	87.6	52	53.3	61	25-150	
13C2 PFTeDA	87.6	43	49.5	57	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.: 320-43696-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.14LLB_038.d
 Lab ID: 320-43696-1 MS Client ID: MW-2R MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
13C3 PFBS	81.4	72	73.4	90	25-150	
18O2 PFHxS	82.8	71	74.1	89	25-150	
13C4 PFOS	83.7	67	73.7	88	25-150	
13C8 FOSA	87.6	71	69.0	79	25-150	
d3-NMeFOSAA	87.6	63	61.1	70	25-150	
d5-NEtFOSAA	87.6	64	62.3	71	25-150	
M2-6:2 FTS	83.2	89	104	125	25-150	
M2-8:2 FTS	83.9	76	66.0	79	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.: 320-43696-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.10.14LLB_039.d

Lab ID: 320-43696-1 MSD

Client ID: MW-2R MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	35.8	36.0	98	13	30	70-130	
Perfluoropentanoic acid (PFPeA)	35.8	32.7	91	21	30	66-126	
Perfluorohexanoic acid (PFHxA)	35.8	32.8	92	13	30	66-126	
Perfluoroheptanoic acid (PFHpA)	35.8	32.9	92	16	30	66-126	
Perfluorooctanoic acid (PFOA)	35.8	32.6	91	15	30	64-124	
Perfluorononanoic acid (PFNA)	35.8	32.7	90	11	30	68-128	
Perfluorodecanoic acid (PFDA)	35.8	32.4	89	13	30	69-129	
Perfluoroundecanoic acid (PFUnA)	35.8	32.1	90	15	30	60-120	
Perfluorododecanoic acid (PFDoA)	35.8	31.3	87	16	30	71-131	
Perfluorotridecanoic acid (PFTriA)	35.8	30.3	85	10	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	35.8	37.5	105	6	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	31.6	29.1	92	21	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	32.6	29.2	89	16	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	34.1	33.1	97	18	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	33.2	28.4	85	20	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	34.5	21.3	62	21	30	68-128	F1
Perfluorooctanesulfonamide (FOSA)	35.8	36.0	101	21	30	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	35.8	35.8	100	9	30	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	35.8	35.3	99	4	30	65-125	
6:2 FTS	33.9	32.2	95	21	30	66-126	
8:2 FTS	34.3	30.1	88	26	30	67-127	
13C4 PFBA	89.5	77.0	86			25-150	
13C5 PFPeA	89.5	81.4	91			25-150	
13C2 PFHxA	89.5	81.7	91			25-150	
13C4 PFHpA	89.5	85.7	96			25-150	
13C4 PFOA	89.5	87.6	98			25-150	
13C5 PFNA	89.5	88.0	98			25-150	
13C2 PFDA	89.5	77.0	86			25-150	
13C2 PFUnA	89.5	67.1	75			25-150	
13C2 PFDoA	89.5	59.7	67			25-150	
13C2 PFTeDA	89.5	50.1	56			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.: 320-43696-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.14LLB_039.d
 Lab ID: 320-43696-1 MSD Client ID: MW-2R MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
13C3 PFBS	83.2	80.2	96			25-150	
18O2 PFHxS	84.6	80.7	95			25-150	
13C4 PFOS	85.5	81.0	95			25-150	
13C8 FOSA	89.5	81.6	91			25-150	
d3-NMeFOSAA	89.5	66.5	74			25-150	
d5-NEtFOSAA	89.5	61.6	69			25-150	
M2-6:2 FTS	85.0	102	120			25-150	
M2-8:2 FTS	85.7	77.2	90			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.: 320-43696-1
 SDG No.: _____
 Lab File ID: 2018.10.14LLB_021.d Lab Sample ID: MB 320-251297/1-A
 Matrix: Water Date Extracted: 10/11/2018 07:31
 Instrument ID: A9 Date Analyzed: 10/15/2018 03:19
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-251297/2-A	2018.10.14L LB 022.d	10/15/2018 03:27
MW-2R	320-43696-1	2018.10.14L LB 037.d	10/15/2018 05:19
MW-2R MS	320-43696-1 MS	2018.10.14L LB 038.d	10/15/2018 05:27
MW-2R MSD	320-43696-1 MSD	2018.10.14L LB 039.d	10/15/2018 05:34

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1
 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 320-252299/3 CCVIS		6469627	2.78			

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.: 320-43696-1
 SDG No.: _____
 Sample No.: CCV 320-252299/3 Date Analyzed: 10/15/2018 01:26
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.10.14LLB_006.d Heated Purge: (Y/N) N
 Calibration ID: 41590

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		6469627	2.78				
UPPER LIMIT		9704441	2.98				
LOWER LIMIT		3234814	2.58				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-252299/1		6607078	2.78				
CCVL 320-252299/2		6635607	2.78				
CCV 320-252302/1		6863214	2.77				
MB 320-251297/1-A		6651016	2.78				
LCS 320-251297/2-A		7026314	2.77				
CCV 320-252302/12		6536105	2.77				
320-43696-1	MW-2R	7599123	2.78				
320-43696-1 MS	MW-2R MS	5089912	2.77				
320-43696-1 MSD	MW-2R MSD	6973557	2.77				
CCV 320-252302/23		6458800	2.77				

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>320-43696-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-2R</u>	Lab Sample ID: <u>320-43696-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_037.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/27/2018 11:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>279.3 (mL)</u>	Date Analyzed: <u>10/15/2018 05:19</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.0	J	1.8	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.8	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.8	0.76
375-95-1	Perfluorononanoic acid (PFNA)	0.39	J	1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	0.49	J	1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.26	J B	1.8	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND	F1	1.8	0.29
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.31
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7
27619-97-2	6:2 FTS	ND		18	1.8
39108-34-4	8:2 FTS	ND		18	1.8

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43696-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-2R</u>	Lab Sample ID: <u>320-43696-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_037.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/27/2018 11:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>279.3 (mL)</u>	Date Analyzed: <u>10/15/2018 05:19</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	77		25-150
STL01893	13C5 PFPeA	81		25-150
STL00993	13C2 PFHxA	83		25-150
STL01892	13C4 PFHpA	84		25-150
STL00990	13C4 PFOA	91		25-150
STL00995	13C5 PFNA	85		25-150
STL00996	13C2 PFDA	79		25-150
STL00997	13C2 PFUnA	65		25-150
STL00998	13C2 PFDoA	58		25-150
STL02116	13C2 PFTeDA	48		25-150
STL02337	13C3 PFBS	86		25-150
STL00994	18O2 PFHxS	84		25-150
STL00991	13C4 PFOS	79		25-150
STL01056	13C8 FOSA	80		25-150
STL02118	d3-NMeFOSAA	71		25-150
STL02117	d5-NEtFOSAA	72		25-150
STL02279	M2-6:2 FTS	105		25-150
STL02280	M2-8:2 FTS	88		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_037.d
 Lims ID: 320-43696-A-1-A
 Client ID: MW-2R
 Sample Type: Client
 Inject. Date: 15-Oct-2018 05:19:47 ALS Bottle#: 27 Worklist Smp#: 18
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 320-43696-a-1-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 16:45:56 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: XAWRK007

First Level Reviewer: mongkols Date: 18-Oct-2018 16:45:56

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	1.530	1.511	0.019	1.000	54209	0.0281			4.9	M
D 1 13C4 PFBA										
217.00 > 172.00	1.530	1.511	0.019	0.550	5184917	1.92		76.7	16235	
D 3 13C5 PFPeA										
267.90 > 223.00	1.813	1.797	0.016	0.652	4969451	2.04		81.4	10501	
D 47 13C3 PFBS										
301.90 > 83.00	1.847	1.839	0.008	0.664	68165	2.01		86.4	257	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.935	2.048	-0.113	0.696	4583	0.0156		0.0	1.3	
D 7 13C2 PFHxA										
315.00 > 270.00	2.099	2.089	0.010	0.754	5443569	2.07		82.6	16435	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.078	2.181	-0.103	0.944	953	0.001953			0.4	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.201	2.181	0.020	0.791	643313	2.36		94.4	2195	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.425	2.413	0.012	1.000	6088	0.002177			0.7	
363.00 > 169.00	2.439	2.413	0.026	1.005	1077		5.65(2.17-6.52)		3.0	
D 9 13C4 PFHpA										
367.00 > 322.00	2.425	2.413	0.012	0.872	6579103	2.10		84.0	28936	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.426	0.013	1.000	15406	0.007267			9.5	
399.00 > 99.00	2.439	2.426	0.013	1.000	5562		2.77(1.90-5.70)		6.2	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.439	0.0	0.877	3978321	1.98		83.8	10803	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.750	0.0	1.000	20047	0.0268			69.1	

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	2.750	2.750	0.0	0.989	796807	2.49		105	1013	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.766	0.016	1.000	29251	0.009856			1.9	
413.00 > 169.00	2.782	2.766	0.016	1.000	6587		4.44(1.36-4.08)		14.7	
* 62 13C2 PFOA										
415.00 > 370.00	2.782	2.766	0.016		7599123	2.50			12314	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.766	0.016	1.000	6791021	2.29		91.4	12590	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.766	0.0		6535	0.002600		0.0	42.5	
20 Perfluorononanoic acid										
463.00 > 419.00	3.152	3.135	0.017	1.000	25582	0.0110			2.9	RM
463.00 > 169.00	3.152	3.135	0.017	1.000	2692		9.50(2.68-8.03)		8.2	RM
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.152	3.135	0.017	1.000	3254	0.001863			1.7	M
499.00 > 99.00	3.152	3.135	0.017	1.000	1212		2.68(2.04-6.12)		4.2	M
D 19 13C5 PFNA										
468.00 > 423.00	3.152	3.153	-0.001	1.133	5759687	2.12		84.8	9920	
D 18 13C4 PFOS										
503.00 > 80.00	3.152	3.153	-0.001	1.133	3850685	1.88		78.7	2685	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.512	3.496	0.016	1.000	4224	0.001659			17.3	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.512	3.496	0.016	1.000	34994	0.0137			5.7	
513.00 > 169.00	3.512	3.496	0.016	1.000	2952		11.85(7.12-21.35)		9.2	
D 23 13C2 PFDA										
515.00 > 470.00	3.512	3.496	0.016	1.262	5603443	1.97		78.8	13238	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.496	0.0	1.257	85039	2.12		88.5	457	
D 21 13C8 FOSA										
506.00 > 78.00	3.512	3.496	0.016	1.262	2143927	1.99		79.8	6888	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.668	3.655	0.013	1.319	2062752	1.77		70.9	4861	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.838	3.823	0.015	1.000	13901	0.009515			3.0	
563.00 > 169.00	3.823	3.823	0.0	0.996	1896		7.33(5.24-15.72)		11.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.374	1689826	1.79		71.6	3150	
D 30 13C2 PFUnA										
565.00 > 520.00	3.838	3.823	0.015	1.380	3910544	1.63		65.4	9842	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.106	0.016	1.482	4253330	1.46		58.5	8111	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.627	4.609	0.018	1.663	2492599	1.19		47.8	6786	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.023	5.024	-0.001	1.000	21142	0.000235			9.9	
813.00 > 169.00	5.040	5.024	0.016	1.003	3707		5.70(2.77-8.32)		10.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags

D 44 13C2 PFHxDA

815.00 > 770.00 5.023 5.024 -0.001 1.806 2038941 1.07 42.7 5257

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_037.d

Injection Date: 15-Oct-2018 05:19:47

Instrument ID: A9

Lims ID: 320-43696-A-1-A

Lab Sample ID: 320-43696-1

Client ID: MW-2R

Operator ID: A9\Administrator

ALS Bottle#: 27

Worklist Smp#: 18

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

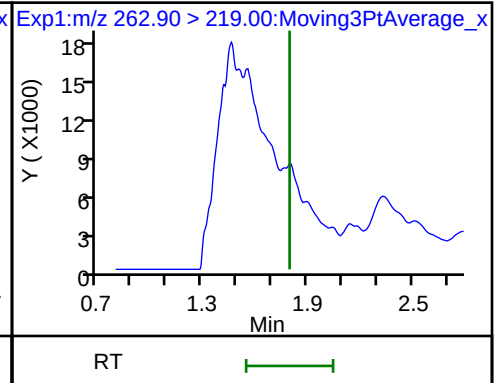
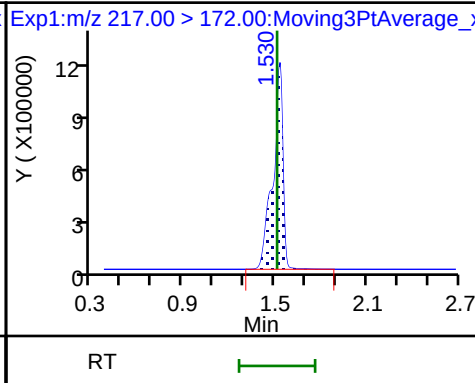
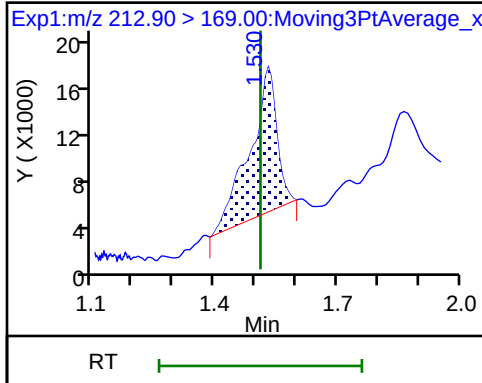
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid (M)

D 1 13C4 PFBA

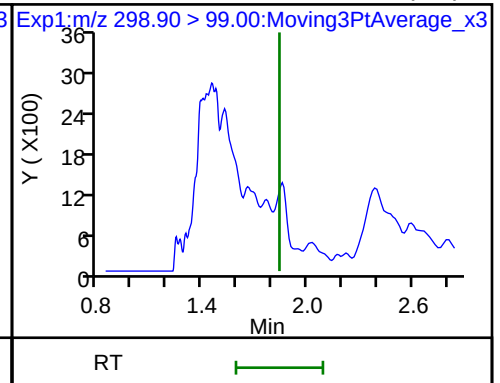
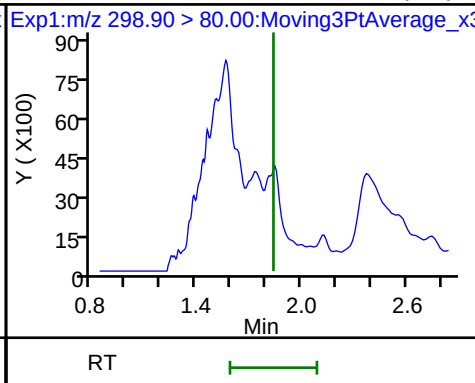
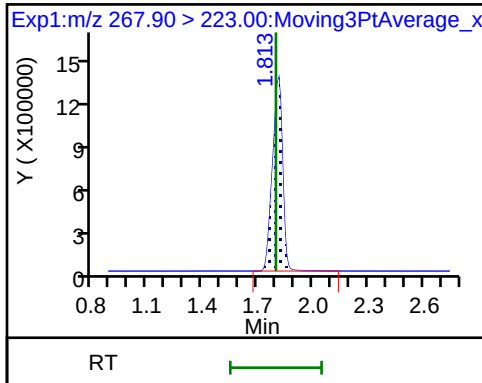
4 Perfluoropentanoic acid (ND)



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid (ND)

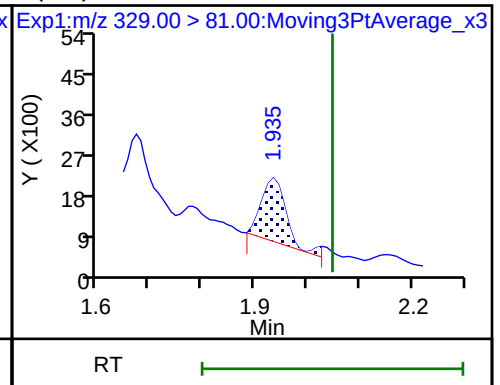
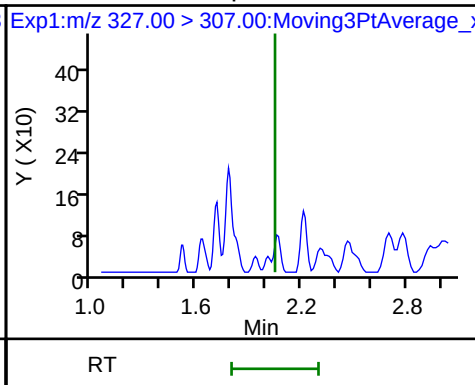
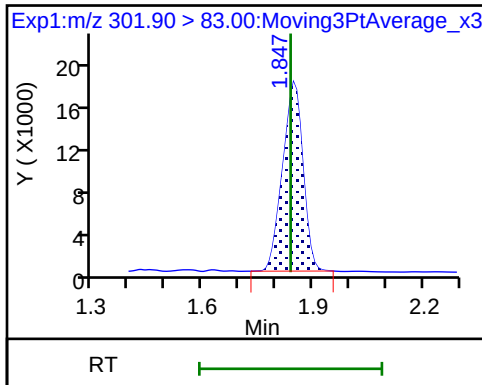
5 Perfluorobutanesulfonic acid (ND)



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate (ND)

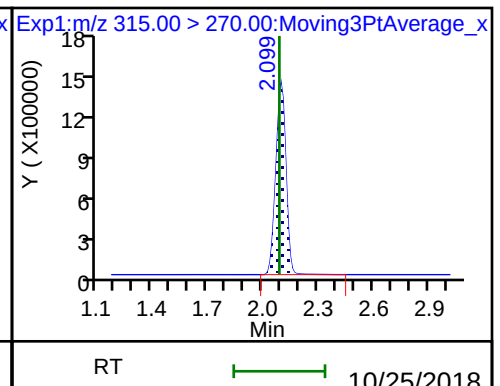
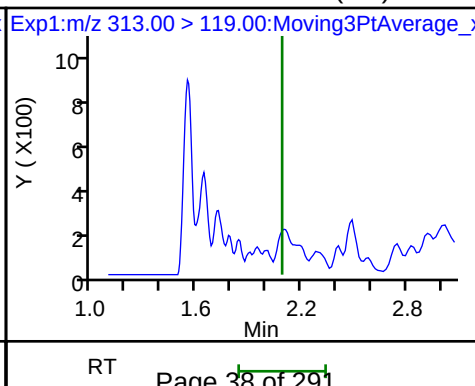
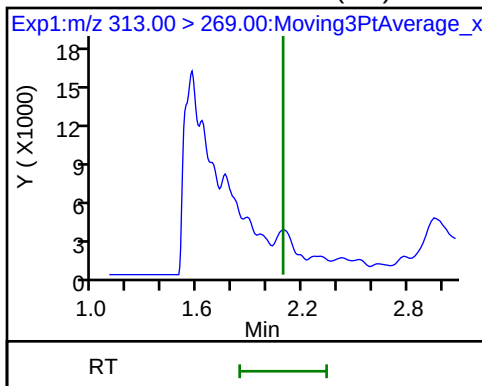
D 50 M2-4:2 FTS



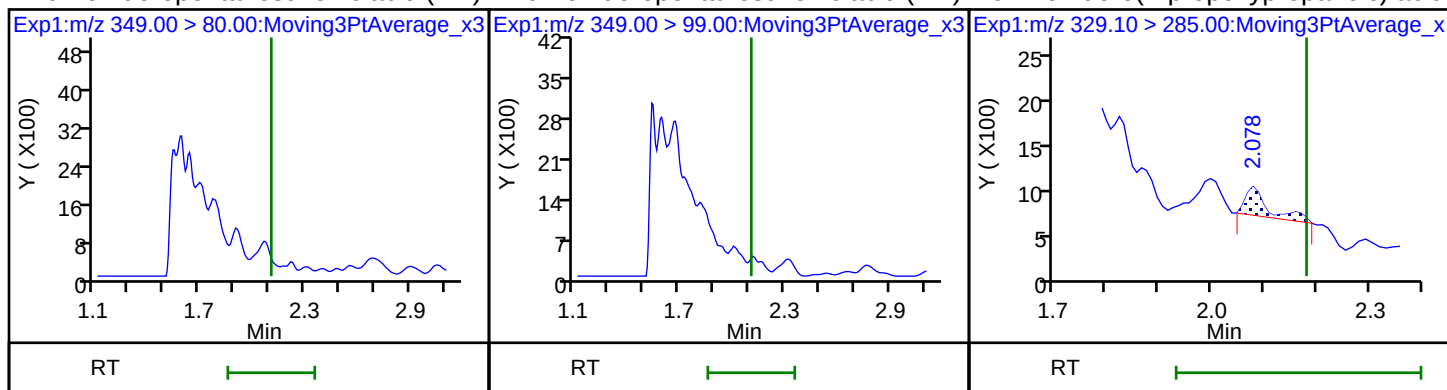
6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

D 7 13C2 PFHxA



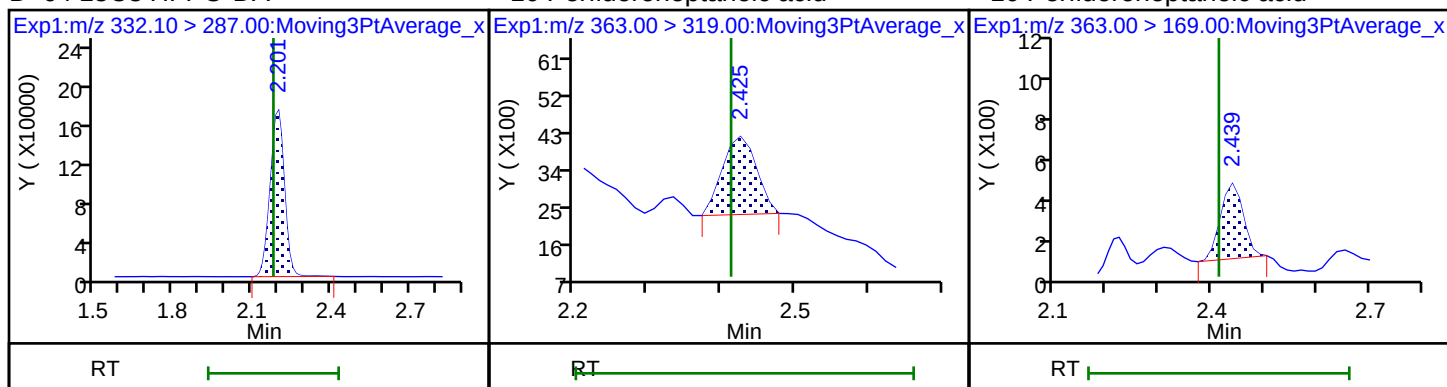
70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) 67 Perfluoro(2-propoxypropanoic) acid



D 64 13C3 HFPO-DA

10 Perfluoroheptanoic acid

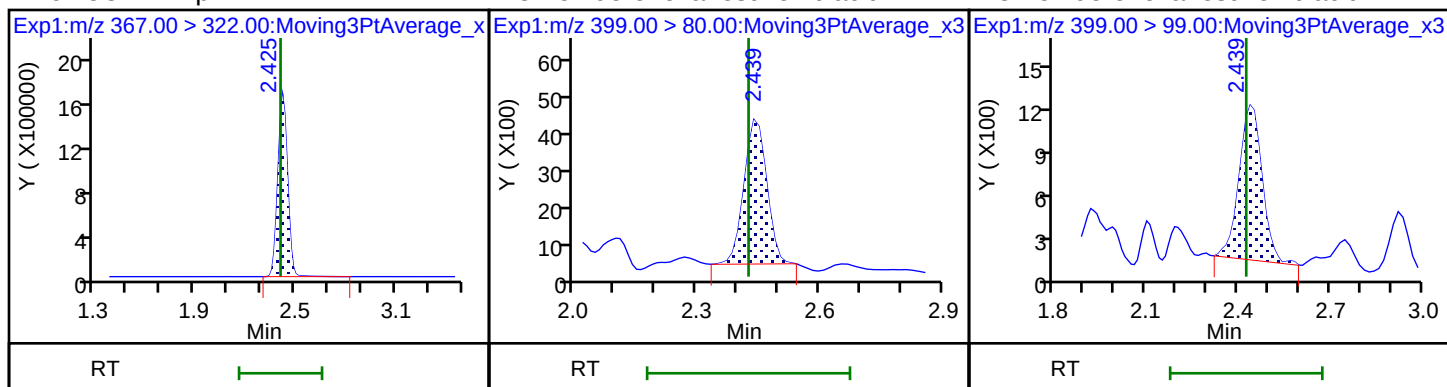
10 Perfluoroheptanoic acid



D 9 13C4 PFHpa

8 Perfluorohexanesulfonic acid

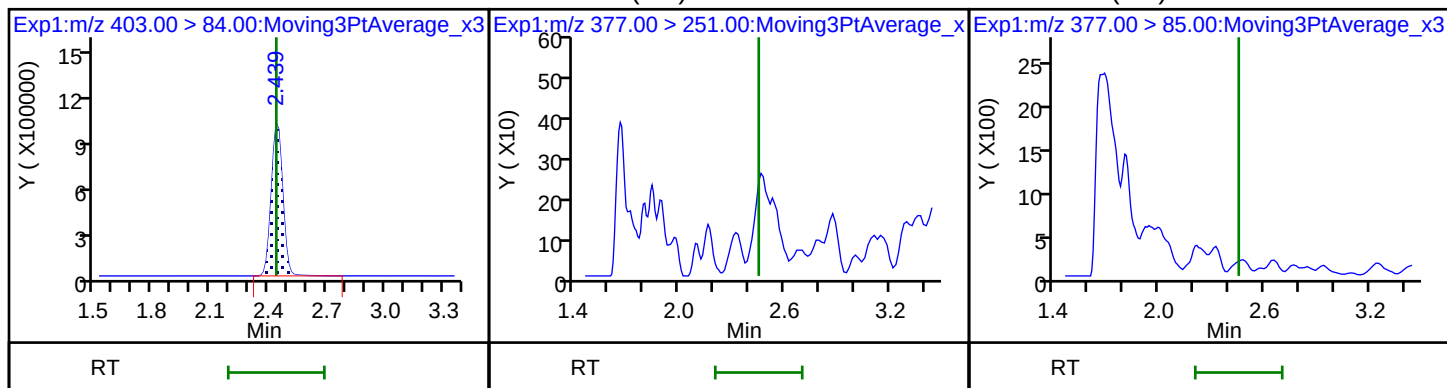
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

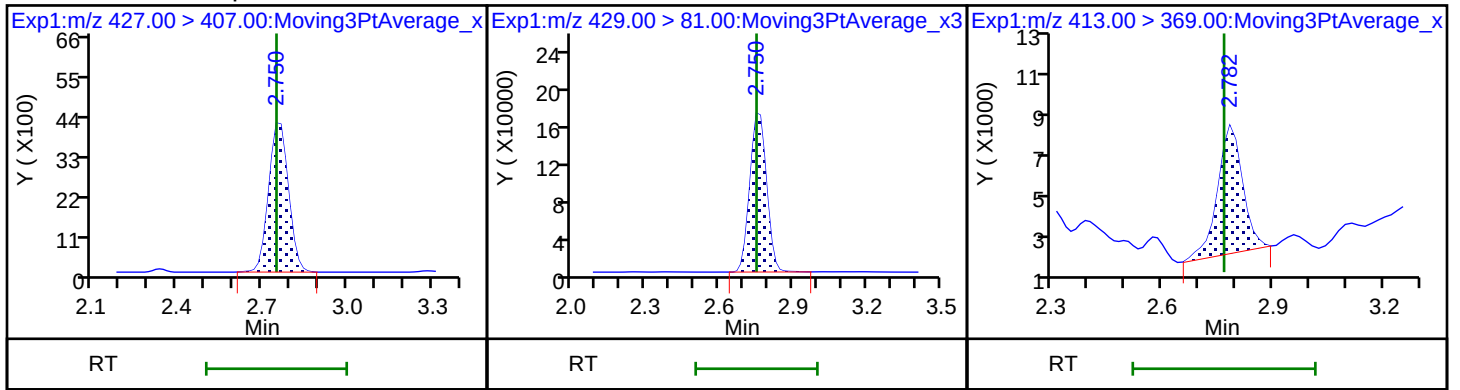
76 DONA (ND)

76 DONA (ND)



13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

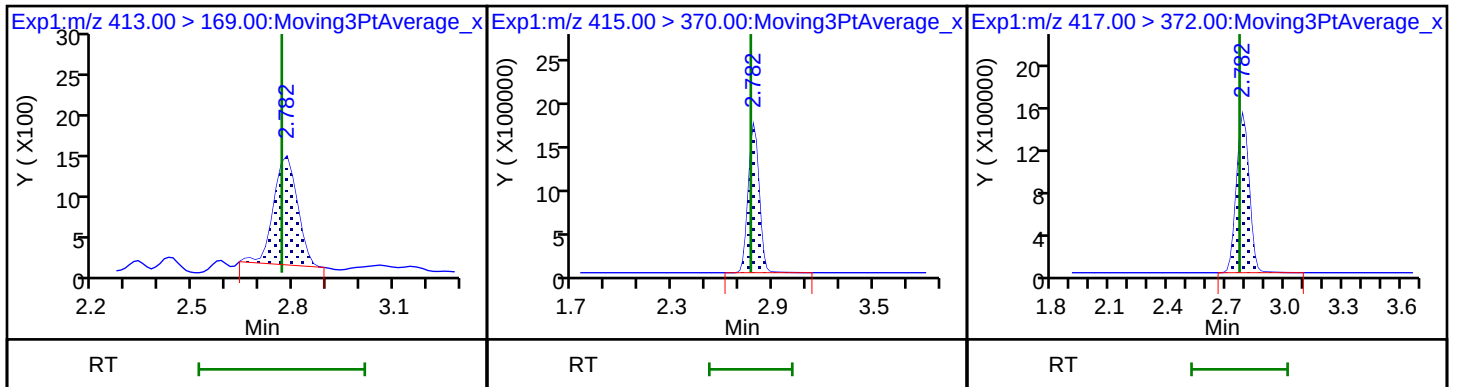
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

* 62 13C2 PFOA

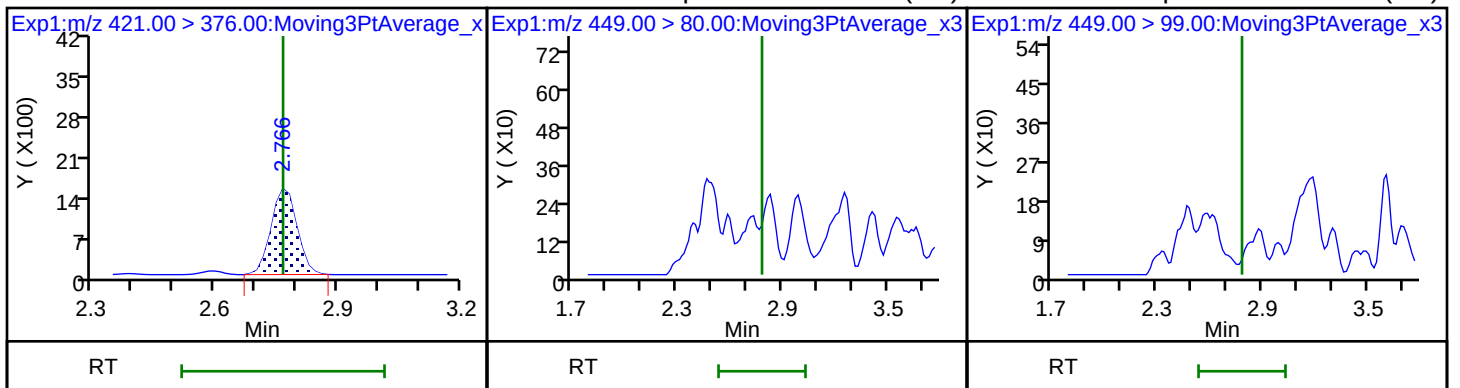
D 14 13C4 PFOA



D 73 13C8 PFOA

16 Perfluoroheptanesulfonic acid (ND)

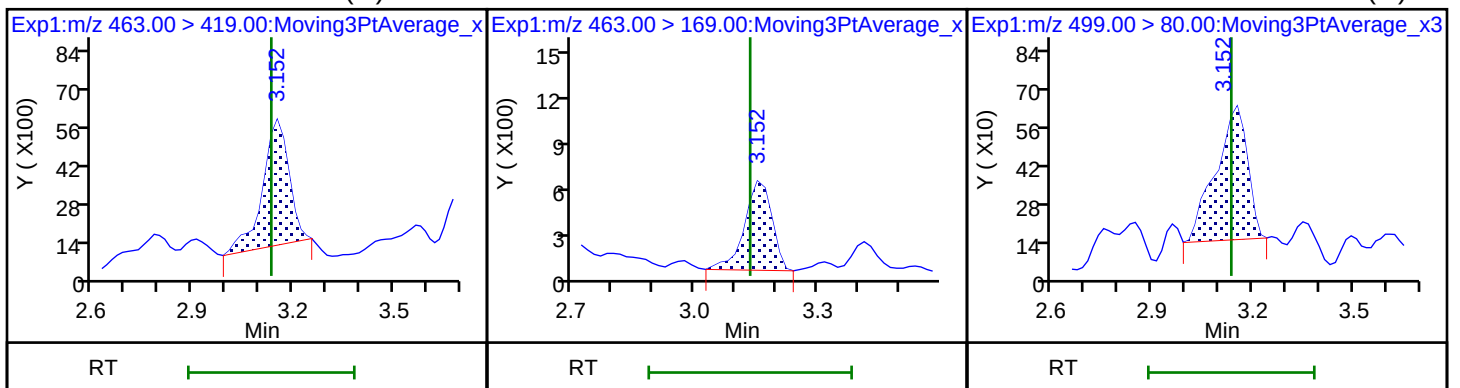
16 Perfluoroheptanesulfonic acid (ND)



20 Perfluorononanoic acid (M)

20 Perfluorononanoic acid

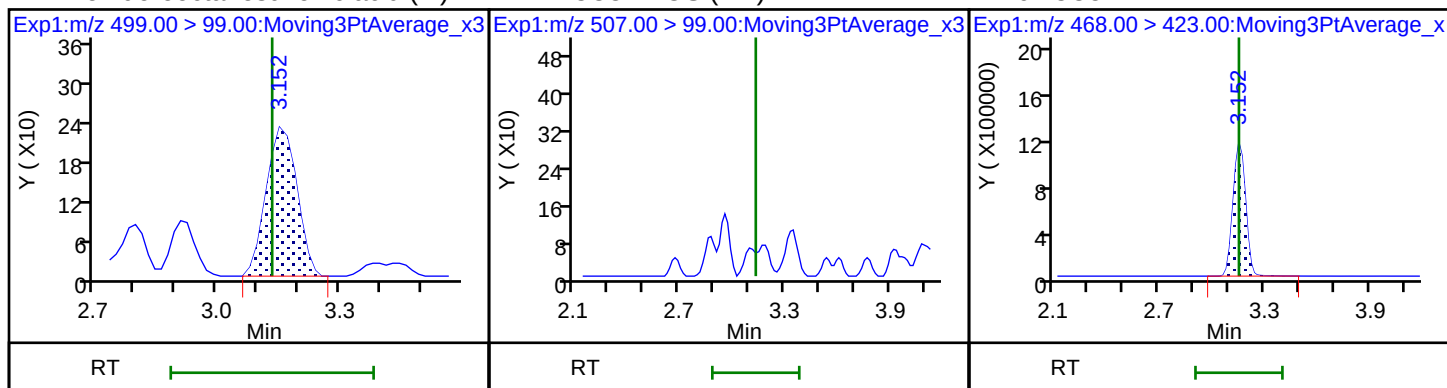
17 Perfluorooctanesulfonic acid (M)



17 Perfluorooctanesulfonic acid (M)

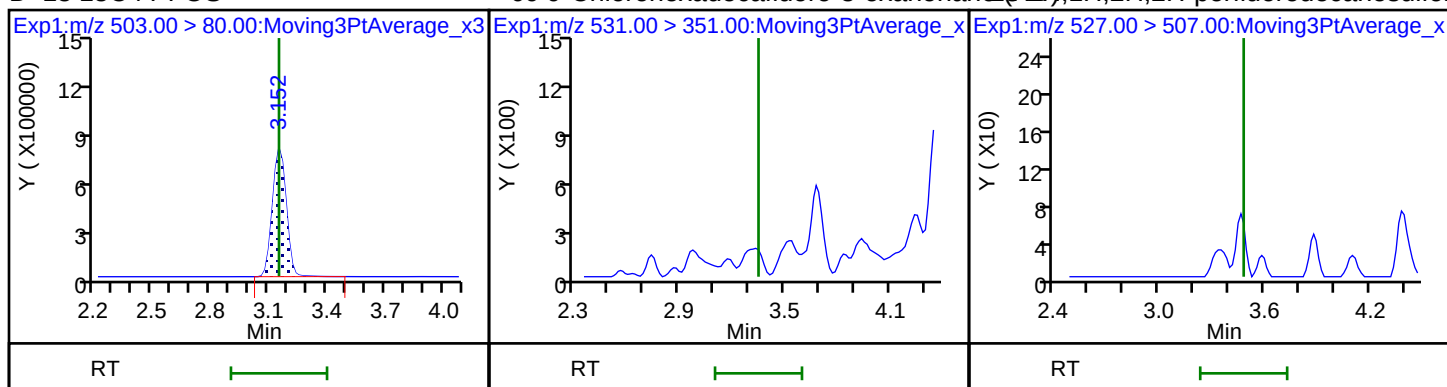
D 72 13C8 PFOS (ND)

D 19 13C5 PFNA



D 18 13C4 PFOS

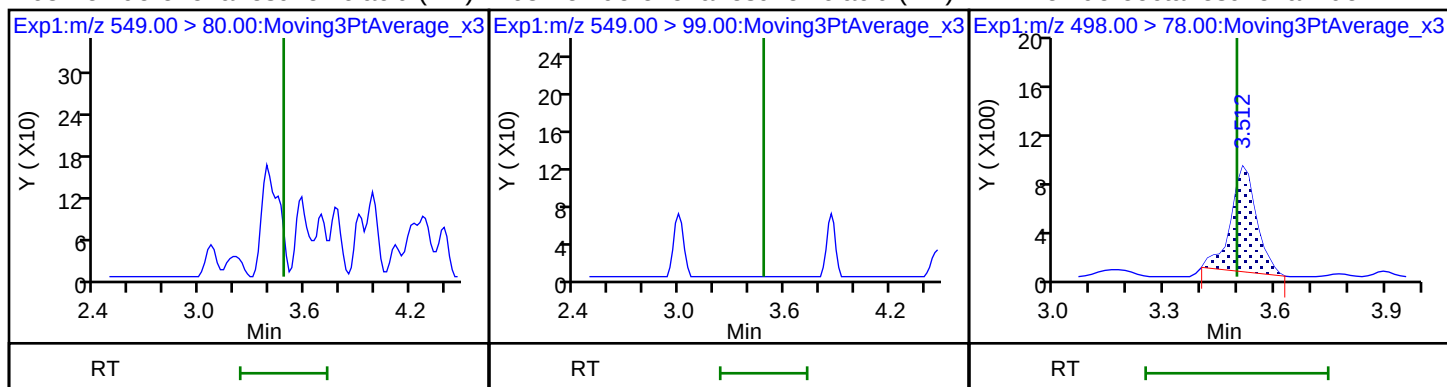
69 9-Chlorohexadecafluoro-3-oxanonan-2(ND), 1H,2H,2H-perfluorodecanesulfoni (ND)



68 Perfluorononanesulfonic acid (ND)

68 Perfluorononanesulfonic acid (ND)

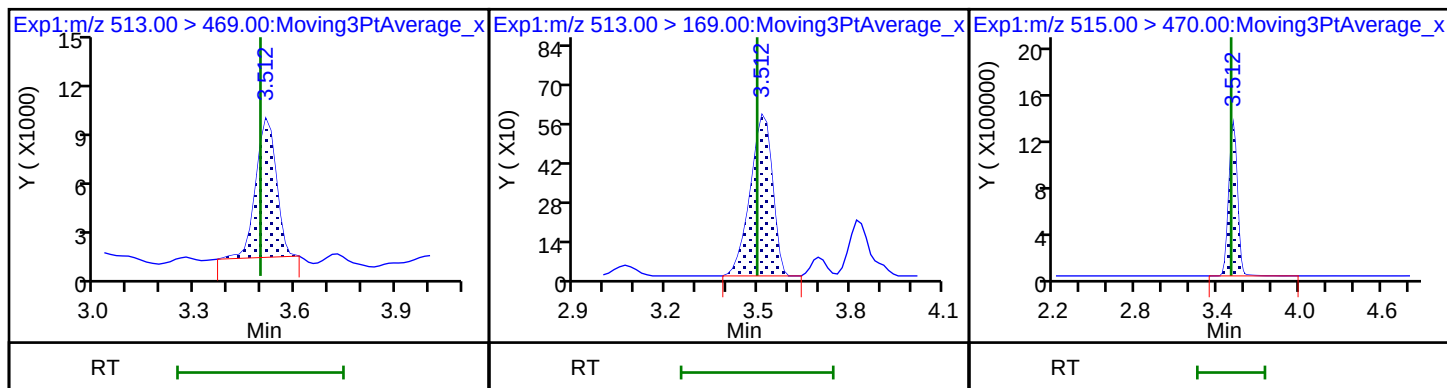
22 Perfluorooctanesulfonamide



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

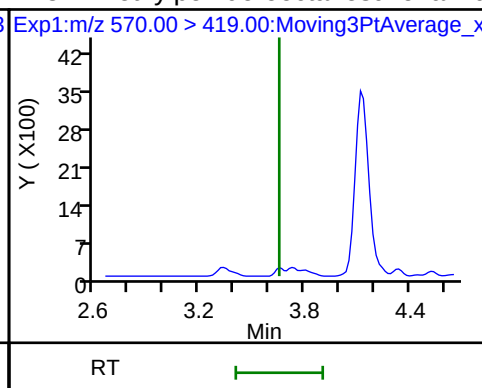
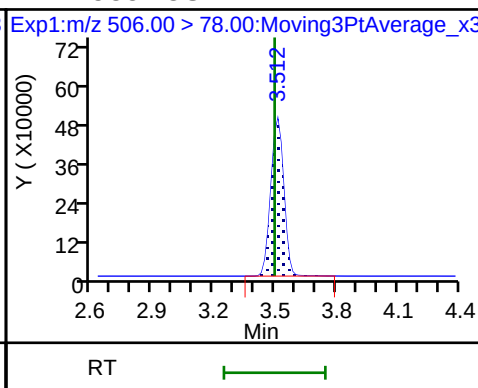
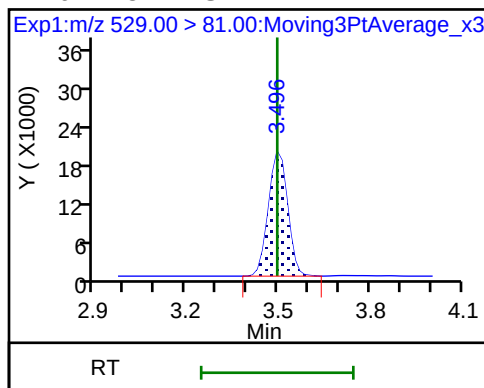
D 23 13C2 PFDA



D 26 M2-8:2 FTS

D 21 13C8 FOSA

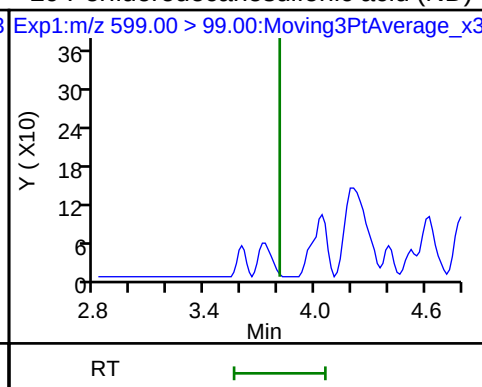
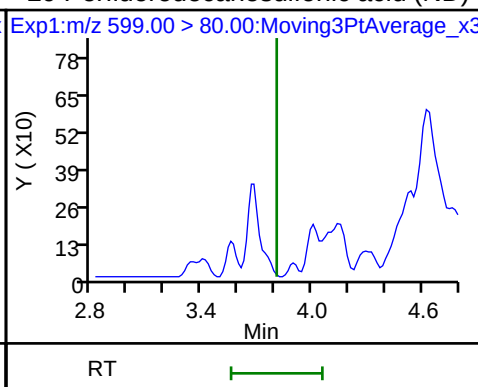
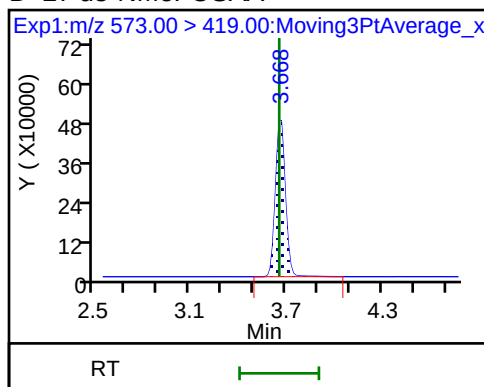
28 N-methylperfluorooctanesulfonamido (ND)



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid (ND)

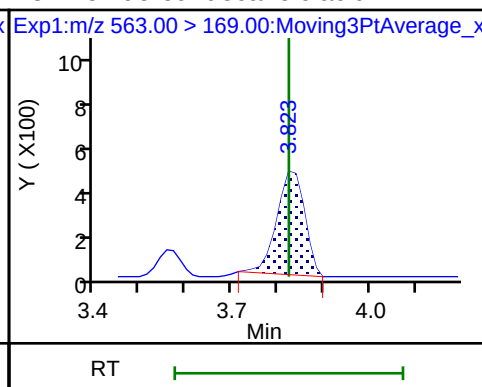
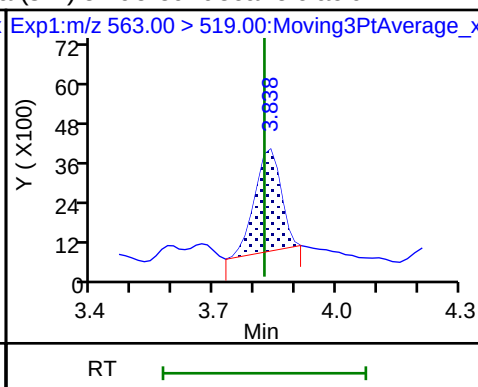
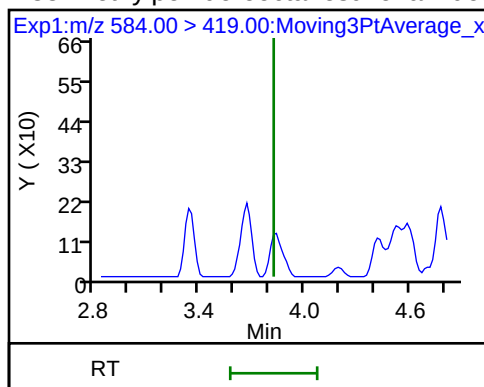
29 Perfluorodecanesulfonic acid (ND)



33 N-ethylperfluorooctanesulfonamidoa (ND)

30 Perfluoroundecanoic acid

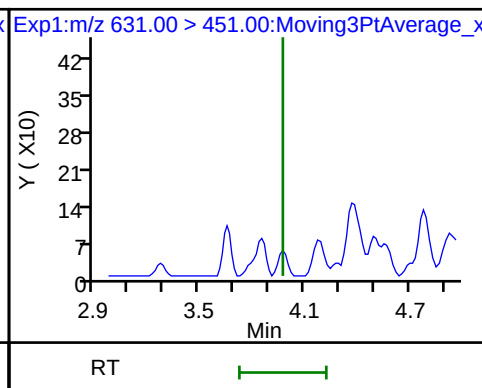
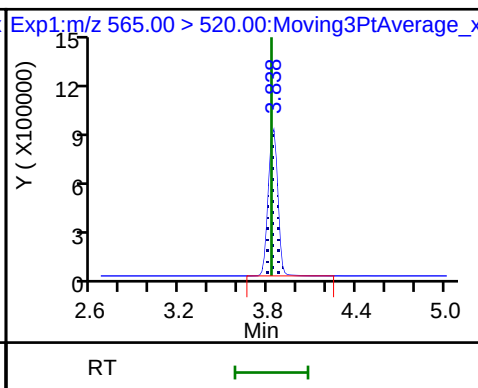
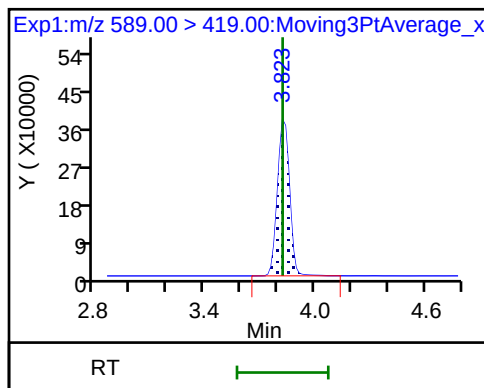
31 Perfluoroundecanoic acid



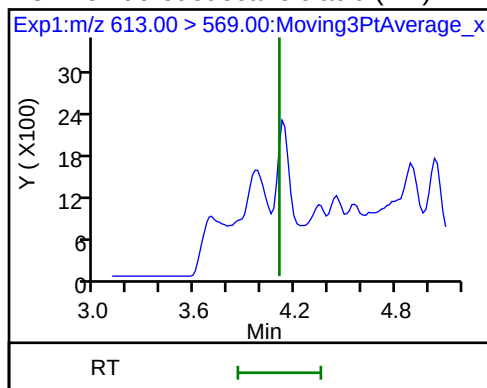
D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

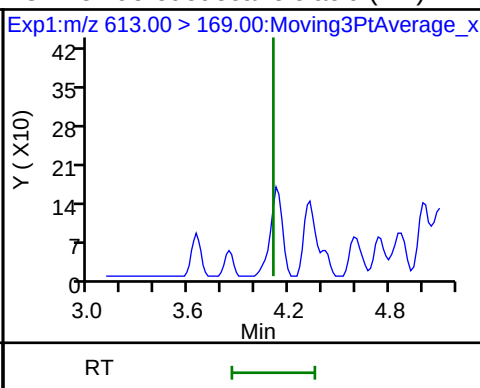
66 11-Chloroeicosafluoro-3-oxaundecan (ND)



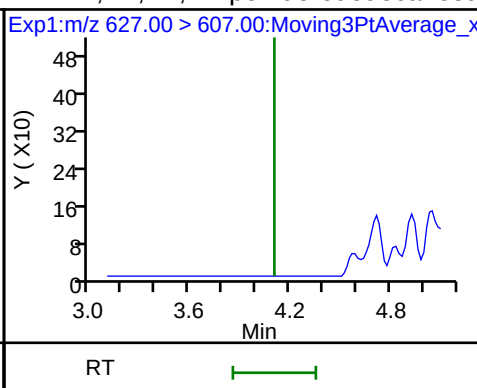
37 Perfluorododecanoic acid (ND)



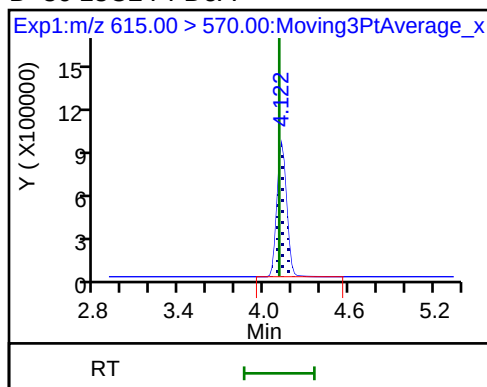
37 Perfluorododecanoic acid (ND)



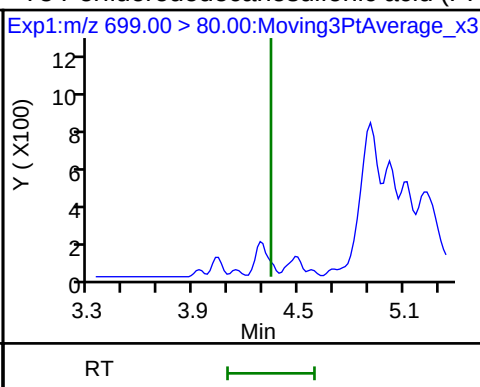
74 1H,1H,2H,2H-perfluorododecanesulfo (ND)



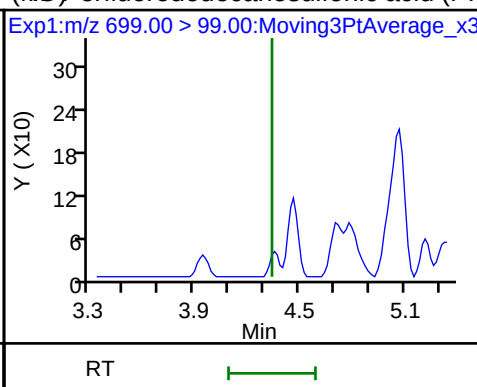
D 36 13C2 PFDa



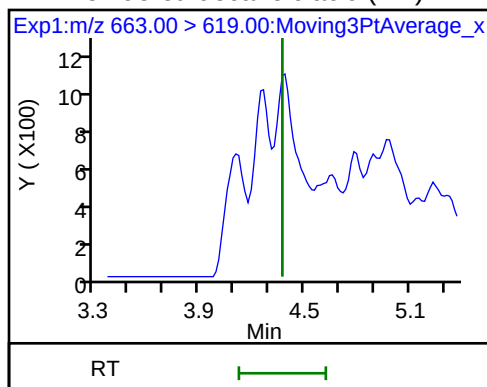
75 Perfluorododecanesulfonic acid (PF (ND)



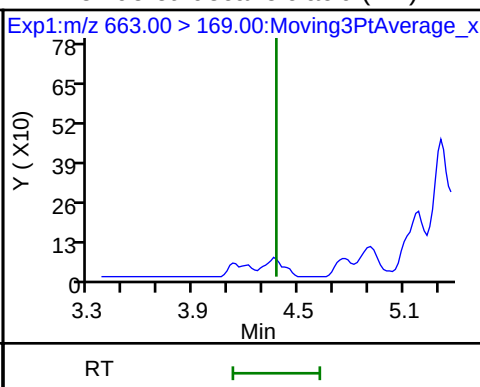
Perfluorododecanesulfonic acid (PF (ND)



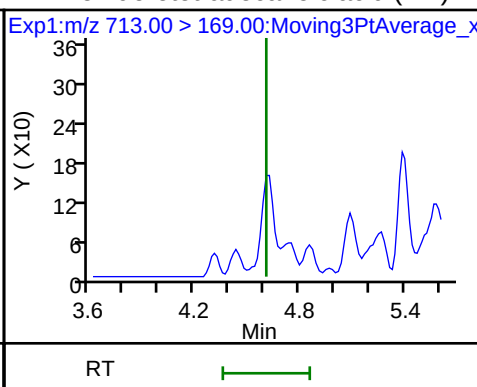
41 Perfluorotridecanoic acid (ND)



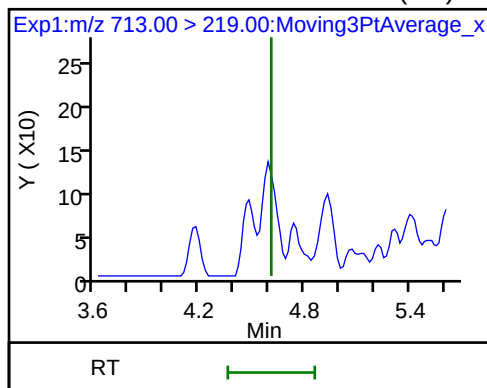
41 Perfluorotridecanoic acid (ND)



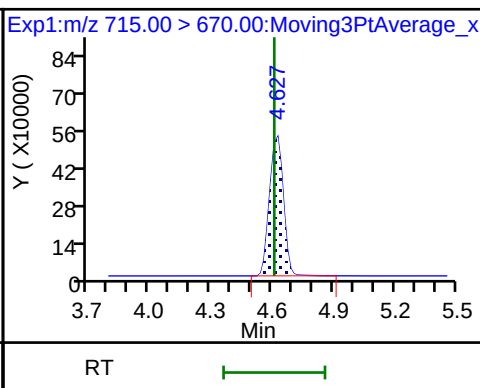
42 Perfluorotetradecanoic acid (ND)



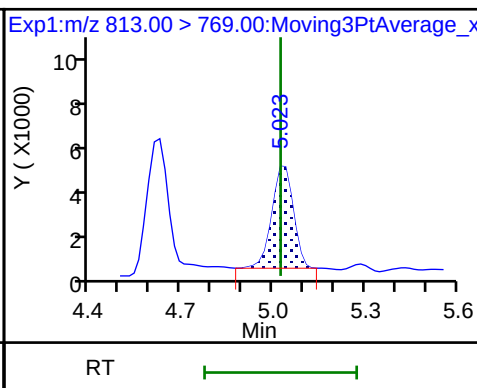
42 Perfluorotetradecanoic acid (ND)



D 43 13C2 PFTeDA



45 Perfluorohexadecanoic acid

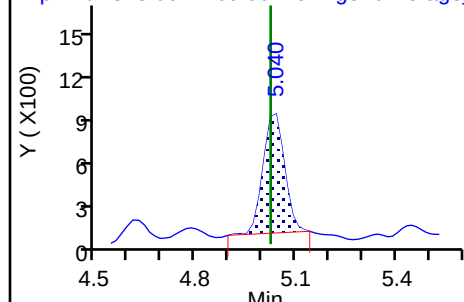


45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

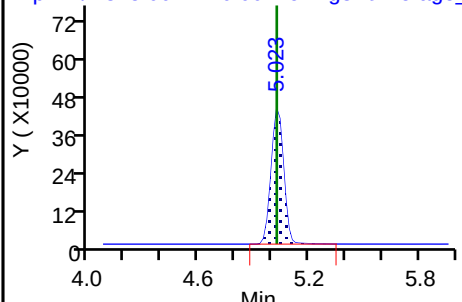
46 Perfluorooctadecanoic acid (ND)

Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



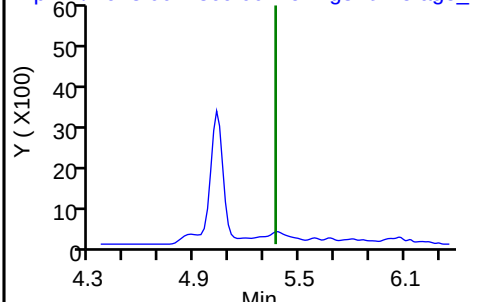
RT

Exp1:m/z 815.00 > 770.00:Moving3PtAverage_x



RT

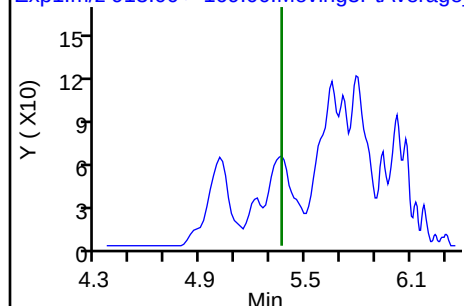
Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



RT

46 Perfluorooctadecanoic acid (ND)

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

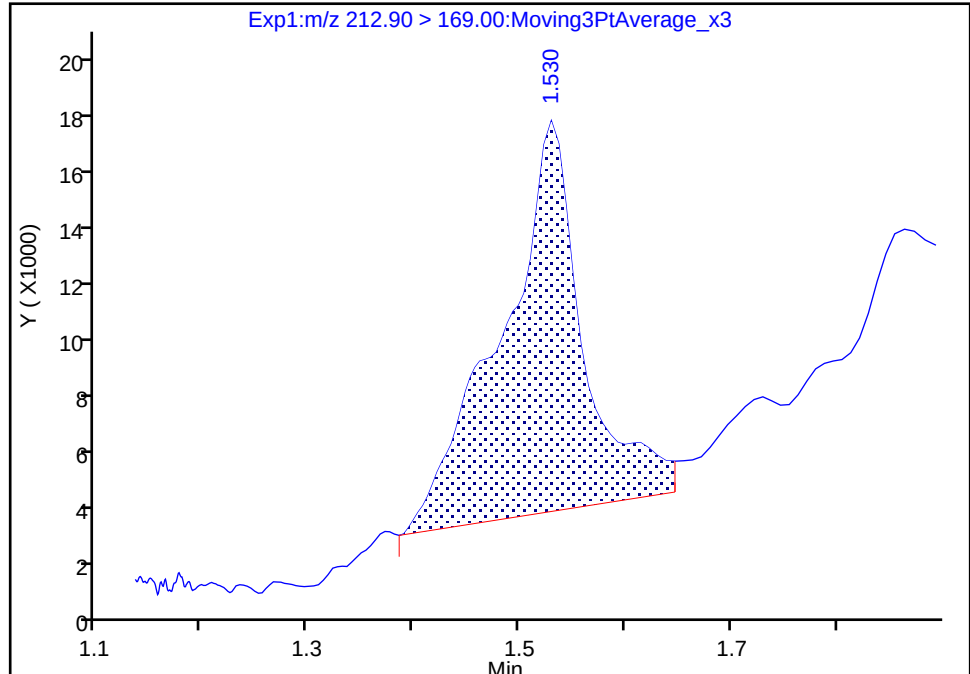
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_037.d				
Injection Date:	15-Oct-2018 05:19:47	Instrument ID:	A9		
Lims ID:	320-43696-A-1-A	Lab Sample ID:	320-43696-1		
Client ID:	MW-2R				
Operator ID:	A9\Administrator	ALS Bottle#:	27	Worklist Smp#:	18
Injection Vol:	20.0 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

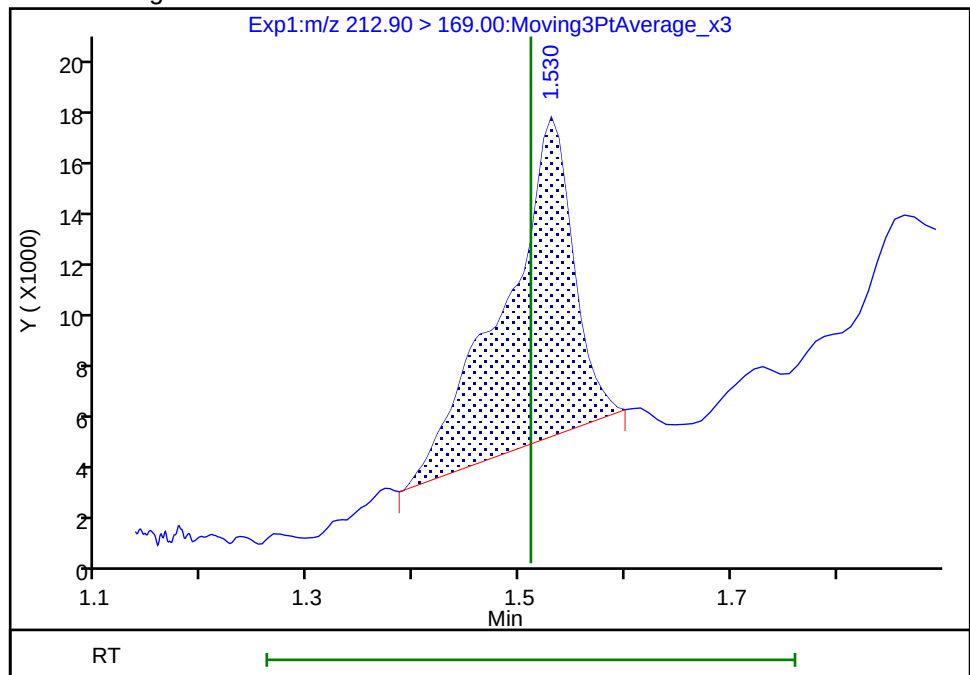
RT: 1.53
Area: 70367
Amount: 0.036519
Amount Units: ng/ml

Processing Integration Results



RT: 1.53
Area: 54209
Amount: 0.028133
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 18-Oct-2018 16:45:09
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

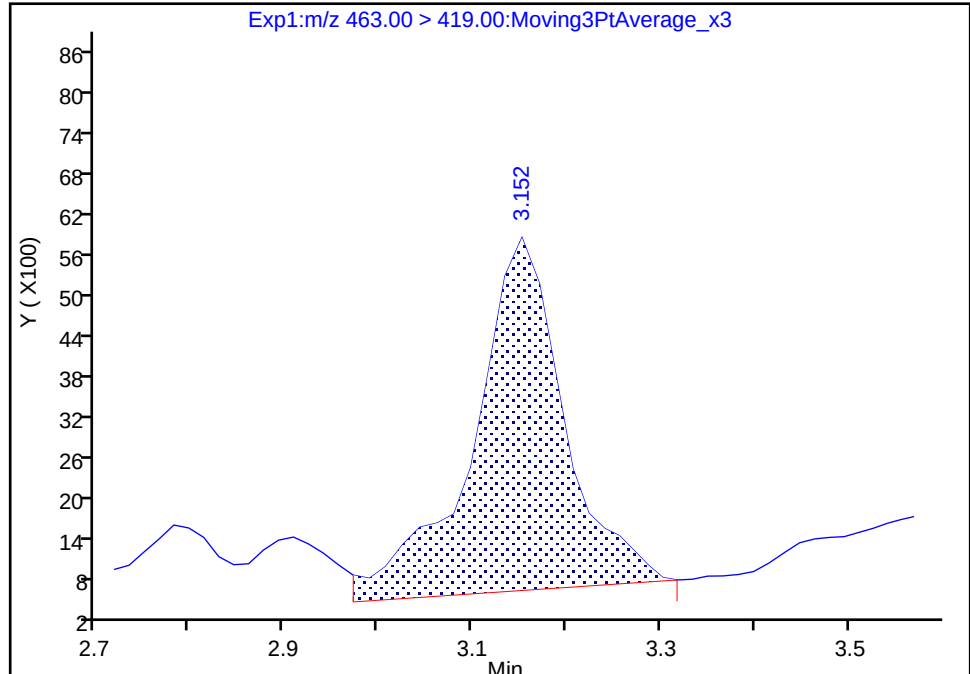
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_037.d				
Injection Date:	15-Oct-2018 05:19:47	Instrument ID:	A9		
Lims ID:	320-43696-A-1-A	Lab Sample ID:	320-43696-1		
Client ID:	MW-2R				
Operator ID:	A9\Administrator	ALS Bottle#:	27	Worklist Smp#:	18
Injection Vol:	20.0 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

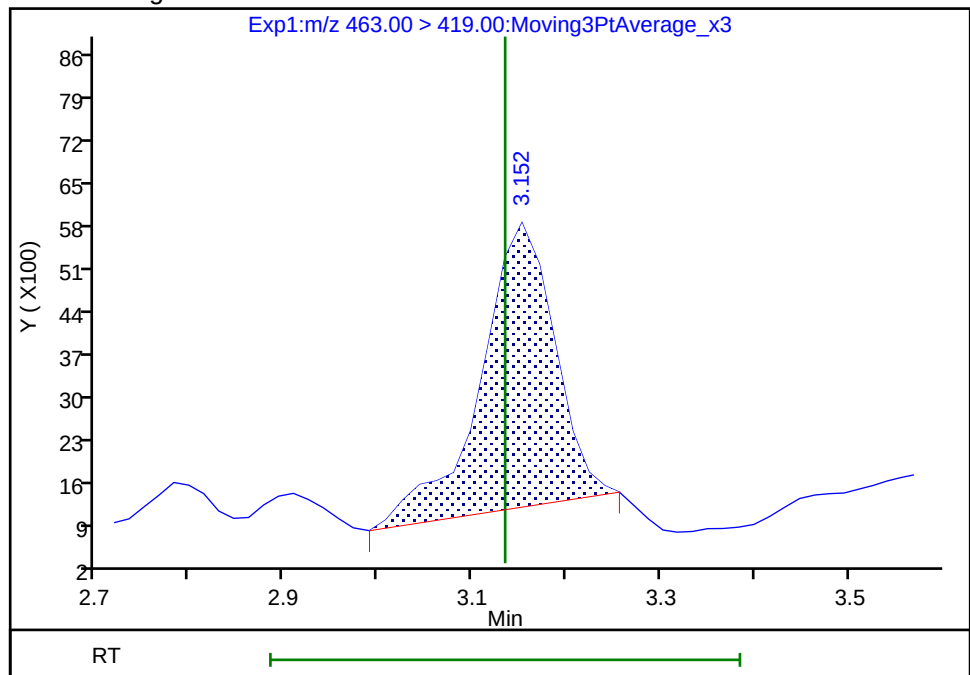
RT: 3.15
Area: 35348
Amount: 0.015189
Amount Units: ng/ml

Processing Integration Results



RT: 3.15
Area: 25582
Amount: 0.010993
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 18-Oct-2018 16:45:31
Audit Action: Manually Integrated

Audit Reason: Baseline
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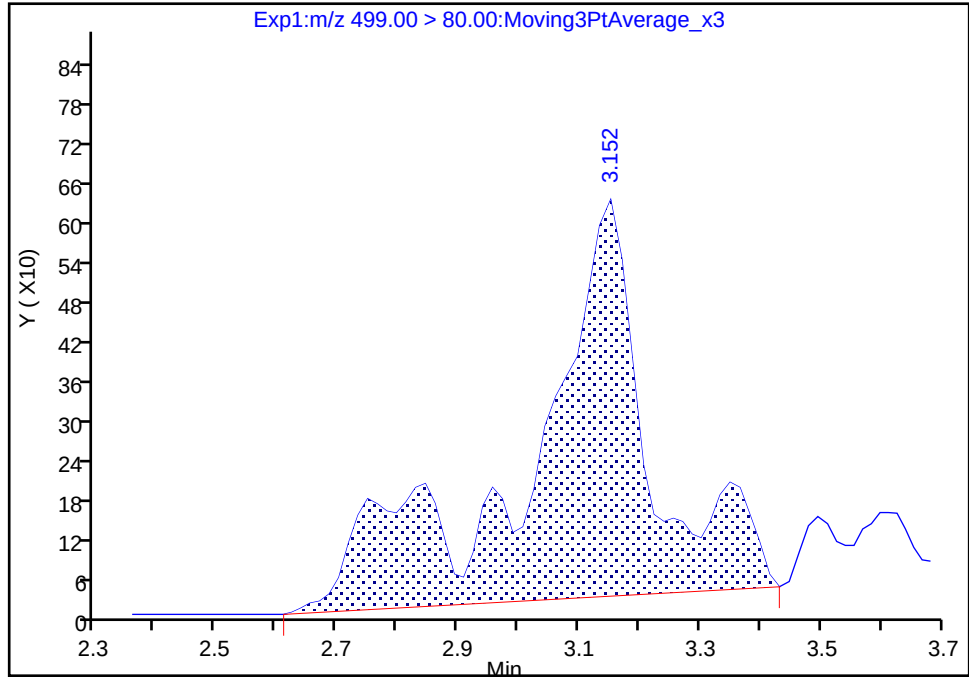
Data File:	\\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_037.d				
Injection Date:	15-Oct-2018 05:19:47	Instrument ID:	A9		
Lims ID:	320-43696-A-1-A	Lab Sample ID:	320-43696-1		
Client ID:	MW-2R				
Operator ID:	A9\Administrator	ALS Bottle#:	27	Worklist Smp#:	18
Injection Vol:	20.0 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

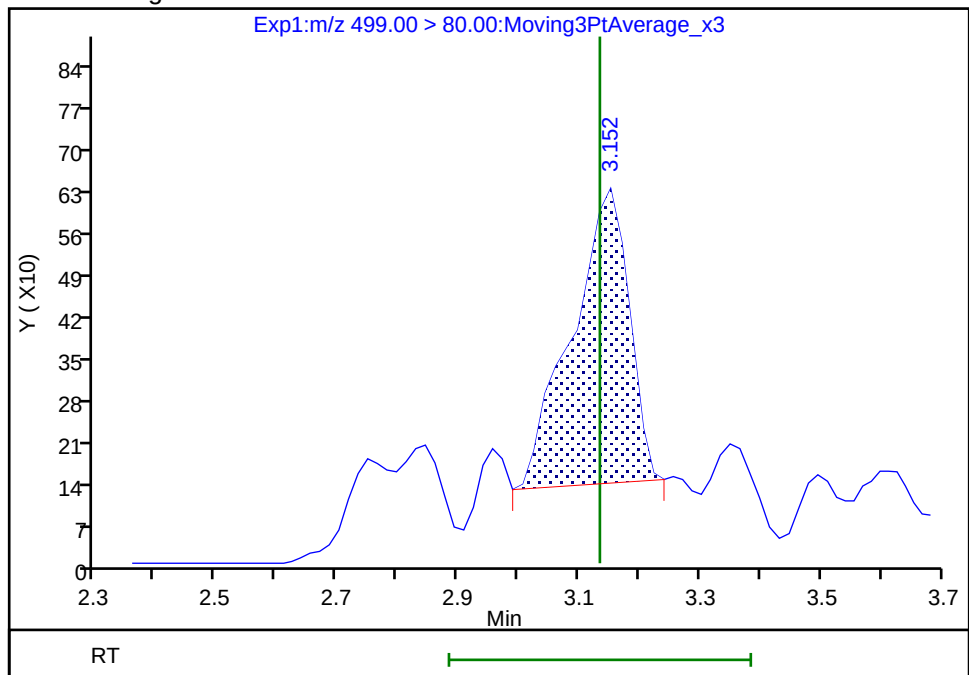
RT: 3.15
Area: 8389
Amount: 0.004804
Amount Units: ng/ml

Processing Integration Results



RT: 3.15
Area: 3254
Amount: 0.001863
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 18-Oct-2018 16:45:40

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

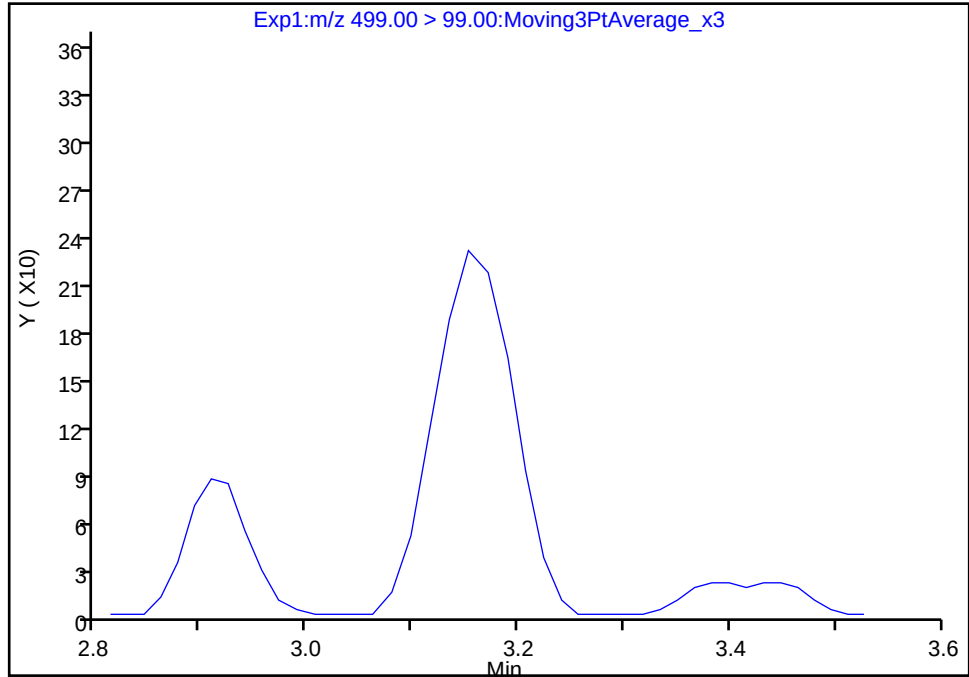
Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_037.d
Injection Date: 15-Oct-2018 05:19:47 Instrument ID: A9
Lims ID: 320-43696-A-1-A Lab Sample ID: 320-43696-1
Client ID: MW-2R
Operator ID: A9\Administrator ALS Bottle#: 27 Worklist Smp#: 18
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

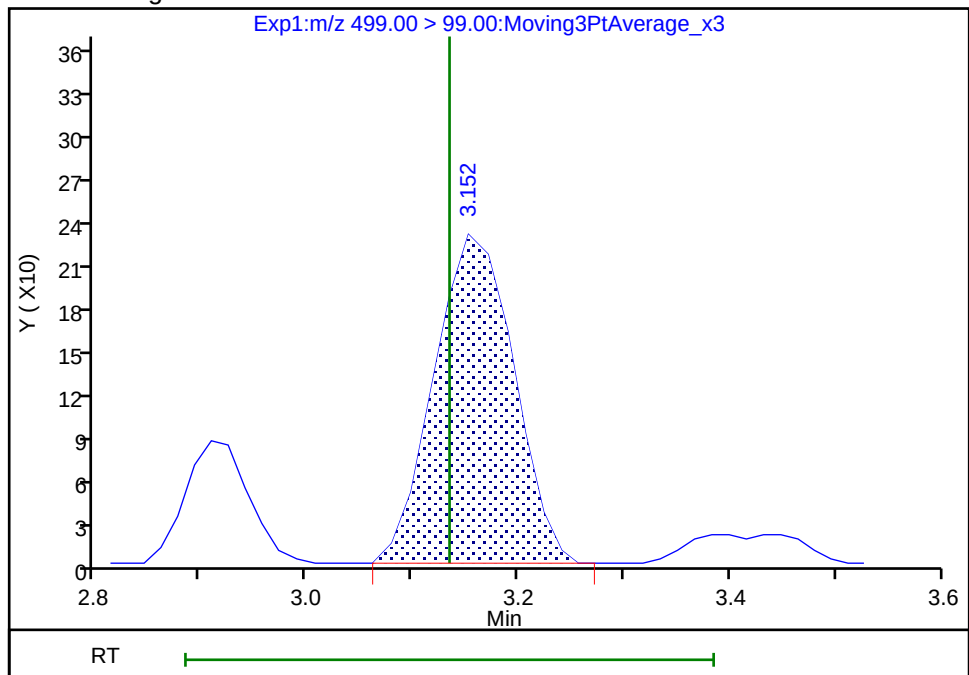
RT: 3.14
Area: 0
Amount: 0.004804
Amount Units: ng/ml

Processing Integration Results



RT: 3.15
Area: 1212
Amount: 0.001863
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 18-Oct-2018 16:45:45

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1 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.: 320-43696-1 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.: 320-43696-1 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.: 320-43696-1 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.: 320-43696-1 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.: 320-43696-1 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.: 320-43696-1 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.: 320-43696-1 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.: 320-43696-1 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.: 320-43696-1 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

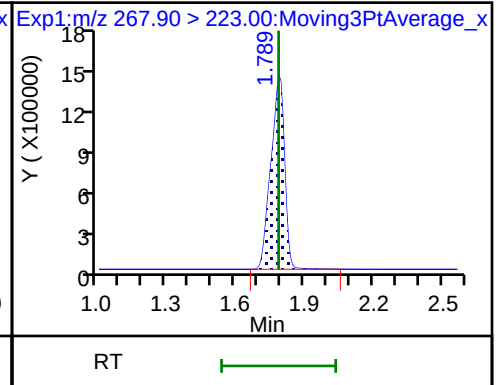
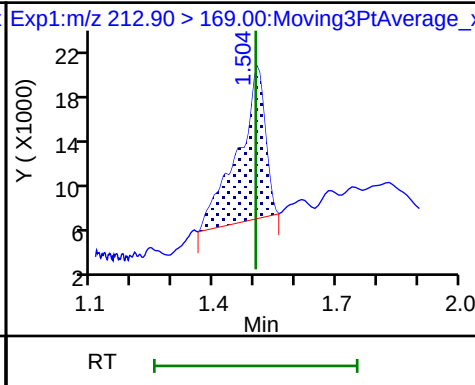
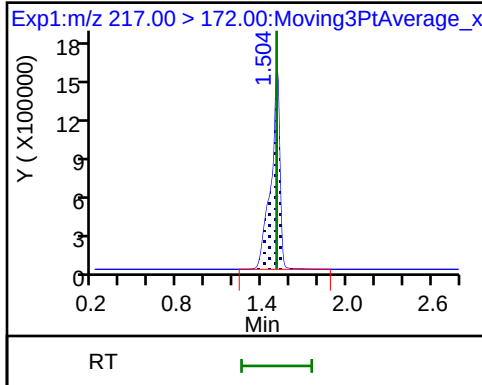
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

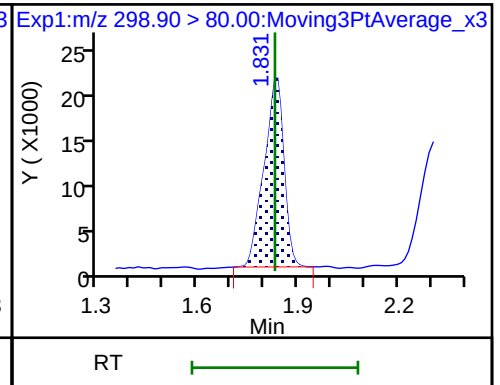
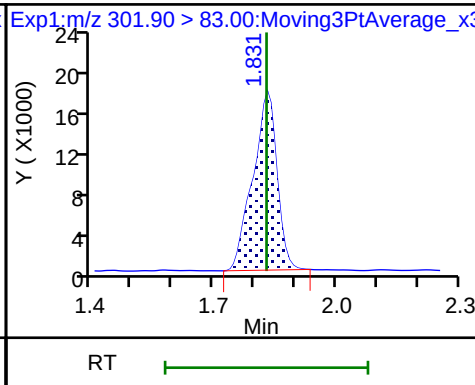
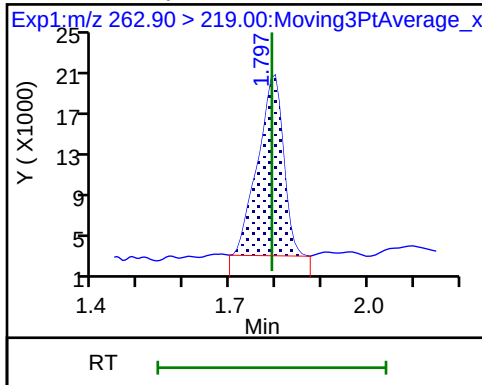
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

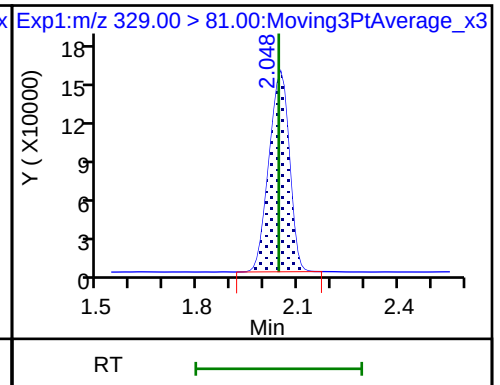
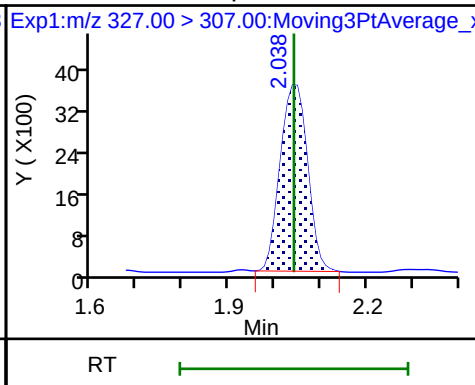
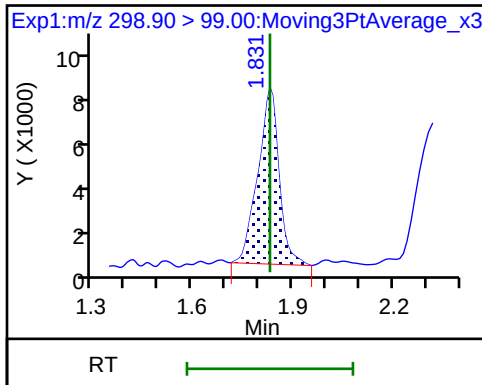
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

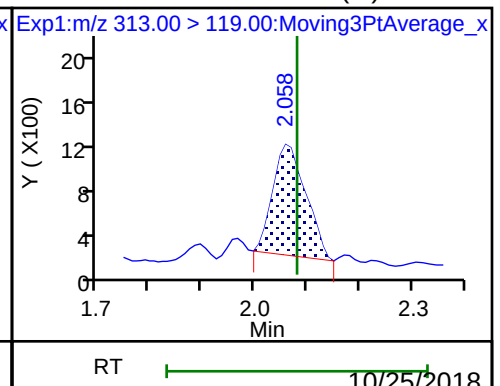
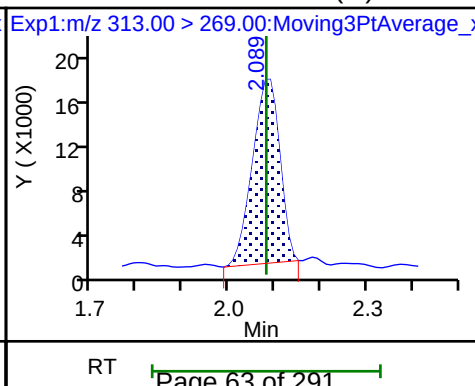
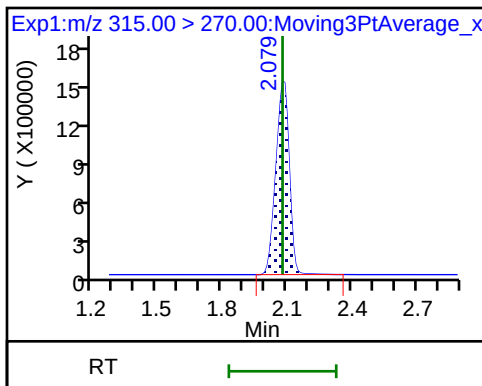
D 60 M2-4:2 FTS

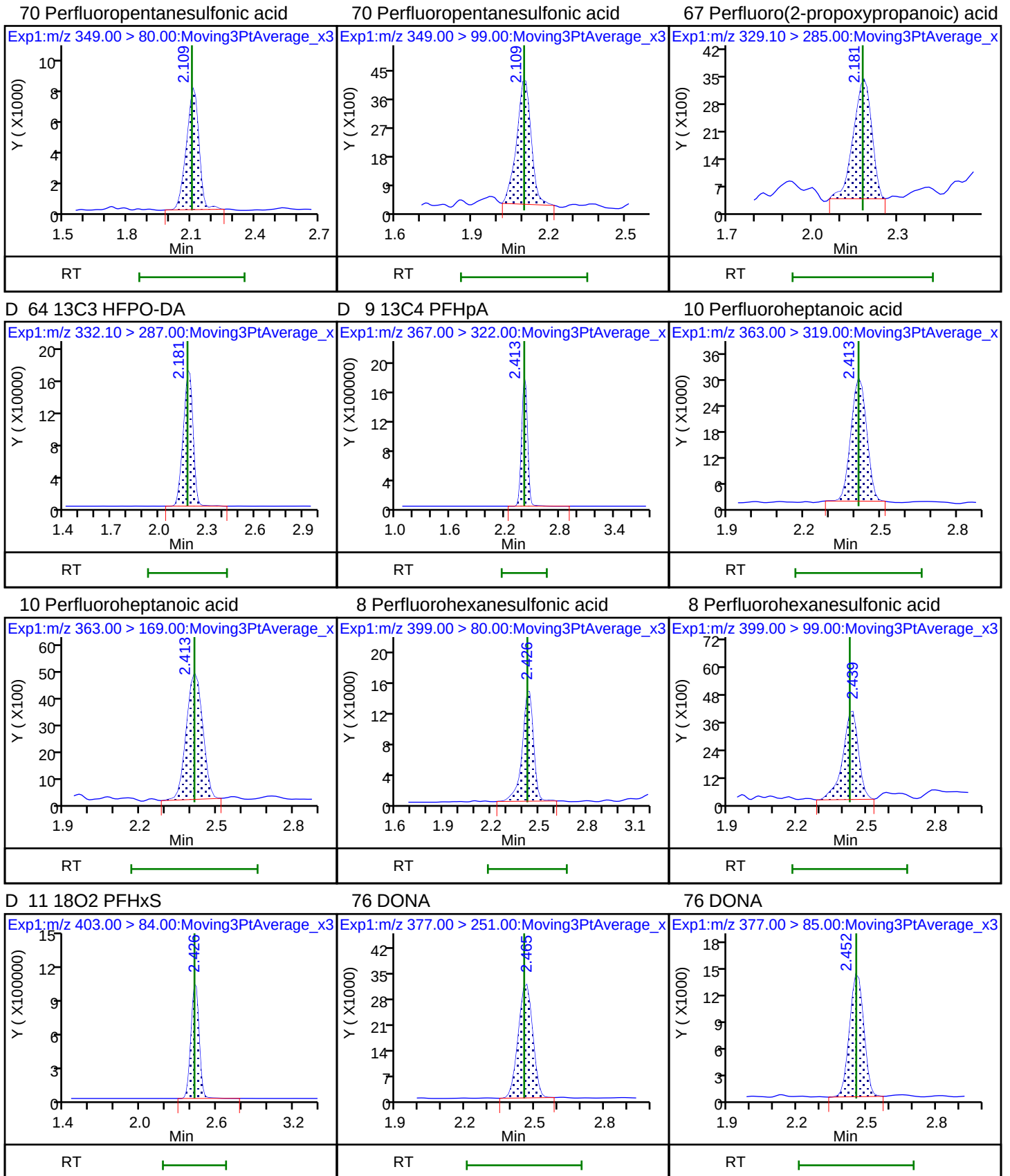


D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

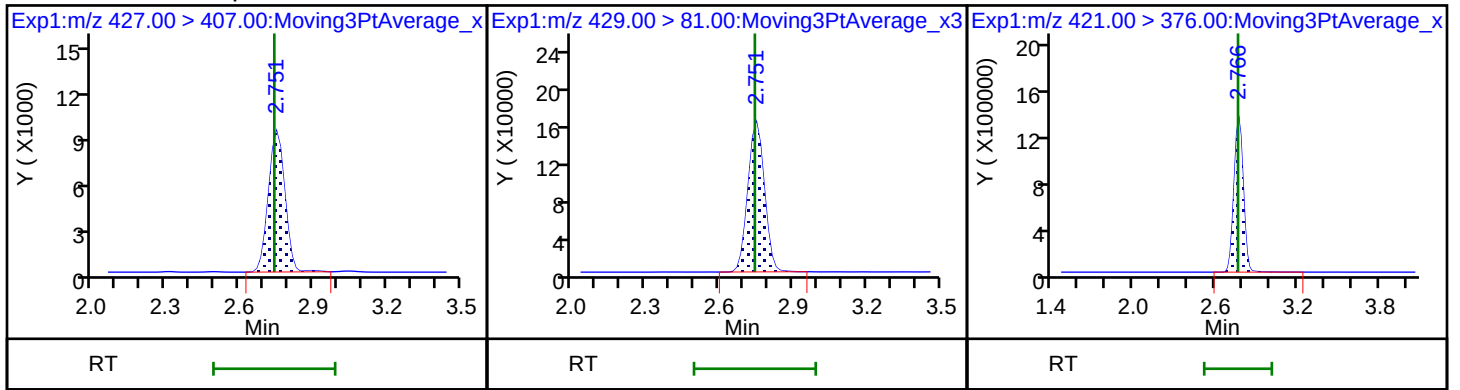
6 Perfluorohexanoic acid (M)





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

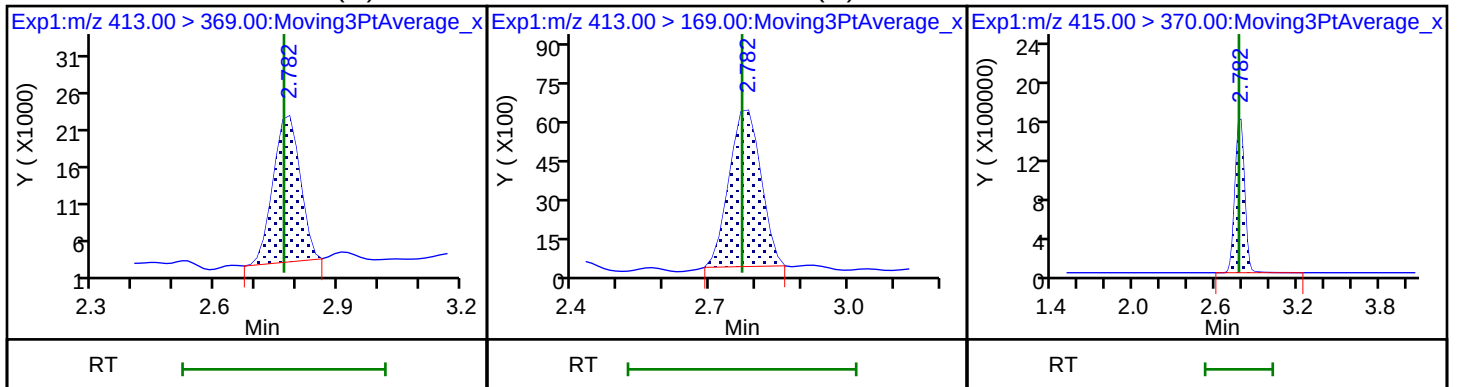
D 73 13C8 PFOA



15 Perfluorooctanoic acid (M)

15 Perfluorooctanoic acid (M)

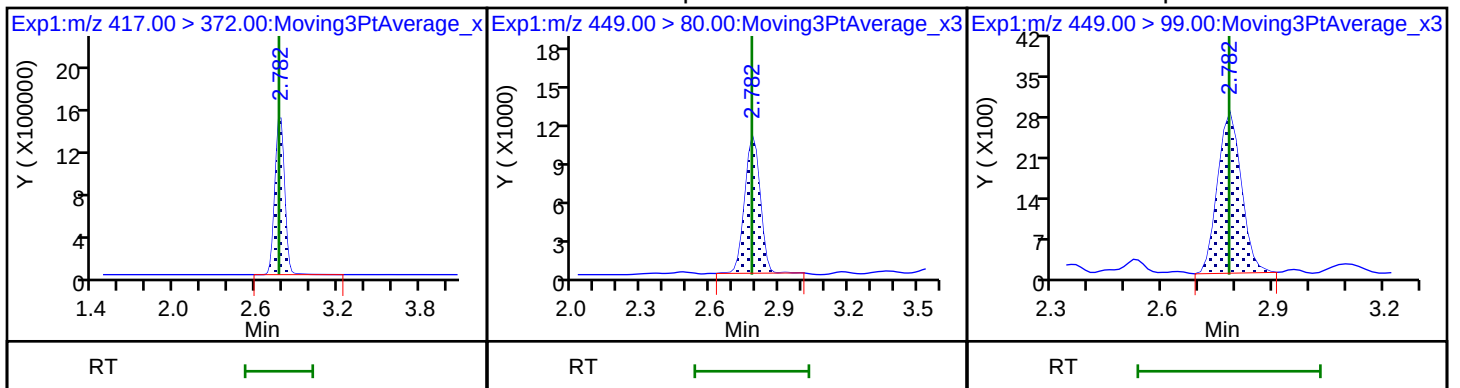
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

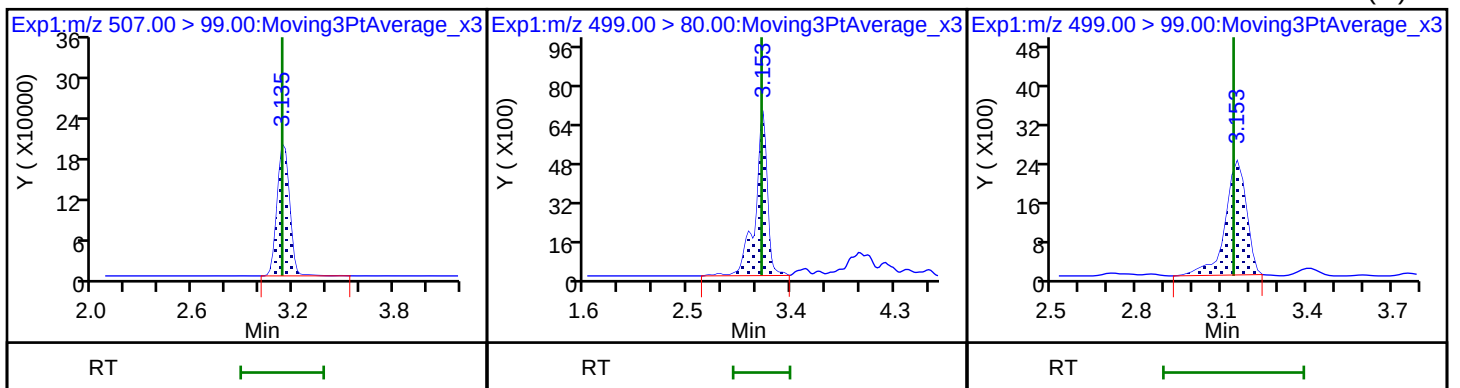
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

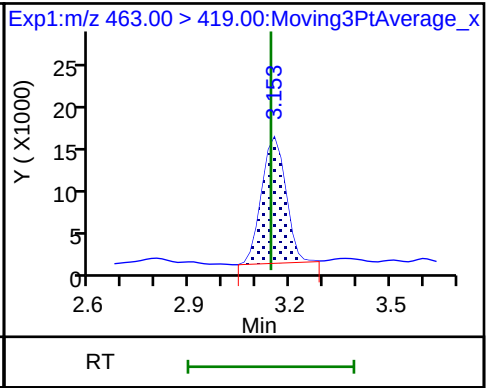
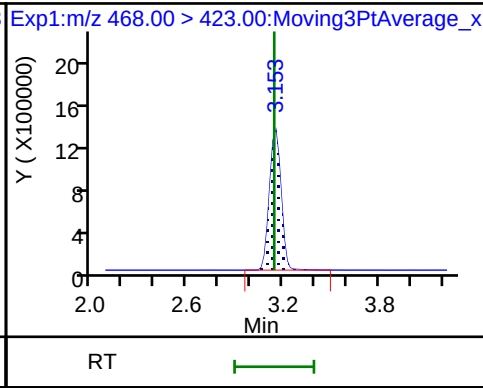
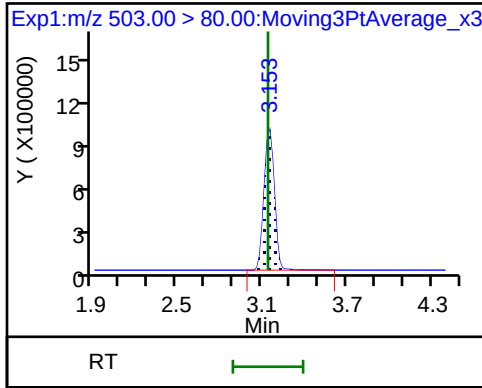
17 Perfluorooctanesulfonic acid (M)



D 18 13C4 PFOS

D 19 13C5 PFNA

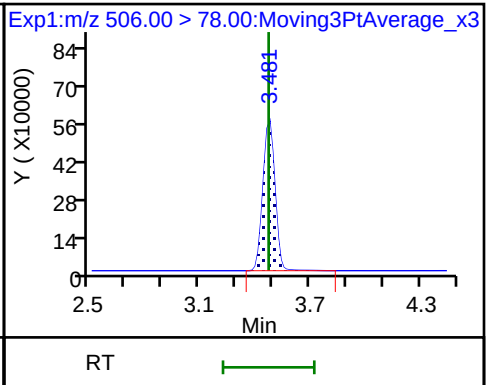
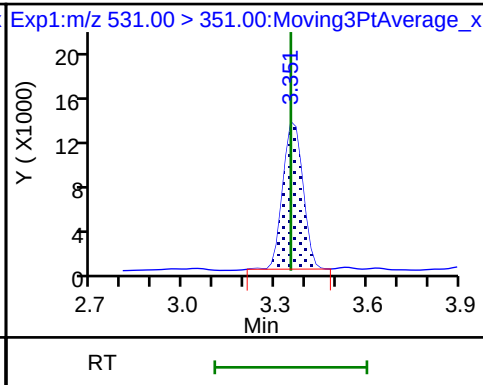
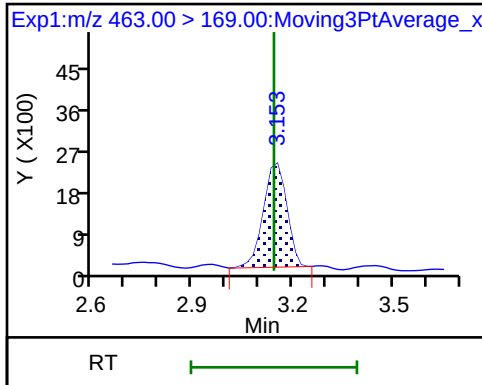
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxonane

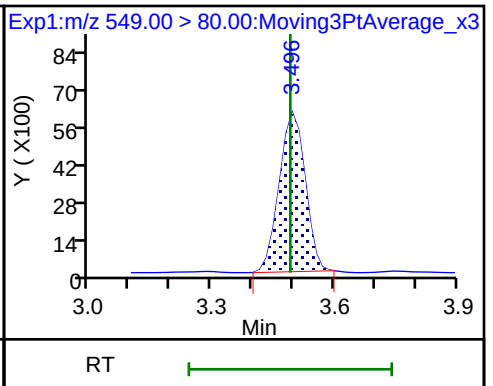
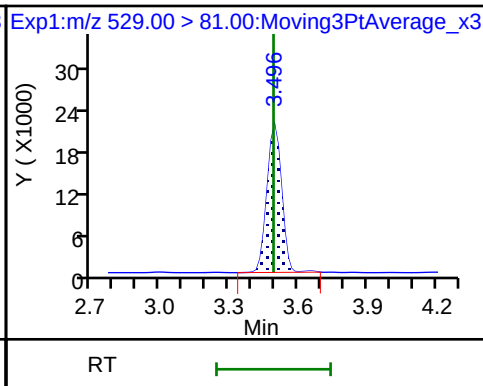
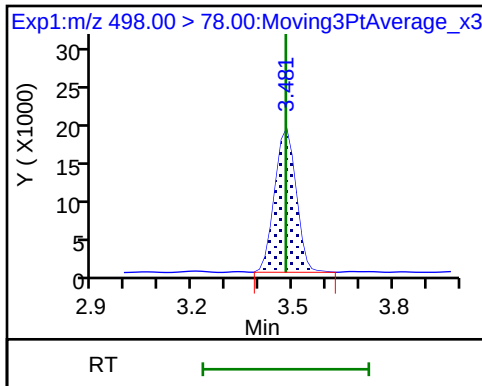
De 21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

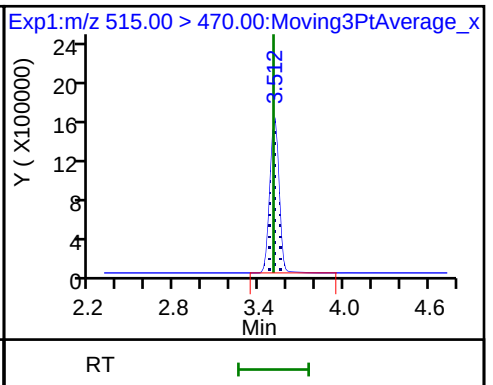
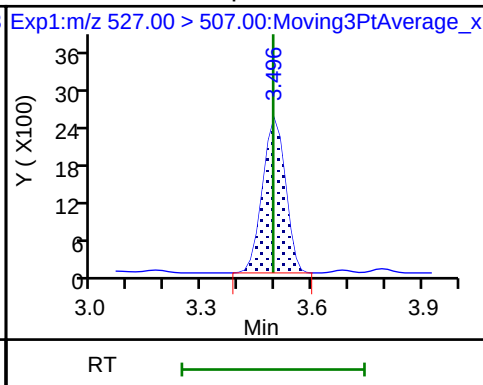
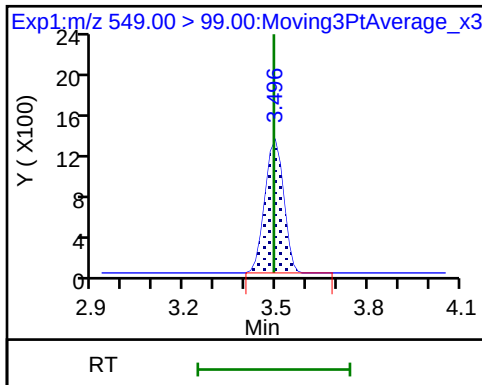
68 Perfluorononanesulfonic acid

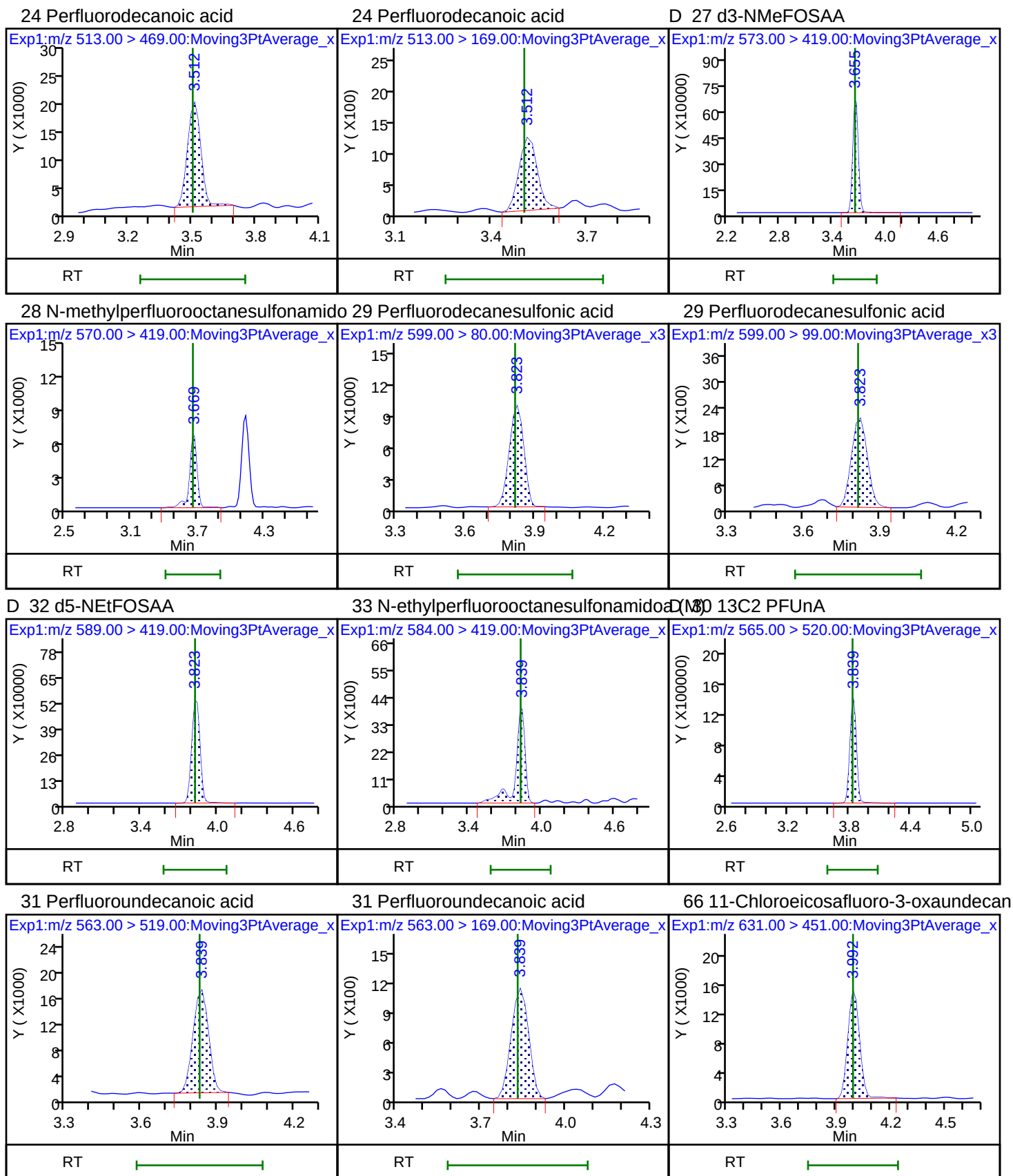


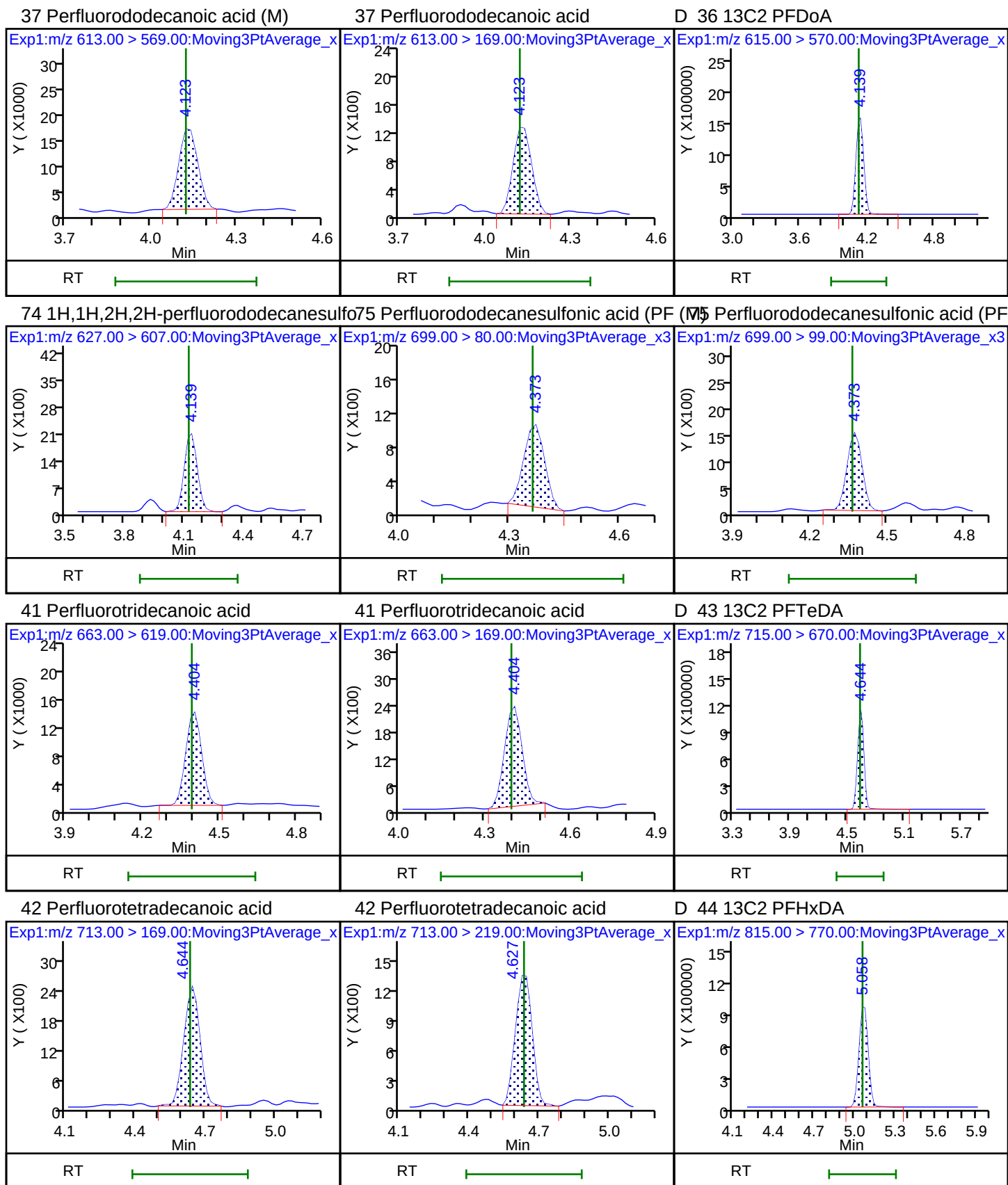
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonate

D 23 13C2 PFDA



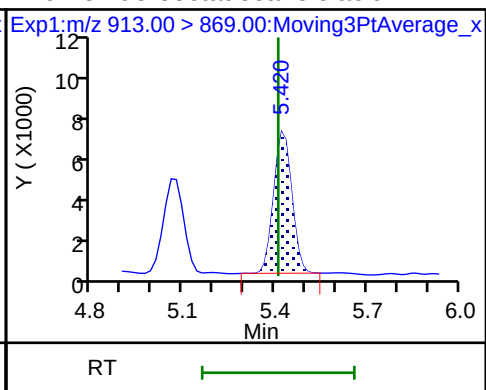
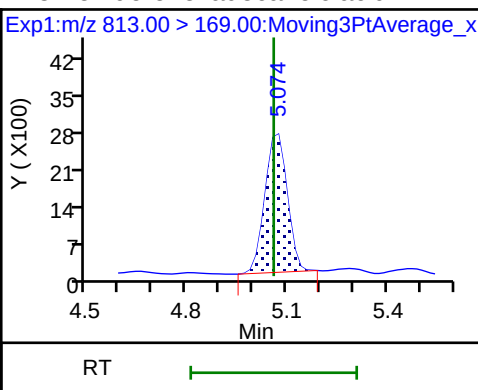
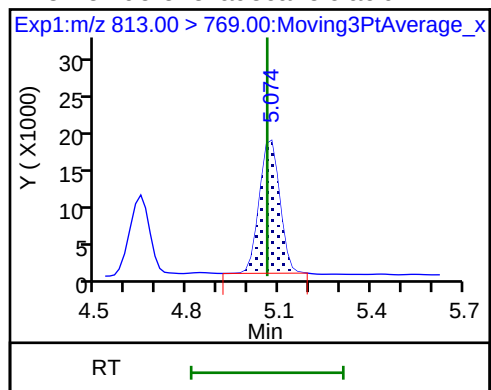




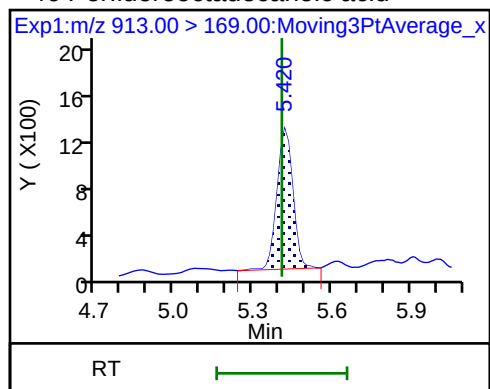
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_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:

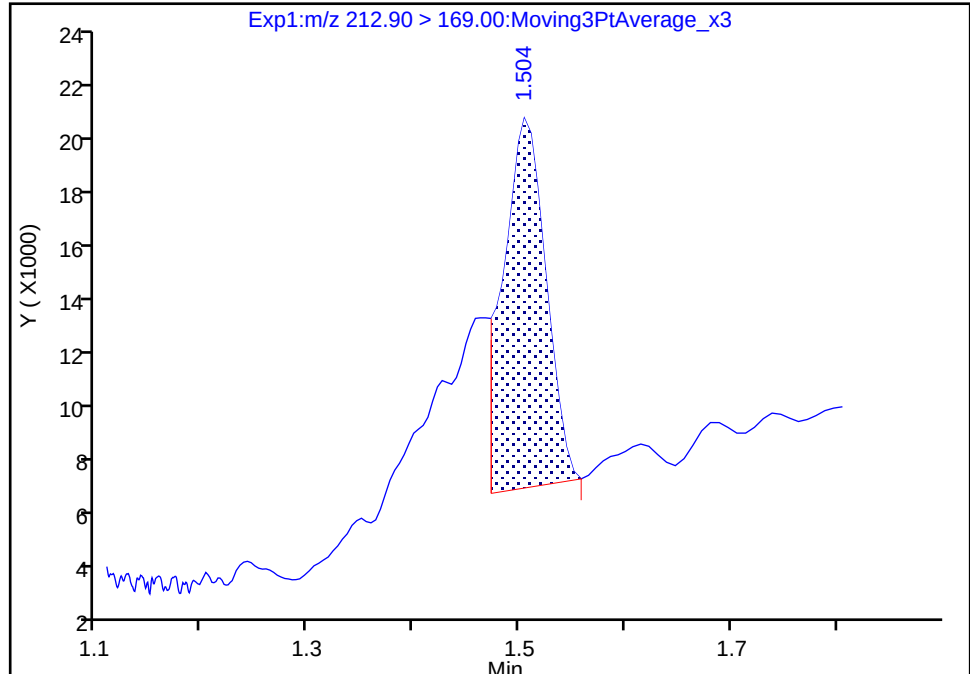
Detector: EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

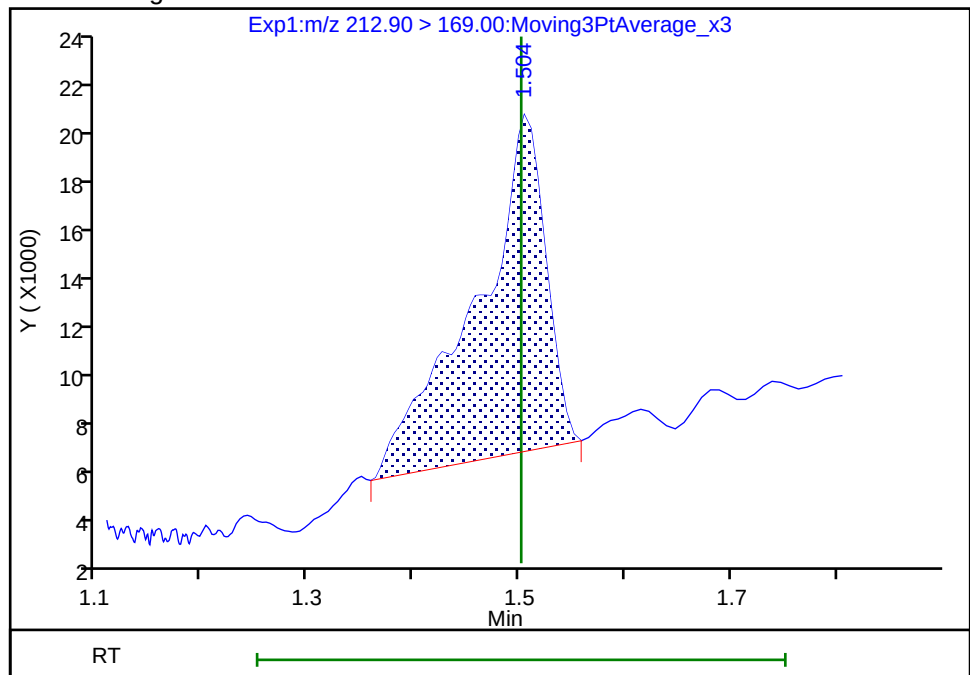
RT: 1.50
Area: 37939
Amount: 0.017450
Amount Units: ng/ml

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

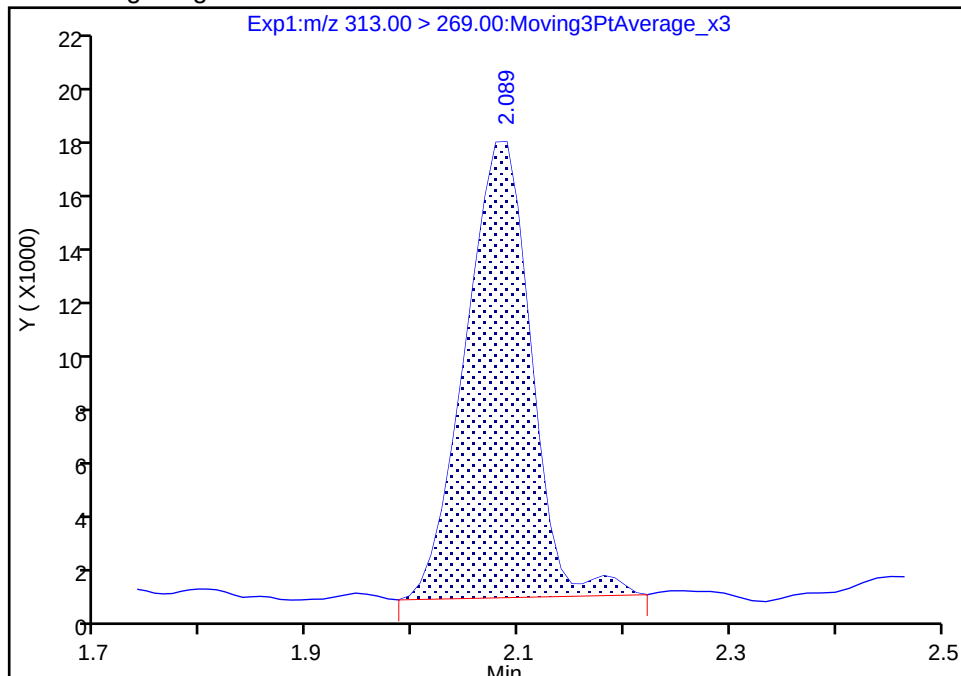
Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_002.d
Injection Date: 11-Oct-2018 15:53:58 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

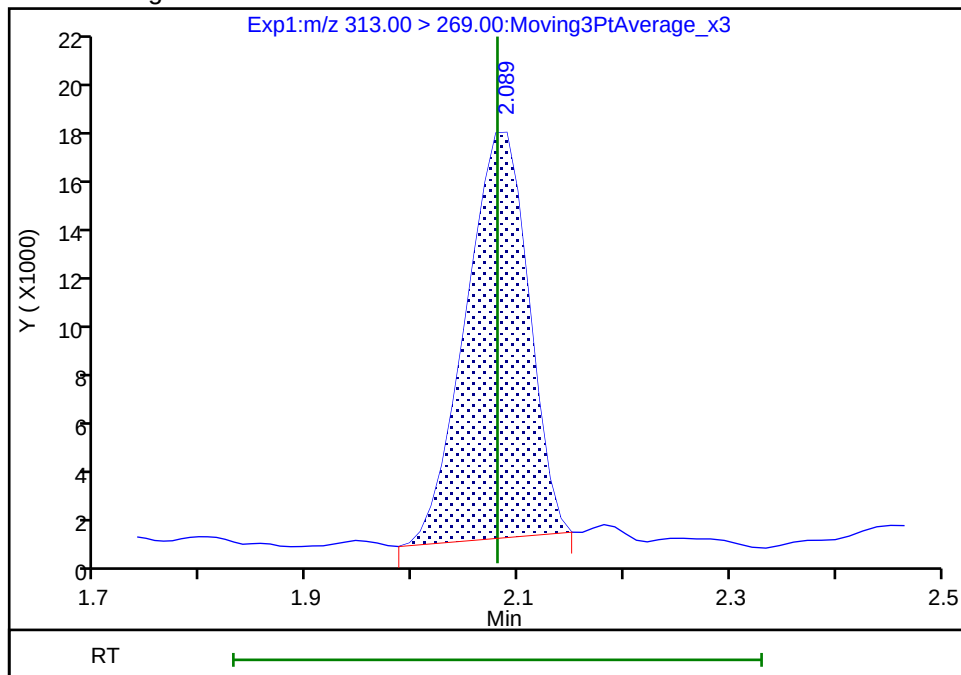
RT: 2.09
Area: 69624
Amount: 0.029942
Amount Units: ng/ml

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
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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

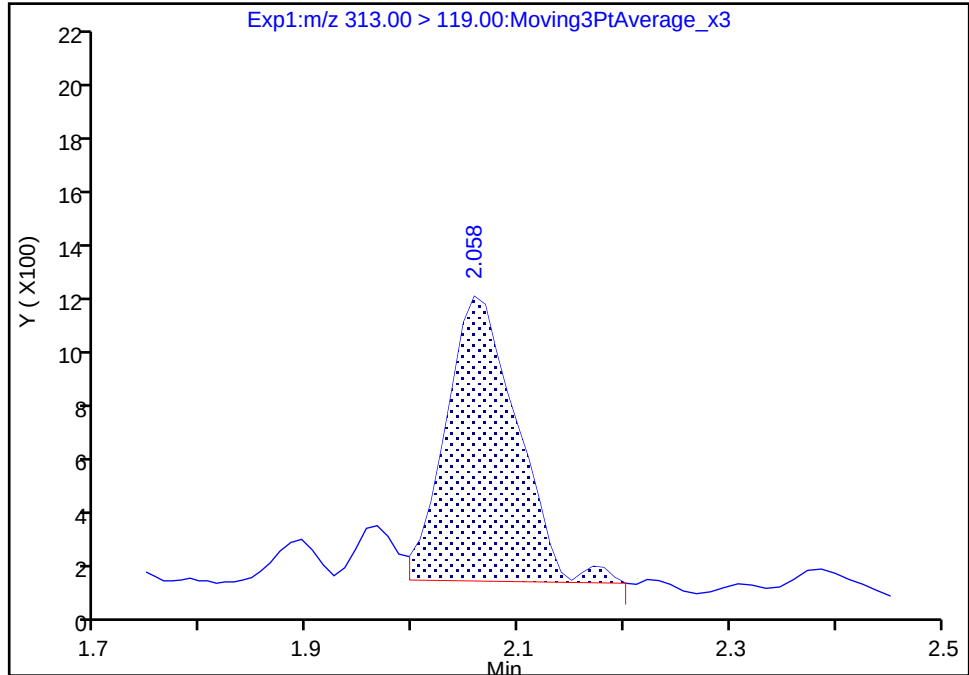
EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

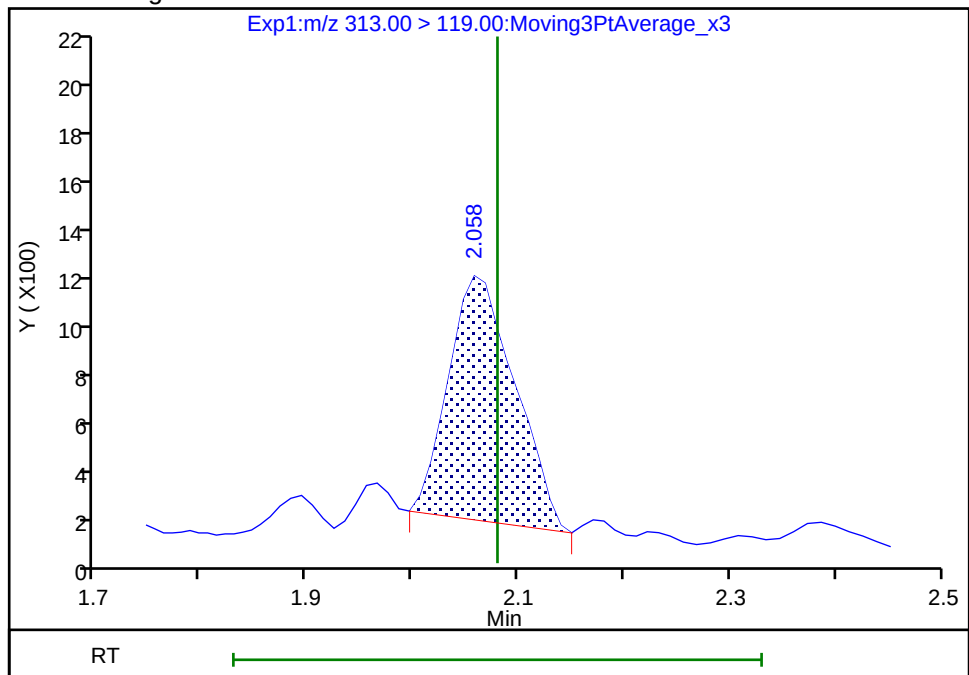
RT: 2.06
Area: 4949
Amount: 0.029942
Amount Units: ng/ml

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:

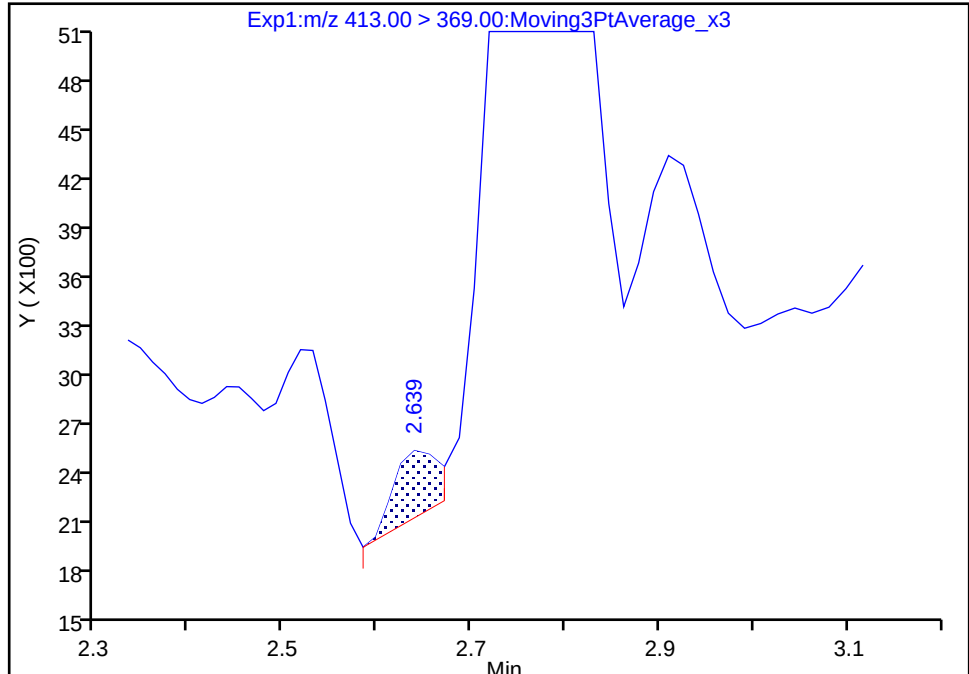
Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

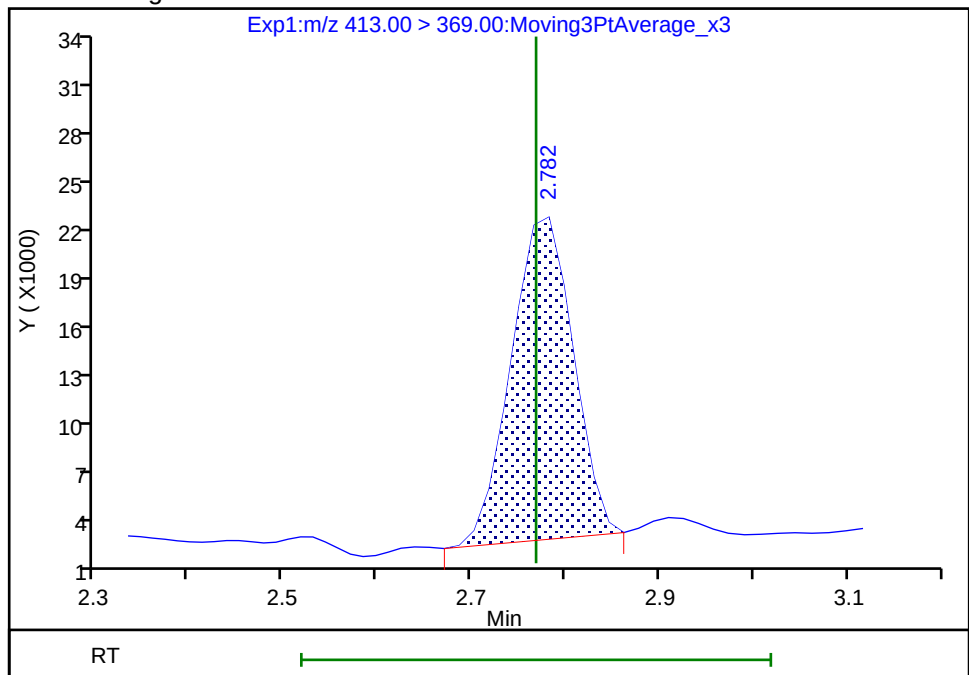
RT: 2.64
Area: 1255
Amount: 0.001123
Amount Units: ng/ml

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

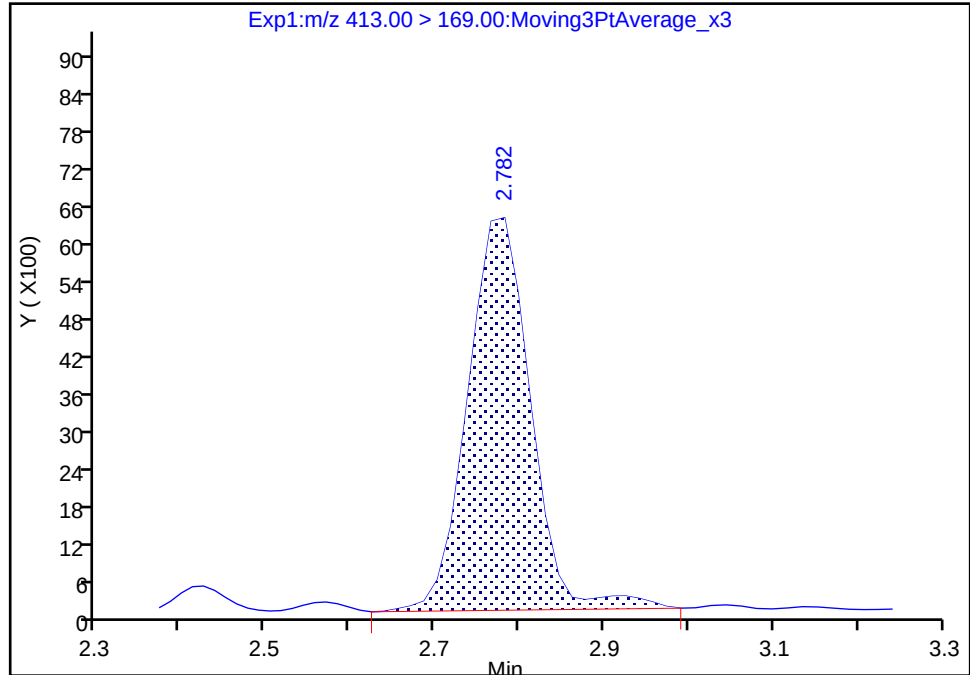
EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

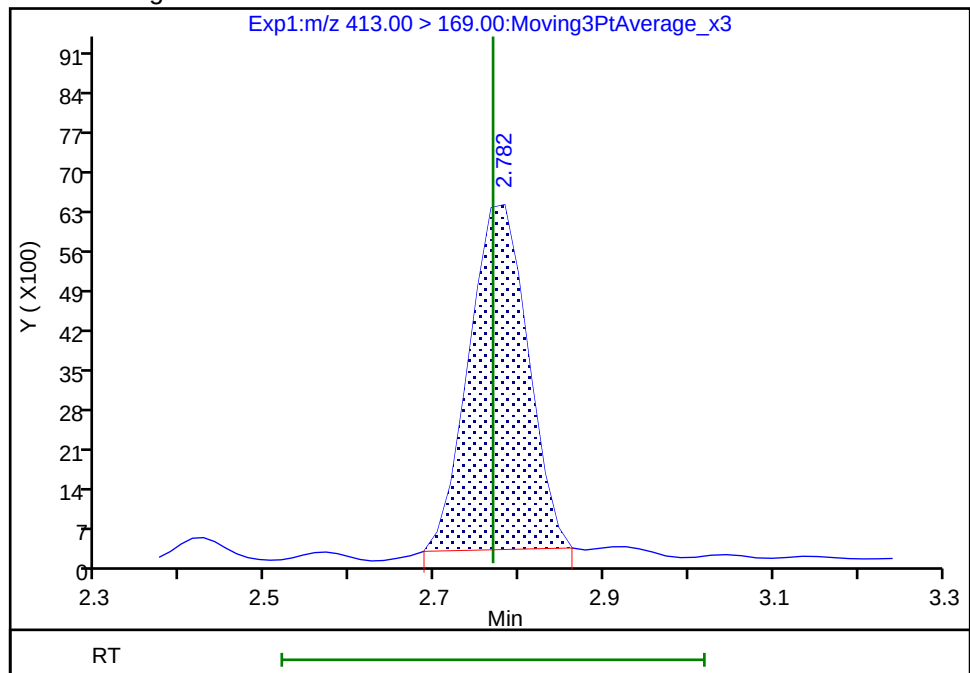
RT: 2.78
Area: 32673
Amount: 0.001123
Amount Units: ng/ml

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:

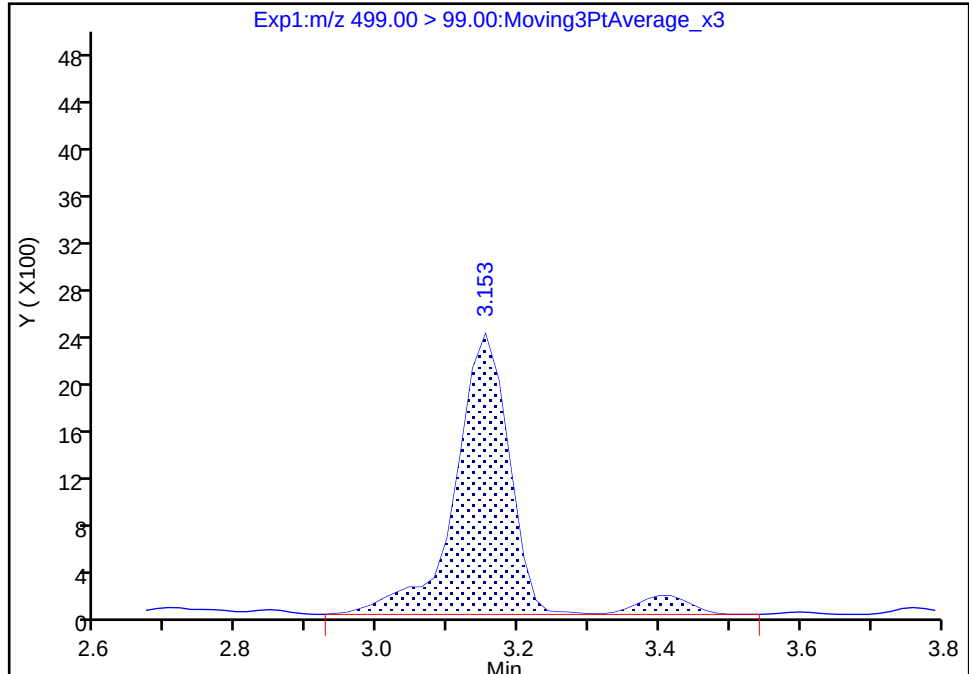
Detector: EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

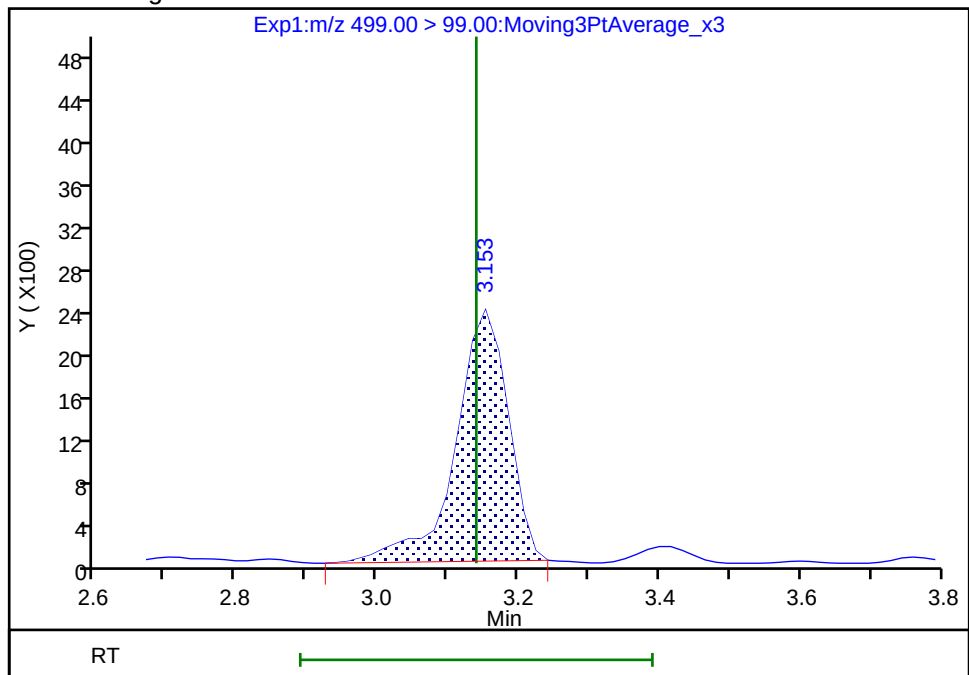
RT: 3.15
Area: 13377
Amount: 0.022875
Amount Units: ng/ml

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:

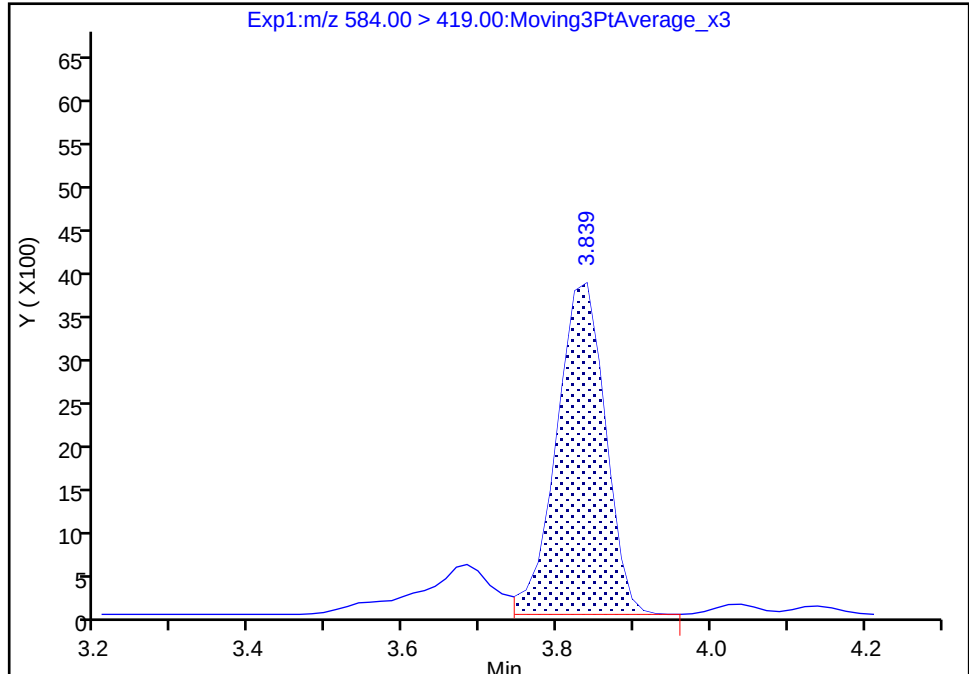
Detector: EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

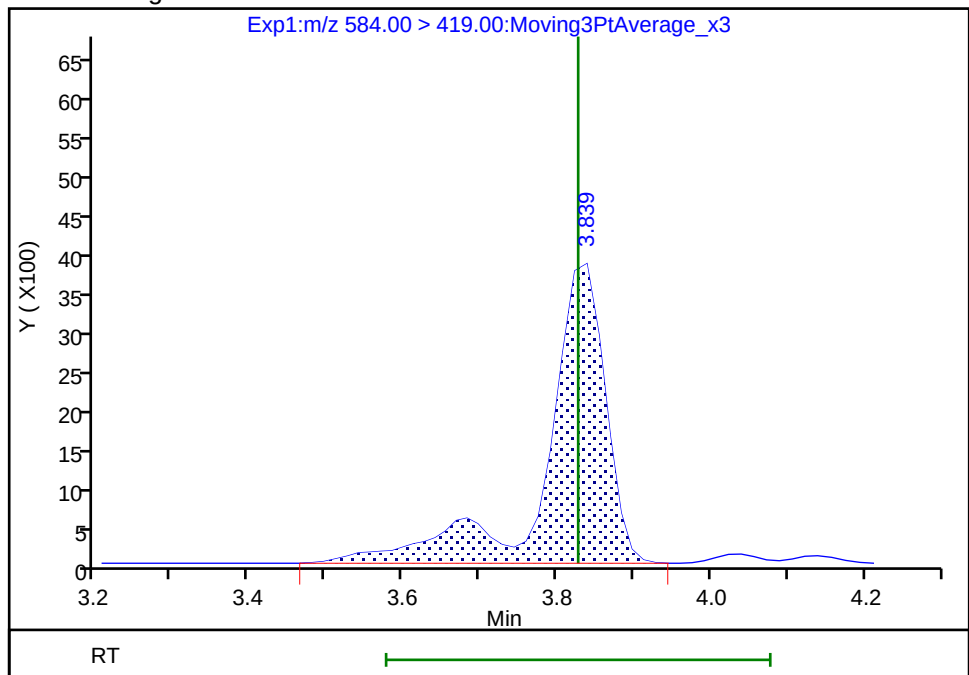
RT: 3.84
Area: 16749
Amount: 0.019558
Amount Units: ng/ml

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:

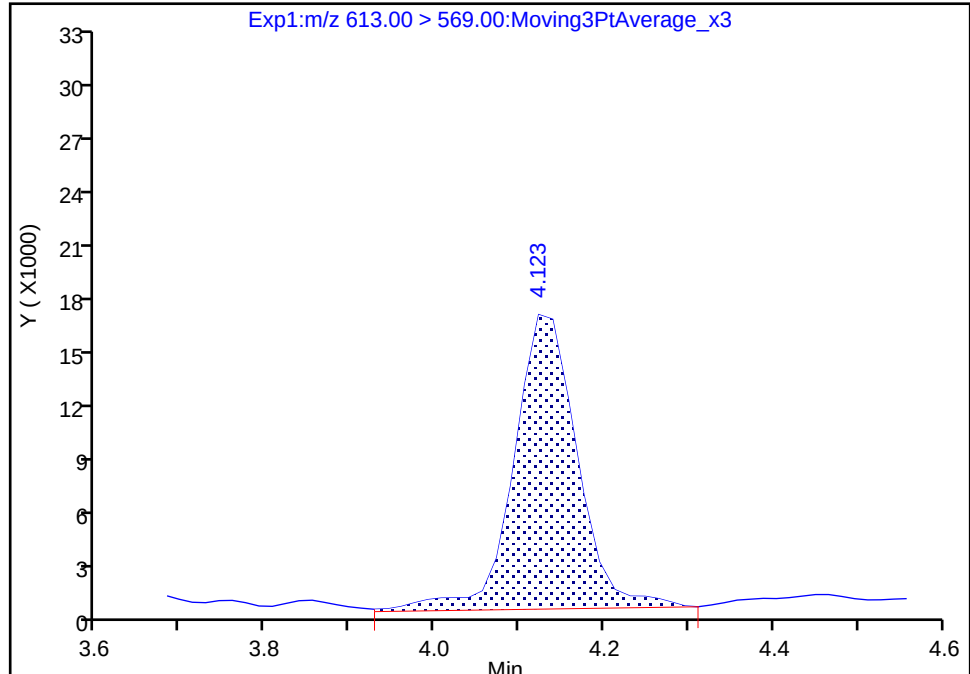
Detector: EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

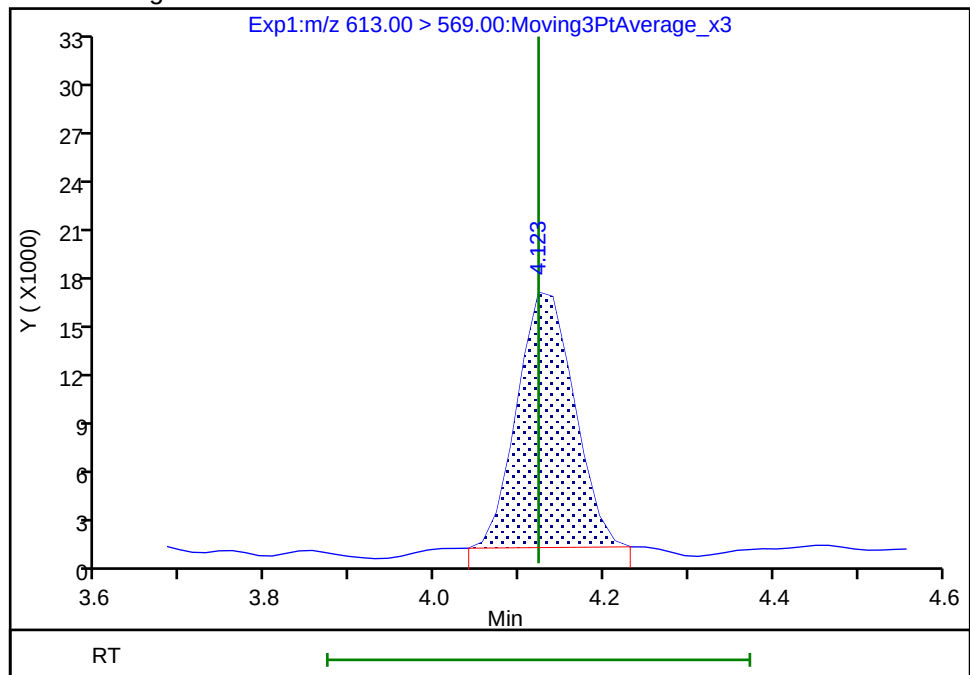
RT: 4.12
Area: 85136
Amount: 0.028210
Amount Units: ng/ml

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:

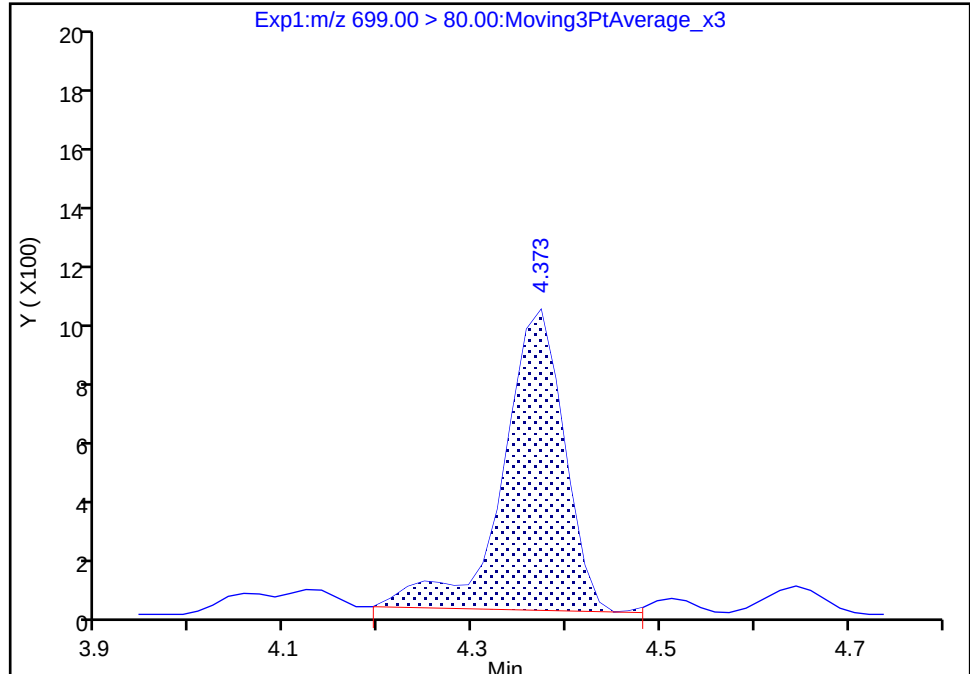
Detector: EXP1

75 Perfluorododecanesulfonic acid (PFDoS), CAS: 79780-39-5

Signal: 1

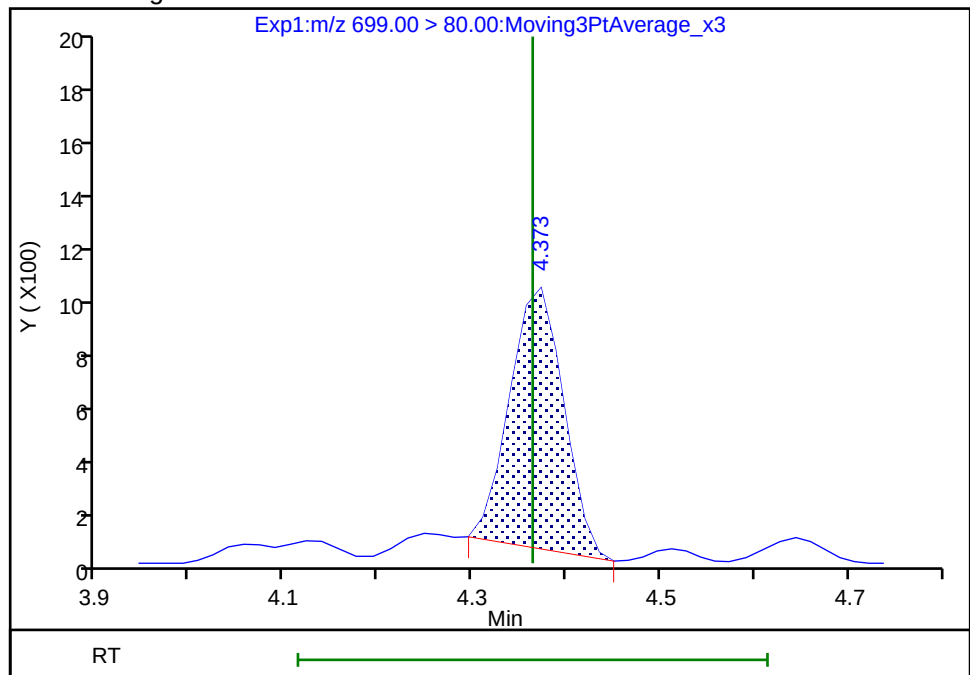
RT: 4.37
Area: 4639
Amount: 0.024012
Amount Units: ng/ml

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

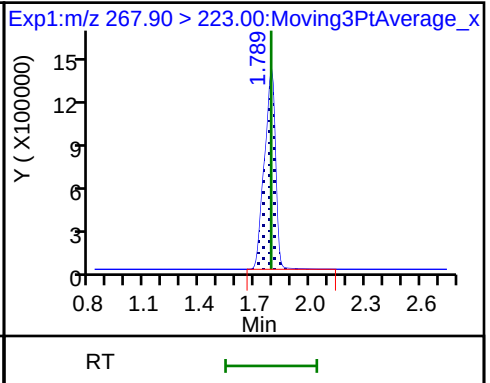
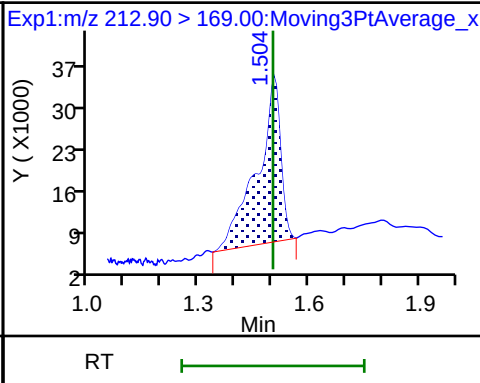
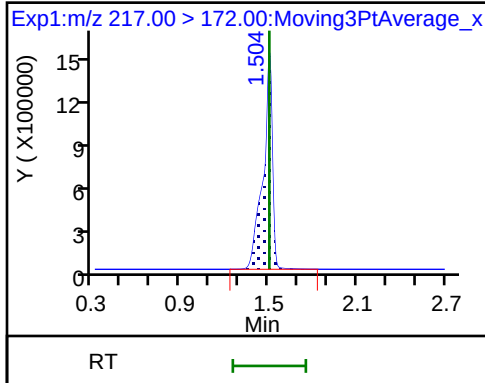
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

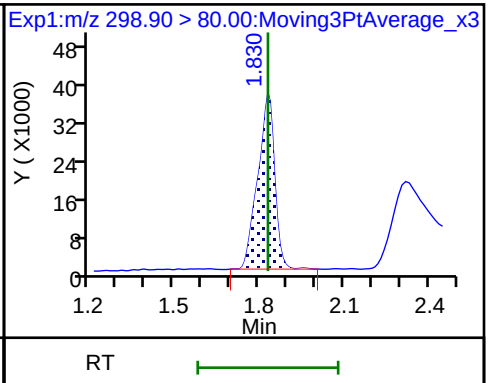
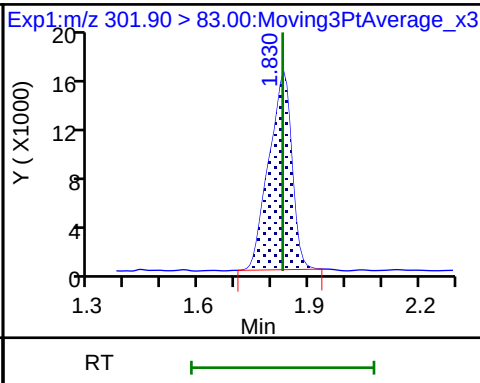
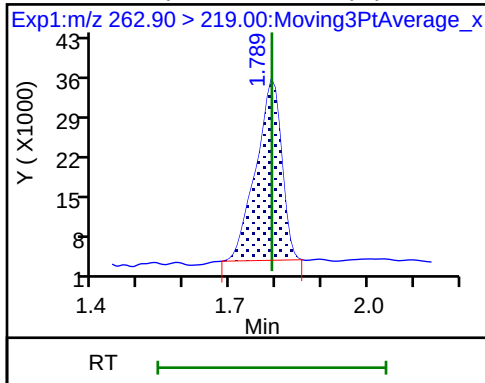
D 3 13C5 PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3 PFBS

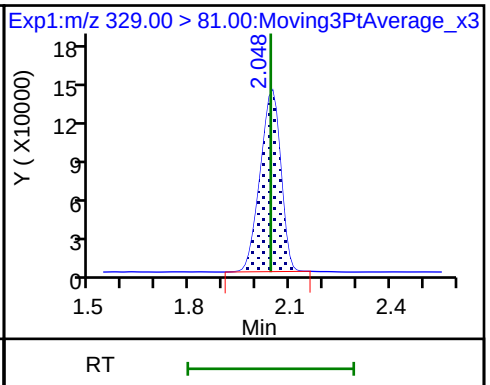
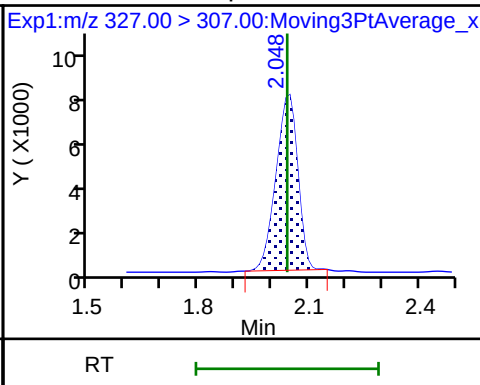
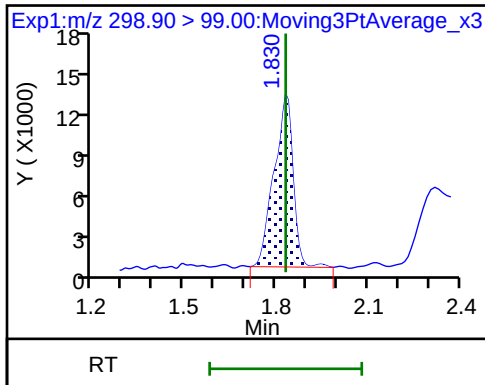
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

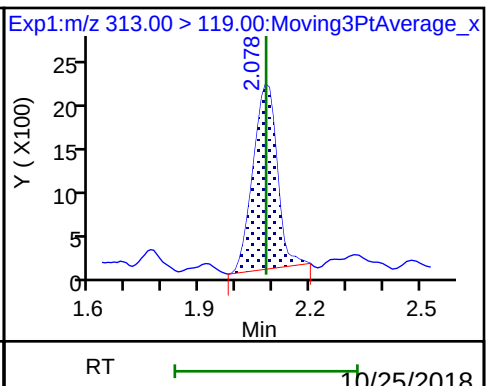
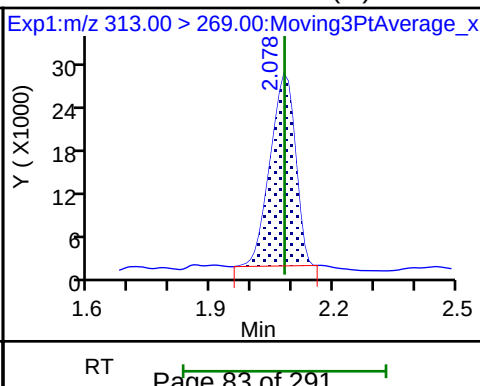
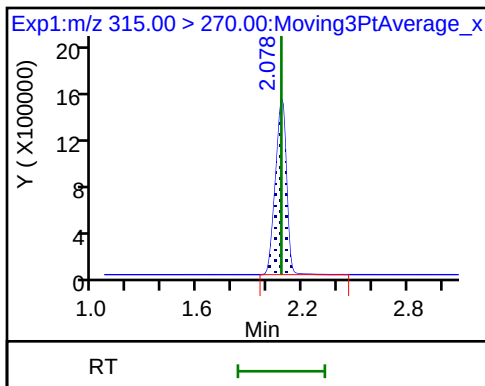
D 60 M2-4:2 FTS

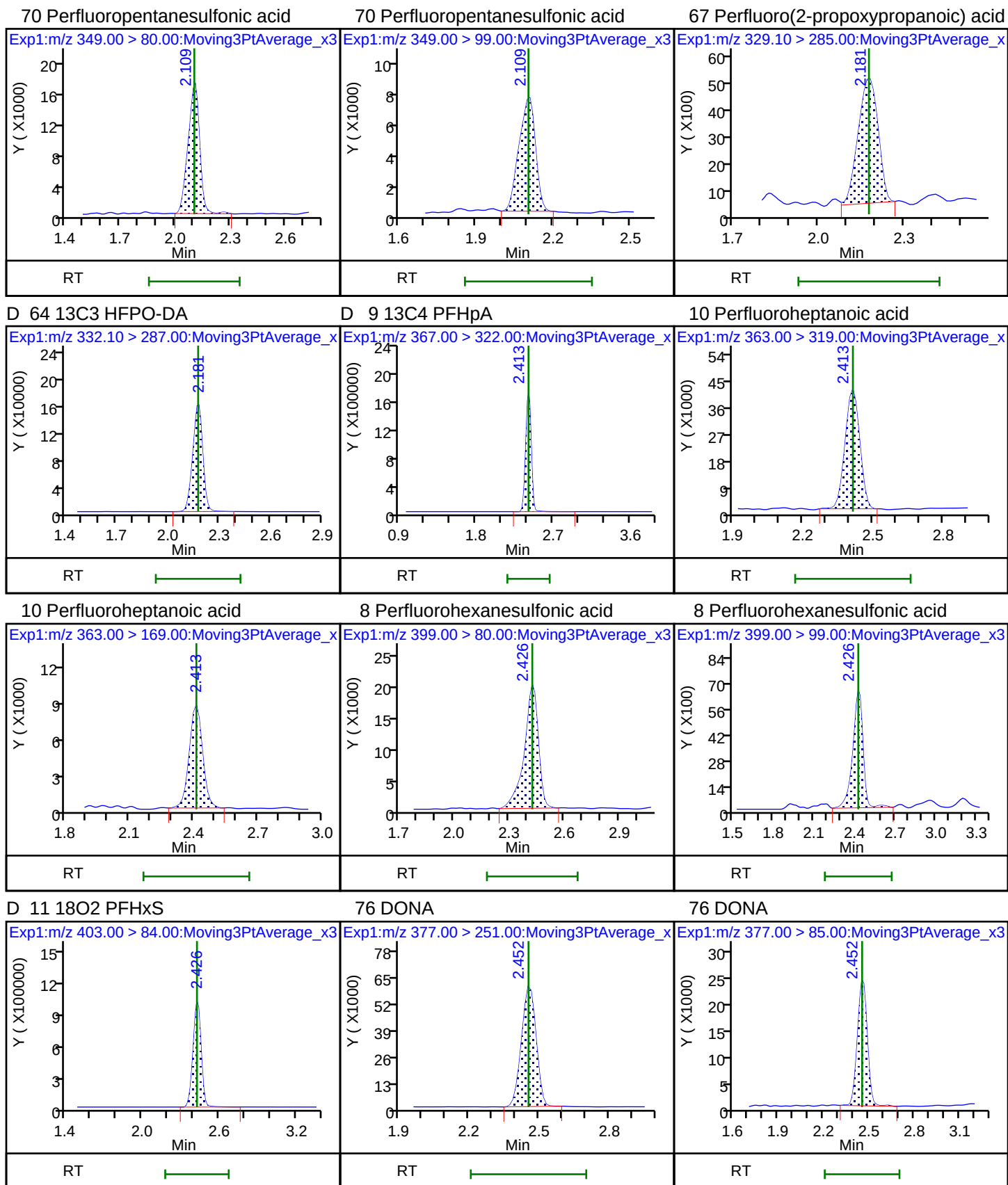


D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

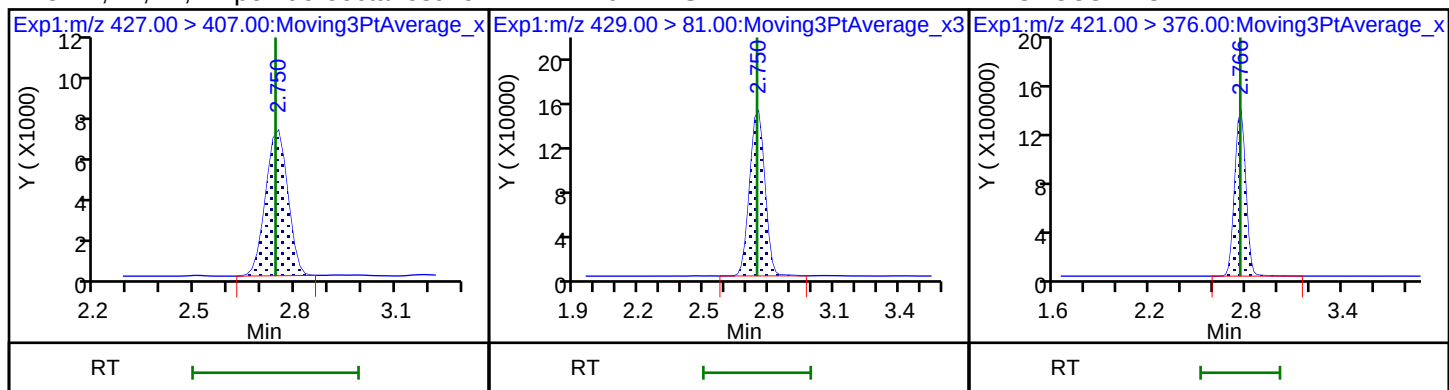
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

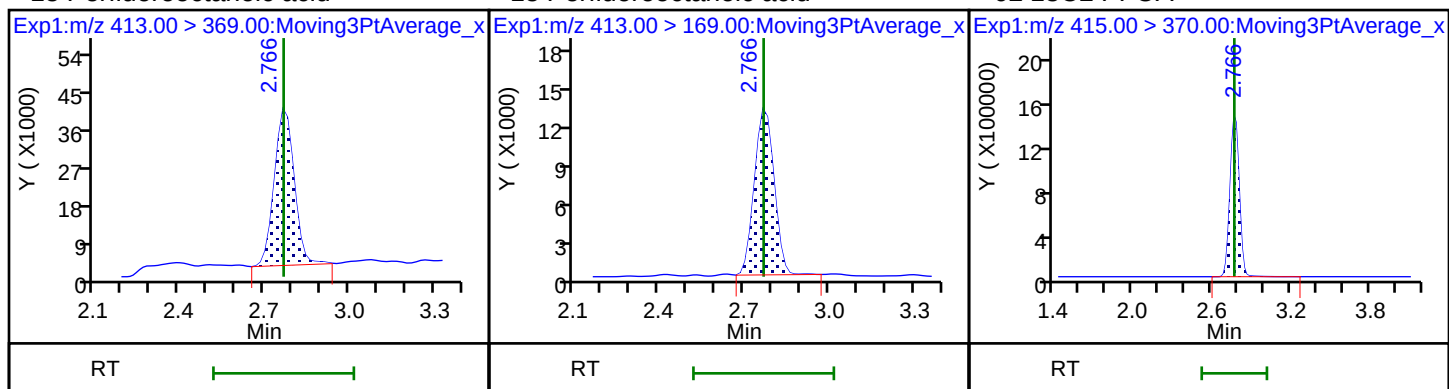
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

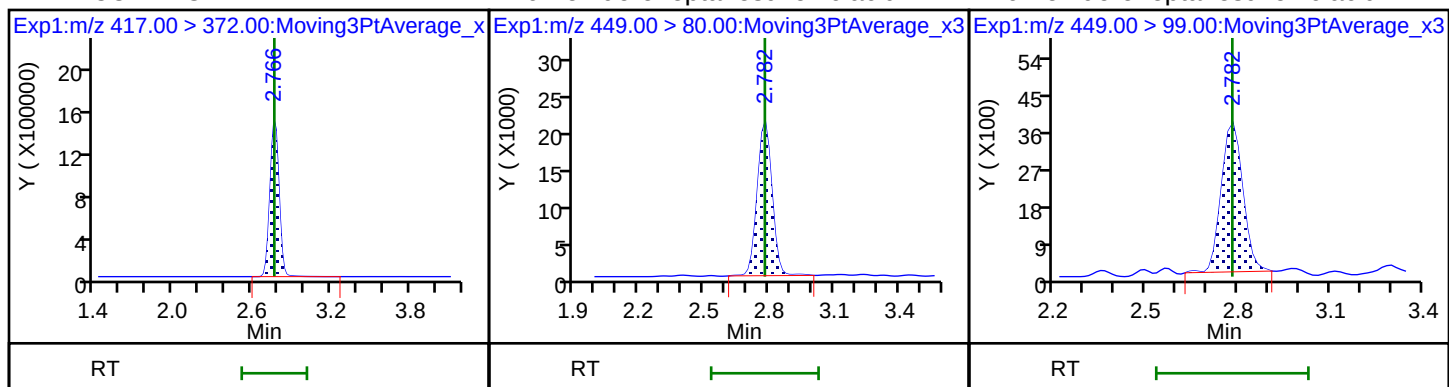
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

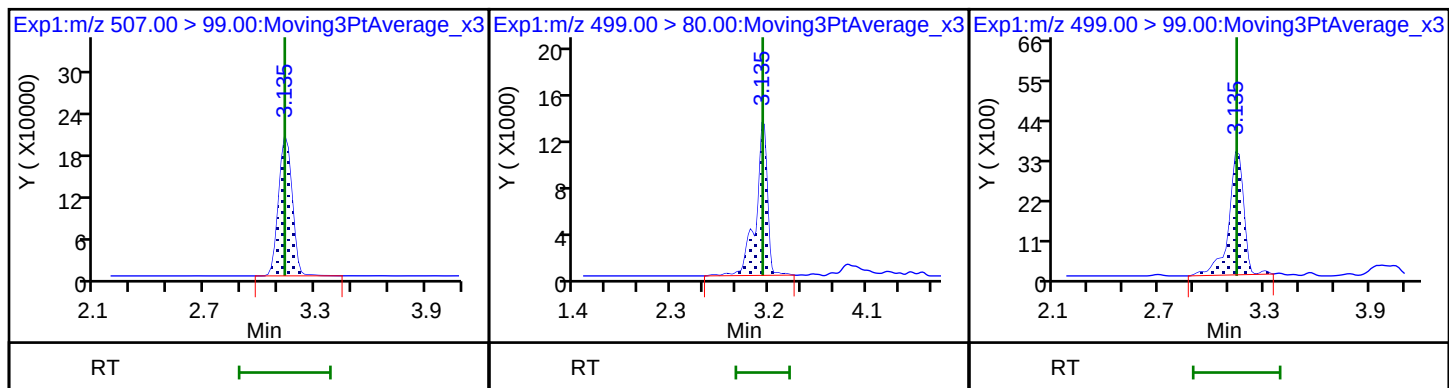
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

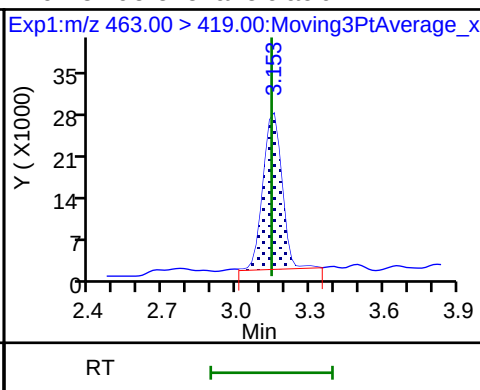
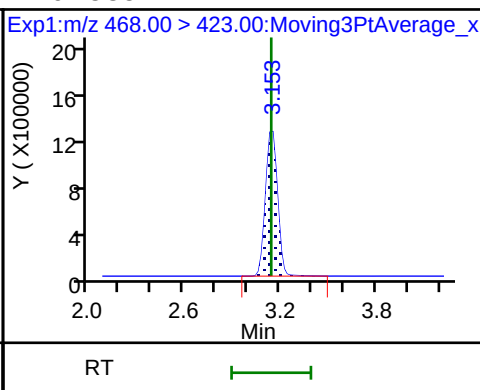
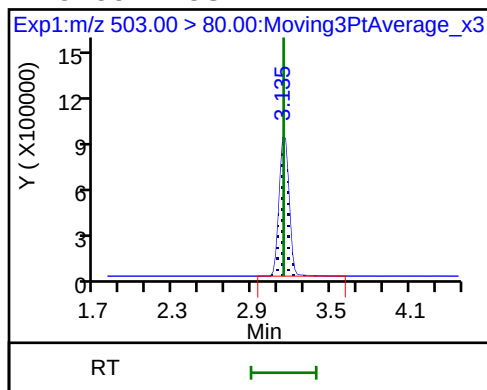
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

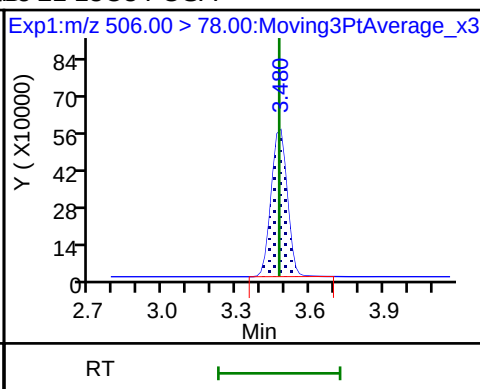
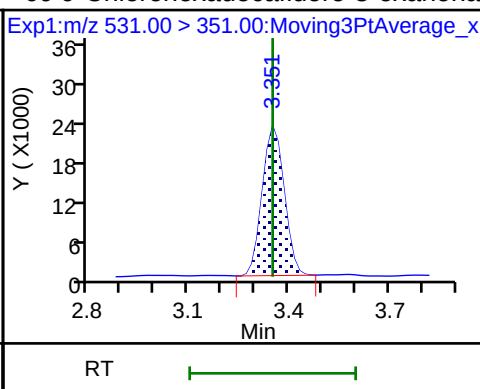
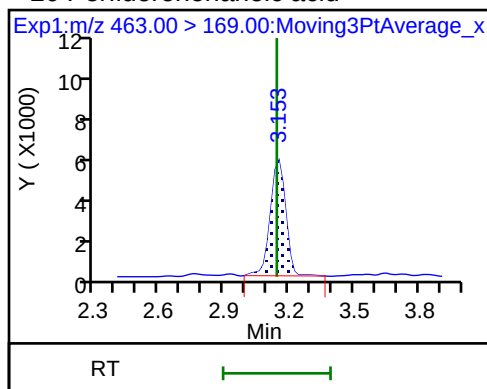
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonadiene

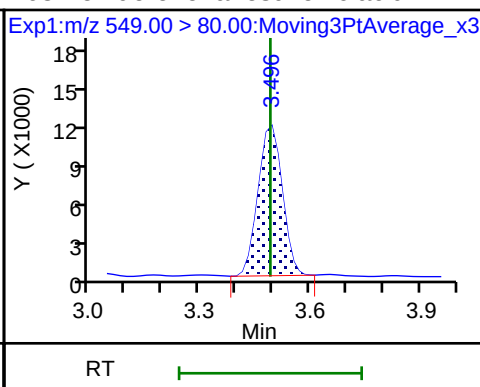
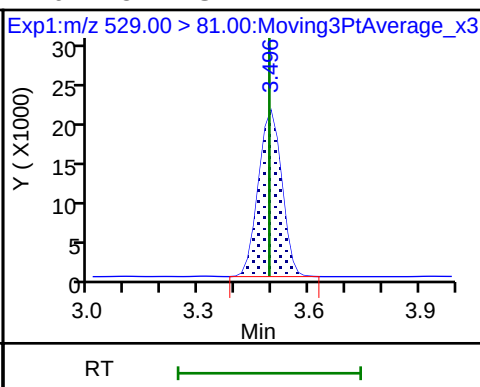
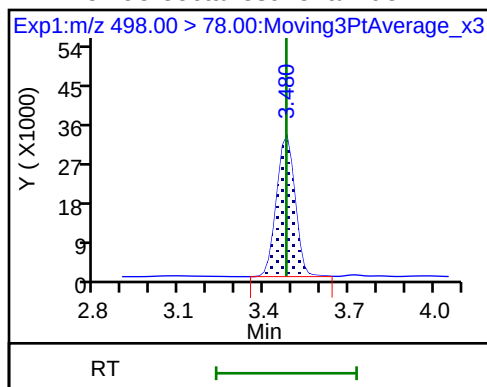
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

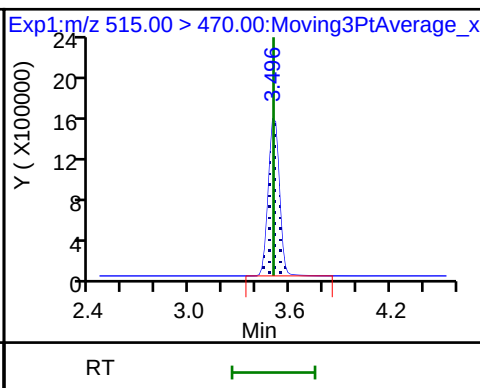
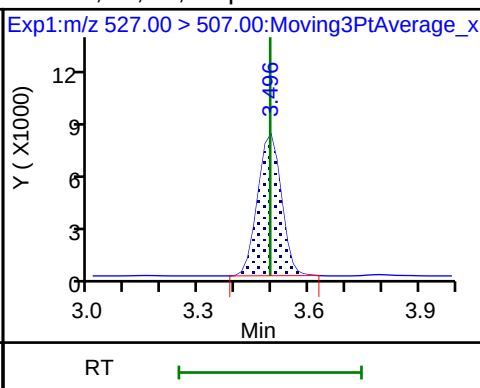
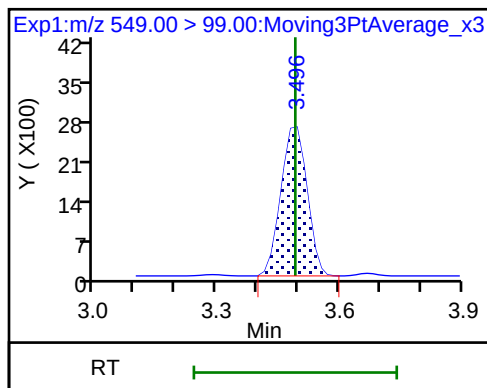
68 Perfluorononanesulfonic acid

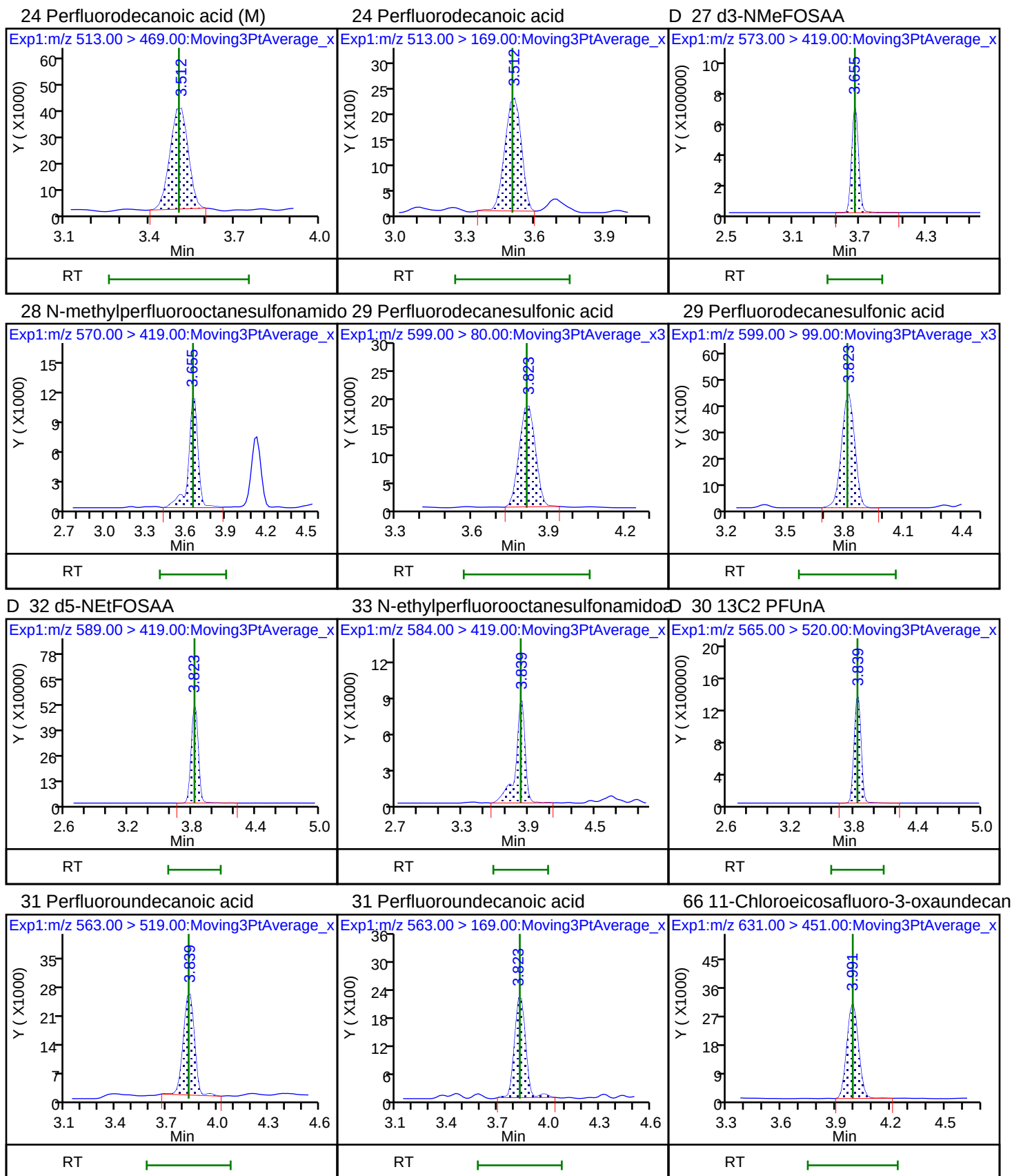


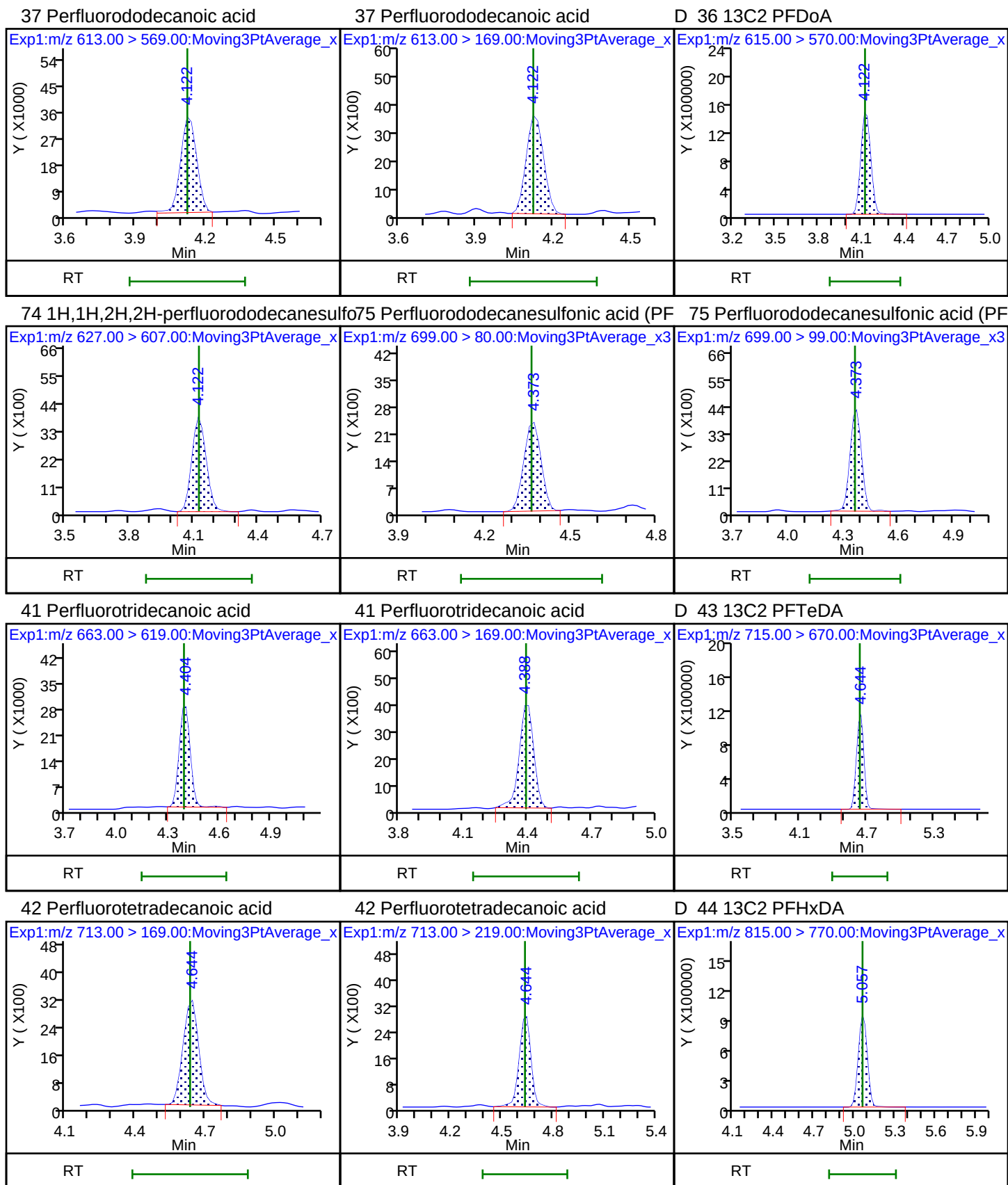
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonate

23 13C2 PFDA







45 Perfluorohexadecanoic acid

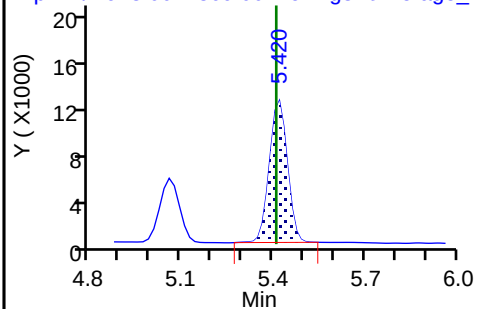
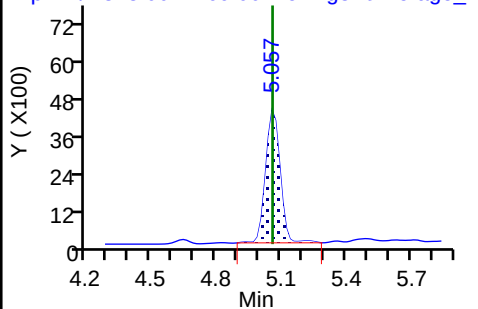
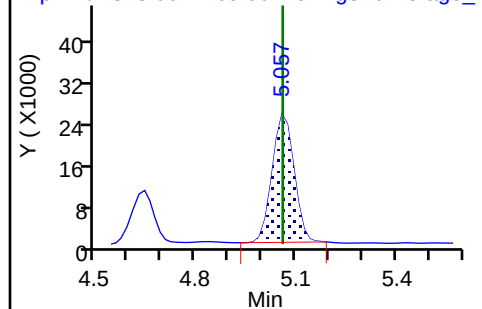
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x

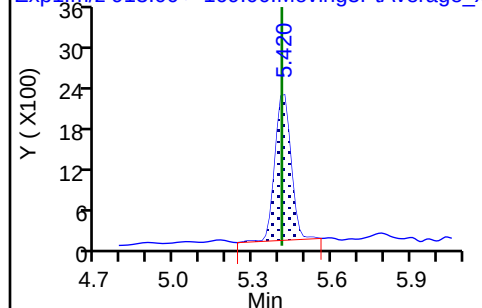
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Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



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_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:

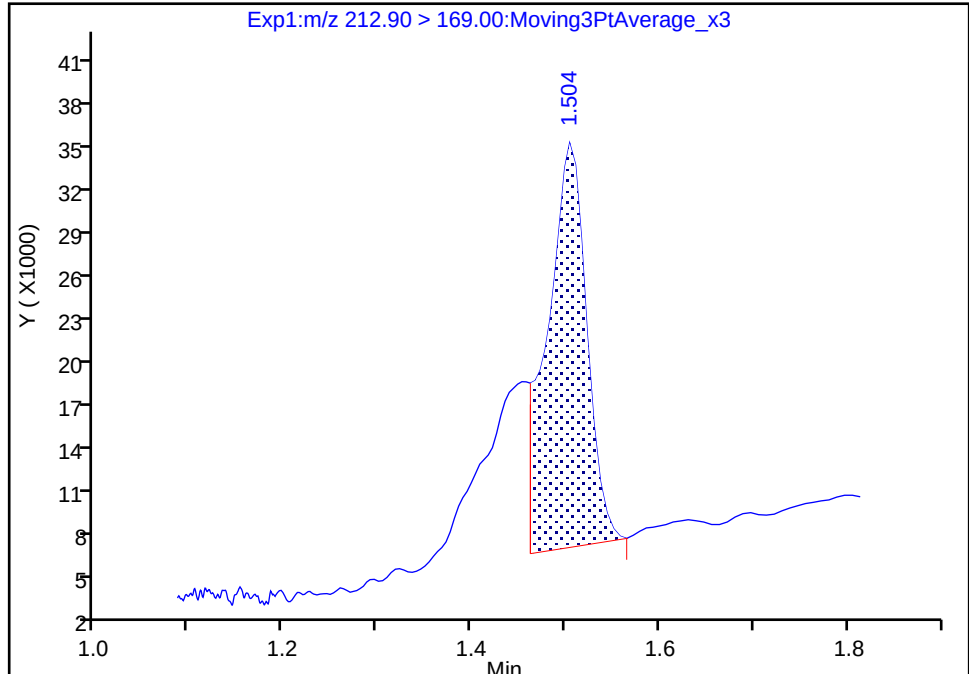
Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

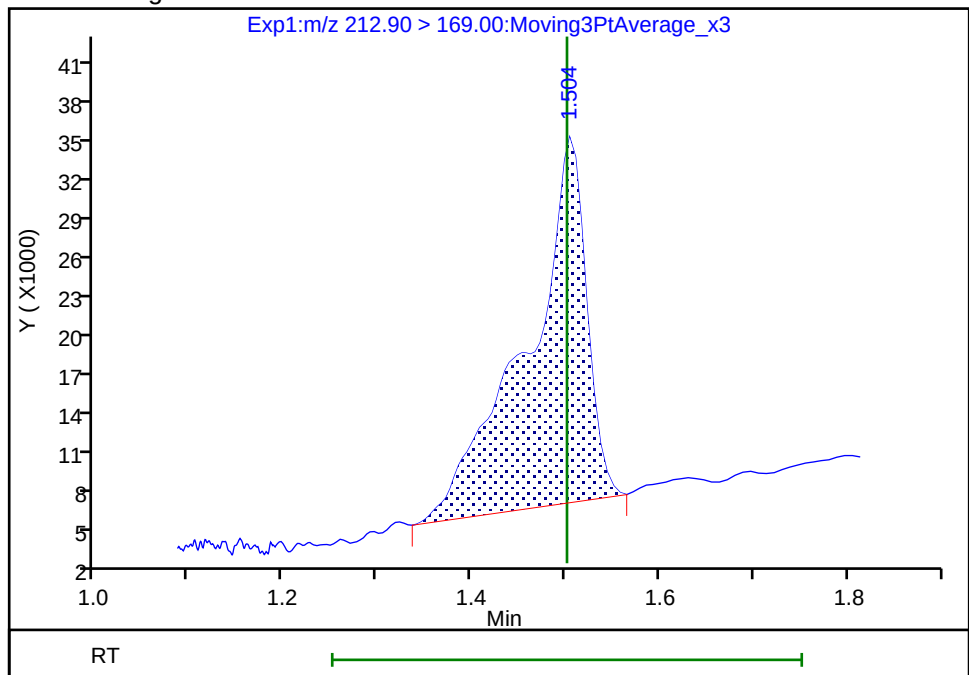
RT: 1.50
Area: 79986
Amount: 0.035426
Amount Units: ng/ml

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:

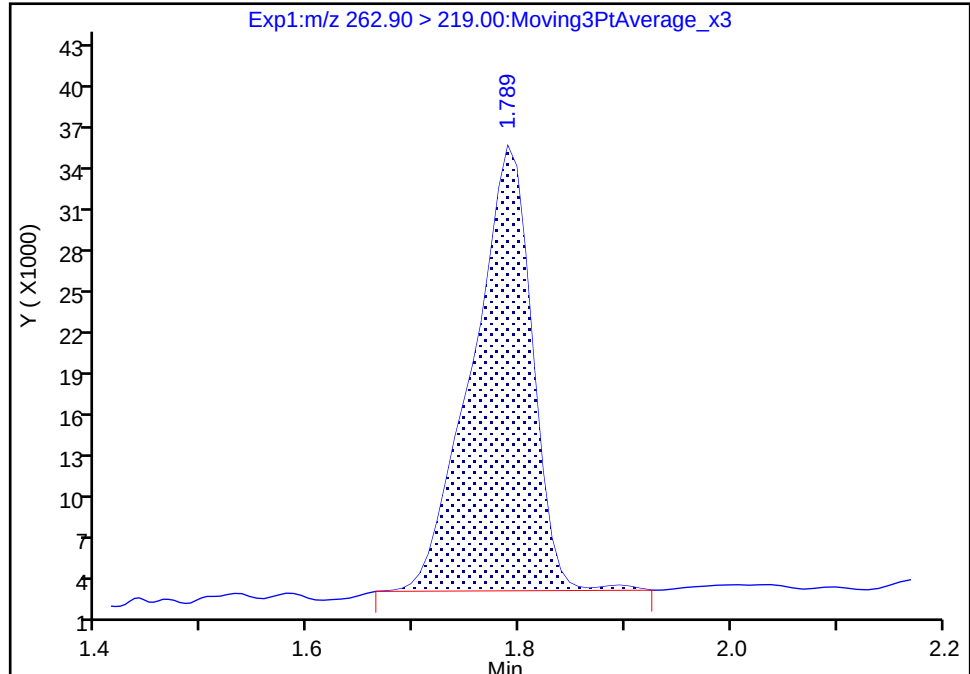
Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

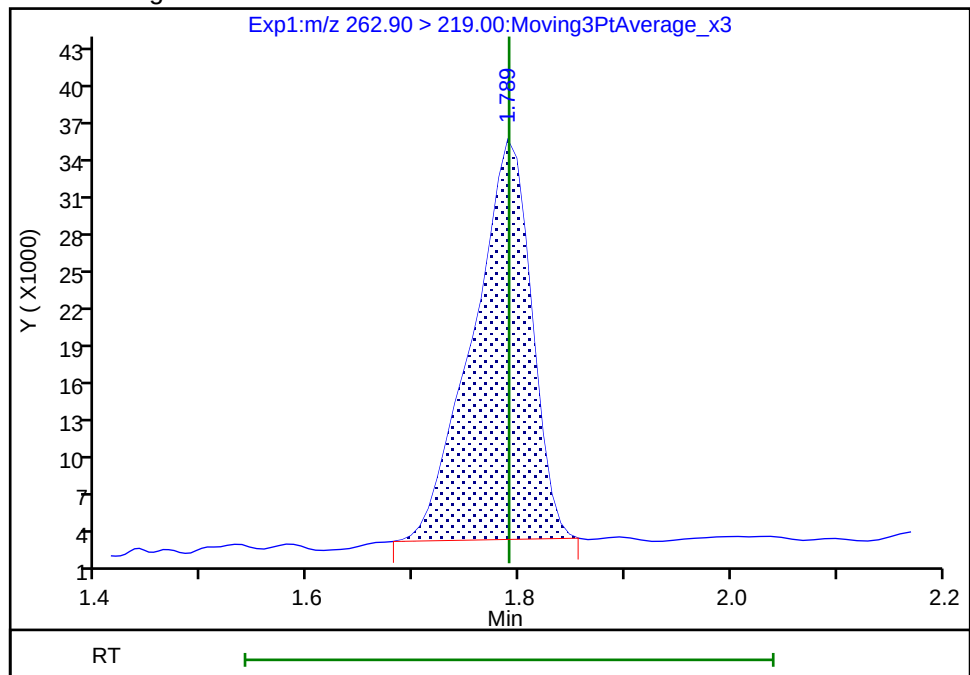
RT: 1.79
Area: 126347
Amount: 0.054382
Amount Units: ng/ml

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:

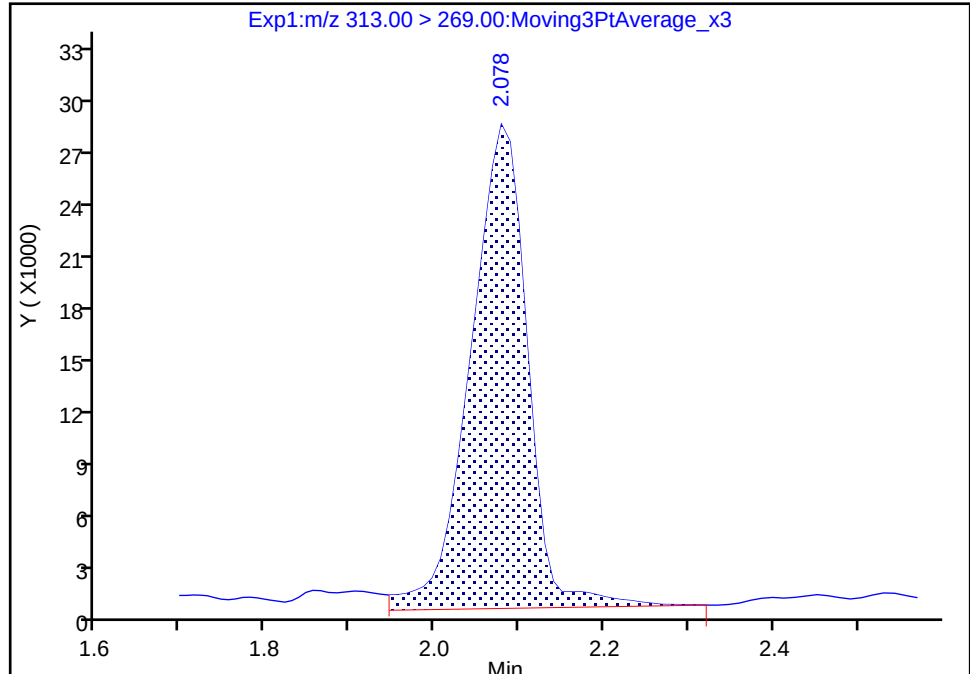
Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

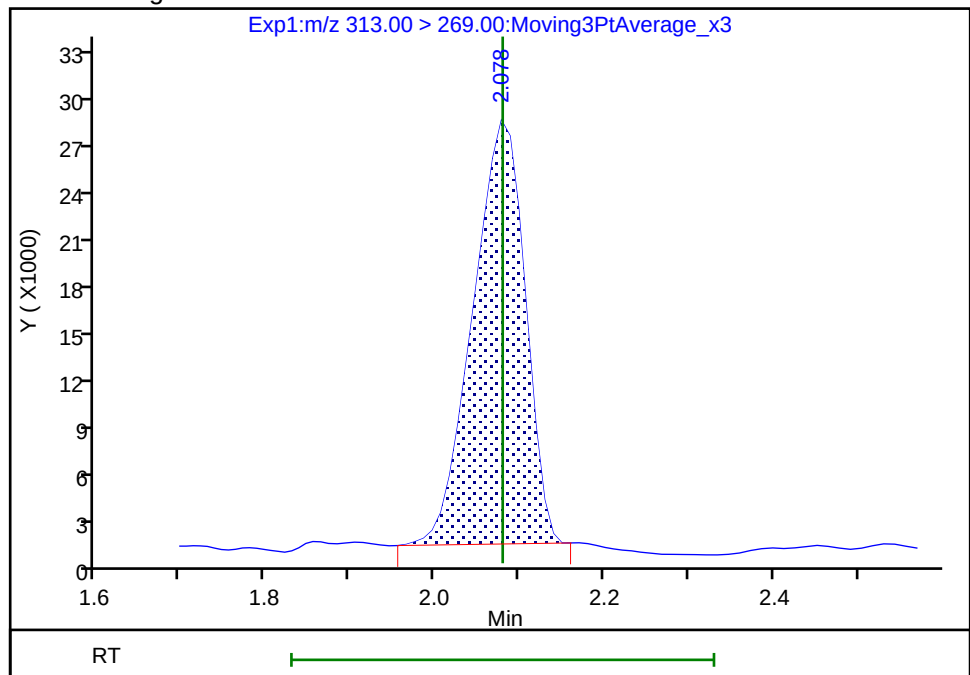
RT: 2.08
Area: 129799
Amount: 0.056249
Amount Units: ng/ml

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

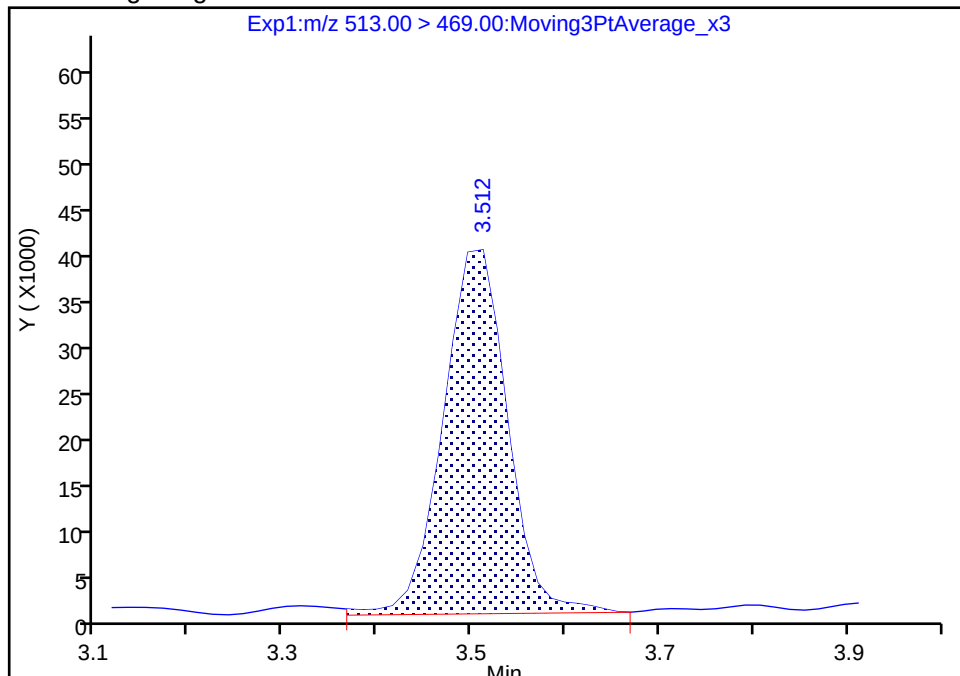
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Injection Date: 11-Oct-2018 16:01:29 Instrument ID: A9
Lims ID: IC L2 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

24 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

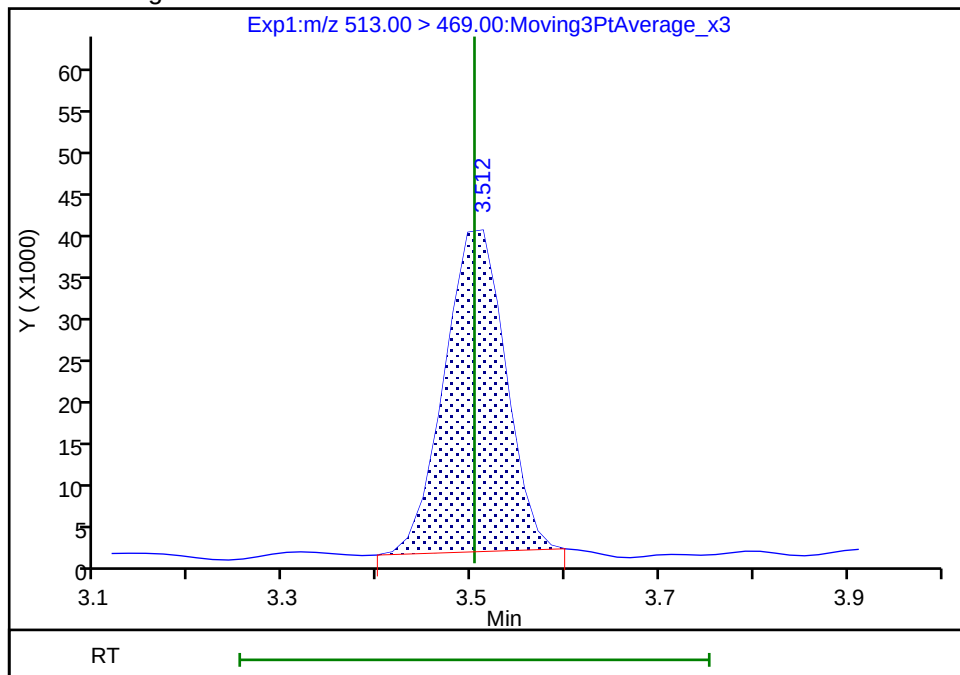
RT: 3.51
Area: 187795
Amount: 0.058436
Amount Units: ng/ml

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
Page 93 of 291

10/25/2018

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

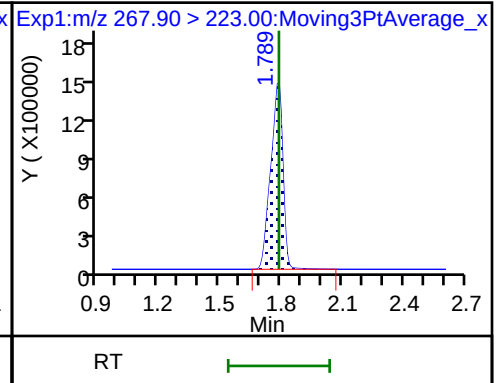
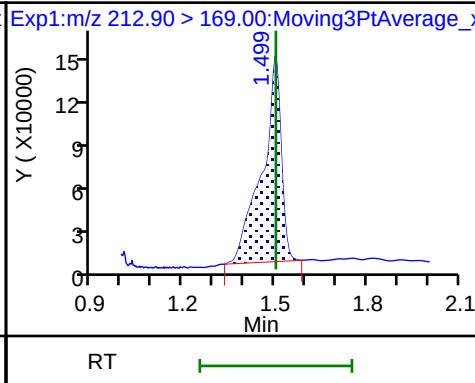
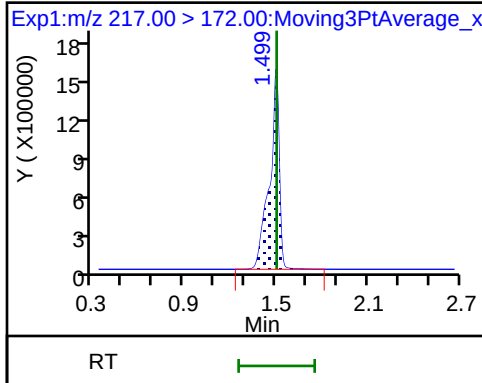
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

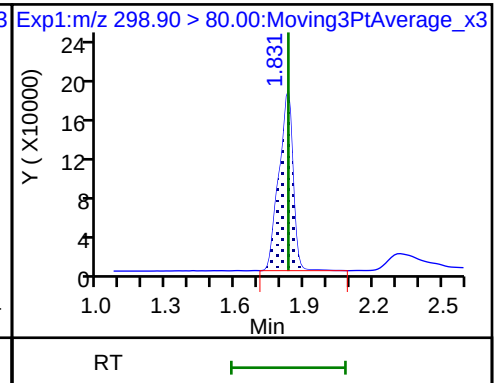
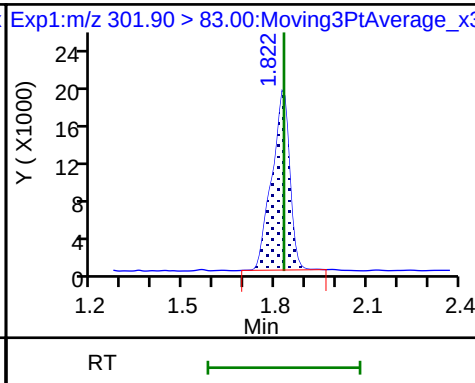
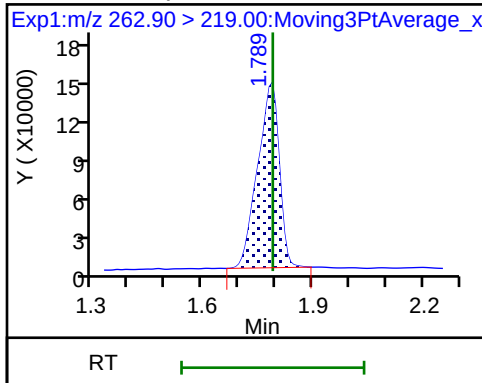
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

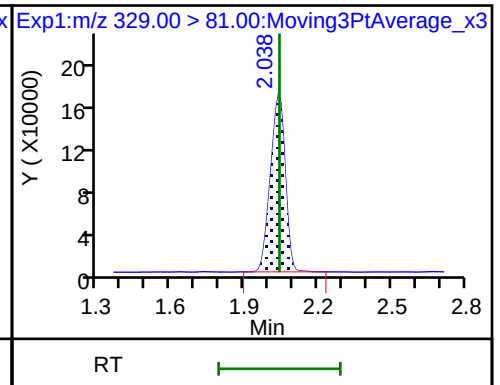
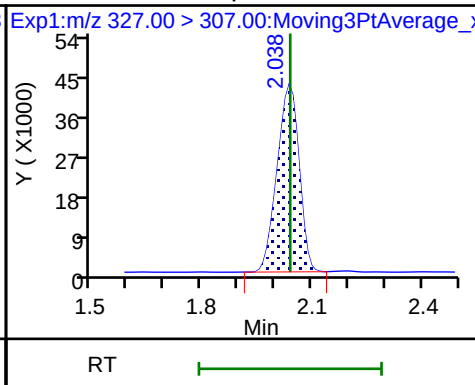
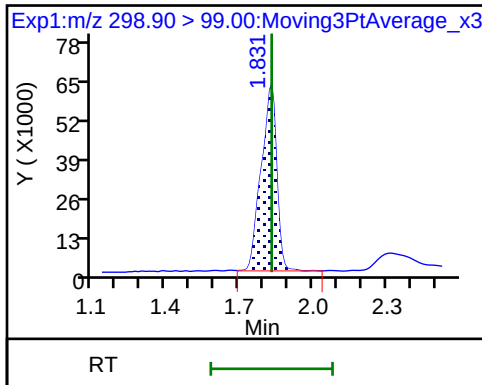
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

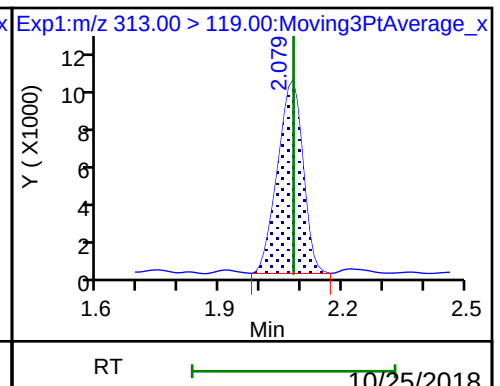
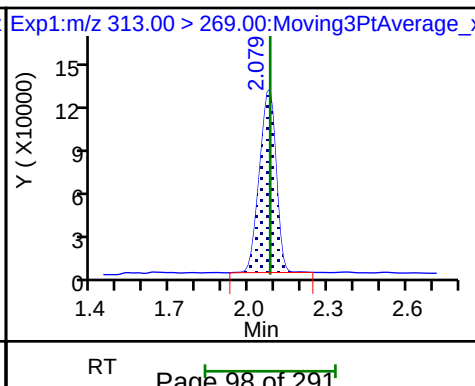
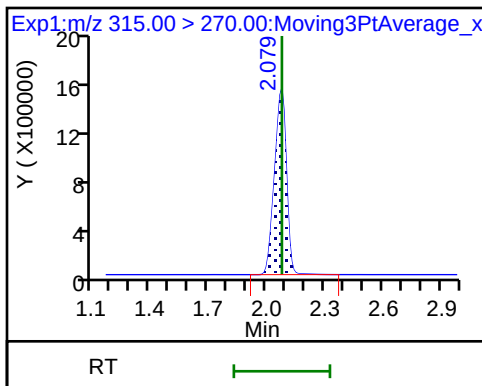
D 60 M2-4:2 FTS

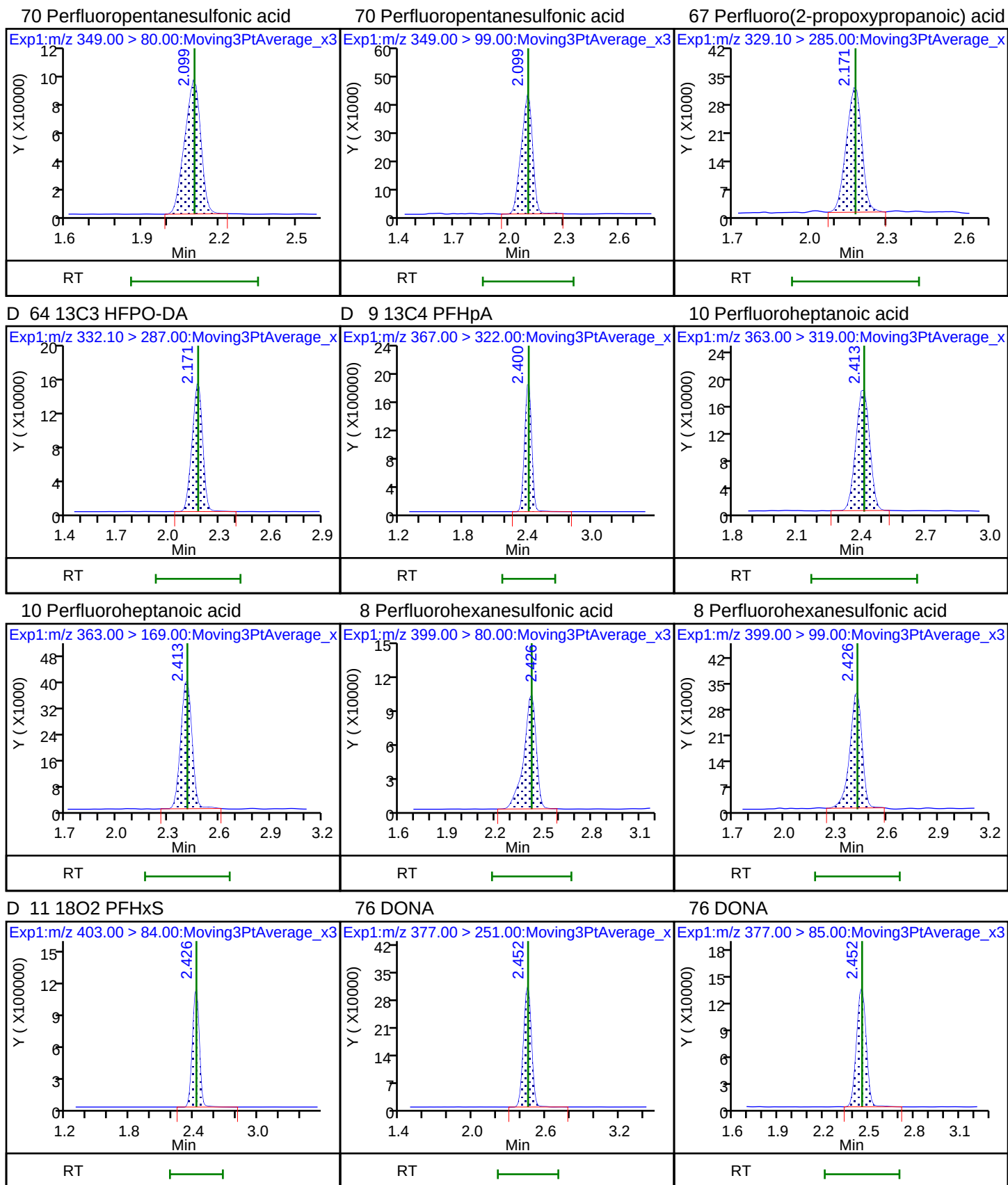


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

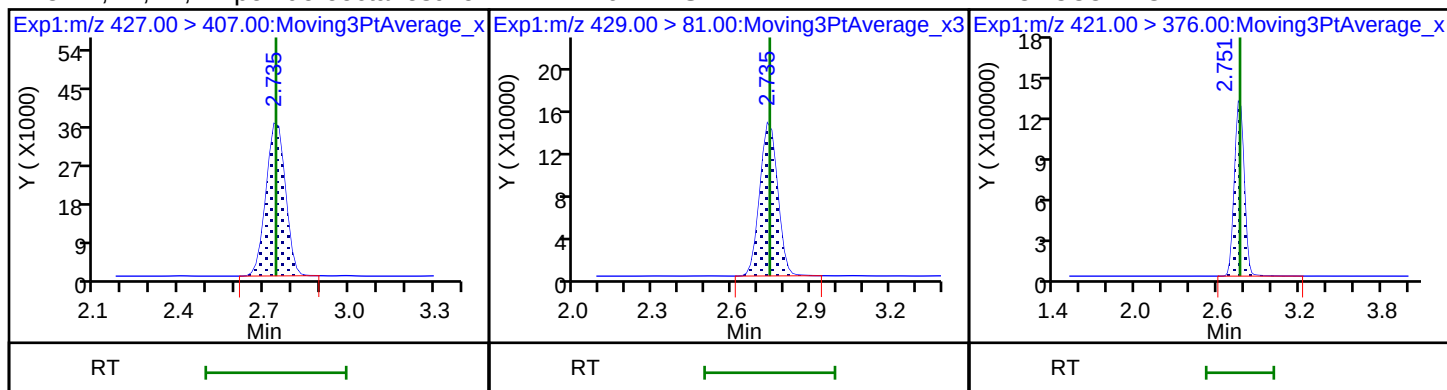
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

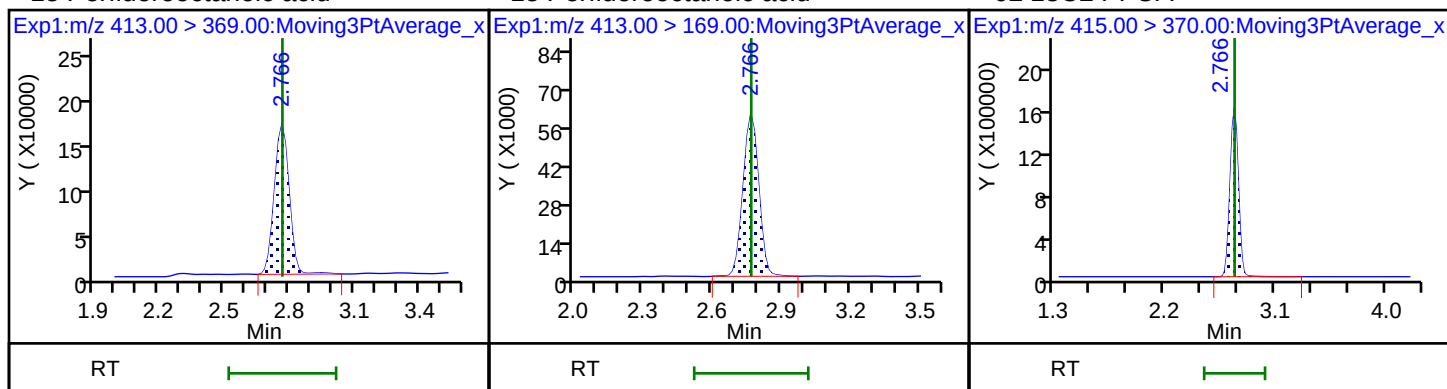
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

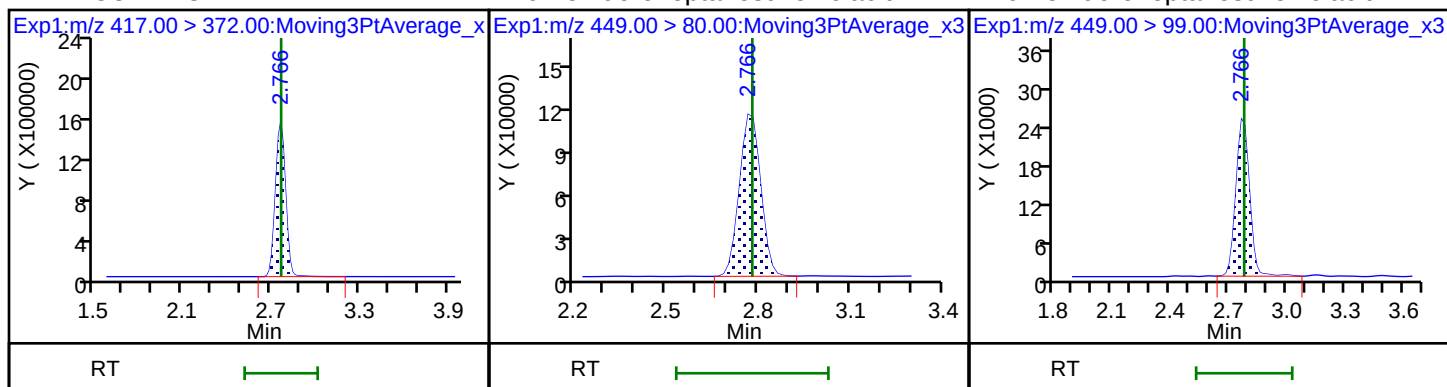
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

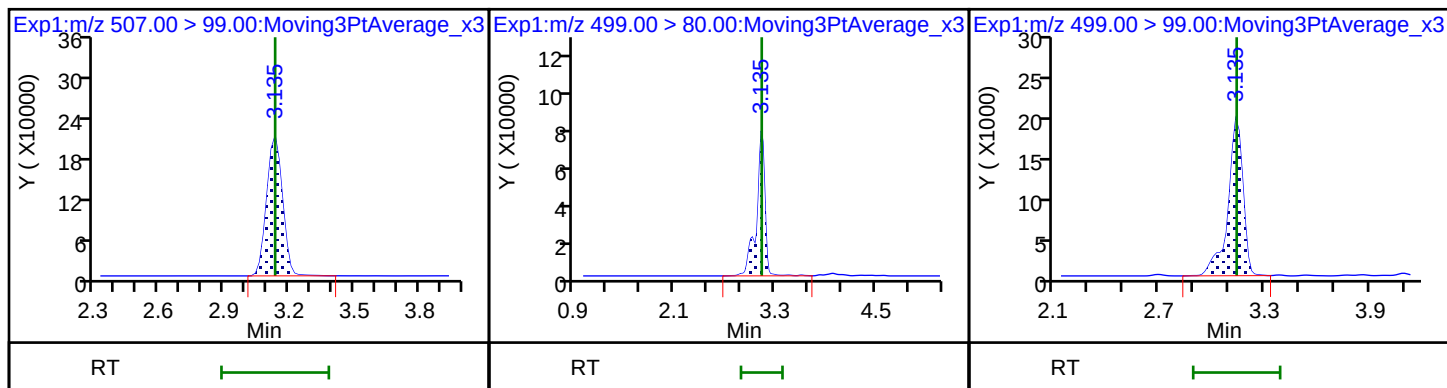
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

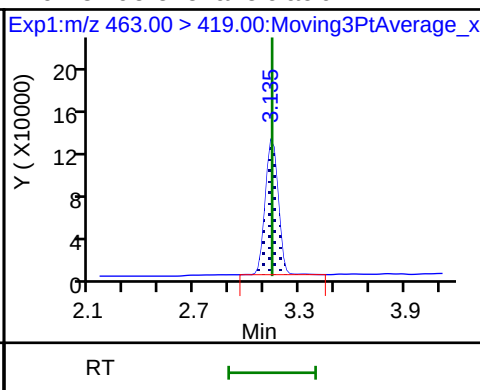
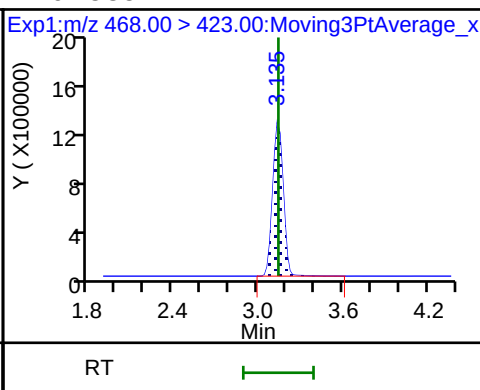
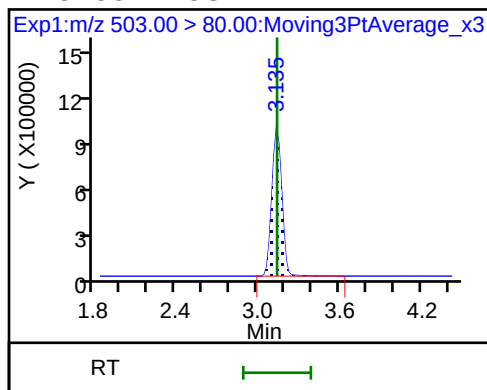
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

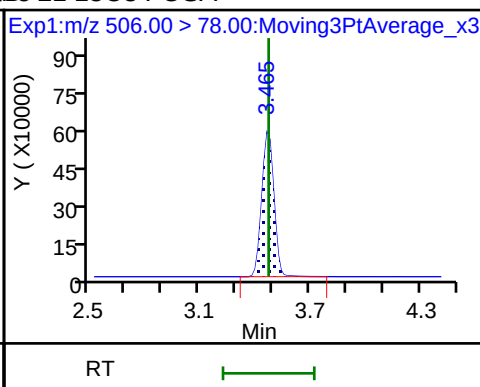
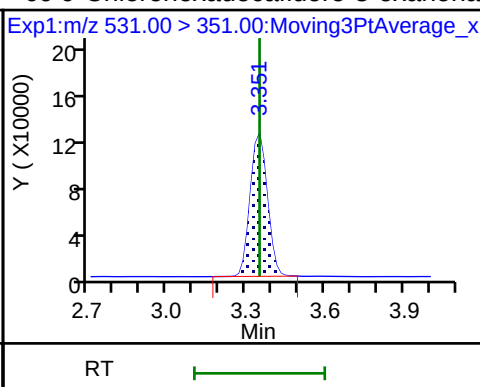
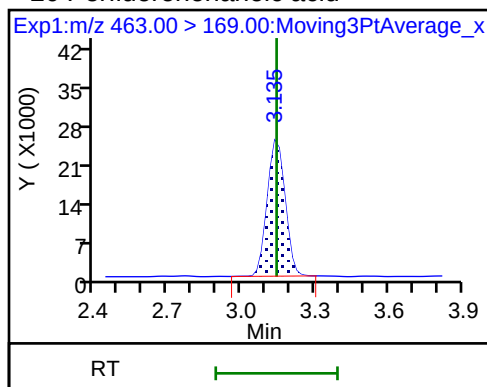
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

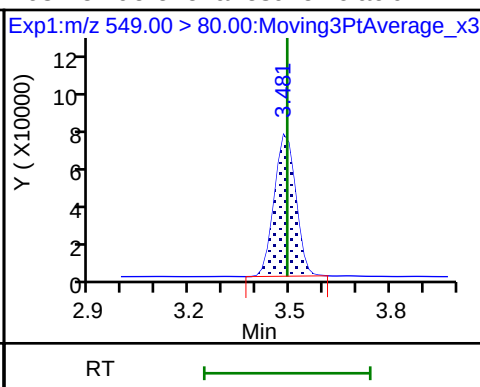
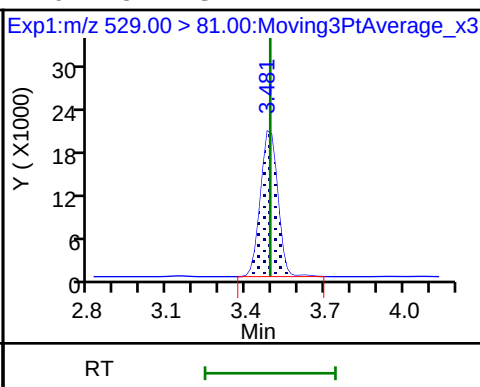
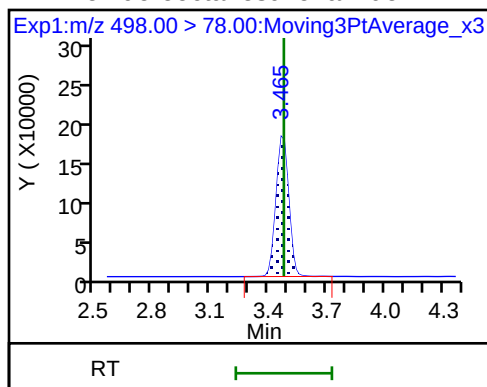
De 21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

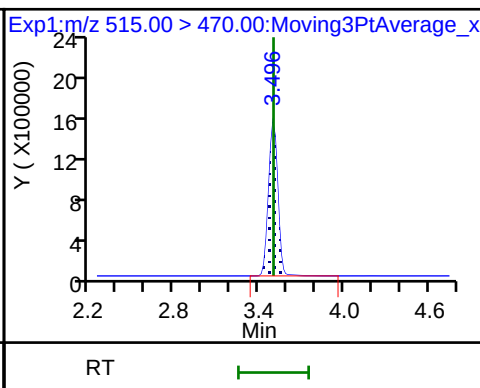
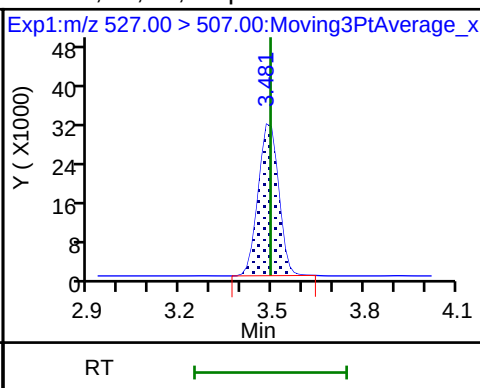
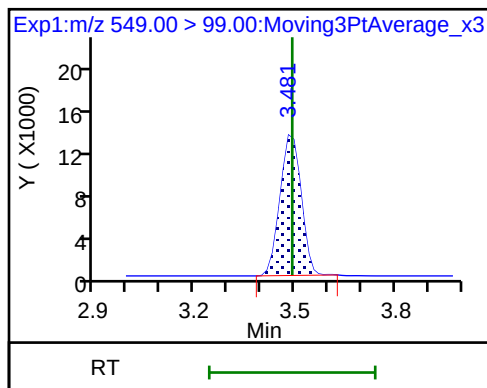
68 Perfluorononanesulfonic acid

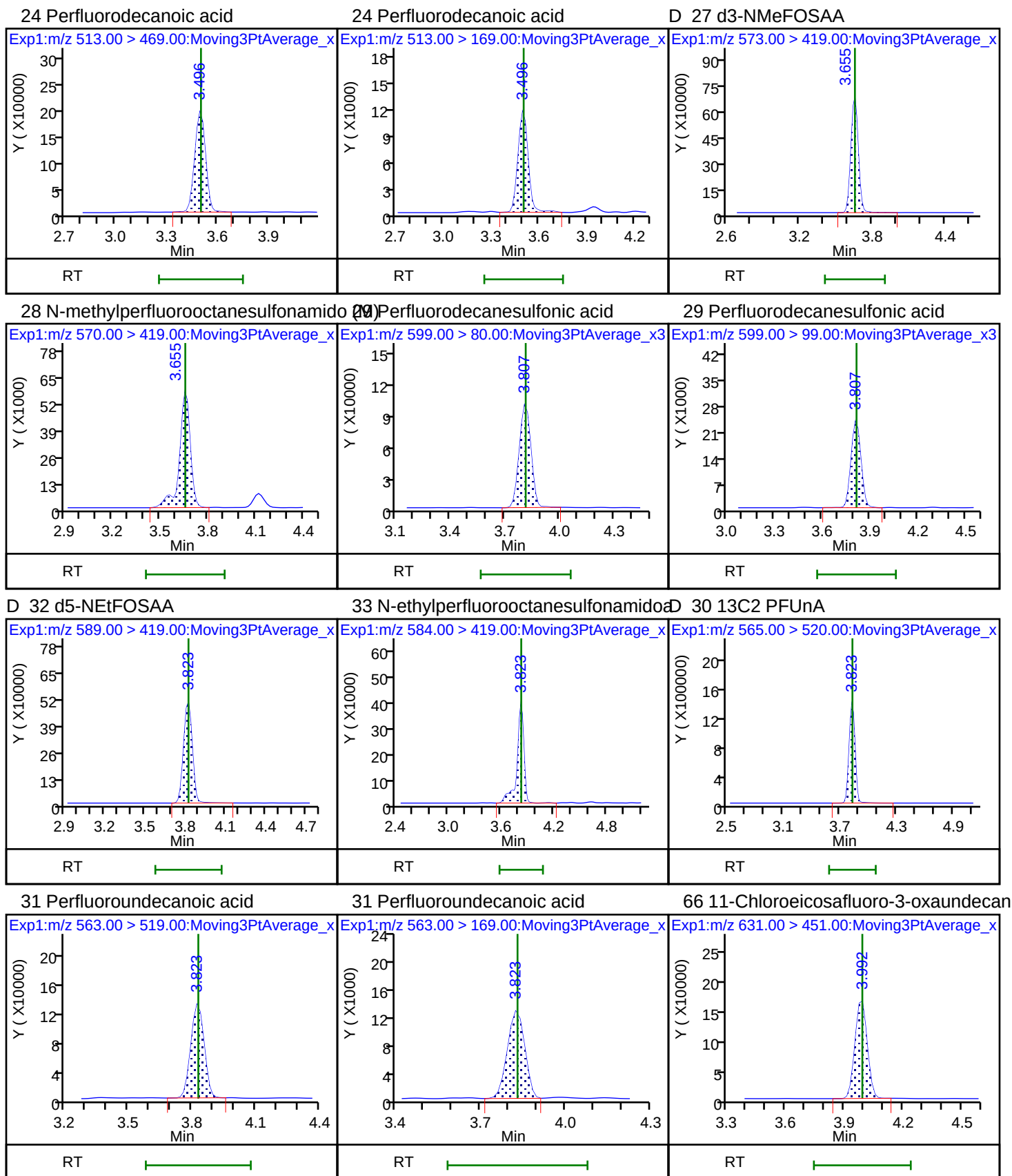


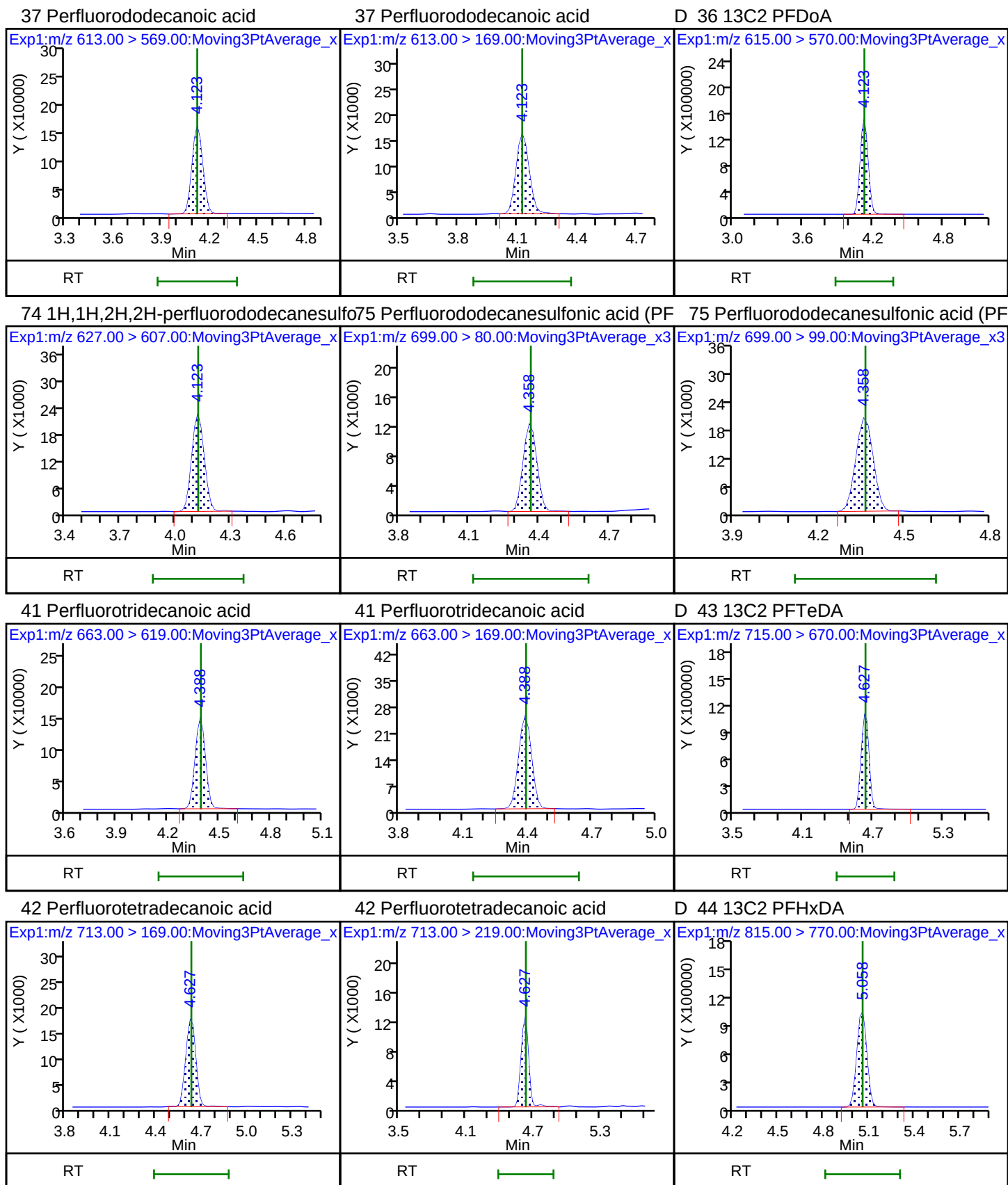
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonic acid

D 23 13C2 PFDA





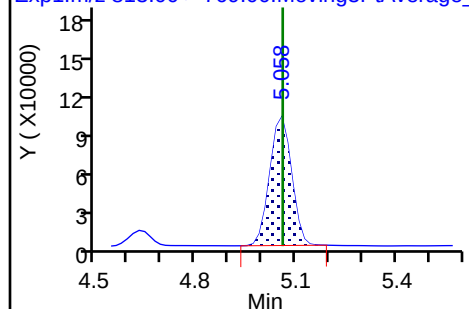


45 Perfluorohexadecanoic acid

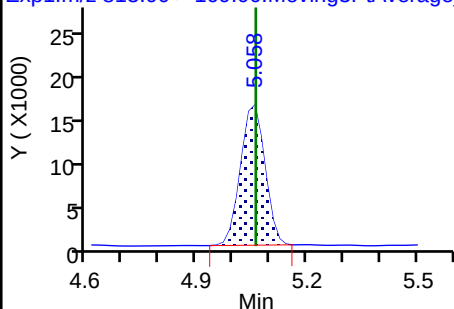
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

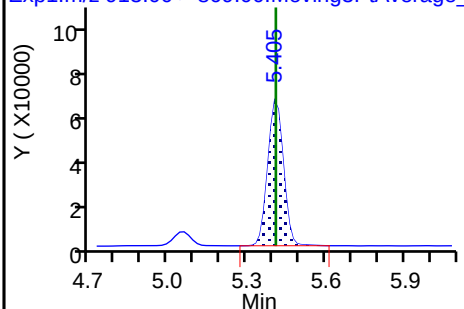
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Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

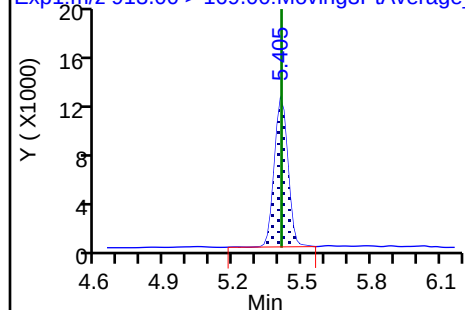


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

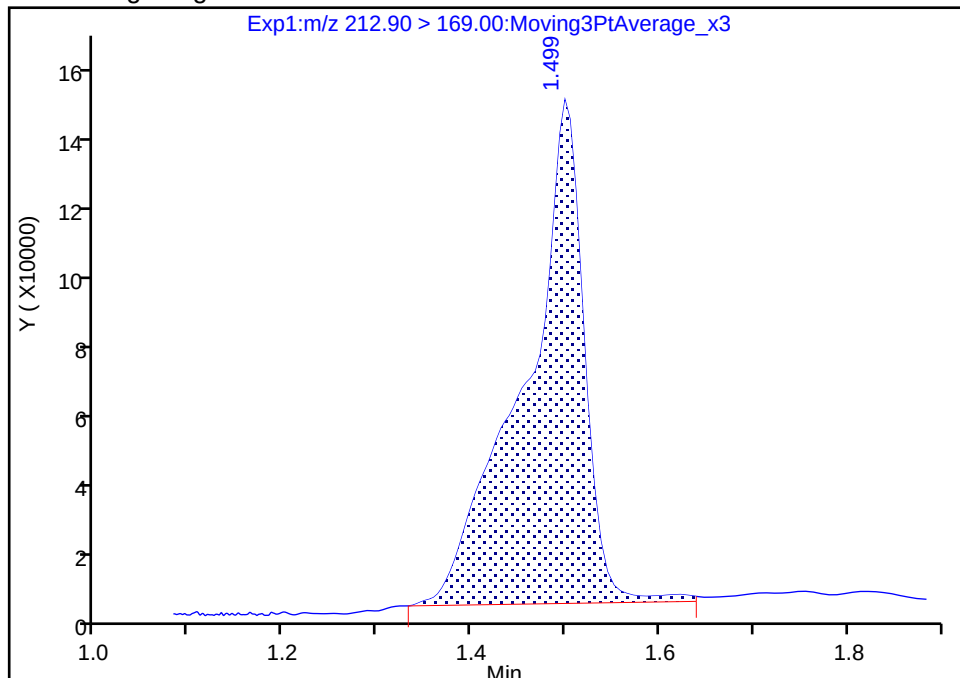
Data File: \\ChromNA\Sacramento\ChromData\A9\20181011-65711.b\2018.10.11LLICALA_004.d
Injection Date: 11-Oct-2018 16:09:03 Instrument ID: A9
Lims ID: IC L3 Full
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

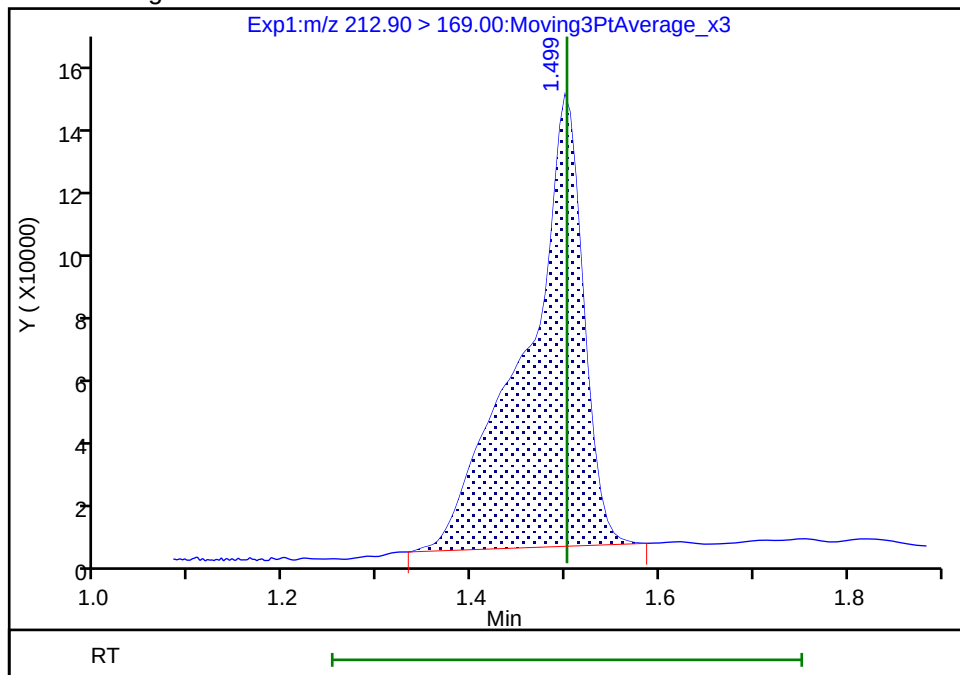
RT: 1.50
Area: 610153
Amount: 0.247286
Amount Units: ng/ml

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
Page 105 of 291

10/25/2018

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:

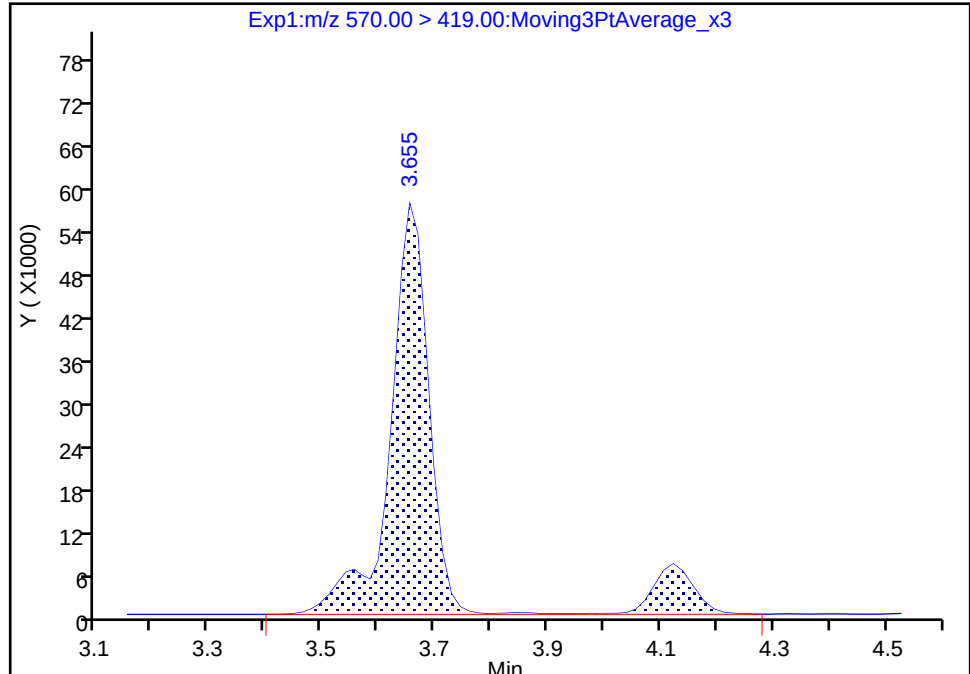
Detector EXP1

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

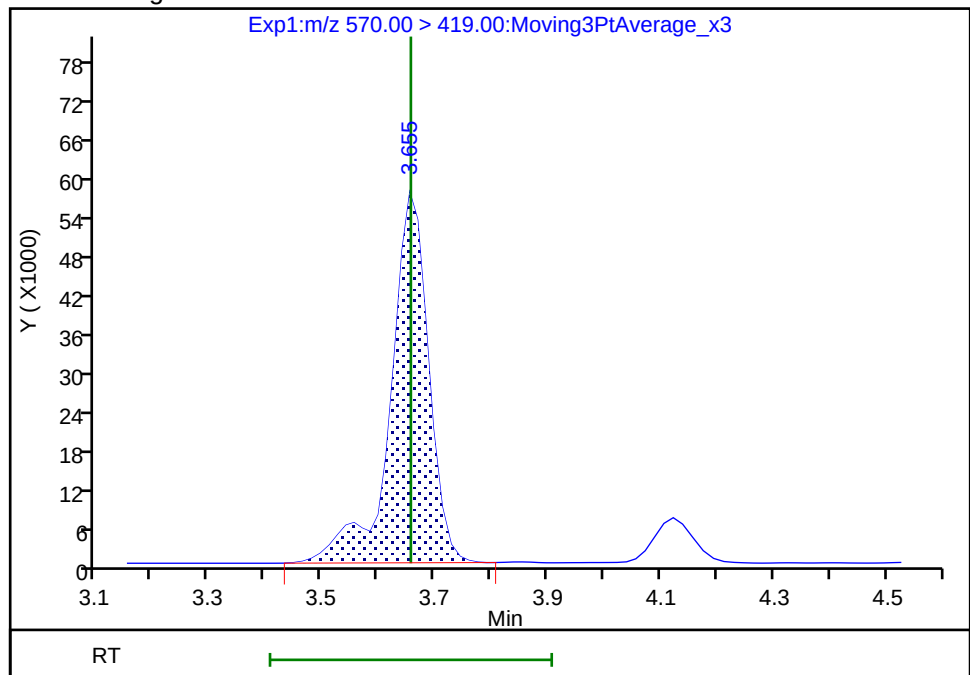
RT: 3.66
Area: 305984
Amount: 0.266415
Amount Units: ng/ml

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

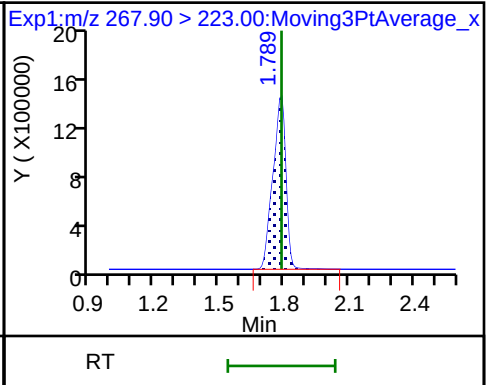
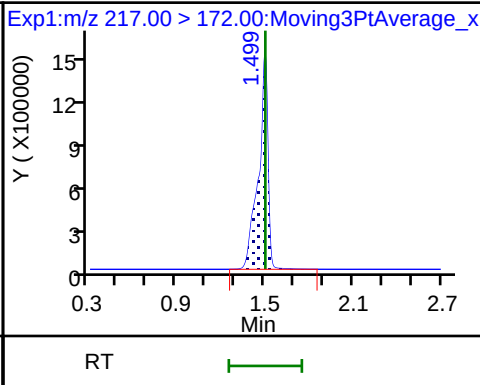
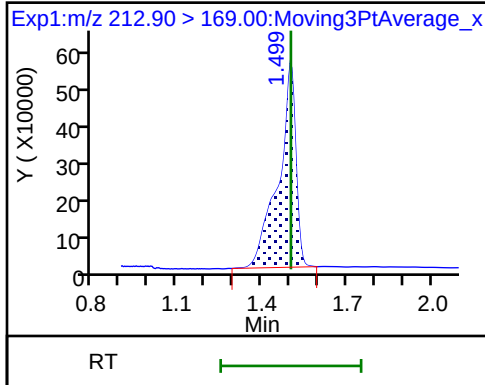
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

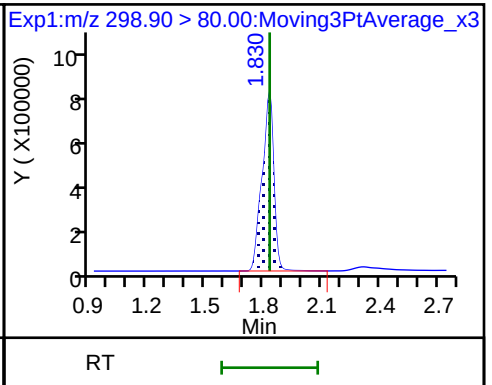
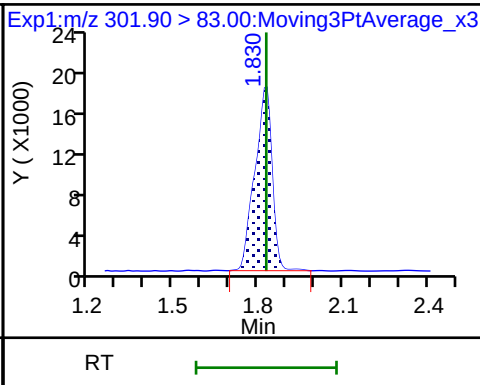
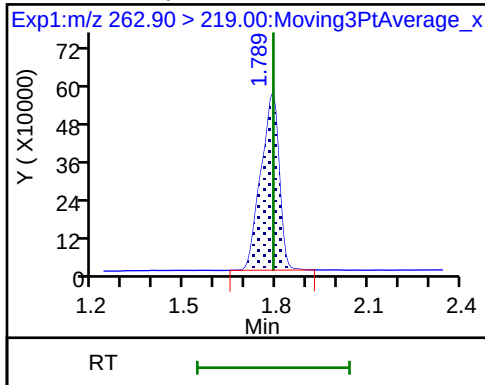
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

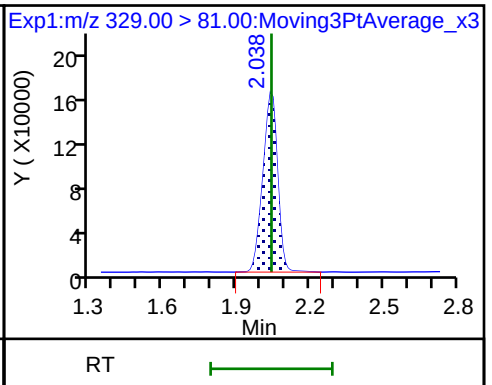
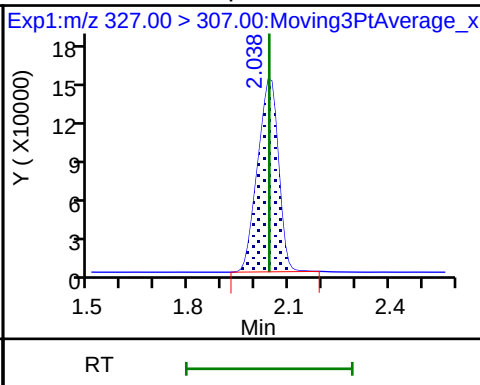
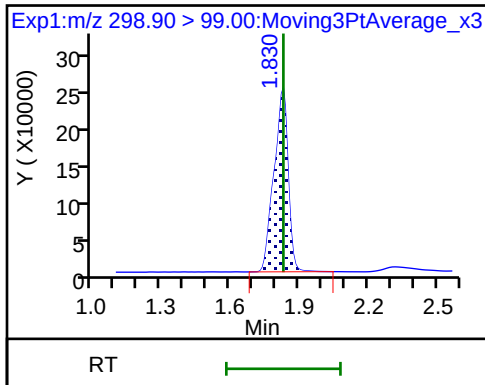
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

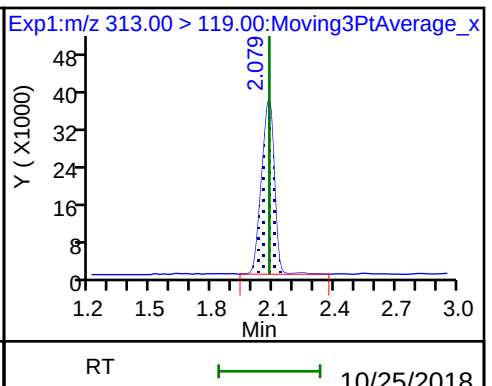
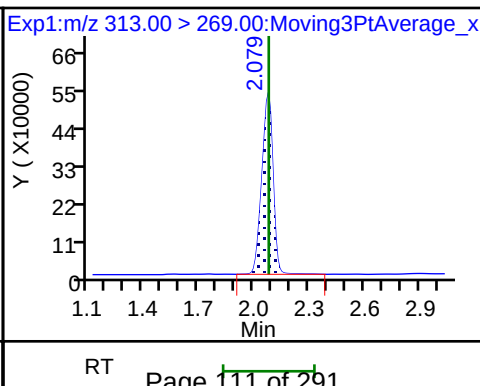
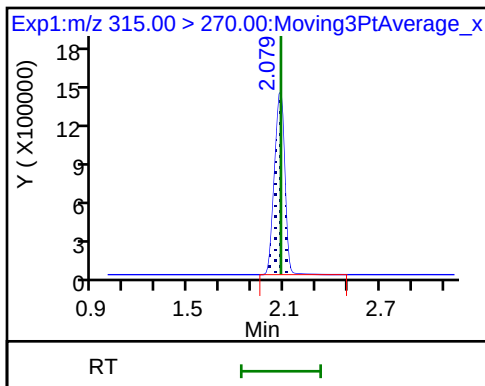
D 60 M2-4:2 FTS

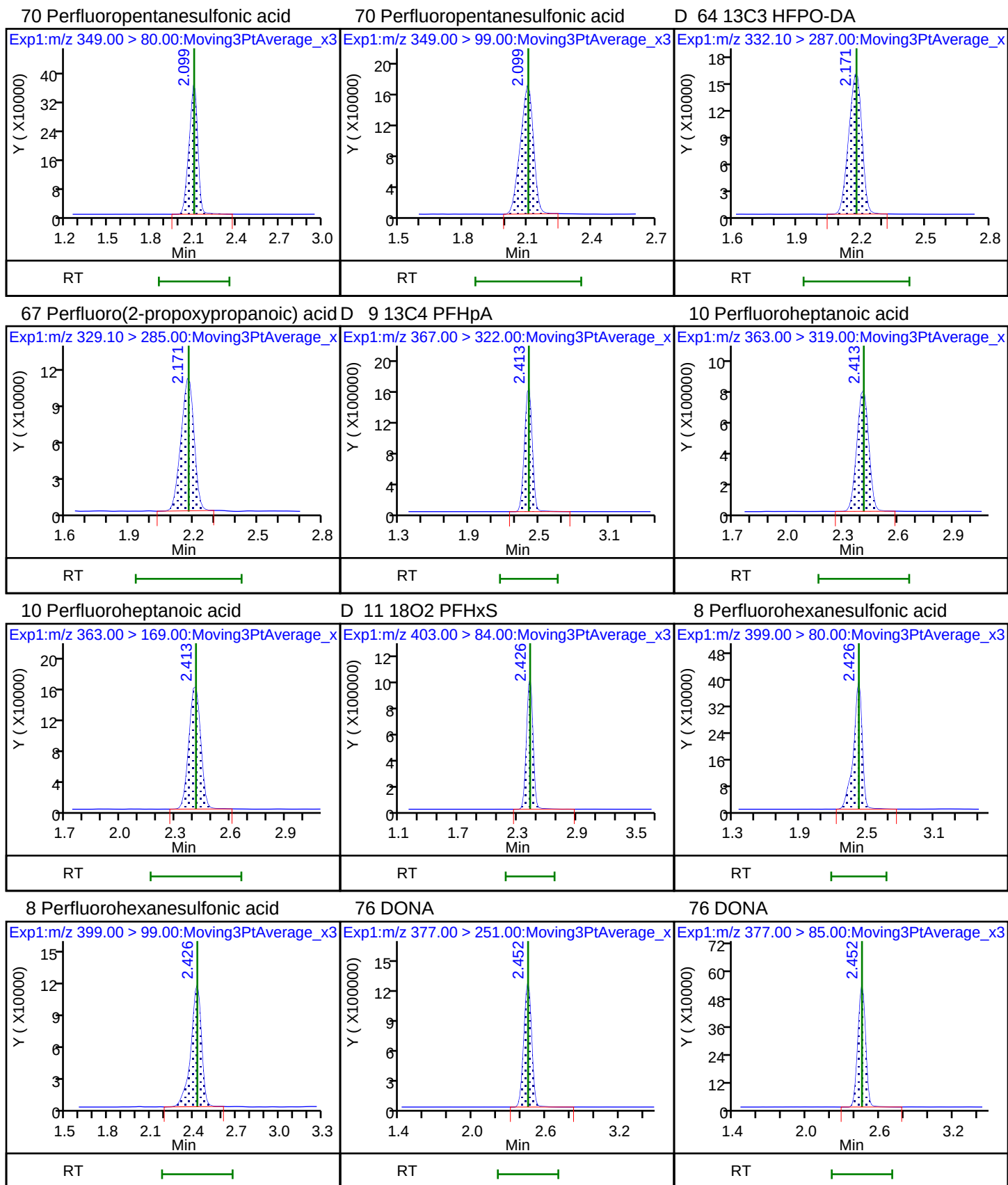


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

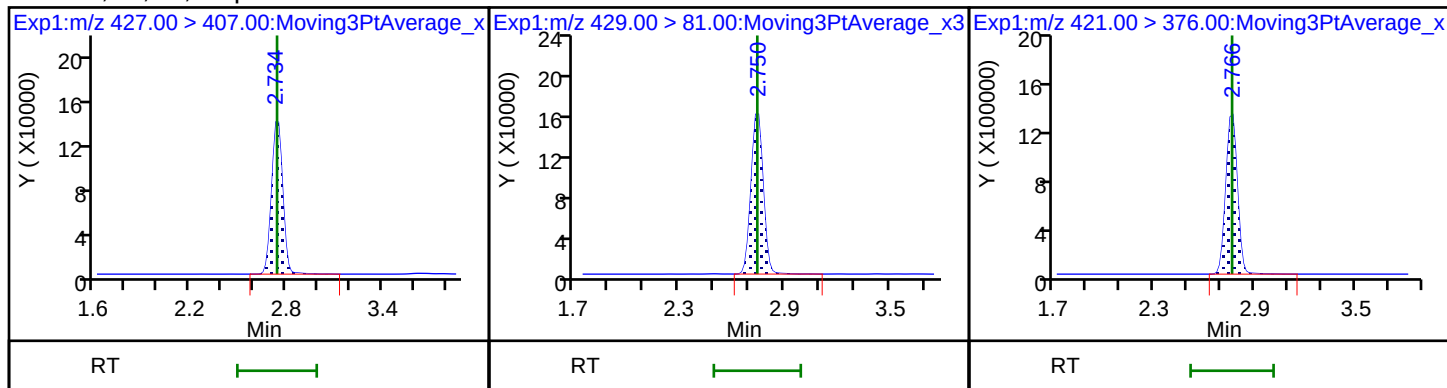
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

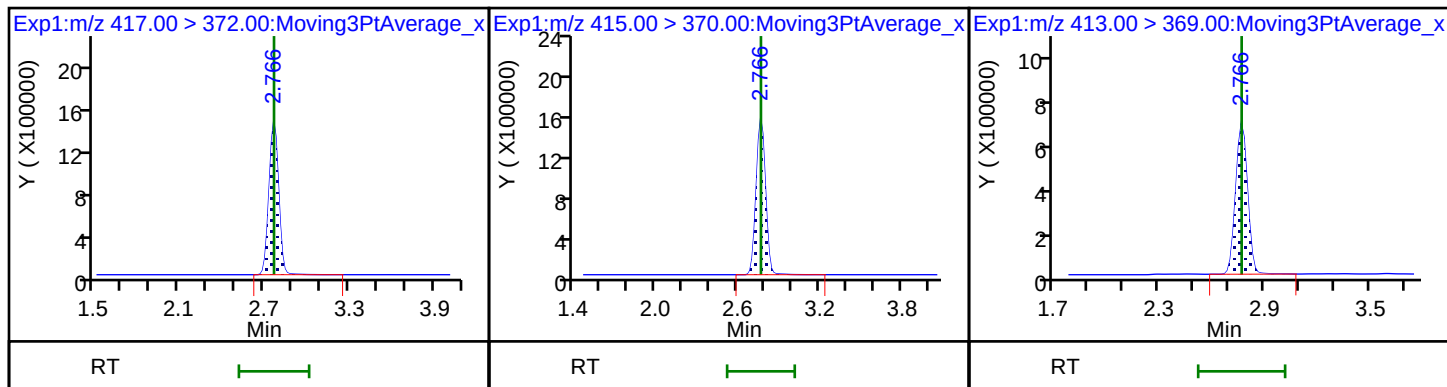
D 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

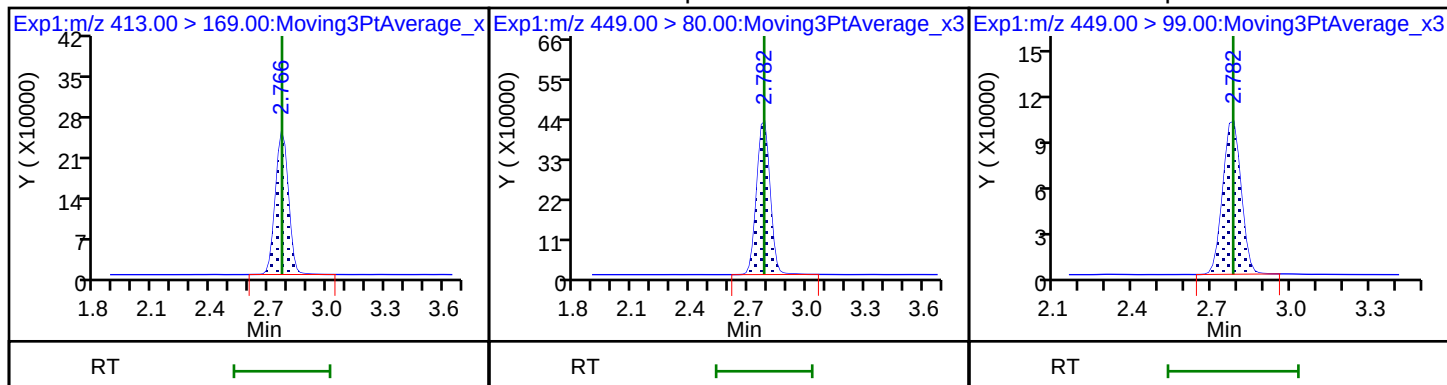
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

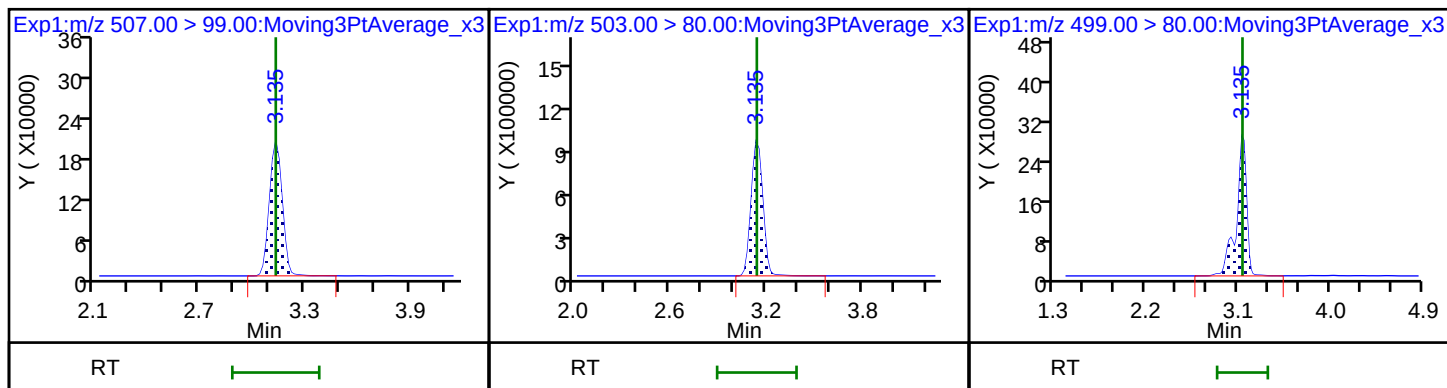
16 Perfluoroheptanesulfonic acid

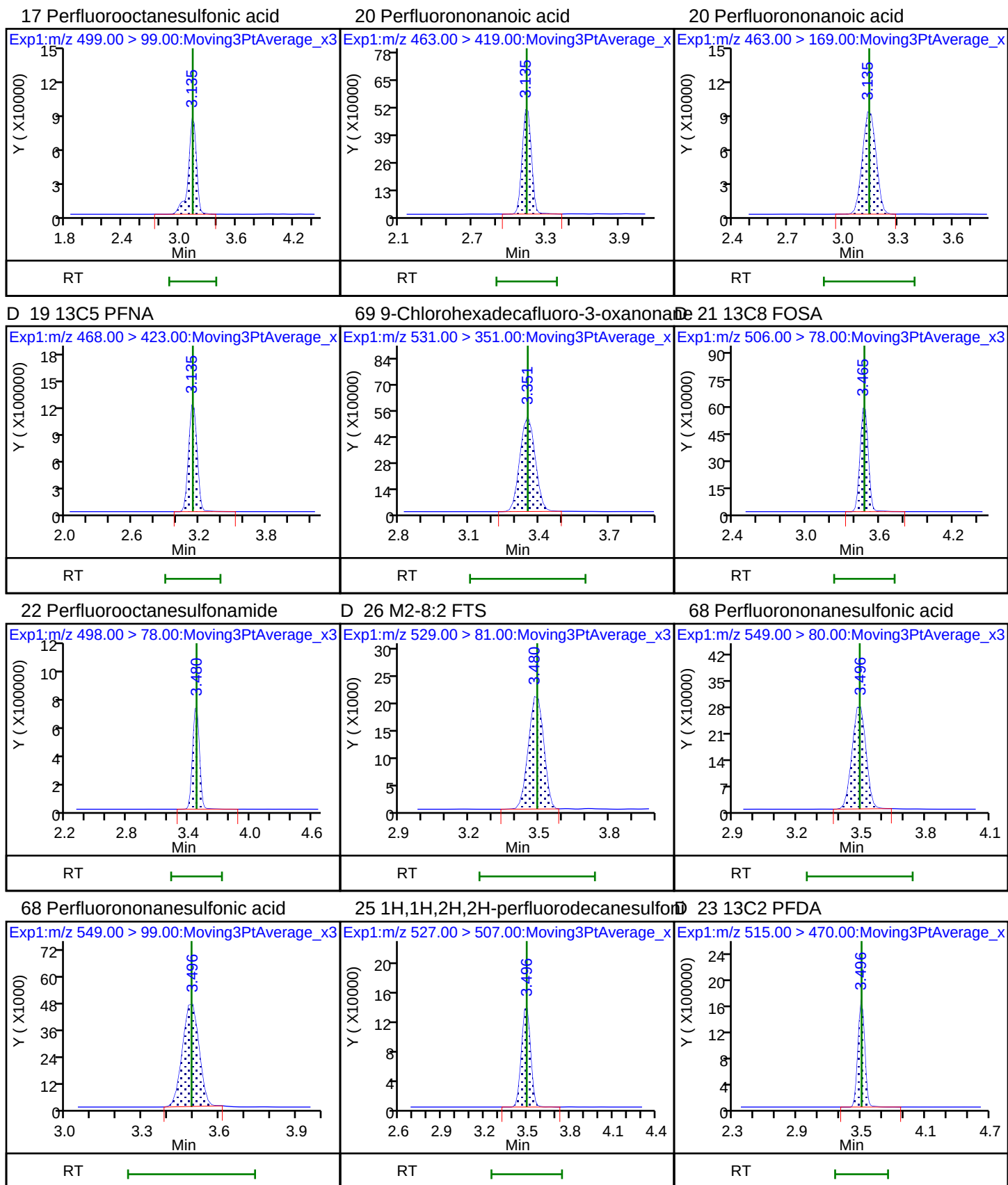


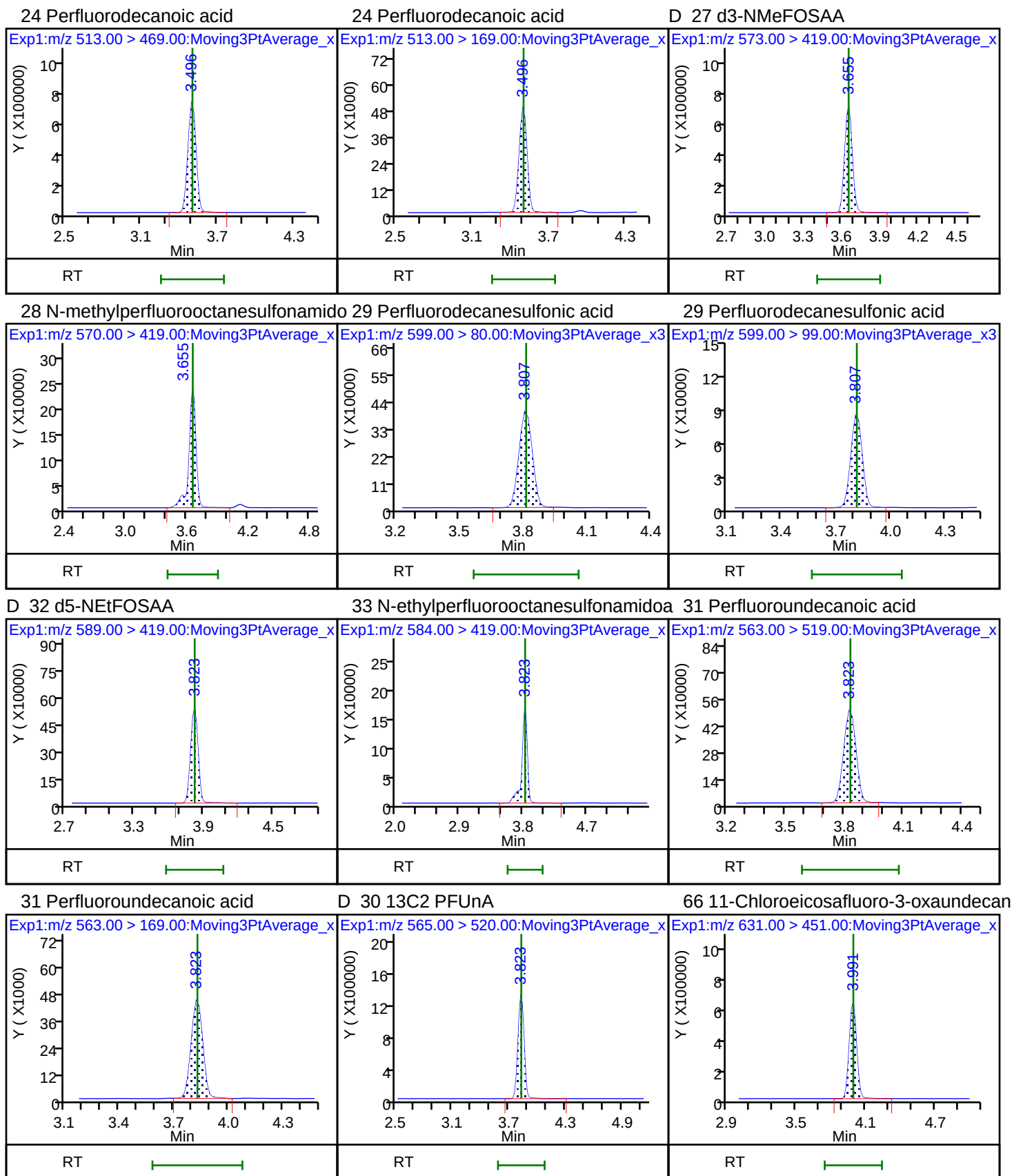
D 72 13C8 PFOS

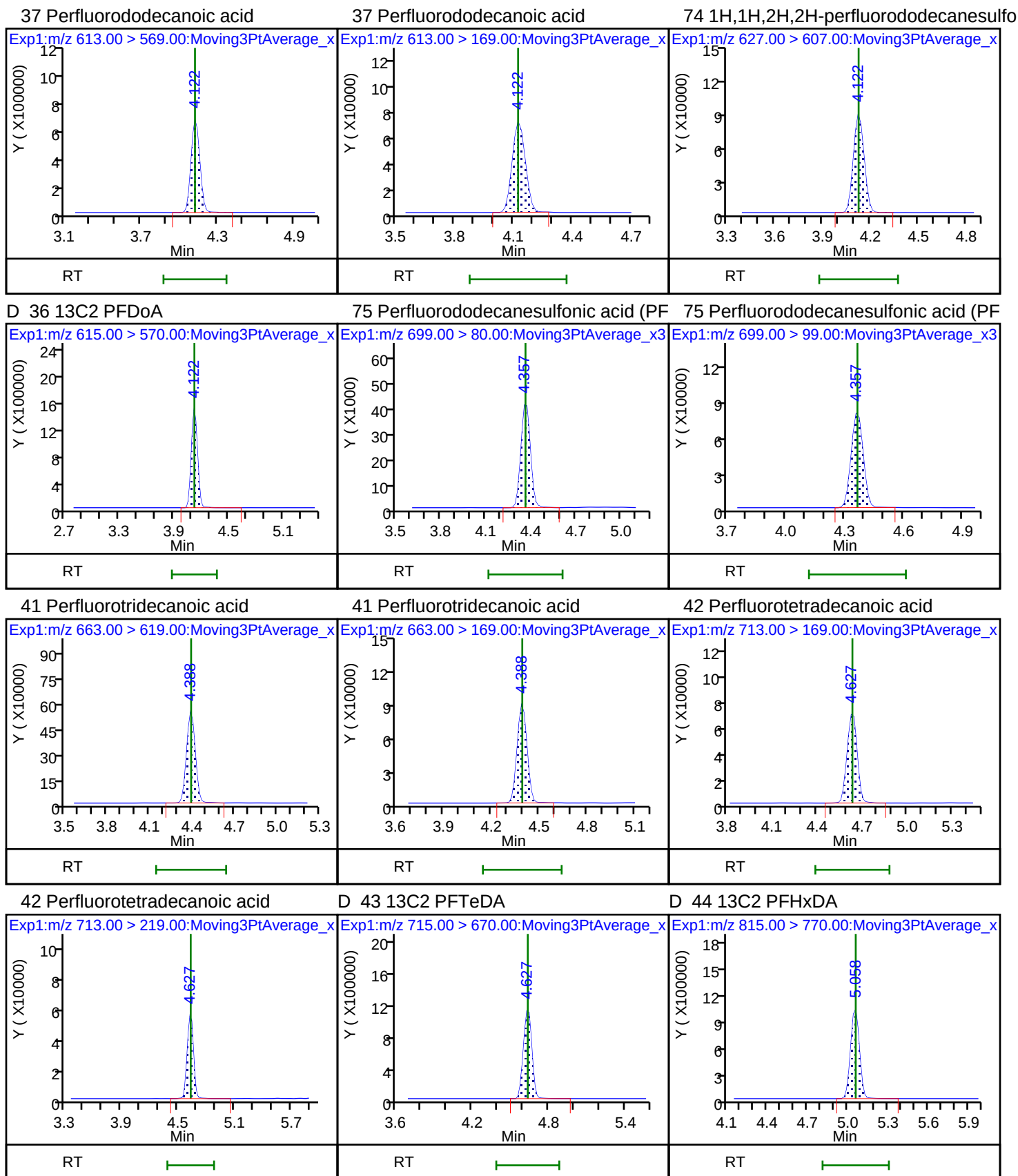
D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid





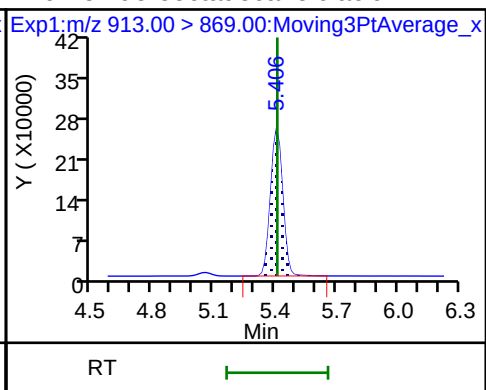
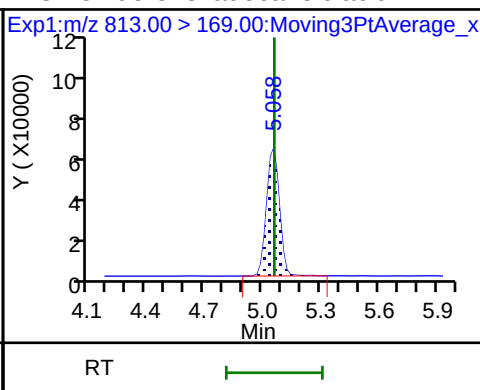
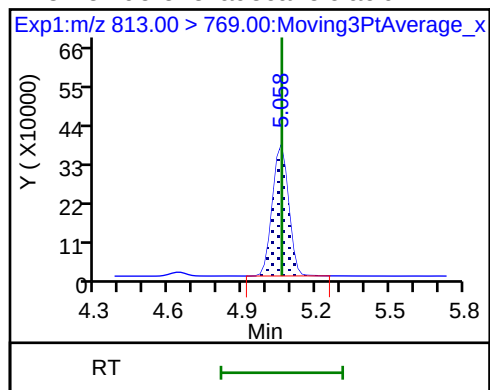




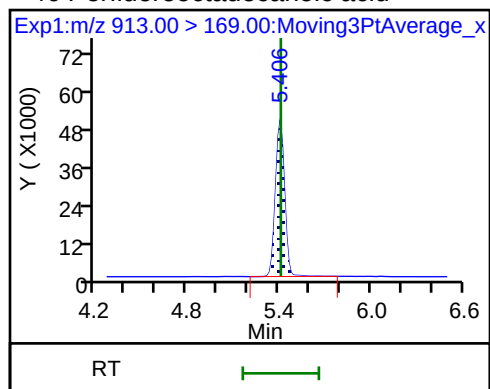
45 Perfluorohexadecanoic acid

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

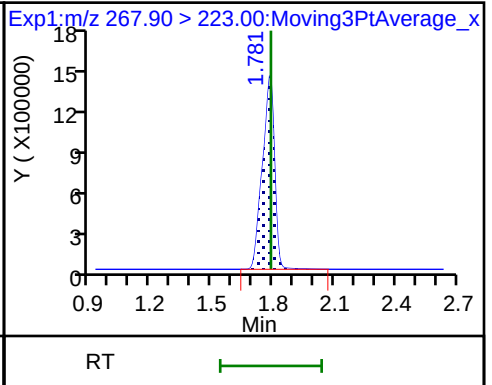
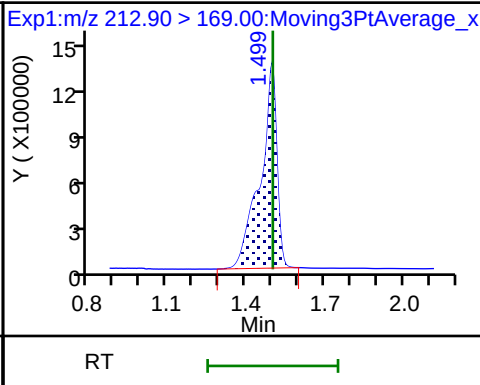
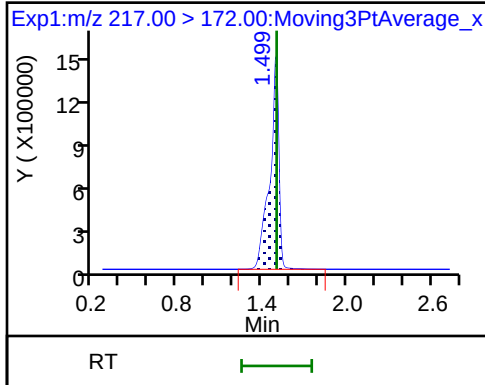
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

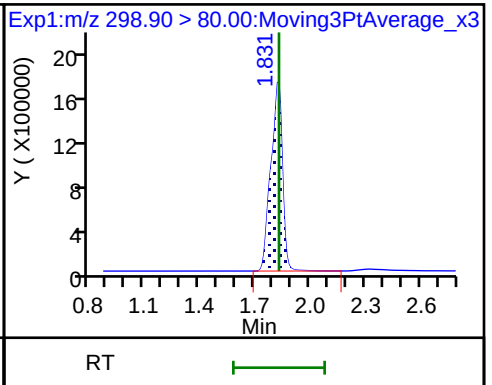
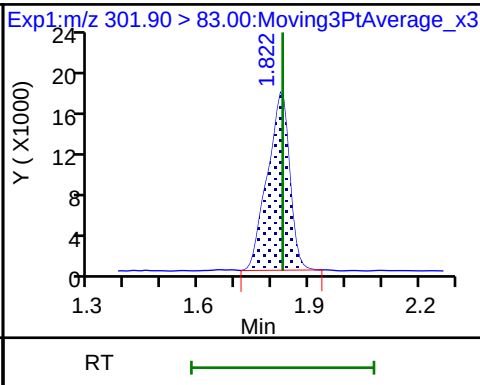
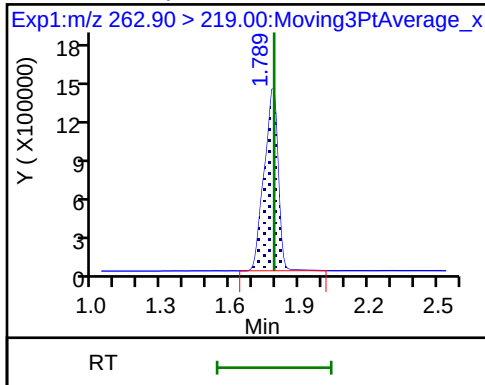
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

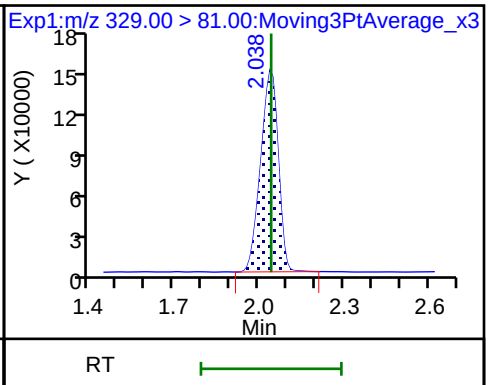
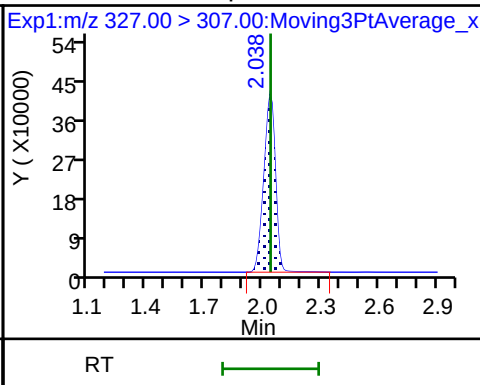
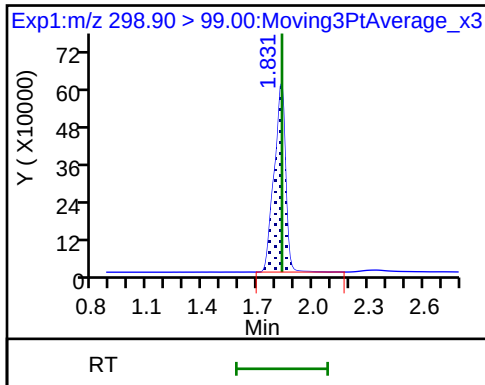
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

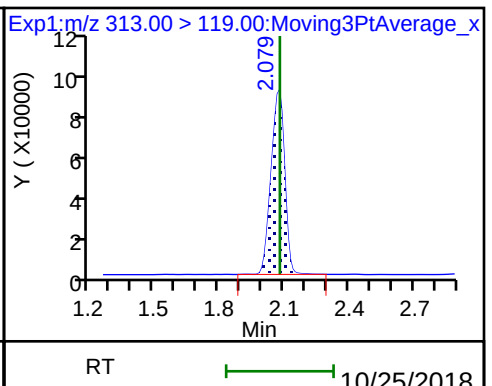
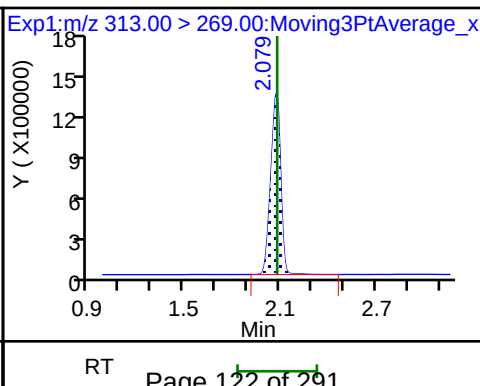
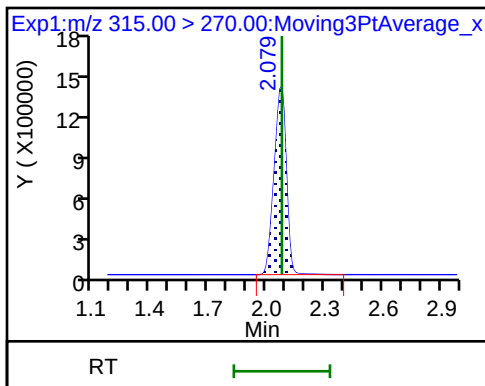
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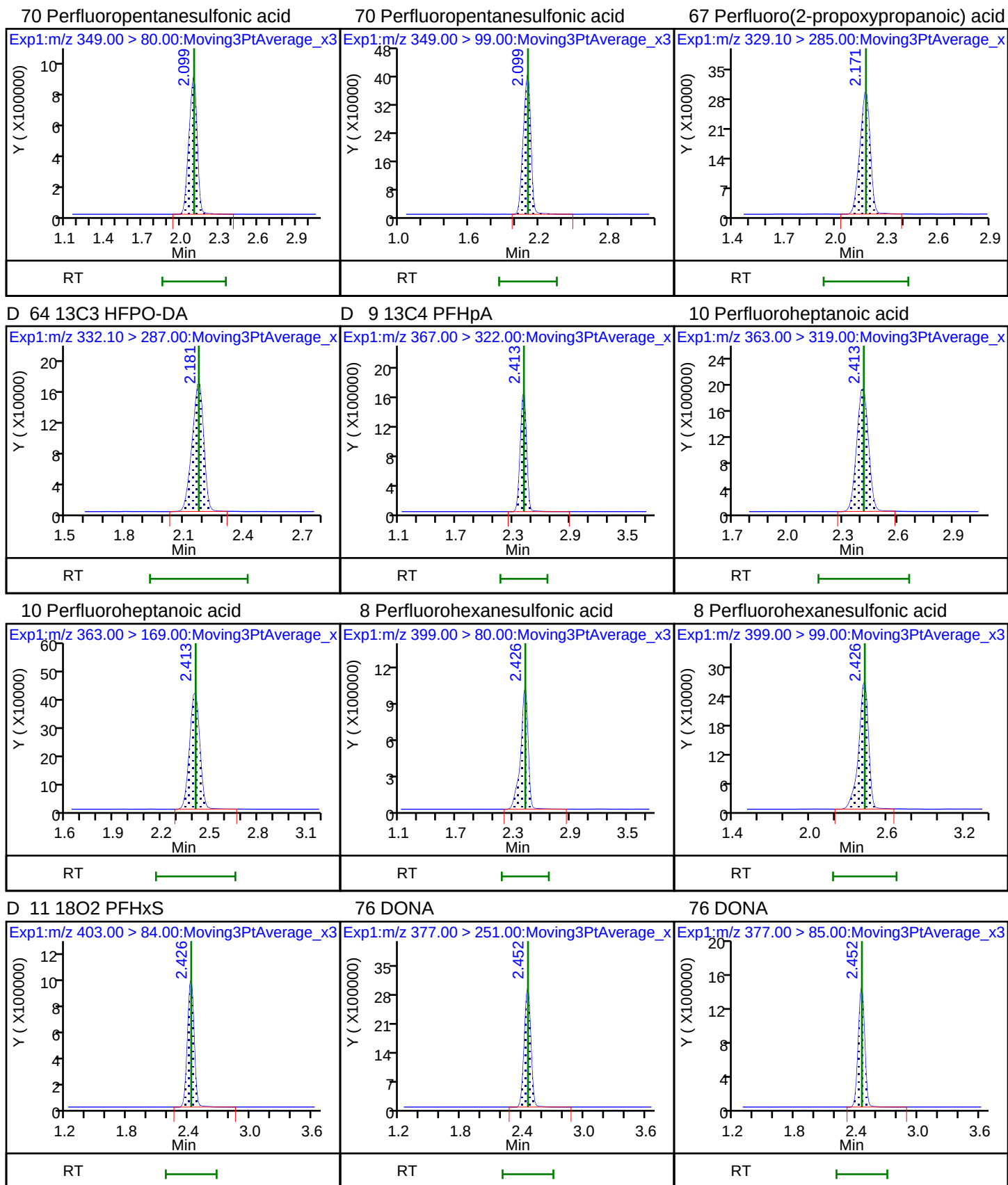


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

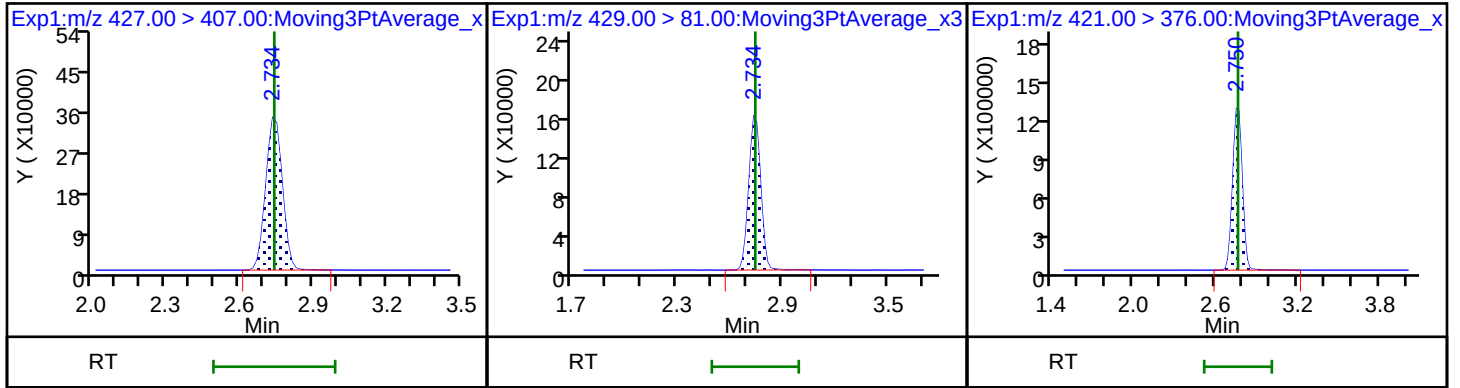
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

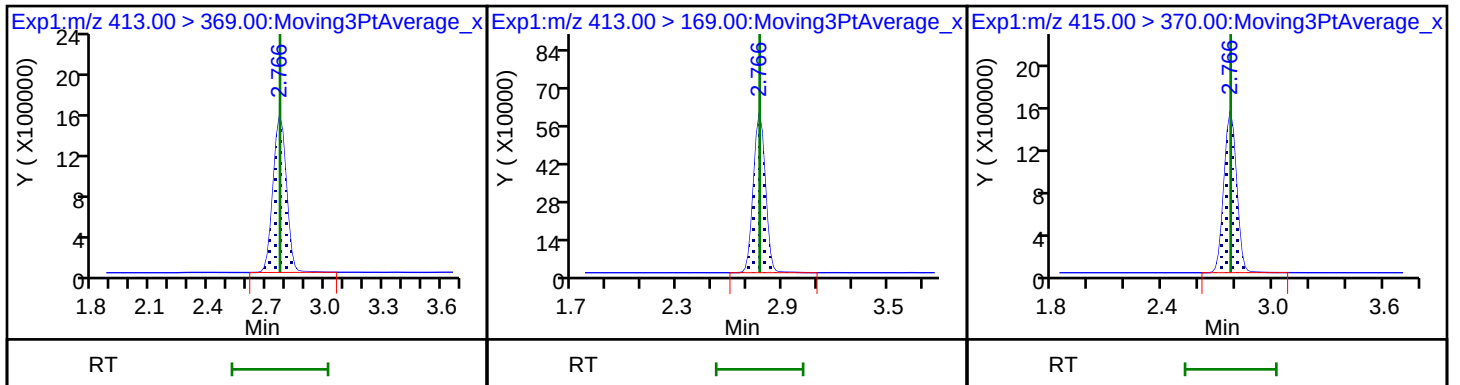
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

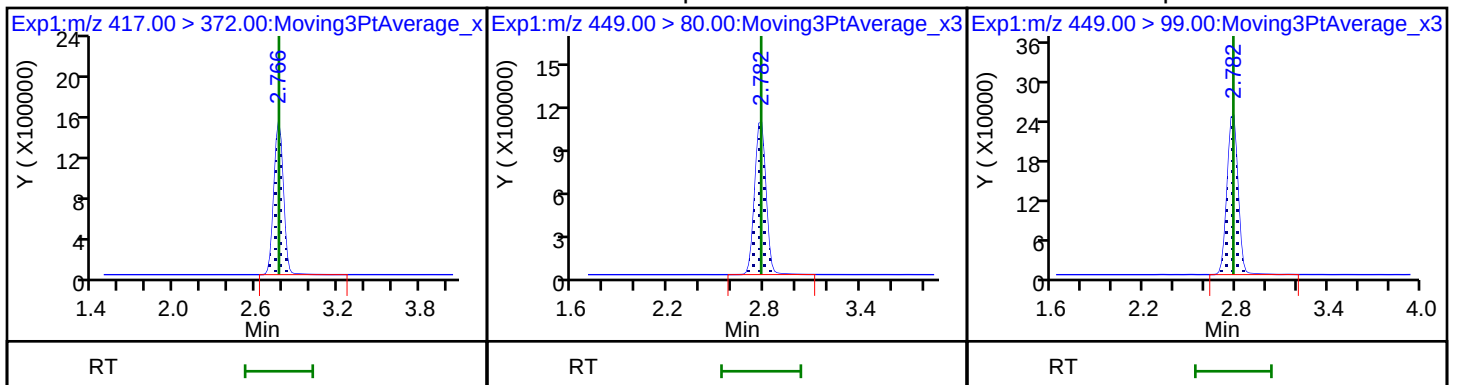
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

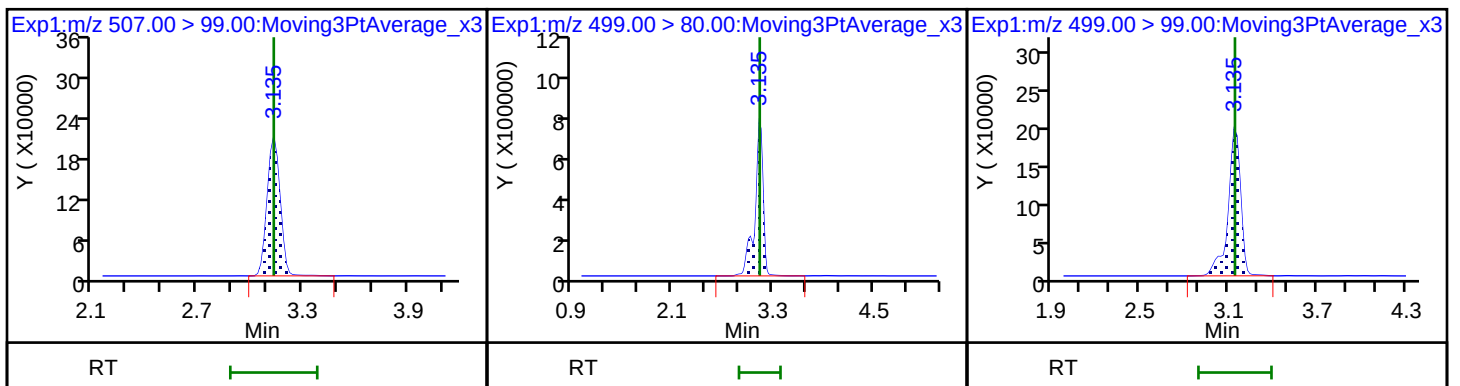
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

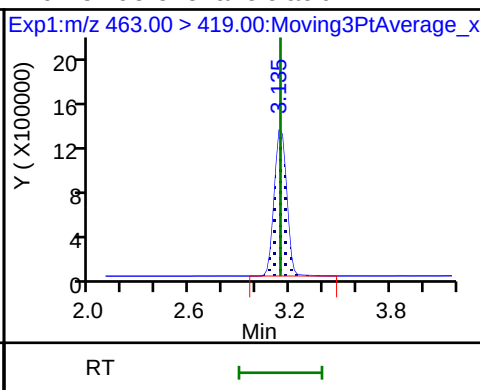
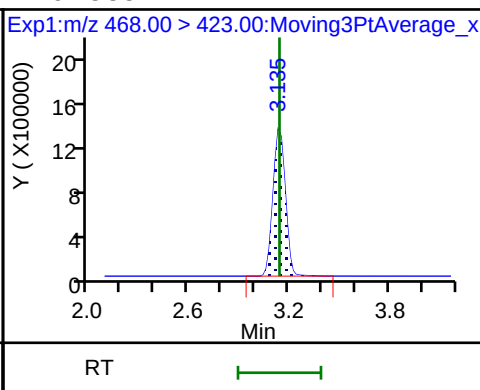
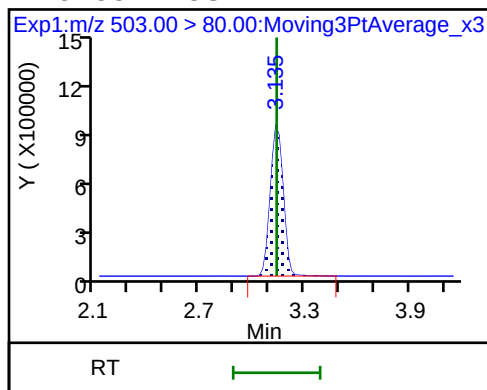
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

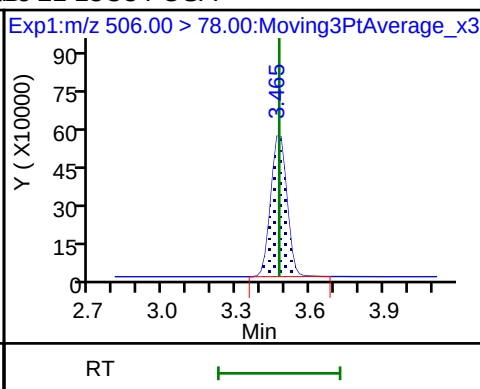
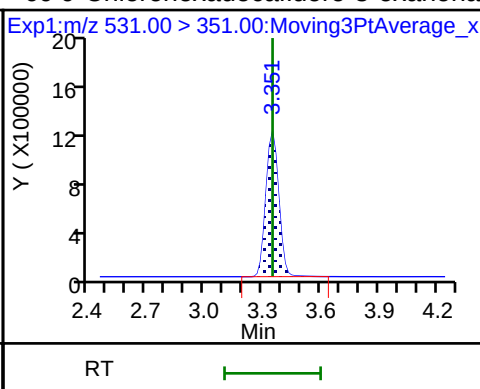
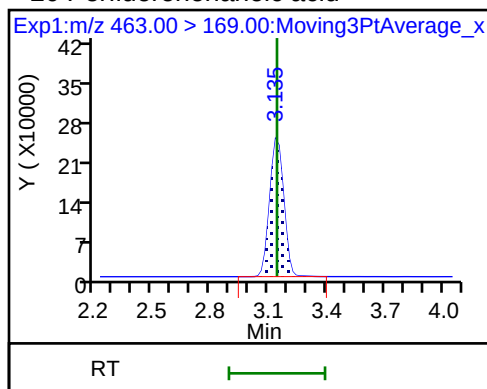
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

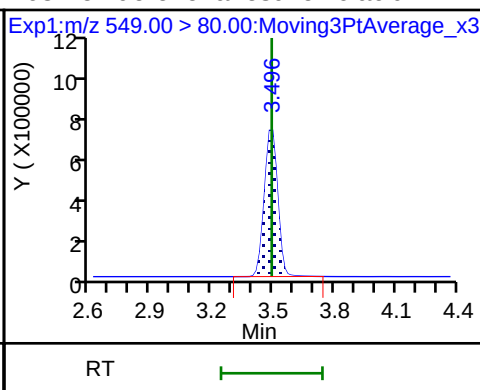
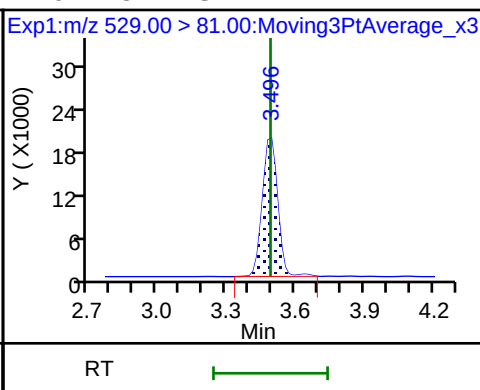
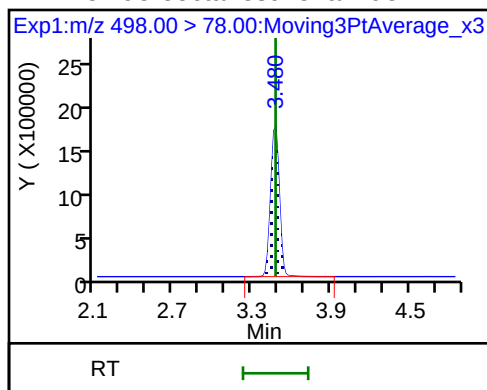
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

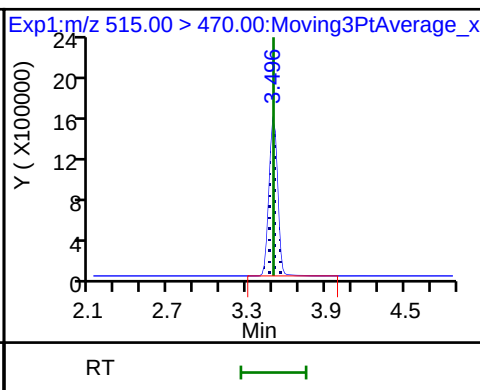
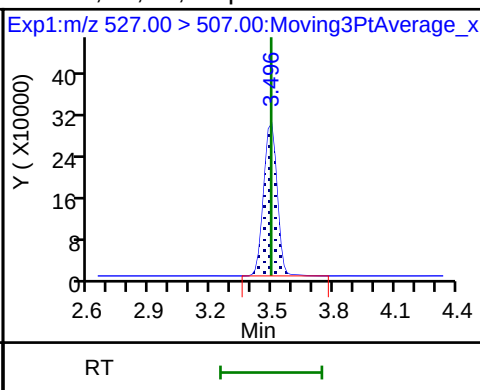
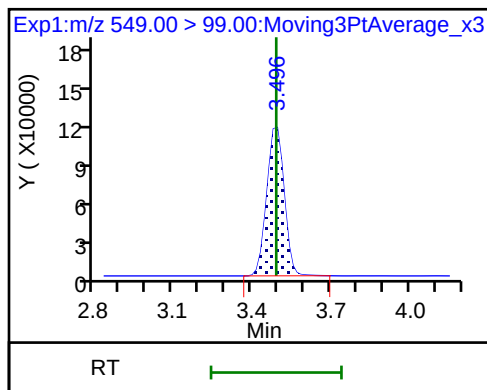
68 Perfluorononanesulfonic acid

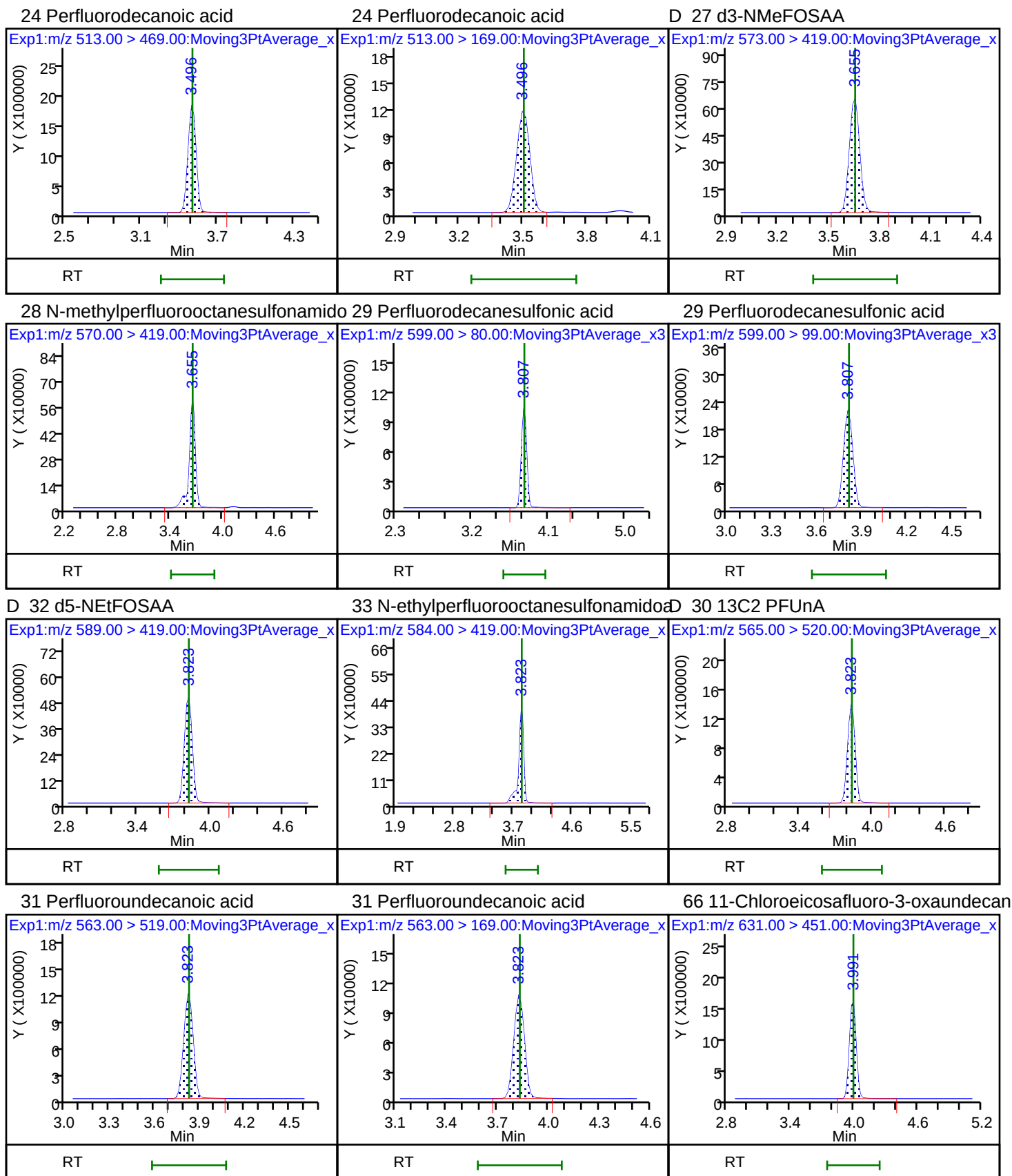


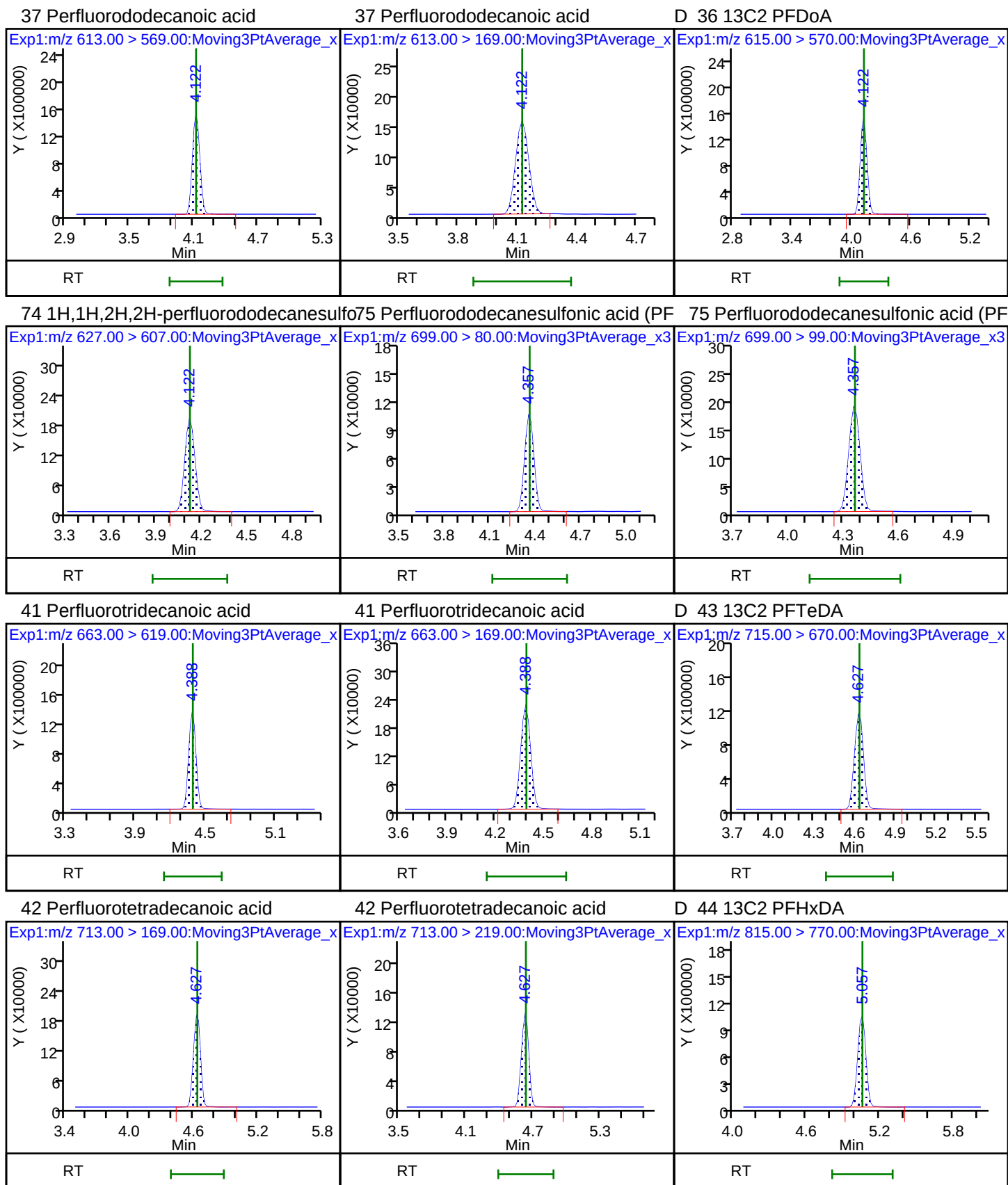
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonic acid

23 13C2 PFDA



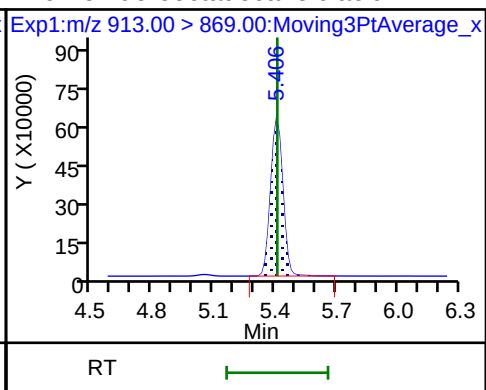
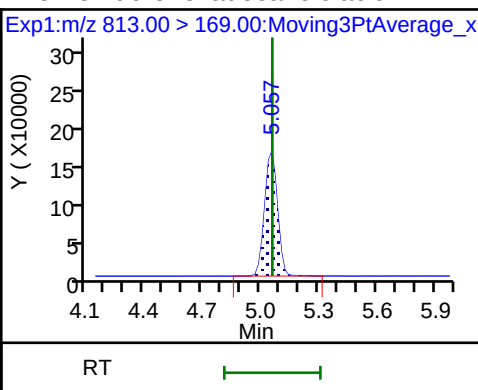
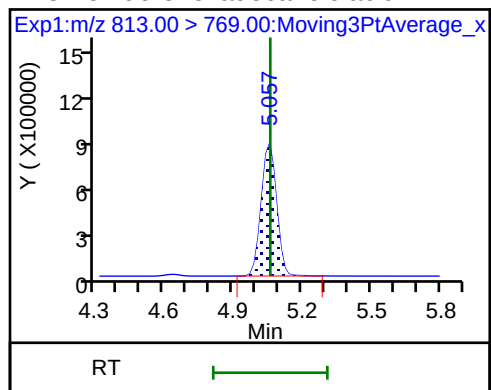




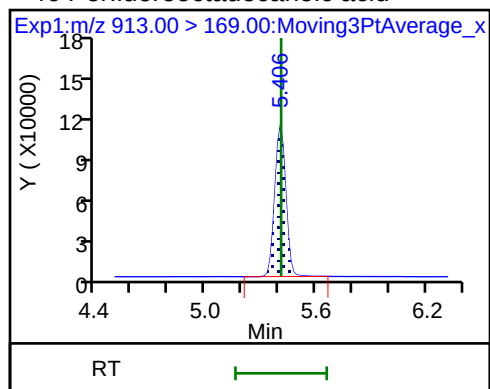
45 Perfluorohexadecanoic acid

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

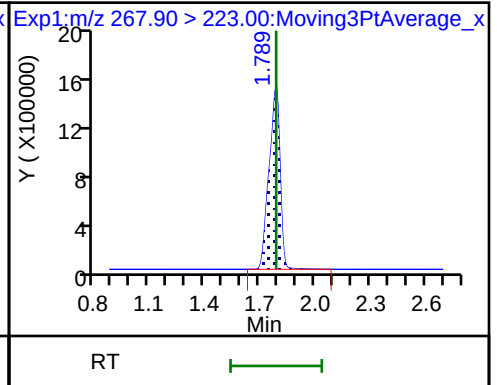
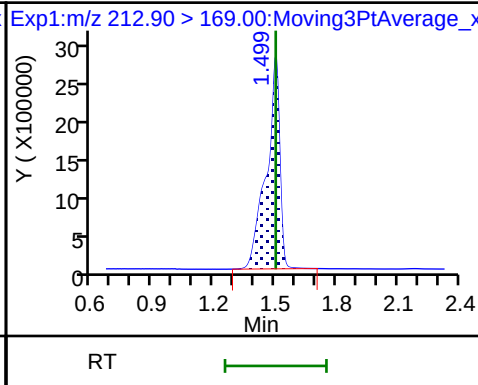
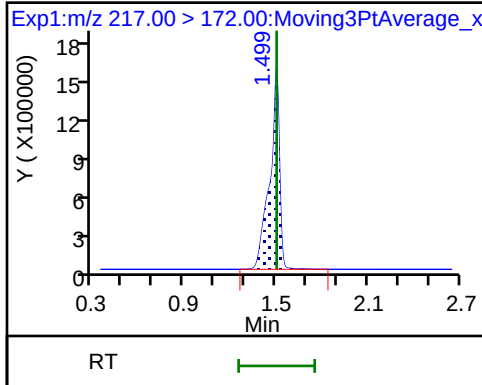
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

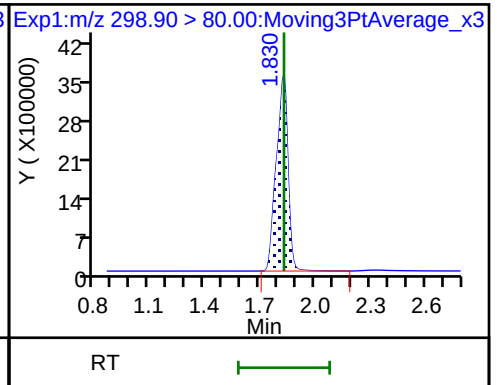
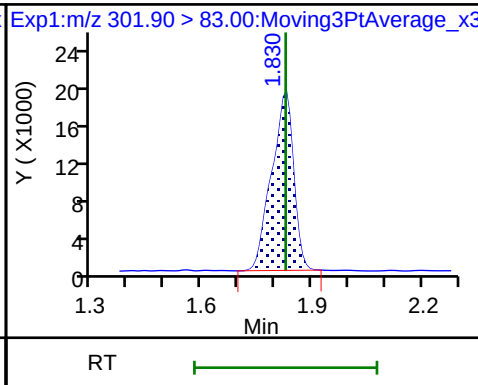
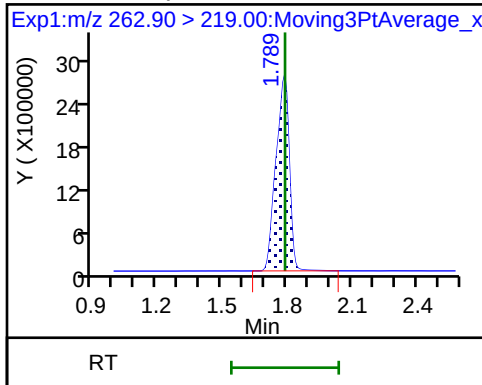
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

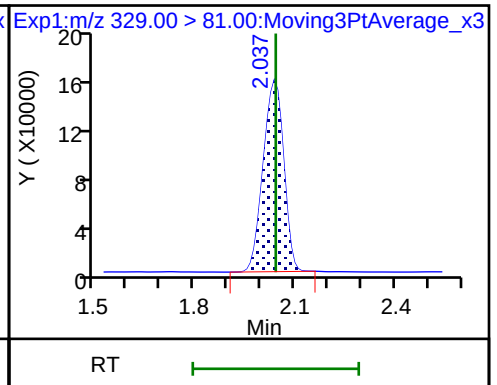
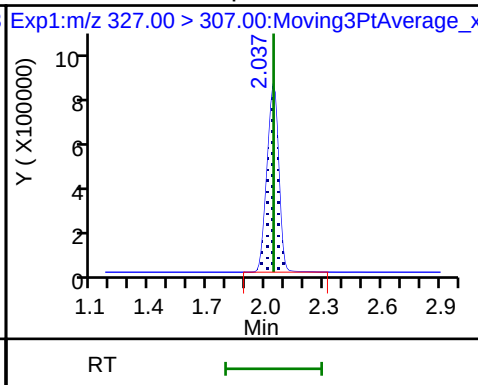
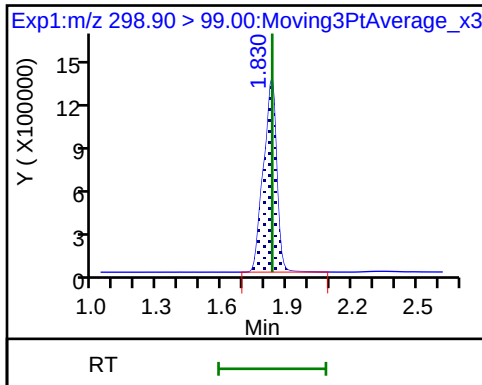
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

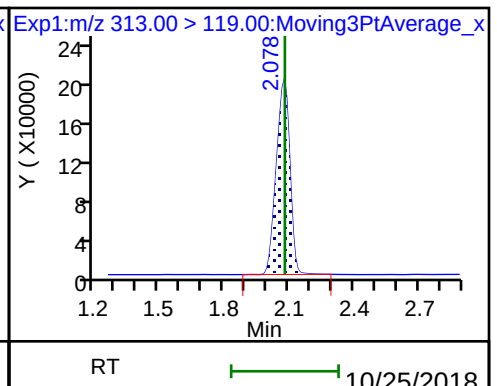
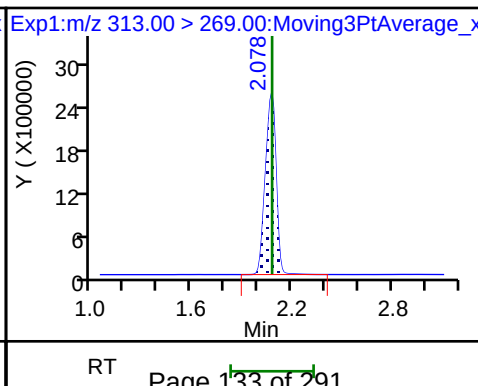
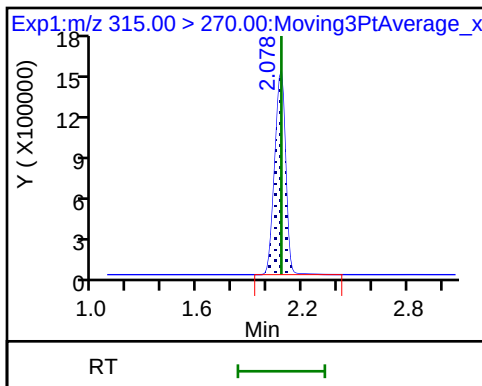
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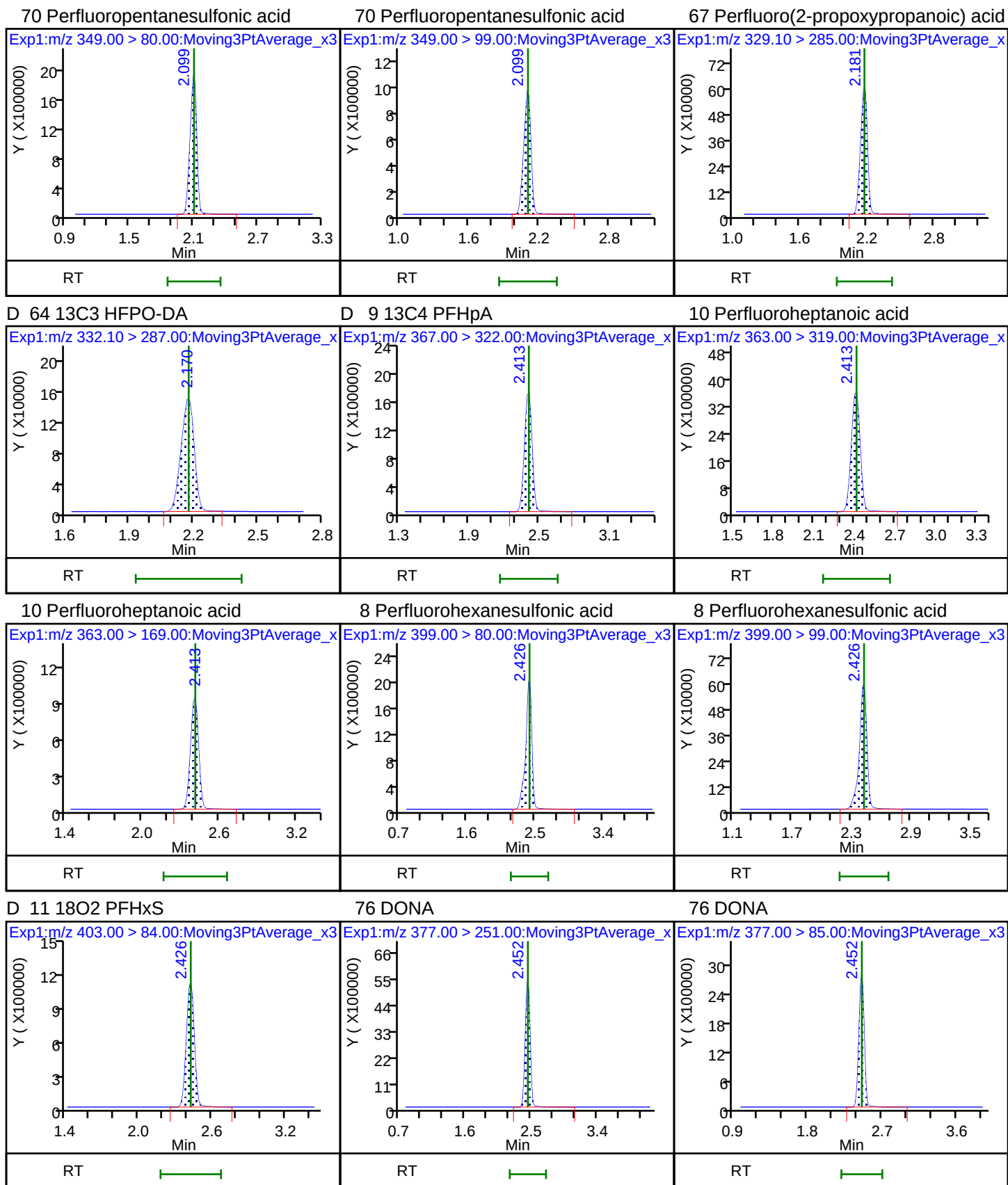


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

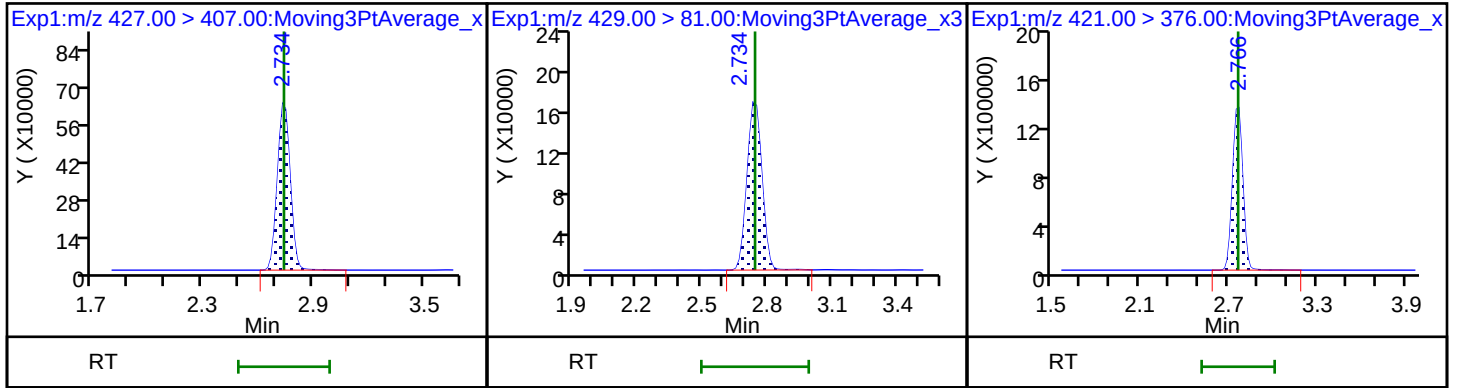
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

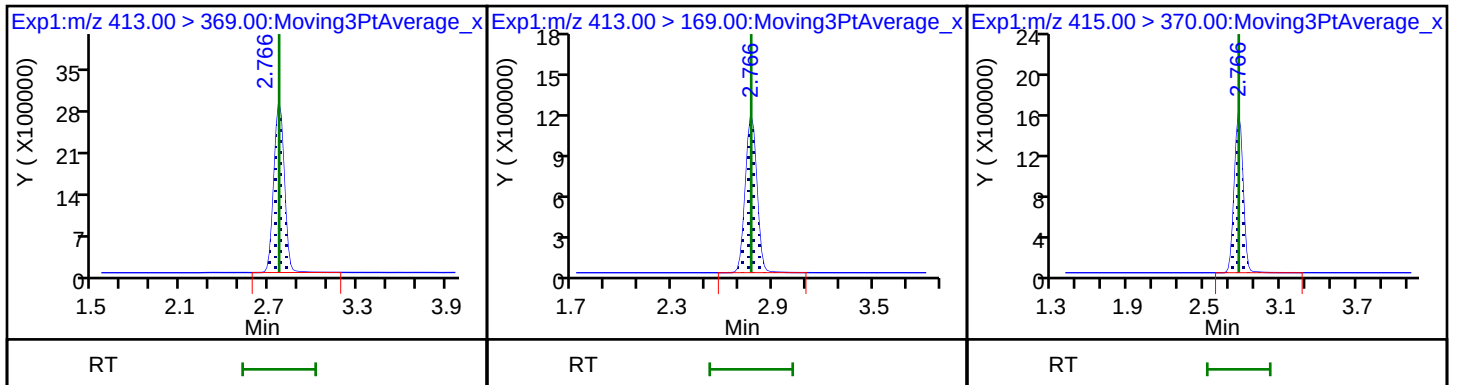
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

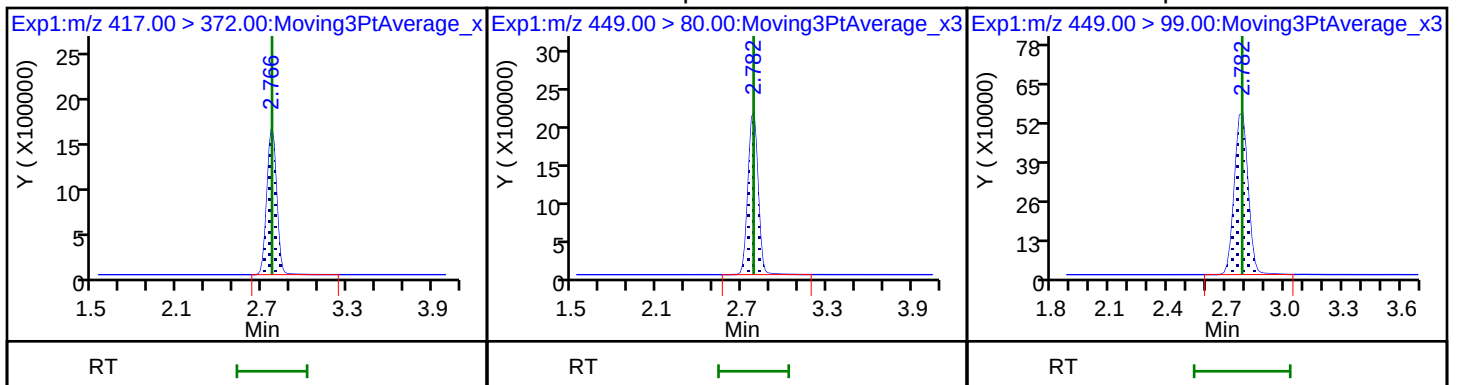
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

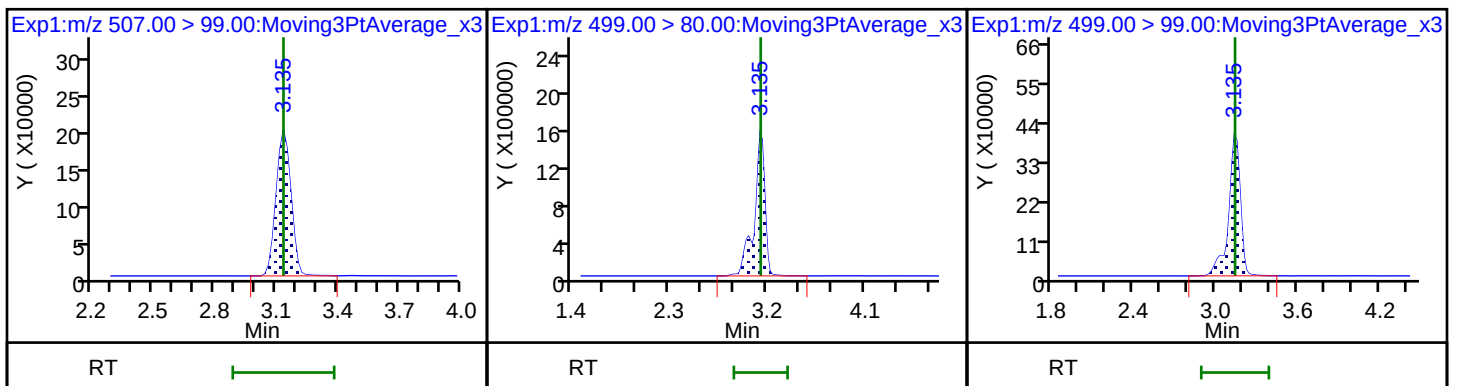
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

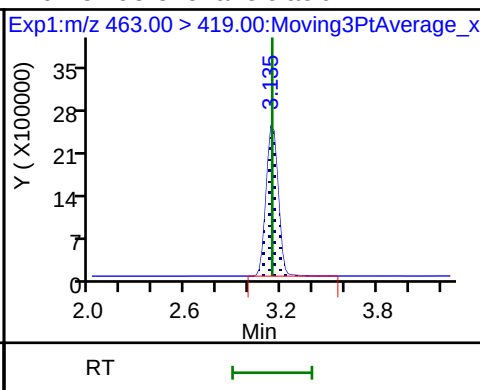
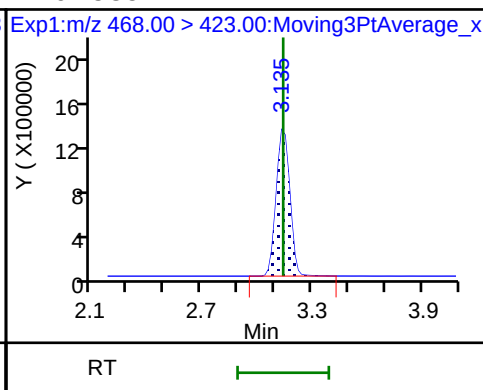
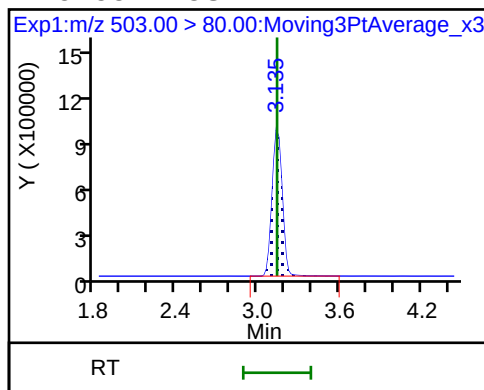
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

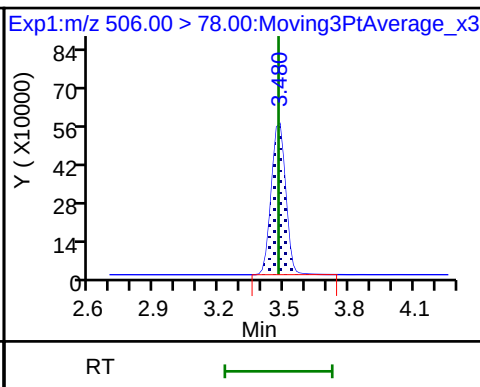
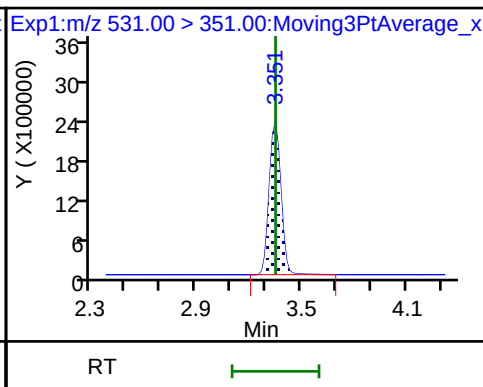
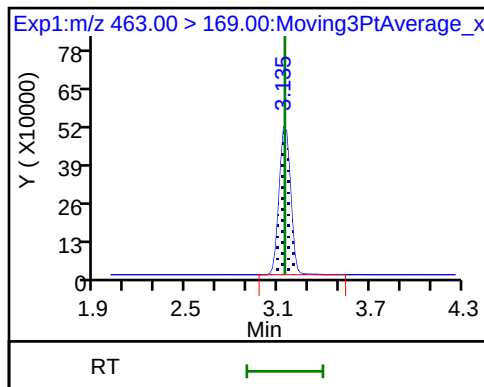
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanamide

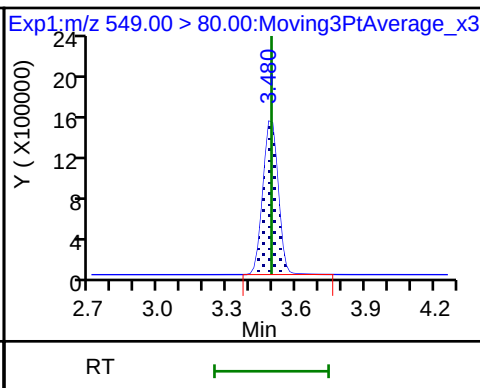
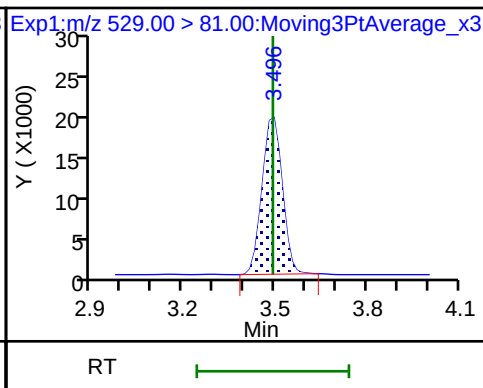
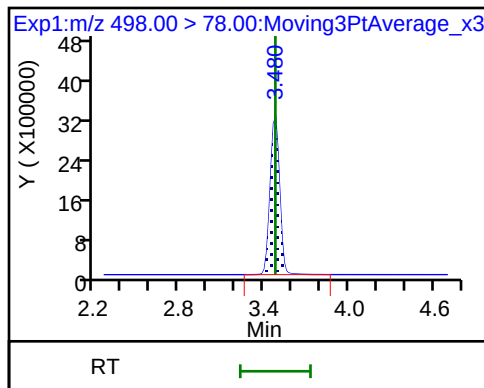
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

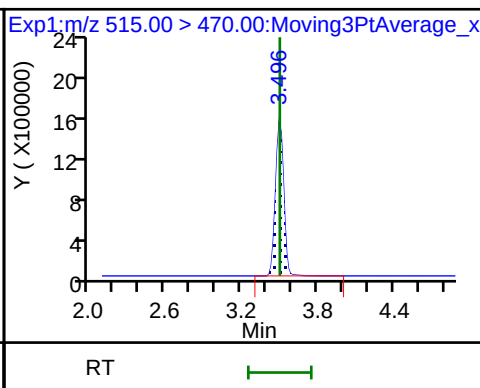
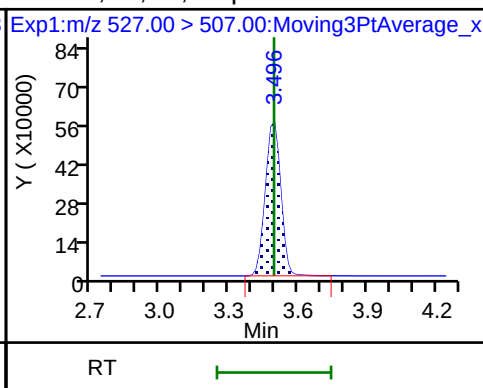
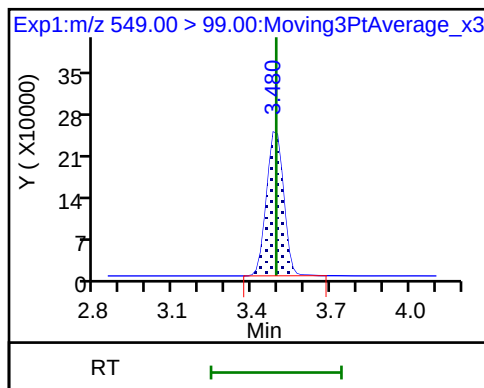
68 Perfluorononanesulfonic acid

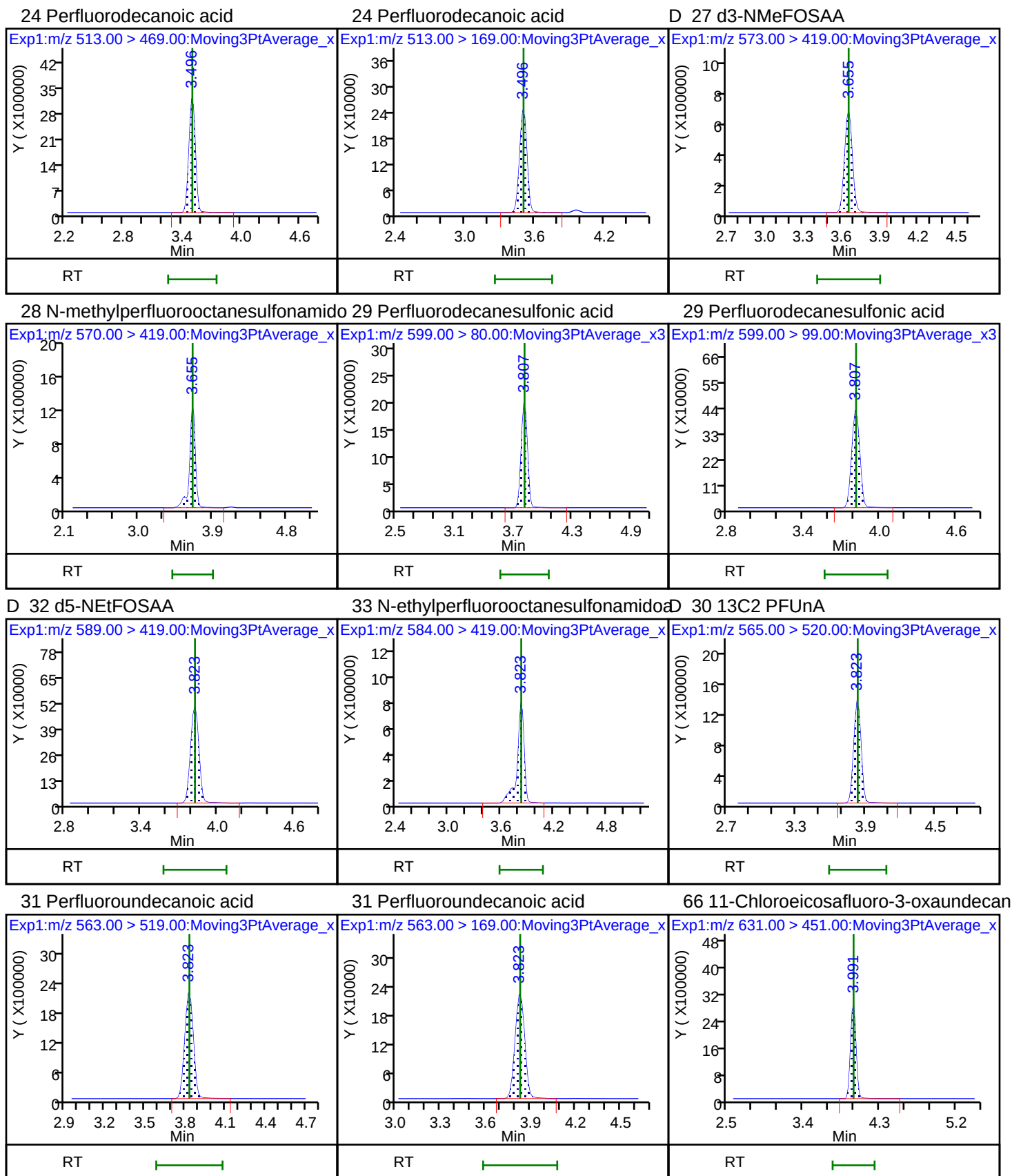


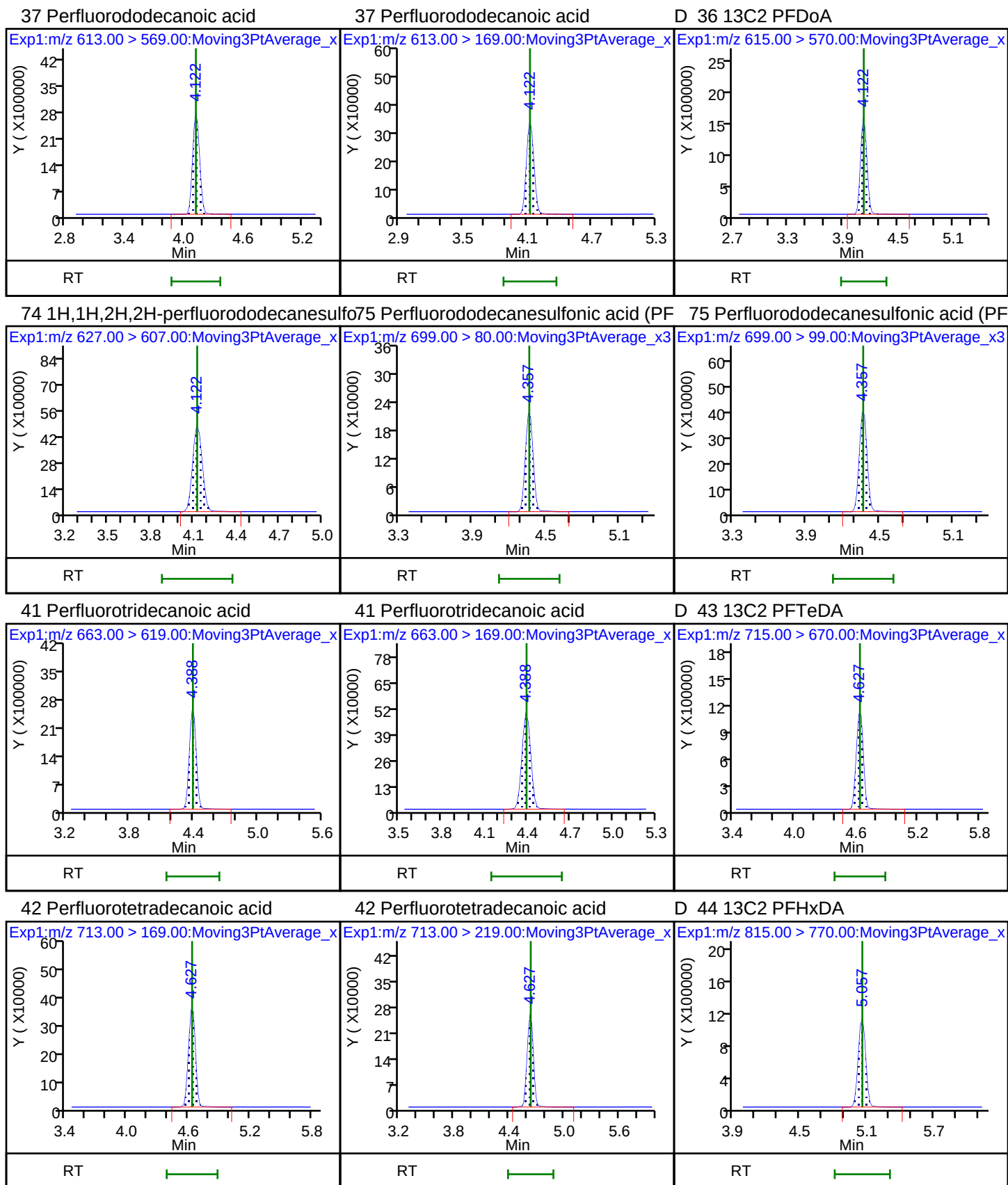
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonamide

23 13C2 PFDA



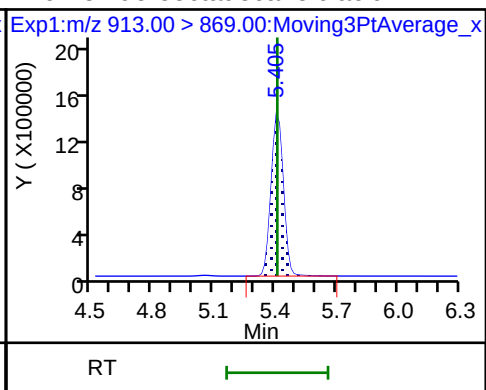
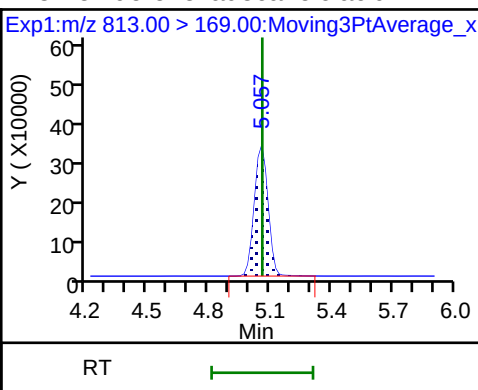
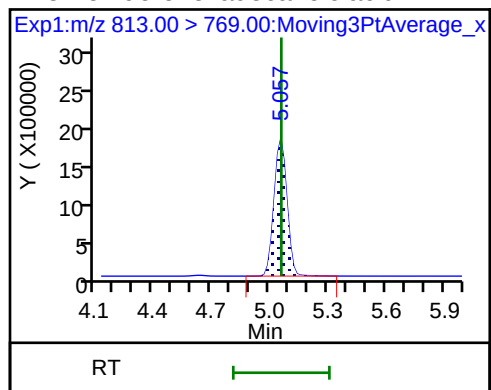




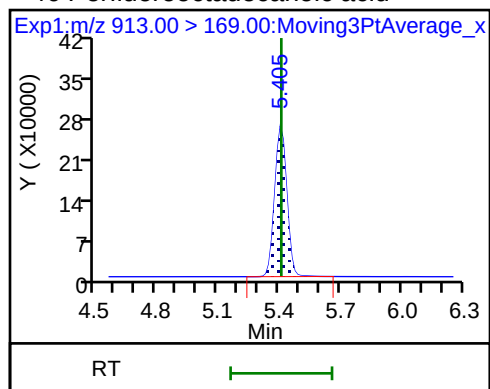
45 Perfluorohexadecanoic acid

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

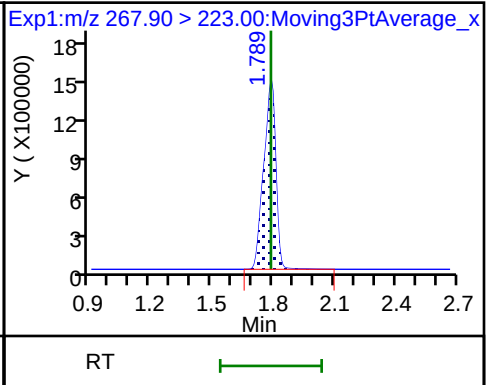
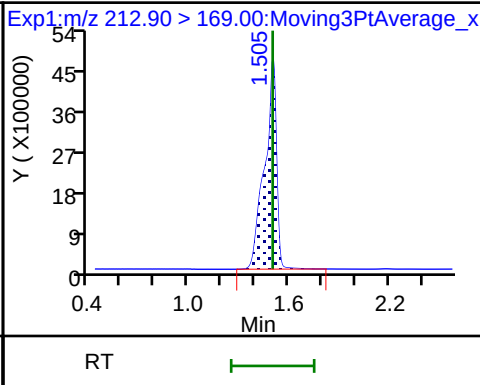
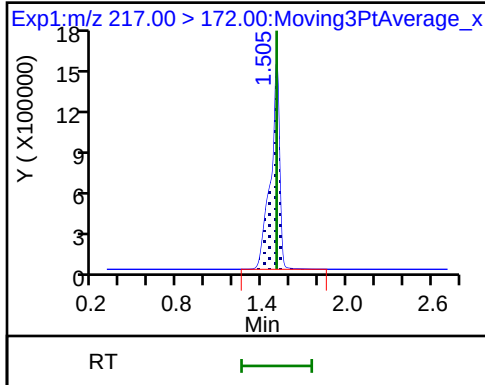
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

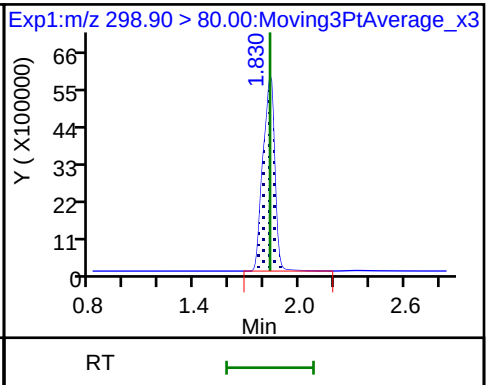
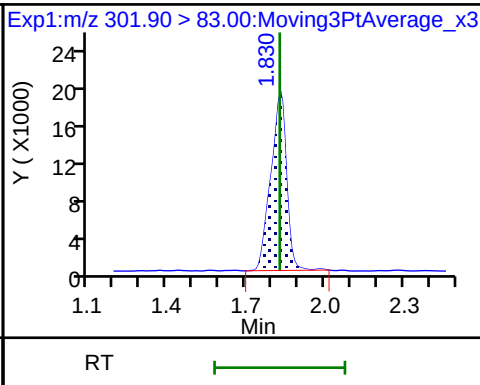
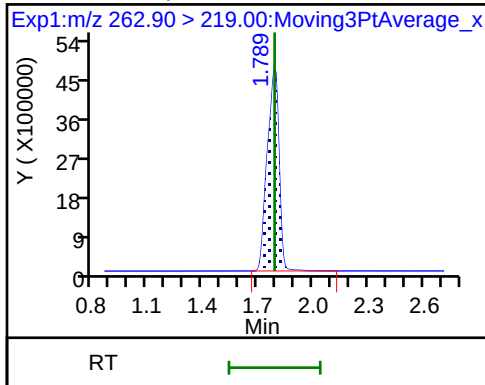
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

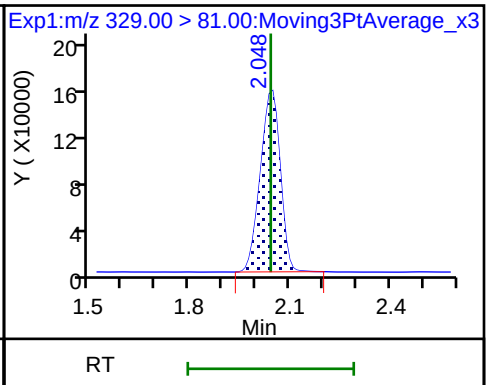
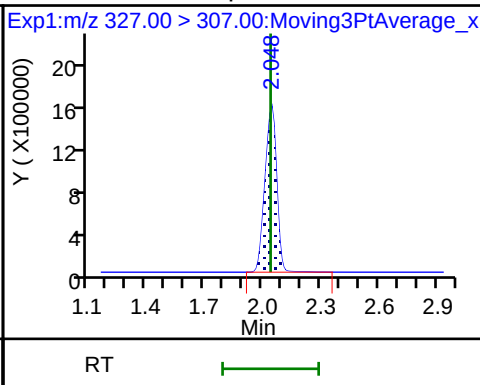
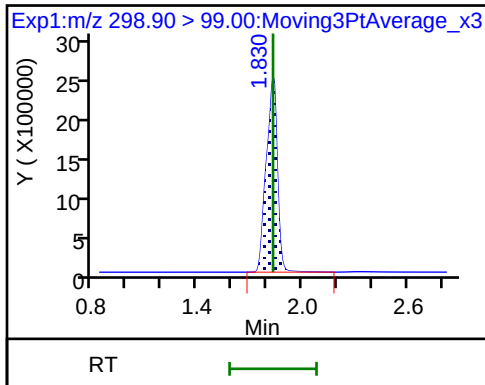
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

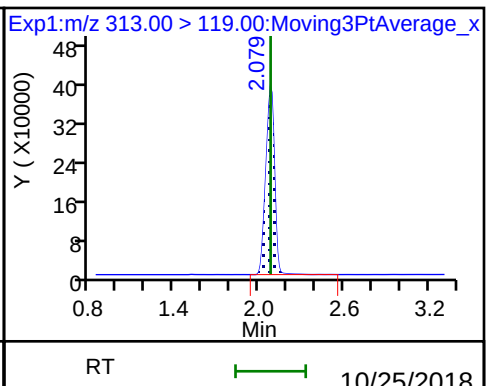
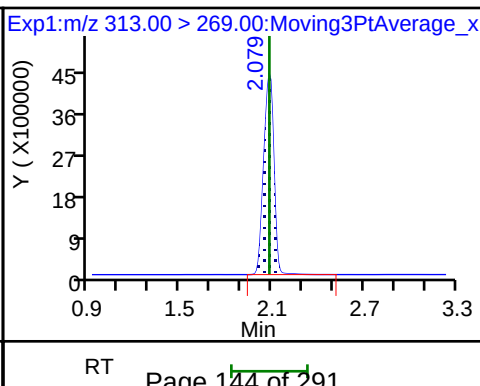
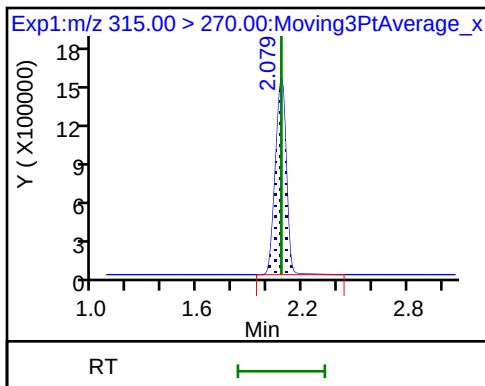
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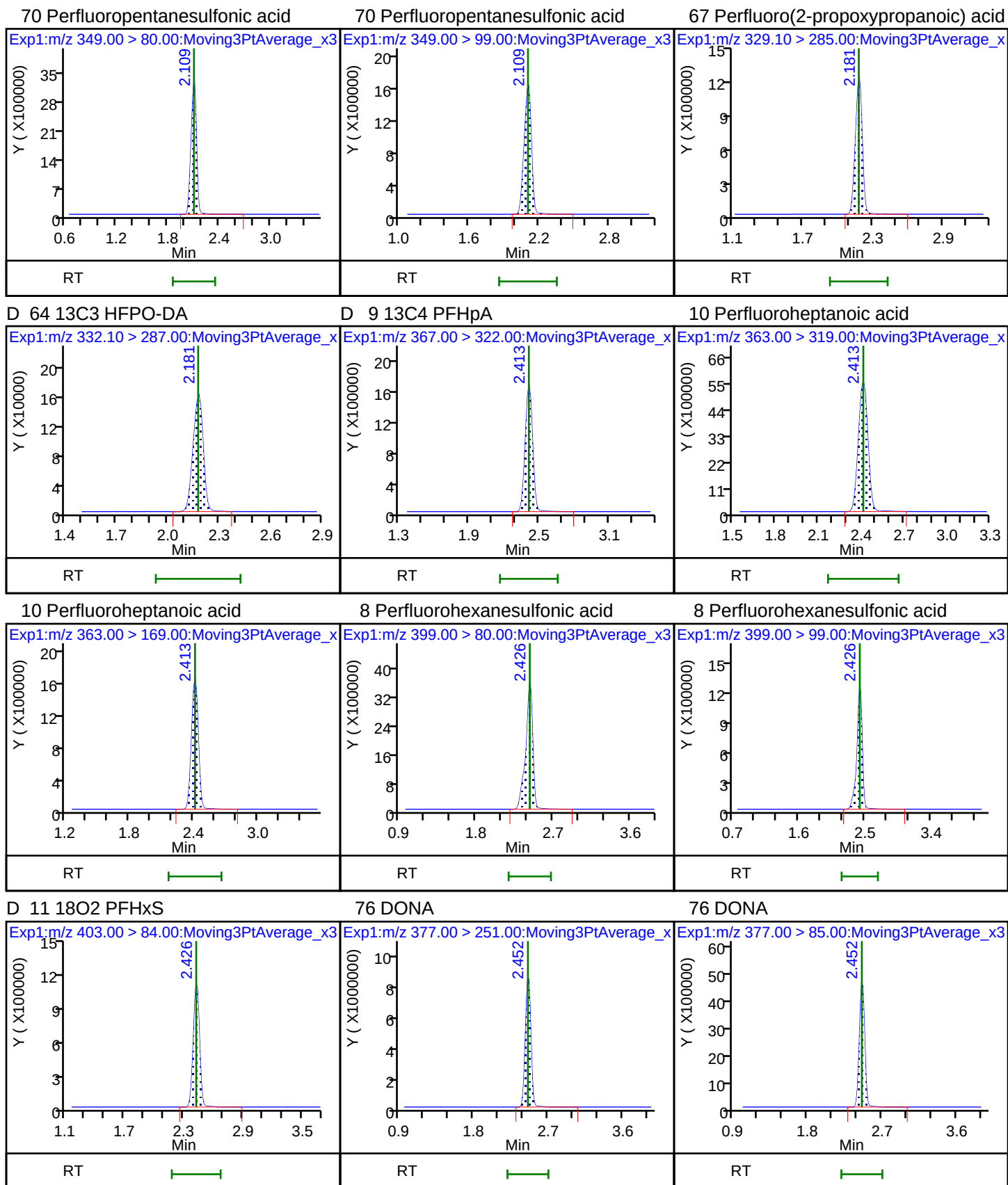


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

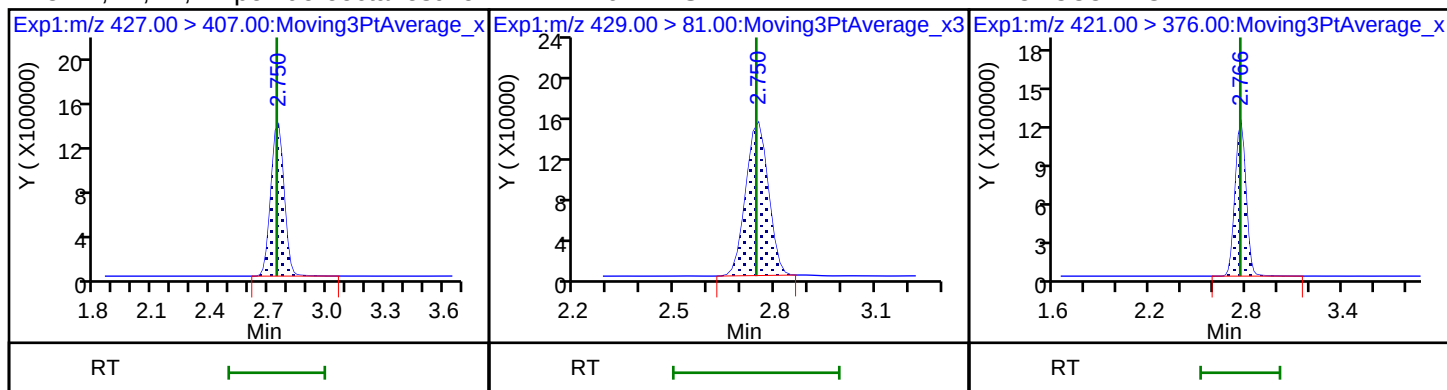
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

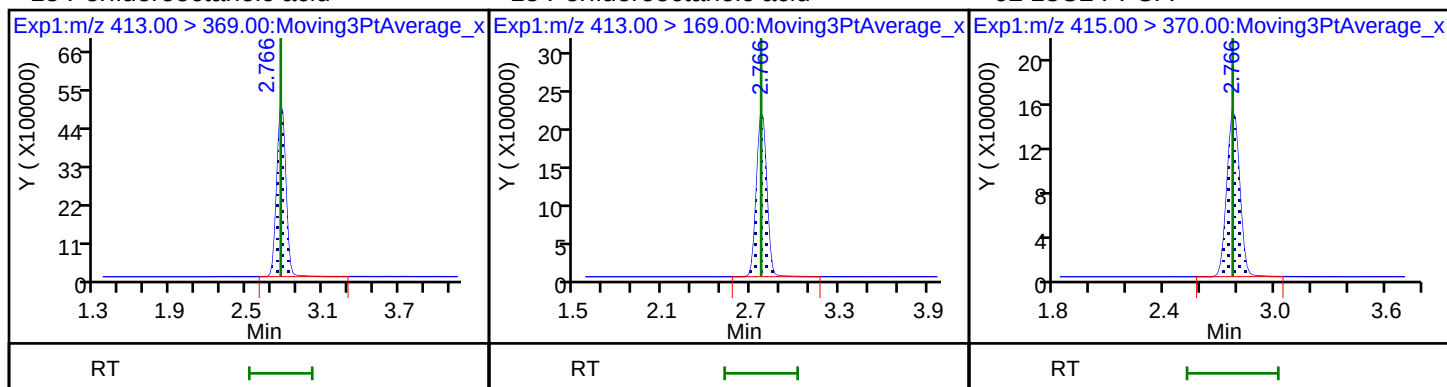
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

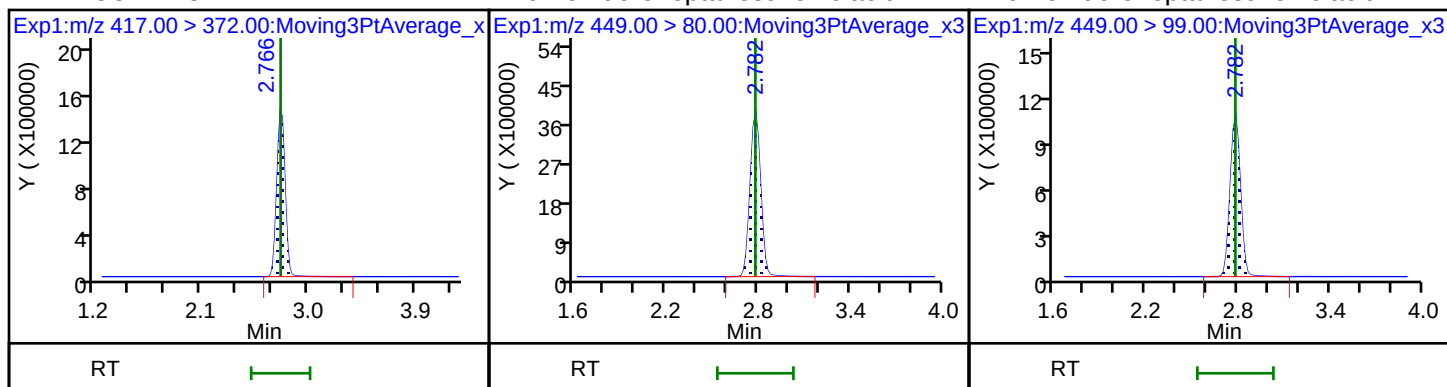
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

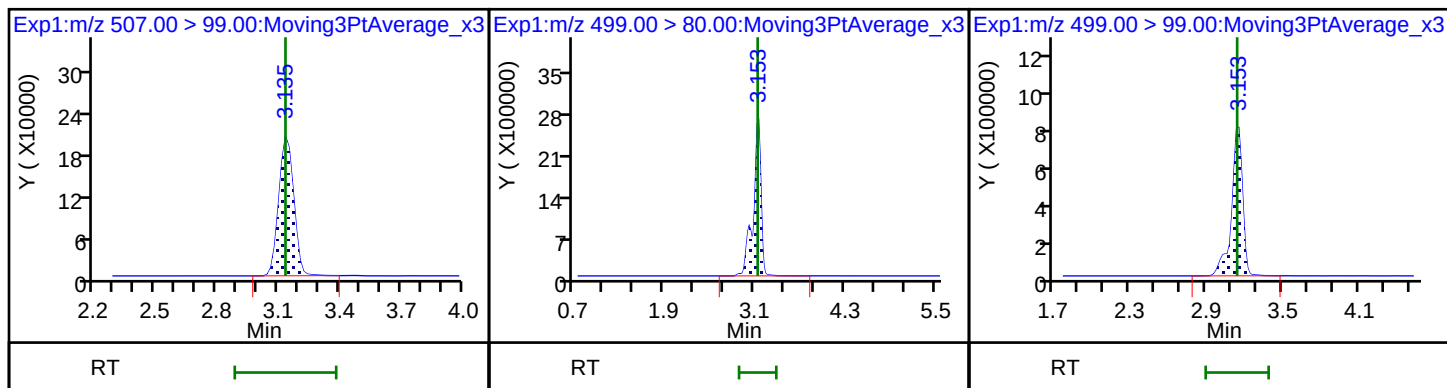
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

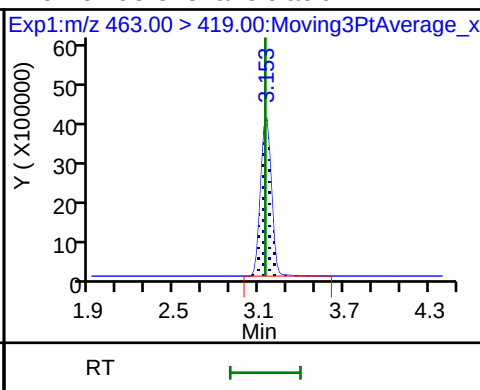
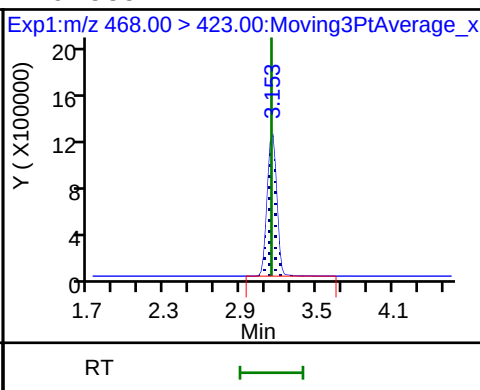
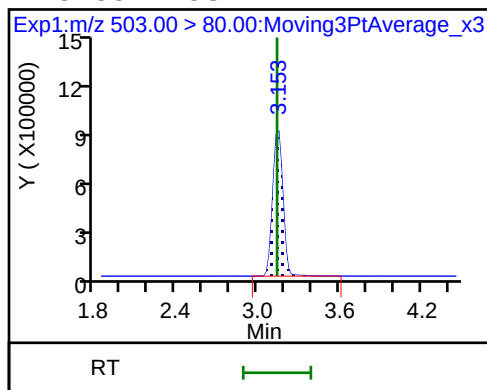
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

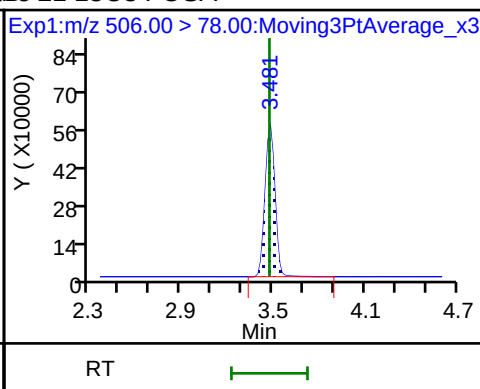
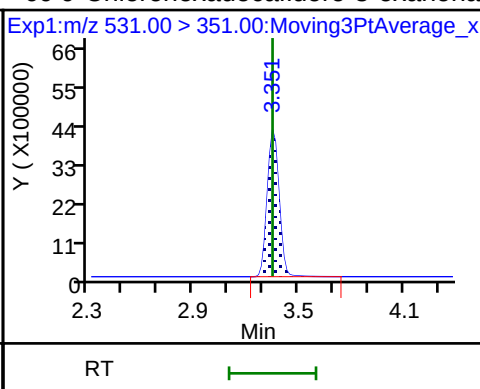
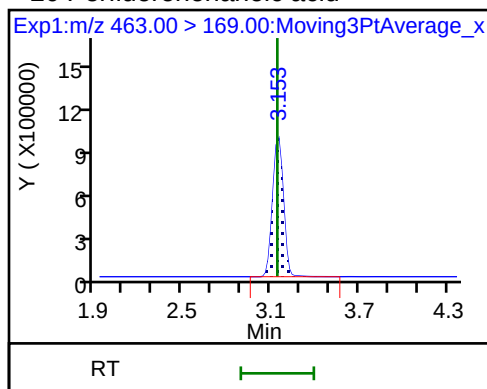
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanone

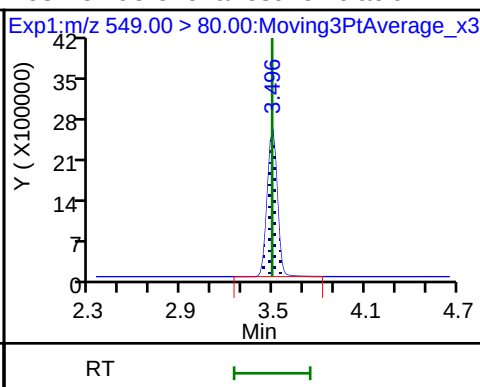
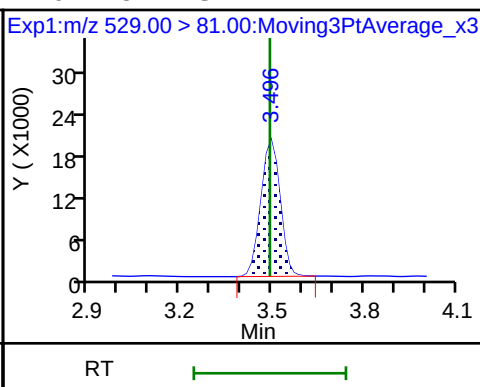
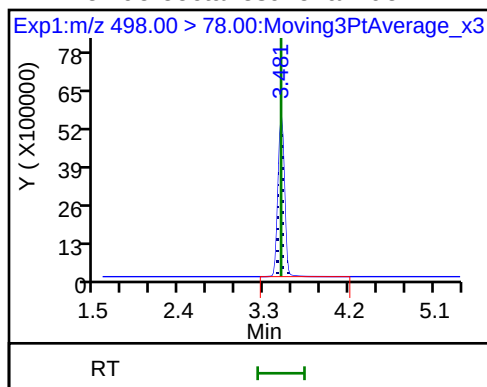
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

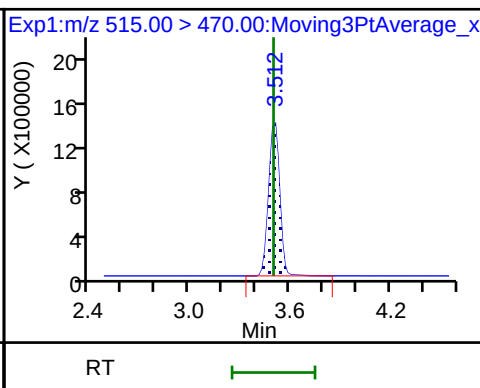
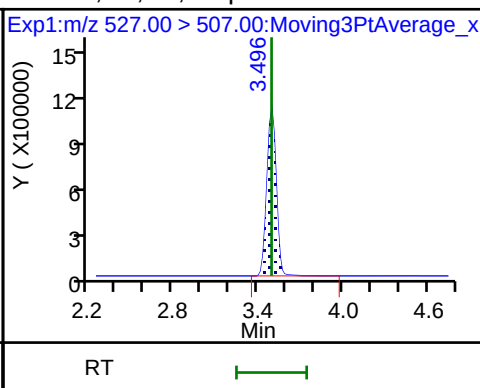
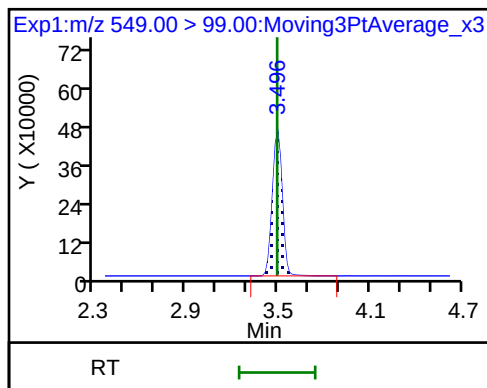
68 Perfluorononanesulfonic acid

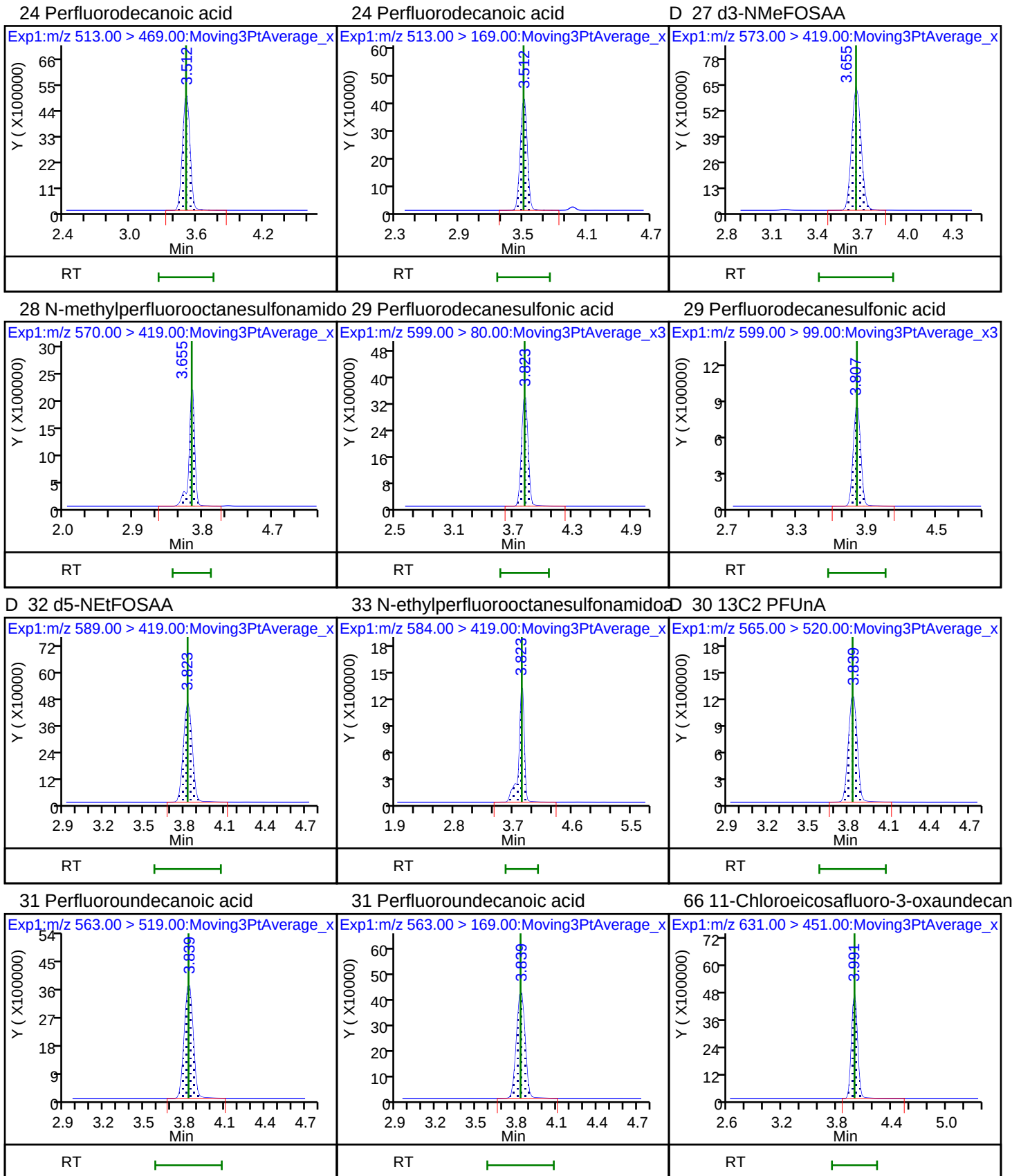


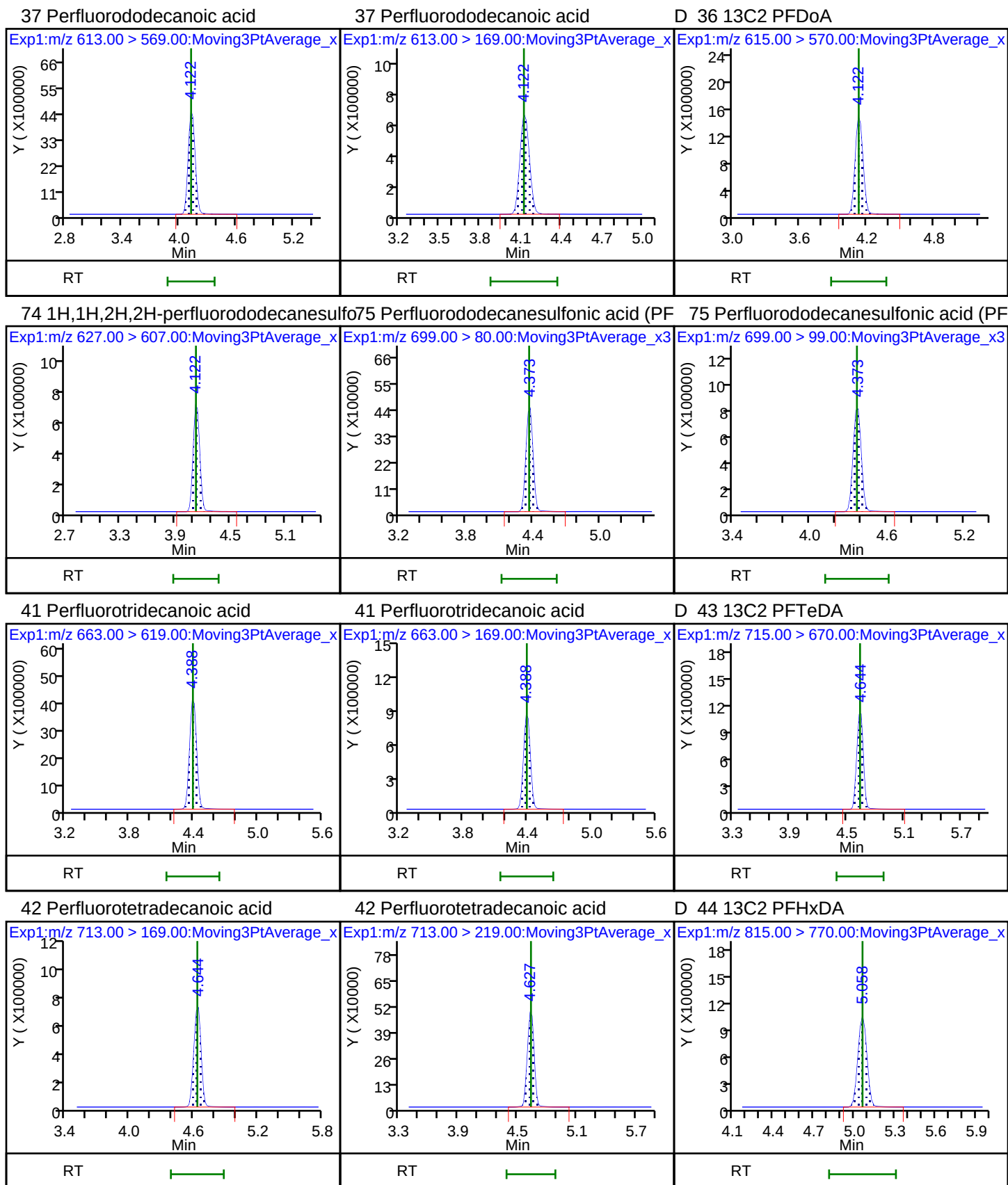
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonate

23 13C2 PFDA



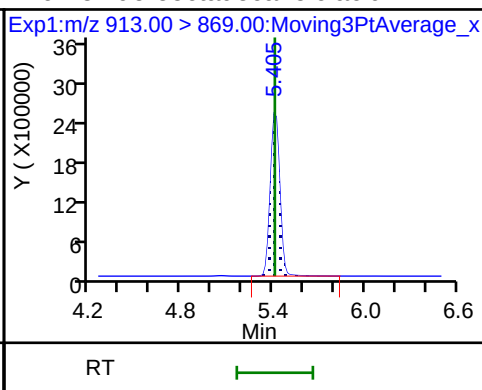
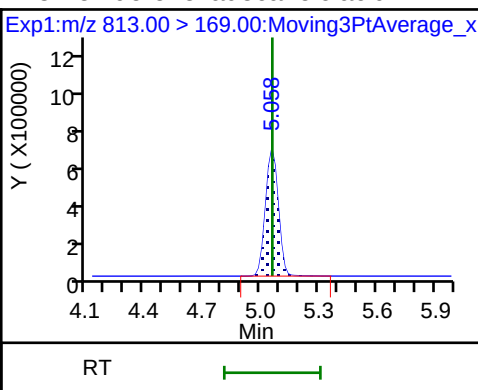
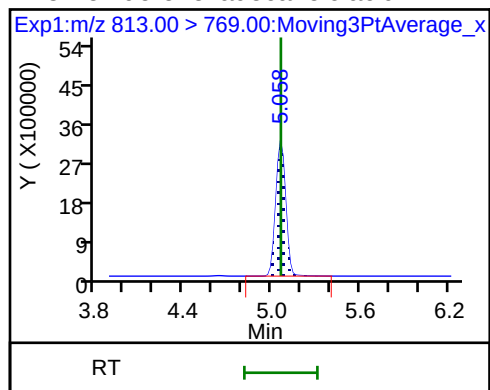




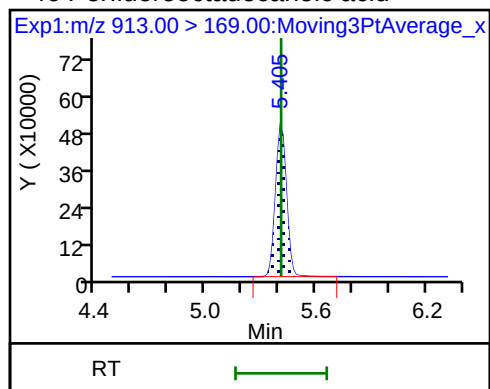
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1

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.: 320-43696-1
 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

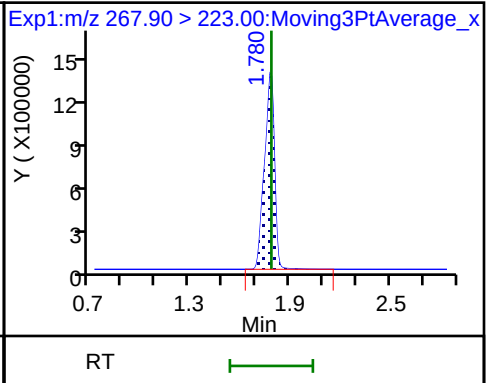
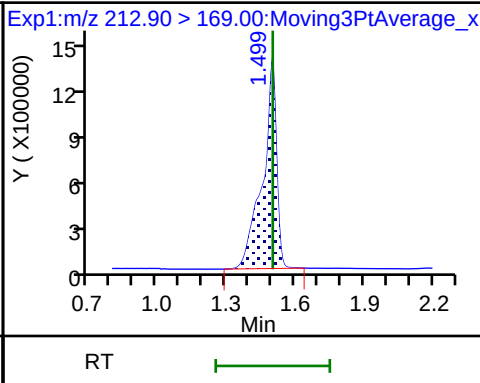
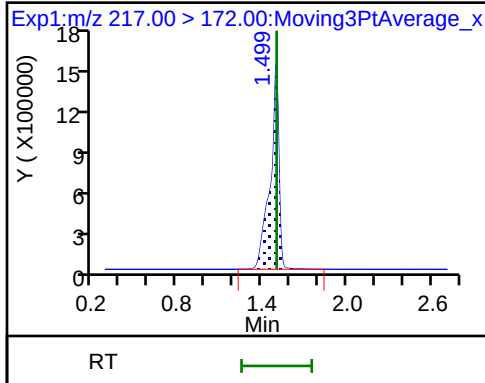
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

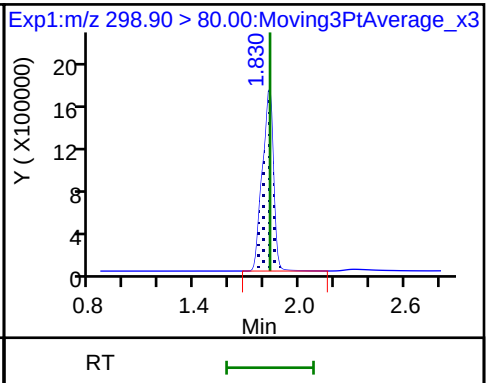
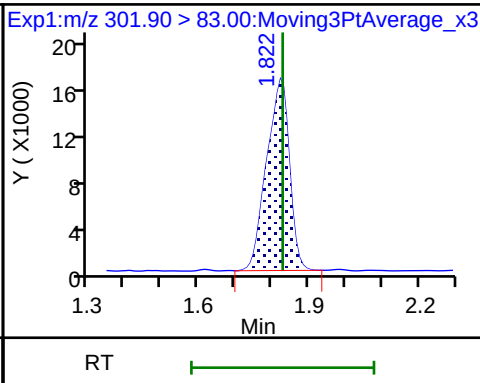
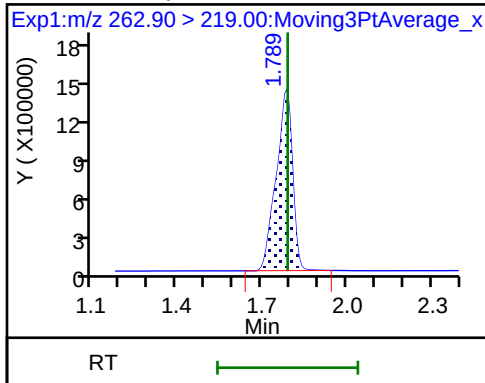
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

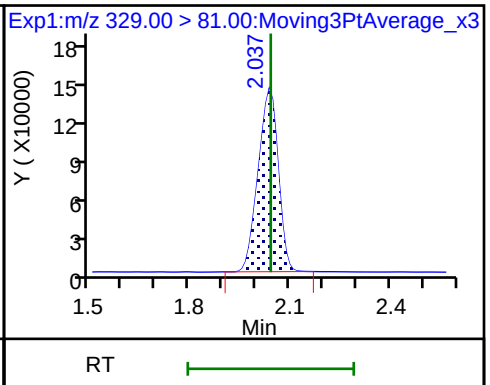
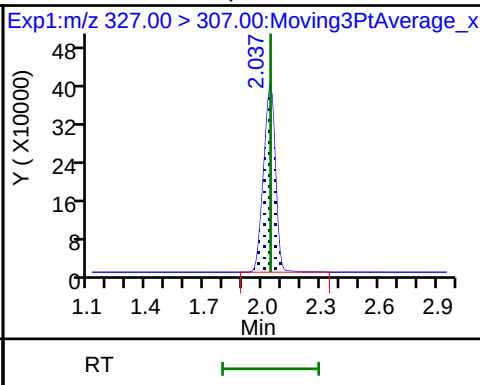
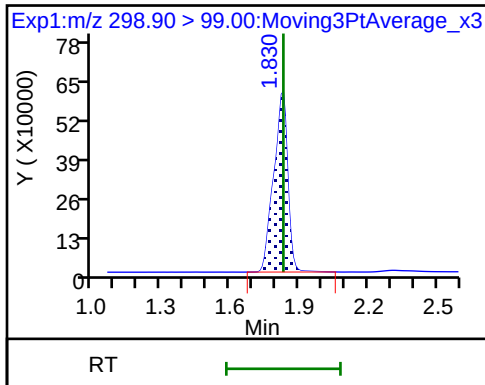
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

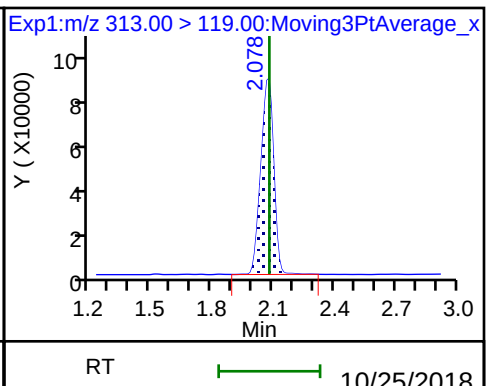
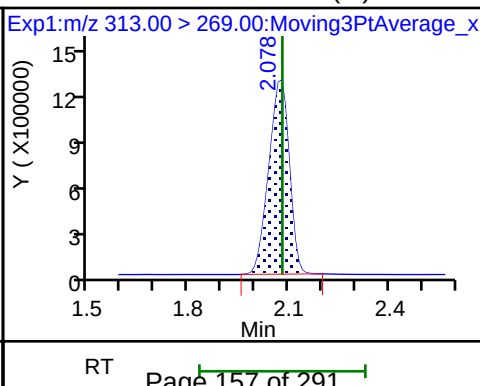
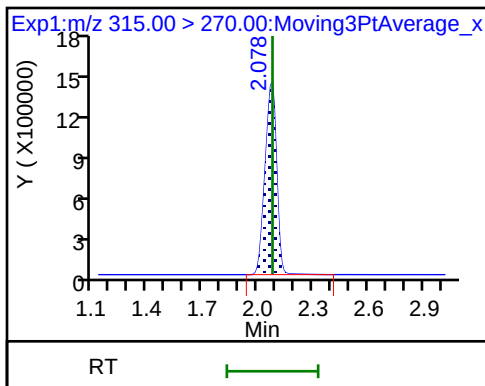
D 60 M2-4:2 FTS

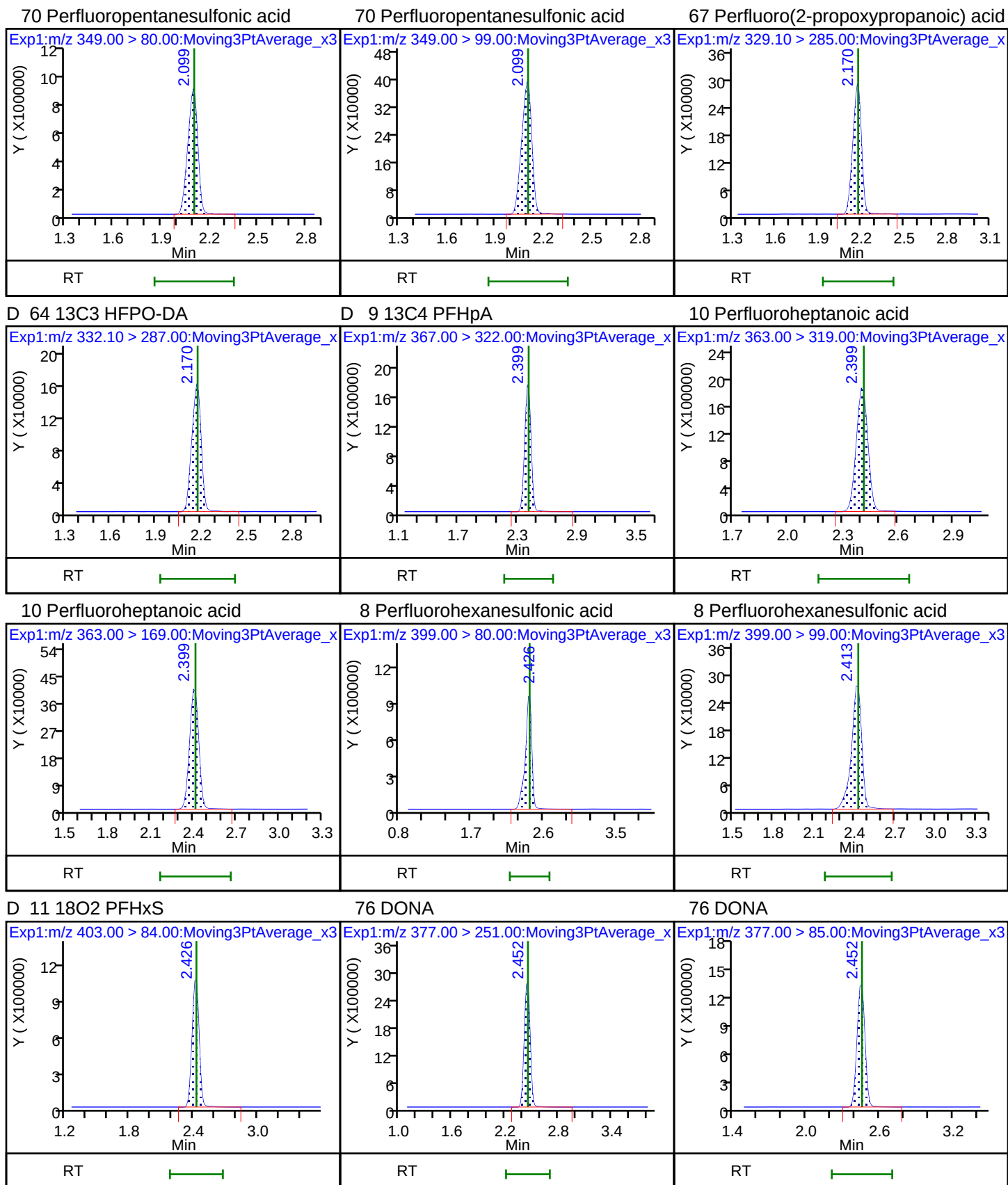


D 7 13C2 PFHxA

6 Perfluorohexanoic acid (M)

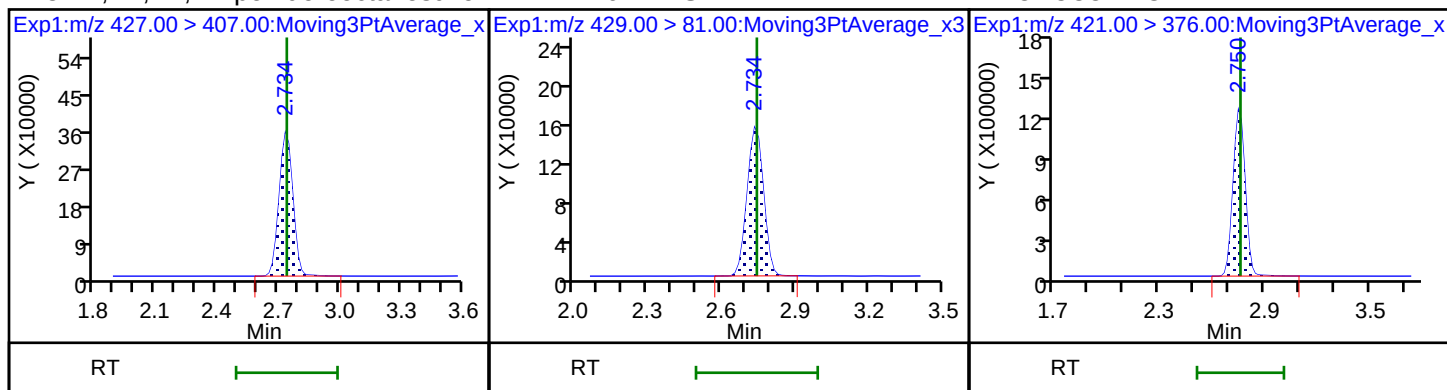
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

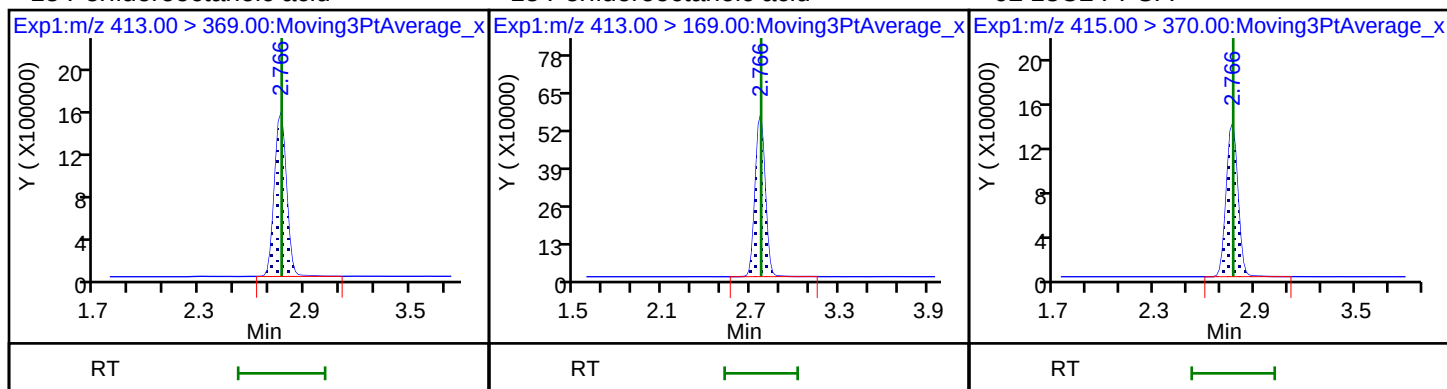
D 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

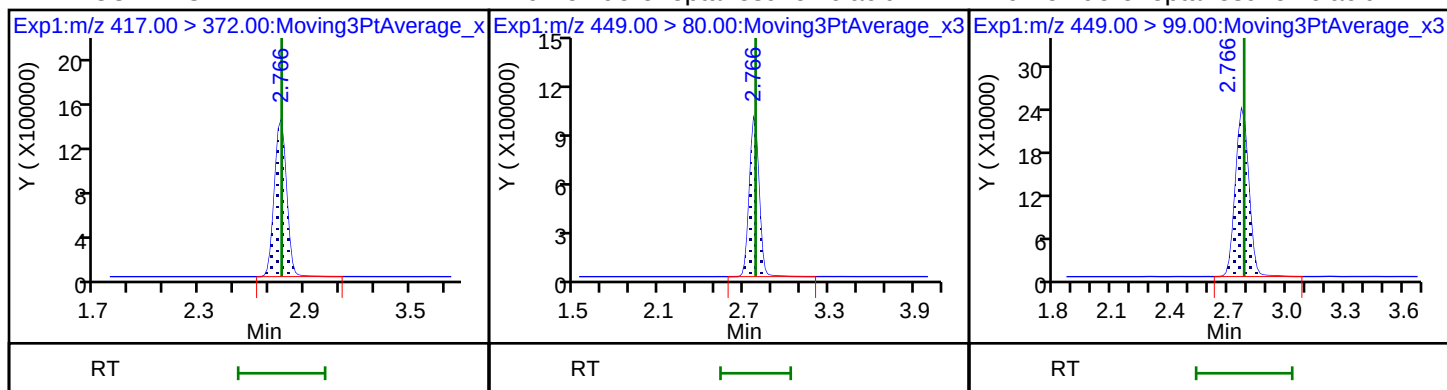
* 62 13C2 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

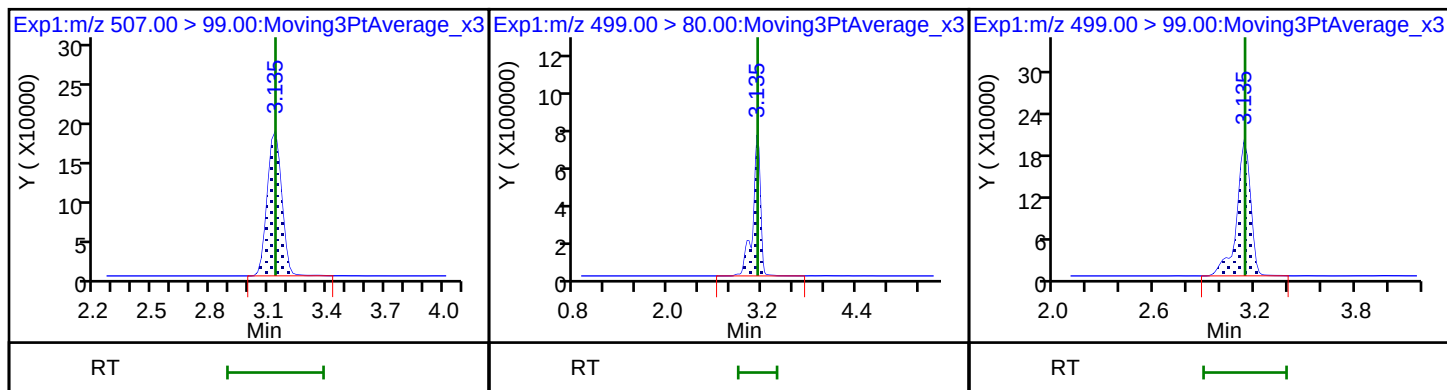
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

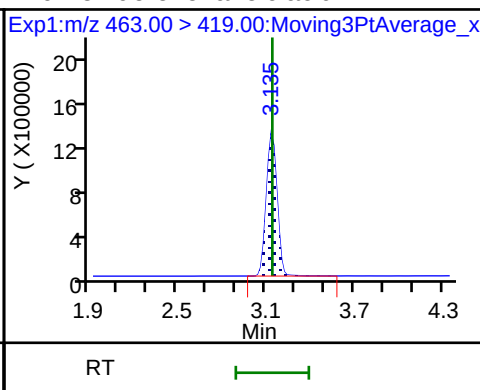
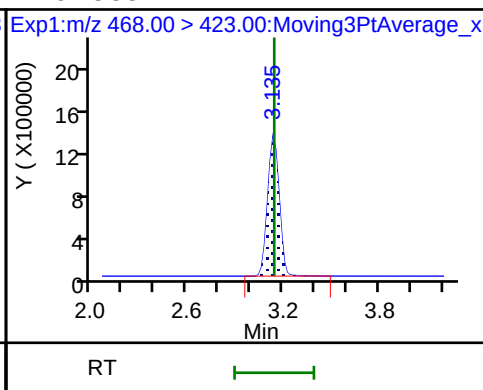
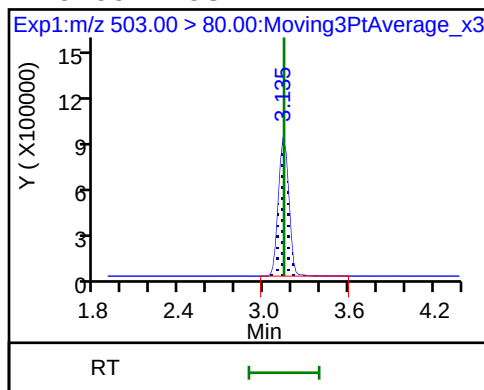
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

D 19 13C5 PFNA

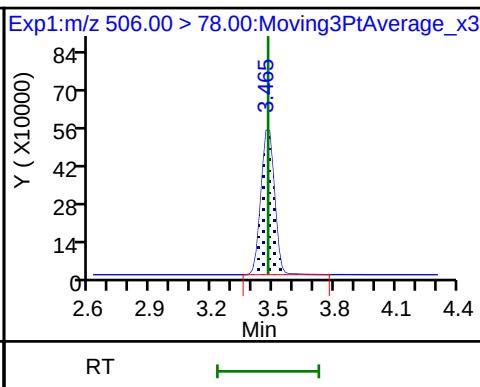
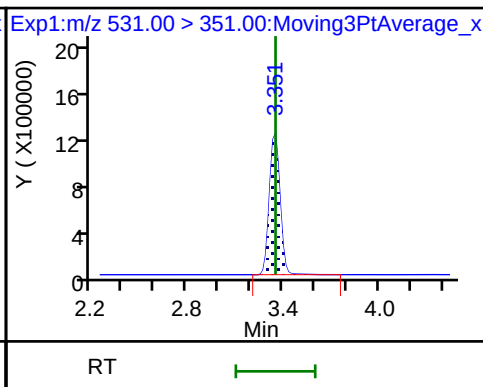
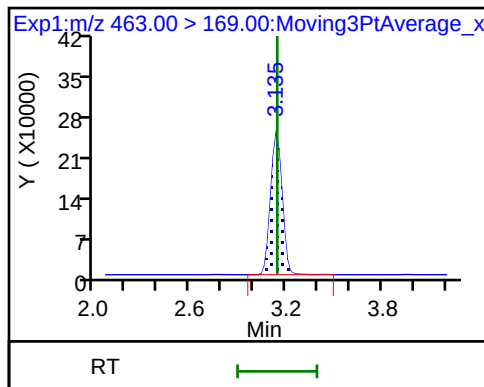
20 Perfluorononanoic acid



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonanamide

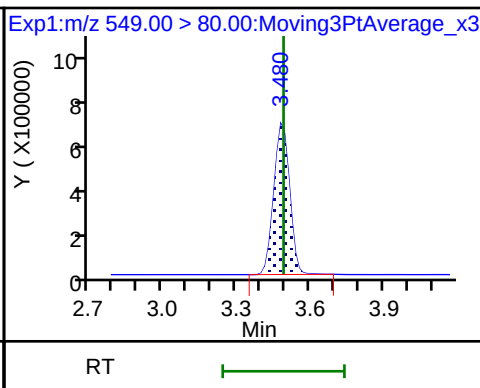
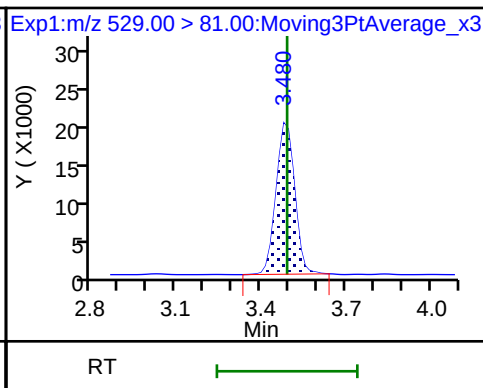
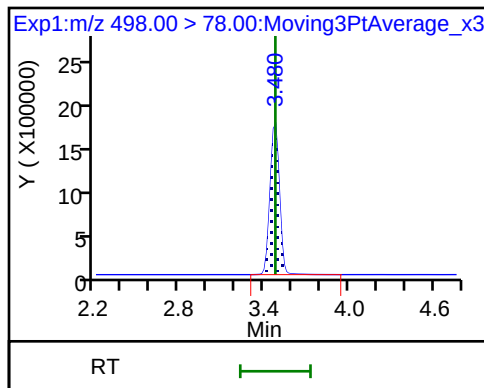
21 13C8 FOSA



22 Perfluorooctanesulfonamide

D 26 M2-8:2 FTS

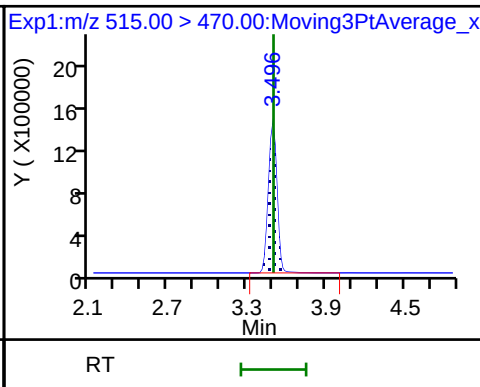
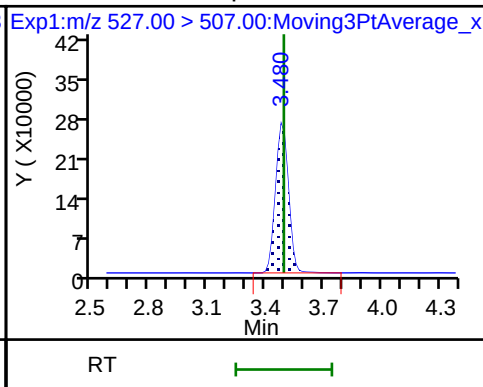
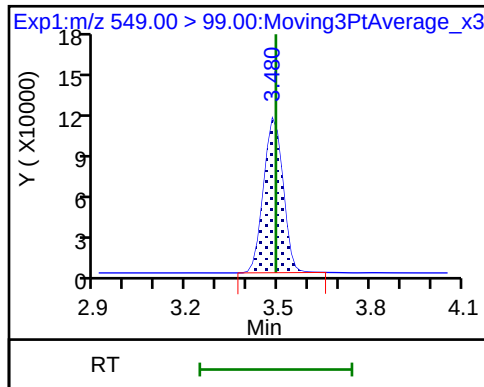
68 Perfluorononanesulfonic acid

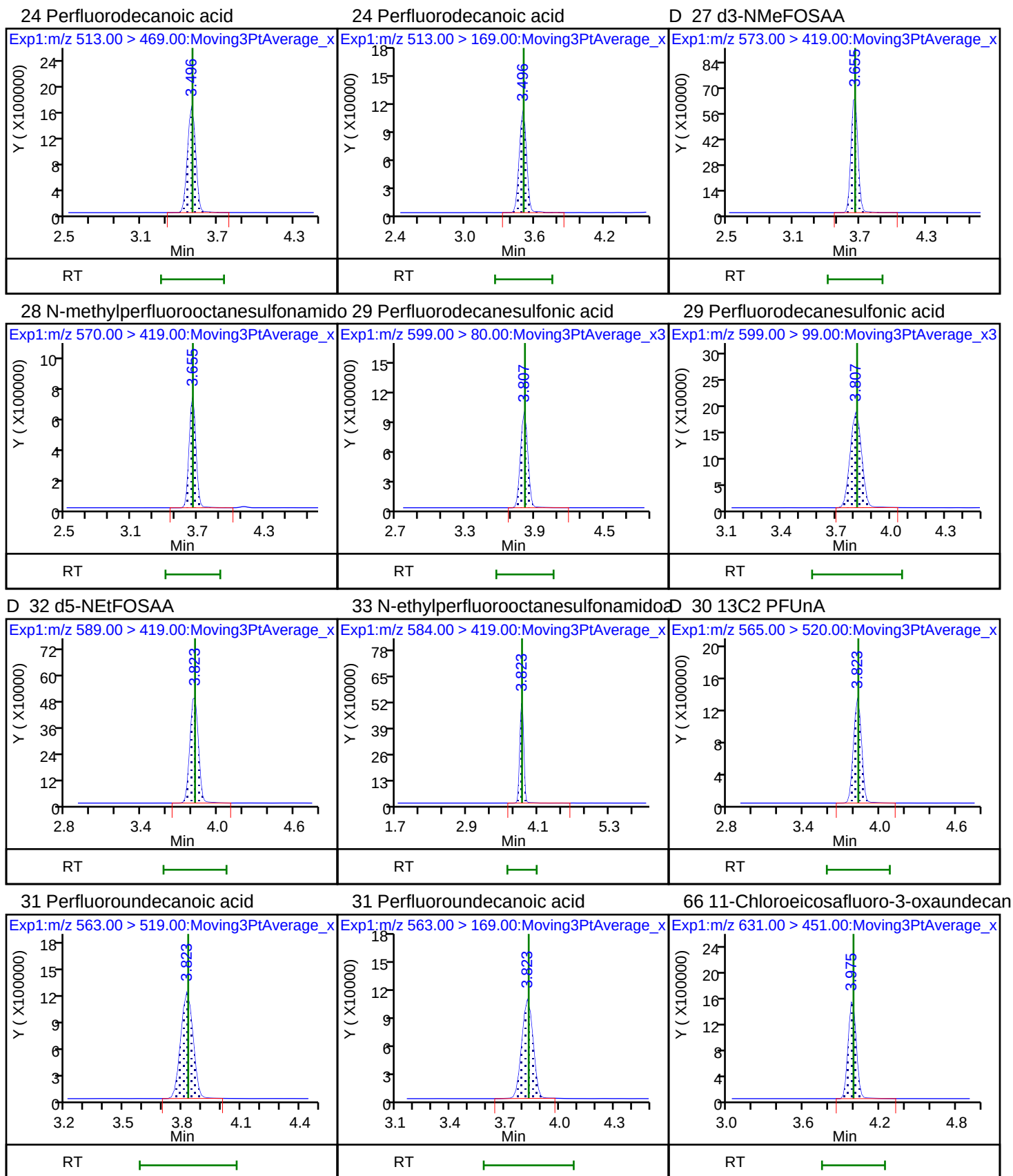


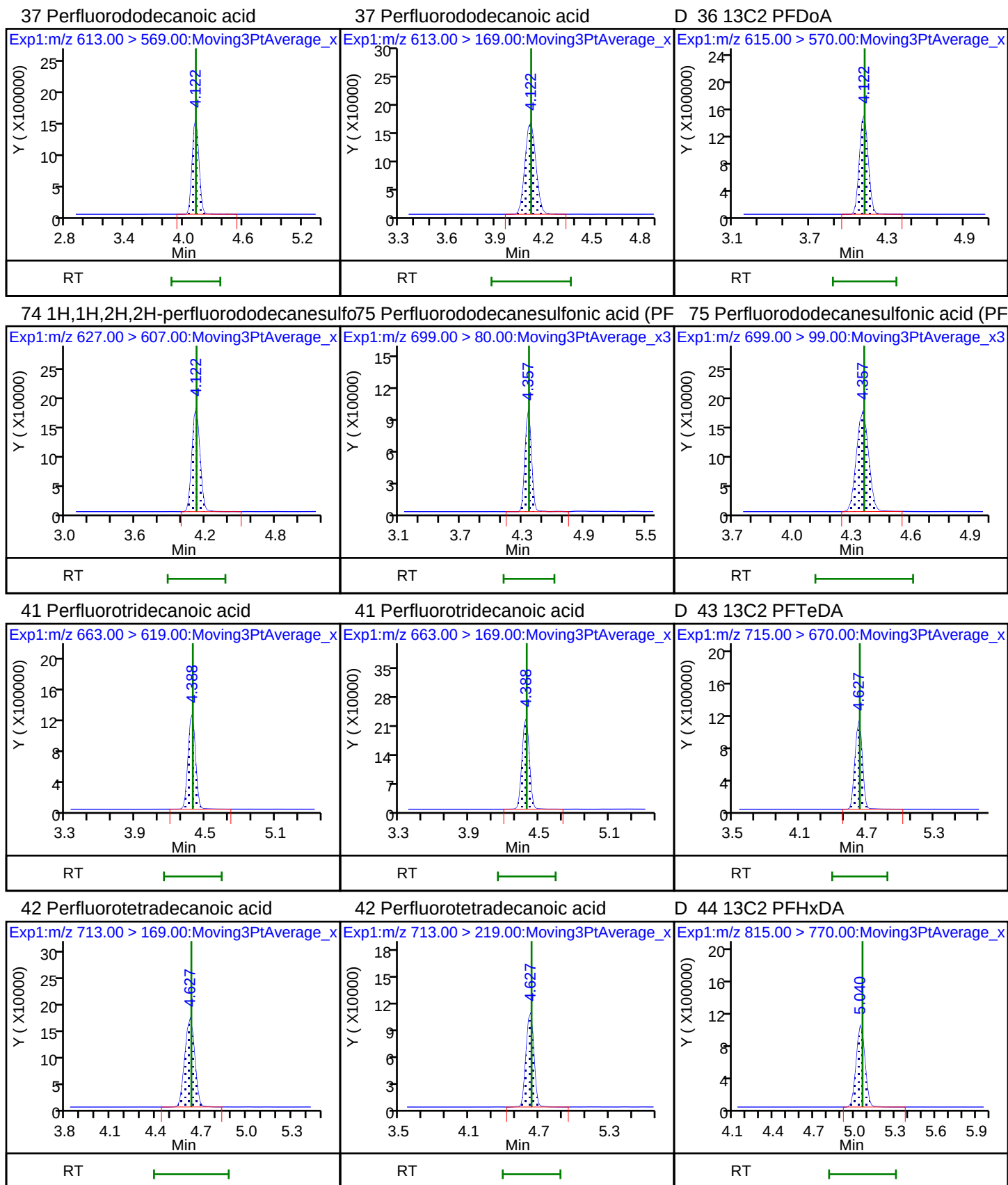
68 Perfluorononanesulfonic acid

25 1H,1H,2H,2H-perfluorodecanesulfonamide

23 13C2 PFDA



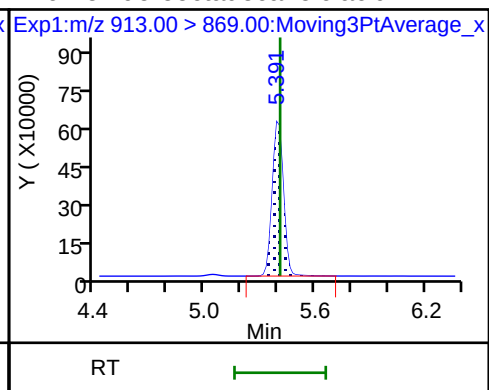
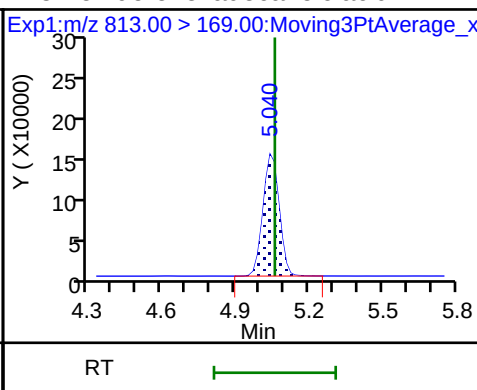
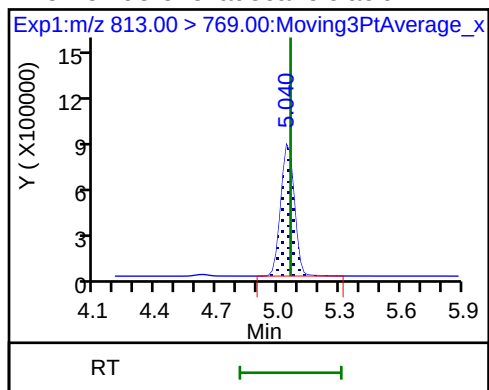




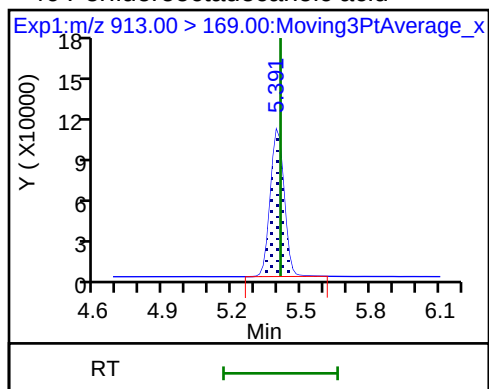
45 Perfluorohexadecanoic acid

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:

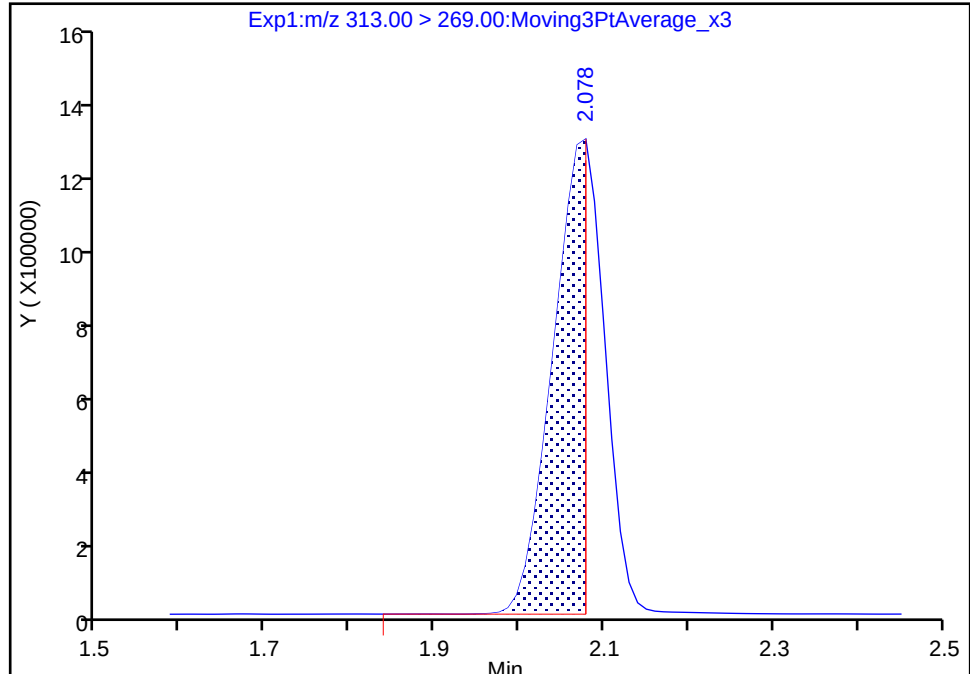
Detector: EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

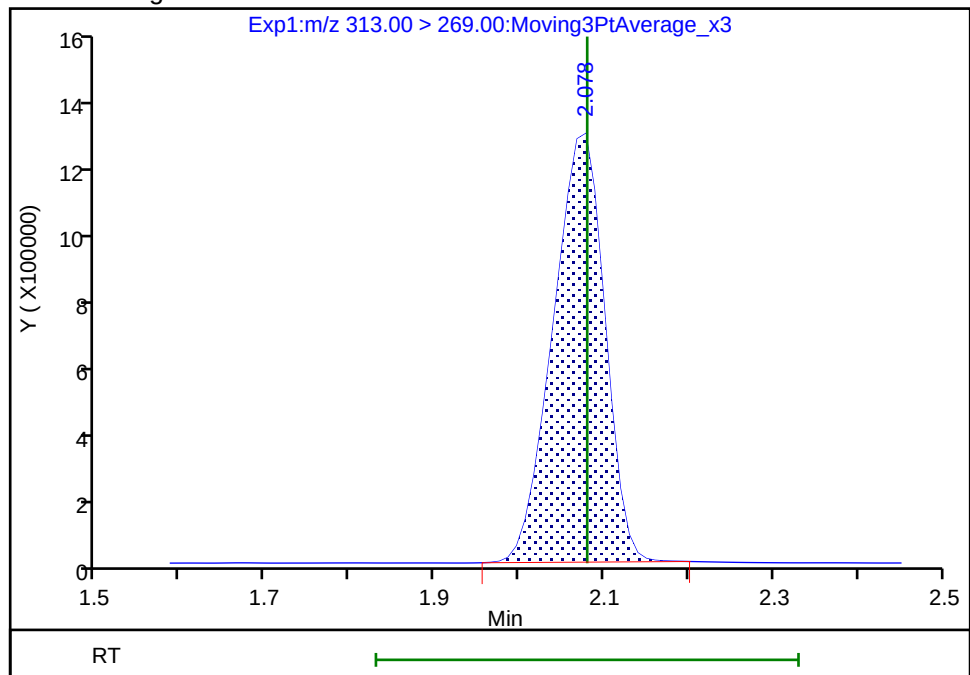
RT: 2.08
Area: 3306200
Amount: 1.546769
Amount Units: ng/ml

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.: 320-43696-1

SDG No.: _____

Lab Sample ID: CCVL 320-252299/2 Calibration Date: 10/15/2018 01:19

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: 2018.10.14LLB_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	0.9291	0.8543		0.0460	0.0500	-8.1	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.011	1.063		0.0525	0.0500	5.1	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	106.6	100.2		0.0415	0.0442	-6.0	50.0
4:2 FTS	AveID	21.65	27.87		0.601	0.467	28.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8935	0.8690		0.0486	0.0500	-2.7	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.19	45.74		0.0445	0.0469	-5.1	50.0
HFPO-DA (GenX)	AveID	1.896	1.645		0.0434	0.0500	-13.2	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.181		0.0555	0.0500	11.1	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.260	1.235		0.0446	0.0455	-2.0	50.0
DONA	AveID	2.707	2.885		0.0502	0.0471	6.6	50.0
6:2 FTS	AveID	2.232	2.462		0.523	0.474	10.3	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.069	1.037		0.0462	0.0476	-3.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.093	1.134		0.0520	0.0501	3.8	50.0
Perfluorononanoic acid (PFNA)	AveID	1.010	0.995		0.0493	0.0500	-1.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.084	1.052		0.0450	0.0464	-3.0	50.0
F-53B Major	AveID	1.202	1.113		0.0432	0.0466	-7.4	50.0
8:2 FTS	AveID	15.00	13.13		0.419	0.479	-12.5	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6471	0.6373		0.0473	0.0480	-1.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.136	1.078		0.0475	0.0500	-5.1	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.090		0.0520	0.0500	4.1	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.996	0.9539		0.479	0.500	-4.2	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8725	0.8804		0.0486	0.0482	0.9	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9305	0.9248		0.497	0.500	-0.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9340	0.9438		0.0505	0.0500	1.0	50.0
F-53B Minor	AveID	1.397	1.362		0.0459	0.0471	-2.6	50.0
10:2 FTS	AveID	10.13	6.193		0.0295	0.0482	-38.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.996	1.144		0.0574	0.0500	14.8	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0952	0.0771		0.0392	0.0484	-19.1	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8040	0.7275		0.0452	0.0500	-9.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1725		0.0541	0.0500	8.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.213		0.0411	0.0500	-17.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-252299/2 Calibration Date: 10/15/2018 01:19
 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: 2018.10.14LLB_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	0.5840	0.5740		0.0492	0.0500	-1.7	50.0
13C4 PFBA	Ave	0.8895	0.8576		2.41	2.50	-3.6	50.0
13C5 PFPeA	Ave	0.8031	0.8038		2.50	2.50	0.0	50.0
13C3 PFBS	Ave	0.0112	0.0114		2.38	2.33	2.2	50.0
M2-4:2 FTS	Ave	0.0964	0.1108		2.68	2.34	15.0	50.0
13C2 PFHxA	Ave	0.8671	0.8610		2.48	2.50	-0.7	50.0
13C3 HFPO-DA	Ave	0.0897	0.0932		2.60	2.50	3.9	50.0
13C4 PFHpA	Ave	1.031	1.035		2.51	2.50	0.3	50.0
18O2 PFHxS	Ave	0.6604	0.6824		2.44	2.37	3.3	50.0
M2-6:2 FTS	Ave	0.1054	0.1167		2.63	2.38	10.6	50.0
13C8 PFOA	Ave	2513465	2420918		2.36	2.45	-3.7	50.0
13C4 PFOA	Ave	0.9773	1.014		2.59	2.50	3.8	50.0
13C8 PFOS	Ave	429013	412861		2.30	2.39	-3.8	50.0
13C4 PFOS	Ave	0.6736	0.6717		2.38	2.39	-0.3	50.0
13C5 PFNA	Ave	0.8934	0.9510		2.66	2.50	6.4	50.0
M2-8:2 FTS	Ave	0.0132	0.0162		2.94	2.40	22.8	50.0
13C2 PFDA	Ave	0.9358	0.9891		2.64	2.50	5.7	50.0
13C8 FOSA	Ave	0.3536	0.3781		2.67	2.50	6.9	50.0
d3-NMeFOSAA	Ave	0.3830	0.3984		2.60	2.50	4.0	50.0
13C2 PFUnA	Ave	0.7875	0.8016		2.54	2.50	1.8	50.0
d5-NEtFOSAA	Ave	0.3106	0.3554		2.86	2.50	14.4	50.0
13C2 PFDoA	Ave	0.9569	0.9324		2.44	2.50	-2.6	50.0
13C2 PFTeDA	Ave	0.6864	0.6235		2.27	2.50	-9.2	50.0
13C2 PFHxDA	Ave	0.6277	0.6450		2.57	2.50	2.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65915.b\2018.10.14LLB_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 15-Oct-2018 01:19:29 ALS Bottle#: 47 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
 Sublist: chrom-PFAS_A9*sub6
 Method: \\ChromNA\Sacramento\ChromData\A9\20181015-65915.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 14:58:45 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: XAWRK052

First Level Reviewer: hannigana

Date: 17-Oct-2018 14:35:22

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	1.517	1.504	0.013	0.545	5690385	2.41		96.4	17625	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.517	1.511	0.006	1.000	97223	0.0460		91.9	10.2	
D 3 13C5 PFPeA										
267.90 > 223.00	1.797	1.789	0.008	0.646	5333635	2.50		100	18186	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.805	1.797	0.008	1.005	113340	0.0525		105	13.5	
D 47 13C3 PFBS										
301.90 > 83.00	1.839	1.830	0.009	0.661	70429	2.38		102	472	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.847	1.839	0.008	1.005	134130	0.0415		94.0	49.4	
298.90 > 99.00	1.847	1.839	0.008	1.005	44587		3.01(1.35-4.05)		42.0	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.058	2.037	0.021	0.740	686659	2.68		115	988	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.048	0.010	1.119	394228	0.6010		129	3689	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.078	0.010	0.751	5713032	2.48		99.3	18984	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.088	2.089	-0.001	1.000	99297	0.0486		97.3	26.5	
313.00 > 119.00	2.088	2.089	-0.001	1.000	6380		15.56(6.96-20.87)		14.1	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.119	2.109	0.010	1.153	64987	0.0445		94.9	178	
349.00 > 99.00	2.119	2.109	0.010	1.153	29955		2.17(1.15-3.45)		112	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.170	0.021	0.787	618118	2.60		104	2363	

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	2.191	0.0	1.000	20333	0.0434		86.8	14.4	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.412	0.014	0.872	6865781	2.51		100	15792	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.426	0.013	0.877	4283500	2.44		103	8680	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.426	0.0	1.000	162119	0.0555		111	36.5	
363.00 > 169.00	2.426	2.426	0.0	1.000	29963		5.41(2.17-6.52)		77.2	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.439	0.0	1.000	101812	0.0446		98.0	112	
399.00 > 99.00	2.439	2.439	0.0	1.000	29831		3.41(1.90-5.70)		77.4	
76 DONA										
377.00 > 251.00	2.465	2.465	0.0	0.782	242247	0.0502		107	939	
377.00 > 85.00	2.465	2.465	0.0	0.782	100667		2.41(1.13-3.39)		240	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.750	2.734	0.016	0.989	735418	2.63		111	1246	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.750	0.016		5925196	2.36		96.3	11697	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.750	0.0	1.000	361339	0.5228		110	1333	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.766	0.016	1.000	6730531	2.59		104	8822	
* 62 13C2 PFOA										
415.00 > 370.00	2.782	2.766	0.016		6635607	2.50			10087	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.782	0.0	1.000	152811	0.0520		104	11.0	
413.00 > 169.00	2.782	2.782	0.0	1.000	56744		2.69(1.36-4.08)		151	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.782	0.0	0.882	87991	0.0462		97.0	175	
449.00 > 99.00	2.798	2.782	0.016	0.887	21647		4.06(1.84-5.53)		63.9	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		986737	2.30		96.2	2888	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.135	0.018	1.133	4261081	2.38		99.7	3613	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.135	0.018	1.133	6310276	2.66		106	7959	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.153	0.0	1.000	125616	0.0493		98.5	16.9	
463.00 > 169.00	3.153	3.153	0.0	1.000	21363		5.88(2.68-8.03)		91.1	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.153	3.153	0.0	1.000	86989	0.0450		97.0	52.0	
499.00 > 99.00	3.153	3.153	0.0	1.000	20299		4.29(2.04-6.12)		71.8	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.350	3.351	-0.001	1.063	92487	0.0432		92.6	85.0	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.480	0.016	1.257	103052	2.94		123	640	

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	3.512	3.480	0.032	1.262	2508637	2.67		107	5971	
D 23 13C2 PFDA										
515.00 > 470.00	3.512	3.480	0.032	1.262	6563336	2.64		106	12833	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.496	0.0	1.109	54538	0.0473		98.5	170	
549.00 > 99.00	3.496	3.496	0.0	1.109	8976		6.08(3.02-9.05)		77.9	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.496	0.0	1.000	270587	0.4193		87.5	1572	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.512	3.496	0.016	1.000	141516	0.0475		94.9	25.8	
513.00 > 169.00	3.496	3.496	0.0	0.995	9428		15.01(7.12-21.35)		24.3	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.512	3.496	0.016	1.000	155039	0.0520		104	402	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.641	0.014	1.314	2643775	2.60		104	5319	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.655	0.0	1.000	504384	0.4791		95.8	231	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.807	0.016	1.374	2358111	2.86		114	4168	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.807	0.016	1.374	5319068	2.54		102	10202	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.807	0.0	1.208	75655	0.0486		101	80.3	
599.00 > 99.00	3.807	3.807	0.0	1.208	16375		4.62(2.14-6.43)		72.0	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.823	0.0	1.000	100401	0.0505		101	26.9	R
563.00 > 169.00	3.823	3.823	0.0	1.000	6017		16.69(5.24-15.72)		38.7	R
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.823	0.0	1.000	436163	0.4969		99.4	1236	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.991	3.976	0.015	1.266	114337	0.0459		97.4	449	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.106	0.016	1.482	6186815	2.44		97.4	9059	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.122	4.123	0.0	1.000	141578	0.0574		115	38.1	
613.00 > 169.00	4.122	4.123	0.0	1.000	10611		13.34(4.68-14.05)		21.0	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.123	0.0	1.179	12844	0.0295		61.1	22.0	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.357	4.357	0.0	1.382	6649	0.0392		80.9	9.3	
699.00 > 99.00	4.357	4.357	0.0	1.382	14064		0.47(0.28-0.83)		51.0	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.388	4.373	0.015	1.064	90013	0.0452		90.5	53.3	
663.00 > 169.00	4.372	4.373	-0.001	1.061	15506		5.81(3.09-9.27)		25.1	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.627	4.609	0.018	1.663	4136946	2.27		90.8	6317	

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	4.609	0.018	1.000	14269	0.0541		108	41.2	
713.00 > 219.00	4.609	4.609	0.0	0.996	10332		1.38(0.70-2.09)		35.2	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.023	5.023	0.0	1.806	4279778	2.57		103	6111	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.040	5.024	0.016	1.003	103806	0.0411		82.2	44.7	
813.00 > 169.00	5.040	5.024	0.016	1.003	21060		4.93(2.77-8.32)		54.4	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.376	5.362	0.014	1.070	49135	0.0492		98.3	31.2	
913.00 > 169.00	5.376	5.362	0.014	1.070	9798		5.01(2.55-7.64)		52.6	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Reagents:

LCPFC_LLCCVL_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65915.b\2018.10.14LLB_005.d

Injection Date: 15-Oct-2018 01:19:29

Instrument ID: A9

Lims ID: CCVL

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 47

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

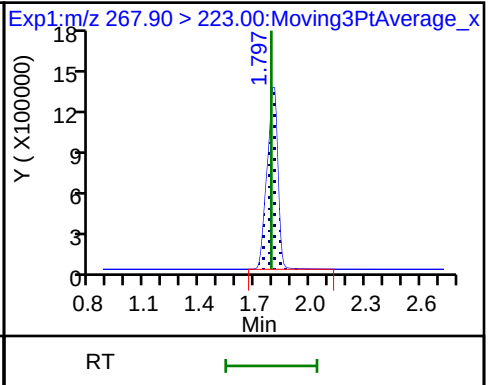
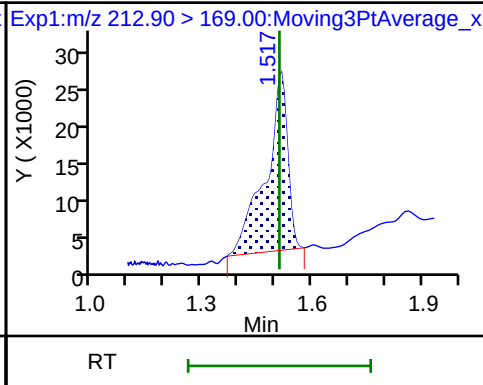
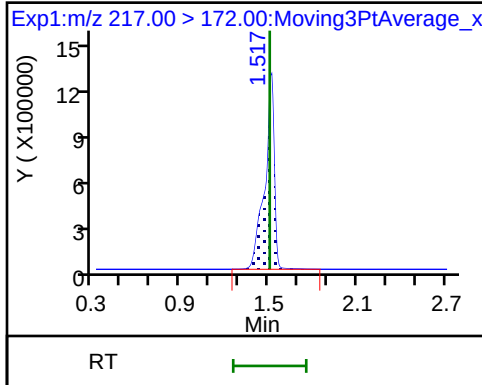
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

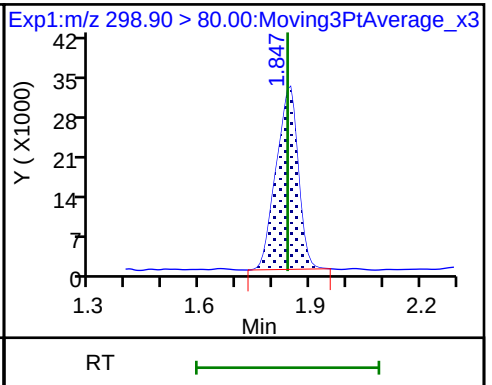
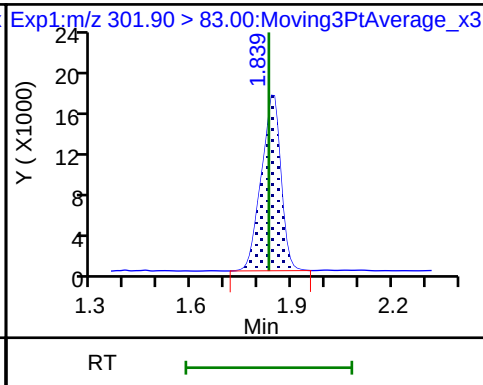
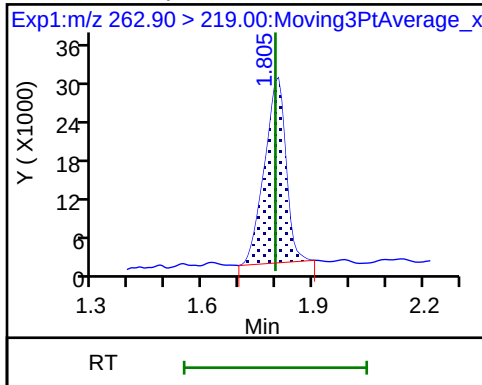
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

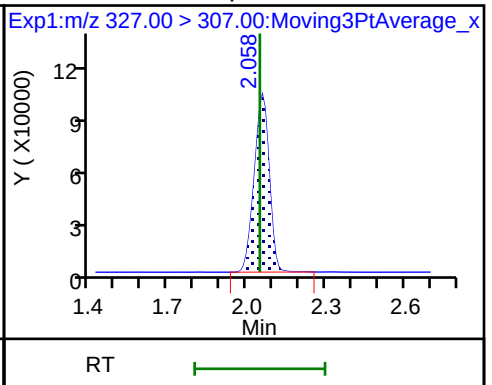
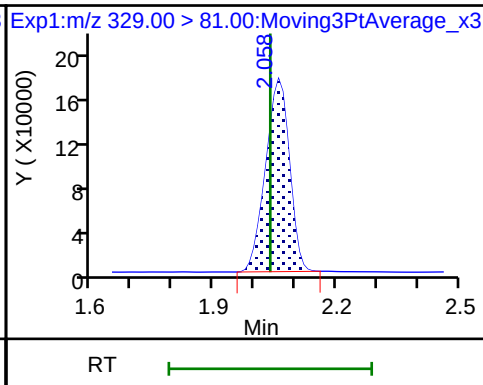
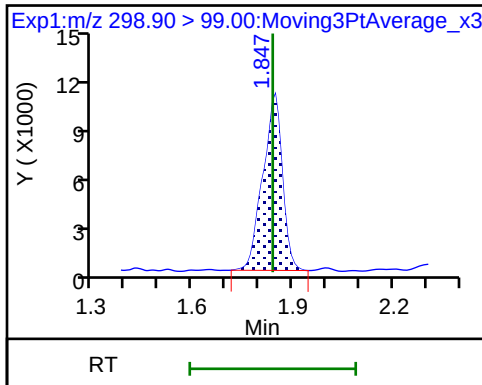
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

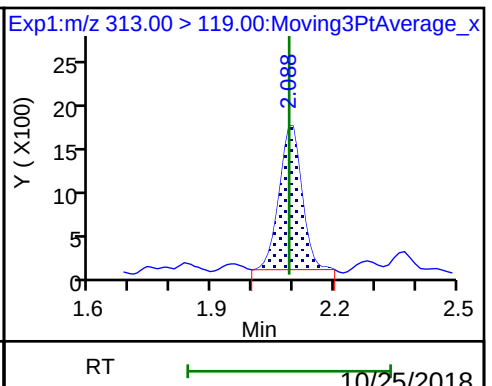
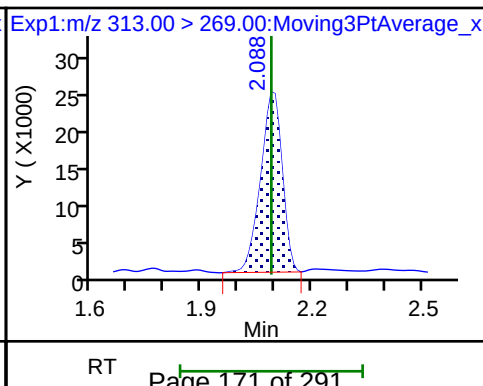
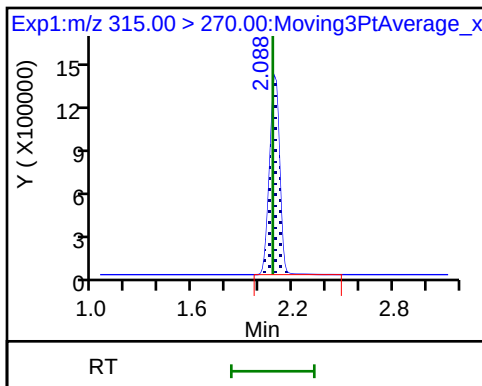
61 1H,1H,2H,2H-perfluorohexanesulfoni

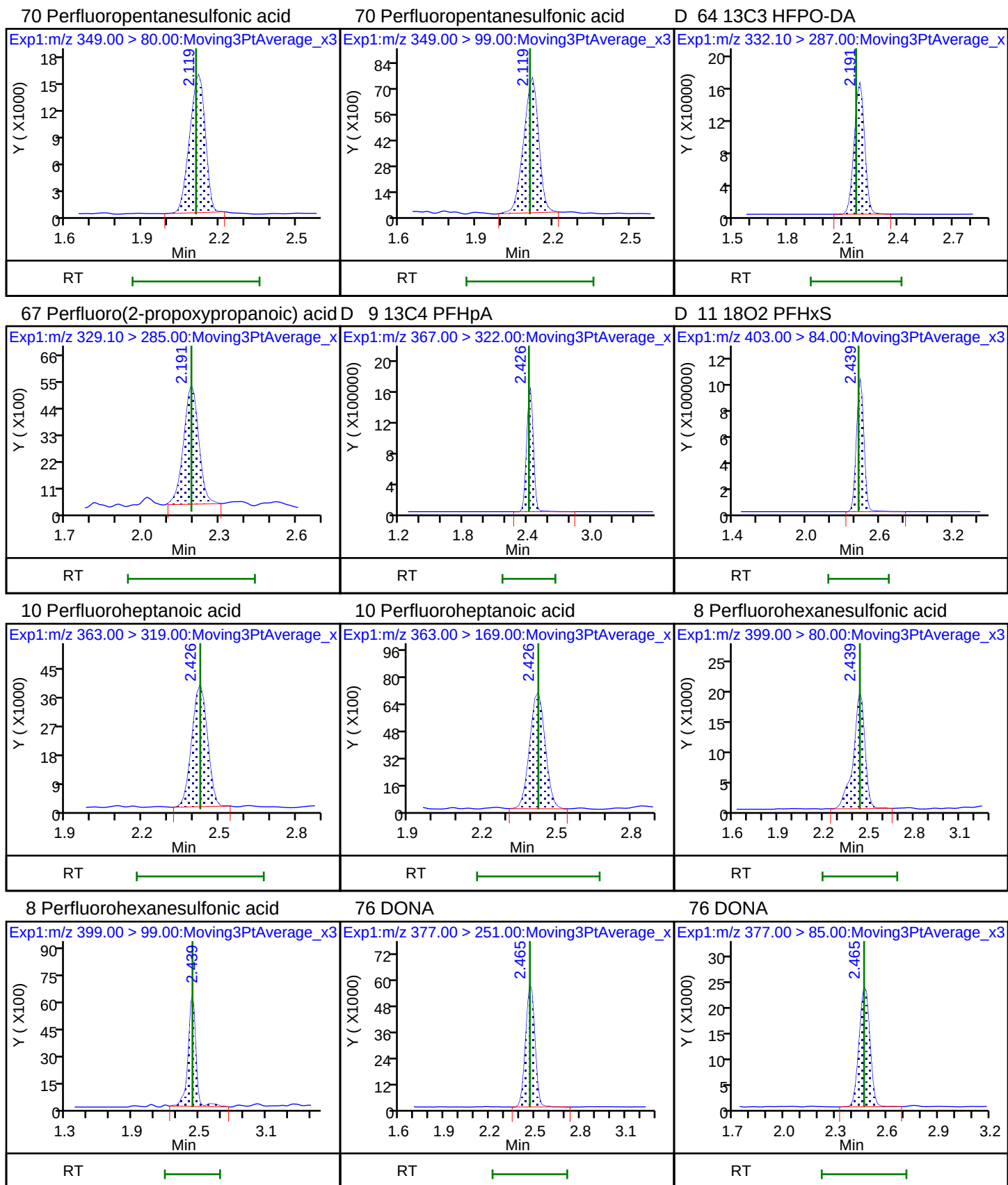


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid



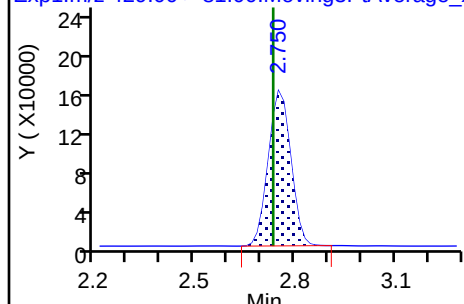


D 12 M2-6:2 FTS

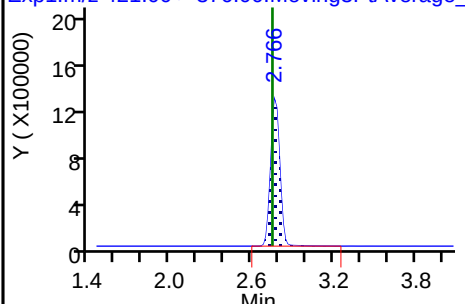
D 73 13C8 PFOA

13 1H,1H,2H,2H-perfluorooctanesulfoni

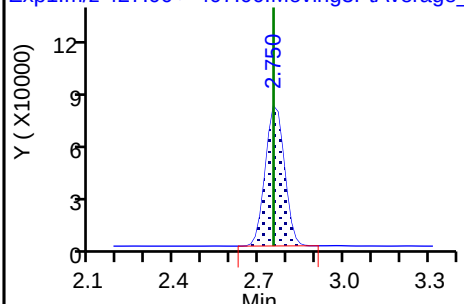
Exp1:m/z 429.00 > 81.00:Moving3PtAverage_x3



Exp1:m/z 421.00 > 376.00:Moving3PtAverage_x



Exp1:m/z 427.00 > 407.00:Moving3PtAverage_x

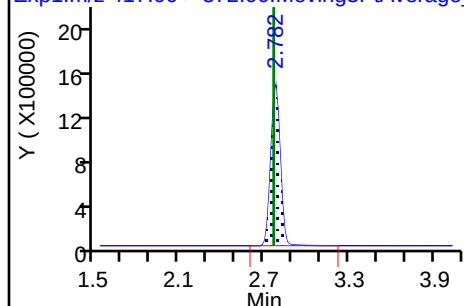


D 14 13C4 PFOA

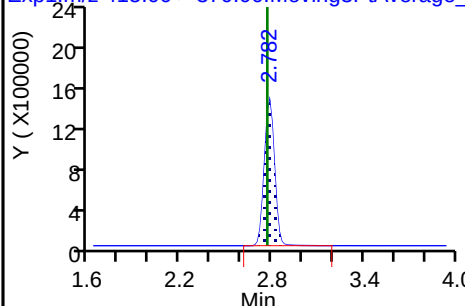
* 62 13C2 PFOA

15 Perfluorooctanoic acid

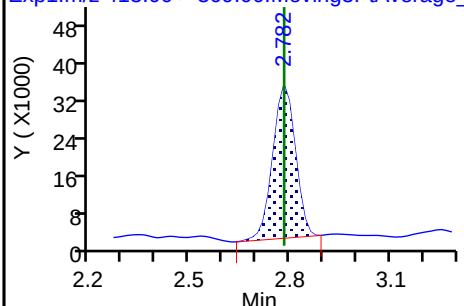
Exp1:m/z 417.00 > 372.00:Moving3PtAverage_x



Exp1:m/z 415.00 > 370.00:Moving3PtAverage_x



Exp1:m/z 413.00 > 369.00:Moving3PtAverage_x

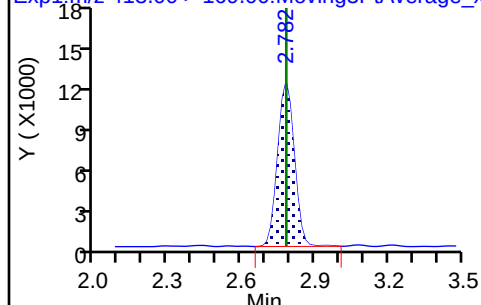


15 Perfluorooctanoic acid

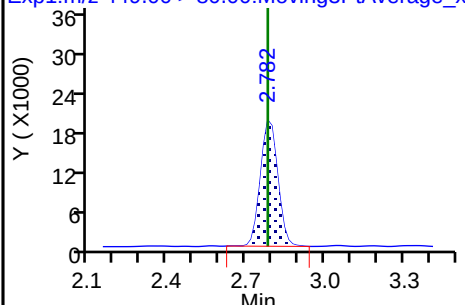
16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

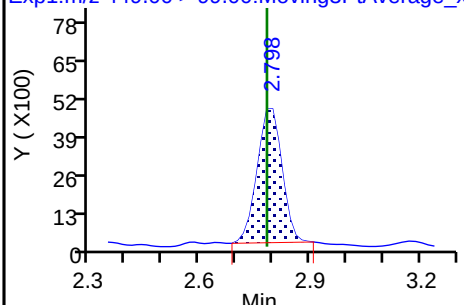
Exp1:m/z 413.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 449.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 449.00 > 99.00:Moving3PtAverage_x3

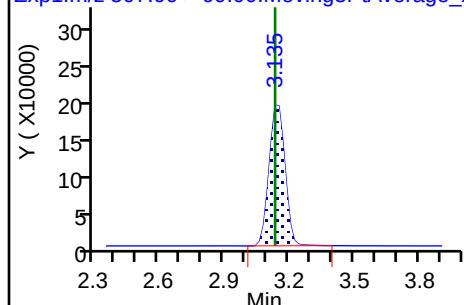


D 72 13C8 PFOS

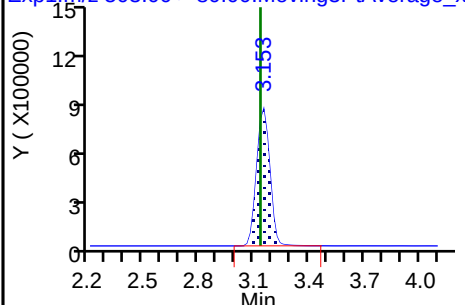
D 18 13C4 PFOS

D 19 13C5 PFNA

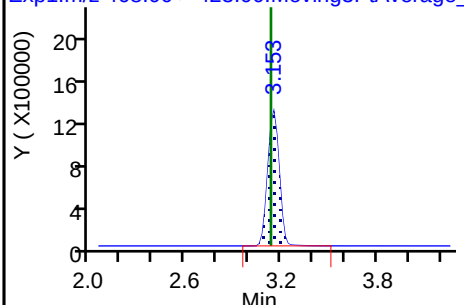
Exp1:m/z 507.00 > 99.00:Moving3PtAverage_x3

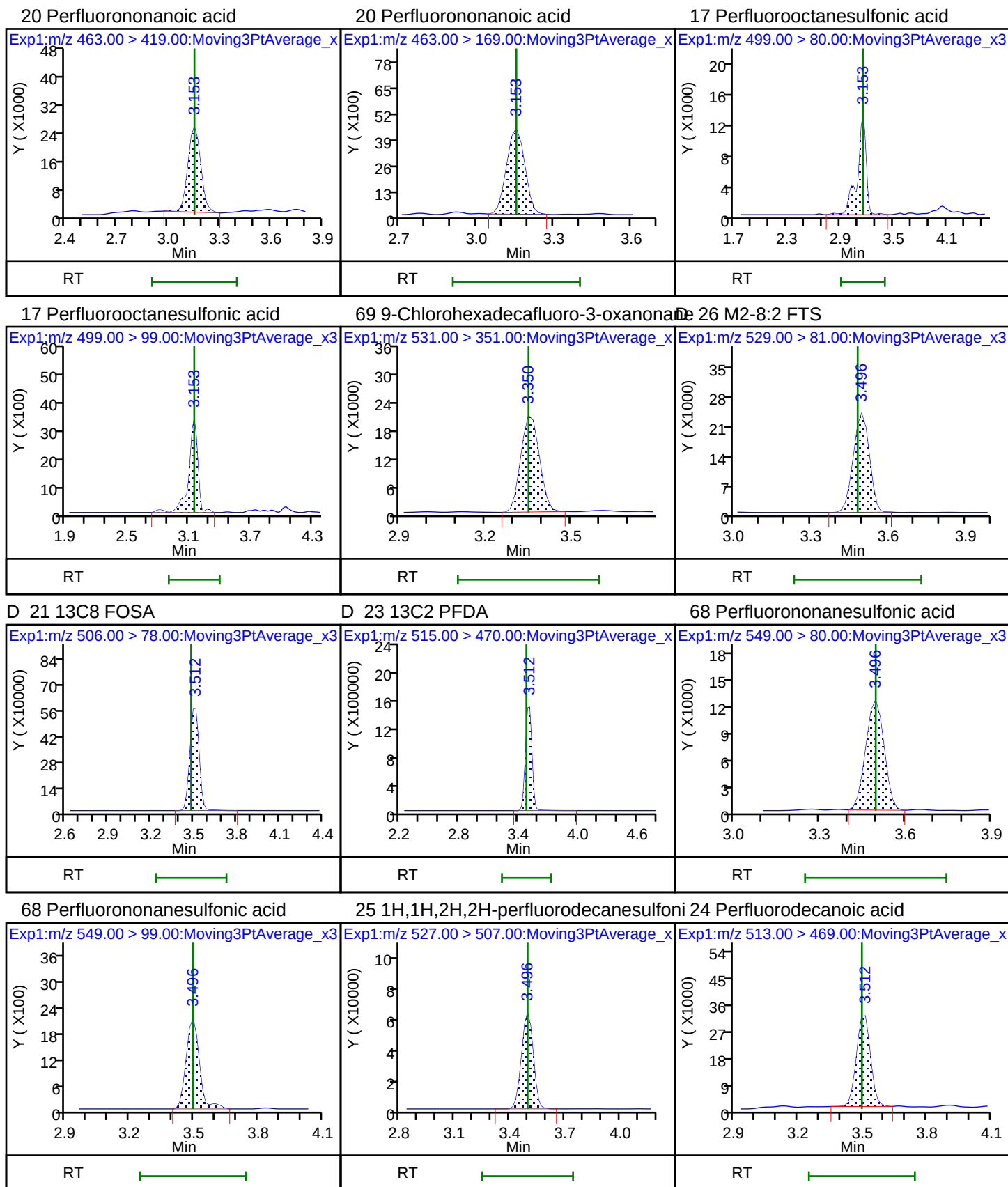


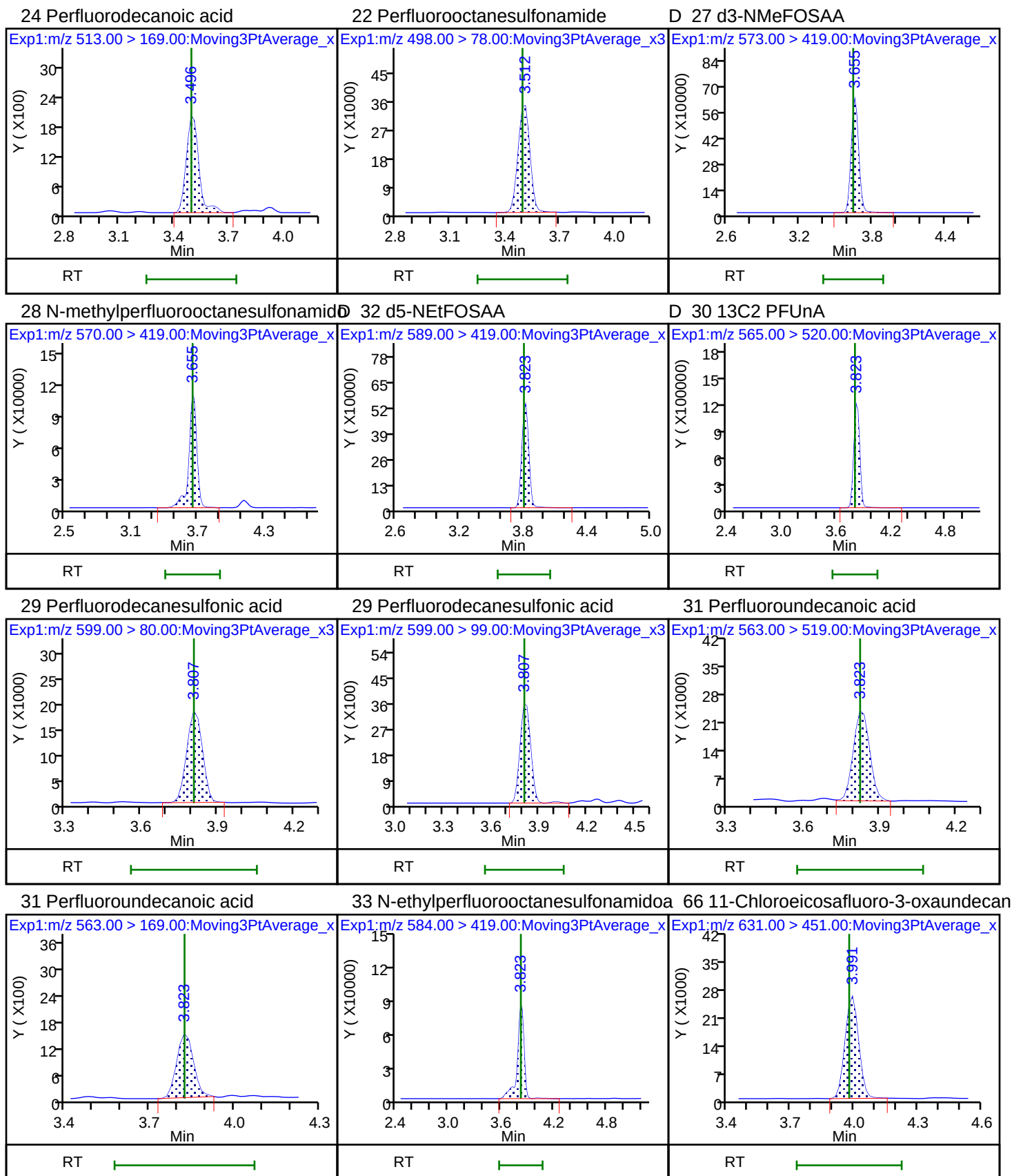
Exp1:m/z 503.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 468.00 > 423.00:Moving3PtAverage_x



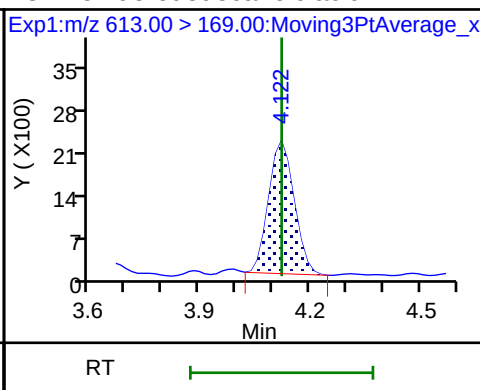
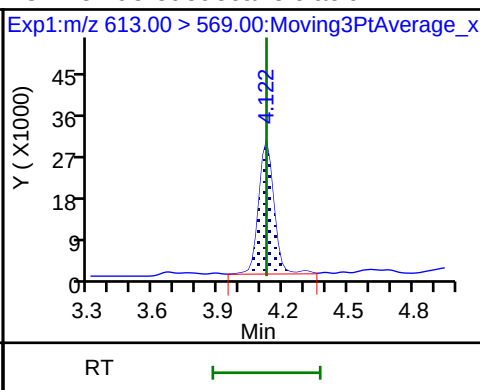
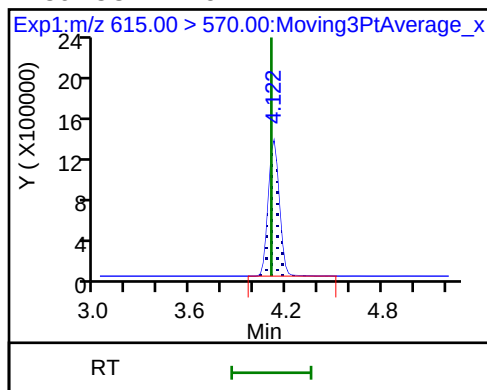




D 36 13C2 PFDaA

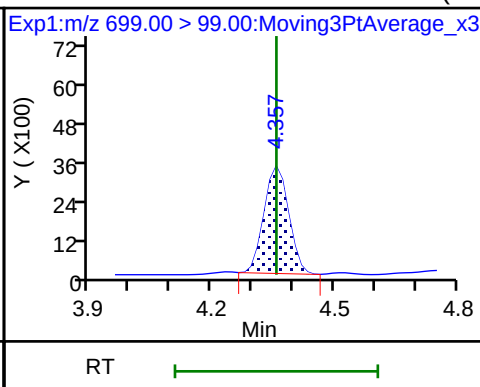
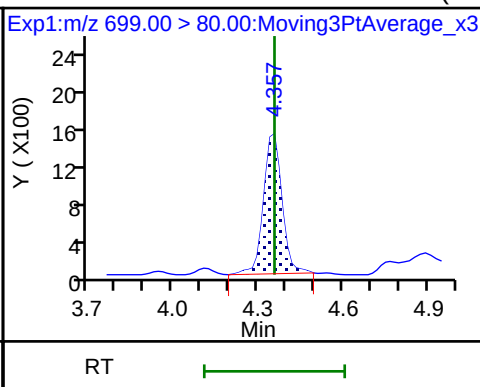
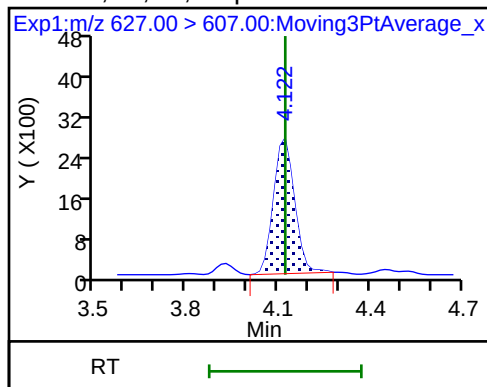
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

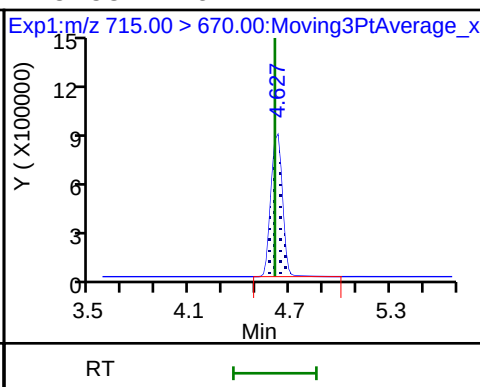
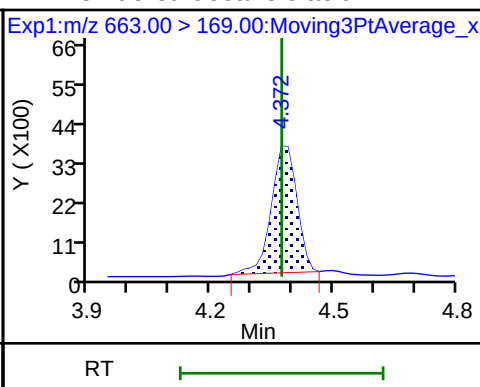
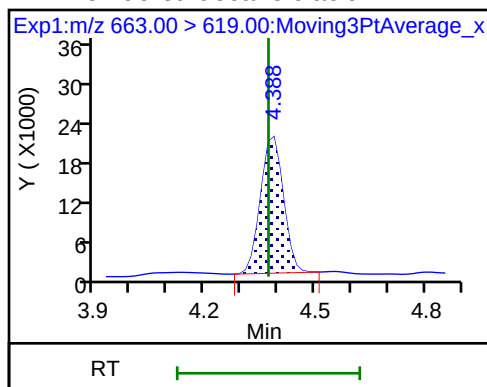
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

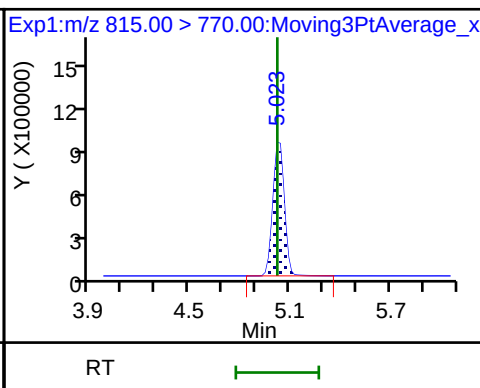
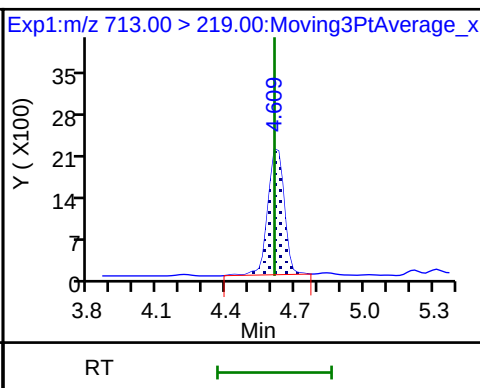
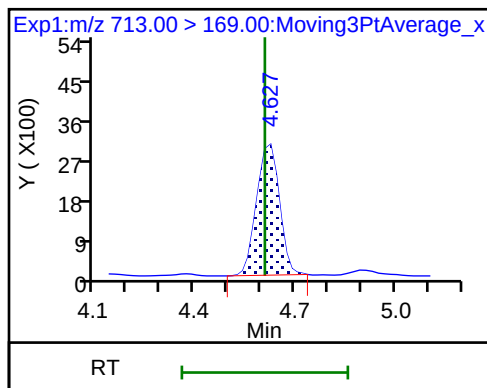
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

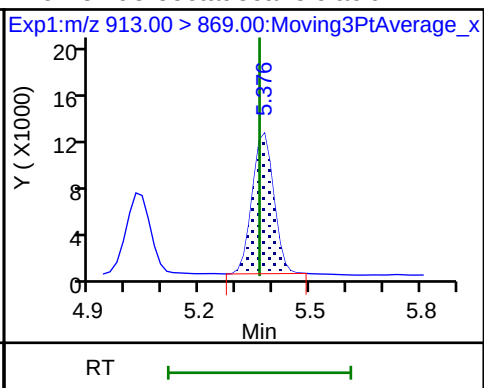
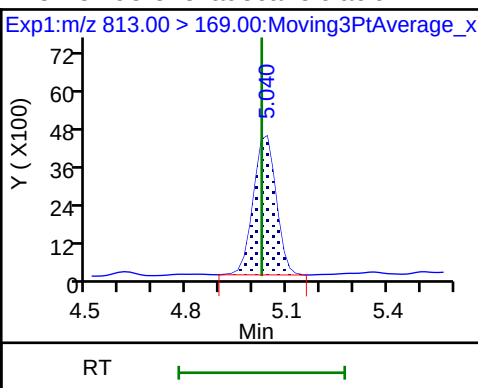
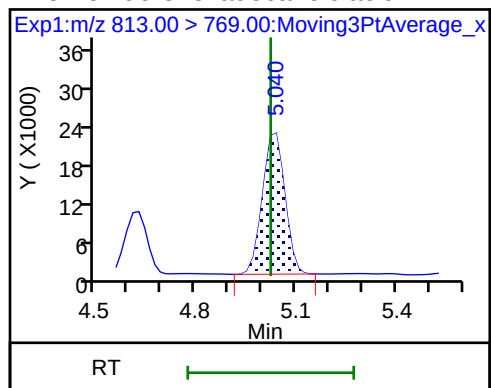
D 44 13C2 PFHxDA



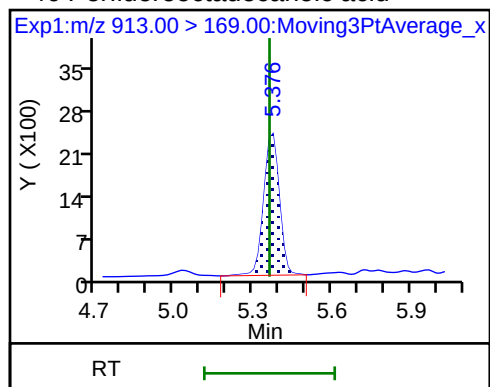
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1

SDG No.: _____

Lab Sample ID: CCV 320-252299/3 Calibration Date: 10/15/2018 01:26

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: 2018.10.14LLB_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	0.9291	0.9309		1.00	1.00	0.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.011	0.9789		0.968	1.00	-3.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	106.6	114.7		0.951	0.884	7.6	50.0
4:2 FTS	AveID	21.65	25.34		1.09	0.934	17.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8935	0.9031		1.01	1.00	1.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.19	49.69		0.967	0.938	3.1	50.0
HFPO-DA (GenX)	AveID	1.896	1.822		0.961	1.00	-3.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.066		1.00	1.00	0.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.260	1.173		0.847	0.910	-7.0	40.0
DONA	AveID	2.707	2.868		0.998	0.942	5.9	50.0
6:2 FTS	AveID	2.232	2.119		0.900	0.948	-5.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.069	1.015		0.904	0.952	-5.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.093	1.053		0.965	1.00	-3.6	40.0
Perfluorononanoic acid (PFNA)	AveID	1.010	0.9570		0.947	1.00	-5.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.084	1.101		0.943	0.928	1.6	40.0
F-53B Major	AveID	1.202	1.104		0.856	0.932	-8.1	50.0
8:2 FTS	AveID	15.00	13.51		0.863	0.958	-9.9	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.136	1.154		1.02	1.00	1.6	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6471	0.6257		0.928	0.960	-3.3	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.155		1.06	1.00	6.3	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.996	0.9909		0.995	1.00	-0.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8725	0.8777		0.970	0.964	0.6	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9305	0.9074		0.975	1.00	-2.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9340	0.9480		1.01	1.00	1.5	40.0
F-53B Minor	AveID	1.397	1.335		0.900	0.942	-4.5	50.0
10:2 FTS	AveID	10.13	8.109		0.771	0.964	-20.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.996	0.9600		0.964	1.00	-3.6	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0952	0.0908		0.923	0.968	-4.6	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8040	0.7364		0.916	1.00	-8.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1665		1.05	1.00	4.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8848		1.01	1.00	1.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1
 SDG No.: _____
 Lab Sample ID: CCV 320-252299/3 Calibration Date: 10/15/2018 01:26
 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: 2018.10.14LLB_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	0.5840	0.5866		1.00	1.00	0.5	50.0
13C4 PFBA	Ave	0.8895	0.8880		2.50	2.50	-0.2	50.0
13C5 PFPeA	Ave	0.8031	0.8219		2.56	2.50	2.3	50.0
13C3 PFBS	Ave	0.0112	0.0111		2.32	2.33	-0.3	50.0
M2-4:2 FTS	Ave	0.0964	0.1168		2.83	2.34	21.2	50.0
13C2 PFHxA	Ave	0.8671	0.8584		2.48	2.50	-1.0	50.0
13C3 HFPO-DA	Ave	0.0897	0.0969		2.70	2.50	8.1	50.0
13C4 PFHpA	Ave	1.031	1.106		2.68	2.50	7.3	50.0
18O2 PFHxS	Ave	0.6604	0.6788		2.43	2.37	2.8	50.0
M2-6:2 FTS	Ave	0.1054	0.1224		2.76	2.38	16.0	40.0
13C8 PFOA	Ave	2513465	2316027		2.26	2.45	-7.9	50.0
13C4 PFOA	Ave	0.9773	1.012		2.59	2.50	3.6	50.0
13C8 PFOS	Ave	429013	381643		2.13	2.39	-11.0	50.0
13C4 PFOS	Ave	0.6736	0.7063		2.51	2.39	4.9	50.0
13C5 PFNA	Ave	0.8934	0.9605		2.69	2.50	7.5	50.0
13C2 PFDA	Ave	0.9358	0.9485		2.53	2.50	1.4	50.0
13C8 FOSA	Ave	0.3536	0.3760		2.66	2.50	6.3	50.0
M2-8:2 FTS	Ave	0.0132	0.0167		3.02	2.40	26.1	40.0
d3-NMeFOSAA	Ave	0.3830	0.4095		2.67	2.50	6.9	50.0
13C2 PFUnA	Ave	0.7875	0.8595		2.73	2.50	9.1	50.0
d5-NEtFOSAA	Ave	0.3106	0.3670		2.95	2.50	18.2	50.0
13C2 PFDoA	Ave	0.9569	0.997		2.60	2.50	4.2	50.0
13C2 PFTeDA	Ave	0.6864	0.6566		2.39	2.50	-4.3	50.0
13C2 PFHxDA	Ave	0.6277	0.6169		2.46	2.50	-1.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65915.b\2018.10.14LLB_006.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 15-Oct-2018 01:26:58 ALS Bottle#: 38 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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181015-65915.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Oct-2018 14:58:50 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: XAWRK052

First Level Reviewer: hannigana

Date: 17-Oct-2018 14:36:35

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	1.517	1.504	0.013	0.545	5744849	2.50		99.8	22224	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.517	1.517	0.0	1.000	2139027	1.00		100	212	
D 3 13C5 PFPeA										
267.90 > 223.00	1.806	1.789	0.017	0.649	5317138	2.56		102	17224	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.806	1.806	0.0	1.000	2082004	0.9679		96.8	249	
D 47 13C3 PFBS										
301.90 > 83.00	1.847	1.830	0.017	0.664	66957	2.32		99.7	469	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.847	1.847	0.0	1.000	2920448	0.9512		108	972	
298.90 > 99.00	1.847	1.847	0.0	1.000	958977		3.05(1.35-4.05)		789	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.058	2.037	0.021	0.740	705494	2.83		121	1157	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.058	0.0	1.114	681679	1.09		117	3694	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.078	0.011	0.751	5553686	2.48		99.0	20379	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.089	0.0	1.000	2006227	1.01		101	500	
313.00 > 119.00	2.089	2.089	0.0	1.000	145915		13.75(6.96-20.87)		317	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.120	2.120	0.0	1.147	1342177	0.9671		103	3041	
349.00 > 99.00	2.120	2.120	0.0	1.147	655950		2.05(1.15-3.45)		1901	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.170	0.021	0.787	627179	2.70		108	2521	

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	2.191	0.0	1.000	457103	0.9610		96.1	390	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.412	0.014	0.872	7157878	2.68		107	13009	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.426	0.013	0.877	4154461	2.43		103	6970	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.426	0.0	1.000	3050989	1.00		100	640	
363.00 > 169.00	2.426	2.426	0.0	1.000	667218		4.57(2.17-6.52)		1451	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.439	0.0	1.000	1874296	0.8467		93.0	1884	
399.00 > 99.00	2.439	2.439	0.0	1.000	543147		3.45(1.90-5.70)		1006	
76 DONA										
377.00 > 251.00	2.465	2.465	0.0	0.782	4938608	1.00		106	11380	
377.00 > 85.00	2.465	2.465	0.0	0.782	2130492		2.32(1.13-3.39)		3761	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.751	2.734	0.017	0.989	752044	2.76		116	1551	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.750	0.016		5668475	2.26		92.1	9650	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.751	2.751	0.0	1.000	636098	0.8999		94.9	2533	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.766	0.016	1.000	6547031	2.59		104	8915	
* 62 13C2 PFOA										
415.00 > 370.00	2.782	2.782	0.0		6469627	2.50			10244	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.782	0.0	1.000	2761386	0.9651		96.4	191	
413.00 > 169.00	2.782	2.782	0.0	1.000	1004204		2.75(1.36-4.08)		1774	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.782	0.0	0.882	1765331	0.9037		94.9	3138	
449.00 > 99.00	2.782	2.782	0.0	0.882	472753		3.73(1.84-5.53)		1575	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		912127	2.13		89.0	2092	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.135	0.018	1.133	4368518	2.51		105	4303	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.135	0.018	1.133	6213829	2.69		108	6732	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.153	0.0	1.000	2378609	0.9474		94.7	326	
463.00 > 169.00	3.153	3.153	0.0	1.000	443902		5.36(2.68-8.03)		1389	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.153	3.153	0.0	1.000	1867417	0.9426		102	742	
499.00 > 99.00	3.153	3.153	0.0	1.000	420304		4.44(2.04-6.12)		776	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.063	1880743	0.8561		91.9	1638	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.480	0.016	1.257	103222	3.02		126	555	

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	3.496	3.480	0.016	1.257	2432784	2.66		106	4432	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.480	0.016	1.257	6136499	2.53		101	5676	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.496	0.0	1.109	1097866	0.9282		96.7	2324	
549.00 > 99.00	3.496	3.496	0.0	1.109	168272		6.52(3.02-9.05)		621	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.496	0.0	1.000	557834	0.8630		90.1	2499	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.496	0.0	1.000	2833227	1.02		102	489	
513.00 > 169.00	3.496	3.496	0.0	1.000	177485		15.96(7.12-21.35)		252	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.496	3.496	0.0	1.000	3070646	1.06		106	6026	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.641	0.014	1.314	2649300	2.67		107	5409	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.655	0.0	1.000	1050039	1.00		99.5	405	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.807	0.016	1.374	2374357	2.95		118	3790	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.807	0.016	1.374	5560443	2.73		109	12231	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.807	0.0	1.208	1546529	0.9697		101	1427	
599.00 > 99.00	3.807	3.807	0.0	1.208	322187		4.80(2.14-6.43)		1298	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.823	0.0	1.000	2108477	1.01		101	524	
563.00 > 169.00	3.823	3.823	0.0	1.000	191191		11.03(5.24-15.72)		610	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.823	0.0	1.000	861747	0.9751		97.5	1750	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.976	3.976	0.0	1.261	2298609	0.8999		95.5	4638	
35 MeFOSA										
512.00 > 169.00	3.991	3.991	0.0		514597	NC			634	
D 36 13C2 PFDaA										
615.00 > 570.00	4.123	4.106	0.016	1.482	6448333	2.60		104	8827	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.123	4.123	0.0	1.000	2476196	0.9636		96.4	713	
613.00 > 169.00	4.123	4.123	0.0	1.000	280617		8.82(4.68-14.05)		440	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.123	4.123	0.0	1.179	336903	0.7714		80.0	525	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.176	4.176	0.0		561744	NC			439	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.357	4.357	0.0	1.382	160623	0.9232		95.4	206	
699.00 > 99.00	4.357	4.357	0.0	1.382	284736		0.56(0.28-0.83)		909	

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	4.373	4.373	0.0	1.061	1899389	0.9159		91.6	955	
663.00 > 169.00	4.373	4.373	0.0	1.061	355351		5.35(3.09-9.27)		658	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.609	4.609	0.0	1.657	4247959	2.39		95.7	7723	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.627	4.627	0.0	1.004	282875	1.05		105	815	
713.00 > 219.00	4.609	4.627	-0.018	1.000	208553		1.36(0.70-2.09)		816	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.024	5.023	0.001	1.806	3991159	2.46		98.3	7468	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.041	5.041	0.0	1.003	1412506	1.01		101	528	
813.00 > 169.00	5.024	5.041	-0.017	1.000	267425		5.28(2.77-8.32)		667	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.377	5.377	0.0	1.070	936487	1.00		100	673	
913.00 > 169.00	5.363	5.377	-0.014	1.068	179577		5.21(2.55-7.64)		1006	

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\20181015-65915.b\2018.10.14LLB_006.d

Injection Date: 15-Oct-2018 01:26:58

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 38

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

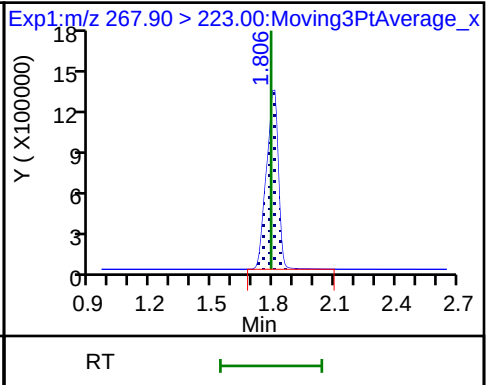
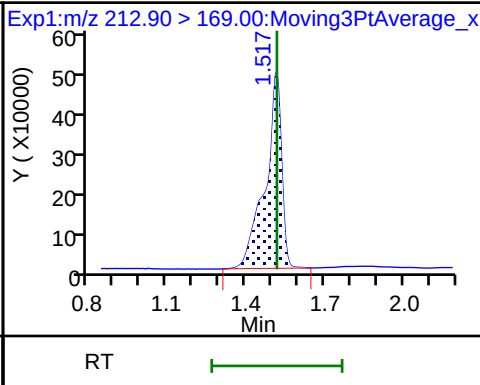
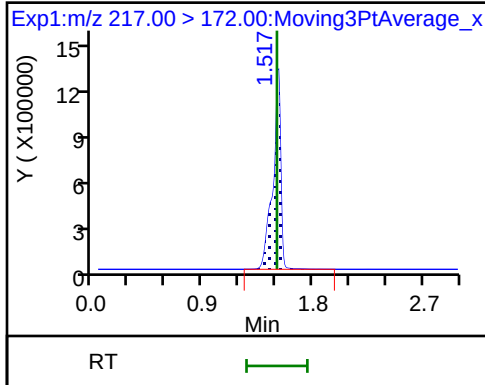
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

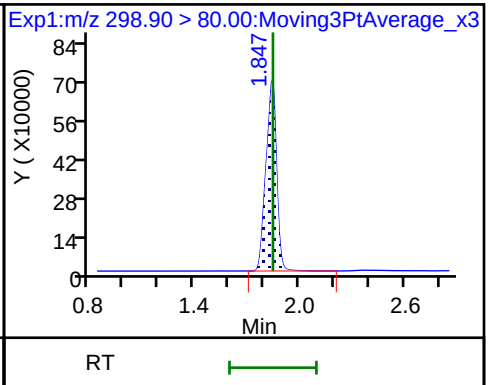
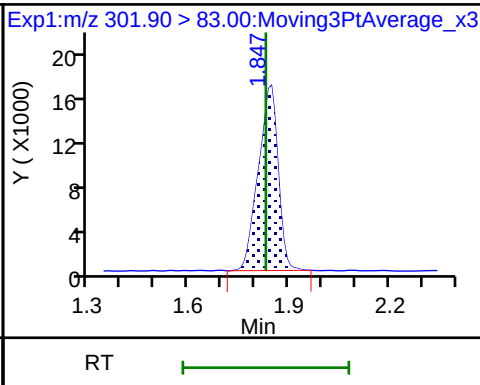
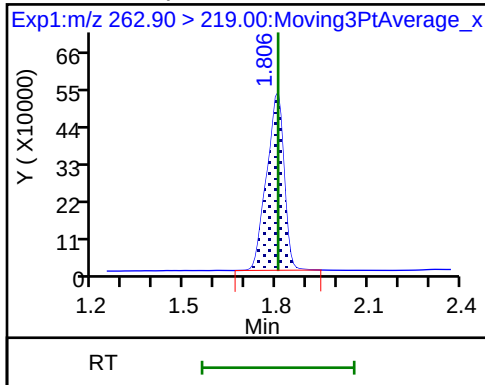
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

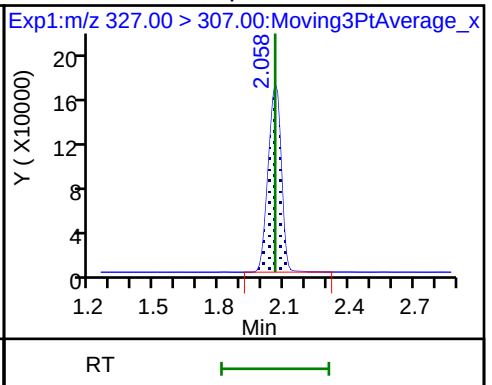
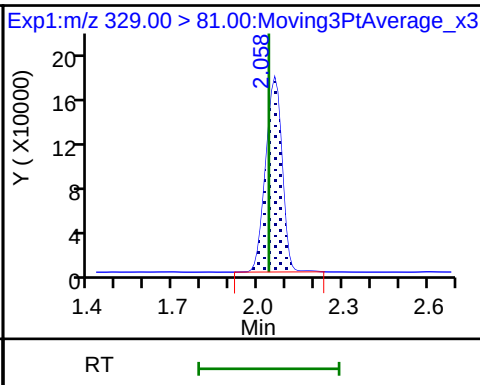
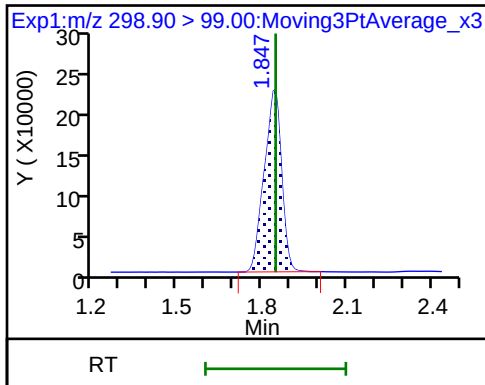
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

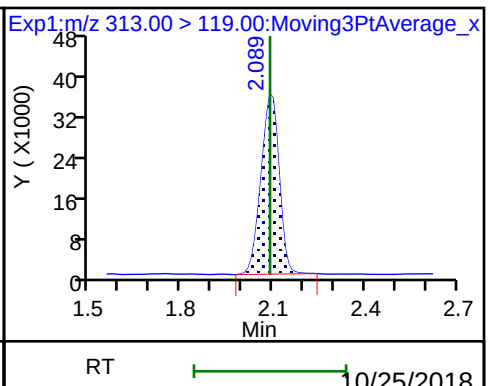
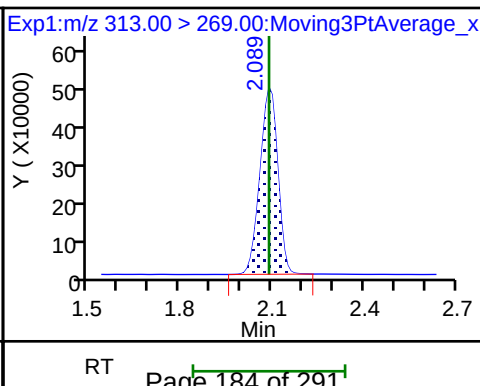
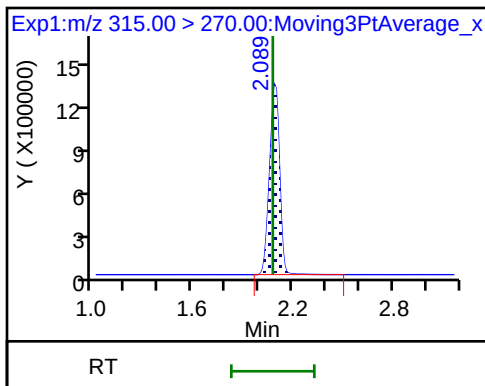
61 1H,1H,2H,2H-perfluorohexanesulfoni

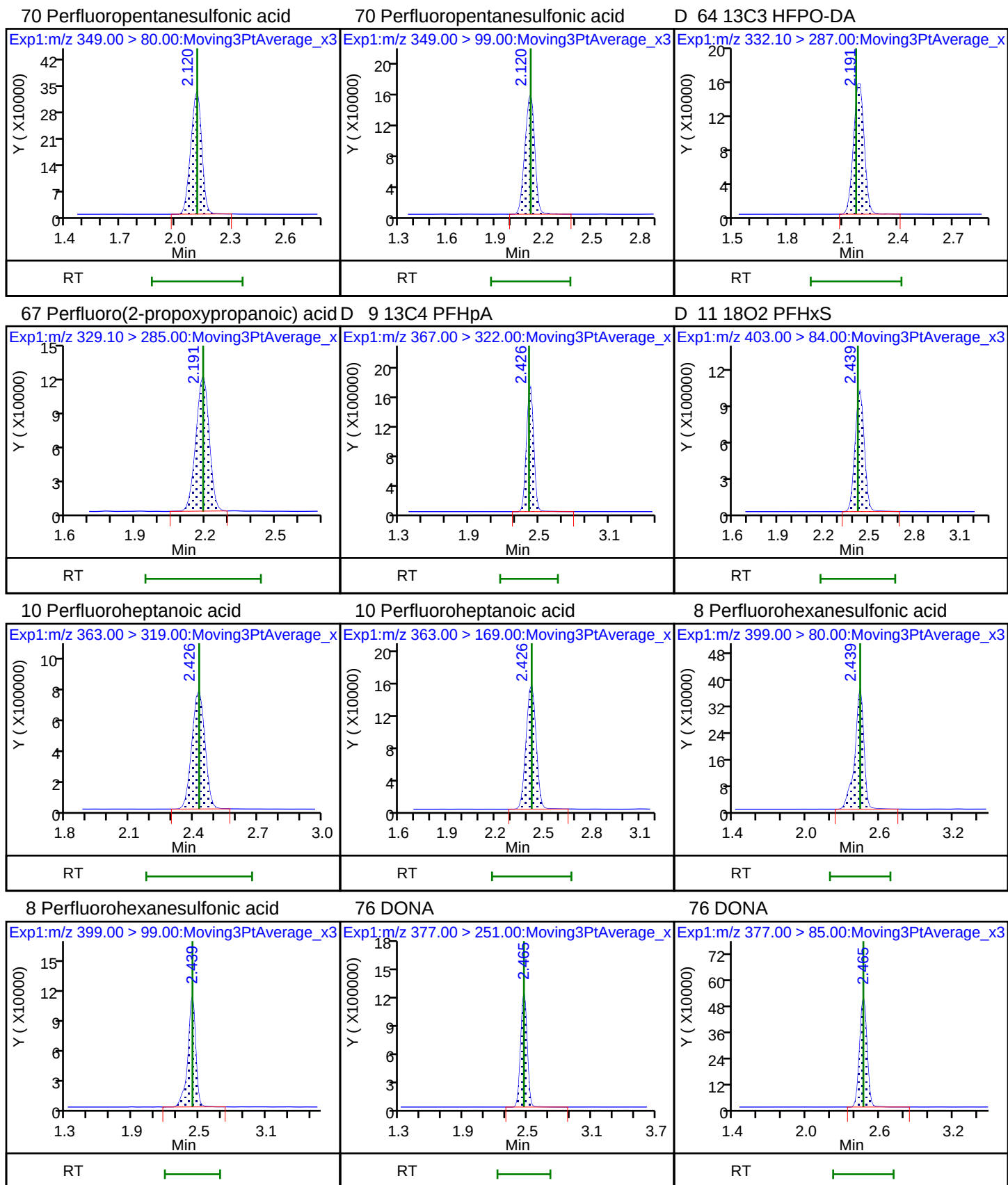


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid



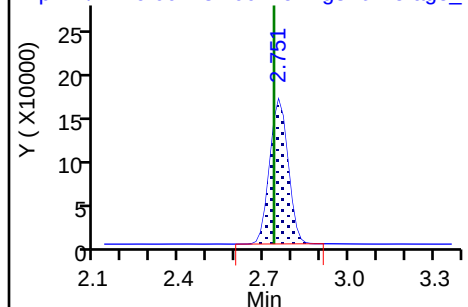


D 12 M2-6:2 FTS

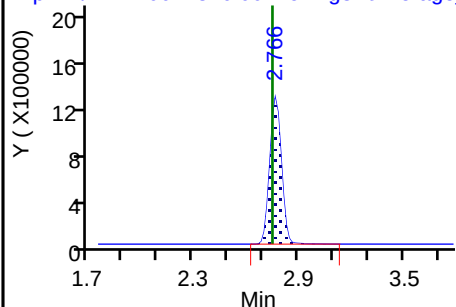
D 73 13C8 PFOA

13 1H,1H,2H,2H-perfluorooctanesulfoni

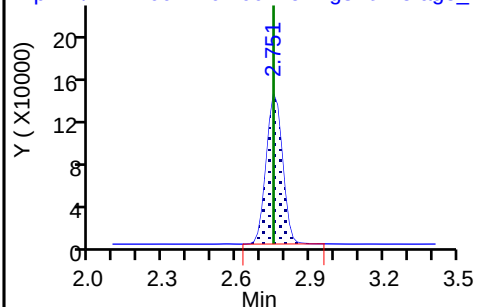
Exp1:m/z 429.00 > 81.00:Moving3PtAverage_x3



Exp1:m/z 421.00 > 376.00:Moving3PtAverage_x



Exp1:m/z 427.00 > 407.00:Moving3PtAverage_x

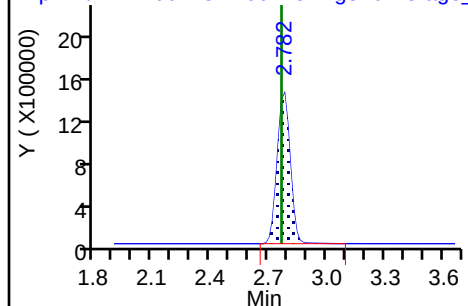


D 14 13C4 PFOA

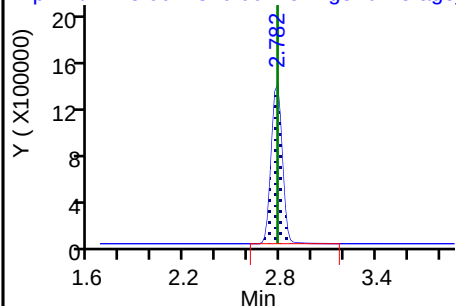
* 62 13C2 PFOA

15 Perfluorooctanoic acid

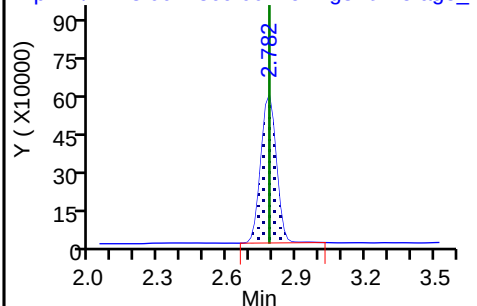
Exp1:m/z 417.00 > 372.00:Moving3PtAverage_x



Exp1:m/z 415.00 > 370.00:Moving3PtAverage_x



Exp1:m/z 413.00 > 369.00:Moving3PtAverage_x

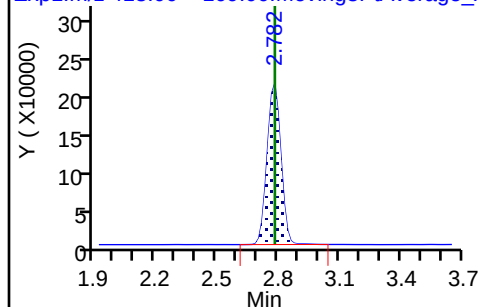


15 Perfluorooctanoic acid

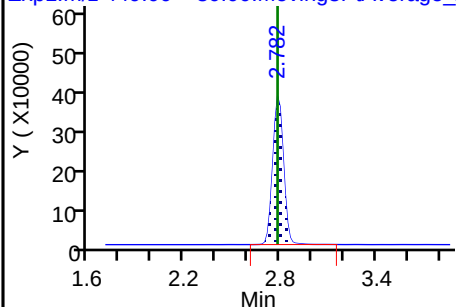
16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

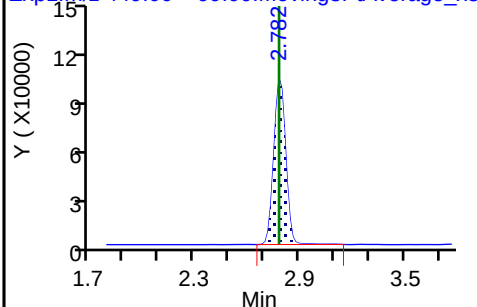
Exp1:m/z 413.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 449.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 449.00 > 99.00:Moving3PtAverage_x3

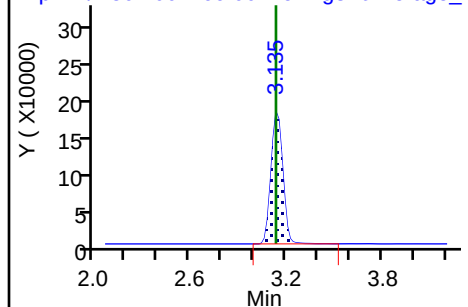


D 72 13C8 PFOS

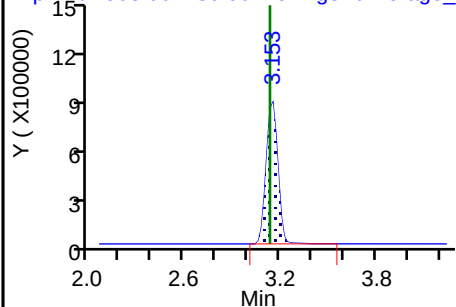
D 18 13C4 PFOS

D 19 13C5 PFNA

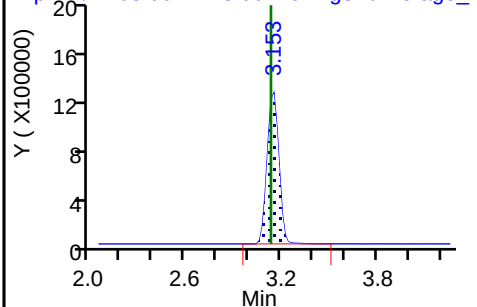
Exp1:m/z 507.00 > 99.00:Moving3PtAverage_x3

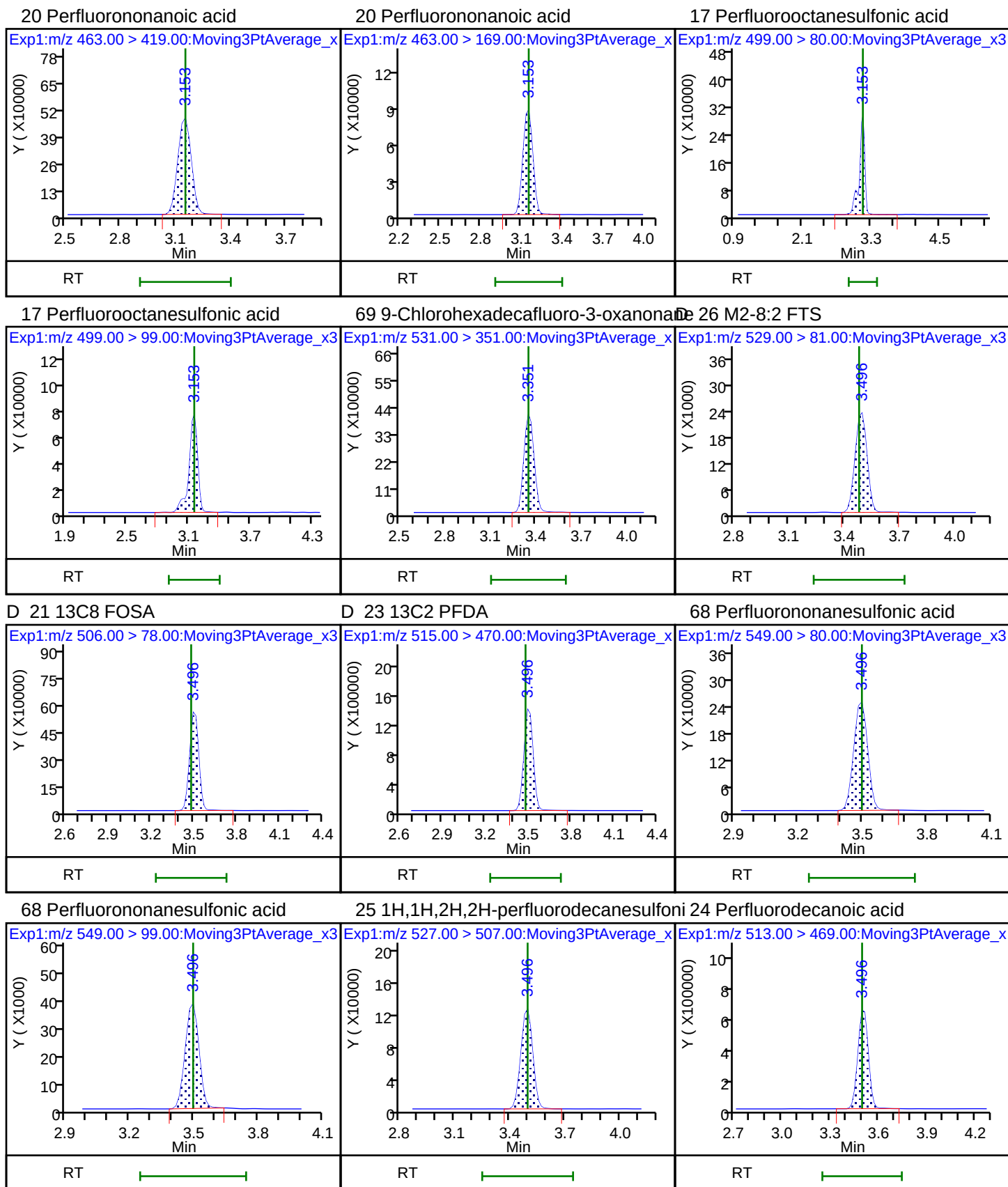


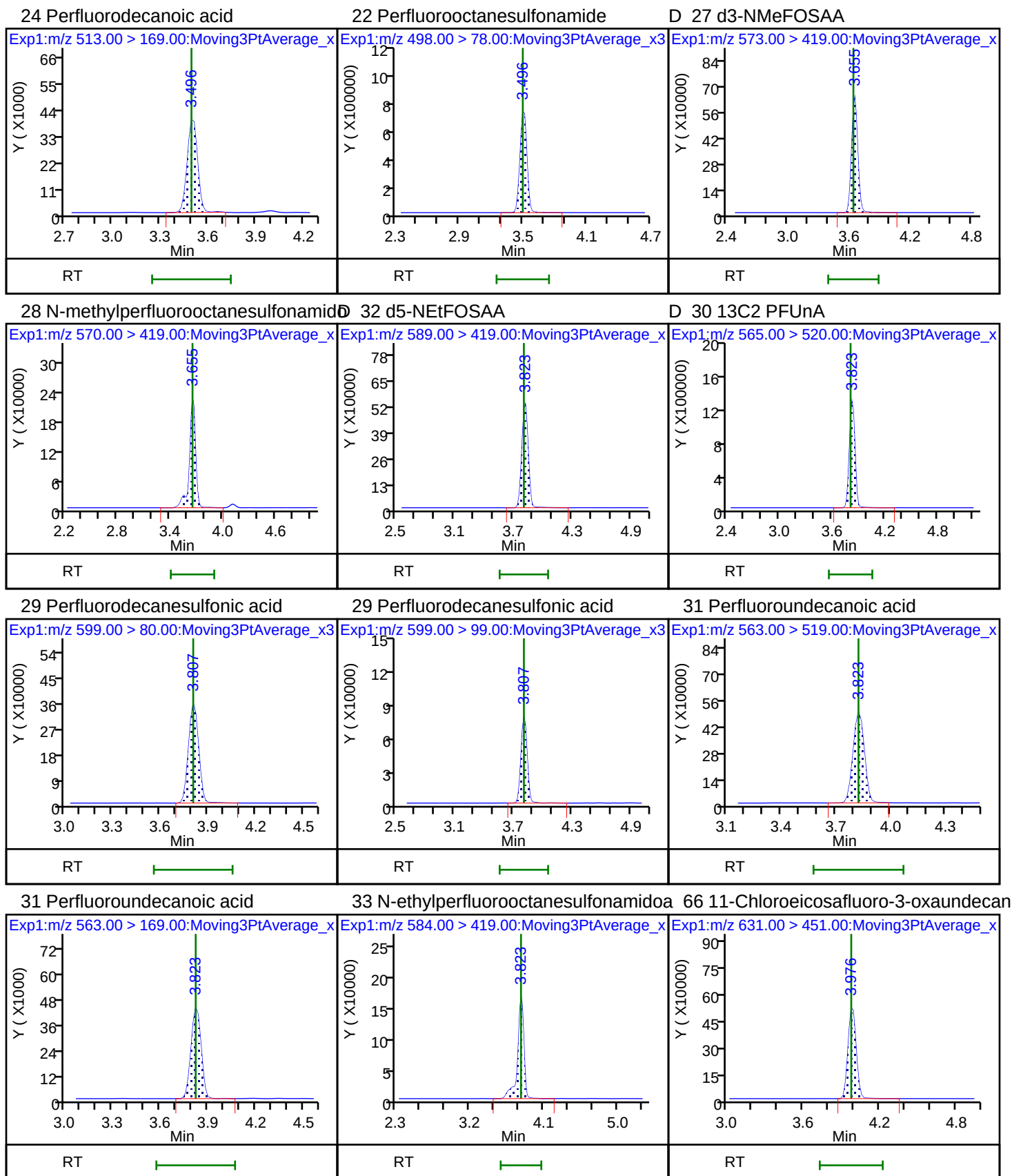
Exp1:m/z 503.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 468.00 > 423.00:Moving3PtAverage_x



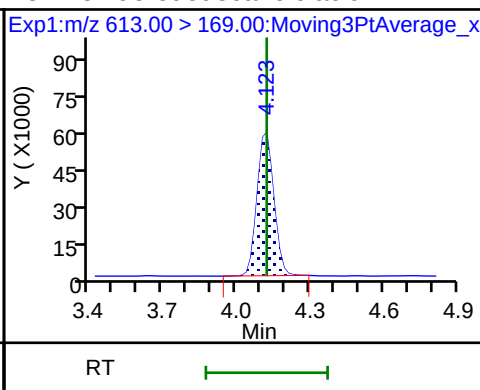
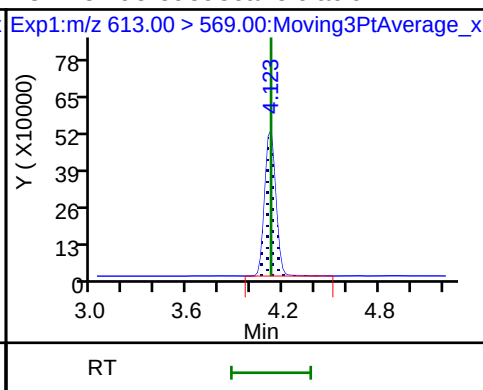
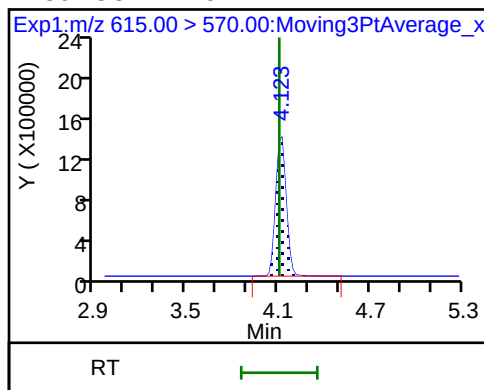




D 36 13C2 PFDaA

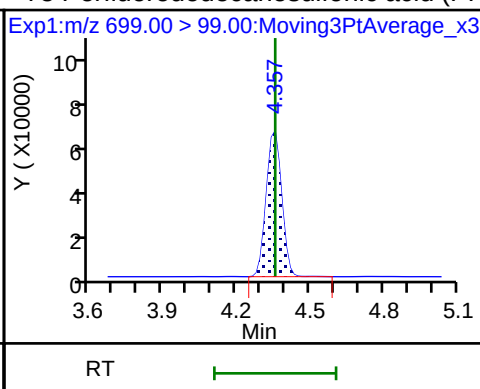
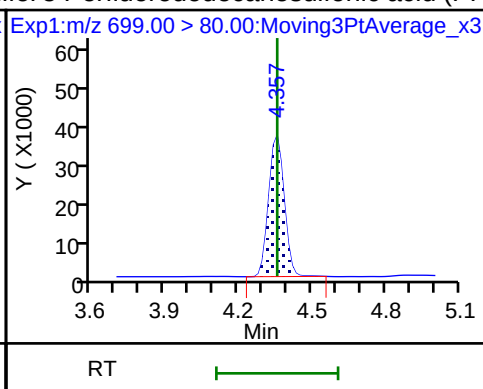
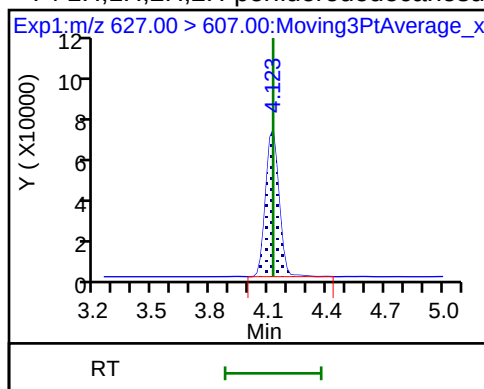
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

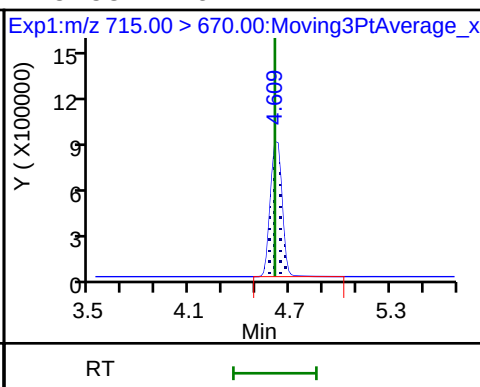
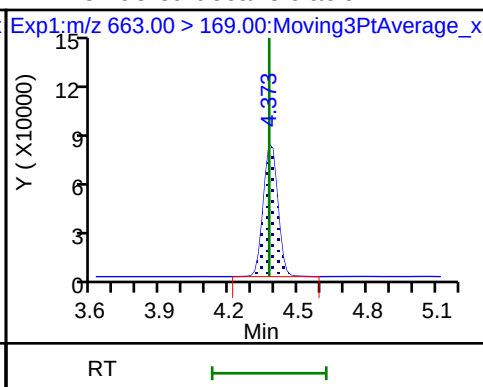
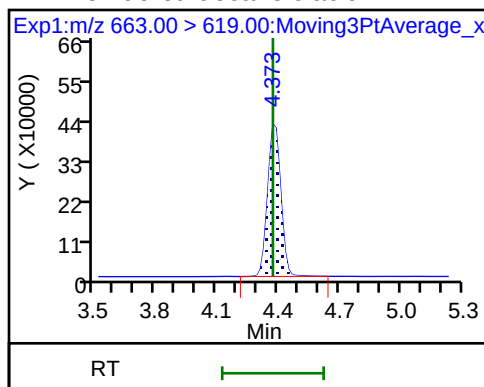
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

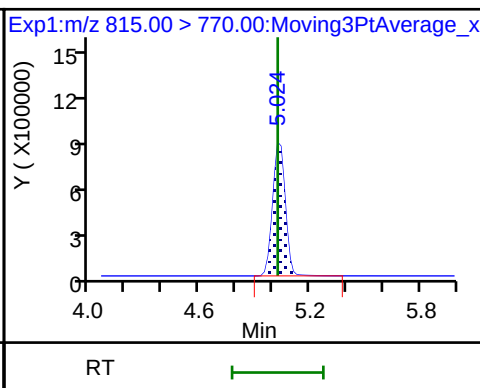
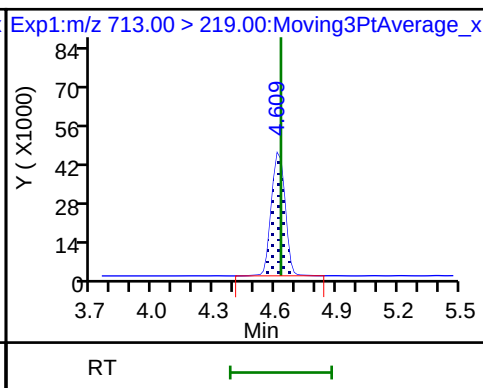
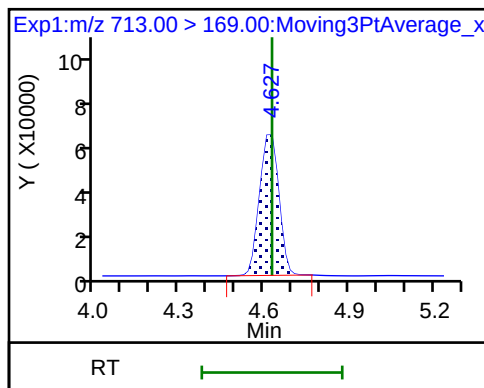
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

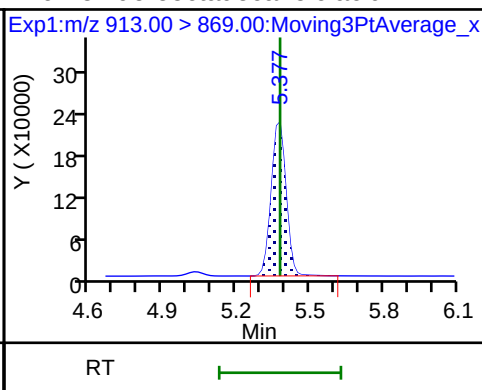
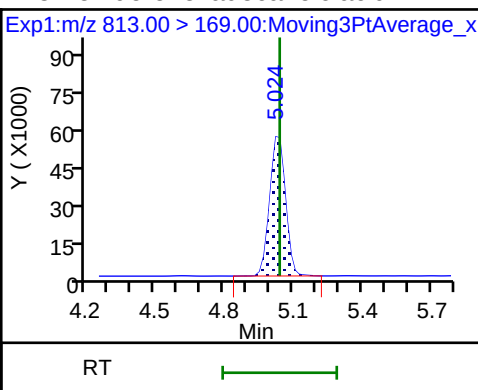
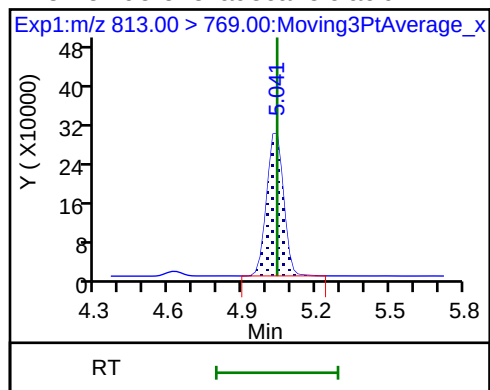
D 44 13C2 PFHxDA



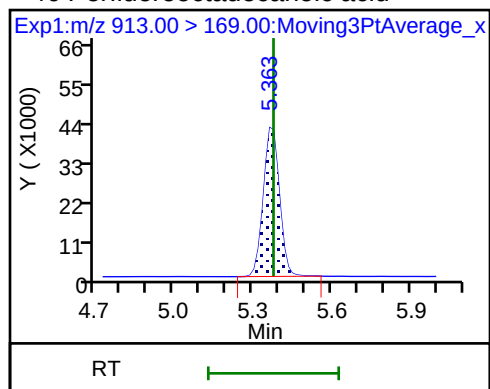
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1

SDG No.: _____

Lab Sample ID: CCV 320-252302/1 Calibration Date: 10/15/2018 03:12

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: 2018.10.14LLB_020.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	0.9412		1.01	1.00	1.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.011	1.013		1.00	1.00	0.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	106.6	113.3		0.940	0.884	6.3	50.0
4:2 FTS	AveID	21.65	27.04		1.17	0.934	24.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8935	0.9003		1.01	1.00	0.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.19	50.09		0.975	0.938	3.9	50.0
HFPO-DA (GenX)	AveID	1.896	1.671		0.881	1.00	-11.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.164		1.10	1.00	9.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.260	1.193		0.862	0.910	-5.3	40.0
DONA	AveID	2.707	2.673		0.930	0.942	-1.3	50.0
6:2 FTS	AveID	2.232	1.989		0.845	0.948	-10.9	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.093	1.105		1.01	1.00	1.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.069	1.033		0.920	0.952	-3.4	50.0
Perfluorononanoic acid (PFNA)	AveID	1.010	0.9925		0.983	1.00	-1.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.084	1.042		0.892	0.928	-3.8	40.0
F-53B Major	AveID	1.202	1.041		0.807	0.932	-13.4	50.0
8:2 FTS	AveID	15.00	16.53		1.06	0.958	10.2	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6471	0.6093		0.904	0.960	-5.8	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.136	1.193		1.05	1.00	5.1	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.058		1.03	1.00	3.0	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.996	1.001		1.01	1.00	0.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8725	0.7881		0.871	0.964	-9.7	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9305	0.9115		0.980	1.00	-2.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9340	0.9026		0.966	1.00	-3.4	40.0
F-53B Minor	AveID	1.397	1.285		0.866	0.942	-8.1	50.0
10:2 FTS	AveID	10.13	9.864		0.938	0.964	-2.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.996	1.064		1.07	1.00	6.8	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0952	0.0832		0.846	0.968	-12.6	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8040	0.8042		1.00	1.00	0.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1655		1.04	1.00	3.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9054		1.04	1.00	3.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1
 SDG No.: _____
 Lab Sample ID: CCV 320-252302/1 Calibration Date: 10/15/2018 03:12
 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: 2018.10.14LLB_020.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	0.5829		0.998	1.00	-0.2	50.0
13C4 PFBA	Ave	0.8895	0.8433		2.37	2.50	-5.2	50.0
13C5 PFPeA	Ave	0.8031	0.7459		2.32	2.50	-7.1	50.0
13C3 PFBS	Ave	0.0112	0.0106		2.20	2.33	-5.3	50.0
M2-4:2 FTS	Ave	0.0964	0.1174		2.84	2.34	21.8	50.0
13C2 PFHxA	Ave	0.8671	0.8191		2.36	2.50	-5.5	50.0
13C3 HFPO-DA	Ave	0.0897	0.1019		2.84	2.50	13.7	50.0
13C4 PFHpA	Ave	1.031	0.9804		2.38	2.50	-4.9	50.0
18O2 PFHxS	Ave	0.6604	0.6498		2.33	2.37	-1.6	50.0
M2-6:2 FTS	Ave	0.1054	0.1152		2.60	2.38	9.3	40.0
13C4 PFOA	Ave	0.9773	0.9454		2.42	2.50	-3.3	50.0
13C8 PFOA	Ave	2513465	2211620		2.15	2.45	-12.0	50.0
13C4 PFOS	Ave	0.6736	0.7247		2.57	2.39	7.6	50.0
13C5 PFNA	Ave	0.8934	0.9138		2.56	2.50	2.3	50.0
13C8 PFOS	Ave	429013	412153		2.30	2.39	-3.9	50.0
M2-8:2 FTS	Ave	0.0132	0.0133		2.41	2.40	0.5	40.0
13C2 PFDA	Ave	0.9358	0.8876		2.37	2.50	-5.1	50.0
13C8 FOSA	Ave	0.3536	0.3612		2.55	2.50	2.1	50.0
d3-NMeFOSAA	Ave	0.3830	0.3778		2.47	2.50	-1.4	50.0
d5-NEtFOSAA	Ave	0.3106	0.3444		2.77	2.50	10.9	50.0
13C2 PFUnA	Ave	0.7875	0.7663		2.43	2.50	-2.7	50.0
13C2 PFDoA	Ave	0.9569	0.8894		2.32	2.50	-7.1	50.0
13C2 PFTeDA	Ave	0.6864	0.6049		2.20	2.50	-11.9	50.0
13C2 PFHxDA	Ave	0.6277	0.5620		2.24	2.50	-10.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_020.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-Oct-2018 03:12:06 ALS Bottle#: 38 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\20181015-65916.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 16:36:10 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: XAWRK007

First Level Reviewer: mongkols

Date: 18-Oct-2018 16:17:04

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	1.517	1.517	0.0	1.004	2179101	1.01		101	219	
D 1 13C4 PFBA										
217.00 > 172.00	1.511	1.511	0.0	0.545	5787863	2.37		94.8	16403	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.797	0.0	1.000	2073693	1.00		100	237	
D 3 13C5 PFPeA										
267.90 > 223.00	1.797	1.797	0.0	0.648	5119261	2.32		92.9	23860	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.847	1.847	0.0	1.005	2907692	0.9396		106	1000	
298.90 > 99.00	1.847	1.847	0.0	1.005	1018538		2.85(1.35-4.05)		816	
D 47 13C3 PFBS										
301.90 > 83.00	1.838	1.839	-0.001	0.663	67486	2.20		94.7	511	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.058	0.0	1.119	733007	1.17		125	5184	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.058	2.048	0.010	0.742	752413	2.84		122	1274	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.088	2.088	0.0	1.000	2024429	1.01		101	503	
313.00 > 119.00	2.088	2.088	0.0	1.000	144272		14.03(6.96-20.87)		309	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.089	-0.001	0.753	5621820	2.36		94.5	18659	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.119	2.119	0.0	1.153	1363650	0.9749		104	2601	
349.00 > 99.00	2.119	2.119	0.0	1.153	613694		2.22(1.15-3.45)		1322	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.191	2.191	0.0	1.000	467517	0.8812		88.1	367	

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	2.191	2.181	0.010	0.790	699569	2.84		114	2786	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.426	0.0	1.000	3133071	1.10		110	627	
363.00 > 169.00	2.426	2.426	0.0	1.000	692654		4.52(2.17-6.52)		1504	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.413	0.013	0.875	6728593	2.38		95.1	18879	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.439	0.0	1.000	1936970	0.8616		94.7	1840	
399.00 > 99.00	2.439	2.439	0.0	1.000	554296		3.49(1.90-5.70)		1074	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.439	0.0	0.880	4218926	2.33		98.4	7928	
76 DONA										
377.00 > 251.00	2.465	2.465	0.0	0.785	5009723	0.9300		98.7	13804	
377.00 > 85.00	2.465	2.465	0.0	0.785	2174600		2.30(1.13-3.39)		5179	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.756	2.756	0.0	1.000	596281	0.8446		89.1	2104	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.756	2.750	0.006	0.994	751154	2.60		109	1561	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.788	2.788	0.0	0.887	1956324	0.9200		96.6	2603	
449.00 > 99.00	2.788	2.788	0.0	0.887	461258		4.24(1.84-5.53)		1255	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.772	2.772	0.0	1.000	2870791	1.01		101	191	
413.00 > 169.00	2.772	2.772	0.0	1.000	1000032		2.87(1.36-4.08)		2012	
* 62 13C2 PFOA										
415.00 > 370.00	2.772	2.772	0.0		6863214	2.50			10152	
D 14 13C4 PFOA										
417.00 > 372.00	2.772	2.766	0.006	1.000	6488505	2.42		96.7	11666	
D 73 13C8 PFOA										
421.00 > 376.00	2.772	2.766	0.006		5412941	2.15		88.0	10746	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.141	3.141	0.0	1.000	1924597	0.8925		96.2	907	
499.00 > 99.00	3.141	3.141	0.0	1.000	438658		4.39(2.04-6.12)		1054	
20 Perfluorononanoic acid										
463.00 > 419.00	3.141	3.141	0.0	1.000	2489735	0.9825		98.3	327	
463.00 > 169.00	3.141	3.141	0.0	1.000	414429		6.01(2.68-8.03)		1340	
D 72 13C8 PFOS										
507.00 > 99.00	3.141	3.135	0.006		985045	2.30		96.1	3420	
D 19 13C5 PFNA										
468.00 > 423.00	3.141	3.153	-0.012	1.133	6271712	2.56		102	7610	
D 18 13C4 PFOS										
503.00 > 80.00	3.141	3.153	-0.012	1.133	4755130	2.57		108	3680	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.356	3.356	0.0	1.068	1930918	0.8074		86.6	1614	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.485	3.485	0.0	1.000	576850	1.06		110	2675	

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	3.485	3.485	0.0	1.109	1163824	0.9040		94.2	2630	
549.00 > 99.00	3.485	3.485	0.0	1.109	208496		5.58(3.02-9.05)		672	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.501	3.501	0.0	1.000	3031775	1.03		103	4461	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.501	3.501	0.0	1.000	2907492	1.05		105	516	
513.00 > 169.00	3.501	3.501	0.0	1.000	177008		16.43(7.12-21.35)		274	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.485	3.496	-0.011	1.257	87222	2.41		100	412	
D 21 13C8 FOSA										
506.00 > 78.00	3.501	3.496	0.005	1.263	2478747	2.55		102	8182	
D 23 13C2 PFDA										
515.00 > 470.00	3.501	3.496	0.005	1.263	6091991	2.37		94.9	7174	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.659	3.659	0.0	1.000	1037923	1.01		101	413	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.659	3.655	0.004	1.320	2592666	2.47		98.6	2809	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.811	3.811	0.0	1.213	1511512	0.8707		90.3	1568	
599.00 > 99.00	3.811	3.811	0.0	1.213	300353		5.03(2.14-6.43)		1185	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.827	3.827	0.0	1.004	861726	0.9795		98.0	1890	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.827	3.827	0.0	1.000	1898668	0.9663		96.6	460	
563.00 > 169.00	3.827	3.827	0.0	1.000	177209		10.71(5.24-15.72)		793	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.811	3.823	-0.012	1.375	2363617	2.77		111	3220	
D 30 13C2 PFUnA										
565.00 > 520.00	3.827	3.823	0.004	1.381	5259099	2.43		97.3	7097	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.980	3.980	0.0	1.267	2407890	0.8661		91.9	5147	
35 MeFOSA										
512.00 > 169.00	3.995	3.995	0.0		510883	NC			779	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.110	4.110	0.0	1.179	346293	0.9384		97.3	445	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.110	4.110	0.0	1.000	2597259	1.07		107	750	
613.00 > 169.00	4.110	4.110	0.0	1.000	263516		9.86(4.68-14.05)		414	
D 36 13C2 PFDaA										
615.00 > 570.00	4.110	4.106	0.004	1.483	6104332	2.32		92.9	9056	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.180	4.180	0.0		559374	NC			409	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.346	4.346	0.0	1.383	160190	0.8458		87.4	182	
699.00 > 99.00	4.346	4.346	0.0	1.383	281220		0.57(0.28-0.83)		776	

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	4.377	4.377	0.0	1.065	1963585	1.00		100	1196	
663.00 > 169.00	4.377	4.377	0.0	1.065	343331		5.72(3.09-9.27)		559	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.616	4.616	0.0	1.000	274789	1.04		104	761	
713.00 > 219.00	4.616	4.616	0.0	1.000	202133		1.36(0.70-2.09)		652	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.616	4.609	0.007	1.665	4151856	2.20		88.1	8230	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.028	5.028	0.0	1.000	1396839	1.04		104	552	
813.00 > 169.00	5.028	5.028	0.0	1.000	248164		5.63(2.77-8.32)		601	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.028	5.024	0.004	1.814	3857179	2.24		89.5	7209	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.365	5.365	0.0	1.067	899288	1.00		99.8	499	
913.00 > 169.00	5.365	5.365	0.0	1.067	187690		4.79(2.55-7.64)		786	

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\20181015-65916.b\2018.10.14LLB_020.d

Injection Date: 15-Oct-2018 03:12:06

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 38

Worklist Smp#: 1

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

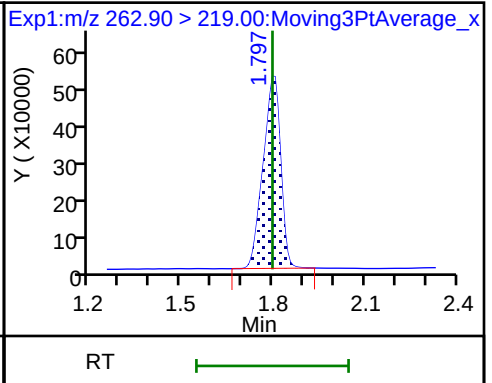
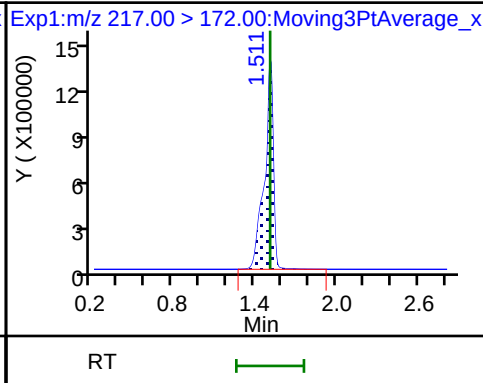
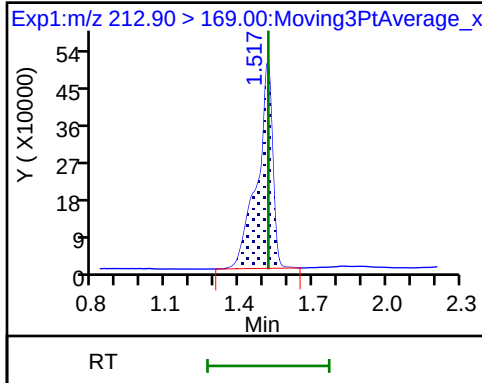
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

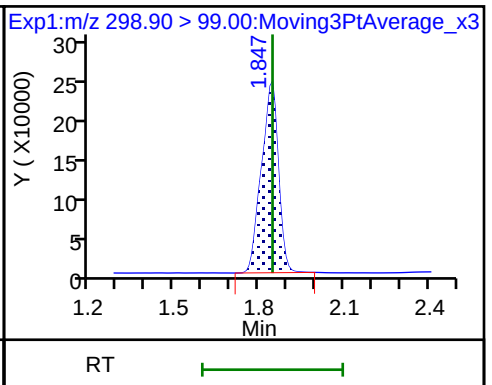
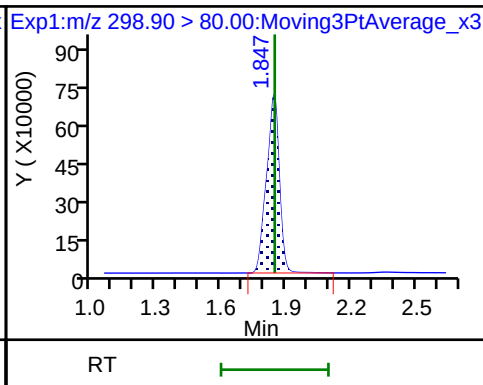
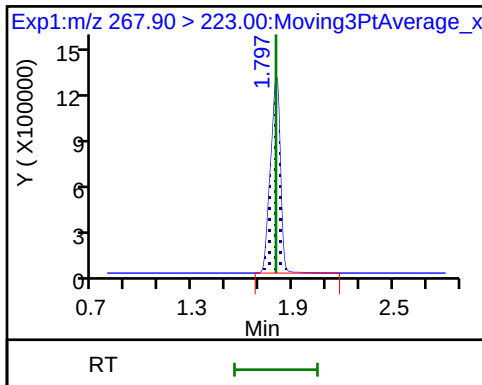
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

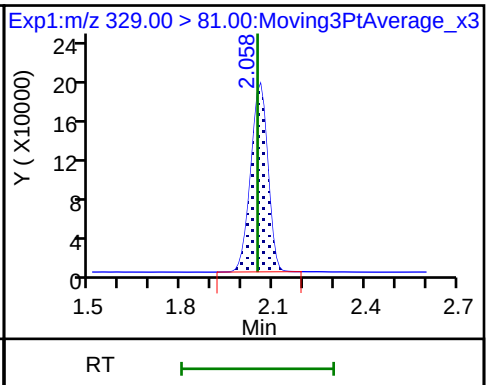
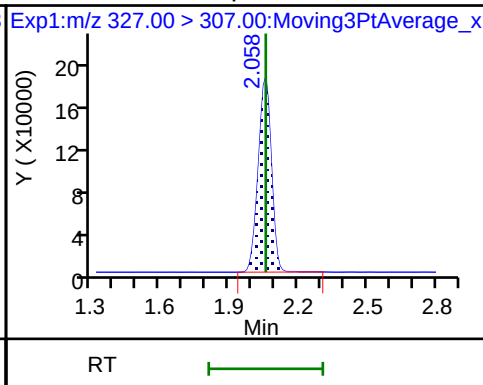
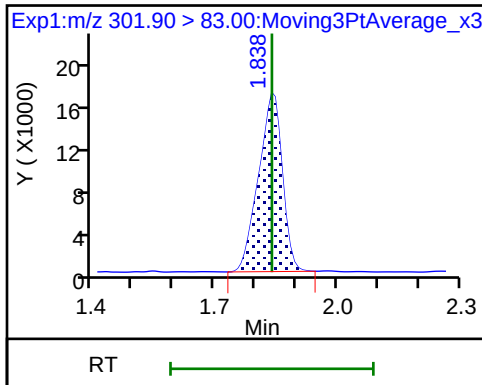
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

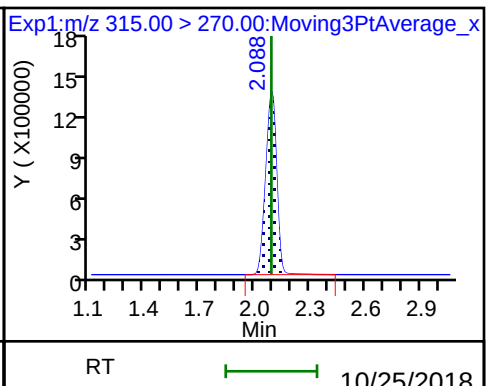
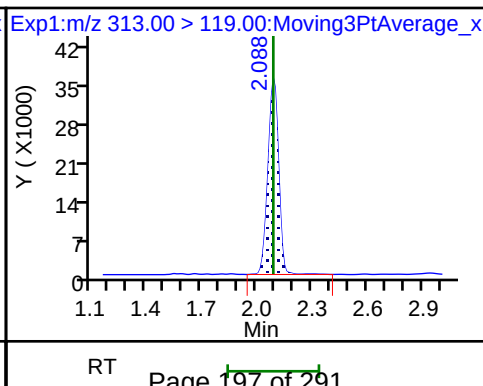
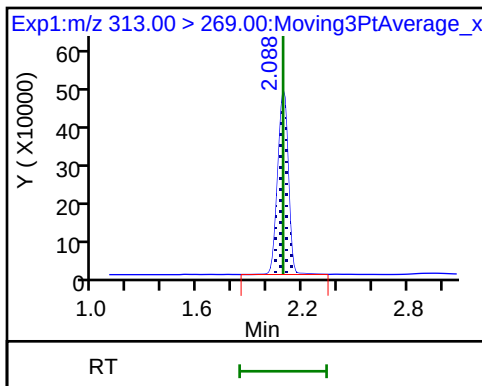
D 60 M2-4:2 FTS

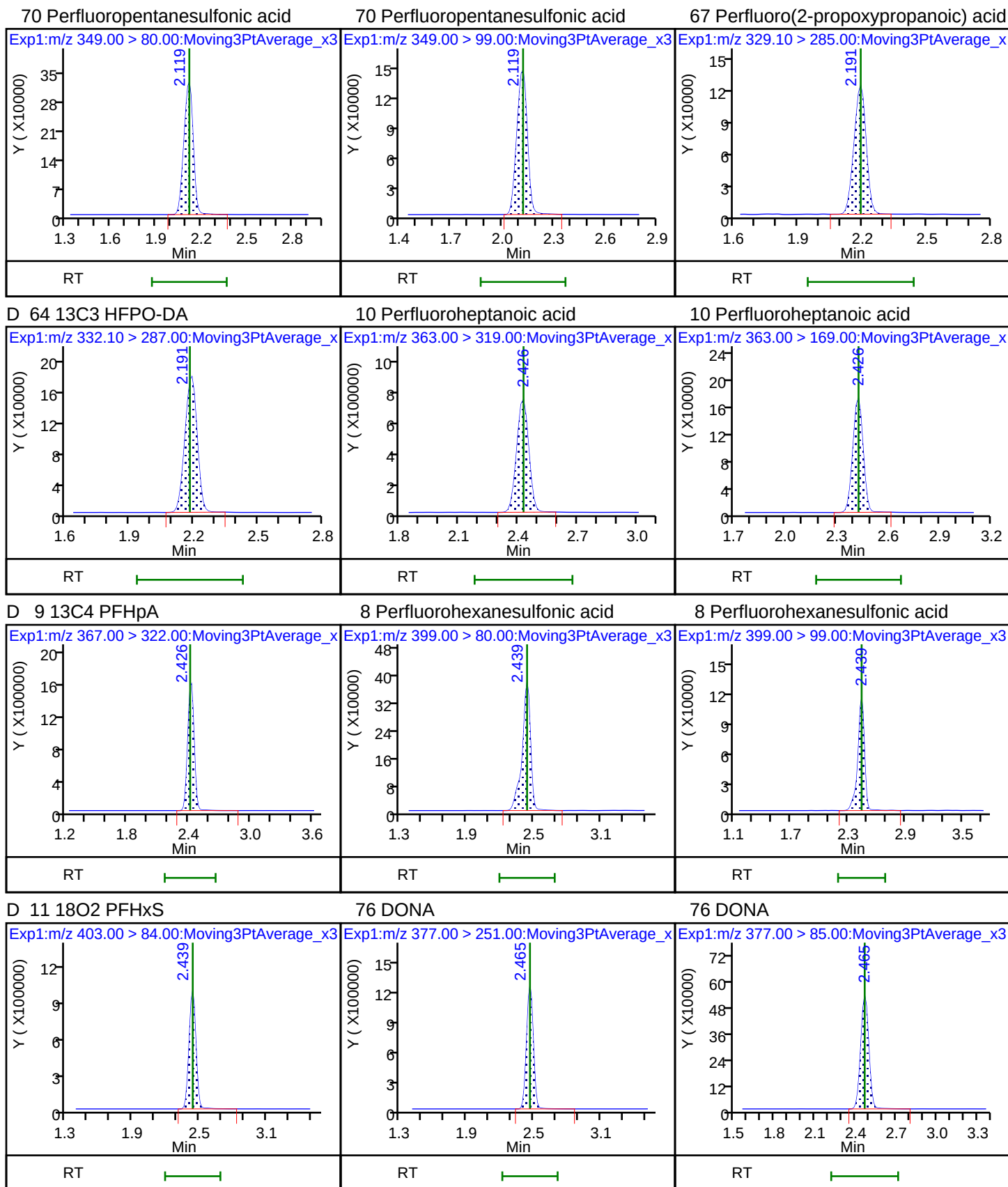


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

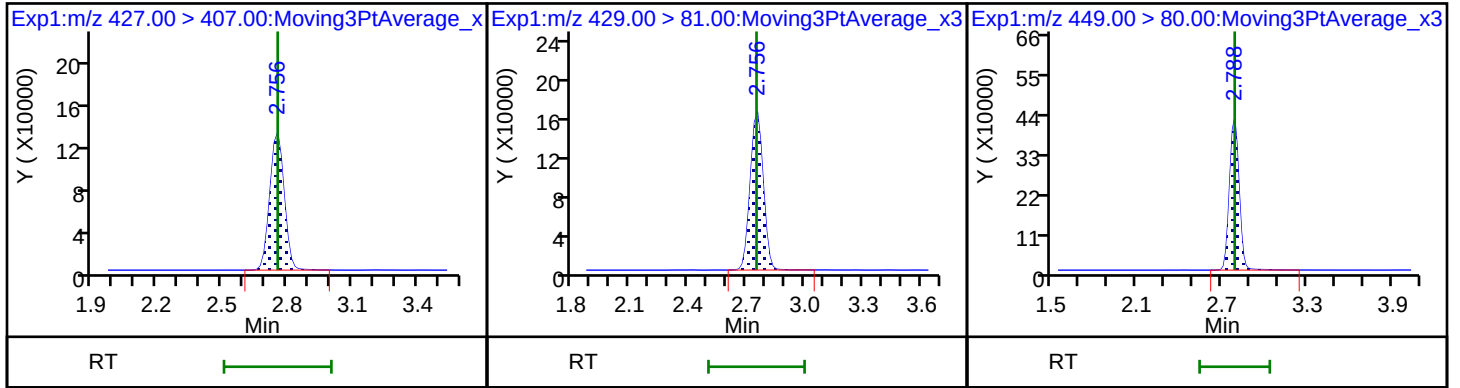
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

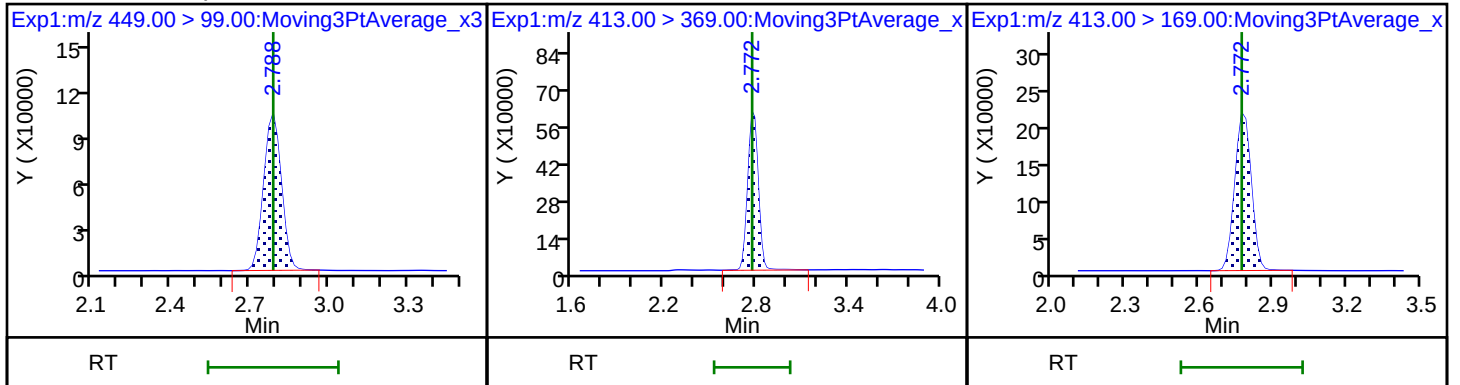
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

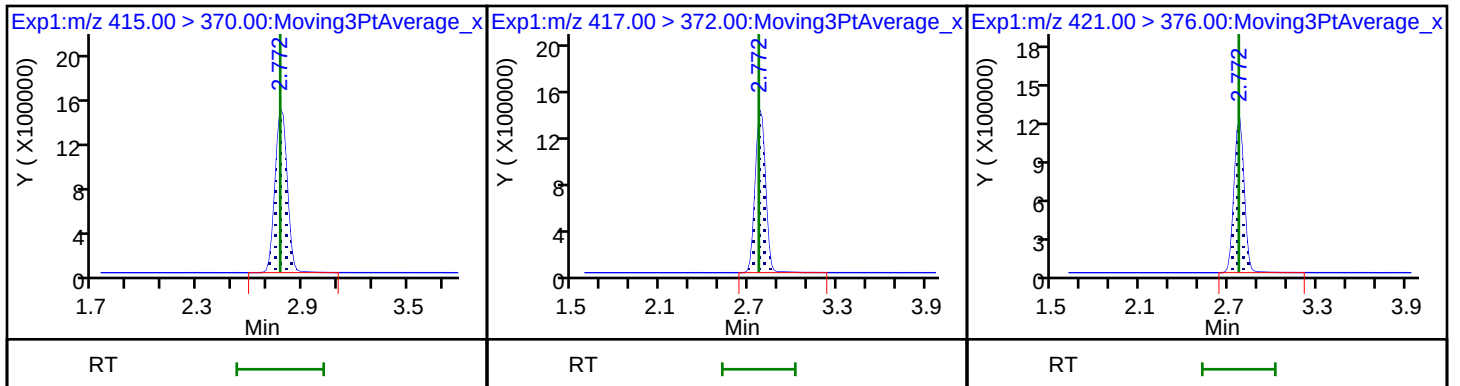
15 Perfluorooctanoic acid



* 62 13C2 PFOA

D 14 13C4 PFOA

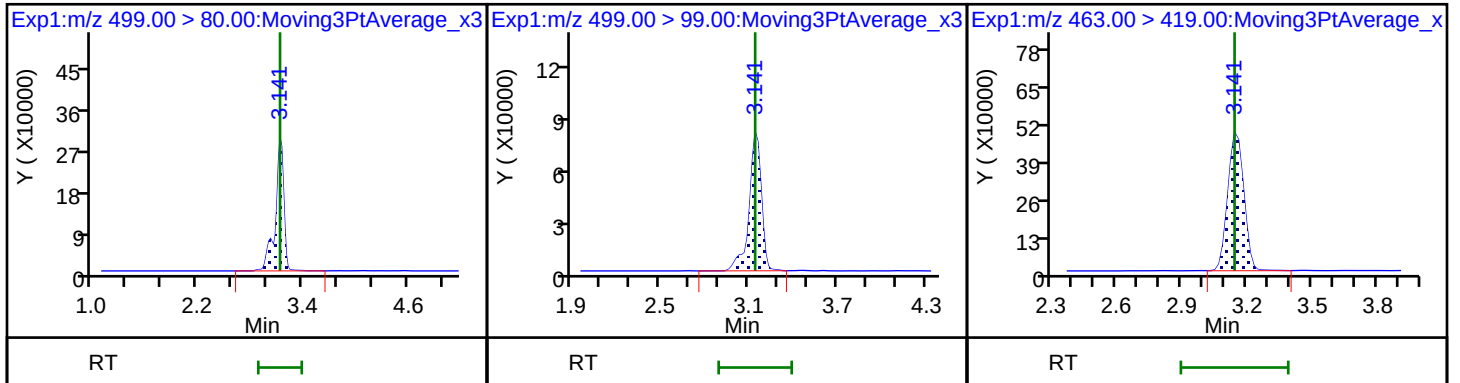
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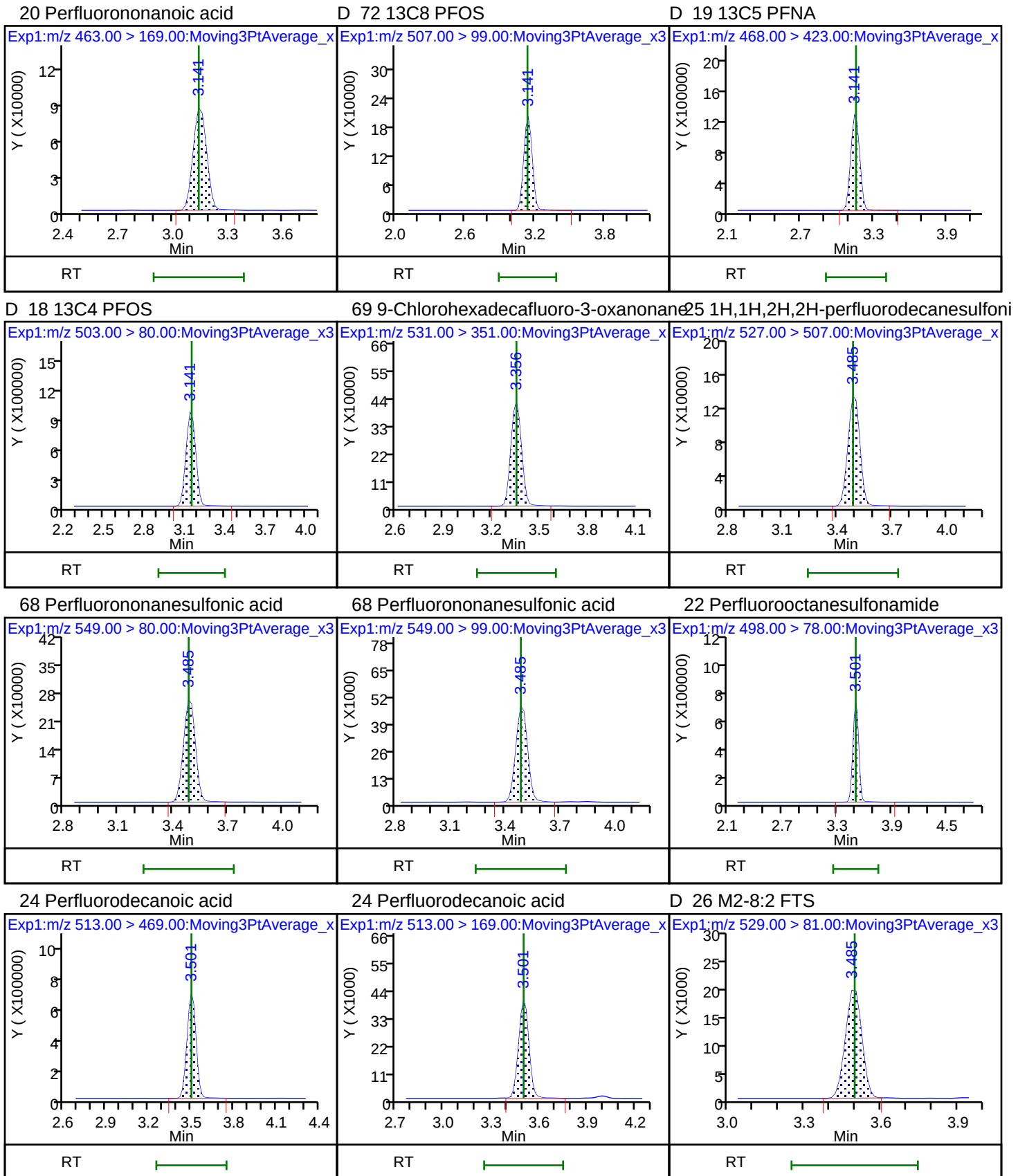


17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

20 Perfluorononanoic acid

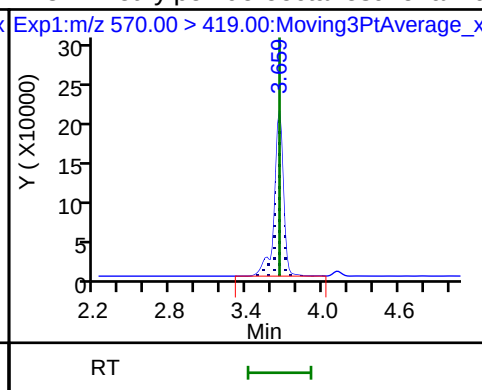
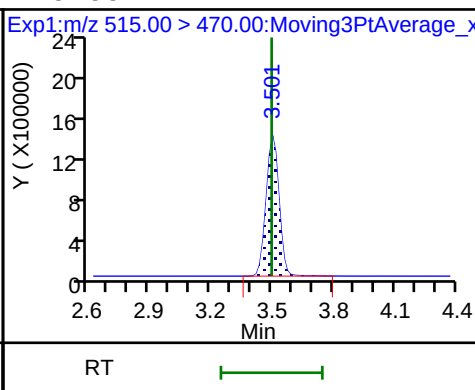
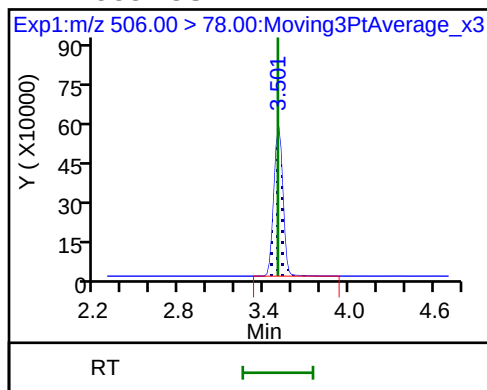




D 21 13C8 FOSA

D 23 13C2 PFDA

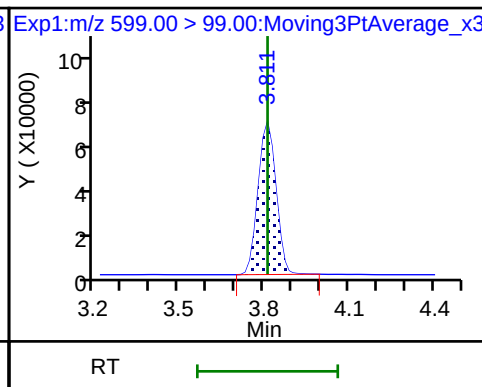
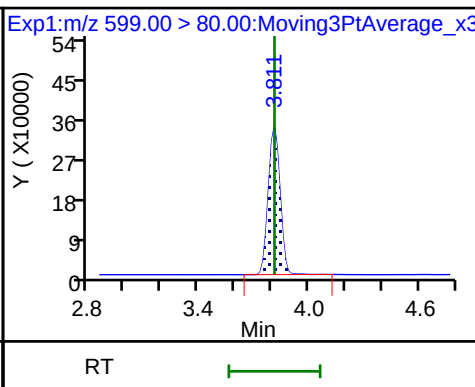
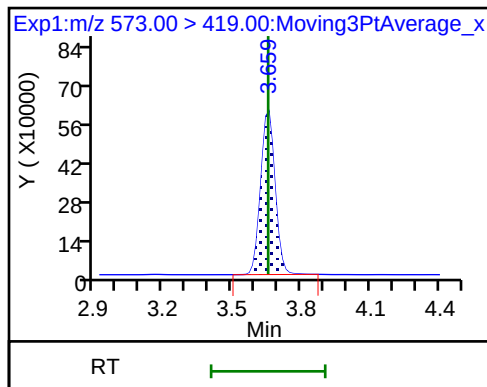
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

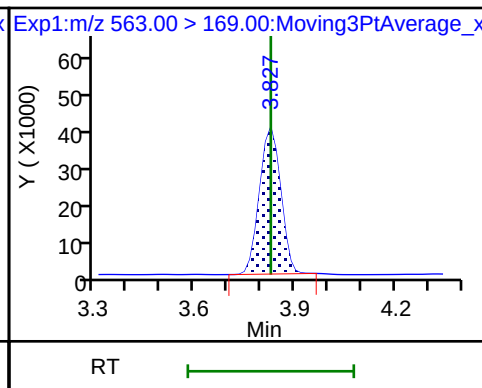
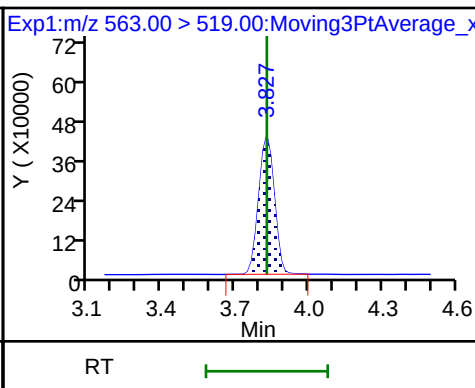
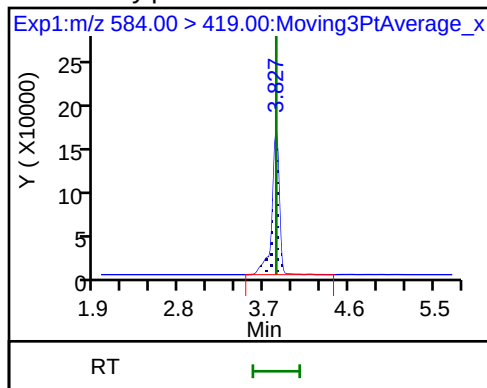
29 Perfluorodecanesulfonic acid



33 N-ethylperfluorooctanesulfonamidoa

31 Perfluoroundecanoic acid

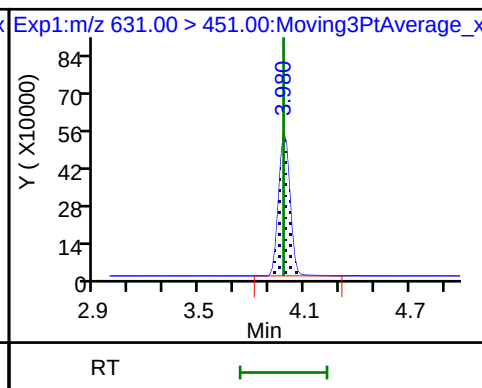
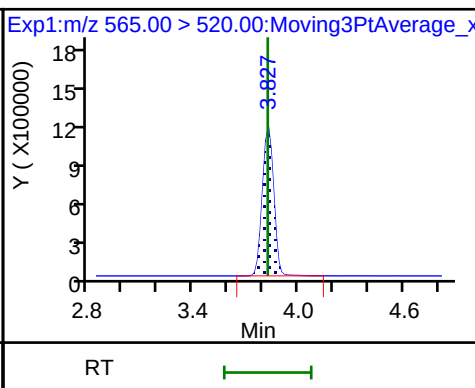
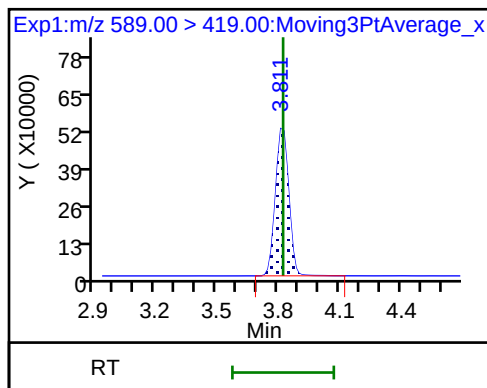
31 Perfluoroundecanoic acid



D 32 d5-NEtFOSAA

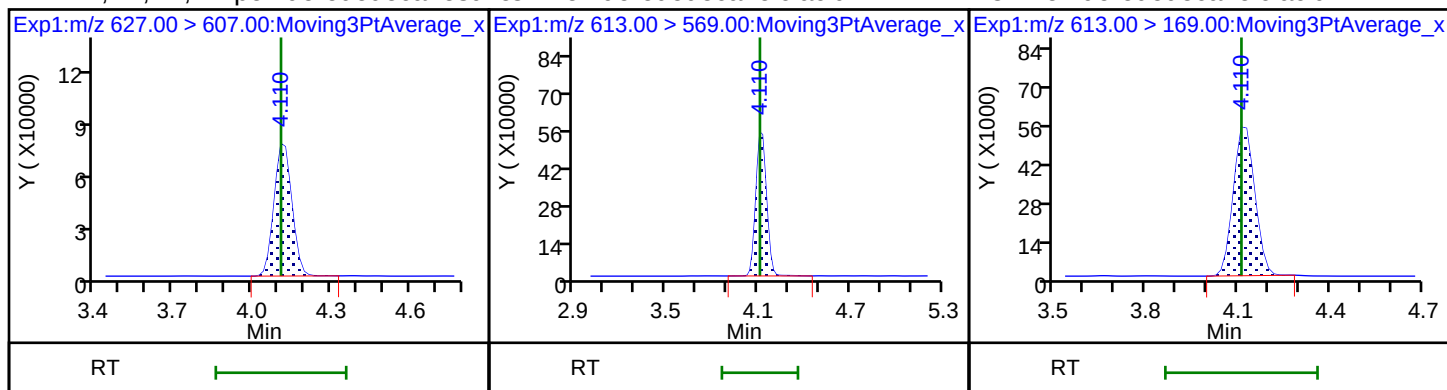
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66 11-Chloroeicosafluoro-3-oxaundecan



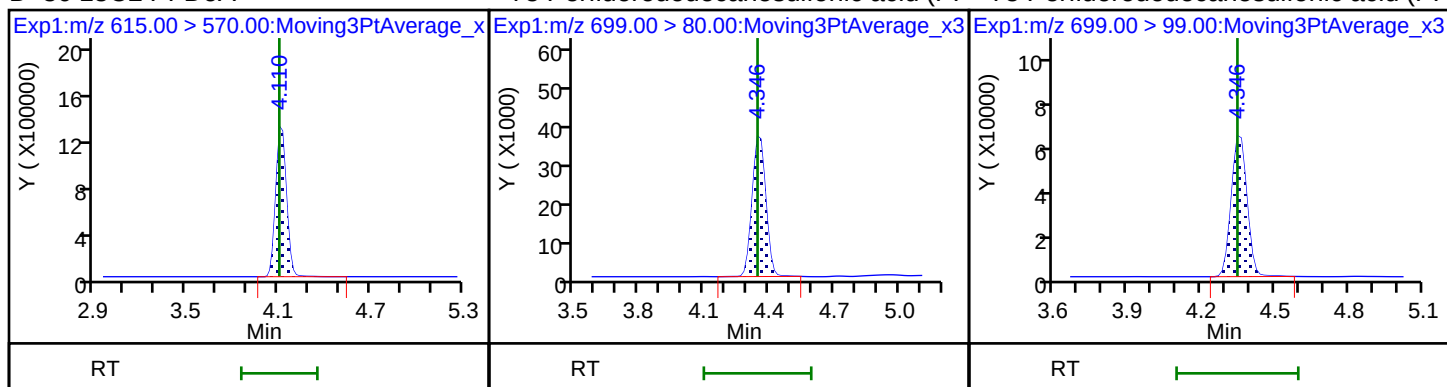
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



D 36 13C2 PFDa

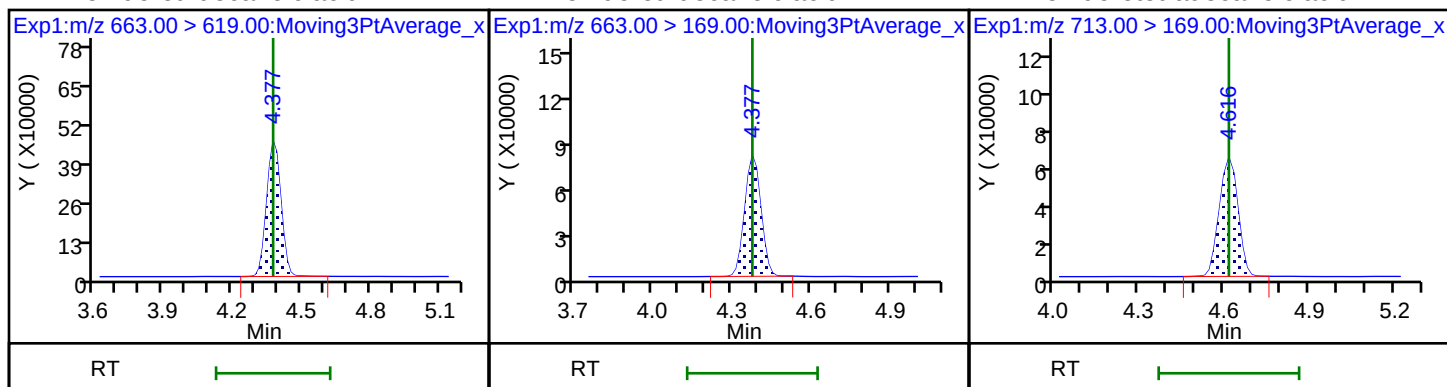
75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

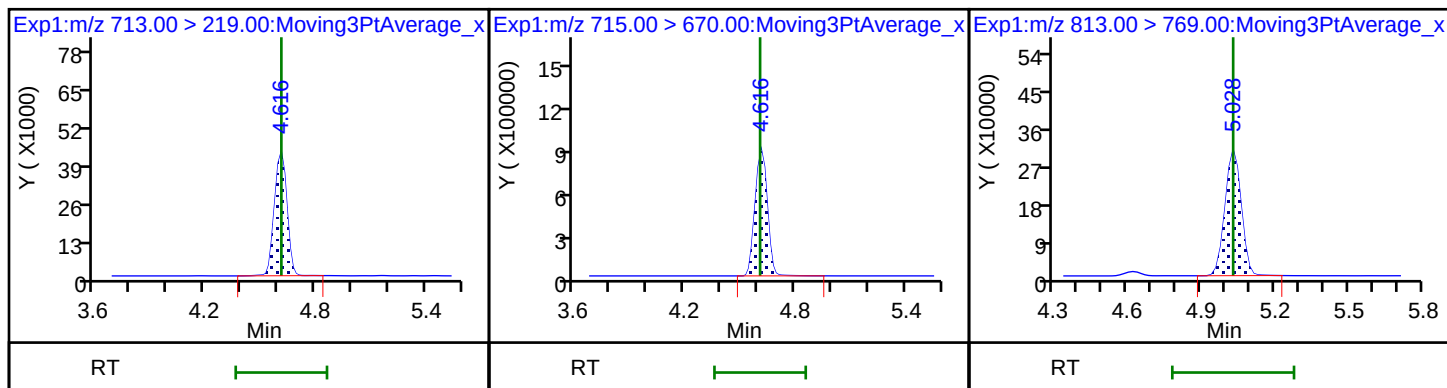
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

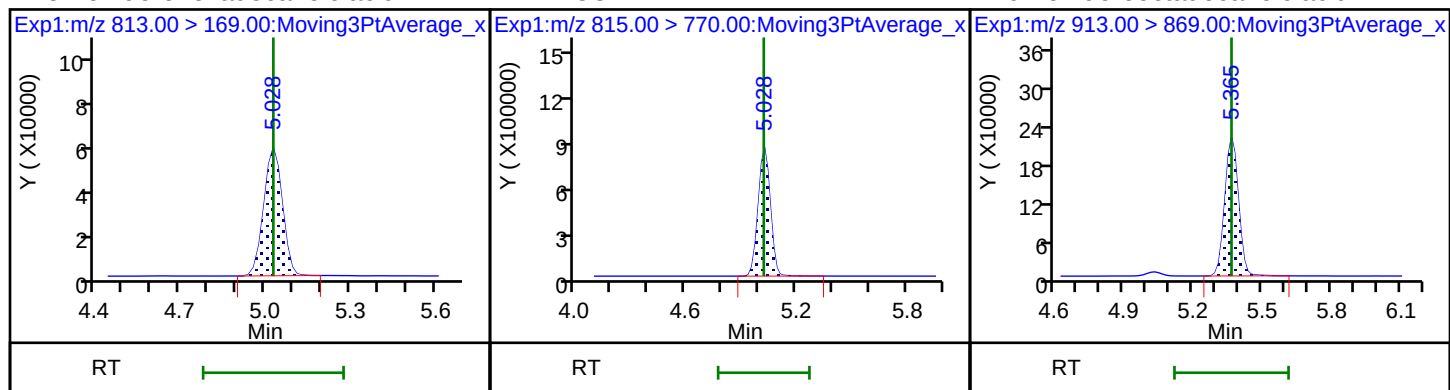
45 Perfluorohexadecanoic acid



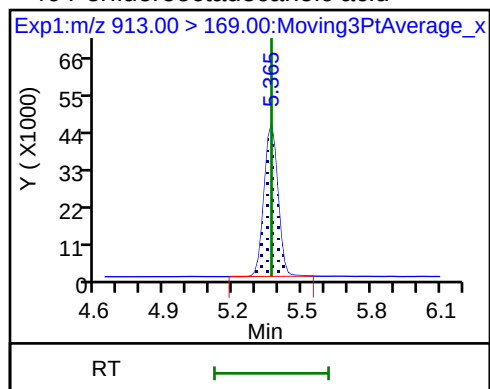
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1

SDG No.: _____

Lab Sample ID: CCV 320-252302/12 Calibration Date: 10/15/2018 04:34

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: 2018.10.14LLB_031.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	0.9498		2.56	2.50	2.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.011	1.013		2.50	2.50	0.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	106.6	114.0		2.36	2.21	6.9	50.0
4:2 FTS	AveID	21.65	27.17		2.93	2.34	25.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8935	0.9046		2.53	2.50	1.2	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.19	53.24		2.59	2.35	10.5	50.0
HFPO-DA (GenX)	AveID	1.896	1.665		2.20	2.50	-12.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.116		2.63	2.50	5.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.260	1.236		2.23	2.28	-1.9	40.0
DONA	AveID	2.707	2.904		2.53	2.36	7.3	50.0
6:2 FTS	AveID	2.232	2.388		2.54	2.37	7.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.069	1.133		2.52	2.38	6.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.093	1.024		2.35	2.50	-6.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.010	0.9420		2.33	2.50	-6.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.084	1.188		2.54	2.32	9.6	40.0
F-53B Major	AveID	1.202	1.182		2.29	2.33	-1.7	50.0
8:2 FTS	AveID	15.00	18.20		2.91	2.40	21.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6471	0.6755		2.51	2.40	4.4	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.136	1.130		2.49	2.50	-0.5	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.185		2.68	2.50	7.3	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.996	0.9725		2.44	2.50	-2.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8725	0.9262		2.56	2.41	6.2	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9305	0.9001		2.42	2.50	-3.3	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9340	0.8744		2.34	2.50	-6.4	40.0
F-53B Minor	AveID	1.397	1.474		2.48	2.36	5.5	50.0
10:2 FTS	AveID	10.13	10.97		2.61	2.41	8.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.996	1.004		2.52	2.50	0.8	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0952	0.1016		2.58	2.42	6.7	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8040	0.8002		2.49	2.50	-0.5	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1604		2.52	2.50	0.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8641		2.51	2.50	0.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1
 SDG No.: _____
 Lab Sample ID: CCV 320-252302/12 Calibration Date: 10/15/2018 04:34
 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: 2018.10.14LLB_031.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	0.6011		2.57	2.50	2.9	50.0
13C4 PFBA	Ave	0.8895	0.8879		2.50	2.50	-0.2	50.0
13C5 PFPeA	Ave	0.8031	0.7882		2.45	2.50	-1.9	50.0
13C3 PFBS	Ave	0.0112	0.0109		2.27	2.33	-2.2	50.0
M2-4:2 FTS	Ave	0.0964	0.1106		2.68	2.34	14.8	50.0
13C2 PFHxA	Ave	0.8671	0.8498		2.45	2.50	-2.0	50.0
13C3 HFPO-DA	Ave	0.0897	0.1117		3.11	2.50	24.6	50.0
13C4 PFHpA	Ave	1.031	0.9730		2.36	2.50	-5.6	50.0
18O2 PFHxS	Ave	0.6604	0.6755		2.42	2.37	2.3	50.0
M2-6:2 FTS	Ave	0.1054	0.1123		2.53	2.38	6.5	40.0
13C8 PFOA	Ave	2513465	2276018		2.22	2.45	-9.4	50.0
13C4 PFOA	Ave	0.9773	0.9862		2.52	2.50	0.9	50.0
13C4 PFOS	Ave	0.6736	0.6667		2.37	2.39	-1.0	50.0
13C5 PFNA	Ave	0.8934	0.9043		2.53	2.50	1.2	50.0
13C8 PFOS	Ave	429013	368901		2.06	2.39	-14.0	50.0
M2-8:2 FTS	Ave	0.0132	0.0122		2.21	2.40	-7.7	40.0
13C2 PFDA	Ave	0.9358	0.9604		2.57	2.50	2.6	50.0
13C8 FOSA	Ave	0.3536	0.3611		2.55	2.50	2.1	50.0
d3-NMeFOSAA	Ave	0.3830	0.4176		2.73	2.50	9.0	50.0
13C2 PFUnA	Ave	0.7875	0.8254		2.62	2.50	4.8	50.0
d5-NEtFOSAA	Ave	0.3106	0.3536		2.85	2.50	13.8	50.0
13C2 PFDoA	Ave	0.9569	0.9517		2.49	2.50	-0.5	50.0
13C2 PFTeDA	Ave	0.6864	0.6956		2.53	2.50	1.3	50.0
13C2 PFHxDA	Ave	0.6277	0.6172		2.46	2.50	-1.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_031.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-Oct-2018 04:34:43 ALS Bottle#: 39 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\20181015-65916.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 16:36:49 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: XAWRK007

First Level Reviewer: mongkols

Date: 18-Oct-2018 16:35:38

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	1.511	-0.007	0.544	5803181	2.50		99.8	20375	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.510	1.510	0.0	1.004	5511954	2.56		102	586	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.797	0.0	1.005	5219075	2.50		100	588	
D 3 13C5 PFPeA										
267.90 > 223.00	1.788	1.797	-0.009	0.647	5151953	2.45		98.1	19024	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.839	-0.009	0.662	66400	2.27		97.8	442	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.830	0.0	1.000	7195772	2.36		107	2276	
298.90 > 99.00	1.830	1.830	0.0	1.000	2457679		2.93(1.35-4.05)		1803	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.047	2.048	-0.001	0.740	675173	2.68		115	1041	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.047	2.047	0.0	1.119	1812011	2.93		125	5868	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.078	0.0	1.000	5024271	2.53		101	1161	
313.00 > 119.00	2.078	2.078	0.0	1.000	356816		14.08(6.96-20.87)		733	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.089	-0.011	0.751	5554305	2.45		98.0	18387	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.108	2.108	0.0	1.152	3565702	2.59		110	5140	
349.00 > 99.00	2.108	2.108	0.0	1.152	1649943		2.16(1.15-3.45)		3398	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.180	2.181	-0.001	0.788	730245	3.11		125	2891	

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	2.180	2.180	0.0	1.000	1215909	2.20		87.8	944	
D 9 13C4 PFHpA										
367.00 > 322.00	2.412	2.413	-0.001	0.872	6359298	2.36		94.4	12941	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.412	2.412	0.0	1.000	7097831	2.63		105	1296	
363.00 > 169.00	2.412	2.412	0.0	1.000	1632006		4.35(2.17-6.52)		3394	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.425	2.425	0.0	1.000	4967779	2.23		98.1	3201	
399.00 > 99.00	2.425	2.425	0.0	1.000	1360412		3.65(1.90-5.70)		1915	
D 11 18O2 PFHxS										
403.00 > 84.00	2.425	2.439	-0.014	0.877	4176857	2.42		102	10256	
76 DONA										
377.00 > 251.00	2.451	2.451	0.0	0.782	11920982	2.53		107	25491	
377.00 > 85.00	2.451	2.451	0.0	0.782	5604374		2.13(1.13-3.39)		12739	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.734	2.750	-0.016	0.988	697560	2.53		107	1349	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.734	0.0	1.000	1662020	2.54		107	6583	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.766	-0.016		5570553	2.22		90.6	11344	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.766	0.0	1.000	6445709	2.52		101	10980	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.766	0.0		6536105	2.50			9645	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.766	0.0	1.000	6607849	2.35		93.7	412	
413.00 > 169.00	2.766	2.766	0.0	1.000	2376066		2.78(1.36-4.08)		4272	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.766	0.0	0.882	4700557	2.52		106	5097	
449.00 > 99.00	2.766	2.766	0.0	0.882	1173798		4.00(1.84-5.53)		2582	
D 72 13C8 PFOS										
507.00 > 99.00	3.134	3.135	-0.001		881674	2.06		86.0	2429	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.134	3.134	0.0	1.000	4804542	2.54		110	1987	
499.00 > 99.00	3.134	3.134	0.0	1.000	1099674		4.37(2.04-6.12)		1800	
20 Perfluorononanoic acid										
463.00 > 419.00	3.134	3.134	0.0	1.000	5567365	2.33		93.3	665	
463.00 > 169.00	3.134	3.134	0.0	1.000	1141147		4.88(2.68-8.03)		2227	
D 19 13C5 PFNA										
468.00 > 423.00	3.134	3.153	-0.019	1.133	5910246	2.53		101	8356	
D 18 13C4 PFOS										
503.00 > 80.00	3.134	3.153	-0.019	1.133	4165975	2.37		99.0	2868	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.334	3.334	0.0	1.064	4798591	2.29		98.3	3213	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.480	3.480	0.0	1.000	1389656	2.91		121	6528	

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	3.480	3.480	0.0	1.110	2826025	2.51		104	3661	
549.00 > 99.00	3.480	3.480	0.0	1.110	477742		5.92(3.02-9.05)		2070	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.480	3.496	-0.016	1.258	76351	2.21		92.3	313	
D 23 13C2 PFDA										
515.00 > 470.00	3.495	3.496	-0.001	1.264	6277351	2.57		103	9247	
D 21 13C8 FOSA										
506.00 > 78.00	3.495	3.496	-0.001	1.264	2360459	2.55		102	4342	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.495	3.495	0.0	1.000	7094807	2.49		99.5	1046	
513.00 > 169.00	3.495	3.495	0.0	1.000	470627		15.08(7.12-21.35)		621	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.495	3.495	0.0	1.000	7517025	2.68		107	6834	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.640	3.655	-0.015	1.316	2729404	2.73		109	5738	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.640	3.640	0.0	1.000	2654461	2.44		97.7	936	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.791	3.791	0.0	1.210	3890907	2.56		106	2668	
599.00 > 99.00	3.791	3.791	0.0	1.210	821560		4.74(2.14-6.43)		3124	
D 30 13C2 PFUnA										
565.00 > 520.00	3.806	3.823	-0.017	1.376	5394793	2.62		105	12548	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.806	3.823	-0.017	1.376	2310955	2.85		114	3168	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.806	3.806	0.0	1.000	4717285	2.34		93.6	1017	
563.00 > 169.00	3.806	3.806	0.0	1.000	457753		10.31(5.24-15.72)		1427	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.806	3.806	0.0	1.000	2080085	2.42		96.7	3782	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.975	3.975	0.0	1.268	6051772	2.48		105	10820	
35 MeFOSA										
512.00 > 169.00	3.991	3.991	0.0		1365849	NC			883	
D 36 13C2 PFDaA										
615.00 > 570.00	4.105	4.106	-0.001	1.484	6220557	2.49		99.5	9006	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.105	4.105	0.0	1.000	6246685	2.52		101	1484	
613.00 > 169.00	4.105	4.105	0.0	1.000	665581		9.39(4.68-14.05)		1074	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.105	4.105	0.0	1.180	842890	2.61		108	1073	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.175	4.175	0.0		1391799	NC			489	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.341	4.341	0.0	1.385	428442	2.58		107	508	
699.00 > 99.00	4.341	4.341	0.0	1.385	739461		0.58(0.28-0.83)		1695	

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	4977955	2.49		99.5	2918	
663.00 > 169.00	4.372	4.372	0.0	1.065	792093		6.28(3.09-9.27)		1293	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.608	4.609	-0.001	1.666	4546564	2.53		101	10782	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.608	4.608	0.0	1.000	729137	2.52		101	1885	
713.00 > 219.00	4.608	4.608	0.0	1.000	498405		1.46(0.70-2.09)		1564	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.023	5.024	-0.001	1.816	4033798	2.46		98.3	8115	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.023	5.023	0.0	1.000	3485726	2.51		100	1226	
813.00 > 169.00	5.023	5.023	0.0	1.000	674494		5.17(2.77-8.32)		1483	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.361	5.361	0.0	1.067	2424692	2.57		103	1278	
913.00 > 169.00	5.361	5.361	0.0	1.067	499780		4.85(2.55-7.64)		1931	

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\20181015-65916.b\2018.10.14LLB_031.d

Injection Date: 15-Oct-2018 04:34:43

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 39

Worklist Smp#: 12

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

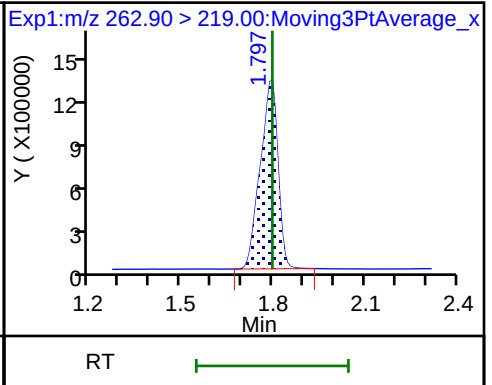
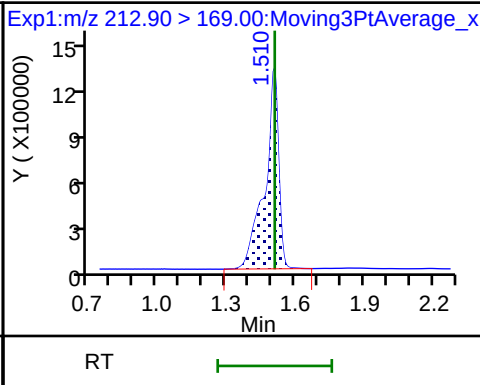
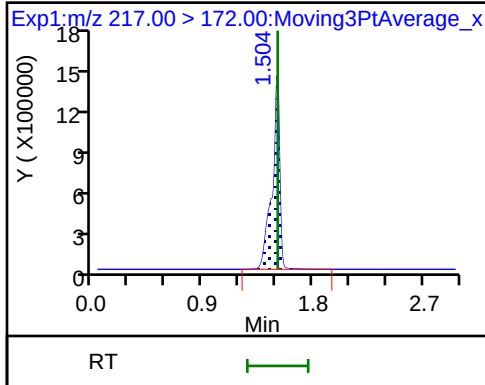
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

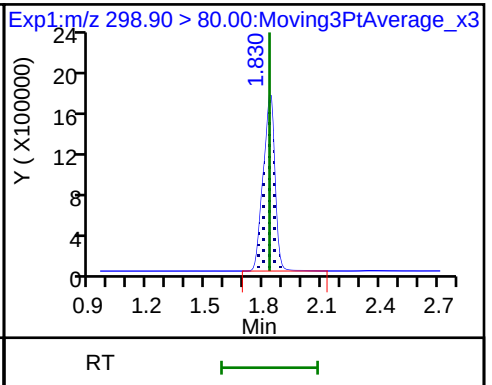
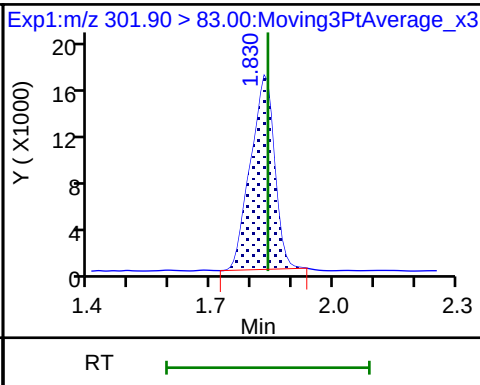
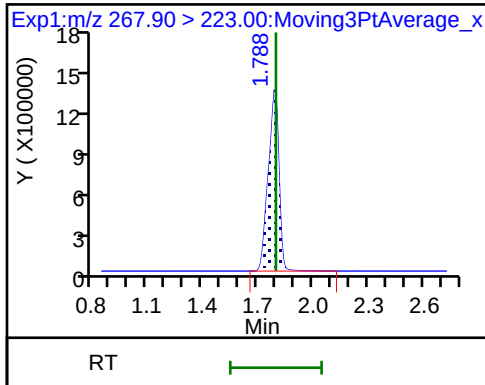
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

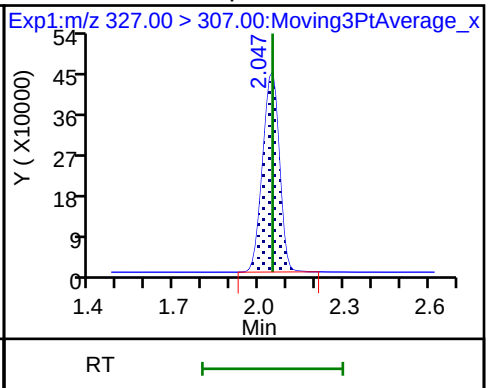
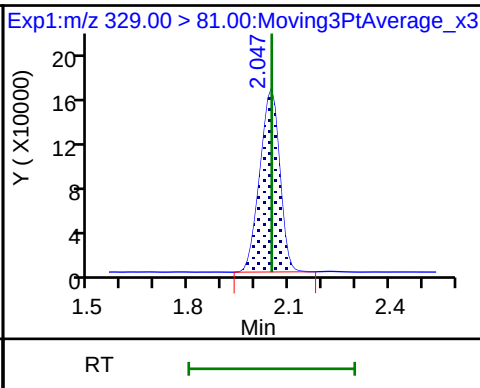
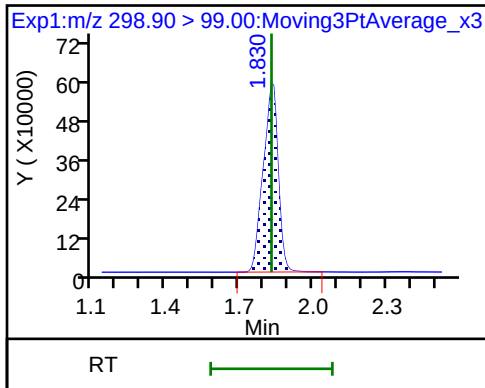
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

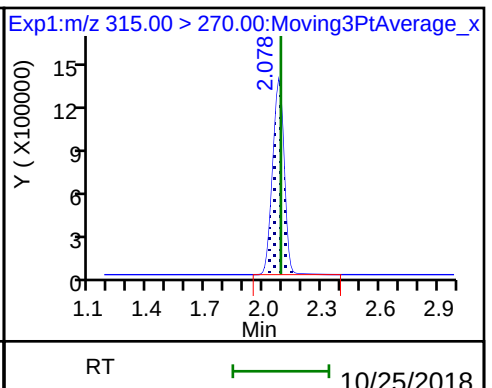
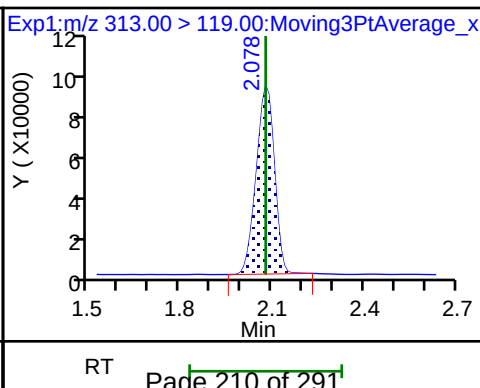
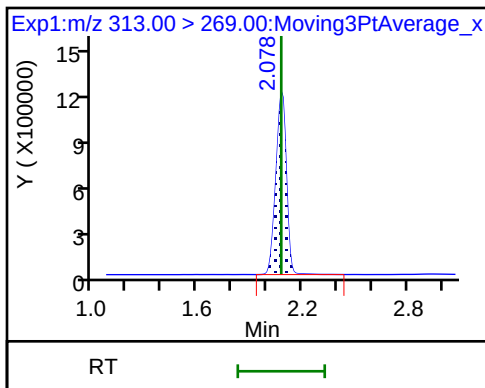
61 1H,1H,2H,2H-perfluorohexanesulfoni

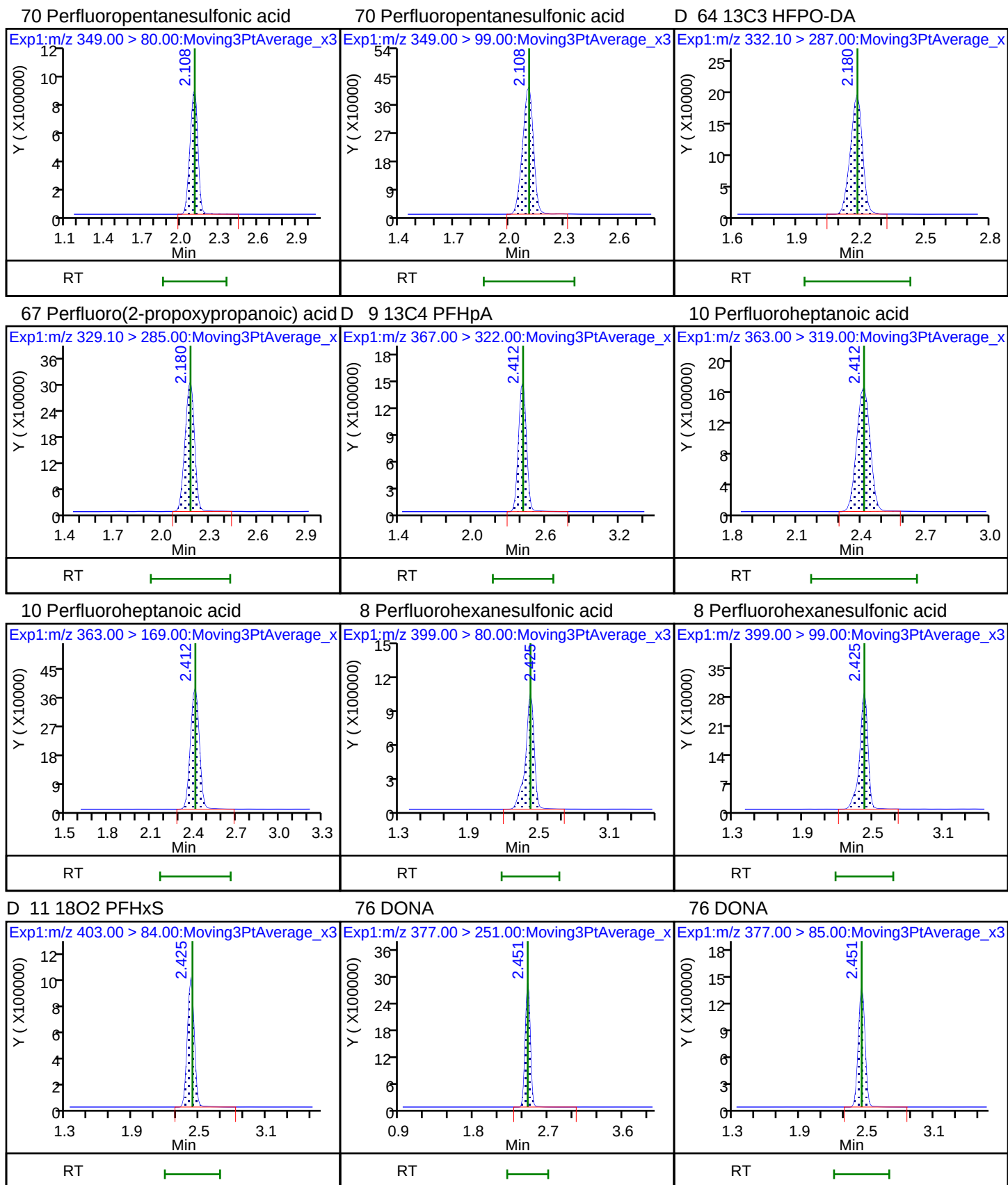


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

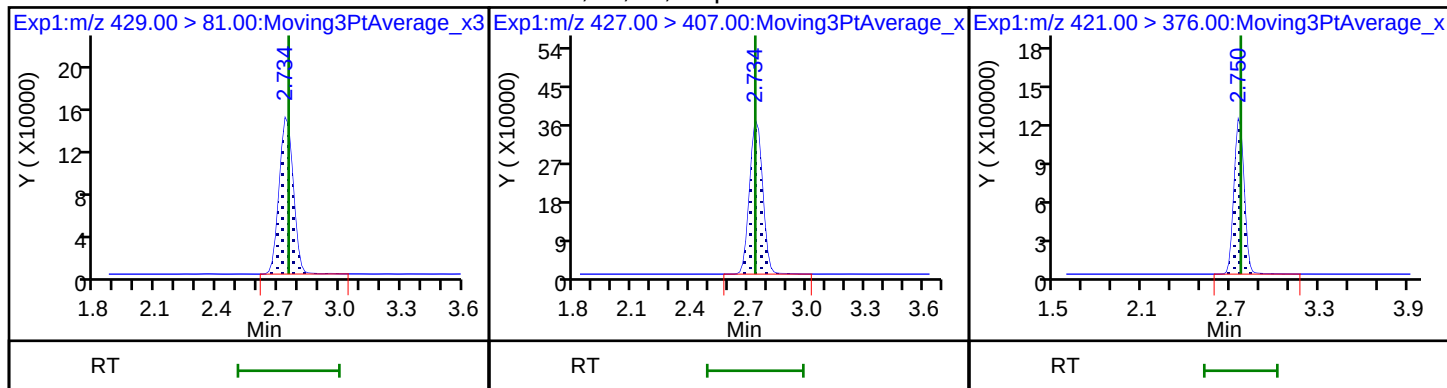
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

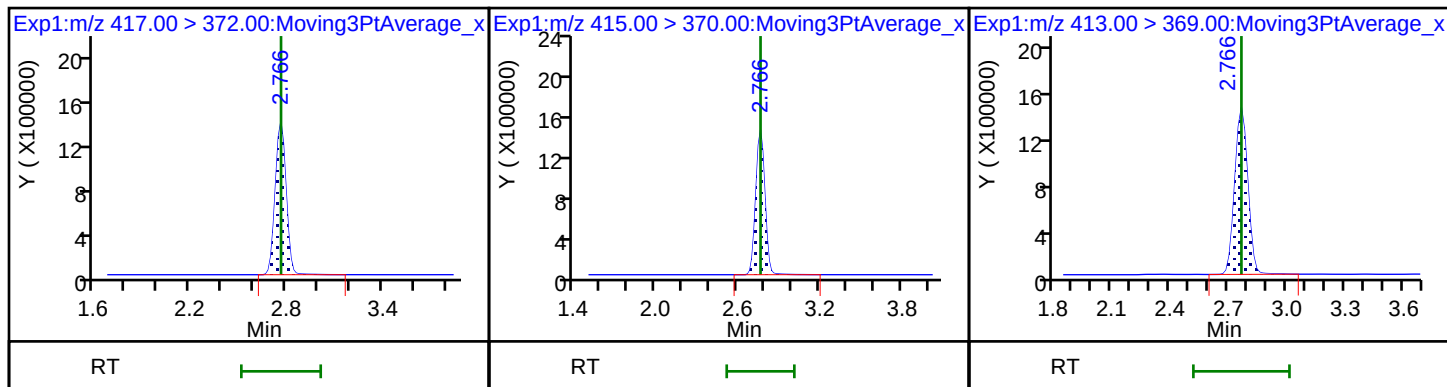
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D 14 13C4 PFOA

* 62 13C2 PFOA

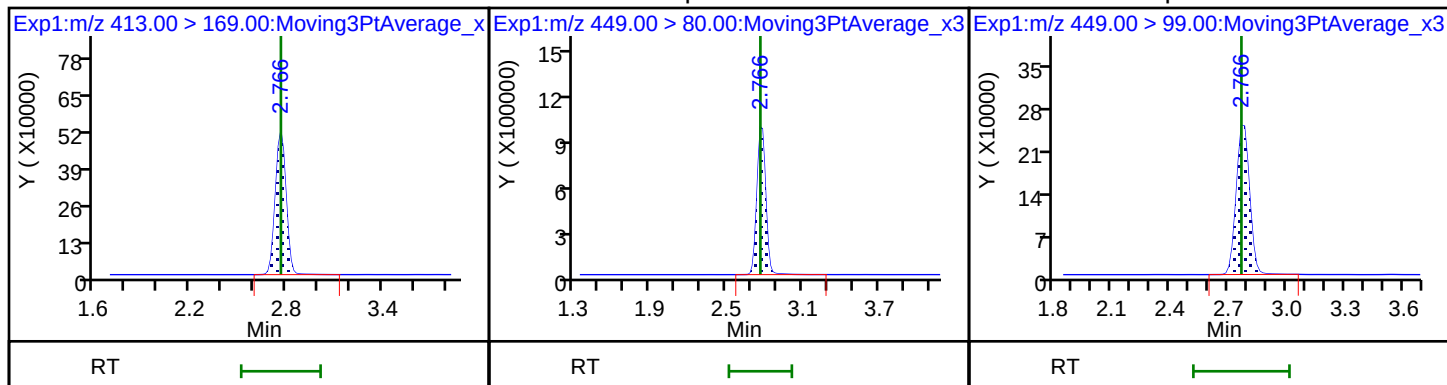
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

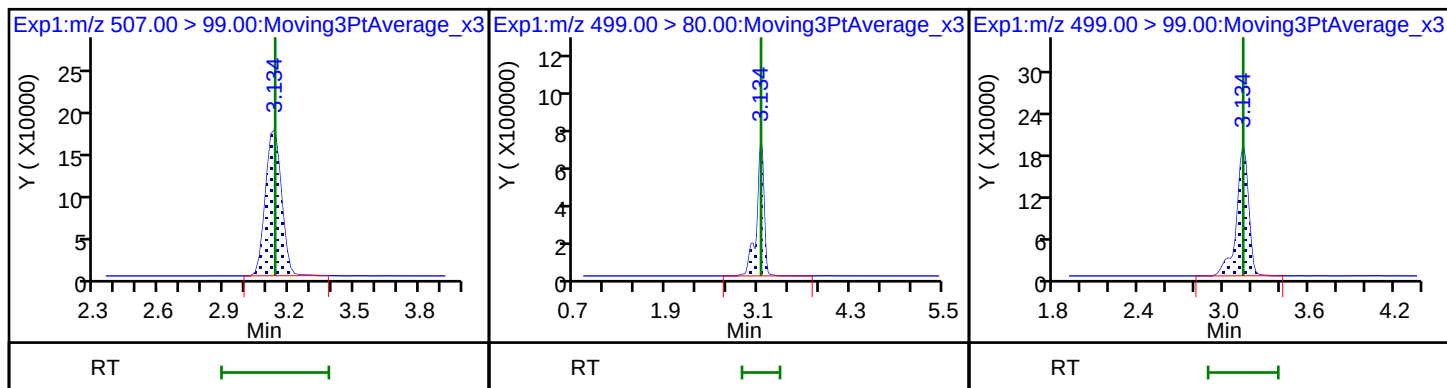
16 Perfluoroheptanesulfonic acid

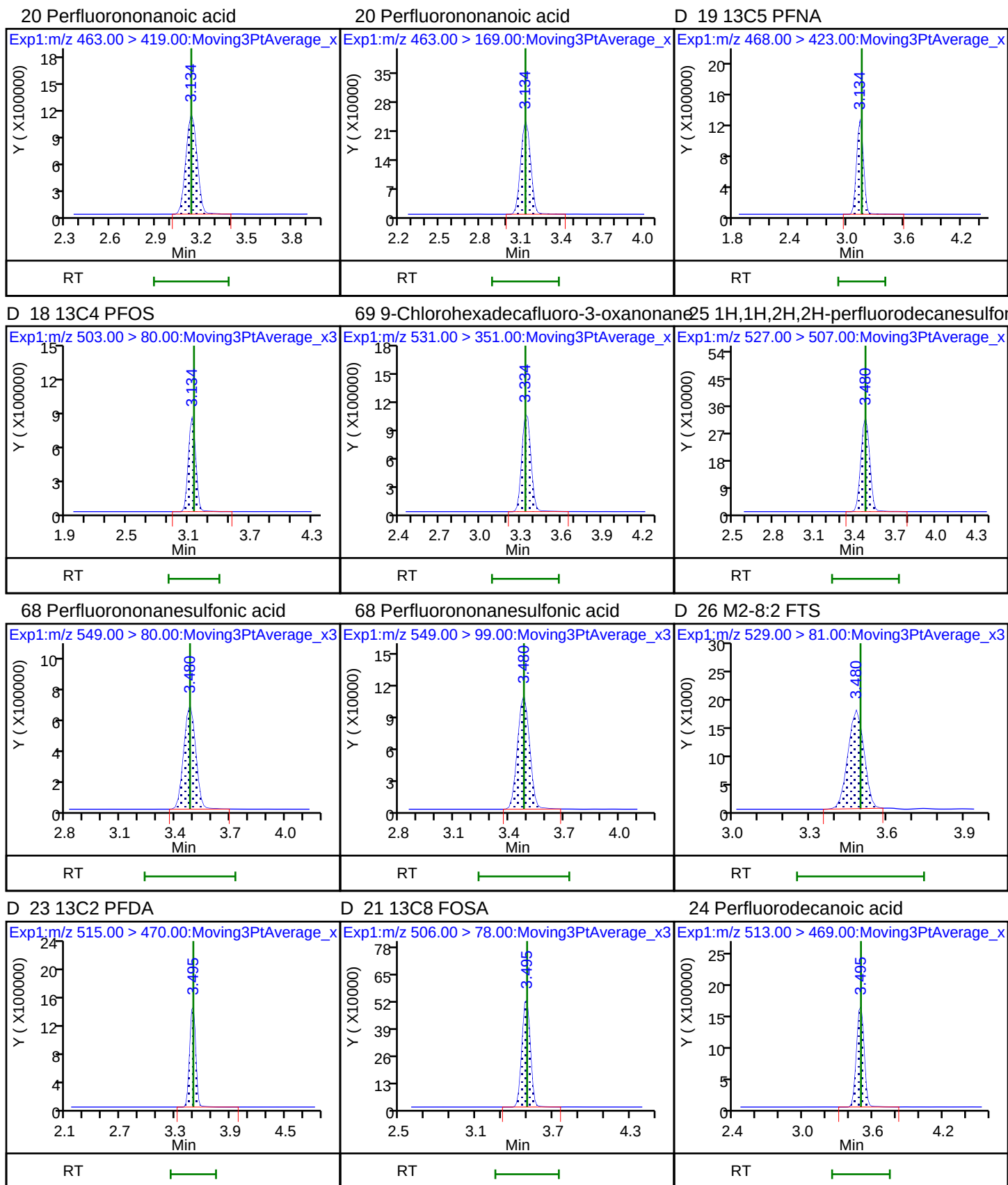


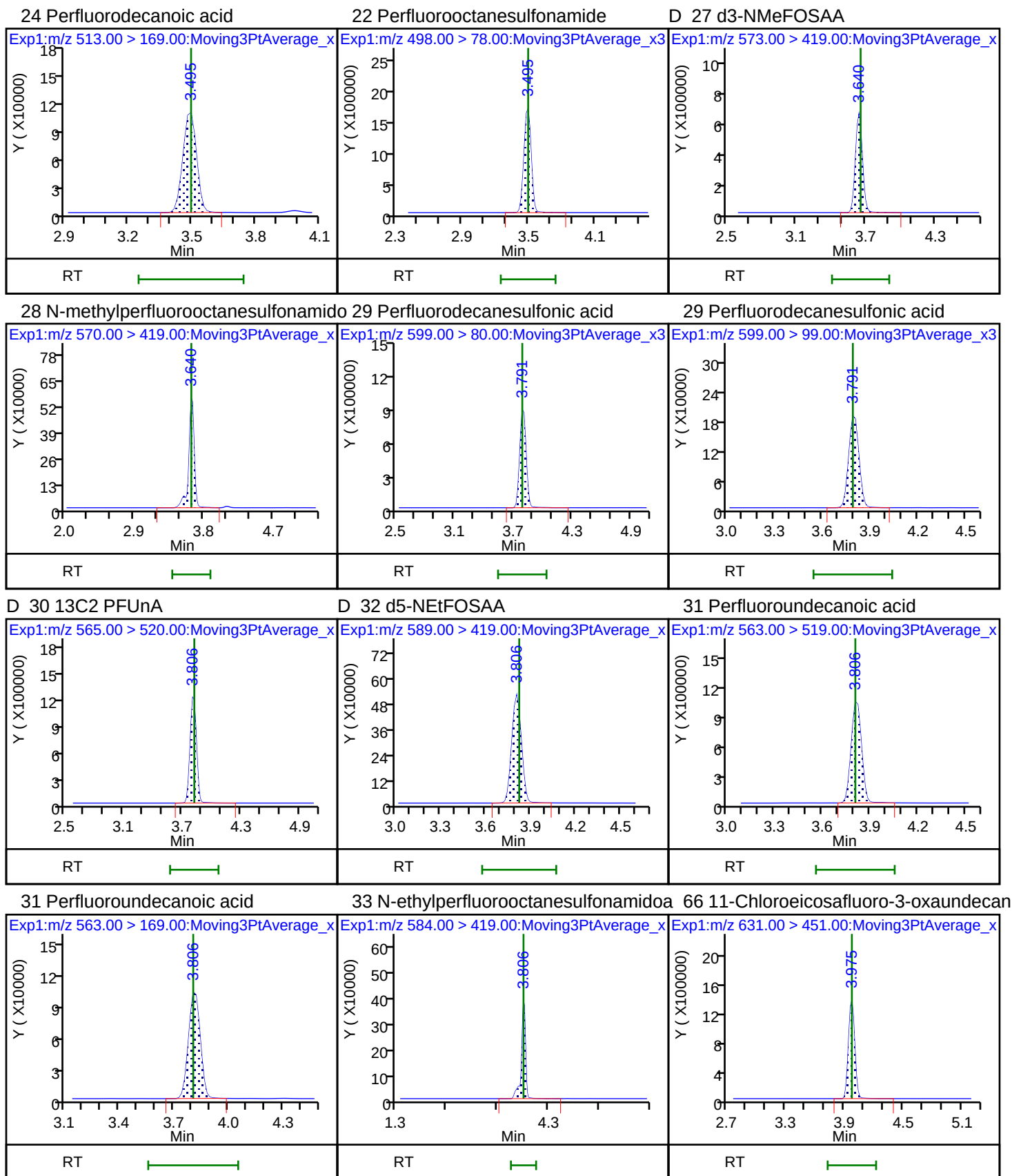
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17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid



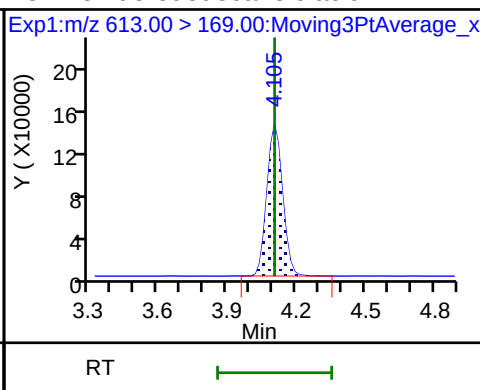
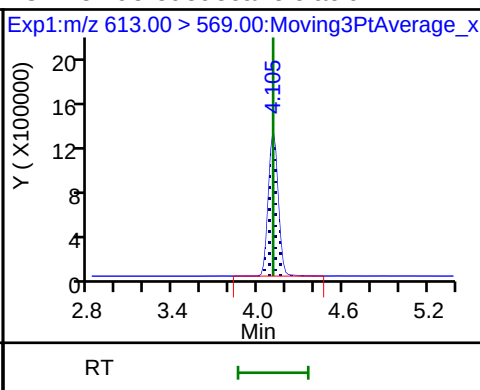
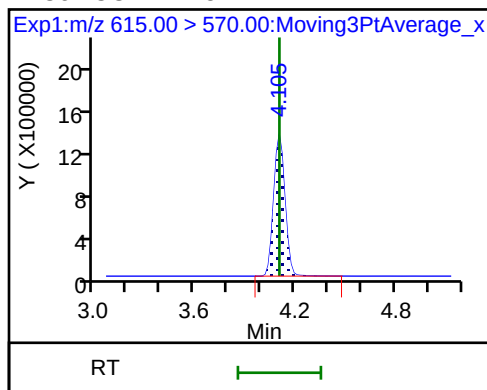




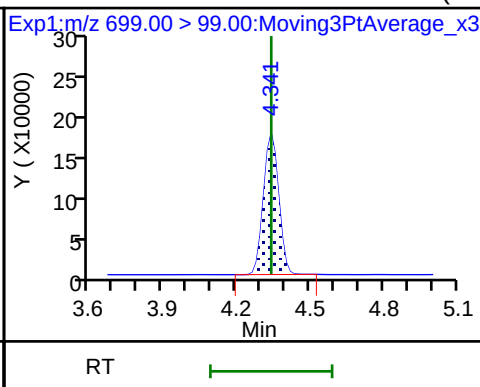
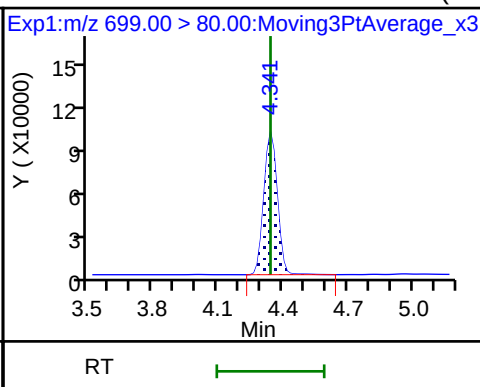
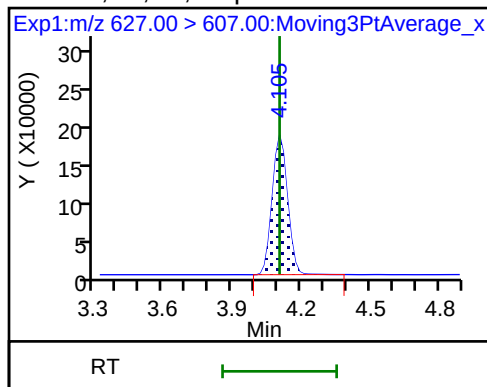
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



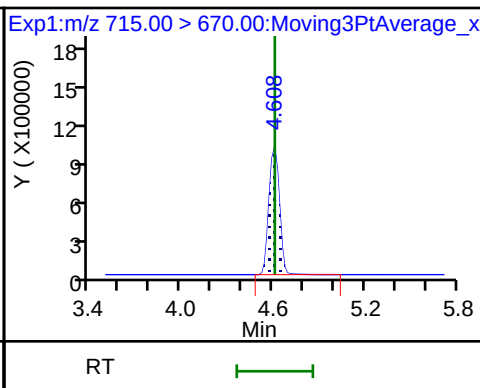
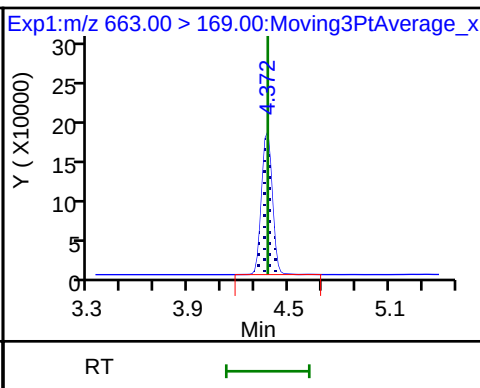
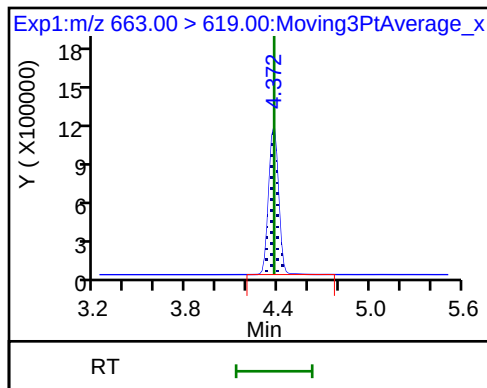
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

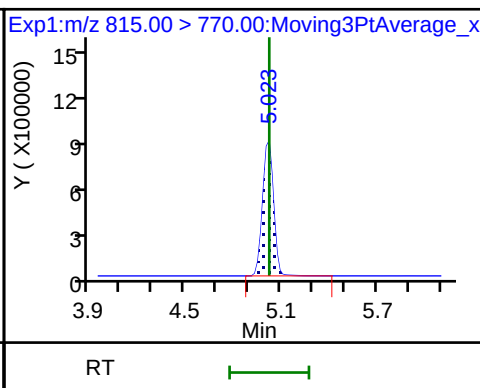
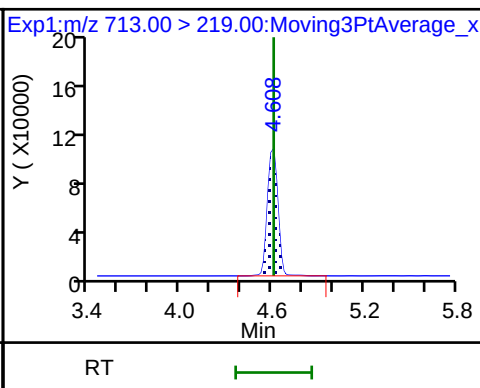
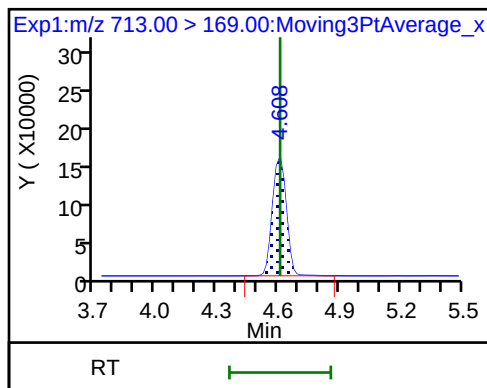
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

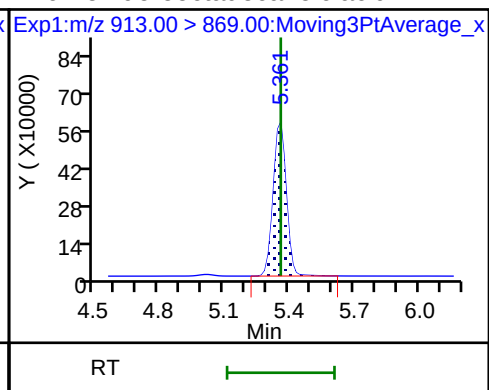
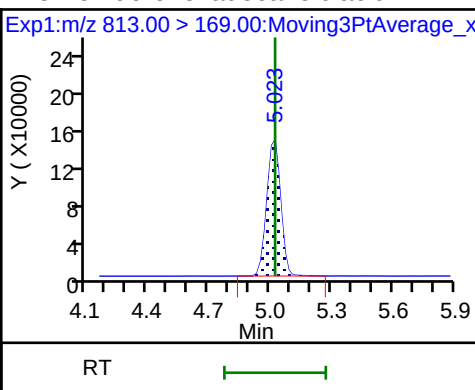
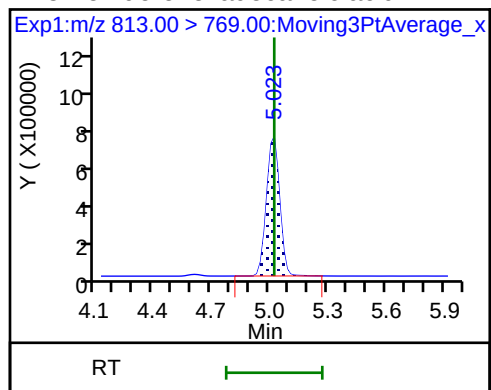
D 44 13C2 PFHxDA



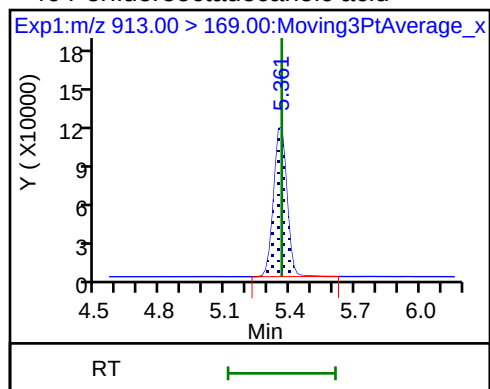
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1

SDG No.: _____

Lab Sample ID: CCV 320-252302/23 Calibration Date: 10/15/2018 05:57

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: 2018.10.14LLB_042.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	0.9274		0.998	1.00	-0.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.011	1.037		1.03	1.00	2.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	106.6	108.3		0.898	0.884	1.6	50.0
4:2 FTS	AveID	21.65	26.37		1.14	0.934	21.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8935	0.8929		0.999	1.00	-0.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.19	48.29		0.940	0.938	0.2	50.0
HFPO-DA (GenX)	AveID	1.896	1.396		0.737	1.00	-26.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.152		1.08	1.00	8.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.260	1.140		0.823	0.910	-9.6	40.0
DONA	AveID	2.707	2.887		1.00	0.942	6.6	50.0
6:2 FTS	AveID	2.232	2.120		0.900	0.948	-5.0	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.093	1.095		1.00	1.00	0.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.069	1.092		0.973	0.952	2.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.010	1.043		1.03	1.00	3.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.084	1.043		0.893	0.928	-3.8	40.0
F-53B Major	AveID	1.202	1.163		0.902	0.932	-3.2	50.0
8:2 FTS	AveID	15.00	13.33		0.852	0.958	-11.1	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6471	0.6670		0.990	0.960	3.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.136	1.213		1.07	1.00	6.8	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.315		1.12	1.00	11.7	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.996	0.9256		0.930	1.00	-7.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8725	0.9320		1.03	0.964	6.8	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9305	0.9360		1.01	1.00	0.6	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9340	0.9671		1.04	1.00	3.5	40.0
F-53B Minor	AveID	1.397	1.398		0.942	0.942	0.0	50.0
10:2 FTS	AveID	10.13	7.956		0.757	0.964	-21.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.996	1.018		1.02	1.00	2.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0952	0.0978		0.995	0.968	2.8	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8040	0.8221		1.02	1.00	2.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1658		1.04	1.00	4.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8693		0.993	1.00	-0.7	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1
 SDG No.: _____
 Lab Sample ID: CCV 320-252302/23 Calibration Date: 10/15/2018 05:57
 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: 2018.10.14LLB_042.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	0.5632		0.964	1.00	-3.6	50.0
13C4 PFBA	Ave	0.8895	0.8810		2.48	2.50	-1.0	50.0
13C5 PFPeA	Ave	0.8031	0.8127		2.53	2.50	1.2	50.0
13C3 PFBS	Ave	0.0112	0.0118		2.45	2.33	5.3	50.0
M2-4:2 FTS	Ave	0.0964	0.1228		2.98	2.34	27.5	50.0
13C2 PFHxA	Ave	0.8671	0.8758		2.52	2.50	1.0	50.0
13C3 HFPO-DA	Ave	0.0897	0.1255		3.50	2.50	39.9	50.0
13C4 PFHpA	Ave	1.031	1.048		2.54	2.50	1.7	50.0
18O2 PFHxS	Ave	0.6604	0.7151		2.56	2.37	8.3	50.0
M2-6:2 FTS	Ave	0.1054	0.1400		3.15	2.38	32.8	40.0
13C4 PFOA	Ave	0.9773	1.019		2.61	2.50	4.3	50.0
13C8 PFOA	Ave	2513465	2371645		2.31	2.45	-5.6	50.0
13C4 PFOS	Ave	0.6736	0.7212		2.56	2.39	7.1	50.0
13C5 PFNA	Ave	0.8934	0.9683		2.71	2.50	8.4	50.0
13C8 PFOS	Ave	429013	396291		2.21	2.39	-7.6	50.0
M2-8:2 FTS	Ave	0.0132	0.0158		2.87	2.40	19.7	40.0
13C2 PFDA	Ave	0.9358	0.9508		2.54	2.50	1.6	50.0
13C8 FOSA	Ave	0.3536	0.3762		2.66	2.50	6.4	50.0
d3-NMeFOSAA	Ave	0.3830	0.4378		2.86	2.50	14.3	50.0
d5-NEtFOSAA	Ave	0.3106	0.3370		2.71	2.50	8.5	50.0
13C2 PFUnA	Ave	0.7875	0.8109		2.57	2.50	3.0	50.0
13C2 PFDoA	Ave	0.9569	0.996		2.60	2.50	4.1	50.0
13C2 PFTeDA	Ave	0.6864	0.6734		2.45	2.50	-1.9	50.0
13C2 PFHxDA	Ave	0.6277	0.6214		2.47	2.50	-1.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_042.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-Oct-2018 05:57:18 ALS Bottle#: 38 Worklist Smp#: 23
 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\20181015-65916.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 16:39:35 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: XAWRK007

First Level Reviewer: mongkols

Date: 18-Oct-2018 16:39:35

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	1.511	1.511	0.0	1.000	2110957	1.00		99.8	219	
D 1 13C4 PFBA										
217.00 > 172.00	1.511	1.511	0.0	0.546	5690259	2.48		99.0	20839	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.797	0.0	1.000	2178167	1.03		103	260	
D 3 13C5 PFPeA										
267.90 > 223.00	1.797	1.797	0.0	0.650	5249240	2.53		101	20322	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.839	1.839	0.0	1.000	2906223	0.8978		102	1043	
298.90 > 99.00	1.839	1.839	0.0	1.000	1016176		2.86(1.35-4.05)		840	
D 47 13C3 PFBS										
301.90 > 83.00	1.839	1.839	0.0	0.665	70598	2.45		105	466	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.048	0.0	1.114	747730	1.14		122	4232	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.048	2.048	0.0	0.740	741055	2.98		127	1183	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.089	0.0	1.000	2020168	1.00		99.9	479	
313.00 > 119.00	2.089	2.089	0.0	1.000	152805		13.22(6.96-20.87)		325	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.089	0.0	0.755	5656349	2.52		101	15195	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.109	0.0	1.147	1375519	0.9400		100	1984	
349.00 > 99.00	2.109	2.109	0.0	1.147	645084		2.13(1.15-3.45)		2077	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.181	0.0	1.000	452717	0.7365		73.7	422	

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	2.181	0.0	0.788	810486	3.50		140	2427	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.413	0.0	1.000	3119175	1.08		108	653	
363.00 > 169.00	2.413	2.413	0.0	1.000	654248		4.77(2.17-6.52)		1202	
D 9 13C4 PFHpA										
367.00 > 322.00	2.413	2.413	0.0	0.872	6771469	2.54		102	18009	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	1915981	0.8229		90.4	1843	
399.00 > 99.00	2.426	2.426	0.0	1.000	530041		3.61(1.90-5.70)		968	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.439	-0.013	0.877	4369429	2.56		108	12567	
76 DONA										
377.00 > 251.00	2.452	2.452	0.0	0.782	5067043	1.00		107	10800	
377.00 > 85.00	2.452	2.452	0.0	0.782	2161692		2.34(1.13-3.39)		5666	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.750	0.0	1.000	727031	0.9004		95.0	2457	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.750	2.750	0.0	0.994	859124	3.15		133	1434	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.766	0.0	1.000	2885820	1.00		100	190	
413.00 > 169.00	2.766	2.766	0.0	1.000	986165		2.93(1.36-4.08)		1564	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.766	0.0		6458800	2.50			9256	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.766	0.0	1.000	6580408	2.61		104	10982	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.766	0.0		5804601	2.31		94.4	12723	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.782	0.0	0.888	1937569	0.9730		102	2967	
449.00 > 99.00	2.782	2.782	0.0	0.888	472899		4.10(1.84-5.53)		1103	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.135	0.0	1.000	2608937	1.03		103	349	
463.00 > 169.00	3.135	3.135	0.0	1.000	482432		5.41(2.68-8.03)		1581	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.135	3.135	0.0	1.000	1802722	0.8926		96.2	774	
499.00 > 99.00	3.135	3.135	0.0	1.000	446003		4.04(2.04-6.12)		946	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		947136	2.21		92.4	2588	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.153	-0.018	1.133	6253723	2.71		108	5231	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.153	-0.018	1.133	4453160	2.56		107	2851	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	2020275	0.9021		96.8	1433	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.480	3.480	0.0	1.000	521685	0.8518		88.9	1981	

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	3.480	3.480	0.0	1.110	1193145	0.9896		103	3013	
549.00 > 99.00	3.480	3.480	0.0	1.110	214560		5.56(3.02-9.05)		1284	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.496	3.496	0.0	1.000	3221651	1.12		112	4953	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.496	0.0	1.000	2979976	1.07		107	494	
513.00 > 169.00	3.496	3.496	0.0	1.000	185264		16.09(7.12-21.35)		212	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.496	0.0	1.264	6140755	2.54		102	6900	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.480	3.496	-0.016	1.258	97808	2.87		120	481	
D 21 13C8 FOSA										
506.00 > 78.00	3.496	3.496	0.0	1.264	2429463	2.66		106	8669	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.655	0.0	1.004	1046940	0.9298		93.0	420	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.641	3.655	-0.014	1.316	2827725	2.86		114	4989	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.807	0.0	1.215	1674084	1.03		107	1784	
599.00 > 99.00	3.807	3.807	0.0	1.215	335751		4.99(2.14-6.43)		926	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.823	0.0	1.004	814921	1.01		101	1566	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.823	0.0	1.000	2025989	1.04		104	474	
563.00 > 169.00	3.823	3.823	0.0	1.000	192983		10.50(5.24-15.72)		766	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.807	3.823	-0.016	1.376	2176574	2.71		109	3022	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.823	0.0	1.382	5237229	2.57		103	6359	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.975	3.975	0.0	1.268	2452982	0.9421		100	4679	
35 MeFOSA										
512.00 > 169.00	3.991	3.991	0.0		554526	NC			736	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.106	4.106	0.0	1.000	2620740	1.02		102	666	
613.00 > 169.00	4.106	4.106	0.0	1.000	286619		9.14(4.68-14.05)		509	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.106	4.106	0.0	1.180	313217	0.7569		78.5	331	
D 36 13C2 PFDaA										
615.00 > 570.00	4.106	4.106	0.0	1.484	6433465	2.60		104	9784	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.176	4.176	0.0		540701	NC			440	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.342	4.342	0.0	1.385	176436	0.99		103	248	
699.00 > 99.00	4.342	4.342	0.0	1.385	296353		0.60(0.28-0.83)		664	

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	4.373	4.373	0.0	1.065	2115629	1.02		102	1135	
663.00 > 169.00	4.373	4.373	0.0	1.065	332186		6.37(3.09-9.27)		597	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	288403	1.04		104	915	
713.00 > 219.00	4.609	4.609	0.0	1.000	205049		1.41(0.70-2.09)		710	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.609	4.609	0.0	1.666	4349357	2.45		98.1	9929	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.024	5.024	0.0	1.000	1395468	0.99		99.3	484	
813.00 > 169.00	5.024	5.024	0.0	1.000	266245		5.24(2.77-8.32)		676	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.024	5.024	0.0	1.816	4013187	2.47		99.0	8068	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.363	5.363	0.0	1.068	904115	0.9645		96.4	537	
913.00 > 169.00	5.363	5.363	0.0	1.068	189936		4.76(2.55-7.64)		1122	

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\20181015-65916.b\2018.10.14LLB_042.d

Injection Date: 15-Oct-2018 05:57:18

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 38

Worklist Smp#: 23

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

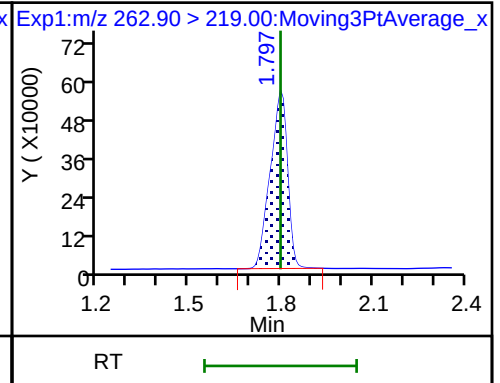
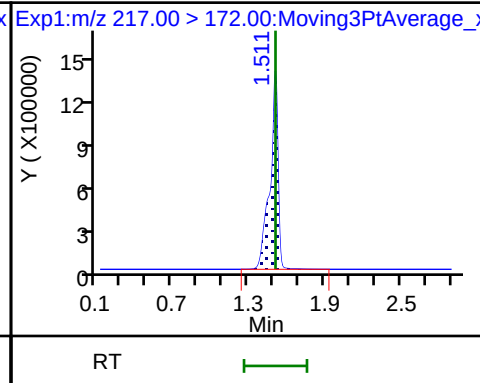
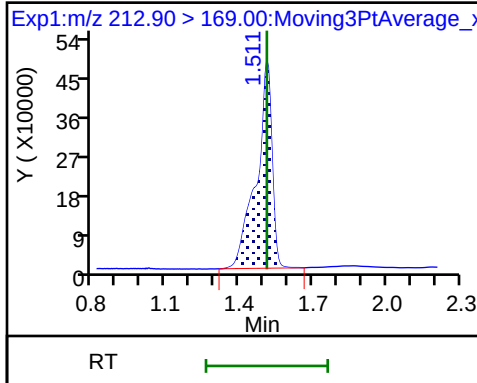
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

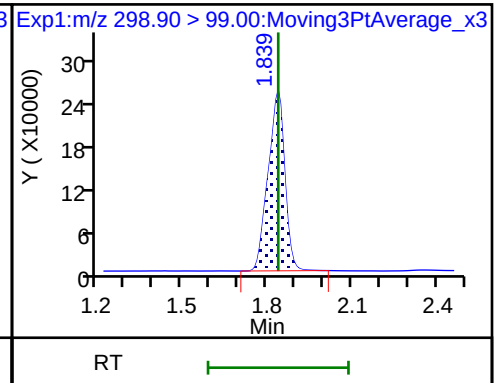
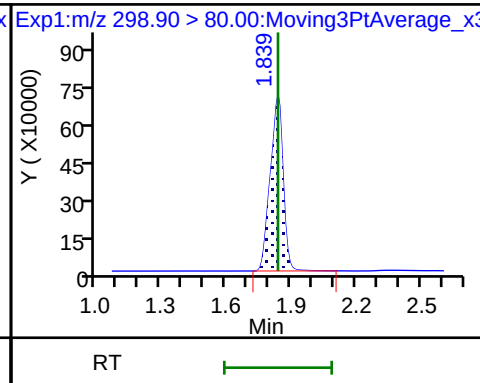
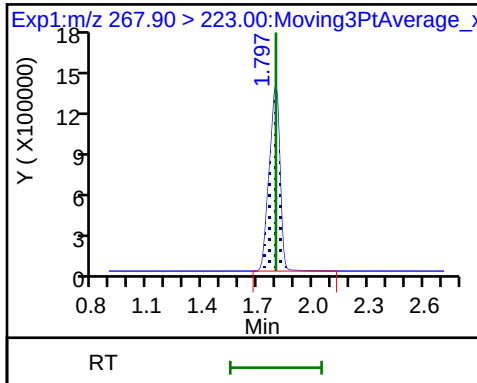
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

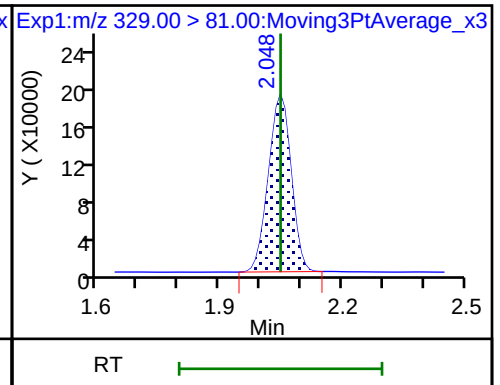
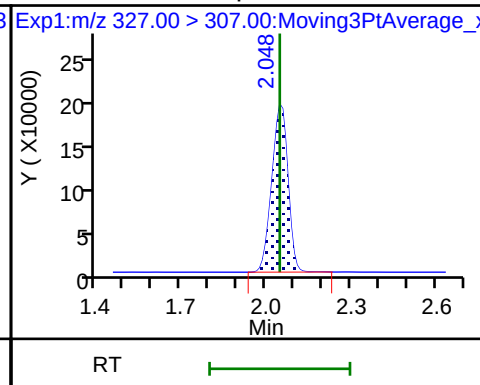
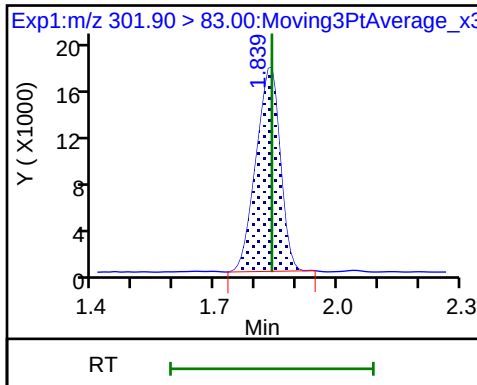
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

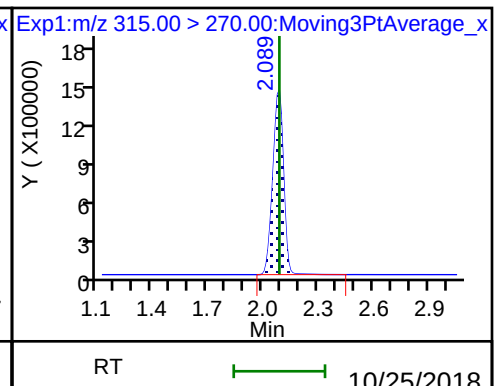
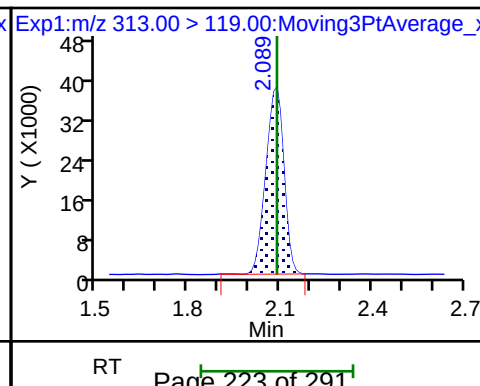
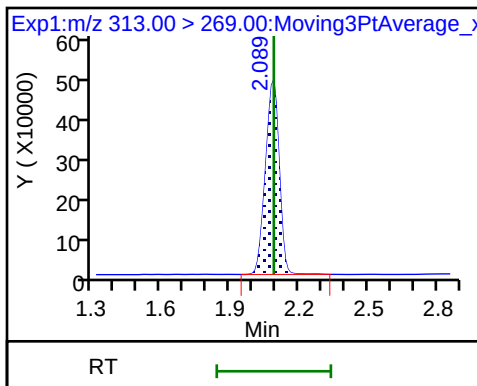
D 60 M2-4:2 FTS

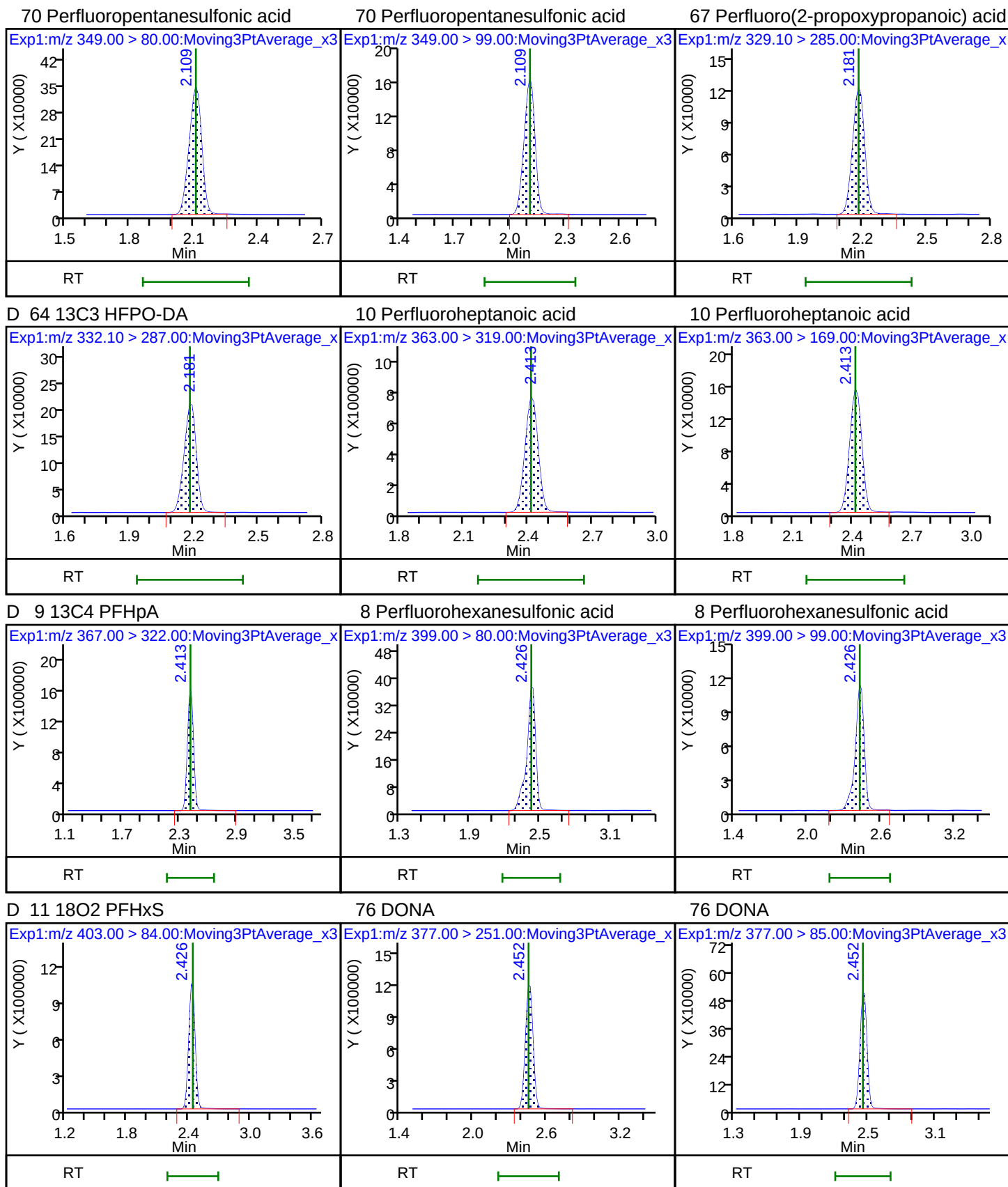


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

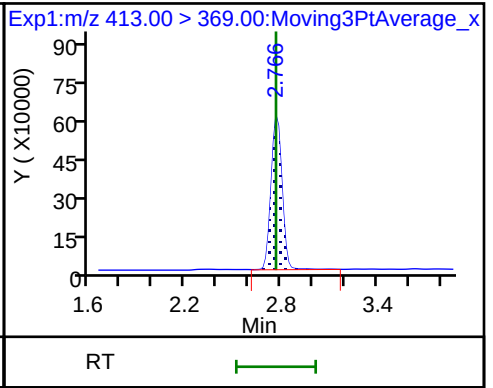
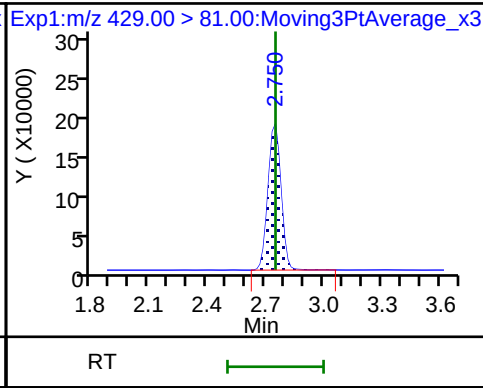
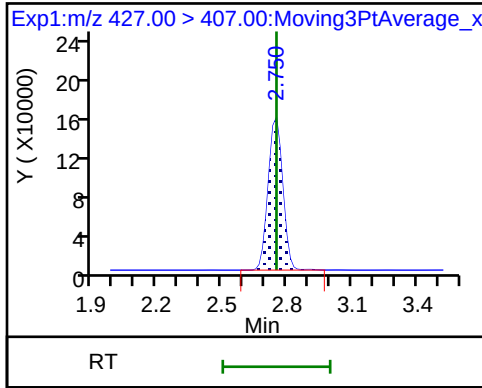
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

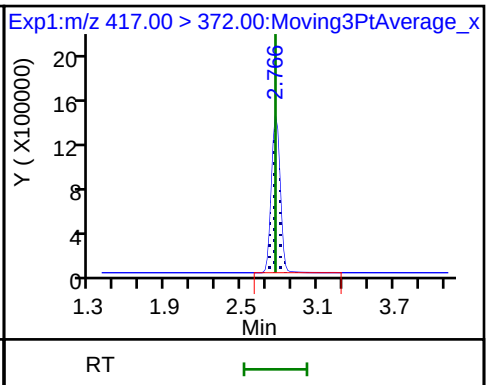
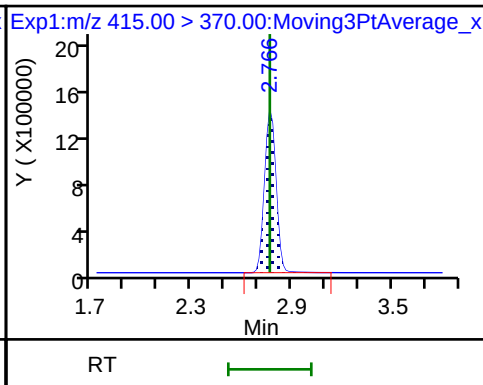
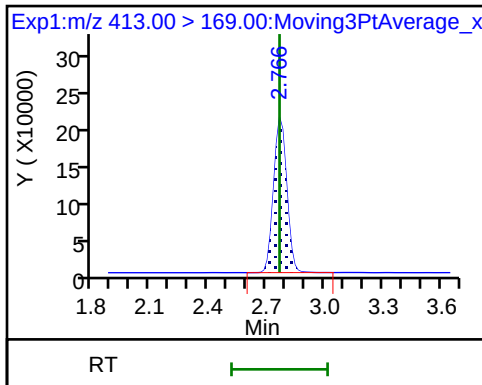
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

* 62 13C2 PFOA

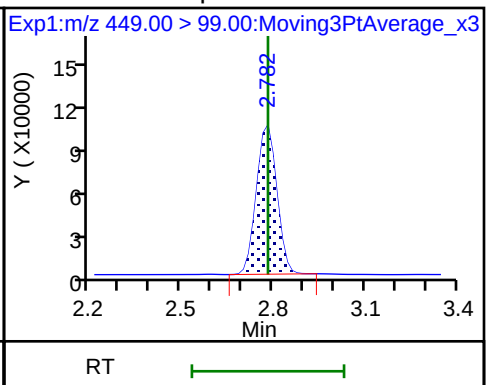
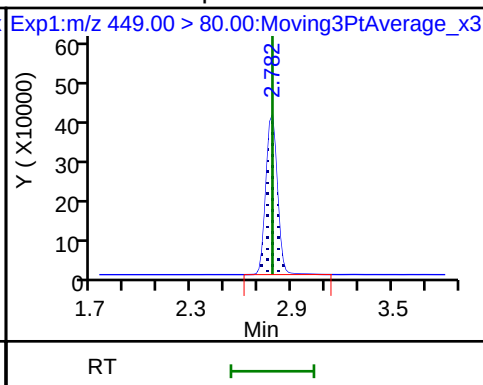
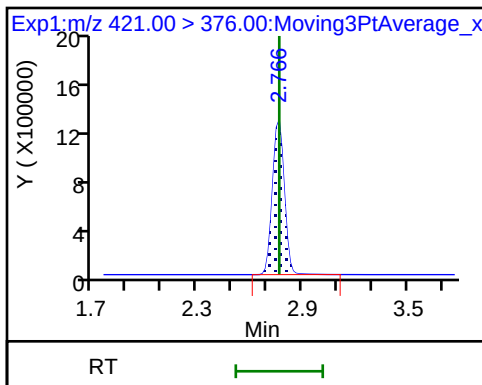
D 14 13C4 PFOA



D 73 13C8 PFOA

16 Perfluoroheptanesulfonic acid

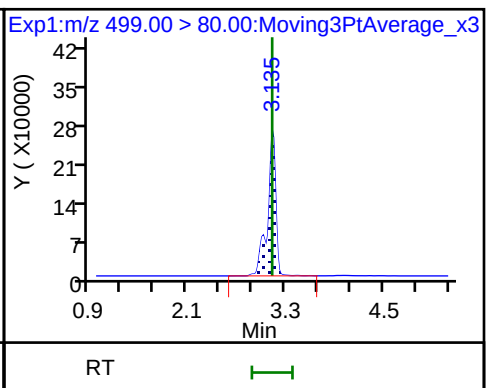
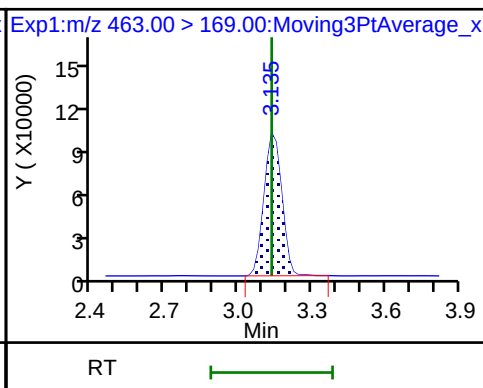
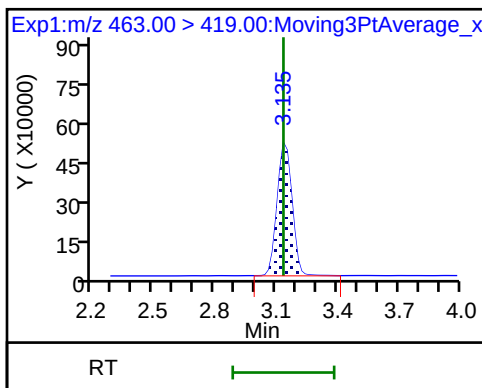
16 Perfluoroheptanesulfonic acid

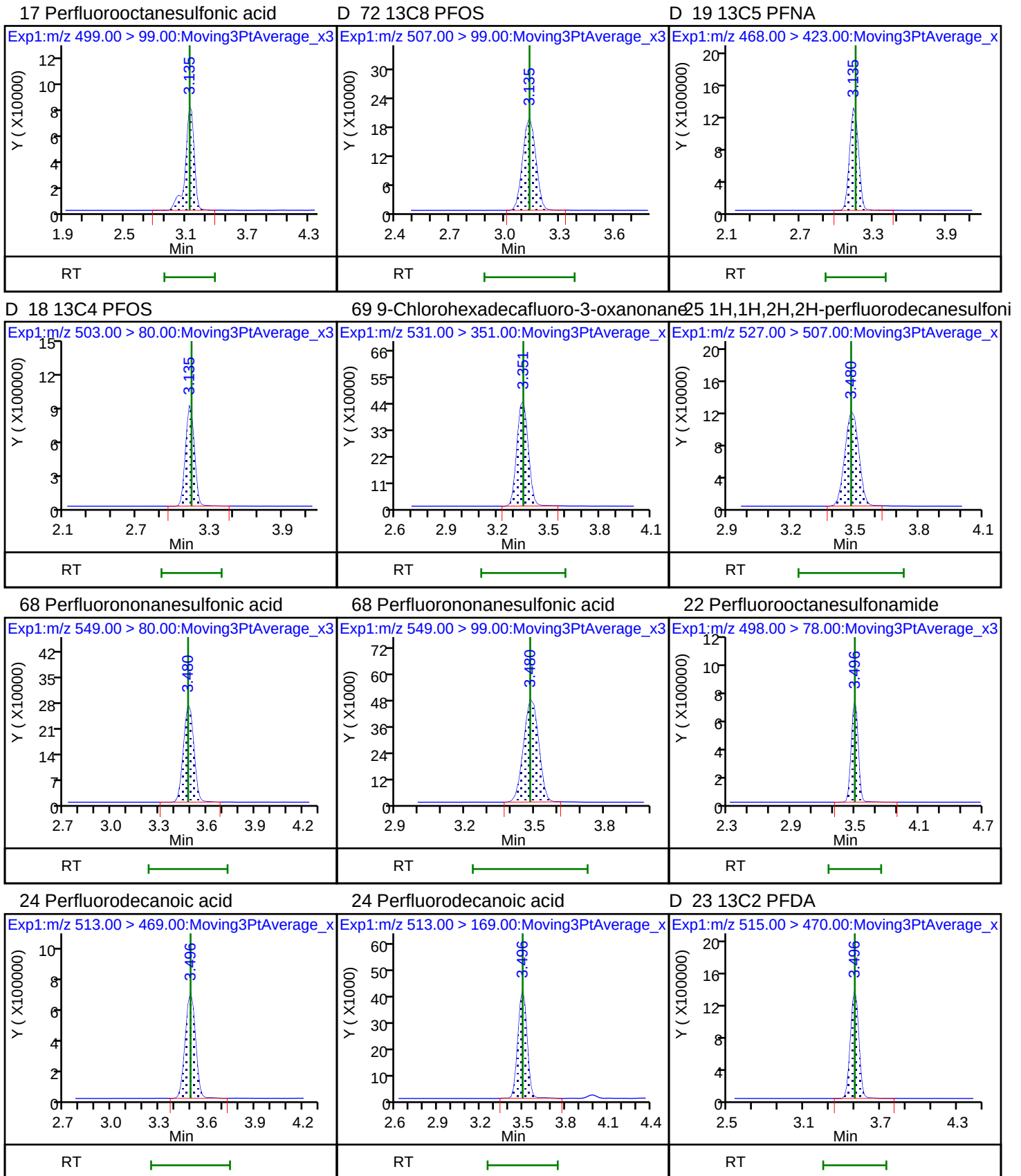


20 Perfluorononanoic acid

20 Perfluorononanoic acid

17 Perfluorooctanesulfonic acid





D 26 M2-8:2 FTS

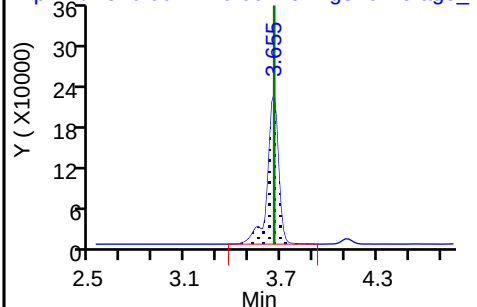
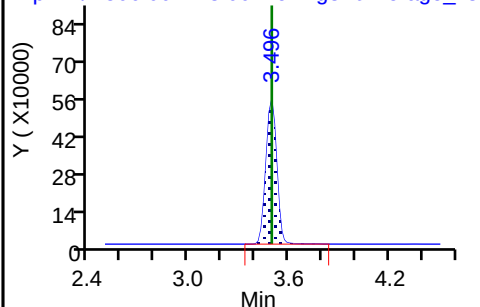
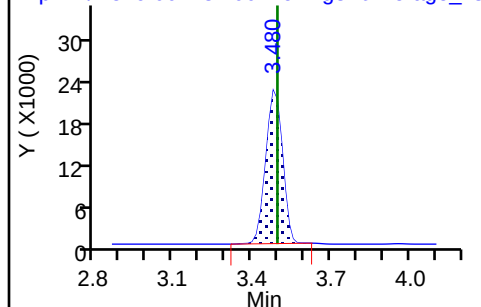
D 21 13C8 FOSA

28 N-methylperfluorooctanesulfonamido

Exp1:m/z 529.00 > 81.00:Moving3PtAverage_x3

Exp1:m/z 506.00 > 78.00:Moving3PtAverage_x3

Exp1:m/z 570.00 > 419.00:Moving3PtAverage_x3



D 27 d3-NMeFOSAA

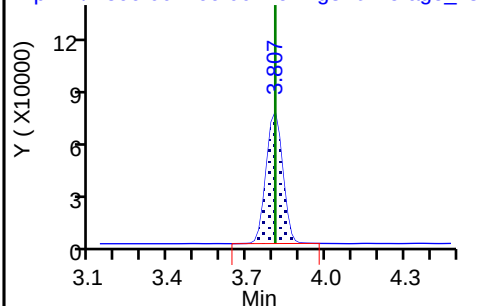
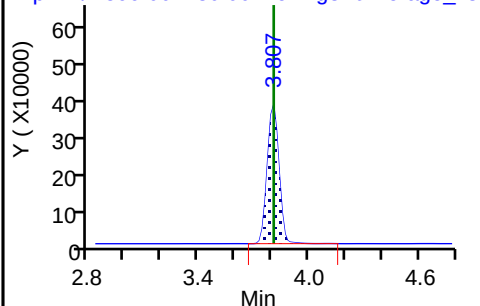
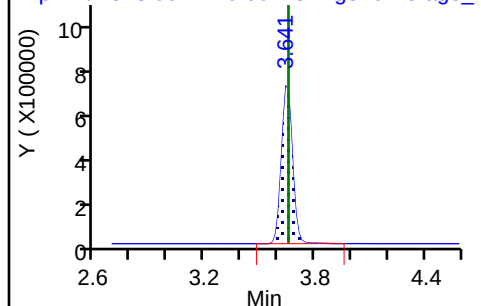
29 Perfluorodecanesulfonic acid

29 Perfluorodecanesulfonic acid

Exp1:m/z 573.00 > 419.00:Moving3PtAverage_x3

Exp1:m/z 599.00 > 80.00:Moving3PtAverage_x3

Exp1:m/z 599.00 > 99.00:Moving3PtAverage_x3



33 N-ethylperfluorooctanesulfonamidoa

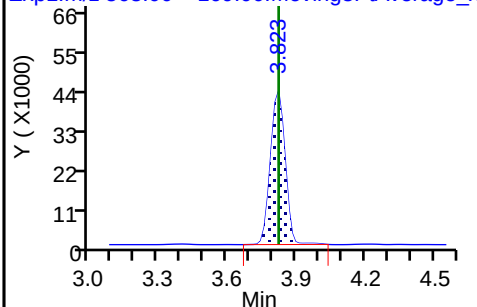
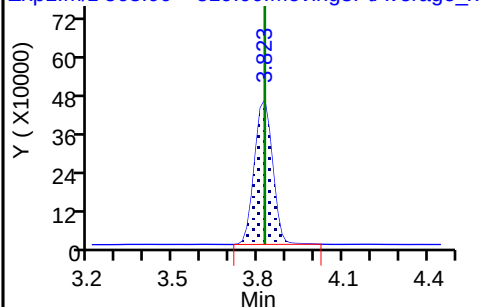
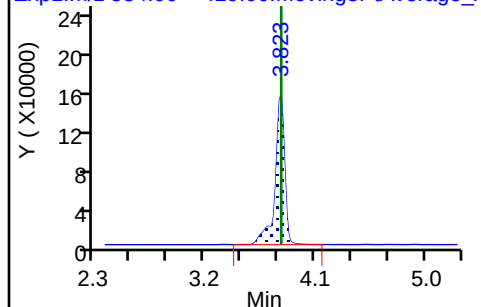
31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

Exp1:m/z 584.00 > 419.00:Moving3PtAverage_x3

Exp1:m/z 563.00 > 519.00:Moving3PtAverage_x3

Exp1:m/z 563.00 > 169.00:Moving3PtAverage_x3



D 32 d5-NEtFOSAA

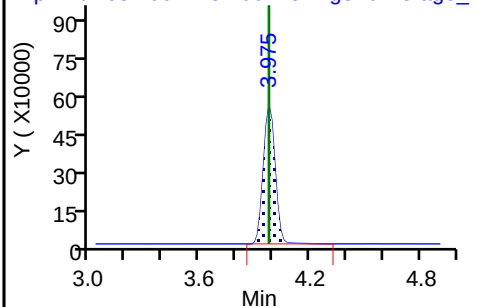
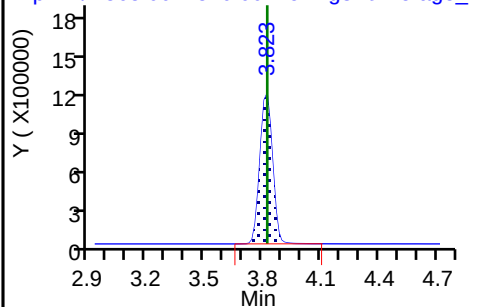
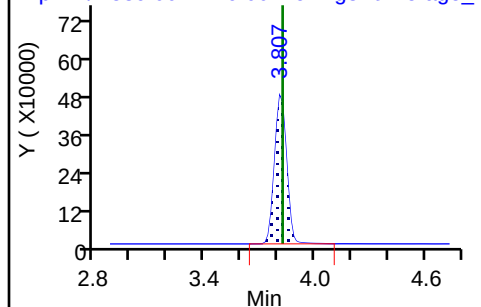
D 30 13C2 PFUnA

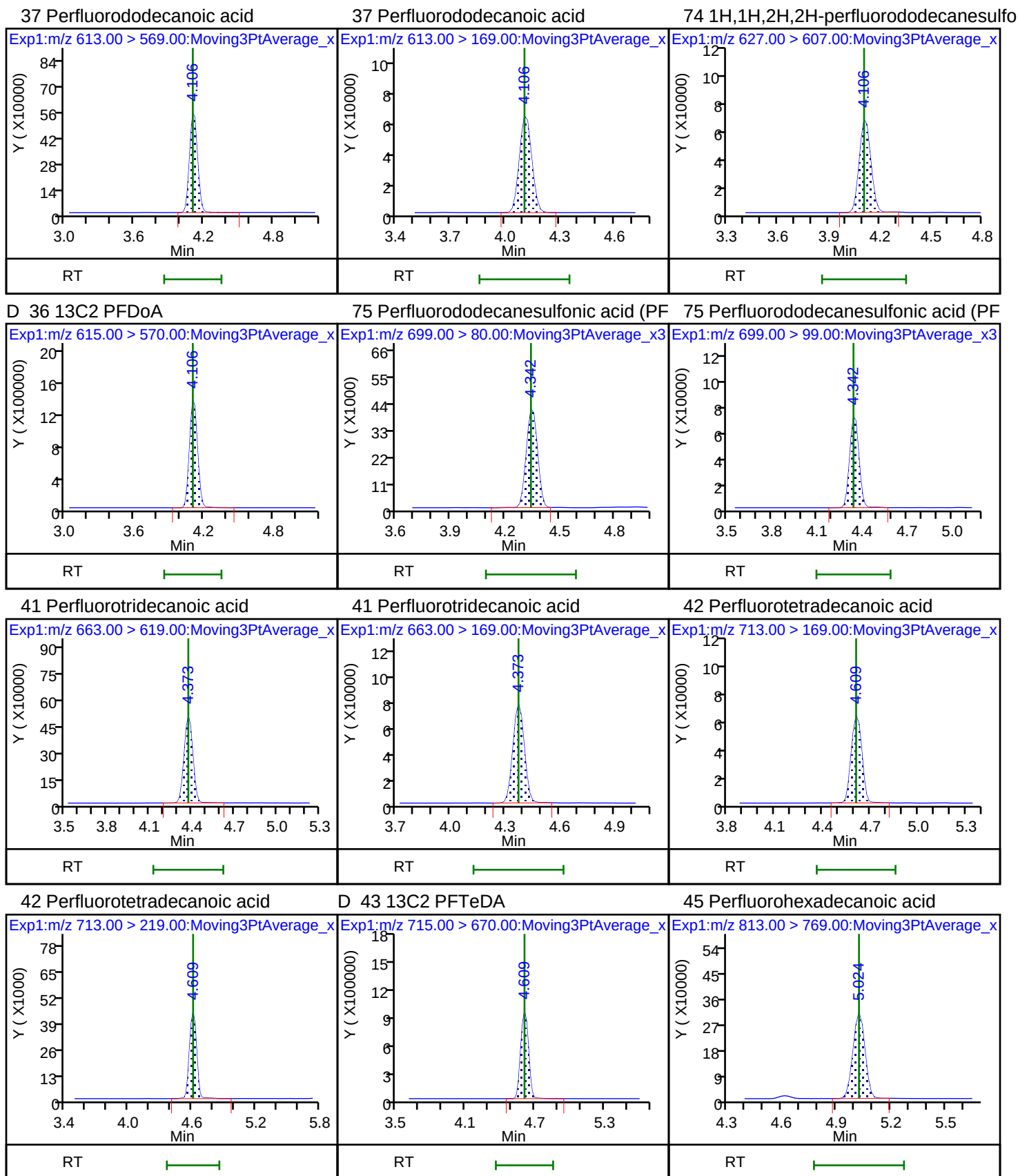
66 11-Chloroeicosafluoro-3-oxaundecan

Exp1:m/z 589.00 > 419.00:Moving3PtAverage_x3

Exp1:m/z 565.00 > 520.00:Moving3PtAverage_x3

Exp1:m/z 631.00 > 451.00:Moving3PtAverage_x3

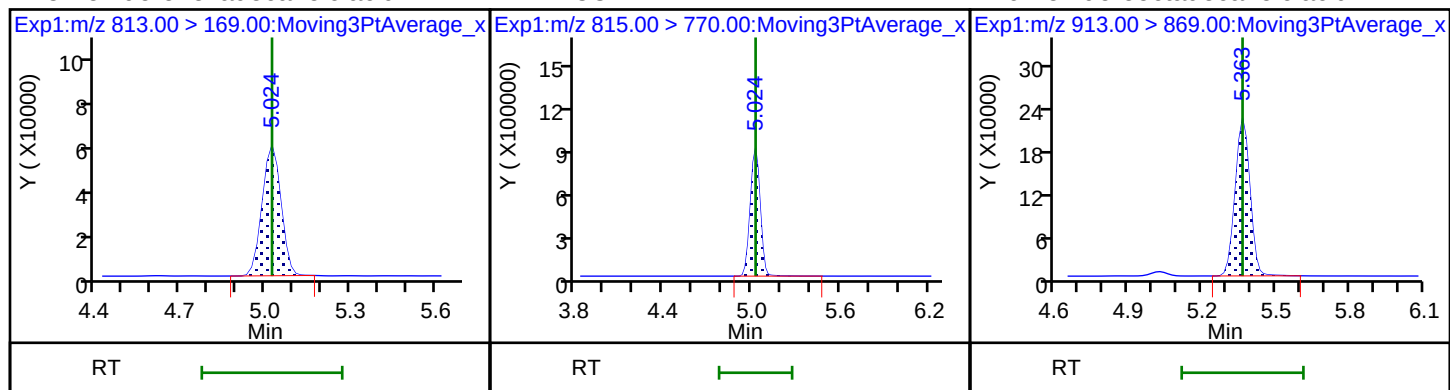




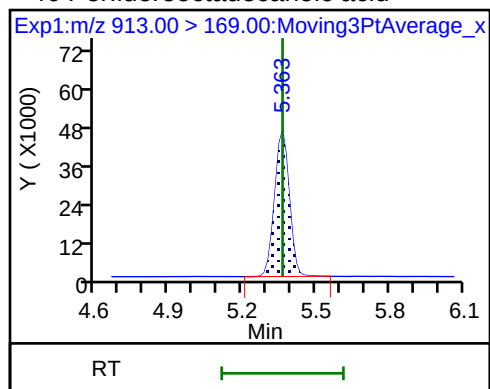
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43696-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-251297/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_021.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/15/2018 03:19</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	ND		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	ND		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.278	J	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	ND		20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43696-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-251297/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_021.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/15/2018 03:19</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	102		25-150
STL01893	13C5 PFPeA	109		25-150
STL00993	13C2 PFHxA	103		25-150
STL01892	13C4 PFHpA	105		25-150
STL00990	13C4 PFOA	107		25-150
STL00995	13C5 PFNA	111		25-150
STL00996	13C2 PFDA	114		25-150
STL00997	13C2 PFUnA	103		25-150
STL00998	13C2 PFDoA	101		25-150
STL02116	13C2 PFTeDA	95		25-150
STL02337	13C3 PFBS	110		25-150
STL00994	18O2 PFHxS	110		25-150
STL00991	13C4 PFOS	115		25-150
STL01056	13C8 FOSA	102		25-150
STL02118	d3-NMeFOSAA	109		25-150
STL02117	d5-NEtFOSAA	120		25-150
STL02279	M2-6:2 FTS	132		25-150
STL02280	M2-8:2 FTS	134		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_021.d
 Lims ID: MB 320-251297/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 15-Oct-2018 03:19:34 ALS Bottle#: 12 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-251297/1-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 16:36:10 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: XAWRK007

First Level Reviewer: mongkols

Date: 18-Oct-2018 16:18:10

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	1.517	1.511	0.006	0.545	6061649	2.56		102	23466	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.517	1.517	0.0	1.000	4713	0.002092			0.8	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.797	0.0	0.995	6548	0.002788			1.0	
D 3 13C5 PFPeA										
267.90 > 223.00	1.805	1.797	0.008	0.649	5805462	2.72		109	12921	
D 47 13C3 PFBS										
301.90 > 83.00	1.847	1.839	0.008	0.664	76268	2.57		110	679	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.089	-0.001	0.751	5954833	2.58		103	29427	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.191	2.181	0.010	0.787	746140	3.13		125	2527	
D 9 13C4 PFHpA										
367.00 > 322.00	2.426	2.413	0.013	0.872	7187386	2.62		105	23115	
10 Perfluoroheptanoic acid										R
363.00 > 319.00	2.426	2.426	0.0	1.000	3363	0.001101			1.0	R
363.00 > 169.00	2.426	2.426	0.0	1.000	1727		1.95(2.17-6.52)		4.0	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.439	0.0	1.000	16986	0.006945			26.2	
399.00 > 99.00	2.439	2.439	0.0	1.000	4058		4.19(1.90-5.70)		9.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.439	0.0	0.877	4589969	2.61		110	13203	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.750	2.750	0.0	0.989	880935	3.14		132	2288	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.756	-0.006	1.000	1578	0.001906			10.2	

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	2.782	2.766	0.016		10442	0.004154		0.0	66.5	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.766	0.016	1.000	6946257	2.67		107	21054	
* 62 13C2 PFOA										
415.00 > 370.00	2.782	2.772	0.010		6651016	2.50			15909	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.772	0.010	1.000	13788	0.004542			1.1	
413.00 > 169.00	2.782	2.772	0.010	1.000	6339		2.18(1.36-4.08)		17.7	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.153	0.0	1.133	6600593	2.78		111	9979	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.153	0.0	1.133	4939122	2.76		115	5070	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.496	3.496	0.0	1.257	113015	3.22		134	790	
D 23 13C2 PFDA										
515.00 > 470.00	3.512	3.496	0.016	1.262	7064435	2.84		114	9440	
D 21 13C8 FOSA										
506.00 > 78.00	3.512	3.496	0.016	1.262	2403704	2.55		102	5365	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.496	3.501	-0.005	0.995	2485	0.000871			6.3	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.314	2777812	2.73		109	5801	
28 N-methylperfluorooctanesulfonamido										M
570.00 > 419.00	3.669	3.659	0.010	1.004	3311	0.002993			1.8	M
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.823	0.0	1.374	5387384	2.57		103	11093	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.823	3.823	0.0	1.374	2484720	3.01		120	4110	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.823	3.827	-0.004	1.000	17289	0.008590			3.3	M
563.00 > 169.00	3.839	3.827	0.011	1.004	1966		8.79(5.24-15.72)		7.7	
33 N-ethylperfluorooctanesulfonamidoa										M
584.00 > 419.00	3.839	3.827	0.011	1.004	3046	0.003294			6.8	M
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.106	0.016	1.482	6441934	2.53		101	13516	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.627	4.609	0.018	1.663	4357769	2.39		95.4	8736	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.023	5.024	-0.001	1.806	4024111	2.41		96.4	7490	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.040	5.028	0.012	1.003	39156	-0.001644			15.7	
813.00 > 169.00	5.023	5.028	-0.005	1.000	7208		5.43(2.77-8.32)		20.9	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_021.d

Injection Date: 15-Oct-2018 03:19:34

Instrument ID: A9

Lims ID: MB 320-251297/1-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 12

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

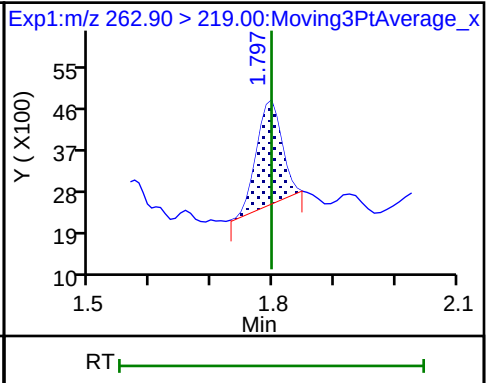
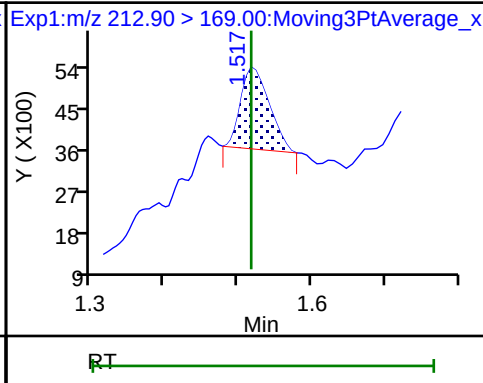
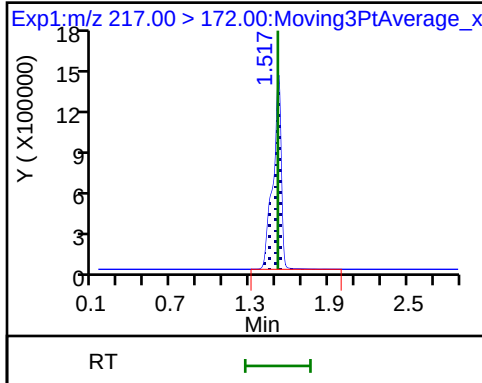
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

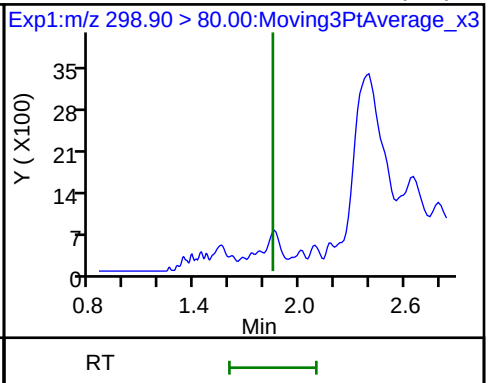
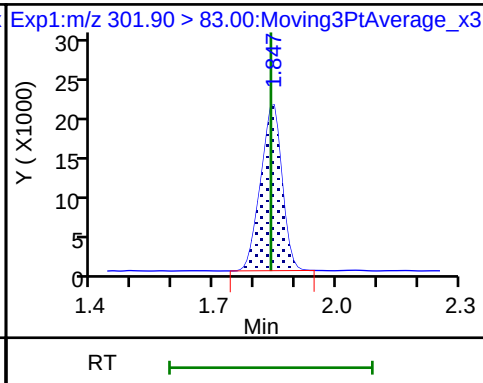
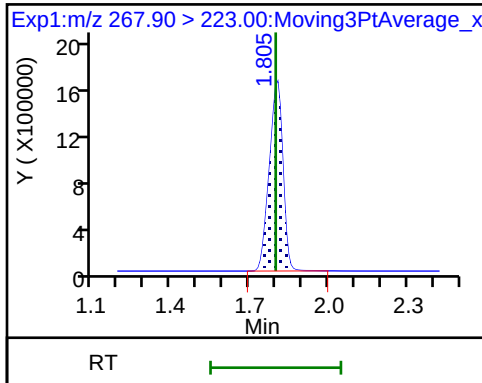
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

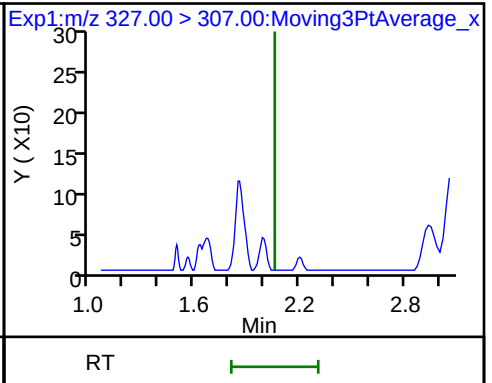
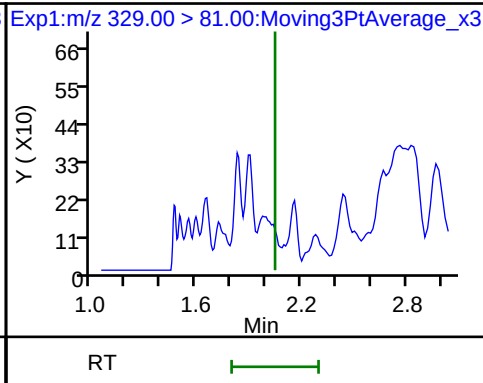
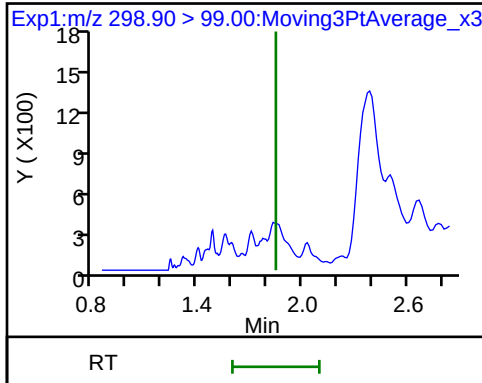
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 60 M2-4:2 FTS (ND)

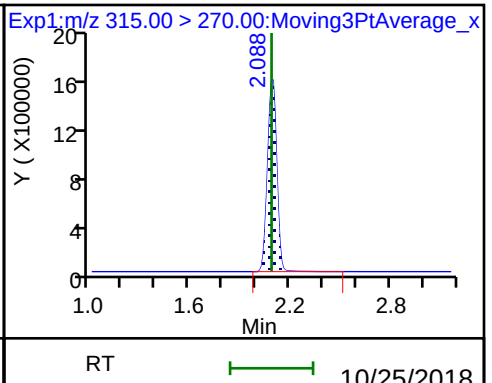
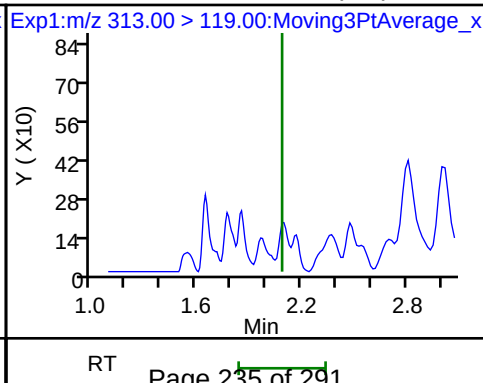
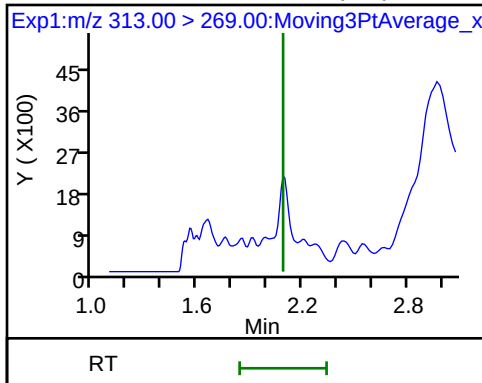
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



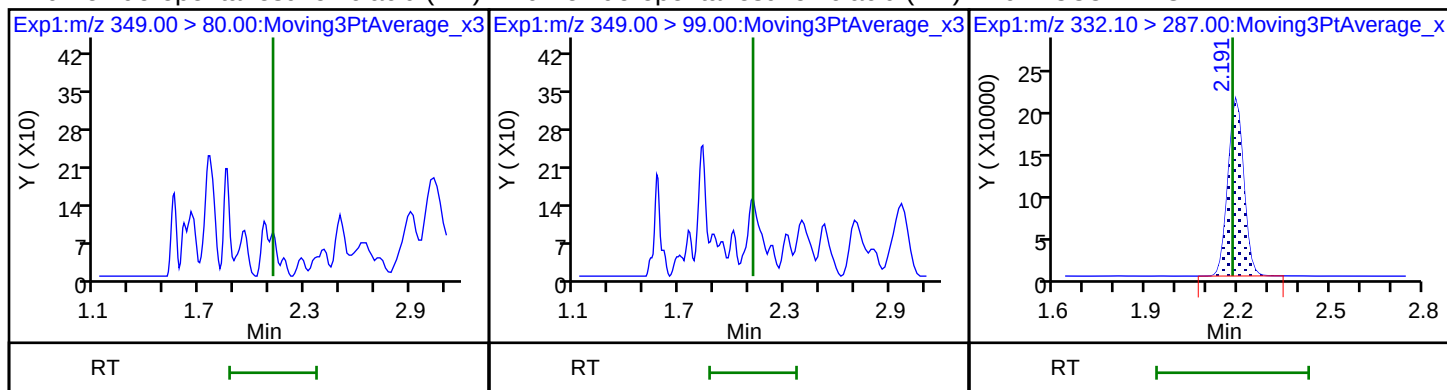
6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

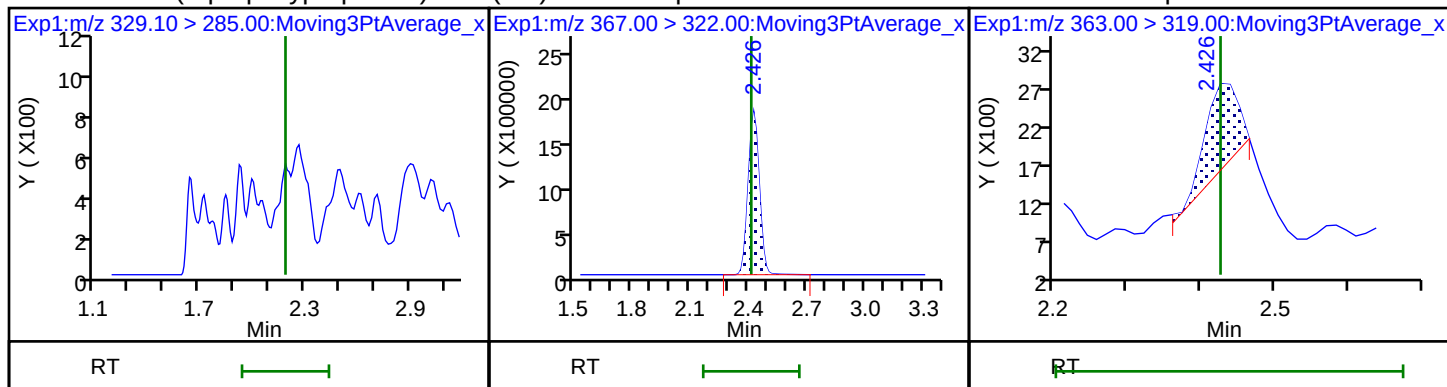
D 7 13C2 PFHxA



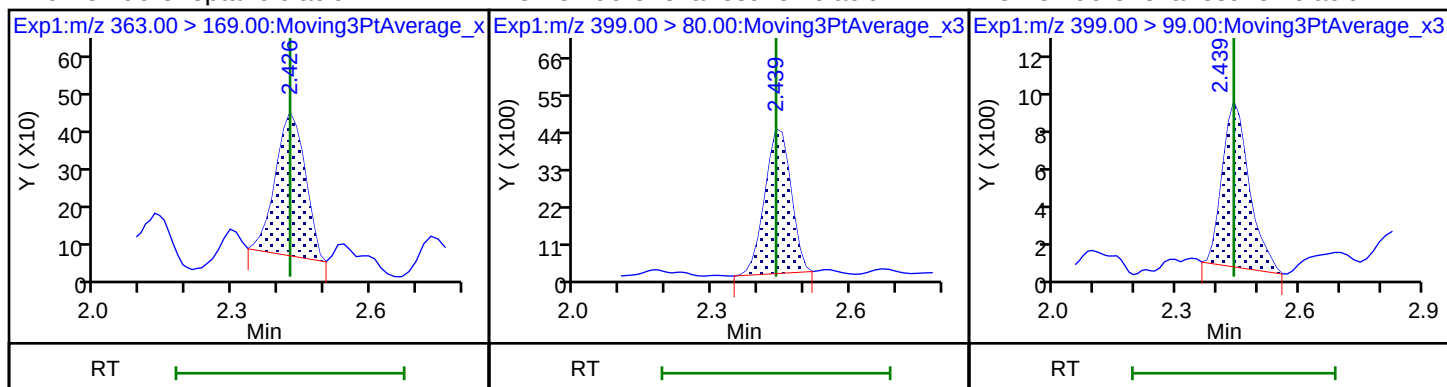
70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) D 64 13C3 HFPO-DA



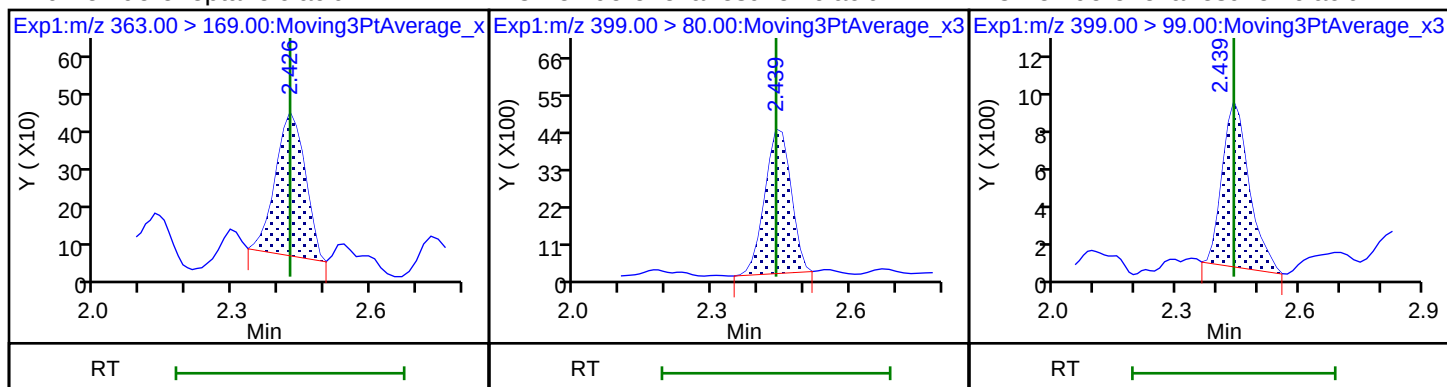
67 Perfluoro(2-propoxypropanoic) acid (ND) 13C4 PFHpA



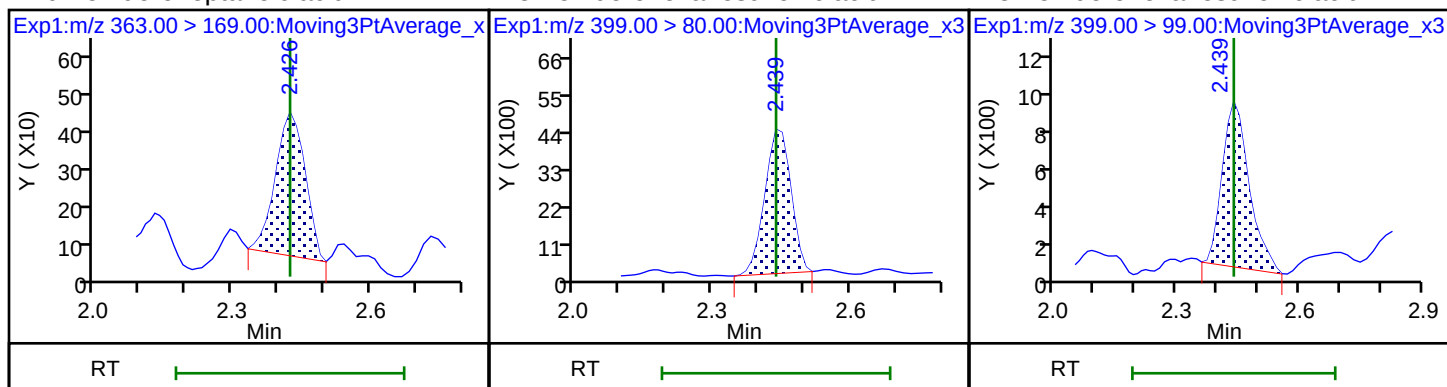
10 Perfluoroheptanoic acid



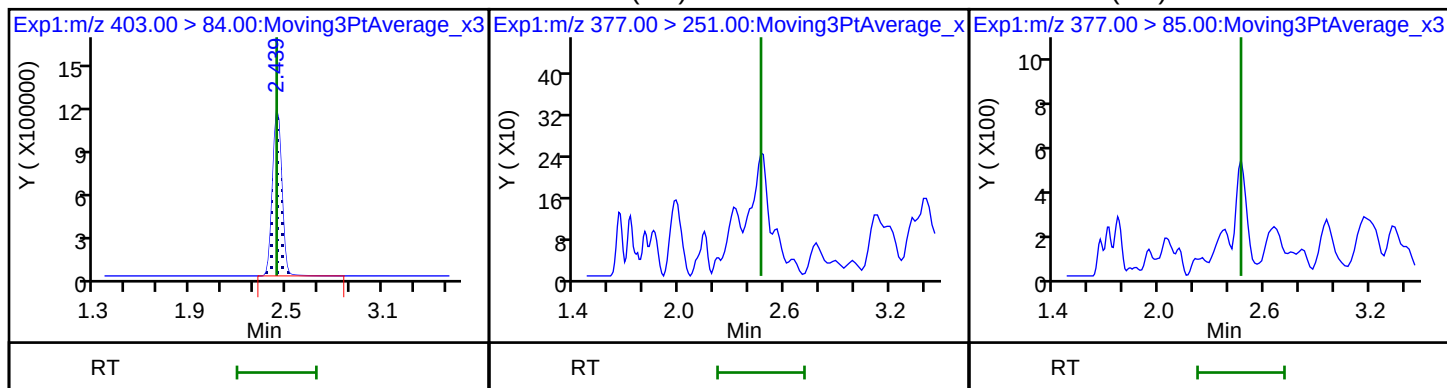
8 Perfluorohexanesulfonic acid



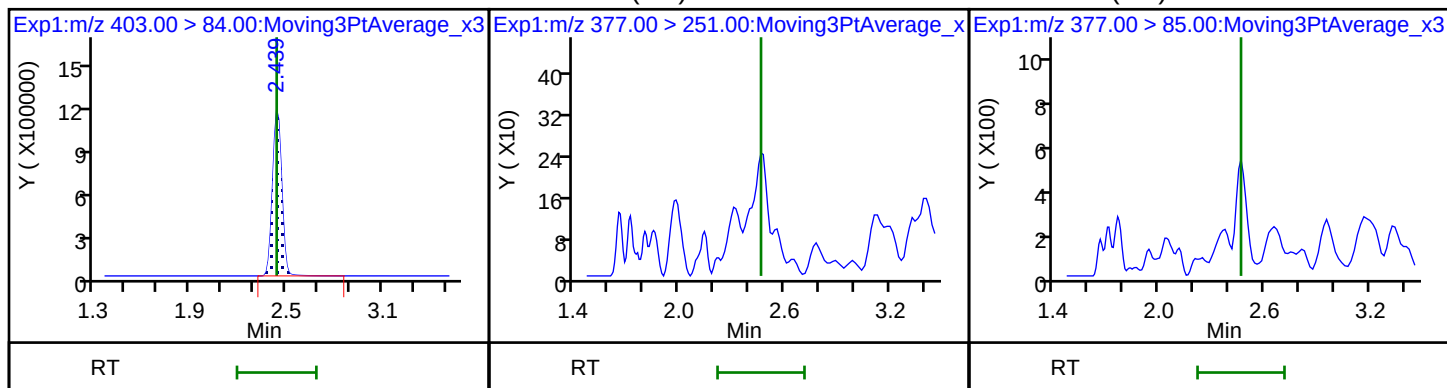
8 Perfluorohexanesulfonic acid



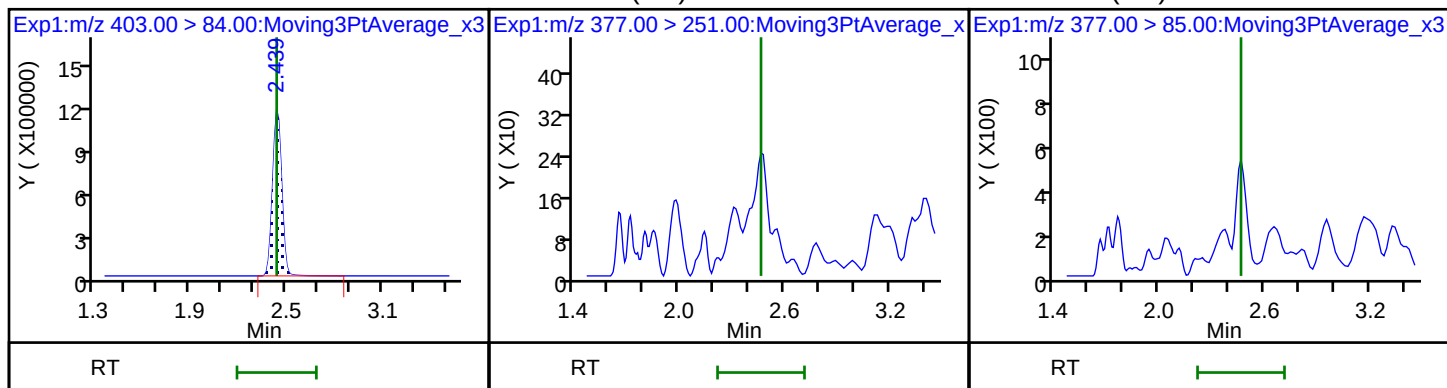
D 11 18O2 PFHxS



76 DONA (ND)

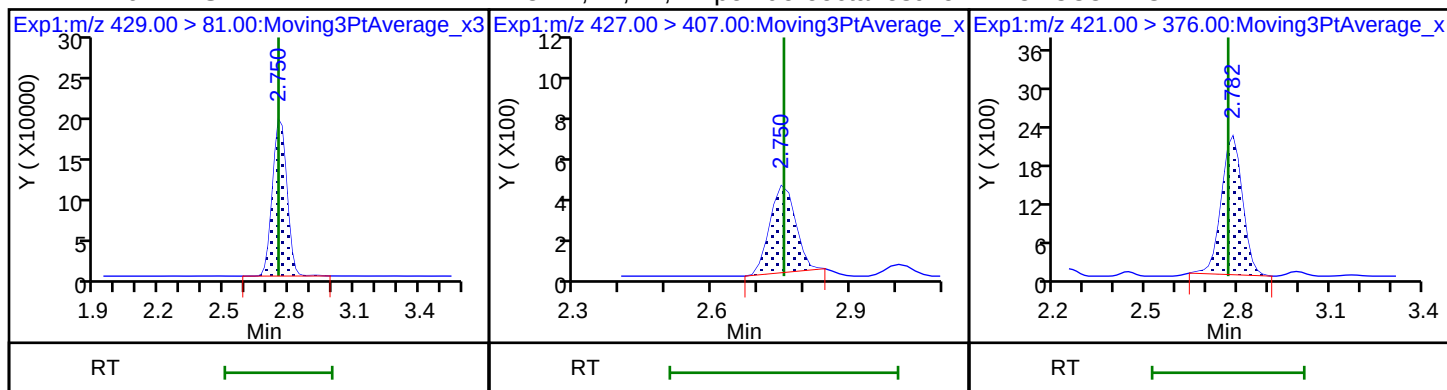


76 DONA (ND)



D 12 M2-6:2 FTS

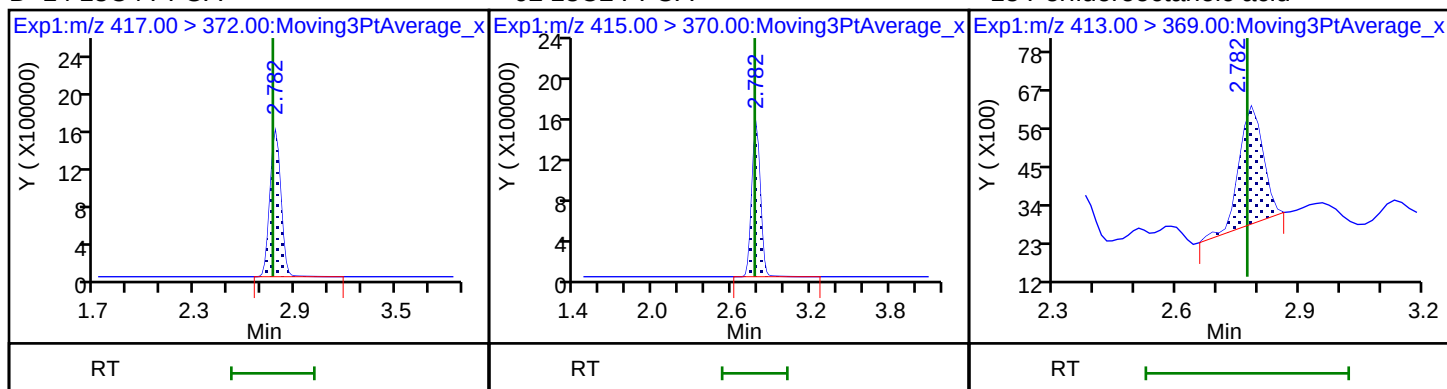
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

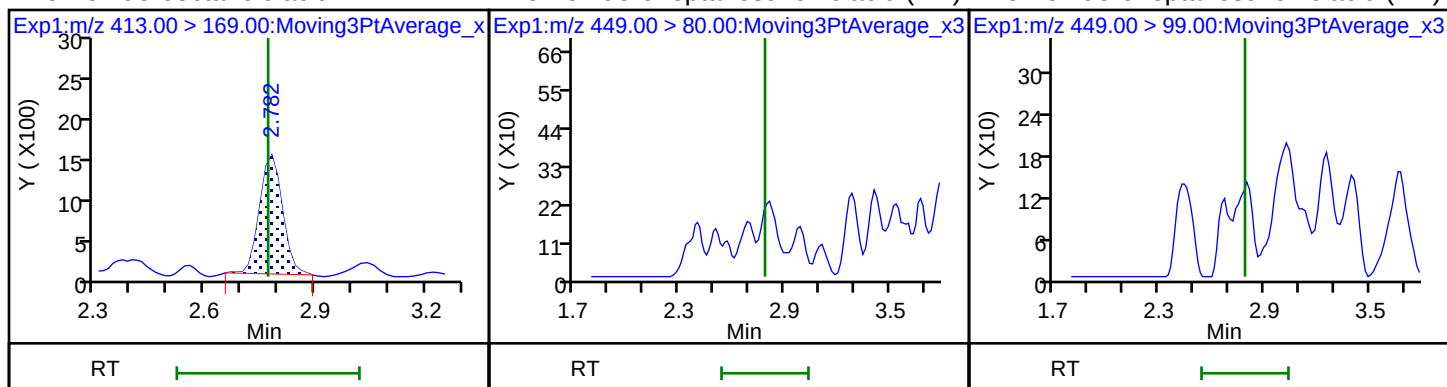
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid (ND)

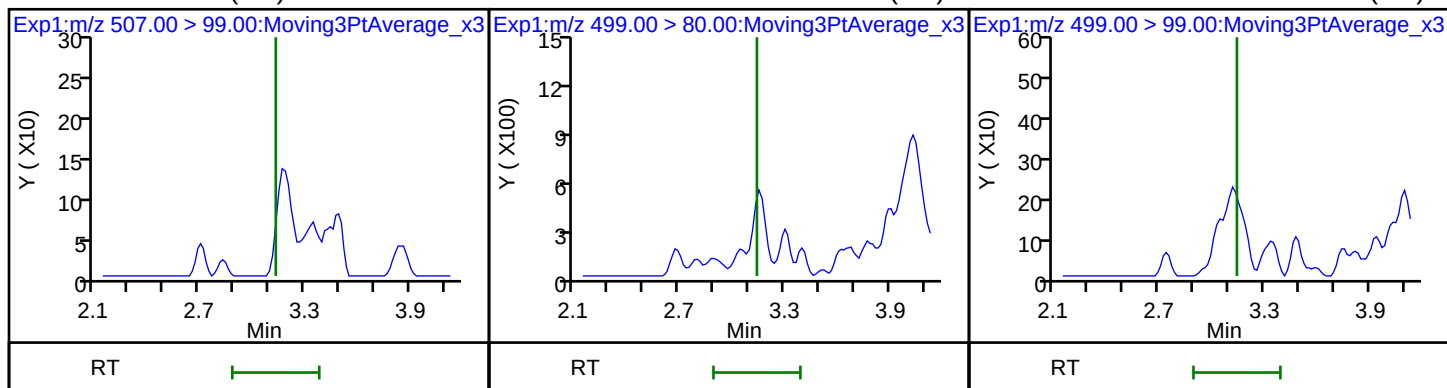
16 Perfluoroheptanesulfonic acid (ND)

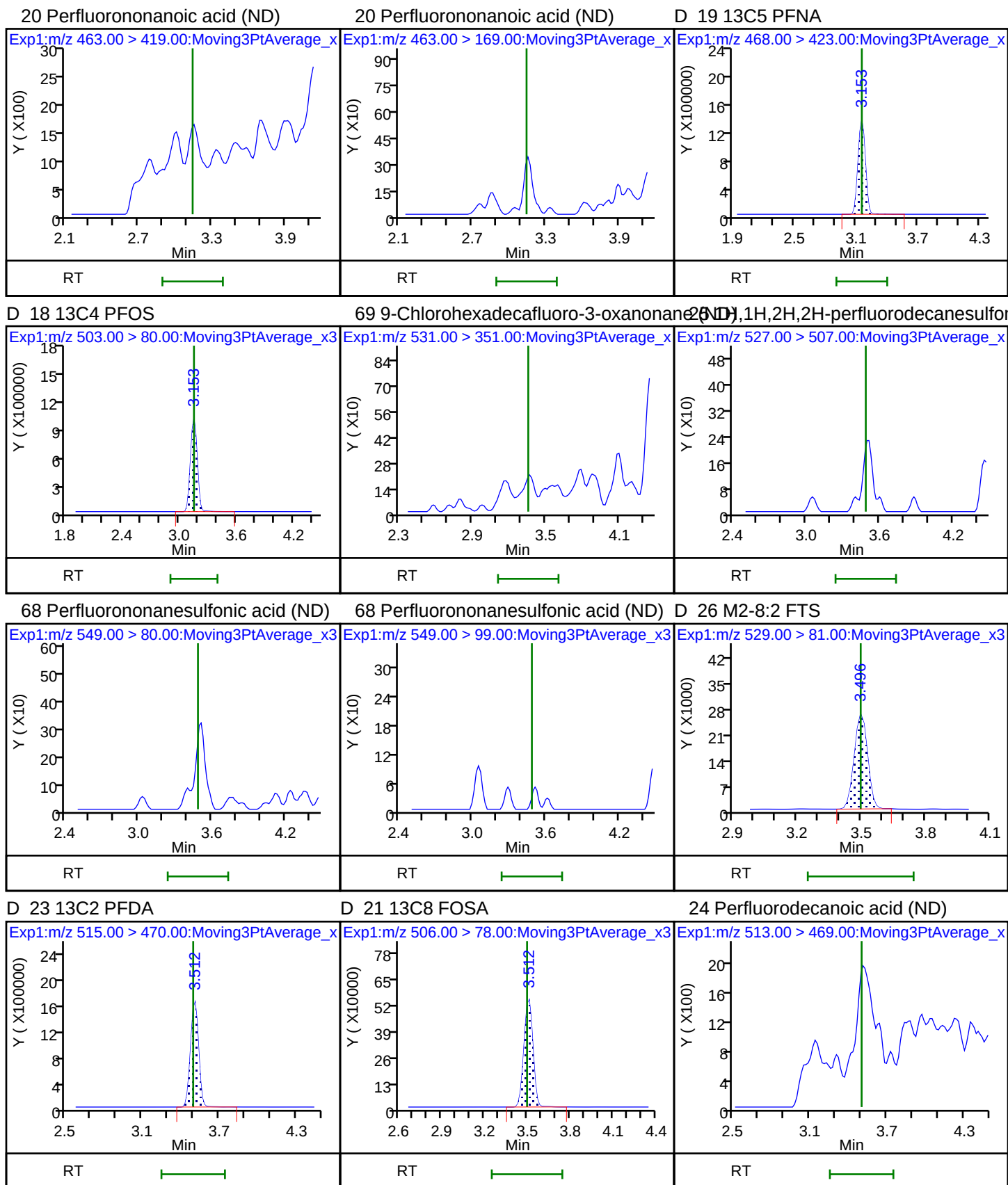


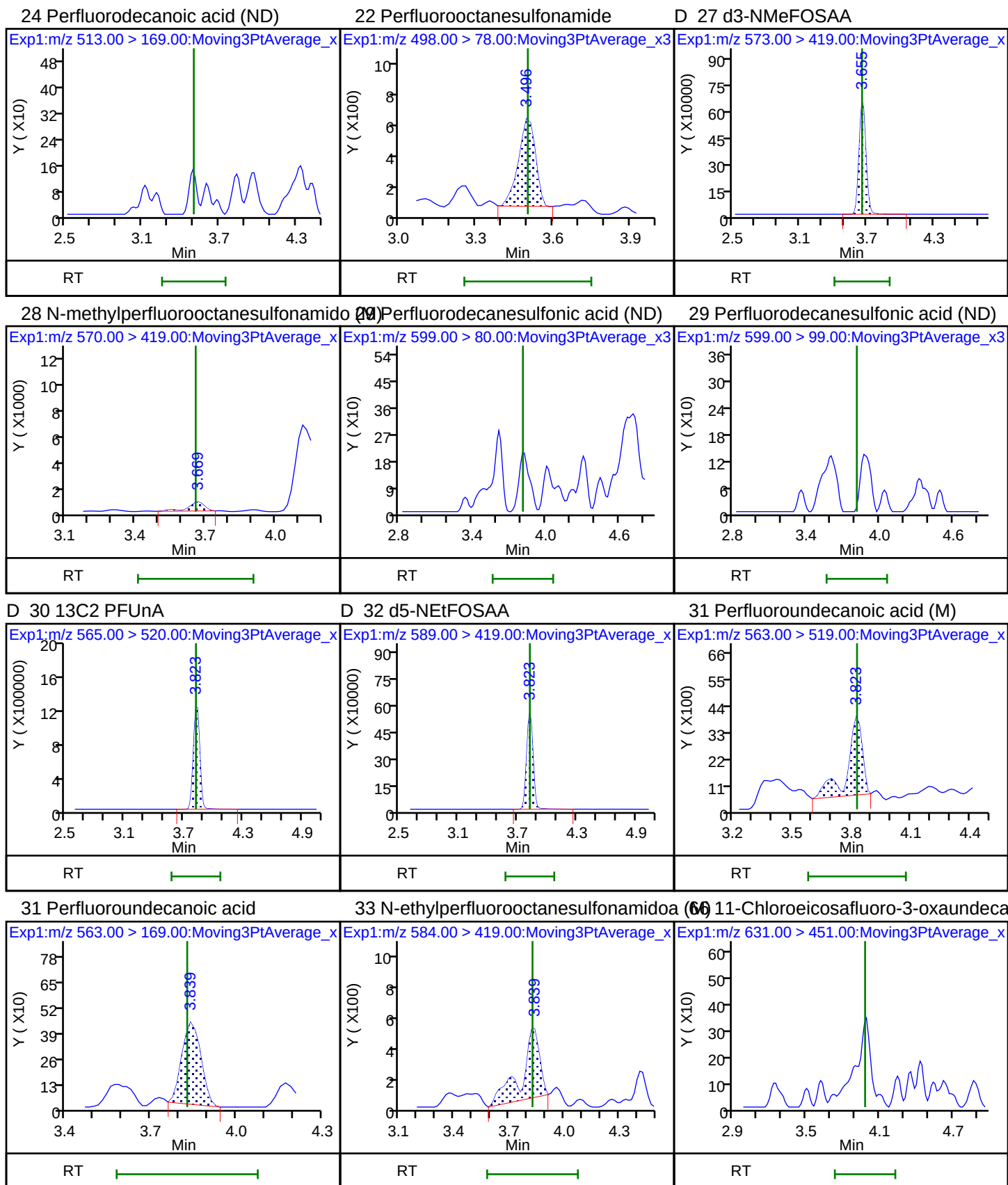
D 72 13C8 PFOS (ND)

17 Perfluorooctanesulfonic acid (ND)

17 Perfluorooctanesulfonic acid (ND)



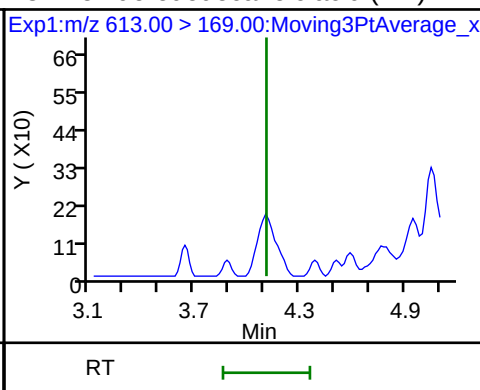
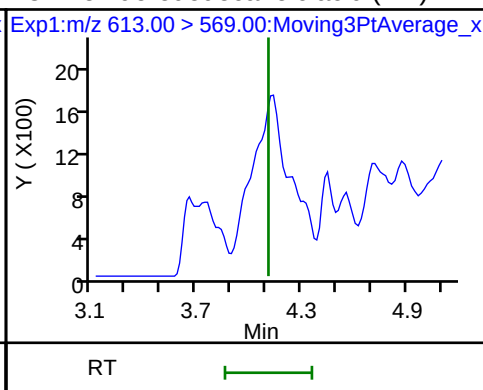
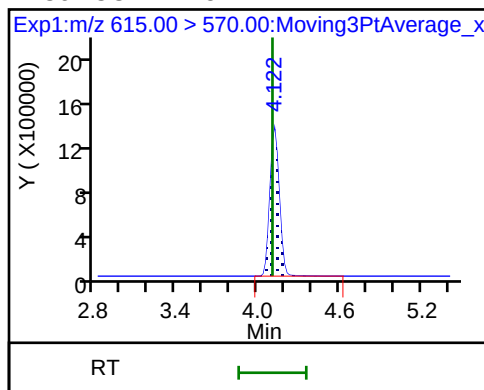




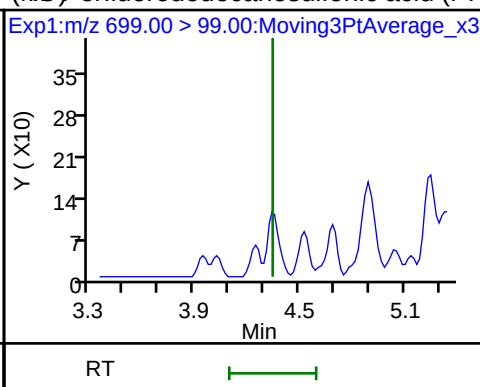
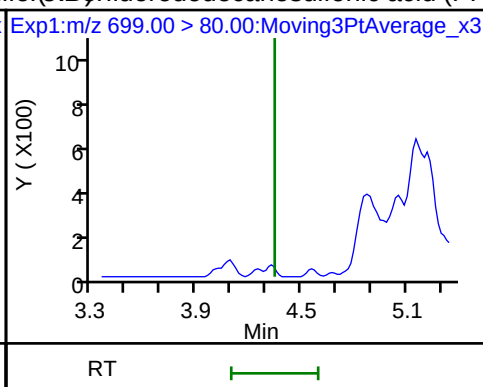
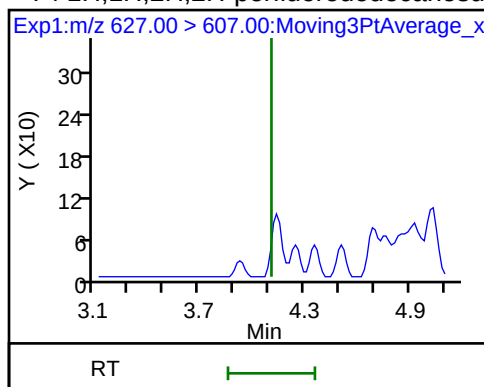
D 36 13C2 PFDaA

37 Perfluorododecanoic acid (ND)

37 Perfluorododecanoic acid (ND)



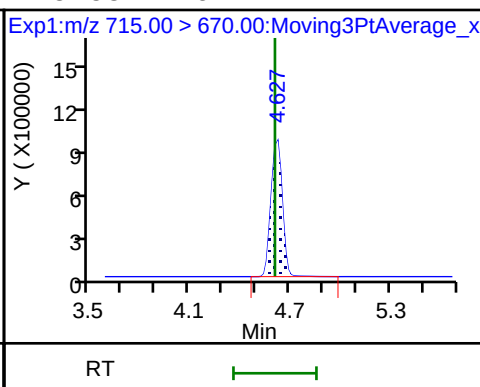
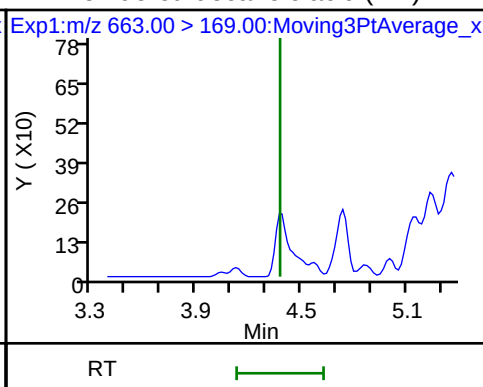
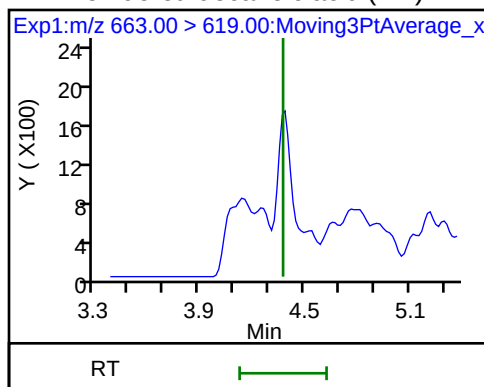
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) 74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) 74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

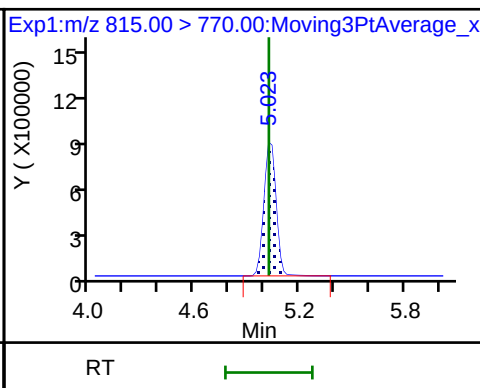
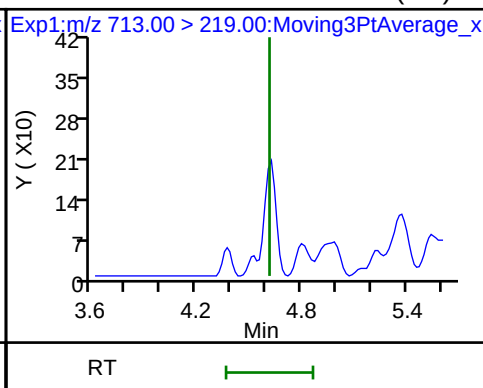
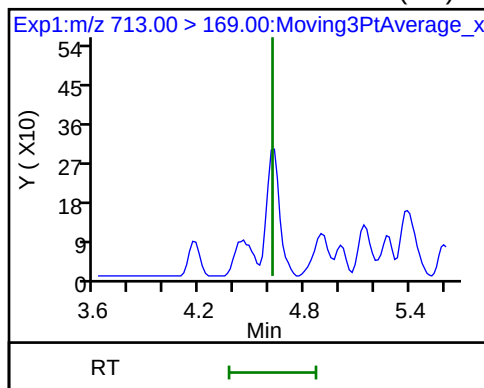
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid (ND)

42 Perfluorotetradecanoic acid (ND)

D 44 13C2 PFHxDA

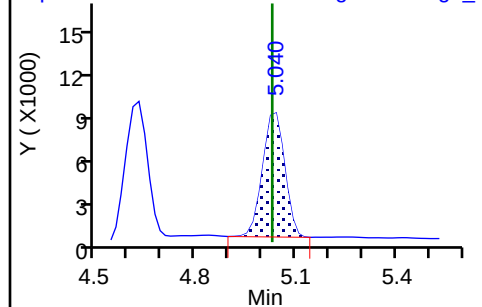


45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

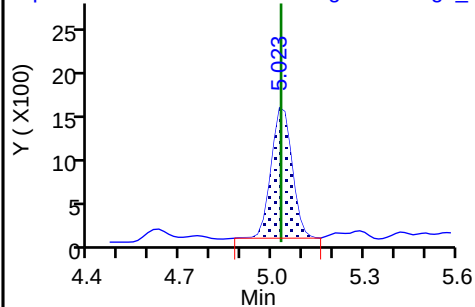
46 Perfluorooctadecanoic acid (ND)

Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



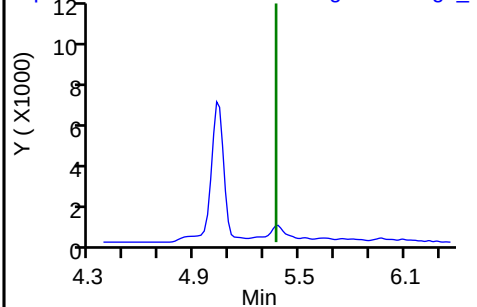
RT

Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



RT

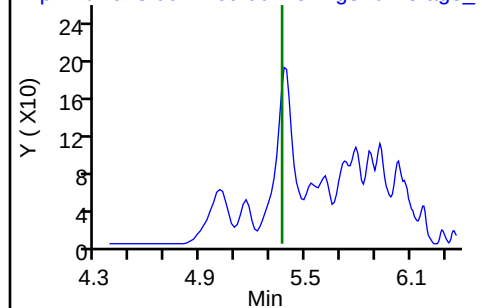
Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



RT

46 Perfluorooctadecanoic acid (ND)

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

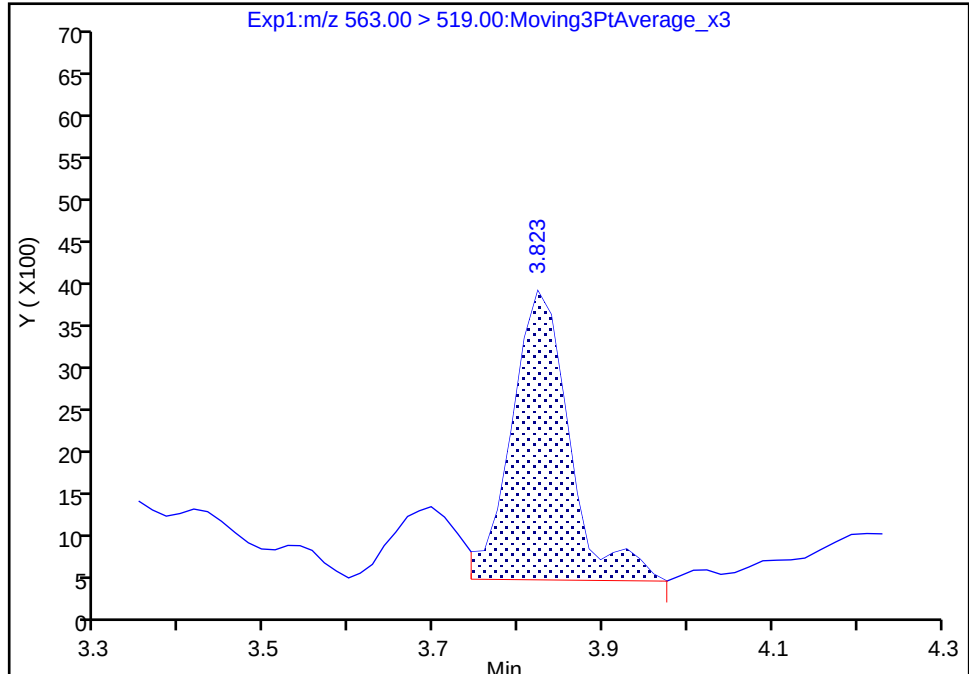
Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_021.d
Injection Date: 15-Oct-2018 03:19:34 Instrument ID: A9
Lims ID: MB 320-251297/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

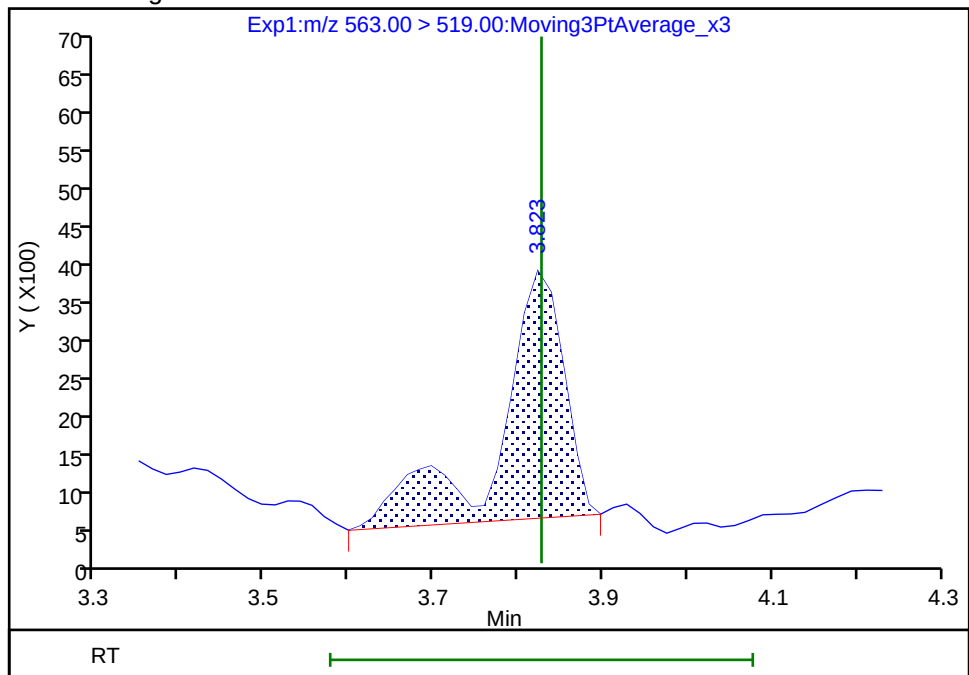
RT: 3.82
Area: 16163
Amount: 0.008030
Amount Units: ng/ml

Processing Integration Results



RT: 3.82
Area: 17289
Amount: 0.008590
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 18-Oct-2018 16:17:56
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

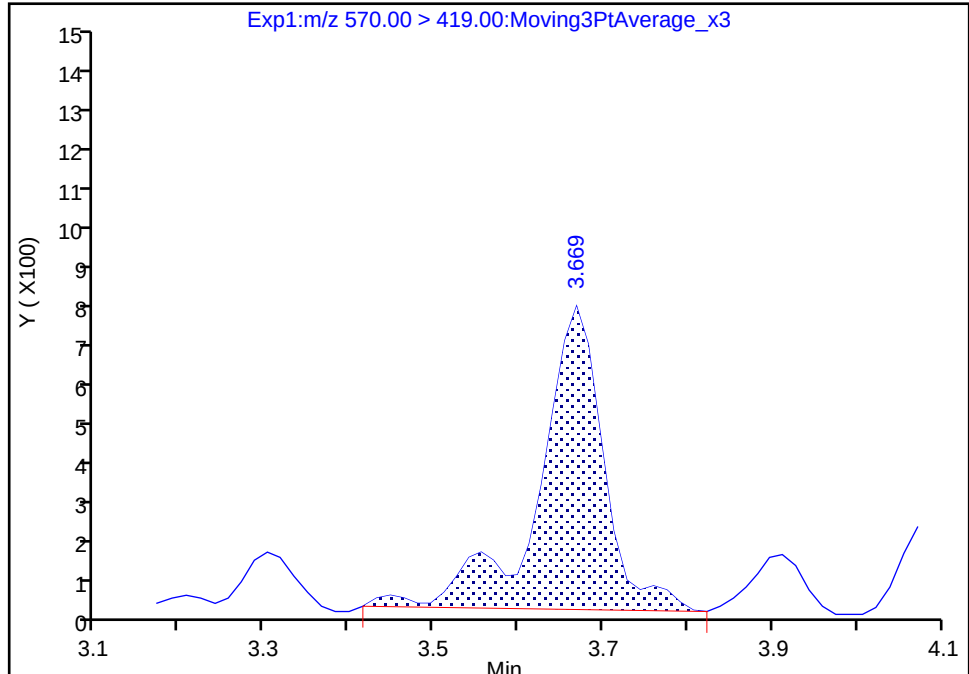
Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_021.d
Injection Date: 15-Oct-2018 03:19:34 Instrument ID: A9
Lims ID: MB 320-251297/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

28 N-methylperfluorooctanesulfonamidoacetic aci, CAS: 2355-31-9

Signal: 1

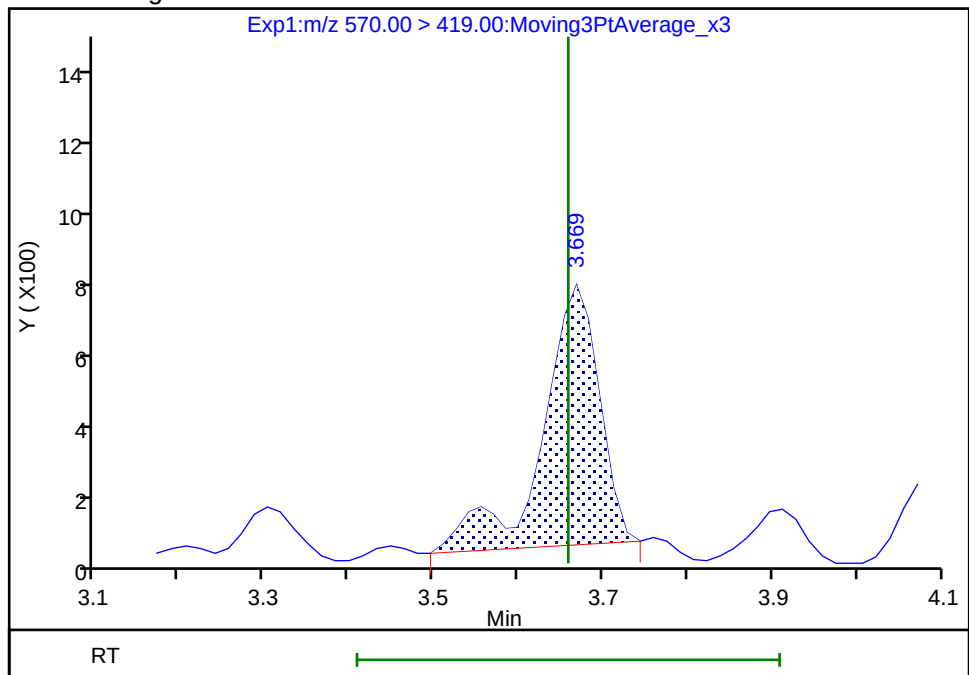
RT: 3.67
Area: 3993
Amount: 0.003610
Amount Units: ng/ml

Processing Integration Results



RT: 3.67
Area: 3311
Amount: 0.002993
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 18-Oct-2018 16:18:07
Audit Action: Manually Integrated

Audit Reason: Baseline
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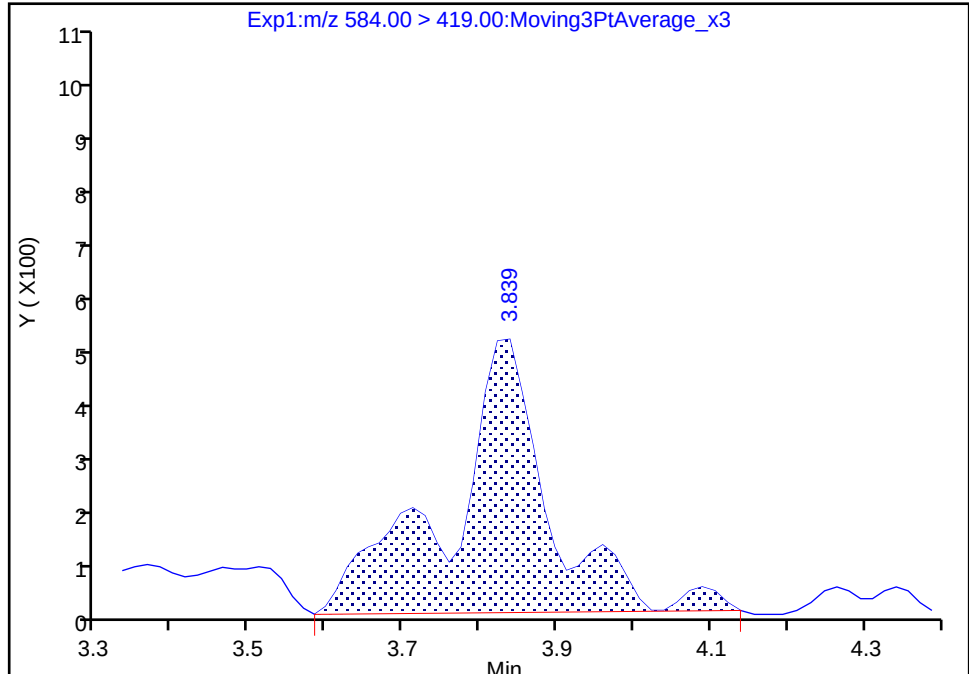
Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_021.d
Injection Date: 15-Oct-2018 03:19:34 Instrument ID: A9
Lims ID: MB 320-251297/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 12 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethylperfluorooctanesulfonamidoacetic acid, CAS: 2991-50-6

Signal: 1

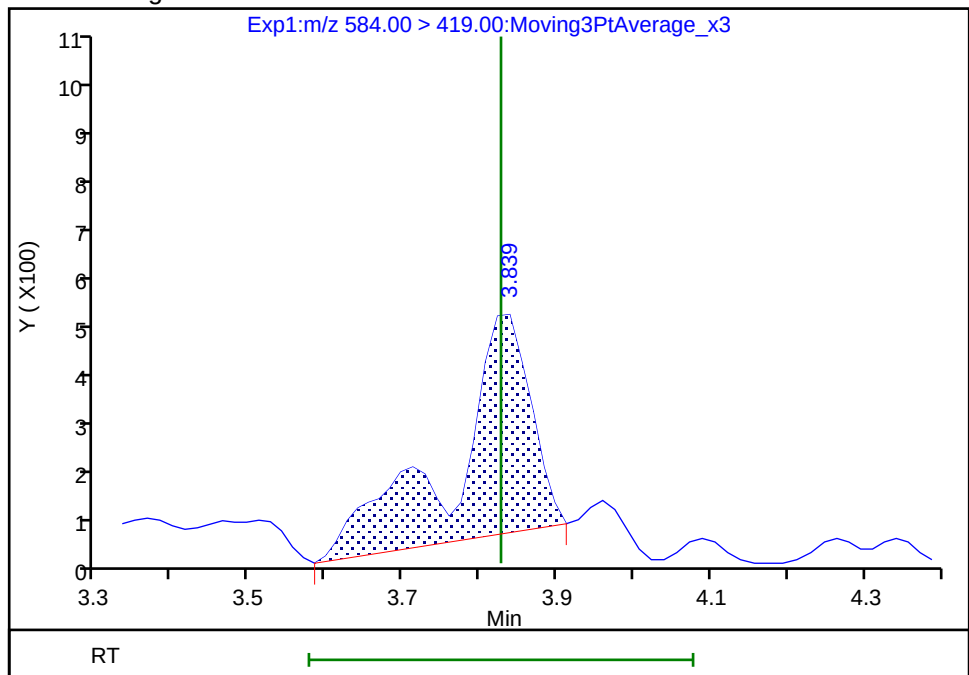
RT: 3.84
Area: 4419
Amount: 0.004778
Amount Units: ng/ml

Processing Integration Results



RT: 3.84
Area: 3046
Amount: 0.003294
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 18-Oct-2018 16:17:50
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>320-43696-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-251297/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_022.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/15/2018 03:27</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	38.1		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	38.9		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	39.7		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	39.4		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	38.0		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	40.2		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	42.6		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	39.0		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	38.7		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	36.9		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	38.4		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	31.8		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.0		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	41.1		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	33.7		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	35.8		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	40.6		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	35.1		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.3		20	1.9
27619-97-2	6:2 FTS	32.7		20	2.0
39108-34-4	8:2 FTS	34.1		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43696-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-251297/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_022.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/15/2018 03:27</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	101		25-150
STL01893	13C5 PFPeA	102		25-150
STL00993	13C2 PFHxA	98		25-150
STL01892	13C4 PFHpA	103		25-150
STL00990	13C4 PFOA	107		25-150
STL00995	13C5 PFNA	104		25-150
STL00996	13C2 PFDA	103		25-150
STL00997	13C2 PFUnA	106		25-150
STL00998	13C2 PFDoA	102		25-150
STL02116	13C2 PFTeDA	94		25-150
STL02337	13C3 PFBS	106		25-150
STL00994	18O2 PFHxS	101		25-150
STL00991	13C4 PFOS	105		25-150
STL01056	13C8 FOSA	105		25-150
STL02118	d3-NMeFOSAA	115		25-150
STL02117	d5-NEtFOSAA	104		25-150
STL02279	M2-6:2 FTS	127		25-150
STL02280	M2-8:2 FTS	121		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_022.d
 Lims ID: LCS 320-251297/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 15-Oct-2018 03:27:04 ALS Bottle#: 13 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-251297/2-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 16:36:10 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: XAWRK007

First Level Reviewer: mongkols

Date: 18-Oct-2018 16:18:48

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	1.511	1.511	0.0	0.546	6287610	2.52		101	23137	

2 Perfluorobutanoic acid

212.90 > 169.00	1.511	1.517	-0.006	1.000	2226282	0.9528		95.3	234	

4 Perfluoropentanoic acid

262.90 > 219.00	1.797	1.797	0.0	1.000	2254323	0.9717		97.2	255	

D 3 13C5 PFPeA

267.90 > 223.00	1.797	1.797	0.0	0.650	5734682	2.54		102	22004	

D 47 13C3 PFBS

301.90 > 83.00	1.830	1.839	-0.009	0.662	77194	2.46		106	543	

5 Perfluorobutanesulfonic acid

298.90 > 80.00	1.839	1.847	-0.008	1.005	2811750	0.7944		89.9	1113	

298.90 > 99.00	1.839	1.847	-0.008	1.005	992225		2.83(1.35-4.05)		856	

61 1H,1H,2H,2H-perfluorohexanesulfoni

327.00 > 307.00	2.058	2.058	0.0	1.124	752471	1.05		112	4860	

6 Perfluorohexanoic acid

313.00 > 269.00	2.089	2.088	0.001	1.000	2129375	0.99		99.3	505	

313.00 > 119.00	2.089	2.088	0.001	1.000	156955		13.57(6.96-20.87)		346	

D 7 13C2 PFHxA

315.00 > 270.00	2.089	2.089	0.0	0.755	6000225	2.46		98.5	23779	

70 Perfluoropentanesulfonic acid

349.00 > 80.00	2.109	2.119	-0.010	1.152	1418146	0.8863		94.5	3990	

349.00 > 99.00	2.109	2.119	-0.010	1.152	674245		2.10(1.15-3.45)		1806	

D 64 13C3 HFPO-DA

332.10 > 287.00	2.181	2.181	0.0	0.788	744161	2.95		118	3555	

67 Perfluoro(2-propoxypropanoic) acid

329.10 > 285.00	2.181	2.191	-0.010	1.000	468499	0.8301		83.0	430	

D 9 13C4 PFHpA

367.00 > 322.00	2.413	2.413	0.0	0.872	7496662	2.59		103	19218	

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	2.413	2.426	-0.013	1.000	3135558	0.9840		98.4	694	
363.00 > 169.00	2.413	2.426	-0.013	1.000	666330		4.71(2.17-6.52)		1351	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.439	0.0	1.000	1948185	0.8253		90.7	2198	
399.00 > 99.00	2.439	2.439	0.0	1.000	559718		3.48(1.90-5.70)		1126	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.439	0.0	0.882	4429781	2.39		101	13568	
76 DONA										
377.00 > 251.00	2.465	2.465	0.0	0.782	5197887	0.9669		103	17349	
377.00 > 85.00	2.465	2.465	0.0	0.782	2143811		2.42(1.13-3.39)		3089	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.750	2.750	0.0	0.994	896851	3.03		127	1441	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.756	-0.006	1.000	688949	0.8173		86.2	2661	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.766	0.0	1.000	7340124	2.67		107	12330	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.772	-0.006		7026314	2.50			11217	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.772	0.010	1.006	3045813	0.9495		94.9	209	
413.00 > 169.00	2.766	2.772	-0.006	1.000	1029911		2.96(1.36-4.08)		2894	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.788	-0.006	0.882	2178687	1.03		108	2884	
449.00 > 99.00	2.782	2.788	-0.006	0.882	468528		4.65(1.84-5.53)		1213	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.153	3.141	0.012	1.000	1813394	0.8426		90.8	659	
499.00 > 99.00	3.135	3.141	-0.006	0.994	446964		4.06(2.04-6.12)		1122	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.141	0.012	1.006	2663347	1.01		101	335	
463.00 > 169.00	3.153	3.141	0.012	1.006	468722		5.68(2.68-8.03)		1199	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.153	-0.018	1.133	6552073	2.61		104	10453	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.153	0.0	1.140	4745810	2.51		105	3889	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.356	-0.005	1.063	1984130	0.8313		89.2	1431	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.480	3.485	-0.005	1.000	576986	0.8536		89.1	2111	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.480	3.485	-0.005	1.104	1211851	0.9431		98.2	1796	
549.00 > 99.00	3.480	3.485	-0.005	1.104	192523		6.29(3.02-9.05)		1764	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.480	3.496	-0.016	1.258	107941	2.91		121	675	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.496	0.0	1.264	6776913	2.58		103	14319	
D 21 13C8 FOSA										
506.00 > 78.00	3.496	3.496	0.0	1.264	2612808	2.63		105	8667	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.501	-0.005	1.000	3276526	1.06		106	499	
513.00 > 169.00	3.496	3.501	-0.005	1.000	198843		16.48(7.12-21.35)		370	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.496	3.501	-0.005	1.000	3151006	1.02		102	6151	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.655	3.655	0.0	1.321	3106880	2.89		115	4903	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.659	-0.004	1.000	1084114	0.8763		87.6	436	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.811	-0.004	1.208	1549418	0.8943		92.8	1093	
599.00 > 99.00	3.807	3.811	-0.004	1.208	313819		4.94(2.14-6.43)		1062	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.823	0.0	1.382	5874594	2.65		106	13121	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.807	3.823	-0.016	1.376	2259668	2.59		104	3601	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.827	-0.004	1.000	2139352	0.9748		97.5	481	
563.00 > 169.00	3.823	3.827	-0.004	1.000	196365		10.89(5.24-15.72)		701	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.827	-0.004	1.004	847968	1.01		101	2009	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.976	3.980	-0.004	1.261	2466668	0.8889		94.4	5203	
D 36 13C2 PFDaA										
615.00 > 570.00	4.106	4.106	0.0	1.484	6837254	2.54		102	17864	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.106	4.110	-0.004	1.000	2639175	0.9686		96.9	652	
613.00 > 169.00	4.106	4.110	-0.004	1.000	261292		10.10(4.68-14.05)		392	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.110	0.012	1.184	363944	0.7969		82.7	492	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.342	4.346	-0.004	1.377	167846	0.8880		91.7	191	
699.00 > 99.00	4.342	4.346	-0.004	1.377	278137		0.60(0.28-0.83)		939	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.373	4.377	-0.004	1.065	2030244	0.9233		92.3	1242	
663.00 > 169.00	4.373	4.377	-0.004	1.065	307975		6.59(3.09-9.27)		565	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.609	4.609	0.0	1.666	4547429	2.36		94.3	9508	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.616	-0.007	1.000	277866	0.9592		95.9	833	
713.00 > 219.00	4.609	4.616	-0.007	1.000	213823		1.30(0.70-2.09)		787	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.024	5.024	0.0	1.816	4025899	2.28		91.3	6938	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.024	5.028	-0.004	1.000	1434853	1.02		102	489	
813.00 > 169.00	5.024	5.028	-0.004	1.000	274585		5.23(2.77-8.32)		645	

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	5.363	5.365	-0.002	1.068	985886	1.05		105	651	
913.00 > 169.00	5.363	5.365	-0.002	1.068	203667		4.84(2.55-7.64)		1115	

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_022.d

Injection Date: 15-Oct-2018 03:27:04

Instrument ID: A9

Lims ID: LCS 320-251297/2-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

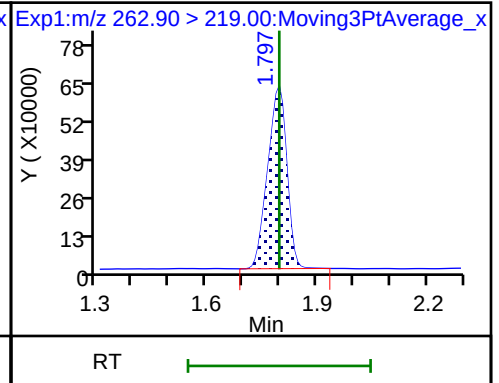
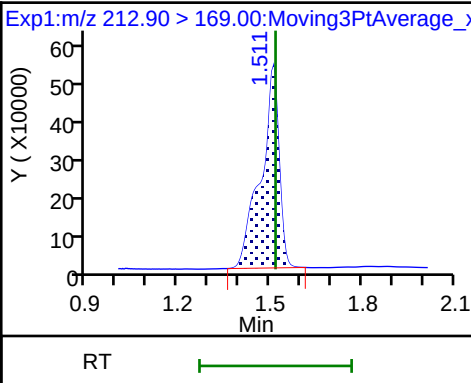
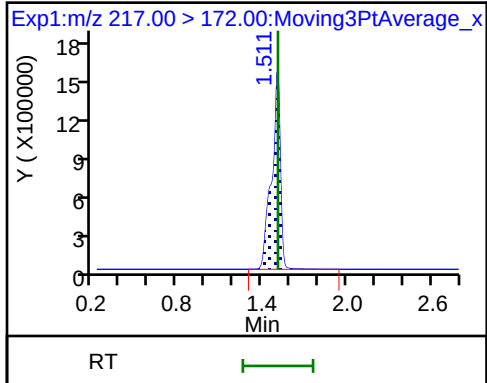
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Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

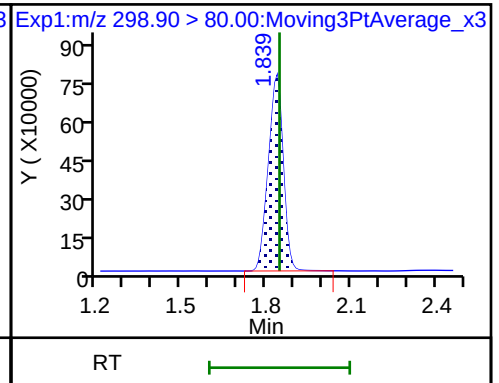
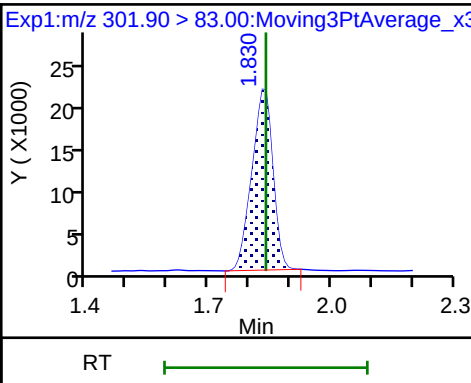
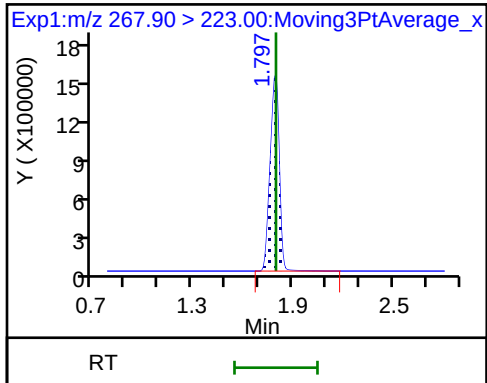
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

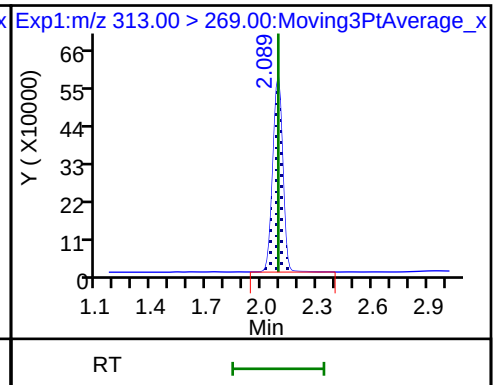
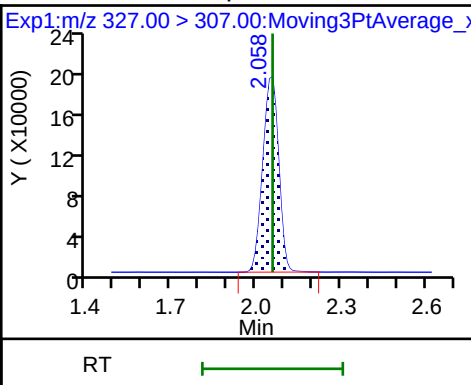
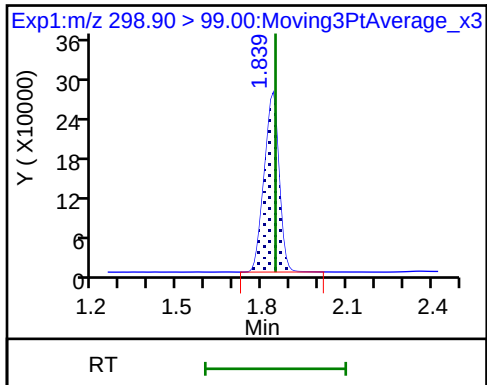
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfoni

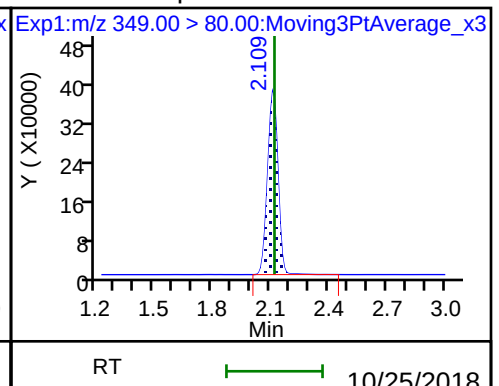
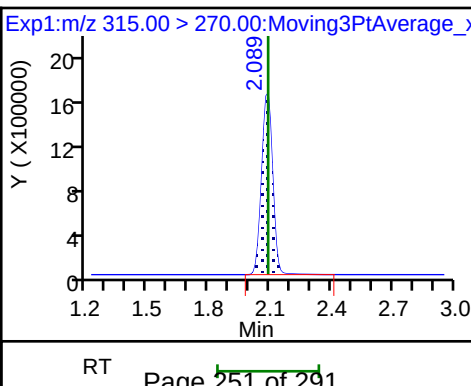
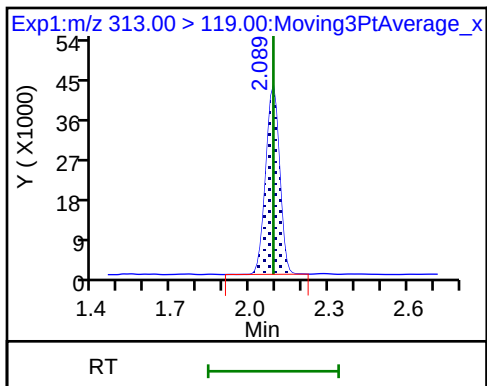
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid

D 7 13C2 PFHxA

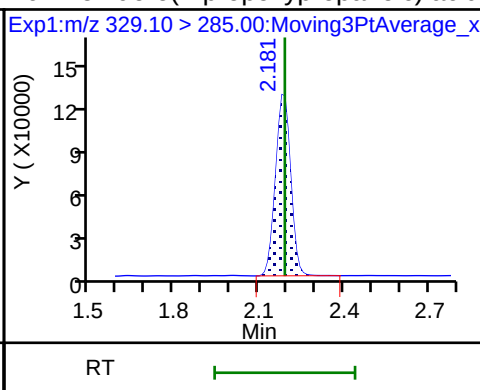
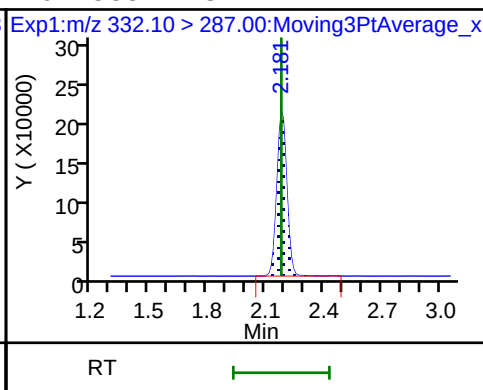
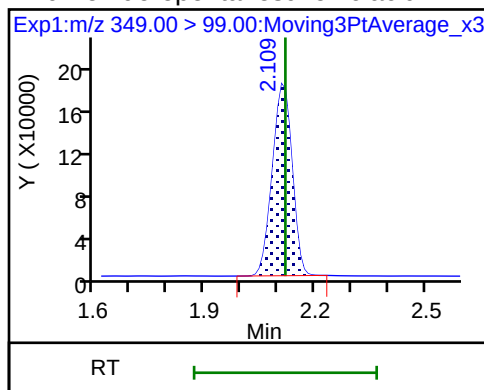
70 Perfluoropentanesulfonic acid



70 Perfluoropentanesulfonic acid

D 64 13C3 HFPO-DA

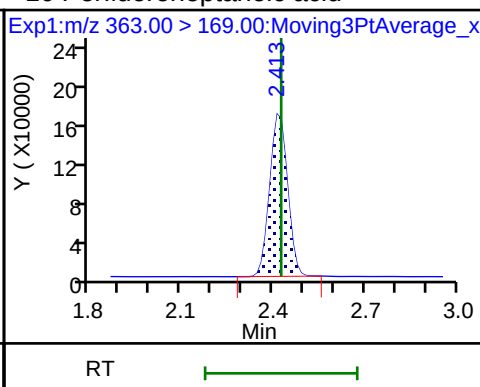
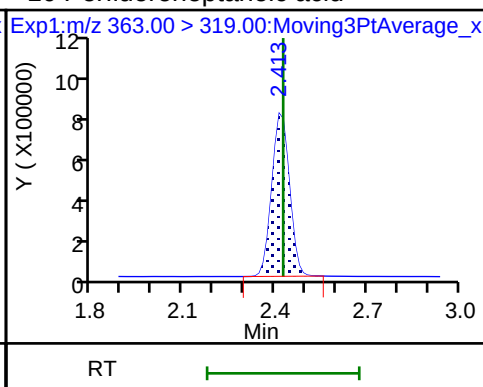
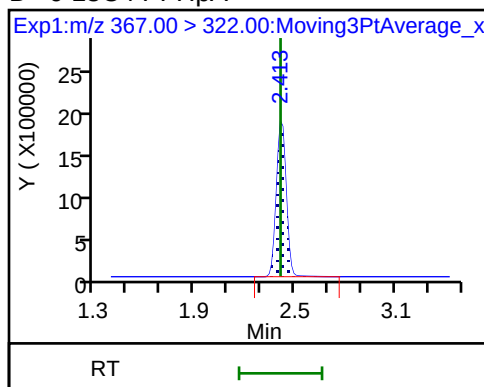
67 Perfluoro(2-propoxypropanoic) acid



D 9 13C4 PFHpA

10 Perfluoroheptanoic acid

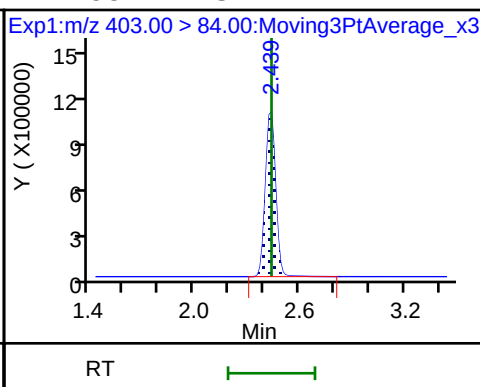
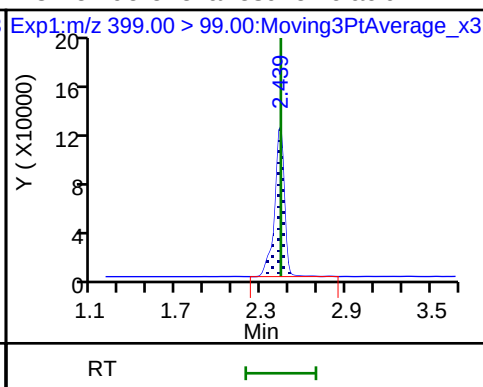
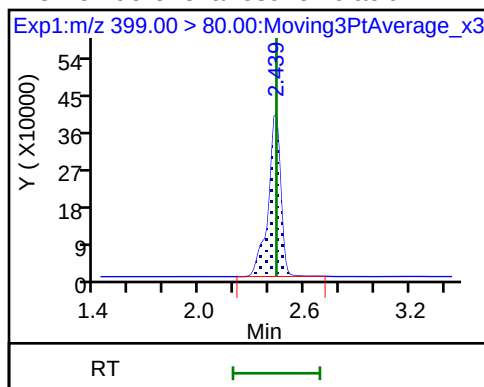
10 Perfluoroheptanoic acid



8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid

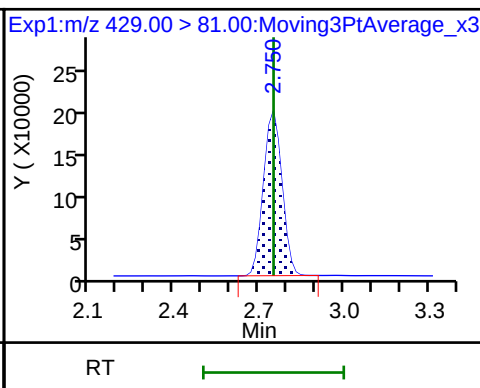
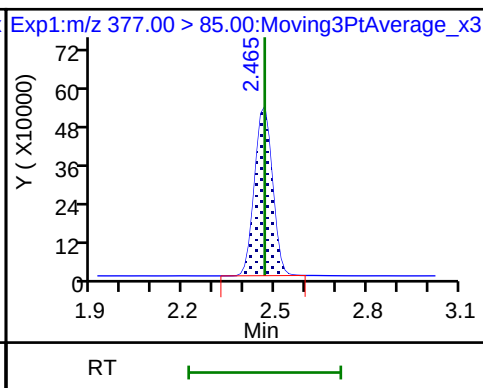
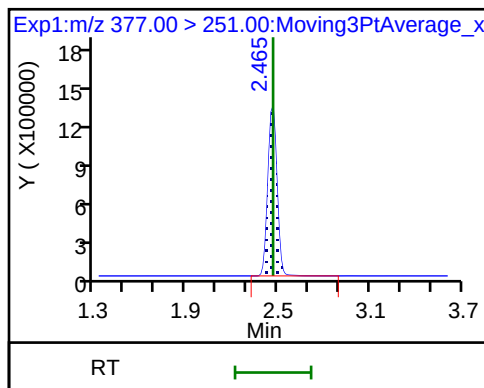
D 11 18O2 PFHxS



76 DONA

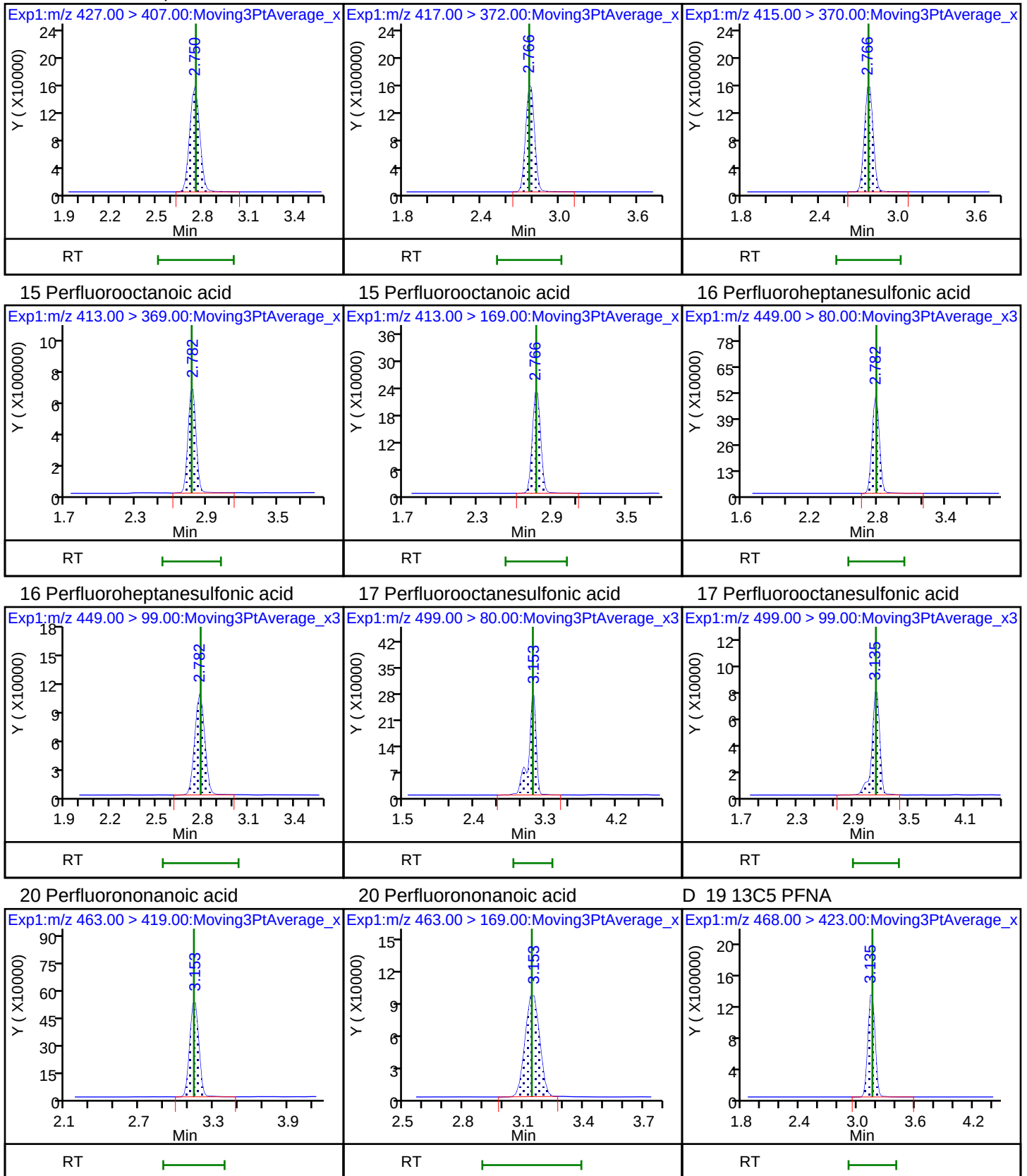
76 DONA

D 12 M2-6:2 FTS



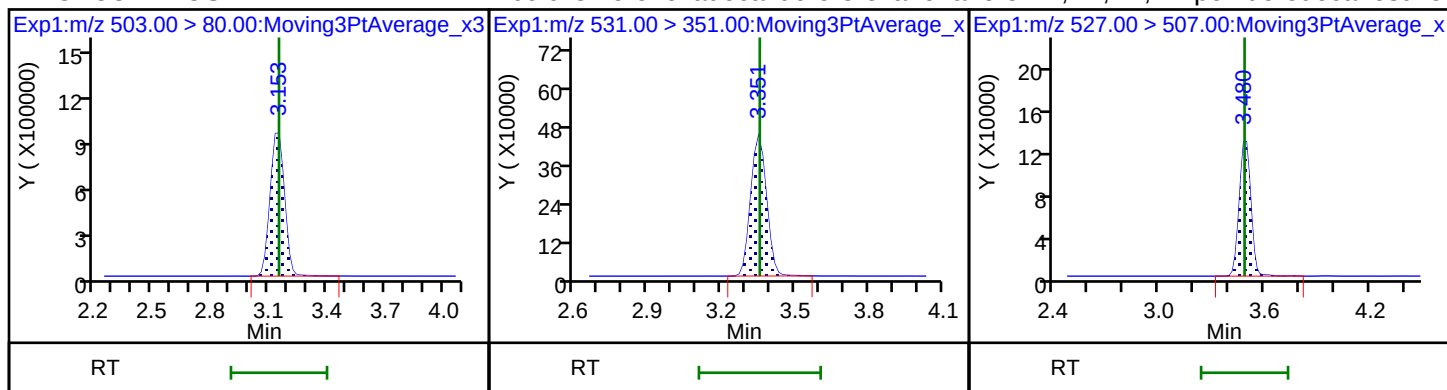
13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA

* 62 13C2 PFOA



D 18 13C4 PFOS

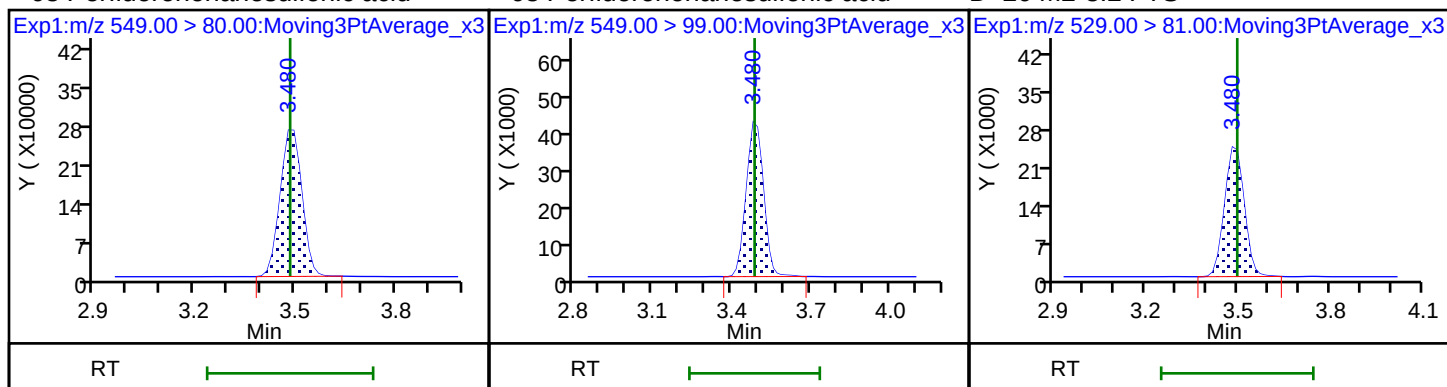
69 9-Chlorohexadecafluoro-3-oxanonan-25 1H,1H,2H,2H-perfluorodecanesulfoni



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

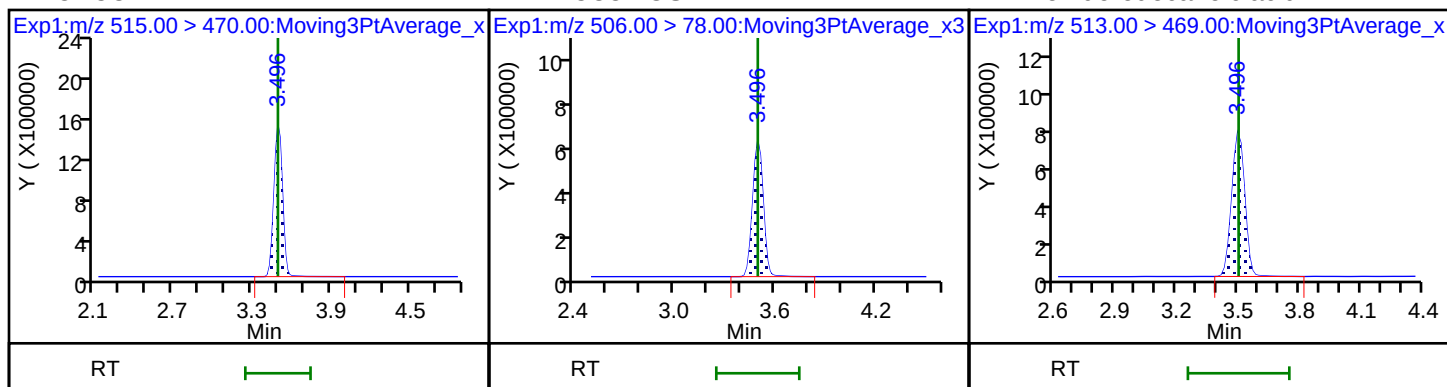
D 26 M2-8:2 FTS



D 23 13C2 PFDA

D 21 13C8 FOSA

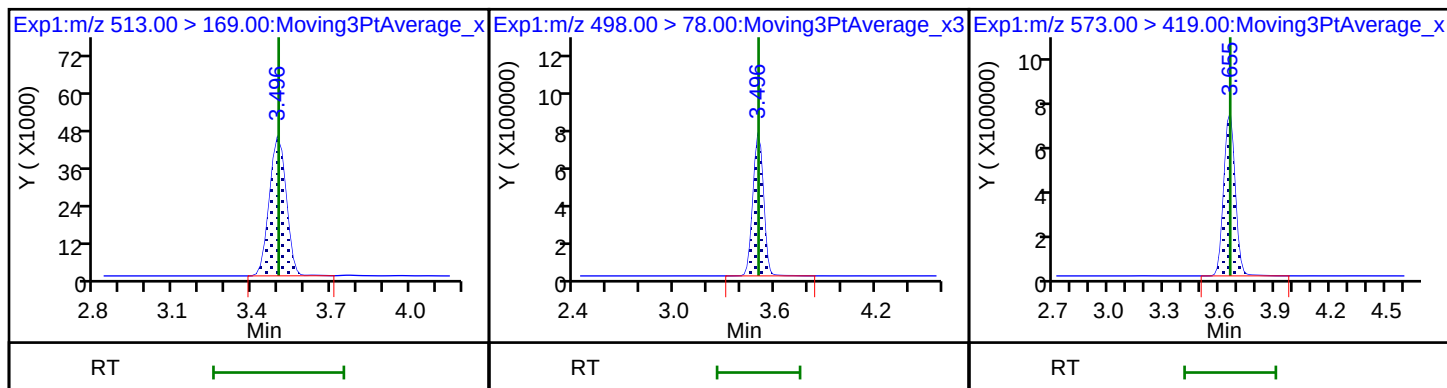
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

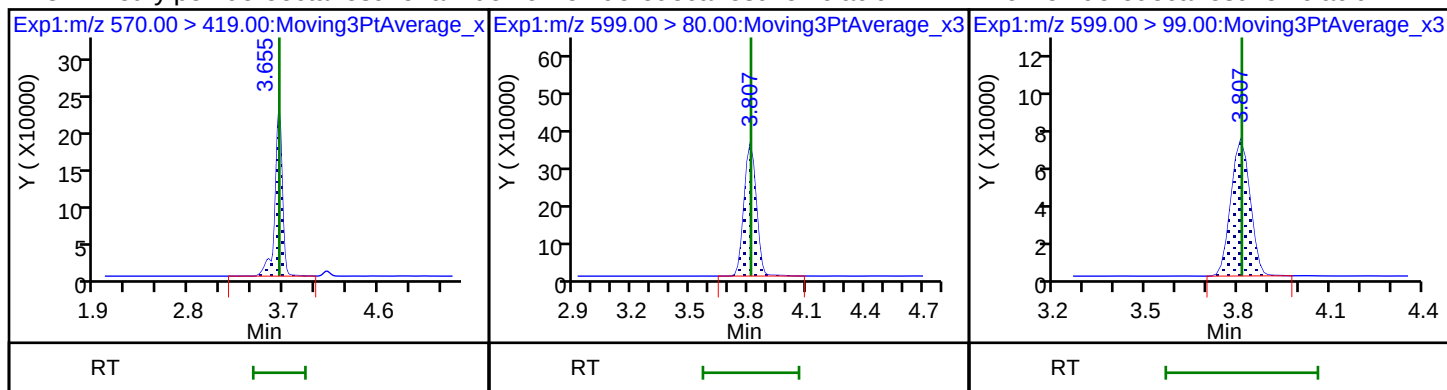
22 Perfluorooctanesulfonamide

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

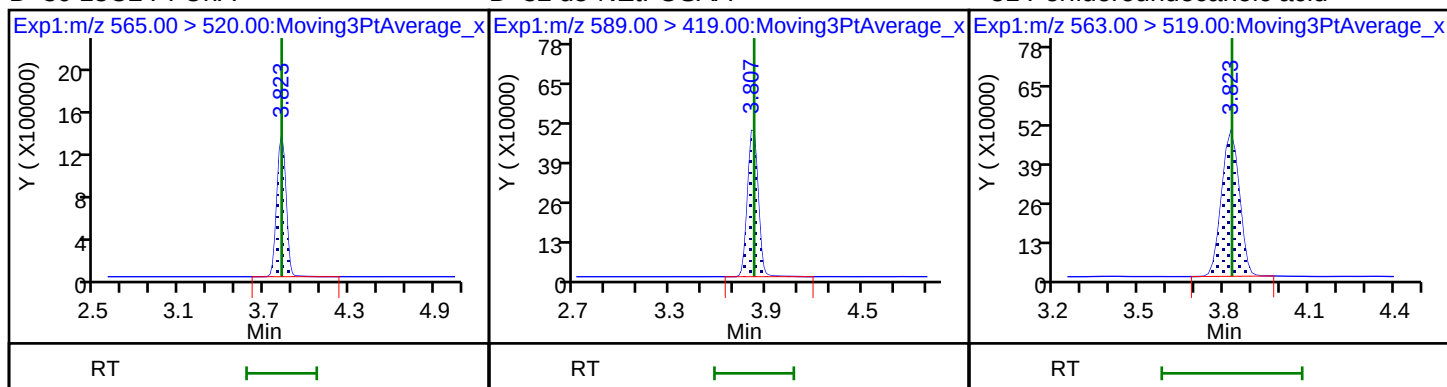
29 Perfluorodecanesulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

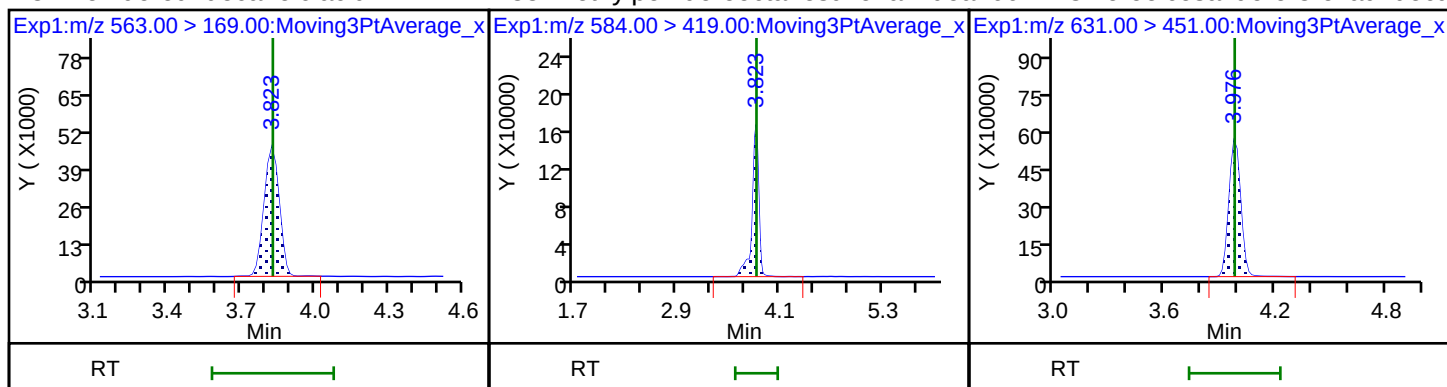
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

33 N-ethylperfluorooctanesulfonamidoa

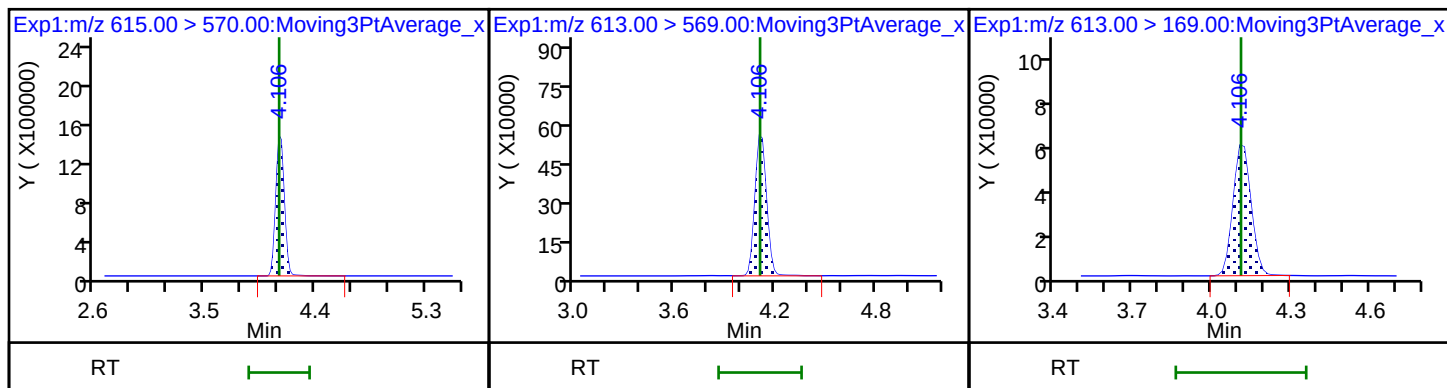
66 11-Chloroeicosafuoro-3-oxaundecan



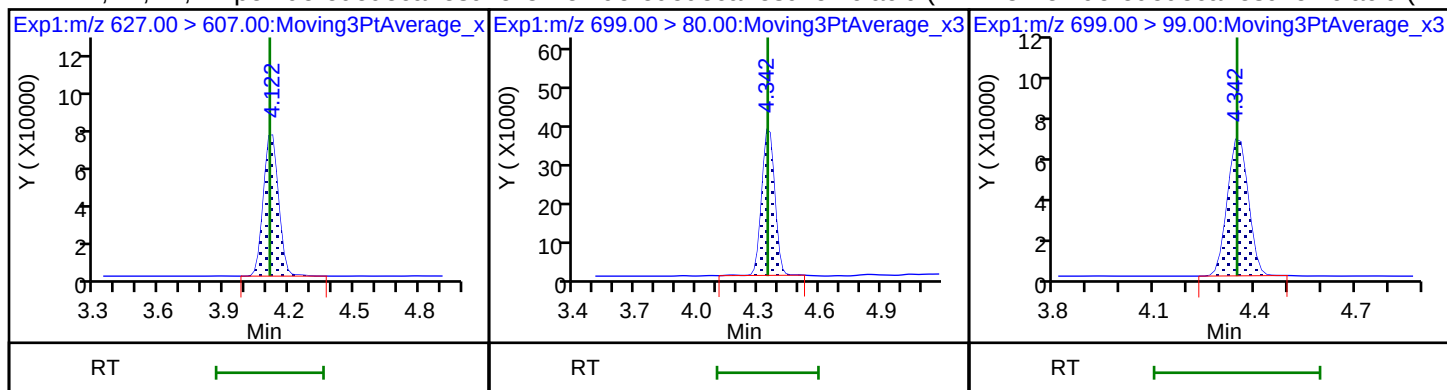
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



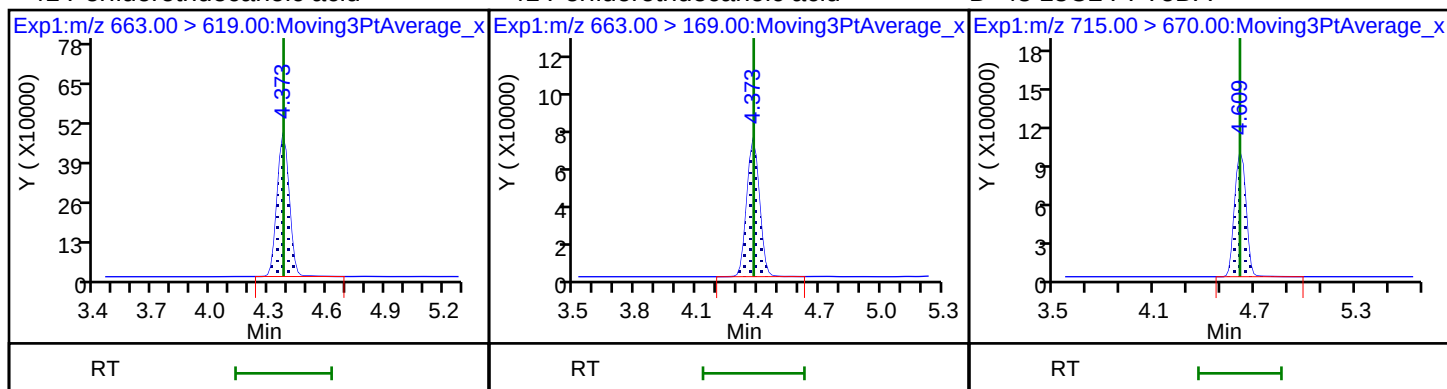
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

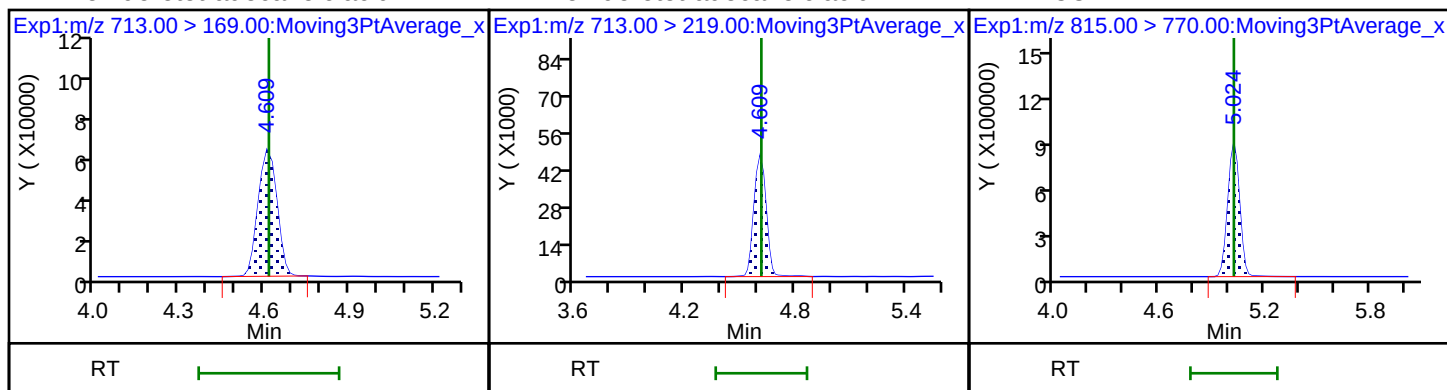
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

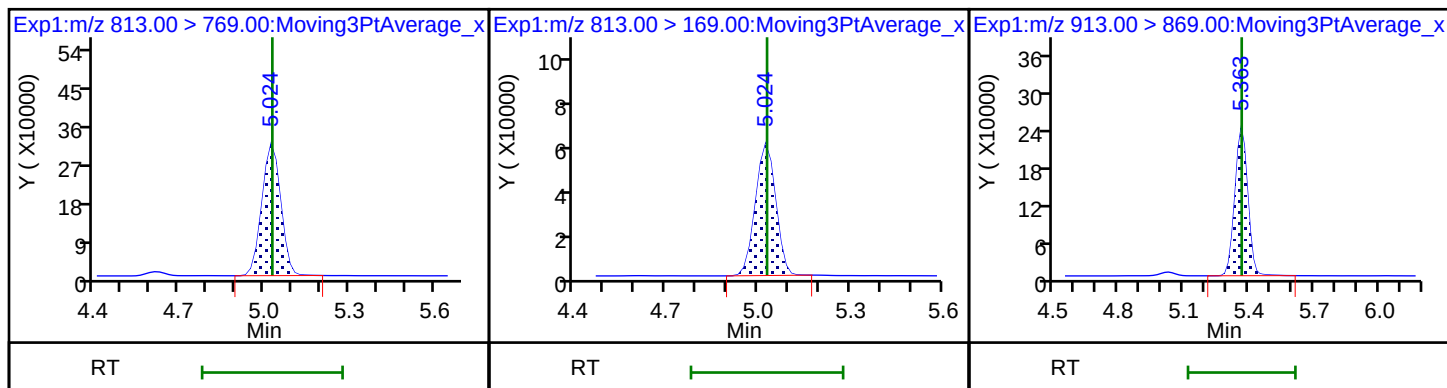
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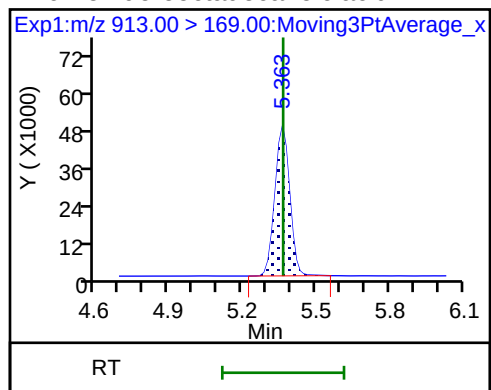
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43696-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-2R MS</u>	Lab Sample ID: <u>320-43696-1 MS</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_038.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/27/2018 11:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>285.5 (mL)</u>	Date Analyzed: <u>10/15/2018 05:27</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	40.9		1.8	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	40.5		1.8	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	37.4		1.8	0.51
375-85-9	Perfluoroheptanoic acid (PFHpA)	38.7		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	38.0		1.8	0.74
375-95-1	Perfluorononanoic acid (PFNA)	36.4		1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	36.7		1.8	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	37.3		1.8	0.96
307-55-1	Perfluorododecanoic acid (PFDoA)	36.8		1.8	0.48
72629-94-8	Perfluorotridecanoic acid (PFTriA)	33.5		1.8	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	40.0		1.8	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35.8		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	34.4		1.8	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	39.9		1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	34.5		1.8	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	26.4		1.8	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	44.4		1.8	0.31
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	39.1		18	2.7
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	36.6		18	1.7
27619-97-2	6:2 FTS	39.5		18	1.8
39108-34-4	8:2 FTS	38.9		18	1.8

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43696-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-2R MS</u>	Lab Sample ID: <u>320-43696-1 MS</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_038.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/27/2018 11:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>285.5 (mL)</u>	Date Analyzed: <u>10/15/2018 05:27</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	91		25-150
STL01893	13C5 PFPeA	85		25-150
STL00993	13C2 PFHxA	88		25-150
STL01892	13C4 PFHpA	93		25-150
STL00990	13C4 PFOA	93		25-150
STL00995	13C5 PFNA	95		25-150
STL00996	13C2 PFDA	82		25-150
STL00997	13C2 PFUnA	70		25-150
STL00998	13C2 PFDoA	61		25-150
STL02116	13C2 PFTeDA	57		25-150
STL02337	13C3 PFBS	90		25-150
STL00994	18O2 PFHxS	89		25-150
STL00991	13C4 PFOS	88		25-150
STL01056	13C8 FOSA	79		25-150
STL02118	d3-NMeFOSAA	70		25-150
STL02117	d5-NEtFOSAA	71		25-150
STL02279	M2-6:2 FTS	125		25-150
STL02280	M2-8:2 FTS	79		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_038.d
 Lims ID: 320-43696-A-1-B MS
 Client ID: MW-2R
 Sample Type: MS
 Inject. Date: 15-Oct-2018 05:27:16 ALS Bottle#: 28 Worklist Smp#: 19
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 320-43696-a-1-b ms
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 16:43:08 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: XAWRK007

First Level Reviewer: mongkols

Date: 18-Oct-2018 16:44:46

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	1.504	1.511	-0.007	1.000	1785107	1.17		117	245	
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.511	-0.007	0.544	4116899	2.27		90.9	22816	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.797	-0.008	1.000	1617516	1.15		115	94.4	
D 3 13C5 PFPeA										
267.90 > 223.00	1.789	1.797	-0.008	0.647	3461695	2.12		84.7	9232	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.839	-0.009	1.000	2231350	1.02		116	328	
298.90 > 99.00	1.830	1.839	-0.009	1.000	758281		2.94(1.35-4.05)		288	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.839	-0.009	0.662	47619	2.09		90.1	262	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.048	0.0	1.119	569472	1.28		137	5357	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.925	2.048	-0.123	0.696	2749	0.0140		0.0	1.0	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.089	-0.001	1.005	1475481	1.07		107	128	
313.00 > 119.00	2.078	2.089	-0.011	1.000	114332		12.91(6.96-20.87)		205	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.089	-0.011	0.751	3866508	2.19		87.6	15275	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.109	0.0	1.152	1104946	1.12		119	590	
349.00 > 99.00	2.109	2.109	0.0	1.152	523323		2.11(1.15-3.45)		279	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.181	0.0	1.000	338412	0.9723		97.2	164	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.181	2.181	0.0	0.788	458925	2.51		101	1580	

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	2.412	2.413	-0.001	1.000	2292388	1.10		110	266	
363.00 > 169.00	2.412	2.413	-0.001	1.000	503644		4.55(2.17-6.52)		1038	
D 9 13C4 PFHpA										
367.00 > 322.00	2.412	2.413	-0.001	0.872	4883124	2.33		93.0	21441	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.426	0.0	1.000	1489719	0.9829		108	781	
399.00 > 99.00	2.426	2.426	0.0	1.000	434283		3.43(1.90-5.70)		307	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.439	-0.013	0.877	2844398	2.12		89.5	9252	
76 DONA										
377.00 > 251.00	2.452	2.452	0.0	0.782	3823111	1.17		124	7865	
377.00 > 85.00	2.452	2.452	0.0	0.782	1685469		2.27(1.13-3.39)		1098	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.750	0.0	1.000	673779	1.13		119	3423	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.750	2.750	0.0	0.994	635146	2.96		125	1182	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.766	0.0	1.000	2192083	1.09		108	155	
413.00 > 169.00	2.766	2.766	0.0	1.000	776513		2.82(1.36-4.08)		1863	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.766	0.0		5089912	2.50			12737	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.766	0.0	1.000	4621270	2.32		92.9	23609	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.766	-0.016		5765	0.002294		0.0	41.3	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.782	0.0	0.888	1469109	1.14		120	2051	
449.00 > 99.00	2.782	2.782	0.0	0.888	338141		4.34(1.84-5.53)		994	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.135	0.0	1.000	1819968	1.04		104	208	
463.00 > 169.00	3.135	3.135	0.0	1.000	342632		5.31(2.68-8.03)		897	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.135	3.135	0.0	1.000	1289712	0.9855		106	435	
499.00 > 99.00	3.135	3.135	0.0	1.000	302886		4.26(2.04-6.12)		900	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.153	-0.018	1.133	4338014	2.38		95.4	11151	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.153	-0.018	1.133	2885568	2.10		88.0	2106	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.350	3.351	-0.001	1.069	1220308	0.8409		90.2	876	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.480	3.480	0.0	1.000	352519	1.11		116	1558	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.480	3.480	0.0	1.110	659932	0.8447		88.0	1536	
549.00 > 99.00	3.480	3.480	0.0	1.110	131963		5.00(3.02-9.05)		454	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.496	3.496	0.0	1.000	2137666	1.27		127	3641	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.496	3.496	0.0	1.000	1866930	1.05		105	269	
513.00 > 169.00	3.496	3.496	0.0	1.000	116863		15.98(7.12-21.35)		278	
D 23 13C2 PFDA										
515.00 > 470.00	3.496	3.496	0.0	1.264	3917330	2.06		82.2	7588	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.480	3.496	-0.016	1.258	50694	1.89		78.7	240	
D 21 13C8 FOSA										
506.00 > 78.00	3.496	3.496	0.0	1.264	1418701	1.97		78.8	4650	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.655	3.655	0.0	1.004	603692	1.12		112	452	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.641	3.655	-0.014	1.316	1359190	1.74		69.7	2589	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.807	0.0	1.215	794925	0.7546		78.3	675	
599.00 > 99.00	3.807	3.807	0.0	1.215	156576		5.08(2.14-6.43)		511	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.823	3.823	0.0	1.004	436823	1.04		104	934	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.823	3.823	0.0	1.000	1108405	1.06		106	270	
563.00 > 169.00	3.823	3.823	0.0	1.000	94481		11.73(5.24-15.72)		388	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.807	3.823	-0.016	1.376	1123947	1.78		71.1	1600	
D 30 13C2 PFUnA										
565.00 > 520.00	3.823	3.823	0.0	1.382	2789164	1.74		69.6	5904	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.975	3.975	0.0	1.268	1111313	0.6587		69.9	3450	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.106	4.106	0.0	1.000	1241422	1.05		105	315	
613.00 > 169.00	4.106	4.106	0.0	1.000	144071		8.62(4.68-14.05)		240	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.106	4.106	0.0	1.180	164469	0.7668		79.5	179	
D 36 13C2 PFDoA										
615.00 > 570.00	4.106	4.106	0.0	1.484	2962440	1.52		60.8	7732	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.342	4.342	0.0	1.385	73422	0.6389		66.0	93.1	
699.00 > 99.00	4.342	4.342	0.0	1.385	130673		0.56(0.28-0.83)		261	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.373	4.373	0.0	1.065	910508	0.9557		95.6	466	
663.00 > 169.00	4.373	4.373	0.0	1.065	160259		5.68(3.09-9.27)		275	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	143605	1.14		114	423	
713.00 > 219.00	4.609	4.609	0.0	1.000	97156		1.48(0.70-2.09)		383	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.609	4.609	0.0	1.666	1974517	1.41		56.5	4112	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.024	5.024	0.0	1.000	759792	1.29		129	430	
813.00 > 169.00	5.024	5.024	0.0	1.000	130071		5.84(2.77-8.32)		347	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 13C2 PFHxDA										
815.00 > 770.00	5.024	5.024	0.0	1.816	1695632	1.33		53.1	3272	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.363	5.363	0.0	1.068	445259	1.12		112	449	
913.00 > 169.00	5.349	5.363	-0.014	1.065	93435		4.77(2.55-7.64)		497	

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_038.d

Injection Date: 15-Oct-2018 05:27:16

Instrument ID: A9

Lims ID: 320-43696-A-1-B MS

Client ID: MW-2R

Operator ID: A9\Administrator

ALS Bottle#: 28

Worklist Smp#: 19

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

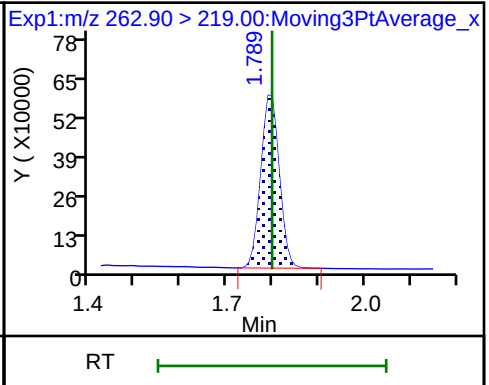
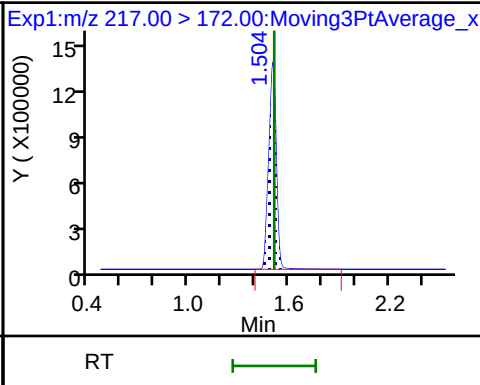
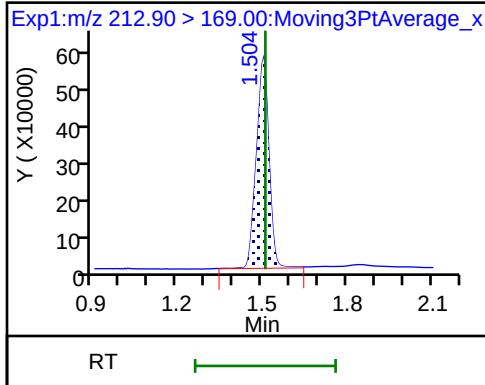
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

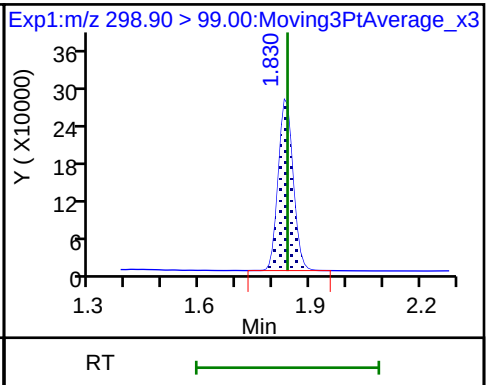
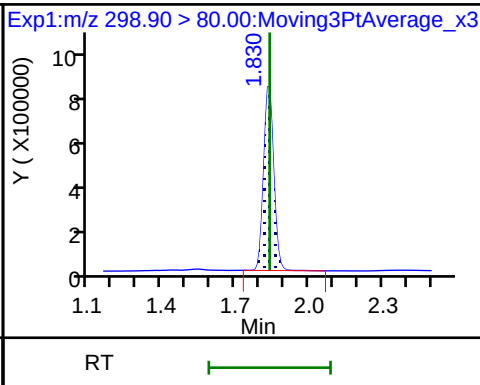
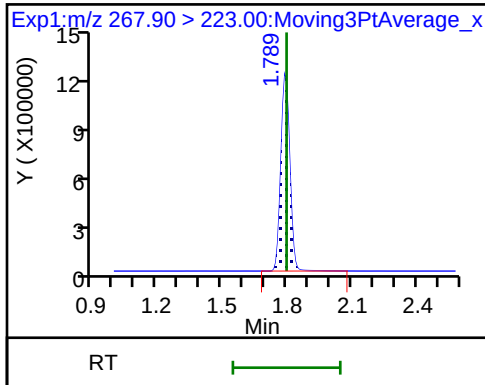
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

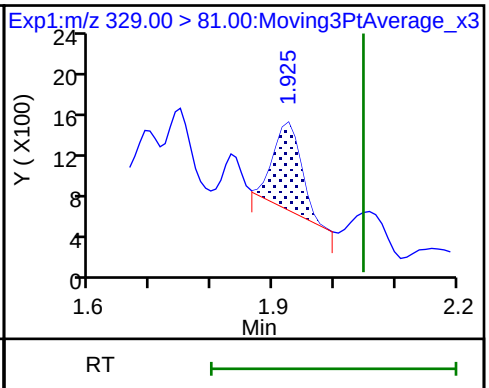
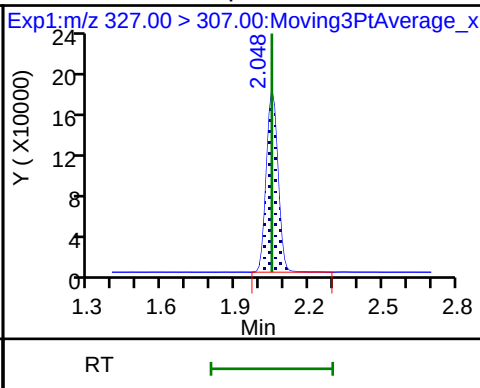
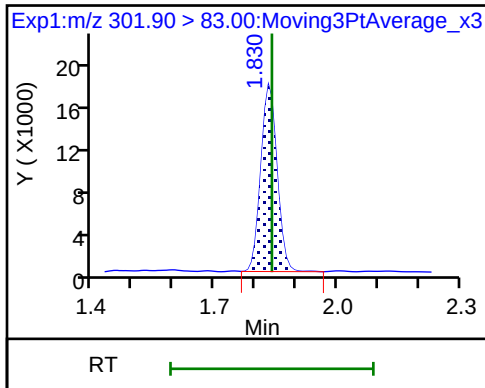
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

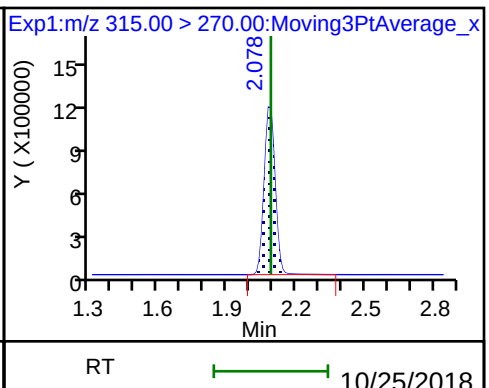
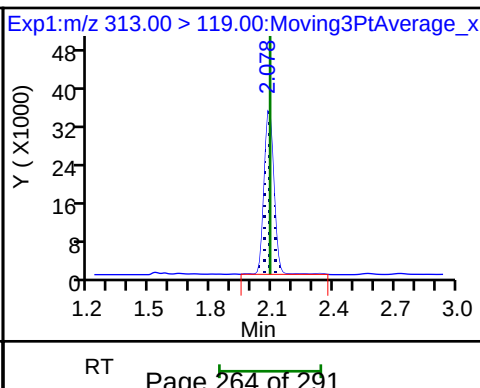
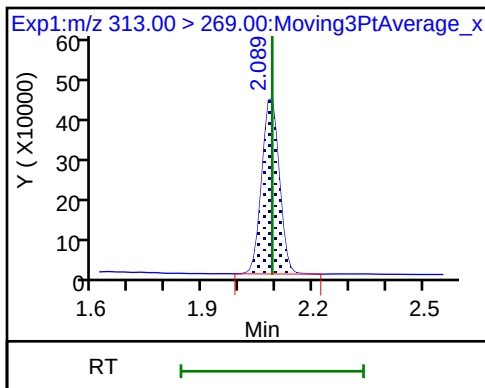
D 60 M2-4:2 FTS

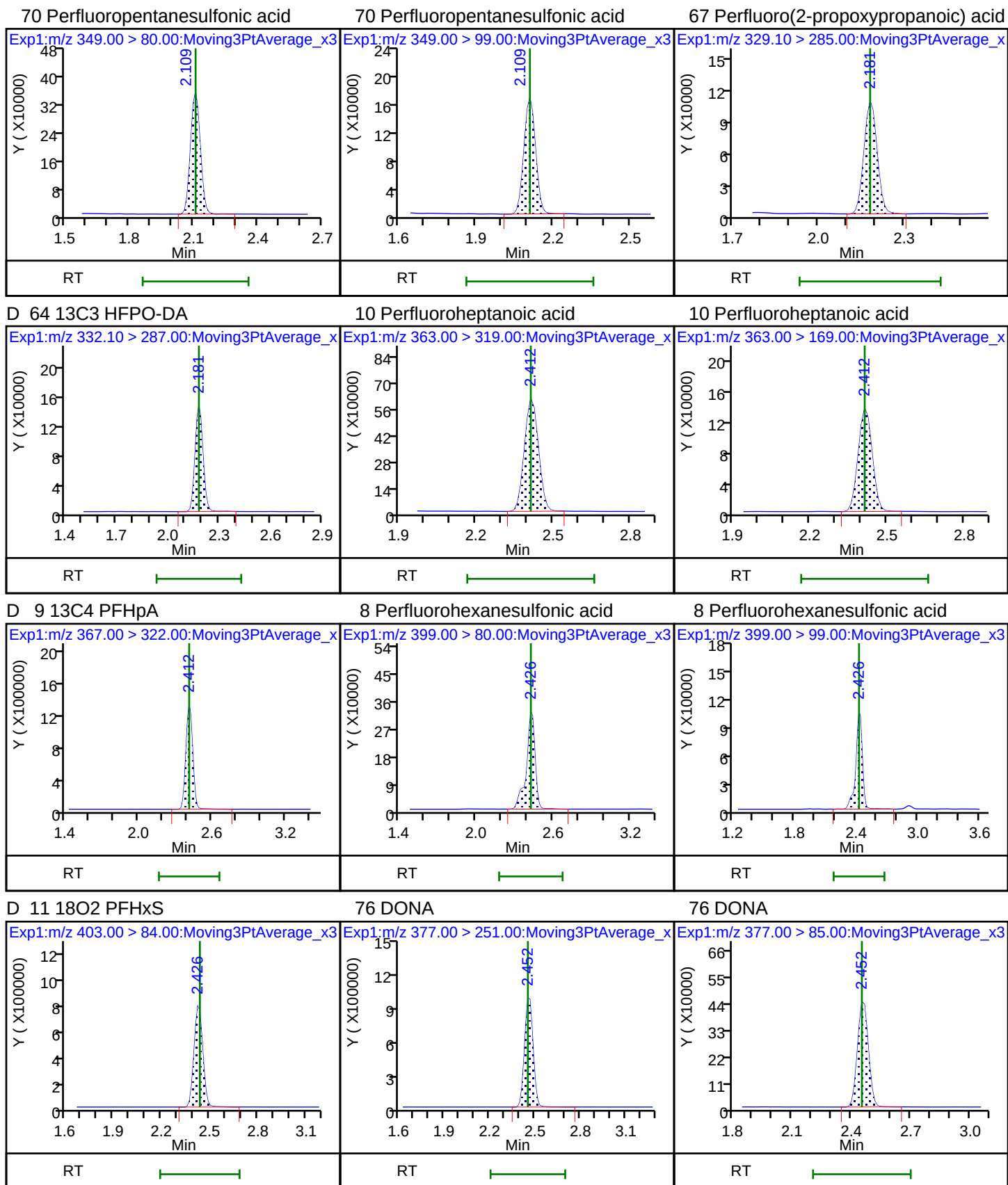


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

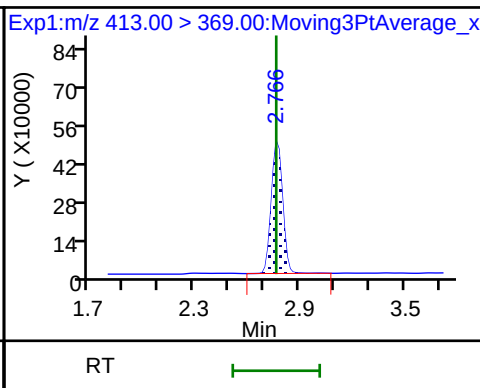
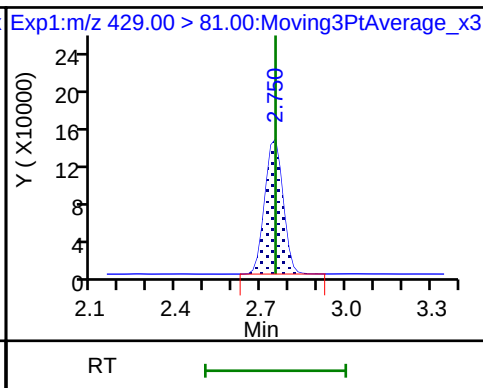
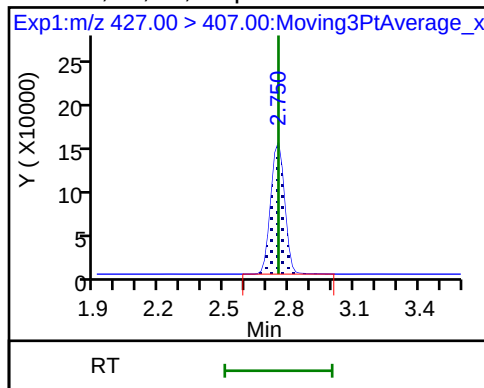
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2 FTS

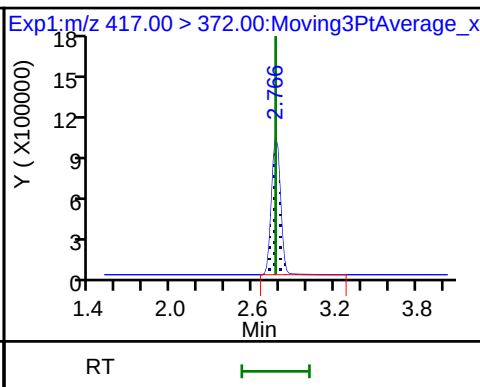
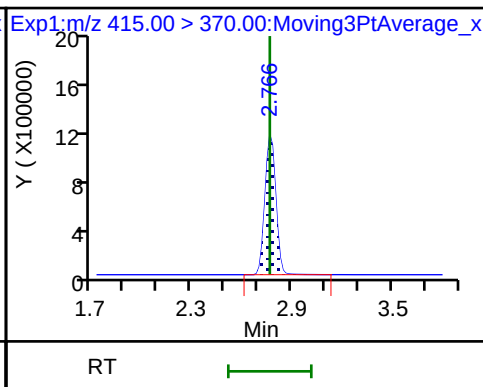
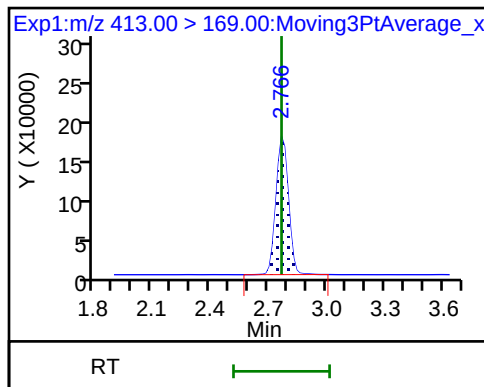
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

* 62 13C2 PFOA

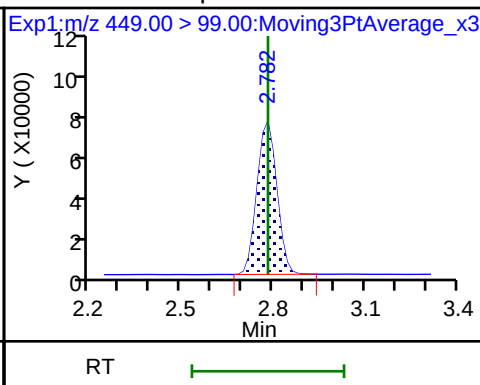
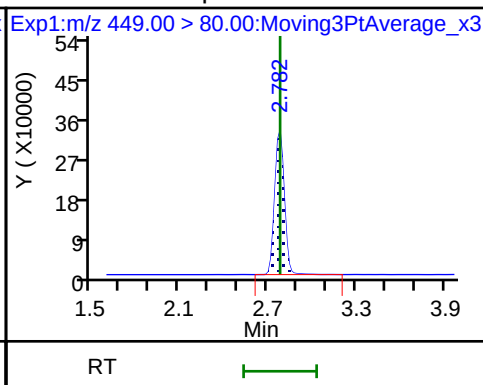
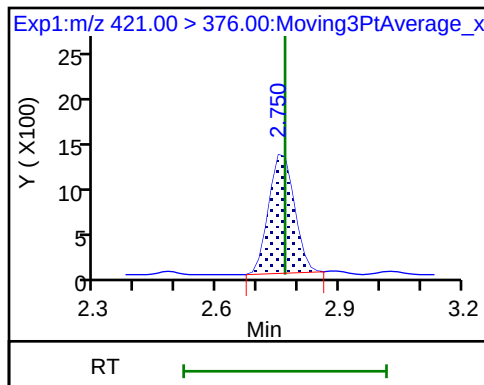
D 14 13C4 PFOA



D 73 13C8 PFOA

16 Perfluoroheptanesulfonic acid

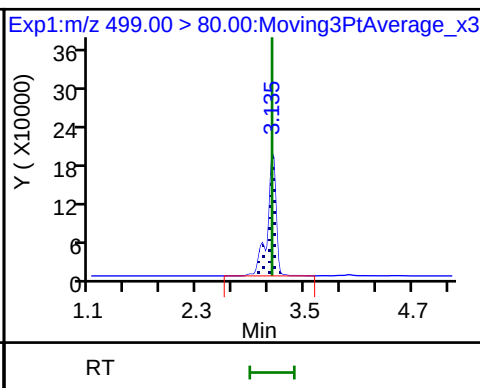
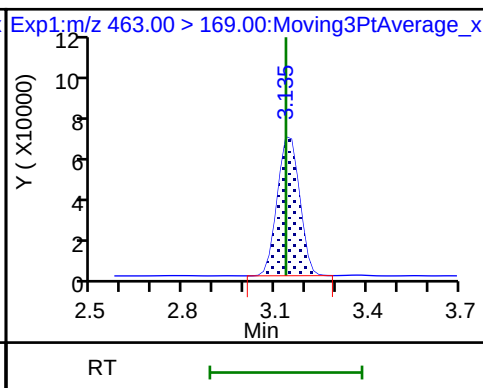
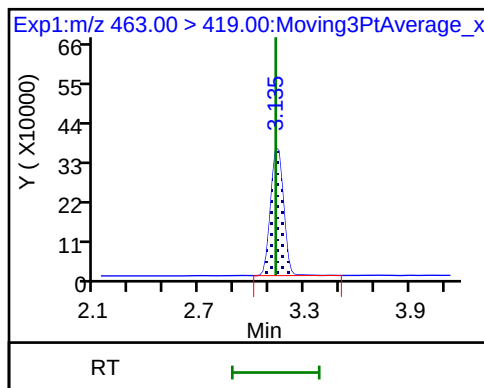
16 Perfluoroheptanesulfonic acid

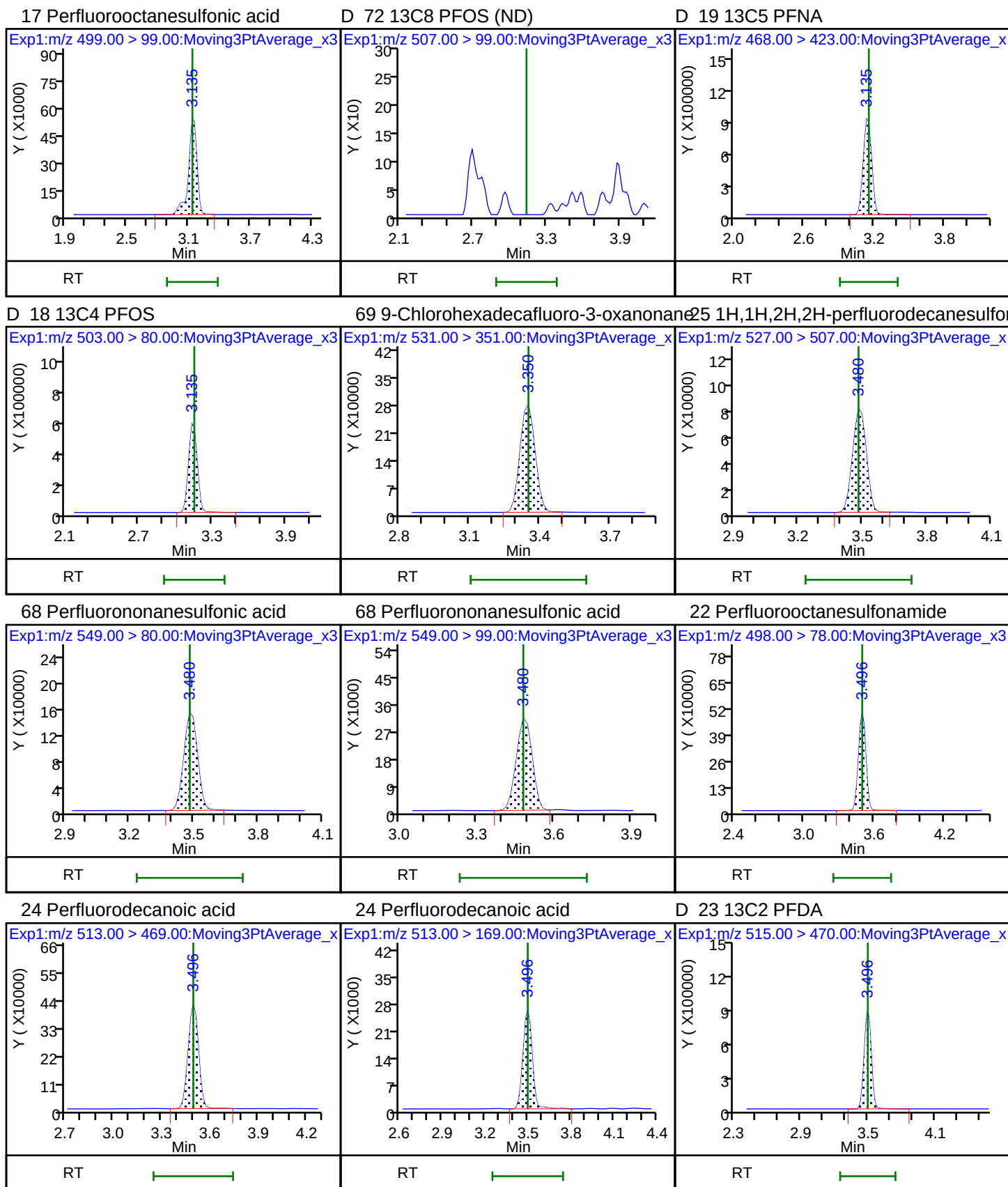


20 Perfluorononanoic acid

20 Perfluorononanoic acid

17 Perfluorooctanesulfonic acid

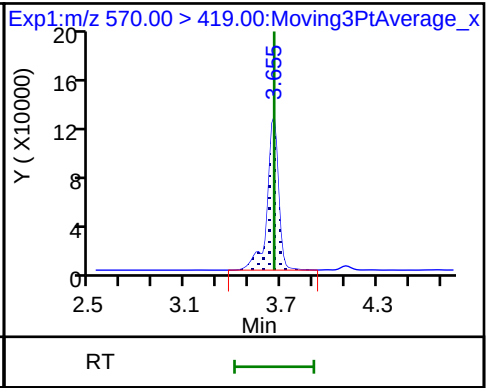
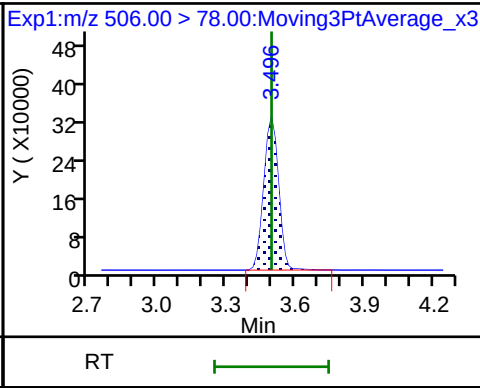
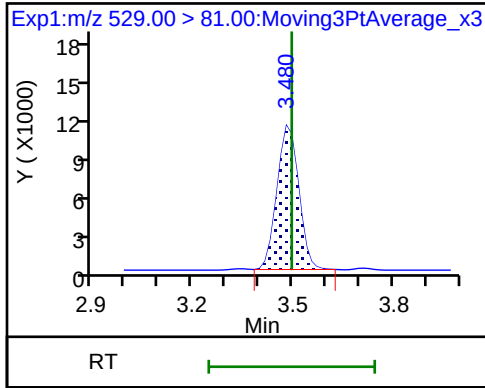




D 26 M2-8:2 FTS

D 21 13C8 FOSA

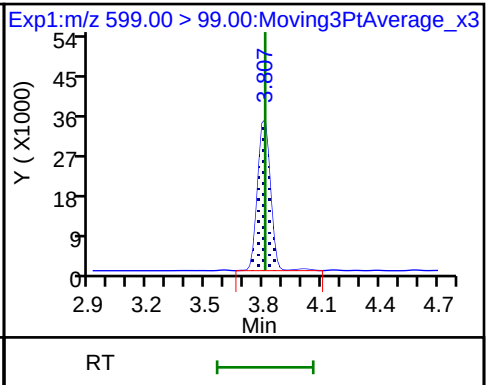
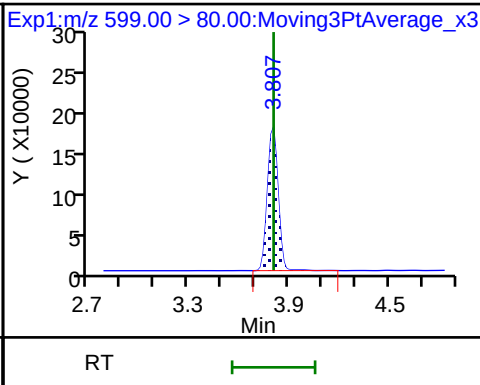
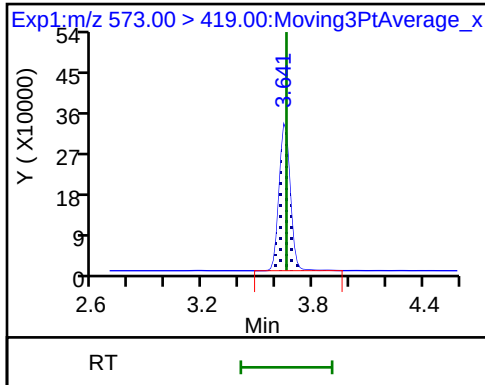
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

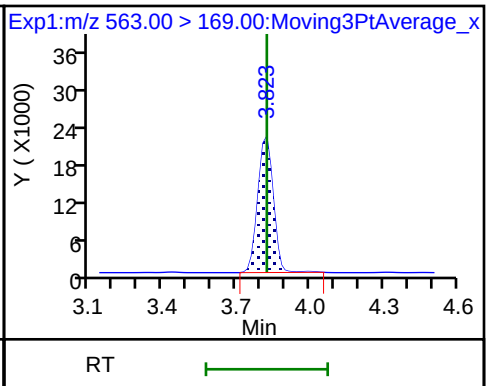
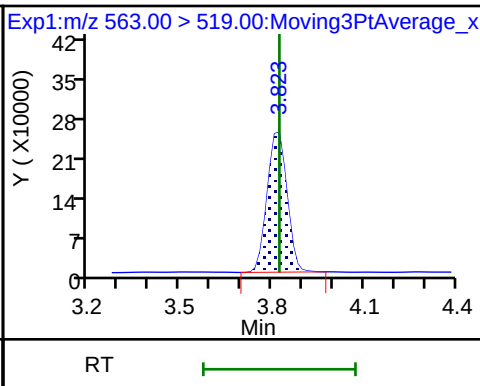
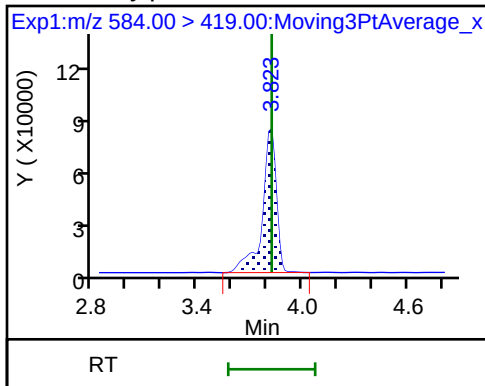
29 Perfluorodecanesulfonic acid



33 N-ethylperfluorooctanesulfonamidoa

31 Perfluoroundecanoic acid

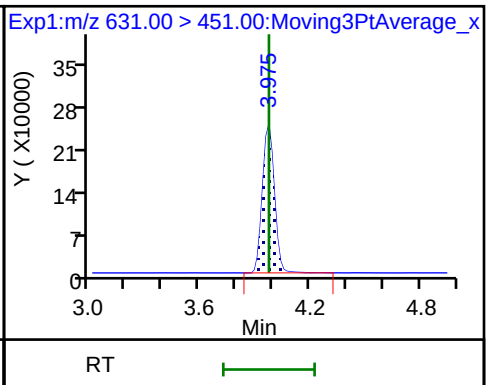
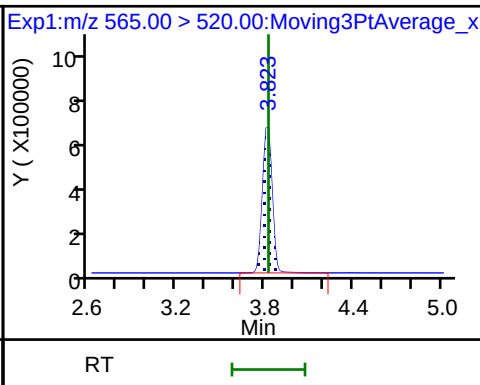
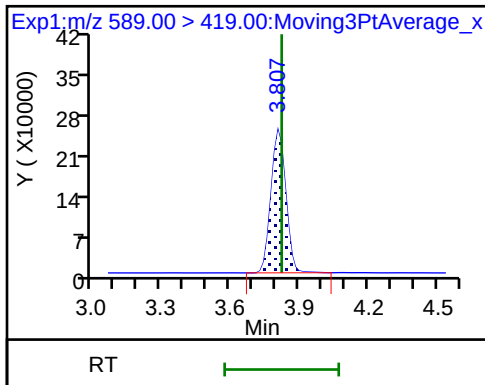
31 Perfluoroundecanoic acid

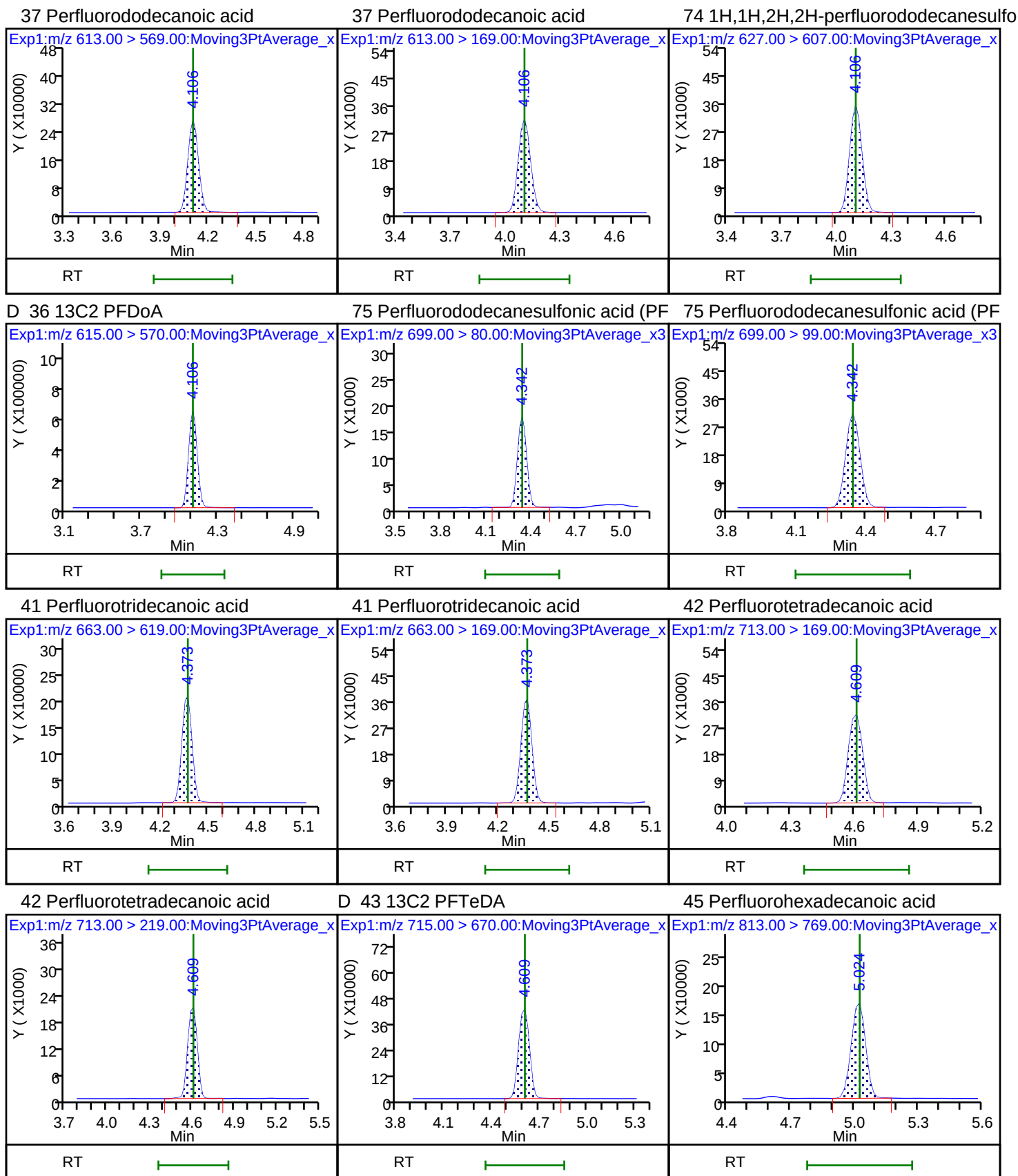


D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

66 11-Chloroeicosafluoro-3-oxaundecan



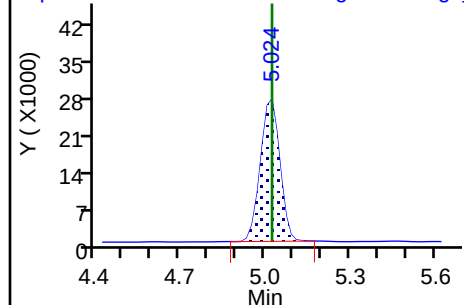


45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

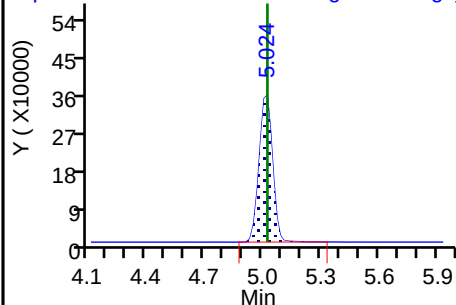
46 Perfluorooctadecanoic acid

Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



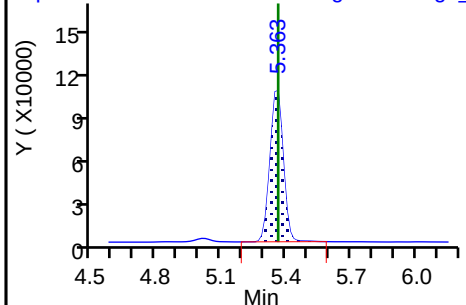
RT

Exp1:m/z 815.00 > 770.00:Moving3PtAverage_x



RT

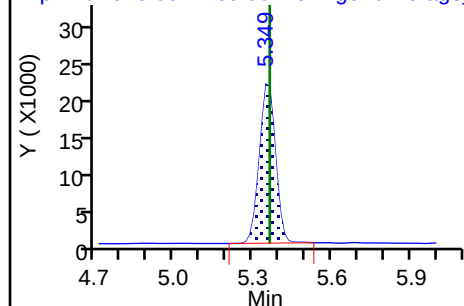
Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



RT

46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



RT

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43696-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-2R MSD</u>	Lab Sample ID: <u>320-43696-1 MSD</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_039.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/27/2018 11:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>279.4 (mL)</u>	Date Analyzed: <u>10/15/2018 05:34</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	36.0		1.8	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	32.7		1.8	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	32.8		1.8	0.52
375-85-9	Perfluoroheptanoic acid (PFHpA)	32.9		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	32.6		1.8	0.76
375-95-1	Perfluorononanoic acid (PFNA)	32.7		1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	32.4		1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	32.1		1.8	0.98
307-55-1	Perfluorododecanoic acid (PFDoA)	31.3		1.8	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	30.3		1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	37.5		1.8	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	29.1		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	29.2		1.8	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	33.1		1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	28.4		1.8	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	21.3		1.8	0.29
754-91-6	Perfluorooctanesulfonamide (FOSA)	36.0		1.8	0.31
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	35.8		18	2.8
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	35.3		18	1.7
27619-97-2	6:2 FTS	32.2		18	1.8
39108-34-4	8:2 FTS	30.1		18	1.8

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>320-43696-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-2R MSD</u>	Lab Sample ID: <u>320-43696-1 MSD</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.14LLB_039.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/27/2018 11:20</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>10/11/2018 07:31</u>
Sample wt/vol: <u>279.4 (mL)</u>	Date Analyzed: <u>10/15/2018 05:34</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>252302</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	86		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	91		25-150
STL01892	13C4 PFHpA	96		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	86		25-150
STL00997	13C2 PFUnA	75		25-150
STL00998	13C2 PFDoA	67		25-150
STL02116	13C2 PFTeDA	56		25-150
STL02337	13C3 PFBS	96		25-150
STL00994	18O2 PFHxS	95		25-150
STL00991	13C4 PFOS	95		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	74		25-150
STL02117	d5-NEtFOSAA	69		25-150
STL02279	M2-6:2 FTS	120		25-150
STL02280	M2-8:2 FTS	90		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_039.d
 Lims ID: 320-43696-A-1-C MSD
 Client ID: MW-2R
 Sample Type: MSD
 Inject. Date: 15-Oct-2018 05:34:49 ALS Bottle#: 29 Worklist Smp#: 20
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 320-43696-a-1-c msd
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 18-Oct-2018 16:43:08 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: XAWRK007

First Level Reviewer: mongkols

Date: 18-Oct-2018 16:44:06

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	1.504	1.511	-0.007	1.000	1995014	1.01		101	194	
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.511	-0.007	0.544	5340317	2.15		86.1	16872	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.797	1.797	0.0	1.005	1882716	0.9129		91.3	73.5	
D 3 13C5 PFPeA										
267.90 > 223.00	1.788	1.797	-0.009	0.647	5097731	2.28		91.0	10336	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.839	-0.009	1.000	2603689	0.8138		92.1	232	
298.90 > 99.00	1.830	1.839	-0.009	1.000	860432		3.03(1.35-4.05)		212	
D 47 13C3 PFBS										
301.90 > 83.00	1.830	1.839	-0.009	0.662	69774	2.24		96.4	269	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.047	2.048	-0.001	1.119	745861	1.15		123	6600	
D 60 M2-4:2 FTS										
329.00 > 81.00	1.925	2.048	-0.123	0.696	3531	0.0131		0.0	0.9	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.089	-0.011	1.000	1806653	0.9153		91.5	115	
313.00 > 119.00	2.078	2.089	-0.011	1.000	140585		12.85(6.96-20.87)		205	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.089	-0.011	0.751	5522802	2.28		91.3	15144	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.109	0.0	1.152	1282965	0.8871		94.6	396	
349.00 > 99.00	2.109	2.109	0.0	1.152	647810		1.98(1.15-3.45)		253	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.180	2.181	-0.001	1.000	414776	0.7380		73.8	145	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.180	2.181	-0.001	0.788	741084	2.96		119	1709	

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	2.412	2.413	-0.001	1.000	2687439	0.9185		91.8	237	
363.00 > 169.00	2.412	2.413	-0.001	1.000	609954		4.41(2.17-6.52)		1299	
D 9 13C4 PFHpA										
367.00 > 322.00	2.412	2.413	-0.001	0.872	6883374	2.39		95.7	17823	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.425	2.426	-0.001	1.000	1808417	0.8169		89.8	864	
399.00 > 99.00	2.425	2.426	-0.001	1.000	506397		3.57(1.90-5.70)		535	
D 11 18O2 PFHxS										
403.00 > 84.00	2.425	2.439	-0.014	0.877	4154475	2.26		95.4	13514	
76 DONA										
377.00 > 251.00	2.451	2.452	-0.001	0.782	4567669	0.9487		101	9876	
377.00 > 85.00	2.451	2.452	-0.001	0.782	1977105		2.31(1.13-3.39)		1115	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.750	-0.016	1.000	709375	0.8989		94.8	3208	
D 12 M2-6:2 FTS										
429.00 > 81.00	2.734	2.750	-0.016	0.988	839678	2.85		120	1342	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.766	0.0	1.000	2660268	0.9119		91.1	183	
413.00 > 169.00	2.766	2.766	0.0	1.000	887563		3.00(1.36-4.08)		2214	
* 62 13C2 PFOA										
415.00 > 370.00	2.766	2.766	0.0		6973557	2.50			16887	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.766	0.0	1.000	6675352	2.45		98.0	21852	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.766	-0.016		9540	0.003796		0.0	49.3	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.782	0.0	0.888	1759727	0.9259		97.3	1849	
449.00 > 99.00	2.766	2.782	-0.016	0.882	429296		4.10(1.84-5.53)		1221	
20 Perfluorononanoic acid										
463.00 > 419.00	3.134	3.135	-0.001	1.000	2261134	0.9131		91.3	271	
463.00 > 169.00	3.134	3.135	-0.001	1.000	410795		5.50(2.68-8.03)		1223	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.134	3.135	-0.001	1.000	1527742	0.7926		85.4	481	
499.00 > 99.00	3.134	3.135	-0.001	1.000	357600		4.27(2.04-6.12)		772	
D 19 13C5 PFNA										
468.00 > 423.00	3.134	3.153	-0.019	1.133	6128596	2.46		98.4	10728	
D 18 13C4 PFOS										
503.00 > 80.00	3.134	3.153	-0.019	1.133	4250187	2.26		94.6	2784	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.350	3.351	-0.001	1.069	1482263	0.6935		74.4	1115	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.480	3.480	0.0	1.000	418408	0.8405		87.7	2952	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.480	3.480	0.0	1.110	906071	0.7874		82.0	1724	
549.00 > 99.00	3.480	3.480	0.0	1.110	135628		6.68(3.02-9.05)		762	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.495	3.496	-0.001	1.000	2686702	1.01		101	4816	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
24 Perfluorodecanoic acid										
513.00 > 469.00	3.495	3.496	-0.001	1.000	2306316	0.9040		90.4	325	
513.00 > 169.00	3.495	3.496	-0.001	1.000	157235		14.67(7.12-21.35)		347	
D 23 13C2 PFDA										
515.00 > 470.00	3.495	3.496	-0.001	1.264	5615599	2.15		86.1	6309	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.480	3.496	-0.016	1.258	79495	2.16		90.1	439	
D 21 13C8 FOSA										
506.00 > 78.00	3.495	3.496	-0.001	1.264	2248898	2.28		91.2	5132	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	3.641	3.655	-0.014	1.000	790235	1.00		100.0	404	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.641	3.655	-0.014	1.316	1985294	1.86		74.3	2933	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	3.807	3.807	0.0	1.215	925307	0.5963		61.9	688	
599.00 > 99.00	3.807	3.807	0.0	1.215	192407		4.81(2.14-6.43)		619	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	3.807	3.823	-0.016	1.000	546889	0.9854		98.5	1055	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.822	3.823	-0.001	1.000	1378589	0.8955		89.6	279	
563.00 > 169.00	3.807	3.823	-0.016	0.996	125452		10.99(5.24-15.72)		481	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.807	3.823	-0.016	1.376	1491051	1.72		68.8	3305	
D 30 13C2 PFUnA										
565.00 > 520.00	3.822	3.823	-0.001	1.382	4120458	1.88		75.0	8484	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.975	3.975	0.0	1.268	1353579	0.5447		57.8	3547	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.105	4.106	-0.001	1.000	1549448	0.8734		87.3	357	
613.00 > 169.00	4.105	4.106	-0.001	1.000	166307		9.32(4.68-14.05)		258	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.105	4.106	-0.001	1.180	205664	0.6115		63.4	285	
D 36 13C2 PFDoA										
615.00 > 570.00	4.105	4.106	-0.001	1.484	4451675	1.67		66.7	12739	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.341	4.342	-0.001	1.385	98405	0.5813		60.1	133	
699.00 > 99.00	4.341	4.342	-0.001	1.385	162257		0.61(0.28-0.83)		459	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.372	4.373	-0.001	1.065	1210889	0.8458		84.6	669	
663.00 > 169.00	4.372	4.373	-0.001	1.065	200180		6.05(3.09-9.27)		284	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.608	4.609	-0.001	1.000	178886	1.05		105	703	
713.00 > 219.00	4.608	4.609	-0.001	1.000	111356		1.61(0.70-2.09)		323	
D 43 13C2 PFTeDA										
715.00 > 670.00	4.608	4.609	-0.001	1.666	2679402	1.40		56.0	7866	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.023	5.024	-0.001	1.000	1001301	1.07		107	439	
813.00 > 169.00	5.023	5.024	-0.001	1.000	182975		5.47(2.77-8.32)		494	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 13C2 PFHxDA										
815.00 > 770.00	5.023	5.024	-0.001	1.816	2677024	1.53		61.2	4582	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.361	5.363	-0.002	1.067	659119	1.05		105	534	
913.00 > 169.00	5.361	5.363	-0.002	1.067	136632		4.82(2.55-7.64)		697	

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181015-65916.b\2018.10.14LLB_039.d

Injection Date: 15-Oct-2018 05:34:49

Instrument ID: A9

Lims ID: 320-43696-A-1-C MSD

Client ID: MW-2R

Operator ID: A9\Administrator

ALS Bottle#: 29

Worklist Smp#: 20

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

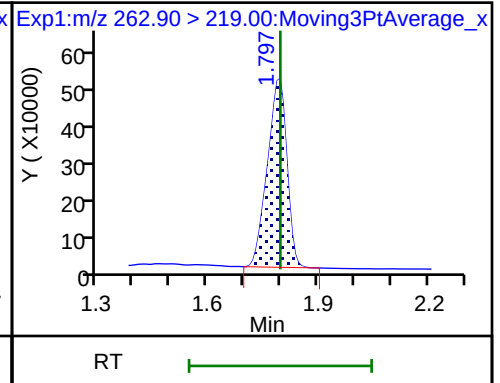
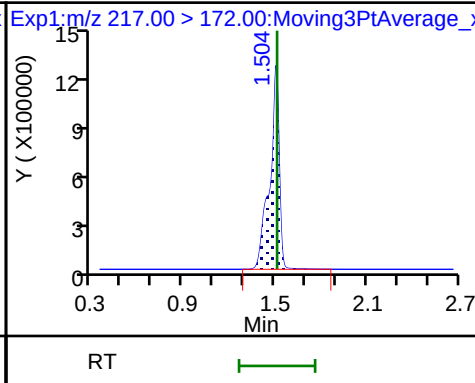
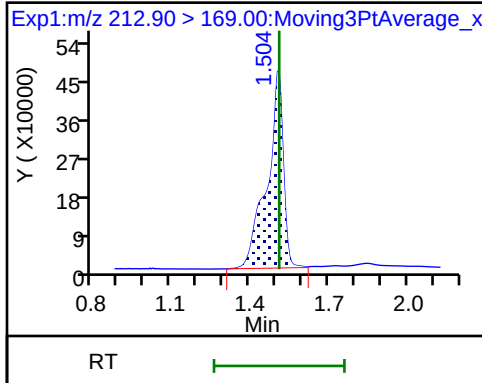
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

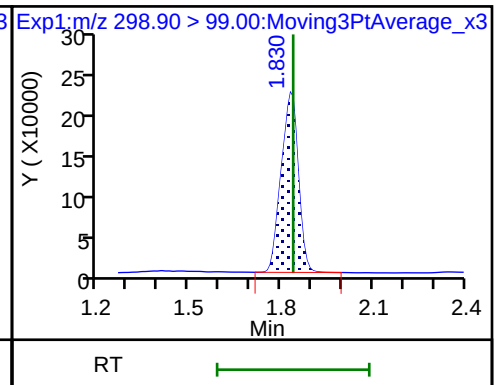
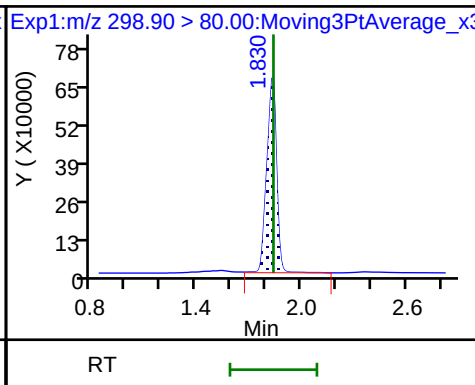
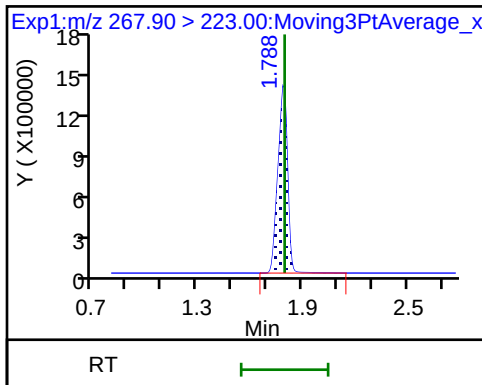
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

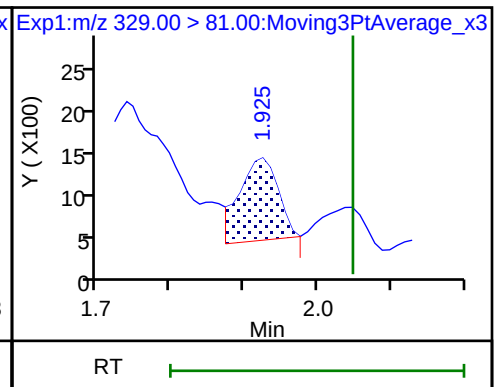
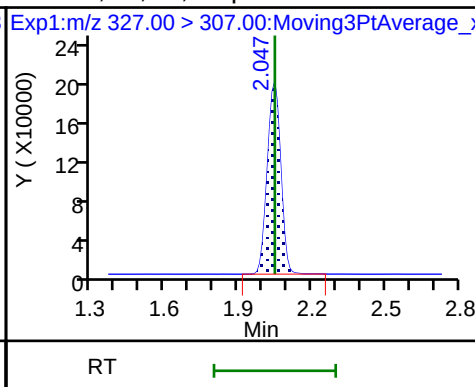
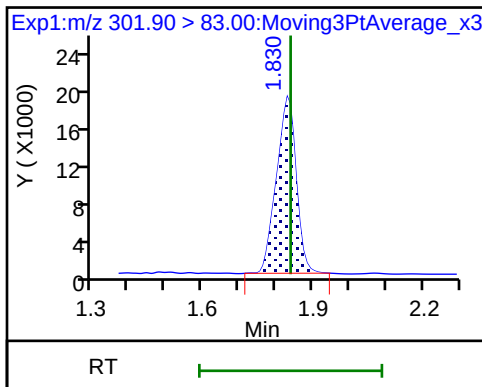
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

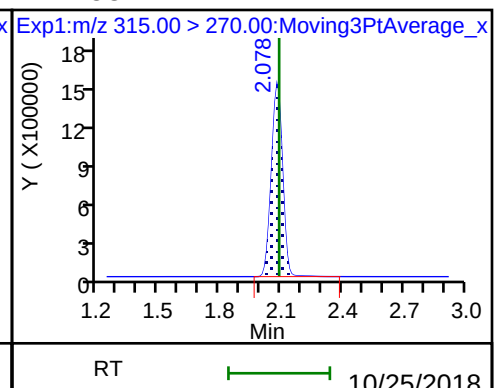
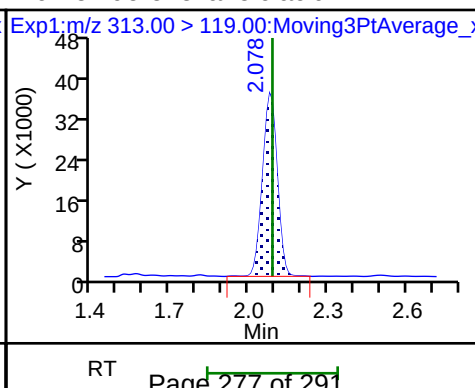
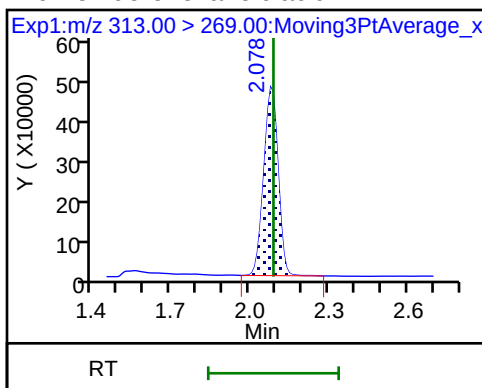
D 60 M2-4:2 FTS

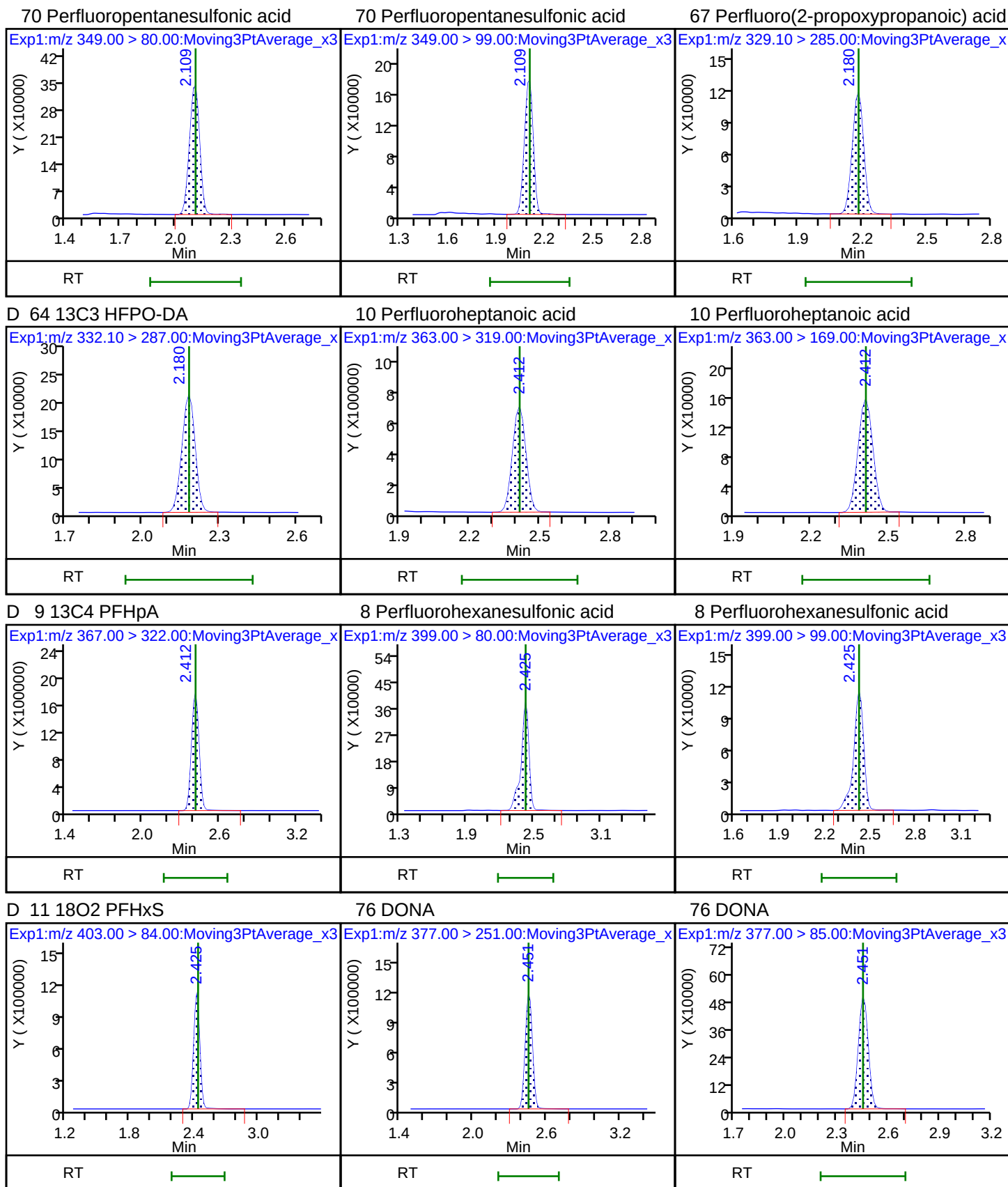


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

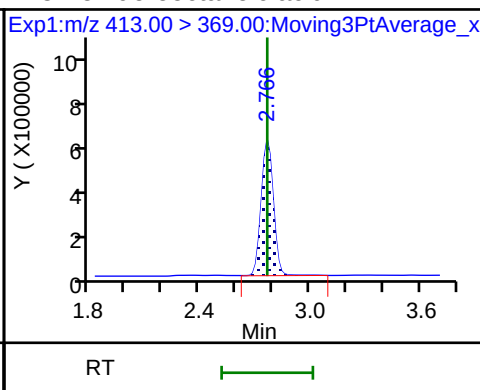
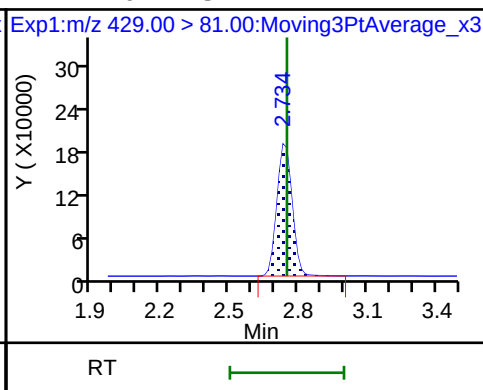
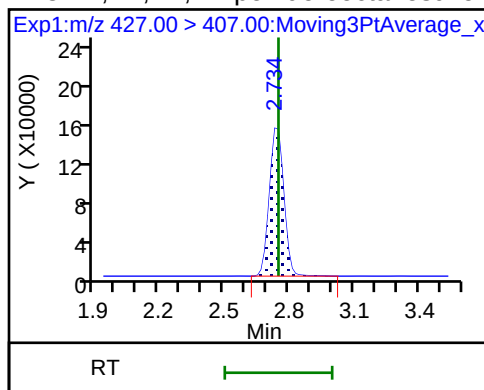
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfoD 12 M2-6:2 FTS

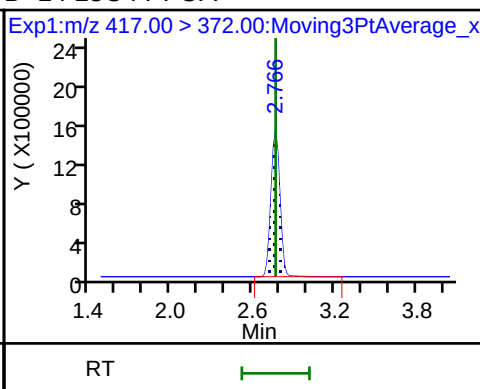
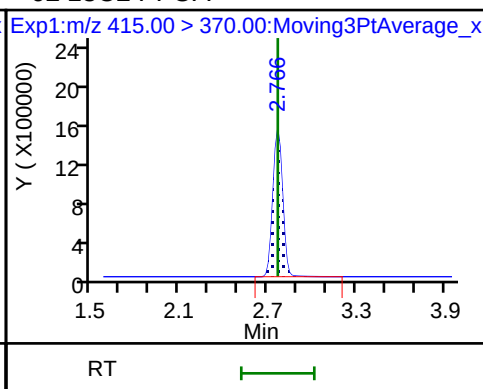
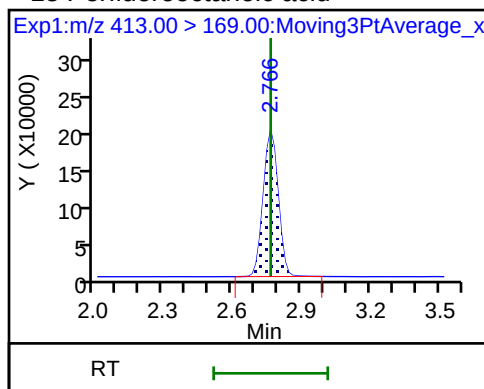
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

* 62 13C2 PFOA

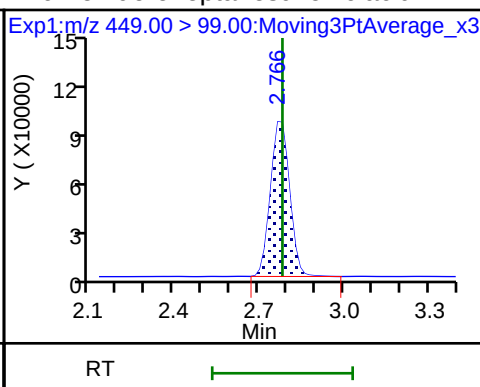
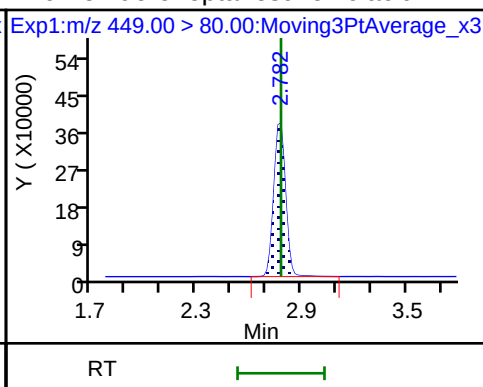
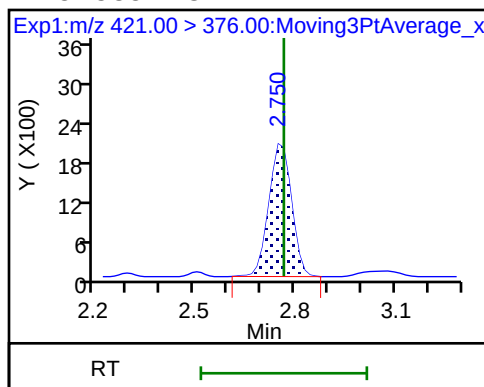
D 14 13C4 PFOA



D 73 13C8 PFOA

16 Perfluoroheptanesulfonic acid

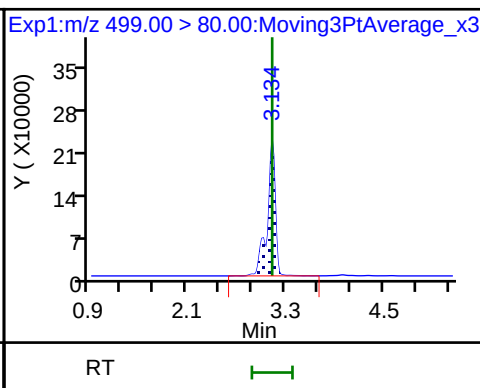
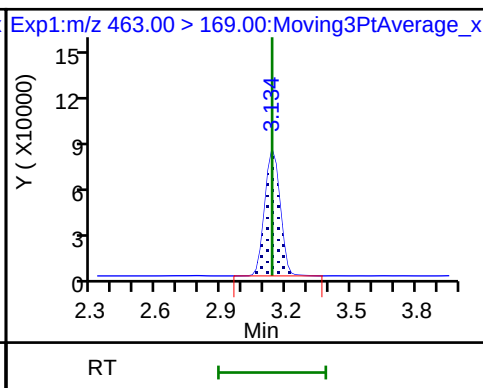
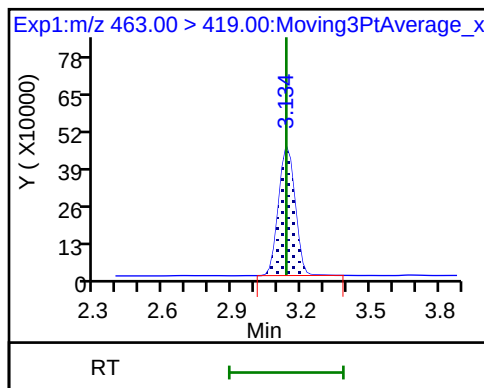
16 Perfluoroheptanesulfonic acid



20 Perfluorononanoic acid

20 Perfluorononanoic acid

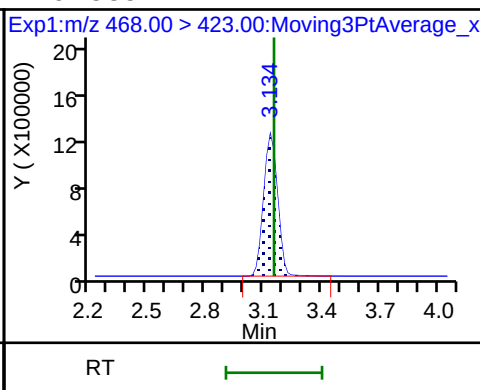
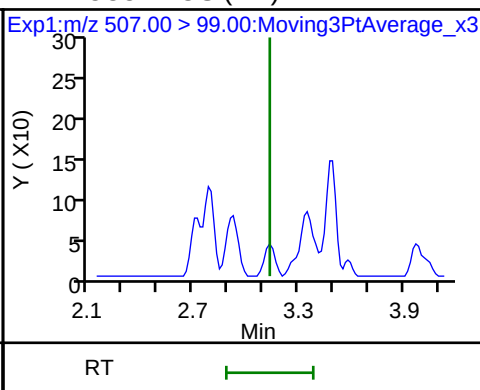
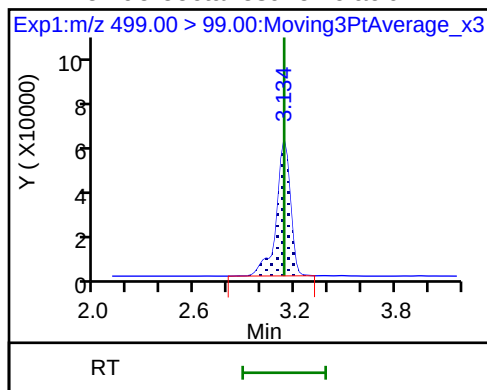
17 Perfluorooctanesulfonic acid



17 Perfluorooctanesulfonic acid

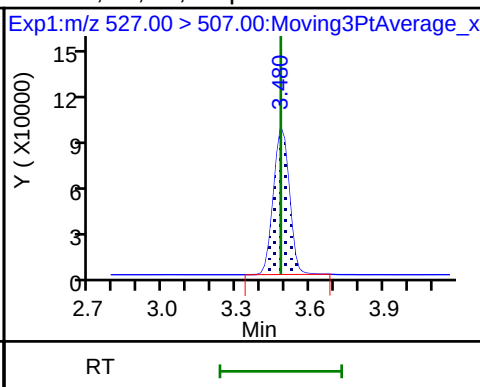
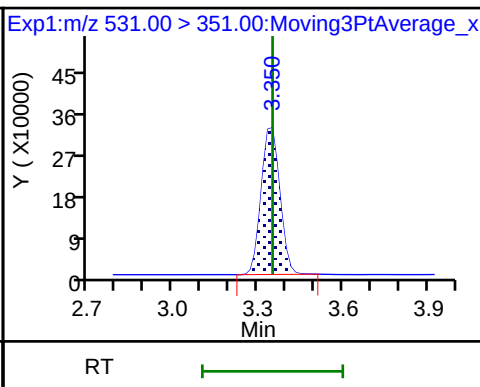
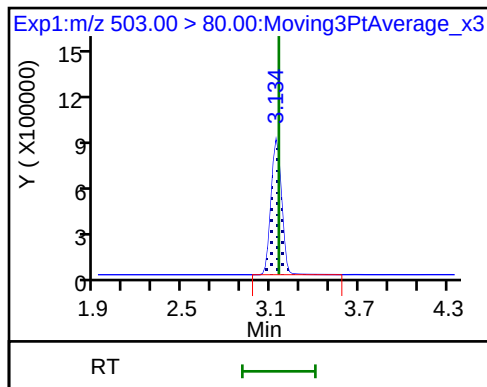
D 72 13C8 PFOS (ND)

D 19 13C5 PFNA



D 18 13C4 PFOS

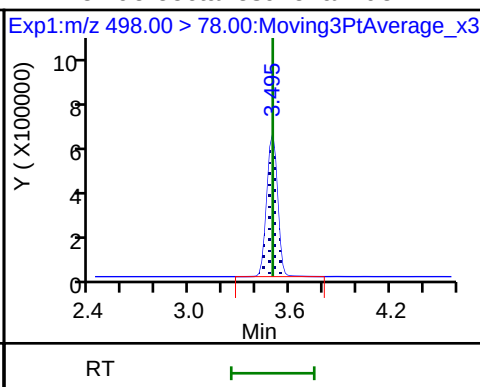
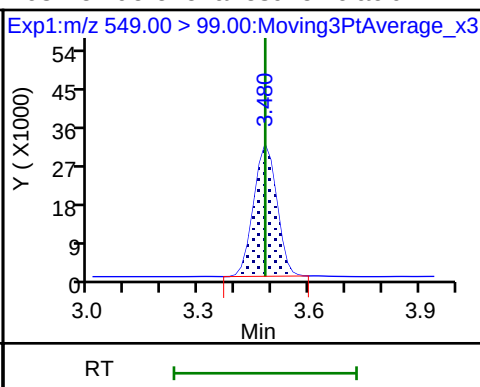
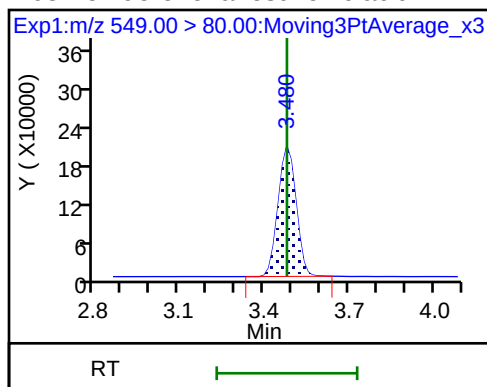
69 9-Chlorohexadecafluoro-3-oxanonan-25 1H,1H,2H,2H-perfluorodecanesulfoni



68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

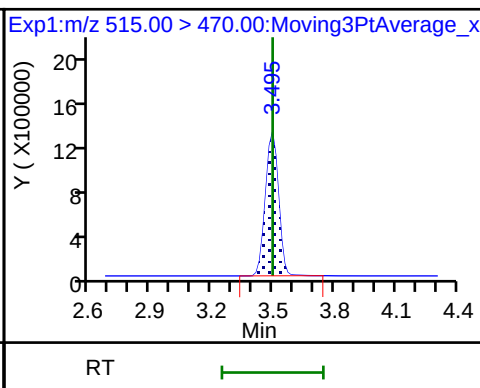
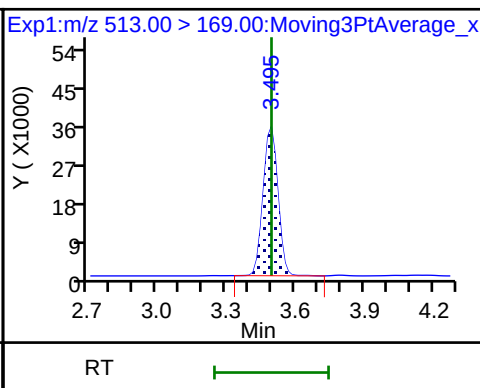
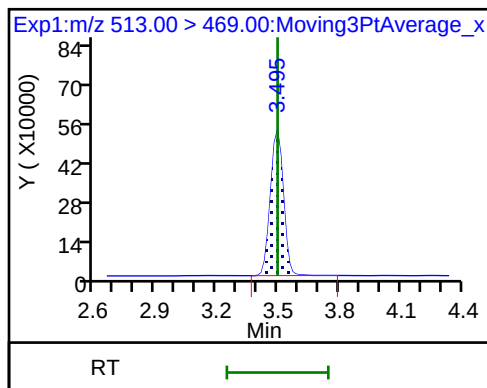
22 Perfluorooctanesulfonamide



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

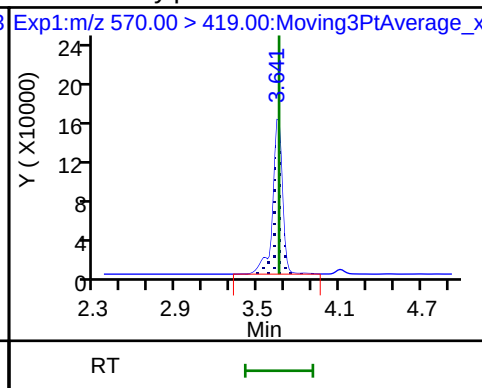
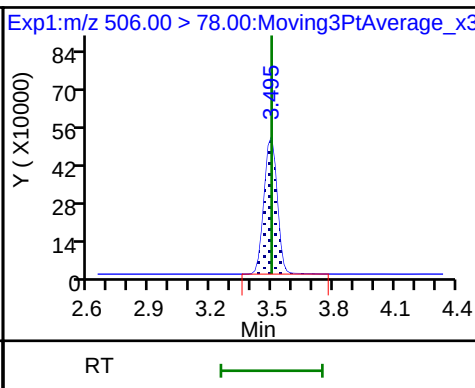
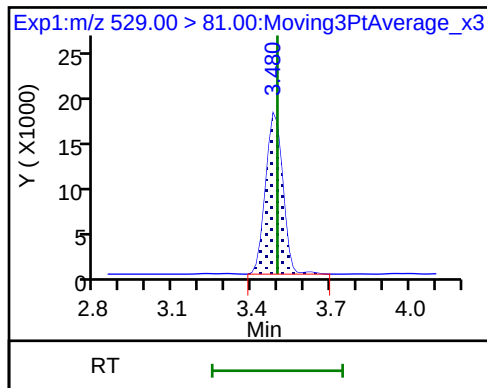
D 23 13C2 PFDA



D 26 M2-8:2 FTS

D 21 13C8 FOSA

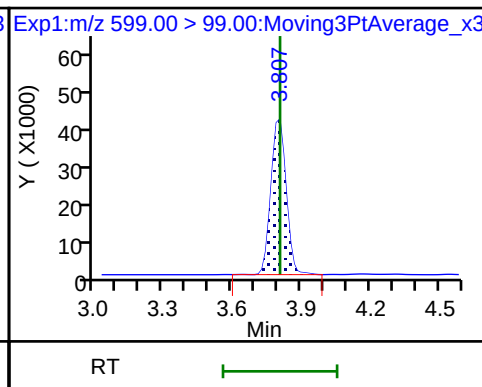
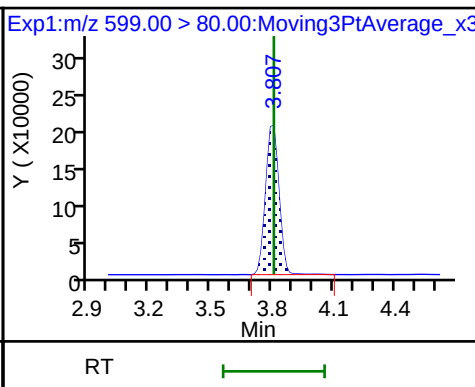
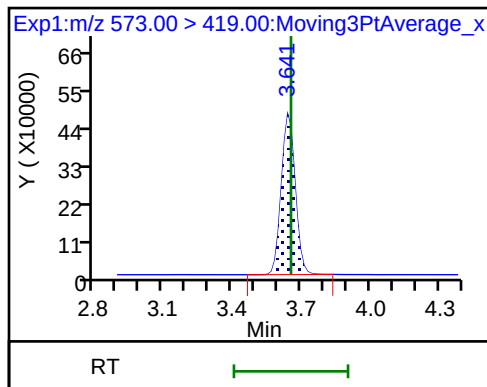
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

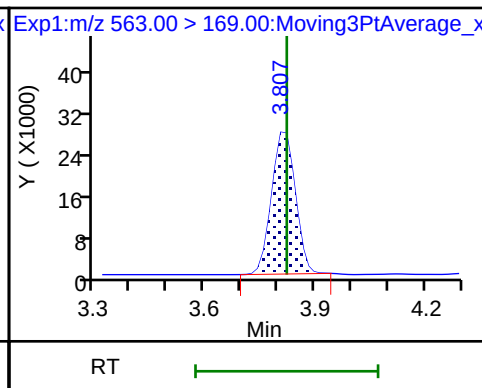
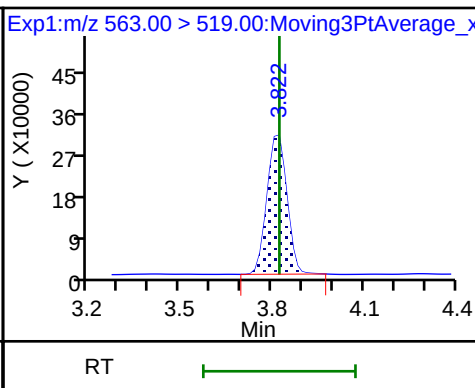
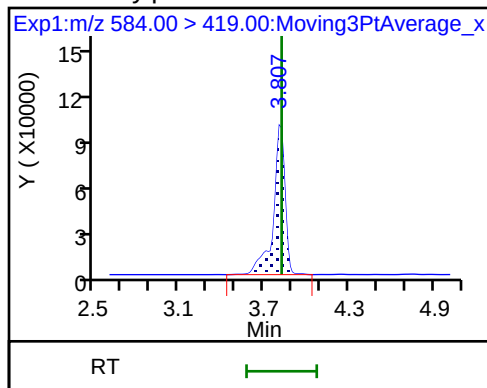
29 Perfluorodecanesulfonic acid



33 N-ethylperfluorooctanesulfonamidoa

31 Perfluoroundecanoic acid

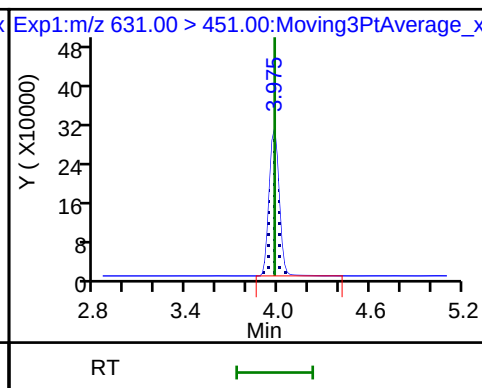
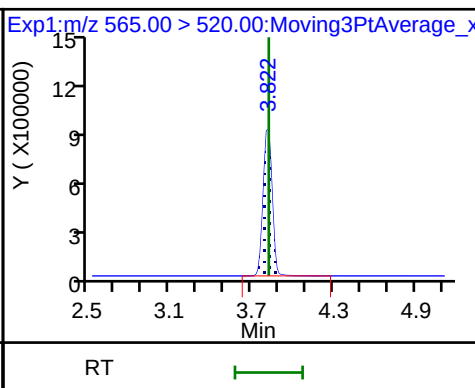
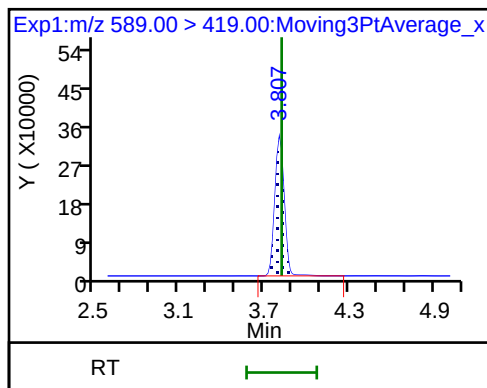
31 Perfluoroundecanoic acid

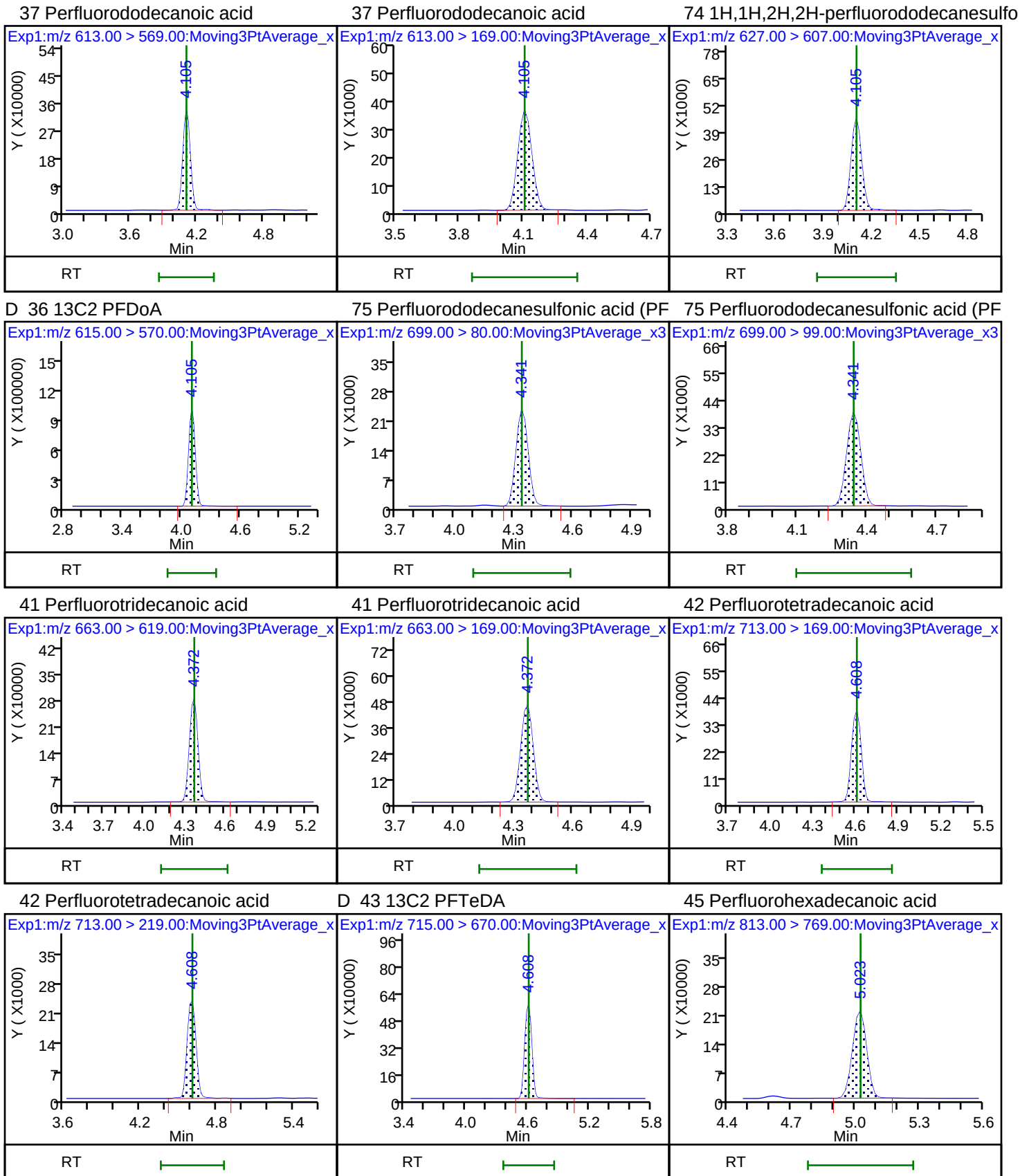


D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

66 11-Chloroeicosafluoro-3-oxaundecan

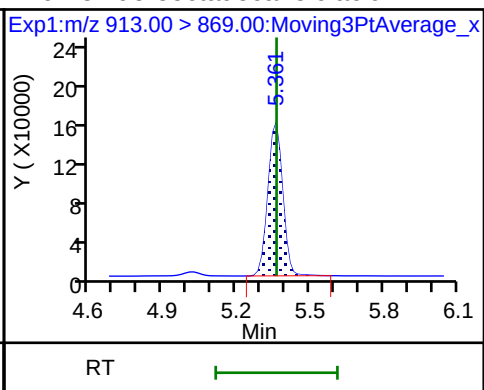
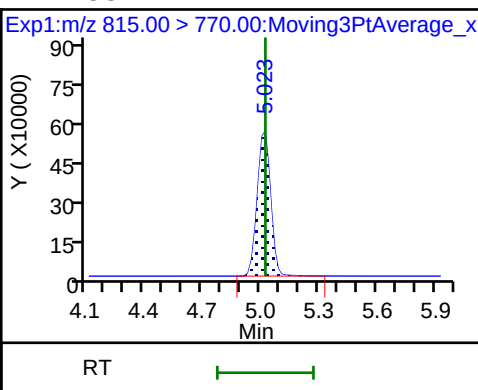
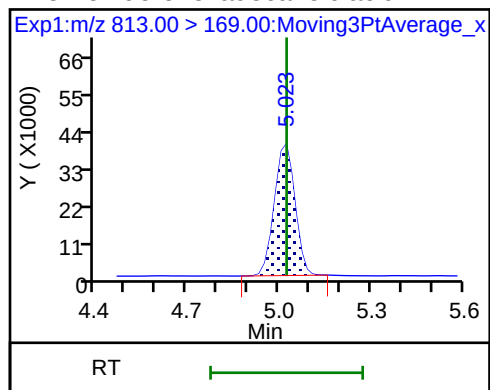




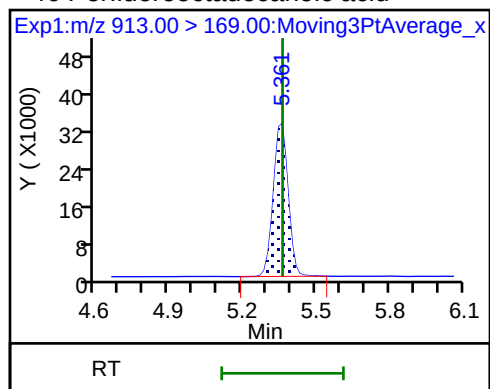
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1

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.: 320-43696-1

SDG No.: _____

Instrument ID: A9 Start Date: 10/15/2018 01:12Analysis Batch Number: 252299 End Date: 10/15/2018 03:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-252299/1		10/15/2018 01:12	1	2018.10.14LLB_0 04.d	Acquity 2.1 (mm)
CCVL 320-252299/2		10/15/2018 01:19	1	2018.10.14LLB_0 05.d	Acquity 2.1 (mm)
CCV 320-252299/3 CCVIS		10/15/2018 01:26	1	2018.10.14LLB_0 06.d	Acquity 2.1 (mm)
ZZZZZ		10/15/2018 01:34	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 01:41	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 01:49	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 01:56	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 02:04	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 02:12	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 02:19	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 02:27	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 02:34	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 02:42	1		Acquity 2.1 (mm)
CCV 320-252299/14		10/15/2018 02:49	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 02:57	1		Acquity 2.1 (mm)
CCV 320-252299/16		10/15/2018 03:04	1		Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 320-43696-1

SDG No.: _____

Instrument ID: A9Start Date: 10/15/2018 03:12Analysis Batch Number: 252302End Date: 10/15/2018 06:12

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-252302/1		10/15/2018 03:12	1	2018.10.14LLB_0 20.d	Acquity 2.1 (mm)
MB 320-251297/1-A		10/15/2018 03:19	1	2018.10.14LLB_0 21.d	Acquity 2.1 (mm)
LCS 320-251297/2-A		10/15/2018 03:27	1	2018.10.14LLB_0 22.d	Acquity 2.1 (mm)
ZZZZZ		10/15/2018 03:34	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 03:42	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 03:49	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 03:57	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 04:04	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 04:12	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 04:19	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 04:27	1		Acquity 2.1 (mm)
CCV 320-252302/12		10/15/2018 04:34	1	2018.10.14LLB_0 31.d	Acquity 2.1 (mm)
ZZZZZ		10/15/2018 04:42	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 04:49	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 04:57	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 05:04	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 05:12	1		Acquity 2.1 (mm)
320-43696-1		10/15/2018 05:19	1	2018.10.14LLB_0 37.d	Acquity 2.1 (mm)
320-43696-1 MS		10/15/2018 05:27	1	2018.10.14LLB_0 38.d	Acquity 2.1 (mm)
320-43696-1 MSD		10/15/2018 05:34	1	2018.10.14LLB_0 39.d	Acquity 2.1 (mm)
ZZZZZ		10/15/2018 05:42	1		Acquity 2.1 (mm)
ZZZZZ		10/15/2018 05:49	1		Acquity 2.1 (mm)
CCV 320-252302/23		10/15/2018 05:57	1	2018.10.14LLB_0 42.d	Acquity 2.1 (mm)
ZZZZZ		10/15/2018 06:04	1		Acquity 2.1 (mm)
CCV 320-252302/25		10/15/2018 06:12	1		Acquity 2.1 (mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-43696-1

SDG No.: _____

Batch Number: 251297 Batch Start Date: 10/11/18 07:31 Batch Analyst: Vang, Mai YeeBatch Method: 3535 Batch End Date: 10/11/18 14:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC ALL_SU 00118	LCPFC-IS 00095
MB 320-251297/1		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCS 320-251297/2		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
320-43696-A-1	MW-2R	3535, 537 (modified)	T	307.98 g	28.66 g	279.3 mL	10.00 mL	500 uL	500 uL
320-43696-A-1 MS	MW-2R	3535, 537 (modified)	T	313.80 g	28.29 g	285.5 mL	10.00 mL	500 uL	500 uL
320-43696-A-1 MSD	MW-2R	3535, 537 (modified)	T	309.73 g	30.32 g	279.4 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00191	AnalysisComment				
MB 320-251297/1		3535, 537 (modified)							
LCS 320-251297/2		3535, 537 (modified)		500 uL					
320-43696-A-1	MW-2R	3535, 537 (modified)	T		41.94 g remaining				
320-43696-A-1 MS	MW-2R	3535, 537 (modified)	T	500 uL	33.88 g remaining				
320-43696-A-1 MSD	MW-2R	3535, 537 (modified)	T	500 uL	27.52 g remaining				

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.: 320-43696-1

SDG No.: _____

Batch Number: 251297 Batch Start Date: 10/11/18 07:31 Batch Analyst: Vang, Mai YeeBatch Method: 3535 Batch End Date: 10/11/18 14:45

Batch Notes	
Balance ID	QA-070
Batch Comment	Client labels match TA label, MYV 10/11/18.
H2O ID	10/10/2018
Hexane ID	1353799
Manifold ID	O,A
Methanol ID	1394878
Sodium Hydroxide ID	1390821
Analyst ID - Reagent Drop	HJA
Analyst ID - IS Reagent Drop	TWL
Analyst ID - IS Reagent Drop Witness	MYV
Solvent Lot #	1391526
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.

Shipping and Receiving Documents

CHAIN OF CUSTODY

**Client: New York State Dept. of
Environmental Conservation**

PAGE } OF

Bottle Order Control #

FED-EX Tracking #	Bottle Order Control #
Lab Order # 8201 5048006553	Lab Job #

[illegible]

Data Deliverable Information	
☐	Commercial 'A' (Level 1) = Results Only
☐	Commercial 'B' (Level 2) = Results + QC Summary
☐	FULLT1 (Level 3 & 4)
☐	NJ Reduced = Results + QC Summary + Partial Raw Data
☐	Commercial 'C'
☐	NJ Data of Known Quality Protocol Reporting
☐	NYASP Category A
☒	NYASP Category B
☐	State Forms
☒	GES/EQEDD/EQUIS/EDD
☒	NYDEC EDD

Laboratory Information

TestAmerica Buffalo
Lab:
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 484-685-0864
Lab PM: Orlette Johnson
Lab PM Email: orlette.johnson@testamericainc.com

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Gainesville/NY/BroughtonRd_LabReport#.30435.EQEDD.zip

Sample Custody must be documented below each time samples change possession, including courier.			
Relinquished By / Sampler	Date / Time	Received By	
1. <i>[Signature]</i>	6/9/02 2:18	<i>[Signature]</i>	1655
Relinquished By	Date / Time	Received By	
2. <i>[Signature]</i>	9/28/03 1400	<i>[Signature]</i>	02-29-03
Relinquished By	Date / Time	Received By	
	3	3	
Custody Seal Number:	☐ Intact ☐ Not Intact	☐ Preserved where applicable ☐ On Ice	☐ Cooler Temp

~~* sample not received~~ M- 10/2/18

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 320-43696-1

Login Number: 43696

List Source: TestAmerica Sacramento

List Number: 1

Creator: Hytrek, Cheryl

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?	False	
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	

ANALYTICAL REPORT

Job Number: 480-142274-1

Job Description: ETE Sanitation & Landfill Site# 961005

Contract Number: C100700

For:

New York State D.E.C.
270 Michigan Avenue
Buffalo, NY 14203

Attention: Mr. Dave Szymanski



Approved for release.
Orlette S. Johnson
Senior Project Manager
1/11/2019 4:06 PM

Orlette S Johnson, Senior Project Manager
10 Hazelwood Drive, Amherst, NY, 14228-2298
(484)685-0864
orlette.johnson@testamericainc.com
01/11/2019

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

Job Number: 480-142274-1

Job Description: ETE Sanitation & Landfill Site# 961005

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

A handwritten signature in dark ink, appearing to read "Orlette S. Johnson". The signature is fluid and cursive, with a horizontal line drawn underneath it.

Approved for release.
Orlette S Johnson
Senior Project Manager
1/11/2019 4:06 PM

Orlette S Johnson

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Job Narrative
480-142274-1

Comments

No additional comments.

Receipt

The samples were received on 9/21/2018 9:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.0° C, 3.0° C and 4.0° C.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described 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: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 320-248335.

Method(s) 3535: The following sample: MW-7S (480-142274-1) in preparation batch 320-248335 was observed to be a yellow color prior to extraction.

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

Sample Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-142274-1	MW-7S	Water	09/18/18 11:25	09/21/18 21:20
480-142274-2	MW-11S	Water	09/20/18 15:05	09/21/18 21:20
480-142274-3	MW-11S DUP	Water	09/20/18 15:35	09/21/18 21:20
480-142274-4	EB	Water	09/20/18 16:10	09/21/18 21:20

Detection Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Client Sample ID: MW-7S

Lab Sample ID: 480-142274-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.5		1.9	0.33	ng/L	1			537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	1.5	J	1.9	0.47	ng/L	1			537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.7	J	1.9	0.55	ng/L	1			537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1.7	J	1.9	0.24	ng/L	1			537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	7.8		1.9	0.81	ng/L	1			537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.59	J	1.9	0.26	ng/L	1			537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.1	J	1.9	0.19	ng/L	1			537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	1.4	J B	1.9	0.16	ng/L	1			537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.2		1.9	0.52	ng/L	1			537 (modified)	Total/NA

Client Sample ID: MW-11S

Lab Sample ID: 480-142274-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.22	J B	2.0	0.17	ng/L	1			537 (modified)	Total/NA

Client Sample ID: MW-11S DUP

Lab Sample ID: 480-142274-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.32	J B	1.9	0.16	ng/L	1			537 (modified)	Total/NA

Client Sample ID: EB

Lab Sample ID: 480-142274-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.34	J B	2.0	0.17	ng/L	1			537 (modified)	Total/NA
6:2 FTS	2.4	J	20	2.0	ng/L	1			537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

Method Summary

Client: New York State D.E.C.

TestAmerica Job ID: 480-142274-1

Project/Site: ETE Sanitation & Landfill Site# 961005

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: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Client Sample ID: MW-7S

Date Collected: 09/18/18 11:25

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-1

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	ND		0.20	0.10	ug/L		09/25/18 14:25	09/29/18 03:50	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 110				09/25/18 14:25	09/29/18 03:50	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	0.33	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluoropentanoic acid (PFPeA)	1.5 J		1.9	0.47	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorohexanoic acid (PFHxA)	1.7 J		1.9	0.55	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluoroheptanoic acid (PFHpA)	1.7 J		1.9	0.24	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorooctanoic acid (PFOA)	7.8		1.9	0.81	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorononanoic acid (PFNA)	0.59 J		1.9	0.26	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorobutanesulfonic acid (PFBS)	1.1 J		1.9	0.19	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorohexanesulfonic acid (PFHxS)	1.4 J B		1.9	0.16	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorooctanesulfonic acid (PFOS)	7.2		1.9	0.52	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		09/28/18 09:36	09/29/18 15:33	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9	0.33	ng/L		09/28/18 09:36	09/29/18 15:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	3.0	ng/L		09/28/18 09:36	09/29/18 15:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.8	ng/L		09/28/18 09:36	09/29/18 15:33	1
6:2 FTS	ND		19	1.9	ng/L		09/28/18 09:36	09/29/18 15:33	1
8:2 FTS	ND		19	1.9	ng/L		09/28/18 09:36	09/29/18 15:33	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	53		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C5 PFPeA	84		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C2 PFHxA	107		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C4 PFHpA	105		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C4 PFOA	95		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C5 PFNA	92		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C2 PFDA	101		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C2 PFUnA	93		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C2 PFDoA	82		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C2 PFTeA	69		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C3 PFBS	90		25 - 150				09/28/18 09:36	09/29/18 15:33	1
18O2 PFHxS	104		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C4 PFOS	106		25 - 150				09/28/18 09:36	09/29/18 15:33	1
13C8 FOSA	115		25 - 150				09/28/18 09:36	09/29/18 15:33	1
d3-NMeFOSAA	58		25 - 150				09/28/18 09:36	09/29/18 15:33	1
d5-NEtFOSAA	58		25 - 150				09/28/18 09:36	09/29/18 15:33	1

TestAmerica Buffalo

Client Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Client Sample ID: MW-7S

Date Collected: 09/18/18 11:25

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-1

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-6:2 FTS	98		25 - 150	09/28/18 09:36	09/29/18 15:33	1
M2-8:2 FTS	101		25 - 150	09/28/18 09:36	09/29/18 15:33	1

Client Sample ID: MW-11S

Date Collected: 09/20/18 15:05

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-2

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	ND		0.20	0.10	ug/L		09/25/18 14:25	09/29/18 04:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 110				09/25/18 14:25	09/29/18 04:13	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.48	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.57	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.84	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorohexanesulfonic acid (PFHxS)	0.22	J B	2.0	0.17	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.53	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		09/28/18 07:48	09/29/18 14:10	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35	ng/L		09/28/18 07:48	09/29/18 14:10	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		09/28/18 07:48	09/29/18 14:10	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		09/28/18 07:48	09/29/18 14:10	1
6:2 FTS	ND		20	2.0	ng/L		09/28/18 07:48	09/29/18 14:10	1
8:2 FTS	ND		20	2.0	ng/L		09/28/18 07:48	09/29/18 14:10	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	91		25 - 150				09/28/18 07:48	09/29/18 14:10	1
13C5 PFPeA	101		25 - 150				09/28/18 07:48	09/29/18 14:10	1
13C2 PFHxA	100		25 - 150				09/28/18 07:48	09/29/18 14:10	1
13C4 PFHpA	103		25 - 150				09/28/18 07:48	09/29/18 14:10	1
13C4 PFOA	97		25 - 150				09/28/18 07:48	09/29/18 14:10	1
13C5 PFNA	107		25 - 150				09/28/18 07:48	09/29/18 14:10	1
13C2 PFDA	98		25 - 150				09/28/18 07:48	09/29/18 14:10	1
13C2 PFUnA	90		25 - 150				09/28/18 07:48	09/29/18 14:10	1
13C2 PFDoA	86		25 - 150				09/28/18 07:48	09/29/18 14:10	1

TestAmerica Buffalo

Client Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Client Sample ID: MW-11S

Date Collected: 09/20/18 15:05

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-2

Matrix: Water

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
¹³ C2 PFTeDA	80		25 - 150	09/28/18 07:48	09/29/18 14:10	1
¹³ C3 PFBS	95		25 - 150	09/28/18 07:48	09/29/18 14:10	1
¹⁸ O2 PFHxS	98		25 - 150	09/28/18 07:48	09/29/18 14:10	1
¹³ C4 PFOS	102		25 - 150	09/28/18 07:48	09/29/18 14:10	1
¹³ C8 FOSA	109		25 - 150	09/28/18 07:48	09/29/18 14:10	1
d3-NMeFOSAA	63		25 - 150	09/28/18 07:48	09/29/18 14:10	1
d5-NEtFOSAA	64		25 - 150	09/28/18 07:48	09/29/18 14:10	1
M2-6:2 FTS	81		25 - 150	09/28/18 07:48	09/29/18 14:10	1
M2-8:2 FTS	104		25 - 150	09/28/18 07:48	09/29/18 14:10	1

Client Sample ID: MW-11S DUP

Date Collected: 09/20/18 15:35

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-3

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	ND		0.20	0.10	ug/L		09/25/18 14:25	09/29/18 04:36	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	34		15 - 110				09/25/18 14:25	09/29/18 04:36	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		1.9	0.34	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluoropentanoic acid (PFPeA)	ND		1.9	0.47	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorooctanoic acid (PFOA)	ND		1.9	0.82	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorononanoic acid (PFNA)	ND		1.9	0.26	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorodecanoic acid (PFDA)	ND		1.9	0.30	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorohexanesulfonic acid (PFHxS)	0.32	J B	1.9	0.16	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31	ng/L		09/28/18 07:48	09/29/18 14:18	1
Perfluorooctanesulfonamide (FOSA)	ND		1.9	0.34	ng/L		09/28/18 07:48	09/29/18 14:18	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	3.0	ng/L		09/28/18 07:48	09/29/18 14:18	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.8	ng/L		09/28/18 07:48	09/29/18 14:18	1
6:2 FTS	ND		19	1.9	ng/L		09/28/18 07:48	09/29/18 14:18	1
8:2 FTS	ND		19	1.9	ng/L		09/28/18 07:48	09/29/18 14:18	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	91		25 - 150				09/28/18 07:48	09/29/18 14:18	1
13C5 PFPeA	99		25 - 150				09/28/18 07:48	09/29/18 14:18	1

TestAmerica Buffalo

Client Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Client Sample ID: MW-11S DUP

Lab Sample ID: 480-142274-3

Date Collected: 09/20/18 15:35

Matrix: Water

Date Received: 09/21/18 21:20

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

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	98		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C4 PFHpA	101		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C4 PFOA	101		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C5 PFNA	94		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C2 PFDA	94		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C2 PFUnA	87		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C2 PFDoA	86		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C2 PFTeDA	77		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C3 PFBS	98		25 - 150	09/28/18 07:48	09/29/18 14:18	1
18O2 PFHxS	101		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C4 PFOS	101		25 - 150	09/28/18 07:48	09/29/18 14:18	1
13C8 FOSA	111		25 - 150	09/28/18 07:48	09/29/18 14:18	1
d3-NMeFOSAA	56		25 - 150	09/28/18 07:48	09/29/18 14:18	1
d5-NEtFOSAA	61		25 - 150	09/28/18 07:48	09/29/18 14:18	1
M2-6:2 FTS	87		25 - 150	09/28/18 07:48	09/29/18 14:18	1
M2-8:2 FTS	88		25 - 150	09/28/18 07:48	09/29/18 14:18	1

Client Sample ID: EB

Lab Sample ID: 480-142274-4

Date Collected: 09/20/18 16:10

Matrix: Water

Date Received: 09/21/18 21:20

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	ND		0.20	0.10	ug/L		09/25/18 14:25	09/29/18 05:00	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	32		15 - 110				09/25/18 14:25	09/29/18 05:00	1

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorohexanesulfonic acid (PFHxS)	0.34	J B	2.0	0.17	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		09/28/18 07:48	09/29/18 14:25	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35	ng/L		09/28/18 07:48	09/29/18 14:25	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		09/28/18 07:48	09/29/18 14:25	1

TestAmerica Buffalo

Client Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Client Sample ID: EB

Date Collected: 09/20/18 16:10

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		09/28/18 07:48	09/29/18 14:25	1
6:2 FTS	2.4	J	20	2.0	ng/L		09/28/18 07:48	09/29/18 14:25	1
8:2 FTS	ND		20	2.0	ng/L		09/28/18 07:48	09/29/18 14:25	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>13C4 PFBA</i>	98		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C5 PFPeA</i>	98		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C2 PFHxA</i>	98		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C4 PFHpA</i>	96		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C4 PFOA</i>	99		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C5 PFNA</i>	101		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C2 PFDA</i>	95		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C2 PFUnA</i>	92		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C2 PFDoA</i>	83		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C2 PFTeDA</i>	93		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C3 PFBS</i>	96		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>18O2 PFHxS</i>	98		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C4 PFOS</i>	102		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>13C8 FOSA</i>	111		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>d3-NMeFOSAA</i>	57		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>d5-NEtFOSAA</i>	61		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>M2-6:2 FTS</i>	87		25 - 150				09/28/18 07:48	09/29/18 14:25	1
<i>M2-8:2 FTS</i>	119		25 - 150				09/28/18 07:48	09/29/18 14:25	1

Isotope Dilution Summary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

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)
480-142274-1	MW-7S	32
480-142274-2	MW-11S	32
480-142274-3	MW-11S DUP	34
480-142274-4	EB	32
LCS 480-436108/2-A	Lab Control Sample	29
MB 480-436108/1-A	Method Blank	31

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)
480-142274-1	MW-7S	53	84	107	105	95	92	101	93
480-142274-2	MW-11S	91	101	100	103	97	107	98	90
480-142274-3	MW-11S DUP	91	99	98	101	101	94	94	87
480-142274-4	EB	98	98	98	96	99	101	95	92
LCS 320-248335/2-A	Lab Control Sample	97	102	95	103	101	100	92	92
LCSD 320-248335/3-A	Lab Control Sample Dup	99	100	103	100	98	102	96	98
MB 320-248335/1-A	Method Blank	96	98	96	97	101	97	92	97

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)
480-142274-1	MW-7S	82	69	90	104	106	115	58	58
480-142274-2	MW-11S	86	80	95	98	102	109	63	64
480-142274-3	MW-11S DUP	86	77	98	101	101	111	56	61
480-142274-4	EB	83	93	96	98	102	111	57	61
LCS 320-248335/2-A	Lab Control Sample	99	98	104	99	96	94	99	105
LCSD 320-248335/3-A	Lab Control Sample Dup	99	107	97	97	101	92	102	104
MB 320-248335/1-A	Method Blank	89	92	95	97	99	114	57	61

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
480-142274-1	MW-7S	98	101
480-142274-2	MW-11S	81	104
480-142274-3	MW-11S DUP	87	88
480-142274-4	EB	87	119
LCS 320-248335/2-A	Lab Control Sample	98	75
LCSD 320-248335/3-A	Lab Control Sample Dup	100	93
MB 320-248335/1-A	Method Blank	83	100

Surrogate Legend

PFBA = 13C4 PFBA

PFPeA = 13C5 PFPeA

PFHxA = 13C2 PFHxA

PFHpA = 13C4 PFHpA

TestAmerica Buffalo

Isotope Dilution Summary

Client: New York State D.E.C.

Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

PFOA = $^{13}\text{C}_4$ PFOA
PFNA = $^{13}\text{C}_5$ PFNA
PFDA = $^{13}\text{C}_2$ PFDA
PFUnA = $^{13}\text{C}_2$ PFUnA
PFDaA = $^{13}\text{C}_2$ PFDaA
PFTDA = $^{13}\text{C}_2$ PFTeDA
 $^{13}\text{C}_3$ -PFBS = $^{13}\text{C}_3$ PFBS
PFHxS = $^{18}\text{O}_2$ PFHxS
PFOS = $^{13}\text{C}_4$ PFOS
PFOSA = $^{13}\text{C}_8$ FOSA
d3-NMeFOSAA = d3-NMeFOSAA
d5-NEtFOSAA = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

QC Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

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

Lab Sample ID: MB 480-436108/1-A
Matrix: Water
Analysis Batch: 436862

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 436108

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		09/25/18 14:25	09/28/18 23:56	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	31		15 - 110				09/25/18 14:25	09/28/18 23:56	1

Lab Sample ID: LCS 480-436108/2-A
Matrix: Water
Analysis Batch: 436862

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 436108

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dioxane	1.00	1.13		ug/L		113	40 - 140
Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits				
1,4-Dioxane-d8	29		15 - 110				

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-248335/1-A
Matrix: Water
Analysis Batch: 248611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 248335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	ND		2.0	0.35	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorohexanesulfonic acid (PFHxS)	0.331	J	2.0	0.17	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		09/28/18 07:48	09/29/18 12:33	1
Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35	ng/L		09/28/18 07:48	09/29/18 12:33	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		09/28/18 07:48	09/29/18 12:33	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		09/28/18 07:48	09/29/18 12:33	1
6:2 FTS	ND		20	2.0	ng/L		09/28/18 07:48	09/29/18 12:33	1
8:2 FTS	ND		20	2.0	ng/L		09/28/18 07:48	09/29/18 12:33	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	96		25 - 150				09/28/18 07:48	09/29/18 12:33	1

TestAmerica Buffalo

QC Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

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

Lab Sample ID: MB 320-248335/1-A

Matrix: Water

Analysis Batch: 248611

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 248335

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C5 PFPeA	98		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C2 PFHxA	96		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C4 PFHpA	97		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C4 PFOA	101		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C5 PFNA	97		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C2 PFDA	92		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C2 PFUnA	97		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C2 PFDoA	89		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C2 PFTeDA	92		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C3 PFBS	95		25 - 150	09/28/18 07:48	09/29/18 12:33	1
18O2 PFHxS	97		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C4 PFOS	99		25 - 150	09/28/18 07:48	09/29/18 12:33	1
13C8 FOSA	114		25 - 150	09/28/18 07:48	09/29/18 12:33	1
d3-NMeFOSAA	57		25 - 150	09/28/18 07:48	09/29/18 12:33	1
d5-NEtFOSAA	61		25 - 150	09/28/18 07:48	09/29/18 12:33	1
M2-6:2 FTS	83		25 - 150	09/28/18 07:48	09/29/18 12:33	1
M2-8:2 FTS	100		25 - 150	09/28/18 07:48	09/29/18 12:33	1

Lab Sample ID: LCS 320-248335/2-A

Matrix: Water

Analysis Batch: 250745

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 248335

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.4		ng/L		101	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	40.2		ng/L		101	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	39.7		ng/L		99	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	39.2		ng/L		98	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	39.5		ng/L		99	64 - 124
Perfluorononanoic acid (PFNA)	40.0	38.5		ng/L		96	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	41.4		ng/L		104	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	39.7		ng/L		99	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	38.5		ng/L		96	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	43.7		ng/L		109	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	39.7		ng/L		99	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	33.3		ng/L		94	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.1		ng/L		99	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.3		ng/L		109	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	37.0		ng/L		100	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	42.9		ng/L		111	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	43.4		ng/L		109	70 - 130

TestAmerica Buffalo

QC Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

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

Lab Sample ID: LCS 320-248335/2-A

Matrix: Water

Analysis Batch: 250745

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 248335

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.1		ng/L		98	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	37.3		ng/L		93	65 - 125
6:2 FTS	37.9	42.0		ng/L		111	66 - 126
8:2 FTS	38.3	44.7		ng/L		117	67 - 127

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	97		25 - 150
13C5 PFPeA	102		25 - 150
13C2 PFHxA	95		25 - 150
13C4 PFHpA	103		25 - 150
13C4 PFOA	101		25 - 150
13C5 PFNA	100		25 - 150
13C2 PFDA	92		25 - 150
13C2 PFUnA	92		25 - 150
13C2 PFDoA	99		25 - 150
13C2 PFTeDA	98		25 - 150
13C3 PFBS	104		25 - 150
18O2 PFHxS	99		25 - 150
13C4 PFOS	96		25 - 150
13C8 FOSA	94		25 - 150
d3-NMeFOSAA	99		25 - 150
d5-NEtFOSAA	105		25 - 150
M2-6:2 FTS	98		25 - 150
M2-8:2 FTS	75		25 - 150

Lab Sample ID: LCSD 320-248335/3-A

Matrix: Water

Analysis Batch: 250745

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 248335

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	40.0	41.3		ng/L		103	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	40.0	40.7		ng/L		102	66 - 126	1	30
Perfluorohexanoic acid (PFHxA)	40.0	39.0		ng/L		98	66 - 126	2	30
Perfluoroheptanoic acid (PFHpA)	40.0	41.0		ng/L		102	66 - 126	4	30
Perfluorooctanoic acid (PFOA)	40.0	40.2		ng/L		100	64 - 124	2	30
Perfluorononanoic acid (PFNA)	40.0	43.6		ng/L		109	68 - 128	13	30
Perfluorodecanoic acid (PFDA)	40.0	40.3		ng/L		101	69 - 129	3	30
Perfluoroundecanoic acid (PFUnA)	40.0	41.3		ng/L		103	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)	40.0	37.9		ng/L		95	71 - 131	2	30
Perfluorotridecanoic acid (PFTriA)	40.0	43.9		ng/L		110	72 - 132	0	30
Perfluorotetradecanoic acid (PFTeA)	40.0	41.2		ng/L		103	68 - 128	4	30
Perfluorobutanesulfonic acid (PFBS)	35.4	36.8		ng/L		104	73 - 133	10	30

TestAmerica Buffalo

QC Sample Results

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

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

Lab Sample ID: LCSD 320-248335/3-A

Matrix: Water

Analysis Batch: 250745

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 248335

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9		ng/L		96	63 - 123	3	30
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.3		ng/L		103	68 - 128	5	30
Perfluorooctanesulfonic acid (PFOS)	37.1	36.2		ng/L		98	67 - 127	2	30
Perfluorodecanesulfonic acid (PFDS)	38.6	37.5		ng/L		97	68 - 128	13	30
Perfluorooctanesulfonamide (FOSA)	40.0	44.5		ng/L		111	70 - 130	2	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.0		ng/L		98	67 - 127	0	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.8		ng/L		100	65 - 125	6	30
6:2 FTS	37.9	44.1		ng/L		116	66 - 126	5	30
8:2 FTS	38.3	36.4		ng/L		95	67 - 127	20	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	99		25 - 150
13C5 PFPeA	100		25 - 150
13C2 PFHxA	103		25 - 150
13C4 PFHpA	100		25 - 150
13C4 PFOA	98		25 - 150
13C5 PFNA	102		25 - 150
13C2 PFDA	96		25 - 150
13C2 PFUnA	98		25 - 150
13C2 PFDoA	99		25 - 150
13C2 PFTeDA	107		25 - 150
13C3 PFBS	97		25 - 150
18O2 PFHxS	97		25 - 150
13C4 PFOS	101		25 - 150
13C8 FOSA	92		25 - 150
d3-NMeFOSAA	102		25 - 150
d5-NEtFOSAA	104		25 - 150
M2-6:2 FTS	100		25 - 150
M2-8:2 FTS	93		25 - 150

Definitions/Glossary

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Qualifiers

LCMS

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.
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: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

GC/MS Semi VOA

Prep Batch: 436108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142274-1	MW-7S	Total/NA	Water	3510C	
480-142274-2	MW-11S	Total/NA	Water	3510C	
480-142274-3	MW-11S DUP	Total/NA	Water	3510C	
480-142274-4	EB	Total/NA	Water	3510C	
MB 480-436108/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-436108/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 436862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142274-1	MW-7S	Total/NA	Water	8270D SIM ID	436108
480-142274-2	MW-11S	Total/NA	Water	8270D SIM ID	436108
480-142274-3	MW-11S DUP	Total/NA	Water	8270D SIM ID	436108
480-142274-4	EB	Total/NA	Water	8270D SIM ID	436108
MB 480-436108/1-A	Method Blank	Total/NA	Water	8270D SIM ID	436108
LCS 480-436108/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	436108

LCMS

Prep Batch: 248335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142274-1	MW-7S	Total/NA	Water	3535	
480-142274-2	MW-11S	Total/NA	Water	3535	
480-142274-3	MW-11S DUP	Total/NA	Water	3535	
480-142274-4	EB	Total/NA	Water	3535	
MB 320-248335/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-248335/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-248335/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 248611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-142274-1	MW-7S	Total/NA	Water	537 (modified)	248335
480-142274-2	MW-11S	Total/NA	Water	537 (modified)	248335
480-142274-3	MW-11S DUP	Total/NA	Water	537 (modified)	248335
480-142274-4	EB	Total/NA	Water	537 (modified)	248335
MB 320-248335/1-A	Method Blank	Total/NA	Water	537 (modified)	248335

Analysis Batch: 250745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-248335/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	248335
LCSD 320-248335/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	248335

Lab Chronicle

Client: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

Client Sample ID: MW-7S

Date Collected: 09/18/18 11:25

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436108	09/25/18 14:25	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	436862	09/29/18 03:50	MKP	TAL BUF
Total/NA	Prep	3535			248335	09/28/18 09:36	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	248611	09/29/18 15:33	JRB	TAL SAC

Client Sample ID: MW-11S

Date Collected: 09/20/18 15:05

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436108	09/25/18 14:25	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	436862	09/29/18 04:13	MKP	TAL BUF
Total/NA	Prep	3535			248335	09/28/18 07:48	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	248611	09/29/18 14:10	JRB	TAL SAC

Client Sample ID: MW-11S DUP

Date Collected: 09/20/18 15:35

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436108	09/25/18 14:25	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	436862	09/29/18 04:36	MKP	TAL BUF
Total/NA	Prep	3535			248335	09/28/18 07:48	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	248611	09/29/18 14:18	JRB	TAL SAC

Client Sample ID: EB

Date Collected: 09/20/18 16:10

Date Received: 09/21/18 21:20

Lab Sample ID: 480-142274-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			436108	09/25/18 14:25	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	436862	09/29/18 05:00	MKP	TAL BUF
Total/NA	Prep	3535			248335	09/28/18 07:48	SK	TAL SAC
Total/NA	Analysis	537 (modified)		1	248611	09/29/18 14:25	JRB	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: New York State D.E.C.
Project/Site: ETE Sanitation & Landfill Site# 961005

TestAmerica Job ID: 480-142274-1

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	12-31-19
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

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.: 480-142274-1

SDG No.: _____

Matrix: Water

Level: Low

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

Client Sample ID	Lab Sample ID	DXE #
MW-7S	480-142274-1	32
MW-11S	480-142274-2	32
MW-11S DUP	480-142274-3	34
EB	480-142274-4	32
	MB 480-436108/1-A	31
	LCS 480-436108/2-A	29

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.: 480-142274-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: U3311829.D
Lab ID: LCS 480-436108/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	1.13	113	40-140	
1,4-Dioxane-d8	10.0	2.94	29	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.: 480-142274-1
SDG No.: _____
Lab File ID: U3311828.D Lab Sample ID: MB 480-436108/1-A
Matrix: Water Date Extracted: 09/25/2018 14:25
Instrument ID: HP5973U Date Analyzed: 09/28/2018 23:56
Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-436108/2-A	U3311829.D	09/29/2018 00:19
MW-7S	480-142274-1	U3311838.D	09/29/2018 03:50
MW-11S	480-142274-2	U3311839.D	09/29/2018 04:13
MW-11S DUP	480-142274-3	U3311840.D	09/29/2018 04:36
EB	480-142274-4	U3311841.D	09/29/2018 05:00

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

Lab Name: TestAmerica Buffalo Job No.: 480-142274-1
SDG No.: _____
Lab File ID: U3311758.D DFTPP Injection Date: 09/27/2018
Instrument ID: HP5973U DFTPP Injection Time: 12:33
Analysis Batch No.: 436545

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	39.1
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	40.2
70	Less than 2% of mass 69	0.2 (0.5) 1
127	10-80% of Base Peak	48.0
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	28.3
365	Greater than 1% of mass 198	3.9
441	present but less than 24% of mass 442	16.5 (16.6) 2
442	Greater than 50% of mass 198	99.1
443	15-24% of mass 442	19.9 (20.1) 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 480-436545/3	U3311759.D	09/27/2018	13:00
	IC 480-436545/4	U3311760.D	09/27/2018	13:24
	ICIS 480-436545/5	U3311761.D	09/27/2018	13:47
	IC 480-436545/6	U3311762.D	09/27/2018	14:11
	IC 480-436545/7	U3311763.D	09/27/2018	14:35
	IC 480-436545/8	U3311764.D	09/27/2018	14:58

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

Lab Name: TestAmerica Buffalo Job No.: 480-142274-1
SDG No.: _____
Lab File ID: U3311826.D DFTPP Injection Date: 09/28/2018
Instrument ID: HP5973U DFTPP Injection Time: 23:04
Analysis Batch No.: 436862

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	33.3
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	34.8
70	Less than 2% of mass 69	0.2 (0.6) 1
127	10-80% of Base Peak	45.7
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	7.6
275	10-60% of Base Peak	35.6
365	Greater than 1% of mass 198	5.0
441	present but less than 24% of mass 442	18.7 (13.3) 2
442	Greater than 50% of mass 198	140.3
443	15-24% of mass 442	30.5 (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
	CCVIS 480-436862/3	U3311827.D	09/28/2018	23:32
	MB 480-436108/1-A	U3311828.D	09/28/2018	23:56
	LCS 480-436108/2-A	U3311829.D	09/29/2018	00:19
MW-7S	480-142274-1	U3311838.D	09/29/2018	03:50
MW-11S	480-142274-2	U3311839.D	09/29/2018	04:13
MW-11S DUP	480-142274-3	U3311840.D	09/29/2018	04:36
EB	480-142274-4	U3311841.D	09/29/2018	05:00

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

Lab Name: TestAmerica Buffalo Job No.: 480-142274-1
 SDG No.: _____
 Sample No.: ICIS 480-436545/5 Date Analyzed: 09/27/2018 13:47
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
 Lab File ID (Standard): U3311761.D Heated Purge: (Y/N) N
 Calibration ID: 34967

	DCBd4					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	819079	6.02				
UPPER LIMIT	1638158	6.52				
LOWER LIMIT	409540	5.52				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVIS 480-436862/3		1294852	6.02			

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.: 480-142274-1
 SDG No.: _____
 Sample No.: CCVIS 480-436862/3 Date Analyzed: 09/28/2018 23:32
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm)
 Lab File ID (Standard): U3311827.D Heated Purge: (Y/N) N
 Calibration ID: 34967

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		1294852	6.02				
UPPER LIMIT		2589704	6.52				
LOWER LIMIT		647426	5.52				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-436108/1-A		1181432	6.02				
LCS 480-436108/2-A		1144414	6.03				
480-142274-1	MW-7S	1253486	6.02				
480-142274-2	MW-11S	1244767	6.03				
480-142274-3	MW-11S DUP	1210423	6.03				
480-142274-4	EB	1317540	6.02				

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.: 480-142274-1
SDG No.: _____
Client Sample ID: MW-7S Lab Sample ID: 480-142274-1
Matrix: Water Lab File ID: U3311838.D
Analysis Method: 8270D SIM ID Date Collected: 09/18/2018 11:25
Extract. Method: 3510C Date Extracted: 09/25/2018 14:25
Sample wt/vol: 1000 (mL) Date Analyzed: 09/29/2018 03:50
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.: 436862 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		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\20180928-75044.b\U3311838.D
 Lims ID: 480-142274-B-1-A
 Client ID: MW-7S
 Sample Type: Client
 Inject. Date: 29-Sep-2018 03:50:30 ALS Bottle#: 44 Worklist Smp#: 40
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075044-040
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 09:29:28 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

First Level Reviewer: pagem

Date: 02-Oct-2018 09:29:28

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	2.964	2.883	0.081	97	579527	3.20	32.0	
3 1,4-Dioxane	88	3.017	2.919	0.098	86	3703	0.0575		a
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.020	0.004	96	1253486	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00153

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311838.D

Injection Date: 29-Sep-2018 03:50:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142274-B-1-A

Lab Sample ID: 480-142274-1

Worklist Smp#: 40

Client ID: MW-7S

Injection Vol: 1.0 ul

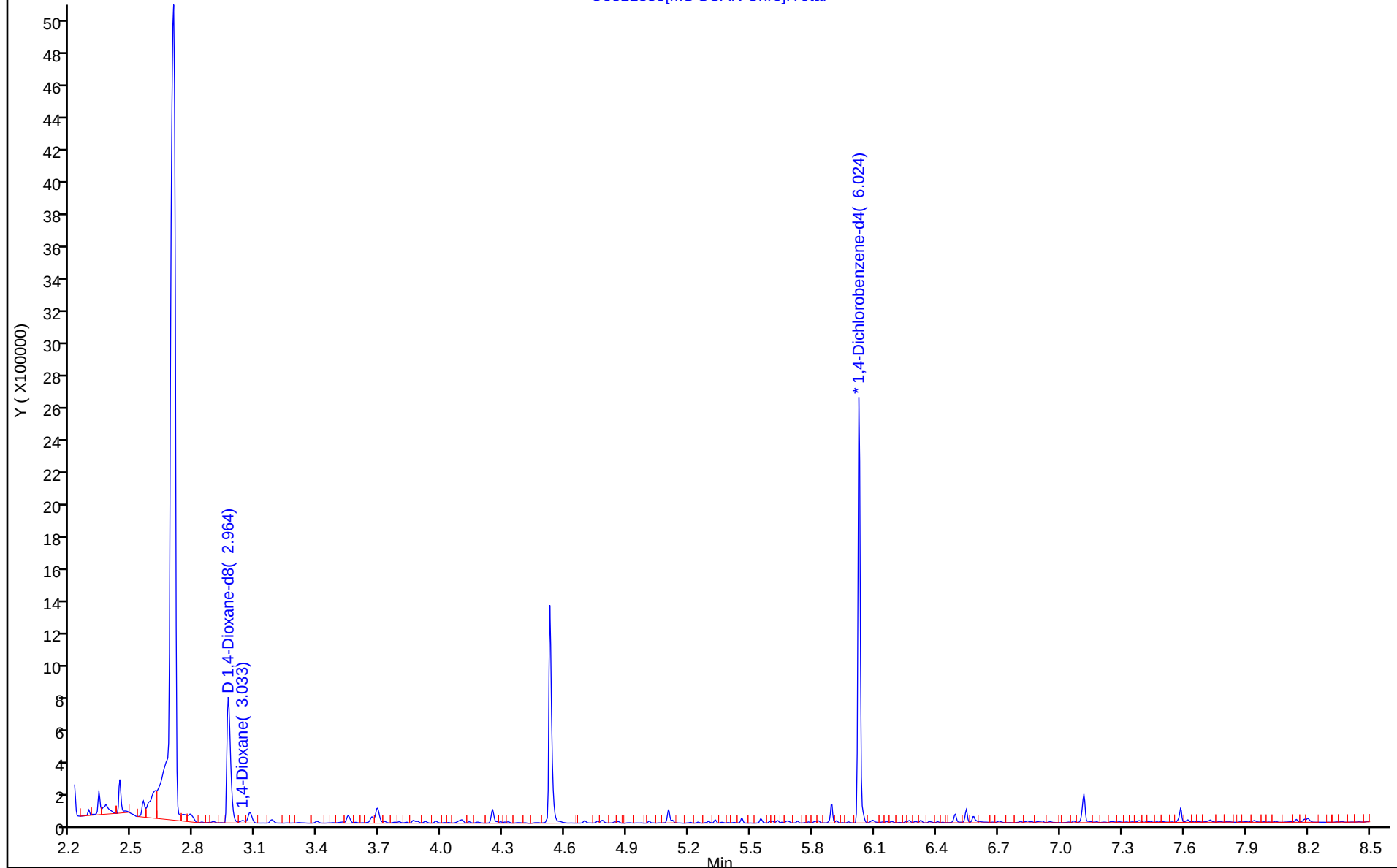
Dil. Factor: 1.0000

ALS Bottle#: 44

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311838[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311838.D

Injection Date: 29-Sep-2018 03:50:30

Instrument ID: HP5973U

Lims ID: 480-142274-B-1-A

Lab Sample ID: 480-142274-1

Client ID: MW-7S

Operator ID: DR

ALS Bottle#: 44

Worklist Smp#: 40

Injection Vol: 1.0 ul

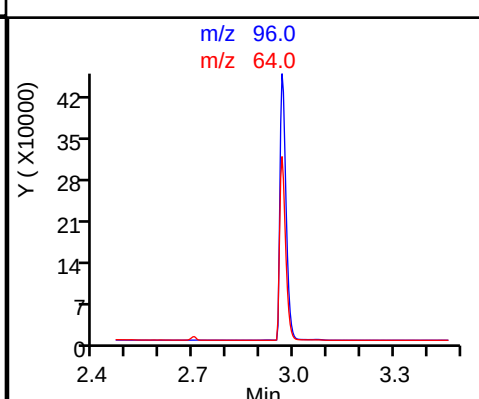
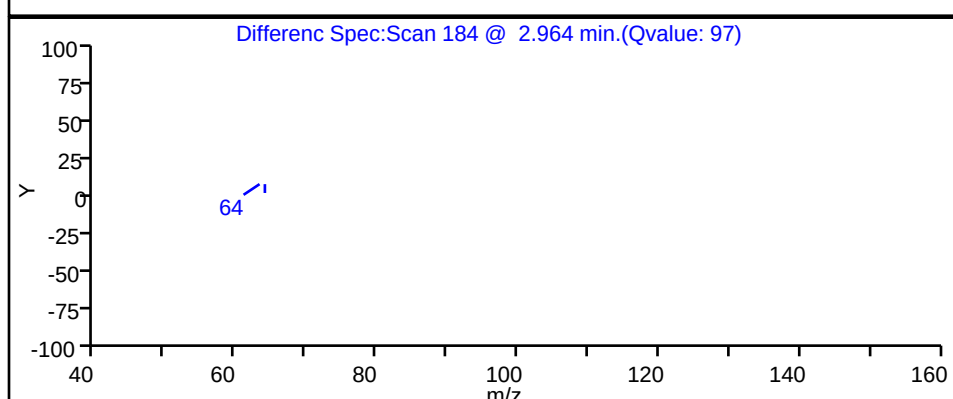
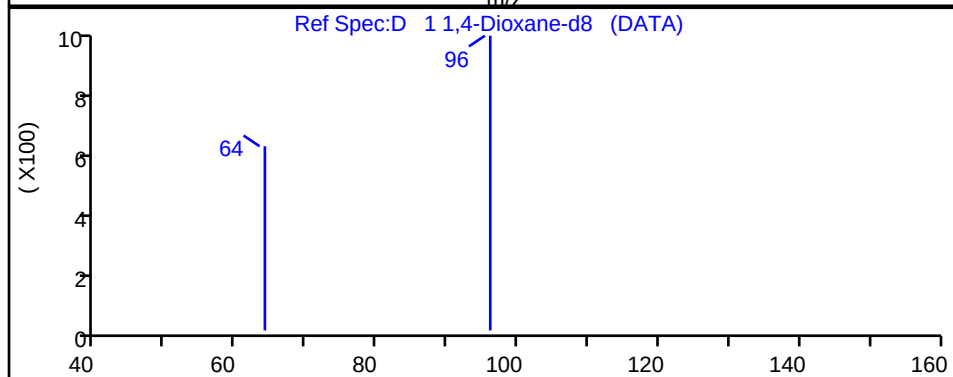
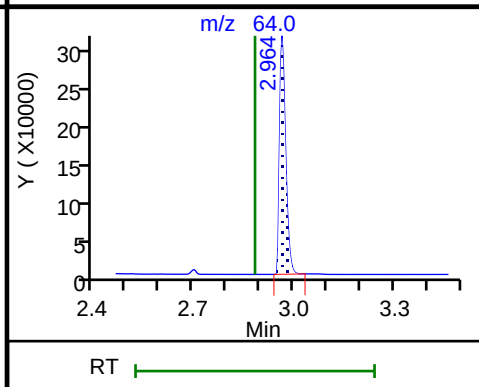
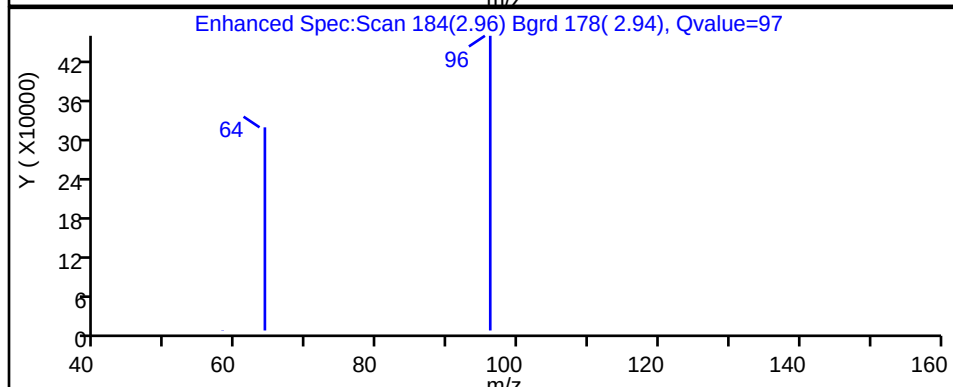
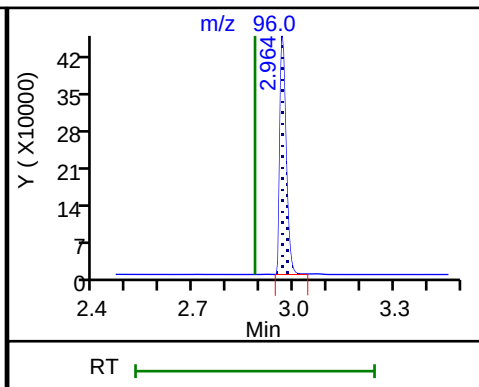
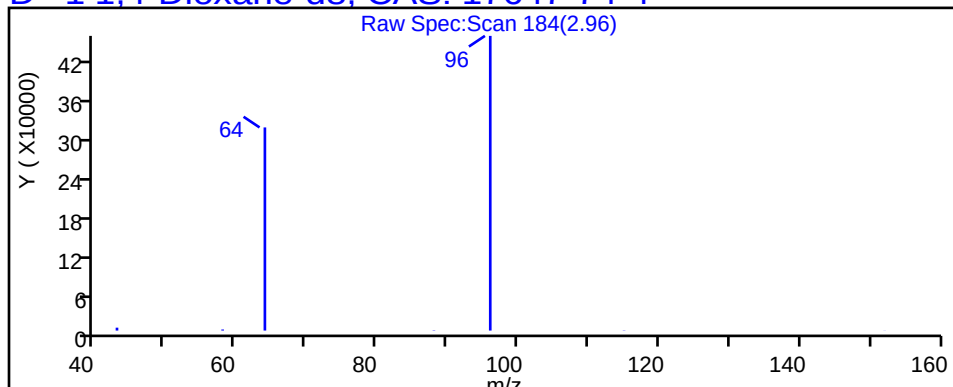
Dil. Factor: 1.0000

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\20180928-75044.b\U3311838.D

Injection Date: 29-Sep-2018 03:50:30

Instrument ID: HP5973U

Lims ID: 480-142274-B-1-A

Lab Sample ID: 480-142274-1

Client ID: MW-7S

Operator ID: DR

ALS Bottle#: 44 Worklist Smp#: 40

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

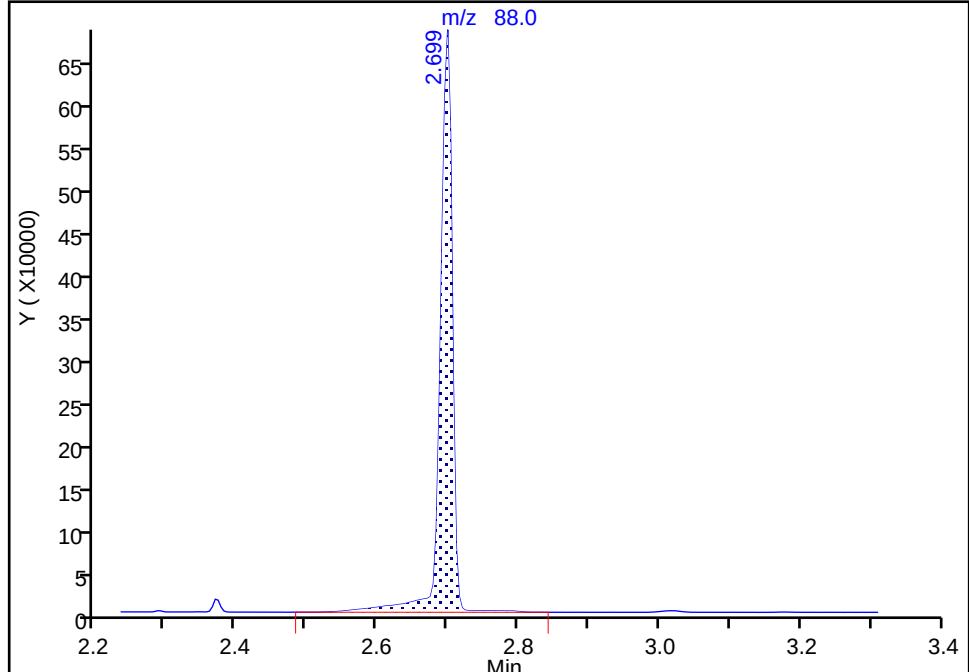
Detector: MS SCAN

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

Signal: 1

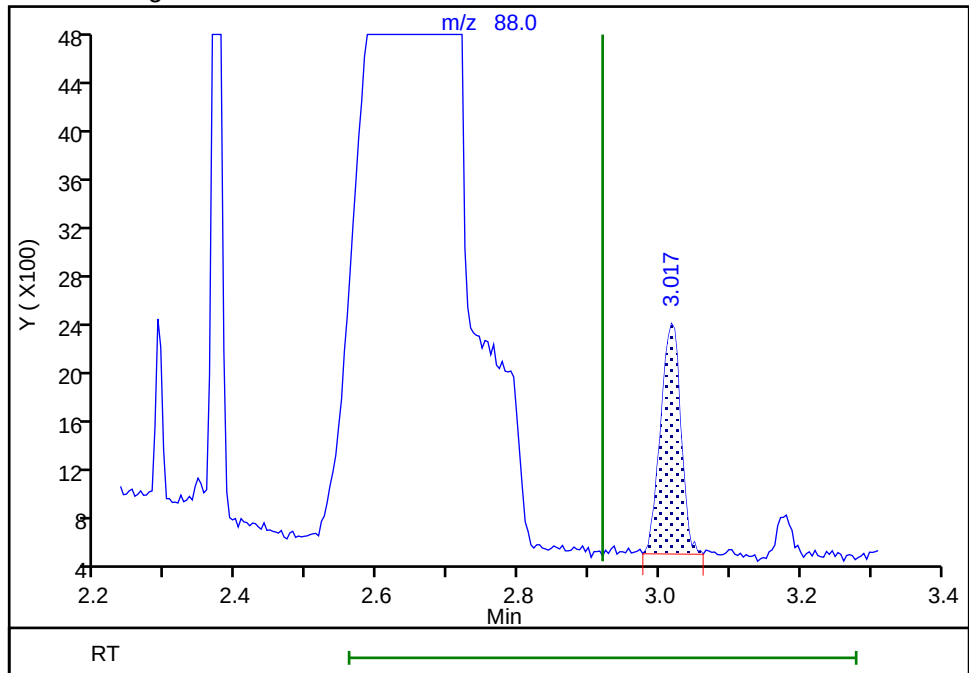
RT: 2.70
Area: 807006
Amount: 12.529151
Amount Units: ng/ul

Processing Integration Results



RT: 3.02
Area: 3703
Amount: 0.057491
Amount Units: ng/ul

Manual Integration Results



Reviewer: pagem, 02-Oct-2018 09:29:25

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.: 480-142274-1
 SDG No.: _____
 Client Sample ID: MW-11S Lab Sample ID: 480-142274-2
 Matrix: Water Lab File ID: U3311839.D
 Analysis Method: 8270D SIM ID Date Collected: 09/20/2018 15:05
 Extract. Method: 3510C Date Extracted: 09/25/2018 14:25
 Sample wt/vol: 1000 (mL) Date Analyzed: 09/29/2018 04:13
 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.: 436862 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		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\20180928-75044.b\U3311839.D
 Lims ID: 480-142274-A-2-A
 Client ID: MW-11S
 Sample Type: Client
 Inject. Date: 29-Sep-2018 04:13:30 ALS Bottle#: 45 Worklist Smp#: 41
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075044-041
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 09:29:37 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

First Level Reviewer: pagem

Date: 02-Oct-2018 09:29:37

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	2.964	2.883	0.081	99	569959	3.17	31.7	
3 1,4-Dioxane	88	3.017	2.919	0.098	82	3257	0.0514		a
* 2 1,4-Dichlorobenzene-d4	152	6.028	6.020	0.008	98	1244767	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00153

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311839.D

Injection Date: 29-Sep-2018 04:13:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142274-A-2-A

Lab Sample ID: 480-142274-2

Worklist Smp#: 41

Client ID: MW-11S

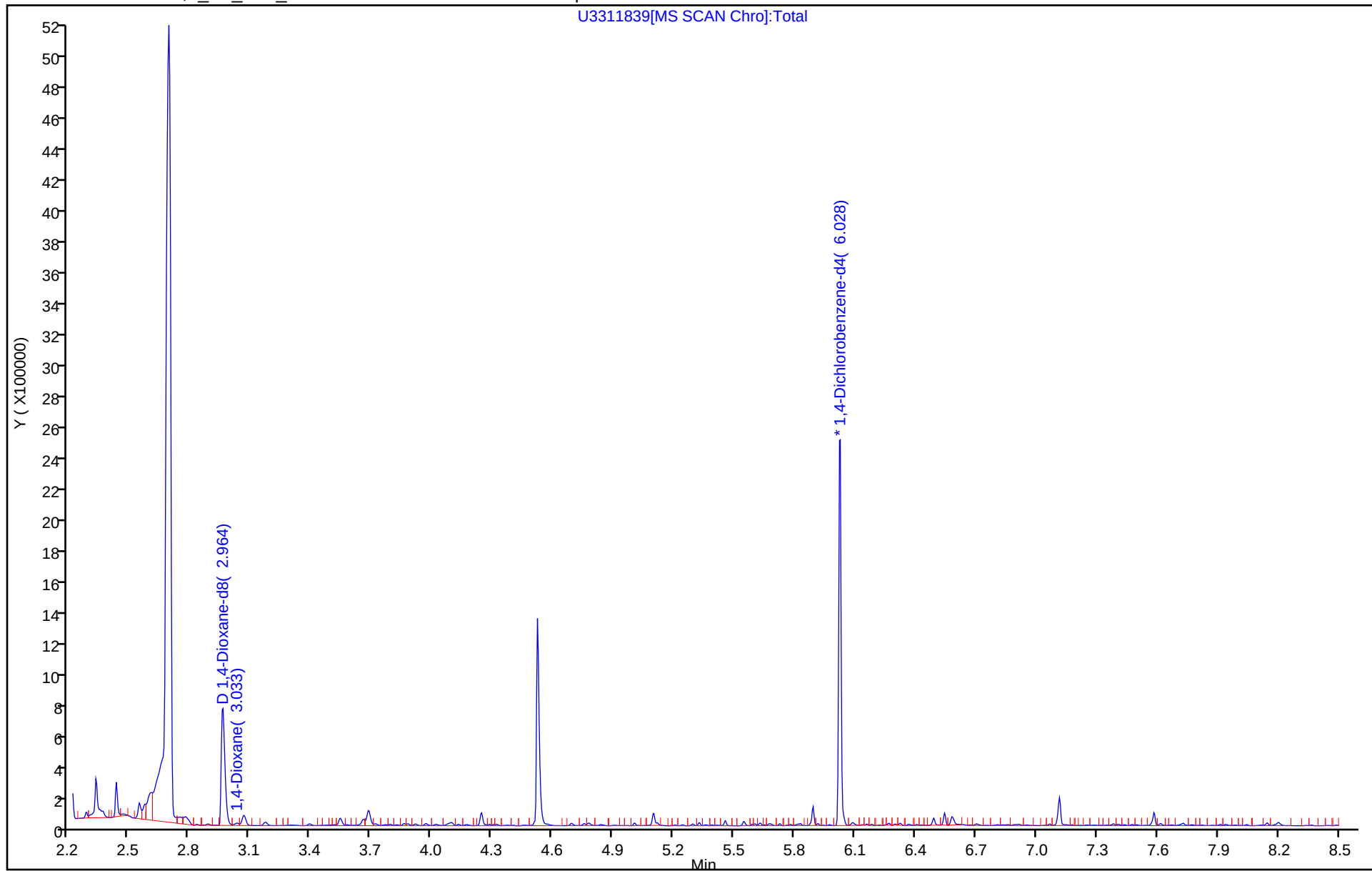
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 45

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311839.D

Injection Date: 29-Sep-2018 04:13:30

Instrument ID: HP5973U

Lims ID: 480-142274-A-2-A

Lab Sample ID: 480-142274-2

Client ID: MW-11S

Operator ID: DR

ALS Bottle#: 45

Worklist Smp#: 41

Injection Vol: 1.0 ul

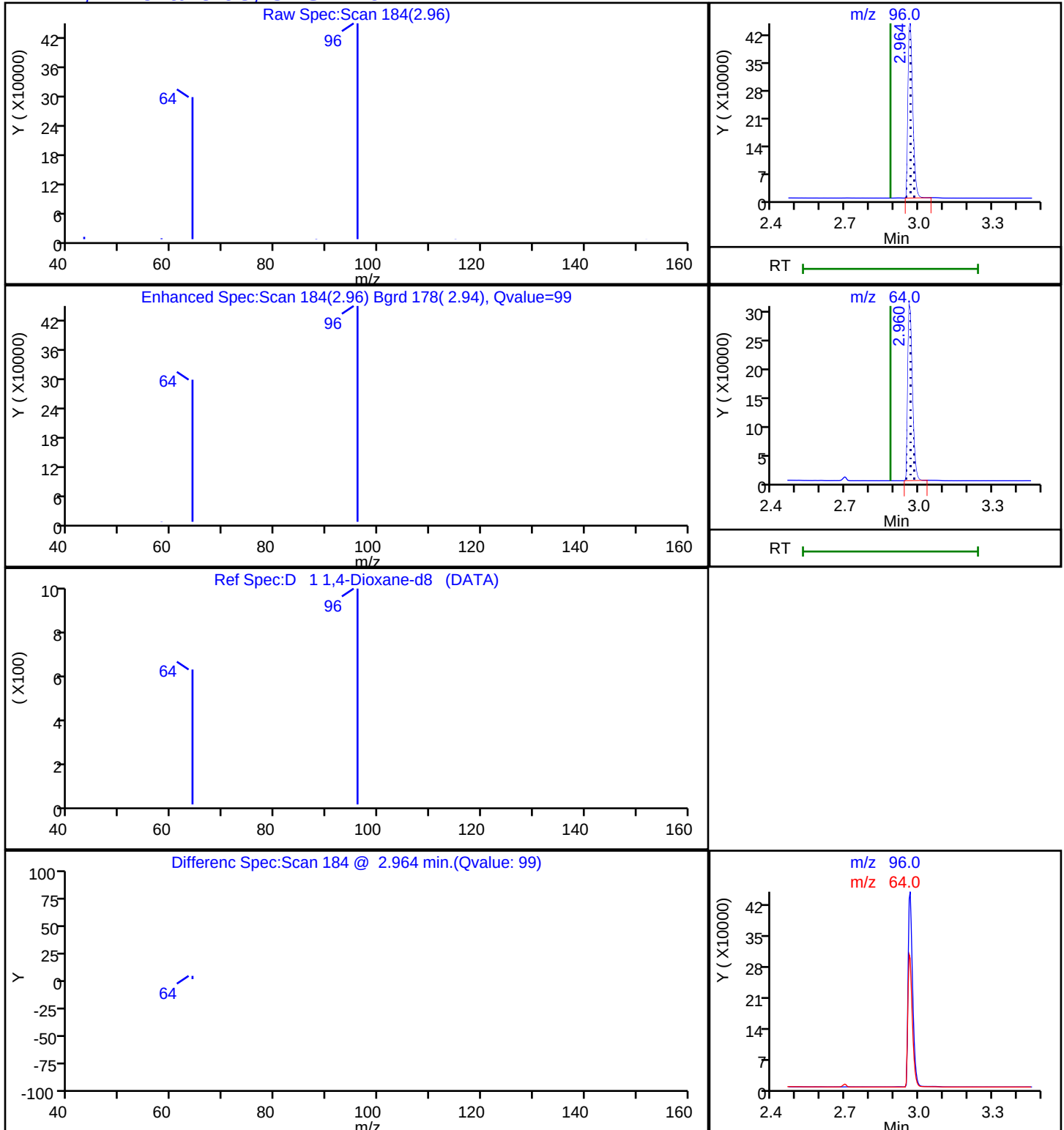
Dil. Factor: 1.0000

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\20180928-75044.b\U3311839.D

Injection Date: 29-Sep-2018 04:13:30

Instrument ID: HP5973U

Lims ID: 480-142274-A-2-A

Lab Sample ID: 480-142274-2

Client ID: MW-11S

Operator ID: DR

ALS Bottle#: 45 Worklist Smp#: 41

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

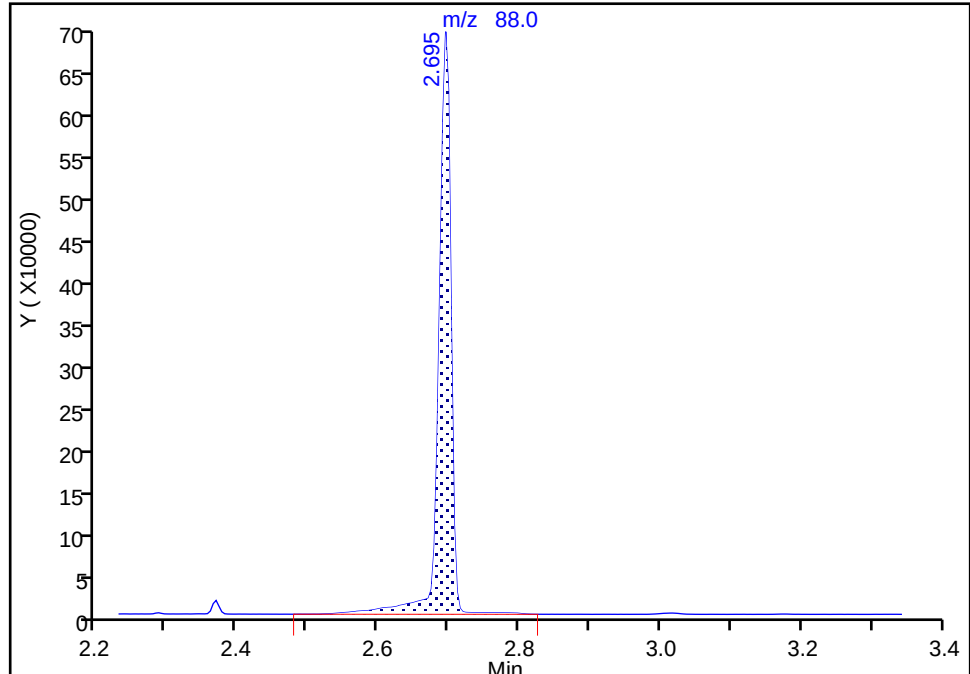
Detector: MS SCAN

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

Signal: 1

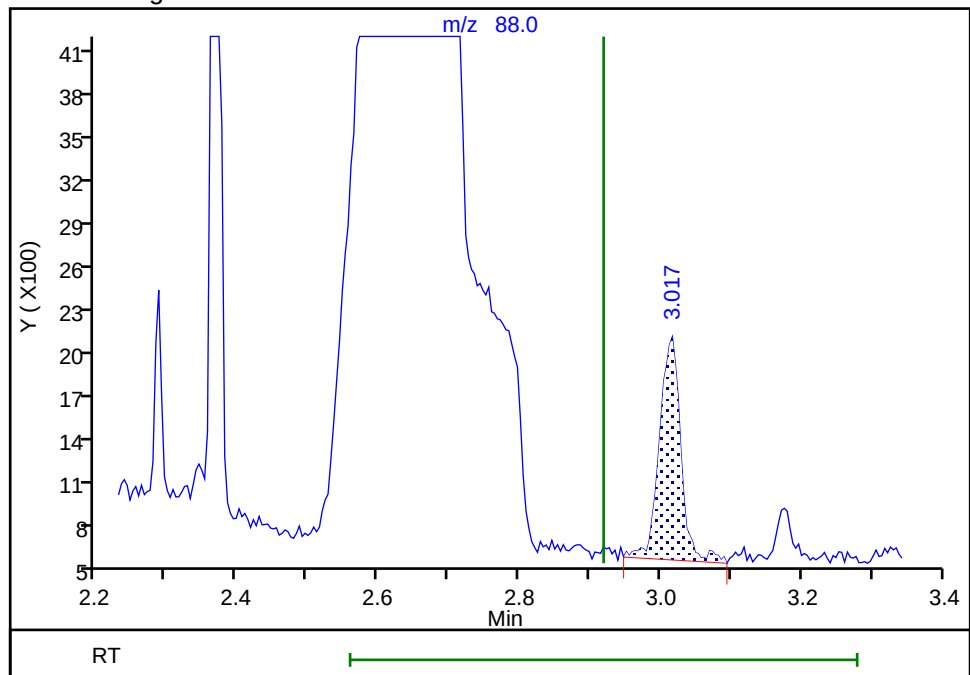
RT: 2.70
Area: 836489
Amount: 13.204902
Amount Units: ng/ul

Processing Integration Results



RT: 3.02
Area: 3257
Amount: 0.051415
Amount Units: ng/ul

Manual Integration Results



Reviewer: pagem, 02-Oct-2018 09:29:34

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.: 480-142274-1
SDG No.: _____
Client Sample ID: MW-11S DUP Lab Sample ID: 480-142274-3
Matrix: Water Lab File ID: U3311840.D
Analysis Method: 8270D SIM ID Date Collected: 09/20/2018 15:35
Extract. Method: 3510C Date Extracted: 09/25/2018 14:25
Sample wt/vol: 1000 (mL) Date Analyzed: 09/29/2018 04:36
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.: 436862 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		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\20180928-75044.b\U3311840.D
 Lims ID: 480-142274-B-3-A
 Client ID: MW-11S DUP
 Sample Type: Client
 Inject. Date: 29-Sep-2018 04:36:30 ALS Bottle#: 46 Worklist Smp#: 42
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075044-042
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 09:29:47 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

First Level Reviewer: pagem

Date: 02-Oct-2018 09:29:47

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	2.960	2.883	0.077	98	595552	3.40	34.0	
3 1,4-Dioxane	88	3.013	2.919	0.094	86	3139	0.0474		a
* 2 1,4-Dichlorobenzene-d4	152	6.028	6.020	0.008	98	1210423	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00153

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311840.D

Injection Date: 29-Sep-2018 04:36:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142274-B-3-A

Lab Sample ID: 480-142274-3

Worklist Smp#: 42

Client ID: MW-11S DUP

Injection Vol: 1.0 ul

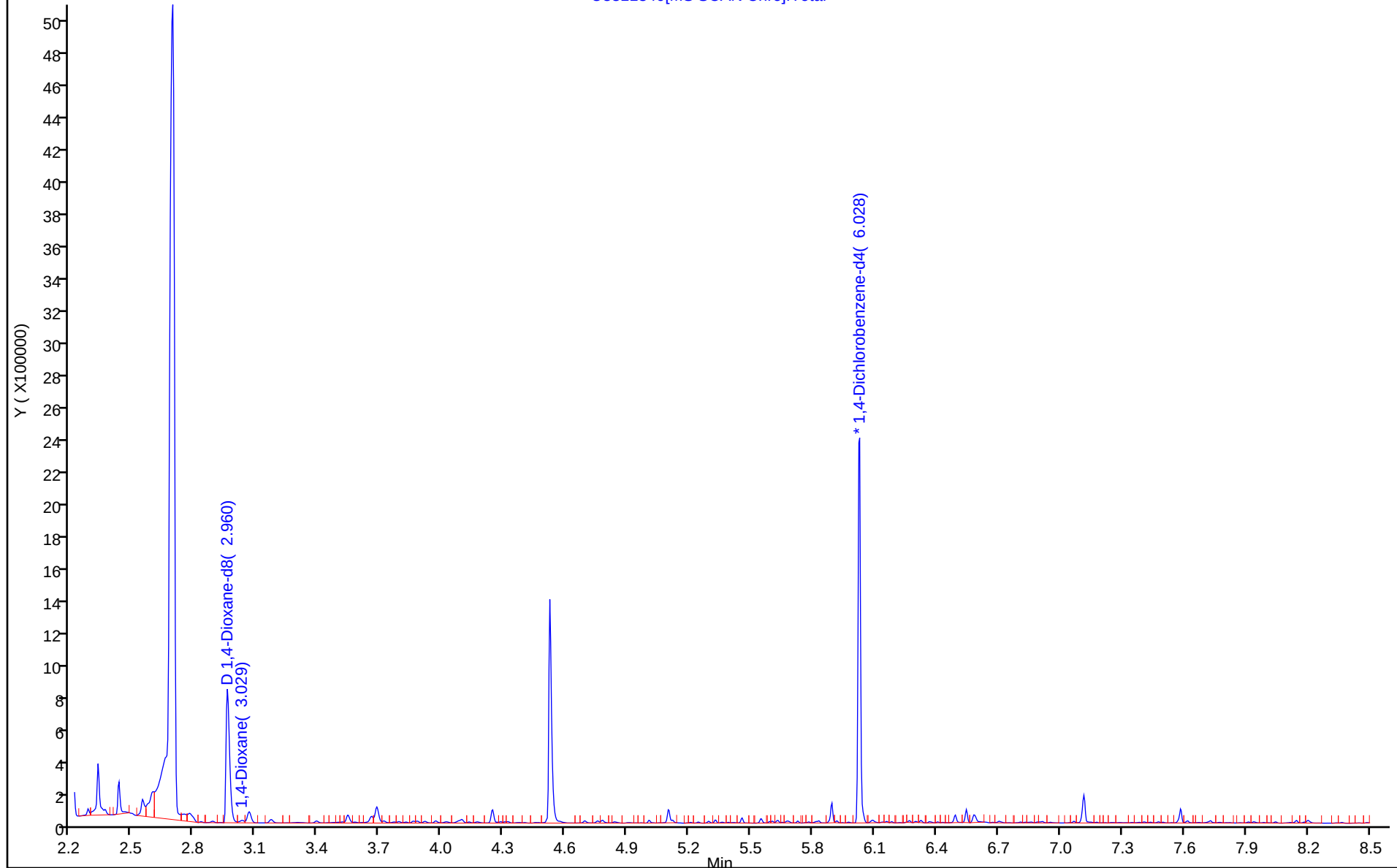
Dil. Factor: 1.0000

ALS Bottle#: 46

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311840[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\\Buffalo\\ChromData\\HP5973U\\20180928-75044.b\\U3311840.D

Injection Date: 29-Sep-2018 04:36:30

Instrument ID: HP5973U

Lims ID: 480-142274-B-3-A

Lab Sample ID: 480-142274-3

Client ID: MW-11S DUP

Operator ID: DR

ALS Bottle#: 46

Worklist Smp#: 42

Injection Vol: 1.0 ul

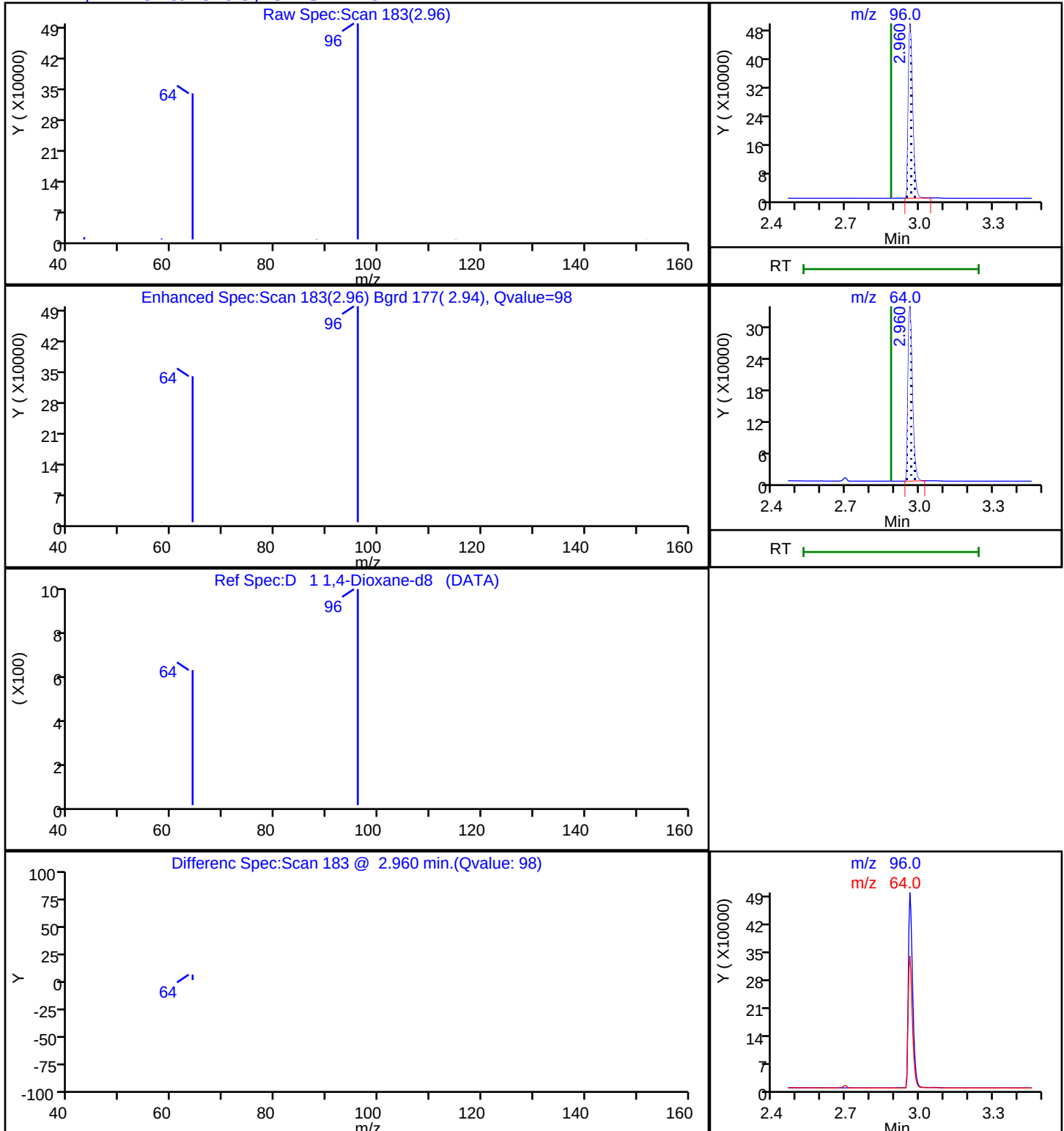
Dil. Factor: 1.0000

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\20180928-75044.b\U3311840.D

Injection Date: 29-Sep-2018 04:36:30

Instrument ID: HP5973U

Lims ID: 480-142274-B-3-A

Lab Sample ID: 480-142274-3

Client ID: MW-11S DUP

Operator ID: DR

ALS Bottle#: 46 Worklist Smp#: 42

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

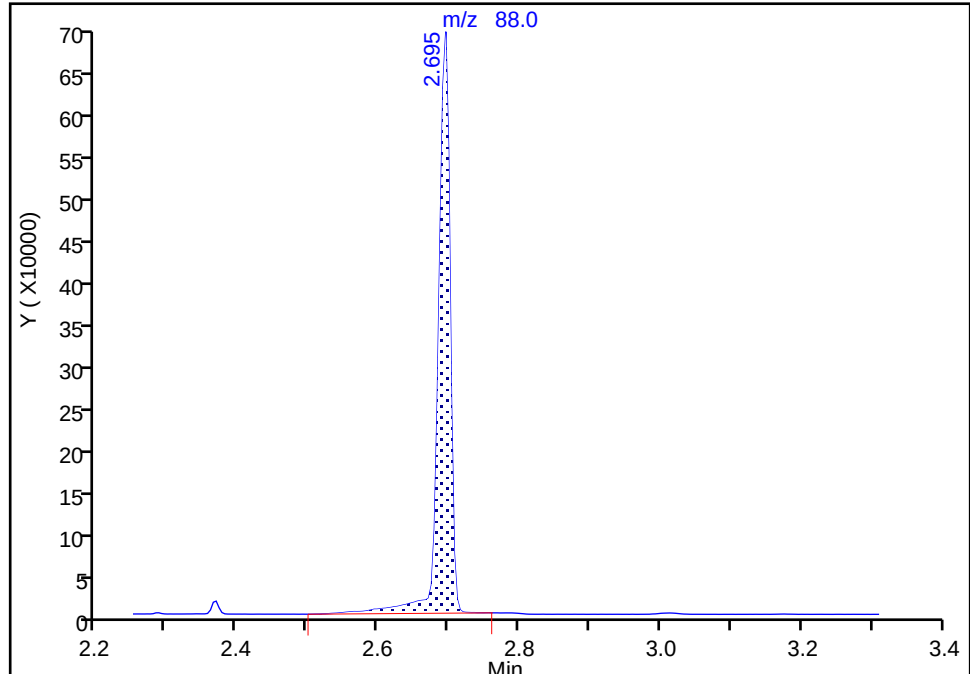
Detector: MS SCAN

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

Signal: 1

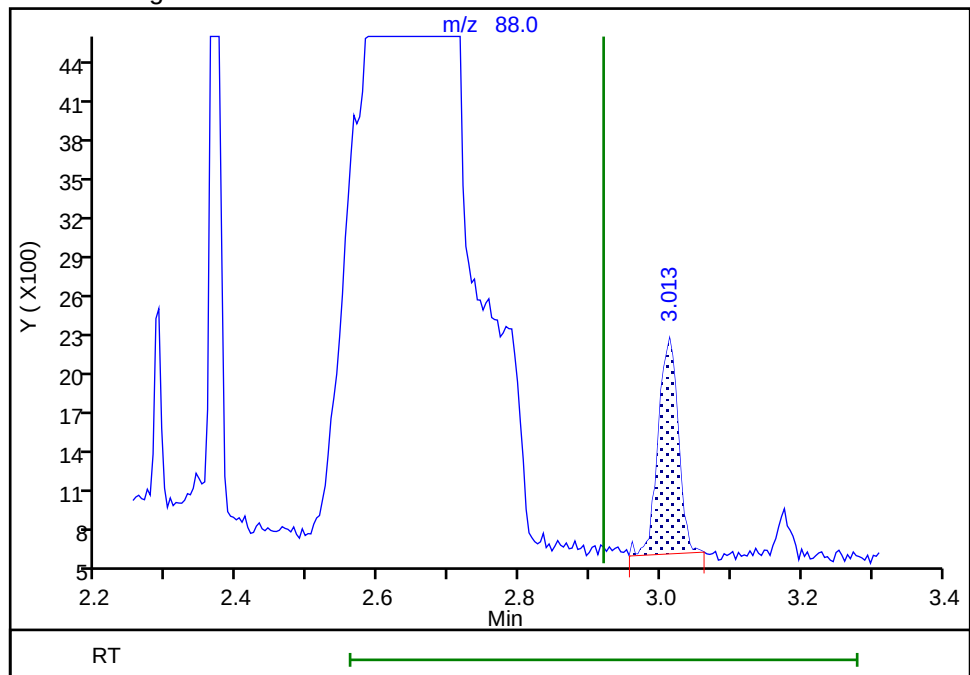
RT: 2.70
Area: 811035
Amount: 12.252888
Amount Units: ng/ul

Processing Integration Results



RT: 3.01
Area: 3139
Amount: 0.047423
Amount Units: ng/ul

Manual Integration Results



Reviewer: pagem, 02-Oct-2018 09:29:45

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.: 480-142274-1
SDG No.: _____
Client Sample ID: EB Lab Sample ID: 480-142274-4
Matrix: Water Lab File ID: U3311841.D
Analysis Method: 8270D SIM ID Date Collected: 09/20/2018 16:10
Extract. Method: 3510C Date Extracted: 09/25/2018 14:25
Sample wt/vol: 1000 (mL) Date Analyzed: 09/29/2018 05:00
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.: 436862 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	ND		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\20180928-75044.b\U3311841.D
 Lims ID: 480-142274-A-4-A
 Client ID: EB
 Sample Type: Client
 Inject. Date: 29-Sep-2018 05:00:30 ALS Bottle#: 47 Worklist Smp#: 43
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075044-043
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 09:29:58 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

First Level Reviewer: pagem

Date: 02-Oct-2018 09:29:58

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	2.968	2.883	0.085	99	614877	3.23	32.3	
3 1,4-Dioxane	88	3.025	2.919	0.106	15	6119	0.0895		a
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.020	0.004	95	1317540	4.00		

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00153

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\\Buffalo\\ChromData\\HP5973U\\20180928-75044.b\\U3311841.D

Injection Date: 29-Sep-2018 05:00:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-142274-A-4-A

Lab Sample ID: 480-142274-4

Worklist Smp#: 43

Client ID: EB

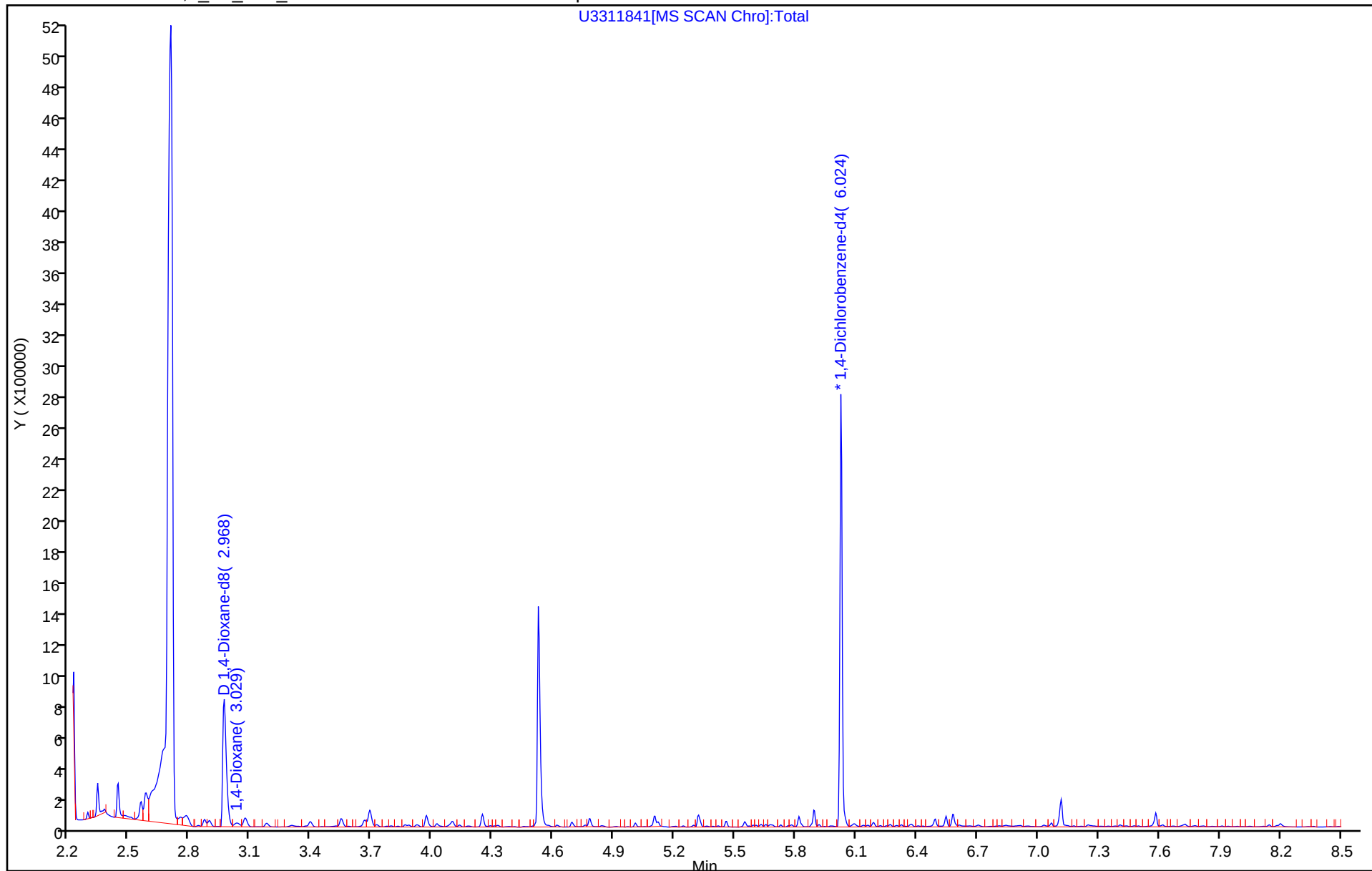
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 47

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311841.D

Injection Date: 29-Sep-2018 05:00:30

Instrument ID: HP5973U

Lims ID: 480-142274-A-4-A

Lab Sample ID: 480-142274-4

Client ID: EB

Operator ID: DR

ALS Bottle#: 47

Worklist Smp#: 43

Injection Vol: 1.0 ul

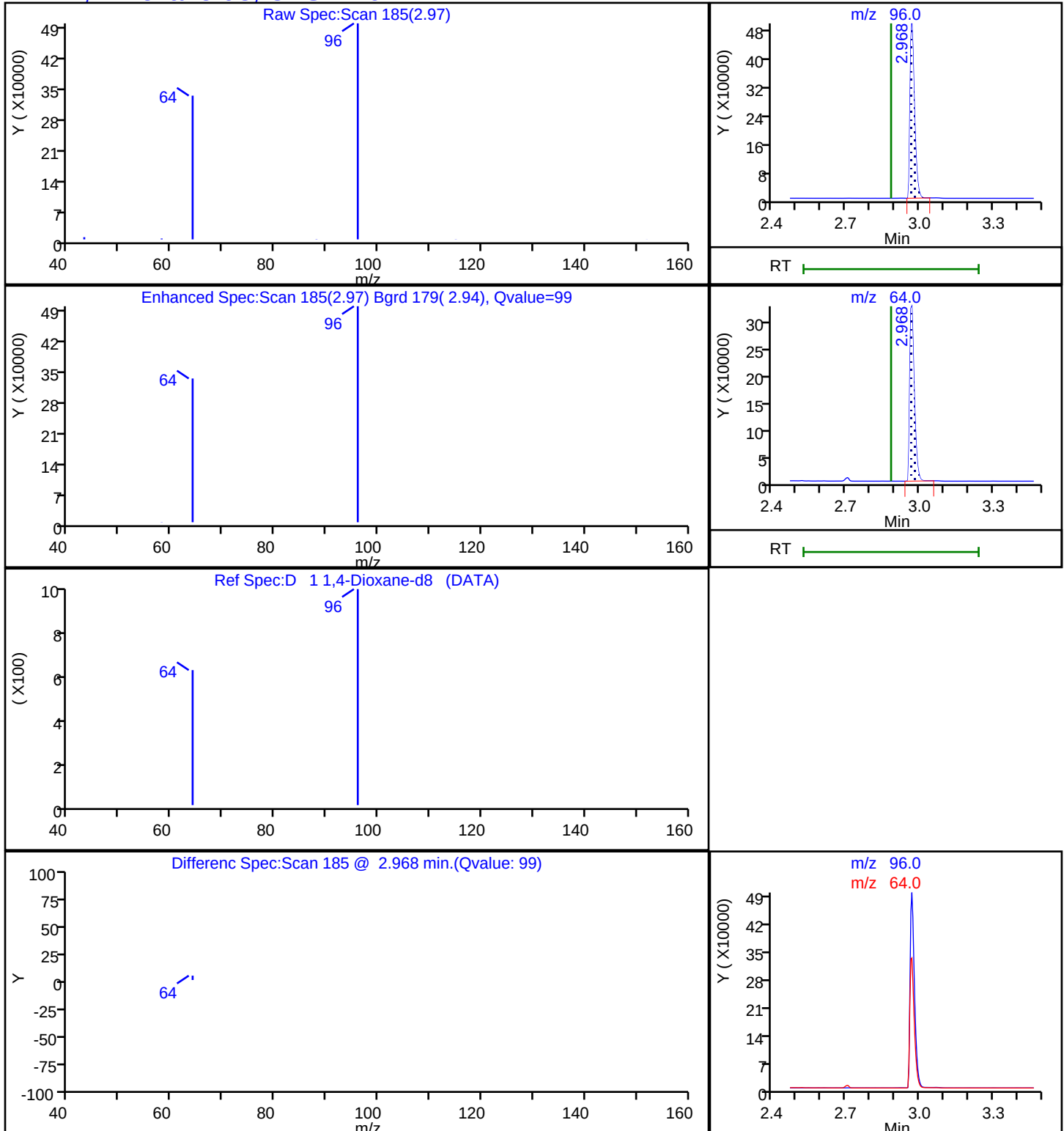
Dil. Factor: 1.0000

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\20180928-75044.b\U3311841.D

Injection Date: 29-Sep-2018 05:00:30

Instrument ID: HP5973U

Lims ID: 480-142274-A-4-A

Lab Sample ID: 480-142274-4

Client ID: EB

Operator ID: DR

ALS Bottle#: 47 Worklist Smp#: 43

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

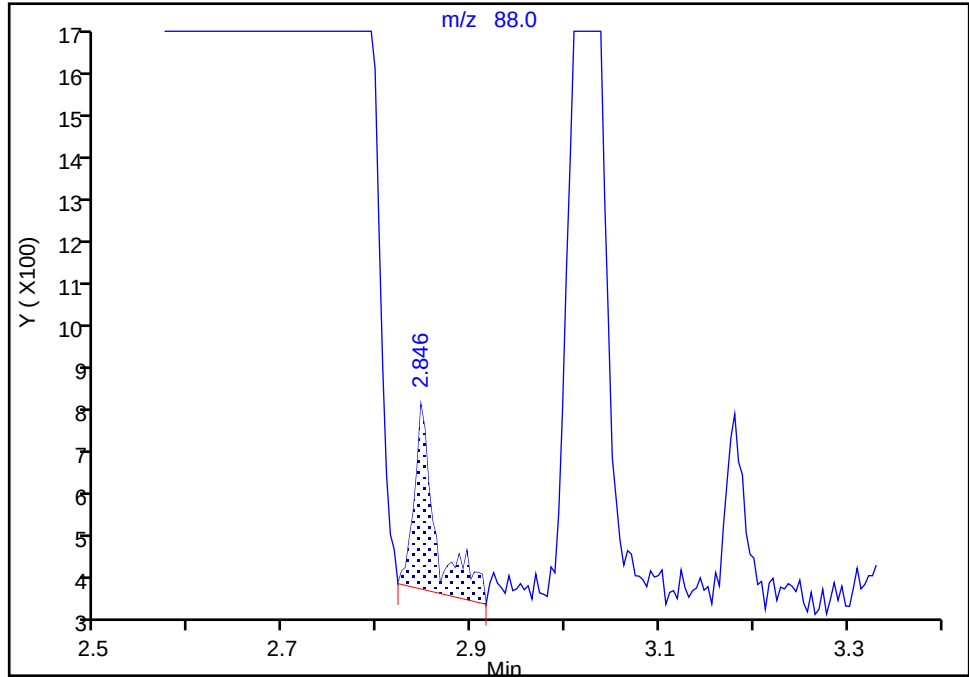
Detector: MS SCAN

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

Signal: 1

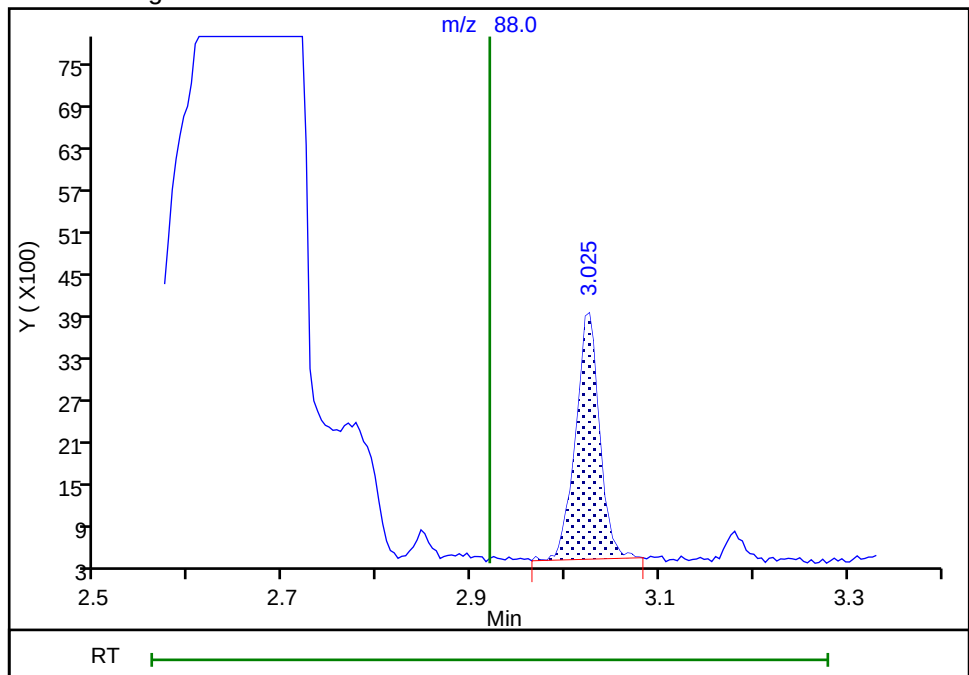
RT: 2.85
Area: 670
Amount: 0.009804
Amount Units: ng/ul

Processing Integration Results



RT: 3.03
Area: 6119
Amount: 0.089539
Amount Units: ng/ul

Manual Integration Results



Reviewer: pagem, 02-Oct-2018 09:29:55

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.: 480-142274-1 Analy Batch No.: 436545

SDG No.: _____

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

Calibration Start Date: 09/27/2018 13:00 Calibration End Date: 09/27/2018 14:58 Calibration ID: 34967

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-436545/3	U3311759.D
Level 2	IC 480-436545/4	U3311760.D
Level 3	ICIS 480-436545/5	U3311761.D
Level 4	IC 480-436545/6	U3311762.D
Level 5	IC 480-436545/7	U3311763.D
Level 6	IC 480-436545/8	U3311764.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	1.0092 1.1539	1.0912	1.1188	1.1303	1.1652	AveID		1.1114			0.0100	5.1		20.0			
1,4-Dioxane-d8	0.5671 0.5871	0.5702	0.5579	0.5974	0.5904	Ave		0.5783			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.: 480-142274-1 Analy Batch No.: 436545

SDG No.: _____

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

Calibration Start Date: 09/27/2018 13:00 Calibration End Date: 09/27/2018 14:58 Calibration ID: 34967

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-436545/3	U3311759.D
Level 2	IC 480-436545/4	U3311760.D
Level 3	ICIS 480-436545/5	U3311761.D
Level 4	IC 480-436545/6	U3311762.D
Level 5	IC 480-436545/7	U3311763.D
Level 6	IC 480-436545/8	U3311764.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		AveID	28214 203192	55281	76691	140302	192468	0.200 1.20	0.400	0.600	0.800	1.00
1,4-Dioxane-d8	DCBd 4	Ave	279580 1760895	506612	685465	1241301	1651787	2.00 12.0	4.00	6.00	8.00	10.0

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311759.D
 Lims ID: IC SIM 0.2
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 27-Sep-2018 13:00:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075003-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Sep-2018 15:19:29 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: richardsd

Date: 27-Sep-2018 15:18:28

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	2.886	2.879	0.007	95	279580	2.00	1.96	
3 1,4-Dioxane	88	2.931	2.923	0.008	96	28214	0.2000	0.1816	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	97	985960	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00053

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\20180927-75003.b\U3311759.D

Injection Date: 27-Sep-2018 13:00:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.2

Worklist Smp#: 3

Client ID:

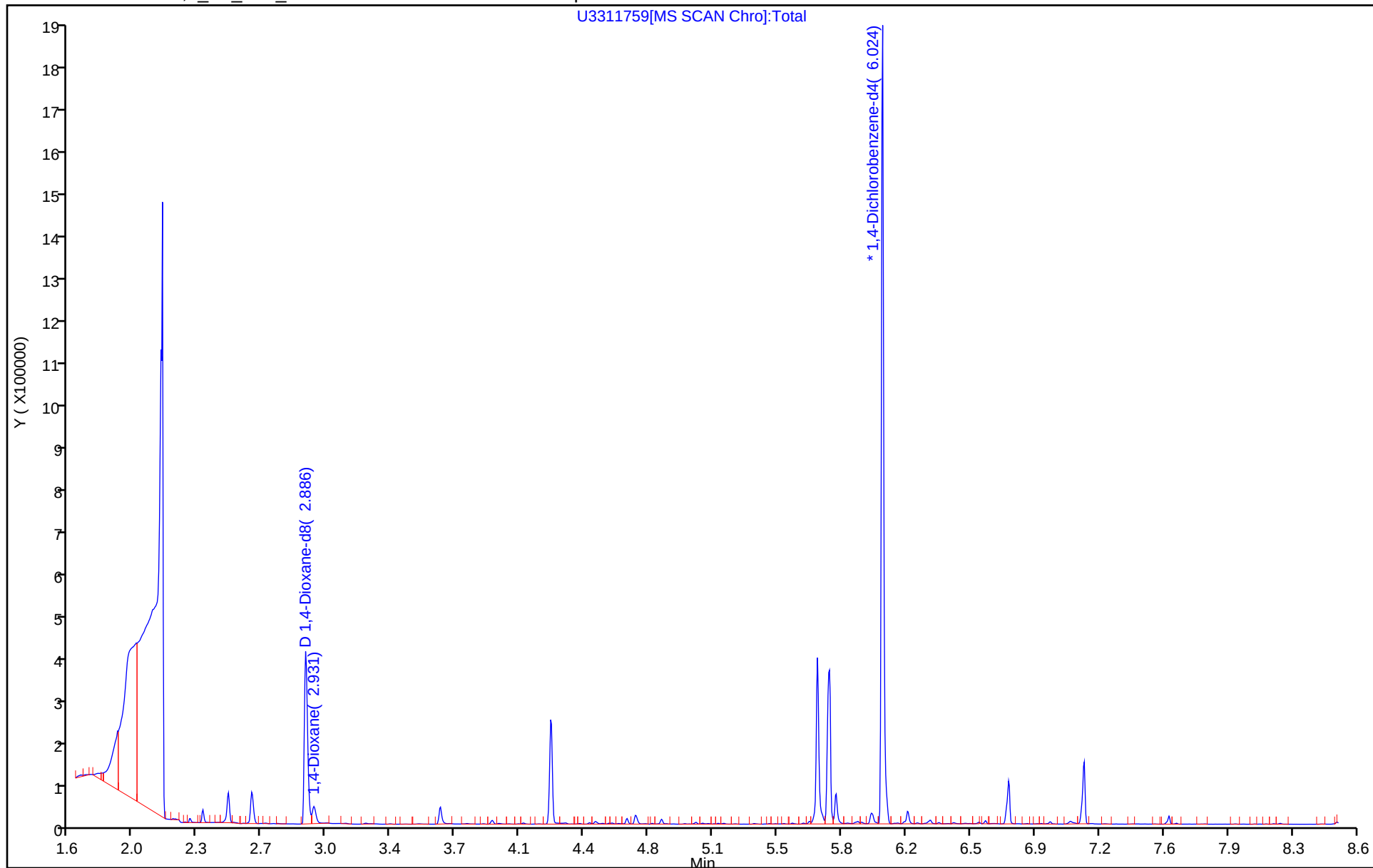
Injection Vol: 2.0 ul

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\20180927-75003.b\U3311760.D
 Lims ID: IC SIM 0.4
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 27-Sep-2018 13:24:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075003-004
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Sep-2018 15:19:30 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: richardsd

Date: 27-Sep-2018 15:18:35

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	2.882	2.879	0.003	95	506612	4.00	3.94	
3 1,4-Dioxane	88	2.927	2.923	0.004	97	55281	0.4000	0.3927	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	96	888522	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00054

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\20180927-75003.b\U3311760.D

Injection Date: 27-Sep-2018 13:24:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.4

Worklist Smp#: 4

Client ID:

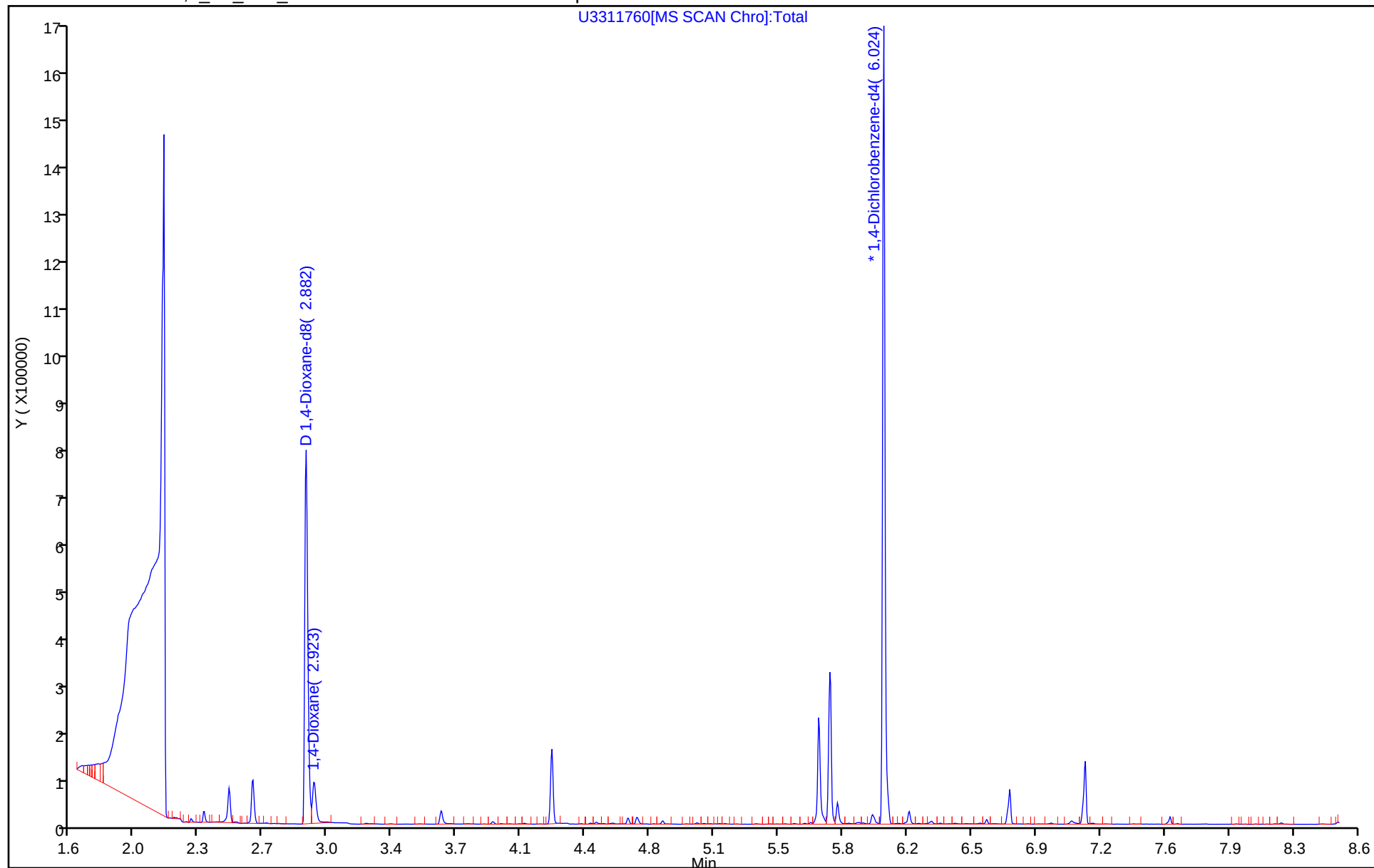
Injection Vol: 2.0 ul

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\20180927-75003.b\U3311761.D
 Lims ID: ICIS SIM 0.6
 Client ID:
 Sample Type: ICIS Calib Level: 3
 Inject. Date: 27-Sep-2018 13:47:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075003-005
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Sep-2018 15:19:31 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: richardsd

Date: 27-Sep-2018 15:18:41

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	2.879	2.879	0.000	95	685465	6.00	5.79	
3 1,4-Dioxane	88	2.923	2.923	0.000	97	76691	0.6000	0.6040	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	97	819079	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059

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\20180927-75003.b\U3311761.D

Injection Date: 27-Sep-2018 13:47:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: ICIS SIM 0.6

Worklist Smp#: 5

Client ID:

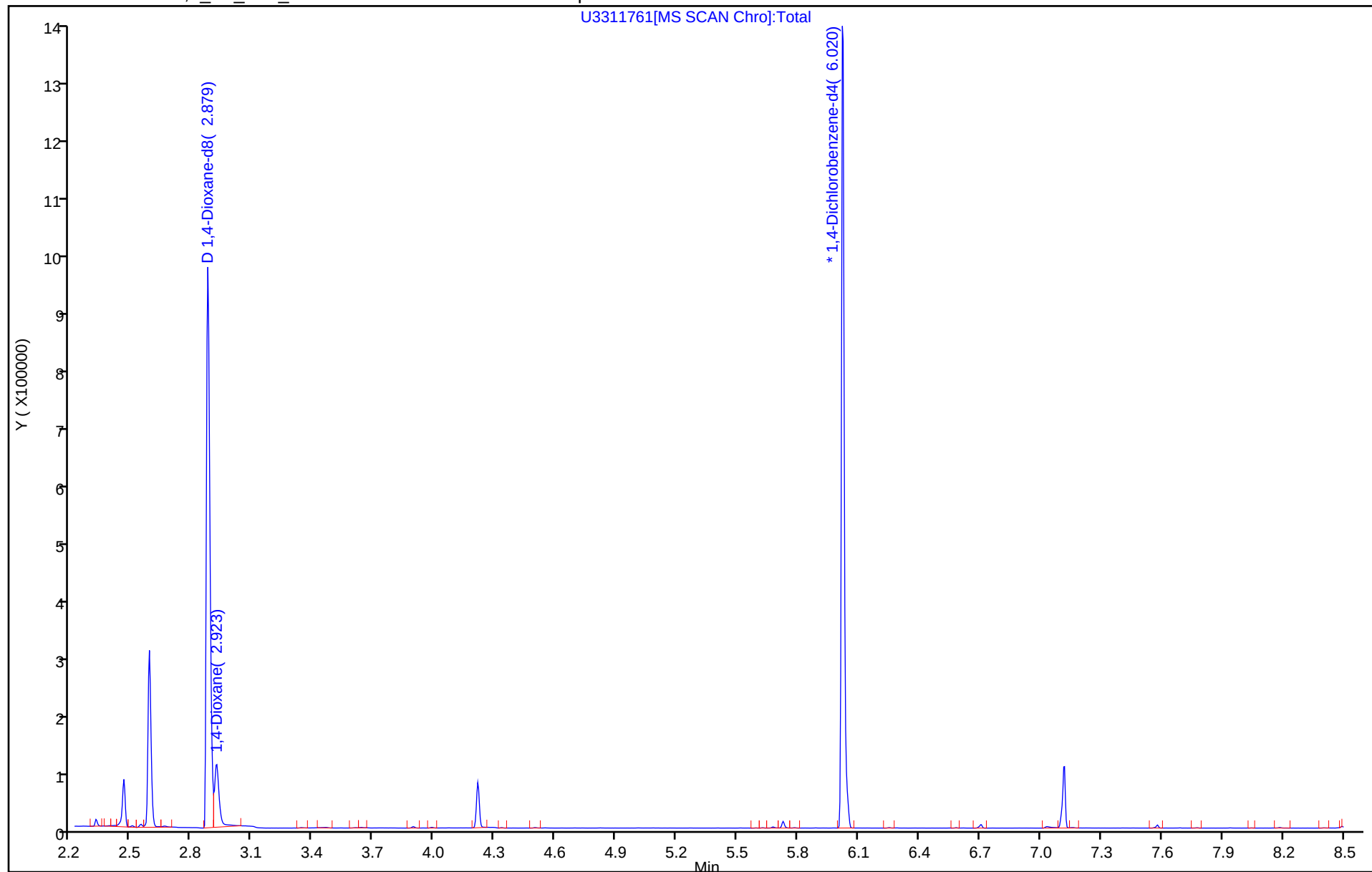
Injection Vol: 2.0 ul

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\20180927-75003.b\U3311762.D
 Lims ID: IC SIM 0.8
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 27-Sep-2018 14:11:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075003-006
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Sep-2018 15:19:32 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: richardsd

Date: 27-Sep-2018 15:18:45

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	2.879	0.004	94	1241301	8.00	8.26	
3 1,4-Dioxane	88	2.928	2.923	0.005	97	140302	0.8000	0.8136	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	96	1038866	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00056

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\20180927-75003.b\U3311762.D

Injection Date: 27-Sep-2018 14:11:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 0.8

Worklist Smp#: 6

Client ID:

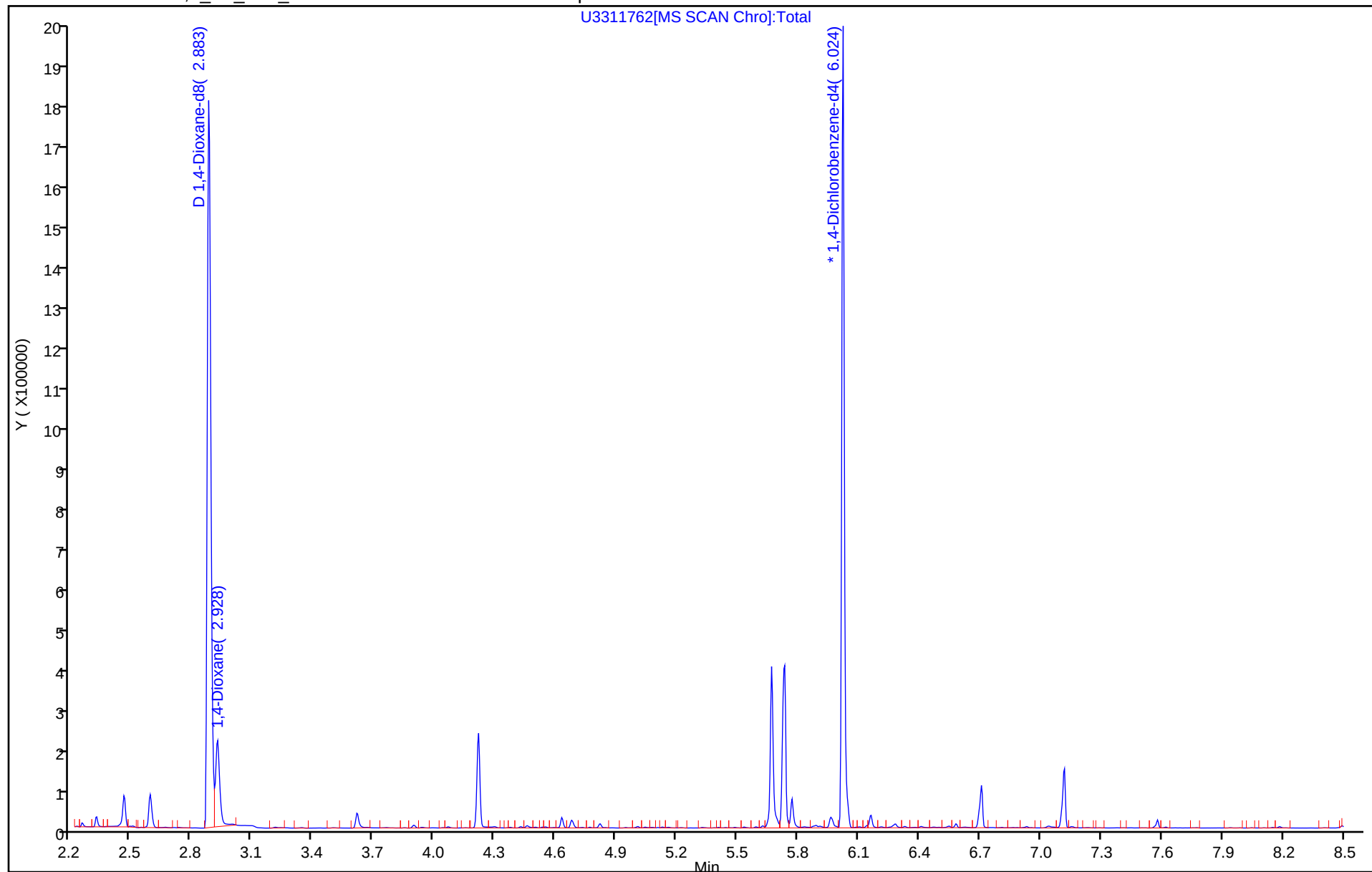
Injection Vol: 2.0 ul

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\20180927-75003.b\U3311763.D
 Lims ID: IC SIM 1.0
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 27-Sep-2018 14:35:30 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075003-007
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Sep-2018 15:19:33 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: richardsd

Date: 27-Sep-2018 15:18:49

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	2.878	2.879	-0.001	95	1651787	10.0	10.2	
3 1,4-Dioxane	88	2.919	2.923	-0.004	95	192468	1.00	1.05	
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.024	0.000	97	1119174	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00057

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\20180927-75003.b\U3311763.D

Injection Date: 27-Sep-2018 14:35:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 1.0

Worklist Smp#: 7

Client ID:

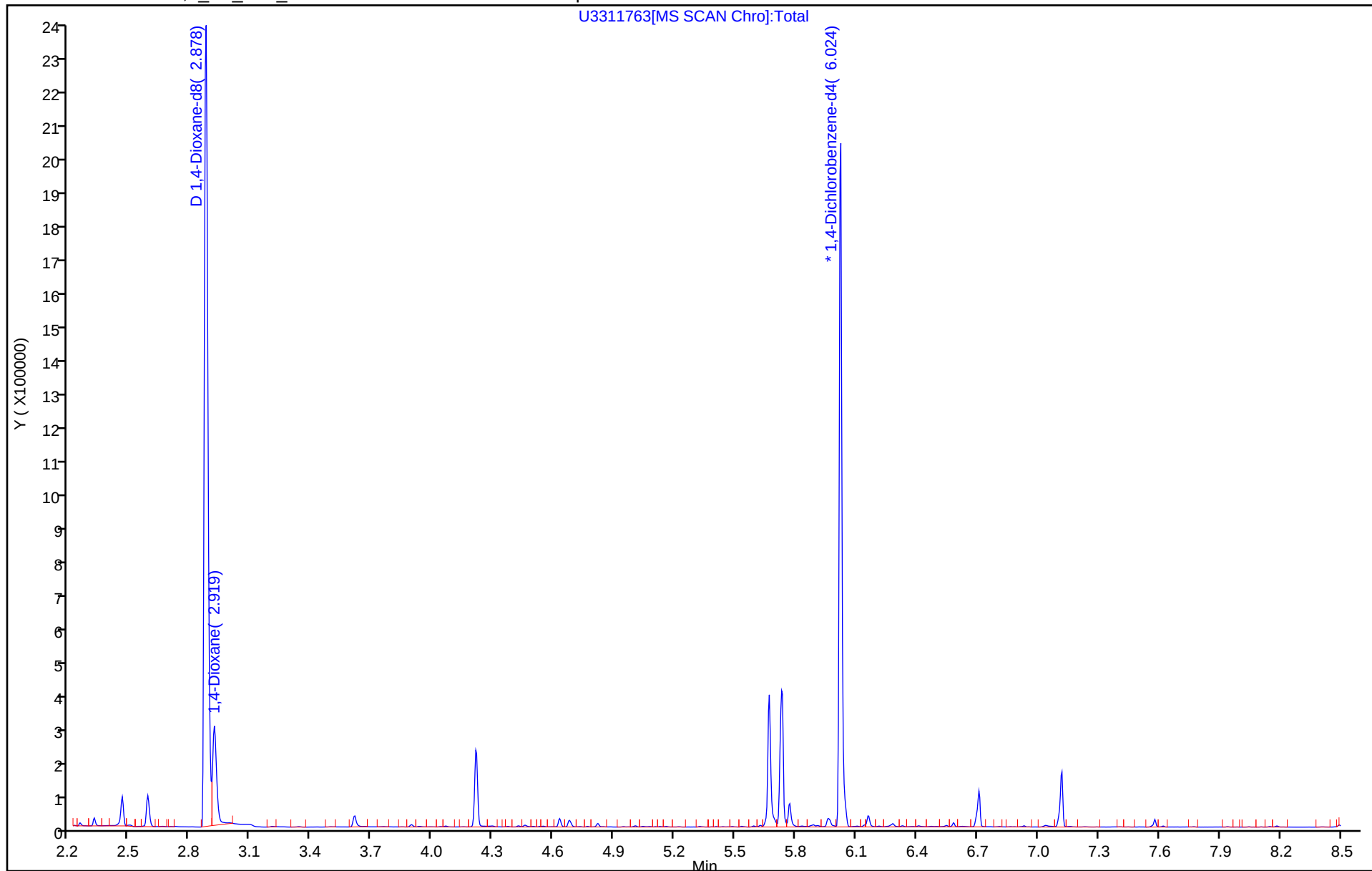
Injection Vol: 2.0 ul

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\20180927-75003.b\U3311764.D
 Lims ID: IC SIM 1.2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 27-Sep-2018 14:58:30 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075003-008
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Sep-2018 15:19:34 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: richardsd

Date: 27-Sep-2018 15:18:57

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	2.879	-0.004	93	1760895	12.0	12.2	
3 1,4-Dioxane	88	2.919	2.923	-0.004	97	203192	1.20	1.25	
* 2 1,4-Dichlorobenzene-d4	152	6.020	6.024	-0.004	95	999828	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00058

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\20180927-75003.b\U3311764.D

Injection Date: 27-Sep-2018 14:58:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC SIM 1.2

Worklist Smp#: 8

Client ID:

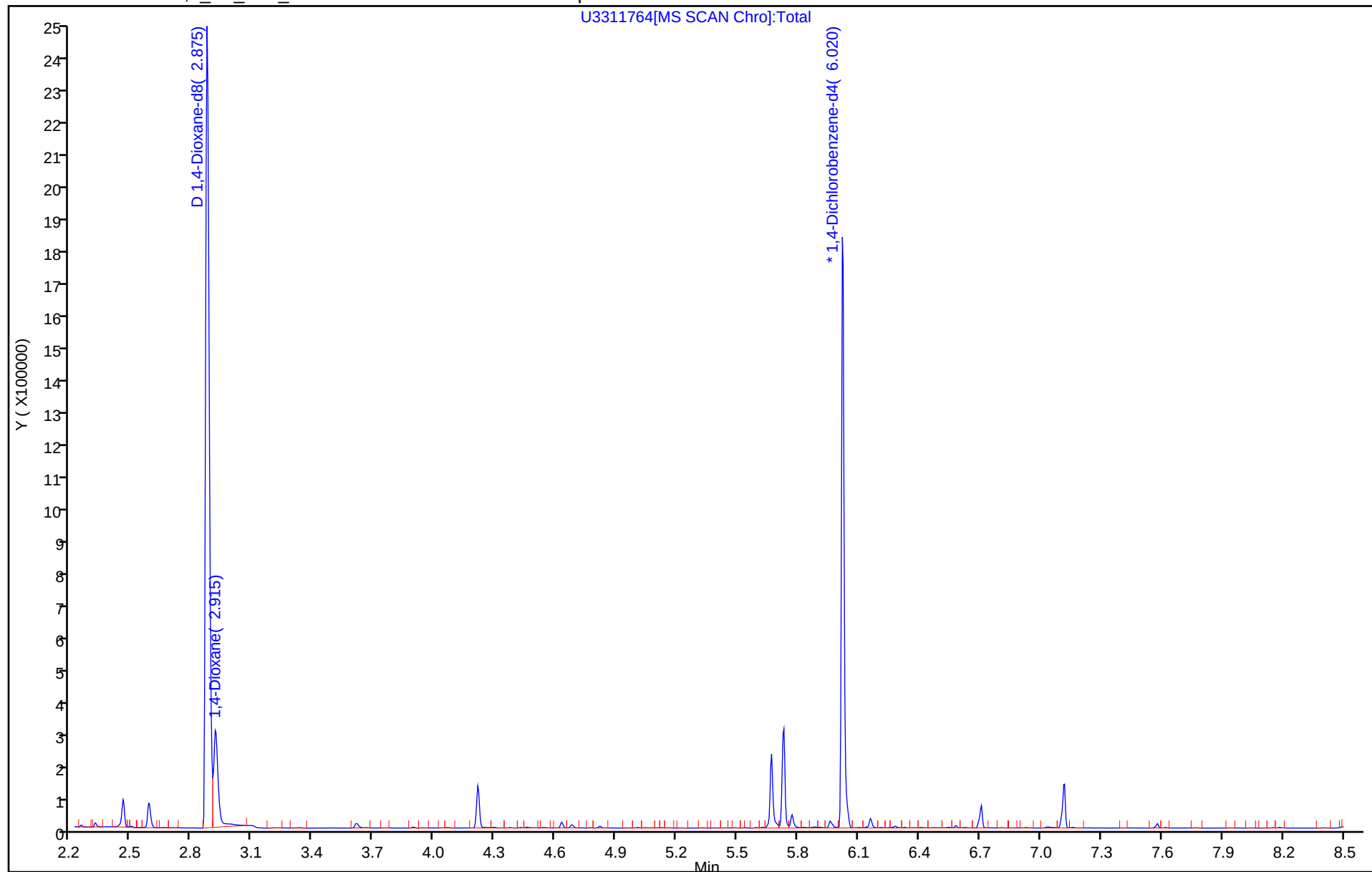
Injection Vol: 2.0 ul

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.: 480-142274-1
SDG No.: _____
Lab Sample ID: CCVIS 480-436862/3 Calibration Date: 09/28/2018 23:32
Instrument ID: HP5973U Calib Start Date: 09/27/2018 13:00
GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm) Calib End Date: 09/27/2018 14:58
Lab File ID: U3311827.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	AveID	1.111	1.121	0.0100	605	600	0.8	20.0
1,4-Dioxane-d8	Ave	0.5783	0.5045	0.0100	5230	6000	-12.8	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311827.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 28-Sep-2018 23:32:30 ALS Bottle#: 33 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075044-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 09:26:42 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

First Level Reviewer: pagem

Date: 02-Oct-2018 09:26:42

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	2.874	2.883	-0.009	97	979896	6.00	5.23	
3 1,4-Dioxane	88	2.919	2.919	0.000	98	109804	0.6000	0.6049	
* 2 1,4-Dichlorobenzene-d4	152	6.020	6.020	0.000	97	1294852	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00059

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\20180928-75044.b\U3311827.D

Injection Date: 28-Sep-2018 23:32:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: CCVIS

Worklist Smp#: 3

Client ID:

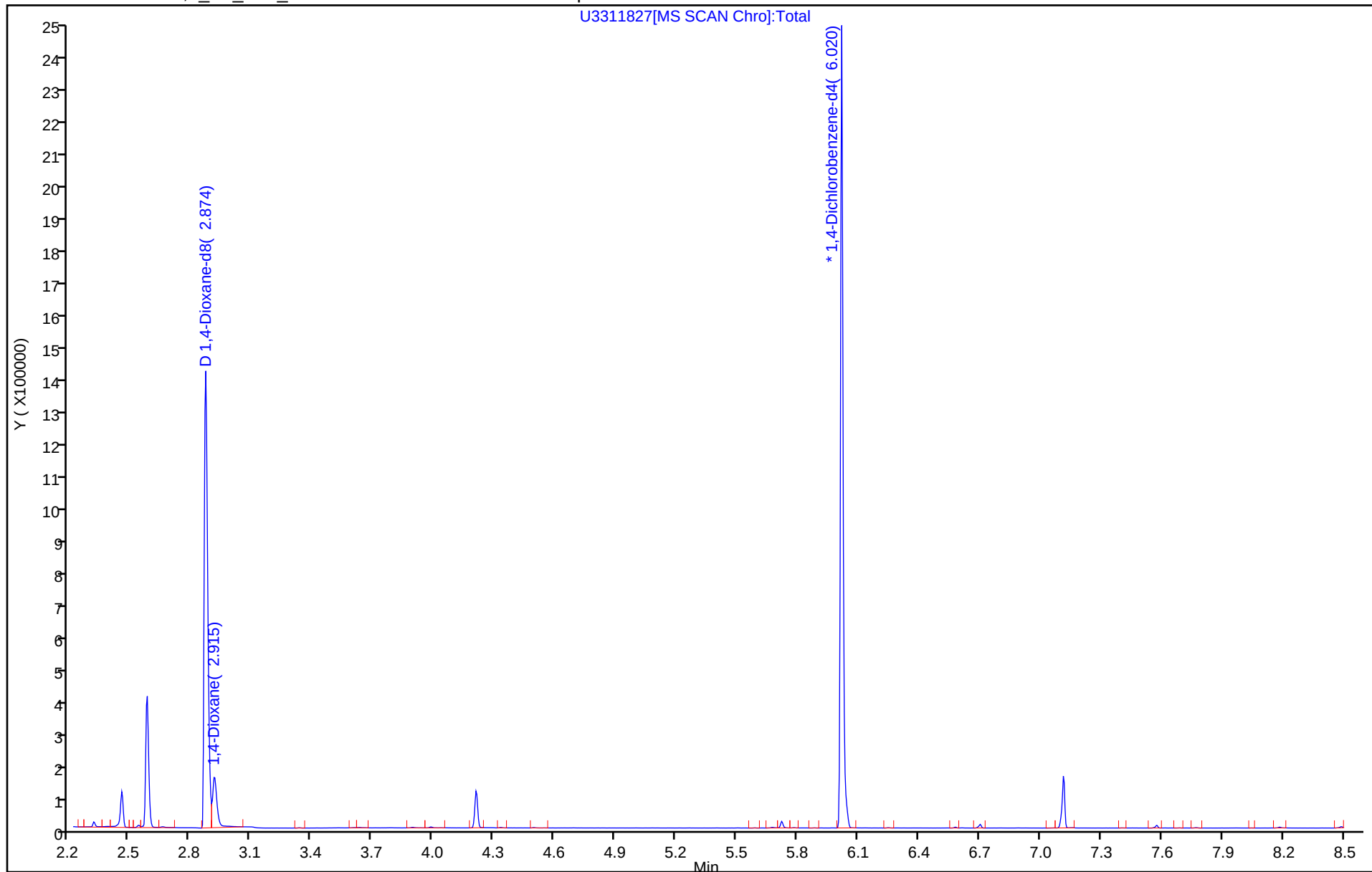
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 33

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\20180927-75003.b\U3311758.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 27-Sep-2018 12:33:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 2.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075003-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 27-Sep-2018 15:19:43 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0321

First Level Reviewer: richardsd

Date: 27-Sep-2018 13:11:31

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		6.024				4.00	ND	
4 DFTPP									
7 4,4'-DDE	246	11.104	11.104	0.000	0	25348		NR	a
5 4,4'-DDD	235	11.403	11.403	0.000	96	42916		NR	a
6 4,4'-DDT	235	11.691	11.691	0.000	99	961814	NR	NR	a

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

8 - Failed MS Tune Ratio Test

Review Flags

M - Manually Integrated

a - User Assigned ID

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\20180927-75003.b\U3311758.D

Injection Date: 27-Sep-2018 12:33:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 2 Worklist Smp#: 2

Injection Vol: 2.0 ul

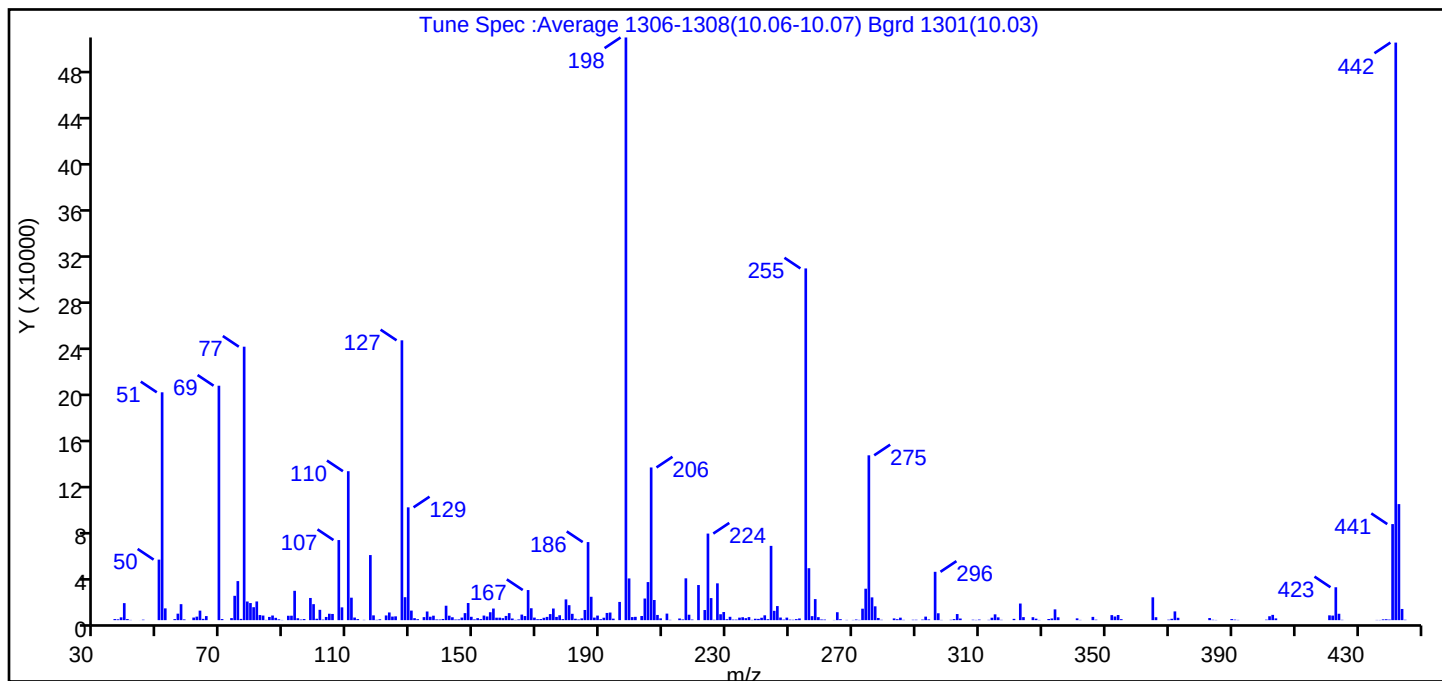
Dil. Factor: 1.0000

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 (100.9)
51	10-80% of the base peak	39.1
68	<2% of mass 69	0.0 (0.0)
69	Present	40.2
70	<2% of mass 69	0.2 (0.5)
127	10-80% of the base peak	48.0
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.2
275	10-60% of the base peak	28.3
365	>1% of mass 198	3.9
441	present but <24% of mass 442	16.5 (16.6)
442	base peak, or >50% of 198	99.1
443	15-24% of mass 442	19.9 (20.1)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311758.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 27-Sep-2018 12:33:30
Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1301(10.03)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 280

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	939	129.00	97496	203.00	3584	286.00	252
37.00	709	130.00	8254	204.00	18688	289.00	329
38.00	2417	131.00	1700	205.00	32904	290.00	346
39.00	14703	132.00	824	206.00	131968	292.00	508
40.00	941	134.00	2610	207.00	17400	293.00	3044
41.00	192	135.00	7478	208.00	4490	294.00	619
44.00	31	136.00	2948	209.00	1543	296.00	41776
45.00	405	137.00	3852	211.00	5660	297.00	5952
50.00	52312	138.00	627	212.00	249	298.00	199
51.00	196928	139.00	541	215.00	1423	301.00	311
52.00	10171	140.00	1014	216.00	611	302.00	878
55.00	892	141.00	12462	217.00	36144	303.00	5268
56.00	5603	142.00	3844	218.00	4687	304.00	1381
57.00	13817	143.00	2492	219.00	515	308.00	368
58.00	638	144.00	550	221.00	30352	309.00	208
61.00	2238	145.00	642	223.00	8747	310.00	511
62.00	3030	146.00	2218	224.00	74824	313.00	259
63.00	8225	147.00	6065	225.00	19064	314.00	2094
64.00	1111	148.00	14808	226.00	336	315.00	5024
65.00	3499	149.00	2895	227.00	31816	316.00	2404
69.00	202624	150.00	661	228.00	5108	317.00	270
70.00	945	151.00	1723	229.00	7020	321.00	1112
73.00	1771	152.00	904	230.00	795	323.00	14359
74.00	21024	153.00	3963	231.00	2883	324.00	2605
75.00	33752	154.00	3158	232.00	473	327.00	2543
76.00	1084	155.00	6844	233.00	463	328.00	1265
77.00	236352	156.00	10027	234.00	2162	329.00	173
78.00	16109	157.00	2118	235.00	2518	332.00	979
79.00	14765	158.00	2127	236.00	1706	333.00	1447
80.00	11188	159.00	1693	237.00	2624	334.00	9312
81.00	16155	160.00	3644	238.00	257	335.00	2455
82.00	4389	161.00	6060	239.00	1209	341.00	1543
83.00	3964	162.00	1413	240.00	1093	342.00	202

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311758.D\1_4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 27-Sep-2018 12:33:30

Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1301(10.03)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 280

m/z	Y	m/z	Y	m/z	Y	m/z	Y
84.00	221	163.00	220	241.00	2056	346.00	2818
85.00	2776	164.00	609	242.00	4183	347.00	439
86.00	4012	165.00	4806	243.00	822	352.00	4351
87.00	2002	166.00	3546	244.00	64192	353.00	3153
88.00	698	167.00	26008	245.00	8051	354.00	4442
89.00	172	168.00	10287	246.00	12169	355.00	843
91.00	3795	169.00	2191	247.00	2249	365.00	19736
92.00	3834	170.00	841	248.00	463	366.00	2535
93.00	25352	171.00	946	249.00	2179	370.00	398
94.00	1645	172.00	2049	250.00	444	371.00	1170
95.00	500	173.00	2794	251.00	332	372.00	7563
96.00	945	174.00	5234	252.00	891	373.00	2047
98.00	19168	175.00	10050	253.00	1460	383.00	1835
99.00	13817	176.00	2789	255.00	304000	384.00	324
100.00	1189	177.00	4227	256.00	44896	385.00	174
101.00	8926	178.00	881	257.00	3456	390.00	921
102.00	483	179.00	17944	258.00	18200	391.00	460
103.00	2765	180.00	12934	259.00	2583	392.00	214
104.00	5535	181.00	5469	260.00	587	401.00	422
105.00	5354	182.00	1216	261.00	493	402.00	3375
107.00	69216	183.00	577	264.00	173	403.00	4557
108.00	11048	184.00	1530	265.00	6852	404.00	1496
110.00	128736	185.00	8784	266.00	816	421.00	4155
111.00	19416	186.00	67472	268.00	210	422.00	3944
112.00	2244	187.00	20192	270.00	187	423.00	28424
113.00	916	188.00	2201	271.00	561	424.00	5518
115.00	245	189.00	3941	272.00	228	425.00	276
117.00	56248	190.00	813	273.00	9899	436.00	184
118.00	4123	191.00	2089	274.00	27168	437.00	168
119.00	290	192.00	6222	275.00	142464	438.00	665
120.00	753	193.00	6568	276.00	19680	439.00	782
122.00	4058	194.00	1282	277.00	11952	440.00	492
123.00	6642	196.00	15745	278.00	1885	441.00	83024
124.00	3076	198.00	503616	279.00	298	442.00	499200

Report Date: 27-Sep-2018 15:19:43

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

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311758.D\1,4_Dx_SIM_HP5973U.rslt\spe

Injection Date: 27-Sep-2018 12:33:30

Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1301(10.03)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 280

m/z	Y	m/z	Y	m/z	Y	m/z	Y
125.00	3287	199.00	36056	283.00	1484	443.00	100304
127.00	241856	200.00	2645	284.00	827	444.00	9661
128.00	19832	201.00	2862	285.00	2139	445.00	332

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311758.D

Injection Date: 27-Sep-2018 12:33:30

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 =

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

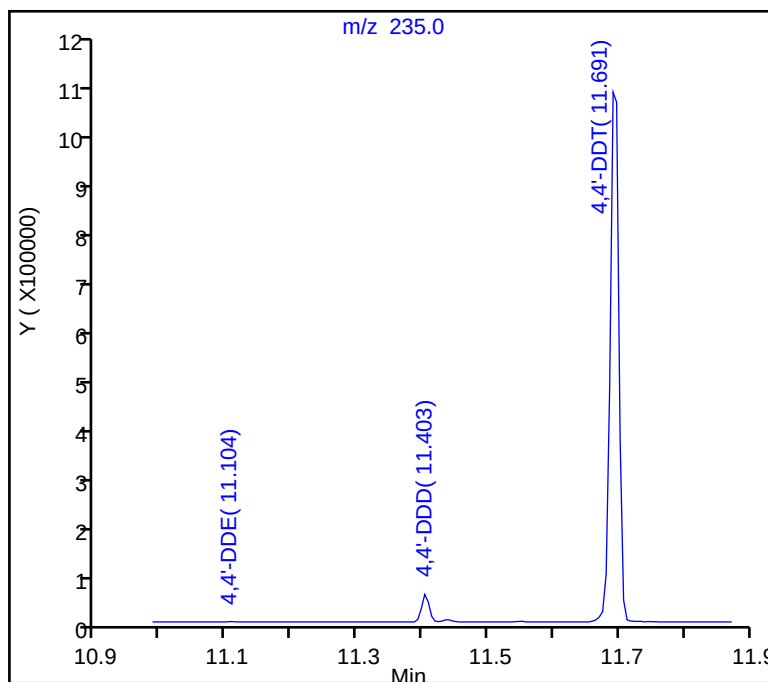
6 4,4'-DDT, Area = 961814

5 4,4'-DDD, Area = 42916

7 4,4'-DDE, Area = 25348

%Breakdown: 6.63%, Max Limit: 20.00%

Passed



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311826.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 28-Sep-2018 23:04:30 ALS Bottle#: 32 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075044-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 09:26:27 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

First Level Reviewer: pagem

Date: 02-Oct-2018 09:26:27

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	9147			NR
5 4,4'-DDD	235	11.403	11.403	0.000	98	125597			NR
6 4,4'-DDT	235	11.691	11.691	0.000	98	2127429	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\20180928-75044.b\U3311826.D

Injection Date: 28-Sep-2018 23:04:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 32 Worklist Smp#: 2

Injection Vol: 1.0 ul

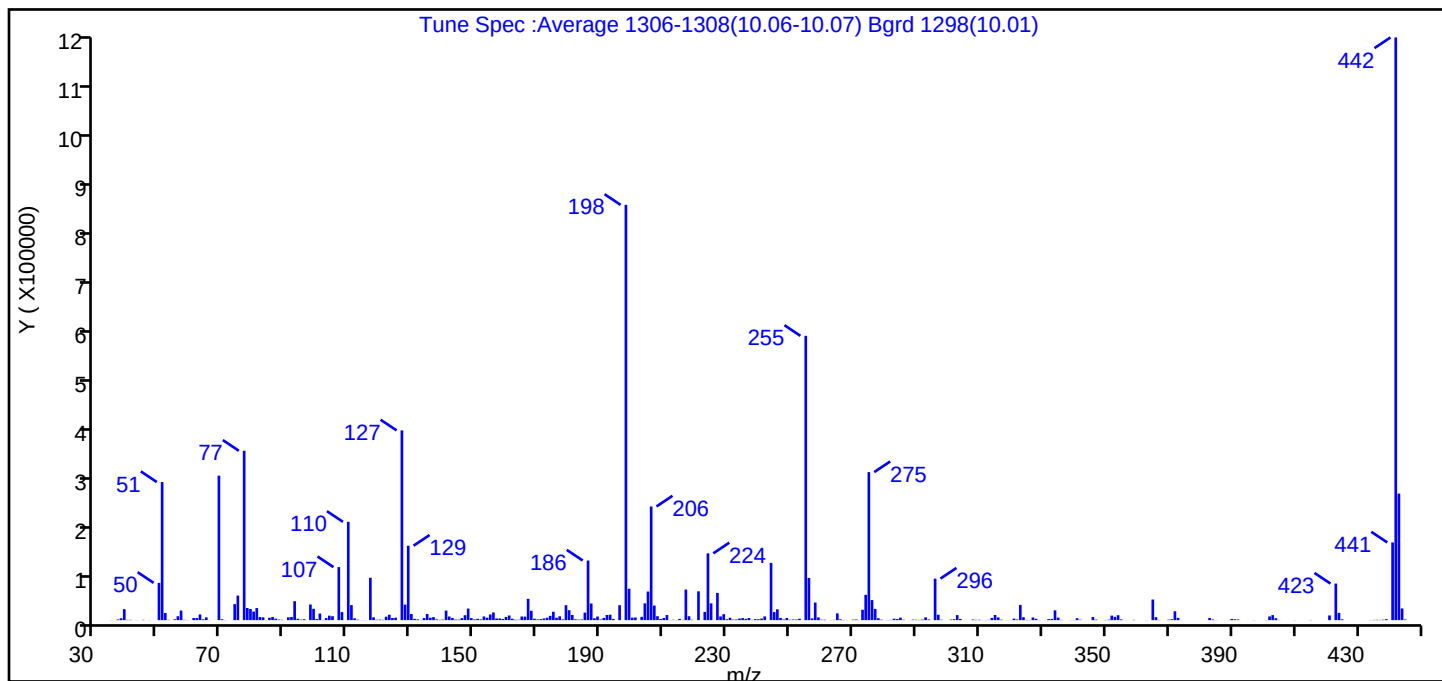
Dil. Factor: 1.0000

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 (71.3)
51	10-80% of the base peak	33.3
68	<2% of mass 69	0.0 (0.0)
69	Present	34.8
70	<2% of mass 69	0.2 (0.6)
127	10-80% of the base peak	45.7
197	<2% of mass 198	0.0
199	5-9% of mass 198	7.6
275	10-60% of the base peak	35.6
365	>1% of mass 198	5.0
441	present but <24% of mass 442	18.7 (13.3)
442	base peak, or >50% of 198	140.3
443	15-24% of mass 442	30.5 (21.7)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311826.D\1,4_Dx_SIM_HP5973U.rsl\tspe
Injection Date: 28-Sep-2018 23:04:30
Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1298(10.01)
Base Peak: 442.00
Minimum % Base Peak: 0
Number of Points: 315

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	259	133.00	314	215.00	2510	309.00	651
37.00	1378	134.00	4118	216.00	436	310.00	726
38.00	3724	135.00	12114	217.00	60392	311.00	186
39.00	21776	136.00	4792	218.00	7686	312.00	249
40.00	569	137.00	5971	219.00	698	313.00	475
41.00	654	138.00	1561	221.00	56864	314.00	4386
43.00	211	139.00	701	223.00	16274	315.00	10129
45.00	611	140.00	1026	224.00	131904	316.00	5449
47.00	208	141.00	18928	225.00	33104	317.00	900
50.00	73592	142.00	7153	227.00	53816	319.00	206
51.00	272704	143.00	4288	228.00	7337	320.00	235
52.00	14180	144.00	1139	229.00	11852	321.00	3008
53.00	509	145.00	1039	230.00	1740	322.00	1292
55.00	1559	146.00	3994	231.00	4602	323.00	29976
56.00	7708	147.00	9711	232.00	951	324.00	5773
57.00	18920	148.00	22840	233.00	1280	325.00	497
58.00	590	149.00	3976	234.00	3186	326.00	401
59.00	261	150.00	1531	235.00	4046	327.00	5271
61.00	4169	151.00	2600	236.00	2641	328.00	2688
62.00	4231	152.00	1459	237.00	4242	329.00	298
63.00	11237	153.00	7200	238.00	609	332.00	2074
64.00	1672	154.00	4807	239.00	1938	333.00	2440
65.00	5482	155.00	11206	240.00	1741	334.00	19328
66.00	270	156.00	15198	241.00	3083	335.00	5007
69.00	285312	157.00	3349	242.00	7379	336.00	420
70.00	1711	158.00	3324	244.00	113064	339.00	172
71.00	228	159.00	2354	245.00	15877	340.00	309
74.00	31616	160.00	6381	246.00	21424	341.00	3769
75.00	48488	161.00	9181	247.00	4323	342.00	844
77.00	334464	162.00	2753	248.00	1193	346.00	6247
78.00	23976	163.00	861	249.00	4279	347.00	1122
79.00	22024	164.00	691	250.00	834	350.00	364
80.00	16992	165.00	7147	251.00	1187	351.00	922

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311826.D\1_4_Dx_SIM_HP5973U.rsl\tspe

Injection Date: 28-Sep-2018 23:04:30

Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1298(10.01)

Base Peak: 442.00

Minimum % Base Peak: 0

Number of Points: 315

m/z	Y	m/z	Y	m/z	Y	m/z	Y
81.00	23880	166.00	6953	252.00	1229	352.00	8921
82.00	6177	167.00	42096	253.00	2794	353.00	6545
83.00	5533	168.00	18472	255.00	561344	354.00	9717
84.00	257	169.00	2879	256.00	83352	355.00	1445
85.00	4634	170.00	1341	257.00	3438	357.00	172
86.00	6215	171.00	1914	258.00	34784	359.00	571
87.00	2922	172.00	3288	259.00	5353	363.00	192
88.00	1123	173.00	4893	260.00	800	365.00	40704
89.00	600	174.00	8478	261.00	829	366.00	5808
91.00	5626	175.00	16600	263.00	175	367.00	423
92.00	6218	176.00	4750	264.00	463	370.00	934
93.00	37472	177.00	7611	265.00	13285	371.00	1749
94.00	2659	178.00	1472	266.00	1571	372.00	17480
95.00	919	179.00	29488	267.00	388	373.00	4478
96.00	1781	180.00	19720	268.00	180	374.00	178
98.00	30880	181.00	10123	270.00	948	383.00	4380
99.00	22360	182.00	1637	271.00	1222	384.00	1299
100.00	2110	183.00	979	272.00	203	385.00	257
101.00	13053	184.00	1267	273.00	20480	389.00	179
102.00	443	185.00	14869	274.00	50024	390.00	2373
103.00	4153	186.00	117736	275.00	292288	391.00	1684
104.00	8809	187.00	32872	276.00	39632	392.00	1314
105.00	7763	188.00	3636	277.00	22216	397.00	224
107.00	104680	189.00	7097	278.00	3790	401.00	240
108.00	15903	190.00	1221	279.00	846	402.00	7343
110.00	194112	191.00	4456	281.00	250	403.00	9935
111.00	29672	192.00	10213	282.00	539	404.00	3761
112.00	3554	193.00	10717	283.00	2814	405.00	407
113.00	951	194.00	2388	284.00	2139	410.00	242
114.00	169	196.00	29504	285.00	4931	415.00	384
115.00	203	198.00	819968	286.00	771	421.00	9270
117.00	83696	199.00	61976	288.00	174	423.00	72136
118.00	5653	200.00	4945	289.00	981	424.00	14396
119.00	851	201.00	5272	290.00	723	425.00	1642

Report Date: 02-Oct-2018 09:26:27

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

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311826.D\1,4_Dx_SIM_HP5973U.rslt\spe

Injection Date: 28-Sep-2018 23:04:30

Spectrum: Tune Spec :Average 1306-1308(10.06-10.07) Bgrd 1298(10.01)

Base Peak: 442.00

Minimum % Base Peak: 0

Number of Points: 315

m/z	Y	m/z	Y	m/z	Y	m/z	Y
120.00	1136	203.00	6524	291.00	487	434.00	267
121.00	629	204.00	33152	292.00	1167	435.00	435
122.00	6820	205.00	56512	293.00	5491	436.00	667
123.00	10712	206.00	224448	294.00	1368	437.00	471
124.00	4238	207.00	28824	296.00	82016	438.00	847
125.00	4856	208.00	7729	297.00	10657	439.00	1935
127.00	374656	209.00	2337	298.00	761	441.00	153408
128.00	30624	210.00	4235	301.00	1044	442.00	1150464
129.00	146944	211.00	10019	302.00	1730	443.00	249920
130.00	12099	212.00	221	303.00	9931	444.00	23120
131.00	2506	213.00	687	304.00	2340	445.00	1266
132.00	1461	214.00	218	308.00	1210		

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311826.D

Injection Date: 28-Sep-2018 23:04:30

Instrument ID: HP5973U

Lims ID: DFTPP

Client ID:

Operator ID: DR

ALS Bottle#: 32 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 =

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

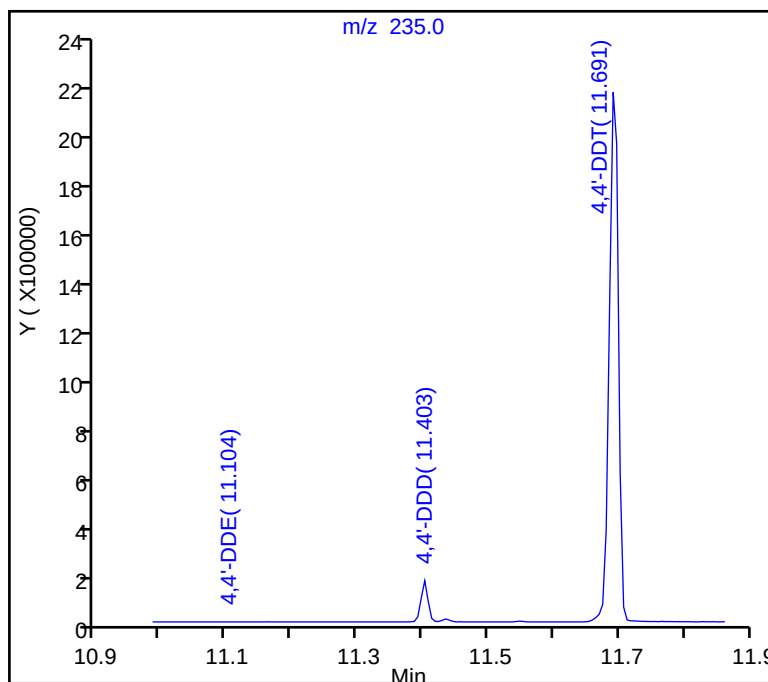
6 4,4'-DDT, Area = 2127429

5 4,4'-DDD, Area = 125597

7 4,4'-DDE, Area = 9147

%Breakdown: 5.96%, Max Limit: 20.00%

Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142274-1
SDG No.: _____
Client Sample ID: _____ Lab Sample ID: MB 480-436108/1-A
Matrix: Water Lab File ID: U3311828.D
Analysis Method: 8270D SIM ID Date Collected: _____
Extract. Method: 3510C Date Extracted: 09/25/2018 14:25
Sample wt/vol: 1000 (mL) Date Analyzed: 09/28/2018 23:56
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.: 436862 Units: ug/L

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

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	31		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311828.D
 Lims ID: MB 480-436108/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 28-Sep-2018 23:56:30 ALS Bottle#: 34 Worklist Smp#: 30
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075044-030
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 09:26:54 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

First Level Reviewer: pagem

Date: 02-Oct-2018 09:26:54

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	2.956	2.883	0.073	97	535340	10.0	3.13	
3 1,4-Dioxane	88	3.009	2.919	0.090	87	3259		0.0548	a
* 2 1,4-Dichlorobenzene-d4	152	6.024	6.020	0.004	97	1181432	4.00	4.00	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

MB_LLIS_WRK_00153

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311828.D

Injection Date: 28-Sep-2018 23:56:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: MB 480-436108/1-A

Worklist Smp#: 30

Client ID:

Injection Vol: 1.0 ul

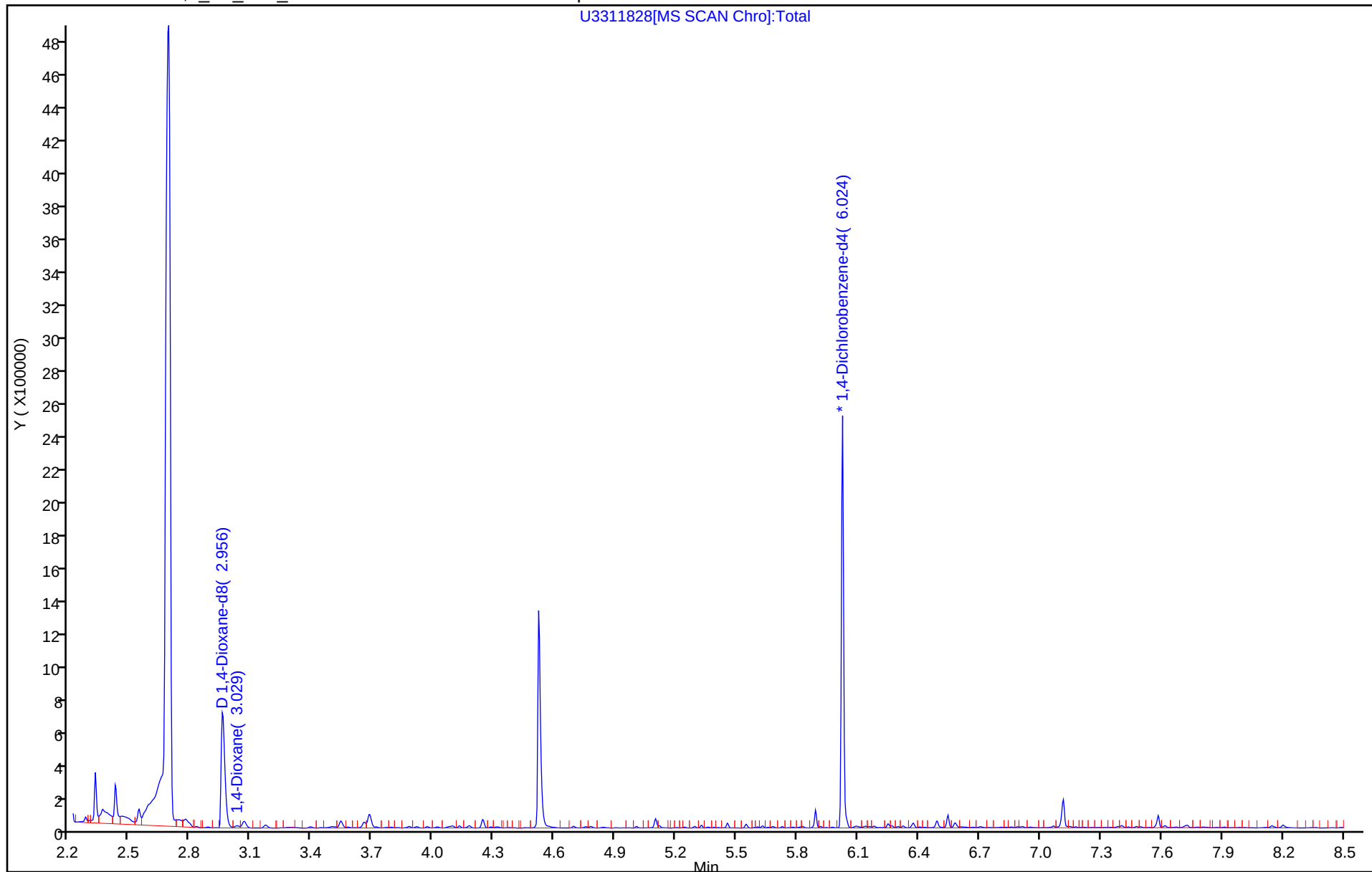
Dil. Factor: 1.0000

ALS Bottle#: 34

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311828[MS SCAN Chro]:Total



TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311828.D

Injection Date: 28-Sep-2018 23:56:30

Instrument ID: HP5973U

Lims ID: MB 480-436108/1-A

Client ID:

Operator ID: DR

ALS Bottle#: 34

Worklist Smp#: 30

Injection Vol: 1.0 ul

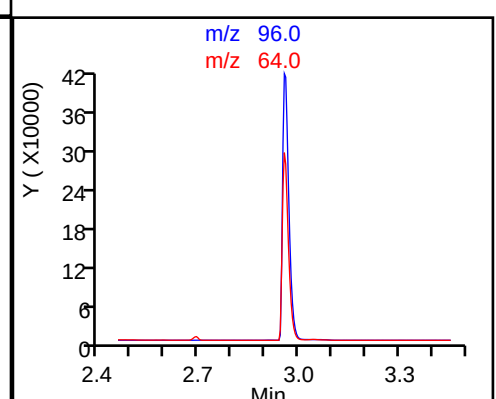
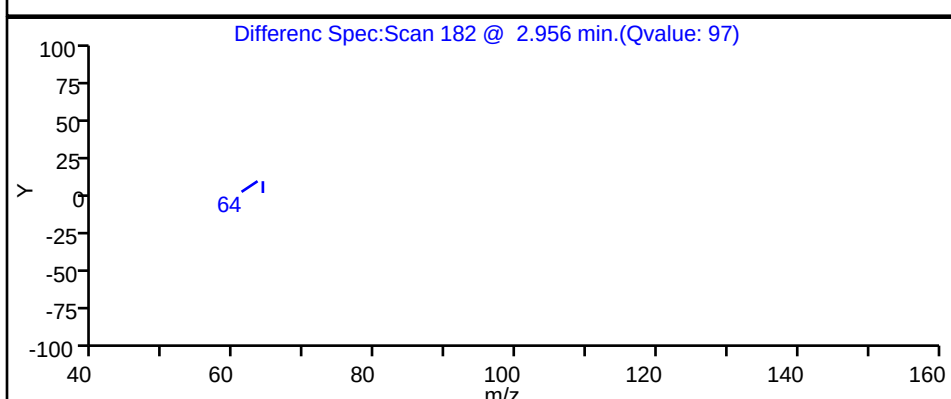
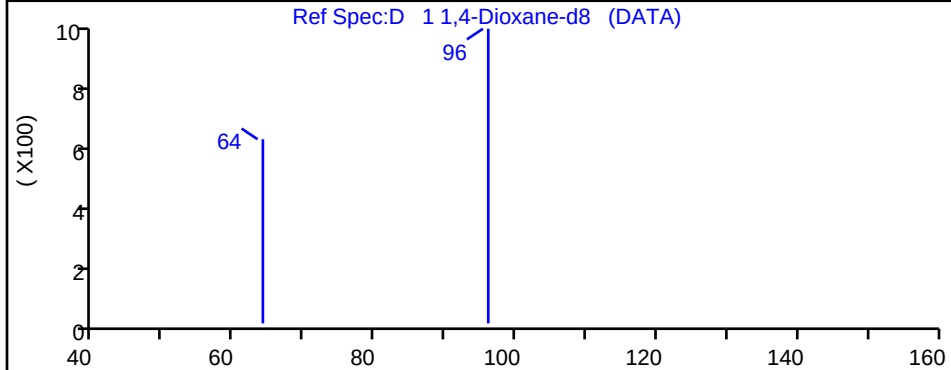
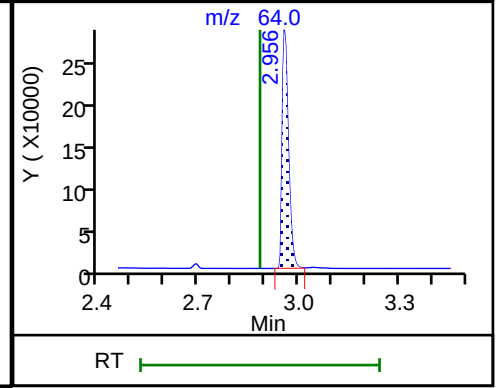
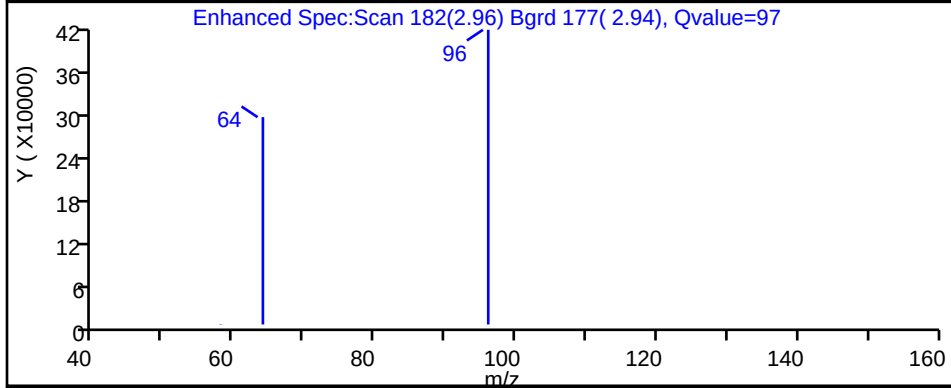
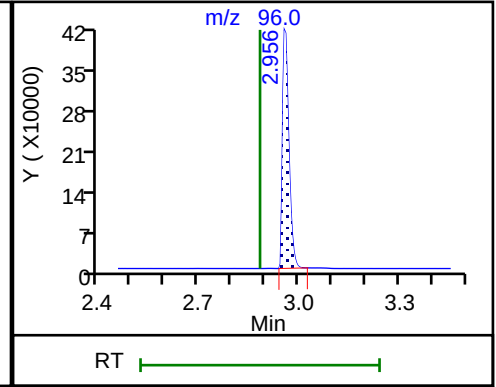
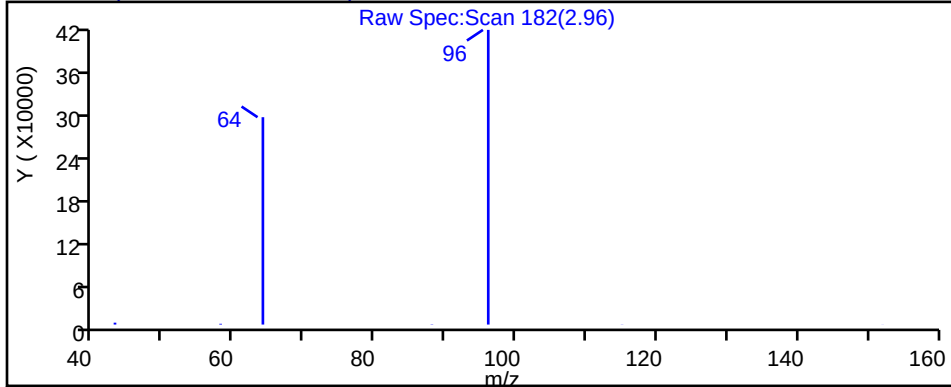
Dil. Factor: 1.0000

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\20180928-75044.b\U3311828.D

Injection Date: 28-Sep-2018 23:56:30

Instrument ID: HP5973U

Lims ID: MB 480-436108/1-A

Client ID:

Operator ID: DR

ALS Bottle#:

34

Worklist Smp#: 30

Injection Vol: 1.0 ul

Dil. Factor:

1.0000

Method: 1,4_Dx_SIM_HP5973U

Limit Group:

MB - 8270D SIM ID ICAL

Column:

Detector

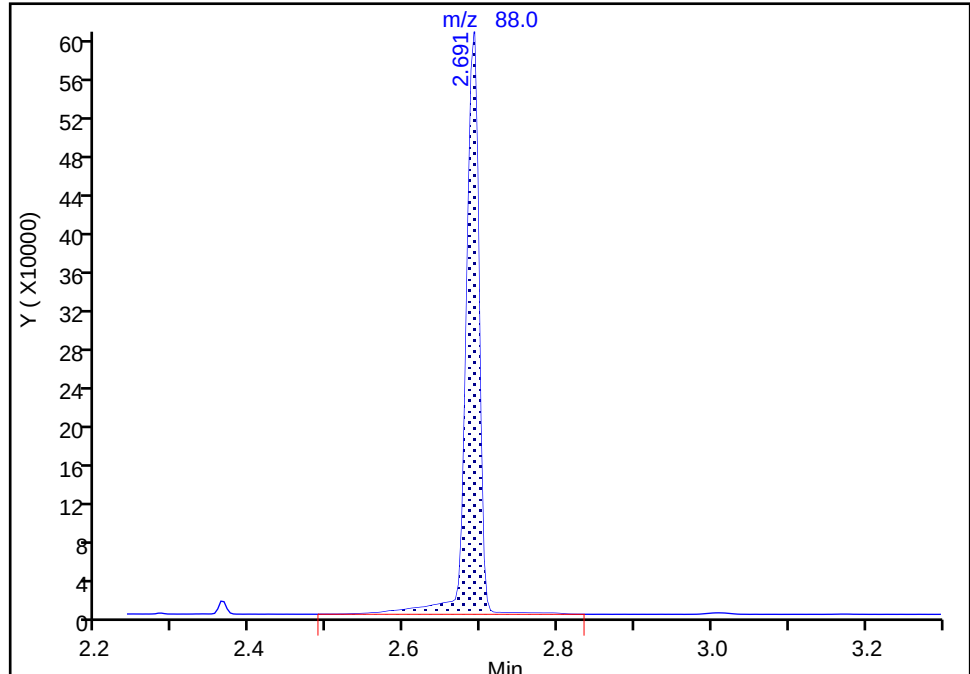
MS SCAN

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

Signal: 1

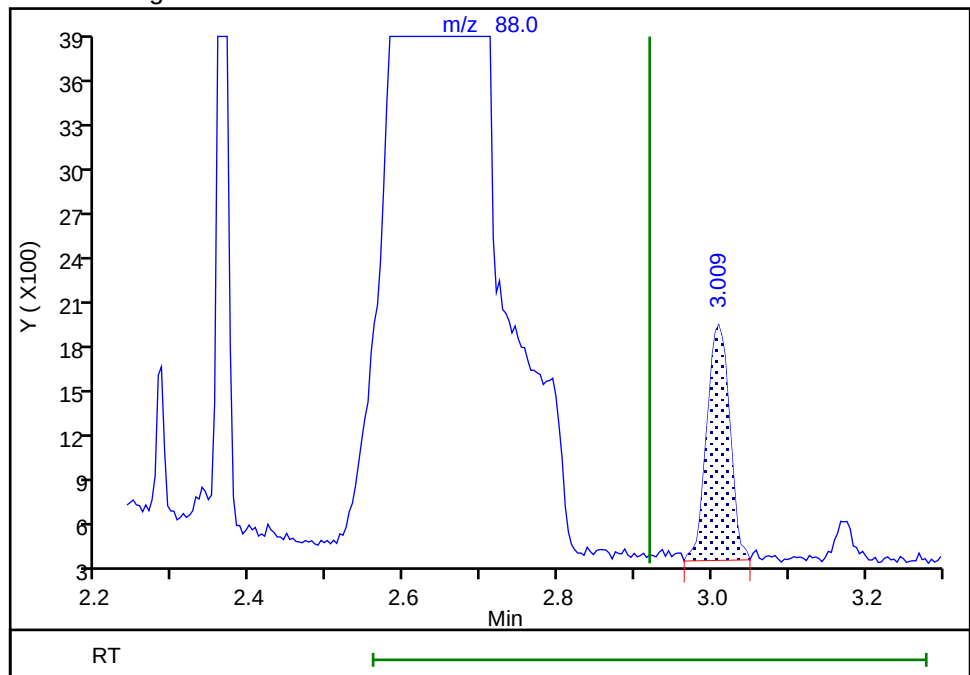
RT: 2.69
Area: 714970
Amount: 12.016464
Amount Units: ng/ul

Processing Integration Results



RT: 3.01
Area: 3259
Amount: 0.054774
Amount Units: ng/ul

Manual Integration Results



Reviewer: pagem, 02-Oct-2018 09:26:48

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.: 480-142274-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 480-436108/2-A
 Matrix: Water Lab File ID: U3311829.D
 Analysis Method: 8270D SIM ID Date Collected: _____
 Extract. Method: 3510C Date Extracted: 09/25/2018 14:25
 Sample wt/vol: 1000 (mL) Date Analyzed: 09/29/2018 00:19
 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.: 436862 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.13		0.20	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
17647-74-4	1,4-Dioxane-d8	29		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311829.D
 Lims ID: LCS 480-436108/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 29-Sep-2018 00:19:30 ALS Bottle#: 35 Worklist Smp#: 31
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0075044-031
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 02-Oct-2018 09:26:54 Calib Date: 27-Sep-2018 14:58:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20180927-75003.b\U3311764.D
 Column 1 : Det: MS SCAN
 Process Host: XAWRK037

First Level Reviewer: pagem

Date: 02-Oct-2018 09:27:00

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	3.001	2.883	0.118	99	486470	10.0	2.94	
3 1,4-Dioxane	88	3.042	2.919	0.123	98	61020	1.00	1.13	
* 2 1,4-Dichlorobenzene-d4	152	6.028	6.020	0.008	96	1144414	4.00	4.00	

Reagents:

MB_LLIS_WRK_00153

Amount Added: 20.00

Units: uL

Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20180928-75044.b\U3311829.D

Injection Date: 29-Sep-2018 00:19:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: LCS 480-436108/2-A

Worklist Smp#: 31

Client ID:

Injection Vol: 1.0 ul

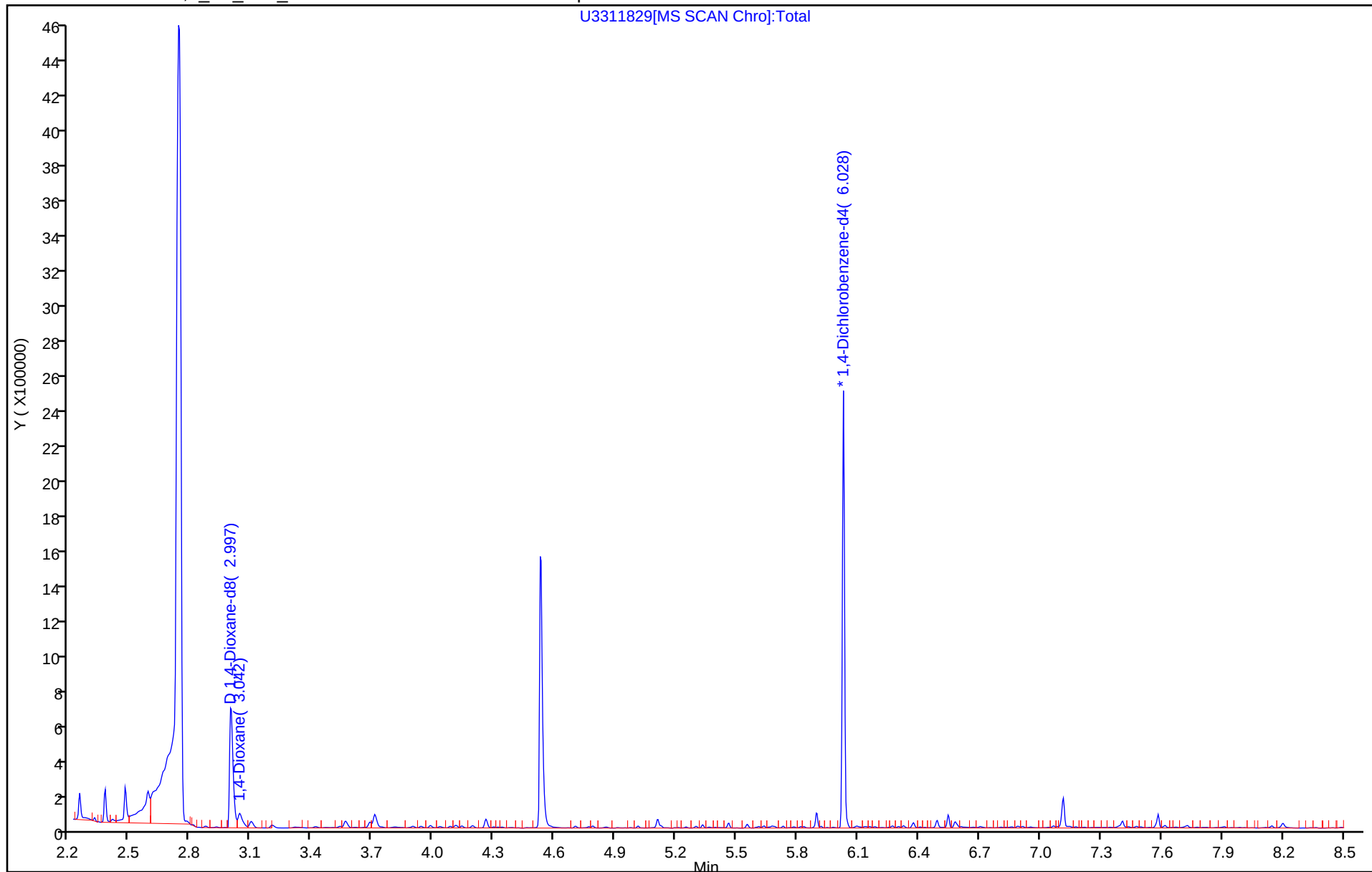
Dil. Factor: 1.0000

ALS Bottle#: 35

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3311829[MS SCAN Chro]:Total



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-142274-1

SDG No.: _____

Instrument ID: HP5973U Start Date: 09/27/2018 12:33Analysis Batch Number: 436545 End Date: 09/27/2018 15:22

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-436545/2		09/27/2018 12:33	1	U3311758.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-436545/3		09/27/2018 13:00	1	U3311759.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-436545/4		09/27/2018 13:24	1	U3311760.D	RXI-5Sil MS(0.5 0.25 (mm))
ICIS 480-436545/5		09/27/2018 13:47	1	U3311761.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-436545/6		09/27/2018 14:11	1	U3311762.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-436545/7		09/27/2018 14:35	1	U3311763.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-436545/8		09/27/2018 14:58	1	U3311764.D	RXI-5Sil MS(0.5 0.25 (mm))
ICV 480-436545/9		09/27/2018 15:22	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-142274-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 09/28/2018 23:04Analysis Batch Number: 436862End Date: 09/29/2018 10:27

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-436862/2		09/28/2018 23:04	1	U3311826.D	RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-436862/3		09/28/2018 23:32	1	U3311827.D	RXI-5Sil MS(0.5 0.25 (mm))
MB 480-436108/1-A		09/28/2018 23:56	1	U3311828.D	RXI-5Sil MS(0.5 0.25 (mm))
LCS 480-436108/2-A		09/29/2018 00:19	1	U3311829.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 00:43	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 01:06	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 01:29	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 01:53	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 02:16	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 02:40	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 03:03	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 03:26	1		RXI-5Sil MS(0.5 0.25 (mm))
480-142274-1		09/29/2018 03:50	1	U3311838.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142274-2		09/29/2018 04:13	1	U3311839.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142274-3		09/29/2018 04:36	1	U3311840.D	RXI-5Sil MS(0.5 0.25 (mm))
480-142274-4		09/29/2018 05:00	1	U3311841.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 05:23	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 05:46	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 06:10	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 06:33	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 06:56	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 07:20	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 07:43	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 08:06	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 08:30	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 08:53	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 09:16	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 09:40	5		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 10:03	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		09/29/2018 10:27	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-142274-1

SDG No.: _____

Batch Number: 436108 Batch Start Date: 09/25/18 14:25 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 00009
MB 480-436108/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU		1 mL
LCS 480-436108/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-142274-B-1	MW-7S	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-142274-A-2	MW-11S	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-142274-B-3	MW-11S DUP	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-142274-A-4	EB	3510C, 8270D SIM ID	T	1000 mL	1 mL	6 SU	<2 SU		1 mL

Batch Notes	
Acid Used for pH Adjustment ID	4851141
Base Used to Adjust pH ID	4763765
Analyst ID - Concentration	AG
Analyst ID - Extraction	AG
Method/Fraction	3510C/8270_SIM
Na2SO4 ID	4849346
Prep Solvent ID	4868937
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

Page 1 of 1

PFC_IDA

Fluorinated Alkyl Substances

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

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 #
MW-7S	480-142274-1	53	84	90	107	105	104	98	95
MW-11S	480-142274-2	91	101	95	100	103	98	81	97
MW-11S DUP	480-142274-3	91	99	98	98	101	101	87	101
EB	480-142274-4	98	98	96	98	96	98	87	99
	MB 320-248335/1-A	96	98	95	96	97	97	83	101
	LCS 320-248335/2-A	97	102	104	95	103	99	98	101
	LCSD 320-248335/3-A	99	100	97	103	100	97	100	98

	<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.: 480-142274-1
 SDG No.: _____
 Matrix: Water Level: Low
 GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFNA #	PFOS #	M282FTS #	PFDA #	PFOSA #	d3NMFOS #	d5NEFOS #	PFUnA #
MW-7S	480-142274-1	92	106	101	101	115	58	58	93
MW-11S	480-142274-2	107	102	104	98	109	63	64	90
MW-11S DUP	480-142274-3	94	101	88	94	111	56	61	87
EB	480-142274-4	101	102	119	95	111	57	61	92
	MB 320-248335/1-A	97	99	100	92	114	57	61	97
	LCS 320-248335/2-A	100	96	75	92	94	99	105	92
	LCSD 320-248335/3-A	102	101	93	96	92	102	104	98

	<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.: 480-142274-1

SDG No.: _____

Matrix: Water Level: Low

GC Column (1): Acquity ID: 2.1 (mm)

Client Sample ID	Lab Sample ID	PFD _o A #	PFTDA #
MW-7S	480-142274-1	82	69
MW-11S	480-142274-2	86	80
MW-11S DUP	480-142274-3	86	77
EB	480-142274-4	83	93
	MB 320-248335/1-A	89	92
	LCS 320-248335/2-A	99	98
	LCSD 320-248335/3-A	99	107

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.: 480-142274-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.08LLE_014.d
 Lab ID: LCS 320-248335/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	40.4	101	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	40.2	101	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	39.7	99	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	39.2	98	66-126	
Perfluorooctanoic acid (PFOA)	40.0	39.5	99	64-124	
Perfluorononanoic acid (PFNA)	40.0	38.5	96	68-128	
Perfluorodecanoic acid (PFDA)	40.0	41.4	104	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	39.7	99	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	38.5	96	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	43.7	109	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	39.7	99	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	33.3	94	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	36.1	99	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	41.3	109	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	37.0	100	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	42.9	111	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	43.4	109	70-130	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	40.0	39.1	98	67-127	
N-ethylperfluorooctanesulfonam idoacetic acid (NEtFOSAA)	40.0	37.3	93	65-125	
6:2 FTS	37.9	42.0	111	66-126	
8:2 FTS	38.3	44.7	117	67-127	
13C4 PFBA	100	97.3	97	25-150	
13C5 PFPeA	100	102	102	25-150	
13C2 PFHxA	100	94.7	95	25-150	
13C4 PFHpA	100	103	103	25-150	
13C4 PFOA	100	101	101	25-150	
13C5 PFNA	100	100	100	25-150	
13C2 PFDA	100	92.3	92	25-150	
13C2 PFUnA	100	92.1	92	25-150	
13C2 PFDoA	100	99.1	99	25-150	
13C2 PFTeDA	100	98.2	98	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.: 480-142274-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.08LLE_014.d
 Lab ID: LCS 320-248335/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C3 PFBS	93.0	96.5	104	25-150	
18O2 PFHxS	94.6	93.4	99	25-150	
13C4 PFOS	95.6	92.2	96	25-150	
13C8 FOSA	100	94.1	94	25-150	
d3-NMeFOSAA	100	99.3	99	25-150	
d5-NEtFOSAA	100	105	105	25-150	
M2-6:2 FTS	95.0	92.6	98	25-150	
M2-8:2 FTS	95.8	71.7	75	25-150	

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

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
SDG No.: _____
Matrix: Water Level: Low Lab File ID: 2018.10.08LLE_015.d
Lab ID: LCSD 320-248335/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	40.0	41.3	103	2	30	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	40.7	102	1	30	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	39.0	98	2	30	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	41.0	102	4	30	66-126	
Perfluorooctanoic acid (PFOA)	40.0	40.2	100	2	30	64-124	
Perfluorononanoic acid (PFNA)	40.0	43.6	109	13	30	68-128	
Perfluorodecanoic acid (PFDA)	40.0	40.3	101	3	30	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	41.3	103	4	30	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	37.9	95	2	30	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	43.9	110	0	30	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	41.2	103	4	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	36.8	104	10	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	34.9	96	3	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.3	103	5	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	36.2	98	2	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	37.5	97	13	30	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	44.5	111	2	30	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	39.0	98	0	30	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.8	100	6	30	65-125	
6:2 FTS	37.9	44.1	116	5	30	66-126	
8:2 FTS	38.3	36.4	95	20	30	67-127	
13C4 PFBA	100	98.5	99			25-150	
13C5 PFPeA	100	99.9	100			25-150	
13C2 PFHxA	100	103	103			25-150	
13C4 PFHpA	100	100	100			25-150	
13C4 PFOA	100	98.0	98			25-150	
13C5 PFNA	100	102	102			25-150	
13C2 PFDA	100	96.1	96			25-150	
13C2 PFUnA	100	98.2	98			25-150	
13C2 PFDoA	100	99.3	99			25-150	
13C2 PFTeDA	100	107	107			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.10.08LLE_015.d
 Lab ID: LCSD 320-248335/3-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
13C3 PFBS	93.0	90.5	97			25-150	
18O2 PFHxS	94.6	91.7	97			25-150	
13C4 PFOS	95.6	96.9	101			25-150	
13C8 FOSA	100	92.5	92			25-150	
d3-NMeFOSAA	100	102	102			25-150	
d5-NEtFOSAA	100	104	104			25-150	
M2-6:2 FTS	95.0	95.3	100			25-150	
M2-8:2 FTS	95.8	88.7	93			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.: 480-142274-1
 SDG No.: _____
 Lab File ID: 2018.09.29LLAA_016.d Lab Sample ID: MB 320-248335/1-A
 Matrix: Water Date Extracted: 09/28/2018 07:48
 Instrument ID: A9 Date Analyzed: 09/29/2018 12:33
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
MW-11S	480-142274-2	2018.09.29L LAA 029.d	09/29/2018 14:10
MW-11S DUP	480-142274-3	2018.09.29L LAA 030.d	09/29/2018 14:18
EB	480-142274-4	2018.09.29L LAA 031.d	09/29/2018 14:25
MW-7S	480-142274-1	2018.09.29L LAA 040.d	09/29/2018 15:33
	LCS 320-248335/2-A	2018.10.08L LE 014.d	10/09/2018 06:27
	LCSD 320-248335/3-A	2018.10.08L LE 015.d	10/09/2018 06:35

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Sample No.: IC 320-247100/5 Date Analyzed: 09/21/2018 13:58
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.09.21LLAICAL_0 Heated Purge: (Y/N) N
 Calibration ID: 41233

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	8503409	2.78				
UPPER LIMIT	12755114	2.98				
LOWER LIMIT	4251705	2.58				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-247100/12		8447876	2.77			
ICV 320-247100/13		8405327	2.77			
CCV 320-248608/3 CCVIS		7570758	2.80			

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.: 480-142274-1
 SDG No.: _____
 Sample No.: CCV 320-248608/3 Date Analyzed: 09/29/2018 11:18
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.09.29LLAA_006. Heated Purge: (Y/N) N
 Calibration ID: 41233

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		7570758	2.80				
UPPER LIMIT		11356137	3.00				
LOWER LIMIT		3785379	2.60				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-248608/1		8188163	2.81				
CCVL 320-248608/2		7692671	2.80				
CCV 320-248611/1		7830799	2.81				
MB 320-248335/1-A		8073273	2.81				
CCV 320-248611/12		7765313	2.81				
480-142274-2	MW-11S	7888942	2.81				
480-142274-3	MW-11S DUP	8377642	2.81				
480-142274-4	EB	8244335	2.81				
CCV 320-248611/23		7925998	2.81				
480-142274-1	MW-7S	7544794	2.81				
CCV 320-248611/27		8022122	2.81				

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.: 480-142274-1
 SDG No.: _____
 Sample No.: IC 320-250597/5 Date Analyzed: 10/08/2018 15:56
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.10.08LLICAL_00 Heated Purge: (Y/N) N
 Calibration ID: 41498

	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 320-250597/9		7572846	2.80			
ICV 320-250597/10		7292323	2.80			
CCV 320-250706/3 CCVIS		7004646	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.: 480-142274-1
 SDG No.: _____
 Sample No.: CCV 320-250706/3 Date Analyzed: 10/09/2018 05:12
 Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm)
 Lab File ID (Standard): 2018.10.08LLE_004.d Heated Purge: (Y/N) N
 Calibration ID: 41498

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		7004646	2.75				
UPPER LIMIT		10506969	2.95				
LOWER LIMIT		3502323	2.55				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-250706/1		6965878	2.75				
CCVL 320-250706/2		7082550	2.75				
CCV 320-250745/1		6823885	2.75				
LCS 320-248335/2-A		7487803	2.75				
LCSD 320-248335/3-A		7474133	2.75				
CCV 320-250745/8		7306912	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>480-142274-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-7S</u>	Lab Sample ID: <u>480-142274-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_040.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/18/2018 11:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 09:36</u>
Sample wt/vol: <u>261.5 (mL)</u>	Date Analyzed: <u>09/29/2018 15:33</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	4.5		1.9	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.5	J	1.9	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.7	J	1.9	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.7	J	1.9	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	7.8		1.9	0.81
375-95-1	Perfluorononanoic acid (PFNA)	0.59	J	1.9	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.9	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.1	J	1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	1.4	J B	1.9	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	7.2		1.9	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.9	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	3.0
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.8
27619-97-2	6:2 FTS	ND		19	1.9
39108-34-4	8:2 FTS	ND		19	1.9

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-7S</u>	Lab Sample ID: <u>480-142274-1</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_040.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/18/2018 11:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 09:36</u>
Sample wt/vol: <u>261.5 (mL)</u>	Date Analyzed: <u>09/29/2018 15:33</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	53		25-150
STL01893	13C5 PFPeA	84		25-150
STL00993	13C2 PFHxA	107		25-150
STL01892	13C4 PFHpA	105		25-150
STL00990	13C4 PFOA	95		25-150
STL00995	13C5 PFNA	92		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	93		25-150
STL00998	13C2 PFDoA	82		25-150
STL02116	13C2 PFTeDA	69		25-150
STL02337	13C3 PFBS	90		25-150
STL00994	18O2 PFHxS	104		25-150
STL00991	13C4 PFOS	106		25-150
STL01056	13C8 FOSA	115		25-150
STL02118	d3-NMeFOSAA	58		25-150
STL02117	d5-NEtFOSAA	58		25-150
STL02279	M2-6:2 FTS	98		25-150
STL02280	M2-8:2 FTS	101		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d
 Lims ID: 480-142274-D-1-A
 Client ID: MW-7S
 Sample Type: Client
 Inject. Date: 29-Sep-2018 15:33:25 ALS Bottle#: 30 Worklist Smp#: 26
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142274-d-1-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 11:55:45 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1
 Process Host: XAWRK023

First Level Reviewer: barnettj Date: 03-Oct-2018 11:16:05

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.530	1.523	0.007	1.000	161713	0.1187			13.2	M
D 1 13C4 PFBA										
217.00 > 172.00	1.530	1.523	0.007	0.544	3716726	1.34		53.5	5228	
D 3 13C5-PFPeA										
267.90 > 223.00	1.822	1.814	0.008	0.648	5286601	2.09		83.7	2685	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.772	1.814	-0.042	0.973	84382	0.0401			0.3	M
D 47 13C3-PFBS										
301.90 > 83.00	1.865	1.855	0.010	0.663	72184	2.10		90.2	82.7	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	1.865	1.865	0.0	1.000	92530	0.0288			8.4	M
298.90 > 99.00	1.865	1.865	0.0	1.000	28210		3.28(1.35-4.05)		2.1	M
D 7 13C2 PFHxA										
315.00 > 270.00	2.119	2.119	0.0	0.753	7158962	2.67		107	6947	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.119	2.119	0.0	1.000	115355	0.0448			2.2	M
313.00 > 119.00	2.119	2.119	0.0	1.000	7766		14.85(6.96-20.87)		4.0	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.465	2.452	0.013	0.876	8386981	2.63		105	10665	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.465	2.452	0.013	1.000	159739	0.0448			3.3	
363.00 > 169.00	2.465	2.452	0.013	1.000	40411		3.95(2.17-6.52)		29.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.478	2.465	0.013	0.881	5072886	2.47		104	7496	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.478	2.465	0.013	1.000	95901	0.0355			16.9	M
399.00 > 99.00	2.478	2.465	0.013	1.000	24220		3.96(1.90-5.70)		9.5	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS										
429.00 > 81.00	2.798	2.782	0.016	0.994	770573	2.33		98.0	698	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.798	2.782	0.016	1.000	25095	0.0355			40.2	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	7204388	2.38		95.4	12703	
* 62 13C2-PFOA										
415.00 > 370.00	2.814	2.814	0.0		7544794	2.50			8445	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.814	2.814	0.0	1.000	614932	0.2035			30.8	
413.00 > 169.00	2.814	2.814	0.0	1.000	240527		2.56(1.36-4.08)		299	M
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.830	2.814	0.016	0.887	10290	0.004463			5.2	
449.00 > 99.00	2.830	2.814	0.016	0.887	4137		2.49(1.84-5.53)		5.0	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5383123	2.52		106	2055	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	6348109	2.31		92.4	7055	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.190	0.0	1.000	38553	0.0155			3.7	
463.00 > 169.00	3.190	3.190	0.0	1.000	5895		6.54(2.68-8.03)		9.7	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.062	3.190	-0.128	0.960	451339	0.1892			191	
499.00 > 99.00	3.190	3.190	0.0	1.000	72099		6.26(2.04-6.12)		98.1	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3263831	2.87		115	6281	
D 26 M2-8:2FTS										
529.00 > 81.00	3.542	3.527	0.015	1.259	101469	2.42		101	486	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.259	7209335	2.53		101	9765	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.542	3.542	0.0	1.000	4059	0.001054			5.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	1826453	1.45		57.9	2235	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.854	0.015	1.375	1444257	1.46		58.4	1765	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.869	0.0	1.375	5612644	2.32		92.9	11697	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.869	0.0	1.000	1027	0.001903			2.9	
D 36 13C2 PFDoA										
615.00 > 570.00	4.157	4.157	0.0	1.477	5875961	2.04		81.7	6389	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.660	0.0	1.656	3894843	1.72		68.8	6683	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d

Injection Date: 29-Sep-2018 15:33:25

Instrument ID: A9

Lims ID: 480-142274-D-1-A

Lab Sample ID: 320-142274-1

Client ID: MW-7S

Operator ID: A9\Administrator

ALS Bottle#: 30

Worklist Smp#: 26

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

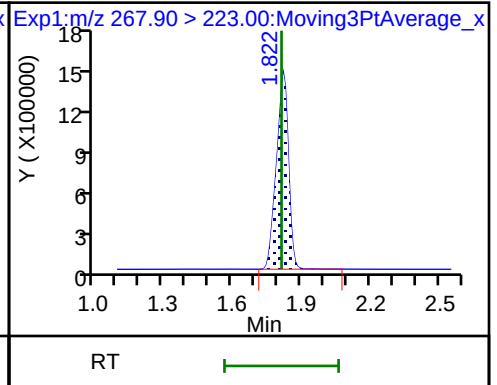
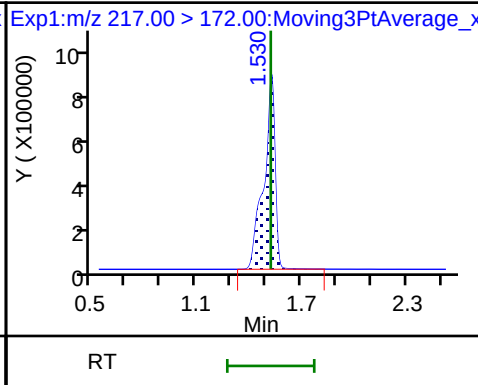
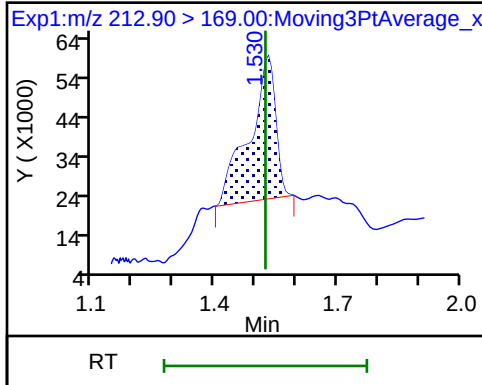
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid (M)

D 1 13C4 PFBA

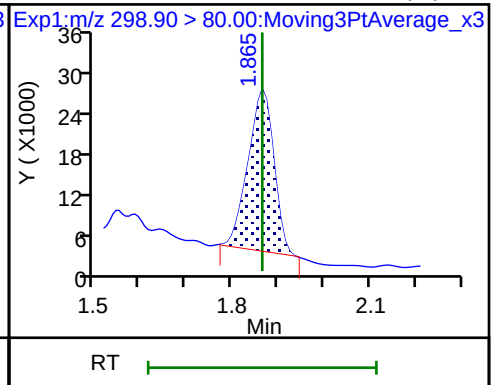
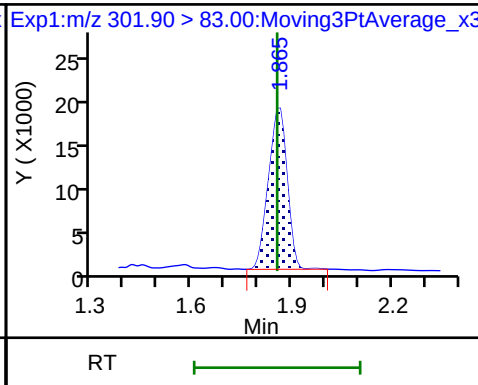
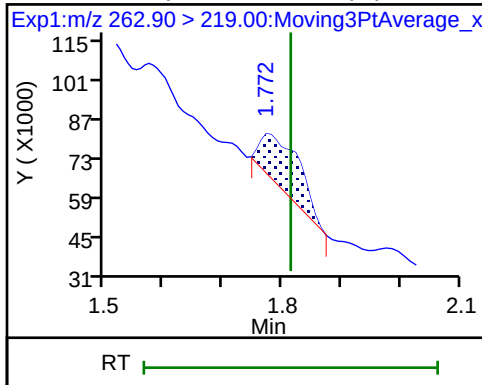
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3-PFBS

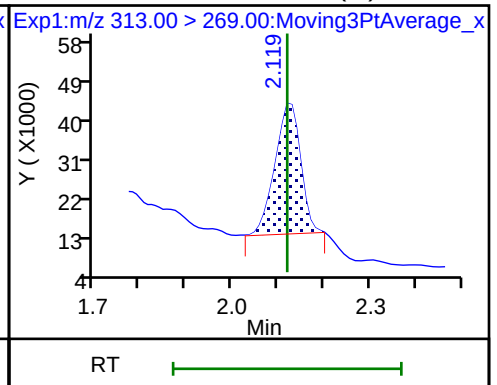
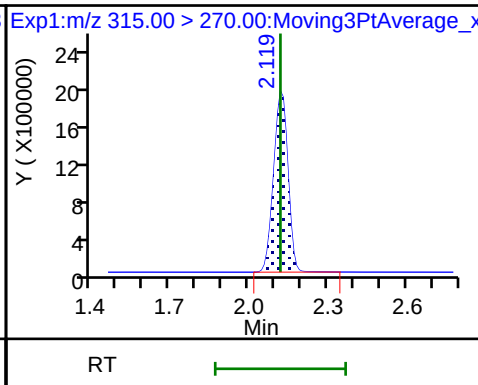
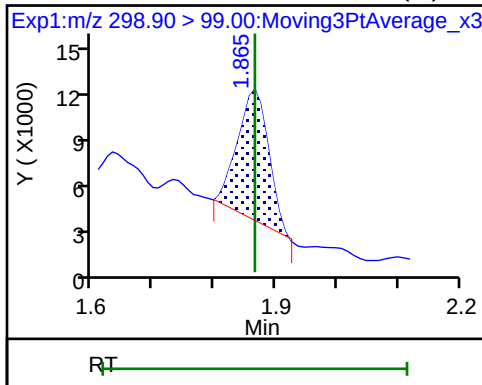
5 Perfluorobutanesulfonic acid (M)



5 Perfluorobutanesulfonic acid (M)

D 7 13C2 PFHxA

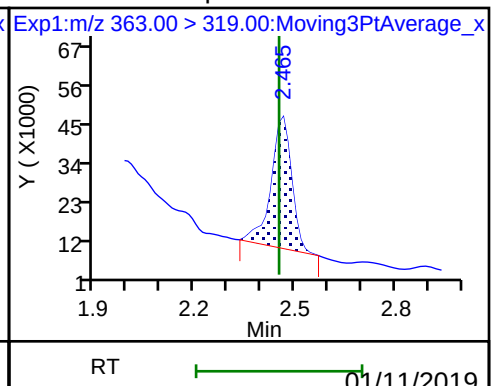
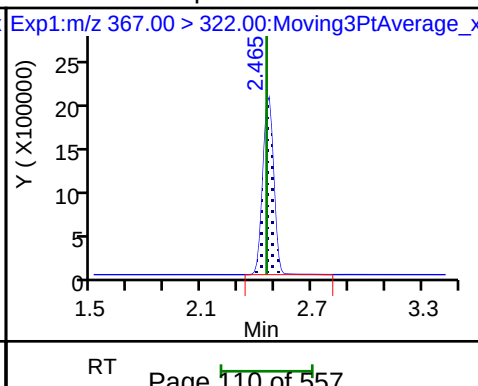
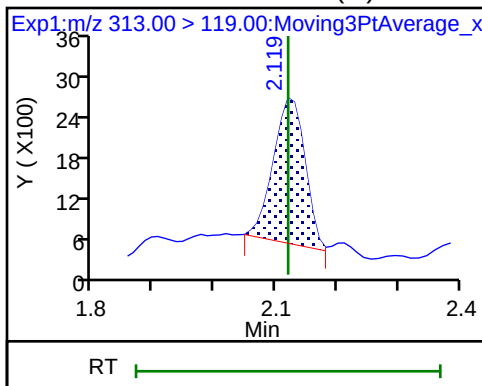
6 Perfluorohexanoic acid (M)

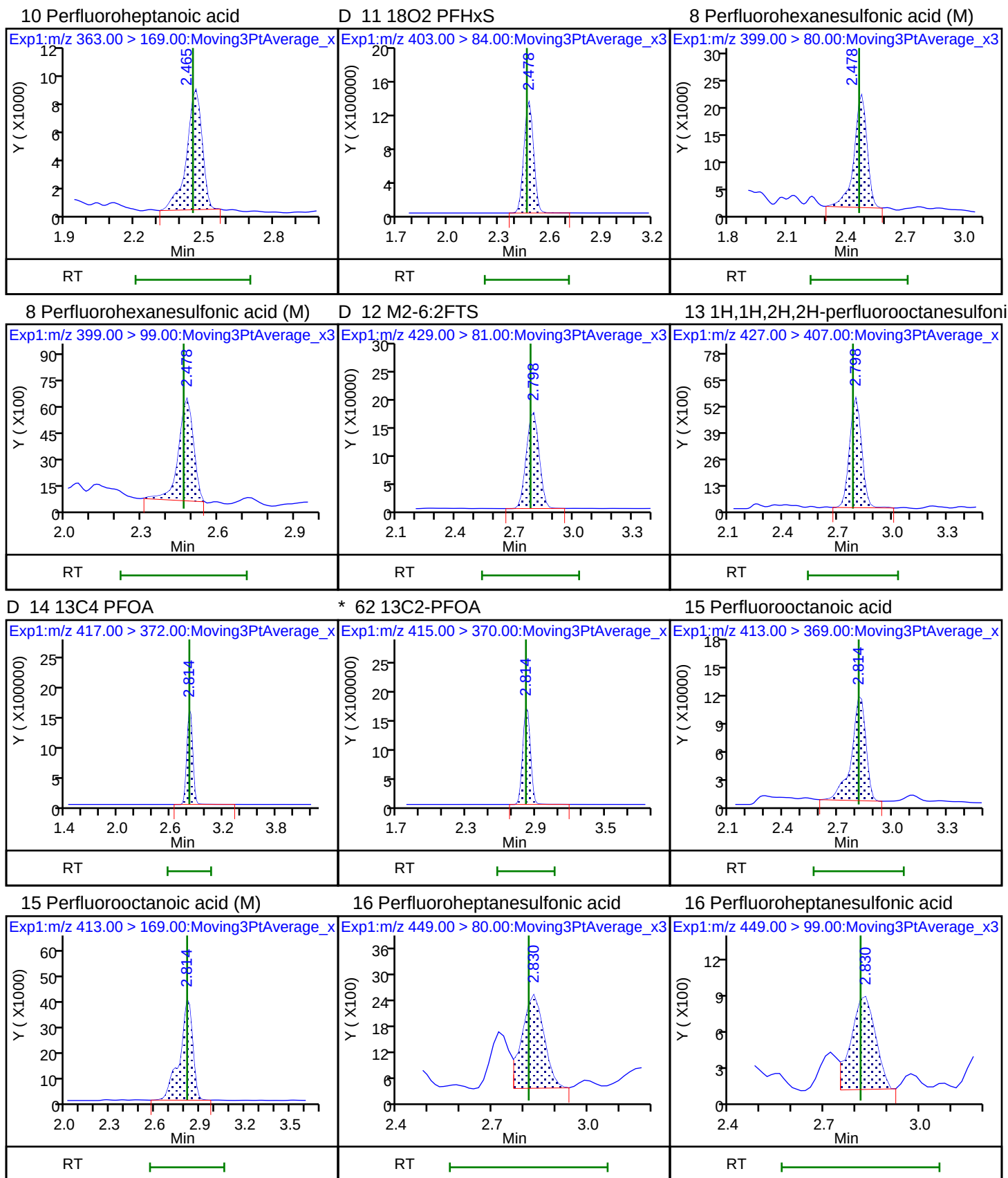


6 Perfluorohexanoic acid (M)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

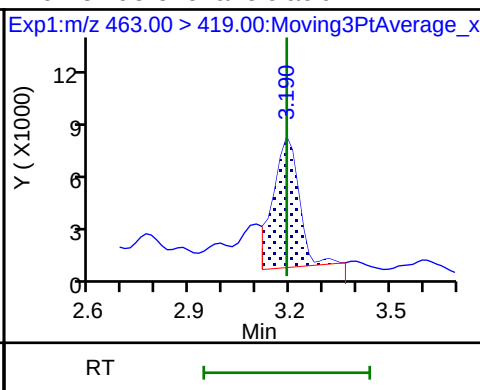
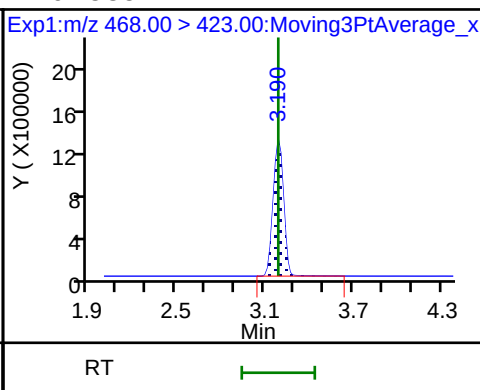
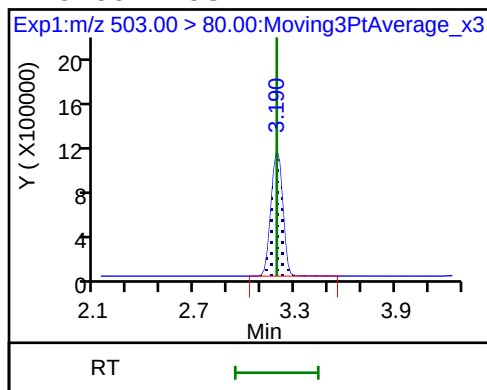




D 18 13C4 PFOS

D 19 13C5 PFNA

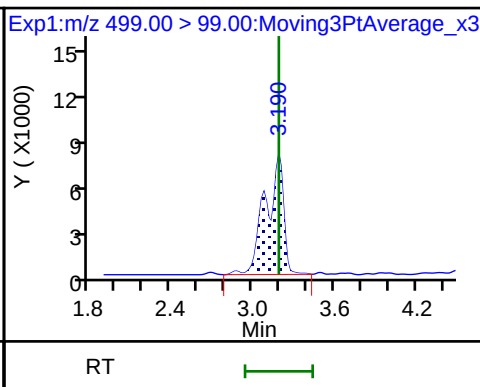
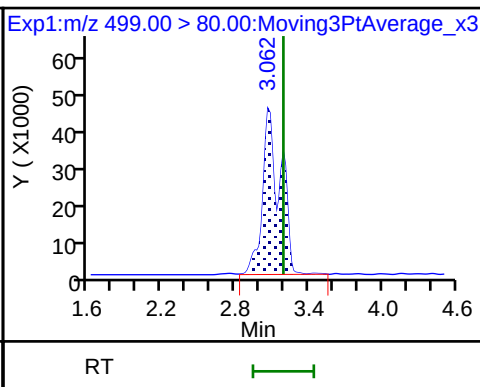
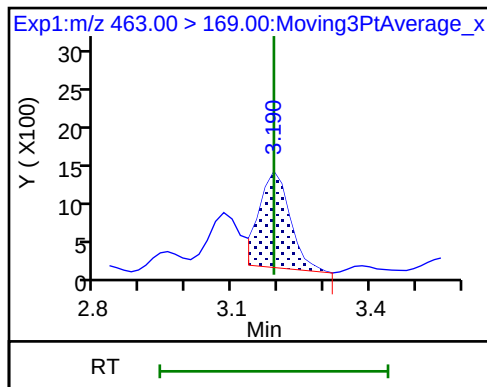
20 Perfluorononanoic acid



20 Perfluorononanoic acid

17 Perfluorooctane sulfonic acid

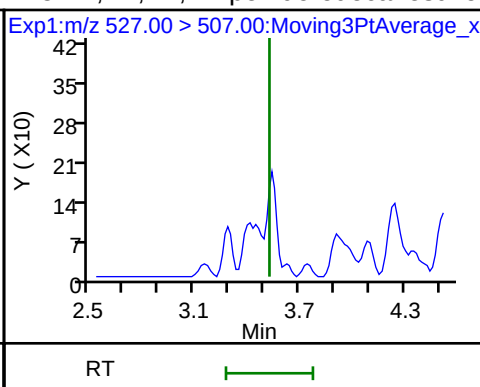
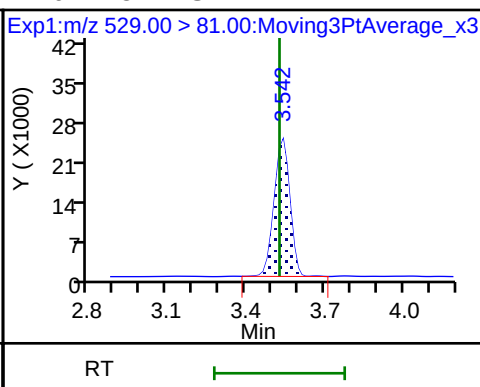
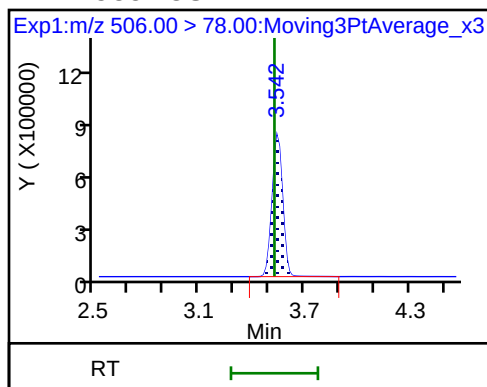
17 Perfluorooctane sulfonic acid



D 21 13C8 FOSA

D 26 M2-8:2FTS

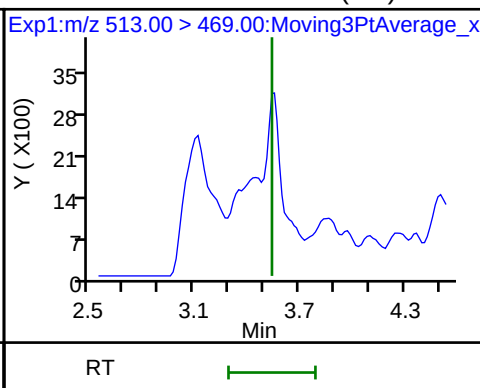
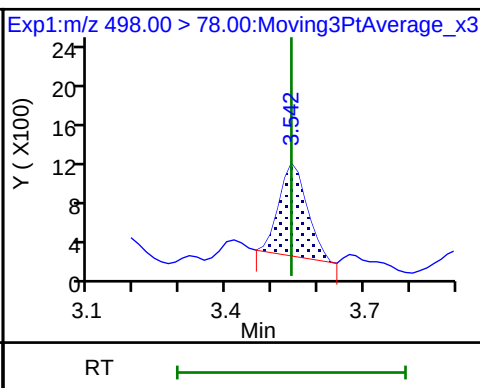
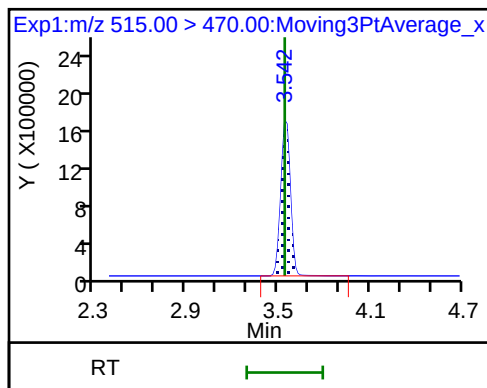
25 1H,1H,2H,2H-perfluorodecanesulfoni (ND)

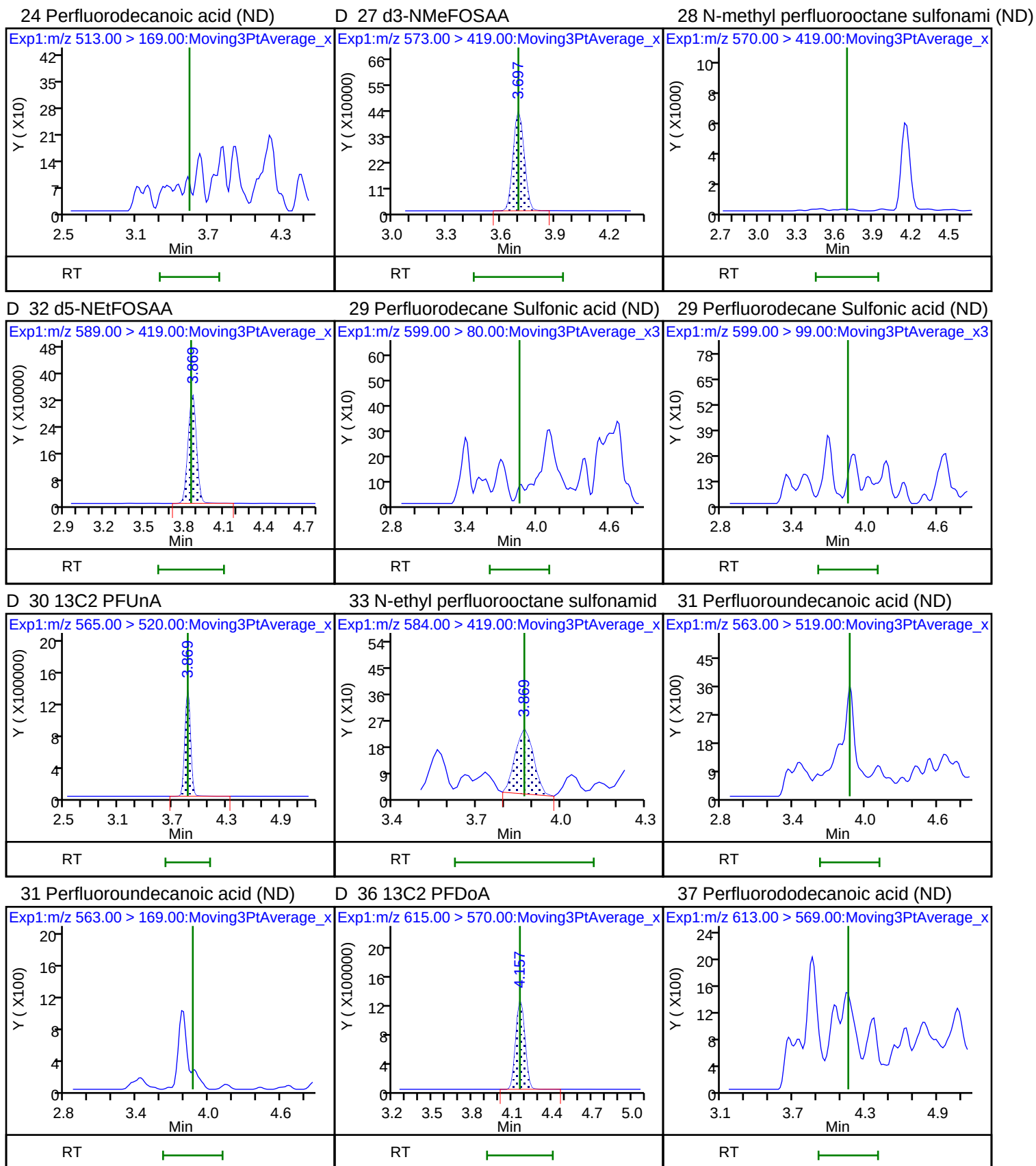


D 23 13C2 PFDA

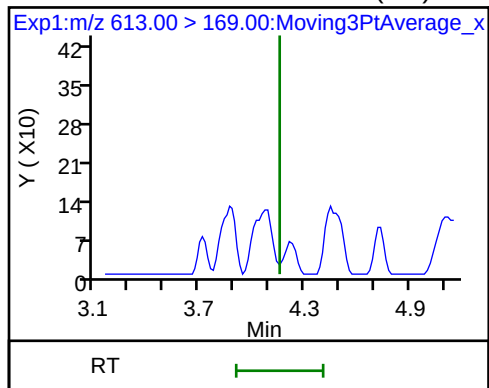
22 Perfluorooctane Sulfonamide

24 Perfluorodecanoic acid (ND)

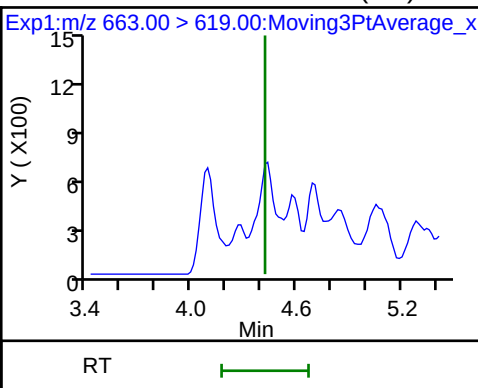




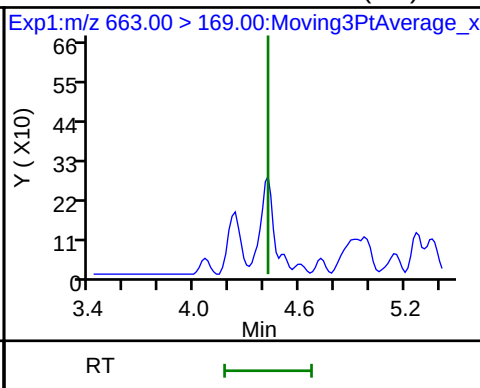
37 Perfluorododecanoic acid (ND)



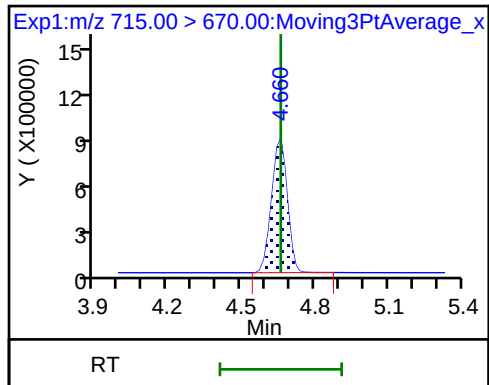
41 Perfluorotridecanoic acid (ND)



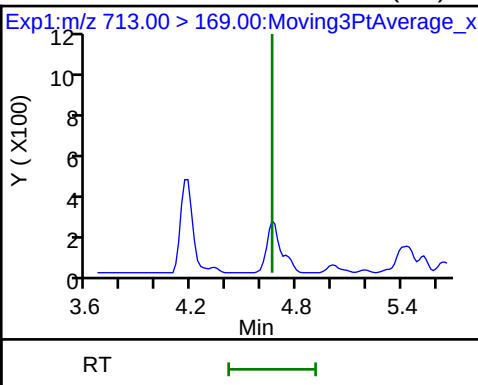
41 Perfluorotridecanoic acid (ND)



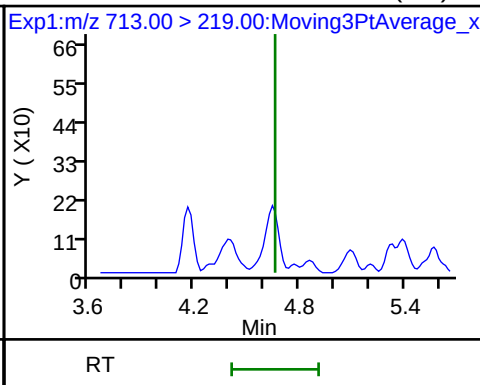
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



TestAmerica Sacramento

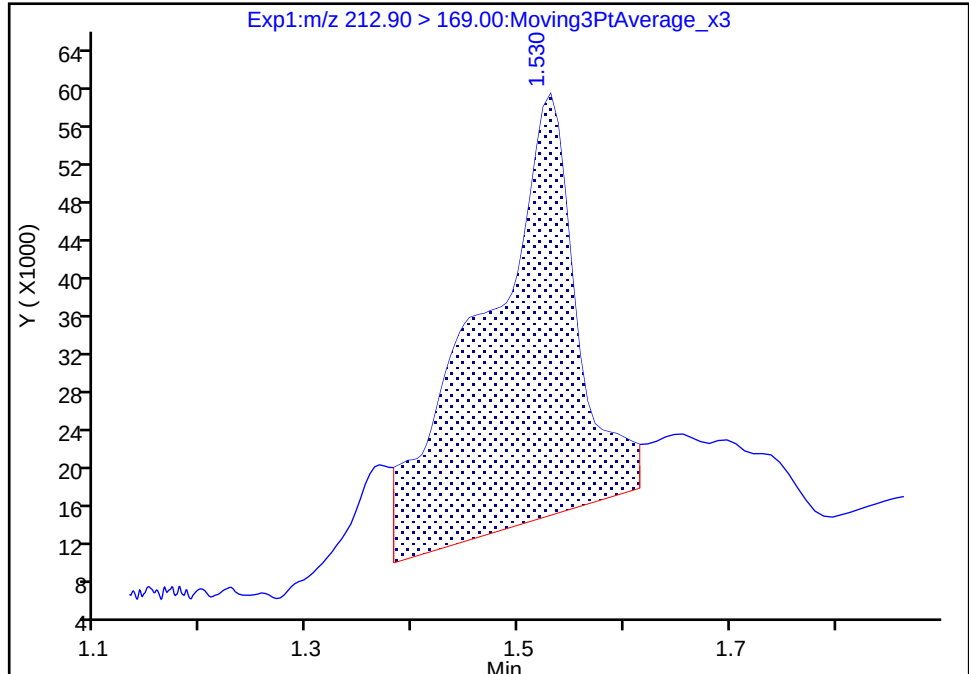
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d				
Injection Date:	29-Sep-2018 15:33:25	Instrument ID:	A9		
Lims ID:	480-142274-D-1-A	Lab Sample ID:	320-142274-1		
Client ID:	MW-7S				
Operator ID:	A9\Administrator	ALS Bottle#:	30	Worklist Smp#:	26
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

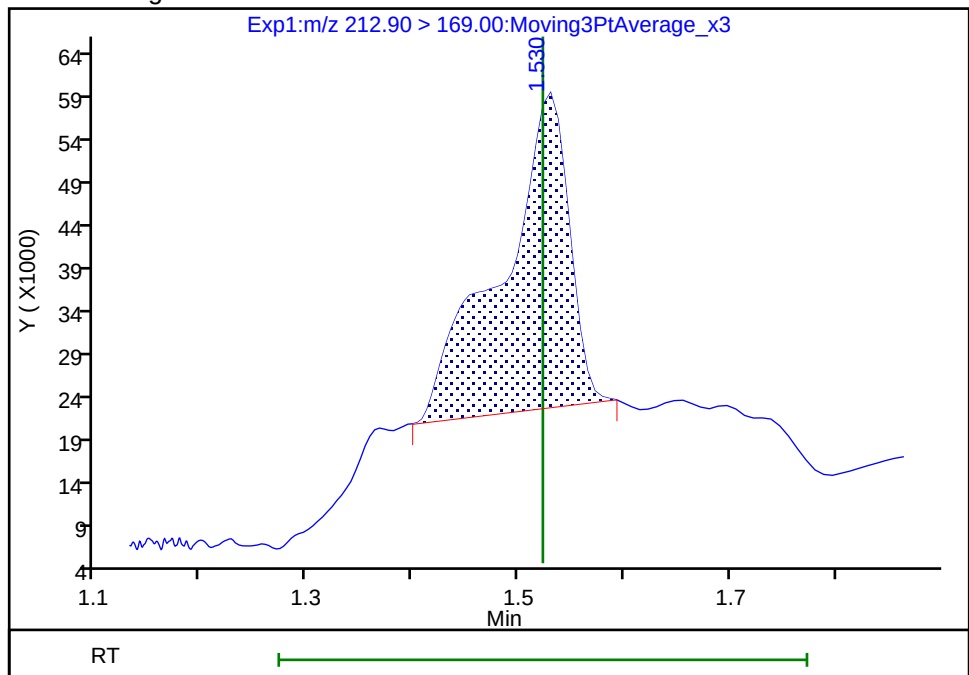
RT: 1.53
Area: 275524
Amount: 0.202169
Amount Units: ng/ml

Processing Integration Results



RT: 1.53
Area: 161713
Amount: 0.118659
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:12:46
Audit Action: Manually Integrated

Audit Reason: Baseline
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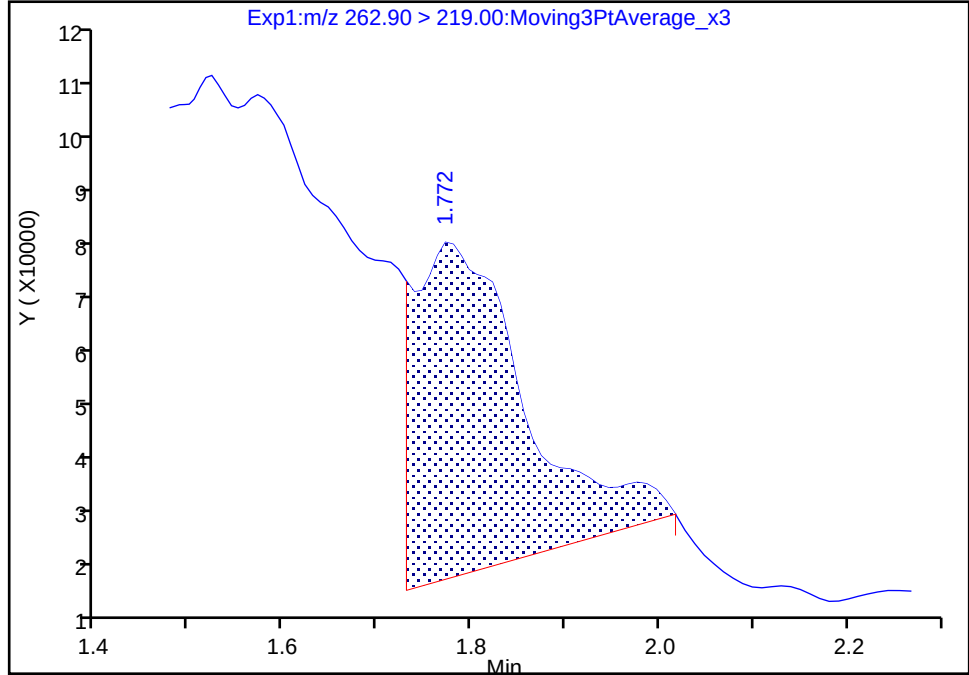
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d				
Injection Date:	29-Sep-2018 15:33:25	Instrument ID:	A9		
Lims ID:	480-142274-D-1-A	Lab Sample ID:	320-142274-1		
Client ID:	MW-7S				
Operator ID:	A9\Administrator	ALS Bottle#:	30	Worklist Smp#:	26
Injection Vol:	20.0 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

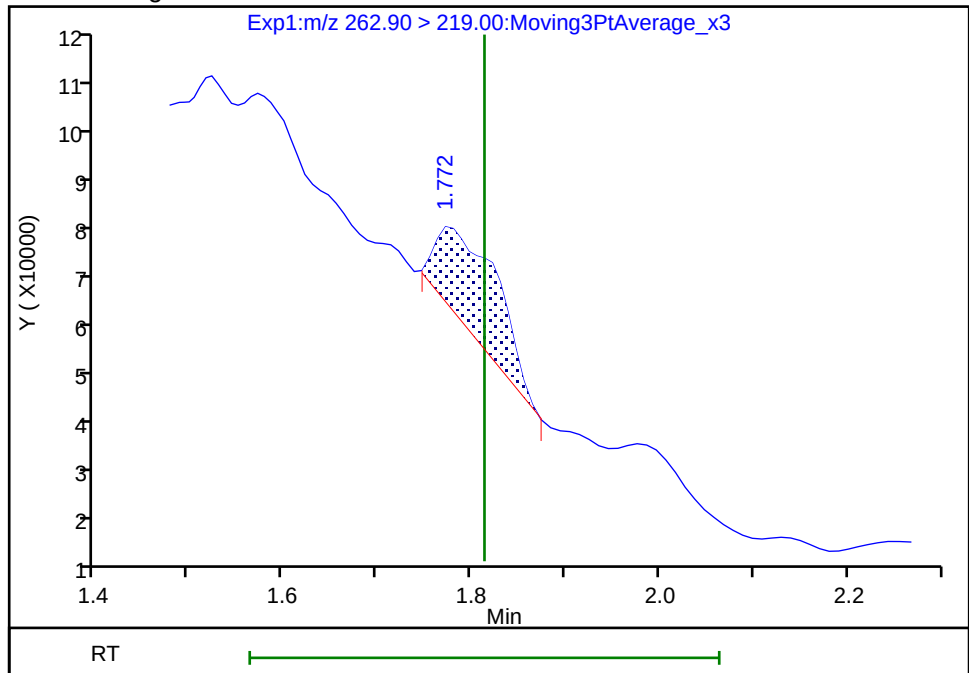
RT: 1.77
Area: 470754
Amount: 0.223596
Amount Units: ng/ml

Processing Integration Results



RT: 1.77
Area: 84382
Amount: 0.040079
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:13:08
Audit Action: Manually Integrated

Audit Reason: Baseline
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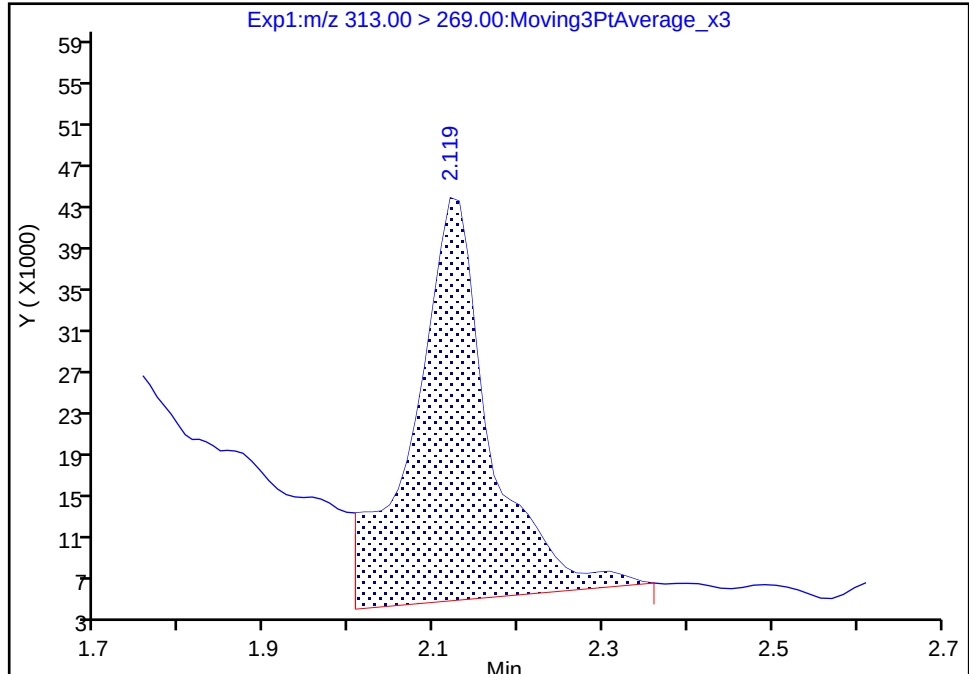
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d
Injection Date: 29-Sep-2018 15:33:25 Instrument ID: A9
Lims ID: 480-142274-D-1-A Lab Sample ID: 320-142274-1
Client ID: MW-7S
Operator ID: A9\Administrator ALS Bottle#: 30 Worklist Smp#: 26
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

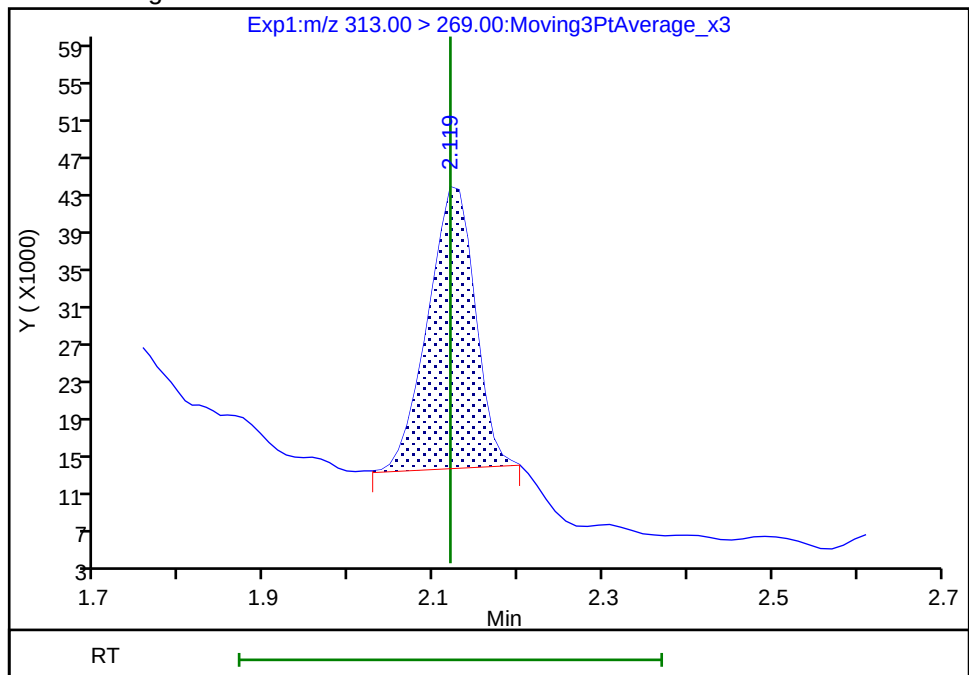
RT: 2.12
Area: 242377
Amount: 0.094120
Amount Units: ng/ml

Processing Integration Results



RT: 2.12
Area: 115355
Amount: 0.044795
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:14:02
Audit Action: Manually Integrated

Audit Reason: Baseline
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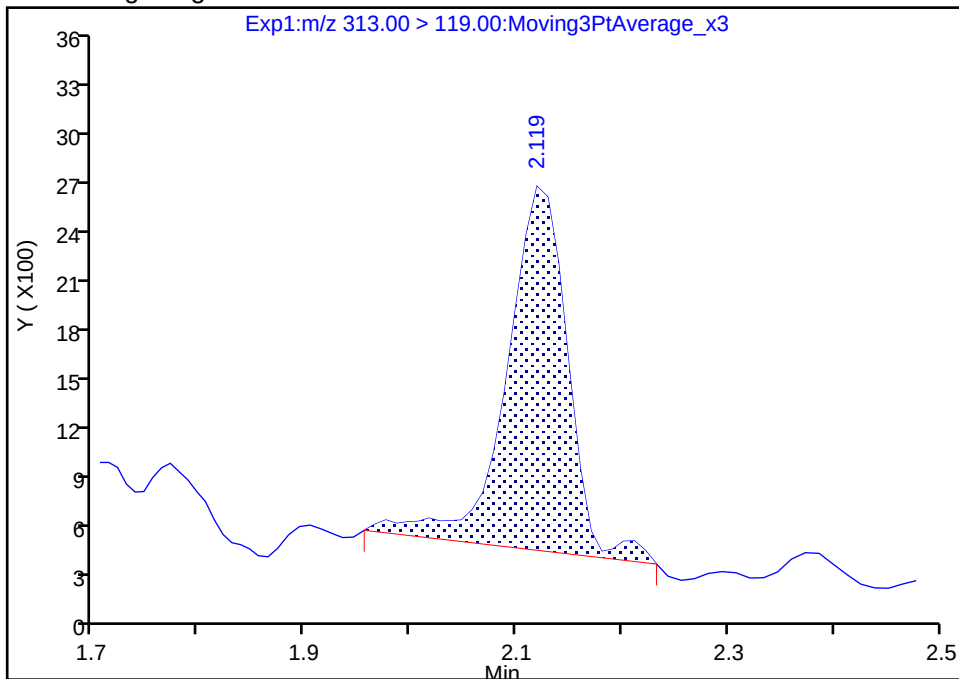
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d
Injection Date: 29-Sep-2018 15:33:25 Instrument ID: A9
Lims ID: 480-142274-D-1-A Lab Sample ID: 320-142274-1
Client ID: MW-7S
Operator ID: A9\Administrator ALS Bottle#: 30 Worklist Smp#: 26
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

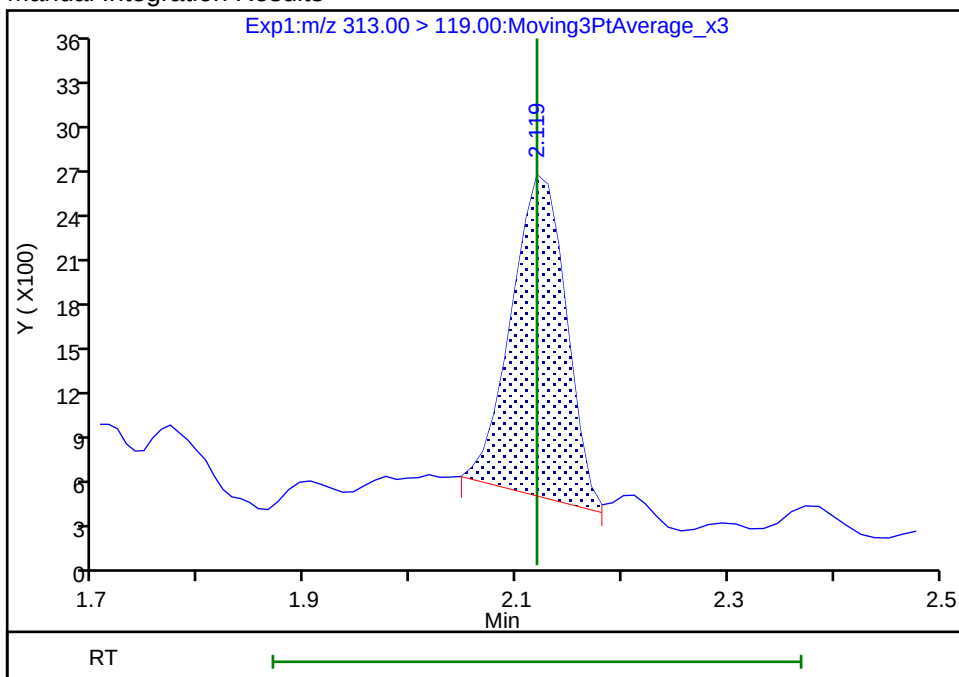
RT: 2.12
Area: 8942
Amount: 0.094120
Amount Units: ng/ml

Processing Integration Results



RT: 2.12
Area: 7766
Amount: 0.044795
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:14:13

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

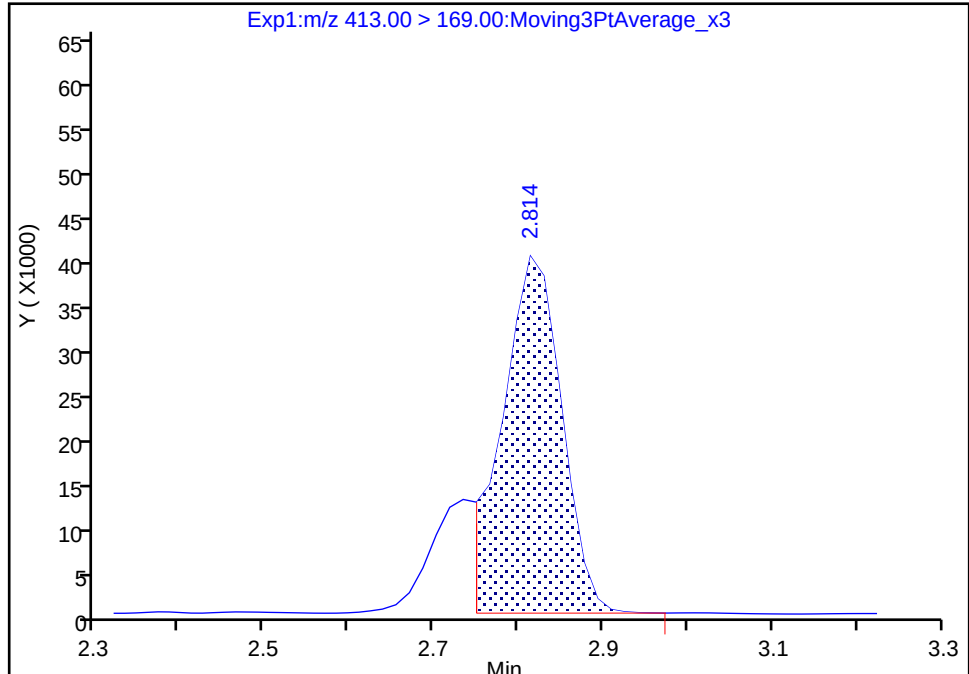
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d
Injection Date: 29-Sep-2018 15:33:25 Instrument ID: A9
Lims ID: 480-142274-D-1-A Lab Sample ID: 320-142274-1
Client ID: MW-7S
Operator ID: A9\Administrator ALS Bottle#: 30 Worklist Smp#: 26
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

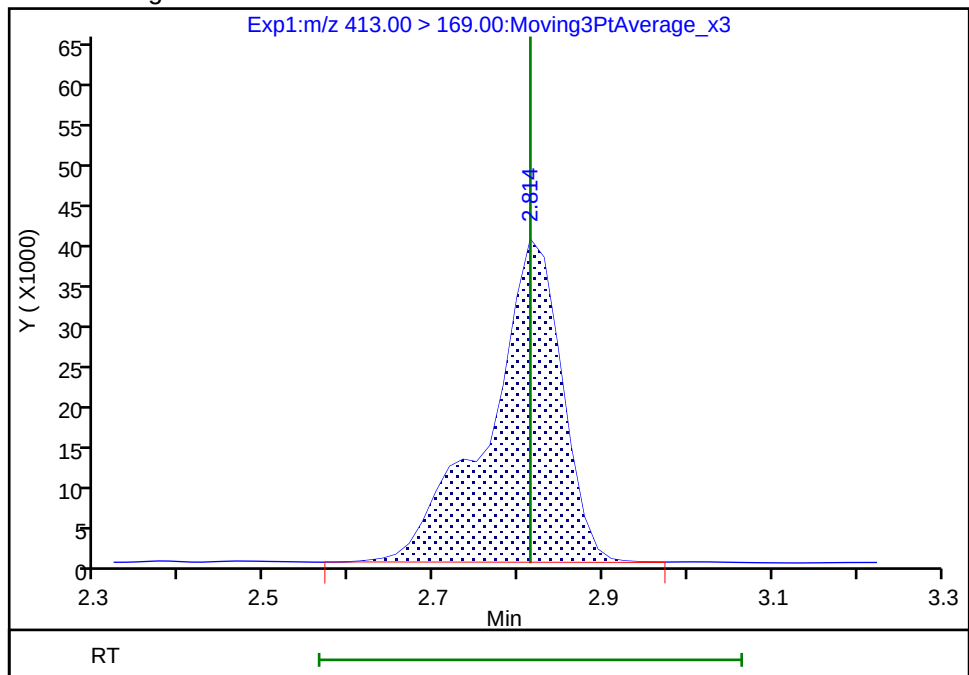
RT: 2.81
Area: 193920
Amount: 0.203456
Amount Units: ng/ml

Processing Integration Results



RT: 2.81
Area: 240527
Amount: 0.203456
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:15:15
Audit Action: Manually Integrated

Audit Reason: Isomers
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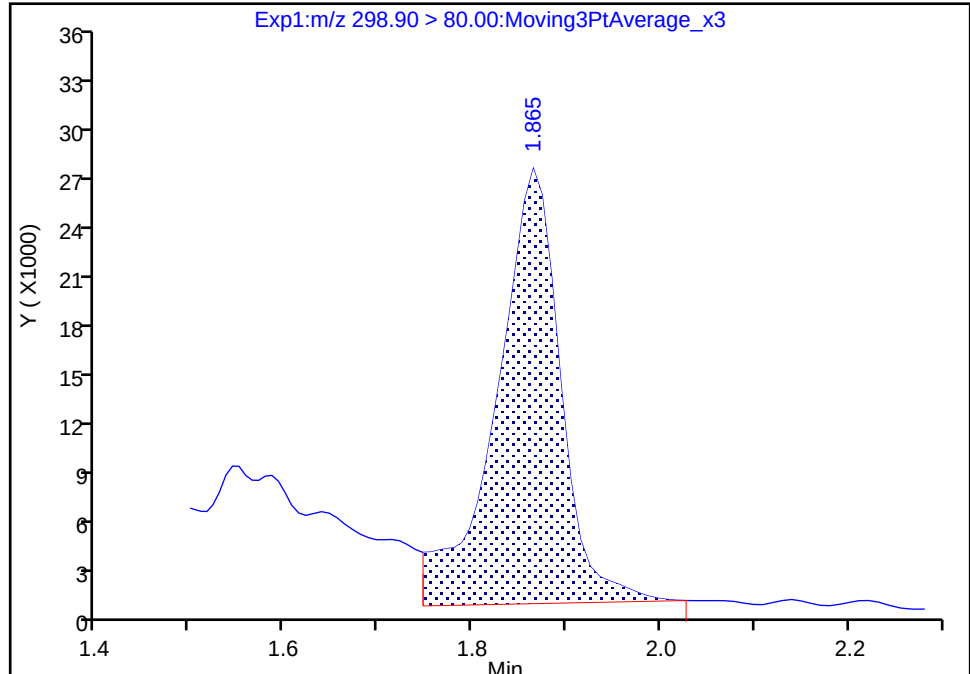
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d				
Injection Date:	29-Sep-2018 15:33:25	Instrument ID:	A9		
Lims ID:	480-142274-D-1-A	Lab Sample ID:	320-142274-1		
Client ID:	MW-7S				
Operator ID:	A9\Administrator	ALS Bottle#:	30	Worklist Smp#:	26
Injection Vol:	20.0 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

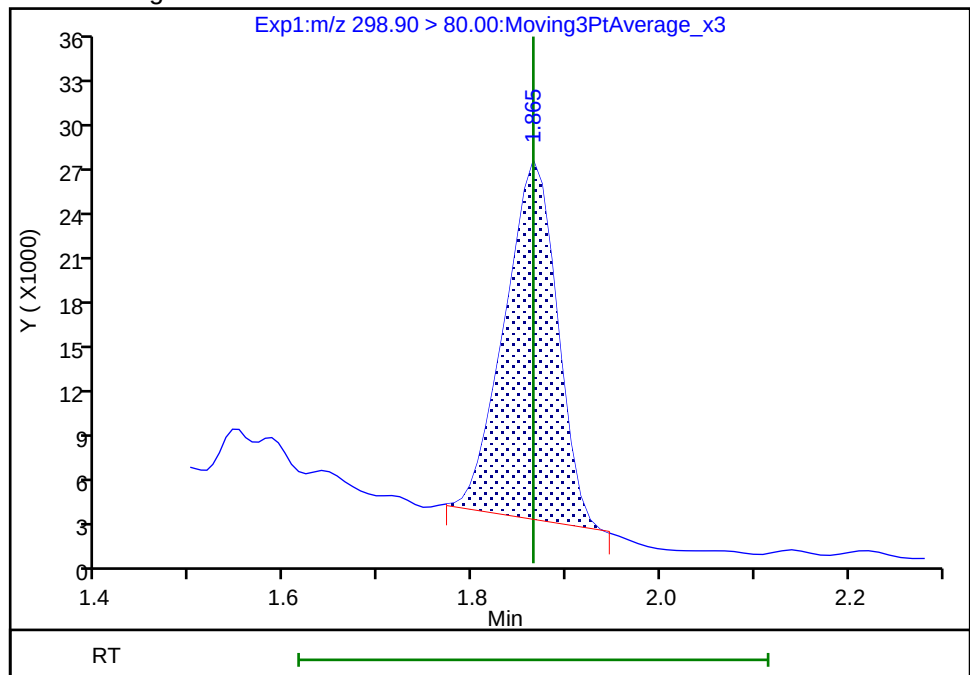
RT: 1.86
Area: 124021
Amount: 0.038662
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 92530
Amount: 0.028845
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:13:31
Audit Action: Manually Integrated

Audit Reason: Baseline
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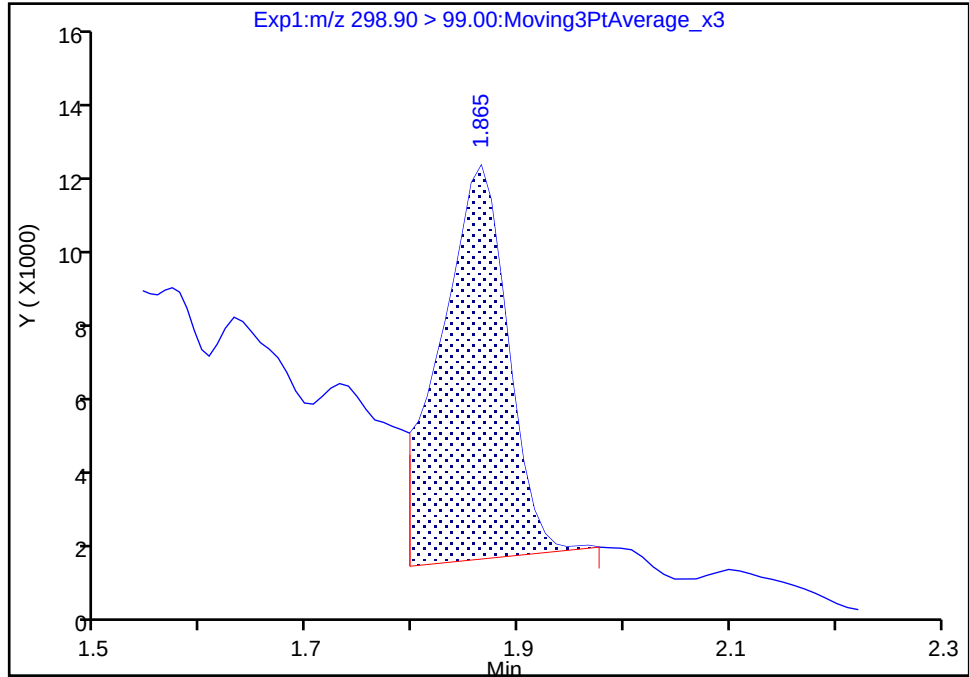
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d
Injection Date: 29-Sep-2018 15:33:25 Instrument ID: A9
Lims ID: 480-142274-D-1-A Lab Sample ID: 320-142274-1
Client ID: MW-7S
Operator ID: A9\Administrator ALS Bottle#: 30 Worklist Smp#: 26
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

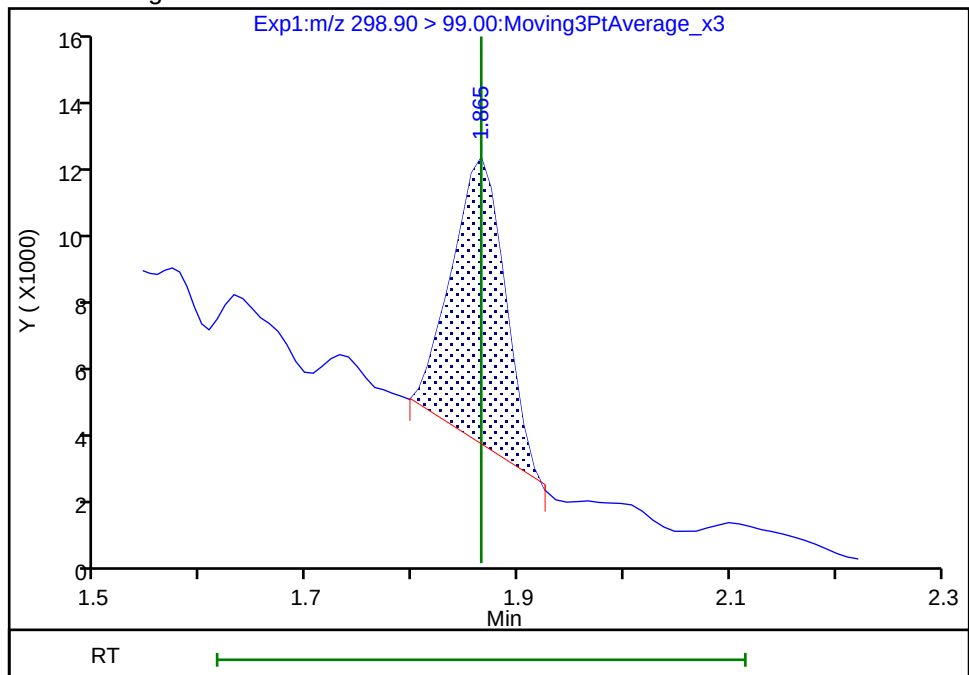
RT: 1.86
Area: 44375
Amount: 0.038662
Amount Units: ng/ml

Processing Integration Results



RT: 1.86
Area: 28210
Amount: 0.028845
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:13:50

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

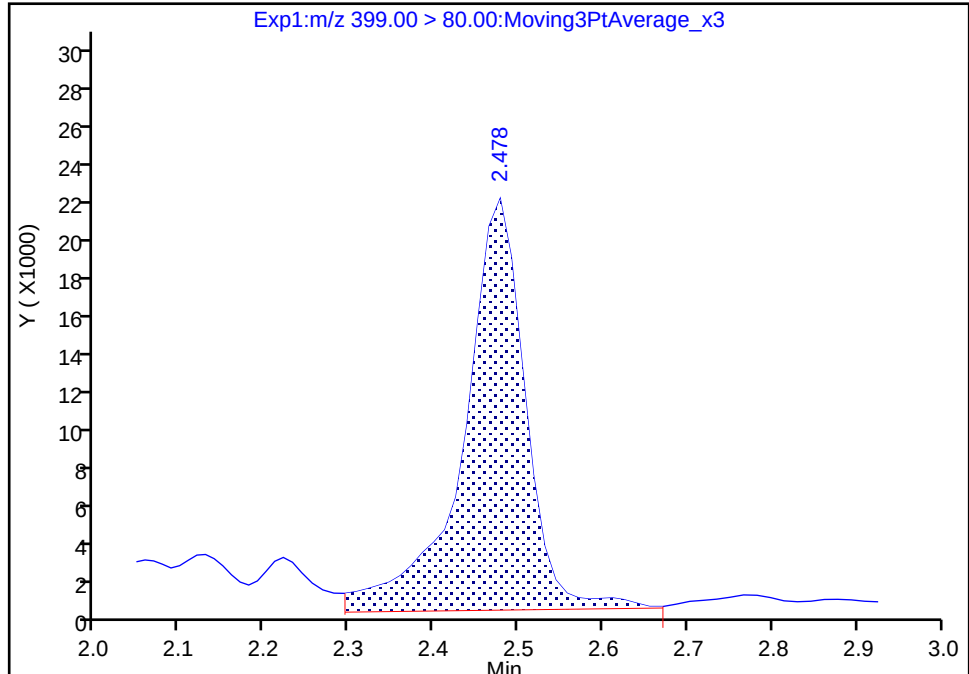
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d
Injection Date: 29-Sep-2018 15:33:25 Instrument ID: A9
Lims ID: 480-142274-D-1-A Lab Sample ID: 320-142274-1
Client ID: MW-7S
Operator ID: A9\Administrator ALS Bottle#: 30 Worklist Smp#: 26
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

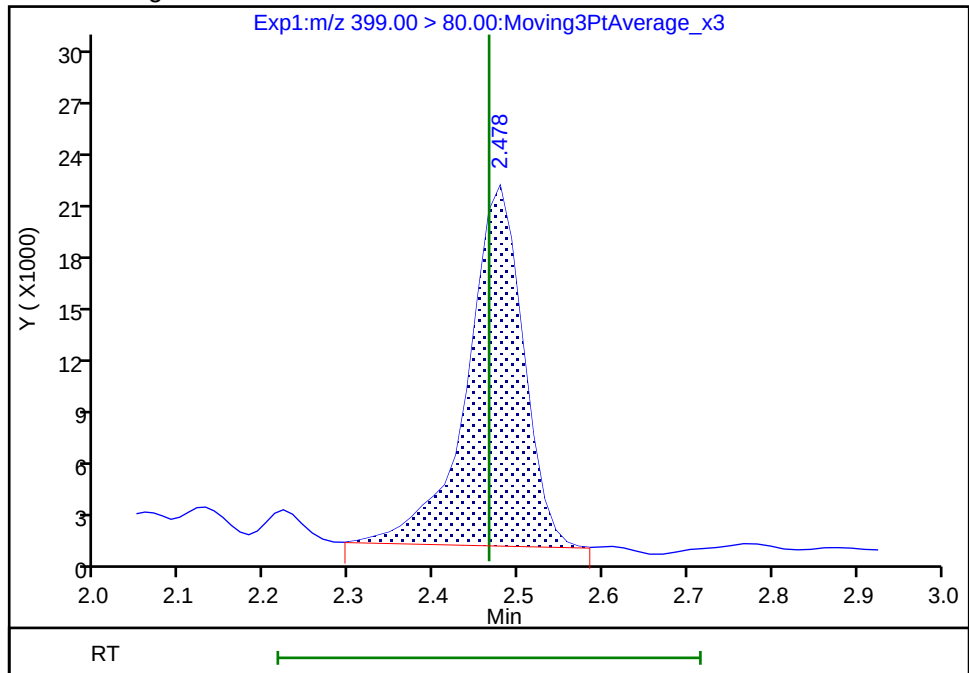
RT: 2.48
Area: 110224
Amount: 0.040823
Amount Units: ng/ml

Processing Integration Results



RT: 2.48
Area: 95901
Amount: 0.035518
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:14:33
Audit Action: Manually Integrated

Audit Reason: Baseline
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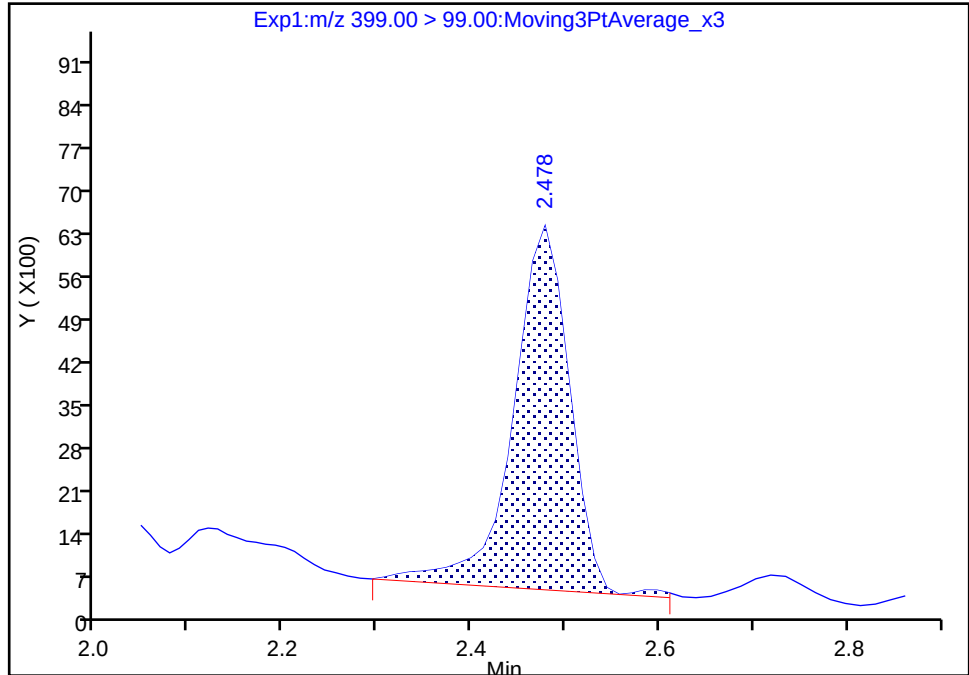
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_040.d
Injection Date: 29-Sep-2018 15:33:25 Instrument ID: A9
Lims ID: 480-142274-D-1-A Lab Sample ID: 320-142274-1
Client ID: MW-7S
Operator ID: A9\Administrator ALS Bottle#: 30 Worklist Smp#: 26
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

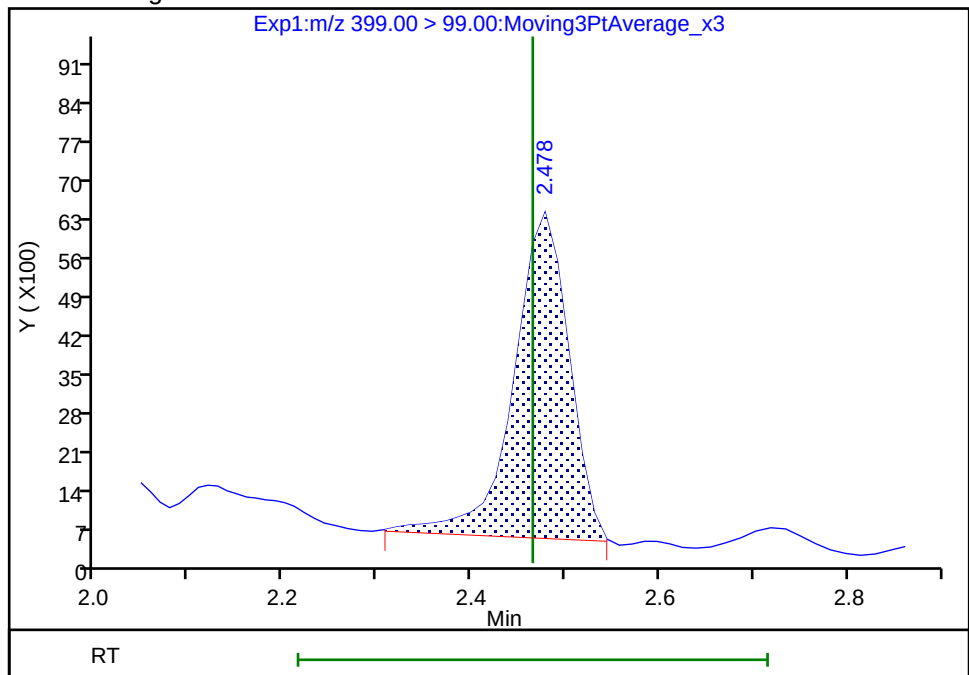
RT: 2.48
Area: 25021
Amount: 0.040823
Amount Units: ng/ml

Processing Integration Results



RT: 2.48
Area: 24220
Amount: 0.035518
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:14:41

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-11S</u>	Lab Sample ID: <u>480-142274-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_029.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/20/2018 15:05</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>253.3 (mL)</u>	Date Analyzed: <u>09/29/2018 14:10</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	ND		2.0	0.84
375-95-1	Perfluorononanoic acid (PFNA)	ND		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.22	J B	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.53
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	ND		20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-11S</u>	Lab Sample ID: <u>480-142274-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_029.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/20/2018 15:05</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>253.3 (mL)</u>	Date Analyzed: <u>09/29/2018 14:10</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	91		25-150
STL01893	13C5 PFPeA	101		25-150
STL00993	13C2 PFHxA	100		25-150
STL01892	13C4 PFHpA	103		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	107		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	90		25-150
STL00998	13C2 PFDoA	86		25-150
STL02116	13C2 PFTeDA	80		25-150
STL02337	13C3 PFBS	95		25-150
STL00994	18O2 PFHxS	98		25-150
STL00991	13C4 PFOS	102		25-150
STL01056	13C8 FOSA	109		25-150
STL02118	d3-NMeFOSAA	63		25-150
STL02117	d5-NEtFOSAA	64		25-150
STL02279	M2-6:2 FTS	81		25-150
STL02280	M2-8:2 FTS	104		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_029.d
 Lims ID: 480-142274-D-2-A
 Client ID: MW-11S
 Sample Type: Client
 Inject. Date: 29-Sep-2018 14:10:42 ALS Bottle#: 20 Worklist Smp#: 15
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142274-d-2-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 11:54:45 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK023

First Level Reviewer: barnettj

Date: 03-Oct-2018 10:59:50

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	1.530	1.523	0.007	0.544	6580483	2.26		90.6	6606	
2 Perfluorobutyric acid										
212.90 > 169.00	1.530	1.523	0.007	1.000	5829	0.002416			1.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.822	1.814	0.008	0.648	6704355	2.54		101	8910	
4 Perfluoropentanoic acid										M
262.90 > 219.00	1.814	1.814	0.0	0.995	10753	0.004027			0.3	M
D 47 13C3-PFBS										
301.90 > 83.00	1.865	1.855	0.010	0.663	79162	2.20		94.6	463	
D 7 13C2 PFHxA										
315.00 > 270.00	2.119	2.119	0.0	0.753	7003632	2.50		100	11294	
D 9 13C4-PFHpA										
367.00 > 322.00	2.452	2.452	0.0	0.871	8580927	2.57		103	10745	
D 11 18O2 PFHxS										
403.00 > 84.00	2.465	2.465	0.0	0.876	4985664	2.32		98.0	10453	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.478	2.465	0.013	1.005	14609	0.005505			20.5	
399.00 > 99.00	2.465	2.465	0.0	1.000	5644		2.59(1.90-5.70)		6.9	
D 12 M2-6:2FTS										
429.00 > 81.00	2.798	2.782	0.016	0.994	668427	1.93		81.3	1037	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.782	0.0	0.994	6928	0.0113			9.3	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	7620178	2.41		96.5	10534	
* 62 13C2-PFOA										
415.00 > 370.00	2.814	2.814	0.0		7888942	2.50			6311	

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	2.814	2.814	0.0	1.000	18037	0.005642			3.2	
413.00 > 169.00	2.814	2.814	0.0	1.000	5494		3.28(1.36-4.08)		10.7	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5410003	2.43		102	3121	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	7680648	2.67		107	8950	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.190	0.0	1.000	9557	0.003986			9.3	
499.00 > 99.00	3.190	3.190	0.0	1.000	0		0.00(2.04-6.12)			
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3245362	2.73		109	4188	
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.527	0.0	1.253	109208	2.49		104	458	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.259	7287541	2.45		97.9	9770	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.527	3.542	-0.015	0.996	4250	0.001110			4.1	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	2064834	1.56		62.6	3196	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.855	3.854	0.001	1.370	1656440	1.60		64.1	1994	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.869	0.0	1.375	5685699	2.25		90.0	5286	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.157	0.0	1.477	6477087	2.15		86.2	12225	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.644	4.660	-0.016	1.650	4728815	2.00		79.8	12150	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_029.d

Injection Date: 29-Sep-2018 14:10:42

Instrument ID: A9

Lims ID: 480-142274-D-2-A

Lab Sample ID: 320-142274-2

Client ID: MW-11S

Operator ID: A9\Administrator

ALS Bottle#: 20

Worklist Smp#: 15

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

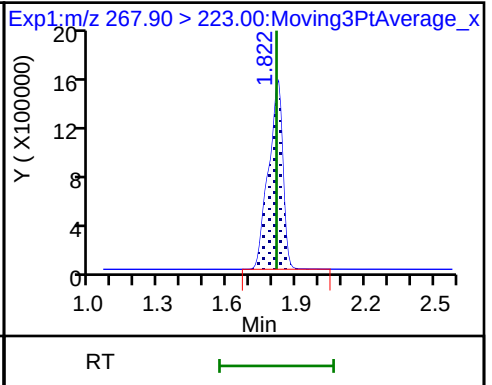
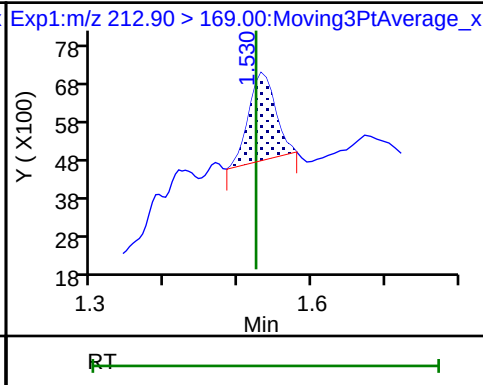
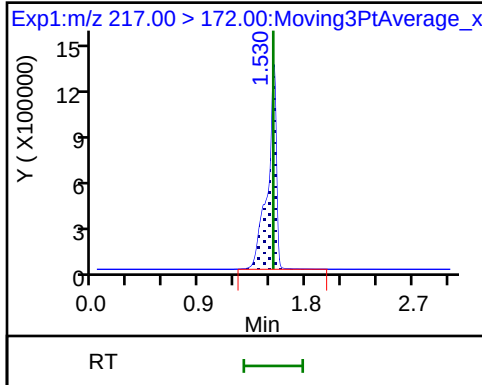
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

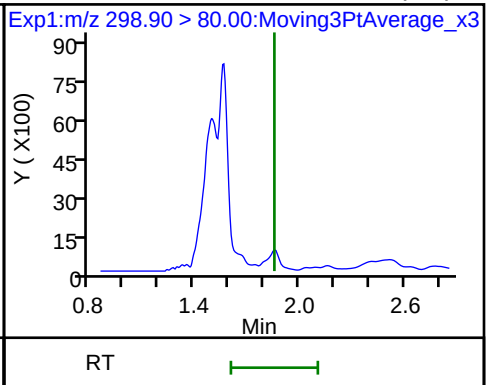
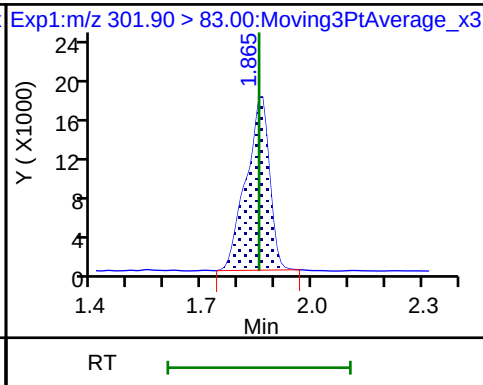
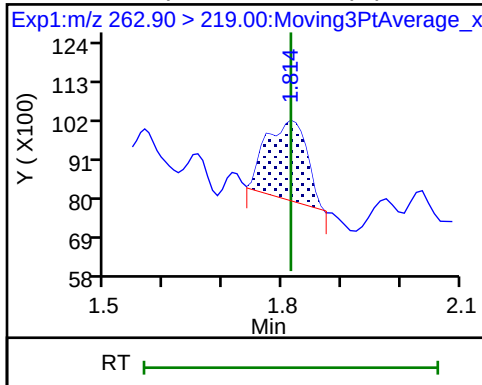
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (M)

D 47 13C3-PFBS

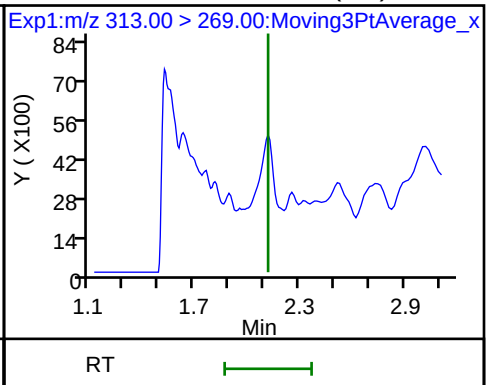
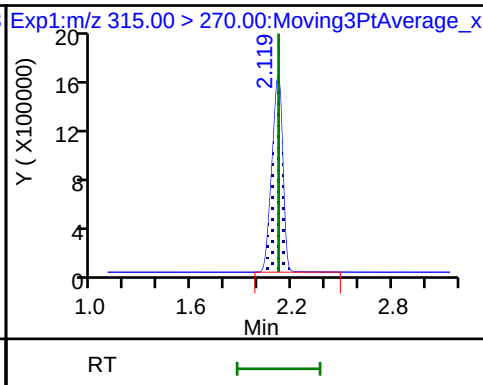
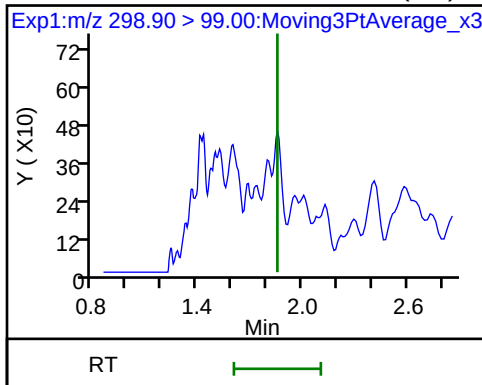
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 7 13C2 PFHxA

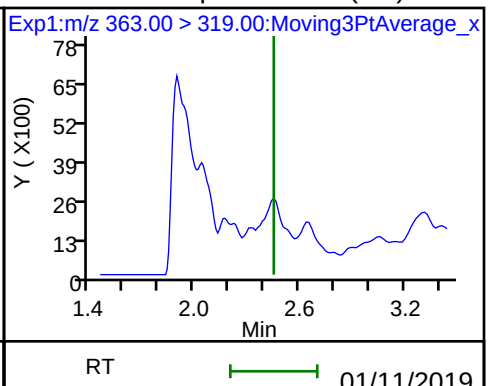
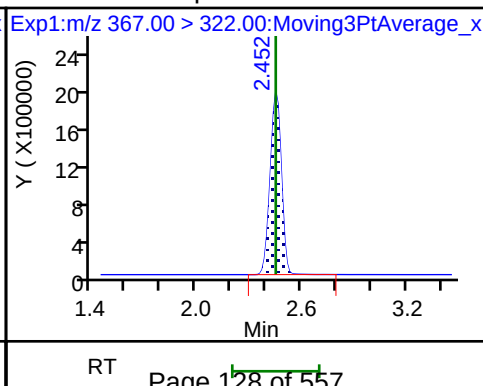
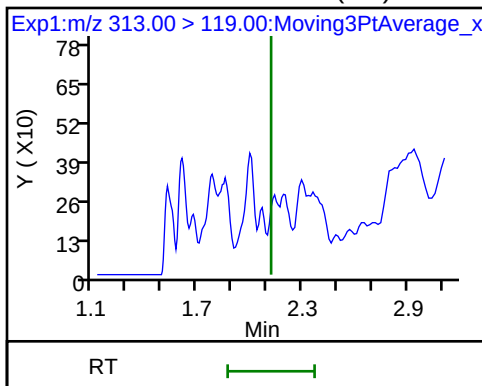
6 Perfluorohexanoic acid (ND)

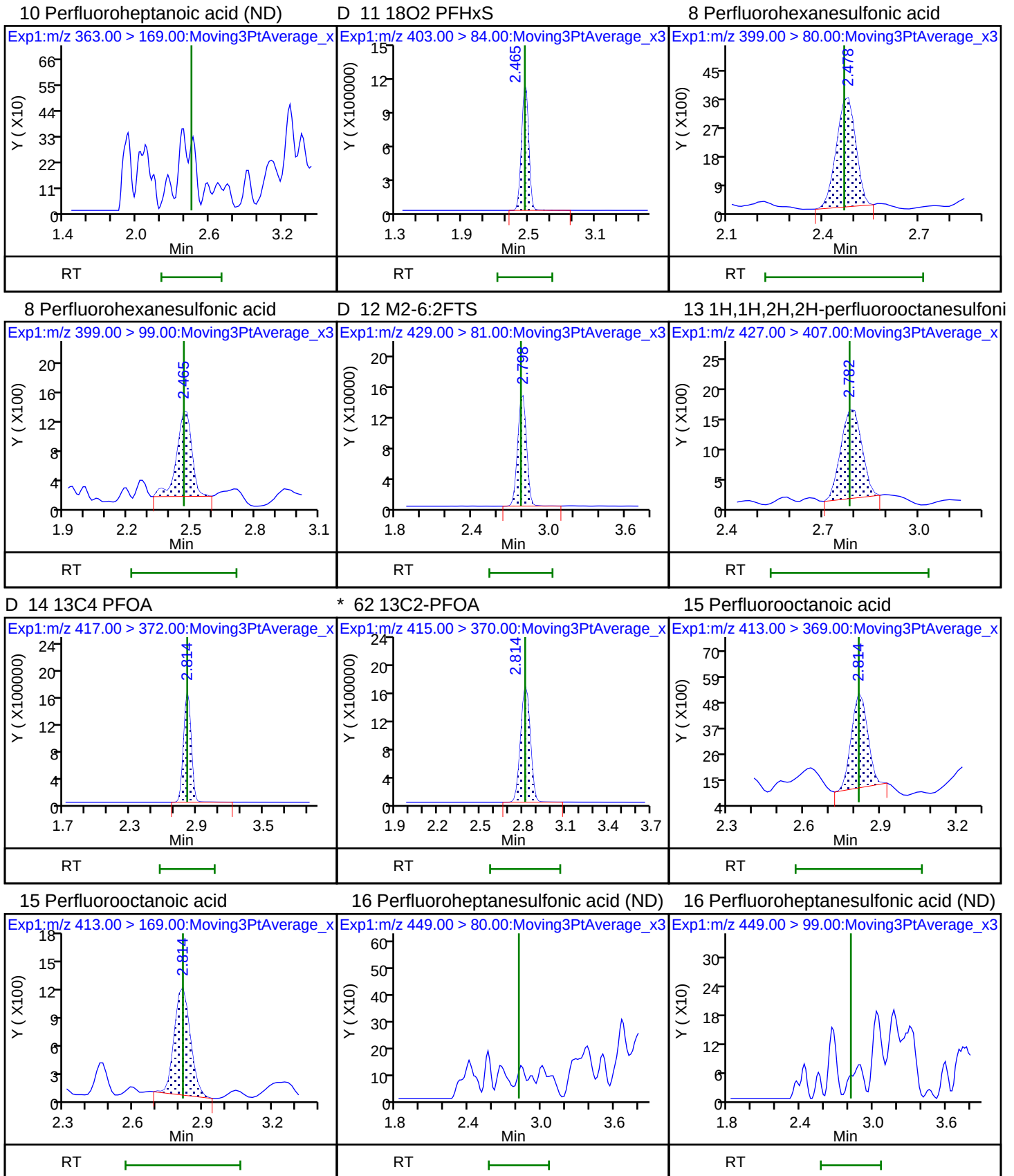


6 Perfluorohexanoic acid (ND)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid (ND)

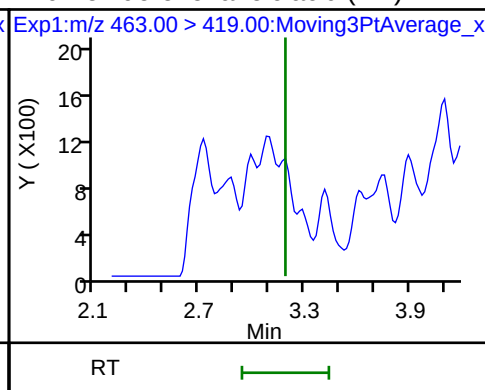
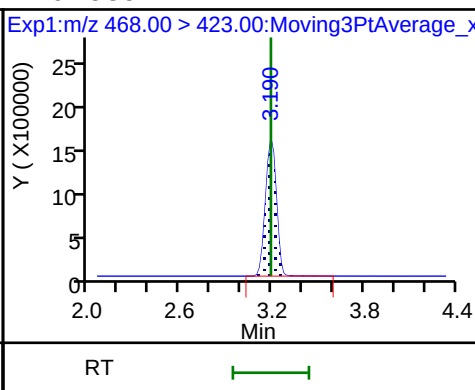
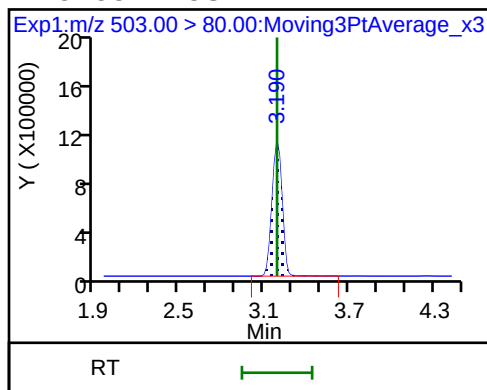




D 18 13C4 PFOS

D 19 13C5 PFNA

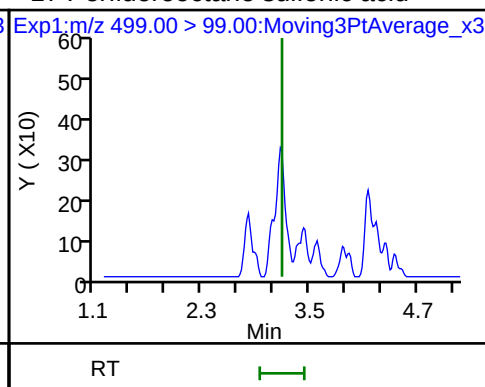
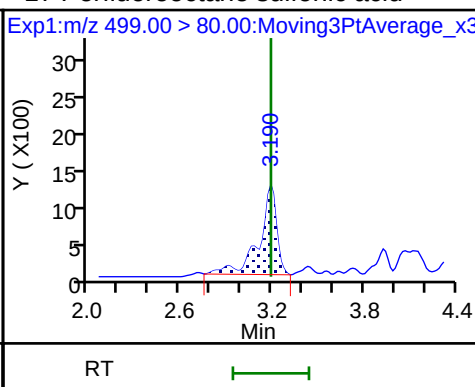
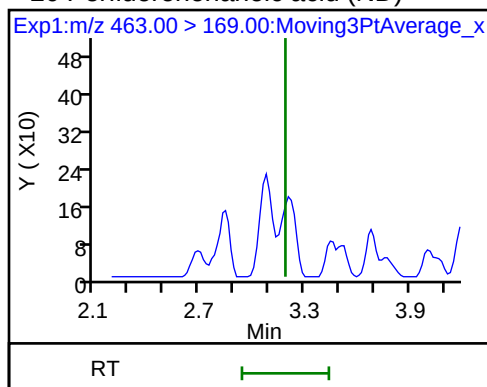
20 Perfluorononanoic acid (ND)



20 Perfluorononanoic acid (ND)

17 Perfluorooctane sulfonic acid

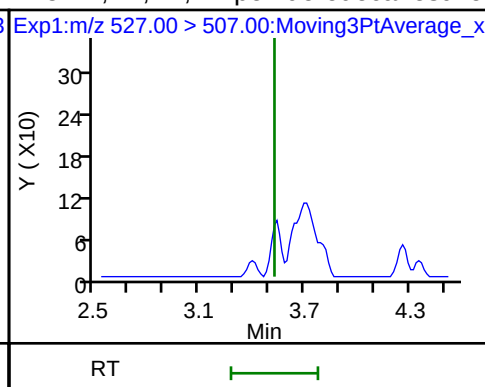
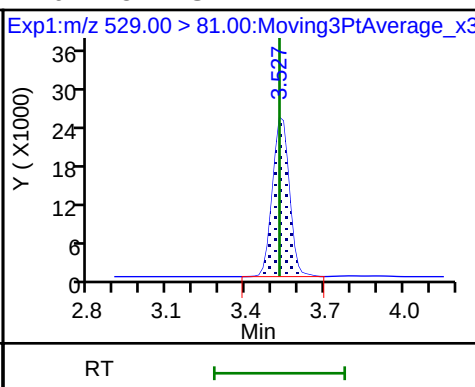
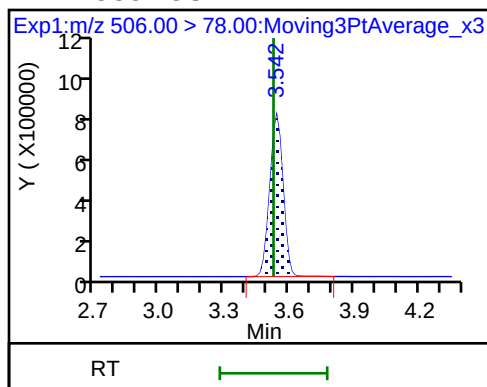
17 Perfluorooctane sulfonic acid



D 21 13C8 FOSA

D 26 M2-8:2FTS

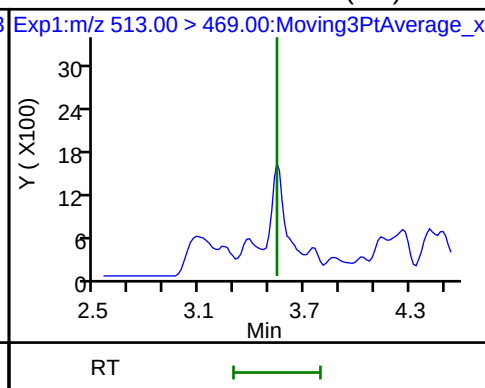
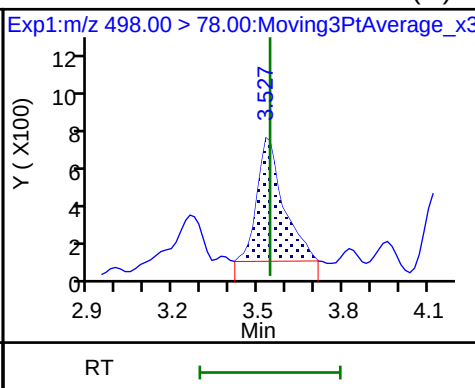
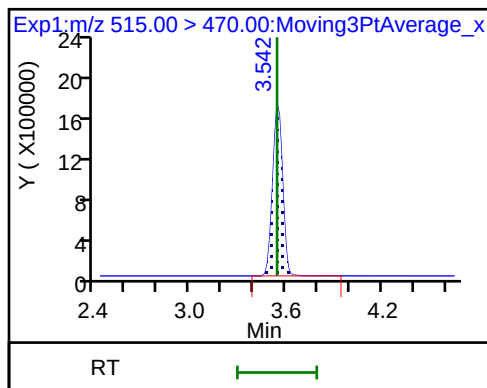
25 1H,1H,2H,2H-perfluorodecanesulfoni (ND)

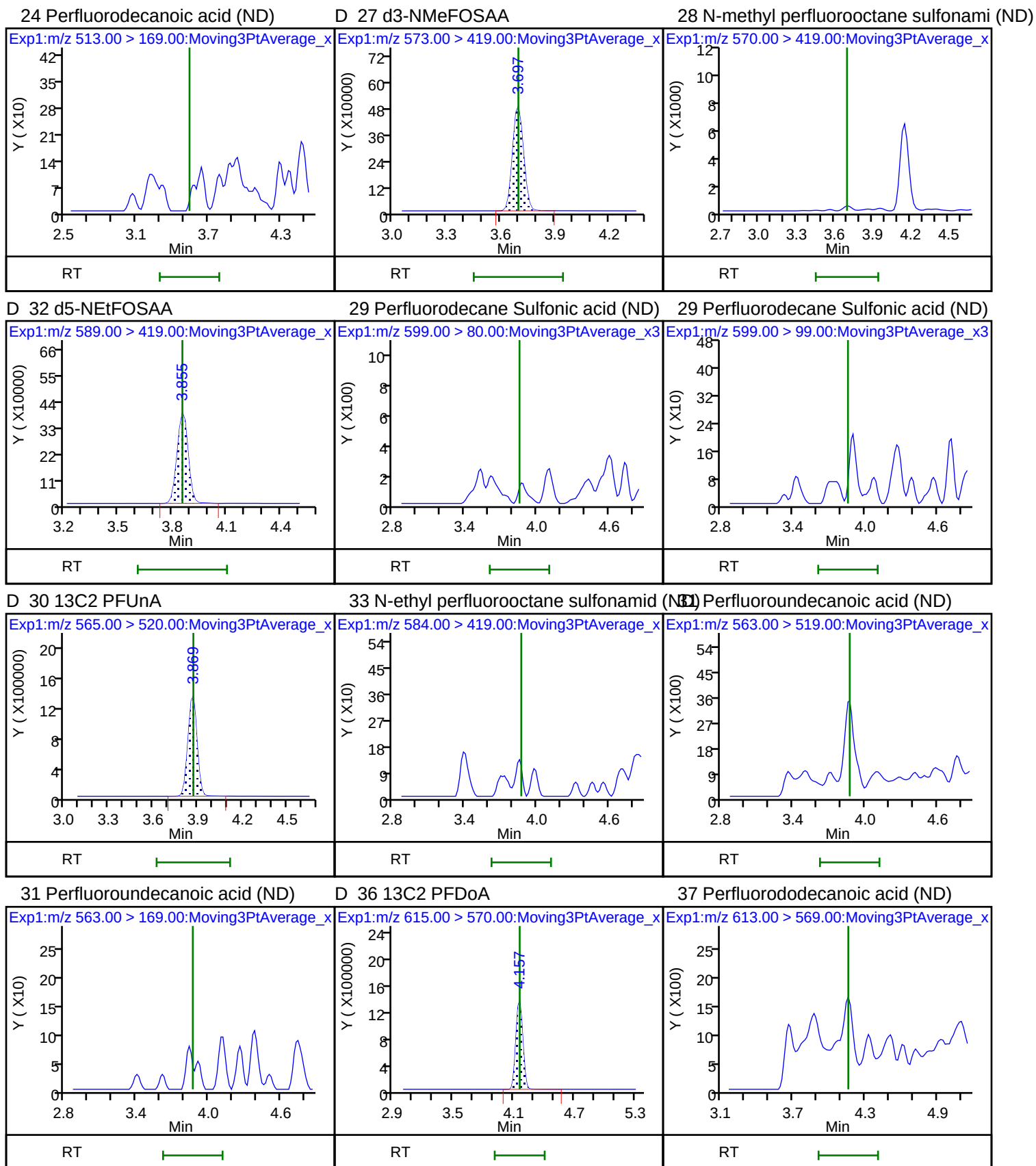


D 23 13C2 PFDA

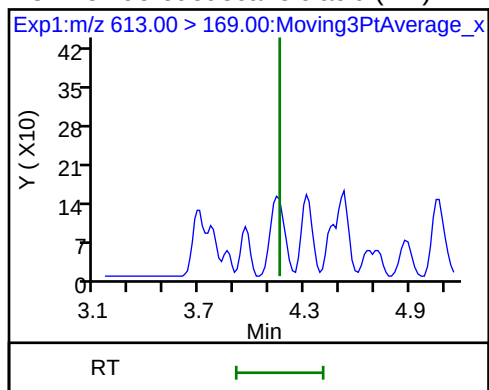
22 Perfluorooctane Sulfonamide (M)

24 Perfluorodecanoic acid (ND)

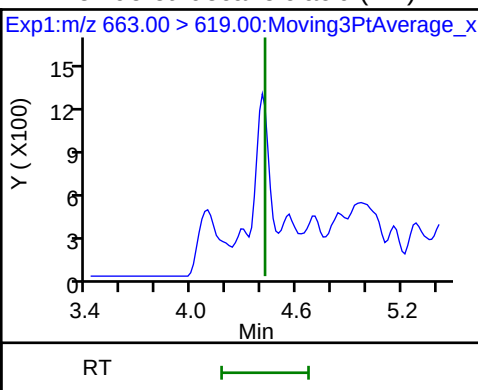




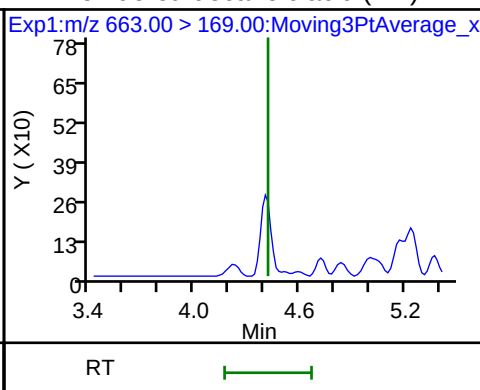
37 Perfluorododecanoic acid (ND)



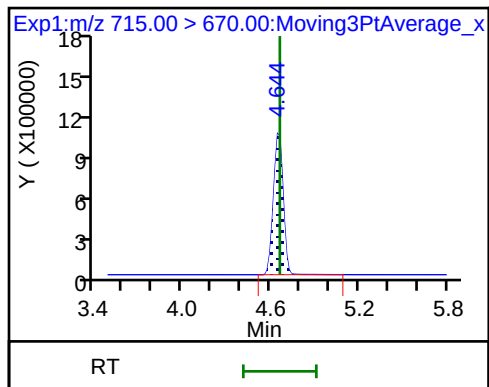
41 Perfluorotridecanoic acid (ND)



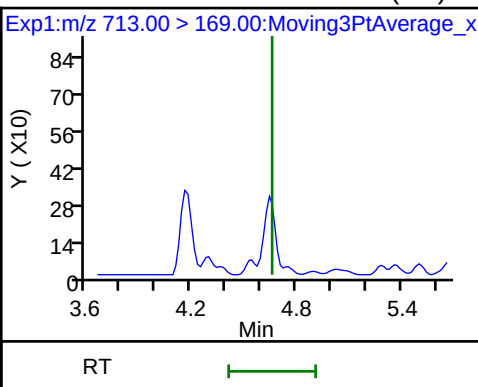
41 Perfluorotridecanoic acid (ND)



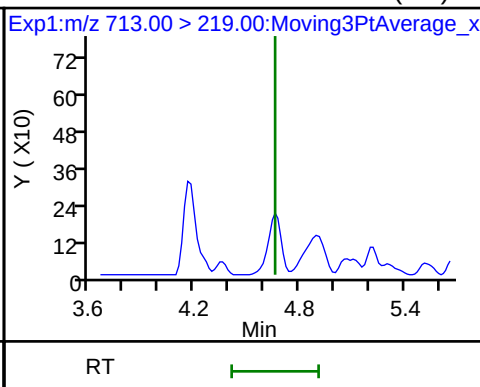
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



TestAmerica Sacramento

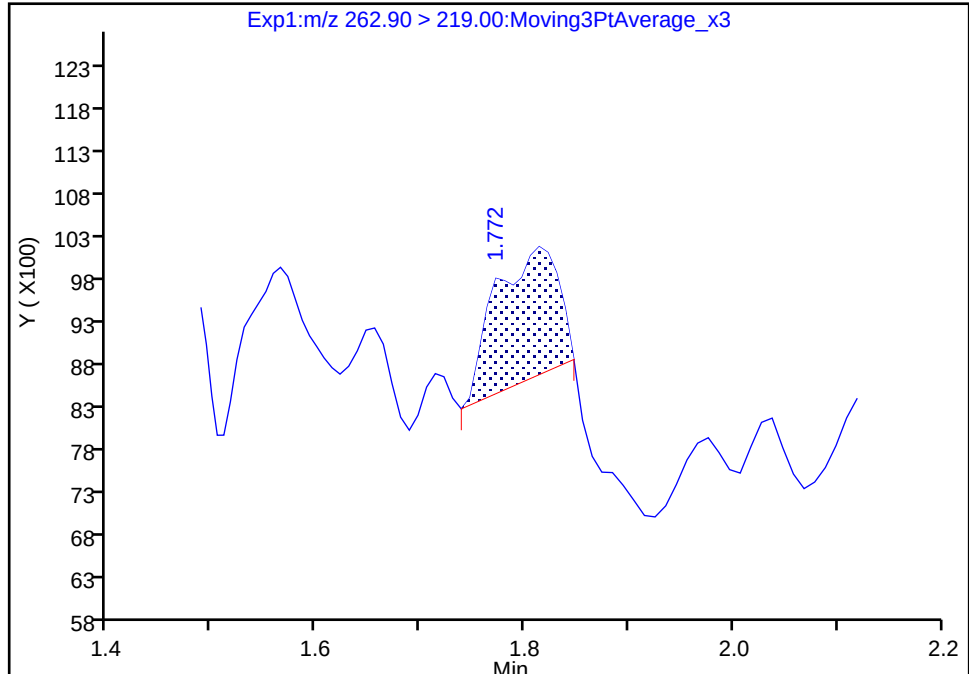
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Injection Date: 29-Sep-2018 14:10:42 Instrument ID: A9
Lims ID: 480-142274-D-2-A Lab Sample ID: 320-142274-2
Client ID: MW-11S
Operator ID: A9\Administrator ALS Bottle#: 20 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

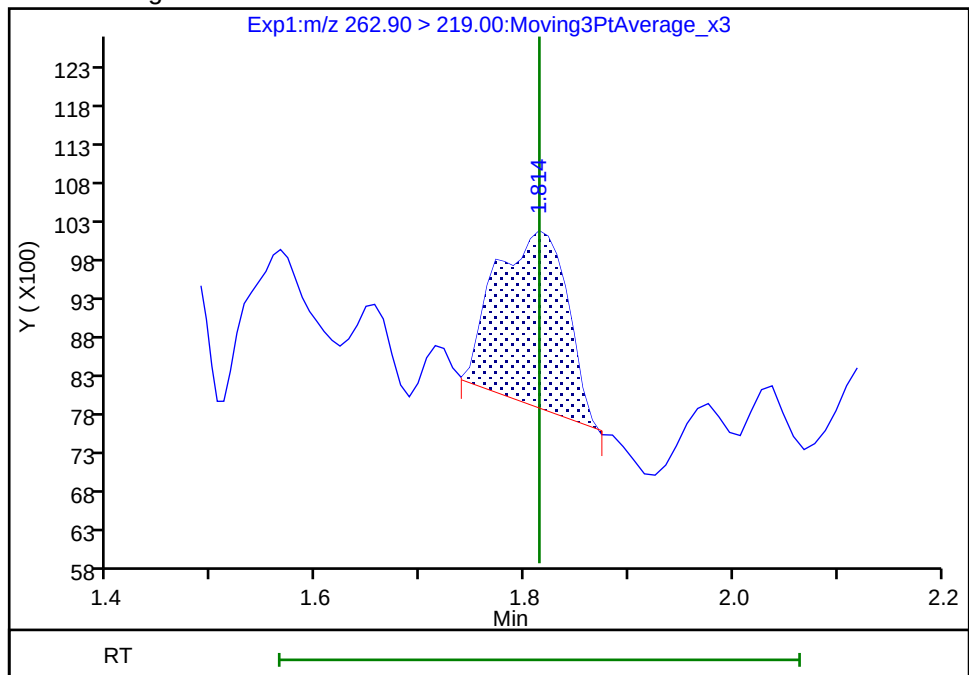
RT: 1.77
Area: 6400
Amount: 0.002397
Amount Units: ng/ml

Processing Integration Results



RT: 1.81
Area: 10753
Amount: 0.004027
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 10:58:47

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

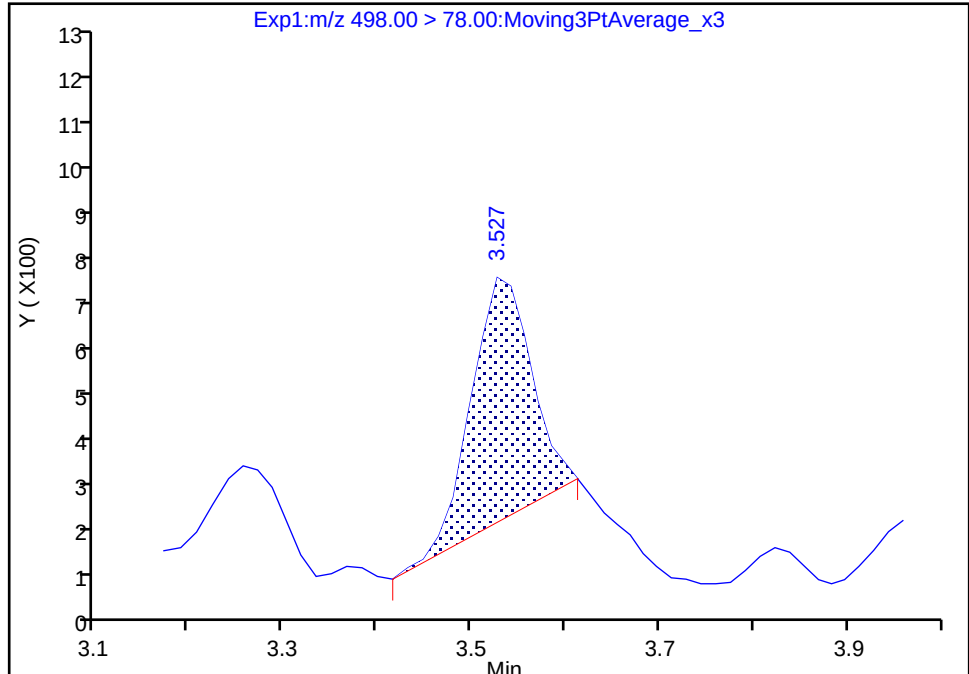
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Injection Date:	29-Sep-2018 14:10:42	Instrument ID:	A9		
Lims ID:	480-142274-D-2-A	Lab Sample ID:	320-142274-2		
Client ID:	MW-11S				
Operator ID:	A9\Administrator	ALS Bottle#:	20	Worklist Smp#:	15
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector:	EXP1		

22 Perfluorooctane Sulfonamide, CAS: 754-91-6

Signal: 1

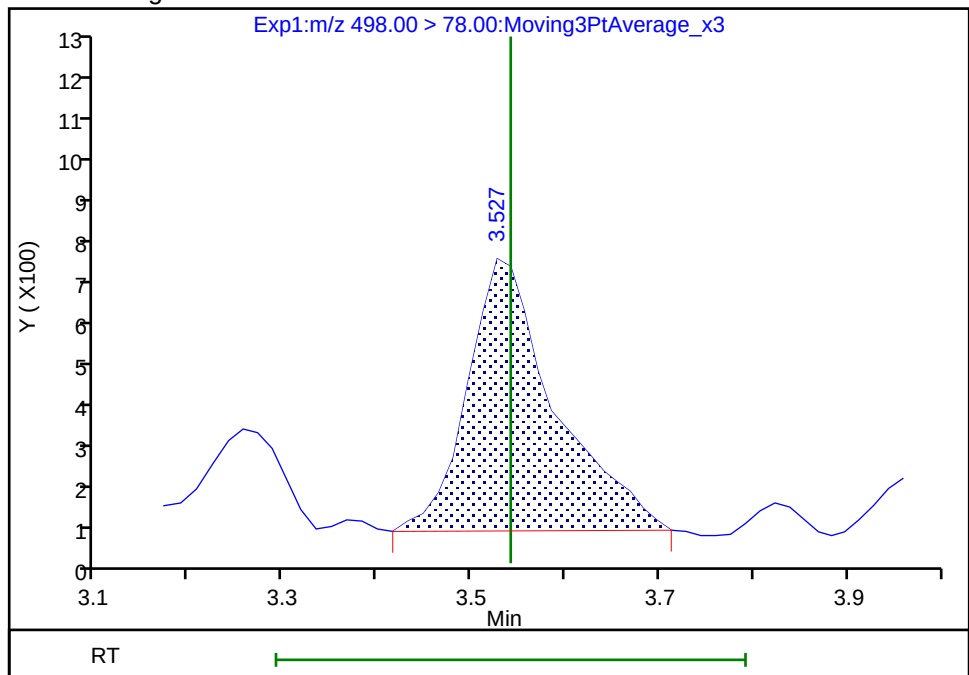
RT: 3.53
Area: 2353
Amount: 0.000615
Amount Units: ng/ml

Processing Integration Results



RT: 3.53
Area: 4250
Amount: 0.001110
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 10:59:22

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-11S DUP</u>	Lab Sample ID: <u>480-142274-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_030.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/20/2018 15:35</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>258.7 (mL)</u>	Date Analyzed: <u>09/29/2018 14:18</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		1.9	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.9	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.9	0.56
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		1.9	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.9	0.82
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.9	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.9	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.9	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.9	0.53
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.9	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.9	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.9	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.32	J B	1.9	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.9	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.9	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.9	0.31
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.9	0.34
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		19	3.0
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		19	1.8
27619-97-2	6:2 FTS	ND		19	1.9
39108-34-4	8:2 FTS	ND		19	1.9

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-11S DUP</u>	Lab Sample ID: <u>480-142274-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_030.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/20/2018 15:35</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>258.7 (mL)</u>	Date Analyzed: <u>09/29/2018 14:18</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	91		25-150
STL01893	13C5 PFPeA	99		25-150
STL00993	13C2 PFHxA	98		25-150
STL01892	13C4 PFHpA	101		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	94		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	87		25-150
STL00998	13C2 PFDoA	86		25-150
STL02116	13C2 PFTeDA	77		25-150
STL02337	13C3 PFBS	98		25-150
STL00994	18O2 PFHxS	101		25-150
STL00991	13C4 PFOS	101		25-150
STL01056	13C8 FOSA	111		25-150
STL02118	d3-NMeFOSAA	56		25-150
STL02117	d5-NEtFOSAA	61		25-150
STL02279	M2-6:2 FTS	87		25-150
STL02280	M2-8:2 FTS	88		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_030.d
 Lims ID: 480-142274-D-3-A
 Client ID: MW-11S DUP
 Sample Type: Client
 Inject. Date: 29-Sep-2018 14:18:11 ALS Bottle#: 21 Worklist Smp#: 16
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142274-d-3-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 11:54:45 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK023

First Level Reviewer: barnettj

Date: 03-Oct-2018 11:34:46

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	1.530	1.523	0.007	0.544	7052023	2.28		91.4	9153	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.530	1.523	0.007	1.000	21011	0.008125			5.8	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.822	1.814	0.008	0.648	6935595	2.47		98.9	9094	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.814	-0.042	0.973	434	0.000157			0.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.865	1.855	0.010	0.663	86910	2.27		97.8	434	
D 7 13C2 PFHxA										
315.00 > 270.00	2.119	2.119	0.0	0.753	7288649	2.45		98.0	7693	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.109	2.119	-0.010	0.995	9916	0.003782			0.6	M
313.00 > 119.00	2.109	2.119	-0.010	0.995	1094		9.06(6.96-20.87)		1.1	M
D 9 13C4-PFHpA										
367.00 > 322.00	2.452	2.452	0.0	0.871	8899478	2.51		101	10349	
D 11 18O2 PFHxS										
403.00 > 84.00	2.478	2.465	0.013	0.881	5454877	2.39		101	8155	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.478	2.465	0.013	1.000	24105	0.008302			28.2	
399.00 > 99.00	2.478	2.465	0.013	1.000	5289		4.56(1.90-5.70)		6.6	
D 12 M2-6:2FTS										
429.00 > 81.00	2.798	2.782	0.016	0.994	755565	2.06		86.6	1256	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.798	2.782	0.016	1.000	11251	0.0162			14.8	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	8445272	2.52		101	10923	

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	2.814	2.814	0.0		8377642	2.50			6065	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.814	2.814	0.0	1.000	22028	0.006217			3.5	
413.00 > 169.00	2.830	2.814	0.016	1.006	6653		3.31(1.36-4.08)		13.9	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5719419	2.42		101	2592	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	7148548	2.34		93.7	5515	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.207	3.190	0.017	1.005	6781	0.002675			3.6	
499.00 > 99.00	3.190	3.190	0.0	1.000	0		0.00(2.04-6.12)			
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3500975	2.77		111	7155	
D 26 M2-8:2FTS										
529.00 > 81.00	3.542	3.527	0.015	1.259	98145	2.11		88.0	381	
D 23 13C2 PFDA										
515.00 > 470.00	3.556	3.541	0.015	1.264	7431677	2.35		94.0	7186	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.570	3.542	0.028	1.008	2541	0.000615			2.9	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	1976407	1.41		56.4	3006	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.870	3.854	0.016	1.375	1681260	1.53		61.3	1474	
D 30 13C2 PFUnA										
565.00 > 520.00	3.870	3.869	0.001	1.375	5853577	2.18		87.2	9595	
D 36 13C2 PFDoA										
615.00 > 570.00	4.157	4.157	0.0	1.477	6889166	2.16		86.3	5282	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.660	0.0	1.656	4839182	1.92		76.9	11301	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_030.d

Injection Date: 29-Sep-2018 14:18:11

Instrument ID: A9

Lims ID: 480-142274-D-3-A

Lab Sample ID: 320-142274-3

Client ID: MW-11S DUP

Operator ID: A9\Administrator

ALS Bottle#: 21

Worklist Smp#: 16

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

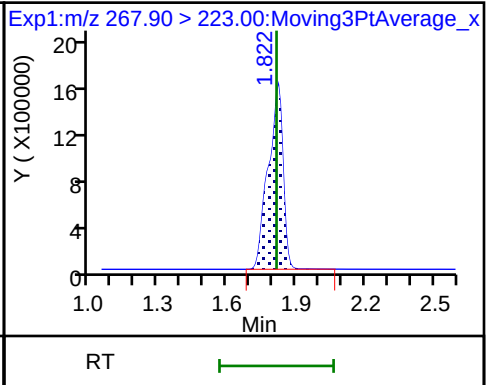
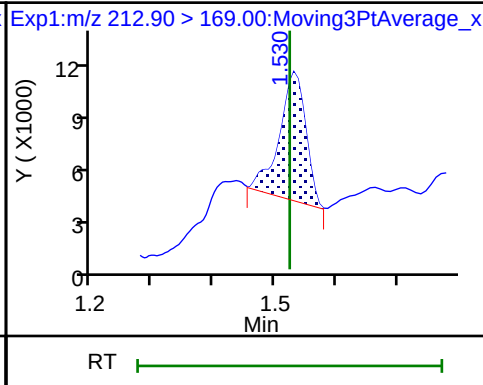
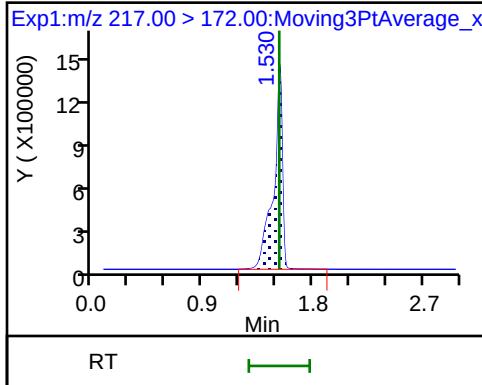
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

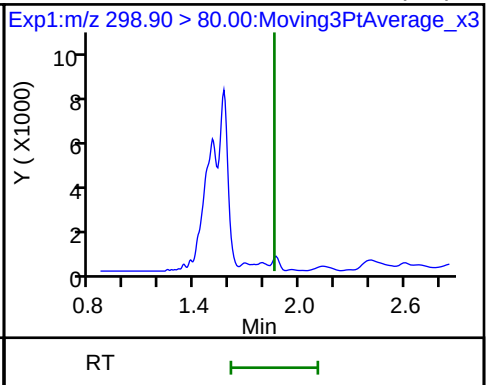
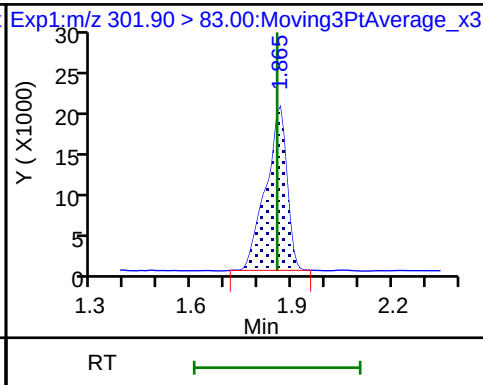
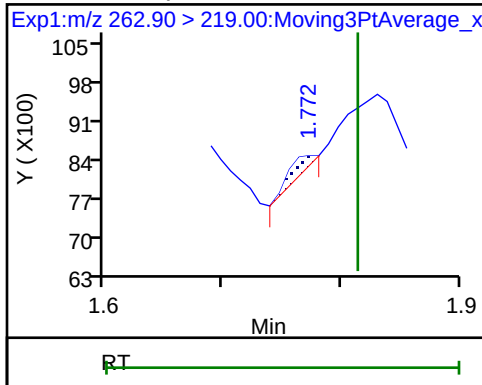
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

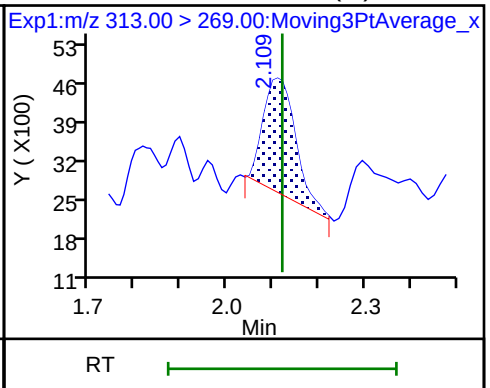
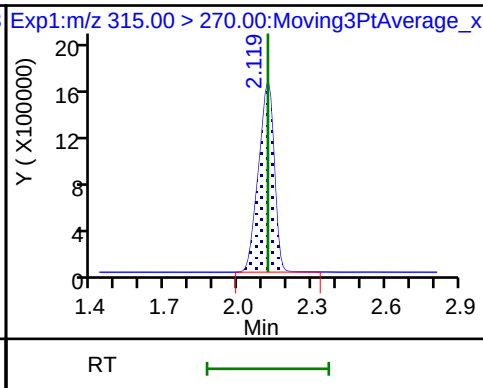
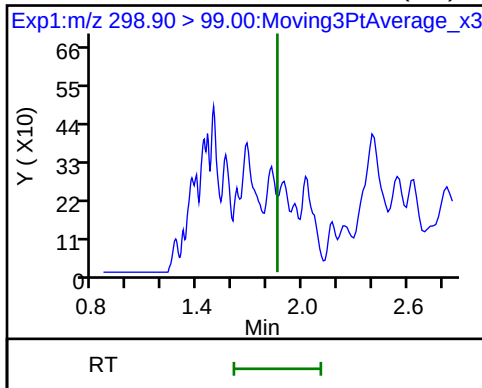
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 7 13C2 PFHxA

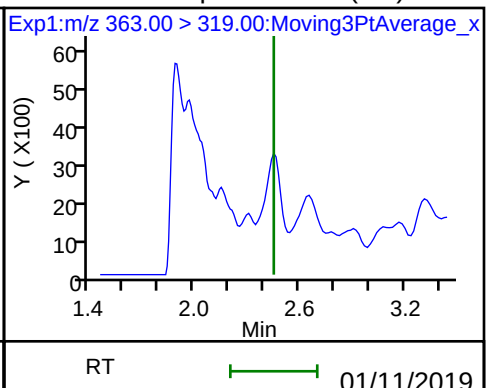
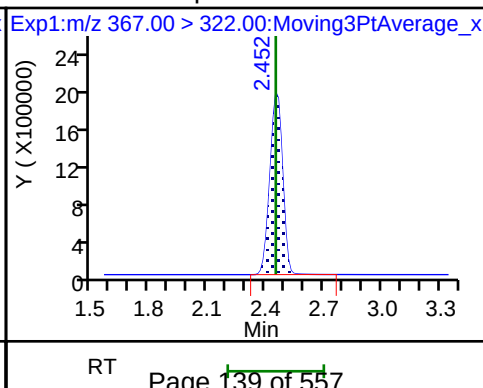
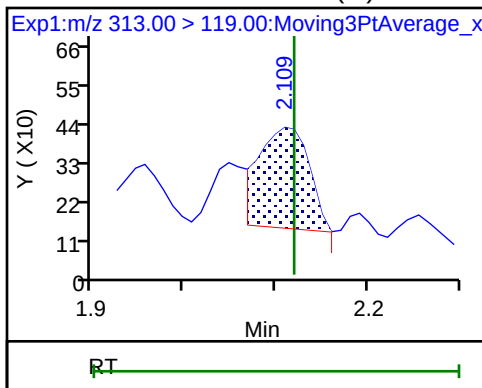
6 Perfluorohexanoic acid (M)

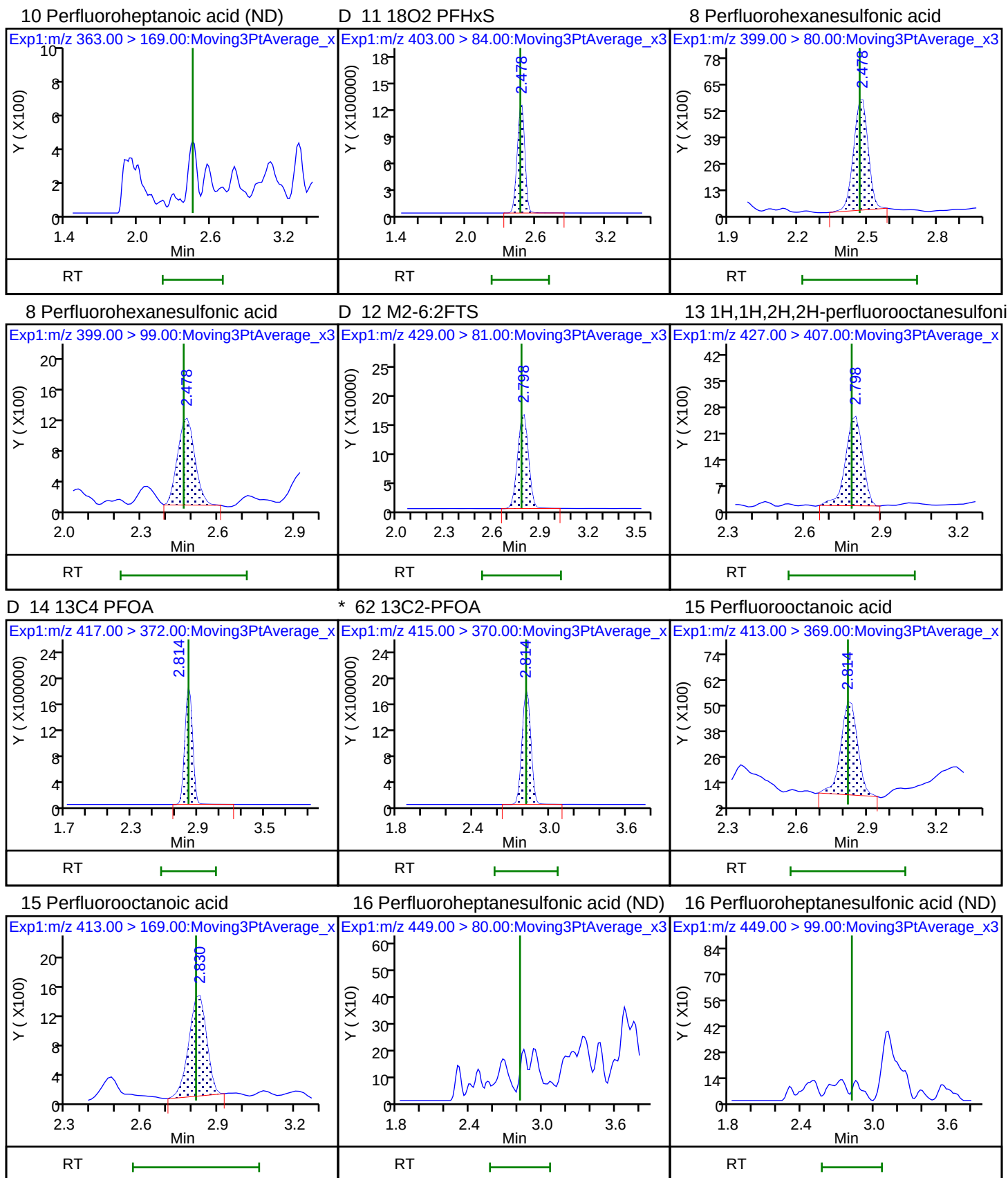


6 Perfluorohexanoic acid (M)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid (ND)

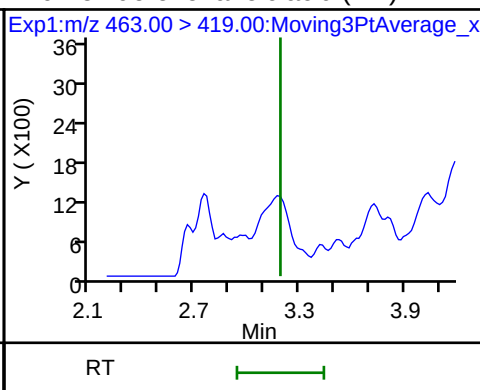
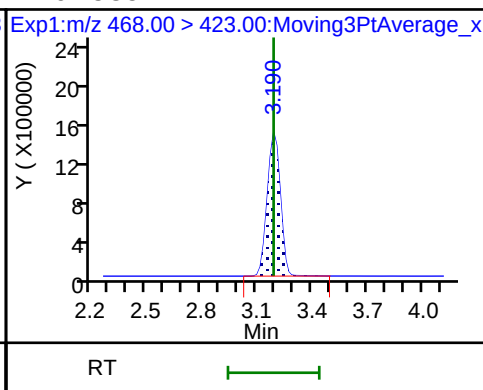
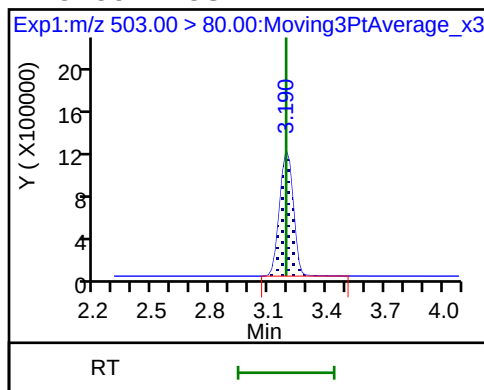




D 18 13C4 PFOS

D 19 13C5 PFNA

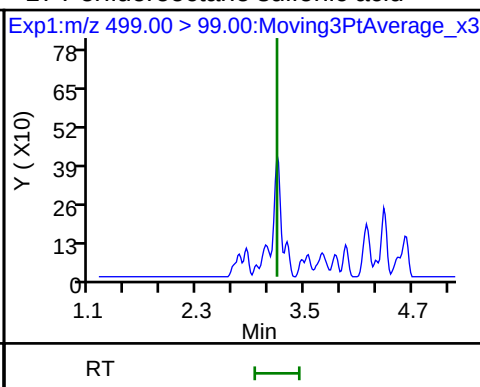
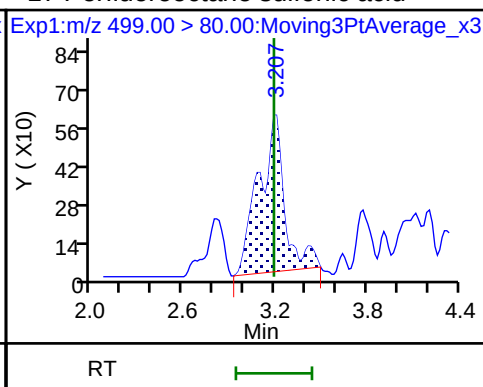
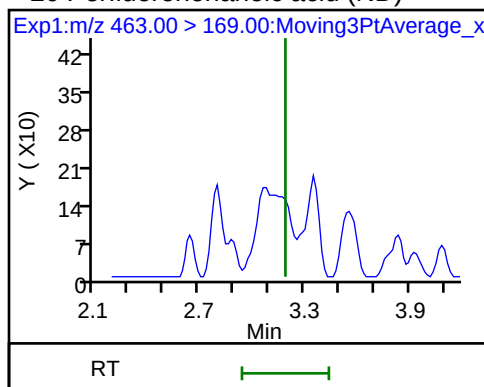
20 Perfluorononanoic acid (ND)



20 Perfluorononanoic acid (ND)

17 Perfluorooctane sulfonic acid

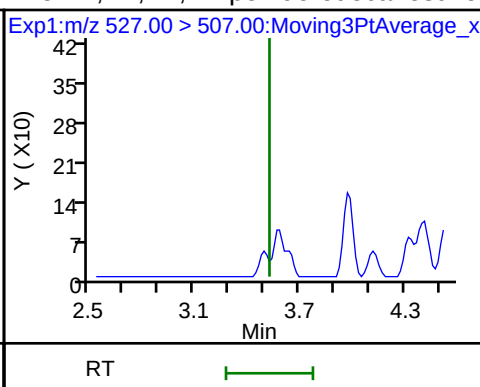
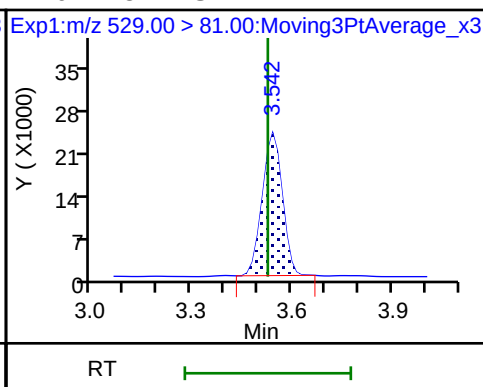
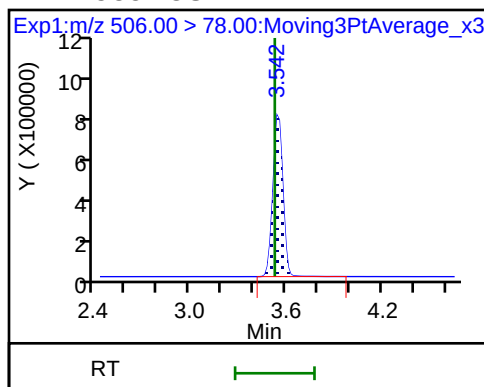
17 Perfluorooctane sulfonic acid



D 21 13C8 FOSA

D 26 M2-8:2FTS

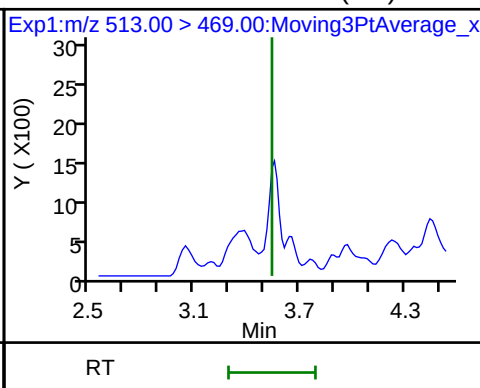
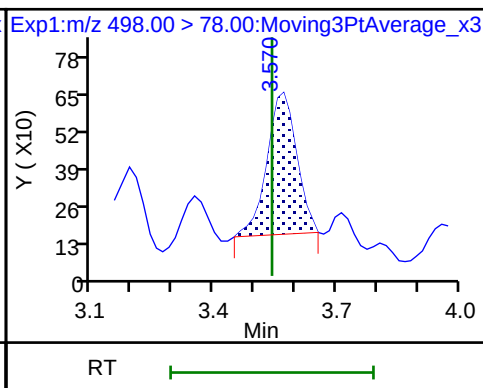
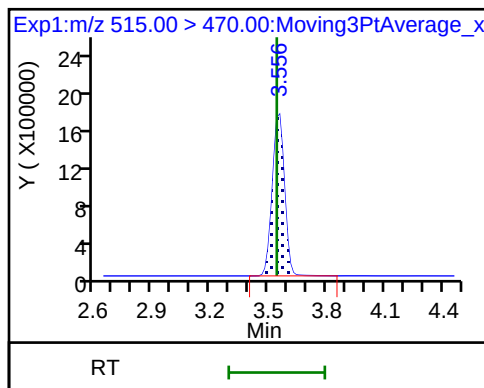
25 1H,1H,2H,2H-perfluorodecanesulfoni (ND)

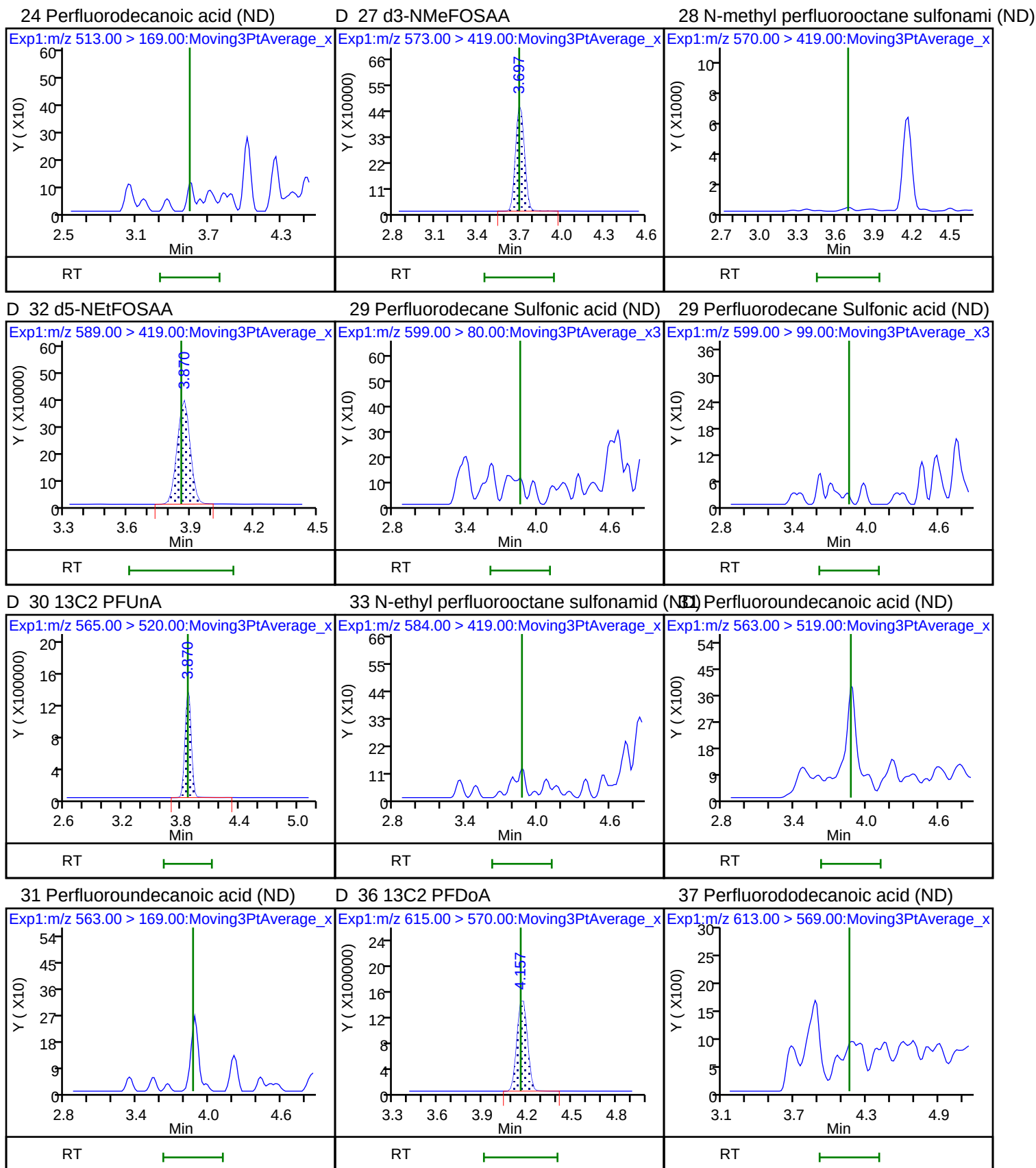


D 23 13C2 PFDA

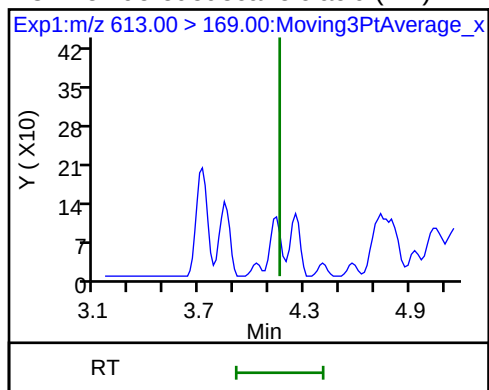
22 Perfluorooctane Sulfonamide

24 Perfluorodecanoic acid (ND)

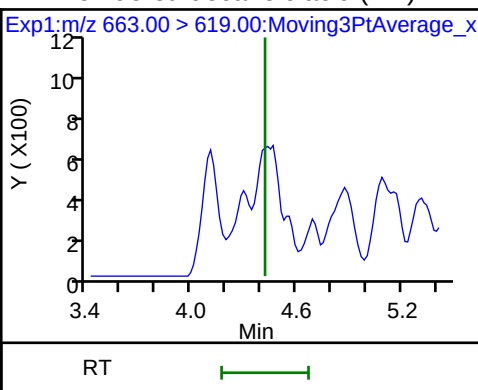




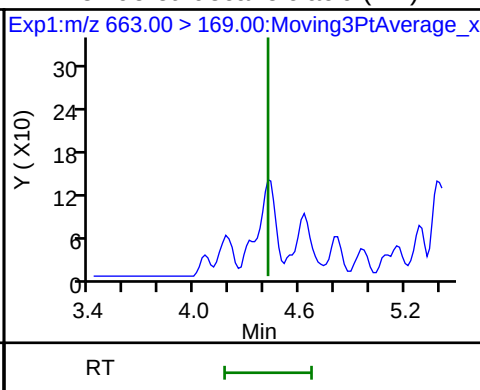
37 Perfluorododecanoic acid (ND)



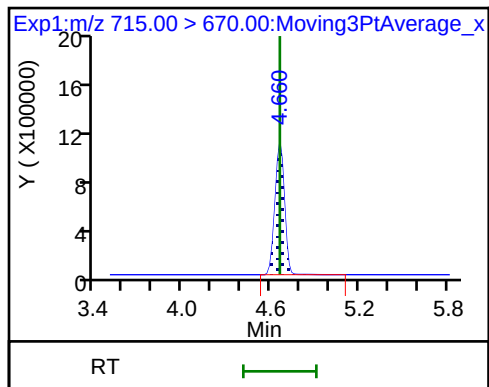
41 Perfluorotridecanoic acid (ND)



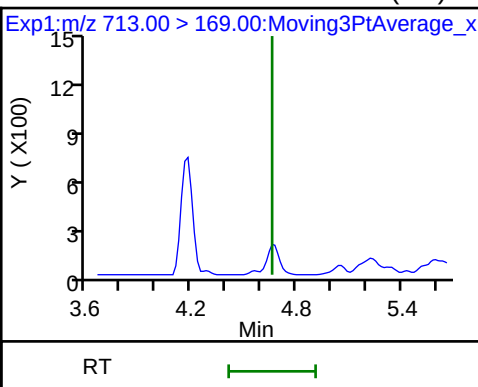
41 Perfluorotridecanoic acid (ND)



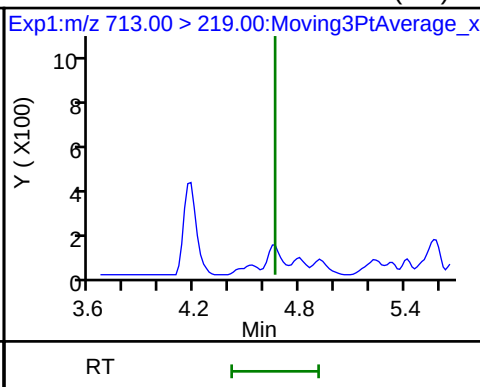
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)



TestAmerica Sacramento

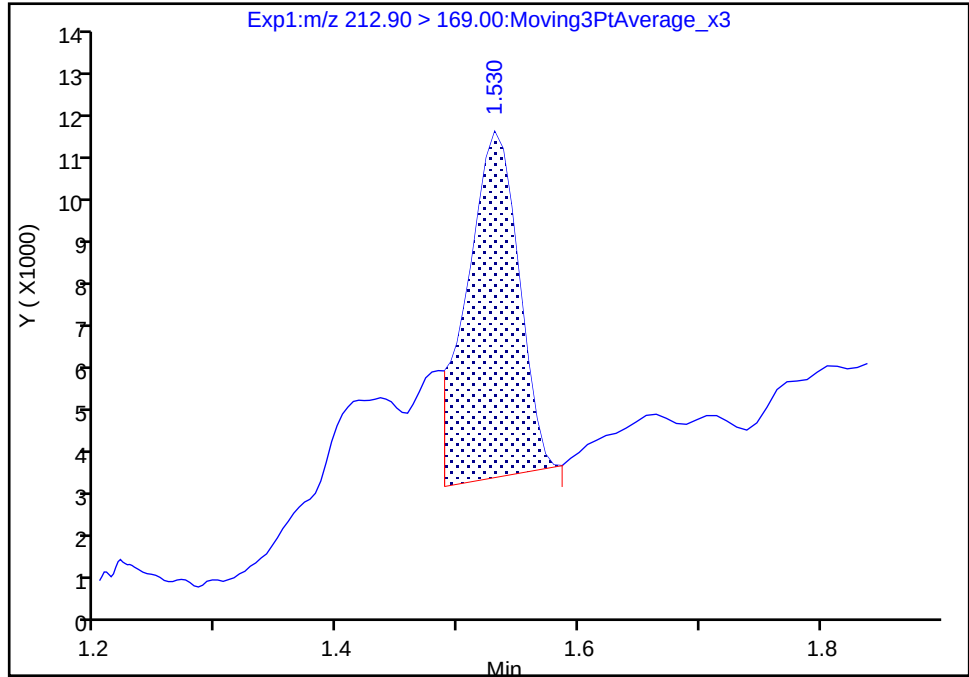
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_030.d				
Injection Date:	29-Sep-2018 14:18:11	Instrument ID:	A9		
Lims ID:	480-142274-D-3-A	Lab Sample ID:	320-142274-3		
Client ID:	MW-11S DUP				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

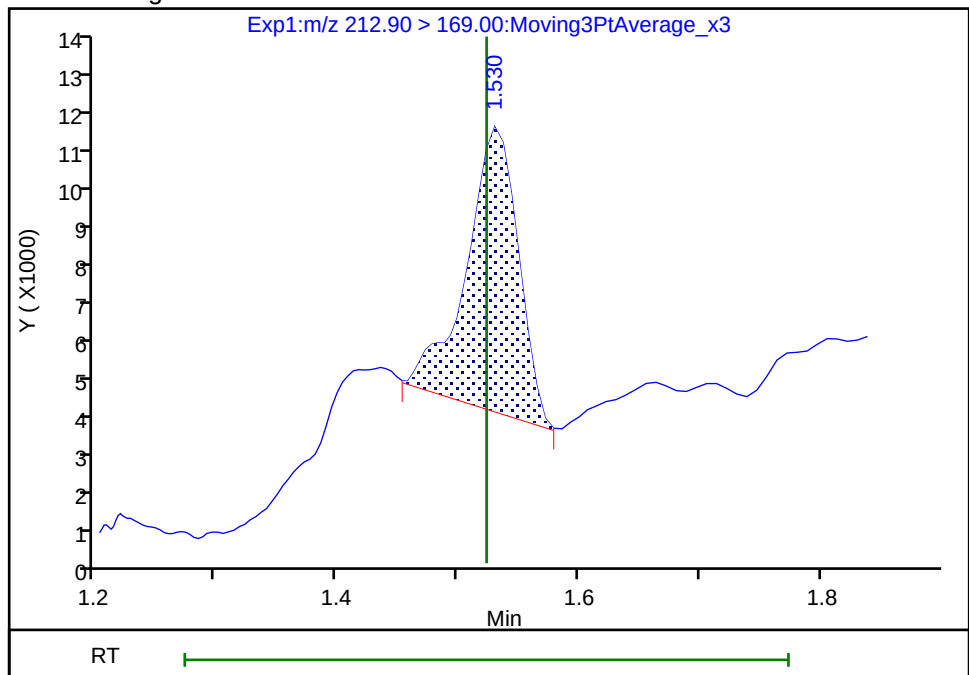
RT: 1.53
Area: 22844
Amount: 0.008834
Amount Units: ng/ml

Processing Integration Results



RT: 1.53
Area: 21011
Amount: 0.008125
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:33:40
Audit Action: Manually Integrated

Audit Reason: Baseline
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01/11/2019

TestAmerica Sacramento

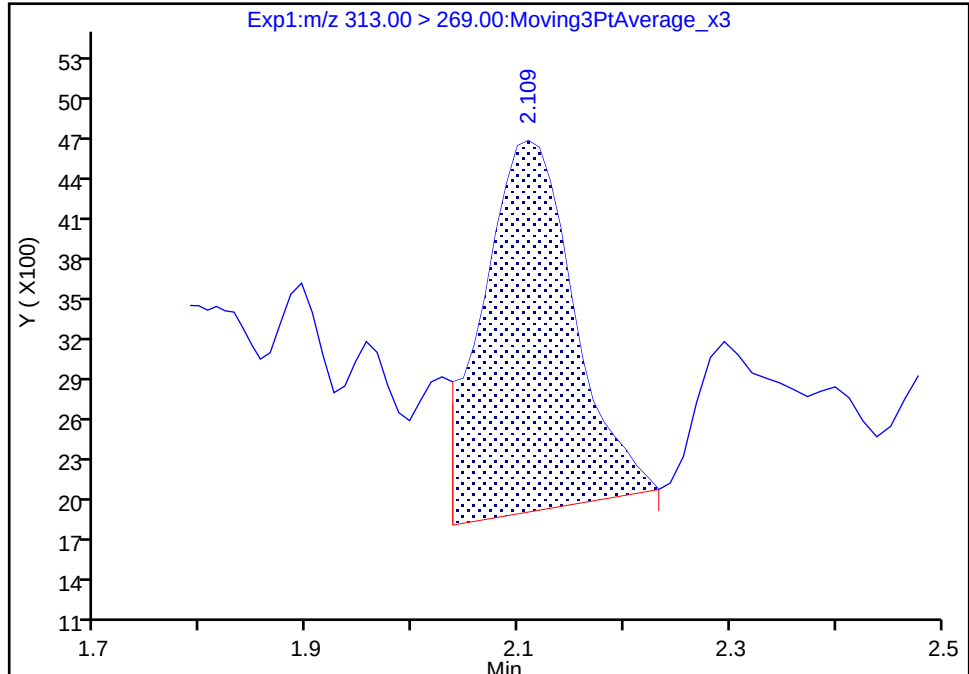
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Injection Date:	29-Sep-2018 14:18:11	Instrument ID:	A9		
Lims ID:	480-142274-D-3-A	Lab Sample ID:	320-142274-3		
Client ID:	MW-11S DUP				
Operator ID:	A9\Administrator	ALS Bottle#:	21	Worklist Smp#:	16
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

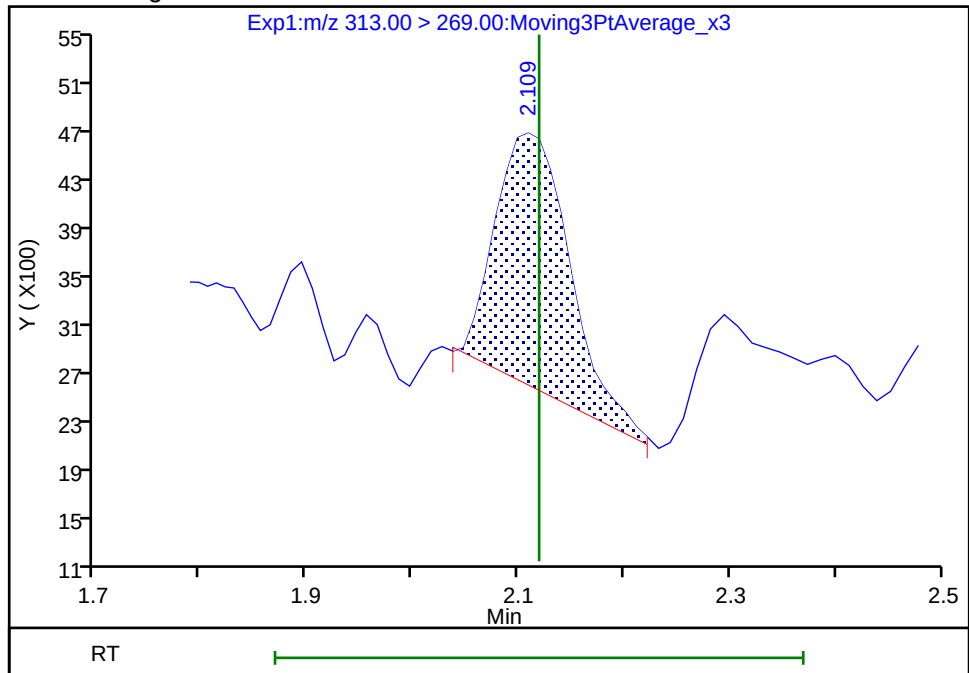
RT: 2.11
Area: 16114
Amount: 0.006146
Amount Units: ng/ml

Processing Integration Results



RT: 2.11
Area: 9916
Amount: 0.003782
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:34:06

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

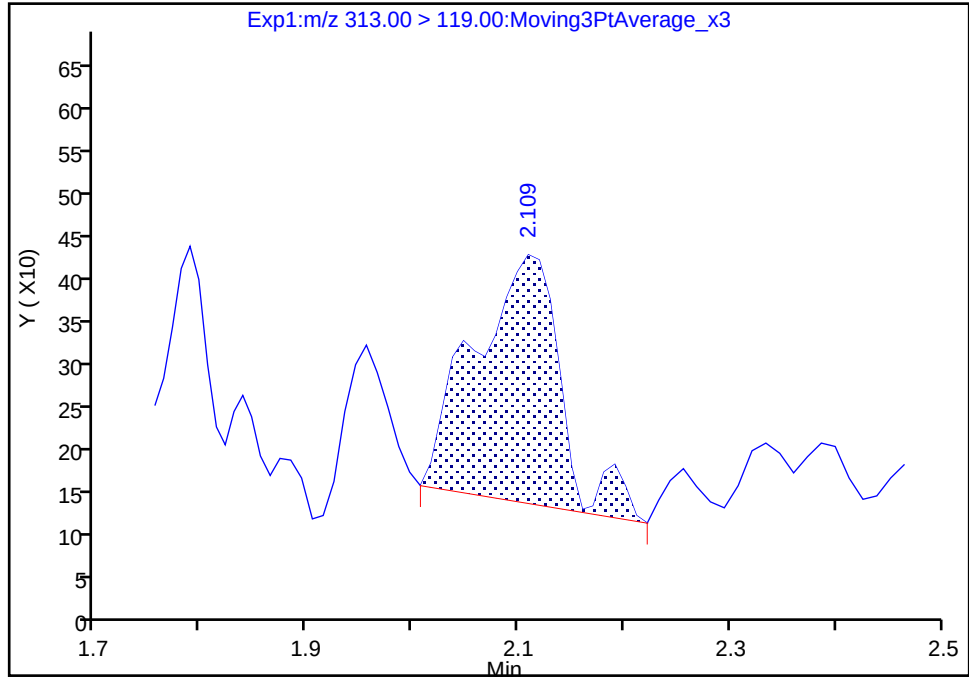
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_030.d
Injection Date: 29-Sep-2018 14:18:11 Instrument ID: A9
Lims ID: 480-142274-D-3-A Lab Sample ID: 320-142274-3
Client ID: MW-11S DUP
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 16
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

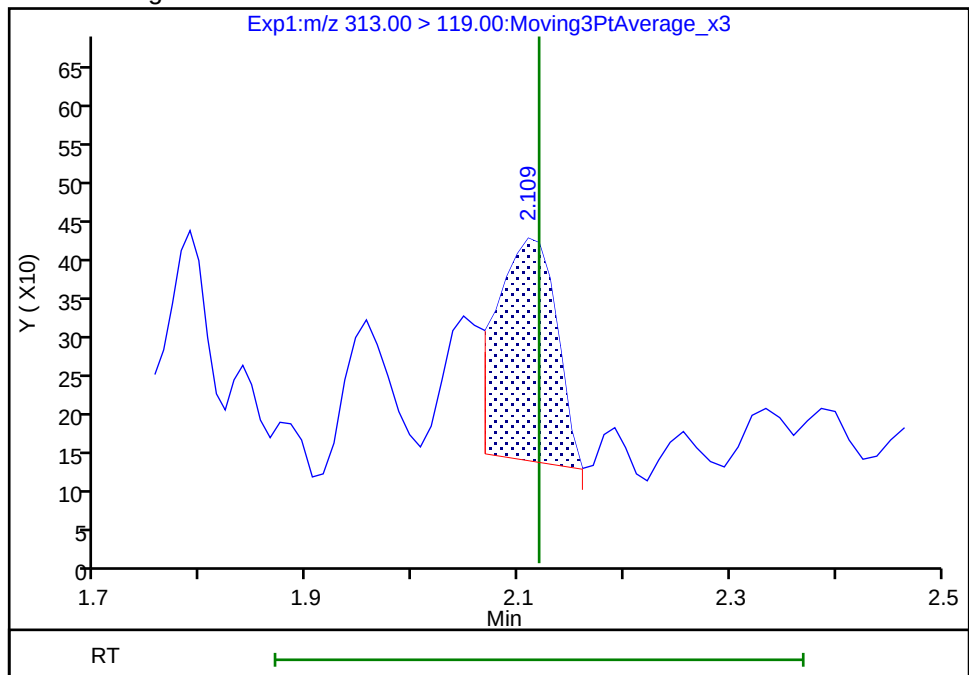
RT: 2.11
Area: 1649
Amount: 0.006146
Amount Units: ng/ml

Processing Integration Results



RT: 2.11
Area: 1094
Amount: 0.003782
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:34:11

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: <u>EB</u>	Lab Sample ID: <u>480-142274-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_031.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/20/2018 16:10</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>250.8 (mL)</u>	Date Analyzed: <u>09/29/2018 14:25</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	ND		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	ND		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.34	J B	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	2.4	J	20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: <u>EB</u>	Lab Sample ID: <u>480-142274-4</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_031.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>09/20/2018 16:10</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>250.8 (mL)</u>	Date Analyzed: <u>09/29/2018 14:25</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	98		25-150
STL01893	13C5 PFPeA	98		25-150
STL00993	13C2 PFHxA	98		25-150
STL01892	13C4 PFHpA	96		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	95		25-150
STL00997	13C2 PFUnA	92		25-150
STL00998	13C2 PFDoA	83		25-150
STL02116	13C2 PFTeDA	93		25-150
STL02337	13C3 PFBS	96		25-150
STL00994	18O2 PFHxS	98		25-150
STL00991	13C4 PFOS	102		25-150
STL01056	13C8 FOSA	111		25-150
STL02118	d3-NMeFOSAA	57		25-150
STL02117	d5-NEtFOSAA	61		25-150
STL02279	M2-6:2 FTS	87		25-150
STL02280	M2-8:2 FTS	119		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_031.d
 Lims ID: 480-142274-C-4-A
 Client ID: EB
 Sample Type: Client
 Inject. Date: 29-Sep-2018 14:25:43 ALS Bottle#: 22 Worklist Smp#: 17
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-142274-c-4-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 11:54:45 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK023

First Level Reviewer: barnettj

Date: 03-Oct-2018 11:36:29

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	1.523	1.523	0.0	0.541	7476412	2.46		98.5	6592	
2 Perfluorobutyric acid										
212.90 > 169.00	1.530	1.523	0.007	1.005	6808	0.002483			1.5	
D 3 13C5-PFPeA										
267.90 > 223.00	1.814	1.814	0.0	0.645	6741031	2.44		97.6	10485	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.822	1.814	0.008	1.005	13945	0.005194			0.6	
D 47 13C3-PFBS										
301.90 > 83.00	1.855	1.855	0.0	0.659	84324	2.24		96.5	516	
D 7 13C2 PFHxA										
315.00 > 270.00	2.119	2.119	0.0	0.753	7176132	2.45		98.1	14065	
D 9 13C4-PFHpA										
367.00 > 322.00	2.452	2.452	0.0	0.871	8346778	2.40		95.8	10222	
D 11 18O2 PFHxS										
403.00 > 84.00	2.465	2.465	0.0	0.876	5219373	2.32		98.2	8450	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.478	2.465	0.013	1.005	23374	0.008414			41.3	
399.00 > 99.00	2.478	2.465	0.013	1.005	6619		3.53(1.90-5.70)		7.4	
D 12 M2-6:2FTS										
429.00 > 81.00	2.798	2.782	0.016	0.994	746843	2.06		86.9	1726	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.798	2.782	0.016	1.000	41153	0.0600			56.2	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	8201123	2.48		99.4	23795	
* 62 13C2-PFOA										
415.00 > 370.00	2.814	2.814	0.0		8244335	2.50			13803	

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	2.814	2.814	0.0	1.000	27795	0.008079			5.6	
413.00 > 169.00	2.814	2.814	0.0	1.000	8997		3.09(1.36-4.08)		18.5	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5697375	2.45		102	2412	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	7577550	2.52		101	7373	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.190	0.0	1.000	18397	0.007285			9.4	
499.00 > 99.00	3.190	3.190	0.0	1.000	6114		3.01(2.04-6.12)		23.7	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3439796	2.77		111	3683	
D 26 M2-8:2FTS										
529.00 > 81.00	3.542	3.527	0.015	1.259	130754	2.85		119	602	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.542	3.527	0.015	1.000	1397	0.001741			9.8	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.259	7382146	2.37		94.9	9485	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.542	3.542	0.0	1.000	4966	0.001224			7.4	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	1972821	1.43		57.2	3207	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.854	0.015	1.375	1660945	1.54		61.5	1991	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.869	0.0	1.375	6082492	2.30		92.1	11800	
D 36 13C2 PFDoA										
615.00 > 570.00	4.157	4.157	0.0	1.477	6536322	2.08		83.2	4721	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.660	0.0	1.656	5751441	2.32		92.9	6775	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.660	-0.016	0.997	2024	0.005356			7.4	M
713.00 > 219.00	4.660	4.660	0.0	1.000	1565		1.29(0.70-2.09)		7.0	M

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_031.d

Injection Date: 29-Sep-2018 14:25:43

Instrument ID: A9

Lims ID: 480-142274-C-4-A

Lab Sample ID: 320-142274-4

Client ID: EB

Operator ID: A9\Administrator

ALS Bottle#: 22

Worklist Smp#: 17

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

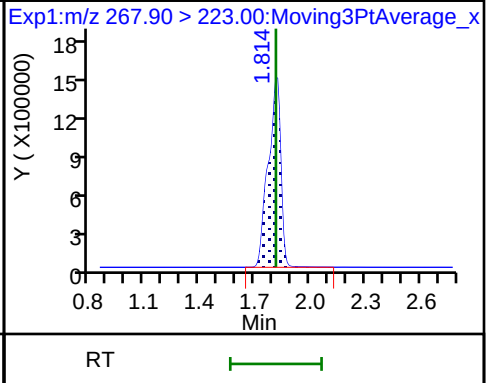
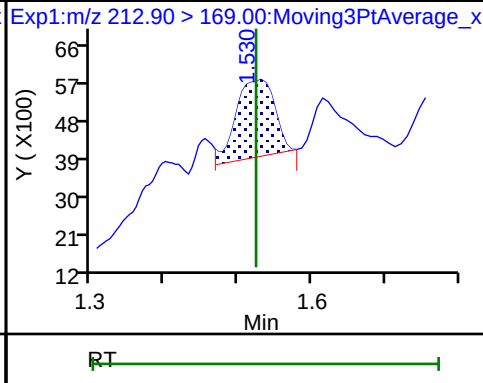
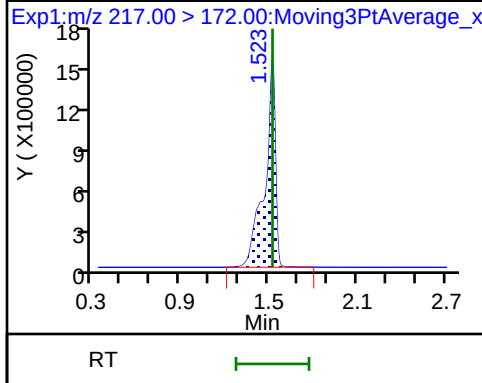
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

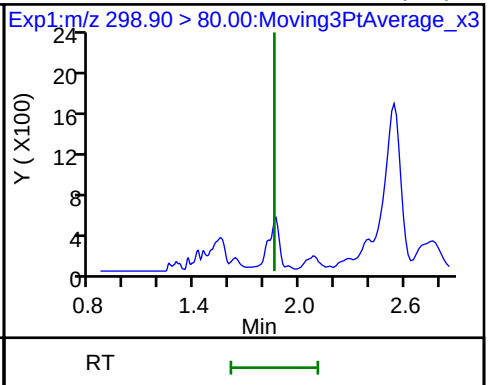
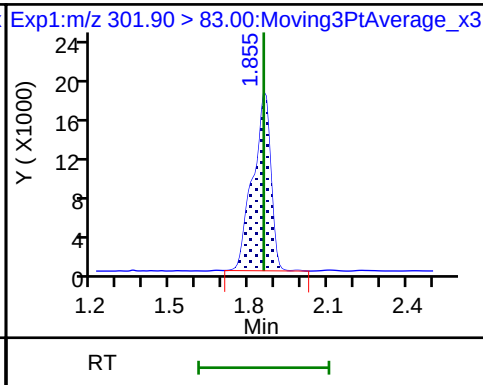
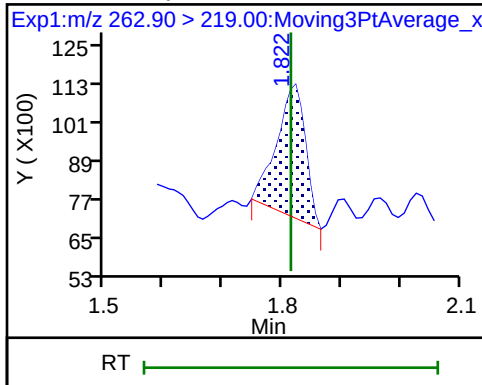
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

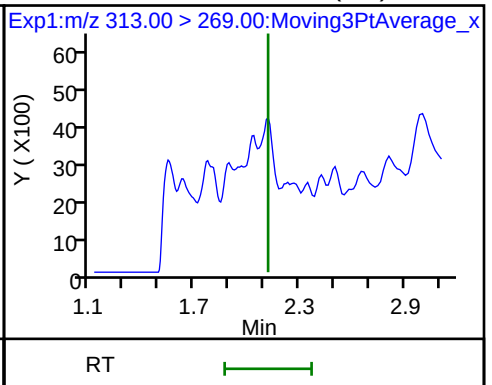
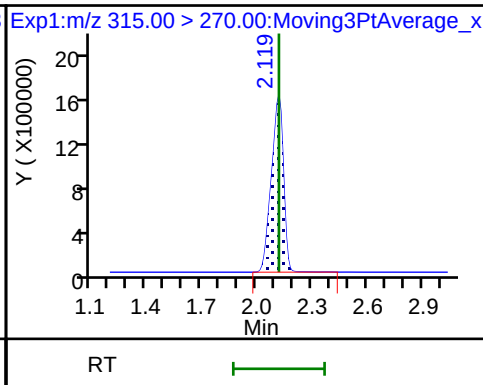
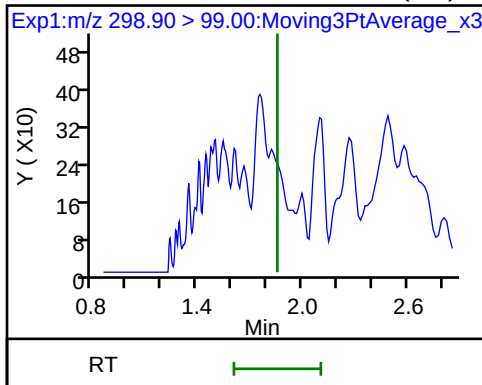
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 7 13C2 PFHxA

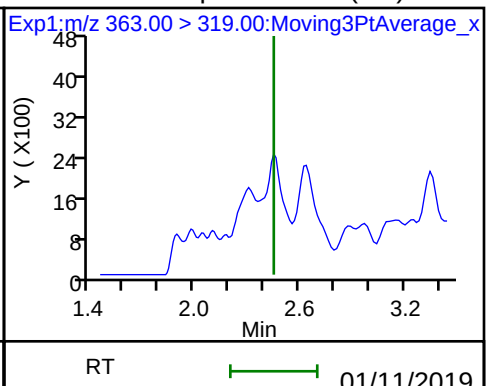
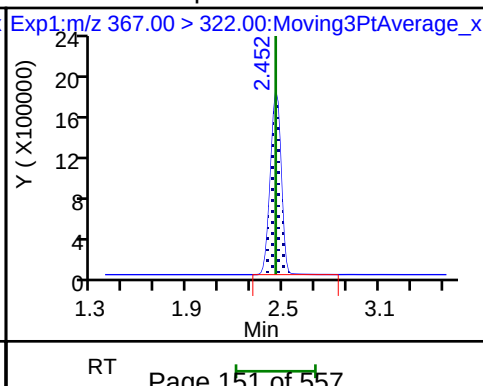
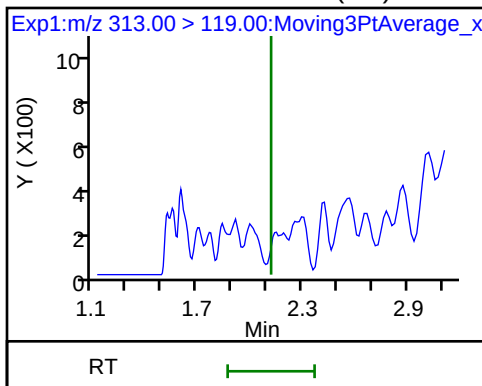
6 Perfluorohexanoic acid (ND)

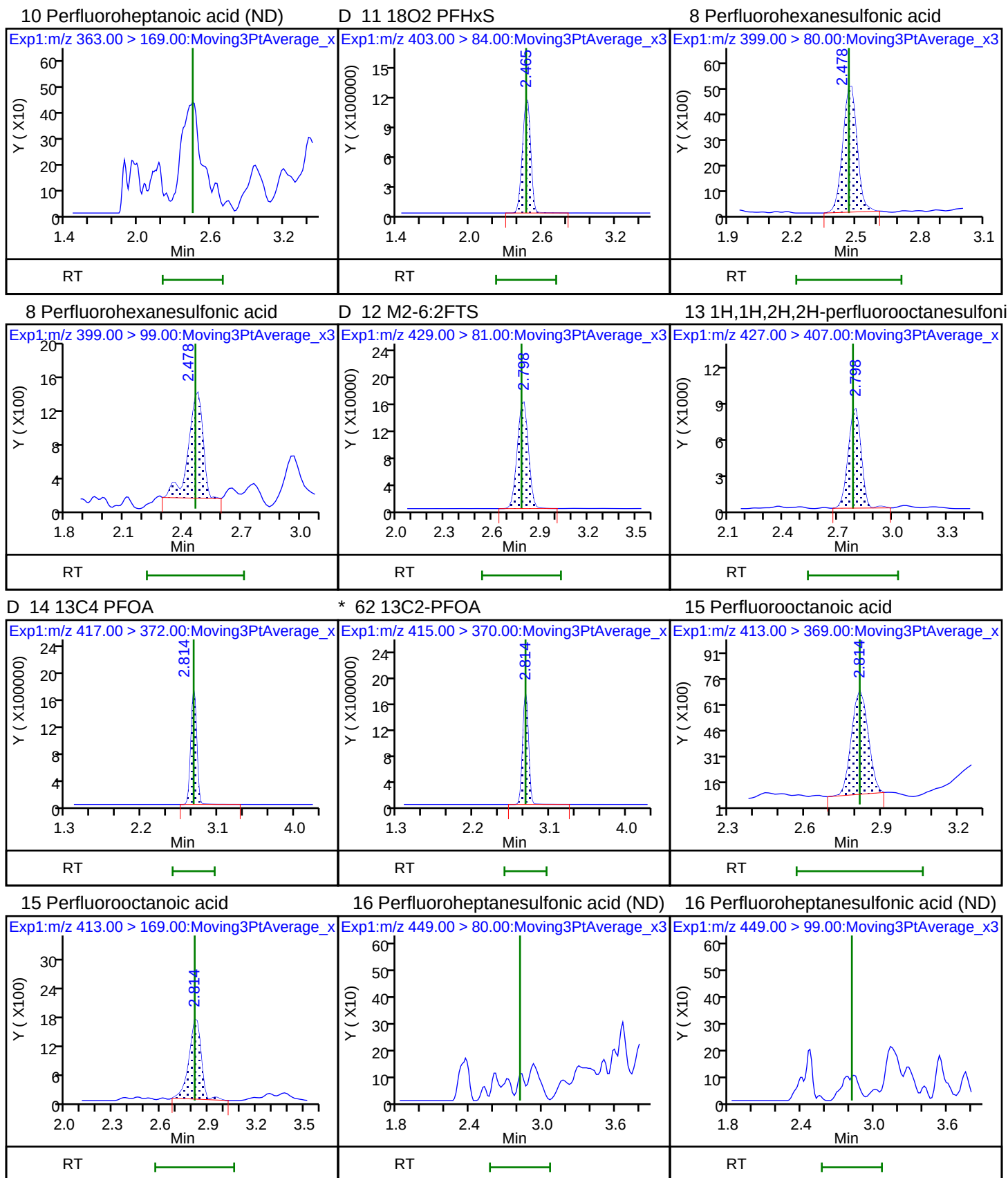


6 Perfluorohexanoic acid (ND)

D 9 13C4-PFHpA

10 Perfluoroheptanoic acid (ND)

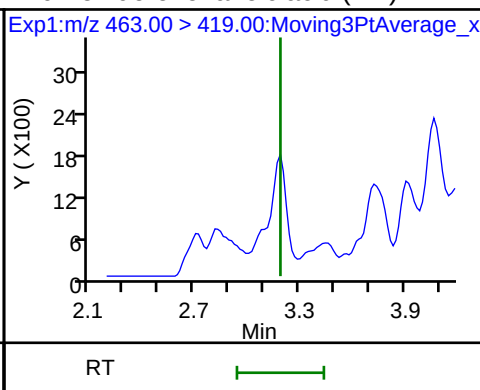
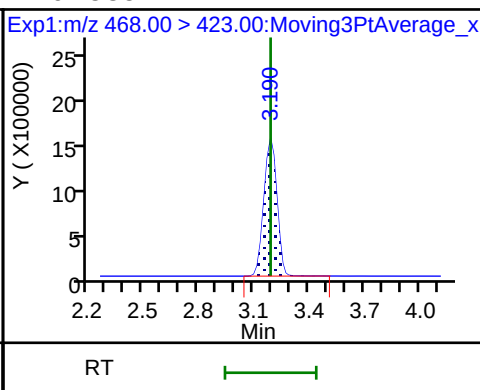
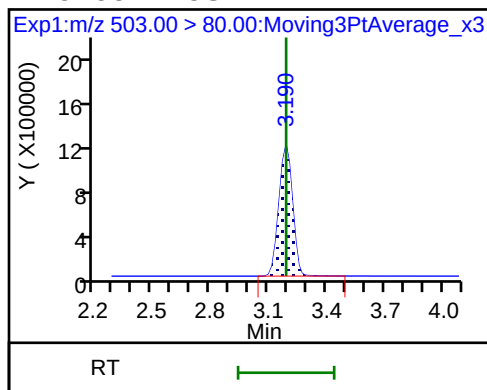




D 18 13C4 PFOS

D 19 13C5 PFNA

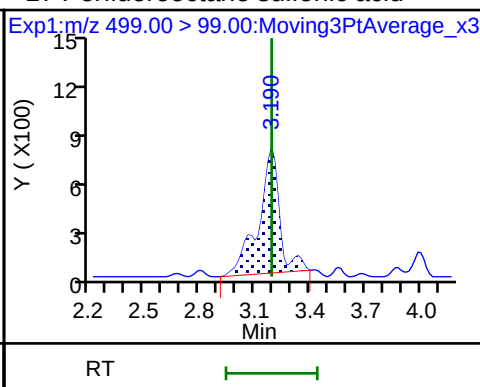
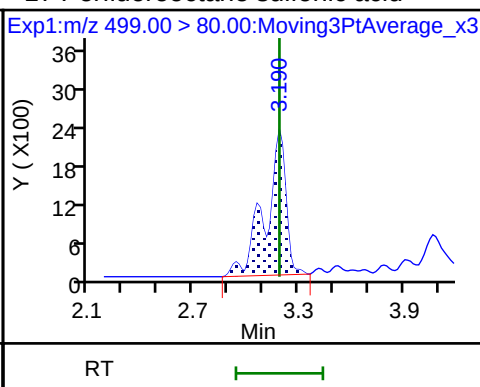
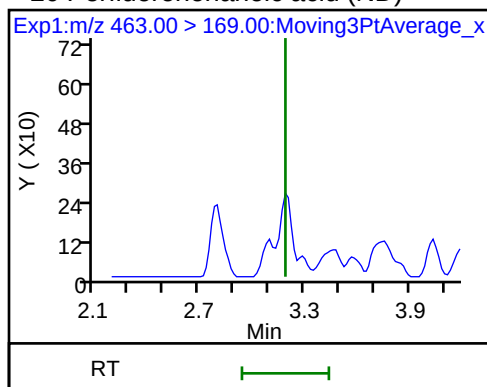
20 Perfluorononanoic acid (ND)



20 Perfluorononanoic acid (ND)

17 Perfluorooctane sulfonic acid

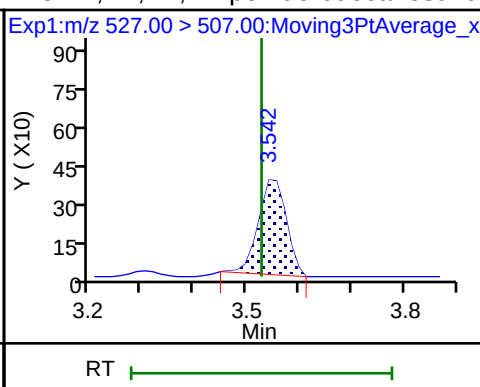
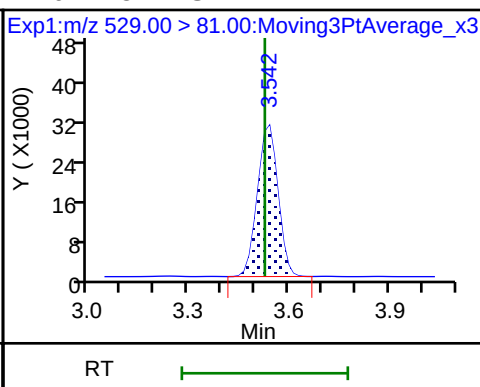
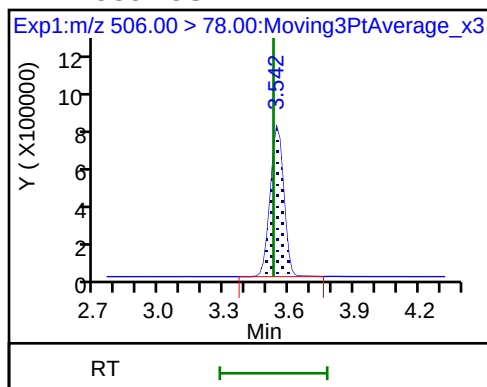
17 Perfluorooctane sulfonic acid



D 21 13C8 FOSA

D 26 M2-8:2FTS

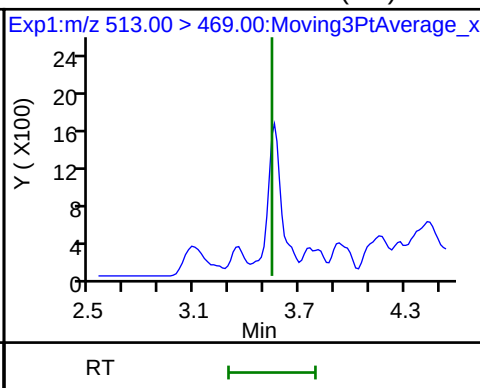
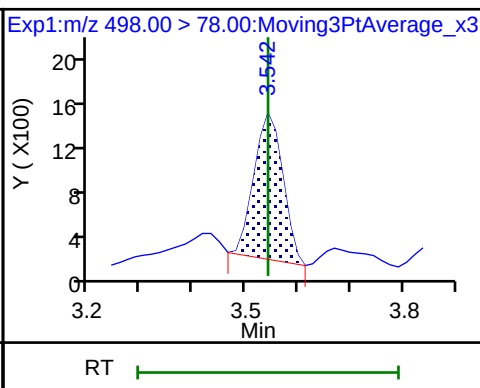
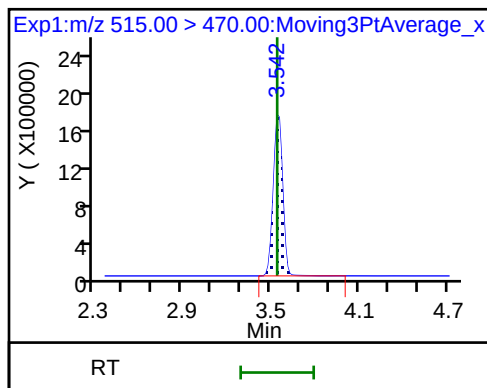
25 1H,1H,2H,2H-perfluorodecanesulfoni

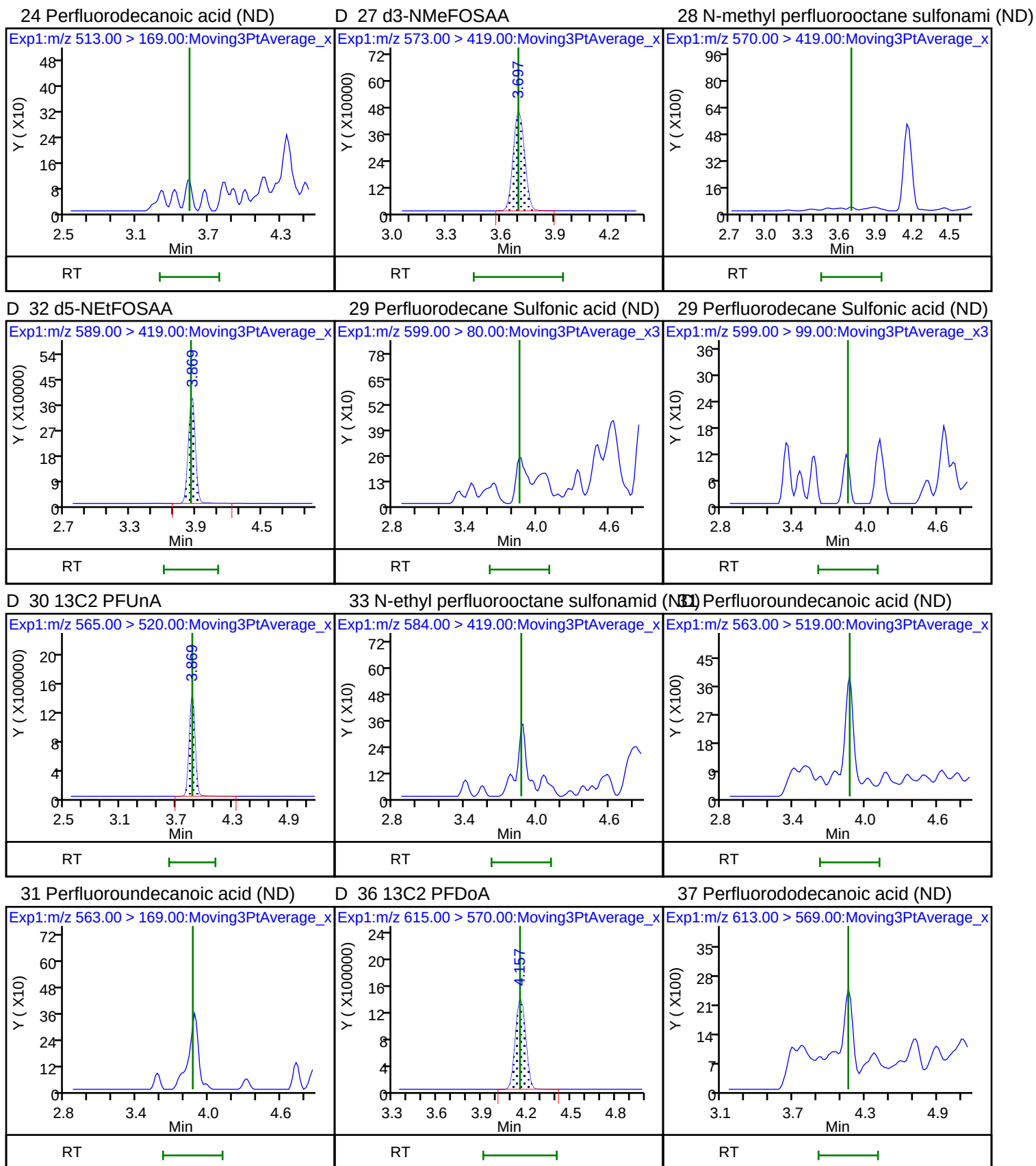


D 23 13C2 PFDA

22 Perfluorooctane Sulfonamide

24 Perfluorodecanoic acid (ND)



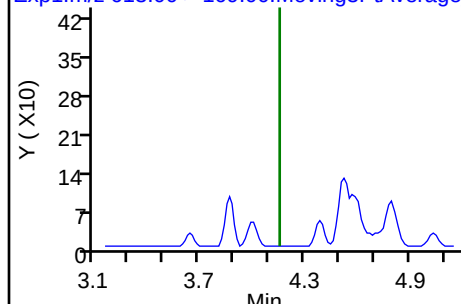


37 Perfluorododecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

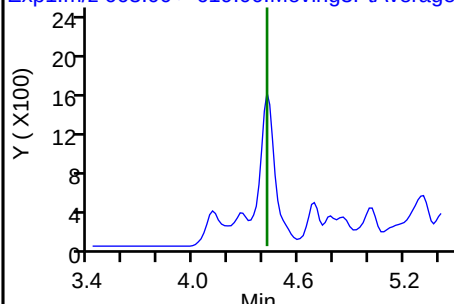
41 Perfluorotridecanoic acid (ND)

Exp1:m/z 613.00 > 169.00:Moving3PtAverage_x



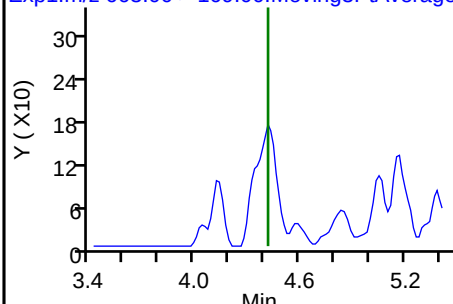
RT

Exp1:m/z 663.00 > 619.00:Moving3PtAverage_x



RT

Exp1:m/z 663.00 > 169.00:Moving3PtAverage_x



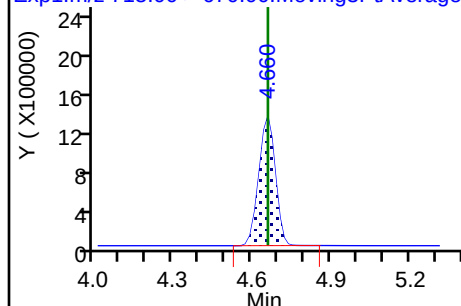
RT

D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

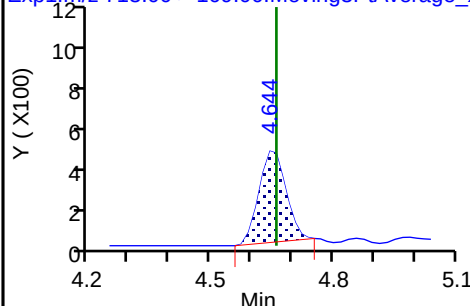
42 Perfluorotetradecanoic acid (M)

Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x



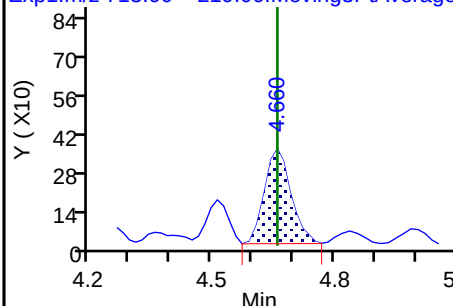
RT

Exp1:m/z 713.00 > 169.00:Moving3PtAverage_x



RT

Exp1:m/z 713.00 > 219.00:Moving3PtAverage_x



RT

TestAmerica Sacramento

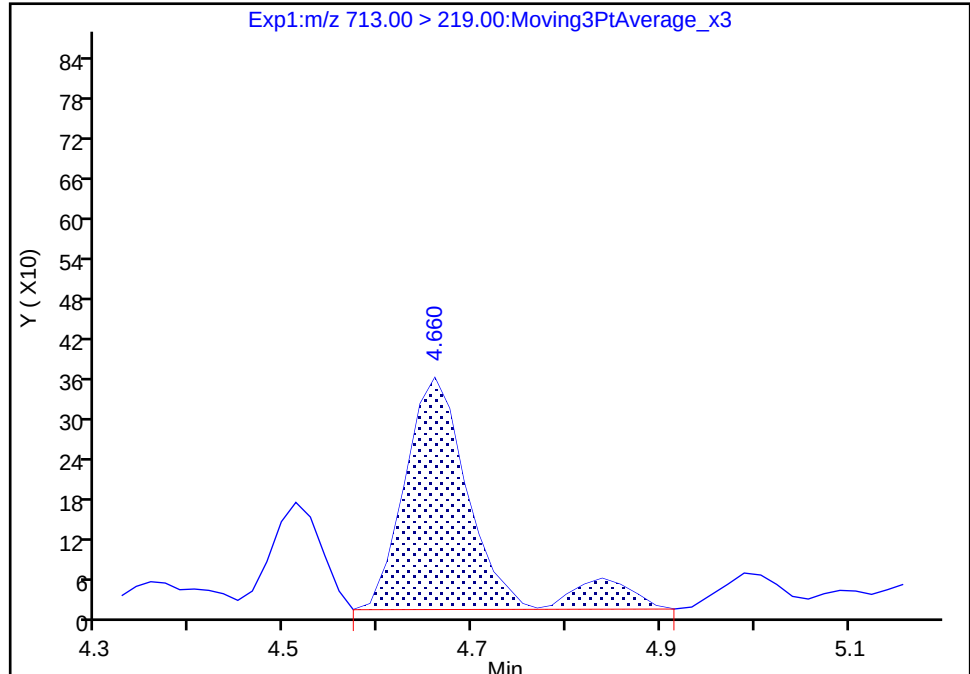
Data File:	\\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_031.d				
Injection Date:	29-Sep-2018 14:25:43	Instrument ID:	A9		
Lims ID:	480-142274-C-4-A	Lab Sample ID:	320-142274-4		
Client ID:	EB				
Operator ID:	A9\Administrator	ALS Bottle#:	22	Worklist Smp#:	17
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

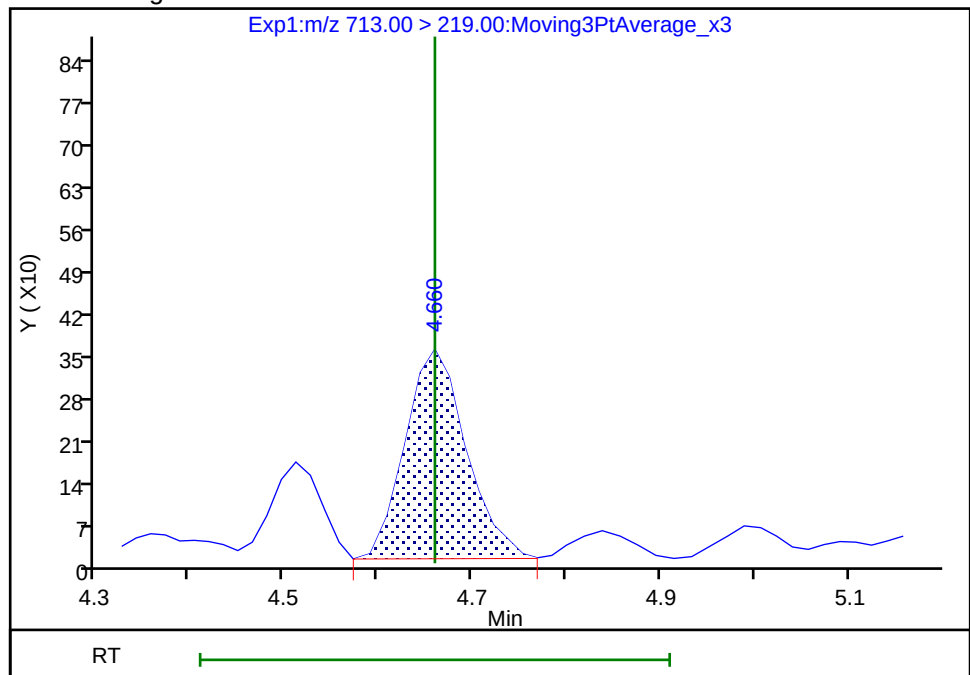
RT: 4.66
Area: 1765
Amount: 0.005356
Amount Units: ng/ml

Processing Integration Results



RT: 4.66
Area: 1565
Amount: 0.005356
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:36:09

Audit Action: Manually Integrated

Audit Reason: Split Peak

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1 Analy Batch No.: 247100

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-247100/2	2018.09.21LLAICAL_005.d
Level 2	IC 320-247100/11	2018.09.21LLBICAL_006.d
Level 3	IC 320-247100/4	2018.09.21LLAICAL_007.d
Level 4	IC 320-247100/5	2018.09.21LLAICAL_008.d
Level 5	IC 320-247100/6	2018.09.21LLAICAL_009.d
Level 6	IC 320-247100/7	2018.09.21LLAICAL_010.d
Level 7	IC 320-247100/8	2018.09.21LLAICAL_011.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	1.493	1.499	1.494	1.494	1.499	1.489				1.246 - 1.746	1.496
Perfluoropentanoic acid (PFPeA)	1.789	1.772	1.780	1.781	1.780	1.781	1.772				1.529 - 2.029	1.779
Perfluorobutanesulfonic acid (PFBS)	1.830	1.813	1.822	1.822	1.822	1.822	1.814				1.571 - 2.071	1.821
4:2 FTS	2.048	2.027	2.037	2.038	2.037	2.038	2.027				1.786 - 2.286	2.036
Perfluorohexanoic acid (PFHxA)	2.089	2.068	2.078	2.078	2.078	2.078	2.068				1.827 - 2.327	2.077
Perfluoropentanesulfonic acid (PFPeS)	2.109	2.088	2.109	2.099	2.099	2.099	2.089				1.849 - 2.349	2.099
HFPO-DA (GenX)	2.181	2.170	2.180	2.181	2.170	2.181	2.170				1.926 - 2.426	2.176
Perfluoroheptanoic acid (PFHpA)	2.426	2.399	2.425	2.413	2.413	2.413	2.399				2.162 - 2.662	2.413
Perfluorohexanesulfonic acid (PFHxS)	2.439	2.412	2.438	2.426	2.426	2.426	2.426				2.177 - 2.677	2.428
DONA	2.465	2.438	2.465	2.452	2.452	2.465	2.452				2.206 - 2.706	2.456
6:2 FTS	2.766	2.734	2.766	2.750	2.750	2.750	2.750				2.502 - 3.002	2.752
Perfluorooctanoic acid (PFOA)	2.798	2.766	2.782	2.782	2.782	2.782	2.766				2.530 - 3.030	2.780
Perfluoroheptanesulfonic Acid (PFHpS)	2.798	2.766	2.798	2.782	2.782	2.782	2.782				2.534 - 3.034	2.784
Perfluorooctanesulfonic acid (PFOS)	3.171	3.134	3.171	3.153	3.153	3.153	3.153				2.905 - 3.405	3.155
Perfluorononanoic acid (PFNA)	3.190	3.134	3.171	3.153	3.153	3.172	3.153				2.911 - 3.411	3.161
F-53B Major	3.383	3.350	3.383	3.367	3.367	3.367	3.367				3.119 - 3.619	3.369
Perfluorooctanesulfonamide (FOSA)	3.496	3.480	3.480	3.480	3.480	3.481	3.480				3.233 - 3.733	3.482
8:2 FTS	3.527	3.495	3.527	3.512	3.512	3.512	3.496				3.262 - 3.762	3.512
Perfluorononanesulfonic acid (PFNS)	3.527	3.495	3.527	3.512	3.512	3.512	3.496				3.262 - 3.762	3.512
Perfluorotetradecanoic acid (PFDA)	3.542	3.495	3.527	3.527	3.527	3.527	3.512				3.272 - 3.772	3.522
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	3.697	3.654	3.696	3.683	3.683	3.683	3.669				3.431 - 3.931	3.681
Perfluorodecanesulfonic acid (PFDS)	3.854	3.807	3.838	3.839	3.839	3.839	3.823				3.584 - 4.084	3.834
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.869	3.822	3.869	3.855	3.855	3.855	3.839				3.602 - 4.102	3.852
Perfluoroundecanoic acid (PFUnA)	3.869	3.822	3.869	3.855	3.855	3.855	3.839				3.602 - 4.102	3.852
F-53B Minor	4.023	3.991	4.022	4.007	4.007	4.007	4.007				3.759 - 4.259	4.009
Perfluorododecanoic acid (PFDoA)	4.176	4.122	4.157	4.157	4.157	4.139	4.139				3.899 - 4.399	4.150
10:2 FTS	4.176	4.122	4.157	4.157	4.157	4.157	4.139				3.902 - 4.402	4.152
Perfluorododecanesulfonic acid (PFDoS)	4.419	4.372	4.403	4.388	4.388	4.388	4.373				4.140 - 4.640	4.390
Perfluorotridecanoic acid (PFTriA)	4.435	4.388	4.434	4.419	4.419	4.419	4.404				4.167 - 4.667	4.417
Perfluorotetradecanoic acid (PFTeA)	+++++	4.626	4.675	4.660	4.660	4.660	4.644				4.409 - 4.909	4.654
Perfluoro-n-hexadecanoic acid (PFHxDA)	5.108	5.057	5.107	5.091	5.091	+++++	+++++				4.839 - 5.339	5.091
Perfluoro-n-octadecanoic acid (PFODA)	5.477	5.418	5.462	5.447	5.448	5.448	5.434				5.198 - 5.698	5.448

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1 Analy Batch No.: 247100

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C4 PFBA	1.499	1.493	1.499	1.494	1.494	1.494	1.489				1.245 - 1.745	1.495
13C5 PFPeA	1.789	1.772	1.780	1.781	1.780	1.781	1.772				1.529 - 2.029	1.779
13C3 PFBS	1.822	1.813	1.822	1.814	1.822	1.822	1.814				1.568 - 2.068	1.818
M2-4:2 FTS	2.048	2.027	2.037	2.038	2.037	2.038	2.027				1.786 - 2.286	2.036
13C2 PFHxA	2.078	2.068	2.078	2.068	2.078	2.078	2.068				1.824 - 2.324	2.074
13C3 HFPO-DA	2.181	2.170	2.180	2.181	2.181	2.181	2.170				1.928 - 2.428	2.178
13C4 PFHpA	2.426	2.399	2.425	2.413	2.413	2.413	2.399				2.162 - 2.662	2.413
18O2 PFHxS	2.439	2.412	2.438	2.426	2.426	2.426	2.426				2.177 - 2.677	2.428
M2-6:2 FTS	2.766	2.734	2.766	2.750	2.750	2.750	2.750				2.502 - 3.002	2.752
13C8 PFOA	2.782	2.750	2.782	2.766	2.766	2.766	2.766				2.518 - 3.018	2.768
13C4 PFOA	2.798	2.766	2.782	2.782	2.782	2.782	2.766				2.530 - 3.030	2.780
13C8 PFOS	3.171	3.134	3.171	3.153	3.153	3.153	3.135				2.903 - 3.403	3.153
13C4 PFOS	3.171	3.134	3.171	3.153	3.153	3.153	3.153				2.905 - 3.405	3.155
13C5 PFNA	3.171	3.134	3.171	3.153	3.153	3.153	3.153				2.905 - 3.405	3.155
13C8 FOSA	3.480	3.480	3.480	3.480	3.480	3.481	3.480				3.230 - 3.730	3.480
M2-8:2 FTS	3.527	3.495	3.527	3.512	3.512	3.512	3.496				3.262 - 3.762	3.512
13C2 PFDA	3.542	3.495	3.527	3.527	3.527	3.527	3.512				3.272 - 3.772	3.522
d3-NMeFOSAA	3.697	3.654	3.682	3.683	3.669	3.669	3.669				3.425 - 3.925	3.675
d5-NEtFOSAA	3.869	3.822	3.854	3.839	3.839	3.839	3.839				3.593 - 4.093	3.843
13C2 PFUnA	3.869	3.822	3.869	3.855	3.855	3.855	3.839				3.602 - 4.102	3.852
13C2 PFDoA	4.176	4.122	4.157	4.157	4.139	4.139	4.139				3.897 - 4.397	4.147
13C2 PFTeDA	4.691	4.626	4.675	4.660	4.660	4.660	4.644				4.409 - 4.909	4.659
13C2 PFHxDA	5.108	5.057	5.091	5.091	5.091	5.074	5.074				4.834 - 5.334	5.084

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1 Analy Batch No.: 247100

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-247100/2	2018.09.21LLAICAL_005.d
Level 2	IC 320-247100/11	2018.09.21LLBICAL_006.d
Level 3	IC 320-247100/4	2018.09.21LLAICAL_007.d
Level 4	IC 320-247100/5	2018.09.21LLAICAL_008.d
Level 5	IC 320-247100/6	2018.09.21LLAICAL_009.d
Level 6	IC 320-247100/7	2018.09.21LLAICAL_010.d
Level 7	IC 320-247100/8	2018.09.21LLAICAL_011.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	3071729 2867356	2995755 3392472	3239651 3071209	2889404	Ave		3075367.87				6.1		50.0			
13C8 PFOS	536076 511431	525488 629070	570572 489547	521291	Ave		540496.533				8.5		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.: 480-142274-1 Analy Batch No.: 247100
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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)	0.9236 0.9118	0.9088 0.8494	0.9488	0.9176	0.9568	AveID		0.9167				3.8		35.0			
Perfluoropentanoic acid (PFPeA)	1.0839 0.9454	1.0926 0.8736	1.0063	0.9844	0.9832	AveID		0.9956				7.7		35.0			
Perfluorobutanesulfonic acid (PFBS)	112.76 98.483	108.09 86.242	103.25	103.85	110.58	AveID		103.32				8.7		50.0			
4:2 FTS	22.918 22.709	21.800 22.210	23.463	22.181	22.909	AveID		22.599				2.5		50.0			
Perfluorohexanoic acid (PFHxA)	0.9526 0.8609	0.9496 0.7869	0.9155	0.9227	0.9068	AveID		0.8993				6.5		35.0			
Perfluoropentanesulfonic acid (PFPeS)	45.070 50.058	47.918 45.774	49.833	49.028	51.125	AveID		48.401				4.7		50.0			
HFPO-DA (GenX)	1.7141 1.9716	1.8837 1.7554	1.8353	2.0093	1.9193	AveID		1.8698				5.8		35.0			
Perfluoroheptanoic acid (PFHpA)	1.1808 1.0106	1.1671 0.8506	1.1115	0.9992	1.1136	AveID		1.0619				11.0		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.4203 1.1926	1.4128 1.0816	1.2178	1.2531	1.2334	AveID		1.2588				9.6		35.0			
DONA	2.6202 2.3969	2.9010 2.1052	2.8664	2.9726	2.6511	AveID		2.6448				11.7		50.0			
6:2 FTS	2.1795 2.1216	2.3644 2.1427	2.3030	1.9944	2.1670	AveID		2.1818				5.6		35.0			
Perfluorooctanoic acid (PFOA)	1.1642 0.9279	1.2018 0.8152	1.1059	1.1136	1.0131	AveID		1.0488				13.2		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	0.9944 1.0312	0.9896 0.9931	1.0269	1.0465	1.0837	AveID		1.0236				3.4		50.0			
Perfluorooctanesulfonic acid (PFOS)	0.9674 1.0512	1.1175 1.0539	1.0661	1.1070	1.0520	AveID		1.0593				4.6		35.0			
Perfluorononanoic acid (PFNA)	0.9934 0.8874	1.0741 0.7975	1.0369	1.0468	1.0392	AveID		0.9822				10.4		35.0			
F-53B Major	1.0154 1.1013	1.1537 1.0308	1.1657	1.2088	1.1426	AveID		1.1169				6.4		50.0			
Perfluorooctanesulfonamide (FOSA)	2.6555 2.6721	3.0987 2.4134	3.2712	3.2988	3.2340	AveID		2.9491				12.2		35.0			
8:2 FTS	13.539 16.125	17.037 13.487	14.319	13.943	14.461	AveID		14.701				9.2		35.0			
Perfluorononanesulfonic acid (PFNS)	0.7178 0.6667	0.6707 0.6240	0.6598	0.6655	0.6549	AveID		0.6656				4.2		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.: 480-142274-1 Analy Batch No.: 247100
SDG No.: _____
Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N
Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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)	1.2254 1.0093	1.1739 0.8557	1.1841	1.1577	1.0660	AveID		1.0960				11.8		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.8882 0.9387	0.9878 0.8990	1.0322	1.0056	0.9671	AveID		0.9598				5.6		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7503 0.8464	0.9202 0.7634	0.8615	0.8943	0.9528	AveID		0.8555				8.9		50.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.7744 0.9657	0.8975 1.0173	0.9509	0.9603	0.9733	AveID		0.9342				8.4		35.0			
Perfluoroundecanoic acid (PFUnA)	1.1333 0.8430	0.9438 0.7405	0.9043	0.8800	0.8676	AveID		0.9018				13.3		35.0			
F-53B Minor	1.2628 1.3407	1.3596 1.1921	1.3047	1.3609	1.3878	AveID		1.3155				5.2		50.0			
Perfluorododecanoic acid (PFDoA)	1.1229 0.8762	1.1095 0.7606	1.0186	1.0616	1.0586	AveID		1.0011				13.4		35.0			
10:2 FTS	11.237 10.895	9.4612 10.579	9.2503	8.8084	9.7412	AveID		9.9961				9.1		50.0			
Perfluorododecanesulfonic acid (PFDoS)	0.0997 0.0996	0.1006 0.0959	0.0912	0.0935	0.0899	AveID		0.0958				4.5		50.0			
Perfluorotridecanoic acid (PFTriA)	0.7835 0.7047	0.9152 0.6222	0.8115	0.8497	0.8004	AveID		0.7839				12.2		50.0			
Perfluorotetradecanoic acid (PFTeA)	++++ 0.1727	0.1624 0.1650	0.1592	0.1618	0.1645	AveID		0.1643				2.8		50.0			
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7966 ++++	1.3414 ++++	1.0223	0.9205	0.9015	L2ID	0.0222	0.9058							1.0000		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.6718 0.6205	0.6822 0.5805	0.6903	0.6350	0.6556	AveID		0.6480				6.0		50.0			
13C4 PFBA	0.9261 0.9630	0.8728 0.9900	0.9386	0.8831	0.8738	Ave		0.9210				5.0		50.0			
13C5 PFPeA	0.8058 0.8727	0.8028 0.8767	0.8596	0.8263	0.8176	Ave		0.8374				3.8		50.0			
13C3 PFBS	0.0110 0.0118	0.0106 0.0123	0.0119	0.0113	0.0109	Ave		0.0114				5.6		50.0			
M2-4:2 FTS	0.1075 0.0968	0.1012 0.1071	0.1160	0.0983	0.1031	Ave		0.1043				6.3		50.0			
13C2 PFHxA	0.8827 0.8999	0.8816 0.9356	0.8994	0.8568	0.8566	Ave		0.8875				3.1		50.0			
13C3 HFPO-DA	0.0990 0.0921	0.0806 0.1049	0.0989	0.0856	0.0858	Ave		0.0924				9.6		50.0			
13C4 PFHpA	1.1065 1.0166	0.9986 1.0812	1.1094	1.0834	1.0006	Ave		1.0566				4.7		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.: 480-142274-1 Analy Batch No.: 247100

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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	0.6932 0.6735	0.6634 0.7424	0.6805	0.6632	0.6549	Ave		0.6816				4.4		50.0			
M2-6:2 FTS	0.1167 0.1146	0.1087 0.1075	0.1105	0.1088	0.1009	Ave		0.1097				4.7		50.0			
13C4 PFOA	1.0039 0.9996	1.0214 1.0299	1.0256	0.9437	0.9824	Ave		1.0009				3.0		50.0			
13C4 PFOS	0.7386 0.7042	0.6978 0.6850	0.7343	0.7011	0.6845	Ave		0.7065				3.1		50.0			
13C5 PFNA	0.9312 0.9359	0.9056 0.9278	0.9569	0.8821	0.8361	Ave		0.9108				4.5		50.0			
13C8 FOSA	0.3722 0.3776	0.3675 0.3970	0.3888	0.3785	0.3575	Ave		0.3770				3.5		50.0			
M2-8:2 FTS	0.0147 0.0122	0.0143 0.0132	0.0148	0.0144	0.0137	Ave		0.0139				6.7		50.0			
13C2 PFDA	0.9507 0.8785	0.9125 0.9483	0.9986	0.9861	0.9298	Ave		0.9435				4.4		50.0			
d3-NMeFOSAA	0.4061 0.4586	0.3780 0.4576	0.4169	0.3961	0.4144	Ave		0.4182				7.2		50.0			
d5-NEtFOSAA	0.3816 0.3107	0.3456 0.2911	0.3237	0.3351	0.3055	Ave		0.3276				9.2		50.0			
13C2 PFUnA	0.8340 0.7619	0.7699 0.7599	0.8218	0.8883	0.7721	Ave		0.8011				6.1		50.0			
13C2 PFDoA	0.9472 0.9743	0.9238 0.9735	0.9834	0.9516	0.9164	Ave		0.9529				2.7		50.0			
13C2 PFTeDA	0.7001 0.7552	0.7572 0.8274	0.7415	0.7738	0.7007	Ave		0.7508				5.9		50.0			
13C2 PFHxDA	0.6629 0.7847	0.7578 0.8050	0.7408	0.7736	0.7234	Ave		0.7497				6.3		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.: 480-142274-1 Analy Batch No.: 247100

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-247100/2	2018.09.21LLAICAL_005.d
Level 2	IC 320-247100/11	2018.09.21LLBICAL_006.d
Level 3	IC 320-247100/4	2018.09.21LLAICAL_007.d
Level 4	IC 320-247100/5	2018.09.21LLAICAL_008.d
Level 5	IC 320-247100/6	2018.09.21LLAICAL_009.d
Level 6	IC 320-247100/7	2018.09.21LLAICAL_010.d
Level 7	IC 320-247100/8	2018.09.21LLAICAL_011.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	7518056 8303074	7332111 7516784	7929046	7071816	7017853	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	Ave	1281222 1503478	1255916 1170018	1363666	1245886	1222321	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.: 480-142274-1 Analy Batch No.: 247100

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-247100/2	2018.09.21LLAICAL_005.d
Level 2	IC 320-247100/11	2018.09.21LLBICAL_006.d
Level 3	IC 320-247100/4	2018.09.21LLAICAL_007.d
Level 4	IC 320-247100/5	2018.09.21LLAICAL_008.d
Level 5	IC 320-247100/6	2018.09.21LLAICAL_009.d
Level 6	IC 320-247100/7	2018.09.21LLAICAL_010.d
Level 7	IC 320-247100/8	2018.09.21LLAICAL_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	77055 17281545	135508 28619286	798416	2756176	7252916	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	78683 16238450	149842 26065041	775517	2766671	6973880	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	98473 20193580	172445 32034311	976249	3538619	9234217	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	21146 4919870	36747 8716545	234387	798573	2021321	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	75755 15247478	143018 25055147	738263	2689169	6739358	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	41763 10891174	81120 18041204	499950	1772705	4530111	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	15283 3572548	25929 6264056	162786	584968	1428015	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	117706 20220855	199114 31298210	1105629	3682041	9667715	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	80709 14384660	145720 24867986	676086	2572211	6376580	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	164242 31294393	325759 46231056	1777483	6677901	14831368	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	21721 4536400	41619 7432909	216251	699961	1798266	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluorooctanoic acid (PFOA)		AveID	105397 18275076	209915 28602312	1017840	3578089	8643372	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	62995 13605882	112302 22040563	643568	2375847	6127089	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanesulfonic acid (PFOS)		AveID	59737 13520611	123626 22799451	651252	2449918	5797920	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	83336 16345593	166178 25182261	889492	3140933	7537549	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.: 480-142274-1 Analy Batch No.: 247100

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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	62970 14226340	128181 22397136	715170	2686654	6324366	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	89032 19856984	194556 32608152	1140400	4247372	10029311	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	17119 3702598	39972 5817799	181928	652901	1651526	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorononanesulfonic acid (PFNS)		AveID	45856 8870383	76752 13965529	416998	1523710	3733587	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	104958 17451112	182990 27615483	1060083	3882763	8599090	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	32494 8472296	63800 14001333	385771	1354726	3476640	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	48131 11308841	105743 17155341	546672	2055868	5454861	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	26624 5905384	52993 10076333	276010	1094595	2579505	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	85150 12640500	124140 19149013	666267	2658767	5811860	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	79154 17503848	152674 26180127	809080	3057280	7764072	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	95815 16802308	175107 25199086	898058	3435967	8415870	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	14298 2517398	22337 4592235	118262	415059	1119449	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	6423 1335682	11605 2163811	58138	215875	517092	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	66853 13513007	144436 20612834	715480	2750053	6363083	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	++++ 2567080	21006 4644490	105811	425772	1000159	++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	107296 ++++	173671 ++++	679012	2422100	5658034	0.0250 ++++	0.0500 ++++	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	40120 9581981	88318 15904110	458517	1670958	4114602	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	8342977 9476564	7455703 8422985	8414655	7509010	7580397	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	7259389 8588479	6857279 7458806	7706743	7026337	7093002	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	91872 107858	83923 97694	99469	89621	87853	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	904855 890030	807073 851043	971040	780634	835063	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.: 480-142274-1 Analy Batch No.: 247100

SDG No.: _____

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm) Heated Purge: (Y/N) N

Calibration Start Date: 09/21/2018 13:35 Calibration End Date: 09/21/2018 15:36 Calibration ID: 41233

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	7952570 8855748	7530157 7960200	8063933	7286027	7431760	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	891586 905993	688254 892112	886972	727812	744031	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	9968243 10004341	8530313 9199009	9946736	9212621	8681131	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5907514 6269545	5360994 5975198	5771389	5334919	5374593	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	998717 1071332	881970 869086	940959	879255	831601	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	9044329 9837265	8724980 8762277	9194911	8024393	8523187	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	6361401 6625089	5698100 5571777	6293260	5699757	5677498	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	8388965 9209816	7735806 7893873	8578709	7501183	7253244	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	3352703 3715643	3139325 3377811	3486173	3218888	3101165	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	126443 114810	117311 107844	127051	117069	114204	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	8564950 8645119	7794397 8068123	8952864	8385003	8066736	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	3658347 4512795	3229247 3893478	3737383	3367819	3594763	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	3438218 3057484	2952255 2476319	2902553	2849760	2650176	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	7513282 7497732	6576404 6465241	7367515	7553155	6698462	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	8533148 9588251	7891096 8282800	8816999	8091461	7950004	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	6307400 7431707	6467590 7039163	6647508	6579603	6078915	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	5972047 7721737	6473479 6848863	6641856	6578080	6275952	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\20180921-64578.b\2018.09.21LLAICAL_005.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 21-Sep-2018 13:35:59 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD1
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:05:38 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 14:57:20

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	1.499	1.495	0.004	0.536	8342977	2.51		101	10502	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.504	1.496	0.008	1.003	77055	0.0252		101	3.8	M
4 Perfluoropentanoic acid										
262.90 > 219.00	1.789	1.779	0.010	1.000	78683	0.0272		109	6.6	
D 3 13C5-PFPeA										
267.90 > 223.00	1.789	1.779	0.010	0.639	7259389	2.41		96.2	7261	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.818	0.004	0.651	91872	2.24		96.2	501	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.830	1.821	0.009	1.005	98473	0.0241		109	52.4	
298.90 > 99.00	1.822	1.821	0.001	1.000	30993		3.18(1.35-4.05)	109	24.5	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.048	2.036	0.012	1.124	21146	0.0237		101	166	
D 60 M2-4:2FTS										
329.00 > 81.00	2.048	2.036	0.012	0.732	904855	2.41		103	897	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.074	0.004	0.743	7952570	2.49		99.5	7639	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.077	0.012	1.005	75755	0.0265		106	17.5	
313.00 > 119.00	2.089	2.077	0.012	1.005	5191		14.59(6.96-20.87)	106	10.7	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.099	0.010	1.158	41763	0.0218		93.1	109	
349.00 > 99.00	2.109	2.099	0.010	1.158	20964		1.99(1.15-3.45)	93.1	68.7	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	15283	0.0229		91.7	6.7	

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	2.181	2.178	0.003	0.779	891586	2.68		107	2605	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.426	2.412	0.014	1.000	117706	0.0278		111	17.9	
363.00 > 169.00	2.426	2.412	0.014	1.000	24162		4.87(2.17-6.52)	111	56.6	
D 9 13C4-PFHpA										
367.00 > 322.00	2.426	2.412	0.014	0.867	9968243	2.62		105	15972	
D 11 18O2 PFHxS										
403.00 > 84.00	2.439	2.427	0.012	0.872	5907514	2.41		102	6280	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.439	2.427	0.012	1.000	80709	0.0257		113	85.2	
399.00 > 99.00	2.439	2.427	0.012	1.000	21125		3.82(1.90-5.70)	113	26.2	
76 DONA										
377.00 > 251.00	2.465	2.456	0.009	0.777	164242	0.0233		99.1	474	M
377.00 > 85.00	2.478	2.456	0.022	0.781	69199		2.37(1.13-3.39)	99.1	32.3	M
D 12 M2-6:2FTS										
429.00 > 81.00	2.766	2.752	0.014	0.989	998717	2.53		106	1238	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.752	0.014	1.000	21721	0.0237		99.9	53.5	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.768	0.014		7518056	2.44		99.9	6091	
* 62 13C2-PFOA										
415.00 > 370.00	2.798	2.780	0.018		9008984	2.50			5796	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.780	0.018	1.000	105397	0.0278		111	6.1	M
413.00 > 169.00	2.798	2.780	0.018	1.000	38631		2.73(1.36-4.08)	111	62.2	M
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.780	0.018	1.000	9044329	2.51		100	17580	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.784	0.014	0.882	62995	0.0231		97.1	105	
449.00 > 99.00	2.798	2.784	0.014	0.882	13214		4.77(1.84-5.53)	97.1	44.9	
D 72 13C8 PFOS										
507.00 > 99.00	3.171	3.153	0.018		1281222	2.37		99.2	3414	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.155	0.016	1.133	8388965	2.56		102	8082	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.155	0.016	1.133	6361401	2.50		105	4449	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.155	0.016	1.000	59737	0.0212		91.3	66.9	M
499.00 > 99.00	3.190	3.155	0.035	1.006	16268		3.67(2.04-6.12)	91.3	59.7	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.161	0.029	1.006	83336	0.0253		101	11.2	M
463.00 > 169.00	3.190	3.161	0.029	1.006	15261		5.46(2.68-8.03)	101	34.4	M
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.369	0.014	1.067	62970	0.0212		90.9	129	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	3352703	2.47		98.7	7267	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.496	3.483	0.013	1.004	89032	0.0225		90.0	205	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.512	0.015	1.000	17119	0.0221		92.1	120	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.512	0.015	1.112	45856	0.0259		108	131	
549.00 > 99.00	3.527	3.512	0.015	1.112	6461		7.10(3.02-9.05)	108	64.0	
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.512	0.015	1.261	126443	2.52		105	664	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.522	0.020	1.000	104958	0.0280		112	23.8	
513.00 > 169.00	3.542	3.522	0.020	1.000	8071		13.00(7.12-21.35)	112	24.1	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.522	0.020	1.266	8564950	2.52		101	7586	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.675	0.022	1.321	3658347	2.43		97.1	3409	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.681	0.016	1.000	32494	0.0231		92.5	10.3	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.854	3.834	0.020	1.215	48131	0.0211		87.7	84.2	
599.00 > 99.00	3.854	3.834	0.020	1.215	10651		4.52(2.14-6.43)	87.7	49.8	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.843	0.026	1.383	3438218	2.91		116	3465	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.852	0.017	1.000	85150	0.0314		126	20.2	
563.00 > 169.00	3.869	3.852	0.017	1.000	7060		12.06(5.24-15.72)	126	27.8	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.852	0.017	1.000	26624	0.0207		82.9	51.4	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.852	0.017	1.383	7513282	2.60		104	9463	
35 MeFOSA										
512.00 > 169.00	3.975	3.965	0.010		15691	NC			62.8	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.009	0.014	1.268	79154	0.0226		96.0	249	
D 36 13C2 PFDaA										
615.00 > 570.00	4.176	4.147	0.029	1.492	8533148	2.49		99.4	7351	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.176	4.149	0.027	1.000	95815	0.0280		112	26.1	M
613.00 > 169.00	4.176	4.149	0.027	1.000	8876		10.79(4.68-14.05)	112	19.2	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.176	4.152	0.024	1.184	14298	0.0271		112	11.1	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		19846	NC			78.1	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.419	4.390	0.029	1.393	6423	0.0252		104	14.1	
699.00 > 99.00	4.404	4.390	0.014	1.389	9818		0.65(0.28-0.83)	104	43.4	

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	4.435	4.417	0.017	1.062	66853	0.0250		99.9	29.9	
663.00 > 169.00	4.435	4.417	0.017	1.062	13058		5.12(3.09-9.27)	99.9	25.1	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.691	4.659	0.032	1.000	14652	0.0354		141	48.3	M
713.00 > 219.00	4.675	4.659	0.016	0.997	8623		1.70(0.70-2.09)	141	23.4	M
D 43 13C2-PFTeDA										
715.00 > 670.00	4.691	4.659	0.032	1.677	6307400	2.33		93.2	11718	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.108	5.084	0.024	1.826	5972047	2.21		88.4	6446	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.108	5.089	0.019	1.000	107296	0.0251		100	28.2	
813.00 > 169.00	5.108	5.089	0.019	1.000	20738		5.17(2.77-8.32)	100	36.9	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.477	5.448	0.029	1.072	40120	0.0259		104	19.3	
913.00 > 169.00	5.477	5.448	0.029	1.072	7480		5.36(2.55-7.64)	104	42.1	

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\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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

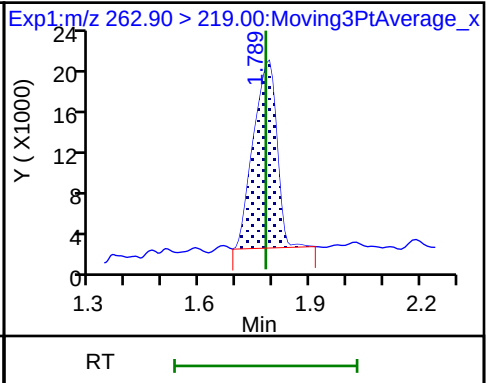
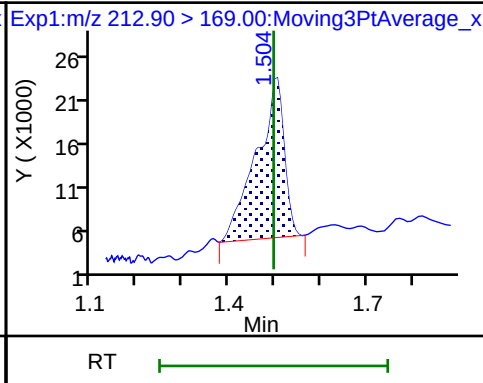
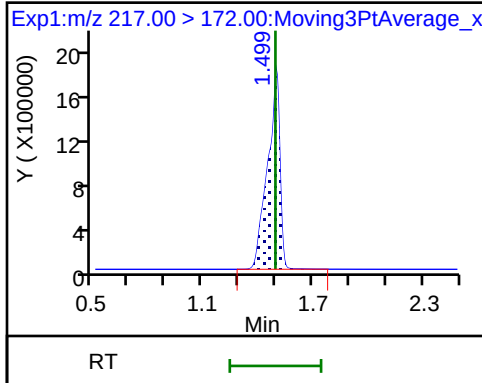
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

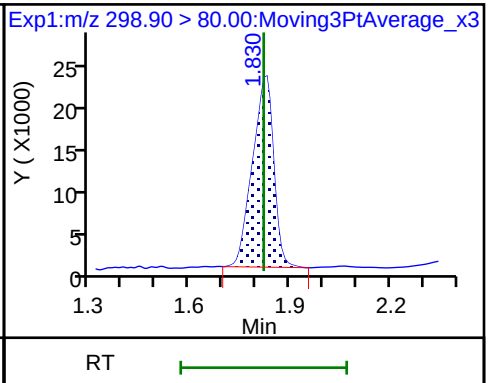
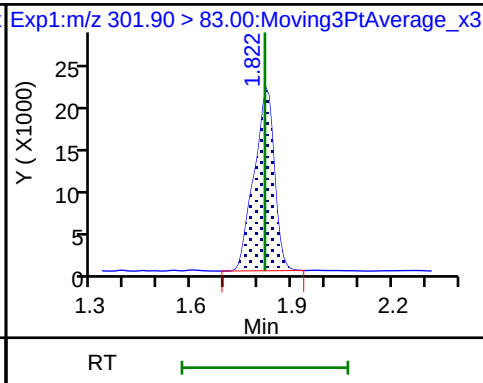
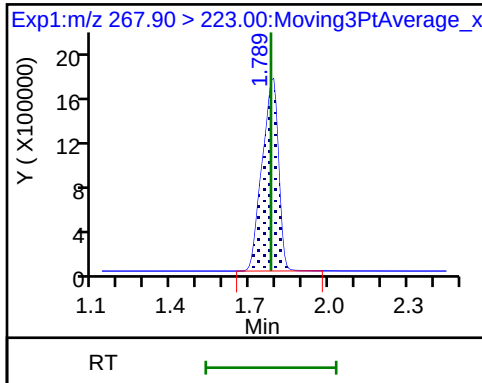
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

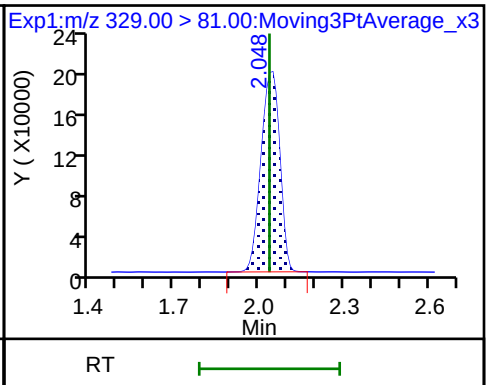
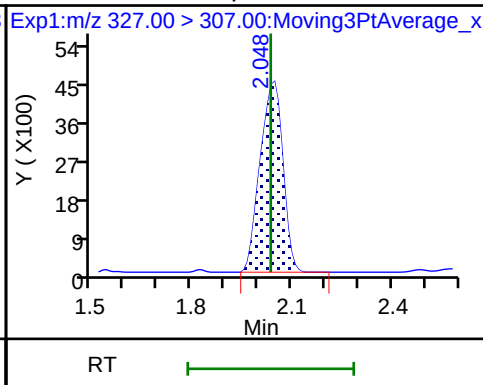
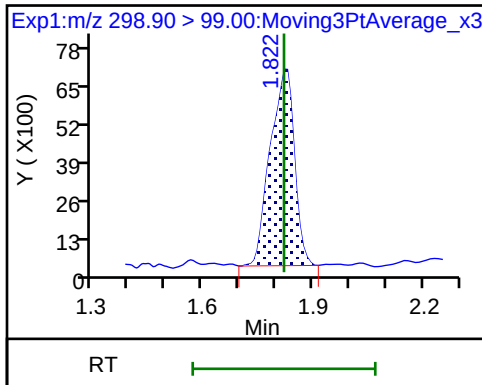
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

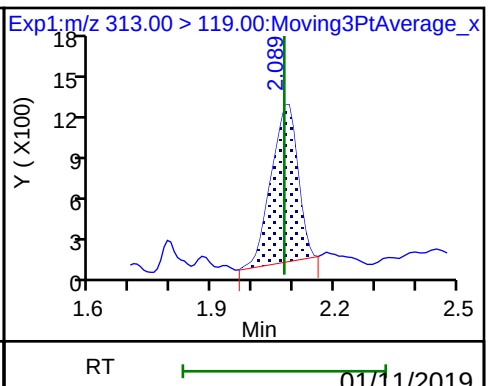
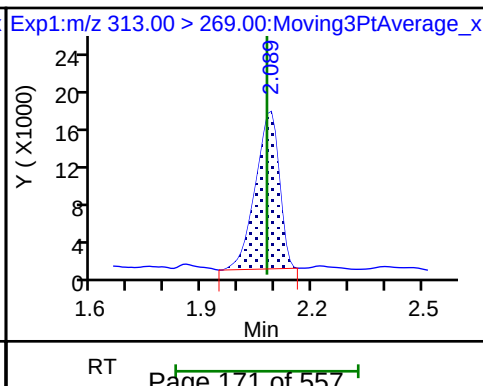
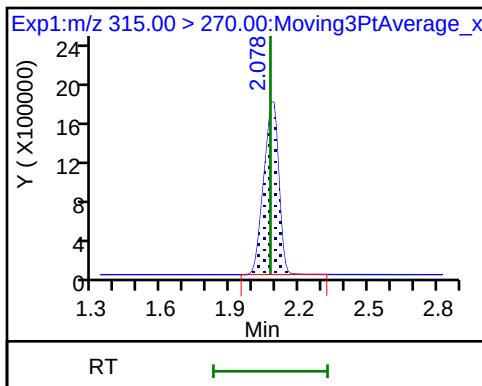
D 60 M2-4:2FTS

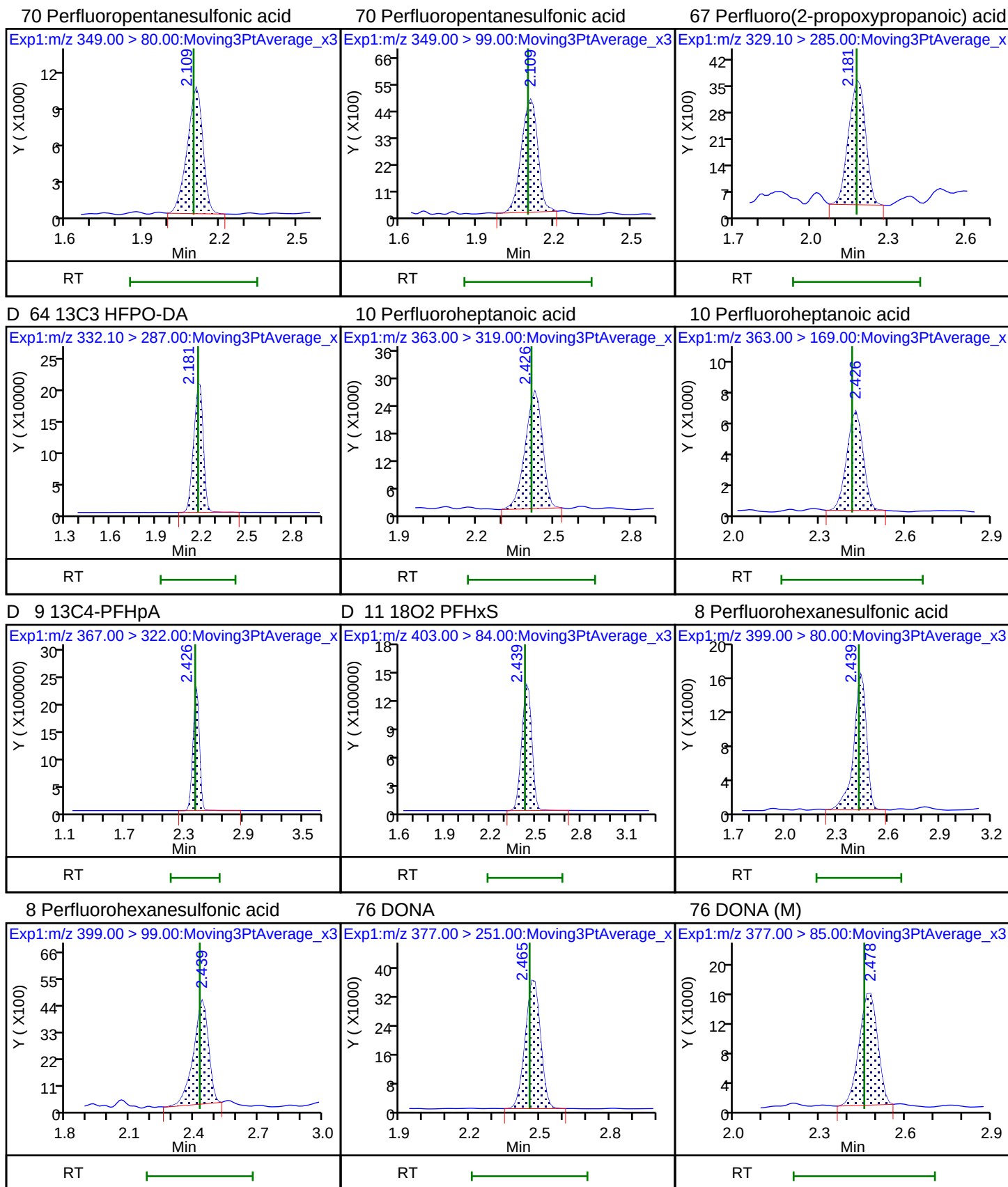


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

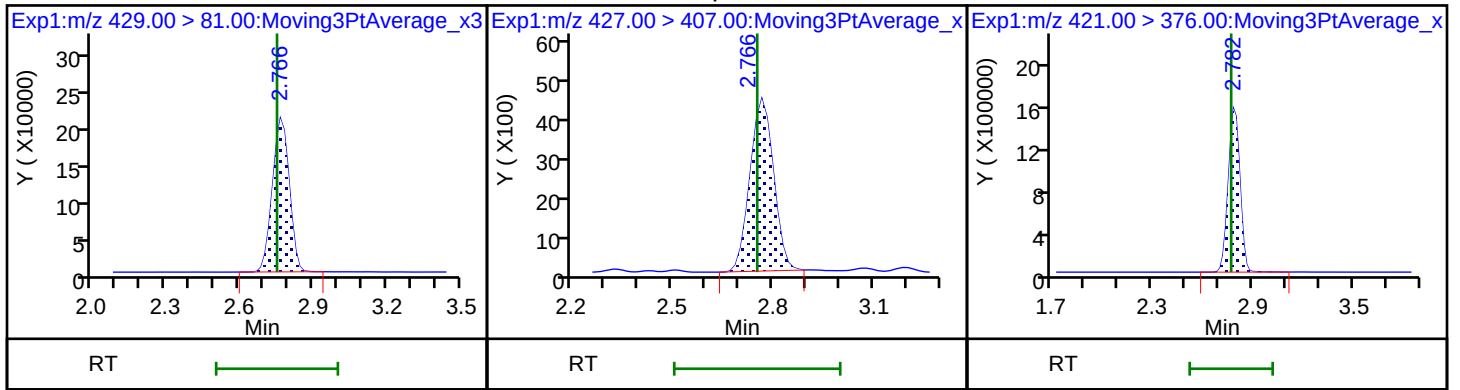
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

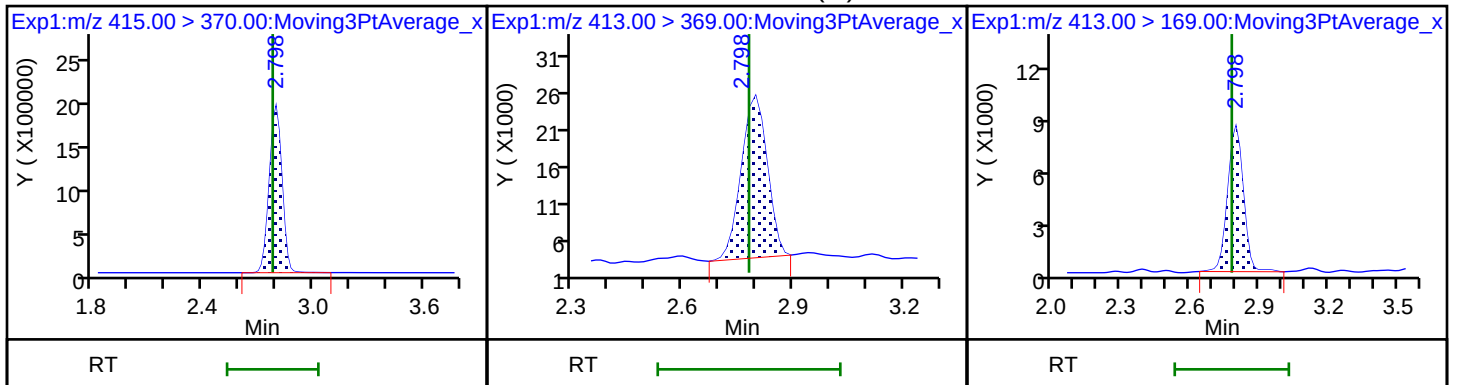
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

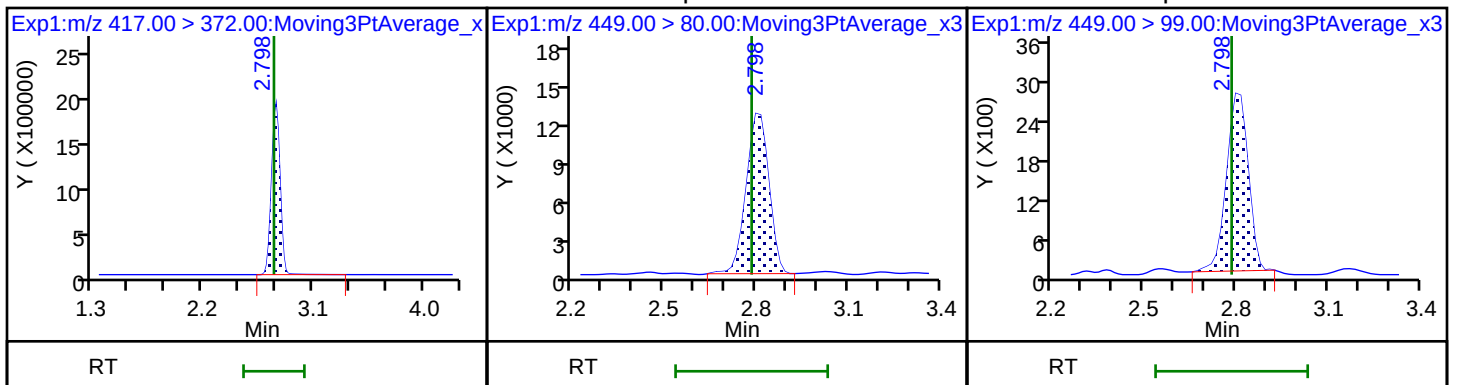
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

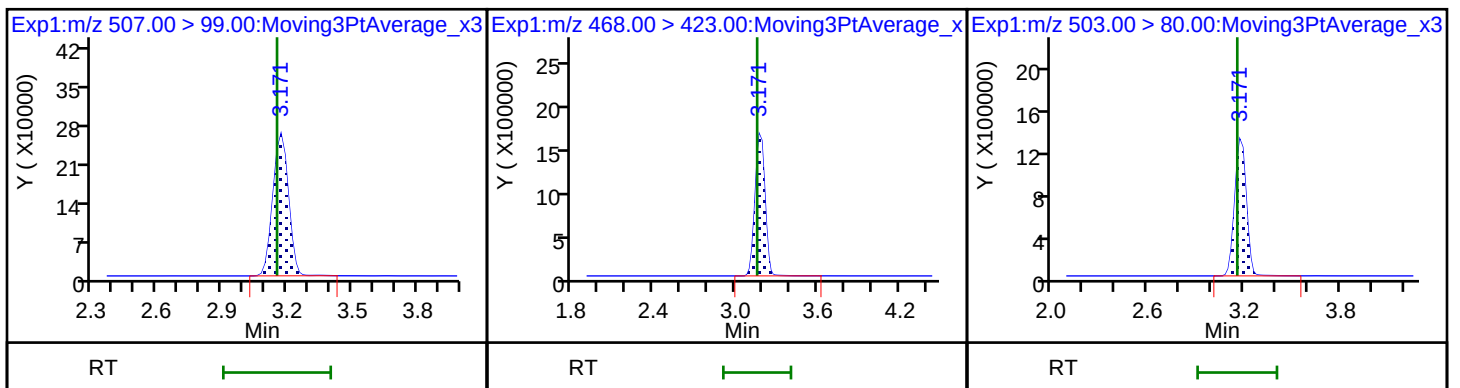
16 Perfluoroheptanesulfonic acid

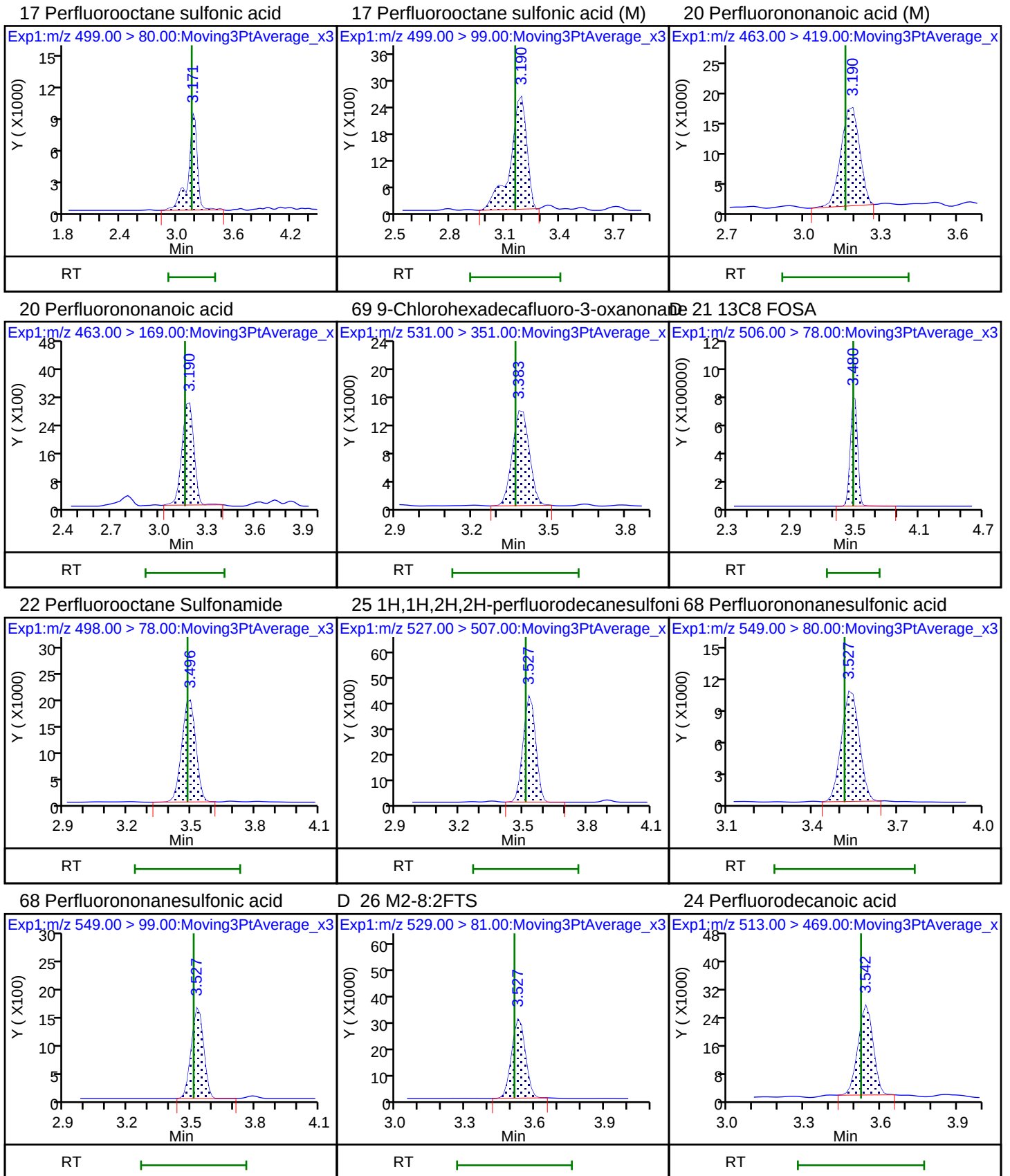


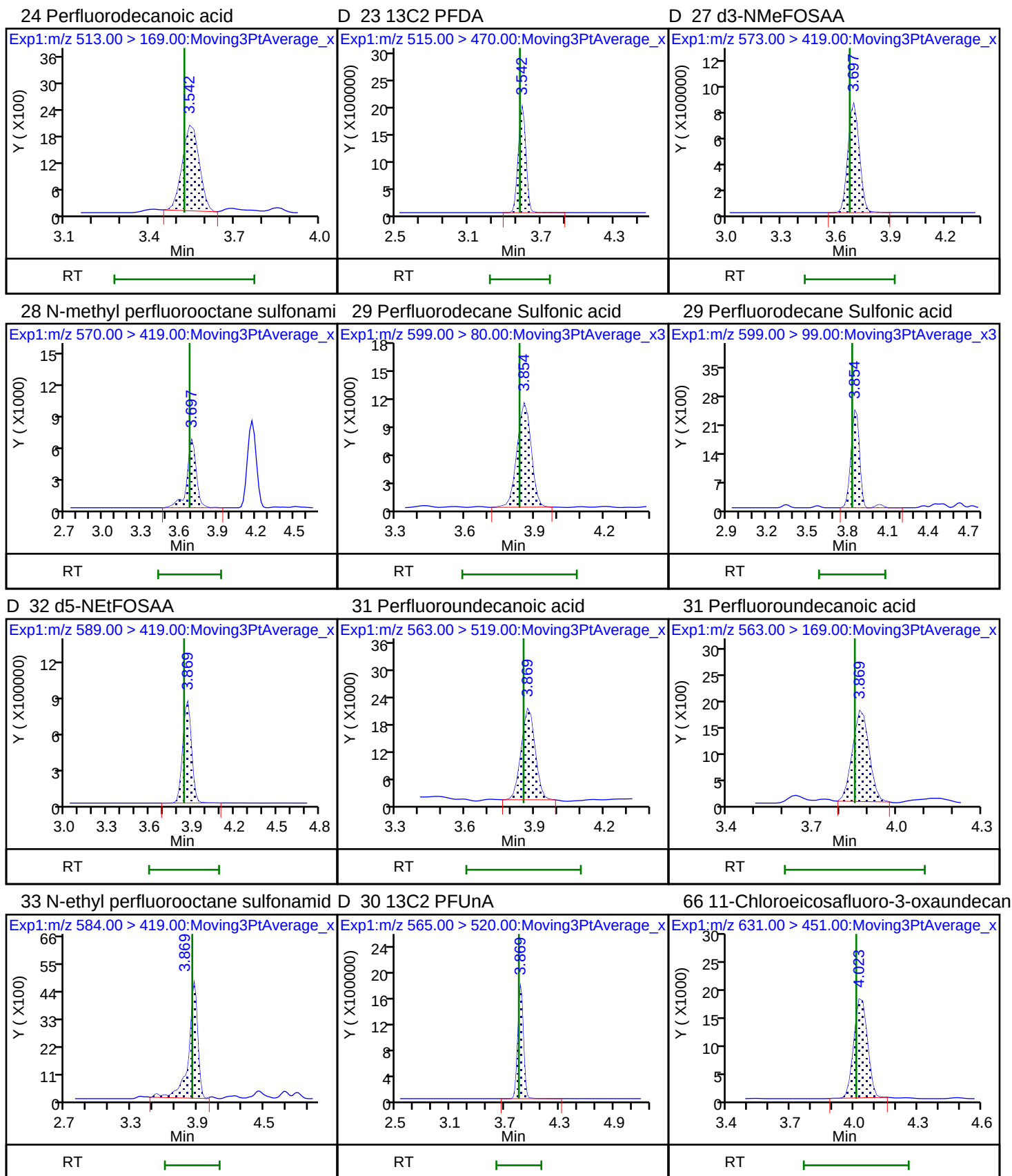
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



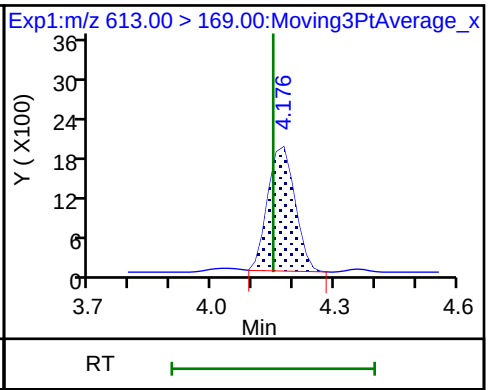
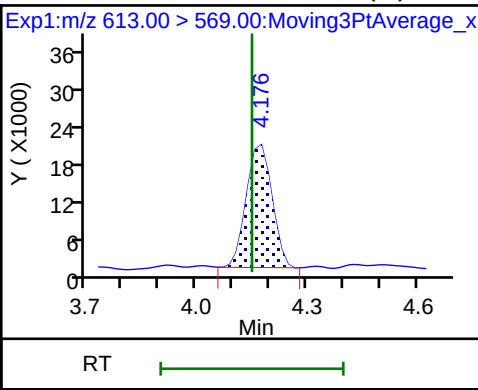
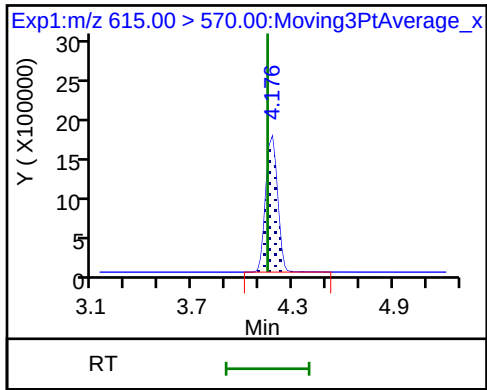




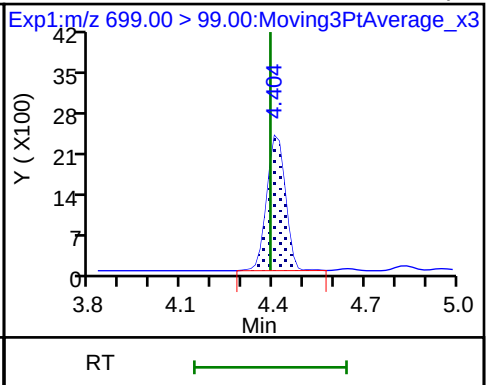
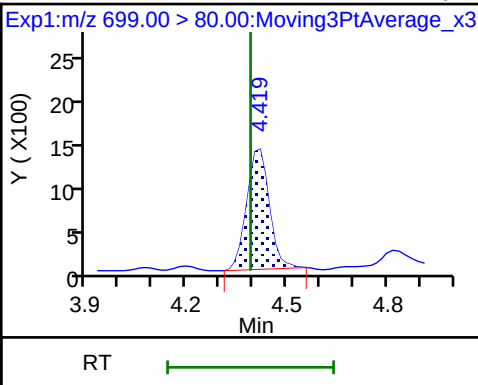
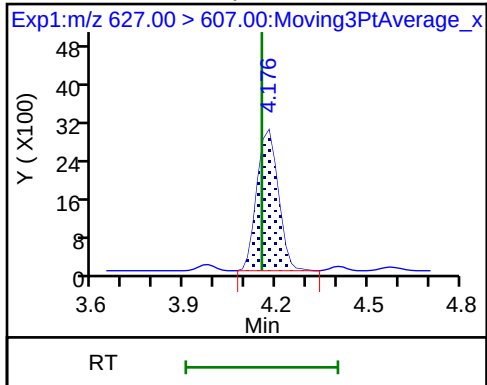
D 36 13C2 PFDaA

37 Perfluorododecanoic acid (M)

37 Perfluorododecanoic acid



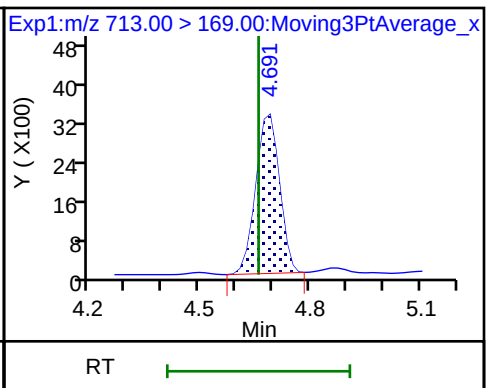
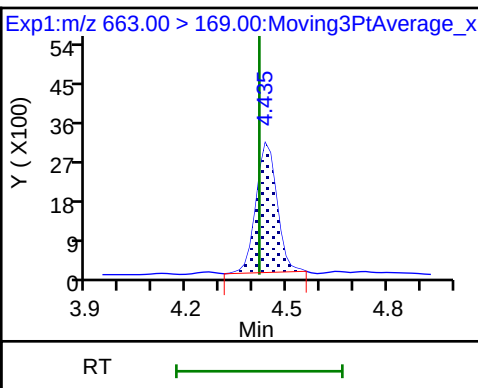
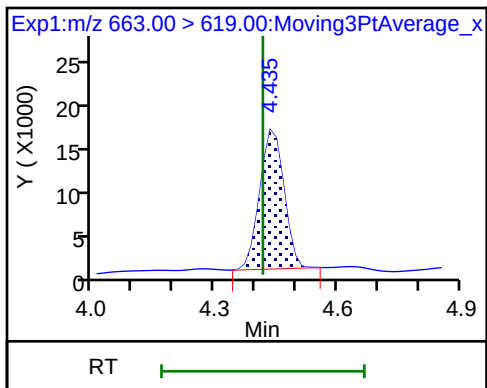
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

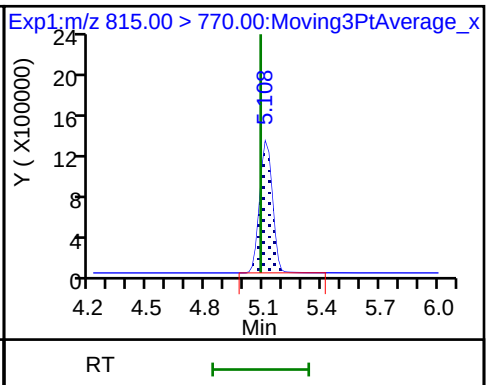
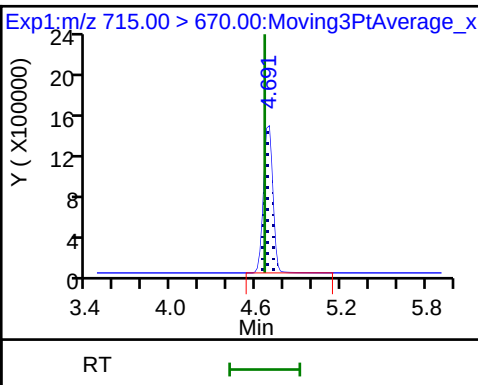
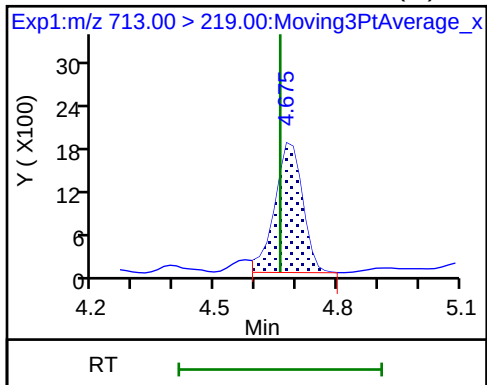
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid (M)

D 43 13C2-PFTeDA

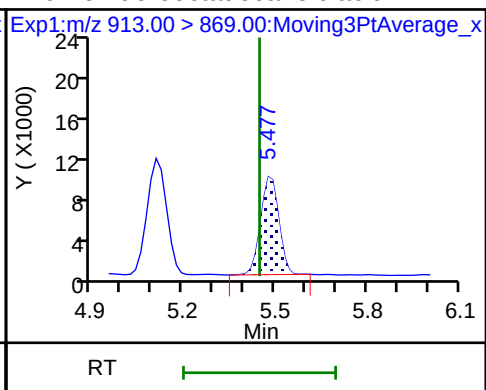
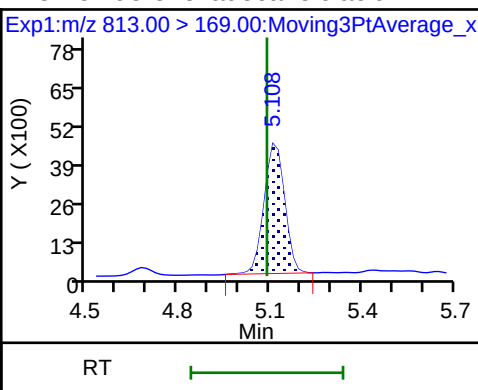
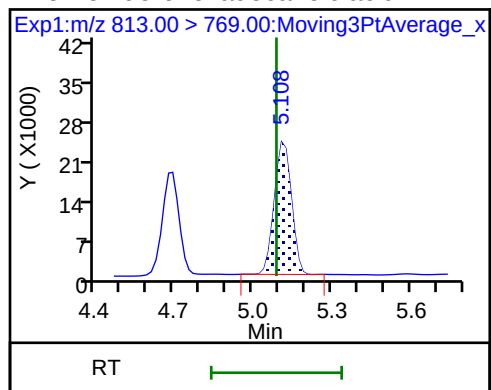
D 44 13C2-PFHxDA



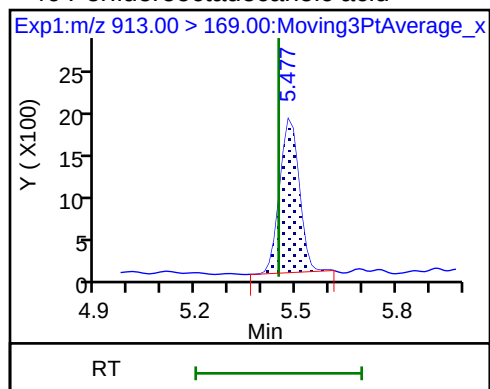
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

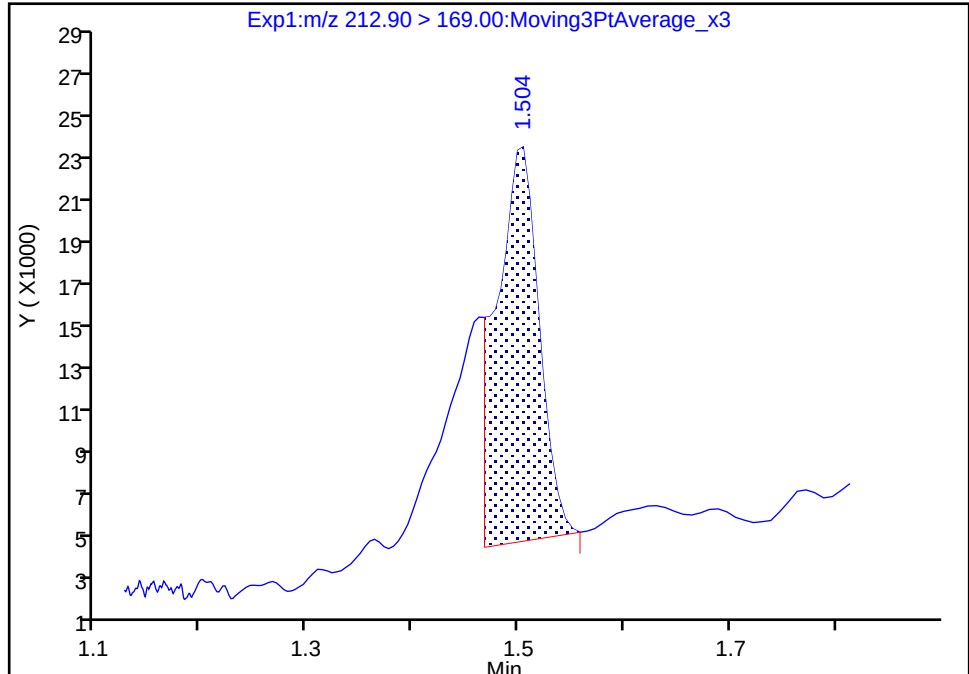
Detector: EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

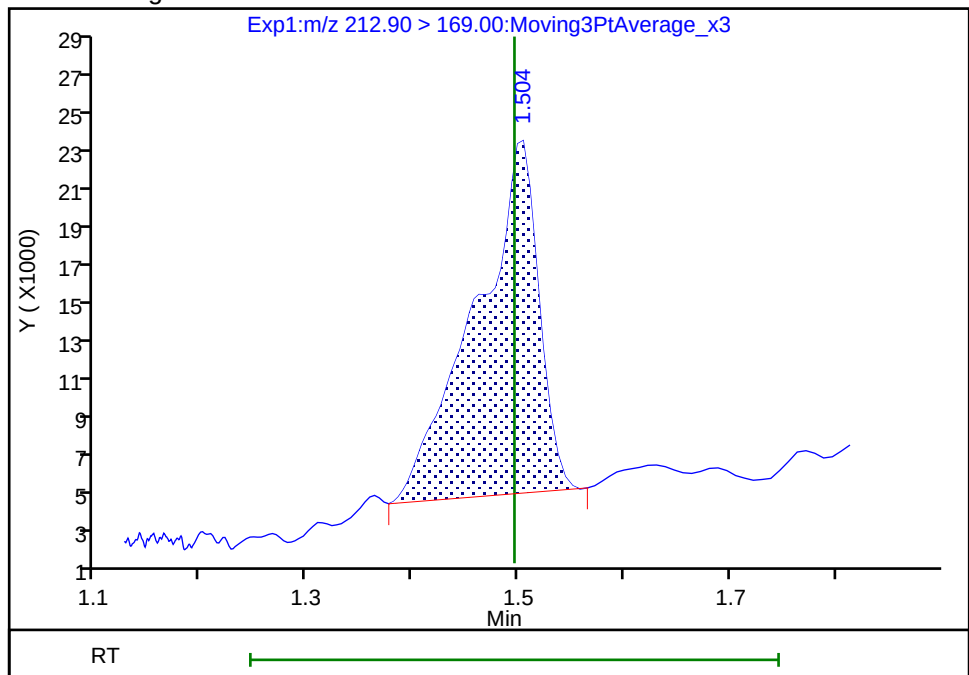
RT: 1.50
Area: 51154
Amount: 0.017430
Amount Units: ng/ml

Processing Integration Results



RT: 1.50
Area: 77055
Amount: 0.025188
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:09

Audit Action: Manually Integrated

Audit Reason: Incomplete Integration

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

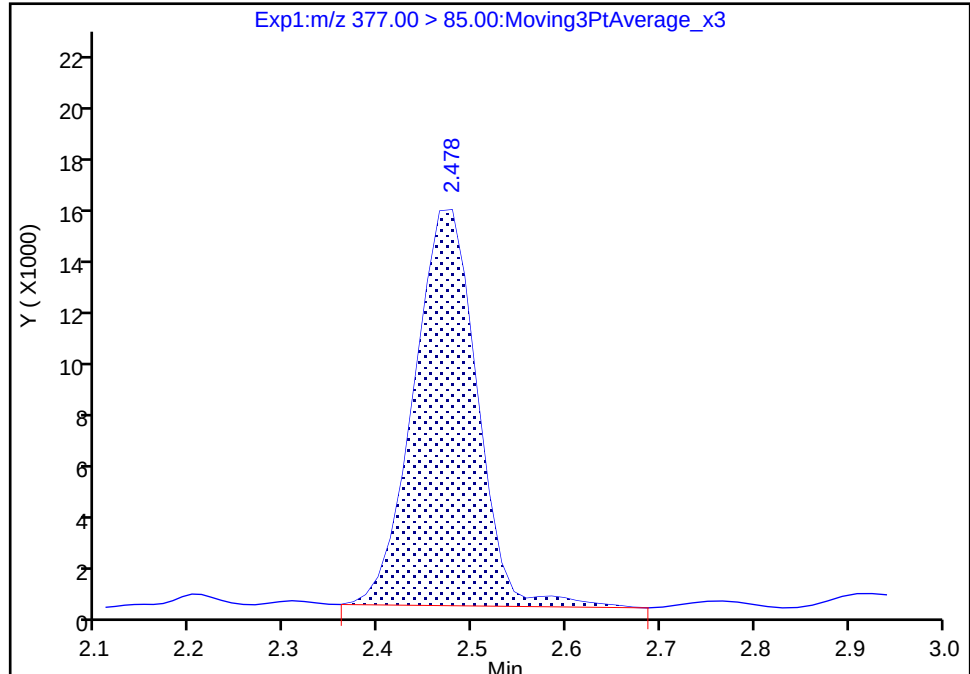
Detector: EXP1

76 DONA, CAS: 919005-14-4

Signal: 2

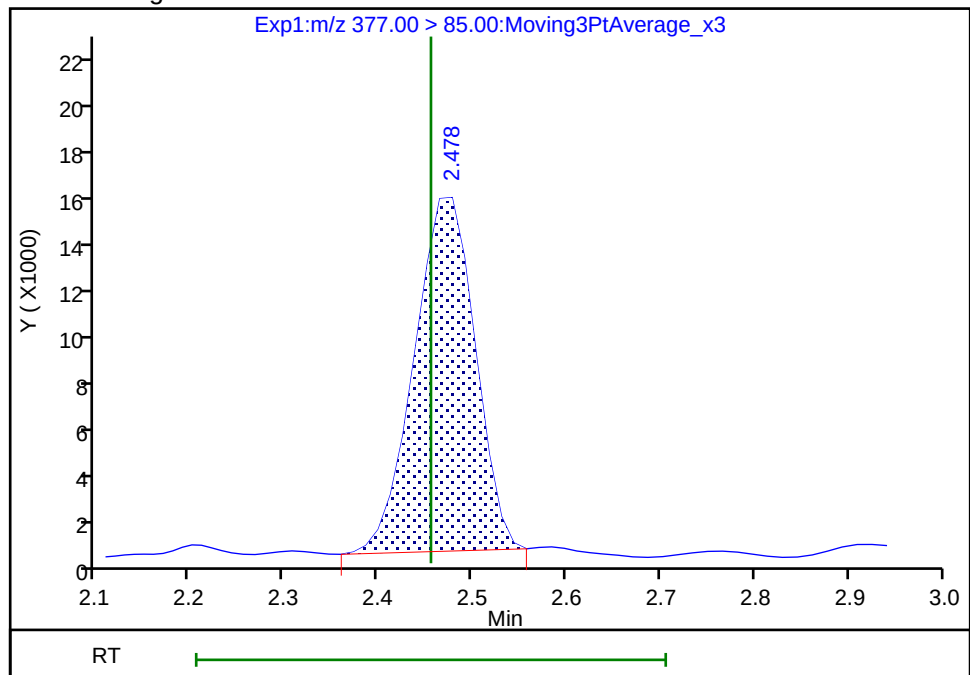
RT: 2.48
Area: 72707
Amount: 0.022502
Amount Units: ng/ml

Processing Integration Results



RT: 2.48
Area: 69199
Amount: 0.023331
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:24

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

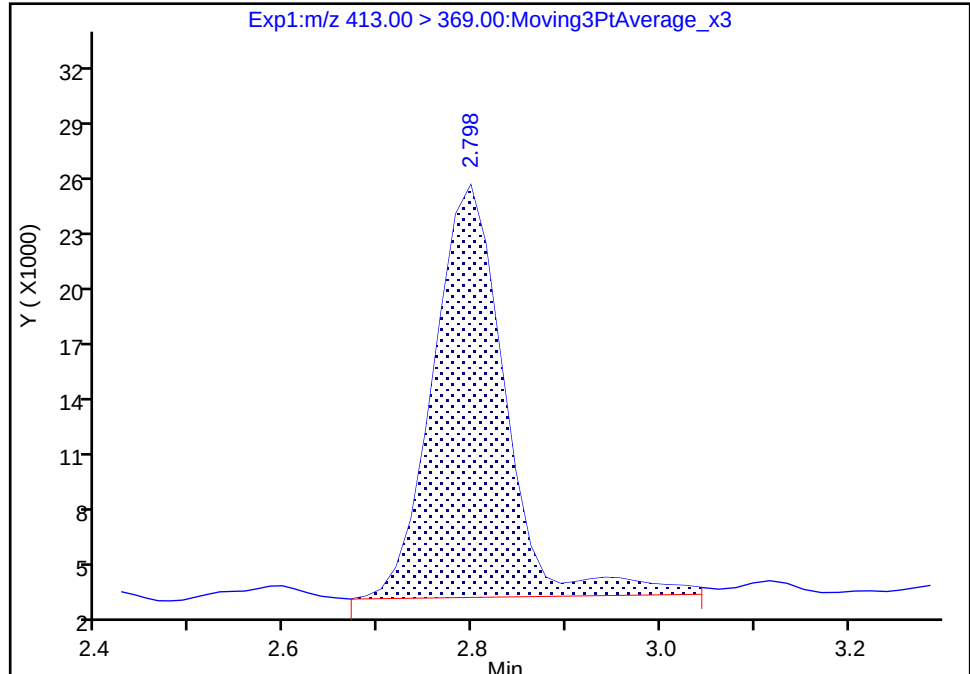
Detector: EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

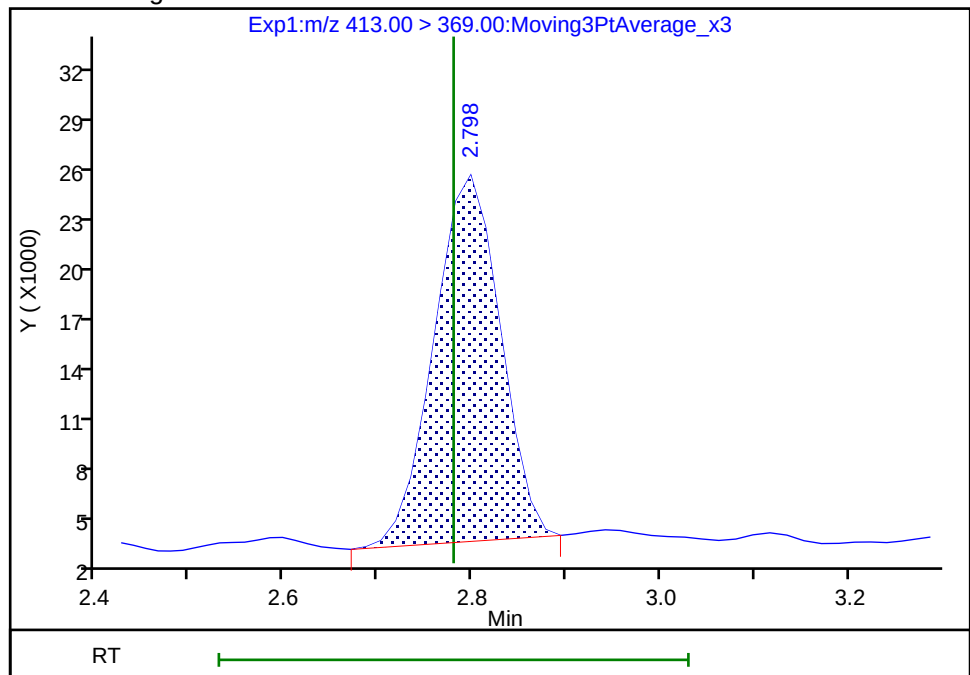
RT: 2.80
Area: 116197
Amount: 0.028612
Amount Units: ng/ml

Processing Integration Results



RT: 2.80
Area: 105397
Amount: 0.027778
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:34

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

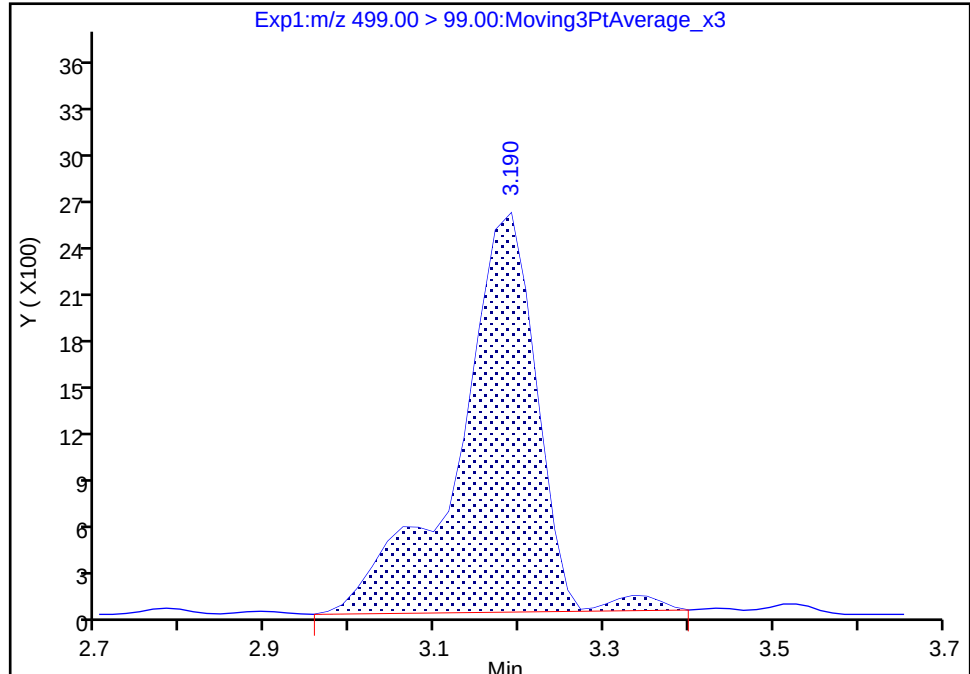
Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

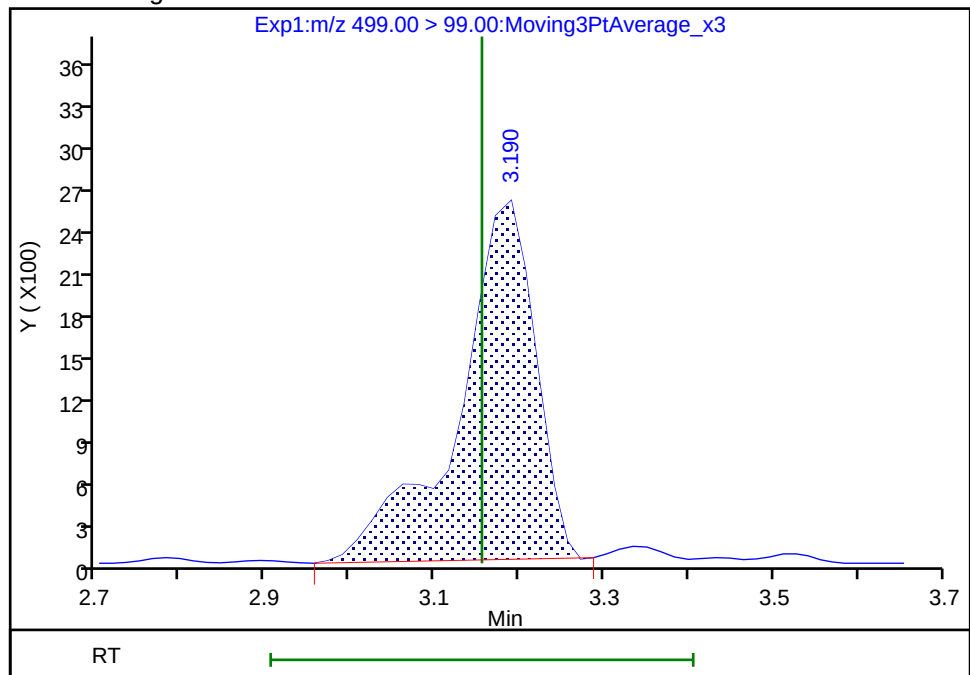
RT: 3.19
Area: 16838
Amount: 0.021539
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 16268
Amount: 0.021187
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:42

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

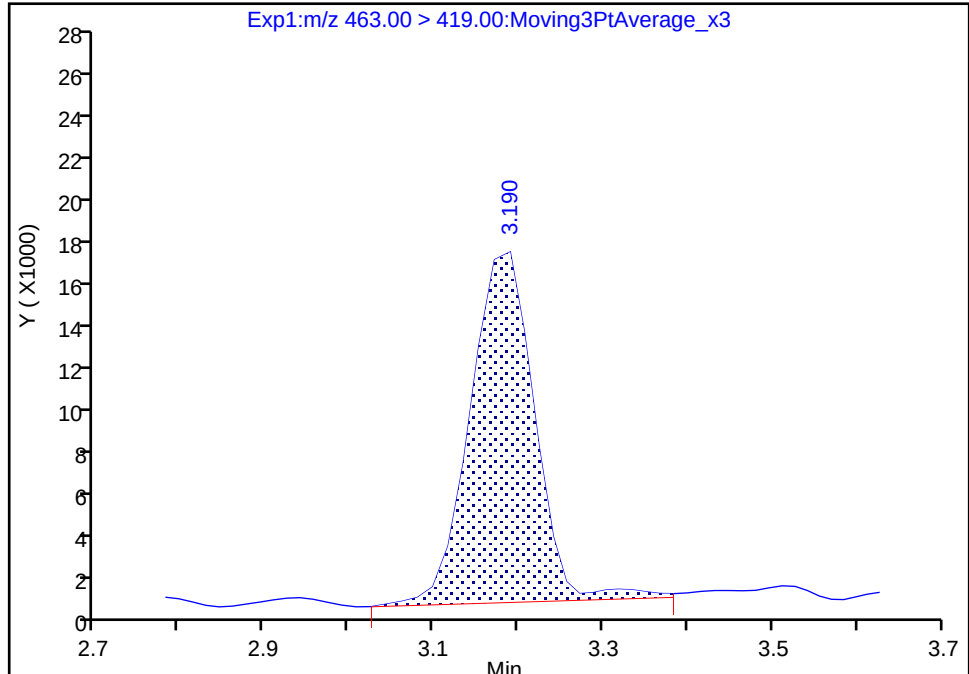
Detector: EXP1

20 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

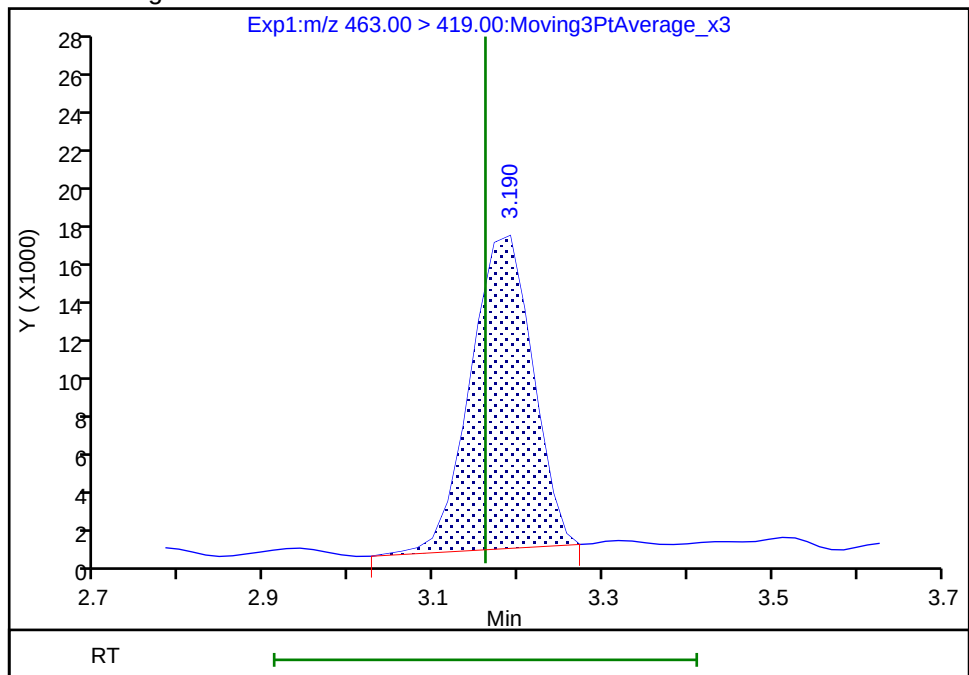
RT: 3.19
Area: 88049
Amount: 0.026347
Amount Units: ng/ml

Processing Integration Results



RT: 3.19
Area: 83336
Amount: 0.025286
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:55:50

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

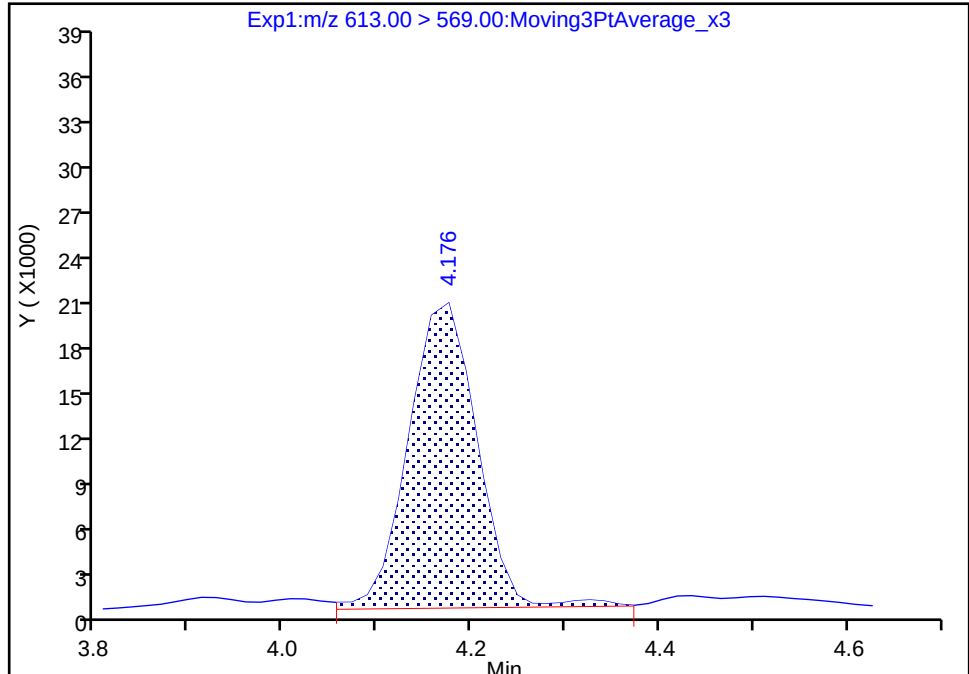
Detector EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

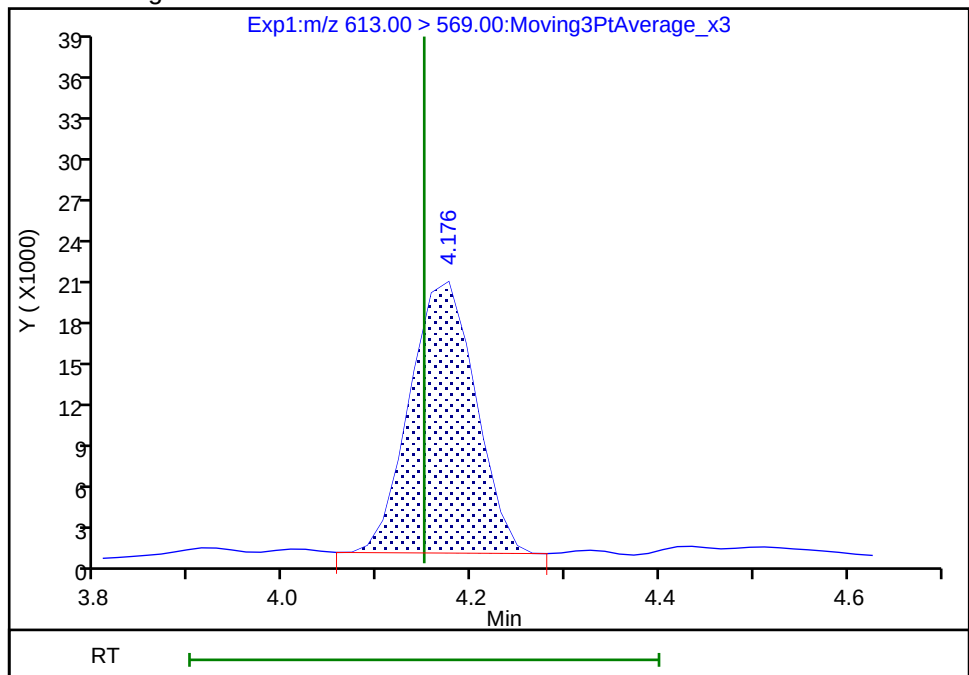
RT: 4.18
Area: 101827
Amount: 0.028510
Amount Units: ng/ml

Processing Integration Results



RT: 4.18
Area: 95815
Amount: 0.028040
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:56:10

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_005.d

Injection Date: 21-Sep-2018 13:35:59

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:

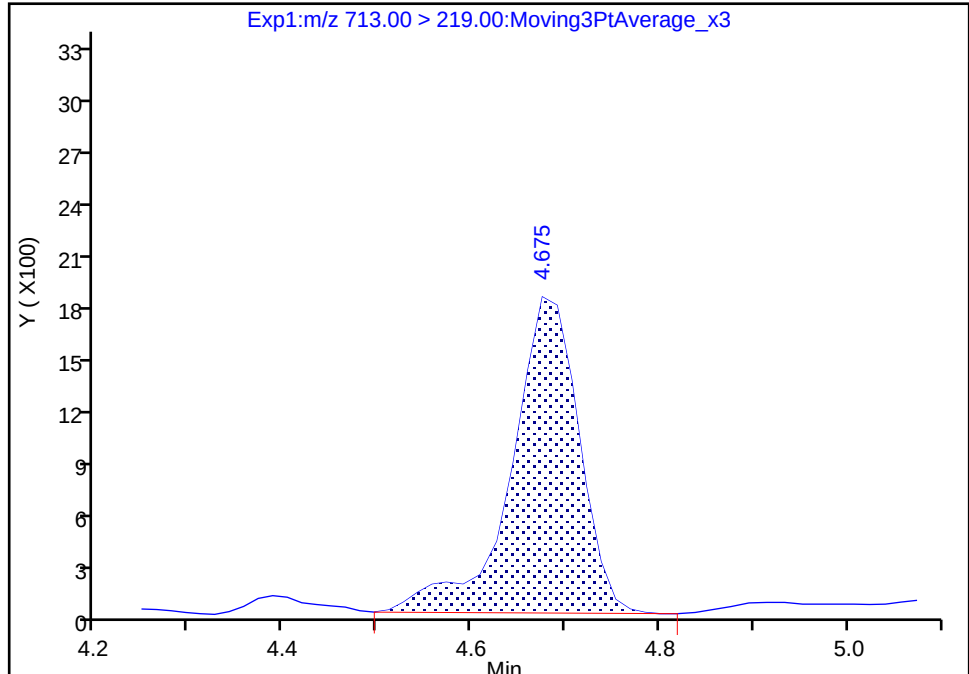
Detector EXP1

42 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 2

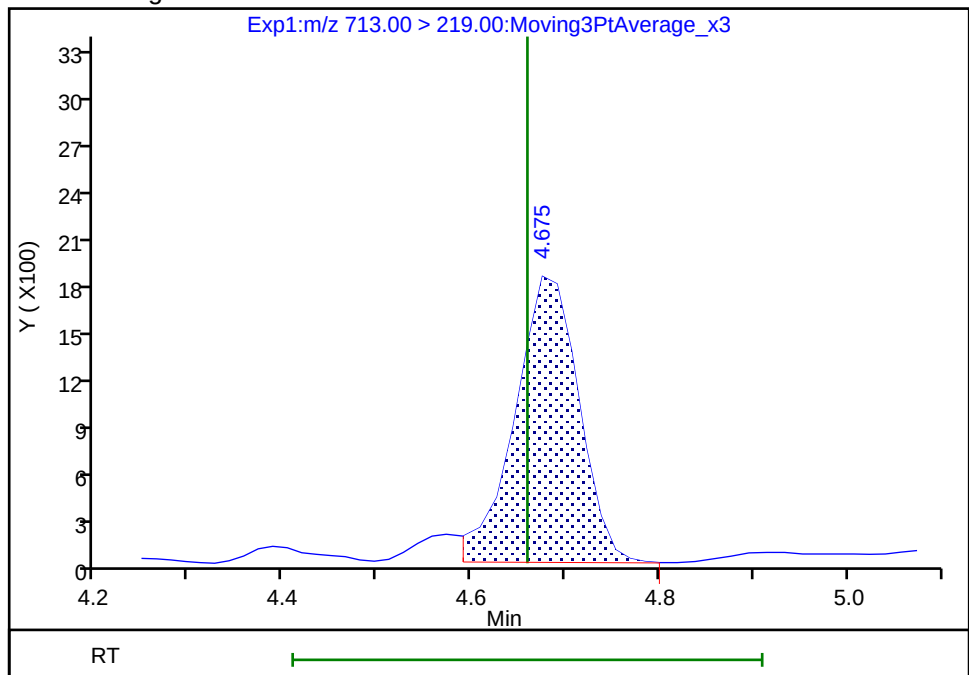
RT: 4.68
Area: 9170
Amount: 0.032950
Amount Units: ng/ml

Processing Integration Results



RT: 4.68
Area: 8623
Amount: 0.035356
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:56:31

Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_007.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 21-Sep-2018 13:51:01 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:05:47 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 14:59:57

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	1.499	1.495	0.004	0.539	8414655	2.55		102	7957	
2 Perfluorobutyric acid										
212.90 > 169.00	1.499	1.496	0.003	1.000	798416	0.2588		104	48.1	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.779	0.001	1.000	775517	0.2527		101	70.2	
D 3 13C5-PFPeA										
267.90 > 223.00	1.780	1.779	0.001	0.640	7706743	2.57		103	11953	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.818	0.004	0.655	99469	2.43		105	471	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.821	0.001	1.000	976249	0.2209		99.9	557	
298.90 > 99.00	1.822	1.821	0.001	1.000	354065		2.76(1.35-4.05)	99.9	338	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.037	2.036	0.001	1.118	234387	0.2424		104	1336	
D 60 M2-4:2FTS										
329.00 > 81.00	2.037	2.036	0.001	0.732	971040	2.60		111	1194	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.074	0.004	0.747	8063933	2.53		101	16428	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.077	0.001	1.000	738263	0.2545		102	162	
313.00 > 119.00	2.078	2.077	0.001	1.000	57603		12.82(6.96-20.87)	102	135	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.109	2.099	0.010	1.158	499950	0.2414		103	1115	
349.00 > 99.00	2.109	2.099	0.010	1.158	230966		2.16(1.15-3.45)	103	576	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.180	2.176	0.004	1.000	162786	0.2454		98.2	84.8	

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	2.180	2.178	0.002	0.784	886972	2.68		107	2339	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.425	2.412	0.013	1.000	1105629	0.2617		105	189	
363.00 > 169.00	2.425	2.412	0.013	1.000	239207		4.62(2.17-6.52)	105	470	
D 9 13C4-PFHpA										
367.00 > 322.00	2.425	2.412	0.013	0.872	9946736	2.62		105	11905	
D 11 18O2 PFHxS										
403.00 > 84.00	2.438	2.427	0.011	0.877	5771389	2.36		99.8	3947	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.438	2.427	0.011	1.000	676086	0.2201		96.7	572	
399.00 > 99.00	2.438	2.427	0.011	1.000	199421		3.39(1.90-5.70)	96.7	265	
76 DONA										
377.00 > 251.00	2.465	2.456	0.009	0.777	1777483	0.2552		108	3310	
377.00 > 85.00	2.465	2.456	0.009	0.777	778944		2.28(1.13-3.39)	108	325	
D 12 M2-6:2FTS										
429.00 > 81.00	2.766	2.752	0.014	0.994	940959	2.39		101	1712	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.752	0.014	1.000	216251	0.2502		106	728	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.768	0.014		7929046	2.58		105	9391	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.780	0.002		8965476	2.50			11800	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.780	0.002	1.000	1017840	0.2639		105	58.5	
413.00 > 169.00	2.782	2.780	0.002	1.000	349595		2.91(1.36-4.08)	105	526	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.780	0.002	1.000	9194911	2.56		102	9949	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.798	2.784	0.014	0.882	643568	0.2388		100	850	
449.00 > 99.00	2.798	2.784	0.014	0.882	153003		4.21(1.84-5.53)	100	500	
D 72 13C8 PFOS										
507.00 > 99.00	3.171	3.153	0.018		1363666	2.52		106	3945	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.155	0.016	1.140	8578709	2.63		105	10929	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.155	0.016	1.140	6293260	2.48		104	3812	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.155	0.016	1.000	651252	0.2335		101	623	
499.00 > 99.00	3.171	3.155	0.016	1.000	153161		4.25(2.04-6.12)	101	430	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.161	0.010	1.000	889492	0.2639		106	104	
463.00 > 169.00	3.171	3.161	0.010	1.000	161407		5.51(2.68-8.03)	106	361	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.369	0.014	1.067	715170	0.2432		104	1039	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.251	3486173	2.58		103	4087	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide	498.00 > 78.00	3.480	3.483	-0.003	1.000	1140400	0.2773	111	1862	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.527	3.512	0.015	1.000	181928	0.2333	97.4	918	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.527	3.512	0.015	1.112	416998	0.2379	99.1	1475	
549.00 > 99.00	3.527	3.512	0.015	1.112	67269		6.20(3.02-9.05)	99.1	371	
D 26 M2-8:2FTS	529.00 > 81.00	3.527	3.512	0.015	1.268	127051	2.55	106	672	
24 Perfluorodecanoic acid	513.00 > 469.00	3.527	3.522	0.005	1.000	1060083	0.2701	108	209	
513.00 > 169.00	3.527	3.522	0.005	1.000	68702		15.43(7.12-21.35)	108	135	
D 23 13C2 PFDA	515.00 > 470.00	3.527	3.522	0.005	1.268	8952864	2.65	106	15190	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.682	3.675	0.007	1.324	3737383	2.49	99.7	4692	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.696	3.681	0.015	1.004	385771	0.2689	108	145	M
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.838	3.834	0.004	1.210	546672	0.2427	101	794	
599.00 > 99.00	3.854	3.834	0.020	1.215	116984		4.67(2.14-6.43)	101	460	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.854	3.843	0.011	1.386	2902553	2.47	98.8	2128	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.869	3.852	0.017	1.000	666267	0.2507	100	154	
563.00 > 169.00	3.869	3.852	0.017	1.000	61993		10.75(5.24-15.72)	100	249	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.869	3.852	0.017	1.004	276010	0.2545	102	710	
D 30 13C2 PFUnA	565.00 > 520.00	3.869	3.852	0.017	1.391	7367515	2.56	103	7384	
35 MeFOSA	512.00 > 169.00	3.975	3.965	0.010		183964	NC		366	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	4.022	4.009	0.013	1.269	809080	0.2336	99.2	1976	
D 36 13C2 PFDaA	615.00 > 570.00	4.157	4.147	0.010	1.494	8816999	2.58	103	12726	
37 Perfluorododecanoic acid	613.00 > 569.00	4.157	4.149	0.008	1.000	898058	0.2544	102	206	
613.00 > 169.00	4.157	4.149	0.008	1.000	109264		8.22(4.68-14.05)	102	208	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.157	4.152	0.005	1.179	118262	0.2230	92.5	129	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.157	4.157	0.0		193385	NC		381	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.403	4.390	0.013	1.389	58138	0.2305	95.3	148	
699.00 > 99.00	4.403	4.390	0.013	1.389	107333		0.54(0.28-0.83)	95.3	427	

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	4.434	4.417	0.017	1.067	715480	0.2588		104	306	
663.00 > 169.00	4.434	4.417	0.017	1.067	124463		5.75(3.09-9.27)	104	347	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.675	4.659	0.016	1.000	105811	0.2423		96.9	317	
713.00 > 219.00	4.675	4.659	0.016	1.000	74565		1.42(0.70-2.09)	96.9	318	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.675	4.659	0.016	1.681	6647508	2.47		98.8	12336	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.091	5.084	0.007	1.830	6641856	2.47		98.8	5829	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.107	5.089	0.018	1.003	679012	0.2576		103	156	
813.00 > 169.00	5.107	5.089	0.018	1.003	120442		5.64(2.77-8.32)	103	342	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.462	5.448	0.014	1.073	458517	0.2663		107	154	
913.00 > 169.00	5.462	5.448	0.014	1.073	79655		5.76(2.55-7.64)	107	483	

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\20180921-64578.b\2018.09.21LLAICAL_007.d

Injection Date: 21-Sep-2018 13:51:01

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

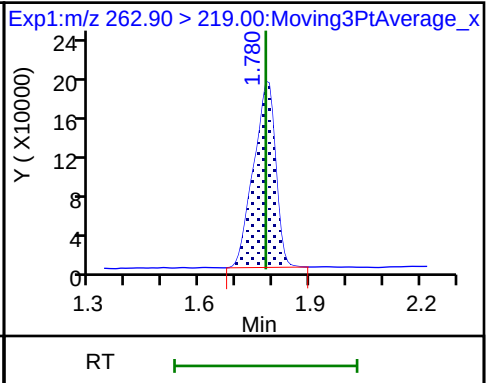
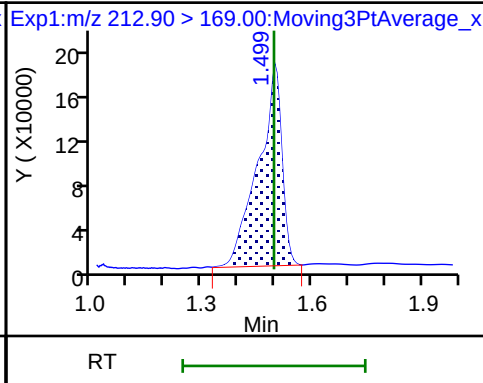
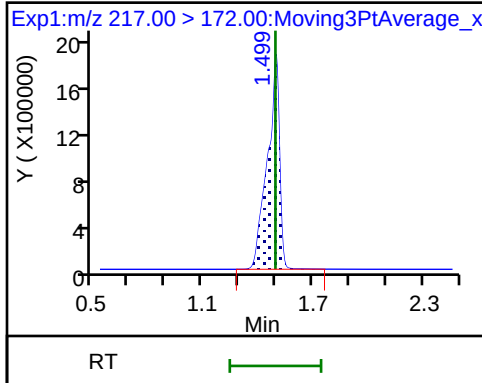
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

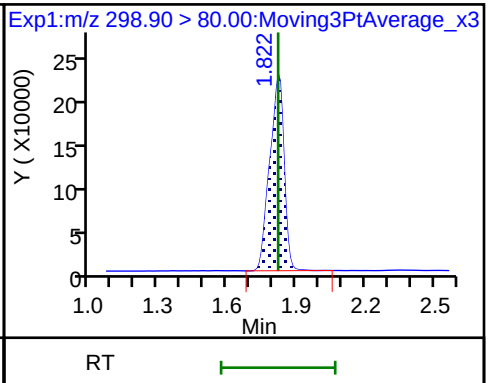
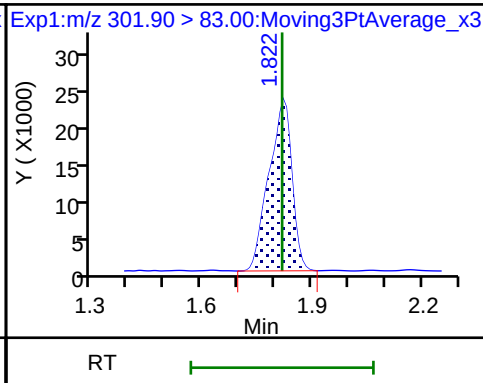
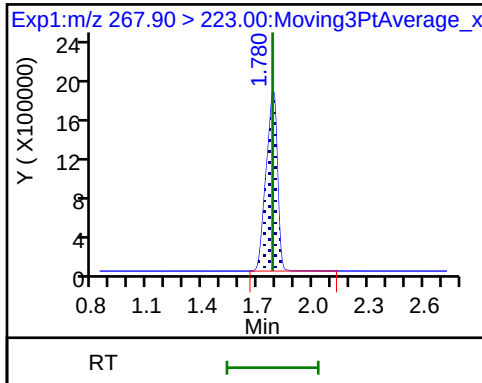
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

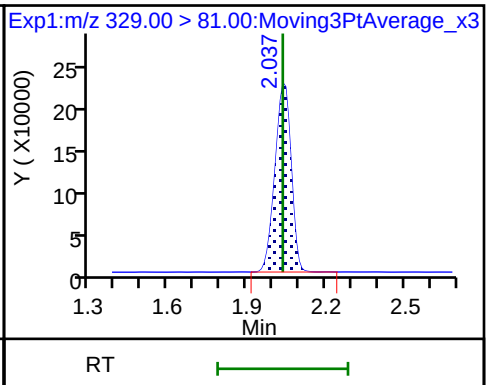
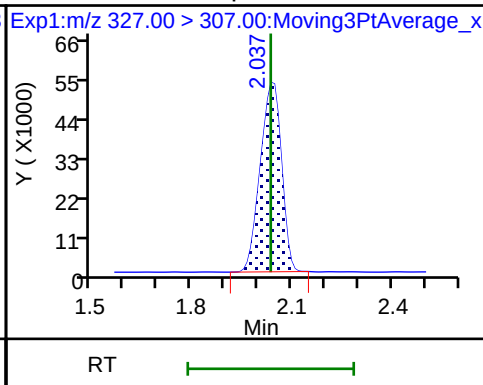
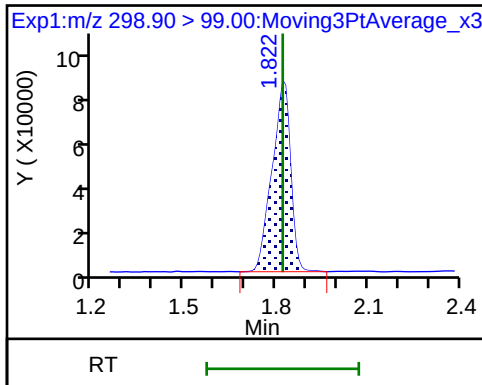
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

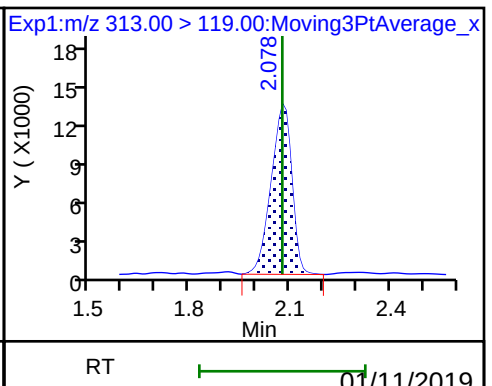
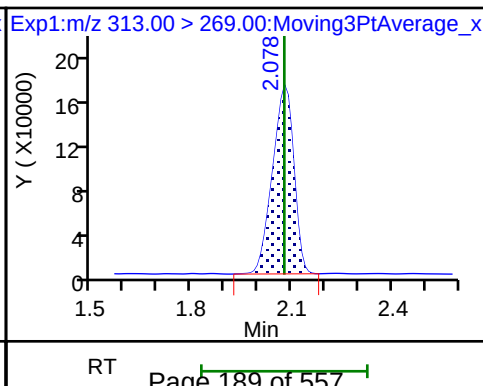
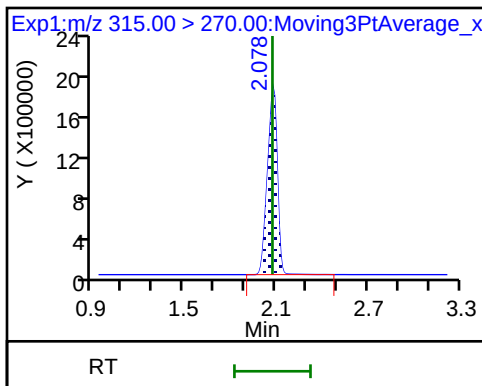
D 60 M2-4:2FTS

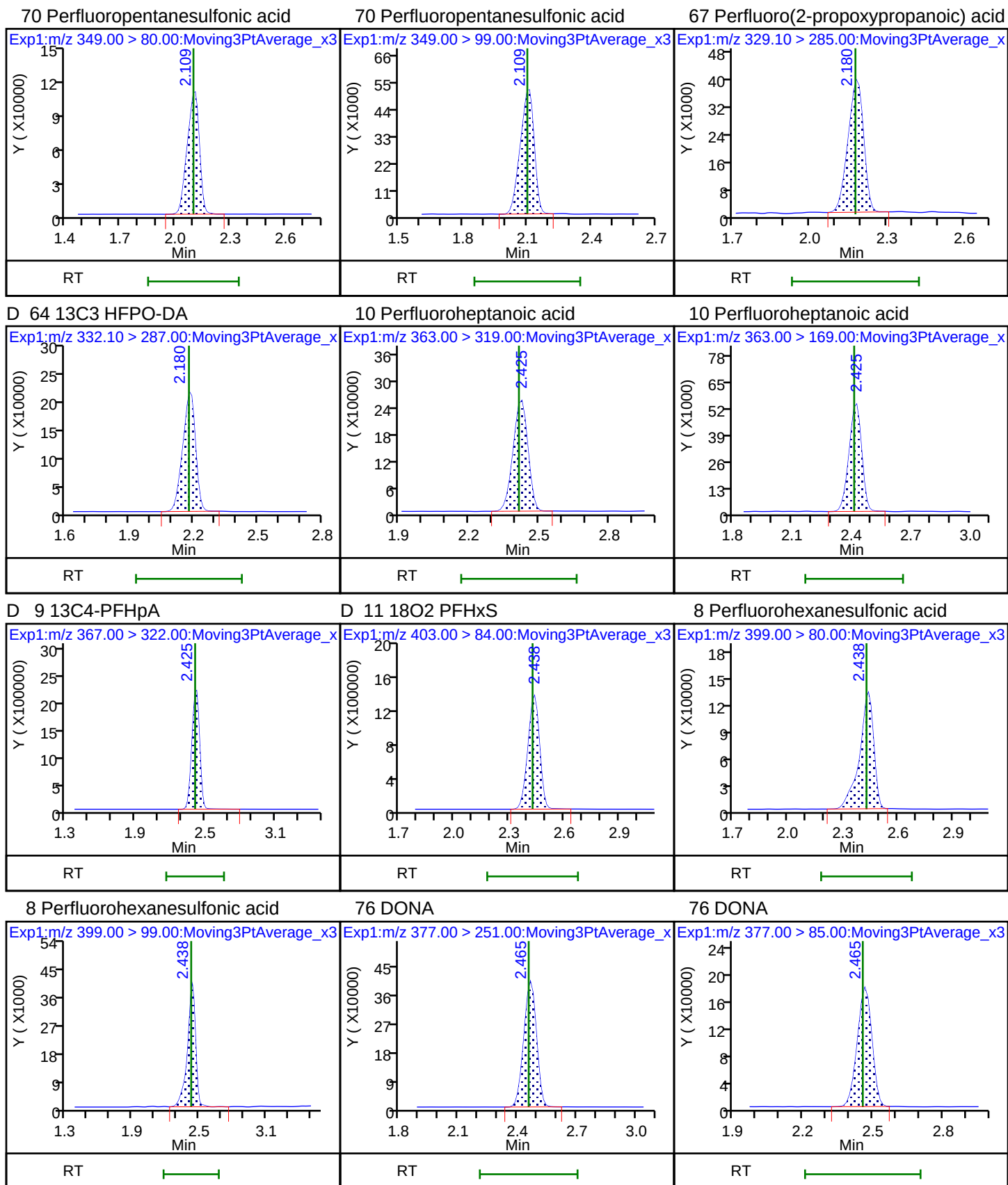


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

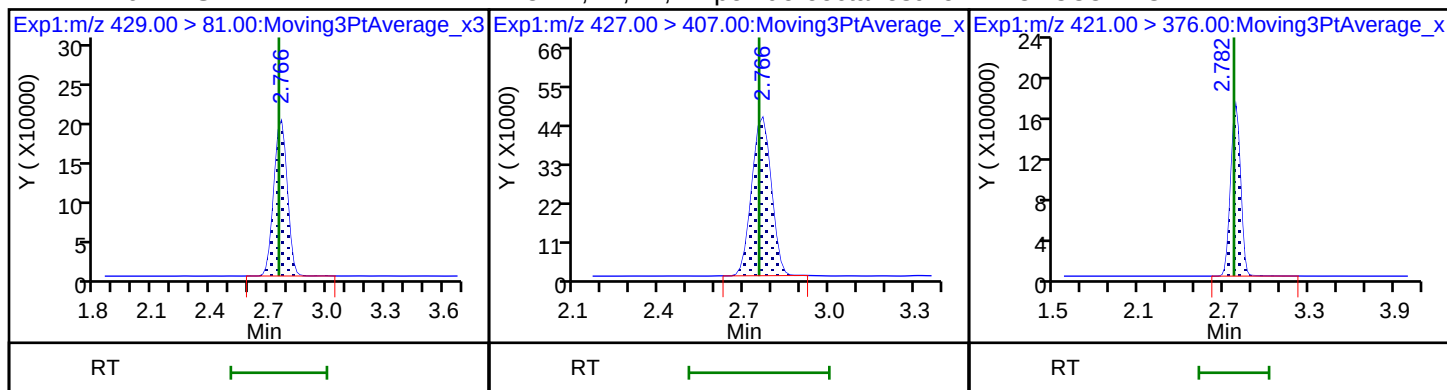
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

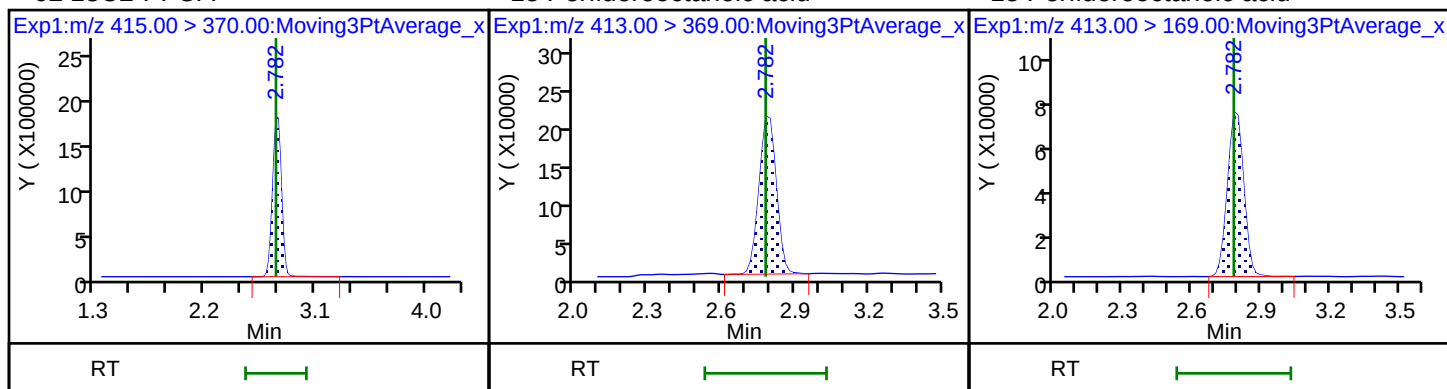
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

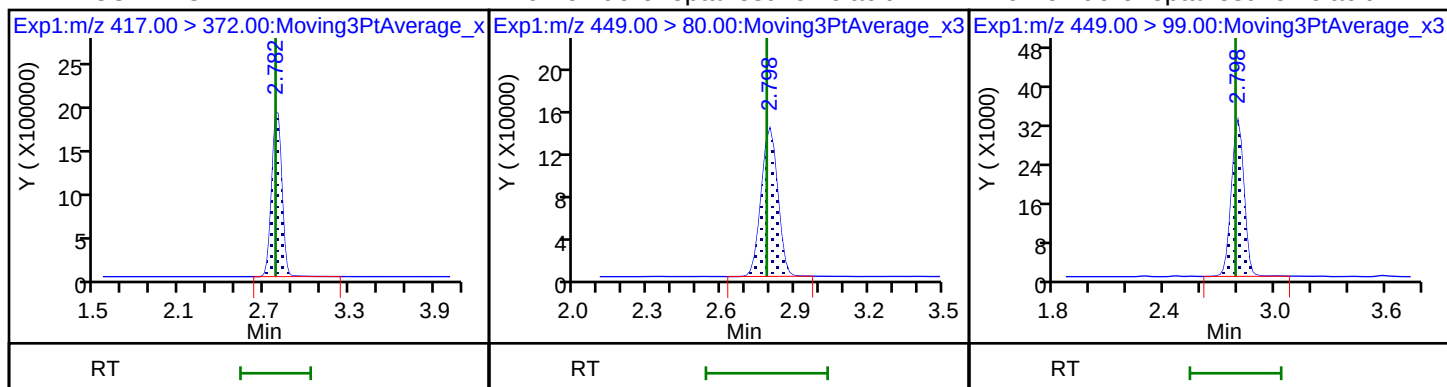
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

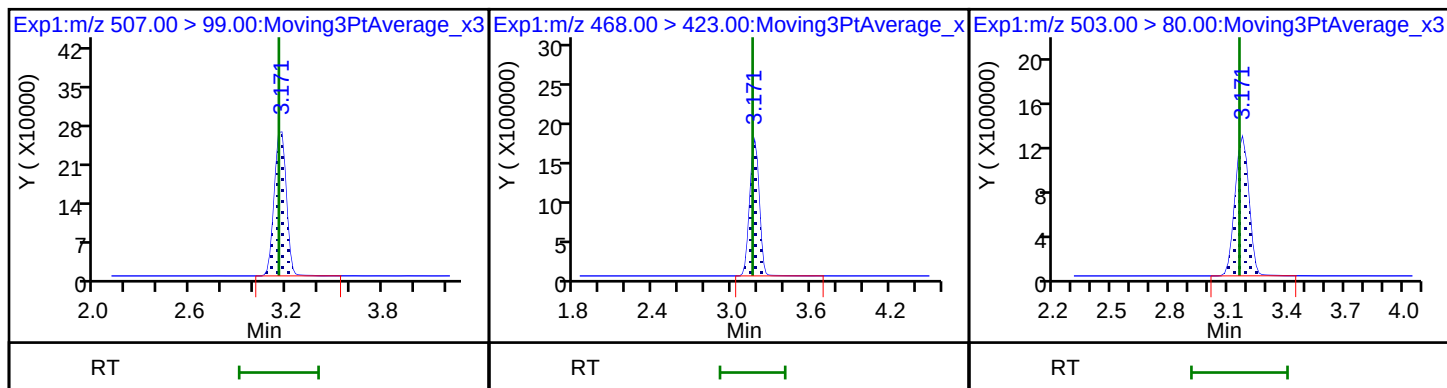
16 Perfluoroheptanesulfonic acid

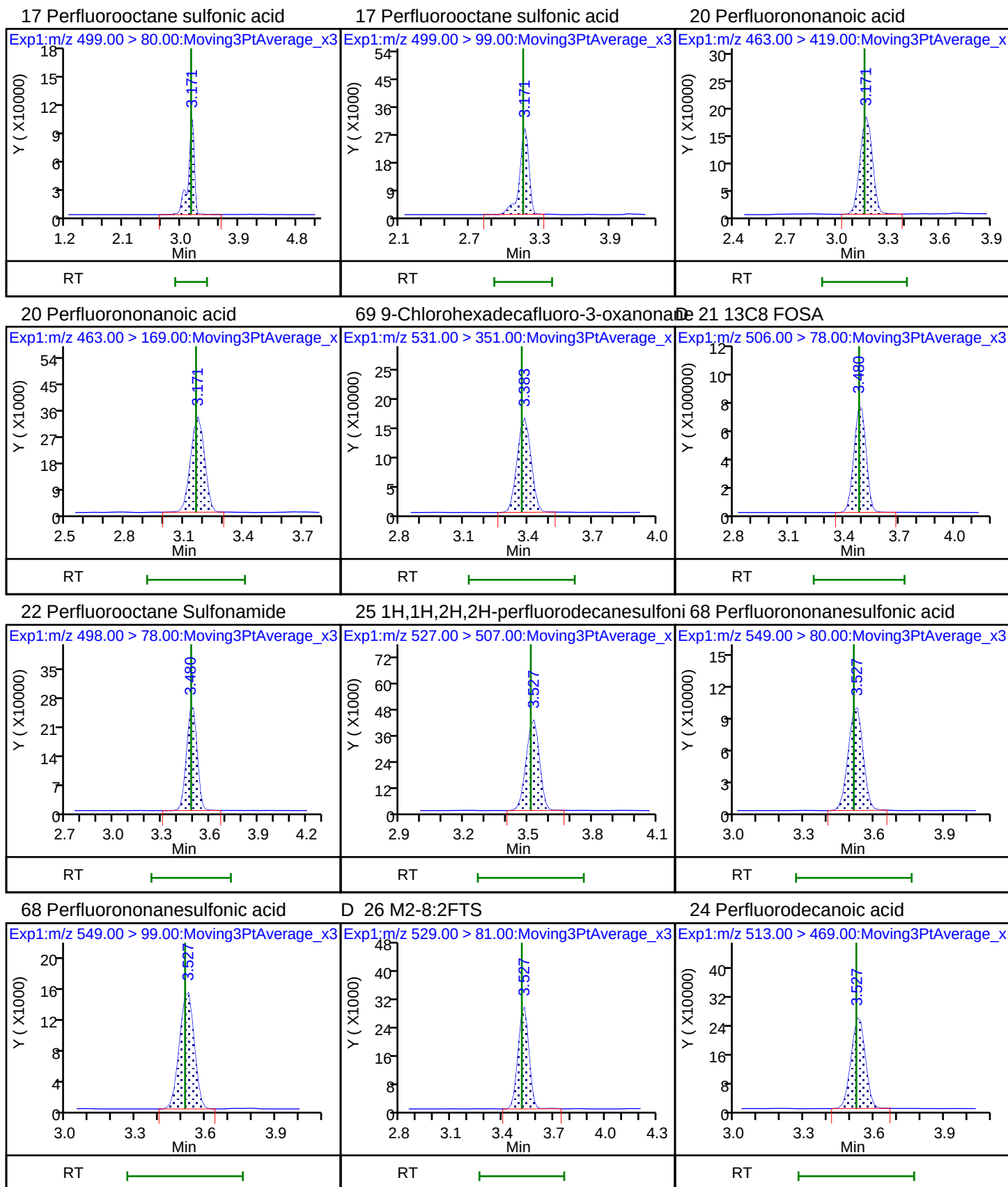


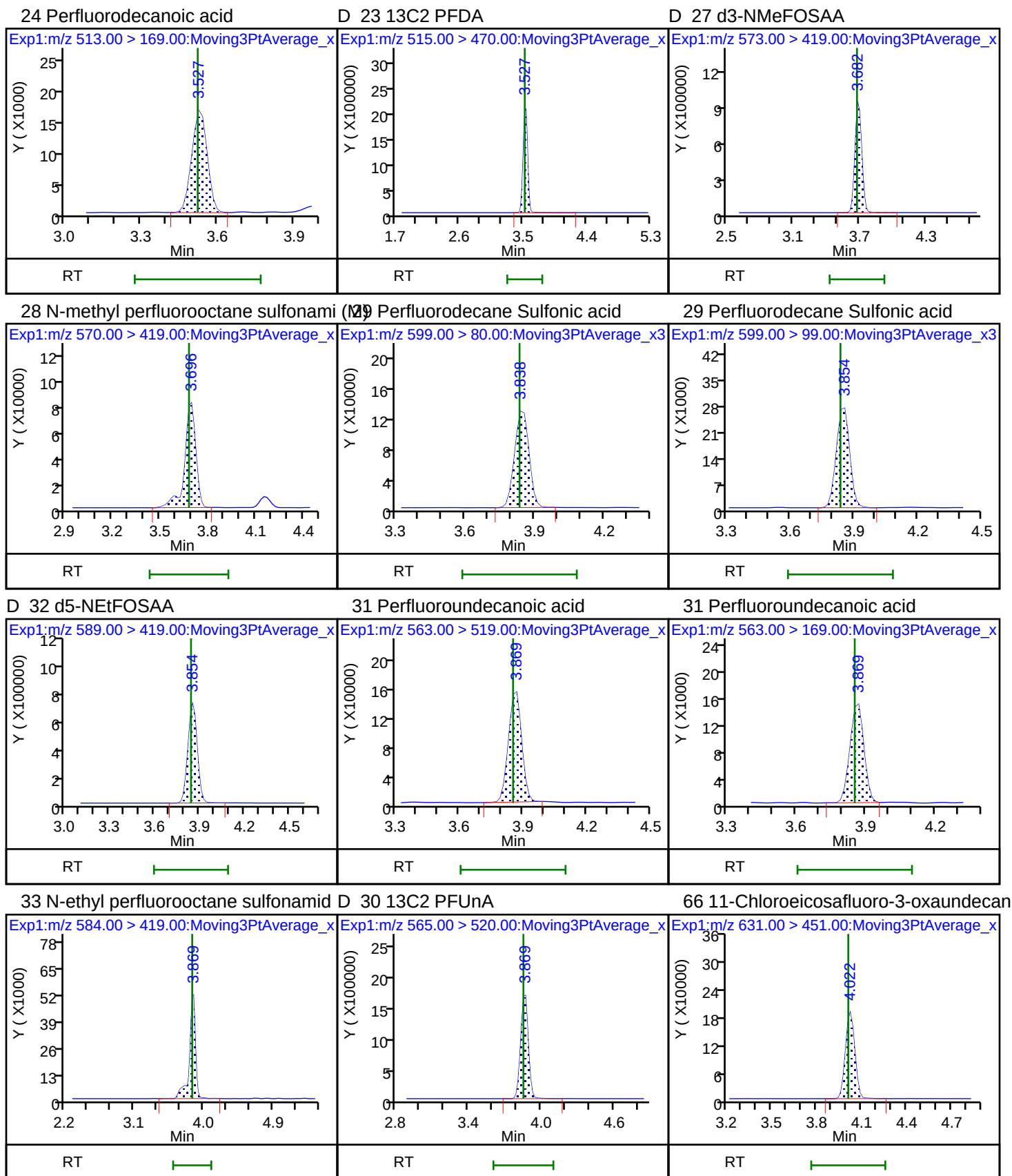
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



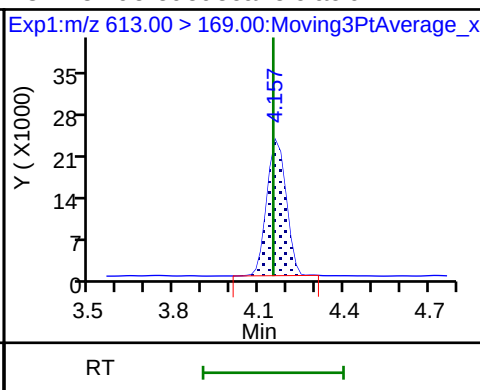
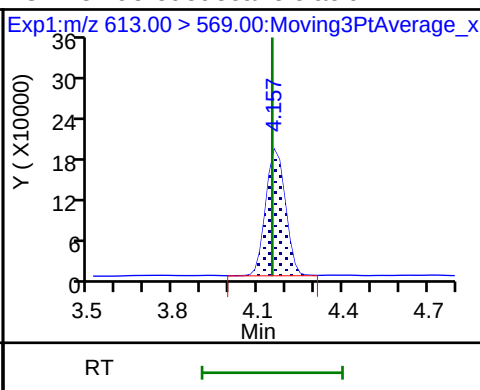
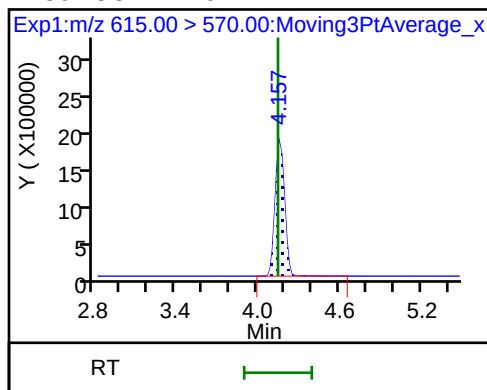




D 36 13C2 PFDaA

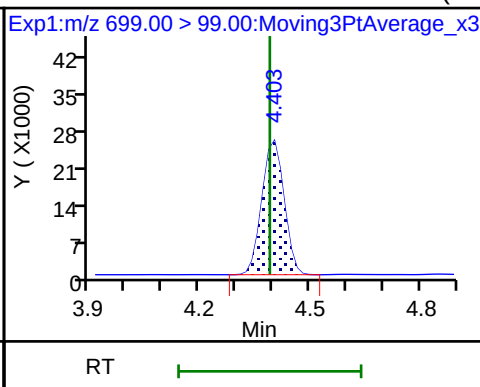
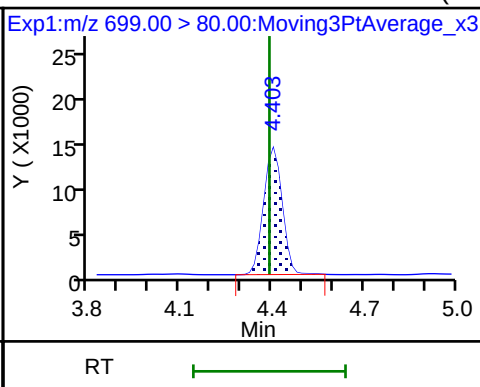
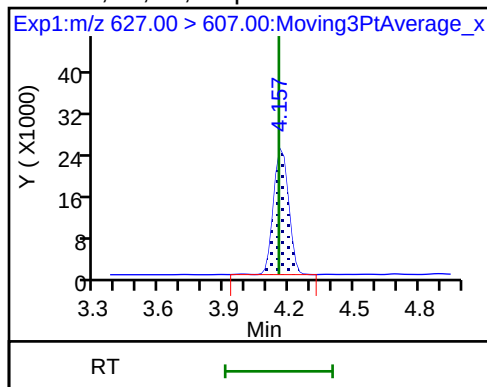
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

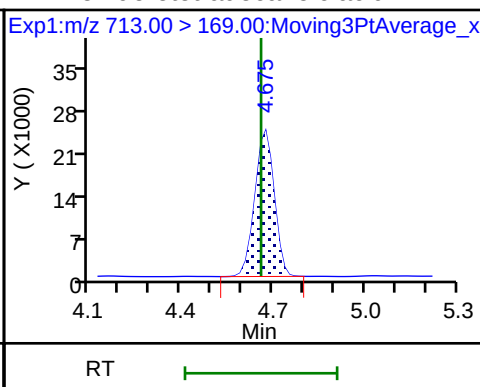
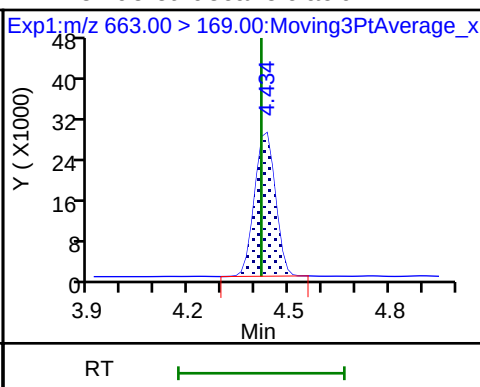
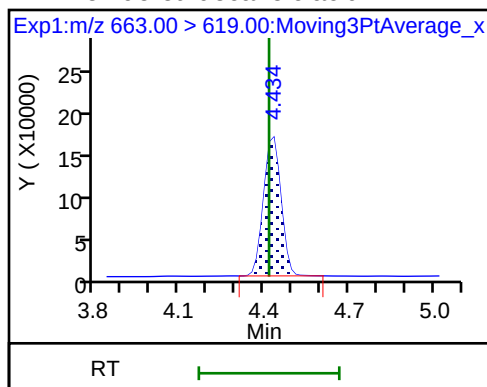
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

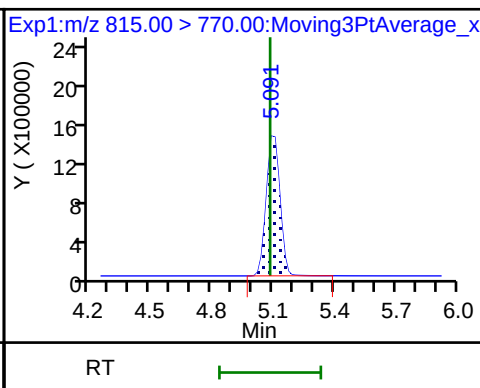
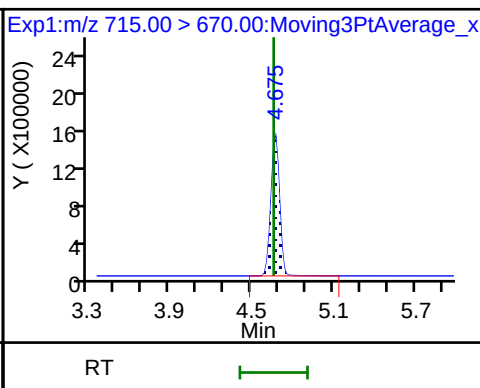
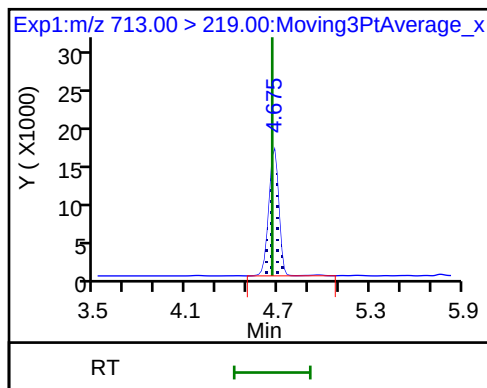
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

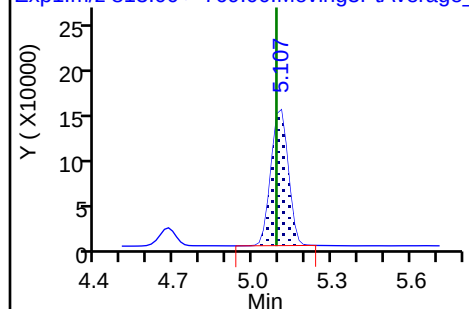


45 Perfluorohexadecanoic acid

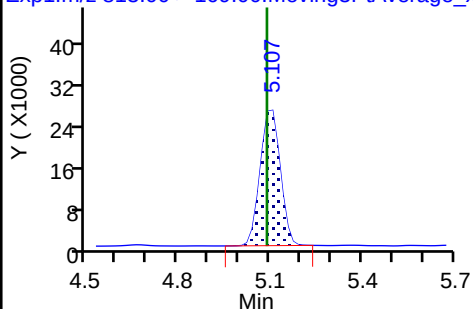
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

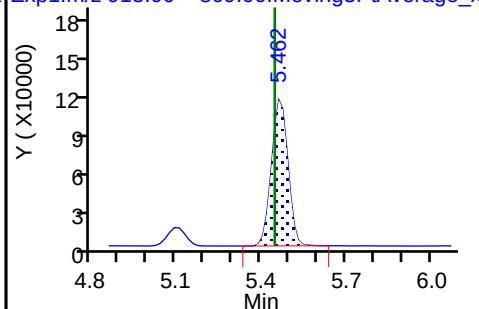
Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x



Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

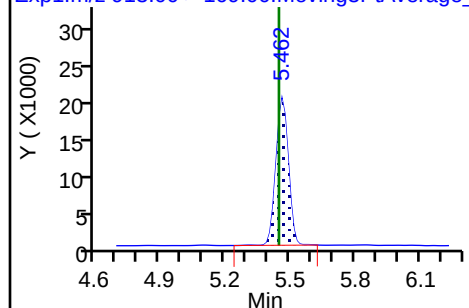


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_007.d

Injection Date: 21-Sep-2018 13:51:01

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:

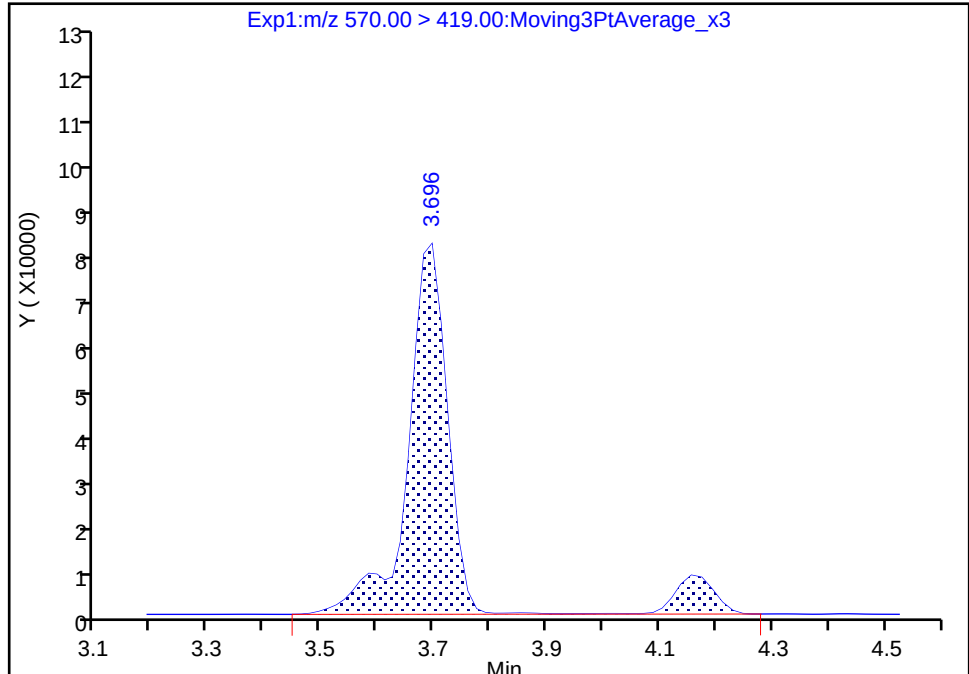
Detector: EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

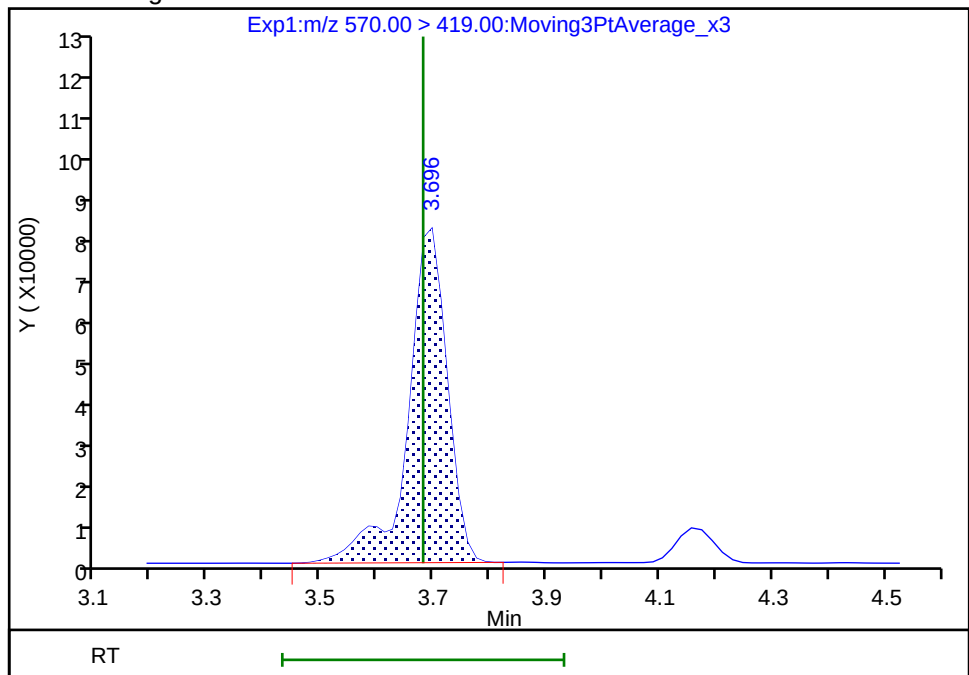
RT: 3.70
Area: 428677
Amount: 0.293426
Amount Units: ng/ml

Processing Integration Results



RT: 3.70
Area: 385771
Amount: 0.268851
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 14:59:19

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_008.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 21-Sep-2018 13:58:32 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:05:24 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: hannigana

Date: 22-Sep-2018 09:05:24

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	1.494	1.495	-0.001	0.537	7509010	2.40		95.9	17192	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.496	-0.002	1.000	2756176	1.00		100	159	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.781	1.779	0.002	1.000	2766671	0.9887		98.9	233	
D 3 13C5-PFPeA										
267.90 > 223.00	1.781	1.779	0.002	0.640	7026337	2.47		98.7	8349	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.818	-0.004	0.652	89621	2.31		99.4	437	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.821	0.001	1.005	3538619	0.8885		101	1679	
298.90 > 99.00	1.822	1.821	0.001	1.005	1238638		2.86(1.35-4.05)	101	898	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.036	0.002	1.123	798573	0.9167		98.2	3465	
D 60 M2-4:2FTS										
329.00 > 81.00	2.038	2.036	0.002	0.732	780634	2.20		94.3	769	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.074	-0.006	0.743	7286027	2.41		96.5	9407	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.077	0.001	1.005	2689169	1.03		103	571	
313.00 > 119.00	2.068	2.077	-0.009	1.000	195139		13.78(6.96-20.87)	103	509	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.157	1772705	0.9502		101	2616	
349.00 > 99.00	2.099	2.099	0.0	1.157	823512		2.15(1.15-3.45)	101	1347	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	584968	1.07		107	239	

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	2.178	0.003	0.784	727812	2.32		92.6	1856	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.412	0.001	1.000	3682041	0.9409		94.1	493	
363.00 > 169.00	2.413	2.412	0.001	1.000	867165		4.25(2.17-6.52)	94.1	1601	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.412	0.001	0.867	9212621	2.56		103	11611	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.427	-0.001	0.872	5334919	2.30		97.3	3153	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.427	-0.001	1.000	2572211	0.9059		99.5	1966	
399.00 > 99.00	2.426	2.427	-0.001	1.000	688090		3.74(1.90-5.70)	99.5	849	
76 DONA										
377.00 > 251.00	2.452	2.456	-0.004	0.778	6677901	1.06		112	10264	
377.00 > 85.00	2.452	2.456	-0.004	0.778	2831100		2.36(1.13-3.39)	112	1142	
D 12 M2-6:2FTS										
429.00 > 81.00	2.750	2.752	-0.002	0.989	879255	2.36		99.2	1184	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.752	-0.002	1.000	699961	0.8666		91.4	1449	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.768	-0.002		7071816	2.30		94.0	10554	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.780	0.002		8503409	2.50			13354	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.780	0.002	1.000	3578089	1.06		106	208	
413.00 > 169.00	2.782	2.780	0.002	1.000	1213614		2.95(1.36-4.08)	106	1796	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.780	0.002	1.000	8024393	2.36		94.3	7560	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.784	-0.002	0.882	2375847	0.9732		102	2430	
449.00 > 99.00	2.782	2.784	-0.002	0.882	523272		4.54(1.84-5.53)	102	986	
D 72 13C8 PFOS										
507.00 > 99.00	3.153	3.153	0.0		1245886	2.31		96.4	3469	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.155	-0.002	1.133	7501183	2.42		96.9	3940	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.155	-0.002	1.133	5699757	2.37		99.2	3625	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.153	3.155	-0.002	1.000	2449918	0.9698		105	1924	
499.00 > 99.00	3.153	3.155	-0.002	1.000	575909		4.25(2.04-6.12)	105	1309	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.161	-0.008	1.000	3140933	1.07		107	357	
463.00 > 169.00	3.153	3.161	-0.008	1.000	595490		5.27(2.68-8.03)	107	1225	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.367	3.369	-0.002	1.068	2686654	1.01		108	3117	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.251	3218888	2.51		100	5236	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide	498.00 > 78.00	3.480	3.483	-0.003	1.000	4247372	1.12	112	4775	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.512	3.512	0.0	1.000	652901	0.9086	94.8	2662	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.512	3.512	0.0	1.114	1523710	0.9599	100.0	2638	
549.00 > 99.00	3.512	3.512	0.0	1.114	287498		5.30(3.02-9.05)	100.0	1222	
D 26 M2-8:2FTS	529.00 > 81.00	3.512	3.512	0.0	1.262	117069	2.48	103	539	
24 Perfluorodecanoic acid	513.00 > 469.00	3.527	3.522	0.005	1.000	3882763	1.06	106	710	
513.00 > 169.00	3.527	3.522	0.005	1.000	258846		15.00(7.12-21.35)	106	340	
D 23 13C2 PFDA	515.00 > 470.00	3.527	3.522	0.005	1.268	8385003	2.61	105	8716	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.683	3.675	0.008	1.324	3367819	2.37	94.7	3923	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.683	3.681	0.002	1.000	1354726	1.05	105	395	M
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.839	3.834	0.005	1.218	2055868	1.01	105	1820	
599.00 > 99.00	3.839	3.834	0.005	1.218	402420		5.11(2.14-6.43)	105	1046	M
D 32 d5-NEtFOSAA	589.00 > 419.00	3.839	3.843	-0.004	1.380	2849760	2.56	102	2401	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.855	3.852	0.002	1.000	2658767	0.9759	97.6	564	
563.00 > 169.00	3.855	3.852	0.002	1.000	237039		11.22(5.24-15.72)	97.6	948	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.855	3.852	0.002	1.004	1094595	1.03	103	1717	
D 30 13C2 PFUnA	565.00 > 520.00	3.855	3.852	0.002	1.385	7553155	2.77	111	9381	
35 MeFOSA	512.00 > 169.00	3.960	3.965	-0.005		671718	NC		759	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	4.007	4.009	-0.002	1.271	3057280	0.9745	103	4832	
D 36 13C2 PFDaA	615.00 > 570.00	4.157	4.147	0.010	1.494	8091461	2.50	99.9	5699	
37 Perfluorododecanoic acid	613.00 > 569.00	4.157	4.149	0.008	1.000	3435967	1.06	106	708	
613.00 > 169.00	4.157	4.149	0.008	1.000	356569		9.64(4.68-14.05)	106	475	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.157	4.152	0.005	1.184	415059	0.8495	88.1	618	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.157	4.157	0.0		744799	NC		448	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.388	4.390	-0.002	1.392	215875	0.9451	97.6	574	
699.00 > 99.00	4.388	4.390	-0.002	1.392	377045		0.57(0.28-0.83)	97.6	1096	

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	4.419	4.417	0.002	1.063	2750053	1.08		108	1067	
663.00 > 169.00	4.419	4.417	0.002	1.063	464155		5.92(3.09-9.27)	108	1506	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.659	0.001	1.000	425772	0.9849		98.5	1247	
713.00 > 219.00	4.660	4.659	0.001	1.000	323007		1.32(0.70-2.09)	98.5	1124	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.659	0.001	1.675	6579603	2.58		103	10168	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.091	5.084	0.007	1.830	6578080	2.58		103	8758	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.091	5.089	0.002	1.000	2422100	0.99		99.2	552	
813.00 > 169.00	5.091	5.089	0.002	1.000	421868		5.74(2.77-8.32)	99.2	1074	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.447	5.448	-0.001	1.070	1670958	0.9800		98.0	525	
913.00 > 169.00	5.447	5.448	-0.001	1.070	303868		5.50(2.55-7.64)	98.0	1248	

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\A9\20180921-64578.b\2018.09.21LLAICAL_008.d

Injection Date: 21-Sep-2018 13:58:32

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

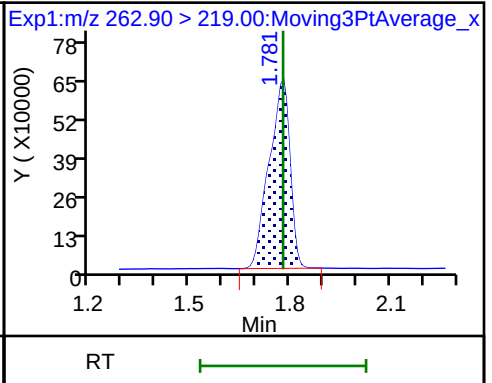
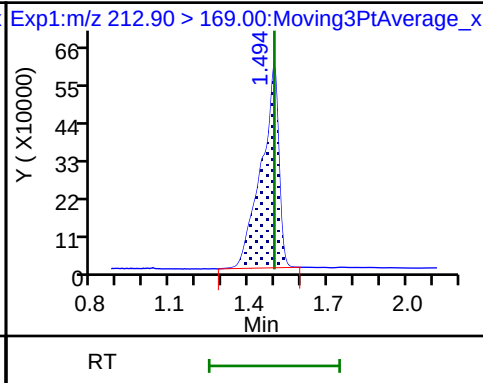
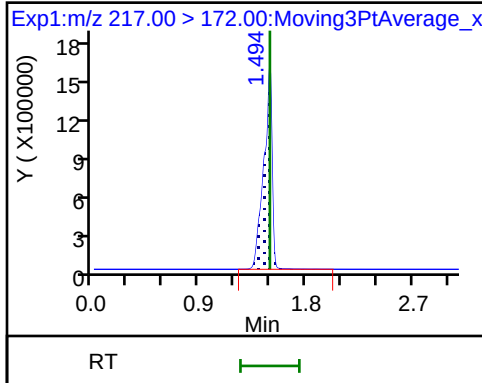
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

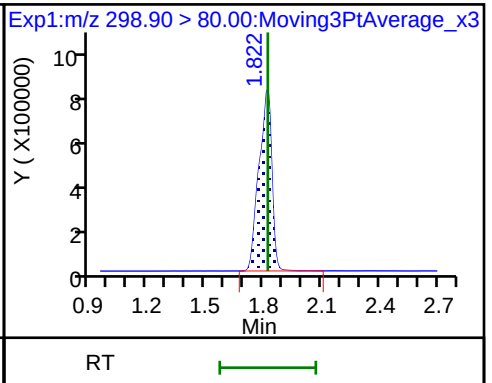
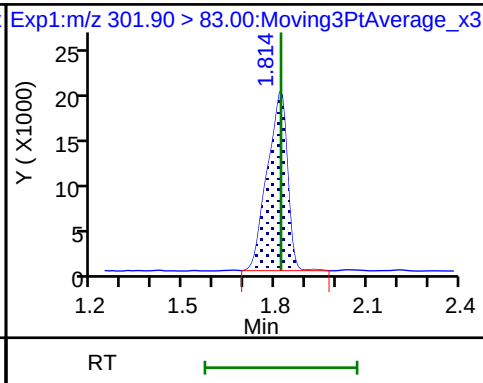
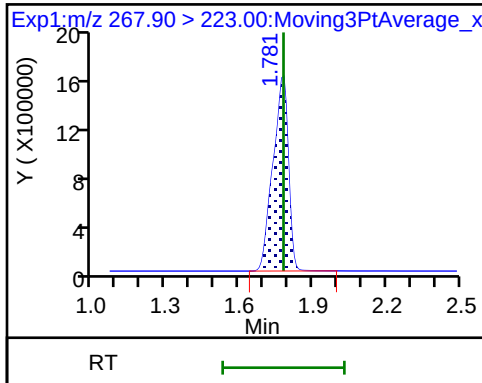
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

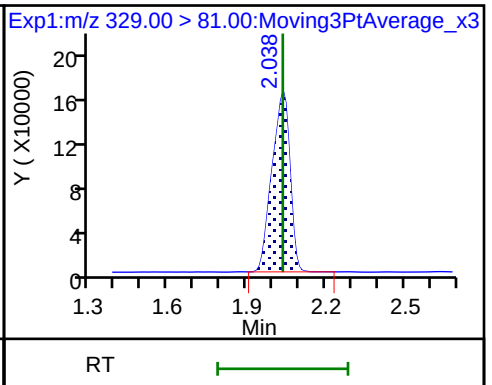
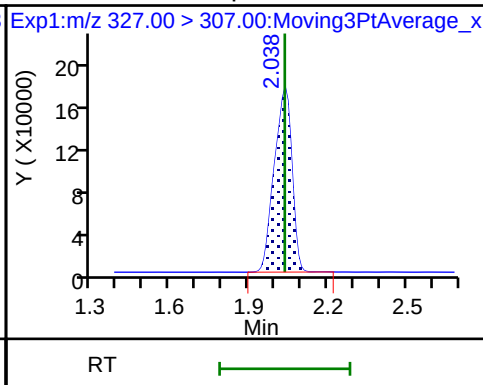
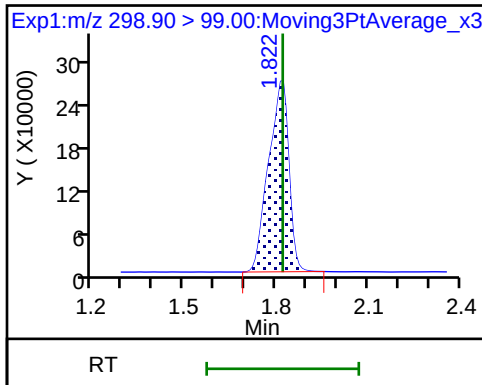
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

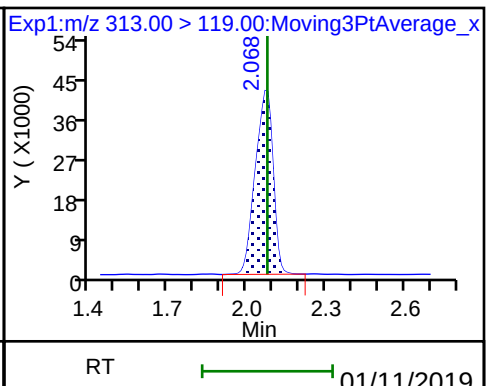
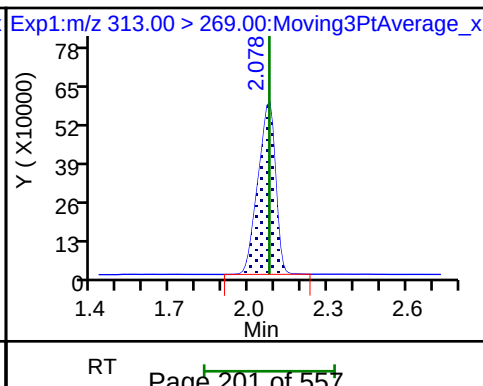
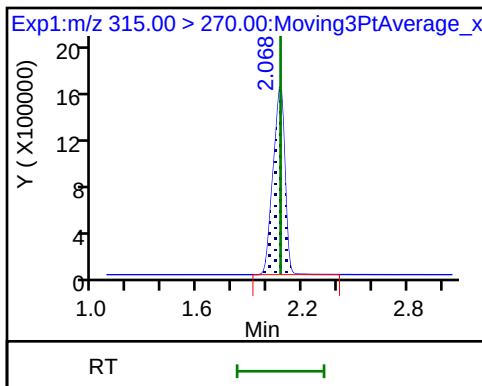
D 60 M2-4:2FTS

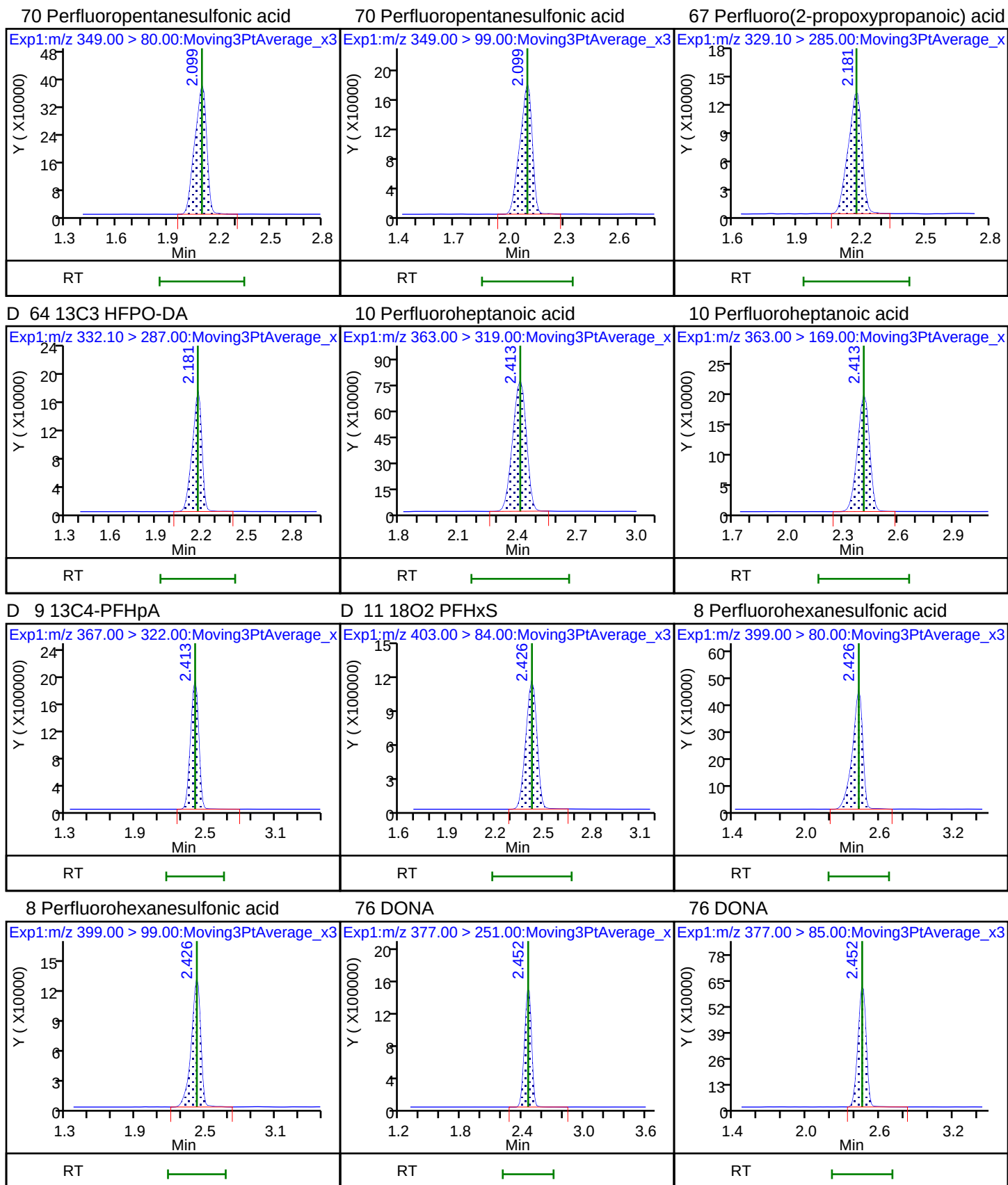


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

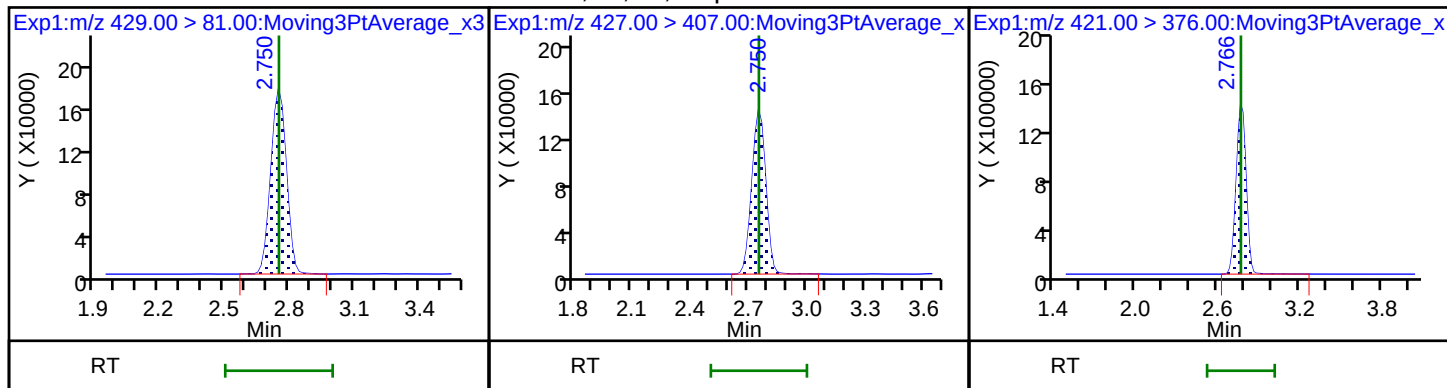
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

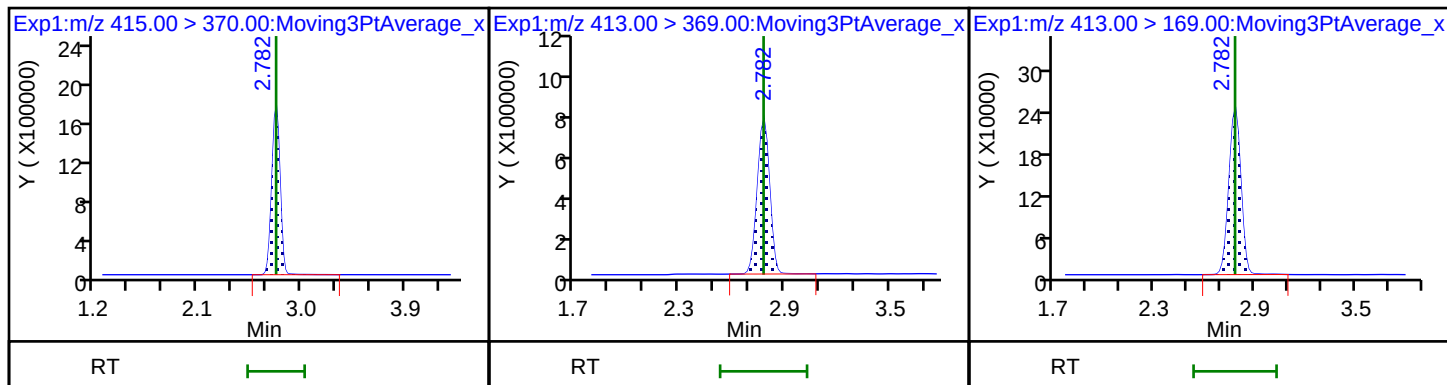
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

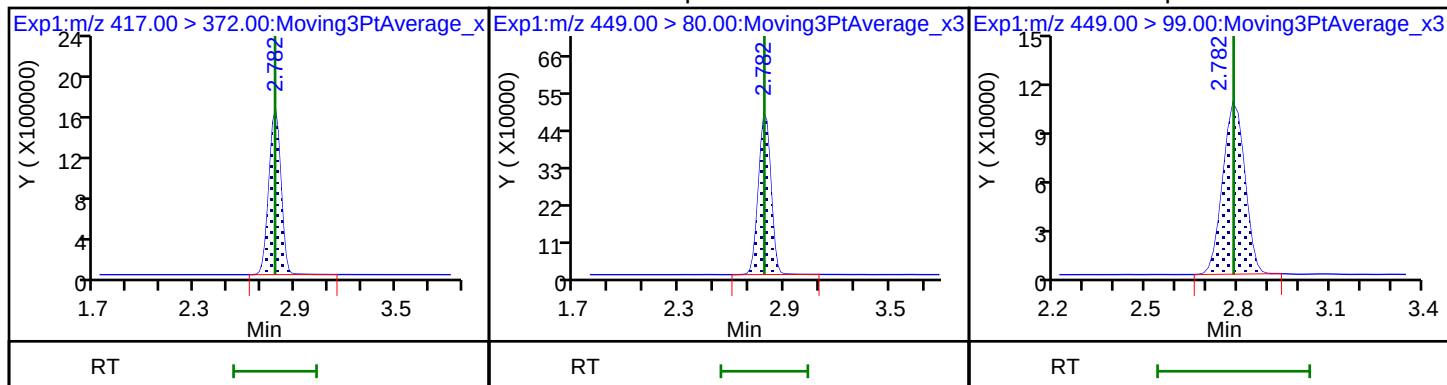
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

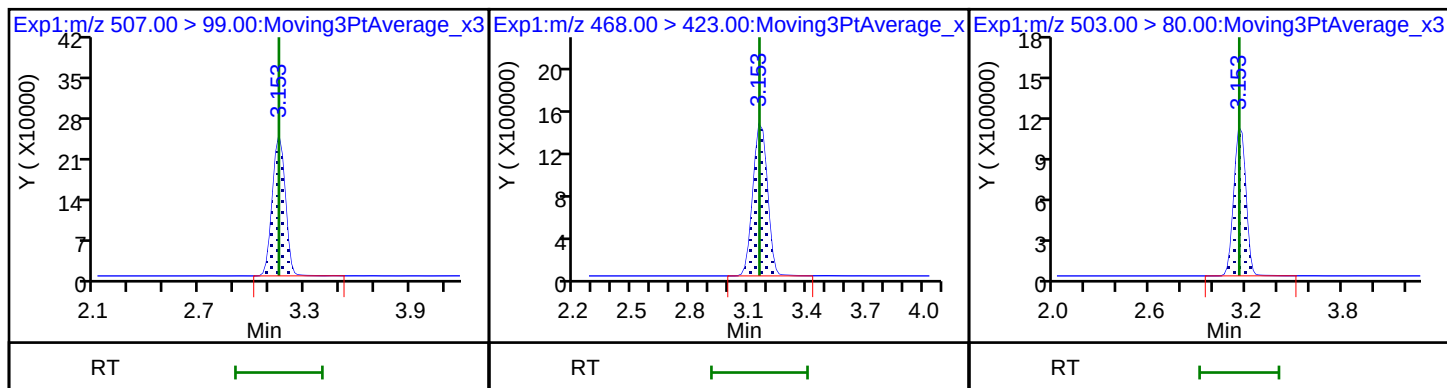
16 Perfluoroheptanesulfonic acid

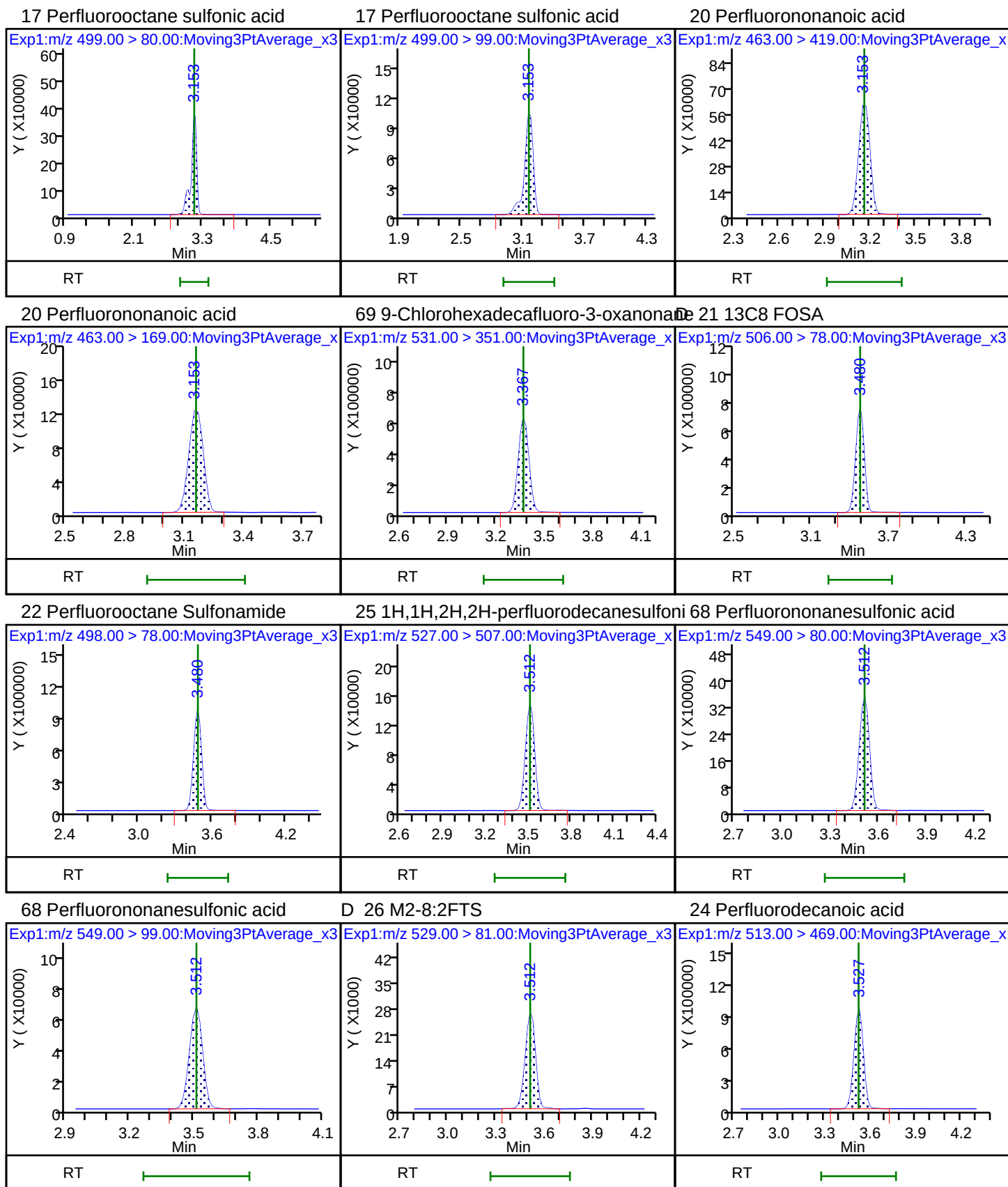


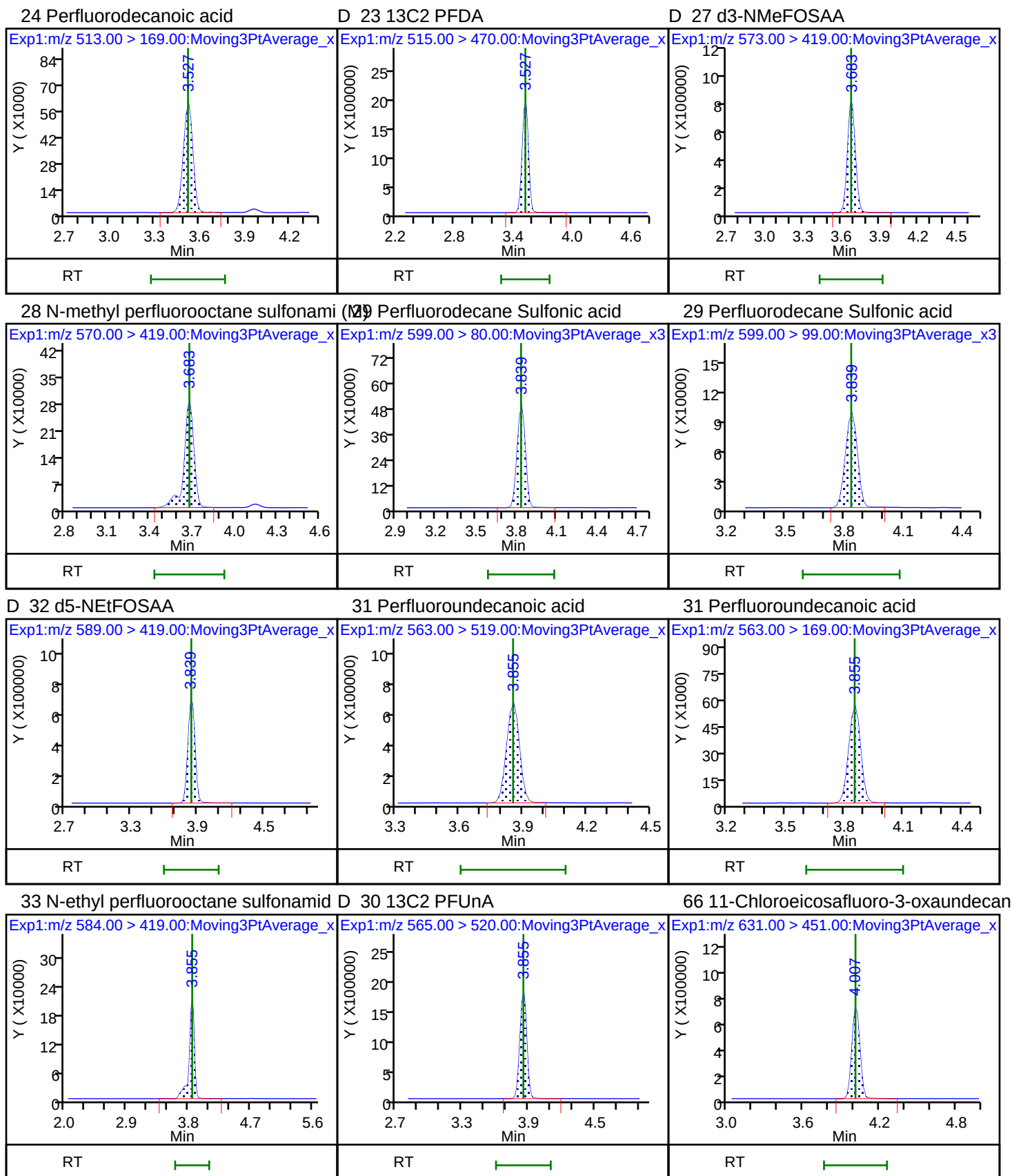
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



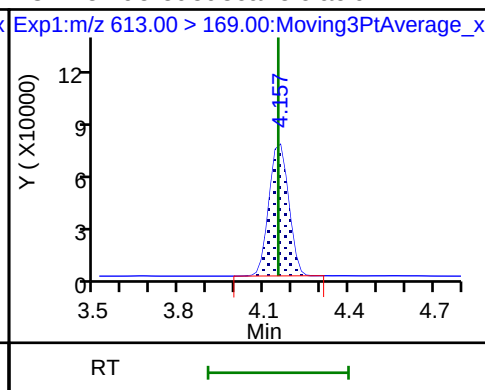
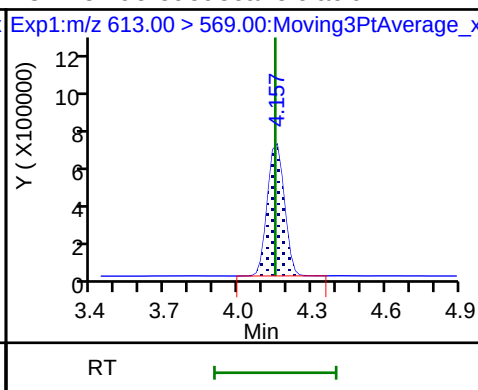
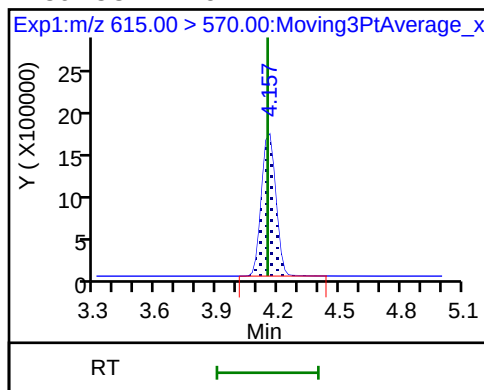




D 36 13C2 PFDaA

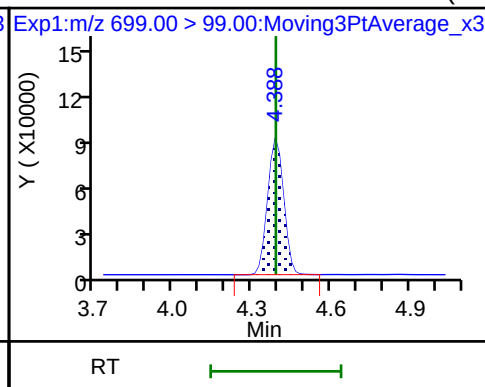
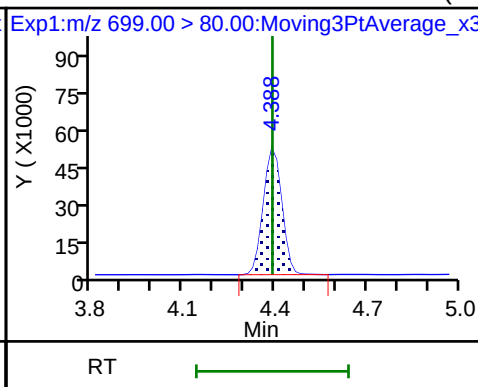
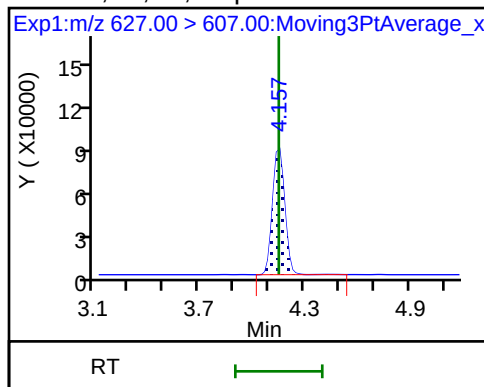
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

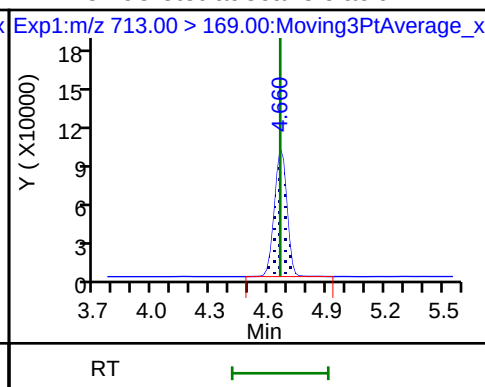
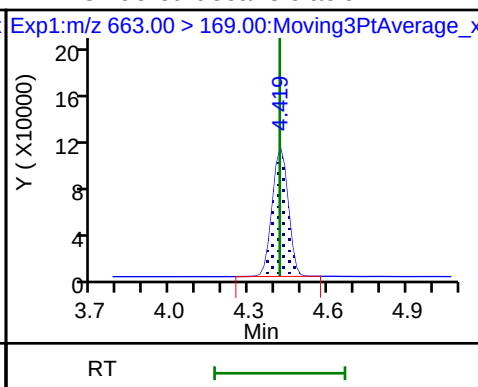
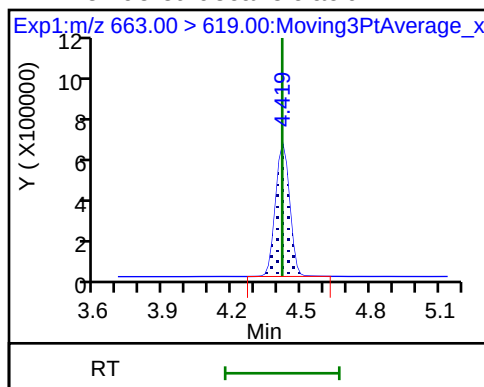
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

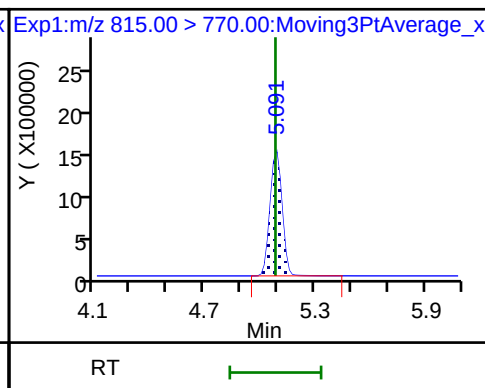
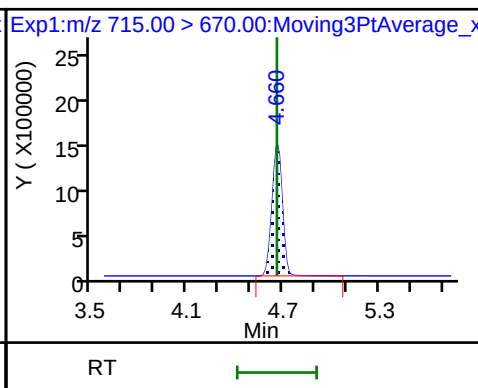
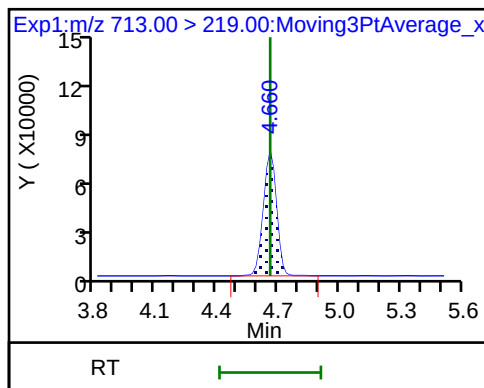
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

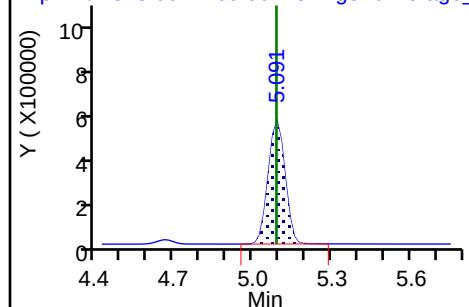


45 Perfluorohexadecanoic acid

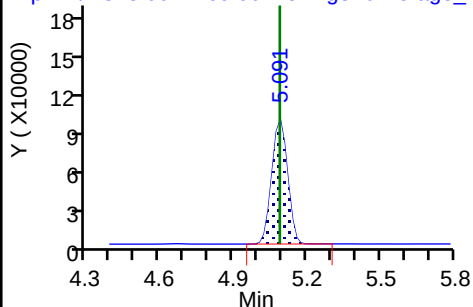
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

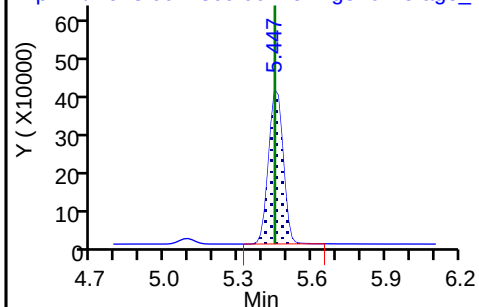
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Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

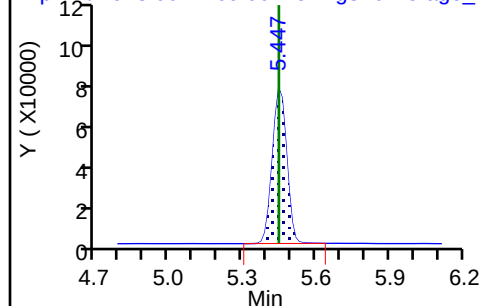


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_008.d

Injection Date: 21-Sep-2018 13:58:32

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

Column:

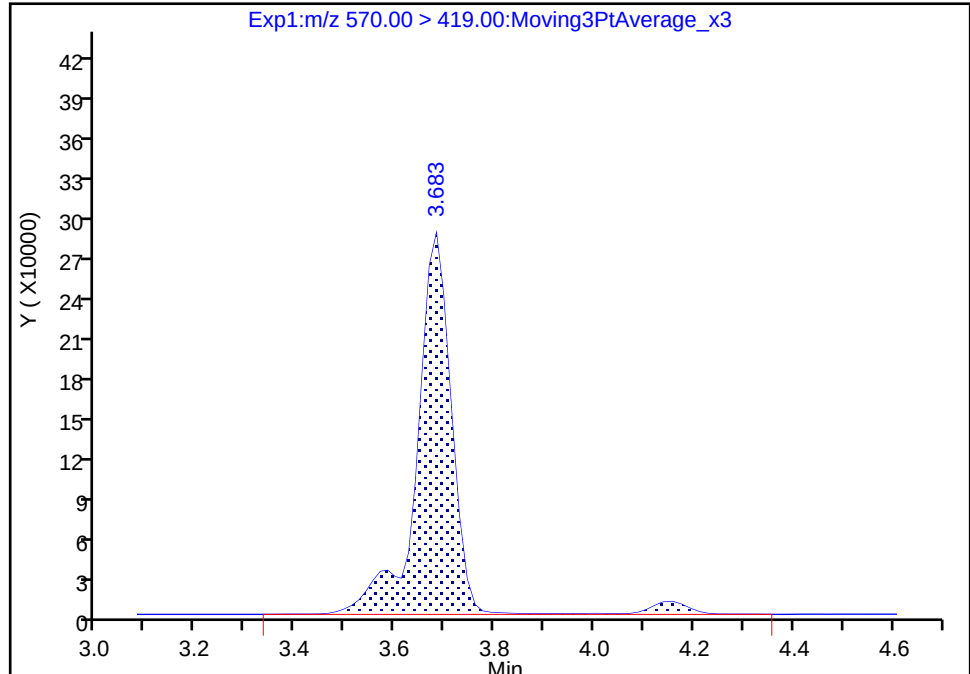
Detector EXP1

28 N-methyl perfluorooctane sulfonamidoacetic a, CAS: 2355-31-9

Signal: 1

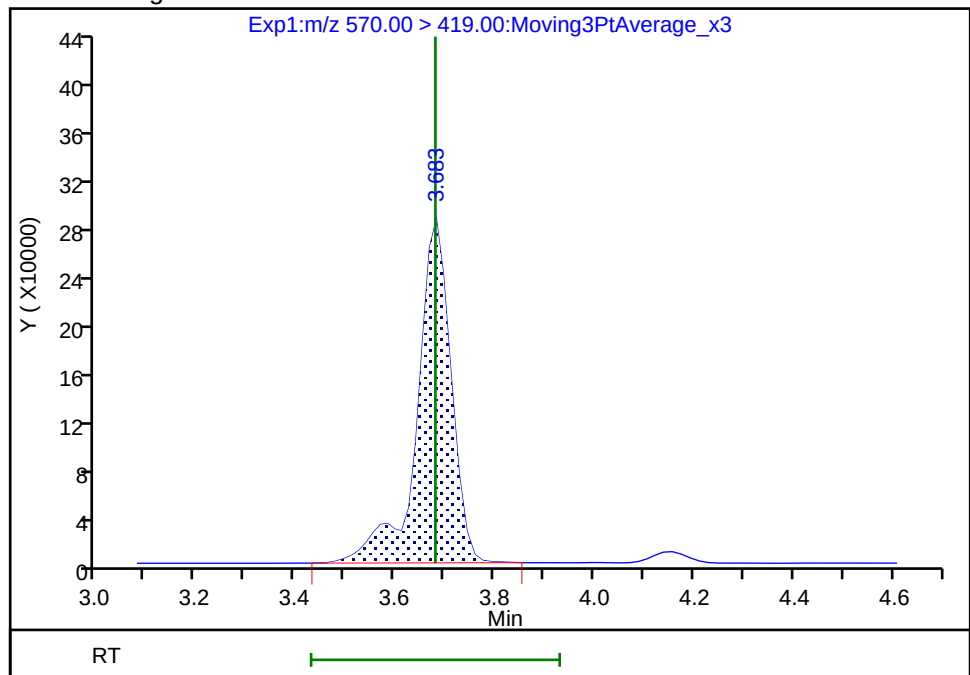
RT: 3.68
Area: 1416600
Amount: 1.097545
Amount Units: ng/ml

Processing Integration Results



RT: 3.68
Area: 1354726
Amount: 1.047735
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 15:01:23

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_009.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 21-Sep-2018 14:06:01 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:05:55 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 17:05:50

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	1.494	1.495	-0.001	0.537	7580397	2.37		94.9	20779	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.496	-0.002	1.000	7252916	2.61		104	427	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.779	0.001	1.000	6973880	2.47		98.8	545	
D 3 13C5-PFPeA										
267.90 > 223.00	1.780	1.779	0.001	0.640	7093002	2.44		97.6	11092	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.818	0.004	0.655	87853	2.22		95.5	594	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.821	0.001	1.000	9234217	2.37		107	3954	
298.90 > 99.00	1.822	1.821	0.001	1.000	3180511		2.90(1.35-4.05)	107	2524	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.037	2.036	0.001	1.118	2021321	2.37		101	6362	
D 60 M2-4:2FTS										
329.00 > 81.00	2.037	2.036	0.001	0.732	835063	2.31		98.8	989	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.074	0.004	0.747	7431760	2.41		96.5	11742	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.077	0.001	1.000	6739358	2.52		101	1256	
313.00 > 119.00	2.078	2.077	0.001	1.000	493612		13.65(6.96-20.87)	101	938	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.152	4530111	2.48		106	5379	
349.00 > 99.00	2.099	2.099	0.0	1.152	2144167		2.11(1.15-3.45)	106	4026	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.170	2.176	-0.006	0.995	1428015	2.57		103	597	

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	2.178	0.003	0.784	744031	2.32		92.8	1826	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.412	0.001	1.000	9667715	2.62		105	1247	
363.00 > 169.00	2.413	2.412	0.001	1.000	2138525		4.52(2.17-6.52)	105	2894	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.412	0.001	0.867	8681131	2.37		94.7	13892	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.427	-0.001	0.872	5374593	2.27		96.1	6407	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.427	-0.001	1.000	6376580	2.23		98.0	4169	
399.00 > 99.00	2.426	2.427	-0.001	1.000	1758775		3.63(1.90-5.70)	98.0	1692	
76 DONA										
377.00 > 251.00	2.452	2.456	-0.004	0.778	14831368	2.36		100	13928	
377.00 > 85.00	2.465	2.456	0.009	0.782	7021571		2.11(1.13-3.39)	100	3021	
D 12 M2-6:2FTS										
429.00 > 81.00	2.750	2.752	-0.002	0.989	831601	2.19		92.0	1075	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.752	-0.002	1.000	1798266	2.35		99.3	3476	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.768	-0.002		7017853	2.28		93.2	6328	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.780	0.002		8675496	2.50			9589	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.780	0.002	1.000	8643372	2.42		96.6	465	
413.00 > 169.00	2.782	2.780	0.002	1.000	3175847		2.72(1.36-4.08)	96.6	3420	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.780	0.002	1.000	8523187	2.45		98.2	8968	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.784	-0.002	0.882	6127089	2.52		106	5687	
449.00 > 99.00	2.782	2.784	-0.002	0.882	1445394		4.24(1.84-5.53)	106	3455	
D 72 13C8 PFOS										
507.00 > 99.00	3.153	3.153	0.0		1222321	2.26		94.6	2100	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.155	-0.002	1.133	7253244	2.29		91.8	4608	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.155	-0.002	1.133	5677498	2.32		96.9	3083	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.153	3.155	-0.002	1.000	5797920	2.30		99.3	3421	
499.00 > 99.00	3.153	3.155	-0.002	1.000	1391720		4.17(2.04-6.12)	99.3	2461	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.161	-0.008	1.000	7537549	2.65		106	792	
463.00 > 169.00	3.153	3.161	-0.008	1.000	1347734		5.59(2.68-8.03)	106	1948	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.367	3.369	-0.002	1.068	6324366	2.38		102	5106	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.251	3101165	2.37		94.8	6544	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.480	3.483	-0.003	1.000	10029311	2.74		110	11119	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.512	3.512	0.0	1.000	1651526	2.36		98.4	3105	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.512	3.512	0.0	1.114	3733587	2.36		98.4	4142	
549.00 > 99.00	3.512	3.512	0.0	1.114	646578		5.77(3.02-9.05)	98.4	1620	
D 26 M2-8:2FTS										
529.00 > 81.00	3.512	3.512	0.0	1.262	114204	2.37		98.9	755	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.527	3.522	0.005	1.000	8599090	2.43		97.3	1376	
513.00 > 169.00	3.527	3.522	0.005	1.000	577114		14.90(7.12-21.35)	97.3	426	
D 23 13C2 PFDA										
515.00 > 470.00	3.527	3.522	0.005	1.268	8066736	2.46		98.6	5951	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.669	3.675	-0.006	1.319	3594763	2.48		99.1	2996	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.683	3.681	0.002	1.004	3476640	2.52		101	1076	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.839	3.834	0.005	1.218	5454861	2.68		111	4784	
599.00 > 99.00	3.839	3.834	0.005	1.218	1066452		5.11(2.14-6.43)	111	3059	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.839	3.843	-0.004	1.380	2650176	2.33		93.2	2729	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.855	3.852	0.002	1.000	5811860	2.41		96.2	1059	
563.00 > 169.00	3.855	3.852	0.002	1.000	516444		11.25(5.24-15.72)	96.2	1425	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.855	3.852	0.002	1.004	2579505	2.60		104	4216	
D 30 13C2 PFUnA										
565.00 > 520.00	3.855	3.852	0.002	1.385	6698462	2.41		96.4	8989	
35 MeFOSA										
512.00 > 169.00	3.960	3.965	-0.005		1621703	NC			779	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.007	4.009	-0.002	1.271	7764072	2.48		105	7949	
D 36 13C2 PFDaA										
615.00 > 570.00	4.139	4.147	-0.008	1.488	7950004	2.40		96.2	16255	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.149	0.008	1.004	8415870	2.64		106	1572	
613.00 > 169.00	4.139	4.149	-0.010	1.000	924816		9.10(4.68-14.05)	106	1395	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.152	0.005	1.184	1119449	2.35		97.4	1551	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		1764224	NC			449	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.390	-0.002	1.392	517092	2.27		93.9	947	
699.00 > 99.00	4.388	4.390	-0.002	1.392	939260		0.55(0.28-0.83)	93.9	2708	

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	4.419	4.417	0.002	1.068	6363083	2.55		102	2387	
663.00 > 169.00	4.419	4.417	0.002	1.068	1081284		5.88(3.09-9.27)	102	2097	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.659	0.001	1.000	1000159	2.50		100	2351	
713.00 > 219.00	4.660	4.659	0.001	1.000	752006		1.33(0.70-2.09)	100	2800	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.659	0.001	1.675	6078915	2.33		93.3	16003	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.091	5.084	0.007	1.830	6275952	2.41		96.5	7434	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.091	5.089	0.002	1.000	5658034	2.46		98.5	1169	
813.00 > 169.00	5.091	5.089	0.002	1.000	1038740		5.45(2.77-8.32)	98.5	2515	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.448	5.448	0.0	1.070	4114602	2.53		101	1207	
913.00 > 169.00	5.448	5.448	0.0	1.070	758978		5.42(2.55-7.64)	101	2519	

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\20180921-64578.b\2018.09.21LLAICAL_009.d

Injection Date: 21-Sep-2018 14:06:01

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

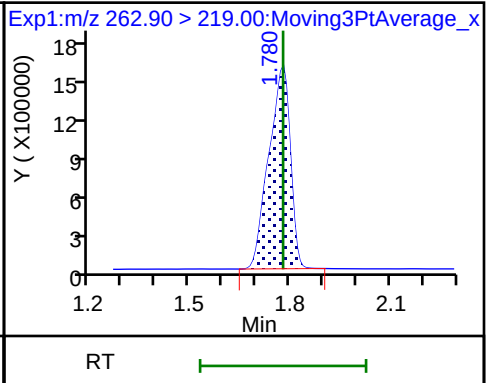
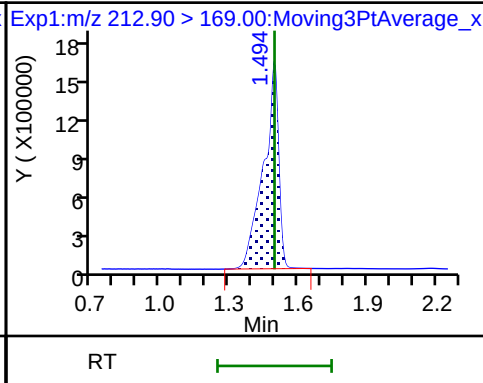
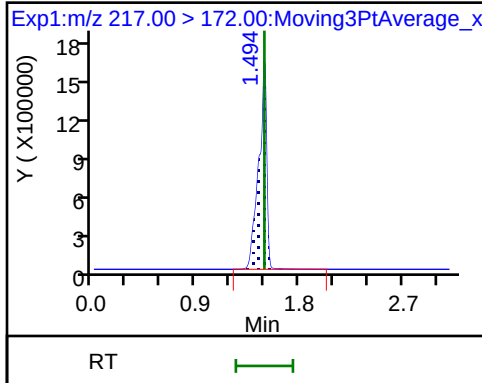
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

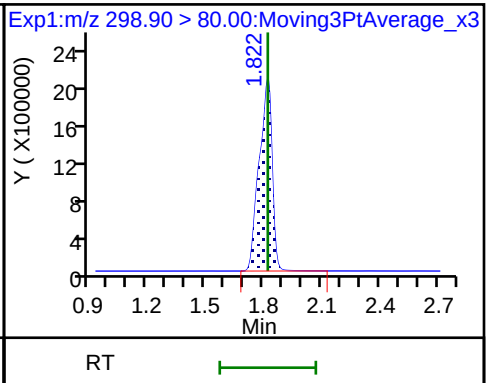
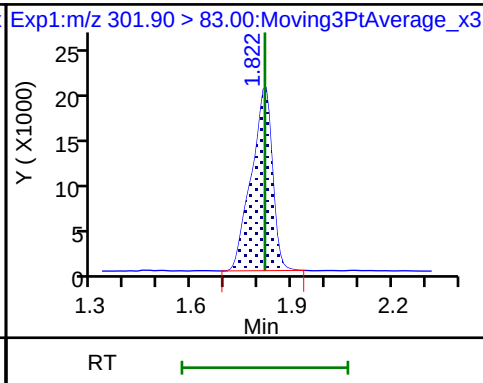
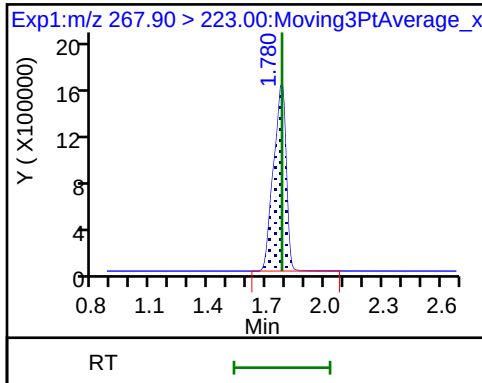
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

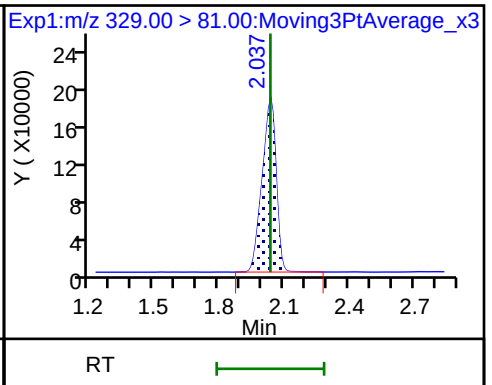
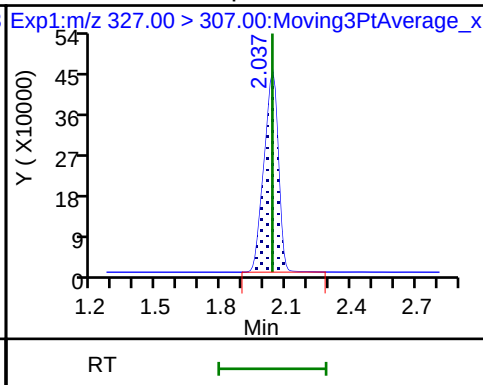
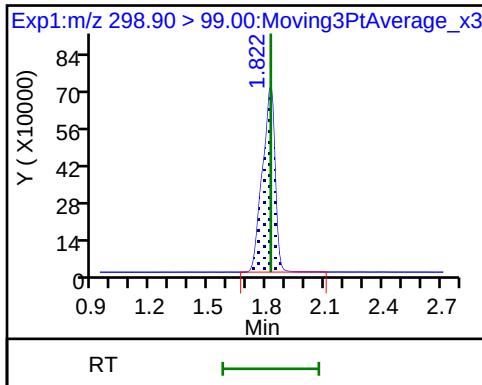
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

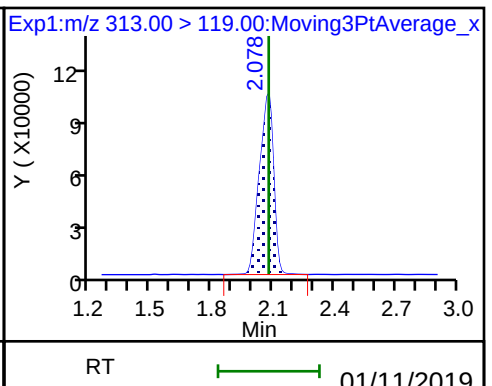
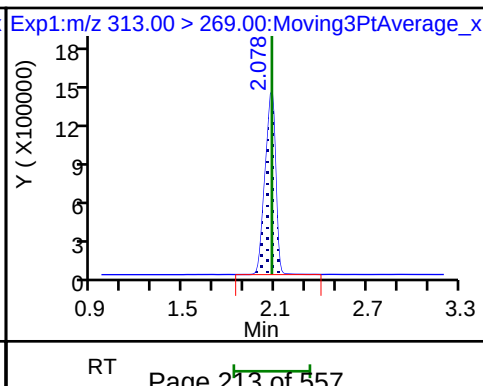
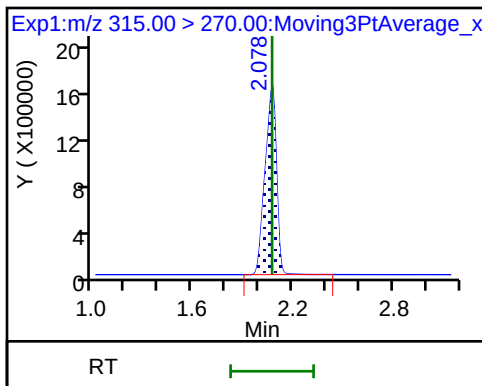
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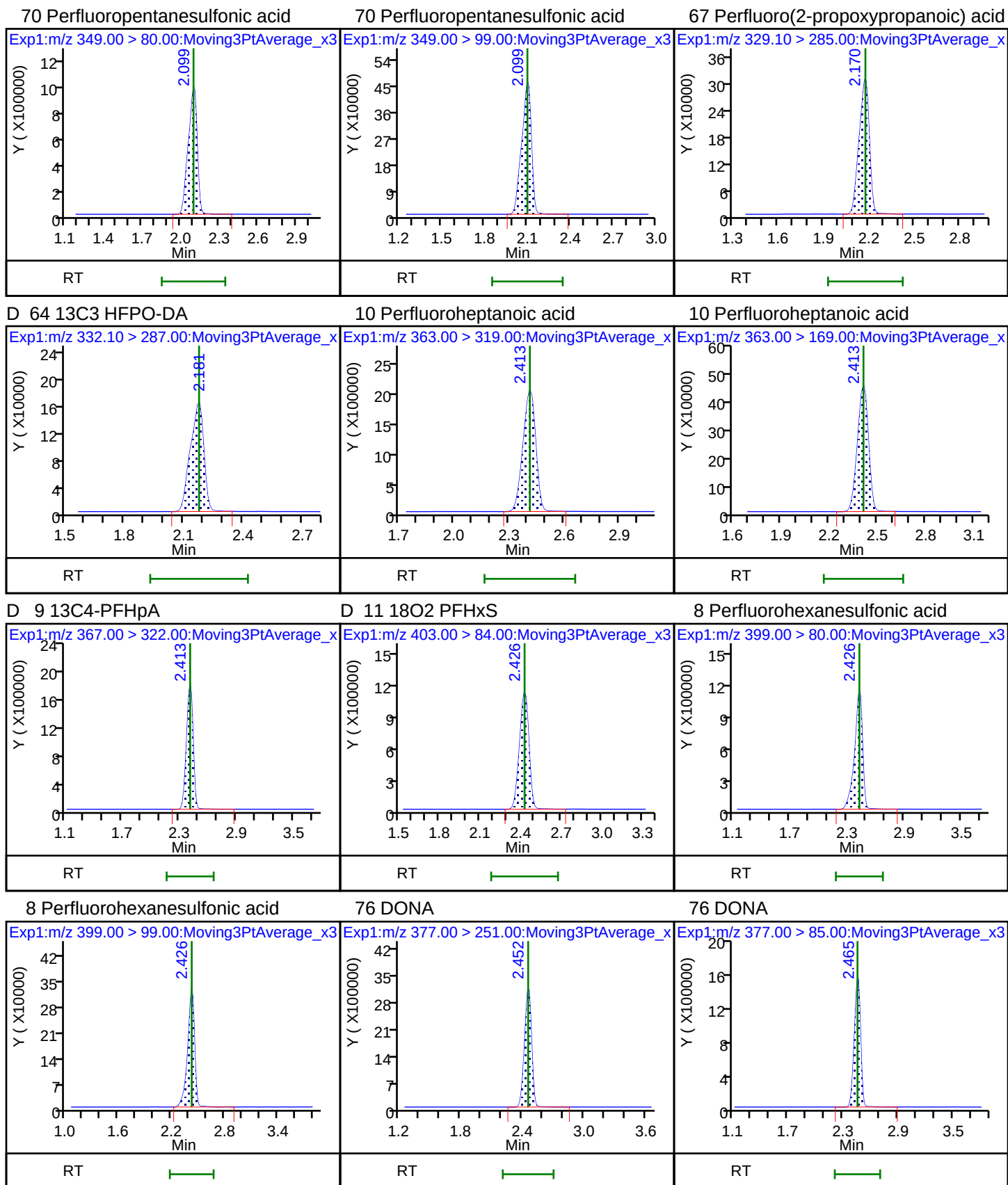


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

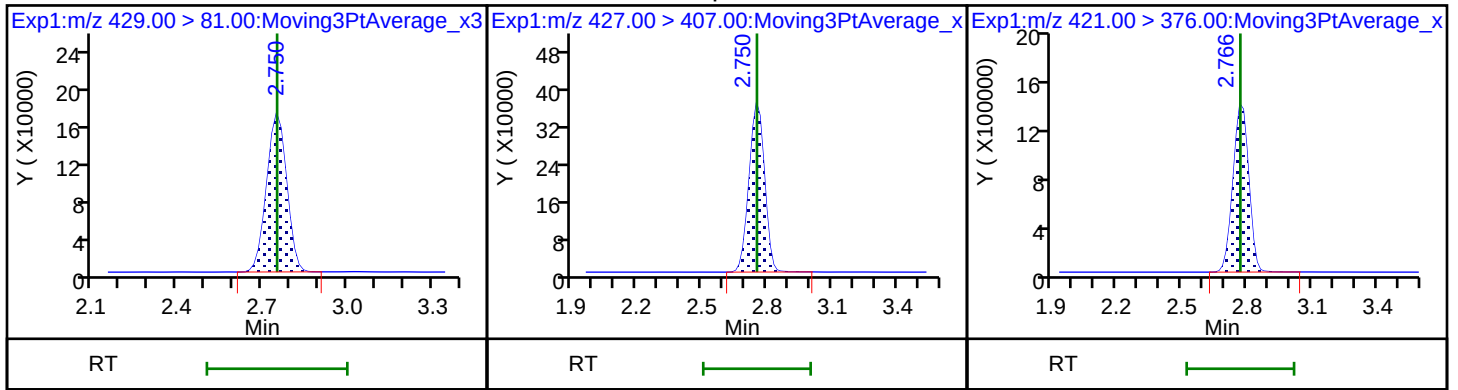
6 Perfluorohexanoic acid





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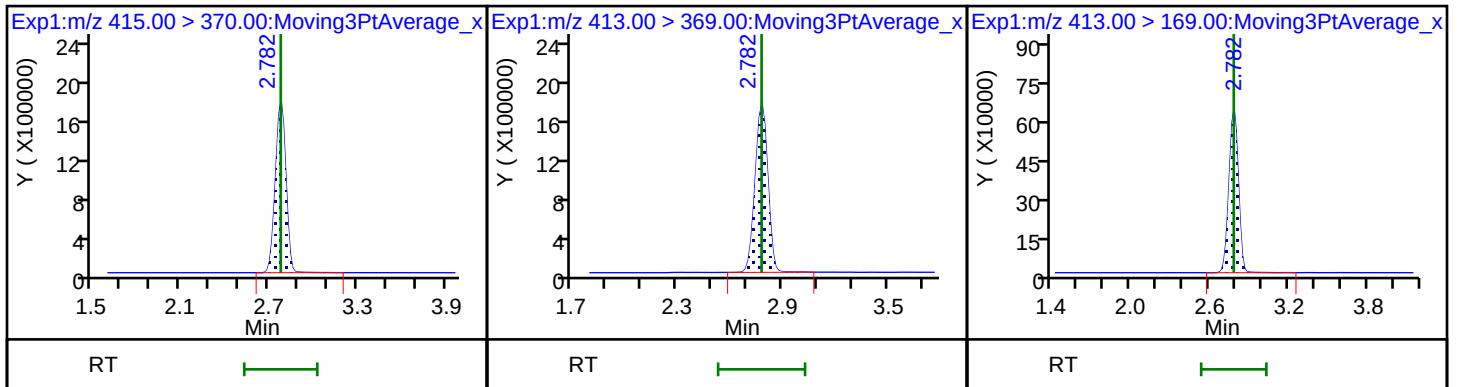
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* 62 13C2-PFOA

15 Perfluorooctanoic acid

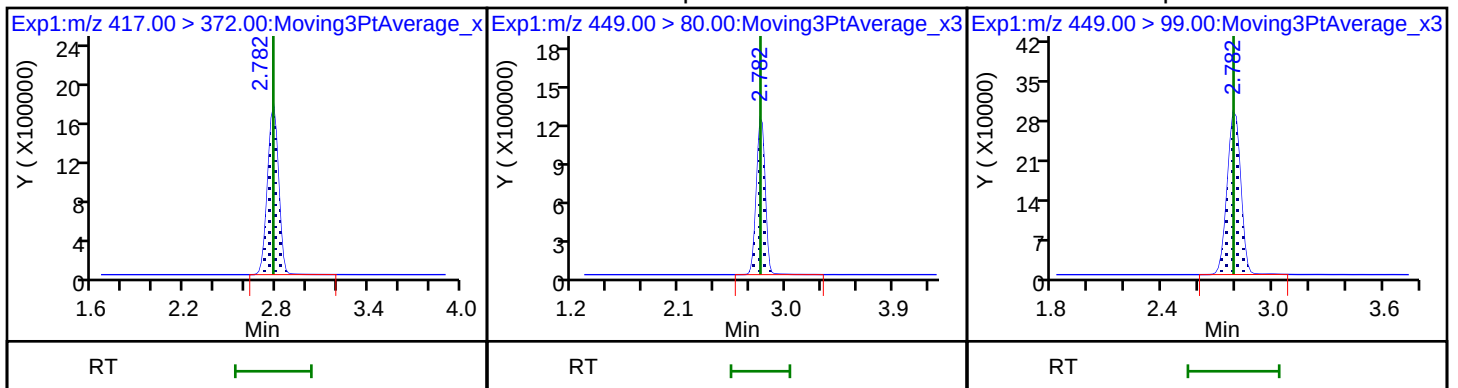
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

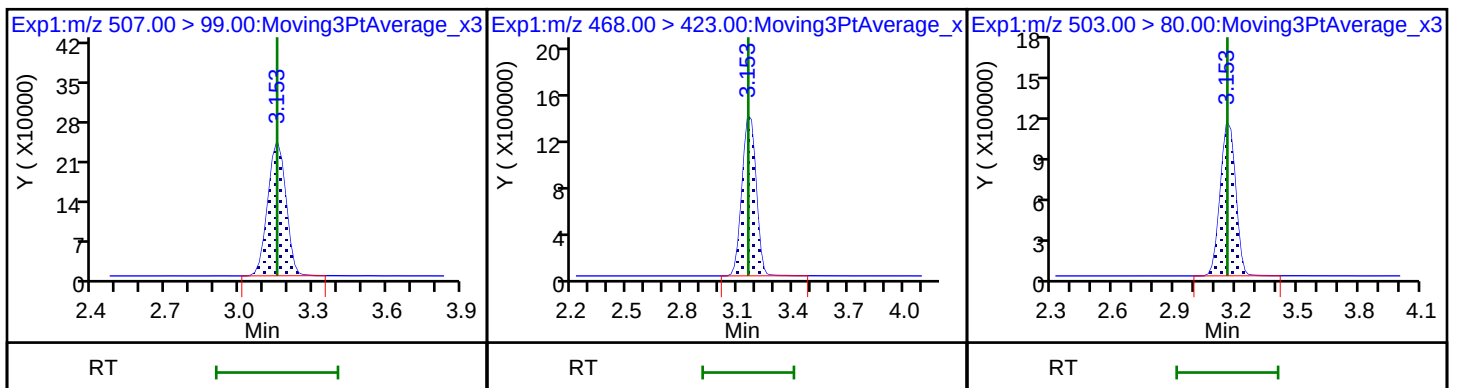
16 Perfluoroheptanesulfonic acid

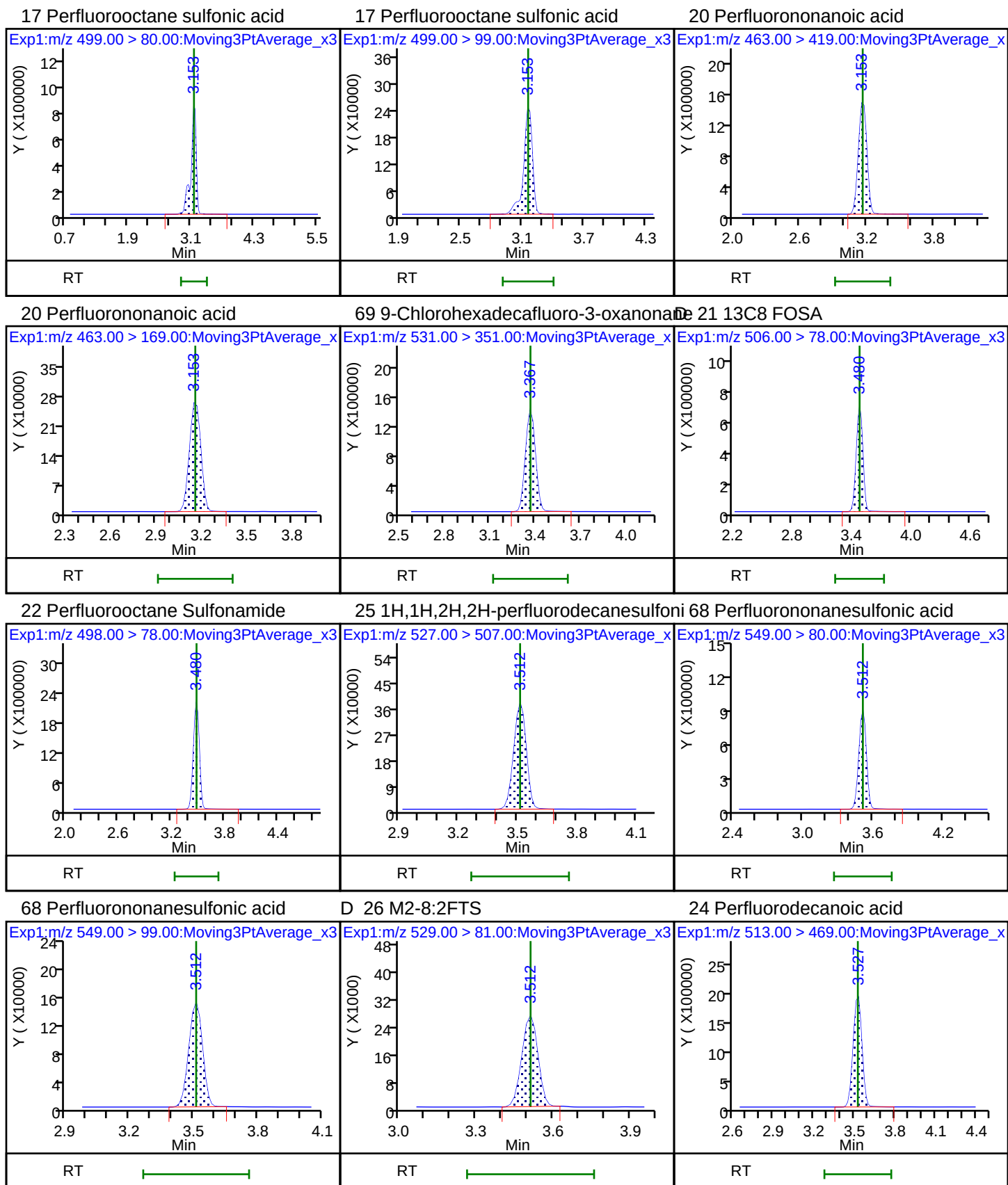


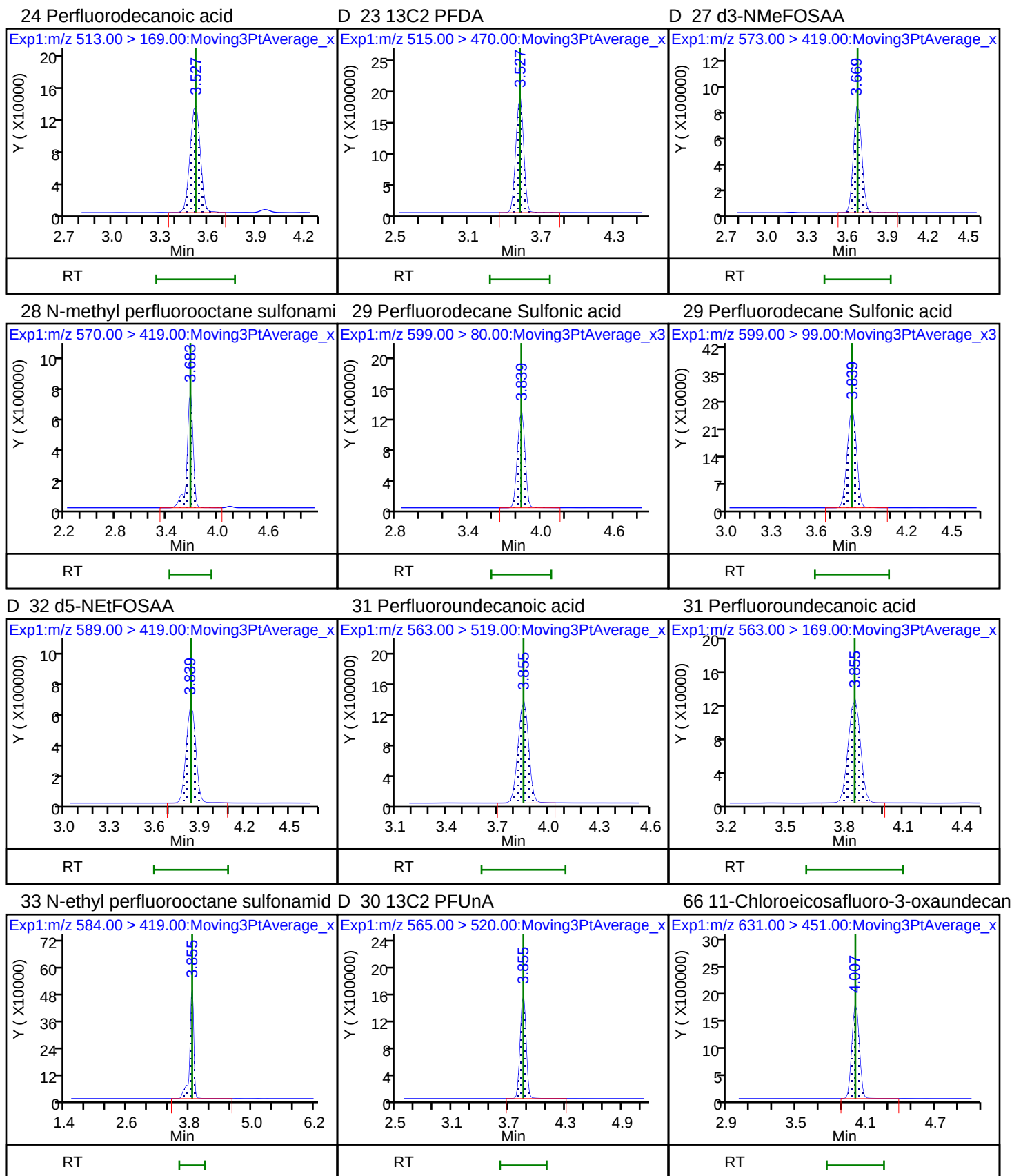
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



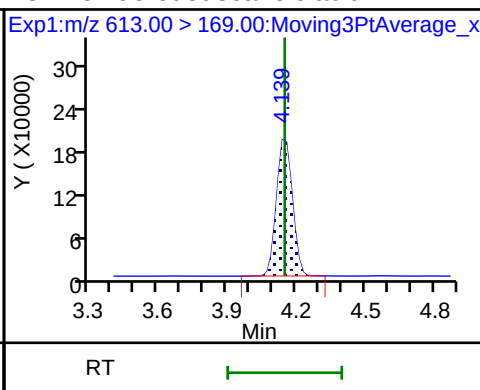
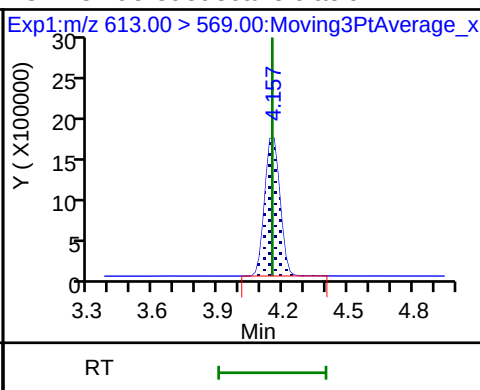
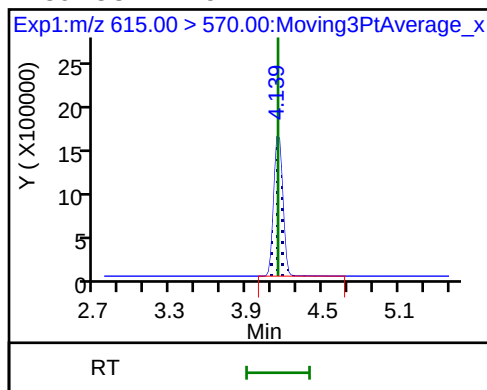




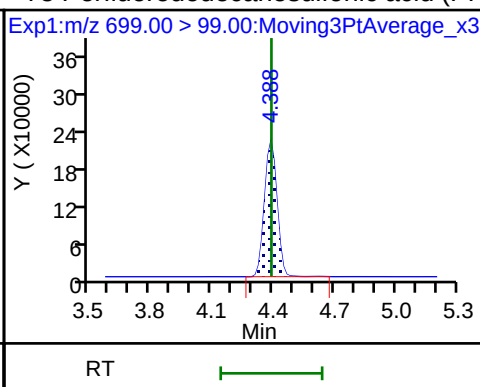
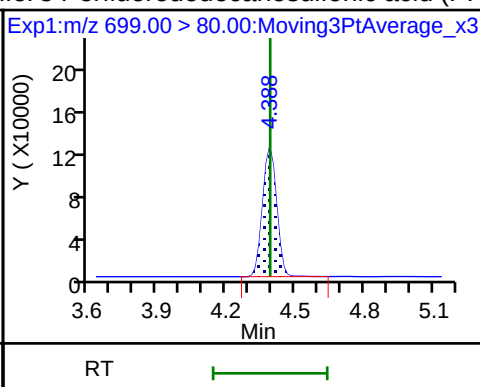
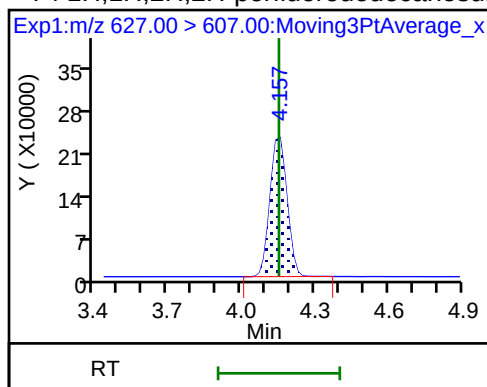
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



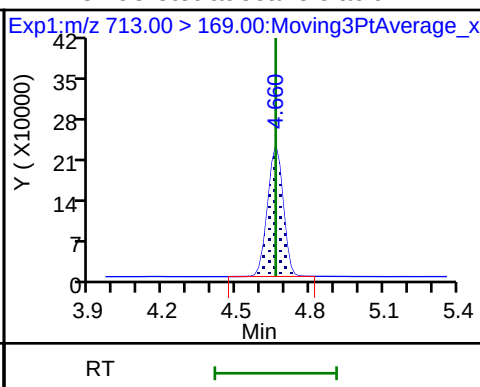
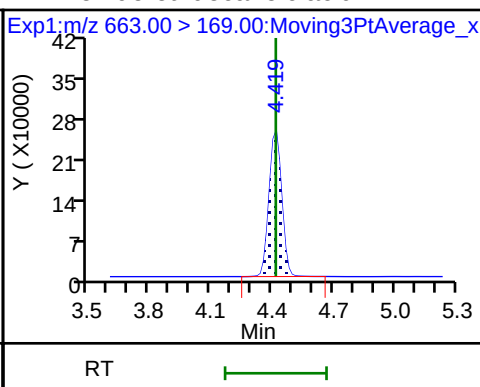
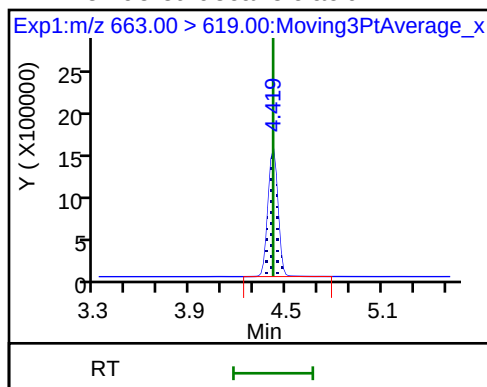
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

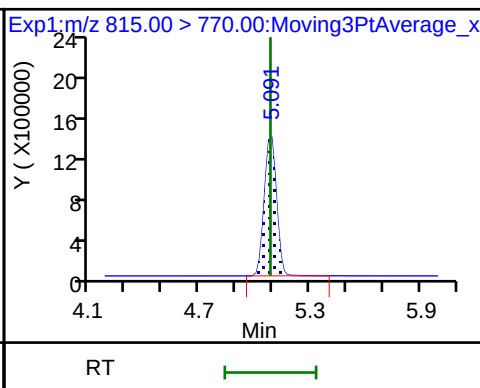
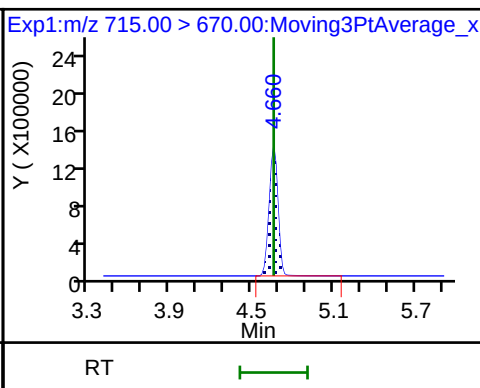
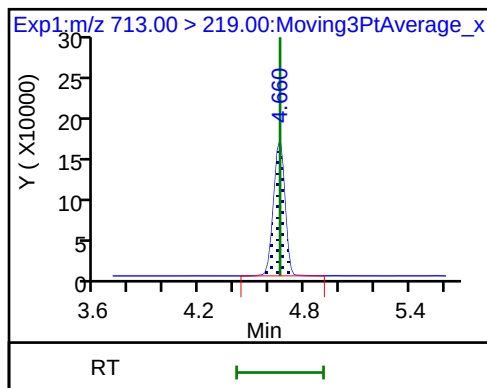
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

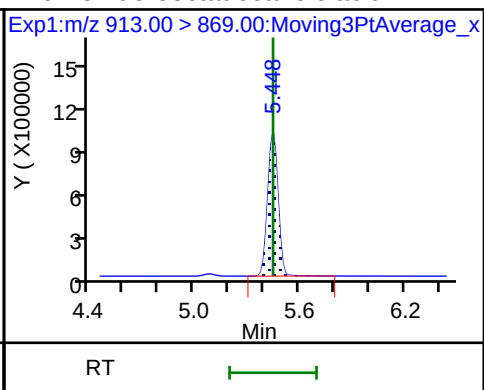
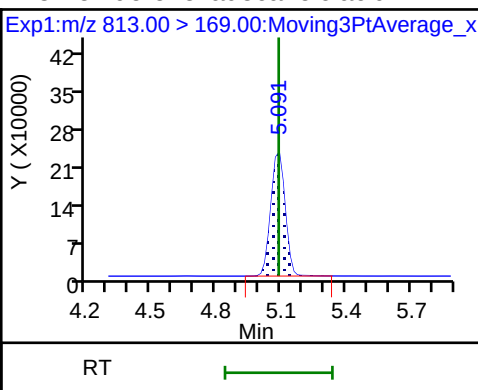
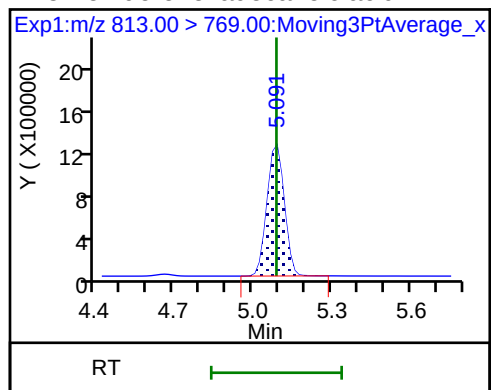
D 44 13C2-PFHxDA



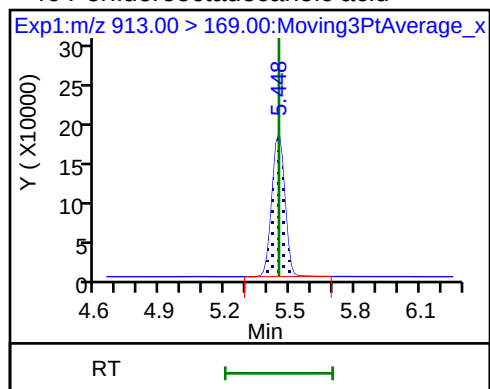
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_010.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 21-Sep-2018 14:13:31 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD6
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:06:02 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 15:04:20

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	1.494	1.495	-0.001	0.537	9476564	2.61		105	19508	
2 Perfluorobutyric acid										
212.90 > 169.00	1.499	1.496	0.003	1.004	17281545	4.97		99.5	923	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.781	1.779	0.002	1.000	16238450	4.75		95.0	1304	
D 3 13C5-PFPeA										
267.90 > 223.00	1.781	1.779	0.002	0.640	8588479	2.61		104	10424	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.818	0.004	0.655	107858	2.40		103	864	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.821	0.001	1.000	20193580	4.21		95.3	6512	
298.90 > 99.00	1.822	1.821	0.001	1.000	7970511		2.53(1.35-4.05)	95.3	5182	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.036	0.002	1.118	4919870	4.69		100	7064	
D 60 M2-4:2FTS										
329.00 > 81.00	2.038	2.036	0.002	0.732	890030	2.17		92.9	1108	
D 7 13C2 PFHxA										
315.00 > 270.00	2.078	2.074	0.004	0.747	8855748	2.53		101	11459	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.078	2.077	0.001	1.000	15247478	4.79		95.7	3150	
313.00 > 119.00	2.078	2.077	0.001	1.000	1197853		12.73(6.96-20.87)	95.7	2428	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.152	10891174	4.85		103	9608	
349.00 > 99.00	2.099	2.099	0.0	1.152	5276371		2.06(1.15-3.45)	103	5289	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.181	2.176	0.005	1.000	3572548	5.27		105	1663	

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	2.178	0.003	0.784	905993	2.49		99.6	1774	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.413	2.412	0.001	1.000	20220855	4.76		95.2	2218	
363.00 > 169.00	2.413	2.412	0.001	1.000	5308875		3.81(2.17-6.52)	95.2	10174	
D 9 13C4-PFHpA										
367.00 > 322.00	2.413	2.412	0.001	0.867	10004341	2.41		96.2	8647	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.427	-0.001	0.872	6269545	2.34		98.8	6800	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.427	-0.001	1.000	14384660	4.31		94.7	6504	
399.00 > 99.00	2.426	2.427	-0.001	1.000	4176894		3.44(1.90-5.70)	94.7	2878	
76 DONA										
377.00 > 251.00	2.465	2.456	0.009	0.782	31294393	4.27		90.6	35602	
377.00 > 85.00	2.465	2.456	0.009	0.782	16072420		1.95(1.13-3.39)	90.6	5652	
D 12 M2-6:2FTS										
429.00 > 81.00	2.750	2.752	-0.002	0.989	1071332	2.48		104	1365	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.752	-0.002	1.000	4536400	4.61		97.2	5421	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.768	-0.002		8303074	2.70		110	9303	
* 62 13C2-PFOA										
415.00 > 370.00	2.782	2.780	0.002		9840912	2.50			5996	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.782	2.780	0.002	1.000	18275076	4.43		88.5	969	
413.00 > 169.00	2.782	2.780	0.002	1.000	7346215		2.49(1.36-4.08)	88.5	4716	
D 14 13C4 PFOA										
417.00 > 372.00	2.782	2.780	0.002	1.000	9837265	2.50		99.9	8879	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.784	-0.002	0.882	13605882	4.80		101	8394	
449.00 > 99.00	2.782	2.784	-0.002	0.882	3698462		3.68(1.84-5.53)	101	5978	
D 72 13C8 PFOS										
507.00 > 99.00	3.153	3.153	0.0		1503478	2.78		116	2527	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.155	-0.002	1.133	9209816	2.57		103	5436	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.155	-0.002	1.133	6625089	2.38		99.7	4778	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.153	3.155	-0.002	1.000	13520611	4.60		99.2	4756	
499.00 > 99.00	3.153	3.155	-0.002	1.000	3256938		4.15(2.04-6.12)	99.2	3142	
20 Perfluorononanoic acid										
463.00 > 419.00	3.172	3.161	0.011	1.006	16345593	4.52		90.3	1517	
463.00 > 169.00	3.153	3.161	-0.008	1.000	3603040		4.54(2.68-8.03)	90.3	5016	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.367	3.369	-0.002	1.068	14226340	4.60		98.6	4967	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.480	0.001	1.251	3715643	2.50		100	4001	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.481	3.483	-0.002	1.000	19856984	4.53		90.6	8080	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.512	3.512	0.0	1.000	3702598	5.25		110	5567	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.512	3.512	0.0	1.114	8870383	4.81		100	3919	
549.00 > 99.00	3.512	3.512	0.0	1.114	1534385		5.78(3.02-9.05)	100	3194	
D 26 M2-8:2FTS										
529.00 > 81.00	3.512	3.512	0.0	1.262	114810	2.10		87.6	684	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.527	3.522	0.005	1.000	17451112	4.60		92.1	2385	
513.00 > 169.00	3.527	3.522	0.005	1.000	1388343		12.57(7.12-21.35)	92.1	502	
D 23 13C2 PFDA										
515.00 > 470.00	3.527	3.522	0.005	1.268	8645119	2.33		93.1	4870	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.669	3.675	-0.006	1.319	4512795	2.74		110	2881	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.683	3.681	0.002	1.004	8472296	4.89		97.8	1887	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.839	3.834	0.005	1.218	11308841	4.77		98.9	6663	
599.00 > 99.00	3.839	3.834	0.005	1.218	2545577		4.44(2.14-6.43)	98.9	4512	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.839	3.843	-0.004	1.380	3057484	2.37		94.8	2982	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.855	3.852	0.003	1.000	12640500	4.67		93.5	2111	
563.00 > 169.00	3.855	3.852	0.003	1.000	1277053		9.90(5.24-15.72)	93.5	2071	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.855	3.852	0.003	1.004	5905384	5.17		103	6619	
D 30 13C2 PFUnA										
565.00 > 520.00	3.855	3.852	0.003	1.385	7497732	2.38		95.1	11367	
35 MeFOSA										
512.00 > 169.00	3.976	3.965	0.011		4221241	NC			910	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.007	4.009	-0.002	1.271	17503848	4.80		102	11261	
D 36 13C2 PFDaA										
615.00 > 570.00	4.139	4.147	-0.008	1.488	9588251	2.56		102	9173	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.139	4.149	-0.010	1.000	16802308	4.38		87.5	3303	
613.00 > 169.00	4.139	4.149	-0.010	1.000	2173850		7.73(4.68-14.05)	87.5	3104	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.152	0.005	1.184	2517398	5.25		109	3330	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		4372118	NC			548	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.390	-0.002	1.392	1335682	5.03		104	2680	
699.00 > 99.00	4.388	4.390	-0.002	1.392	2221643		0.60(0.28-0.83)	104	3926	

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	4.419	4.417	0.002	1.068	13513007	4.49		89.9	3826	
663.00 > 169.00	4.419	4.417	0.002	1.068	2743699		4.93(3.09-9.27)	89.9	5042	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.659	0.001	1.000	2567080	5.26		105	6295	
713.00 > 219.00	4.660	4.659	0.001	1.000	1687786		1.52(0.70-2.09)	105	5156	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.659	0.001	1.675	7431707	2.51		101	13531	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.074	5.084	-0.010	1.824	7721737	2.62		105	8630	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.091	5.089	0.002	1.003	13245075	4.71		94.2	2217	
813.00 > 169.00	5.074	5.089	-0.015	1.000	2529071		5.24(2.77-8.32)	94.2	3906	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.448	5.448	0.0	1.074	9581981	4.79		95.8	1852	
913.00 > 169.00	5.448	5.448	0.0	1.074	1952496		4.91(2.55-7.64)	95.8	3889	

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\20180921-64578.b\2018.09.21LLAICAL_010.d

Injection Date: 21-Sep-2018 14:13:31

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

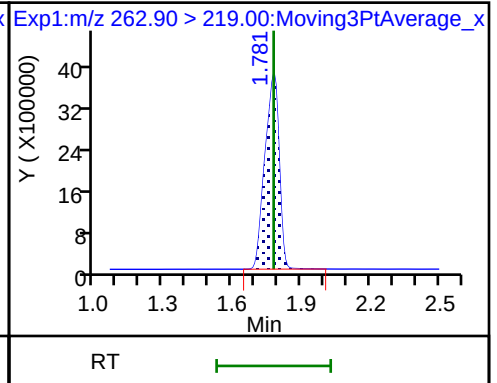
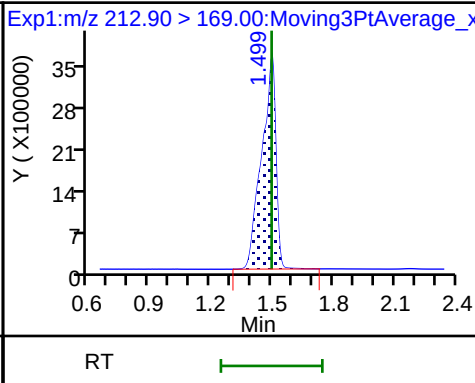
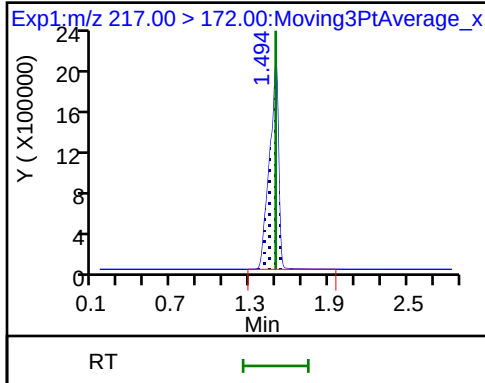
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

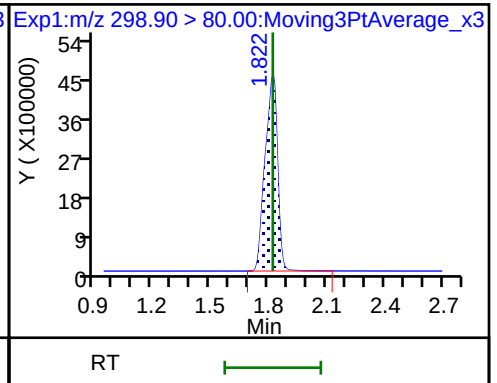
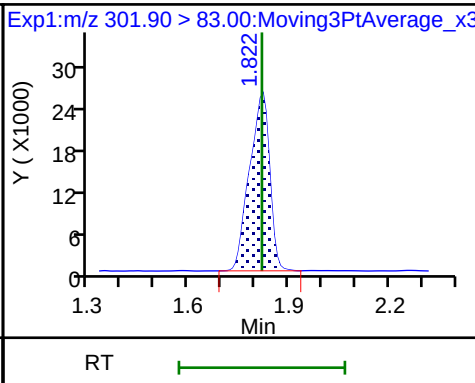
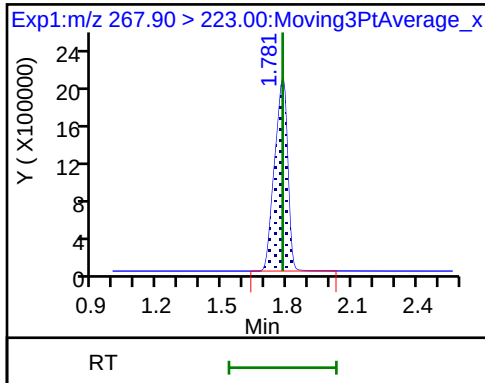
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

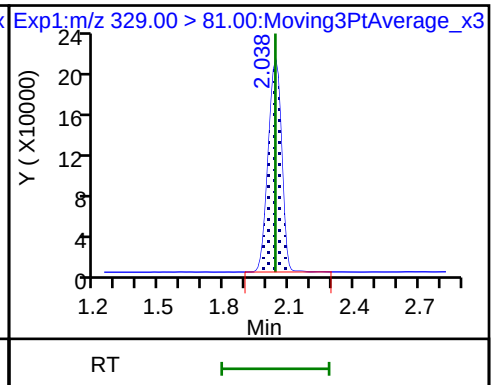
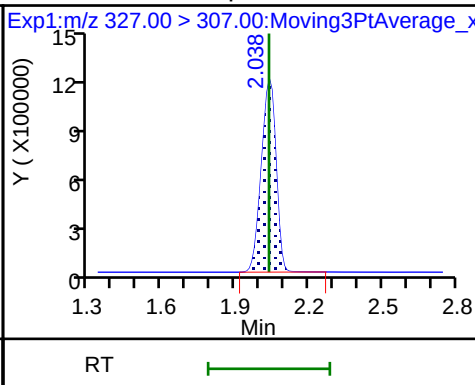
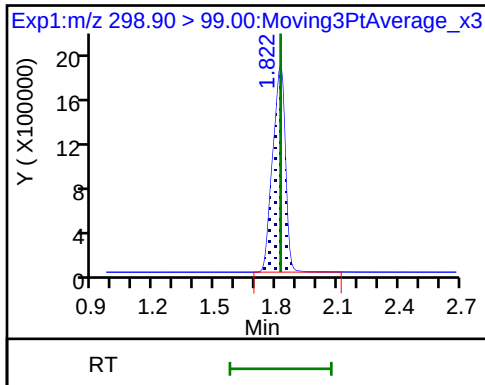
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

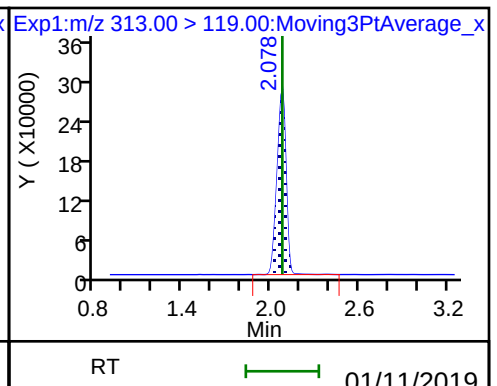
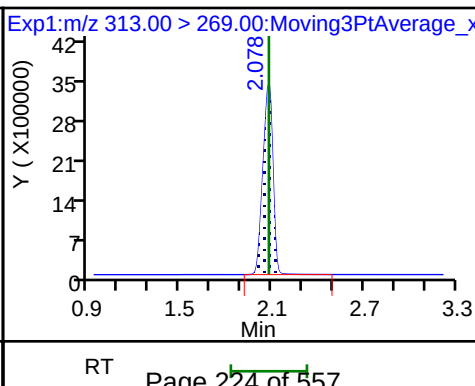
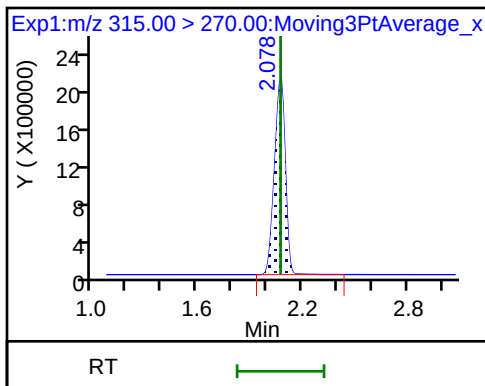
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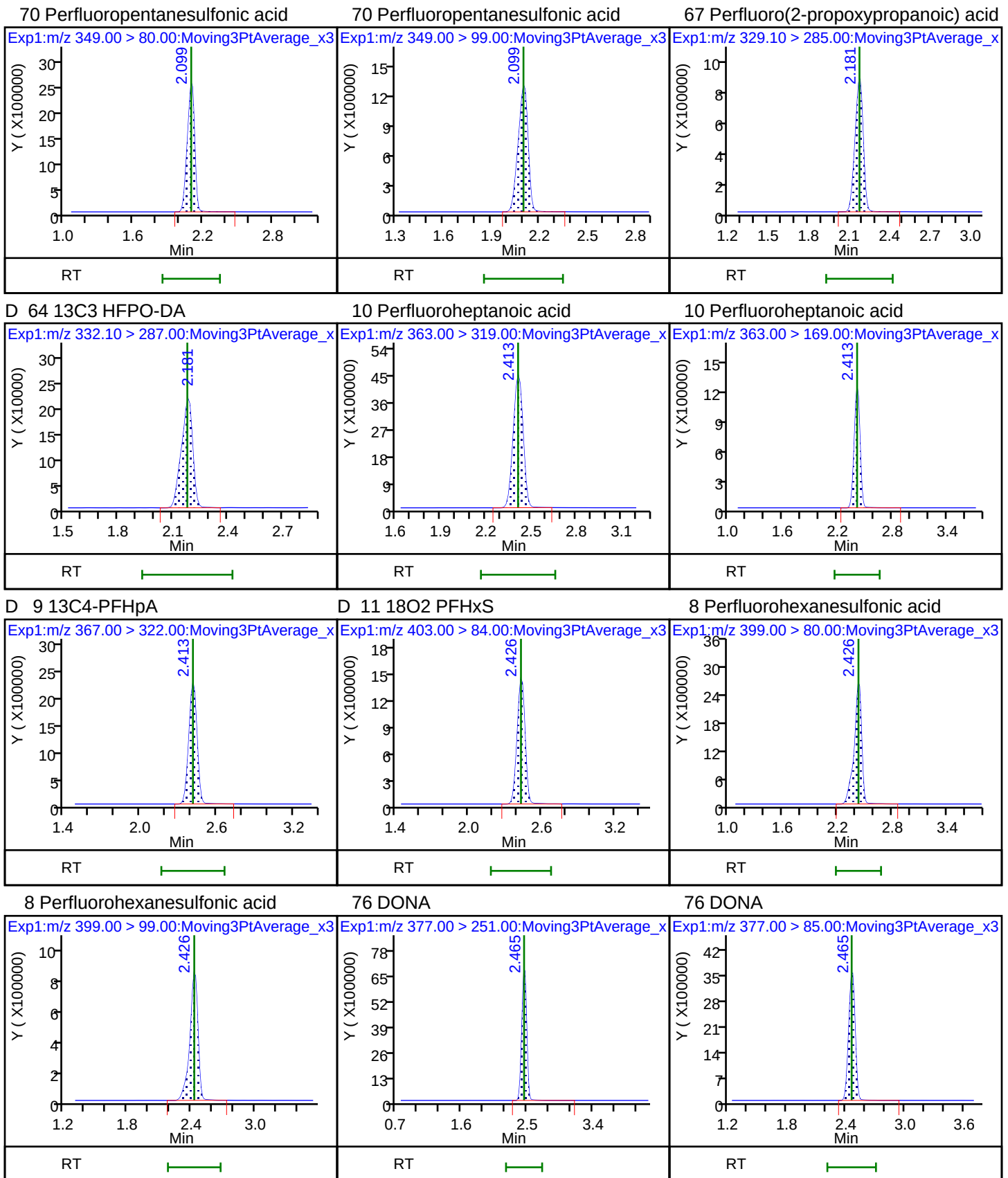


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

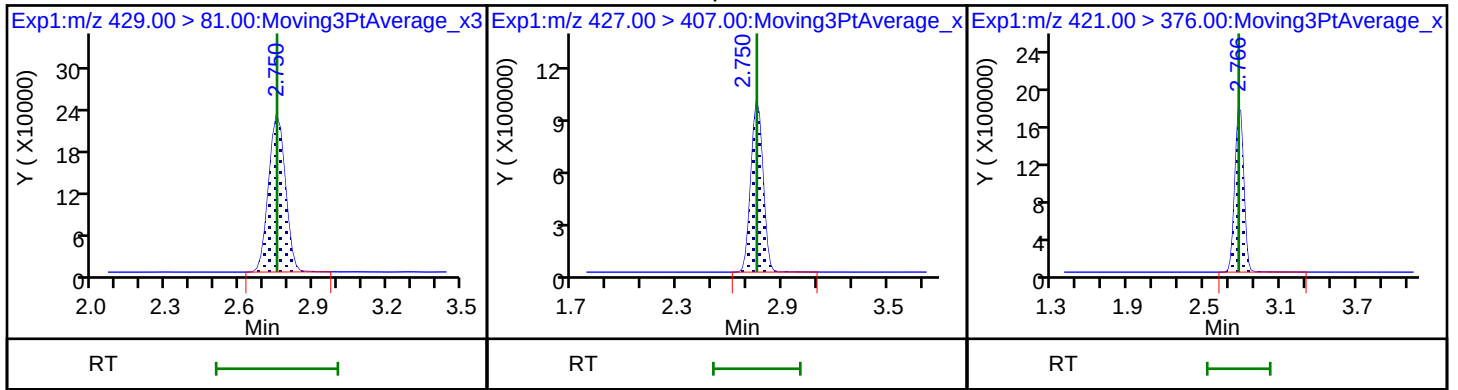
6 Perfluorohexanoic acid





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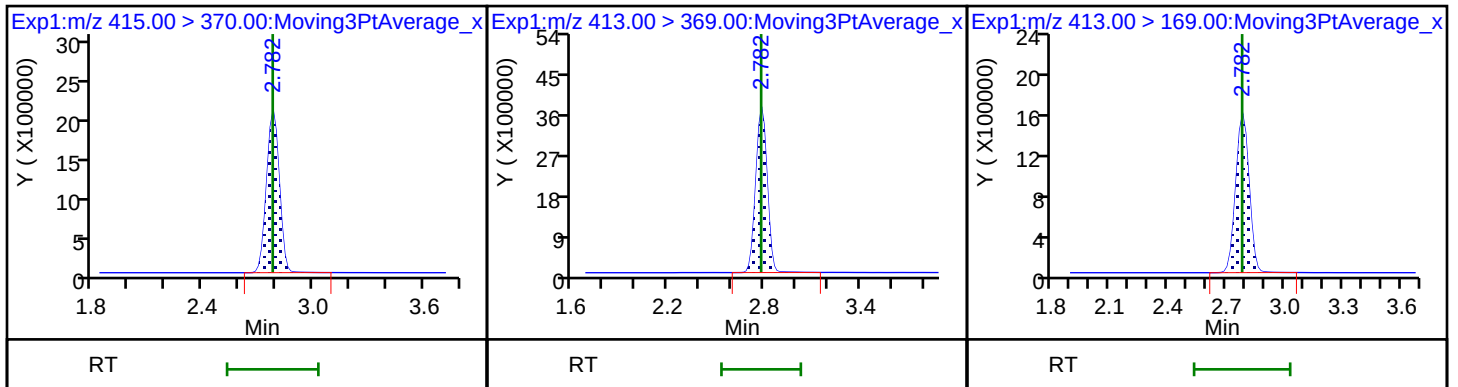
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* 62 13C2-PFOA

15 Perfluorooctanoic acid

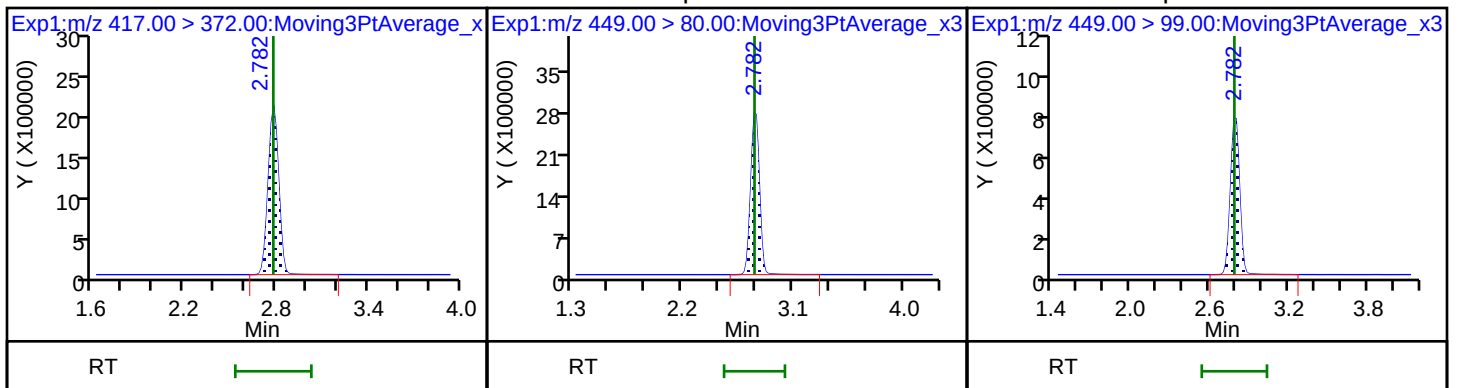
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

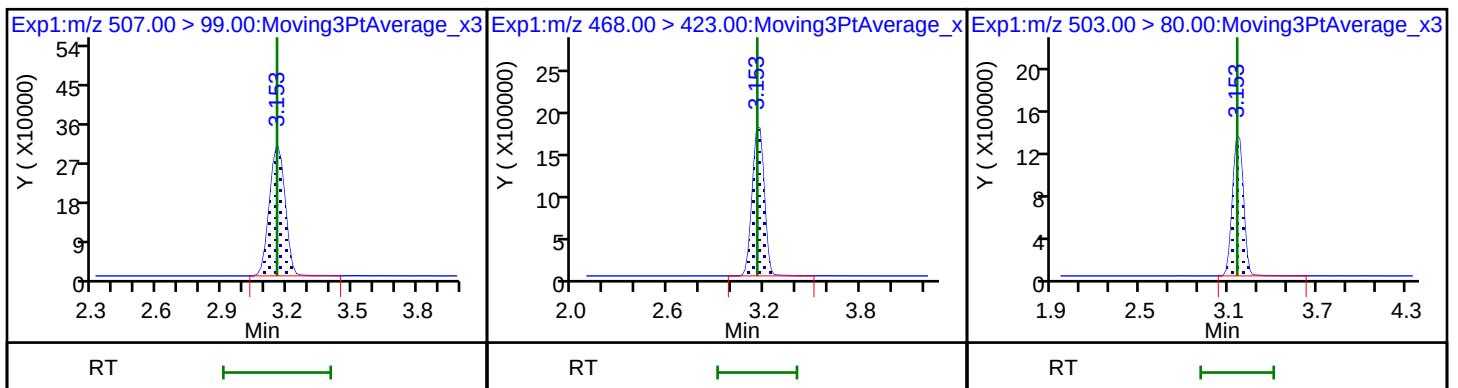
16 Perfluoroheptanesulfonic acid

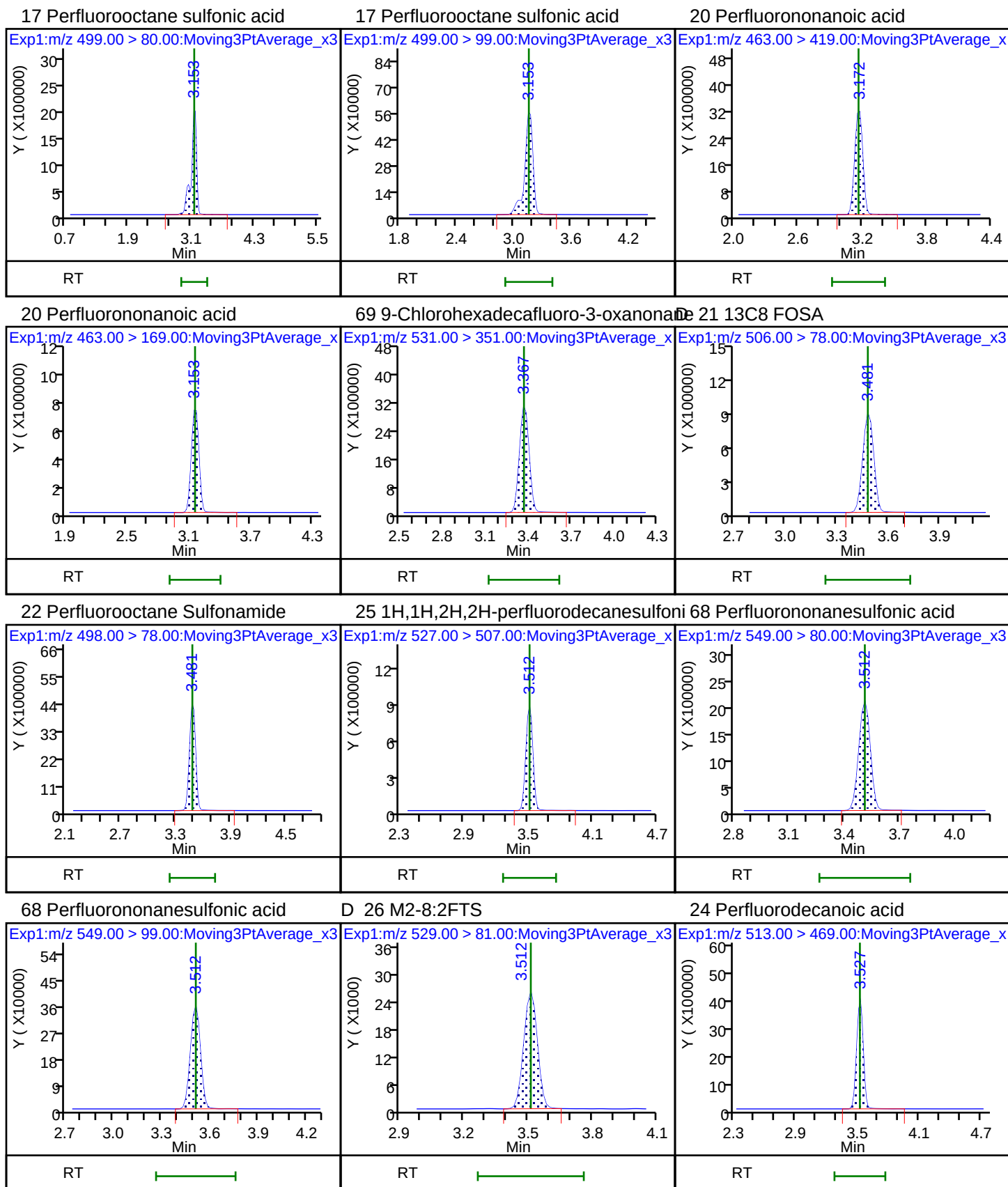


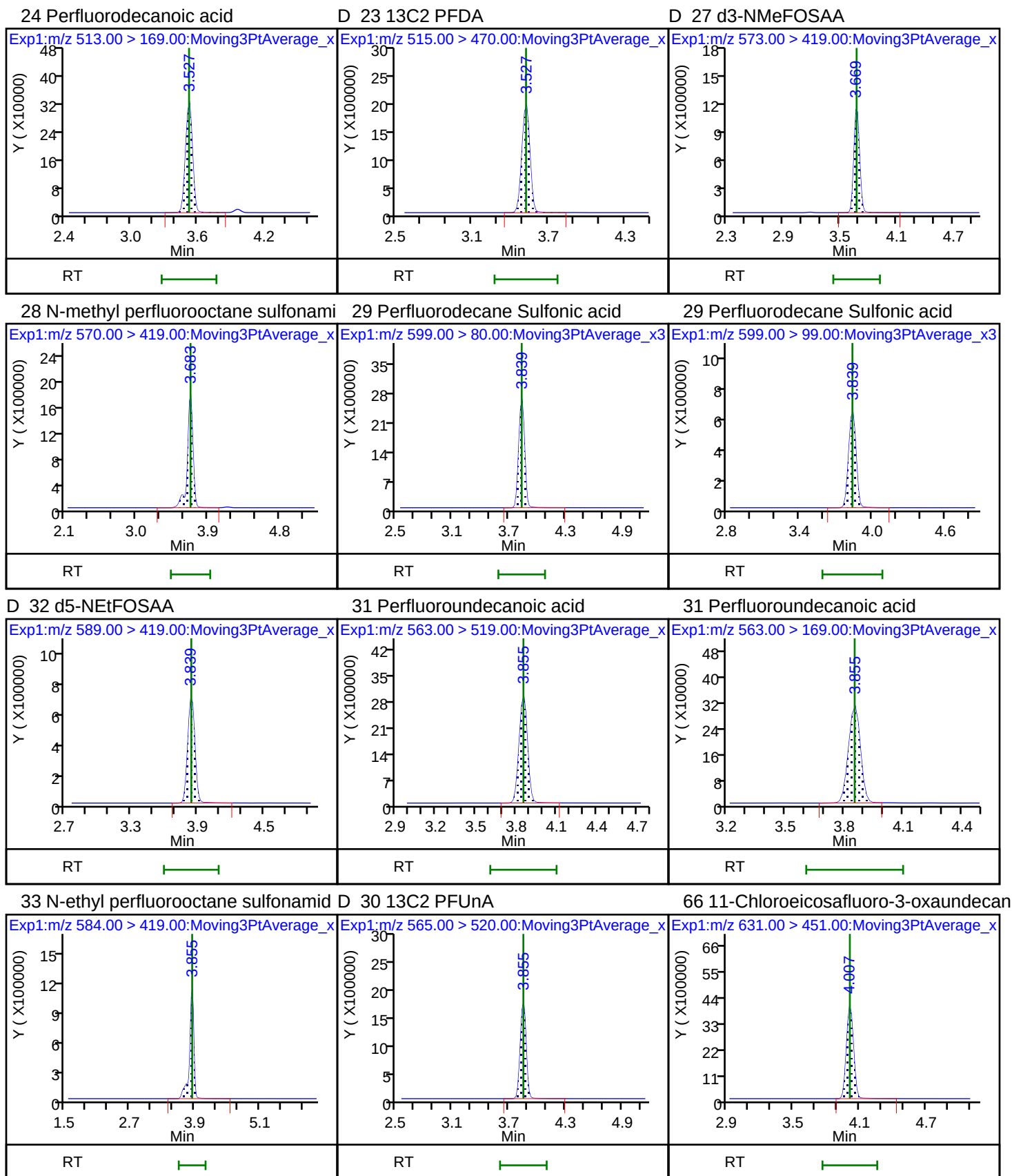
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D 19 13C5 PFNA

D 18 13C4 PFOS



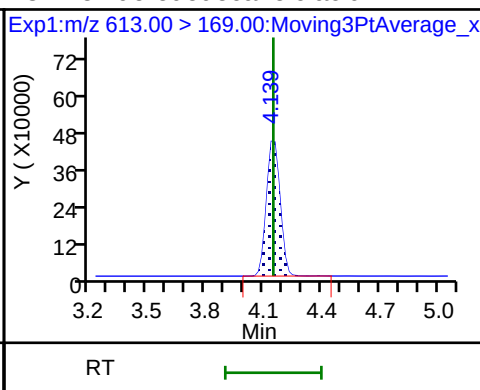
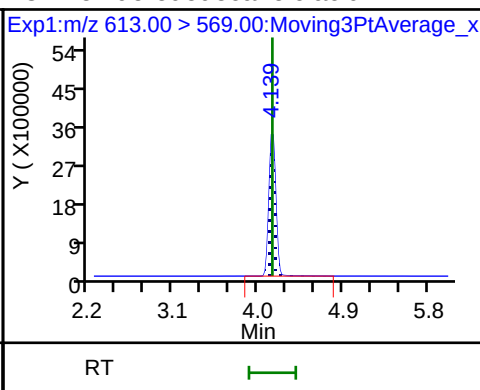
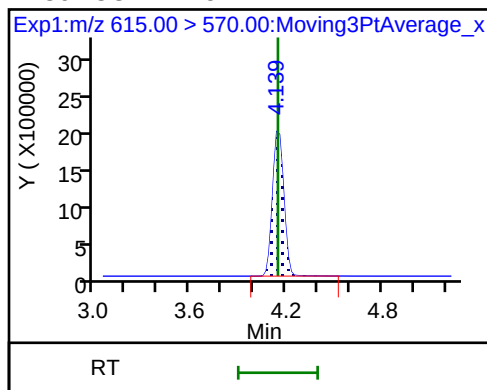




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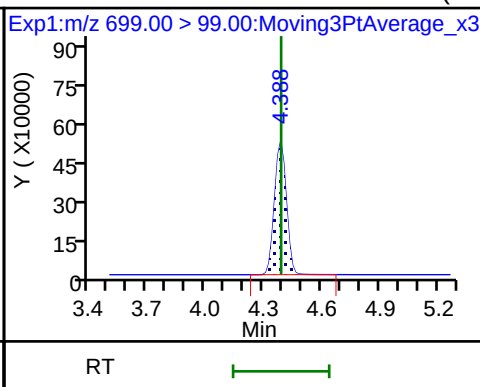
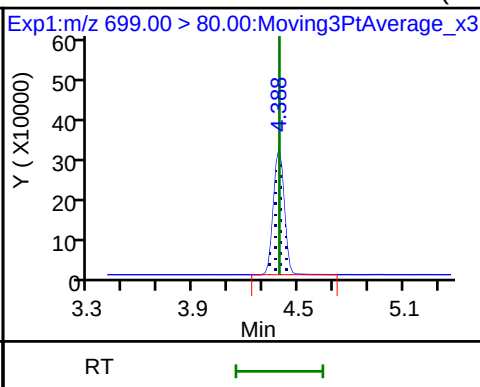
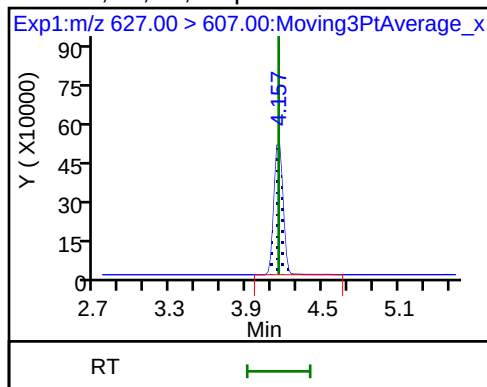
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

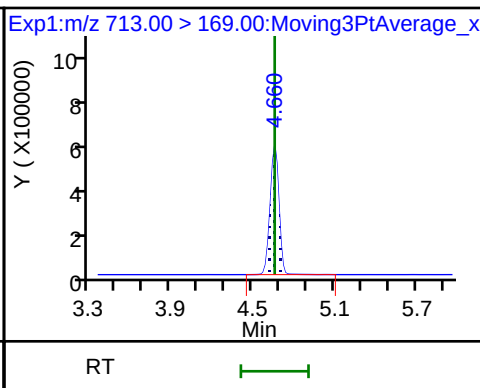
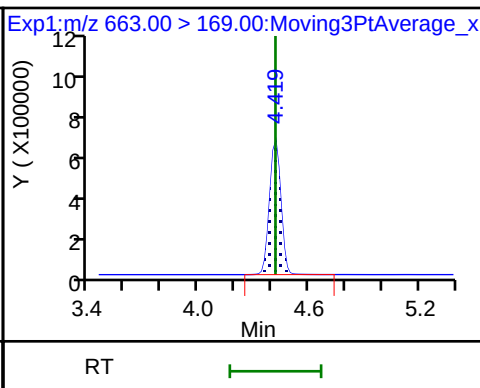
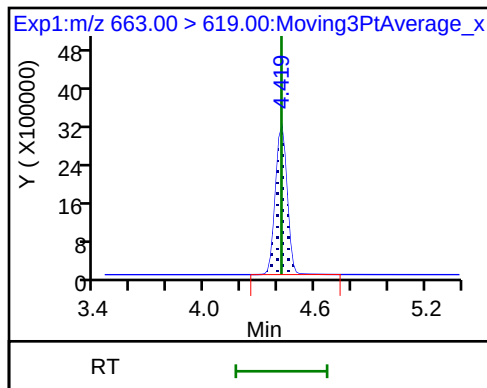
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

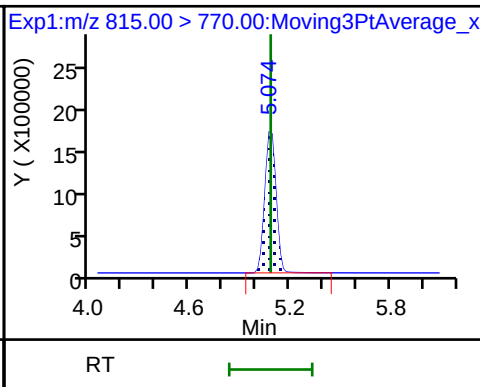
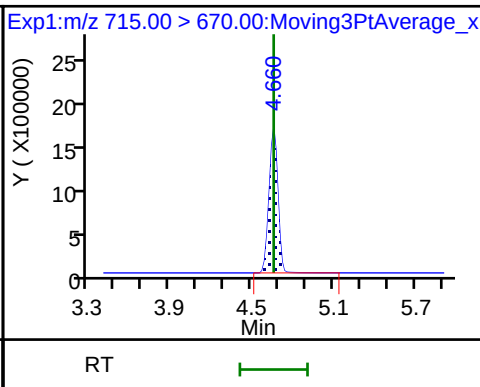
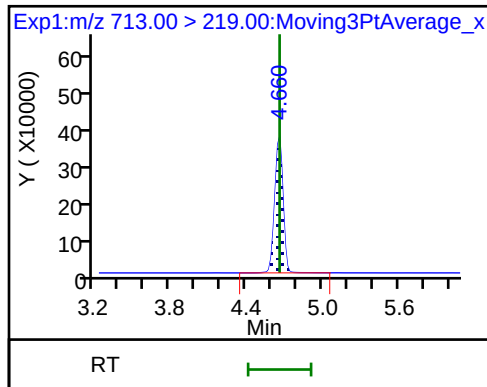
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

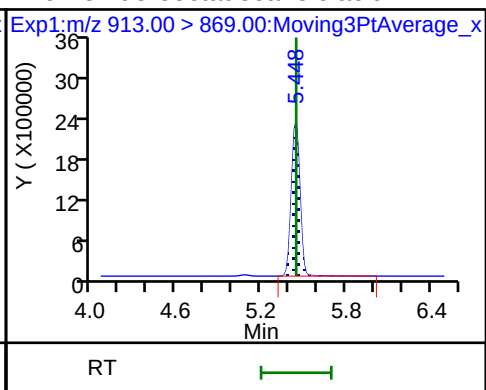
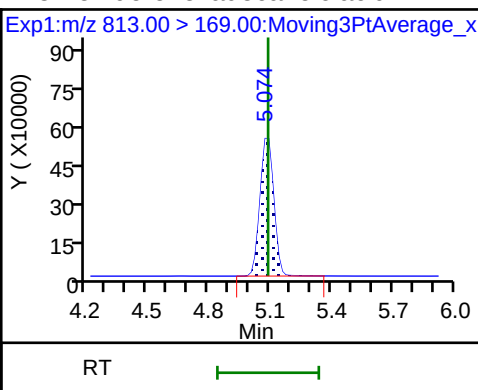
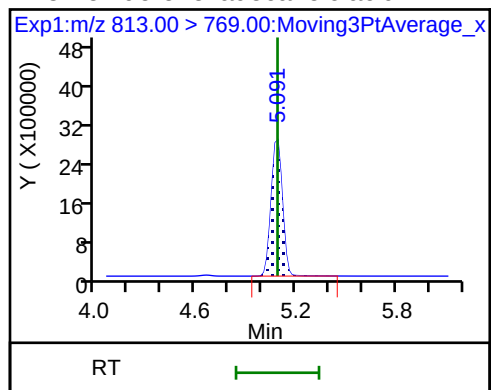
D 44 13C2-PFHxDA



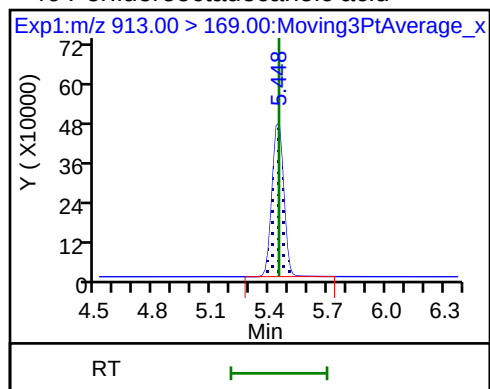
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLAICAL_011.d
 Lims ID: IC L7 Full
 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 21-Sep-2018 14:21:02 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD7
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:06:09 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 15:05:39

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	1.489	1.495	-0.006	0.538	8422985	2.69		107	23919	
2 Perfluorobutyric acid										
212.90 > 169.00	1.489	1.496	-0.007	1.000	28619286	9.27		92.7	1643	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.779	-0.007	1.000	26065041	8.77		87.7	1835	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.779	-0.007	0.641	7458806	2.62		105	10761	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.818	-0.004	0.656	97694	2.52		108	508	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.821	-0.007	1.000	32034311	7.38		83.5	9123	
298.90 > 99.00	1.814	1.821	-0.007	1.000	13059469		2.45(1.35-4.05)	83.5	4828	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.036	-0.009	1.118	8716545	9.18		98.3	12643	
D 60 M2-4:2FTS										
329.00 > 81.00	2.027	2.036	-0.009	0.733	851043	2.40		103	1013	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.074	-0.006	0.748	7960200	2.64		105	15829	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.077	-0.009	1.000	25055147	8.75		87.5	4943	
313.00 > 119.00	2.068	2.077	-0.009	1.000	2161138		11.59(6.96-20.87)	87.5	3223	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.099	-0.010	1.152	18041204	8.87		94.6	16300	
349.00 > 99.00	2.089	2.099	-0.010	1.152	8802447		2.05(1.15-3.45)	94.6	5749	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.170	2.176	-0.006	1.000	6264056	9.39		93.9	2183	

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	2.178	-0.008	0.785	892112	2.84		113	1999	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.399	2.412	-0.013	1.000	31298210	8.01		80.1	3204	
363.00 > 169.00	2.399	2.412	-0.013	1.000	9073586		3.45(2.17-6.52)	80.1	10771	
D 9 13C4-PFHpA										
367.00 > 322.00	2.399	2.412	-0.013	0.867	9199009	2.56		102	5649	
D 11 18O2 PFHxS										
403.00 > 84.00	2.426	2.427	-0.001	0.877	5975198	2.58		109	7546	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.426	2.427	-0.001	1.000	24867986	7.82		85.9	11890	
399.00 > 99.00	2.426	2.427	-0.001	1.000	7857370		3.16(1.90-5.70)	85.9	4160	
76 DONA										
377.00 > 251.00	2.452	2.456	-0.004	0.778	46231056	7.50		79.6	47343	
377.00 > 85.00	2.452	2.456	-0.004	0.778	25084994		1.84(1.13-3.39)	79.6	10184	
D 12 M2-6:2FTS										
429.00 > 81.00	2.750	2.752	-0.002	0.994	869086	2.33		98.0	1401	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.750	2.752	-0.002	1.000	7432909	9.31		98.2	5557	
D 73 13C8 PFOA										
421.00 > 376.00	2.766	2.768	-0.002		7516784	2.44		99.9	13070	
* 62 13C2-PFOA										
415.00 > 370.00	2.766	2.780	-0.014		8508066	2.50			6567	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.780	-0.014	1.000	28602312	7.78		77.7	1412	
413.00 > 169.00	2.766	2.780	-0.014	1.000	12752630		2.24(1.36-4.08)	77.7	12445	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.780	-0.014	1.000	8762277	2.57		103	9189	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.782	2.784	-0.002	0.882	22040563	9.24		97.0	8791	
449.00 > 99.00	2.782	2.784	-0.002	0.882	6474248		3.40(1.84-5.53)	97.0	8521	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.153	-0.018		1170018	2.16		90.6	2070	
D 19 13C5 PFNA										
468.00 > 423.00	3.153	3.155	-0.002	1.140	7893873	2.55		102	7899	
D 18 13C4 PFOS										
503.00 > 80.00	3.153	3.155	-0.002	1.140	5571777	2.32		97.0	3073	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.153	3.155	-0.002	1.000	22799451	9.23		99.5	6444	
499.00 > 99.00	3.153	3.155	-0.002	1.000	6030075		3.78(2.04-6.12)	99.5	3690	
20 Perfluorononanoic acid										
463.00 > 419.00	3.153	3.161	-0.008	1.000	25182261	8.12		81.2	2297	
463.00 > 169.00	3.153	3.161	-0.008	1.000	6270761		4.02(2.68-8.03)	81.2	8410	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.367	3.369	-0.002	1.068	22397136	8.60		92.3	6206	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.258	3377811	2.63		105	5669	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.480	3.483	-0.003	1.000	32608152	8.18		81.8	13170	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.496	3.512	-0.016	1.000	5817799	8.79		91.7	5085	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.496	3.512	-0.016	1.109	13965529	9.00		93.7	5096	
549.00 > 99.00	3.496	3.512	-0.016	1.109	2721964		5.13(3.02-9.05)	93.7	3551	
D 26 M2-8:2FTS										
529.00 > 81.00	3.496	3.512	-0.016	1.264	107844	2.28		95.2	374	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.512	3.522	-0.010	1.000	27615483	7.81		78.1	3790	
513.00 > 169.00	3.512	3.522	-0.010	1.000	2590251		10.66(7.12-21.35)	78.1	586	
D 23 13C2 PFDA										
515.00 > 470.00	3.512	3.522	-0.010	1.270	8068123	2.51		101	5709	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.669	3.675	-0.006	1.326	3893478	2.74		109	2198	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.669	3.681	-0.012	1.000	14001333	9.37		93.7	2177	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.823	3.834	-0.011	1.213	17155341	8.60		89.2	8380	
599.00 > 99.00	3.823	3.834	-0.011	1.213	4283541		4.00(2.14-6.43)	89.2	8843	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.839	3.843	-0.004	1.388	2476319	2.22		88.8	2130	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.839	3.852	-0.013	1.000	19149013	8.21		82.1	2544	
563.00 > 169.00	3.839	3.852	-0.013	1.000	2219032		8.63(5.24-15.72)	82.1	4493	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.839	3.852	-0.013	1.000	10076333	10.9		109	5515	
D 30 13C2 PFUnA										
565.00 > 520.00	3.839	3.852	-0.013	1.388	6465241	2.37		94.9	6550	
35 MeFOSA										
512.00 > 169.00	3.960	3.965	-0.005		7393519	NC			1009	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.007	4.009	-0.002	1.271	26180127	8.54		90.6	15277	
D 36 13C2 PFDaA										
615.00 > 570.00	4.139	4.147	-0.008	1.496	8282800	2.55		102	10953	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.139	4.149	-0.010	1.000	25199086	7.60		76.0	4469	
613.00 > 169.00	4.139	4.149	-0.010	1.000	3994374		6.31(4.68-14.05)	76.0	5004	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.139	4.152	-0.013	1.184	4592235	10.2		106	4517	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		7490701	NC			556	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.373	4.390	-0.017	1.387	2163811	9.69		100	2897	
699.00 > 99.00	4.373	4.390	-0.017	1.387	4022315		0.54(0.28-0.83)	100	8350	

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	4.417	-0.013	1.064	20612834	7.94		79.4	5330	
663.00 > 169.00	4.404	4.417	-0.013	1.064	4536067		4.54(3.09-9.27)	79.4	5039	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.659	-0.015	1.000	4644490	10.0		100	8161	
713.00 > 219.00	4.644	4.659	-0.015	1.000	3168523		1.47(0.70-2.09)	100	8248	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.644	4.659	-0.015	1.679	7039163	2.75		110	11527	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.074	5.084	-0.010	1.834	6848863	2.68		107	12720	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.074	5.089	-0.015	1.000	19994843	8.03		80.3	3389	
813.00 > 169.00	5.074	5.089	-0.015	1.000	4609799		4.34(2.77-8.32)	80.3	5262	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.434	5.448	-0.014	1.071	15904110	8.96		89.6	3076	
913.00 > 169.00	5.434	5.448	-0.014	1.071	3502024		4.54(2.55-7.64)	89.6	5377	

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\20180921-64578.b\2018.09.21LLAICAL_011.d

Injection Date: 21-Sep-2018 14:21:02

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

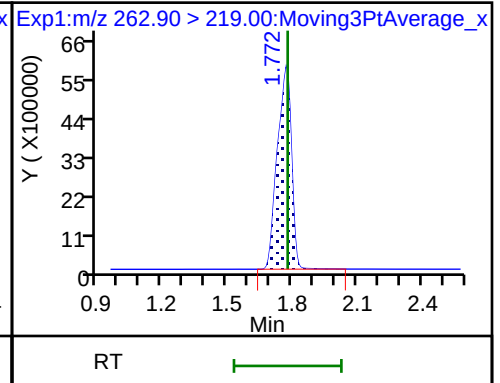
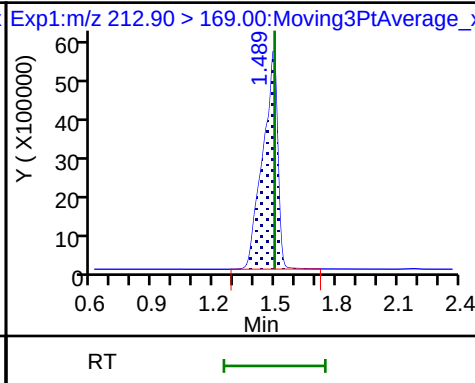
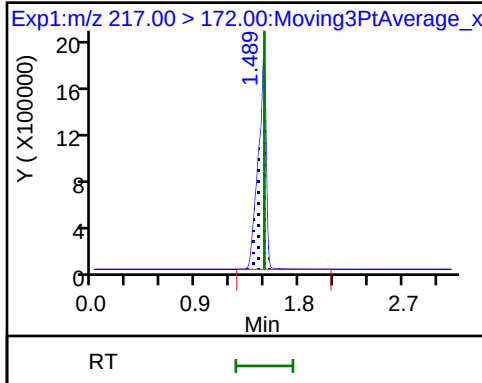
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

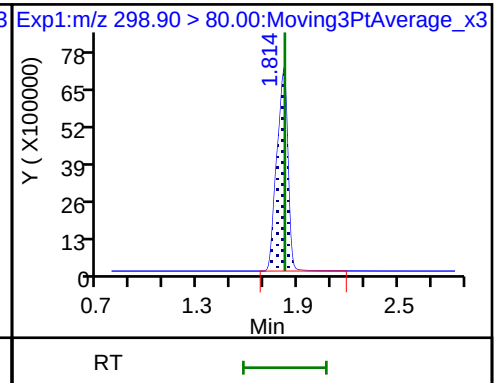
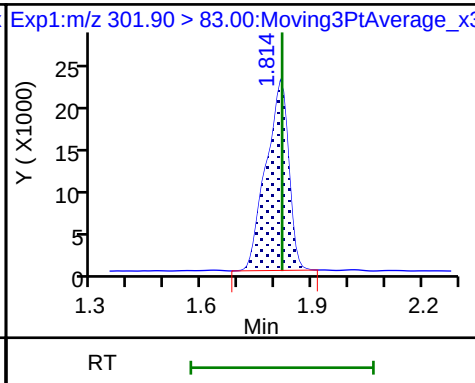
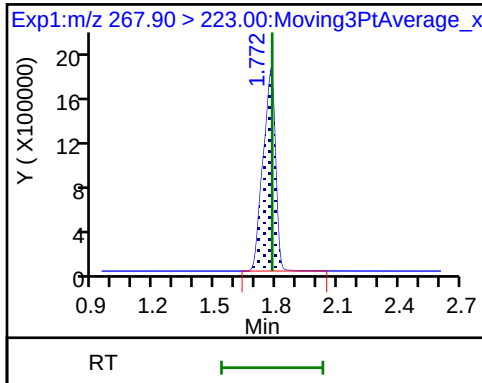
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

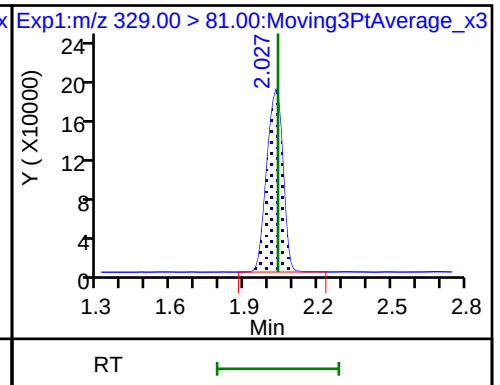
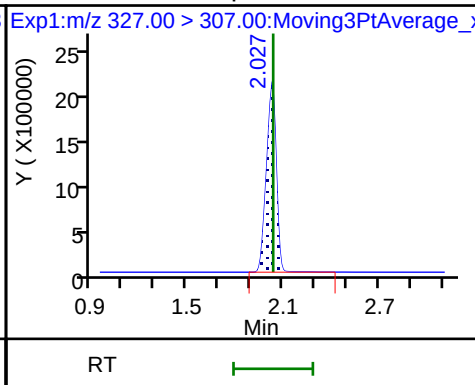
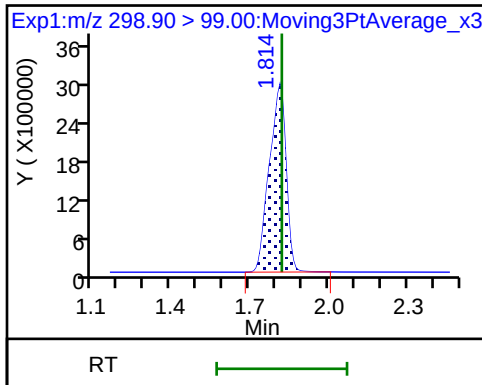
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

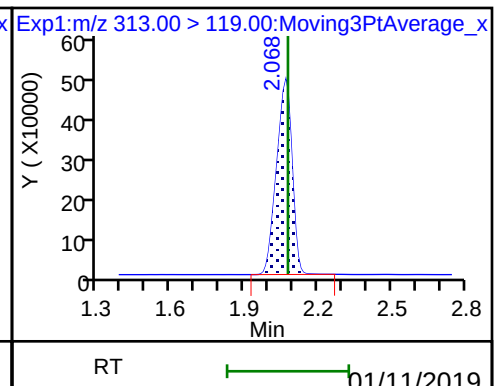
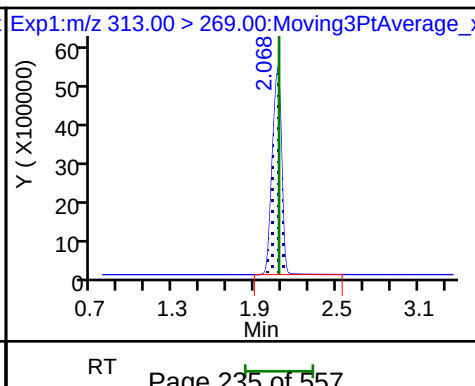
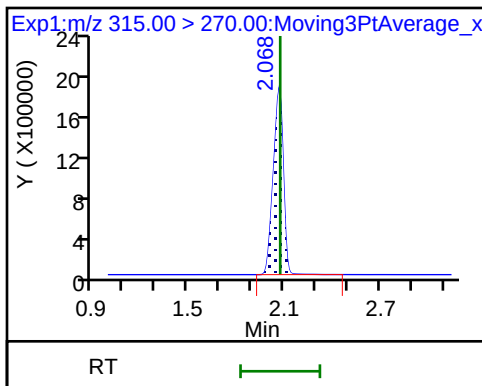
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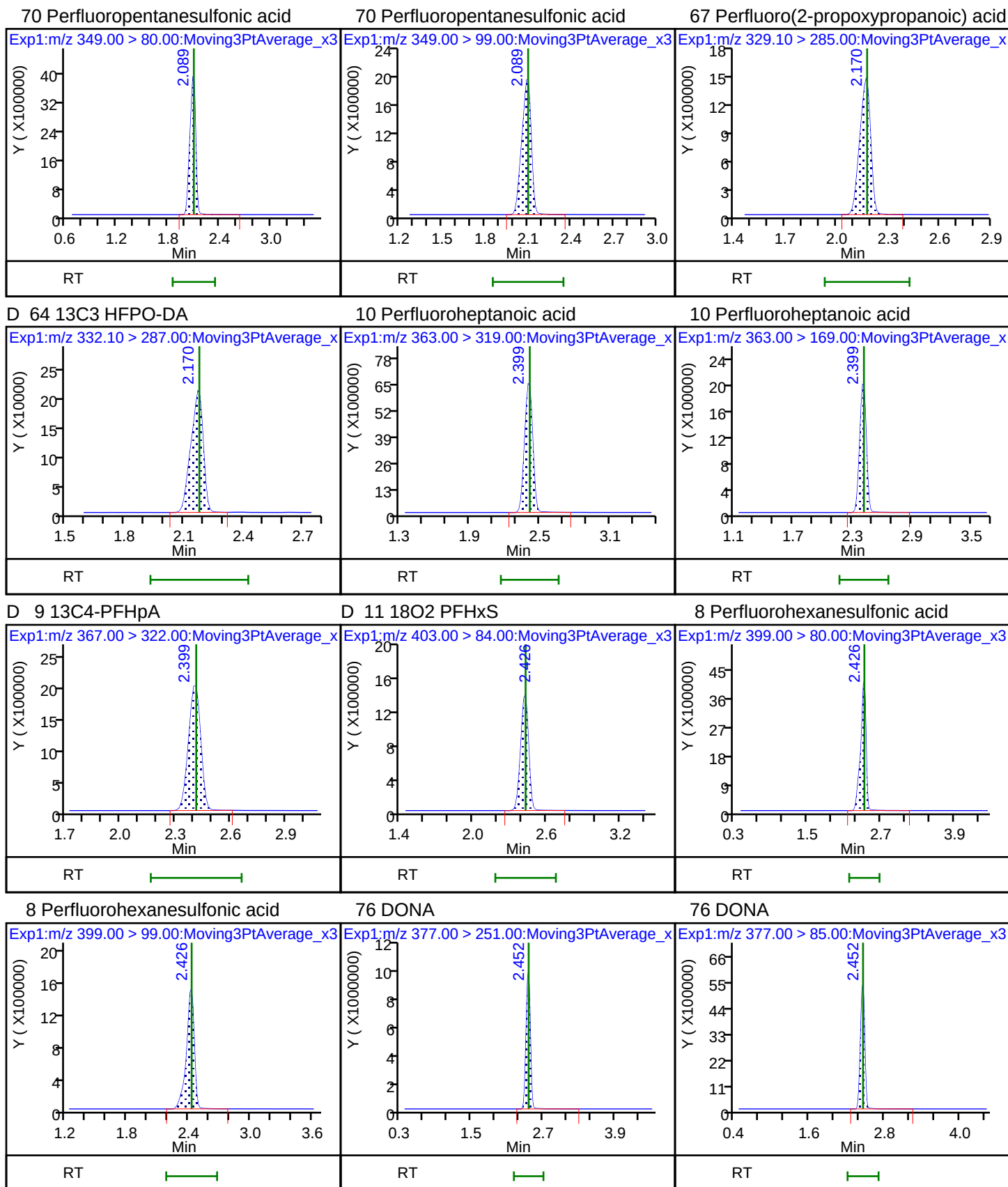


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

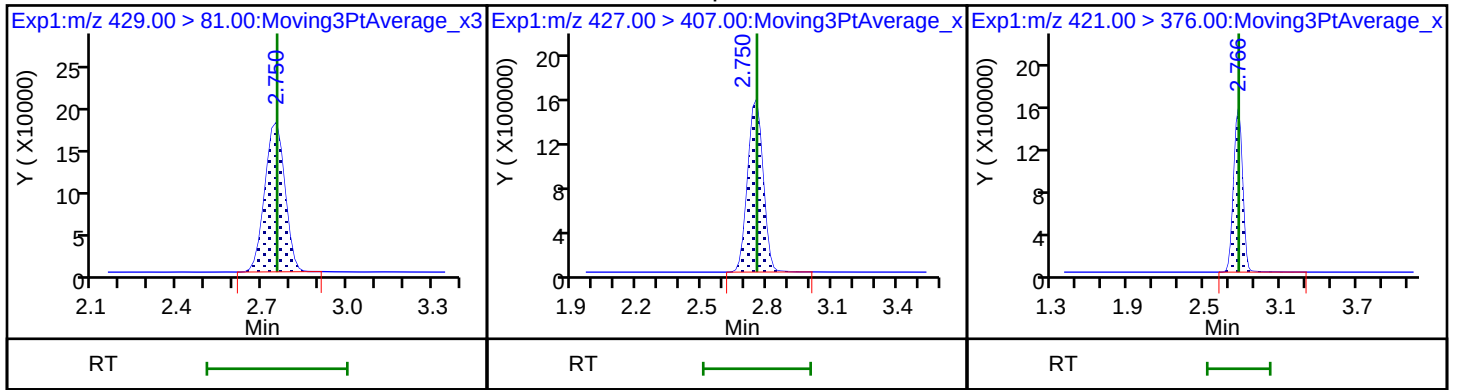
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

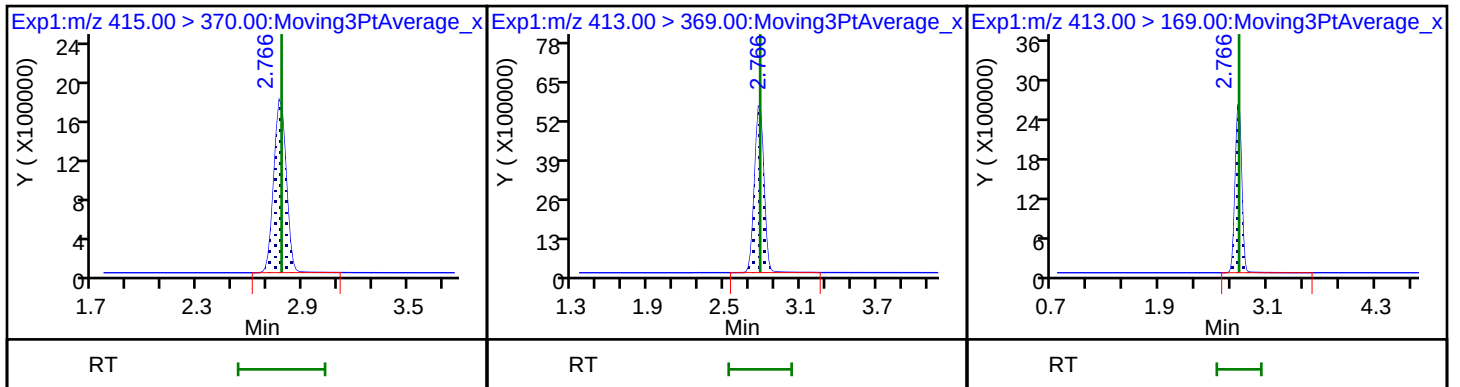
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

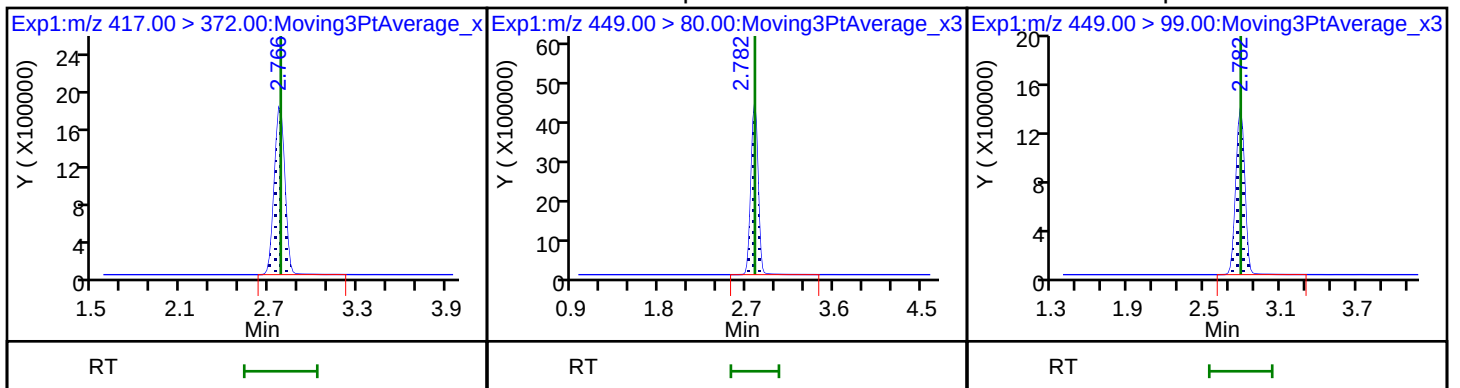
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

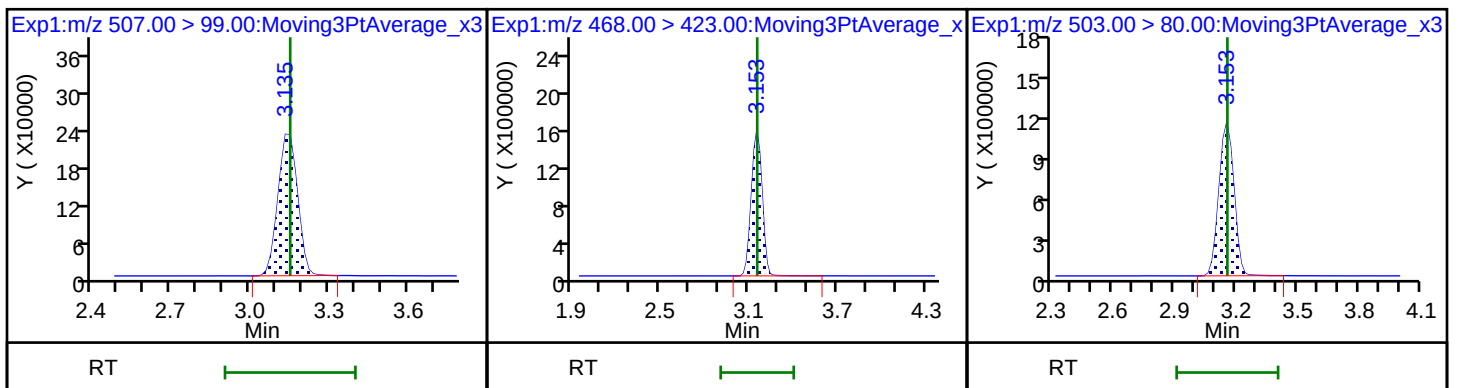
16 Perfluoroheptanesulfonic acid

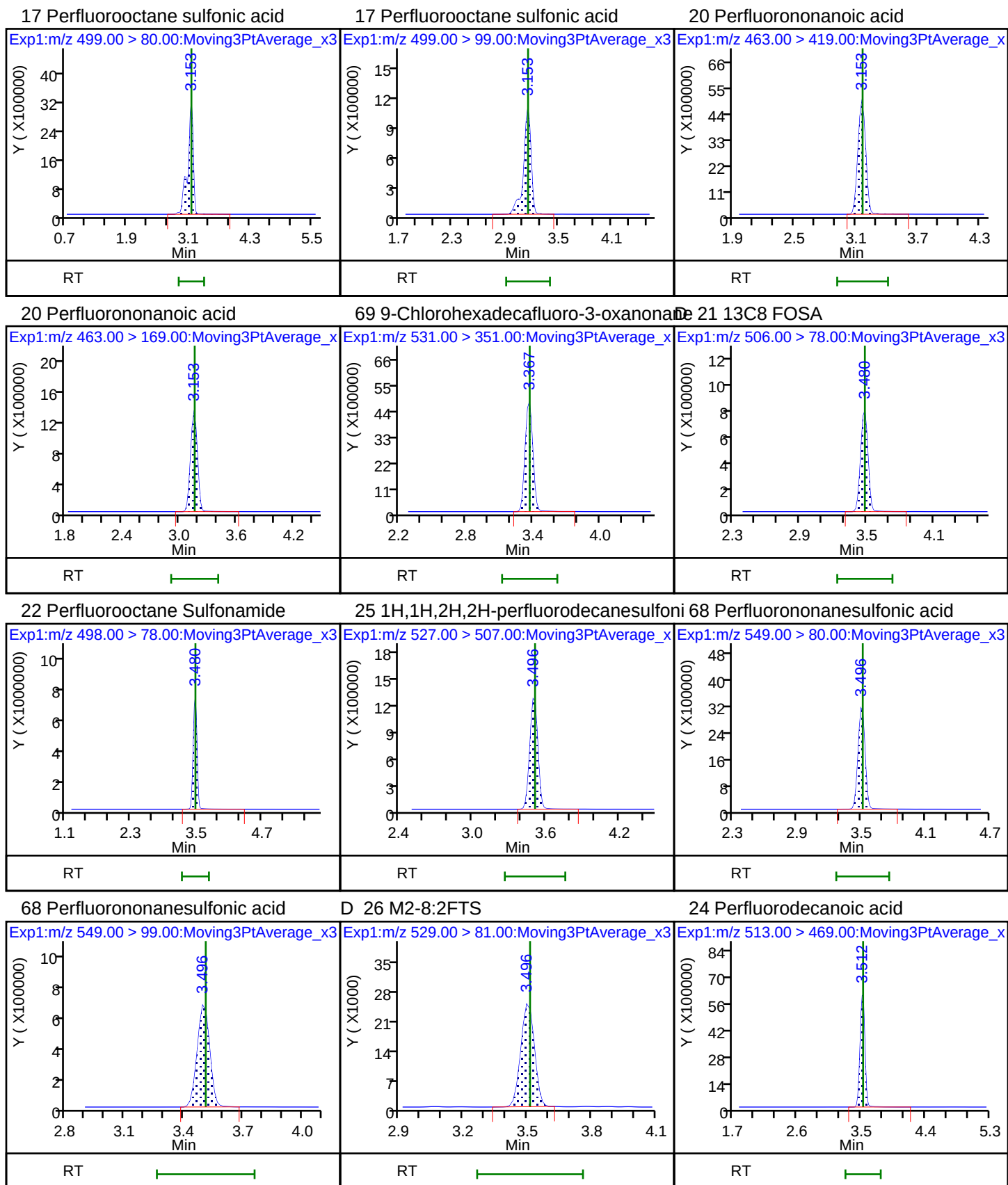


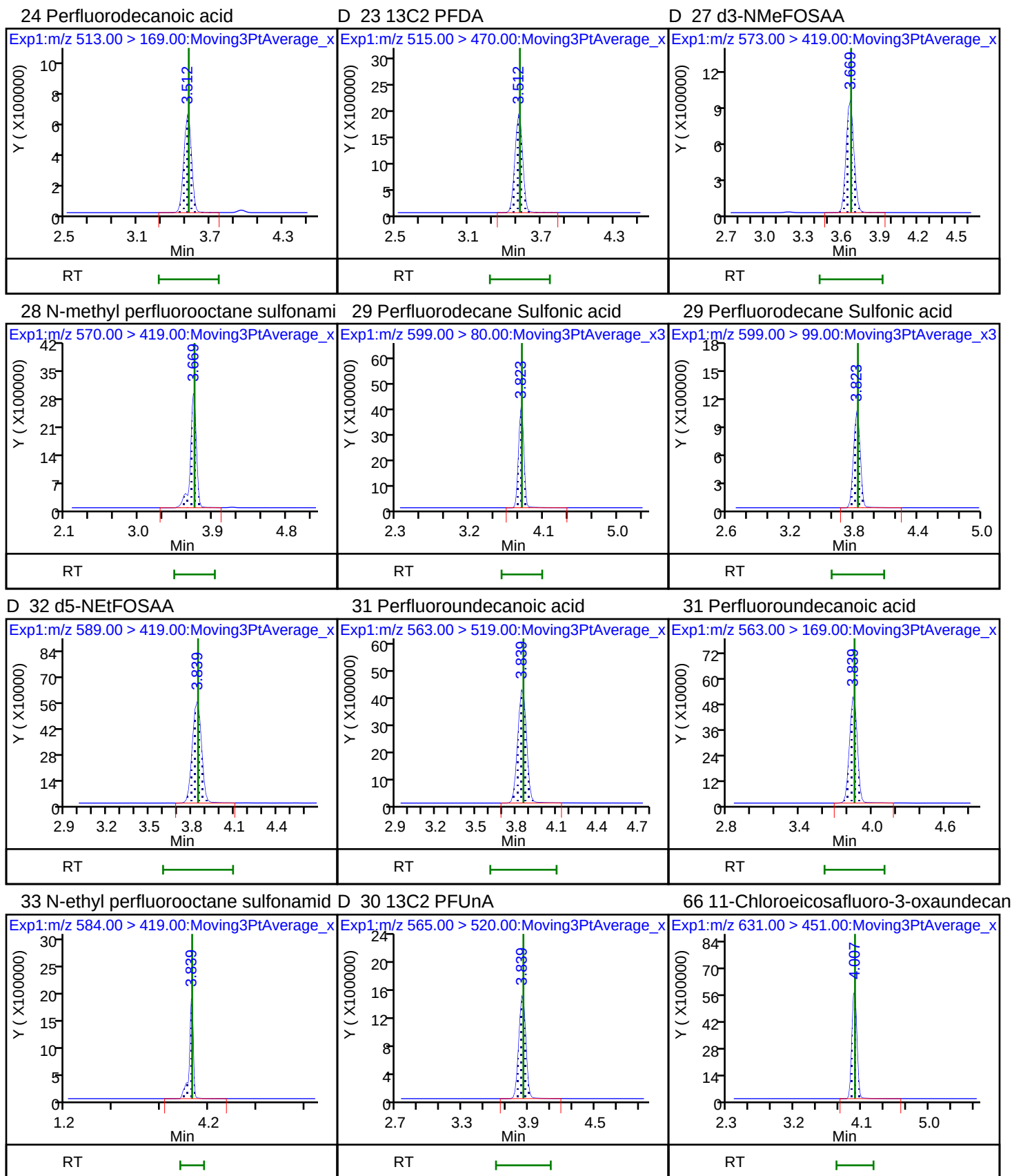
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



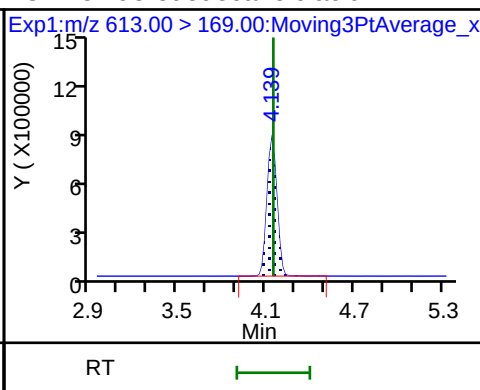
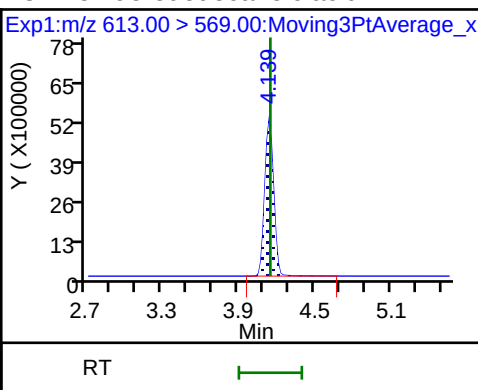
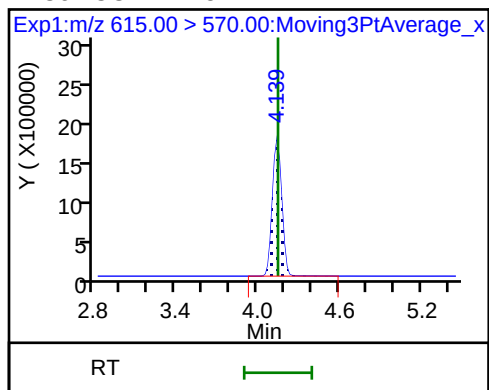




D 36 13C2 PFDaA

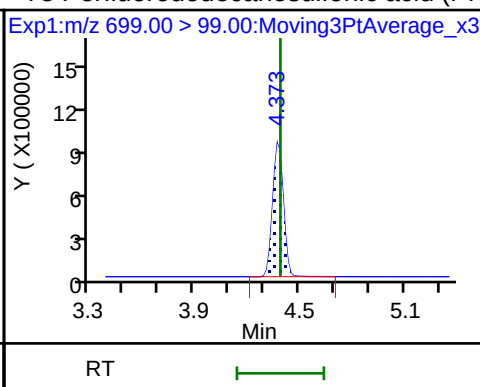
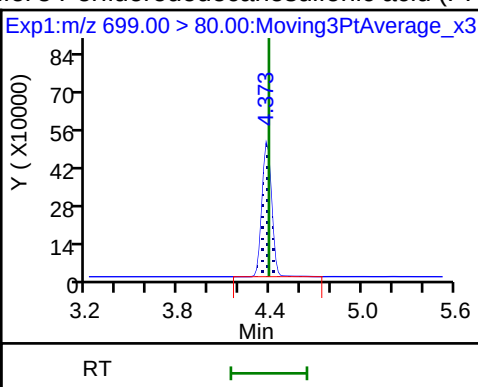
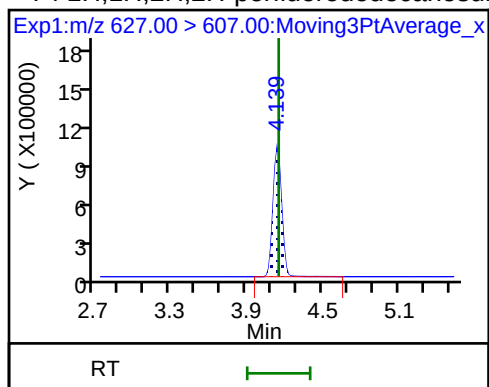
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

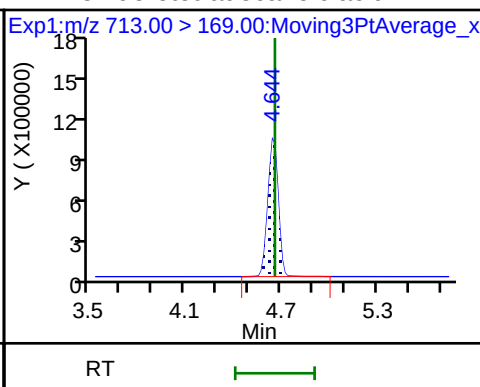
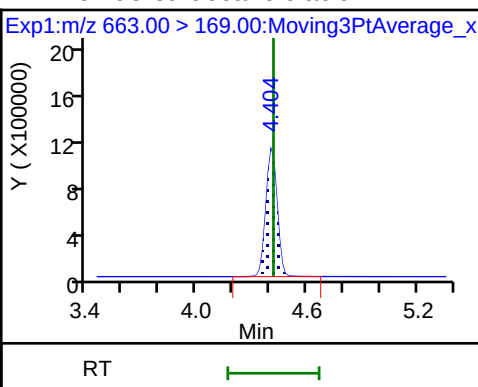
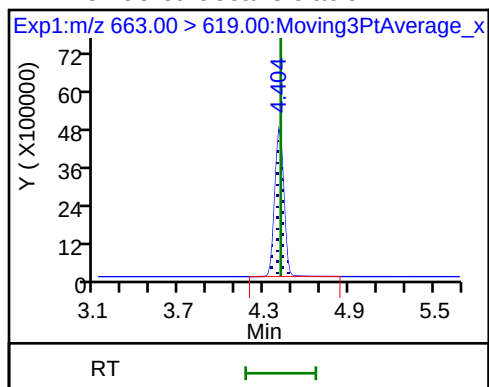
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

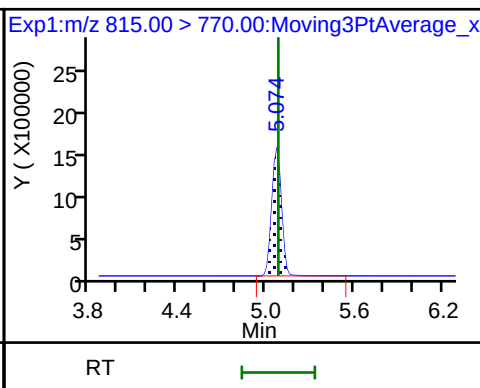
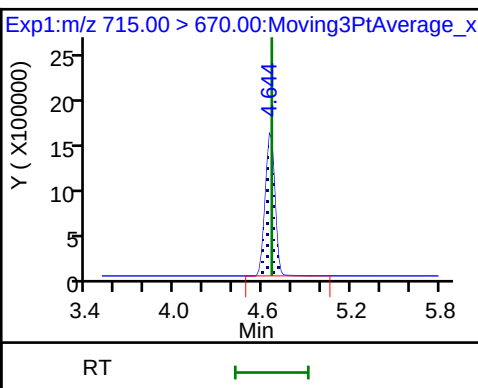
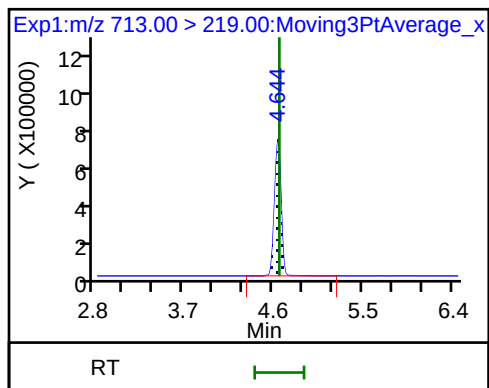
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

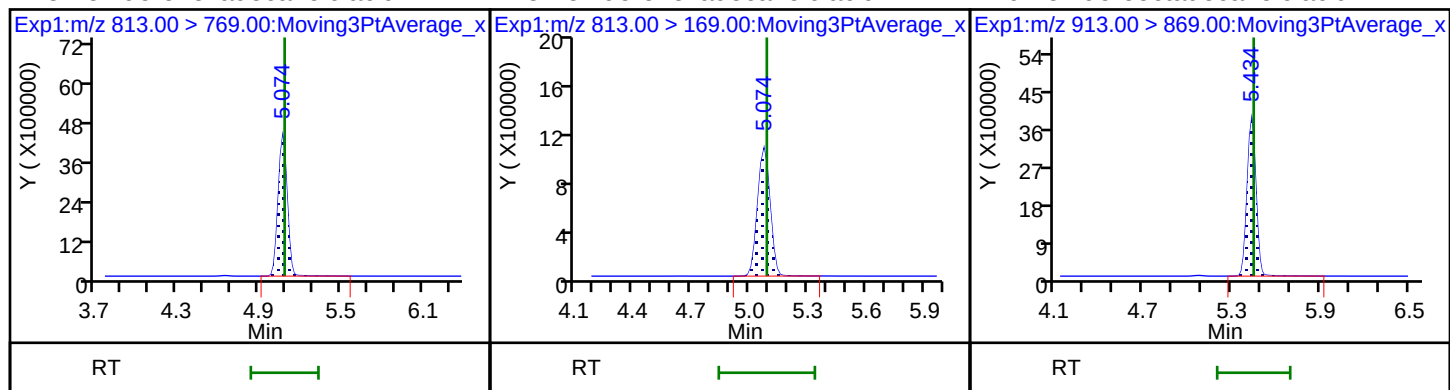
D 44 13C2-PFHxDA



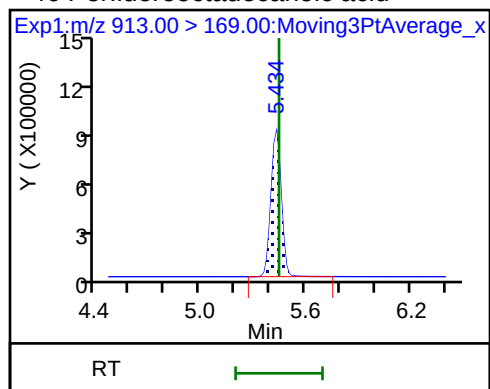
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 21-Sep-2018 15:36:08 ALS Bottle#: 11 Worklist Smp#: 11
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC PFC STD2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: A9\Administrator Instrument ID: A9
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 22-Sep-2018 09:06:16 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK037

First Level Reviewer: roycea

Date: 21-Sep-2018 15:54:20

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	1.493	1.495	-0.002	0.540	7455703	2.37		94.8	11386	
2 Perfluorobutyric acid										
212.90 > 169.00	1.493	1.496	-0.003	1.000	135508	0.0496		99.1	8.9	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.779	-0.007	1.000	149842	0.0549		110	12.7	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.779	-0.007	0.641	6857279	2.40		95.9	9489	
D 47 13C3-PFBS										
301.90 > 83.00	1.813	1.818	-0.005	0.656	83923	2.15		92.7	431	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.813	1.821	-0.008	1.000	172445	0.0462		105	97.2	
298.90 > 99.00	1.813	1.821	-0.008	1.000	58528		2.95(1.35-4.05)	105	61.8	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.036	-0.009	1.118	36747	0.0450		96.5	326	
D 60 M2-4:2FTS										
329.00 > 81.00	2.027	2.036	-0.009	0.733	807073	2.27		97.0	902	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.074	-0.006	0.748	7530157	2.48		99.3	8290	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.077	-0.009	1.000	143018	0.0528		106	32.3	
313.00 > 119.00	2.068	2.077	-0.009	1.000	9796		14.60(6.96-20.87)	106	23.3	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.088	2.099	-0.011	1.152	81120	0.0464		99.0	164	
349.00 > 99.00	2.098	2.099	-0.001	1.157	42510		1.91(1.15-3.45)	99.0	102	
67 Perfluoro(2-propoxypropanoic) acid										M
329.10 > 285.00	2.170	2.176	-0.006	1.000	25929	0.0504		101	12.8	M

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	2.178	-0.008	0.785	688254	2.18		87.2	1519	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.399	2.412	-0.013	1.000	199114	0.0550		110	33.2	
363.00 > 169.00	2.399	2.412	-0.013	1.000	44696		4.45(2.17-6.52)	110	112	
D 9 13C4-PFHpA										
367.00 > 322.00	2.399	2.412	-0.013	0.867	8530313	2.36		94.5	11908	
D 11 18O2 PFHxS										
403.00 > 84.00	2.412	2.427	-0.015	0.872	5360994	2.30		97.3	5685	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.412	2.427	-0.015	1.000	145720	0.0511		112	160	
399.00 > 99.00	2.412	2.427	-0.015	1.000	42813		3.40(1.90-5.70)	112	62.4	
76 DONA										
377.00 > 251.00	2.438	2.456	-0.018	0.778	325759	0.0517		110	843	
377.00 > 85.00	2.438	2.456	-0.018	0.778	130047		2.50(1.13-3.39)	110	59.2	
D 12 M2-6:2FTS										
429.00 > 81.00	2.734	2.752	-0.018	0.988	881970	2.35		99.1	1366	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.752	-0.018	1.000	41619	0.0514		108	122	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.768	-0.018		7332111	2.38		97.4	12266	
* 62 13C2-PFOA										
415.00 > 370.00	2.766	2.780	-0.014		8541936	2.50			10031	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.780	-0.014	1.000	209915	0.0573		115	11.2	
413.00 > 169.00	2.766	2.780	-0.014	1.000	74136		2.83(1.36-4.08)	115	116	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.780	-0.014	1.000	8724980	2.55		102	9964	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.784	-0.018	0.882	112302	0.0460		96.7	156	
449.00 > 99.00	2.766	2.784	-0.018	0.882	27727		4.05(1.84-5.53)	96.7	97.5	
D 72 13C8 PFOS										
507.00 > 99.00	3.134	3.153	-0.019		1255916	2.32		97.2	2636	
D 19 13C5 PFNA										
468.00 > 423.00	3.134	3.155	-0.021	1.133	7735806	2.49		99.4	6498	
D 18 13C4 PFOS										
503.00 > 80.00	3.134	3.155	-0.021	1.133	5698100	2.36		98.8	3992	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.134	3.155	-0.021	1.000	123626	0.0490		105	113	
499.00 > 99.00	3.152	3.155	-0.003	1.006	31718		3.90(2.04-6.12)	105	116	
20 Perfluorononanoic acid										
463.00 > 419.00	3.134	3.161	-0.027	1.000	166178	0.0547		109	18.8	
463.00 > 169.00	3.134	3.161	-0.027	1.000	28535		5.82(2.68-8.03)	109	67.6	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.350	3.369	-0.019	1.069	128181	0.0481		103	329	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.258	3139325	2.44		97.5	6657	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.480	3.483	-0.003	1.000	194556	0.0525		105	344	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.495	3.512	-0.017	1.000	39972	0.0555		116	114	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.495	3.512	-0.017	1.115	76752	0.0484		101	211	
549.00 > 99.00	3.495	3.512	-0.017	1.115	10171		7.55(3.02-9.05)	101	118	
D 26 M2-8:2FTS										
529.00 > 81.00	3.495	3.512	-0.017	1.264	117311	2.47		103	596	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.495	3.522	-0.027	1.000	182990	0.0536		107	36.8	
513.00 > 169.00	3.495	3.522	-0.027	1.000	11451		15.98(7.12-21.35)	107	26.3	
D 23 13C2 PFDA										
515.00 > 470.00	3.495	3.522	-0.027	1.264	7794397	2.42		96.7	10981	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.654	3.675	-0.021	1.321	3229247	2.26		90.4	5166	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.654	3.681	-0.027	1.000	63800	0.0515		103	18.6	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.807	3.834	-0.027	1.215	105743	0.0518		108	185	
599.00 > 99.00	3.807	3.834	-0.027	1.215	21612		4.89(2.14-6.43)	108	104	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.822	3.843	-0.021	1.382	2952255	2.64		105	1883	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.822	3.852	-0.030	1.000	124140	0.0523		105	27.3	
563.00 > 169.00	3.822	3.852	-0.030	1.000	12244		10.14(5.24-15.72)	105	53.4	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.822	3.852	-0.030	1.000	52993	0.0480		96.1	119	
D 30 13C2 PFUnA										
565.00 > 520.00	3.822	3.852	-0.030	1.382	6576404	2.40		96.1	6623	
35 MeFOSA										
512.00 > 169.00	3.959	3.965	-0.006		32369	NC			163	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.991	4.009	-0.018	1.273	152674	0.0487		103	572	
D 36 13C2 PFDaA										
615.00 > 570.00	4.122	4.147	-0.025	1.490	7891096	2.42		96.9	9160	
37 Perfluorododecanoic acid										M
613.00 > 569.00	4.122	4.149	-0.027	1.000	175107	0.0554		111	43.7	M
613.00 > 169.00	4.122	4.149	-0.027	1.000	16570		10.57(4.68-14.05)	111	33.9	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.122	4.152	-0.030	1.179	22337	0.0456		94.6	70.3	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.157	4.157	0.0		34534	NC			94.1	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.372	4.390	-0.018	1.395	11605	0.0508		105	38.4	
699.00 > 99.00	4.357	4.390	-0.033	1.390	19863		0.58(0.28-0.83)	105	70.9	

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	4.417	-0.029	1.064	144436	0.0584		117	58.5	
663.00 > 169.00	4.388	4.417	-0.029	1.064	24020		6.01(3.09-9.27)	117	89.7	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.626	4.659	-0.033	1.000	21006	0.0494		98.9	87.9	
713.00 > 219.00	4.626	4.659	-0.033	1.000	16648		1.26(0.70-2.09)	98.9	74.2	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.626	4.659	-0.033	1.673	6467590	2.52		101	11176	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.057	5.084	-0.027	1.828	6473479	2.53		101	9887	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.089	-0.032	1.000	173671	0.0495		99.0	47.0	
813.00 > 169.00	5.057	5.089	-0.032	1.000	31450		5.52(2.77-8.32)	99.0	107	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.418	5.448	-0.030	1.071	88318	0.0526		105	27.6	
913.00 > 169.00	5.404	5.448	-0.044	1.069	15788		5.59(2.55-7.64)	105	107	

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\A9\20180921-64578.b\2018.09.21LLBICAL 006.d

Injection Date: 21-Sep-2018 15:36:08

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 11

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

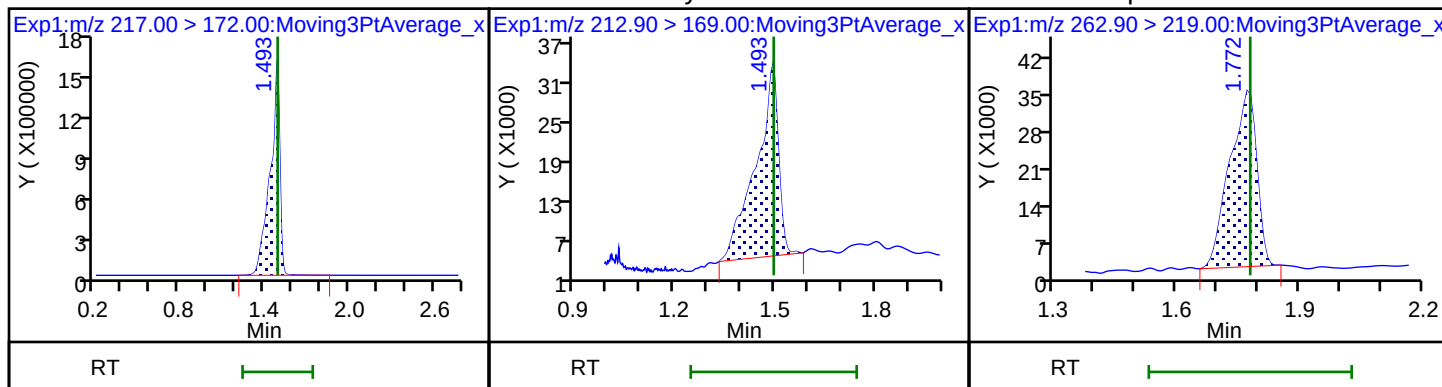
Method: PFAS A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

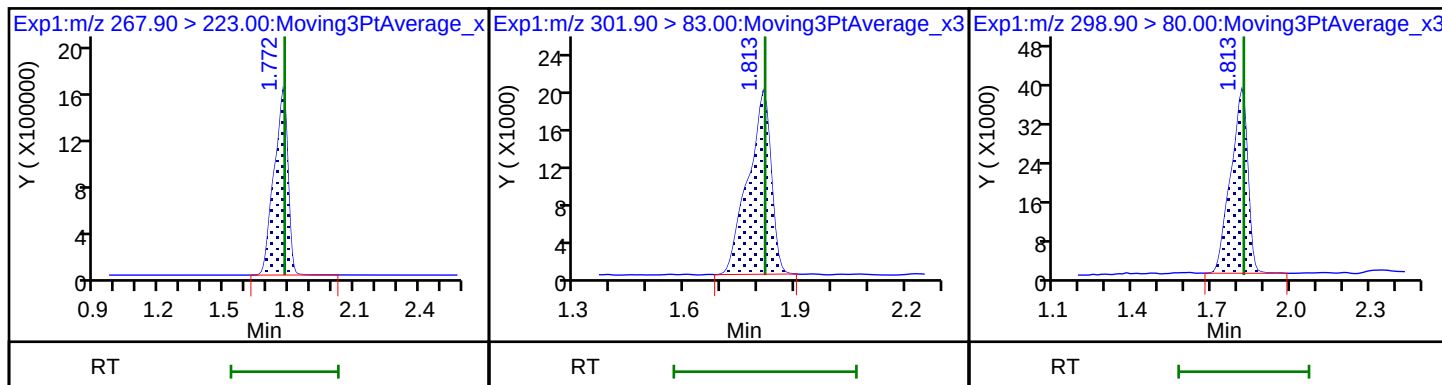
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

D 47 13C3-PFBS

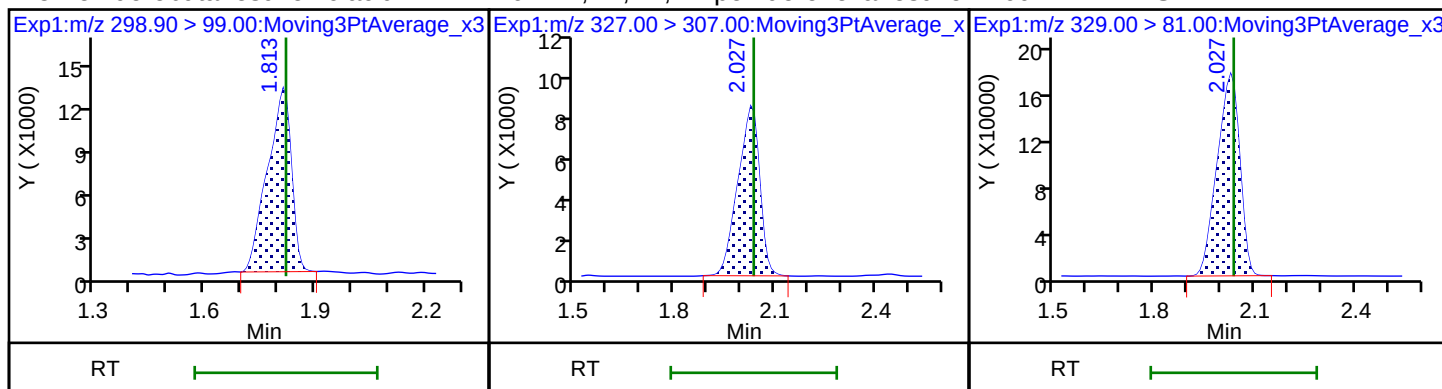
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonid 60 M2-4:2FTS

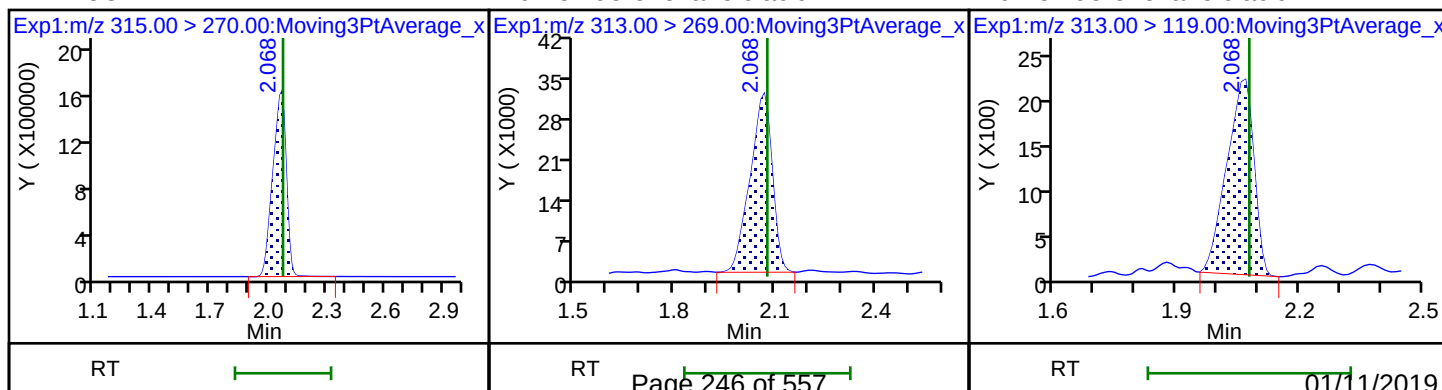
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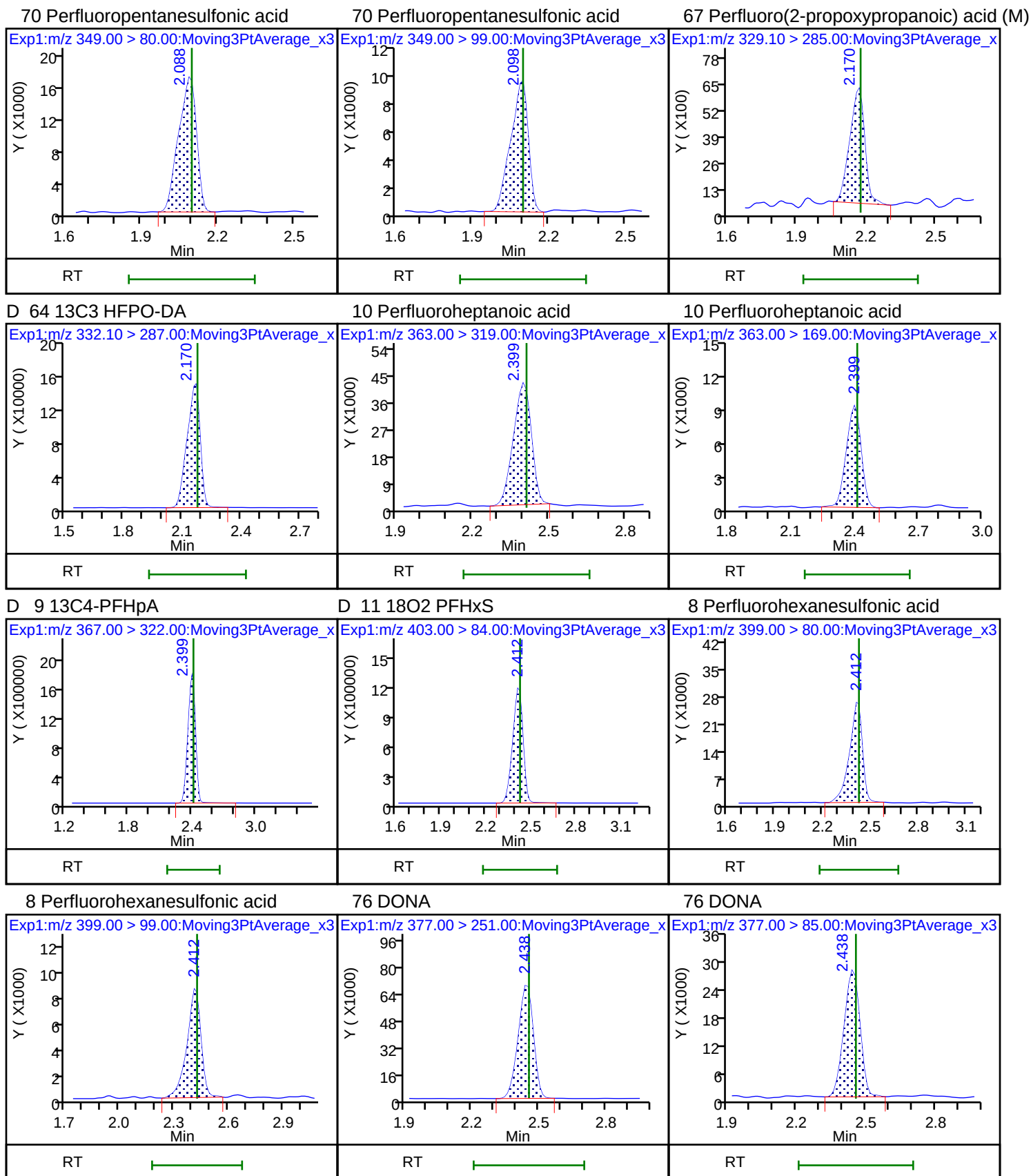


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

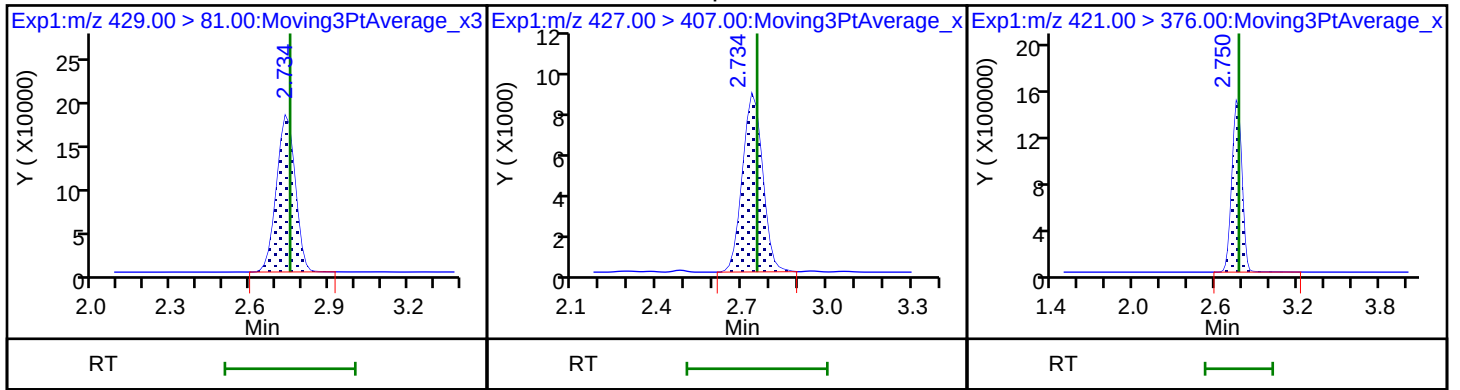
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

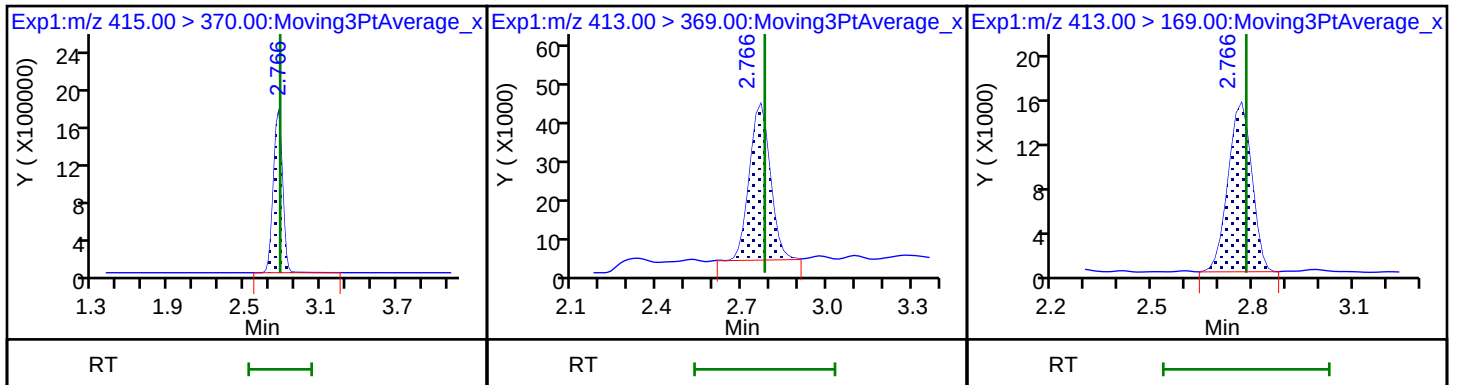
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

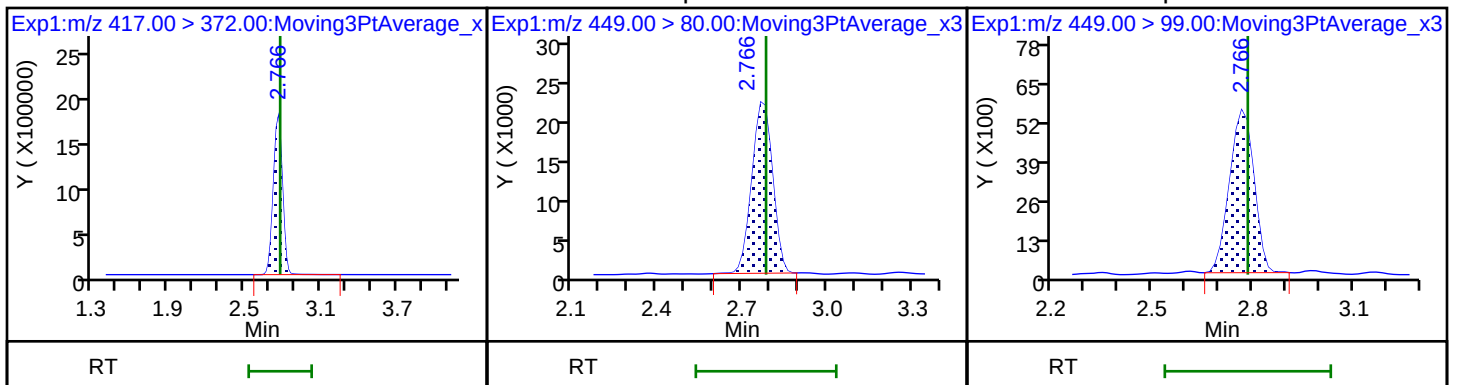
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

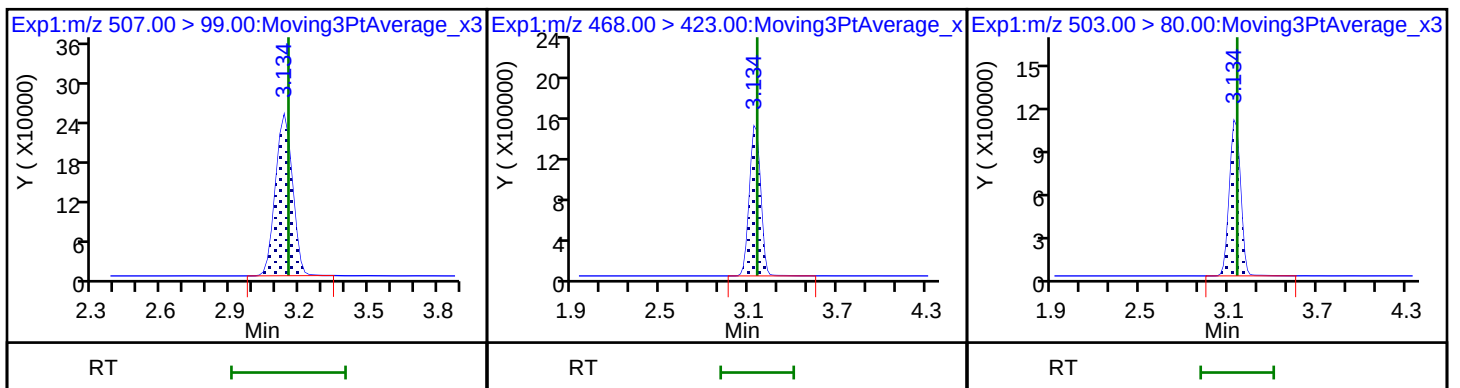
16 Perfluoroheptanesulfonic acid

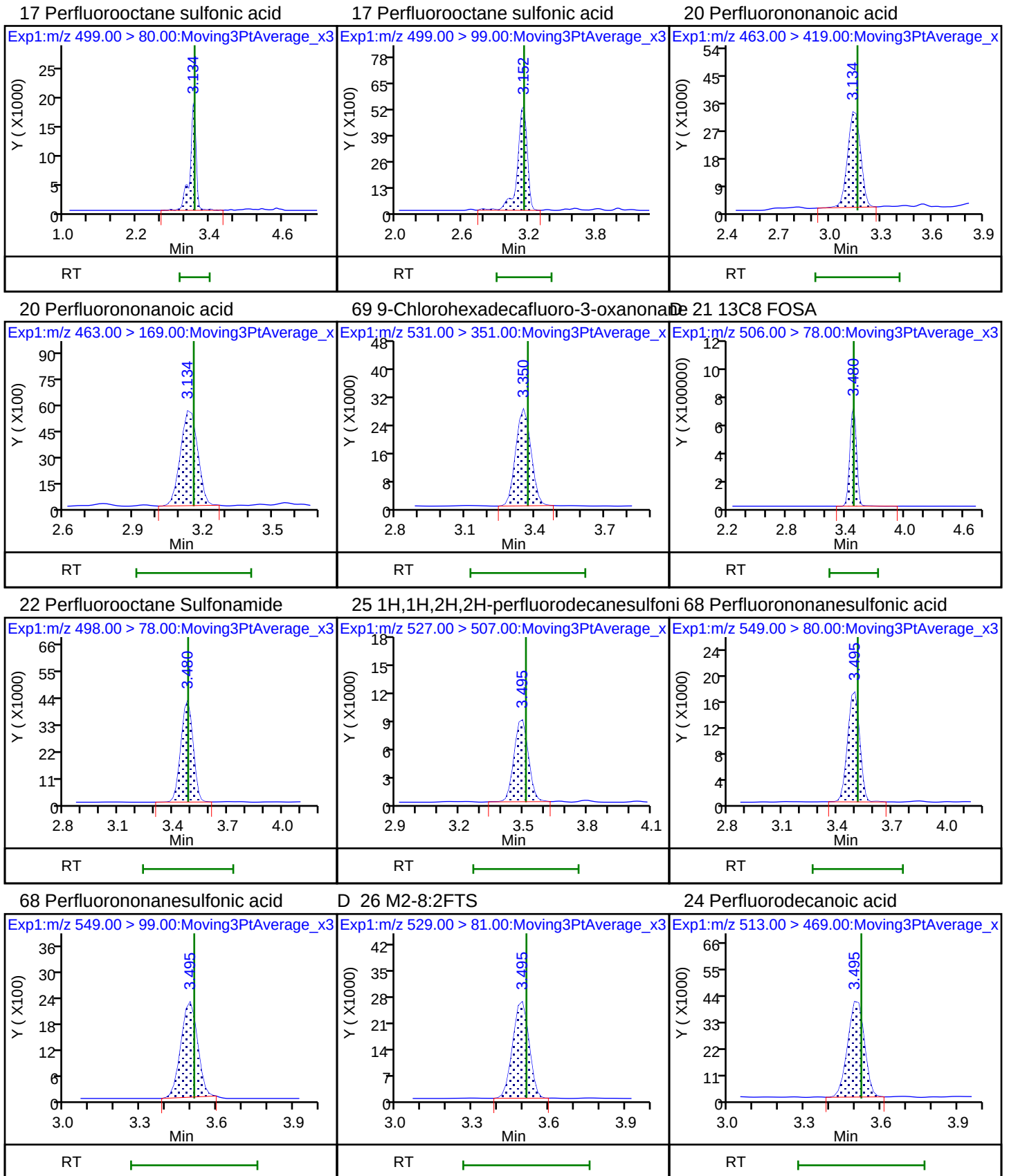


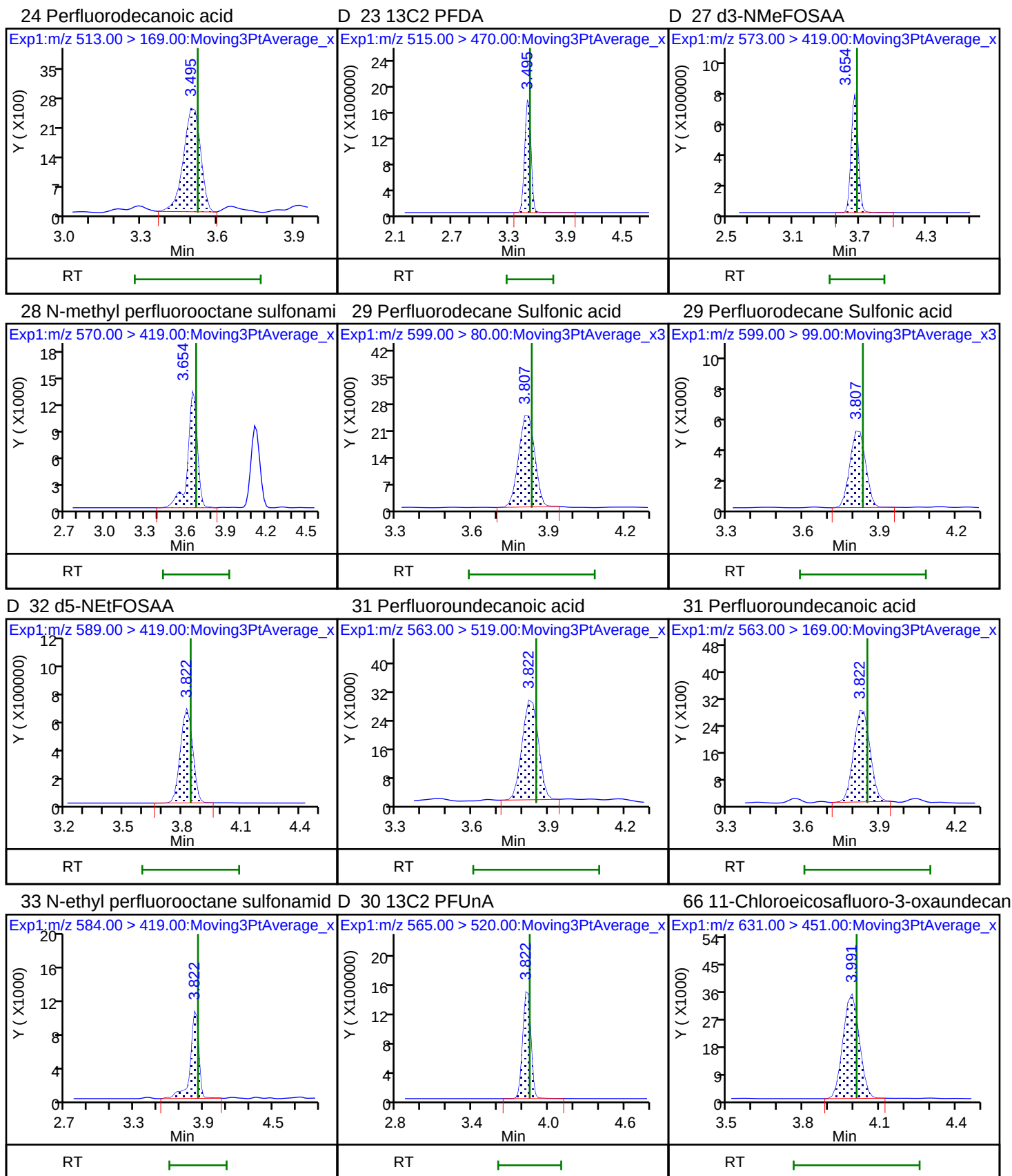
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



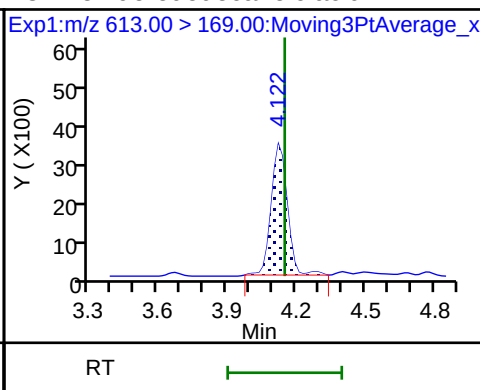
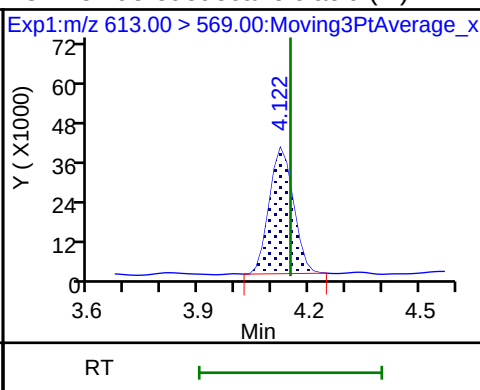
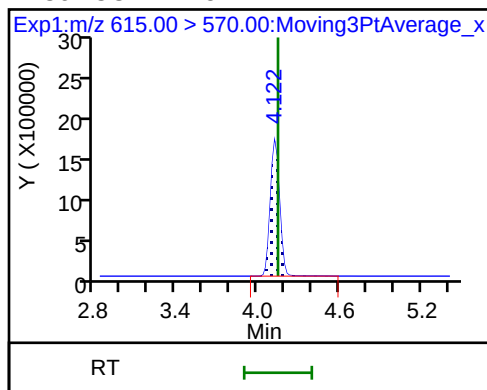




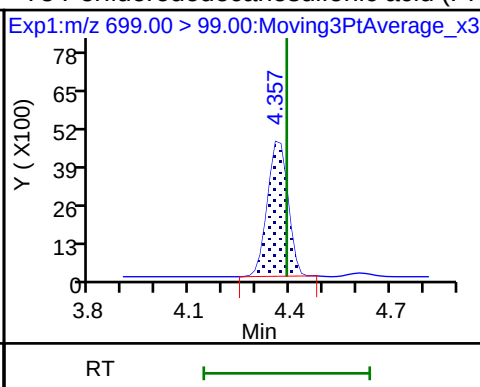
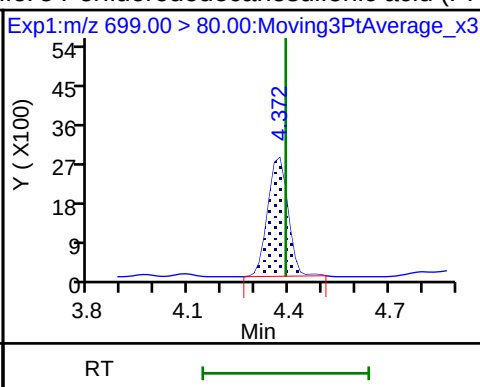
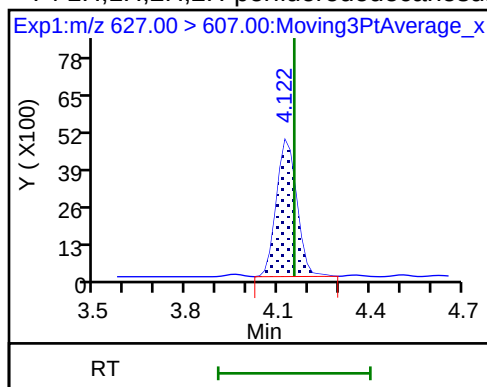
D 36 13C2 PFDaA

37 Perfluorododecanoic acid (M)

37 Perfluorododecanoic acid



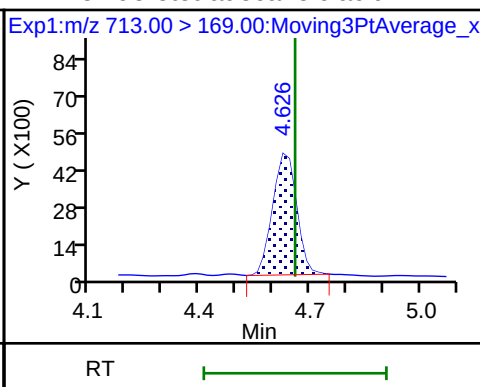
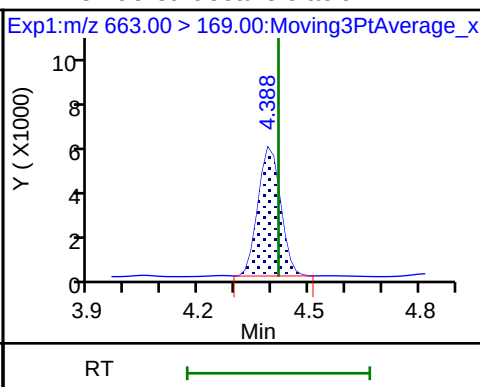
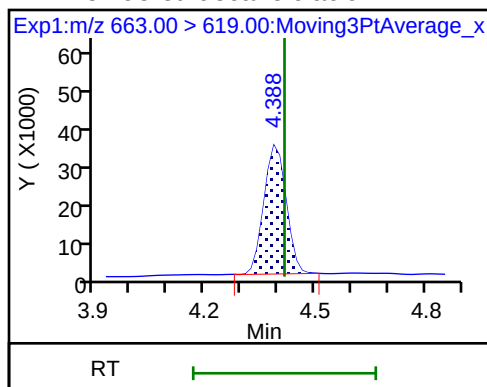
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

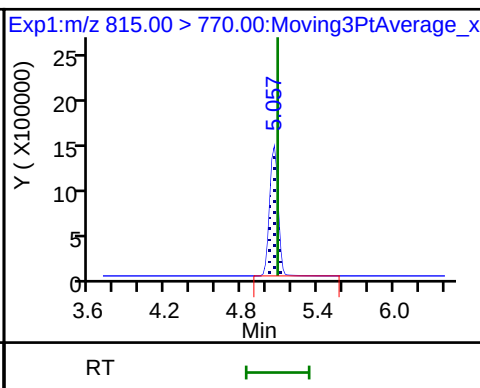
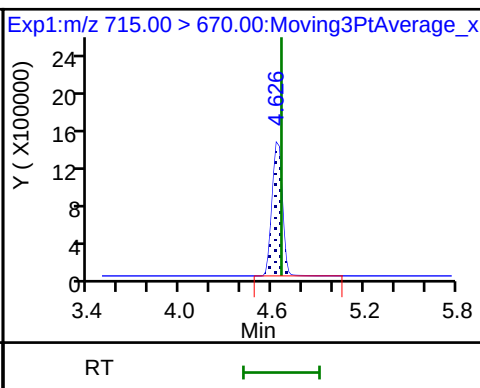
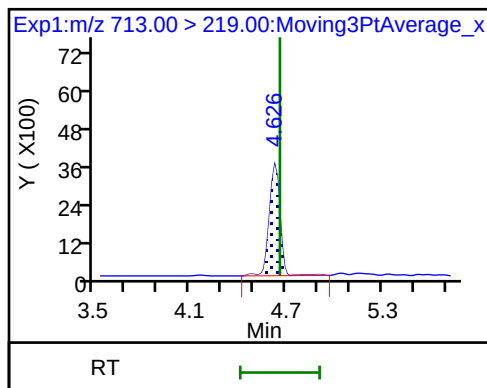
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

D 44 13C2-PFHxDA

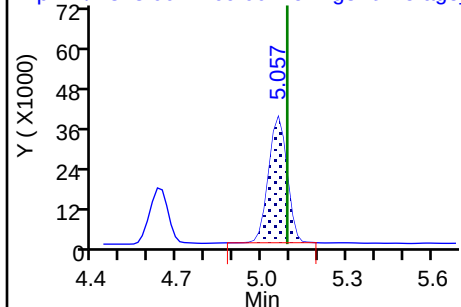


45 Perfluorohexadecanoic acid

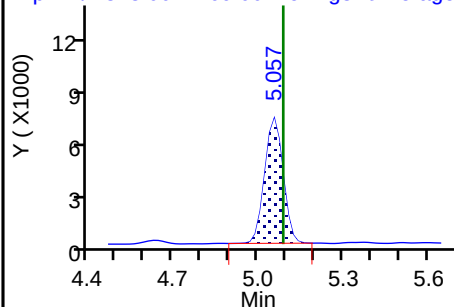
45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid

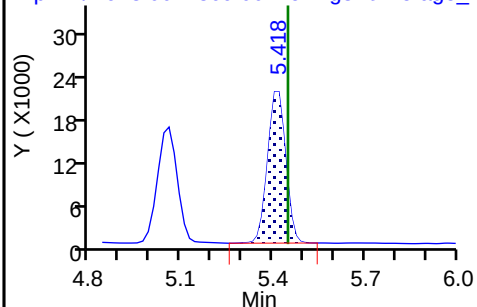
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Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x

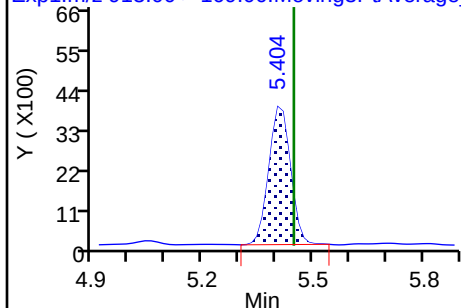


Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Injection Date: 21-Sep-2018 15:36:08

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 11

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

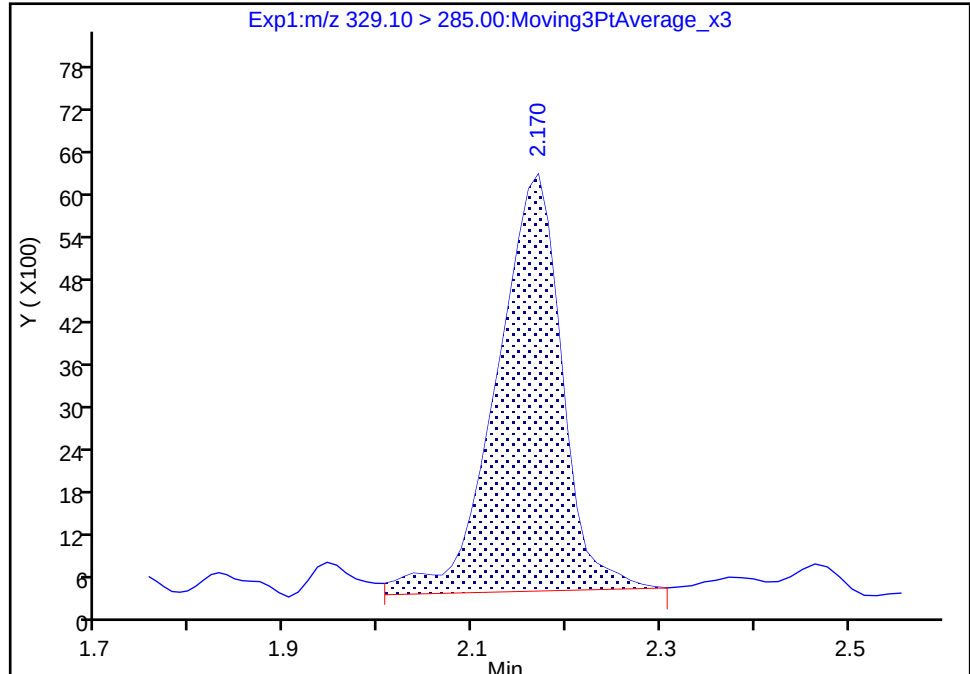
Detector: EXP1

67 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

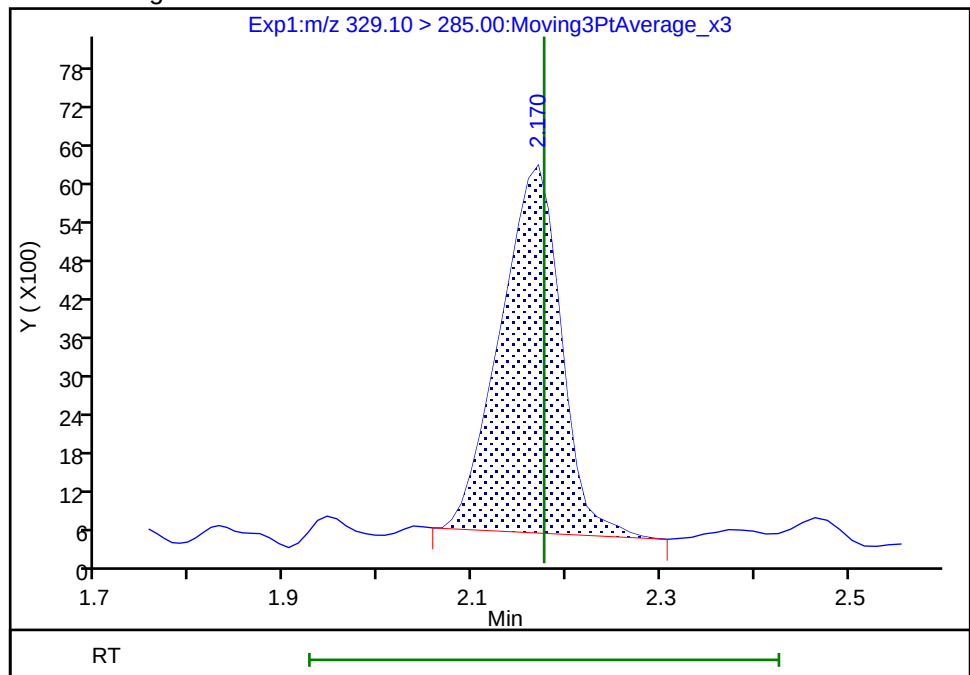
RT: 2.17
Area: 28633
Amount: 0.054801
Amount Units: ng/ml

Processing Integration Results



RT: 2.17
Area: 25929
Amount: 0.050370
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 15:52:43

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Injection Date: 21-Sep-2018 15:36:08

Instrument ID: A9

Lims ID: IC L2 Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#:

11

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: PFAS_A9

Limit Group: LC PFC ICAL

Column:

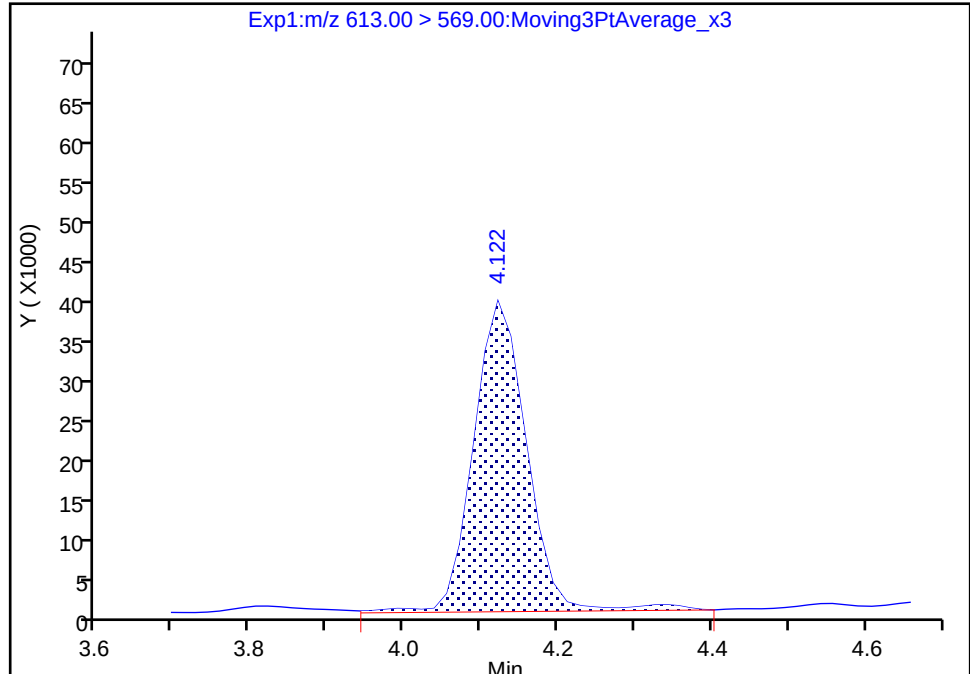
Detector EXP1

37 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

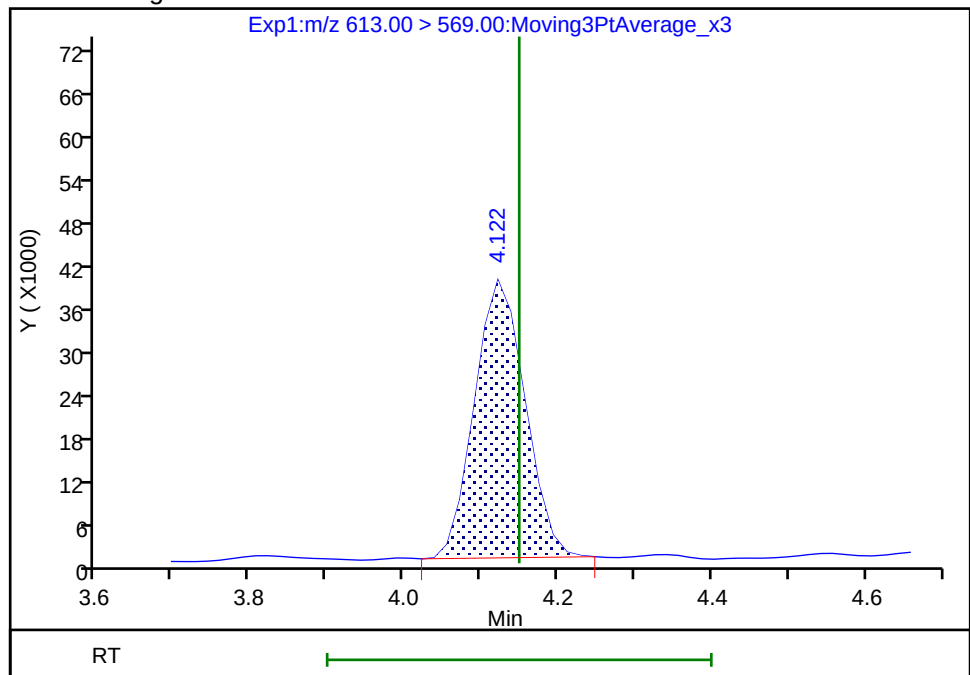
RT: 4.12
Area: 186497
Amount: 0.058416
Amount Units: ng/ml

Processing Integration Results



RT: 4.12
Area: 175107
Amount: 0.055414
Amount Units: ng/ml

Manual Integration Results



Reviewer: roycea, 21-Sep-2018 15:53:03

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1 Analy Batch No.: 250597

SDG No.: _____

Instrument ID: A9 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: 41498

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-250597/2	2018.10.08LLICAL_002.d
Level 2	IC 320-250597/3	2018.10.08LLICAL_003.d
Level 3	IC 320-250597/4	2018.10.08LLICAL_004.d
Level 4	IC 320-250597/5	2018.10.08LLICAL_005.d
Level 5	IC 320-250597/6	2018.10.08LLICAL_006.d
Level 6	IC 320-250597/7	2018.10.08LLICAL_007.d
Level 7	IC 320-250597/8	2018.10.08LLICAL_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	1.500	1.504	1.499	1.499	1.499	1.504				1.251 - 1.751	1.501
Perfluoropentanoic acid (PFPeA)	1.797	1.789	1.797	1.797	1.789	1.789	1.797				1.543 - 2.043	1.794
Perfluorobutanesulfonic acid (PFBS)	1.838	1.831	1.839	1.830	1.830	1.830	1.838				1.584 - 2.084	1.834
4:2 FTS	2.058	2.058	2.058	2.058	2.048	2.048	2.047				1.803 - 2.303	2.054
Perfluorohexanoic acid (PFHxA)	2.099	2.089	2.099	2.089	2.088	2.088	2.088				1.841 - 2.341	2.091
Perfluoropentanesulfonic acid (PFPeS)	2.119	2.120	2.119	2.119	2.119	2.109	2.119				1.868 - 2.368	2.118
HFPO-DA (GenX)	2.201	2.191	2.201	2.191	2.191	2.191	2.190				1.944 - 2.444	2.194
Perfluoroheptanoic acid (PFHpA)	2.439	2.439	2.439	2.426	2.426	2.426	2.425				2.181 - 2.681	2.431
Perfluorohexanesulfonic acid (PFHxS)	2.452	2.452	2.452	2.439	2.439	2.439	2.451				2.196 - 2.696	2.446
DONA	2.478	2.479	2.478	2.478	2.478	2.465	2.478				2.226 - 2.726	2.476
6:2 FTS	2.782	2.782	2.782	2.766	2.766	2.766	2.766				2.523 - 3.023	2.773
Perfluorooctanoic acid (PFOA)	2.814	2.798	2.798	2.798	2.798	2.798	2.798				2.550 - 3.050	2.800
Perfluoroheptanesulfonic Acid (PFHpS)	2.814	2.814	2.814	2.798	2.798	2.798	2.798				2.555 - 3.055	2.805
Perfluorononanoic acid (PFNA)	3.190	3.190	3.190	3.171	3.171	3.171	3.171				2.929 - 3.429	3.179
Perfluorooctanesulfonic acid (PFOS)	3.190	3.190	3.190	3.171	3.171	3.171	3.171				2.929 - 3.429	3.179
F-53B Major	3.399	3.384	3.400	3.383	3.383	3.383	3.383				3.138 - 3.638	3.388
Perfluorooctanesulfonamide (FOSA)	3.496	3.481	3.496	3.480	3.480	3.480	3.480				3.235 - 3.735	3.485
8:2 FTS	3.541	3.527	3.542	3.527	3.527	3.527	3.527				3.281 - 3.781	3.531
Perfluorononanesulfonic acid (PFNS)	3.541	3.527	3.542	3.527	3.527	3.527	3.527				3.281 - 3.781	3.531
Perfluorodecanoic acid (PFDA)	3.556	3.542	3.542	3.541	3.541	3.527	3.541				3.291 - 3.791	3.541
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	3.712	3.697	3.713	3.697	3.696	3.682	3.696				3.449 - 3.949	3.699
Perfluorodecanesulfonic acid (PFDS)	3.869	3.855	3.855	3.854	3.854	3.839	3.854				3.604 - 4.104	3.854
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.883	3.870	3.883	3.869	3.869	3.869	3.869				3.623 - 4.123	3.873
Perfluoroundecanoic acid (PFUnA)	3.883	3.870	3.883	3.869	3.869	3.869	3.869				3.623 - 4.123	3.873
F-53B Minor	4.039	4.040	4.040	4.023	4.023	4.023	4.022				3.780 - 4.280	4.030
10:2 FTS	4.194	4.176	4.176	4.176	4.157	4.157	4.175				3.923 - 4.423	4.173
Perfluorododecanoic acid (PFDoA)	4.194	4.176	4.176	4.176	4.157	4.157	4.175				3.923 - 4.423	4.173
Perfluorododecanesulfonic acid (PFDoS)	4.419	4.419	4.419	4.403	4.403	4.403	4.403				4.160 - 4.660	4.410
Perfluorotridecanoic acid (PFTriA)	4.450	4.450	4.450	4.434	4.434	4.434	4.434				4.191 - 4.691	4.441
Perfluorotetradecanoic acid (PFTeA)	4.706	4.691	4.691	4.691	4.675	4.675	4.675				4.436 - 4.936	4.686
Perfluoro-n-hexadecanoic acid (PFHxDA)	5.141	5.125	5.125	5.108	5.108	5.108	5.108				4.868 - 5.368	5.118
Perfluoro-n-octadecanoic acid (PFODA)	5.504	5.491	5.490	5.491	5.477	5.477	5.475				5.236 - 5.736	5.486

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1 Analy Batch No.: 250597

SDG No.: _____

Instrument ID: A9 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: 41498

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C4 PFBA	1.504	1.500	1.504	1.499	1.499	1.499	1.504				1.251 - 1.751	1.501
13C5 PFPeA	1.797	1.789	1.797	1.789	1.789	1.789	1.788				1.541 - 2.041	1.791
13C3 PFBS	1.838	1.831	1.839	1.830	1.830	1.830	1.838				1.584 - 2.084	1.834
M2-4:2 FTS	2.058	2.058	2.058	2.058	2.048	2.048	2.057				1.805 - 2.305	2.055
13C2 PFHxA	2.099	2.089	2.099	2.089	2.088	2.088	2.088				1.841 - 2.341	2.091
13C3 HFPO-DA	2.201	2.201	2.191	2.191	2.191	2.191	2.190				1.944 - 2.444	2.194
13C4 PFHpA	2.439	2.426	2.439	2.426	2.426	2.426	2.425				2.179 - 2.679	2.430
18O2 PFHxS	2.452	2.452	2.452	2.439	2.439	2.439	2.438				2.194 - 2.694	2.444
M2-6:2 FTS	2.782	2.767	2.782	2.766	2.766	2.766	2.766				2.521 - 3.021	2.771
13C8 PFOA	2.798	2.798	2.798	2.782	2.782	2.782	2.782				2.539 - 3.039	2.789
13C4 PFOA	2.814	2.798	2.798	2.798	2.798	2.798	2.798				2.550 - 3.050	2.800
13C8 PFOS	3.190	3.172	3.172	3.171	3.171	3.153	3.171				2.921 - 3.421	3.171
13C4 PFOS	3.190	3.190	3.190	3.171	3.171	3.171	3.171				2.929 - 3.429	3.179
13C5 PFNA	3.190	3.190	3.190	3.171	3.171	3.171	3.171				2.929 - 3.429	3.179
13C8 FOSA	3.480	3.481	3.481	3.480	3.480	3.480	3.480				3.230 - 3.730	3.480
M2-8:2 FTS	3.541	3.527	3.542	3.527	3.527	3.527	3.527				3.281 - 3.781	3.531
13C2 PFDA	3.556	3.542	3.542	3.541	3.527	3.527	3.541				3.289 - 3.789	3.539
d3-NMeFOSAA	3.712	3.697	3.697	3.697	3.682	3.682	3.682				3.443 - 3.943	3.693
d5-NEtFOSAA	3.869	3.870	3.869	3.854	3.854	3.854	3.854				3.611 - 4.111	3.861
13C2 PFUnA	3.883	3.870	3.883	3.869	3.869	3.869	3.869				3.623 - 4.123	3.873
13C2 PFDoA	4.175	4.176	4.176	4.176	4.157	4.157	4.157				3.918 - 4.418	4.168
13C2 PFTeDA	4.706	4.691	4.691	4.691	4.675	4.675	4.675				4.436 - 4.936	4.686
13C2 PFHxDA	5.125	5.125	5.125	5.108	5.108	5.108	5.108				4.865 - 5.365	5.115

FORM VI
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1 Analy Batch No.: 250597

SDG No.: _____

Instrument ID: A9 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: 41498

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-250597/2	2018.10.08LLICAL_002.d
Level 2	IC 320-250597/3	2018.10.08LLICAL_003.d
Level 3	IC 320-250597/4	2018.10.08LLICAL_004.d
Level 4	IC 320-250597/5	2018.10.08LLICAL_005.d
Level 5	IC 320-250597/6	2018.10.08LLICAL_006.d
Level 6	IC 320-250597/7	2018.10.08LLICAL_007.d
Level 7	IC 320-250597/8	2018.10.08LLICAL_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	2595905 2628125	2516235 2738139	2622729 2475929	2590729	Ave		2595398.63				3.3		50.0			
13C8 PFOS	430496 412015	407681 448986	423699 411176	440219	Ave		424895.995				3.7		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.: 480-142274-1 Analy Batch No.: 250597
SDG No.: _____
Instrument ID: A9 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: 41498

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)	0.8964 0.9407	0.8815 0.8564	0.9213	0.9053	0.9389	AveID		0.9058				3.4		35.0			
Perfluoropentanoic acid (PFPeA)	1.1216 0.9826	1.0429 0.8830	1.0193	0.9921	1.0260	AveID		1.0096				7.1		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)	1.0901 0.8646	0.8981 0.8066	0.8486	0.9290	0.9007	AveID		0.9054				10.0		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)	1.1958 0.9546	1.2702 0.8729	1.0646	1.0830	1.0700	AveID		1.0730				12.5		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)	1.3244 0.9567	1.1658 0.8232	1.1418	1.1190	1.0620	AveID		1.0847				14.8		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 0.8409	1.1046	1.0094	1.0030	AveID		1.0151				10.7		35.0			
Perfluorooctanesulfonic acid (PFOS)	1.0968 1.1154	1.0885 1.0216	1.0164	1.0507	1.1602	AveID		1.0785				4.8		35.0			
F-53B Major	1.0893 1.1677	1.1125 1.0499	1.1203	1.2187	1.2515	AveID		1.1443				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)	0.5061 0.6763	0.6581 0.6262	0.6904	0.6321	0.6691	AveID		0.6369				9.8		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.: 480-142274-1 Analy Batch No.: 250597
SDG No.: _____
Instrument ID: A9 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: 41498

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)	1.1756 1.0240	1.1283 0.8986	1.2047	1.1568	1.1665	AveID		1.1078				9.8		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.2332 0.9475	0.9927 0.8924	1.0839	0.9709	0.9762	AveID		1.0138				11.1		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)	0.8212 0.9318	1.0508 0.9393	0.8580	0.8974	0.9068	AveID		0.9150				8.0		35.0			
Perfluoroundecanoic acid (PFUnA)	0.9831 0.8709	1.0329 0.7608	0.9311	0.9257	0.8825	AveID		0.9124				9.6		35.0			
F-53B Minor	1.3378 1.3391	1.4637 1.0941	1.3731	1.3330	1.5311	AveID		1.3530				10.1		50.0			
10:2 FTS	8.9686 10.032	8.6837 9.9612	9.0071	10.147	10.298	AveID		9.5855				7.0		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)	0.0938 0.0871	0.0945 0.0975	0.0823	0.0841	0.0924	AveID		0.0902				6.4		50.0			
Perfluorotridecanoic acid (PFTriA)	0.8142 0.7211	0.8159 0.6482	0.8291	0.7747	0.7638	AveID		0.7667				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)	1.8487 0.9207	1.3431 0.7786	1.0277	0.9088	0.9412	L2ID	0.0240	0.8850							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	0.9369 0.9247	0.8750 0.9479	0.9147	0.9168	0.8860	Ave		0.9146				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			
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			

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.: 480-142274-1 Analy Batch No.: 250597
SDG No.: _____
Instrument ID: A9 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: 41498

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	0.7272 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 EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1 Analy Batch No.: 250597

SDG No.: _____

Instrument ID: A9 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: 41498

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-250597/2	2018.10.08LLICAL_002.d
Level 2	IC 320-250597/3	2018.10.08LLICAL_003.d
Level 3	IC 320-250597/4	2018.10.08LLICAL_004.d
Level 4	IC 320-250597/5	2018.10.08LLICAL_005.d
Level 5	IC 320-250597/6	2018.10.08LLICAL_006.d
Level 6	IC 320-250597/7	2018.10.08LLICAL_007.d
Level 7	IC 320-250597/8	2018.10.08LLICAL_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	6353477 6701596	6158484 6059836	6419130	6340809	6432335	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	Ave	1028886 1073076	974358 982711	1012640	1052124	984715	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.: 480-142274-1 Analy Batch No.: 250597

SDG No.: _____

Instrument ID: A9 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: 41498

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-250597/2	2018.10.08LLICAL_002.d
Level 2	IC 320-250597/3	2018.10.08LLICAL_003.d
Level 3	IC 320-250597/4	2018.10.08LLICAL_004.d
Level 4	IC 320-250597/5	2018.10.08LLICAL_005.d
Level 5	IC 320-250597/6	2018.10.08LLICAL_006.d
Level 6	IC 320-250597/7	2018.10.08LLICAL_007.d
Level 7	IC 320-250597/8	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	59888 12686233	115605 23189154	615704	2415495	6085910	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	64687 11854502	124753 21127971	603265	2370175	5948379	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	68245 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	95503 14929739	193602 27037175	869128	3385342	8182127	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	99439 14535225	176967 23356347	820590	3242814	7597633	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 22007901	756751	2747410	6908313	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	53596 10450342	103626 19075681	497275	2043283	5182461	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.: 480-142274-1 Analy Batch No.: 250597

SDG No.: _____

Instrument ID: A9 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: 41498

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 10987180	106374 19690091	550453	2380191	5614406	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	25584 6555094	64811 12096985	349409	1271547	3091543	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	86287 14829729	166327 24561300	893762	3398125	8056934	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	34291 5902956	58976 11135865	310263	1142506	2926071	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	22915 4553644	55016 7991517	223201	891079	2210078	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroundecanoic acid (PFUnA)		AveID	66414 10708446	138058 17127313	631135	2276685	5454066	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	10490 2283389	18173 3870295	109608	425979	1073632	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	4779 850747	9385 1898212	42008	170605	430669	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	56856 10443393	118134 18276106	617700	2166041	5541182	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	83074 8694549	123189 15284163	488579	1652362	4377378	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	6681079 6742801	6557542 6769279	6682660	6670736	6482273	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.: 480-142274-1 Analy Batch No.: 250597

SDG No.: _____

Instrument ID: A9 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: 41498

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\20181008-65481.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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 08:00:25 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK010

First Level Reviewer: phomsophat

Date: 08-Oct-2018 16:12:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.504	1.501	0.003	1.000	59888	0.0247		99.0	3.0	
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.501	0.003	0.535	6681079	2.56		102	17900	
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	64687	0.0278		111	6.7	
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	
D 47 13C3-PFBS										
301.90 > 83.00	1.838	1.834	0.004	0.653	75459	2.38		102	484	
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 M2-4:2FTS										
329.00 > 81.00	2.058	2.055	0.003	0.731	771975	2.41		103	1098	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.099	2.091	0.008	1.000	68245	0.0301		120	15.8	
313.00 > 119.00	2.088	2.091	-0.003	0.995	5555		12.29(6.96-20.87)	120	11.7	
D 7 13C2 PFHxA										
315.00 > 270.00	2.099	2.091	0.008	0.746	6260475	2.50		100	13323	
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										
363.00 > 319.00	2.439	2.431	0.008	1.000	95503	0.0279		111	18.5	
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	20589		3.27(1.90-5.70)	115	30.5	
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(1.13-3.39)	103	68.6	
D 12 M2-6:2FTS										
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	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.789	0.009		6353477	2.45		100	7022	
* 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										
413.00 > 369.00	2.814	2.800	0.014	1.000	99439	0.0306		122	6.3	
413.00 > 169.00	2.814	2.800	0.014	1.000	35347		2.81(1.36-4.08)	122	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 72 13C8 PFOS										
507.00 > 99.00	3.190	3.171	0.019		1028886	2.42		101	1996	
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 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.179	0.011	1.000	53596	0.0236		102	49.0	
499.00 > 99.00	3.190	3.179	0.011	1.000	14686		3.65(2.04-6.12)	102	49.1	
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	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.399	3.388	0.011	1.066	53459	0.0222		95.2	52.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.237	2763814	2.56		102	3663	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.496	3.485	0.011	1.004	87943	0.0268		107	192	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.541	3.531	0.010	1.110	25584	0.0191		79.5	88.5	
549.00 > 99.00	3.541	3.531	0.010	1.110	3872		6.61(3.02-9.05)	79.5	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 26 M2-8:2FTS										
529.00 > 81.00	3.541	3.531	0.010	1.259	116236	2.62		109	719	
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	86287	0.0265		106	14.5	
513.00 > 169.00	3.541	3.541	0.0	0.996	4473		19.29(7.12-21.35)	106	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-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.712	3.699	0.013	1.000	34291	0.0304		122	17.1	
29 Perfluorodecane Sulfonic 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	9059		5.23(2.14-6.43)	106	42.7	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.861	0.008	1.375	2790524	2.85		114	4085	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.883	3.873	0.010	1.000	66414	0.0269		108	16.4	
563.00 > 169.00	3.883	3.873	0.010	1.000	7964		8.34(5.24-15.72)	108	32.2	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.883	3.873	0.010	1.004	22915	0.0224		89.7	47.6	
D 30 13C2 PFUnA										
565.00 > 520.00	3.883	3.873	0.010	1.380	6755624	2.72		109	7206	
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 PFDaA										
615.00 > 570.00	4.175	4.168	0.007	1.484	6982834	2.48		99.4	9034	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.194	4.173	0.021	1.184	10490	0.0225		93.6	11.9	
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	
75 Perfluorododecanesulfonic acid (PF										R
699.00 > 80.00	4.419	4.410	0.009	1.385	4779	0.0251		104	4.3	R
699.00 > 99.00	4.419	4.410	0.009	1.385	5564		0.86(0.28-0.83)	104	13.2	

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	4.450	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	8832		1.02(0.70-2.09)	104	25.5	
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	83074	0.0252		101	25.9	
813.00 > 169.00	5.125	5.118	0.007	1.000	15696		5.29(2.77-8.32)	101	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	4786		5.37(2.55-7.64)	101	20.7	

QC Flag Legend

Processing Flags

NC - Not Calibrated

R - Failed Signal Ratio Test

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\2018.10.08LLICAL_002.d

Injection Date: 08-Oct-2018 15:34:22

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

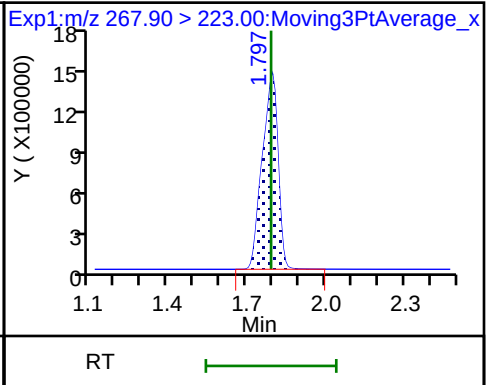
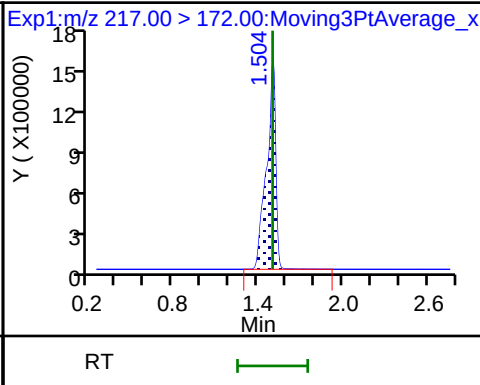
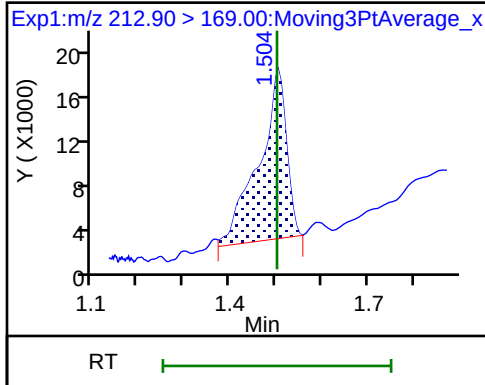
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

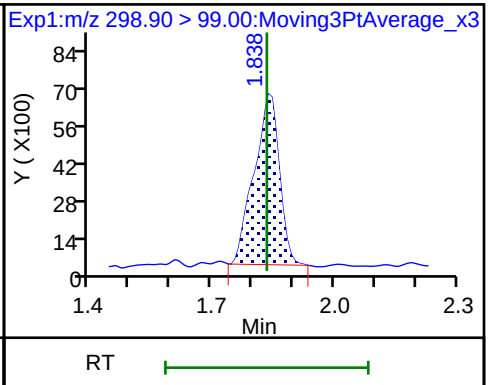
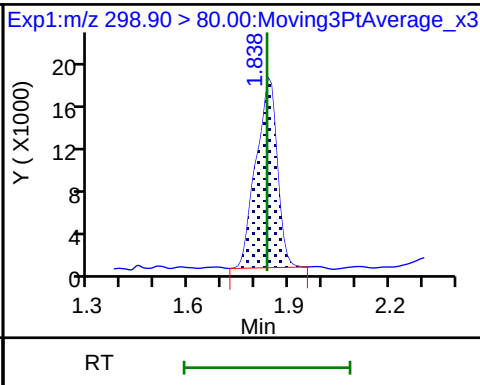
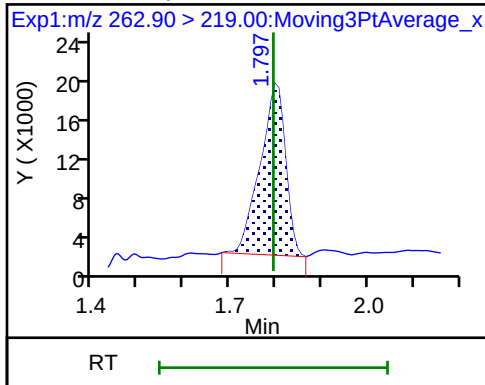
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

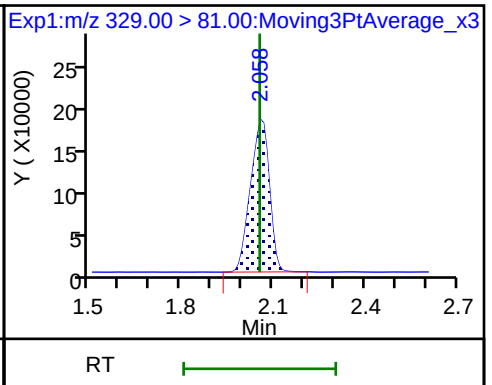
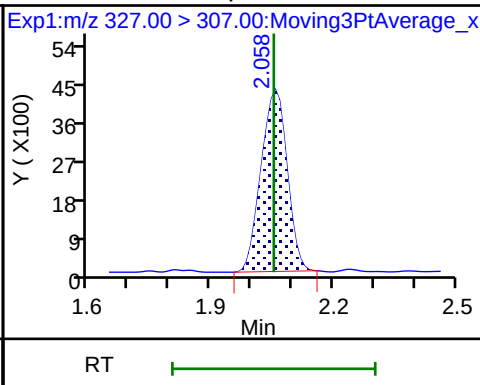
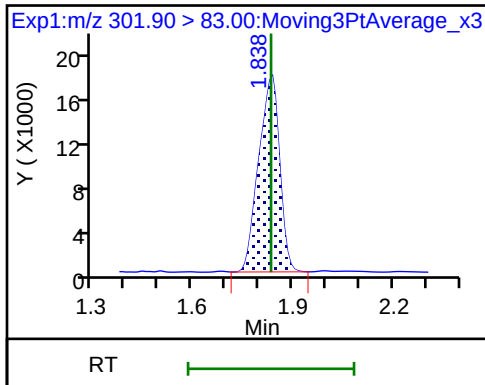
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

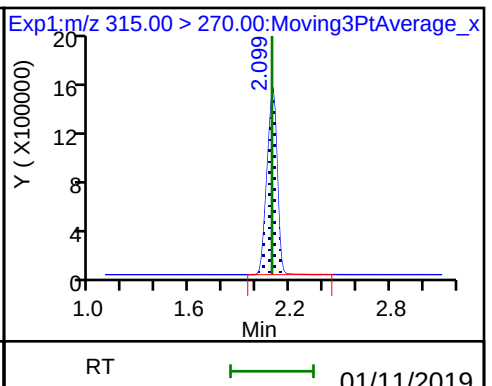
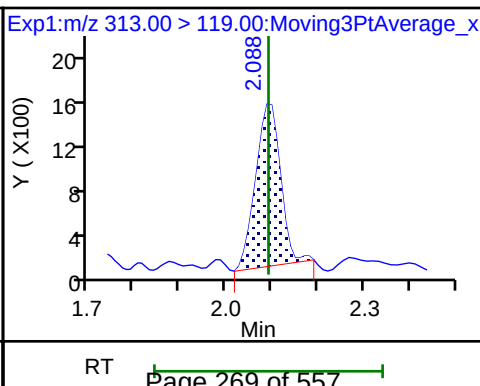
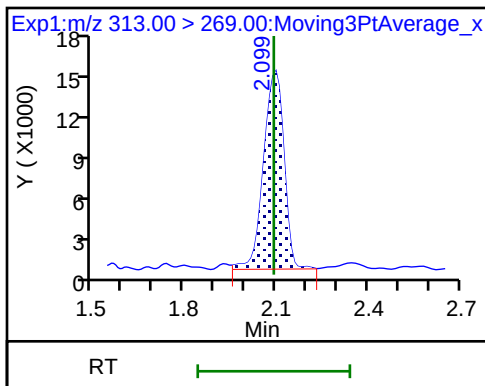
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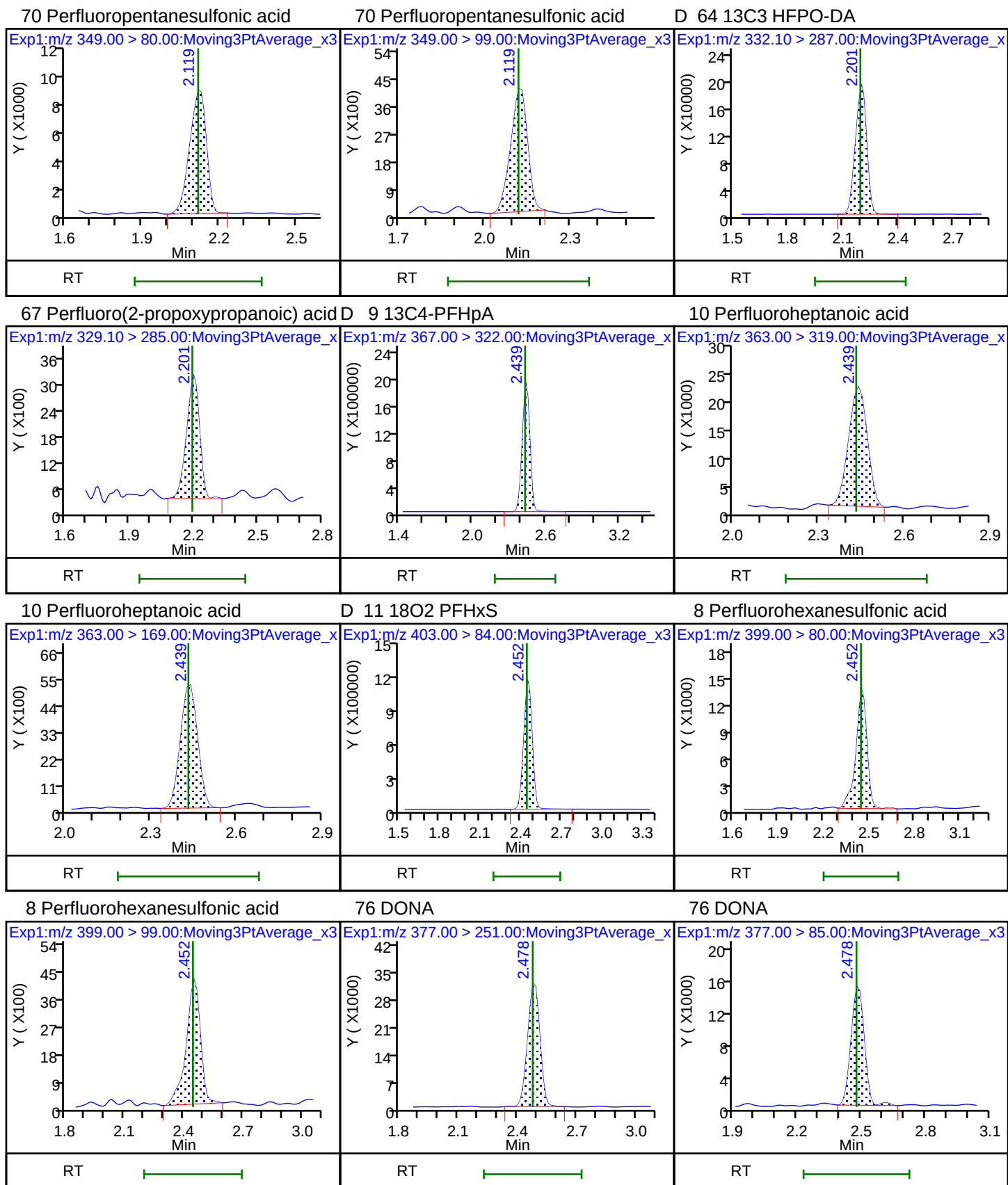


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

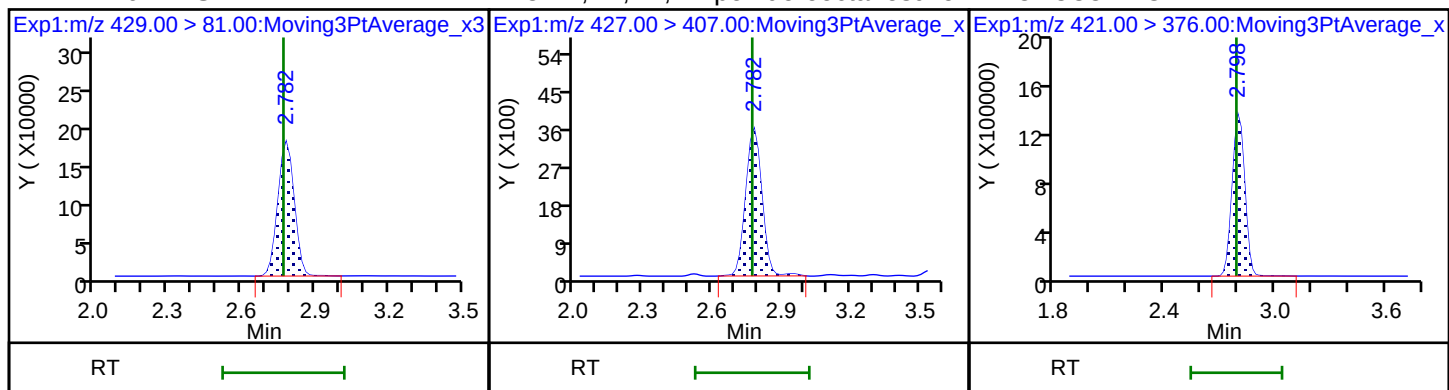
D 7 13C2 PFHxA





D 12 M2-6:2FTS

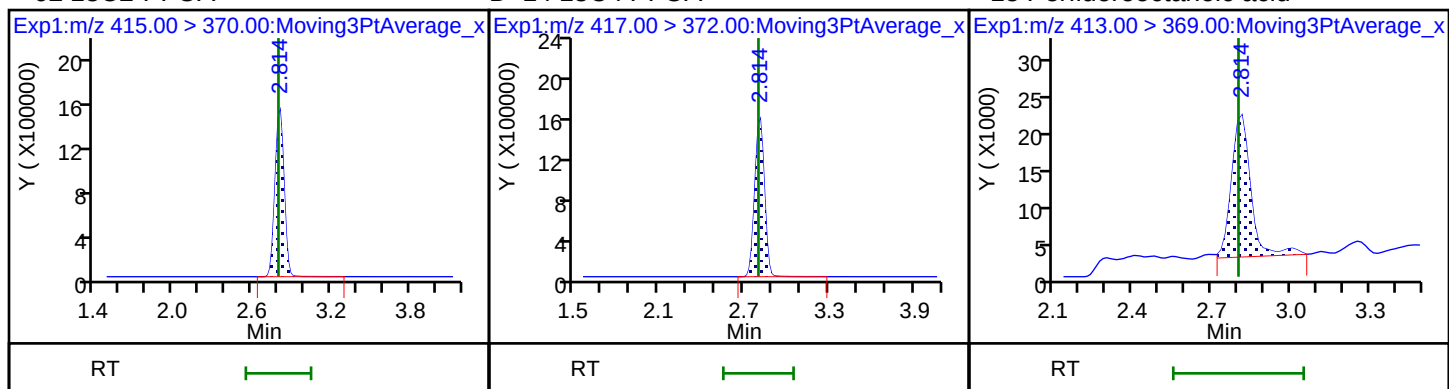
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

D 14 13C4 PFOA

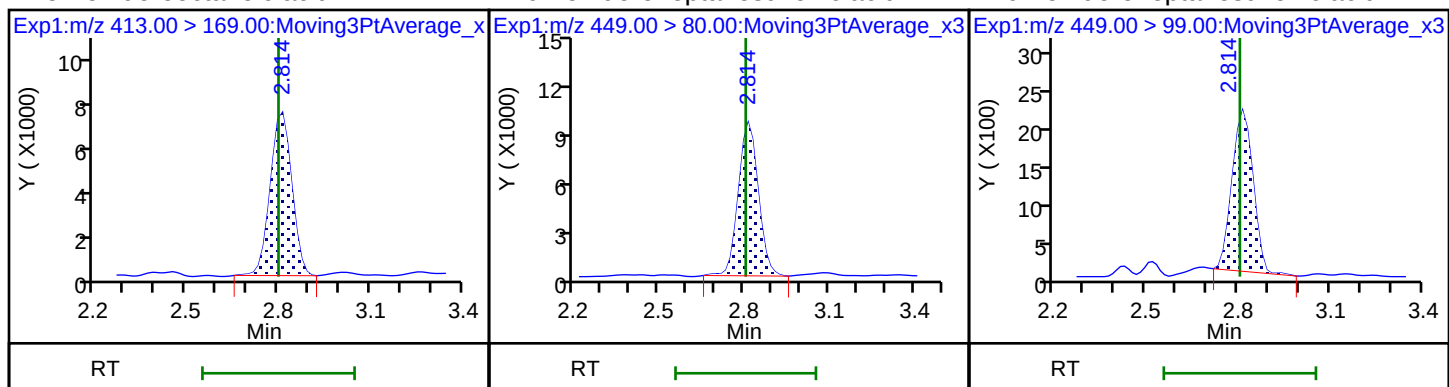
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

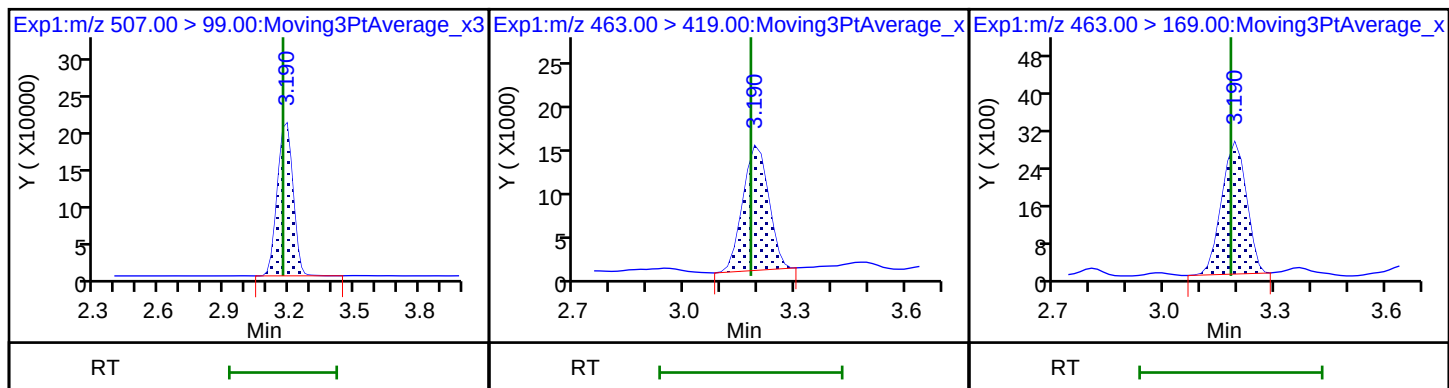
16 Perfluoroheptanesulfonic acid

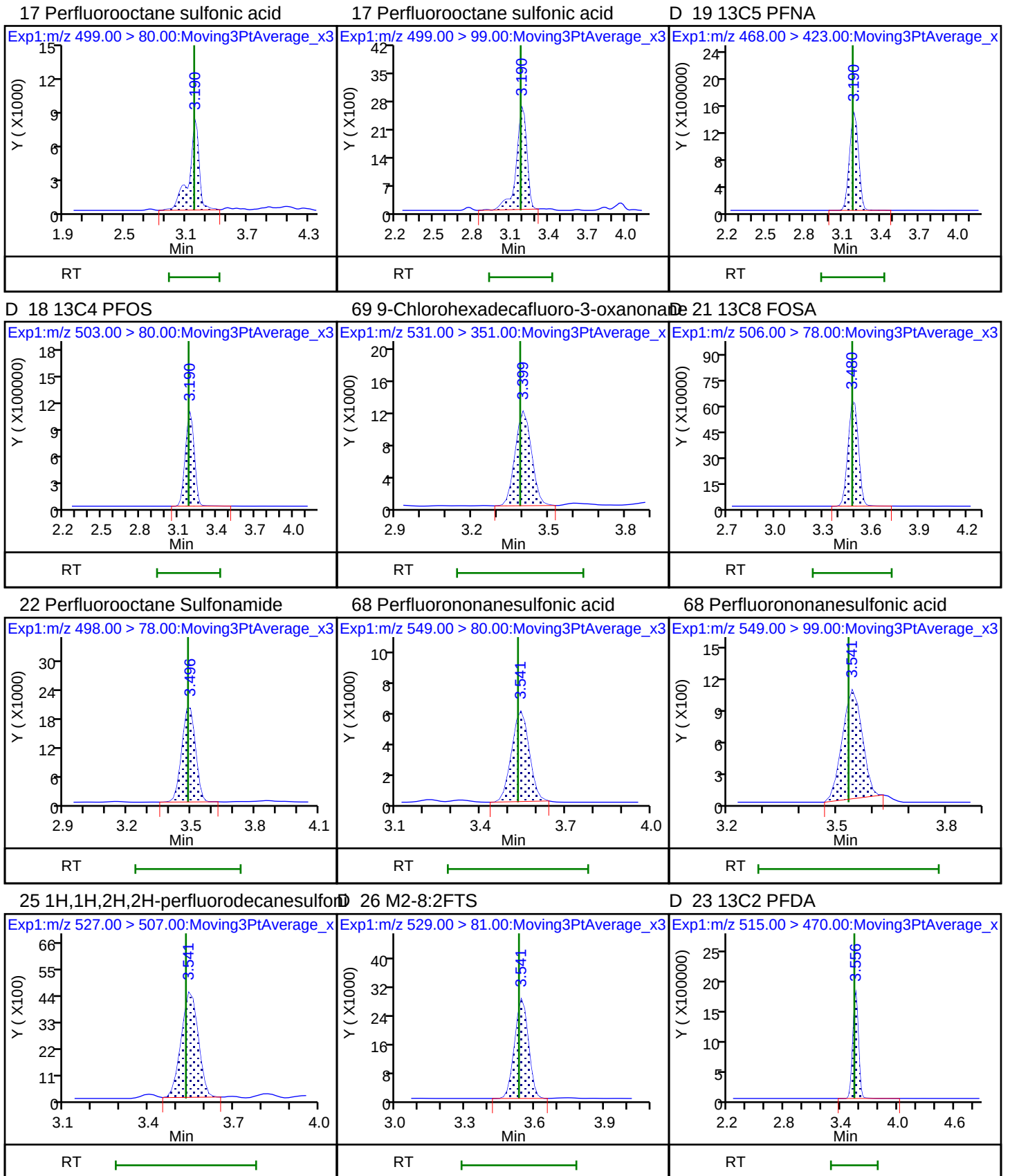


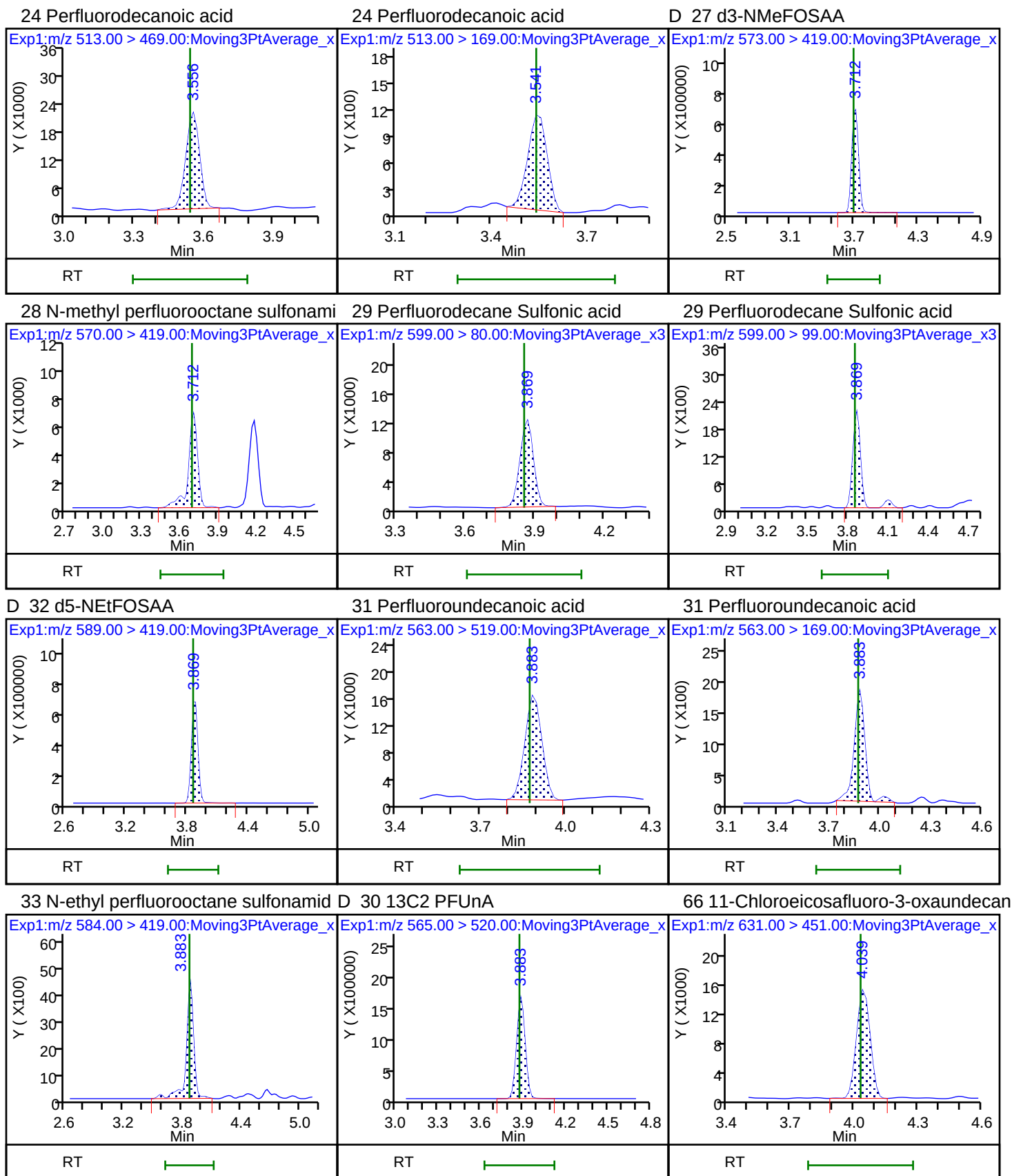
D 72 13C8 PFOS

20 Perfluorononanoic acid

20 Perfluorononanoic acid

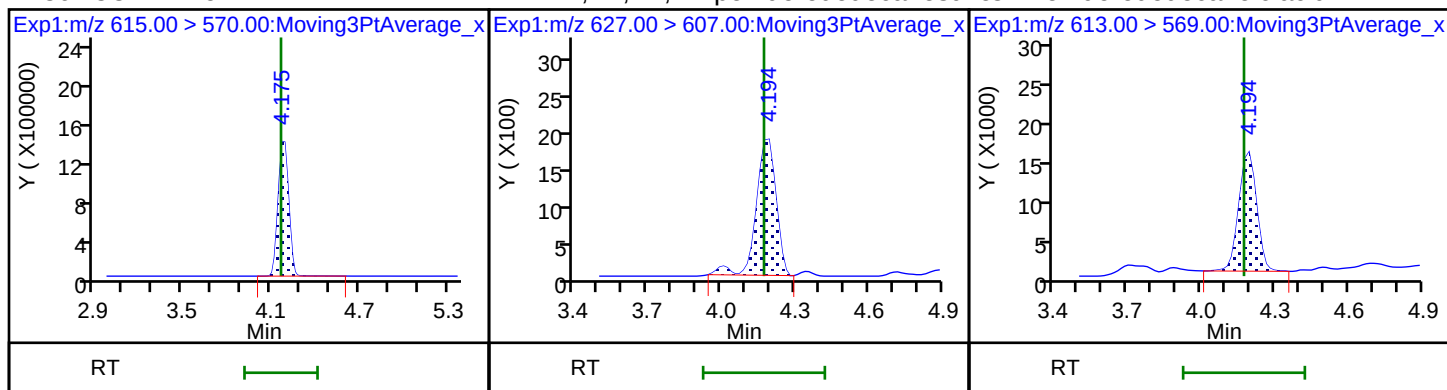






D 36 13C2 PFDaA

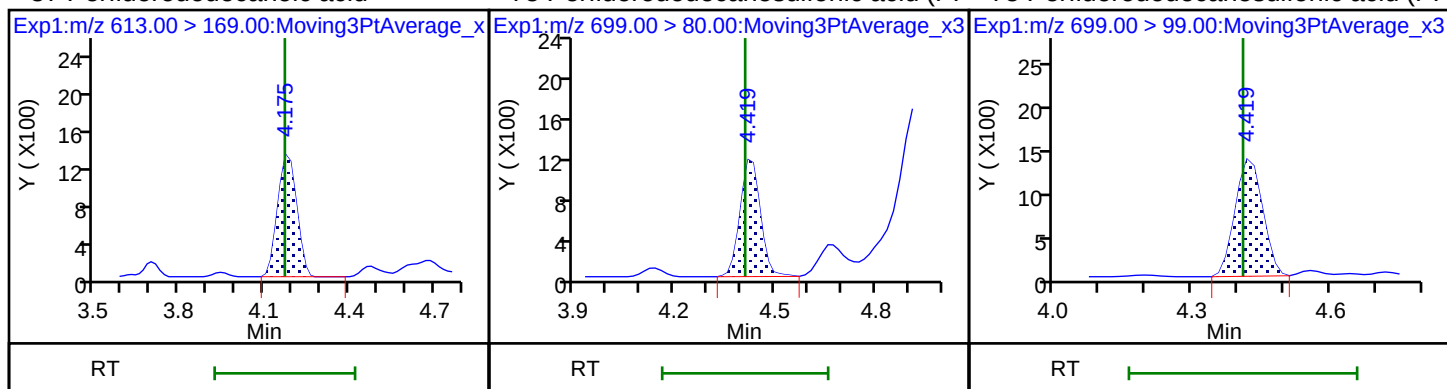
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

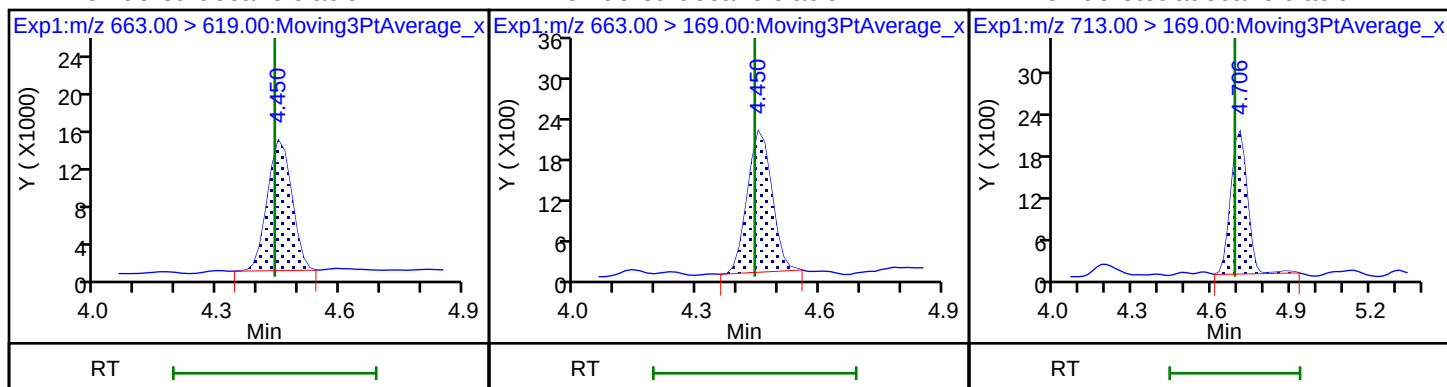
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

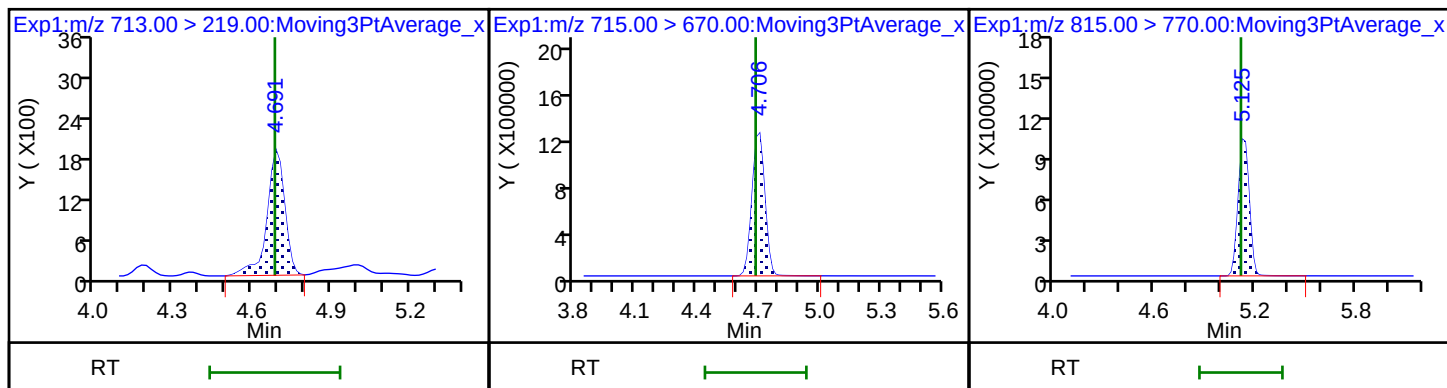
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

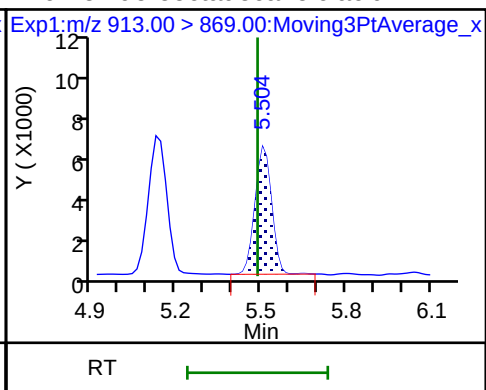
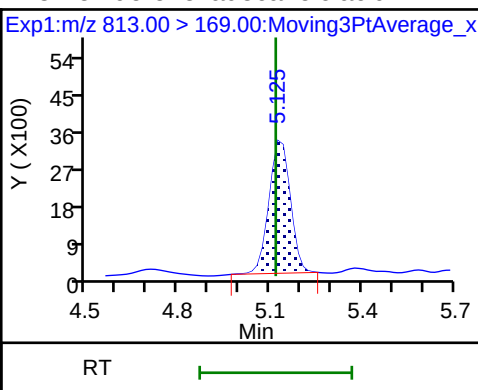
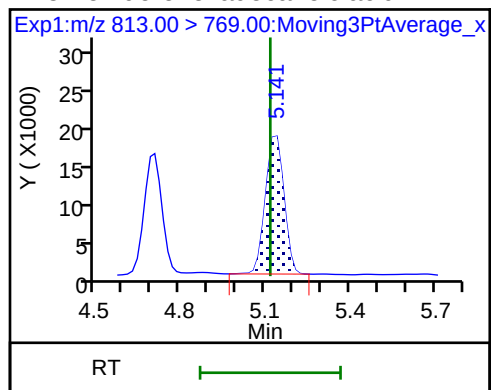
D 44 13C2-PFHxDA



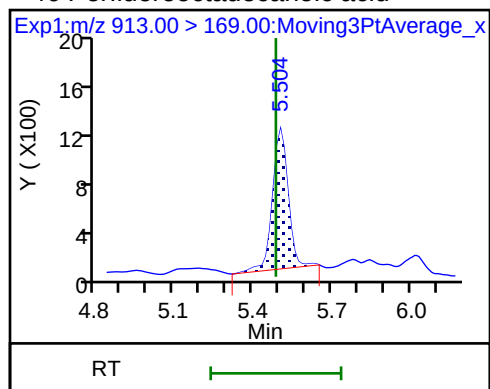
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 08:00:33 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK010

First Level Reviewer: phomsophat

Date: 08-Oct-2018 16:13:50

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	1.500	1.501	-0.001	0.536	6557542	2.39		95.7	19643	
2 Perfluorobutyric acid										
212.90 > 169.00	1.500	1.501	-0.001	1.000	115605	0.0487		97.3	6.0	
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	124753	0.0516		103	12.2	
D 47 13C3-PFBS										
301.90 > 83.00	1.831	1.834	-0.003	0.654	74643	2.24		96.2	563	
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	
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 M2-4:2FTS										
329.00 > 81.00	2.058	2.055	0.003	0.736	794486	2.36		101	914	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.002	0.746	6478093	2.46		98.4	13412	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.002	1.000	116364	0.0496		99.2	26.5	
313.00 > 119.00	2.099	2.091	0.008	1.005	8458		13.76(6.96-20.87)	99.2	15.7	
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	193602	0.0592		118	37.7	
363.00 > 169.00	2.426	2.431	-0.005	1.000	36792		5.26(2.17-6.52)	118	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	32742		3.55(1.90-5.70)	110	46.1	
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(1.13-3.39)	108	124	
D 12 M2-6:2FTS										
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	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.789	0.009		6158484	2.37		96.9	6822	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	176967	0.0538		107	11.2	
413.00 > 169.00	2.798	2.800	-0.002	1.000	61694		2.87(1.36-4.08)	107	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	
D 72 13C8 PFOS										
507.00 > 99.00	3.172	3.171	0.001		974358	2.29		95.9	3520	
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	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.179	0.011	1.000	156233	0.0585		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 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.179	0.011	1.000	103626	0.0468		101	66.9	
499.00 > 99.00	3.172	3.179	-0.007	0.994	26037		3.98(2.04-6.12)	101	65.4	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.384	3.388	-0.004	1.061	106374	0.0453		97.2	103	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.480	0.001	1.244	2707594	2.39		95.4	6800	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.481	3.485	-0.004	1.000	155717	0.0484		96.8	315	
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	103987	2.23		93.2	554	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	34379	0.0531		111	189	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.531	-0.004	1.106	64811	0.0496		103	219	
549.00 > 99.00	3.527	3.531	-0.004	1.106	11123		5.83(3.02-9.05)	103	69.3	
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	166327	0.0509		102	32.6	
513.00 > 169.00	3.556	3.541	0.015	1.004	10971		15.16(7.12-21.35)	102	23.7	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.693	0.004	1.321	2970583	2.43		97.1	4205	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.699	-0.002	1.000	58976	0.0490		97.9	26.7	
29 Perfluorodecane Sulfonic 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	18060		5.04(2.14-6.43)	105	62.5	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.870	3.861	0.009	1.383	2617704	2.54		102	3231	
D 30 13C2 PFUnA										
565.00 > 520.00	3.870	3.873	-0.003	1.383	6682711	2.56		103	11536	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.870	3.873	-0.003	1.000	55016	0.0574		115	104	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.870	3.873	-0.003	1.000	138058	0.0566		113	33.4	
563.00 > 169.00	3.870	3.873	-0.003	1.000	13732		10.05(5.24-15.72)	113	58.9	
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	
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	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.176	4.173	0.003	1.184	18173	0.0437		90.6	17.7	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.419	4.410	0.009	1.385	9385	0.0507		105	14.4	
699.00 > 99.00	4.419	4.410	0.009	1.385	15521		0.60(0.28-0.83)	105	51.0	

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	4.450	4.441	0.009	1.066	118134	0.0532		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	
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	13800		1.13(0.70-2.09)	90.2	41.1	
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	123189	0.0488		97.6	35.8	
813.00 > 169.00	5.125	5.118	0.007	1.000	21541		5.72(2.77-8.32)	97.6	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	8630		6.11(2.55-7.64)	101	42.0	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\2018.10.08LLICAL_003.d

Injection Date: 08-Oct-2018 15:41:56

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

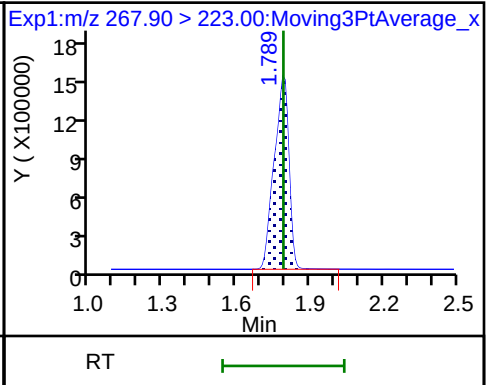
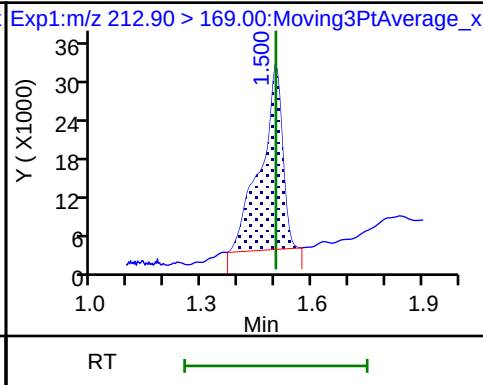
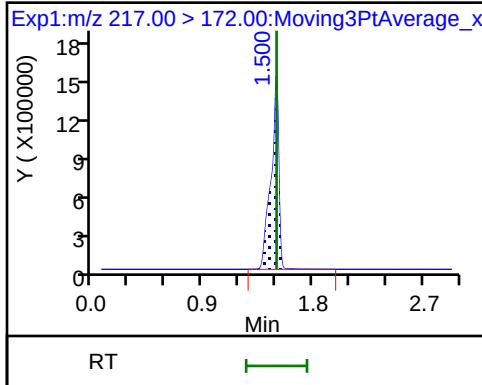
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

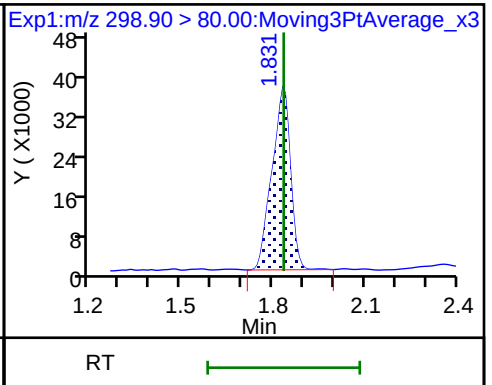
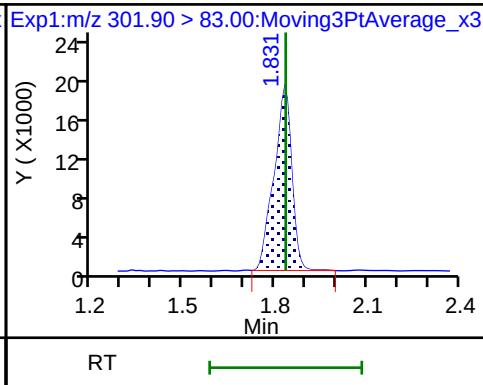
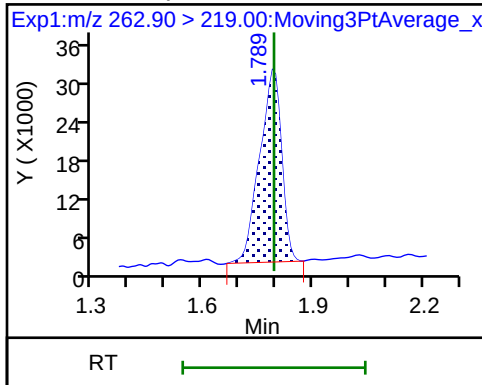
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

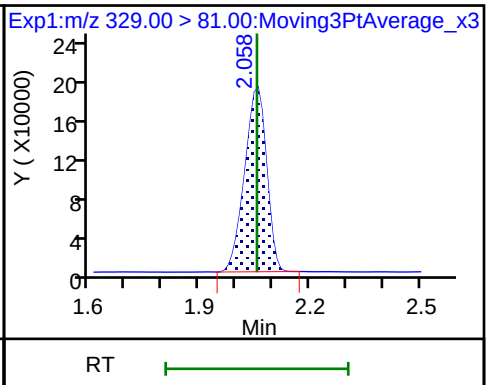
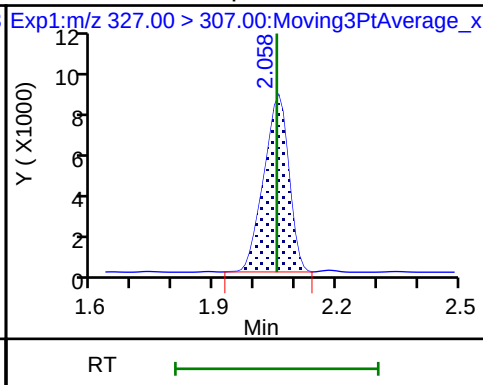
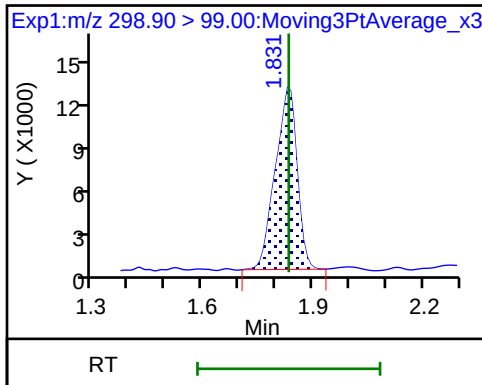
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

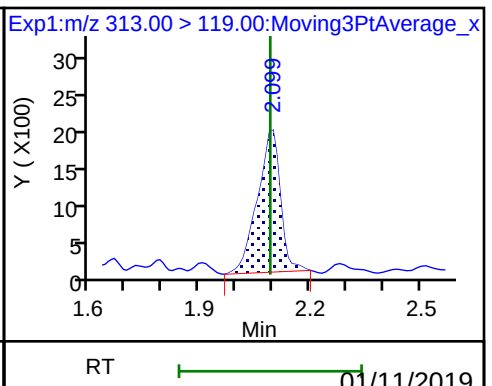
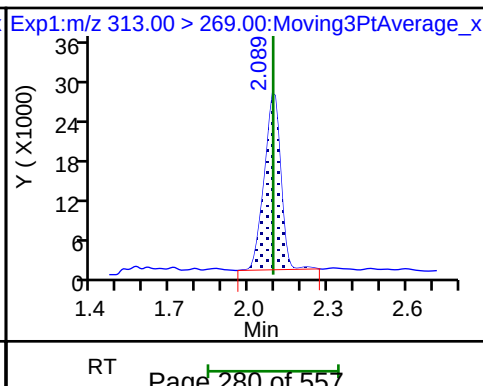
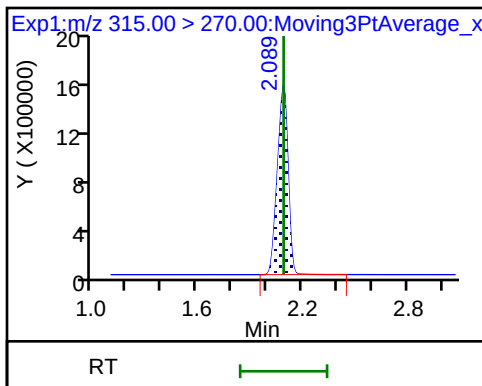
D 60 M2-4:2FTS

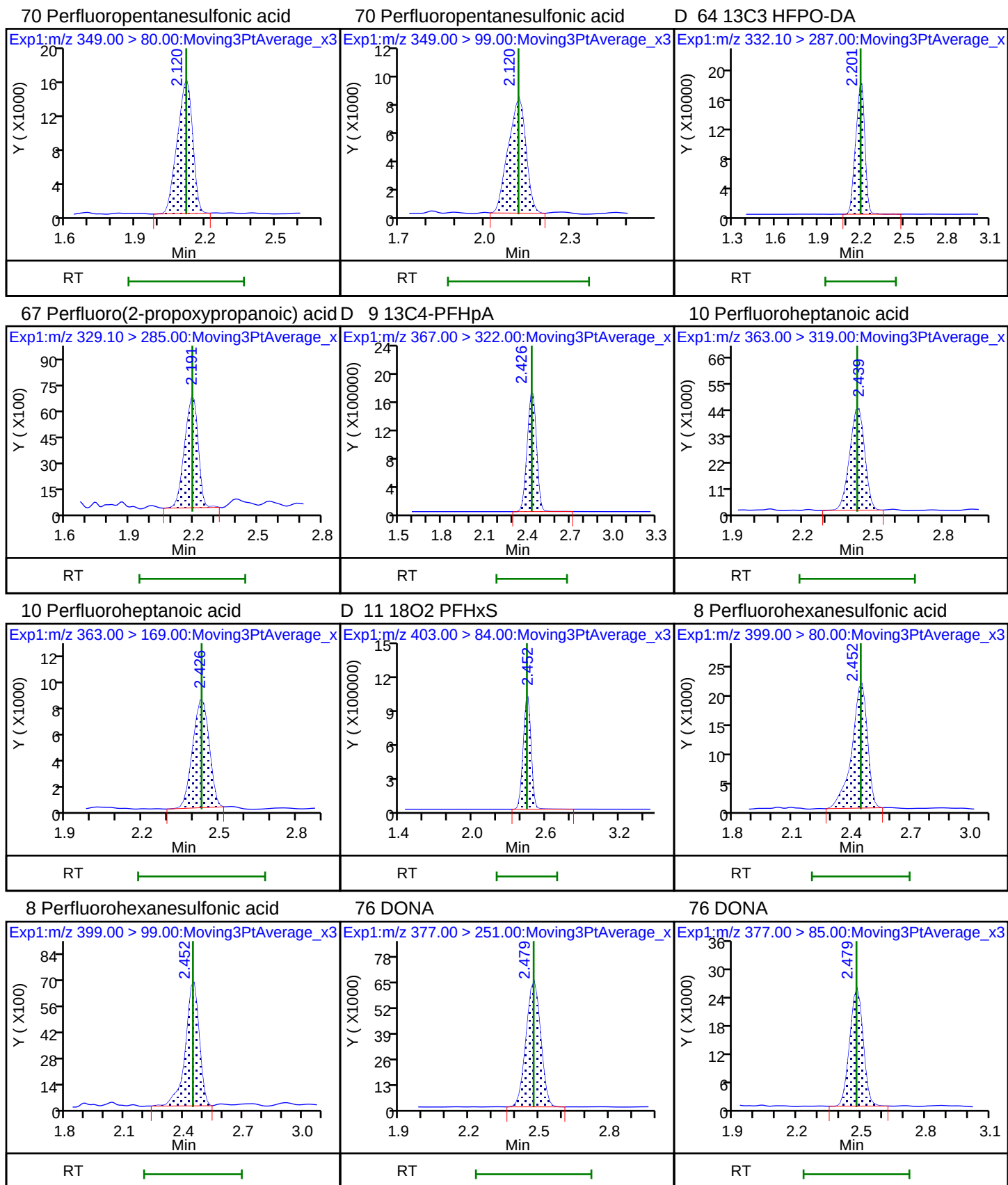


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

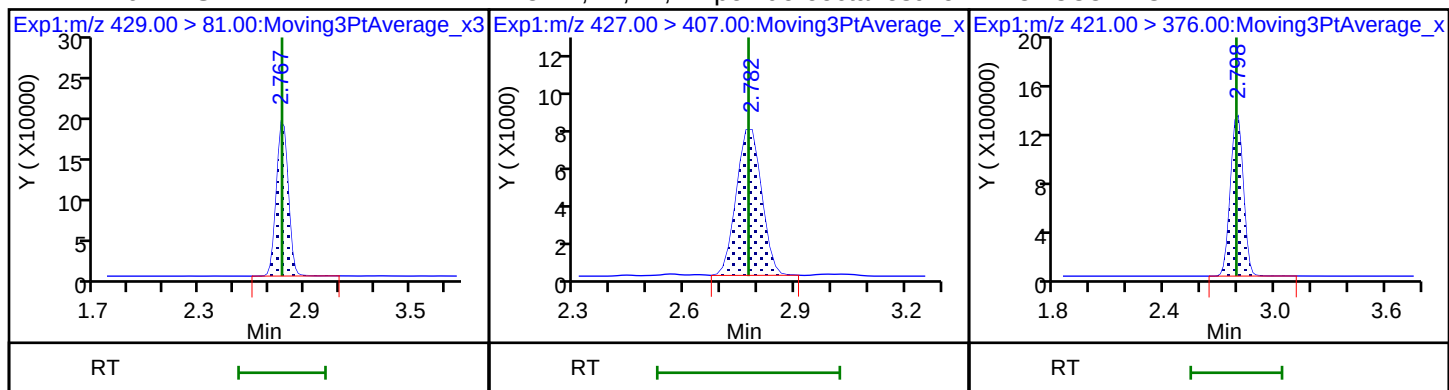
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

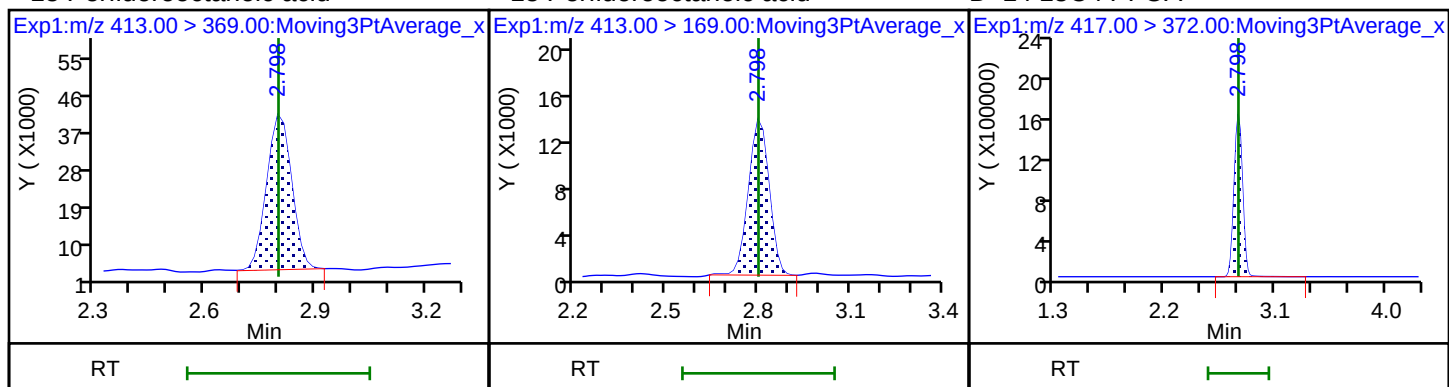
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

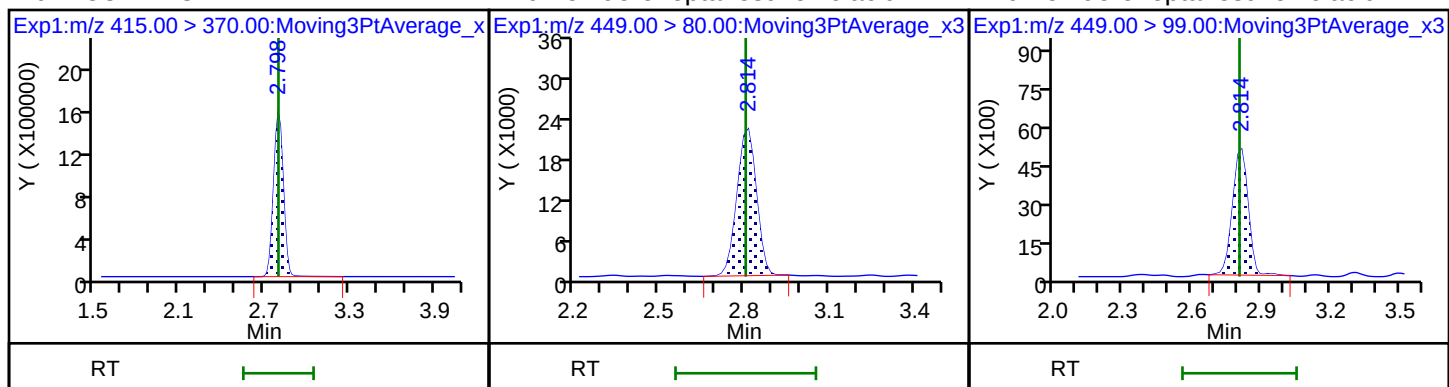
D 14 13C4 PFOA



* 62 13C2-PFOA

16 Perfluoroheptanesulfonic acid

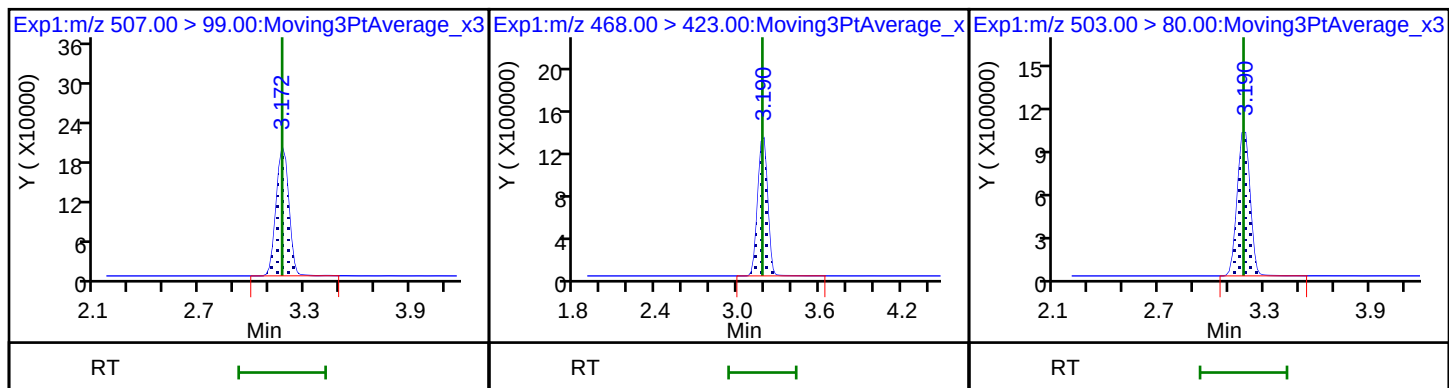
16 Perfluoroheptanesulfonic acid

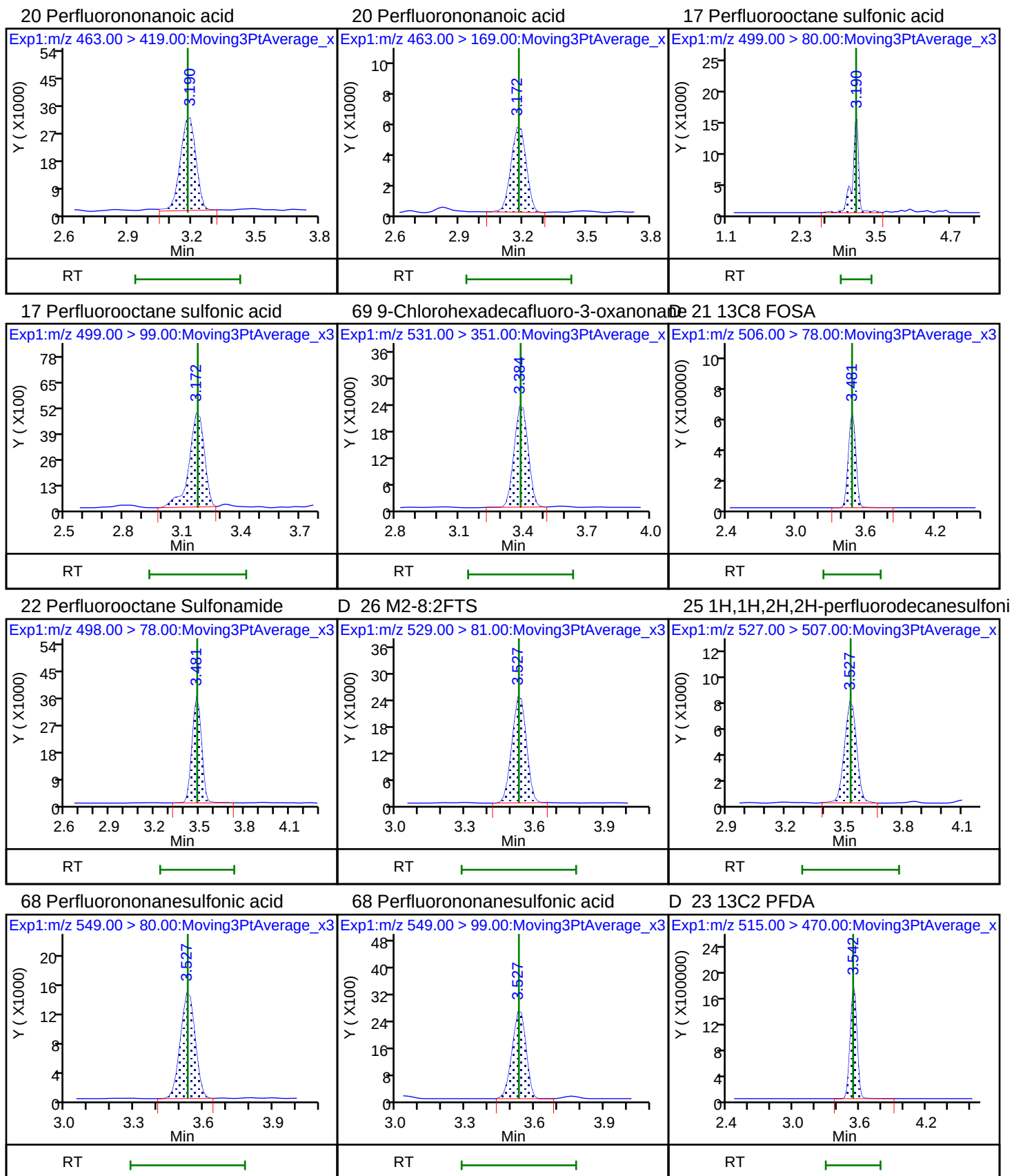


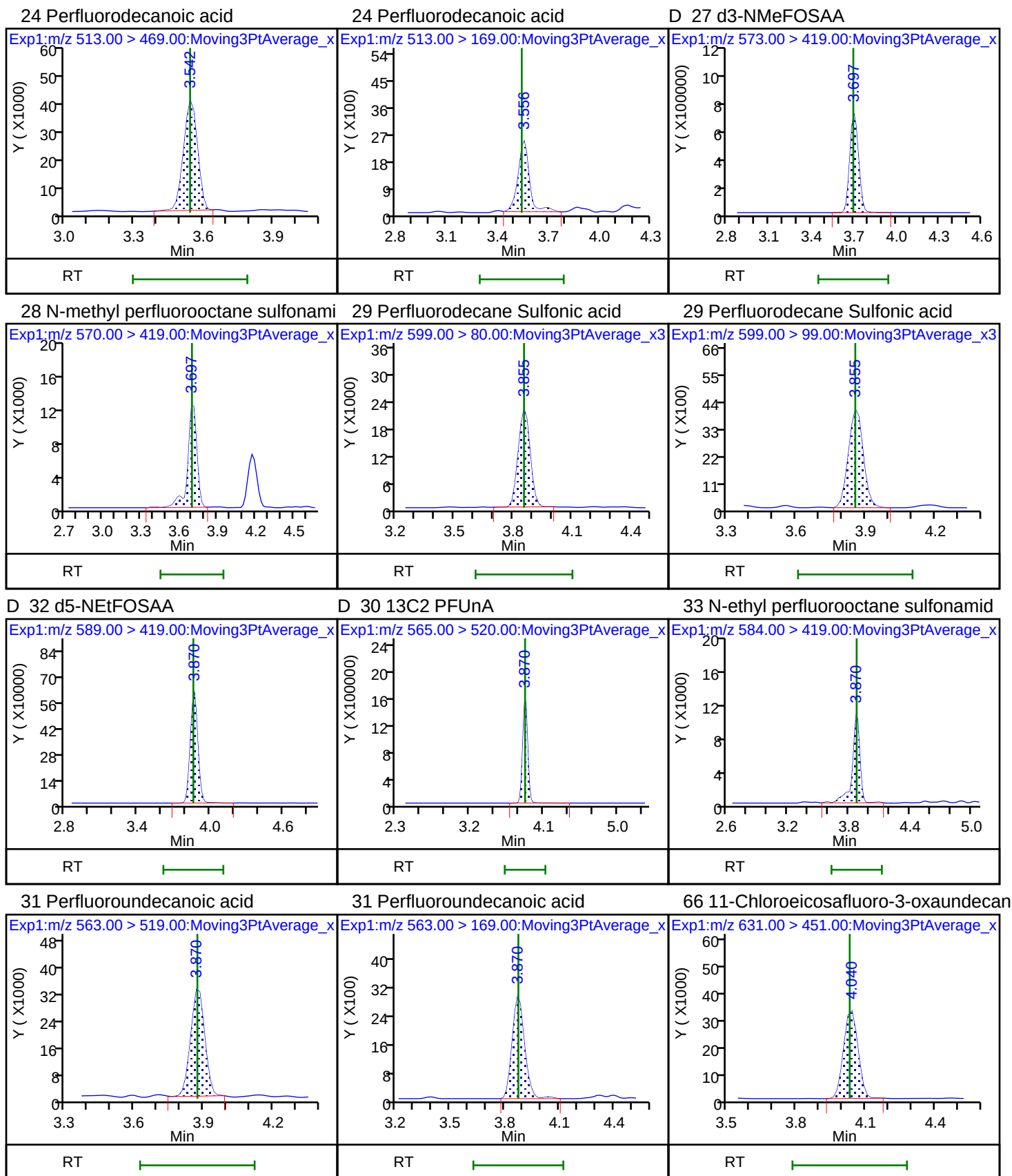
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D 19 13C5 PFNA

D 18 13C4 PFOS



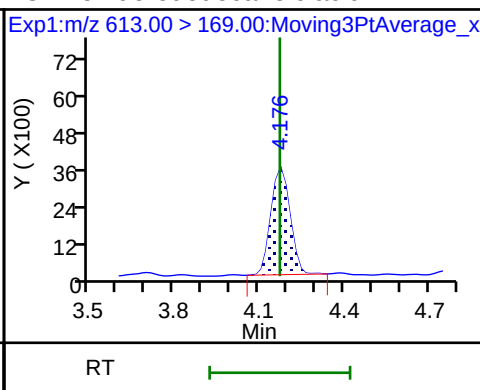
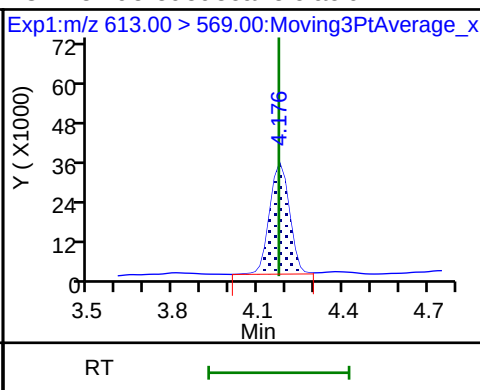
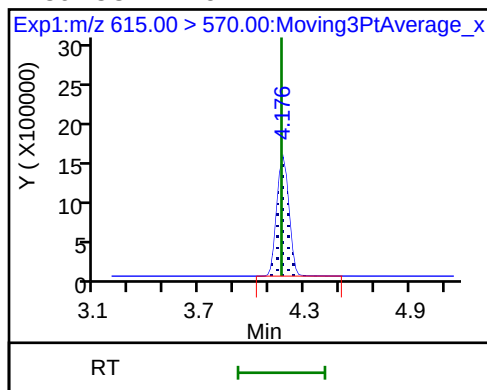




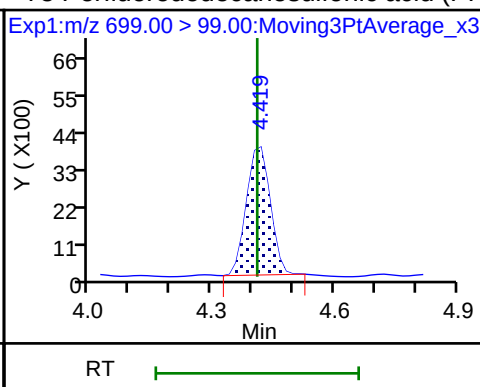
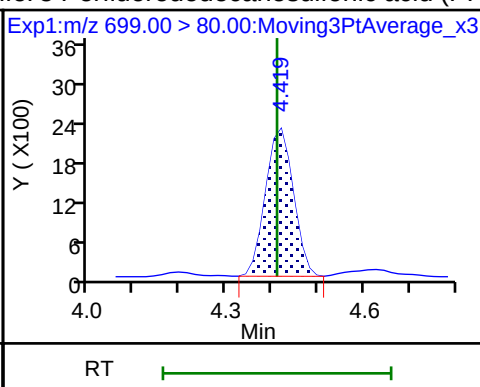
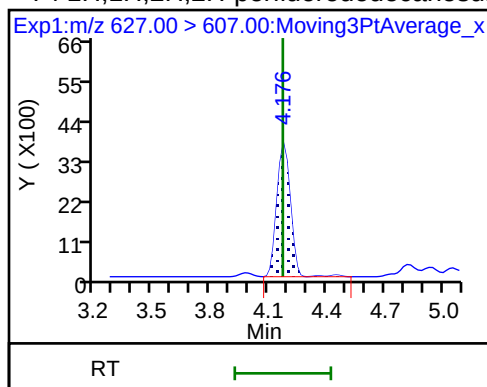
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



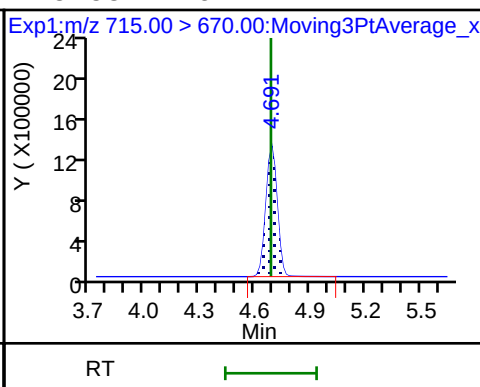
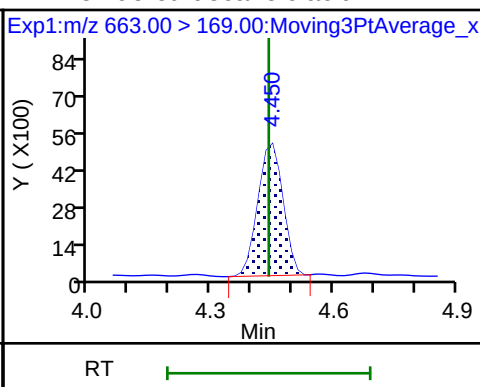
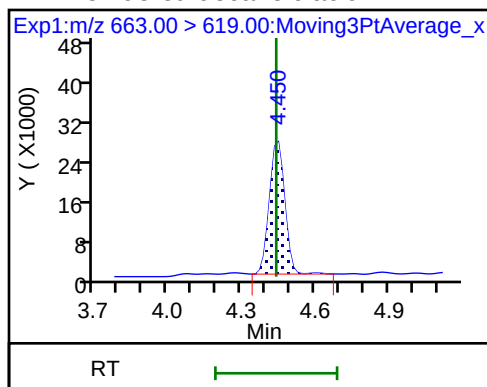
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

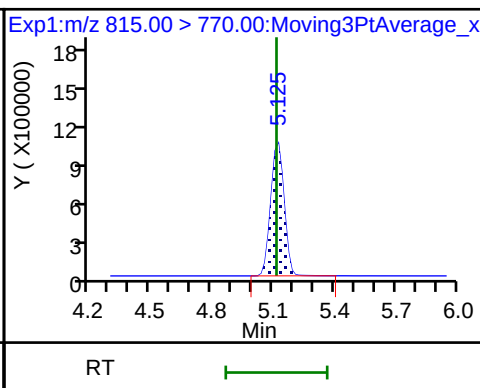
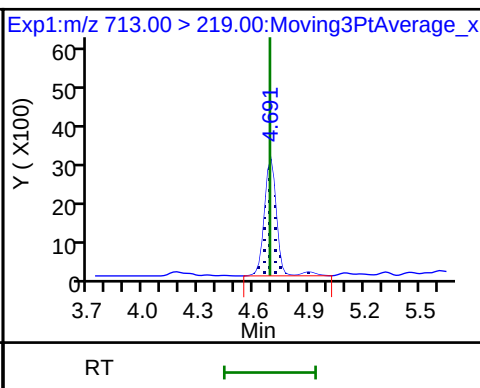
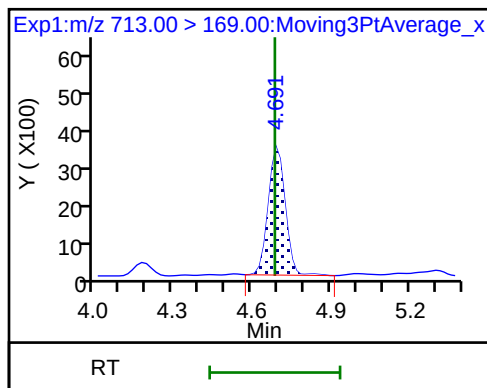
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

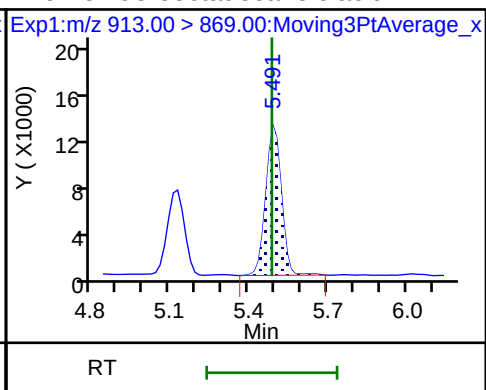
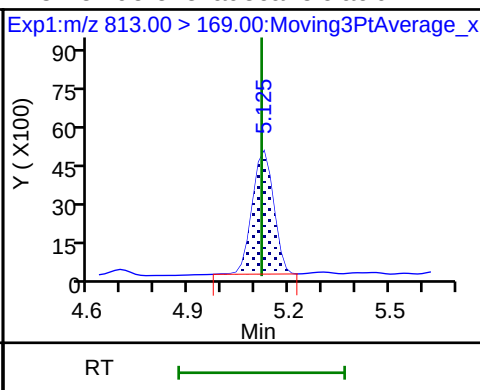
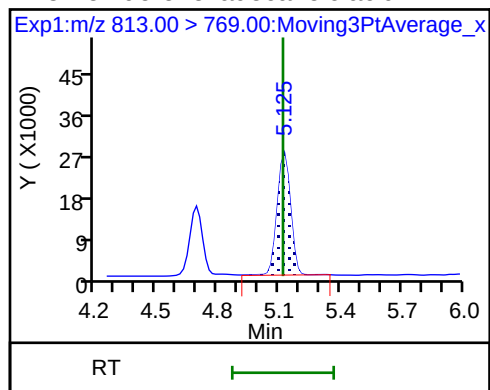
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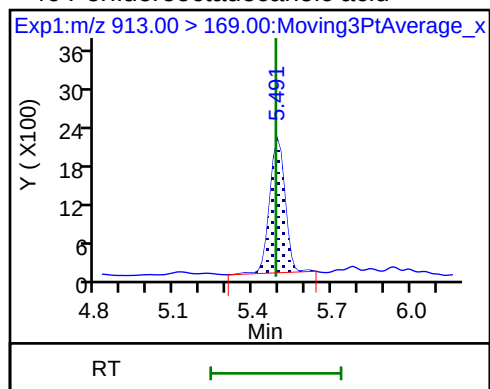
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 08:00:38 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK010

First Level Reviewer: phomsophat

Date: 08-Oct-2018 16:27:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.504	1.501	0.003	1.000	615704	0.2543		102	30.9	
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.501	0.003	0.538	6682660	2.50		100	14302	
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	603265	0.2524		101	61.1	
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	
D 47 13C3-PFBS										
301.90 > 83.00	1.839	1.834	0.005	0.657	75016	2.31		99.2	486	
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 M2-4:2FTS										
329.00 > 81.00	2.058	2.055	0.003	0.735	798190	2.43		104	1133	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.099	2.091	0.008	1.000	551522	0.2343		93.7	116	
313.00 > 119.00	2.089	2.091	-0.002	0.995	40122		13.75(6.96-20.87)	93.7	79.4	
D 7 13C2 PFHxA										
315.00 > 270.00	2.099	2.091	0.008	0.750	6499107	2.53		101	10281	
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	869128	0.2480		99.2	181	
363.00 > 169.00	2.439	2.431	0.008	1.000	195410		4.45(2.17-6.52)	99.2	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	148726		3.47(1.90-5.70)	95.6	219	
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(1.13-3.39)	104	560	
D 12 M2-6:2FTS										
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	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.789	0.009		6419130	2.47		101	8184	
* 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	820590	0.2634		105	52.7	
413.00 > 169.00	2.798	2.800	-0.002	1.000	277964		2.95(1.36-4.08)	105	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 72 13C8 PFOS										
507.00 > 99.00	3.172	3.171	0.001		1012640	2.38		99.7	2640	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.179	0.011	1.000	756751	0.2720		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 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.179	0.011	1.000	497275	0.2186		94.2	337	
499.00 > 99.00	3.190	3.179	0.011	1.000	113165		4.39(2.04-6.12)	94.2	419	
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	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.400	3.388	0.012	1.066	550453	0.2281		97.9	534	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.480	0.001	1.244	2805127	2.54		101	3439	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.496	3.485	0.011	1.004	840207	0.2522		101	1338	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.542	3.531	0.011	1.110	349409	0.2602		108	865	
549.00 > 99.00	3.542	3.531	0.011	1.110	65590		5.33(3.02-9.05)	108	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 26 M2-8:2FTS										
529.00 > 81.00	3.542	3.531	0.011	1.266	120933	2.66		111	516	
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	893762	0.2719		109	156	
513.00 > 169.00	3.542	3.541	0.001	1.000	59706		14.97(7.12-21.35)	109	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-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.713	3.699	0.014	1.004	310263	0.2673		107	127	
29 Perfluorodecane Sulfonic 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	90679		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	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.883	3.873	0.010	1.000	631135	0.2551		102	152	
563.00 > 169.00	3.883	3.873	0.010	1.000	54493		11.58(5.24-15.72)	102	193	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.883	3.873	0.010	1.004	223201	0.2344		93.8	389	
D 30 13C2 PFUnA										
565.00 > 520.00	3.883	3.873	0.010	1.388	6778230	2.67		107	6830	
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	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.176	4.173	0.003	1.179	109608	0.2265		94.0	134	
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	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.419	4.410	0.009	1.385	42008	0.2208		91.2	54.6	
699.00 > 99.00	4.419	4.410	0.009	1.385	77087		0.54(0.28-0.83)	91.2	251	

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	4.450	4.441	0.009	1.066	617700	0.2703		108	353	
663.00 > 169.00	4.450	4.441	0.009	1.066	98977		6.24(3.09-9.27)	108	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	55964		1.50(0.70-2.09)	102	171	
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	488579	0.2633		105	147	
813.00 > 169.00	5.125	5.118	0.007	1.000	81807		5.97(2.77-8.32)	105	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	50476		5.18(2.55-7.64)	96.8	254	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\2018.10.08LLICAL_004.d

Injection Date: 08-Oct-2018 15:49:26

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

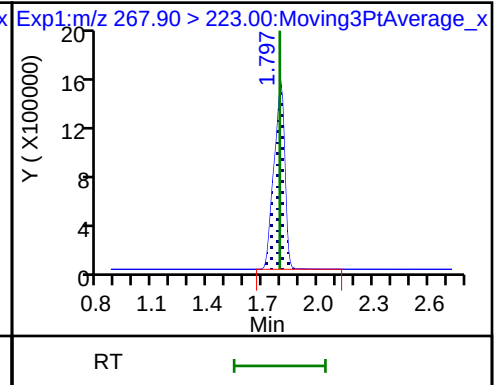
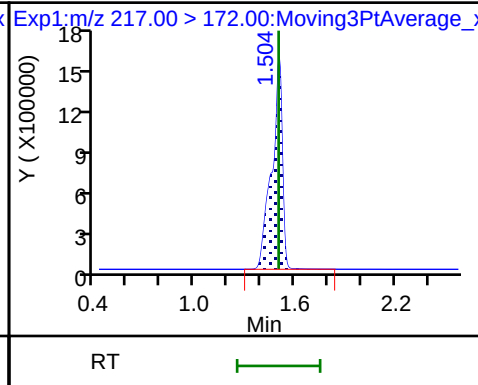
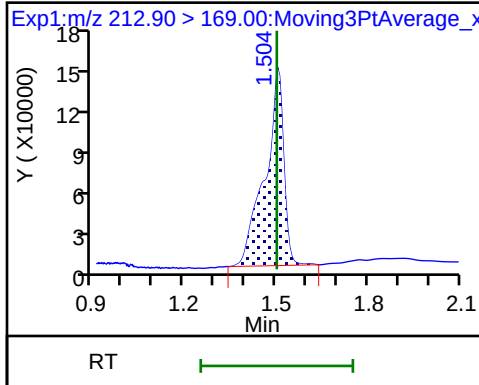
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

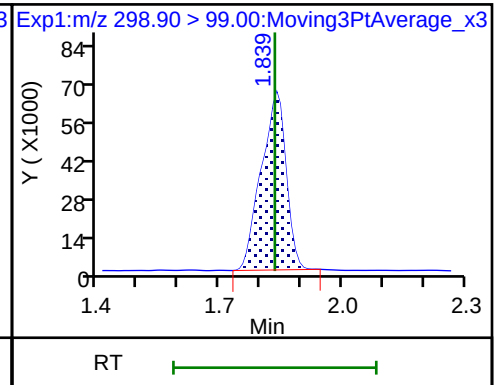
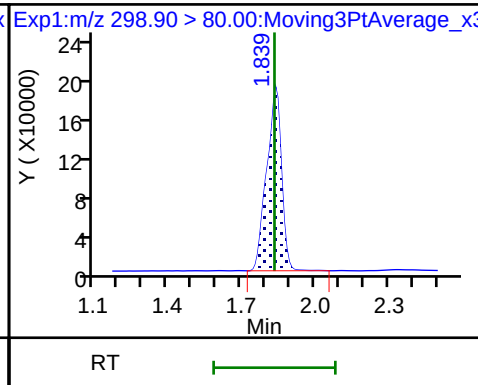
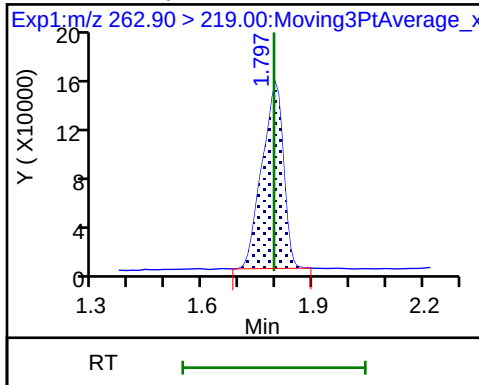
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

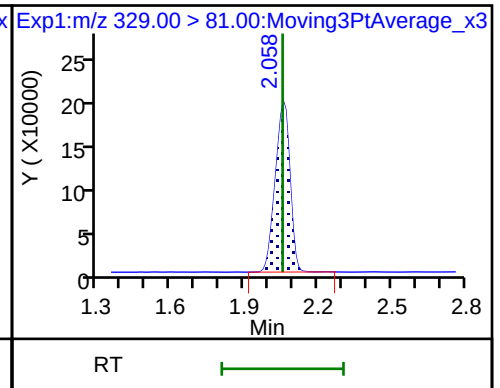
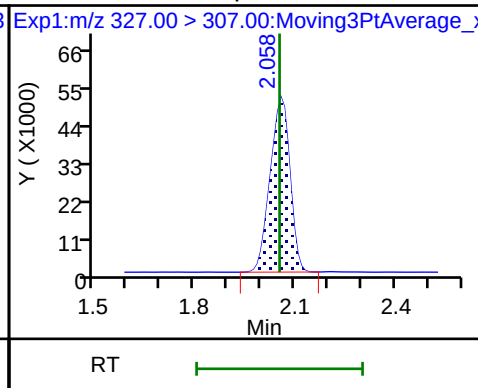
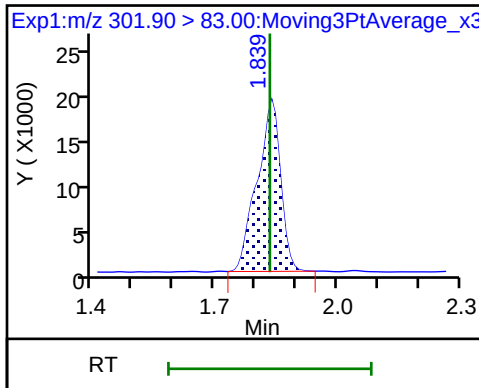
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

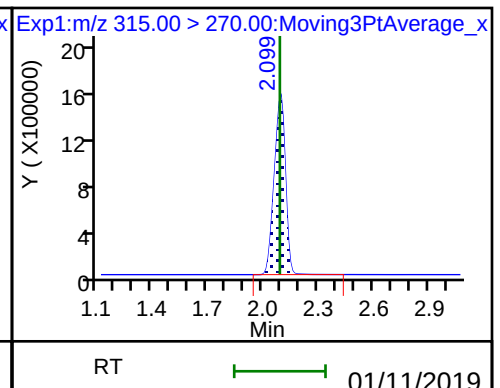
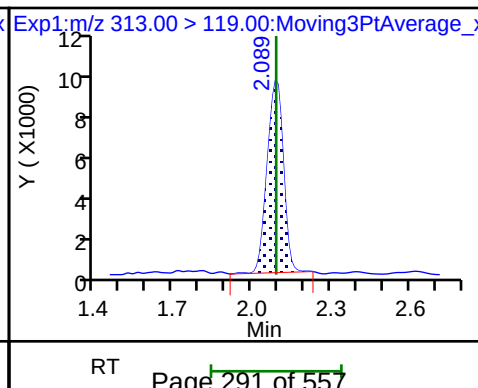
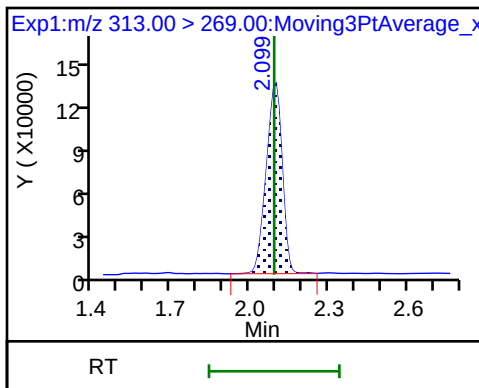
D 60 M2-4:2FTS

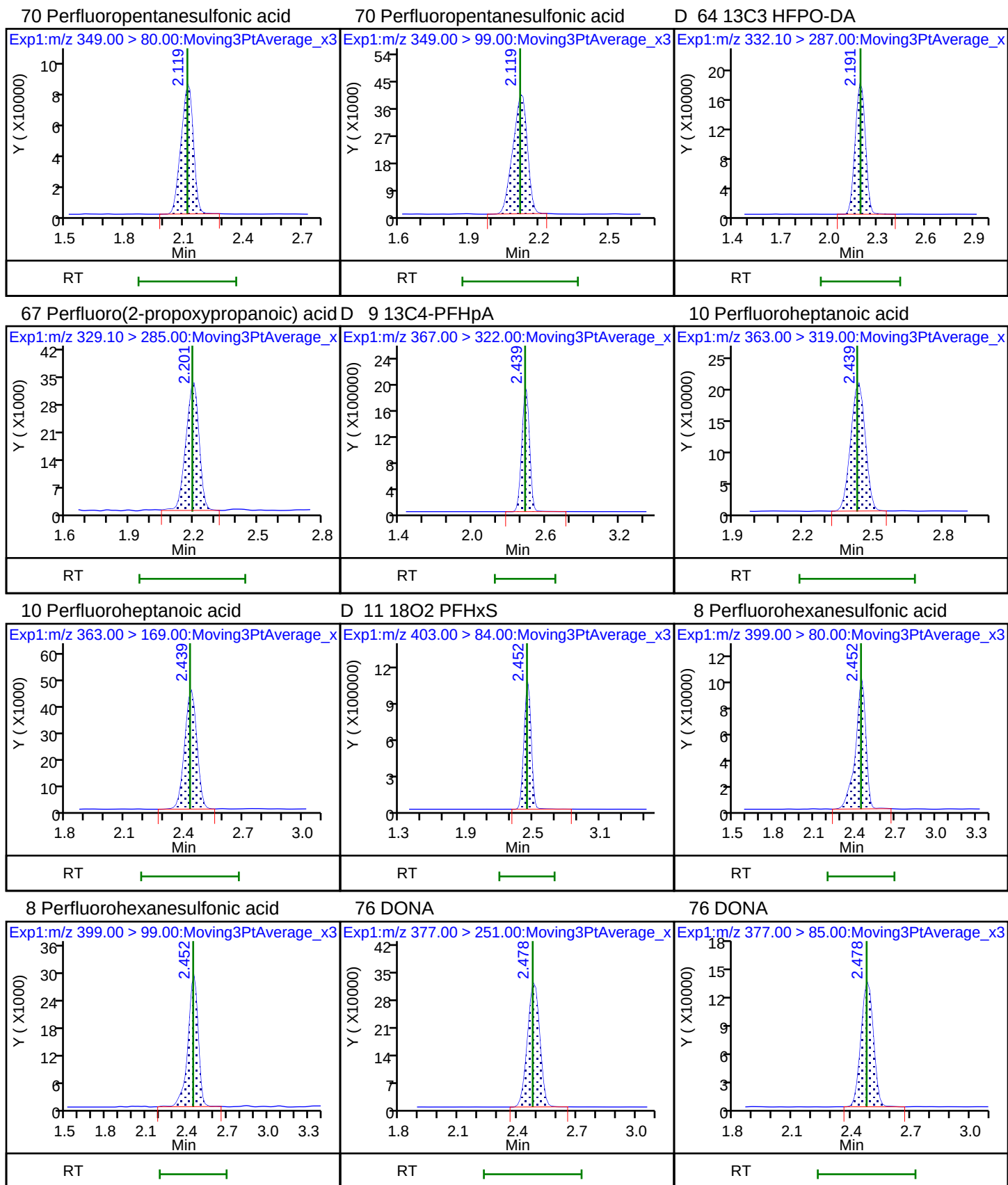


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

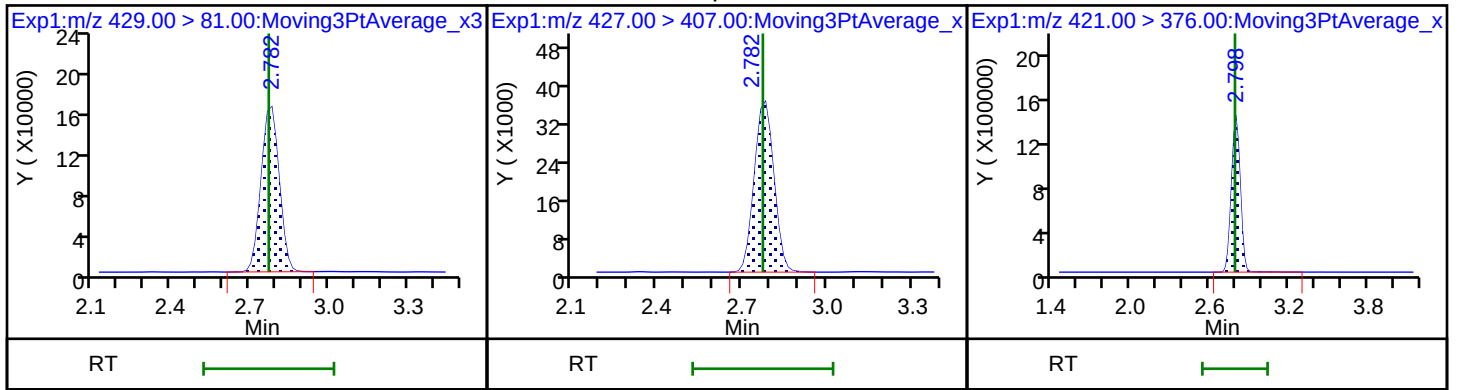
D 7 13C2 PFHxA





D 12 M2-6:2FTS

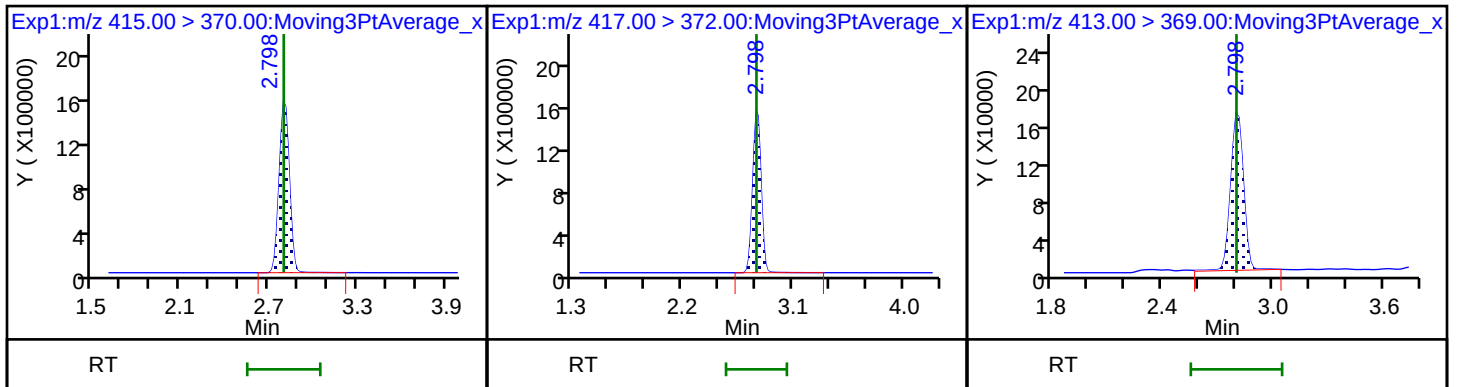
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

D 14 13C4 PFOA

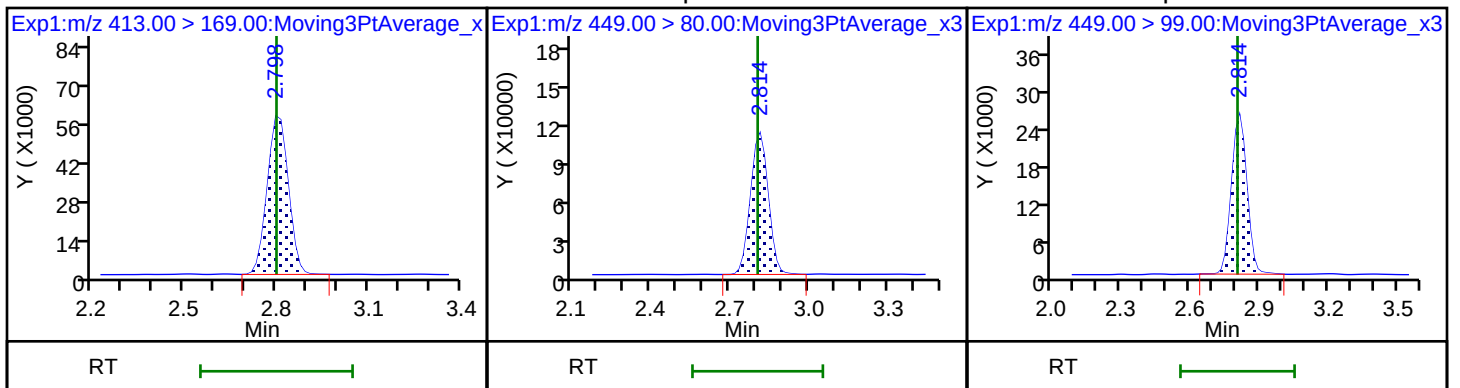
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

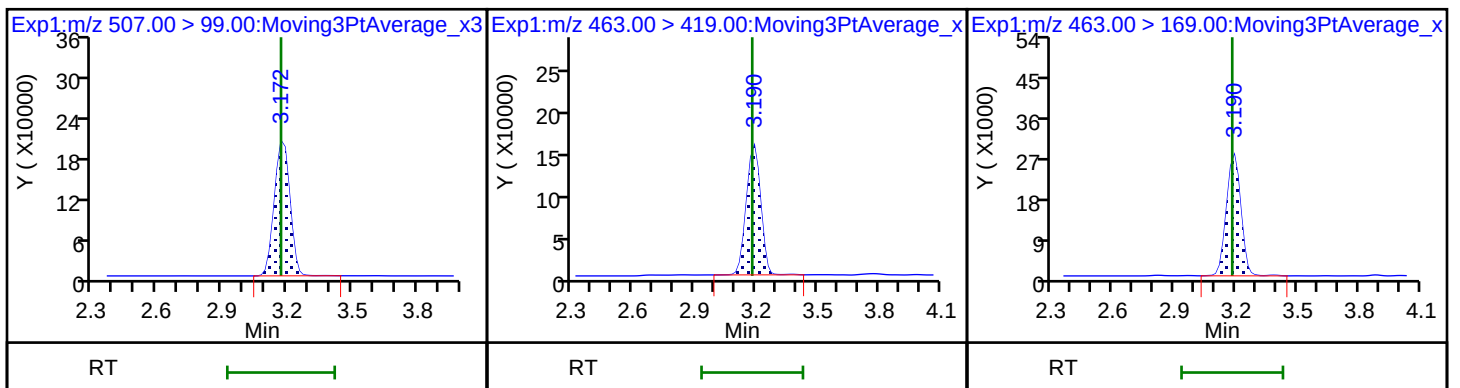
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

20 Perfluorononanoic acid

20 Perfluorononanoic acid

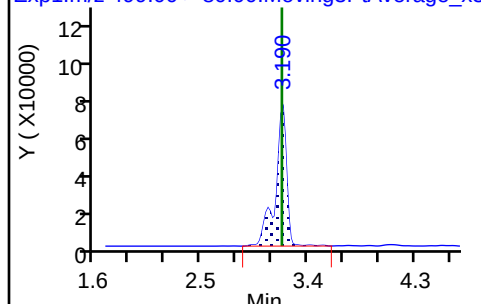


17 Perfluorooctane sulfonic acid

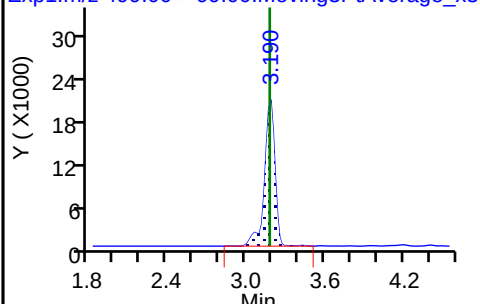
17 Perfluorooctane sulfonic acid

D 19 13C5 PFNA

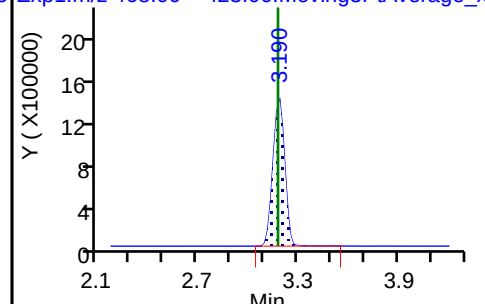
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Exp1:m/z 499.00 > 99.00:Moving3PtAverage_x3



Exp1:m/z 468.00 > 423.00:Moving3PtAverage_x3

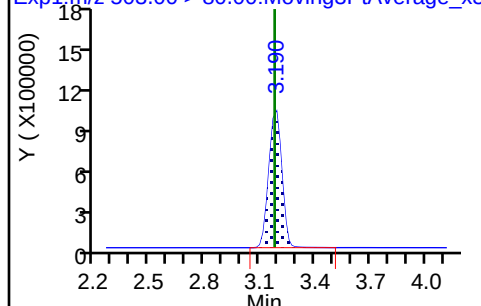


D 18 13C4 PFOS

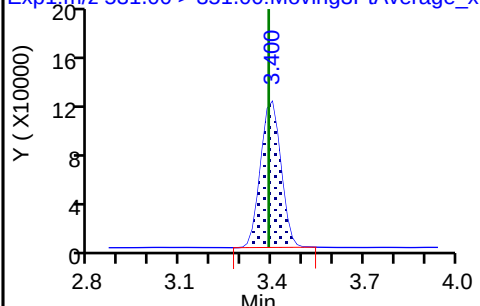
69 9-Chlorohexadecafluoro-3-oxanonane

D 21 13C8 FOSA

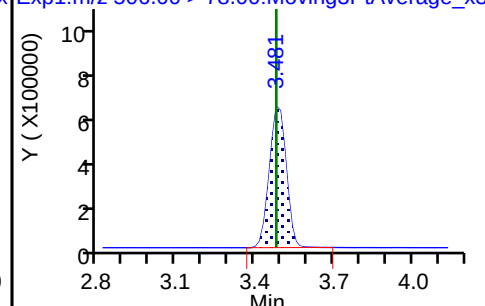
Exp1:m/z 503.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 531.00 > 351.00:Moving3PtAverage_x3



Exp1:m/z 506.00 > 78.00:Moving3PtAverage_x3

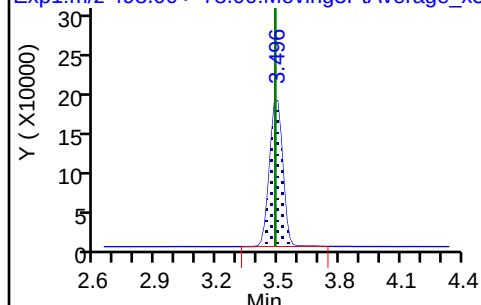


22 Perfluorooctane Sulfonamide

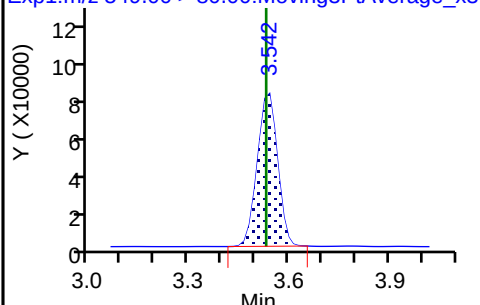
68 Perfluorononanesulfonic acid

68 Perfluorononanesulfonic acid

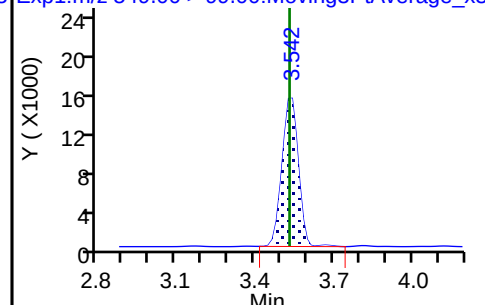
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Exp1:m/z 549.00 > 80.00:Moving3PtAverage_x3



Exp1:m/z 549.00 > 99.00:Moving3PtAverage_x3

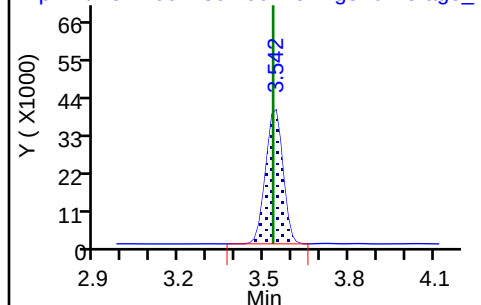


25 1H,1H,2H,2H-perfluorodecanesulfonate

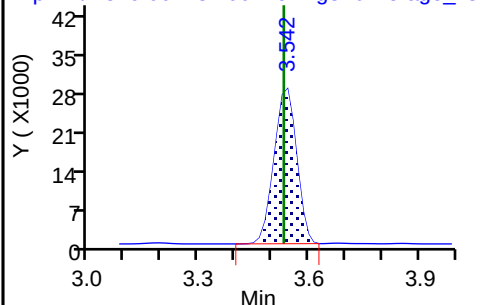
D 26 M2-8:2FTS

D 23 13C2 PFDA

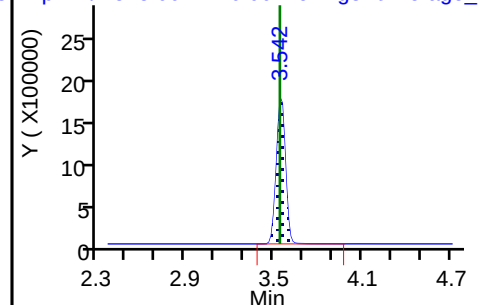
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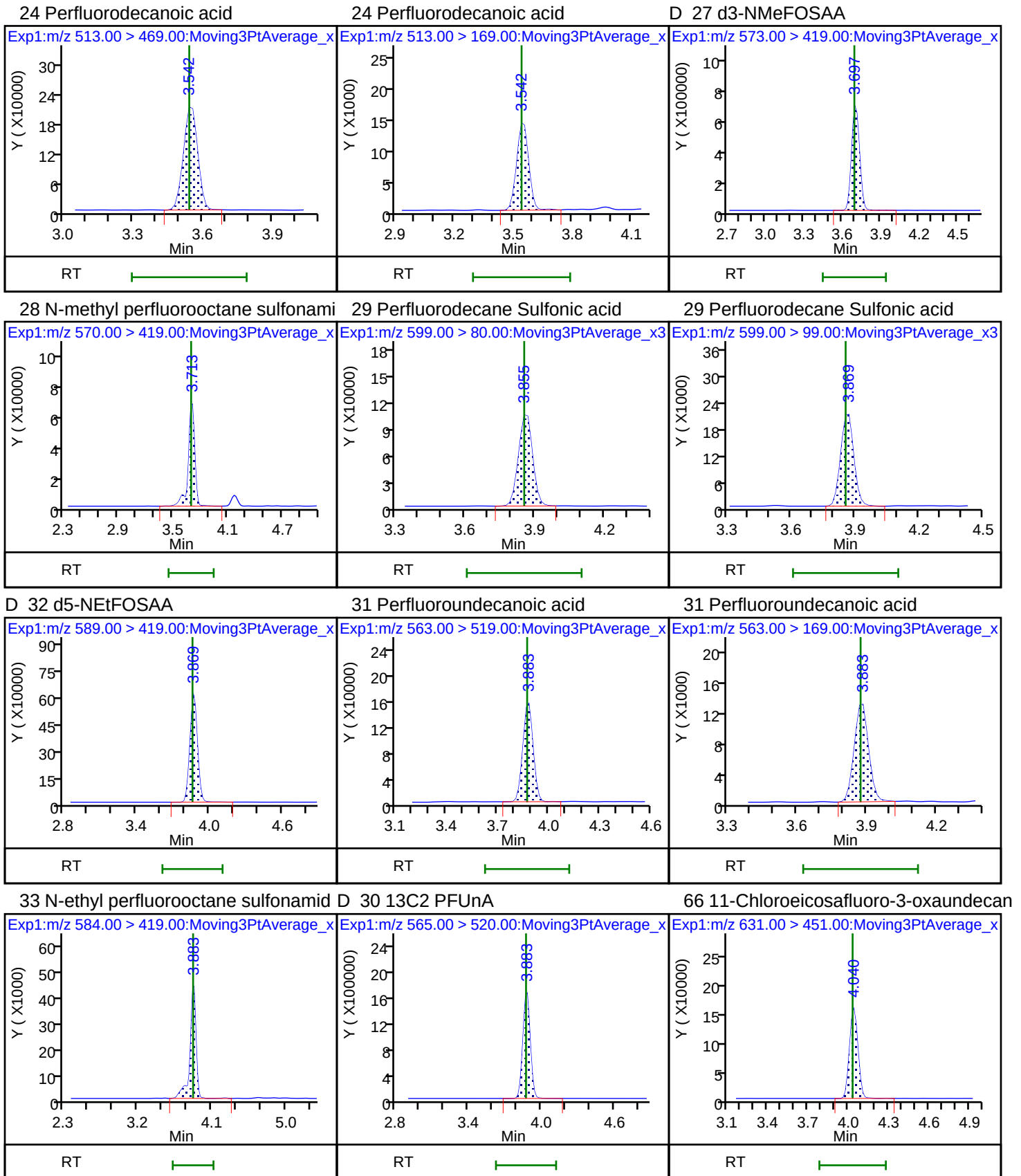


Exp1:m/z 529.00 > 81.00:Moving3PtAverage_x3



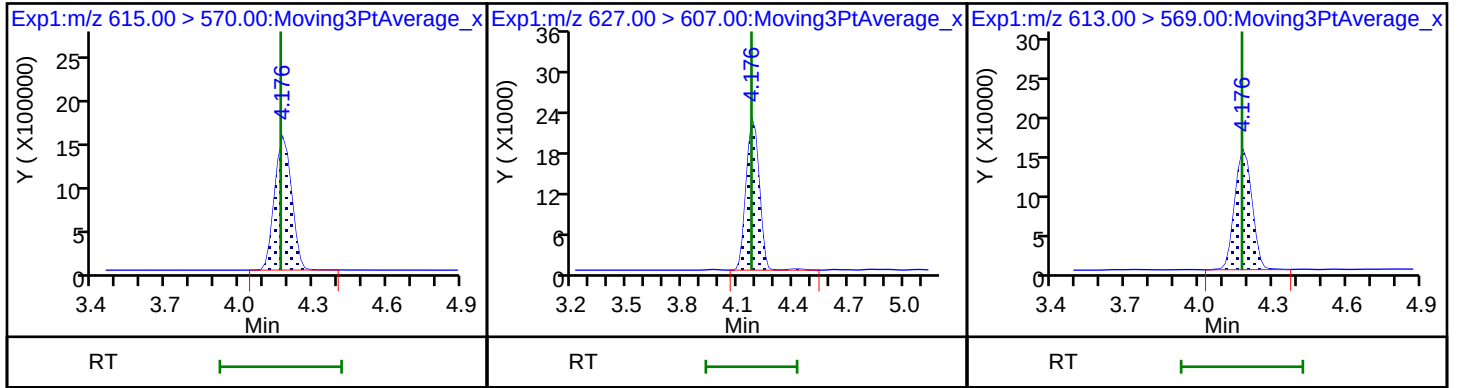
Exp1:m/z 515.00 > 470.00:Moving3PtAverage_x3





D 36 13C2 PFDaA

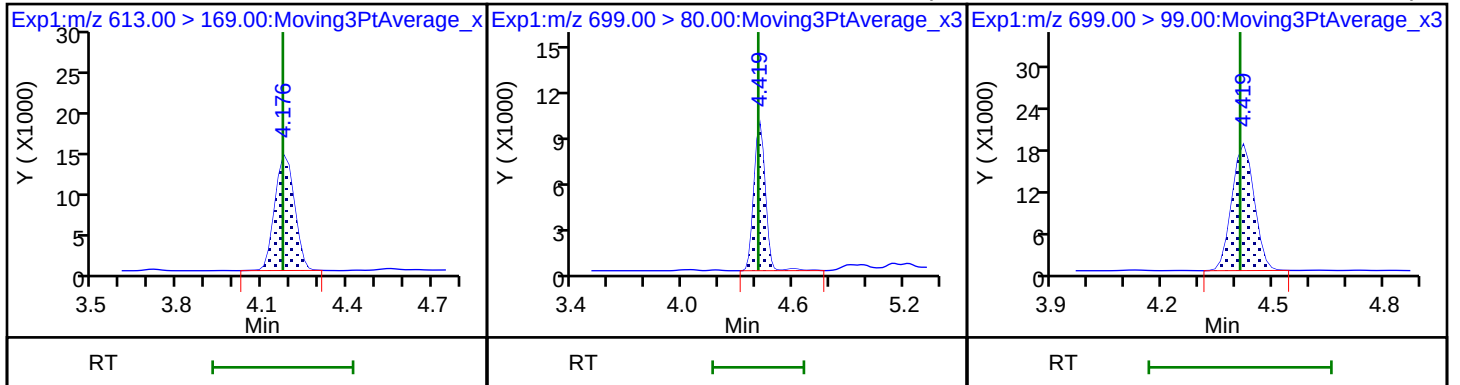
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

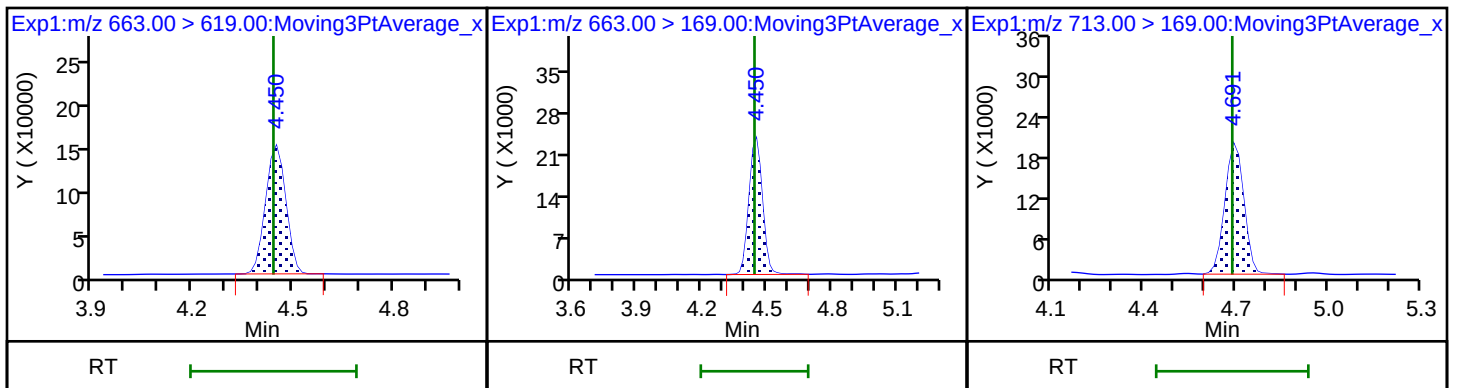
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

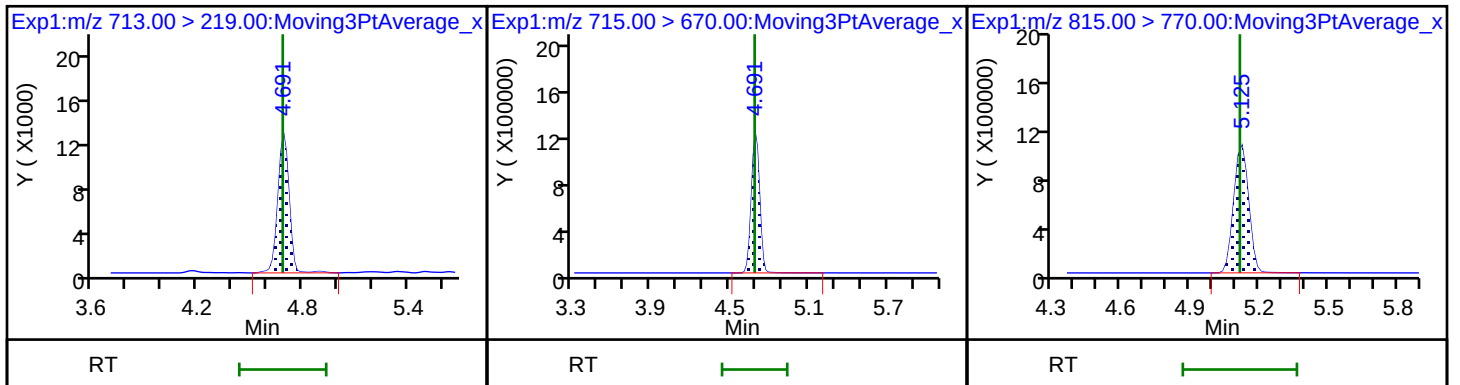
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

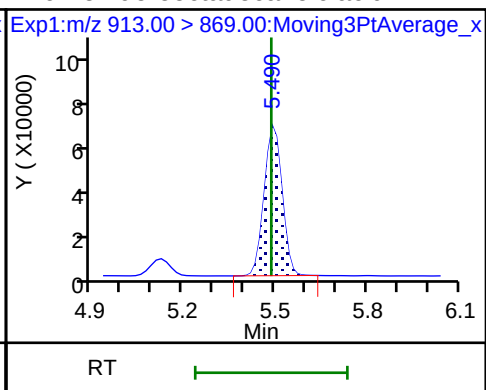
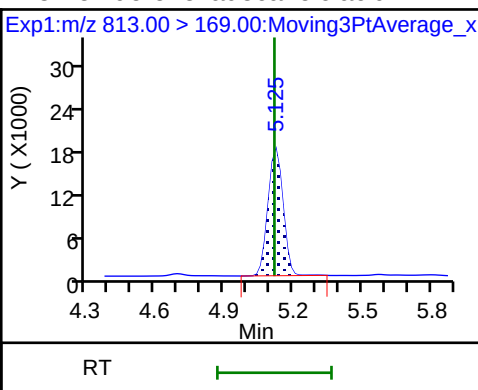
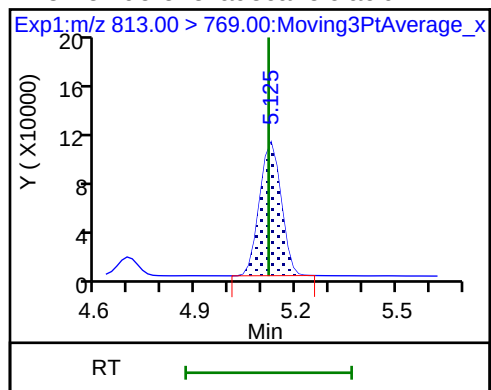
D 44 13C2-PFHxDA



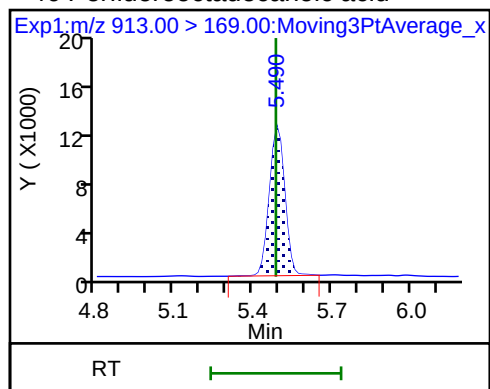
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 08:00:47 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK010

First Level Reviewer: phomsophat

Date: 08-Oct-2018 16:45:00

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	1.499	1.501	-0.002	0.536	6670736	2.51		100	23839	
2 Perfluorobutyric acid										
212.90 > 169.00	1.499	1.501	-0.002	1.000	2415495	1.00		99.9	116	
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	2370175	0.9826		98.3	228	
D 47 13C3-PFBS										
301.90 > 83.00	1.830	1.834	-0.004	0.654	69273	2.14		91.9	453	
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	
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 M2-4:2FTS										
329.00 > 81.00	2.058	2.055	0.003	0.735	763112	2.34		100	1185	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.002	0.746	6167049	2.41		96.5	12587	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.002	1.000	2291756	1.03		103	524	
313.00 > 119.00	2.089	2.091	-0.002	1.000	168305		13.62(6.96-20.87)	103	357	
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	3385342	1.01		101	620	
363.00 > 169.00	2.426	2.431	-0.005	1.000	705004		4.80(2.17-6.52)	101	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	581771		3.55(1.90-5.70)	95.1	707	
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(1.13-3.39)	105	2130	
D 12 M2-6:2FTS										
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	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.789	-0.007		6340809	2.44		99.8	6047	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	3242814	1.03		103	195	
413.00 > 169.00	2.798	2.800	-0.002	1.000	1102226		2.94(1.36-4.08)	103	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	
D 72 13C8 PFOS										
507.00 > 99.00	3.171	3.171	0.0		1052124	2.48		104	1723	
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	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.179	-0.008	1.000	2747410	0.99		99.4	320	
463.00 > 169.00	3.171	3.179	-0.008	1.000	497221		5.53(2.68-8.03)	99.4	1216	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.179	-0.008	1.000	2043283	0.9041		97.4	1197	
499.00 > 99.00	3.171	3.179	-0.008	1.000	479121		4.26(2.04-6.12)	97.4	1099	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.388	-0.005	1.067	2380191	0.99		107	1692	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	2784760	2.53		101	7471	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.480	3.485	-0.005	1.000	3535811	1.07		107	2983	
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	104296	2.31		96.2	573	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	629053	0.9695		101	2121	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.531	-0.004	1.112	1271547	0.9527		99.2	2031	
549.00 > 99.00	3.527	3.531	-0.004	1.112	237914		5.34(3.02-9.05)	99.2	1300	
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	3398125	1.04		104	578	
513.00 > 169.00	3.541	3.541	0.0	1.000	234981		14.46(7.12-21.35)	104	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-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.699	-0.002	1.000	1142506	0.9577		95.8	396	
29 Perfluorodecane Sulfonic 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	367442		4.69(2.14-6.43)	96.9	1336	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.854	3.861	-0.007	1.378	2482383	2.48		99.3	3231	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.873	-0.004	1.383	6148756	2.43		97.2	7265	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.873	-0.004	1.004	891079	0.9807		98.1	1824	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.873	-0.004	1.000	2276685	1.01		101	504	
563.00 > 169.00	3.869	3.873	-0.004	1.000	188267		12.09(5.24-15.72)	101	782	
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	
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	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.176	4.173	0.003	1.184	425979	1.02		106	533	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.403	4.410	-0.007	1.389	170605	0.9023		93.2	201	
699.00 > 99.00	4.403	4.410	-0.007	1.389	349135		0.49(0.28-0.83)	93.2	864	

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	4.434	4.441	-0.007	1.062	2166041	1.01		101	1044	
663.00 > 169.00	4.434	4.441	-0.007	1.062	369728		5.86(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	
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	220272		1.51(0.70-2.09)	96.3	617	
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	1652362	1.00		100.0	488	
813.00 > 169.00	5.108	5.118	-0.010	1.000	300433		5.50(2.77-8.32)	100.0	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	206075		5.07(2.55-7.64)	101	824	

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\20181008-65481.b\2018.10.08LLICAL_005.d

Injection Date: 08-Oct-2018 15:56:59

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

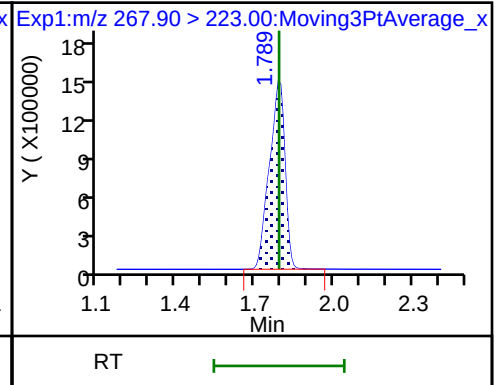
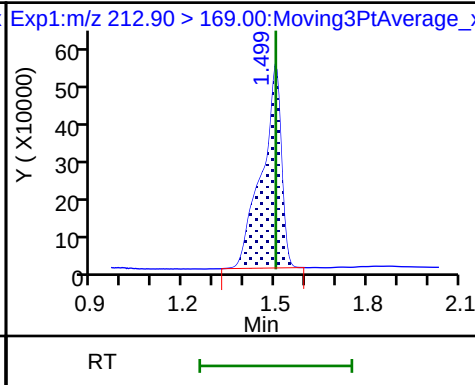
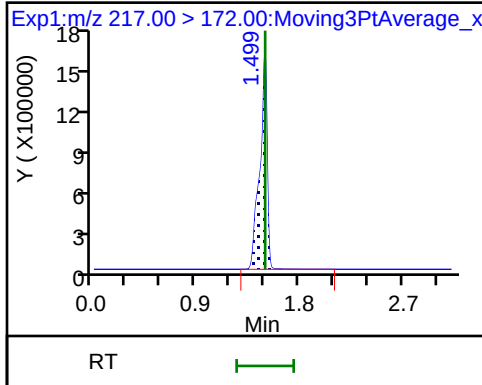
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

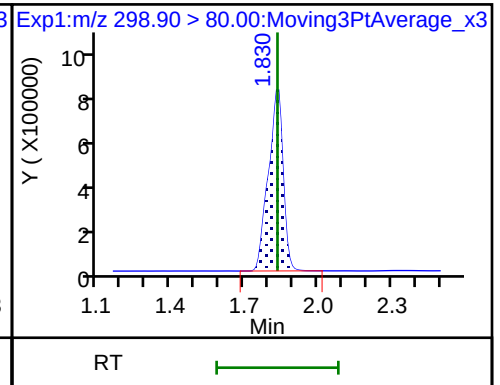
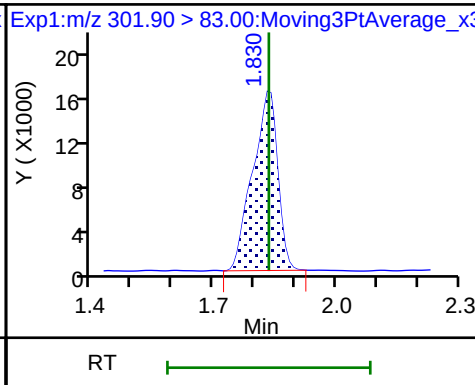
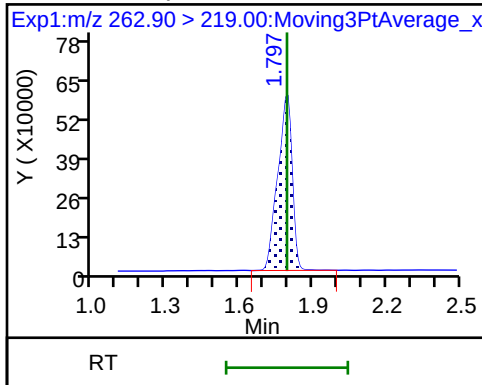
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

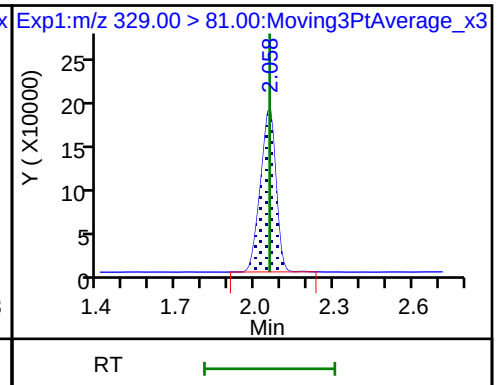
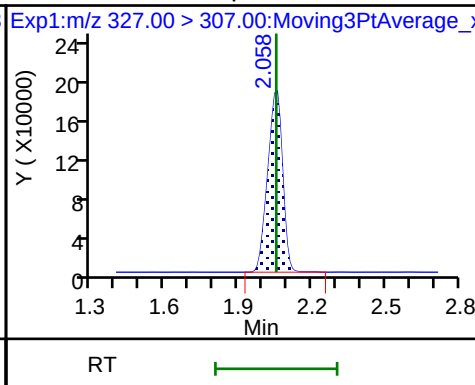
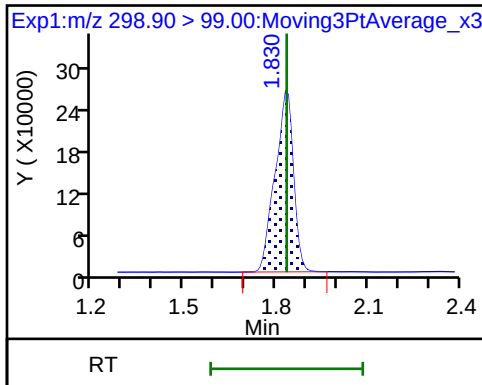
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

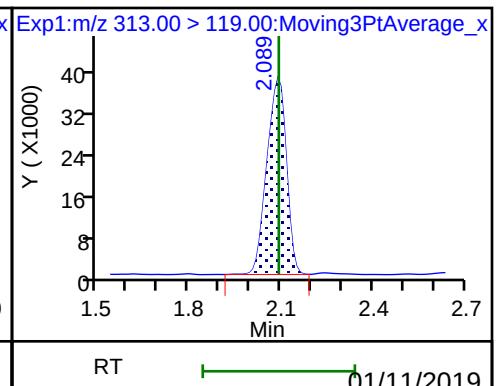
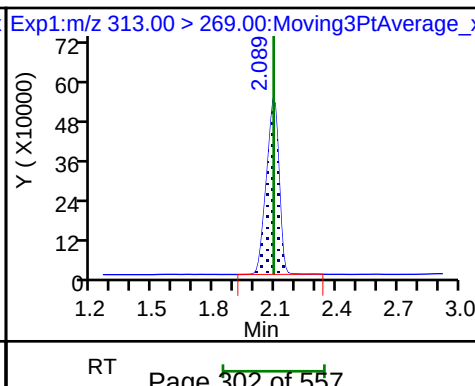
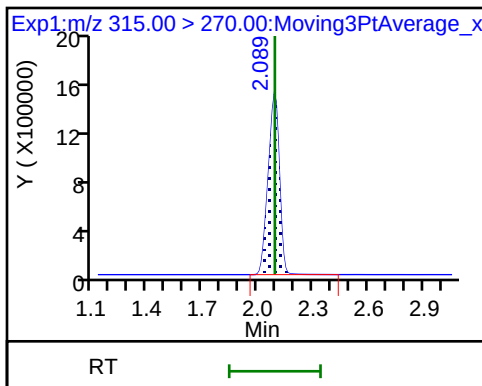
D 60 M2-4:2FTS

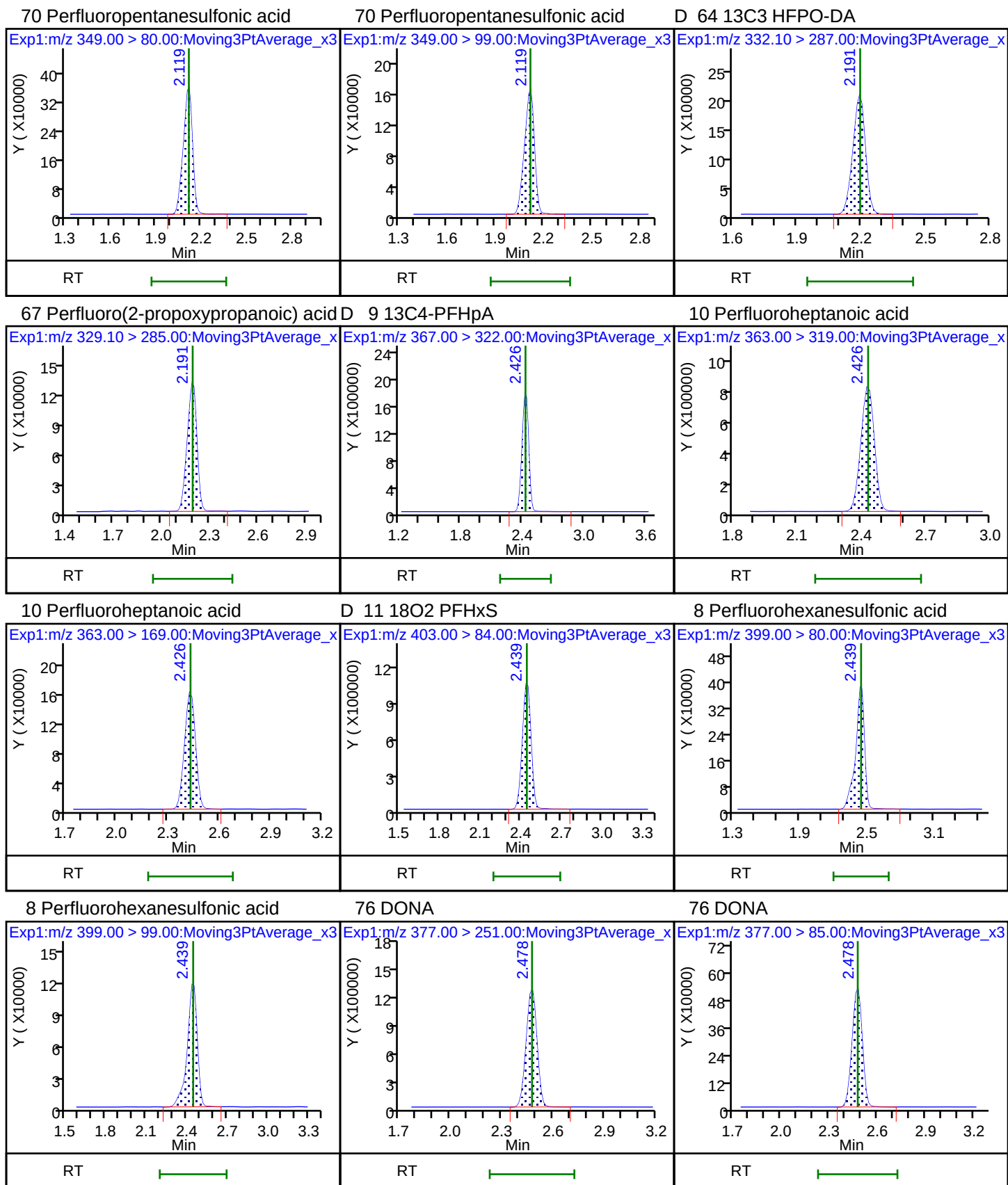


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

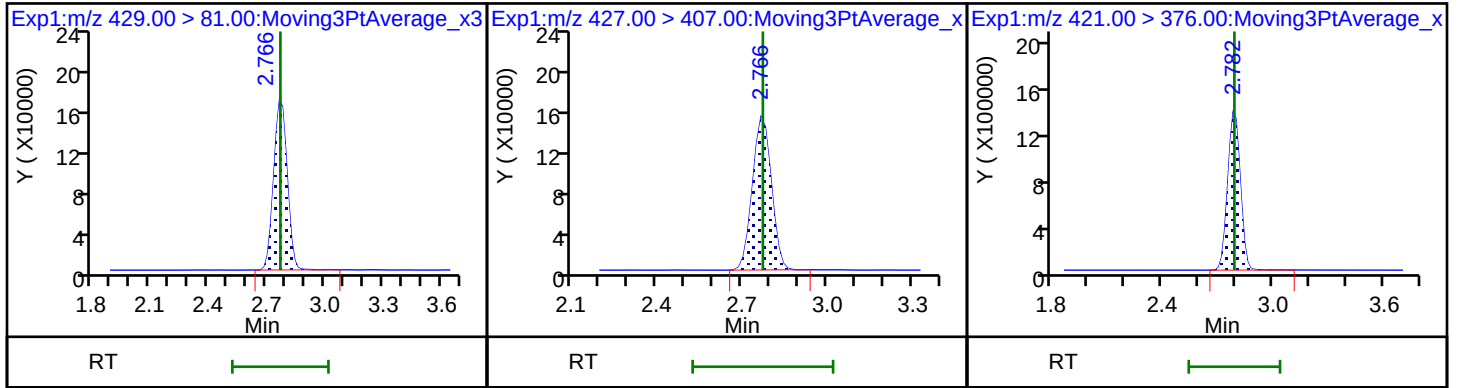
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

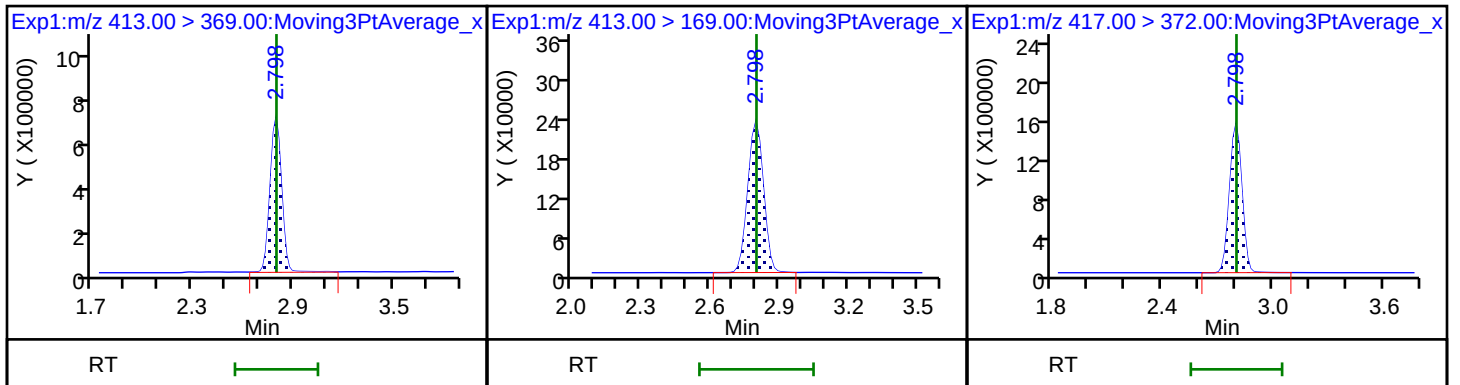
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

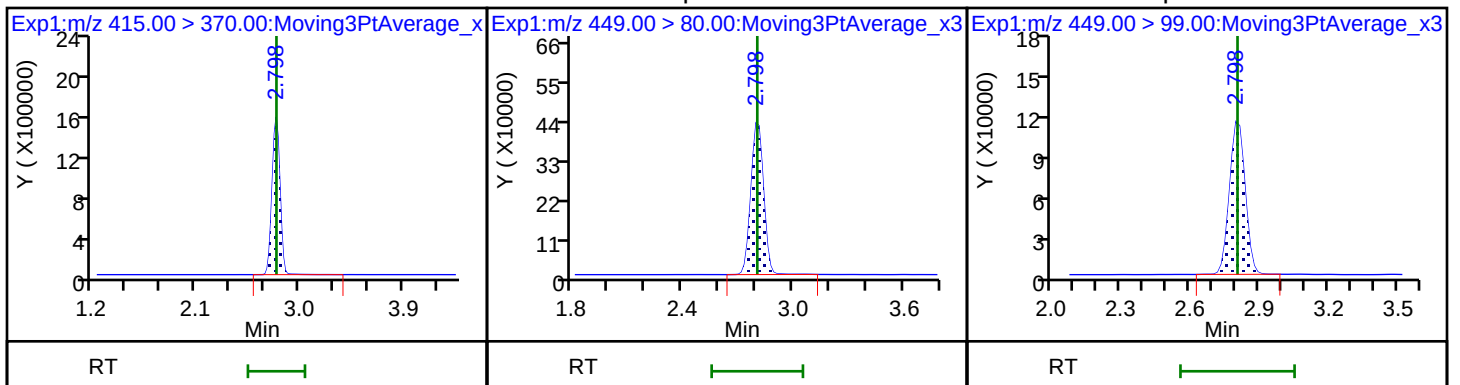
D 14 13C4 PFOA



* 62 13C2-PFOA

16 Perfluoroheptanesulfonic acid

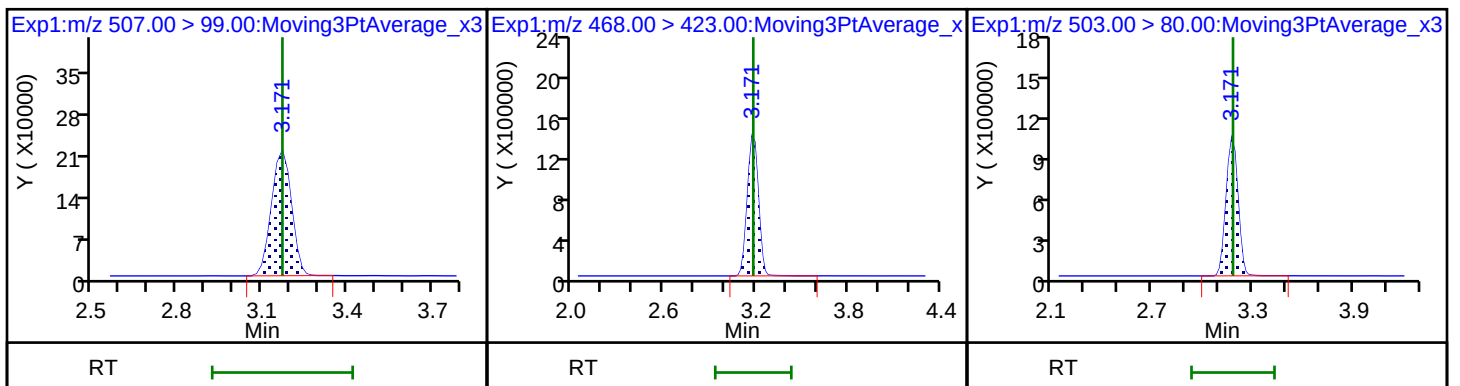
16 Perfluoroheptanesulfonic acid

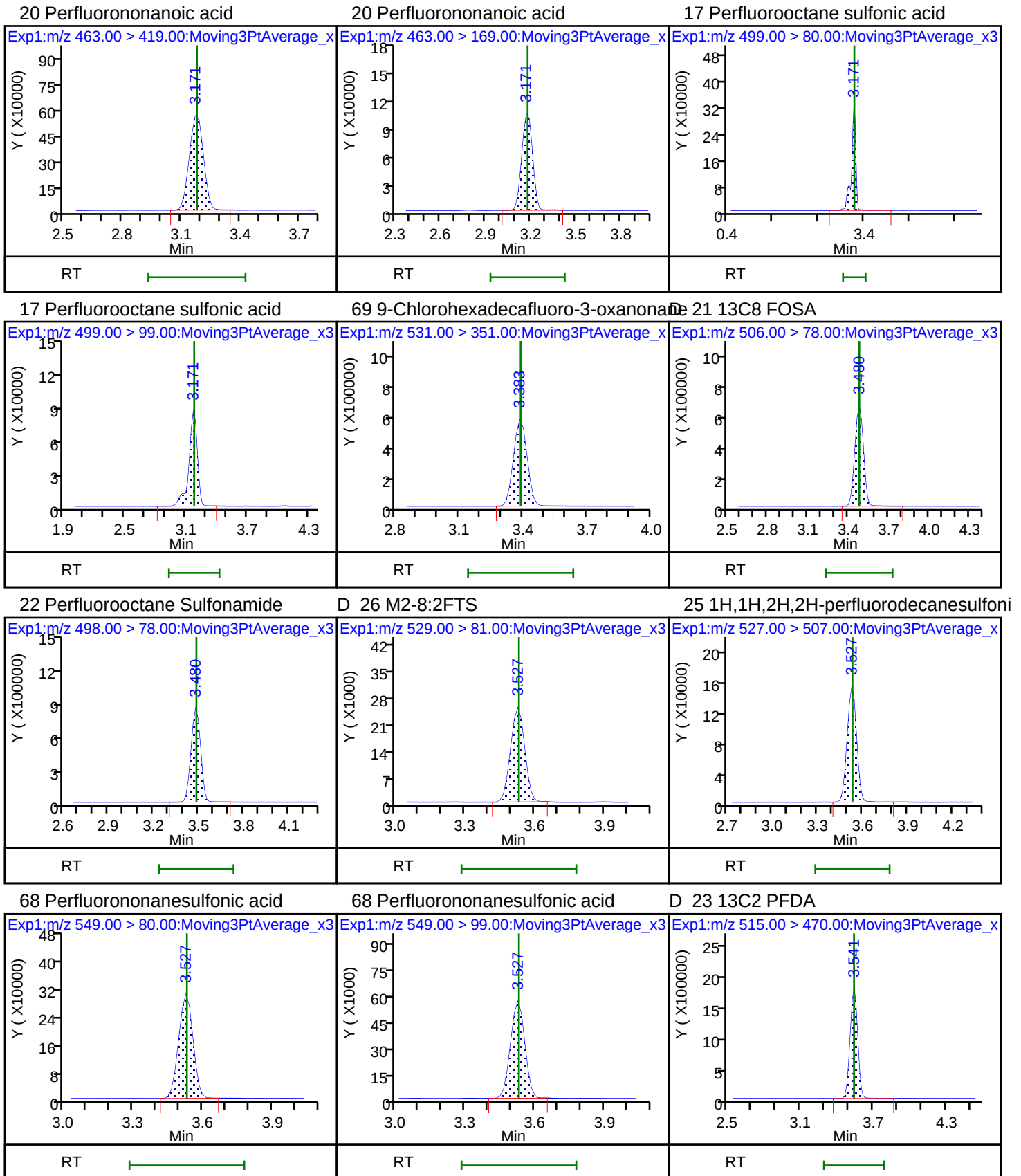


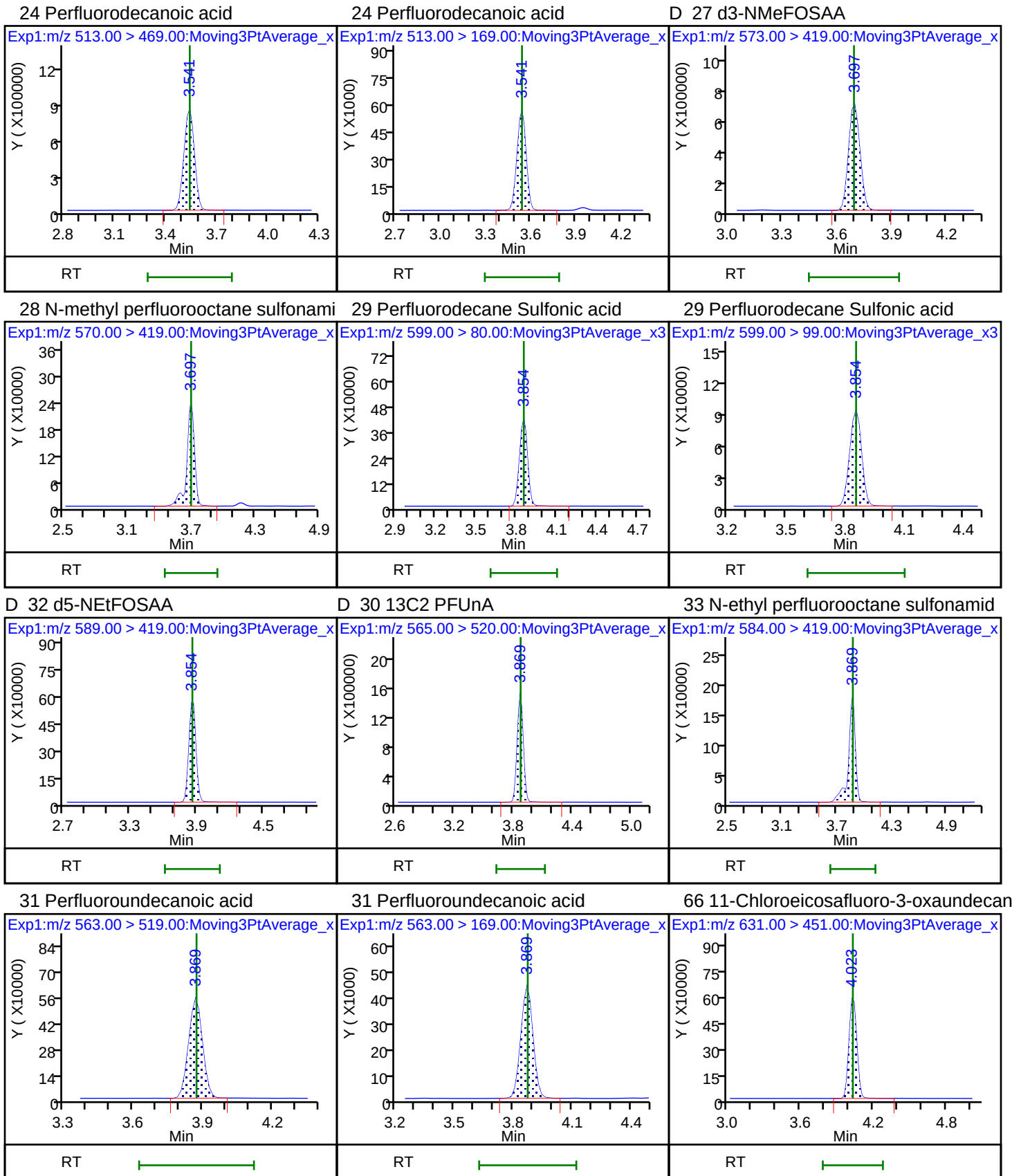
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



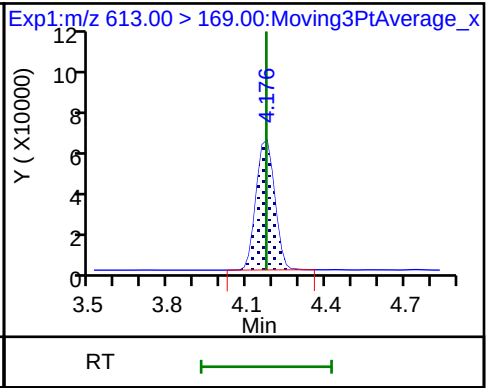
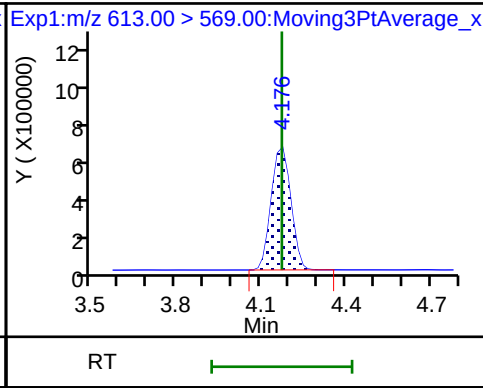
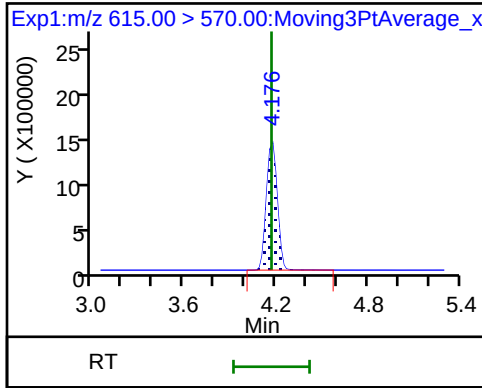




D 36 13C2 PFDaA

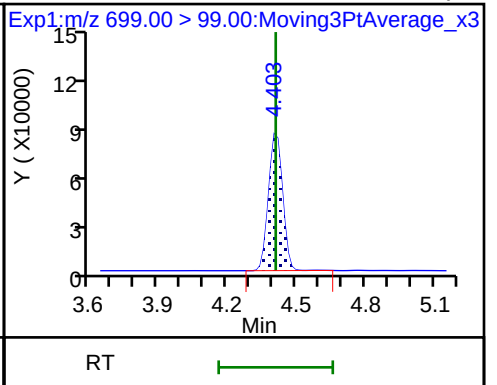
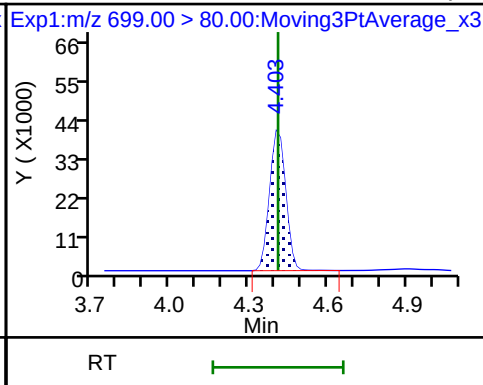
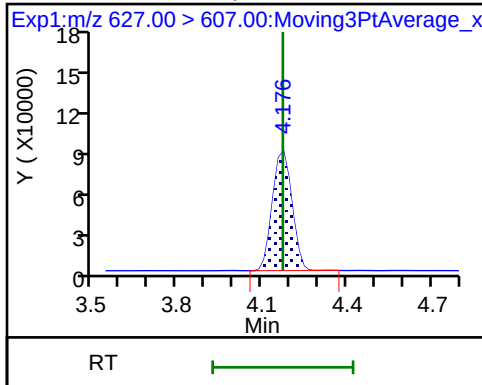
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

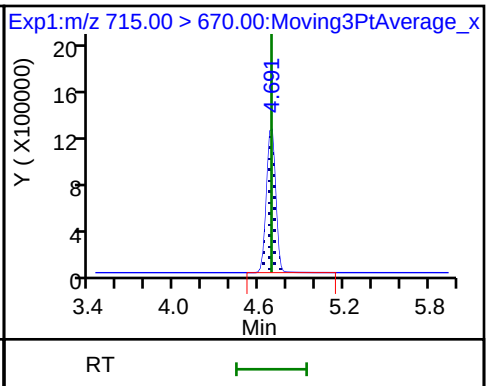
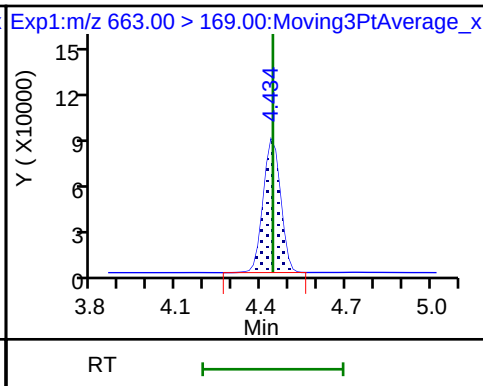
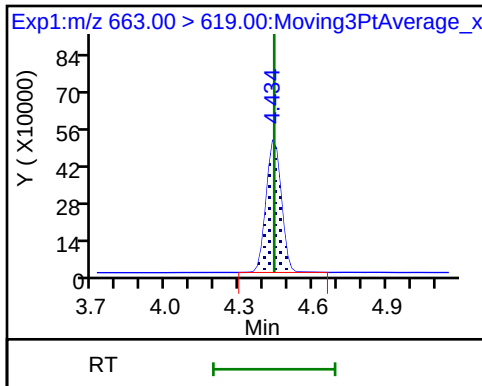
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

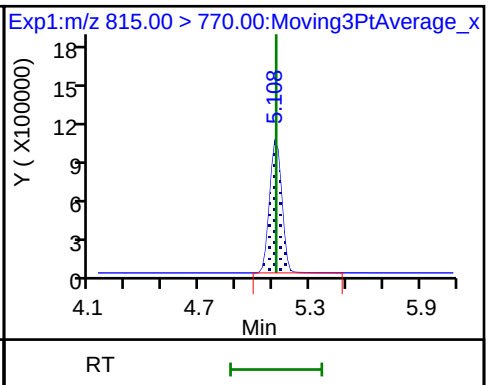
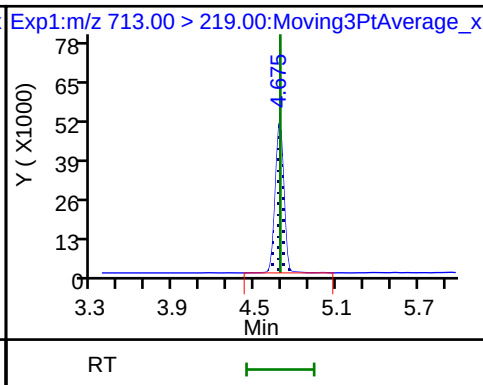
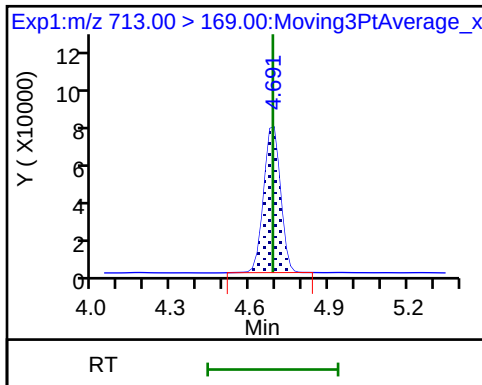
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

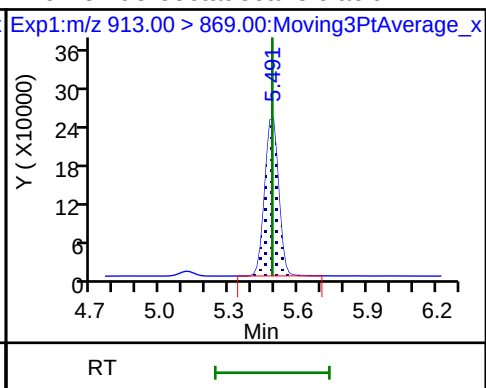
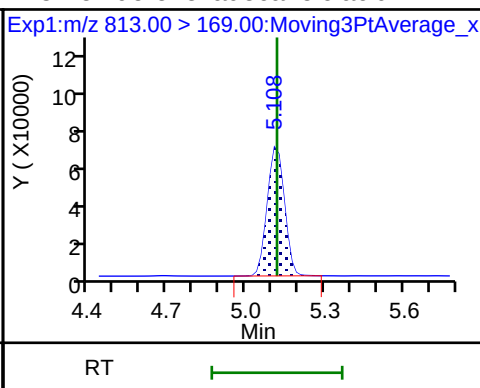
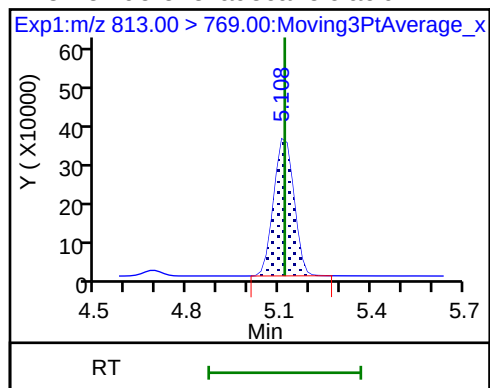
D 44 13C2-PFHxDA



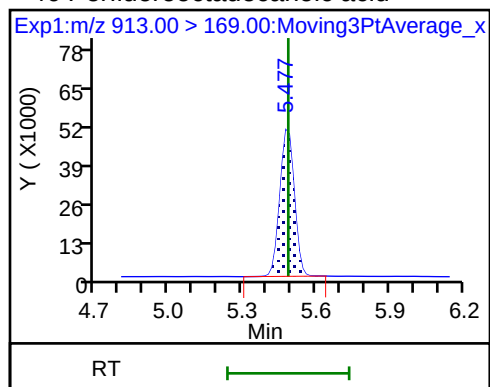
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

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 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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 08:00:52 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK010

First Level Reviewer: phomsophat

Date: 08-Oct-2018 16:27:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.499	1.501	-0.002	1.000	6085910	2.59		104	304	
D 1 13C4 PFBA										
217.00 > 172.00	1.499	1.501	-0.002	0.536	6482273	2.42		96.9	14046	
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	5948379	2.54		102	542	
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	
D 47 13C3-PFBS										
301.90 > 83.00	1.830	1.834	-0.004	0.654	75427	2.31		99.6	668	
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 M2-4:2FTS										
329.00 > 81.00	2.048	2.055	-0.007	0.732	780074	2.37		102	1073	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.088	2.091	-0.003	1.000	5814524	2.49		99.5	1237	
313.00 > 119.00	2.088	2.091	-0.003	1.000	409785		14.19(6.96-20.87)	99.5	726	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.091	-0.003	0.746	6455245	2.51		100	11206	
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	8182127	2.49		99.7	1323	
363.00 > 169.00	2.426	2.431	-0.005	1.000	1797170		4.55(2.17-6.52)	99.7	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	1433635		3.52(1.90-5.70)	93.6	1486	
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(1.13-3.39)	107	4100	
D 12 M2-6:2FTS										
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	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.789	-0.007		6432335	2.48		101	12102	
* 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	7597633	2.45		97.9	467	
413.00 > 169.00	2.798	2.800	-0.002	1.000	2557139		2.97(1.36-4.08)	97.9	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 72 13C8 PFOS										
507.00 > 99.00	3.171	3.171	0.0		984715	2.32		97.0	1716	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.179	-0.008	1.000	6908313	2.47		98.8	730	
463.00 > 169.00	3.171	3.179	-0.008	1.000	1289262		5.36(2.68-8.03)	98.8	2448	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.179	-0.008	1.000	5182461	2.50		108	2462	
499.00 > 99.00	3.171	3.179	-0.008	1.000	1189477		4.36(2.04-6.12)	108	1376	
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	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.388	-0.005	1.067	5614406	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	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.480	3.485	-0.005	1.000	8523670	2.68		107	5172	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.531	-0.004	1.112	3091543	2.52		105	2701	
549.00 > 99.00	3.527	3.531	-0.004	1.112	509404		6.07(3.02-9.05)	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 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	103603	2.28		95.1	550	
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	8056934	2.63		105	1157	
513.00 > 169.00	3.527	3.541	-0.014	1.000	556611		14.47(7.12-21.35)	105	466	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.682	3.693	-0.011	1.316	2997272	2.51		100	1689	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.696	3.699	-0.003	1.004	2926071	2.41		96.3	4381	
29 Perfluorodecane Sulfonic 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	883487		5.01(2.14-6.43)	108	2492	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.854	3.861	-0.007	1.378	2437316	2.43		97.0	2719	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.873	-0.004	1.000	5454066	2.42		96.7	1046	
563.00 > 169.00	3.869	3.873	-0.004	1.000	502547		10.85(5.24-15.72)	96.7	1731	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.873	-0.004	1.004	2210078	2.48		99.1	3224	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.873	-0.004	1.383	6180061	2.43		97.1	6774	
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	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.173	-0.016	1.179	1073632	2.59		107	1143	
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	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.403	4.410	-0.007	1.389	430669	2.48		102	698	
699.00 > 99.00	4.403	4.410	-0.007	1.389	806590		0.53(0.28-0.83)	102	1573	

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	4.434	4.441	-0.007	1.067	5541182	2.49		99.6	2956	
663.00 > 169.00	4.434	4.441	-0.007	1.067	872736		6.35(3.09-9.27)	99.6	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	607253		1.47(0.70-2.09)	105	1948	
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	4377378	2.63		105	1168	
813.00 > 169.00	5.108	5.118	-0.010	1.000	760002		5.76(2.77-8.32)	105	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	508153		5.19(2.55-7.64)	99.8	1683	

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\20181008-65481.b\2018.10.08LLICAL_006.d

Injection Date: 08-Oct-2018 16:04:27

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

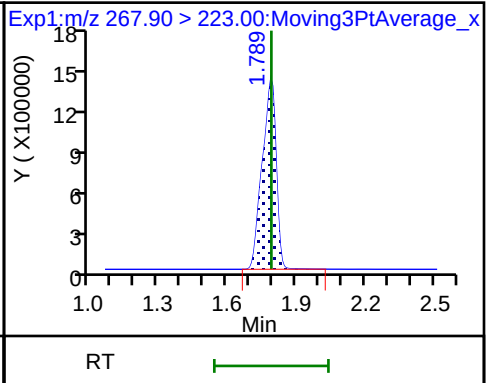
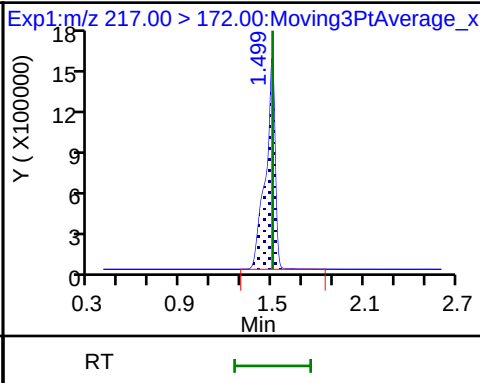
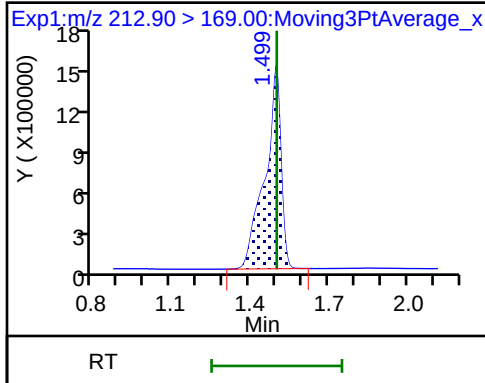
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

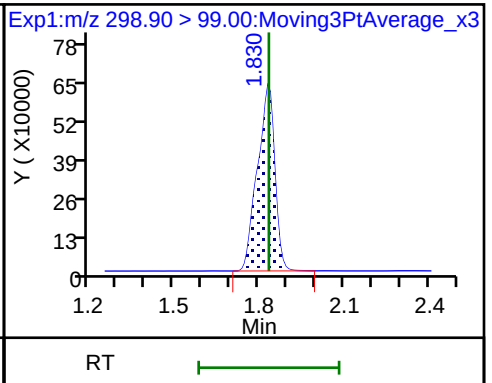
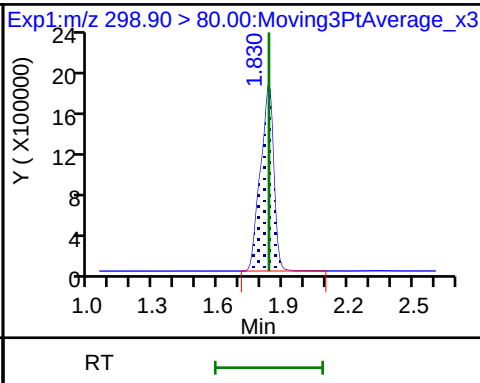
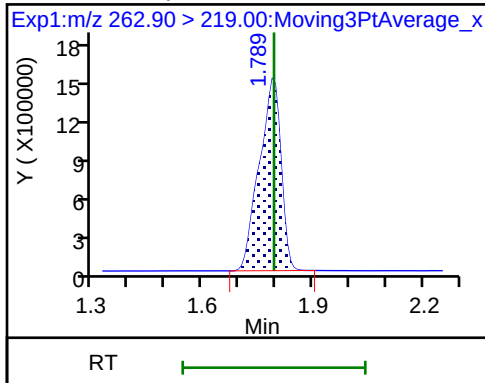
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

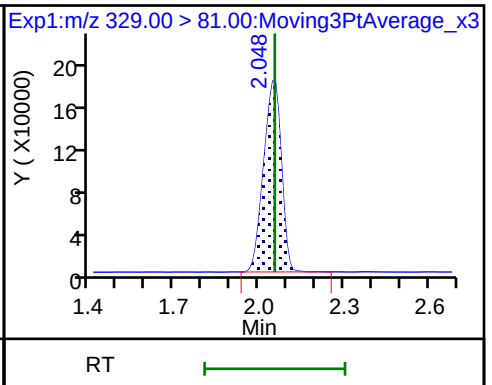
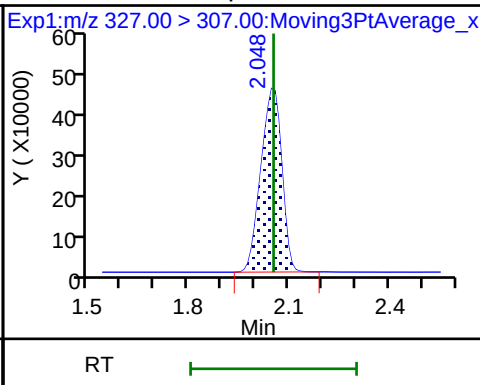
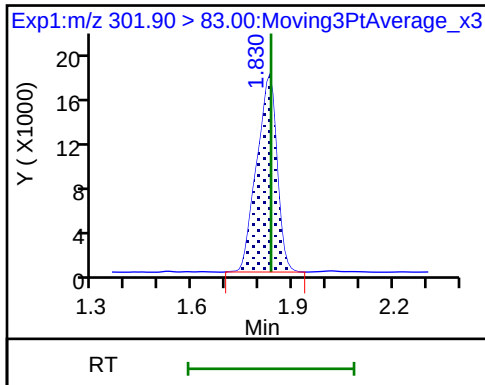
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

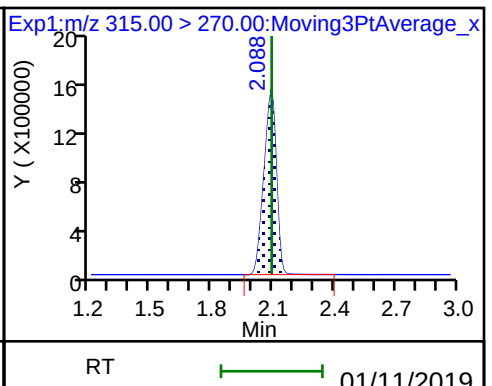
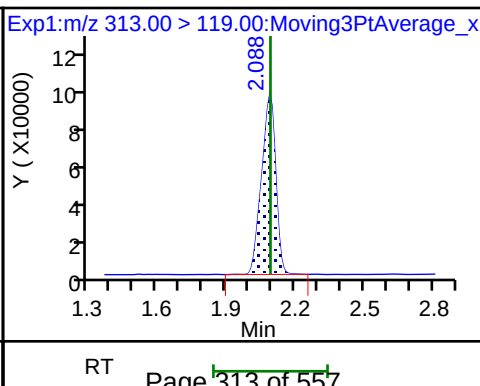
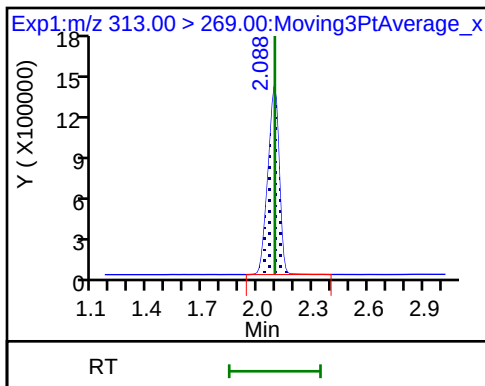
D 60 M2-4:2FTS

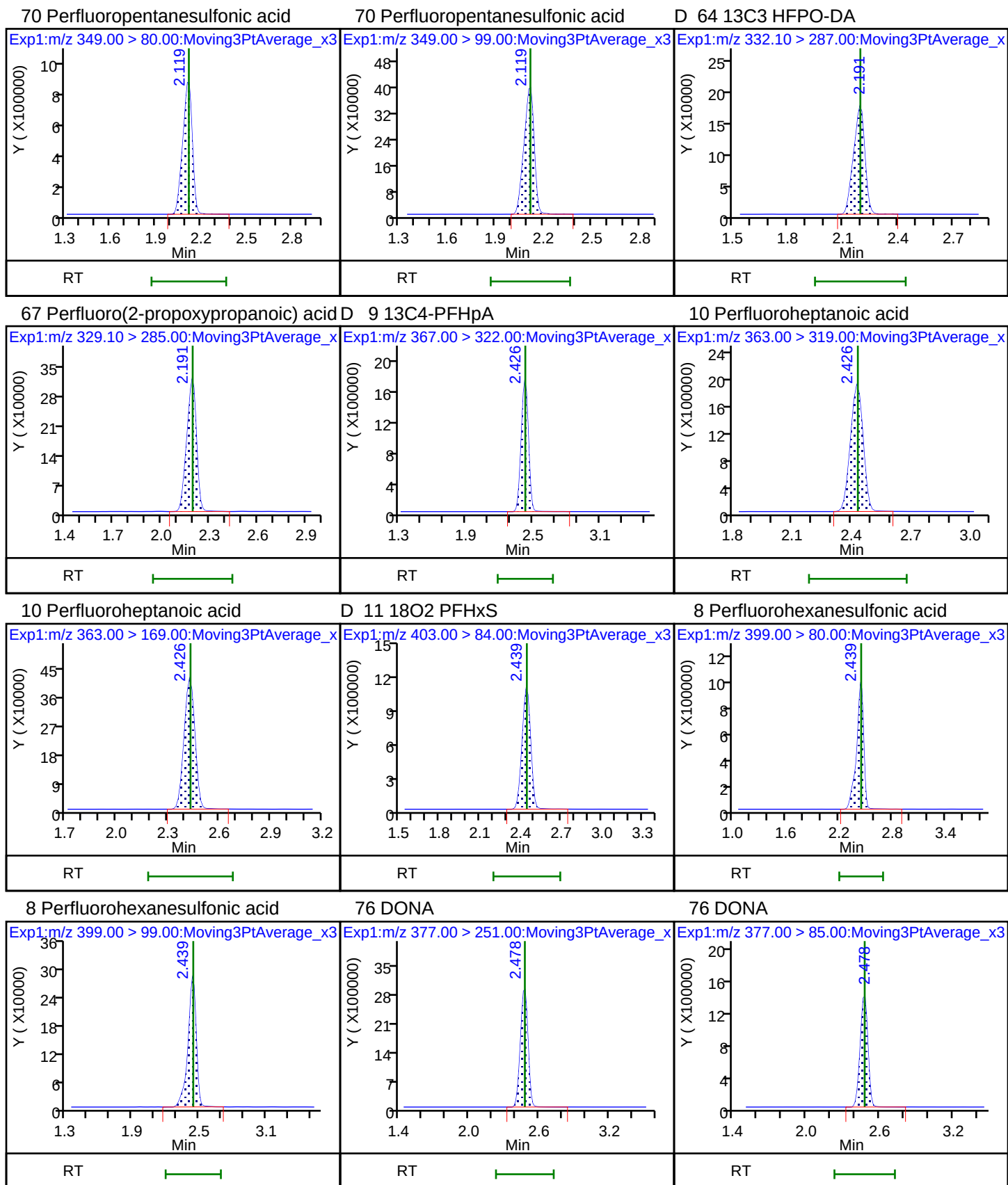


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

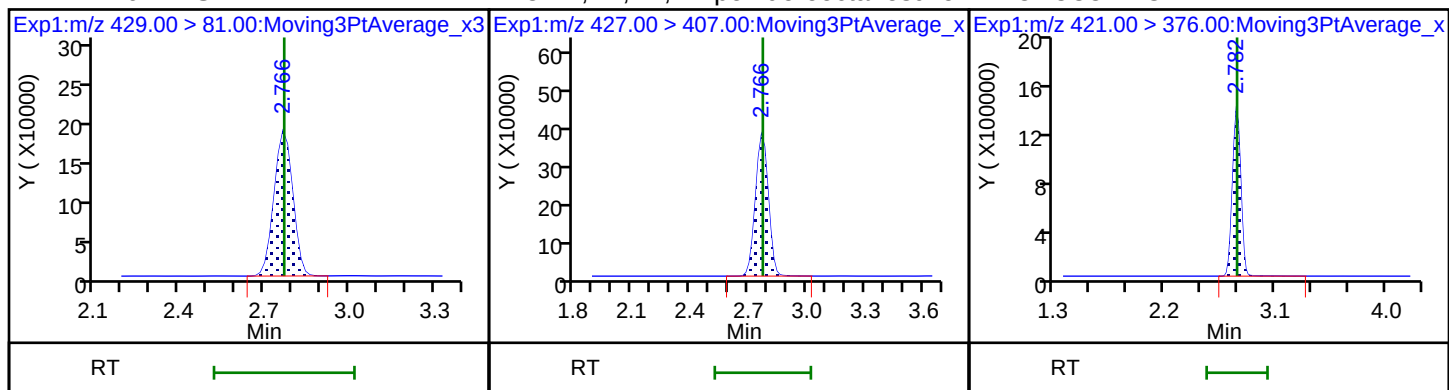
D 7 13C2 PFHxA





D 12 M2-6:2FTS

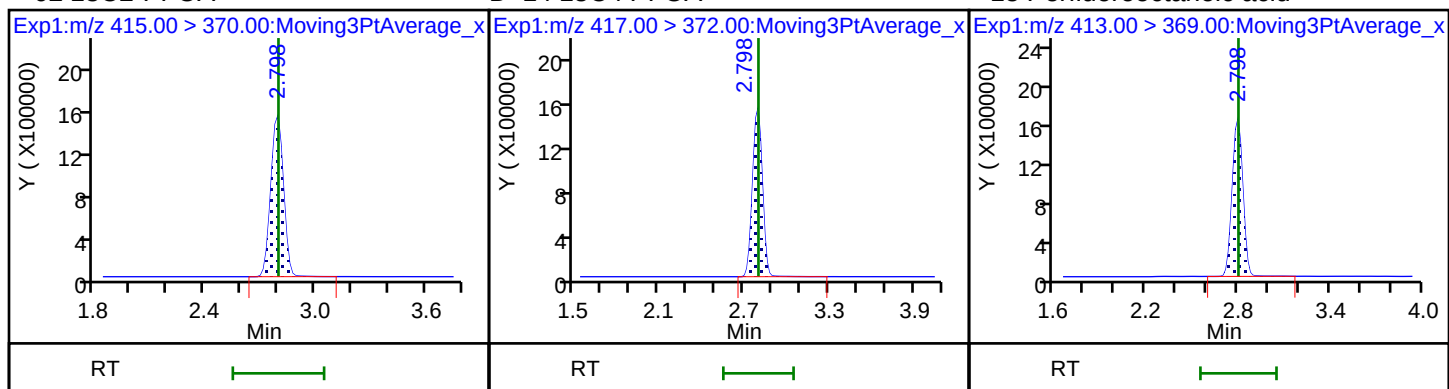
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

D 14 13C4 PFOA

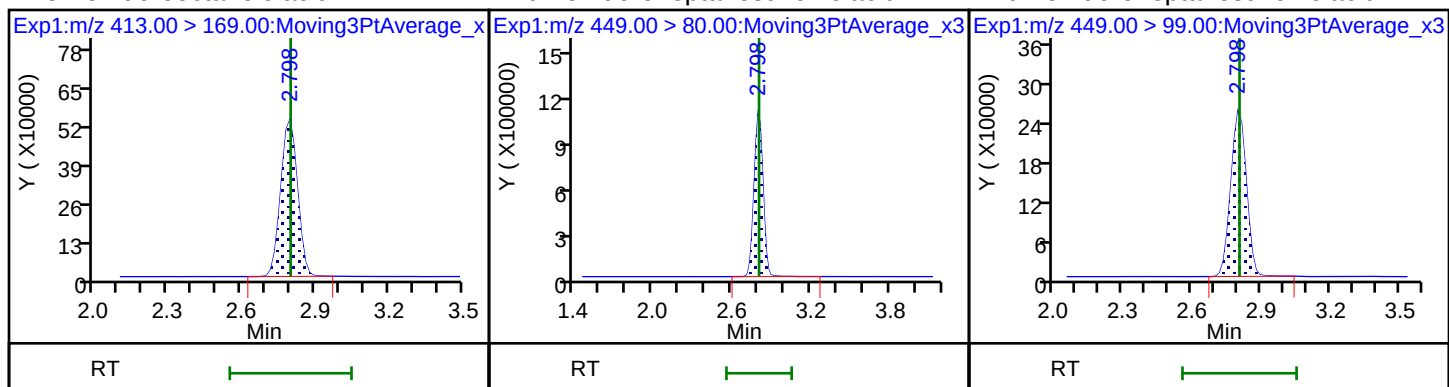
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

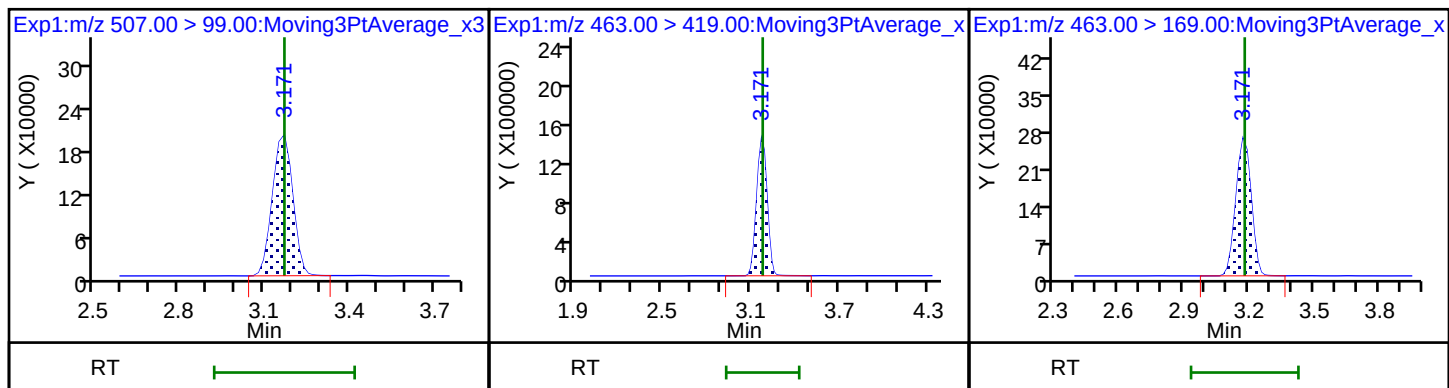
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

20 Perfluorononanoic acid

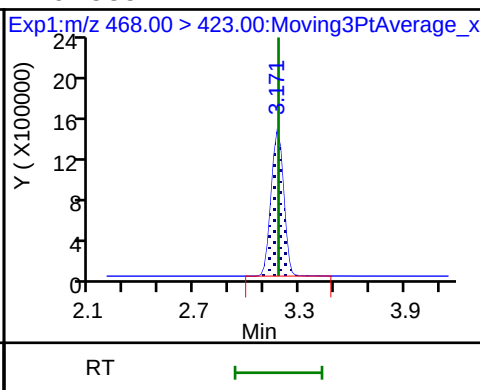
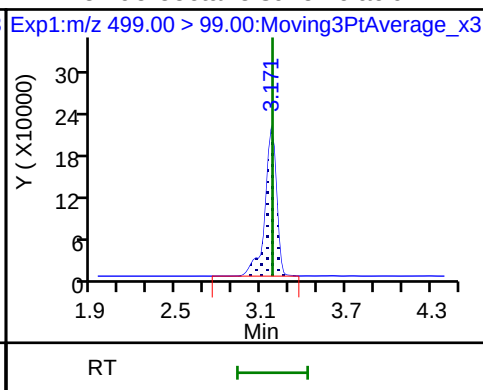
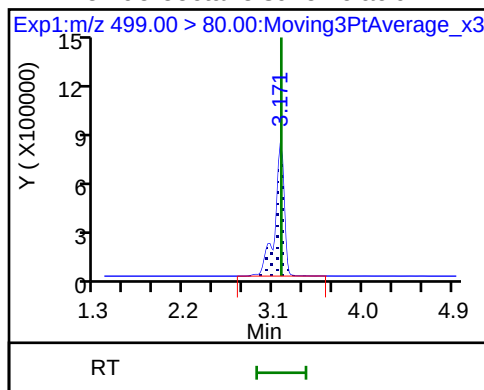
20 Perfluorononanoic acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

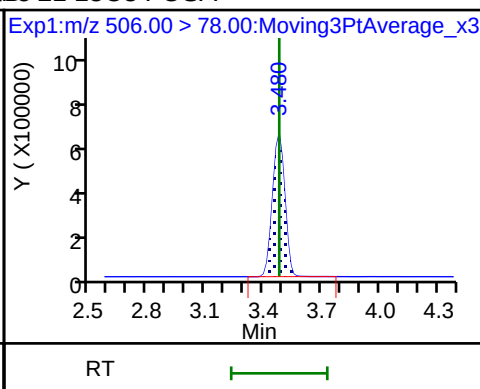
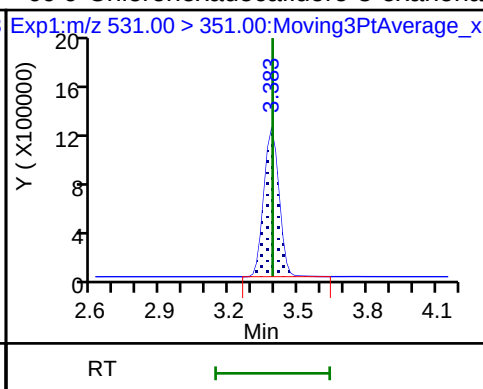
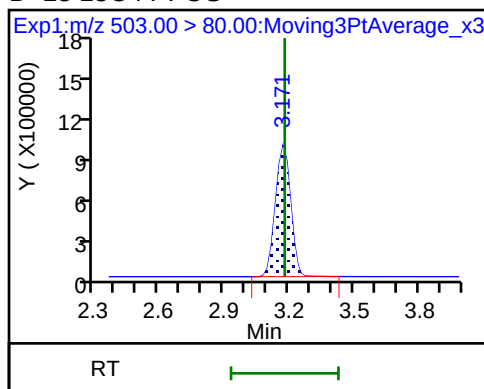
D 19 13C5 PFNA



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonane

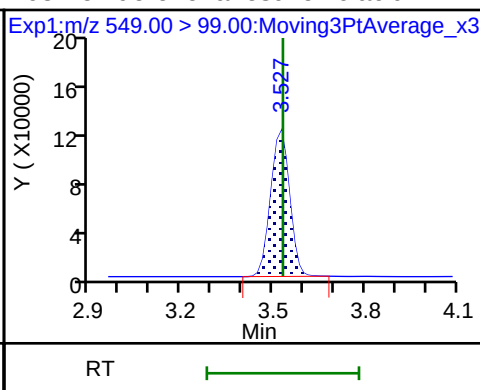
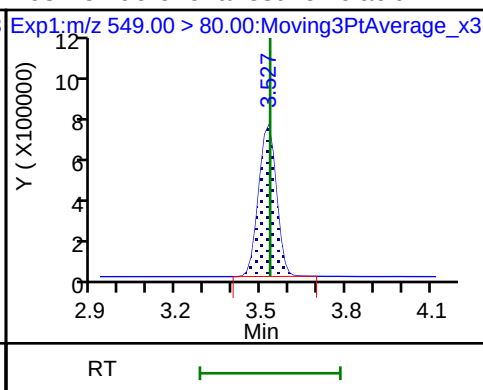
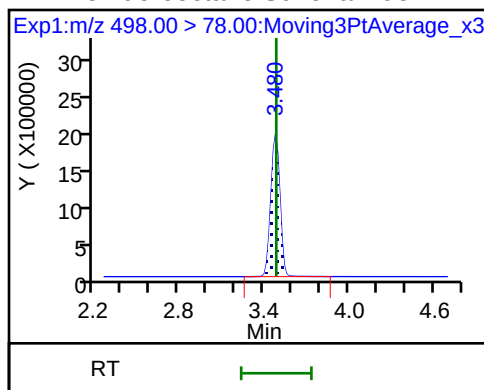
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

68 Perfluorononanesulfonic acid

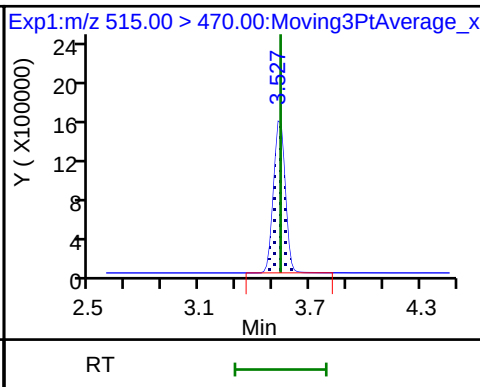
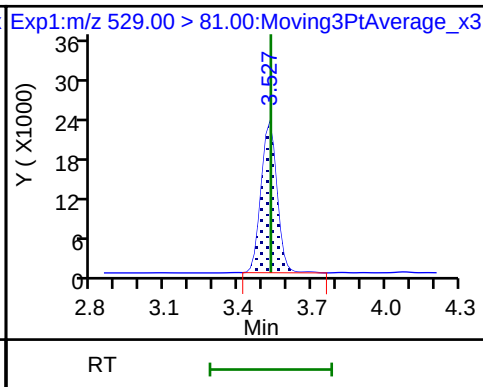
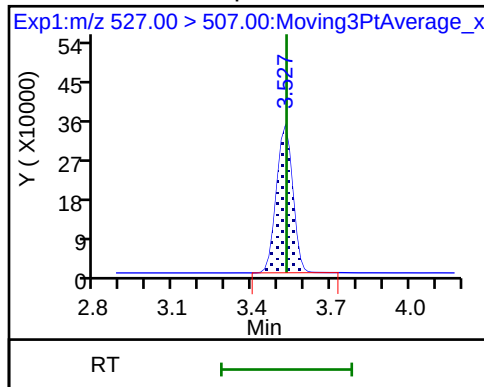
68 Perfluorononanesulfonic acid

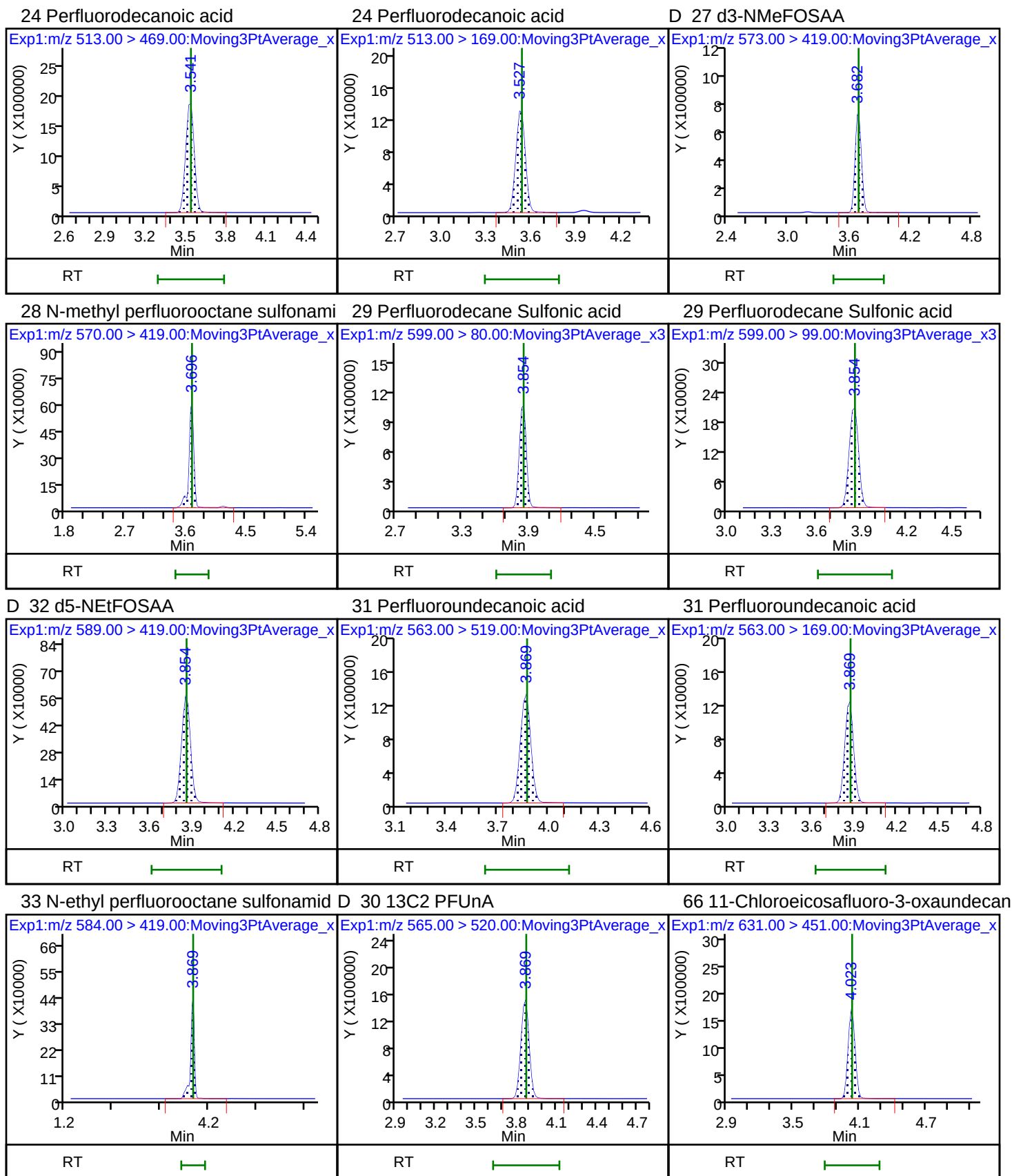


25 1H,1H,2H,2H-perfluorodecanesulfonamide

D 26 M2-8:2FTS

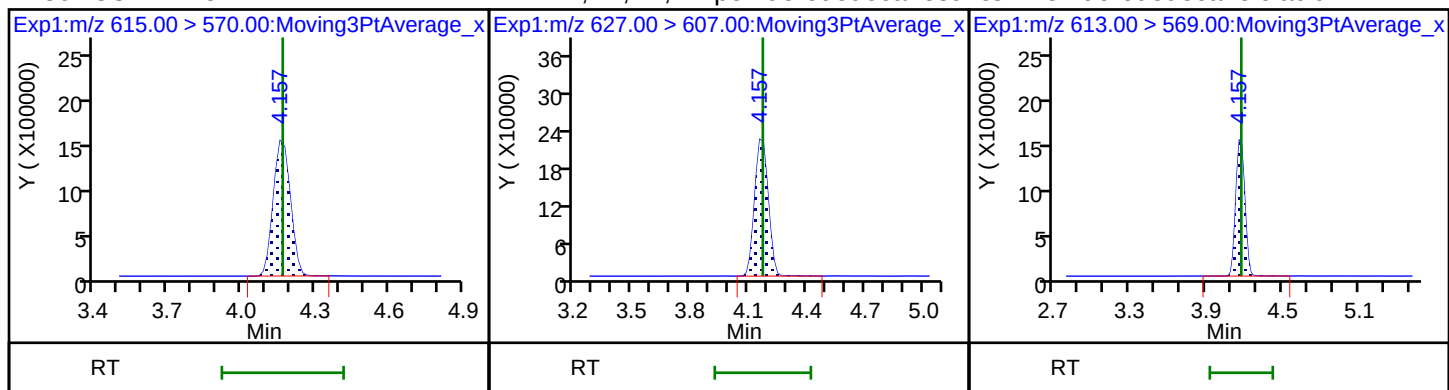
D 23 13C2 PFDA





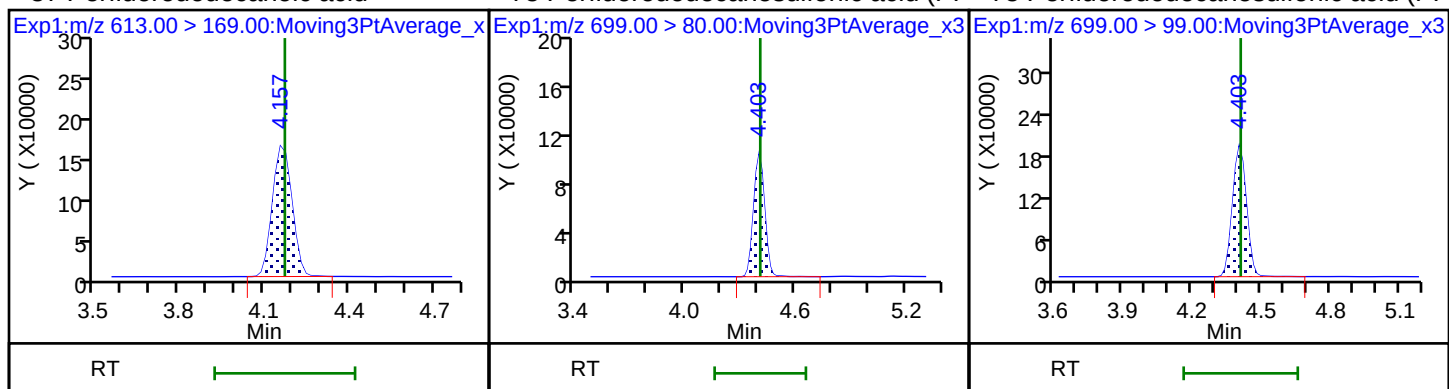
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

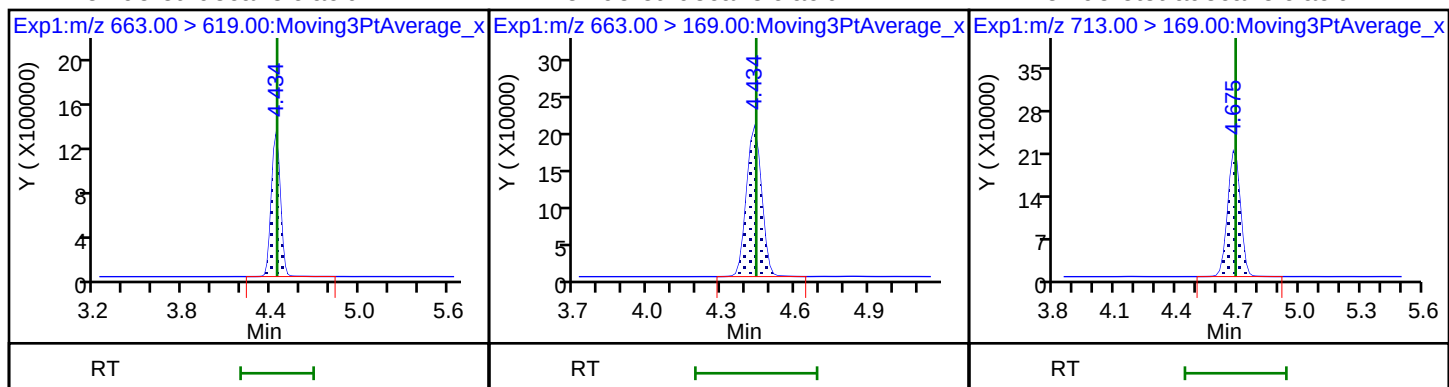
75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

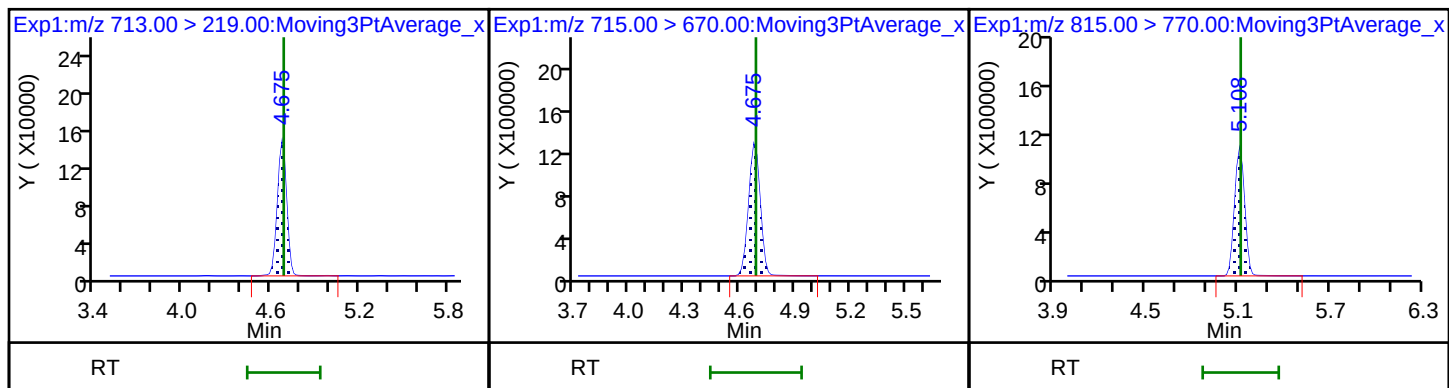
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

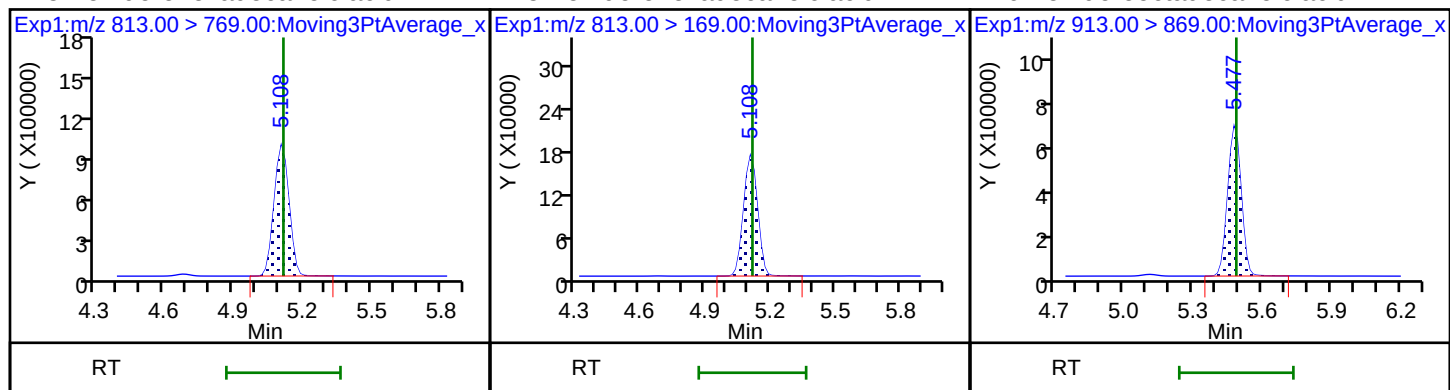
D 44 13C2-PFHxDA



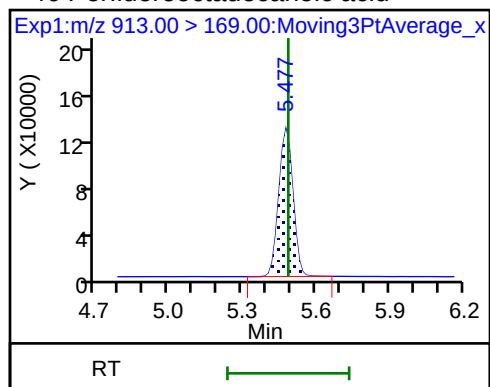
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 08:00:58 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK010

First Level Reviewer: phomsophat

Date: 08-Oct-2018 16:33:39

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	1.499	1.501	-0.002	0.536	6742801	2.53		101	11256	
2 Perfluorobutyric acid										
212.90 > 169.00	1.499	1.501	-0.002	1.000	12686233	5.19		104	602	
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	11854502	4.87		97.3	1010	
D 47 13C3-PFBS										
301.90 > 83.00	1.830	1.834	-0.004	0.654	76736	2.36		102	613	
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	
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 M2-4:2FTS										
329.00 > 81.00	2.048	2.055	-0.007	0.732	700433	2.14		91.6	985	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.091	-0.003	0.746	6588082	2.57		103	7170	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.088	2.091	-0.003	1.000	11392355	4.77		95.5	2312	
313.00 > 119.00	2.088	2.091	-0.003	1.000	853856		13.34(6.96-20.87)	95.5	1301	
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	14929739	4.45		89.0	2053	
363.00 > 169.00	2.426	2.431	-0.005	1.000	3709770		4.02(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	3027468		3.57(1.90-5.70)	98.2	3171	
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(1.13-3.39)	96.1	8163	
D 12 M2-6:2FTS										
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	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.789	-0.007		6701596	2.58		105	5737	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	14535225	4.41		88.2	867	
413.00 > 169.00	2.798	2.800	-0.002	1.000	5627957		2.58(1.36-4.08)	88.2	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	
D 72 13C8 PFOS										
507.00 > 99.00	3.153	3.171	-0.018		1073076	2.53		106	2294	
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	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.179	-0.008	1.000	13024350	4.87		97.5	1325	
463.00 > 169.00	3.171	3.179	-0.008	1.000	2518410		5.17(2.68-8.03)	97.5	3026	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.179	-0.008	1.000	10450342	4.80		103	4633	
499.00 > 99.00	3.171	3.179	-0.008	1.000	2377283		4.40(2.04-6.12)	103	2525	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.388	-0.005	1.067	10987180	4.76		102	4096	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	2812043	2.55		102	3230	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.480	3.485	-0.005	1.000	15916184	4.77		95.3	6987	
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	113097	2.49		104	607	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	3237310	4.60		96.1	3969	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.531	-0.004	1.112	6555094	5.10		106	3330	
549.00 > 99.00	3.527	3.531	-0.004	1.112	1174013		5.58(3.02-9.05)	106	4006	
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	14829729	4.62		92.4	1830	
513.00 > 169.00	3.527	3.541	-0.014	1.000	1117792		13.27(7.12-21.35)	92.4	553	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.682	3.693	-0.011	1.316	3115088	2.62		105	1189	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.682	3.699	-0.017	1.000	5902956	4.67		93.5	1630	
29 Perfluorodecane Sulfonic 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	1882259		4.54(2.14-6.43)	99.8	3288	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.854	3.861	-0.007	1.378	2443548	2.44		97.6	2524	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.873	-0.004	1.383	6147995	2.42		96.9	4014	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.873	-0.004	1.004	4553644	5.09		102	4441	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.873	-0.004	1.000	10708446	4.77		95.4	1830	
563.00 > 169.00	3.869	3.873	-0.004	1.000	1026634		10.43(5.24-15.72)	95.4	1826	
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 PFDoA										
615.00 > 570.00	4.157	4.168	-0.011	1.486	7240998	2.52		101	6887	
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	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.173	-0.016	1.179	2283389	5.04		105	2622	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.403	4.410	-0.007	1.389	850747	4.67		96.5	1116	
699.00 > 99.00	4.403	4.410	-0.007	1.389	1535963		0.55(0.28-0.83)	96.5	2525	

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	4.434	4.441	-0.007	1.067	10443393	4.70		94.1	4318	
663.00 > 169.00	4.434	4.441	-0.007	1.067	1895060		5.51(3.09-9.27)	94.1	3194	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.675	4.686	-0.011	1.671	5680142	2.62		105	6743	
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	1212269		1.42(0.70-2.09)	95.1	3173	
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	8694549	5.17		103	1880	
813.00 > 169.00	5.108	5.118	-0.010	1.000	1607127		5.41(2.77-8.32)	103	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	1021099		5.36(2.55-7.64)	102	2289	

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\20181008-65481.b\2018.10.08LLICAL_007.d

Injection Date: 08-Oct-2018 16:11:58

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

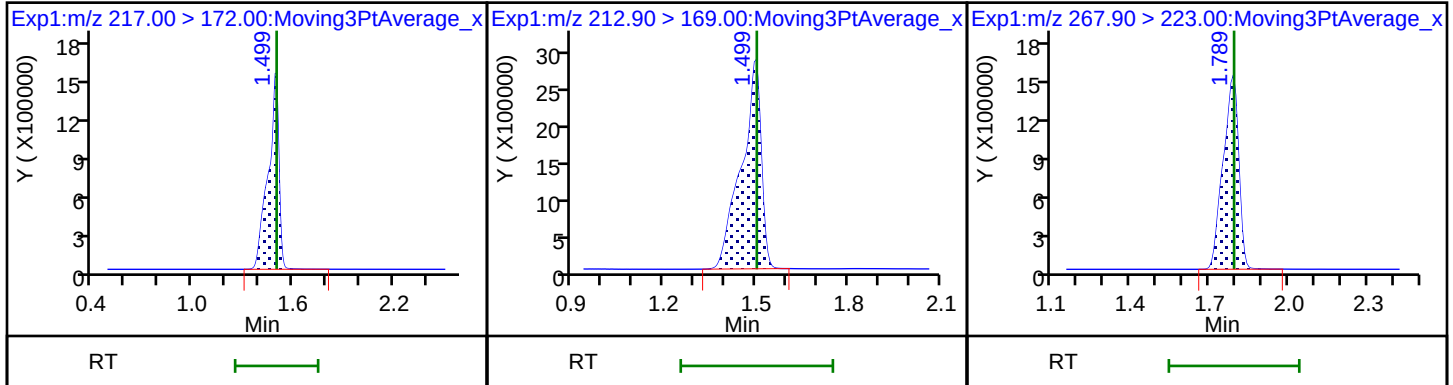
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

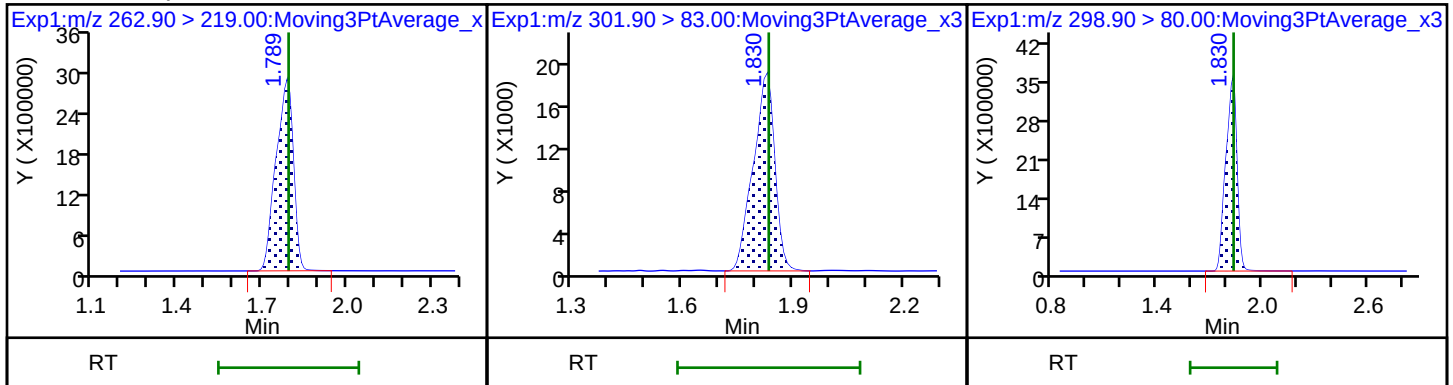
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

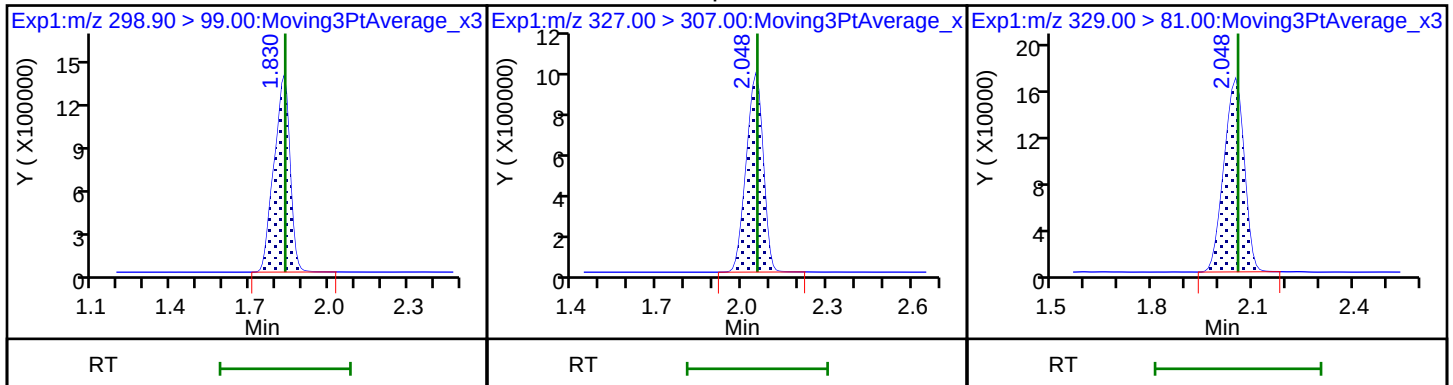
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

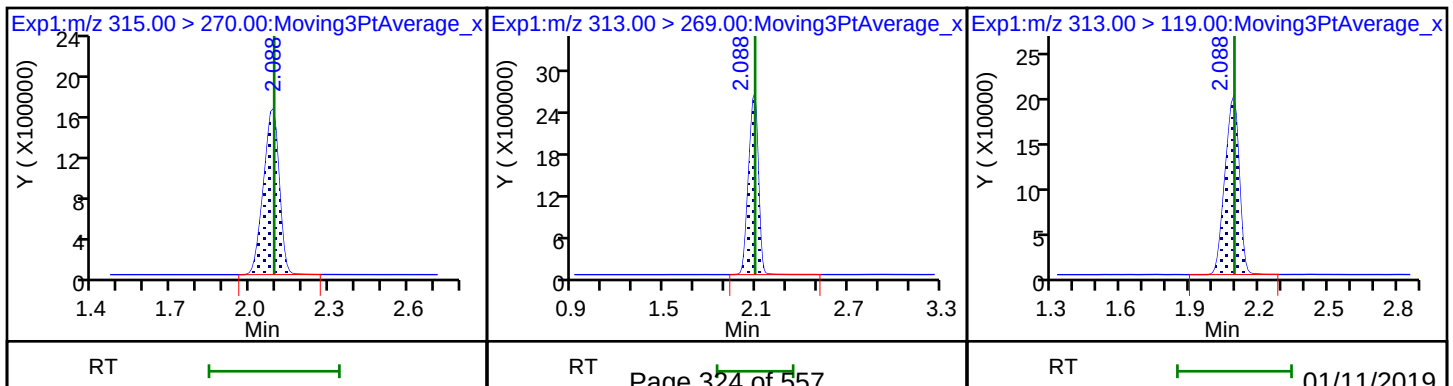
D 60 M2-4:2FTS

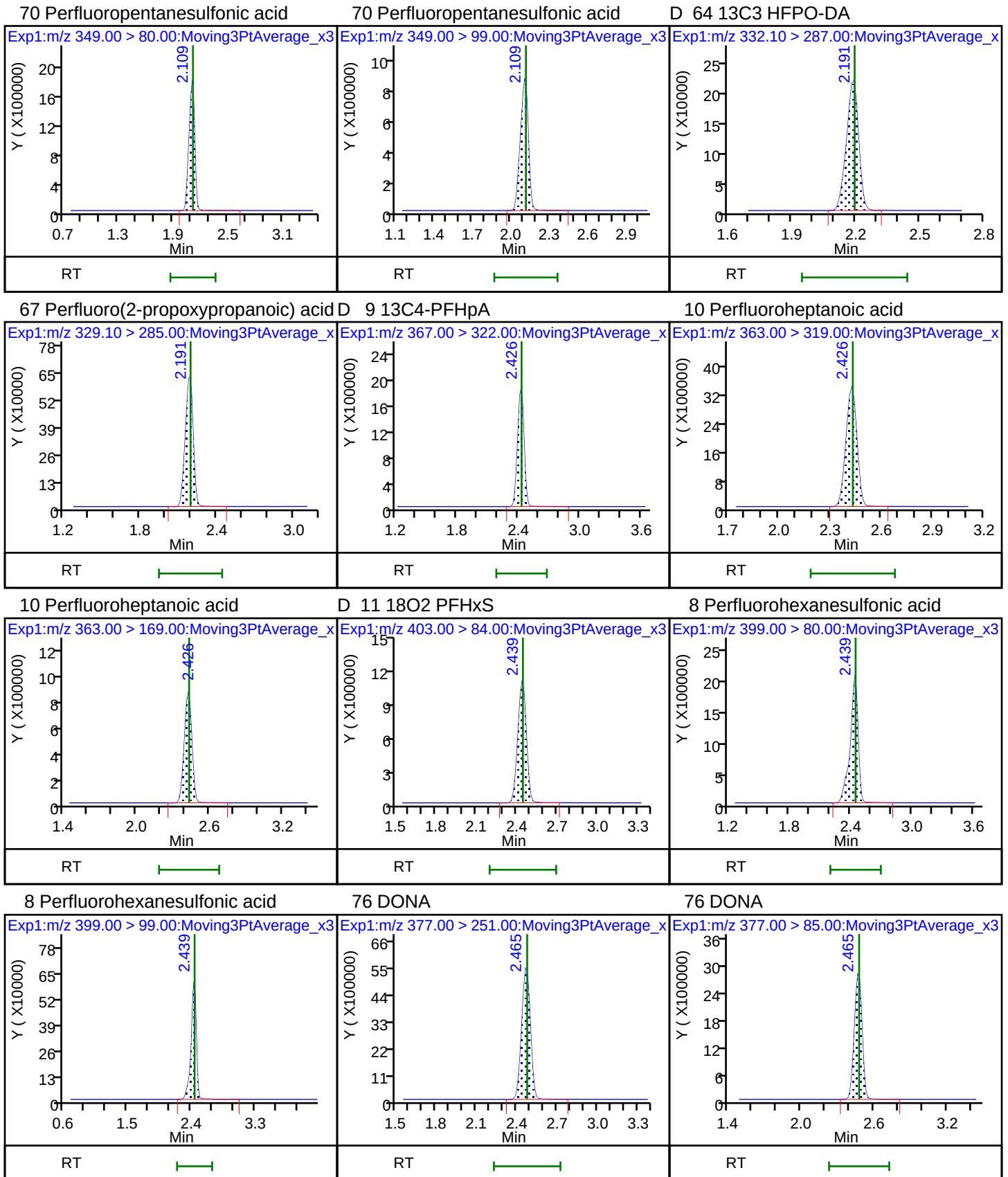


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

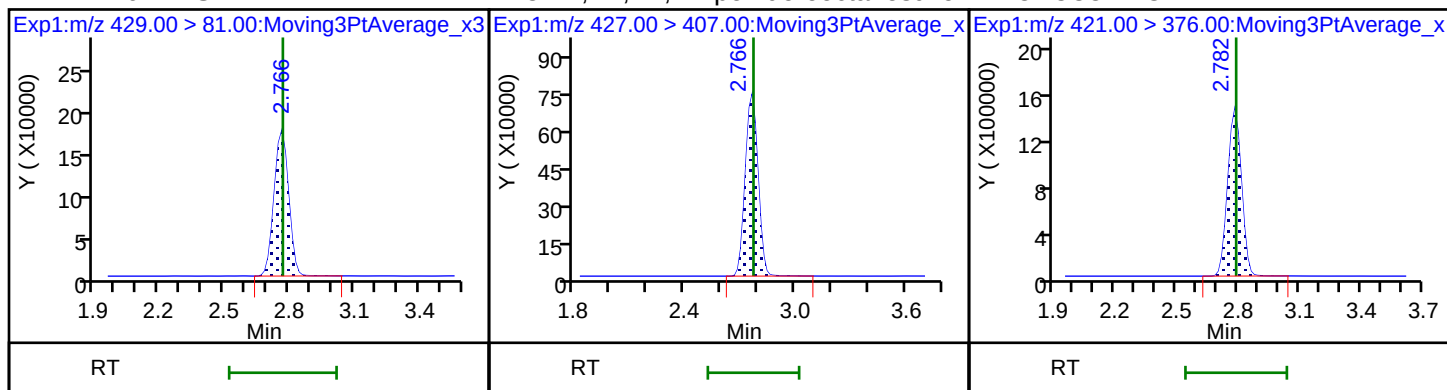
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

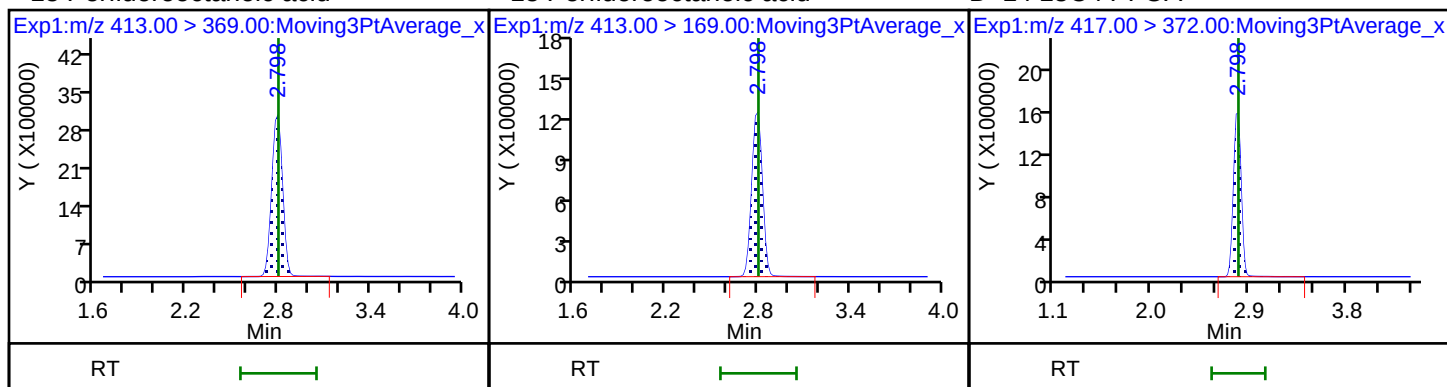
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

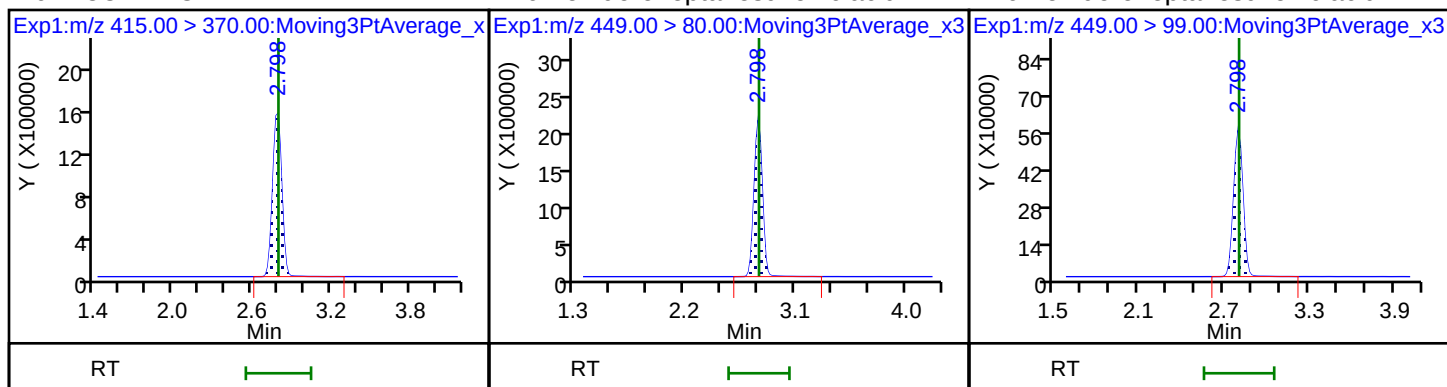
D 14 13C4 PFOA



* 62 13C2-PFOA

16 Perfluoroheptanesulfonic acid

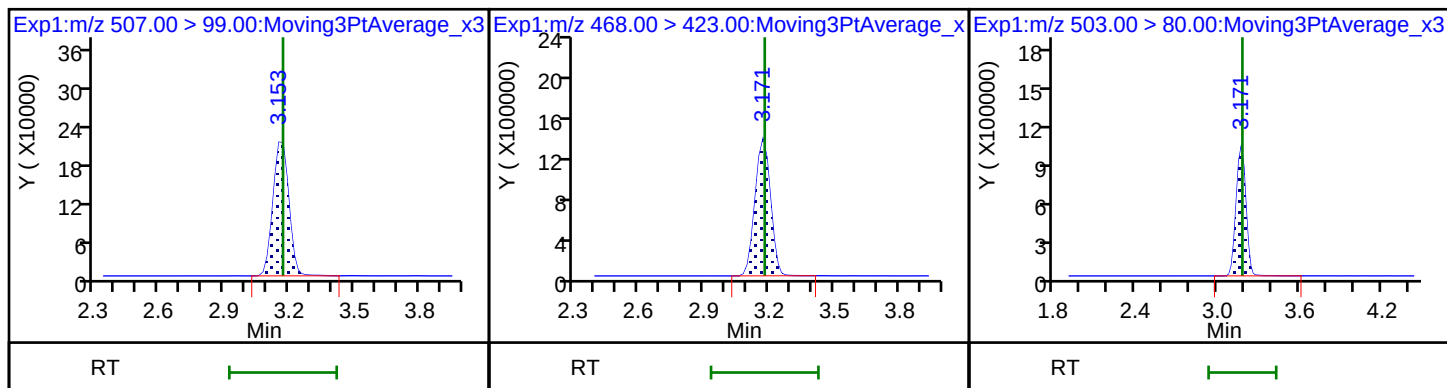
16 Perfluoroheptanesulfonic acid

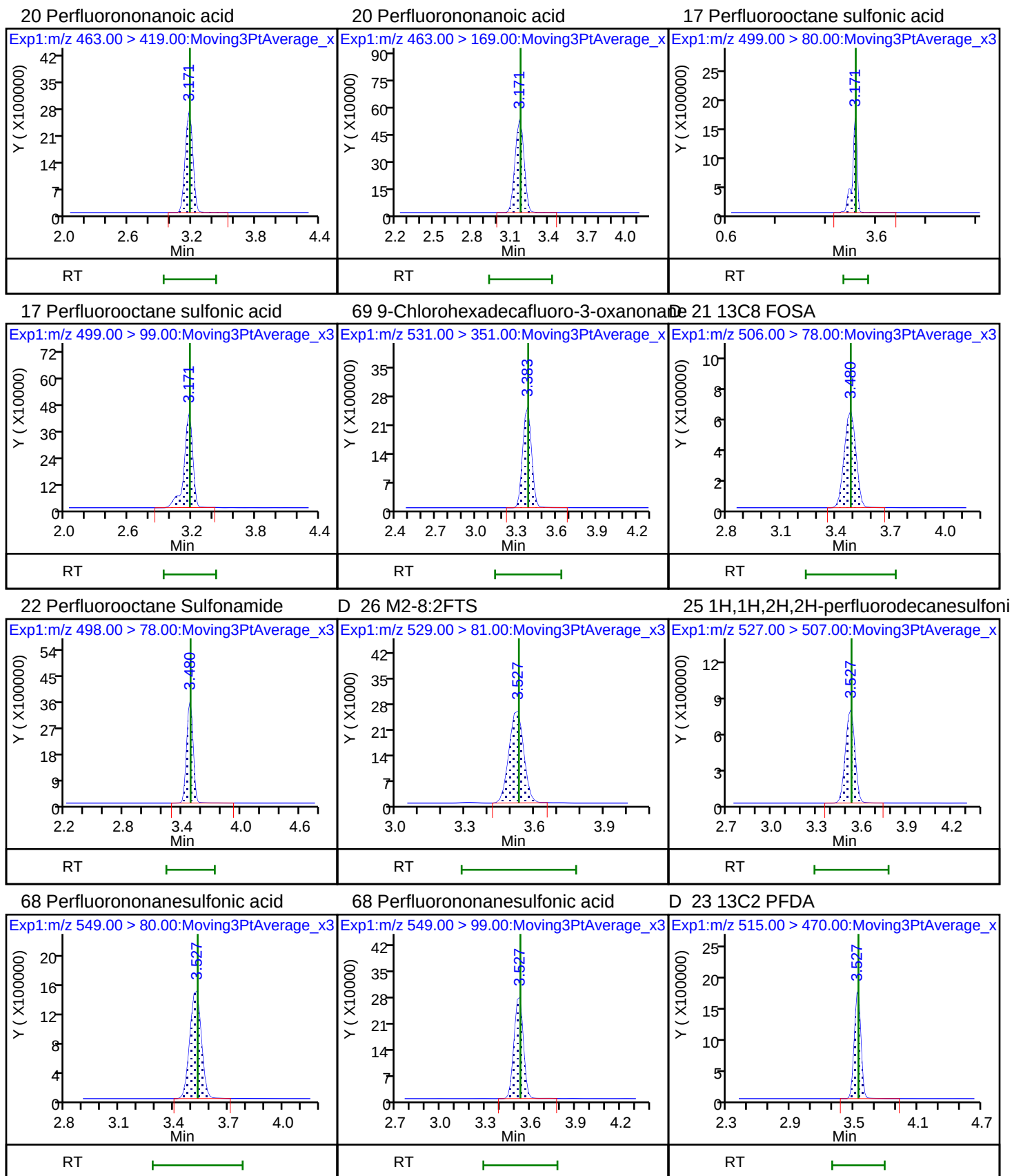


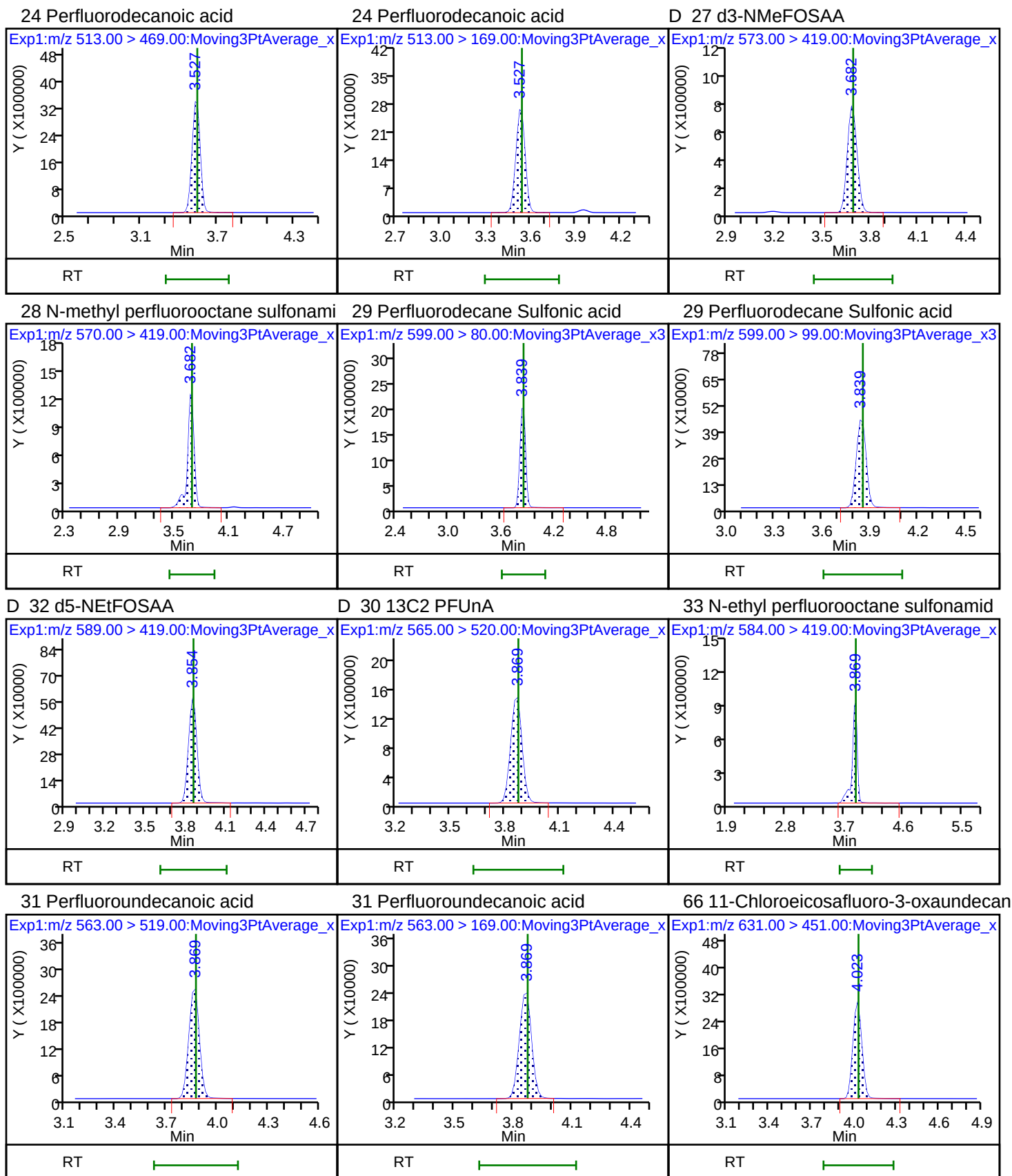
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D 19 13C5 PFNA

D 18 13C4 PFOS



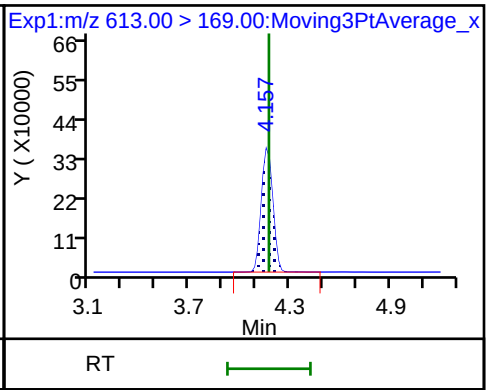
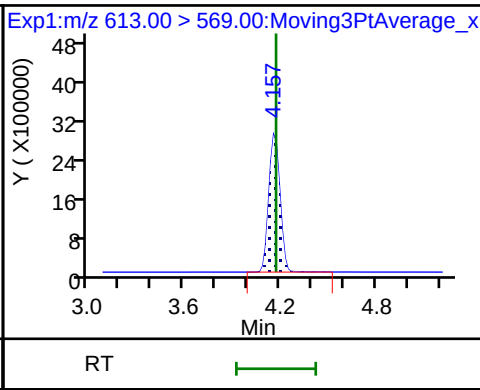
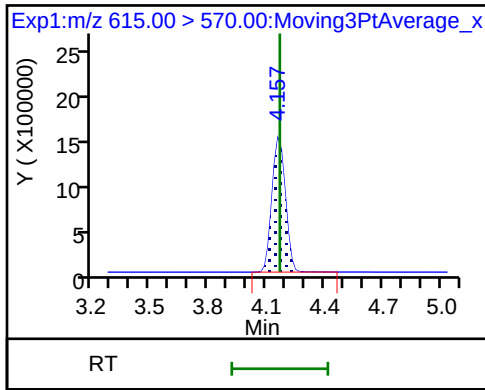




D 36 13C2 PFDaA

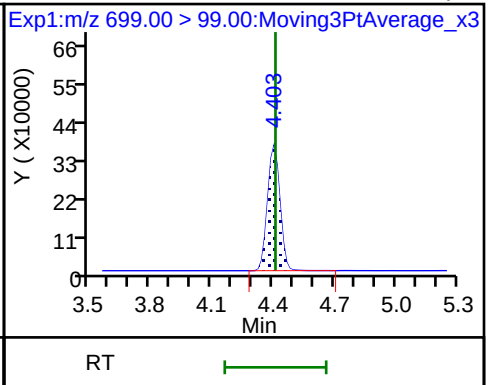
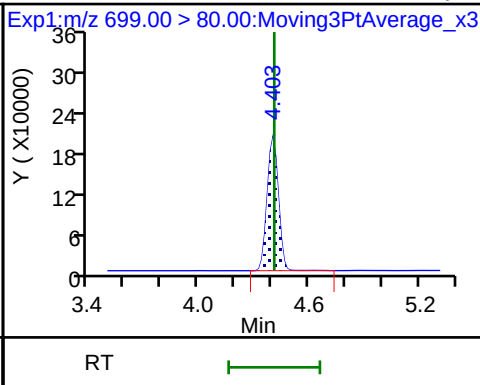
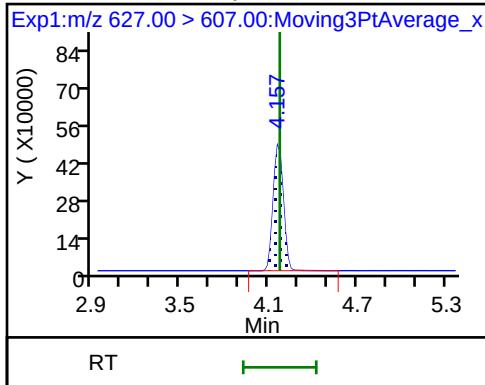
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

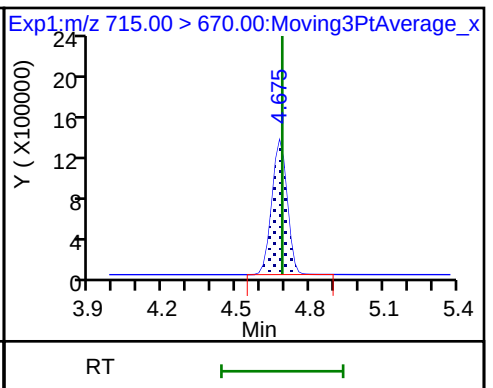
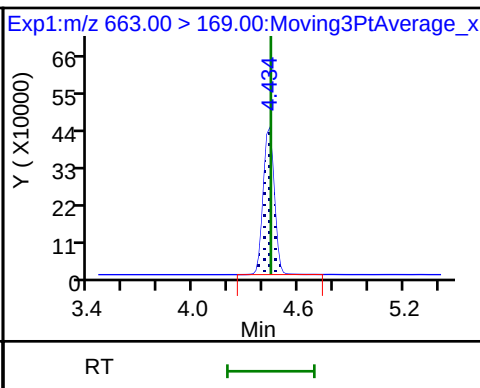
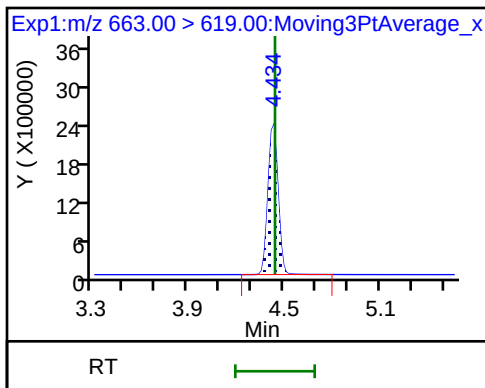
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

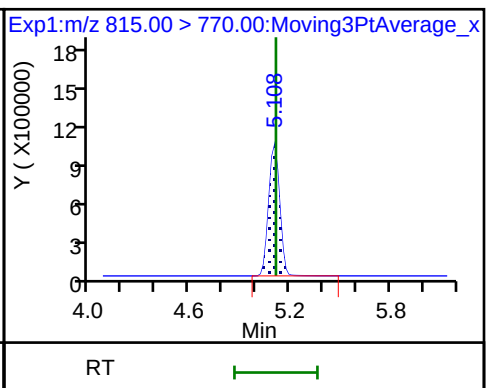
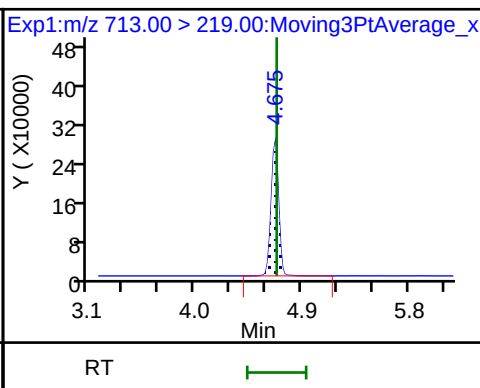
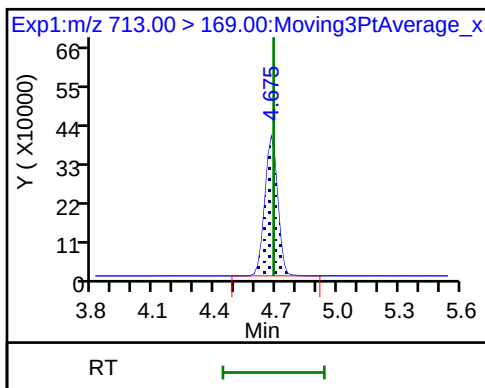
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

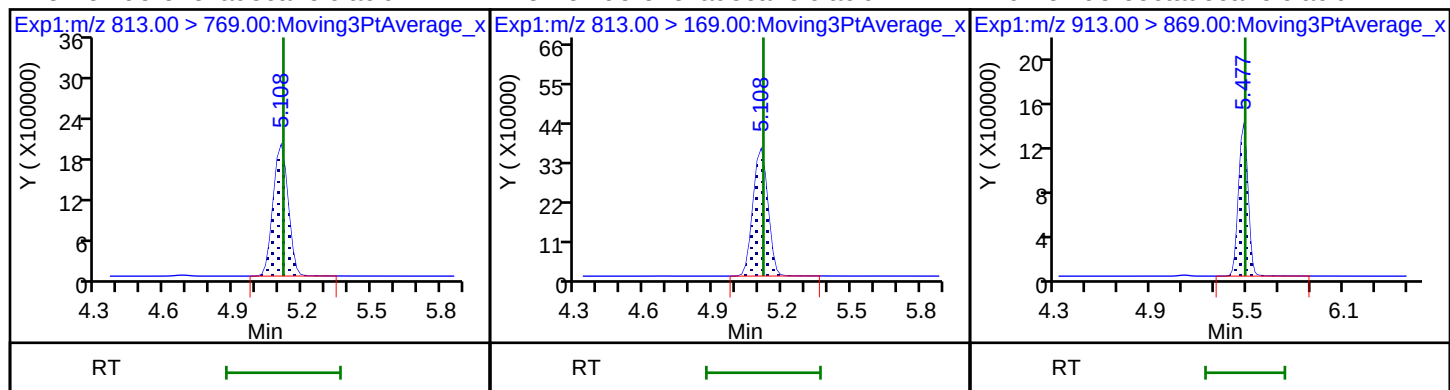
D 44 13C2-PFHxDA



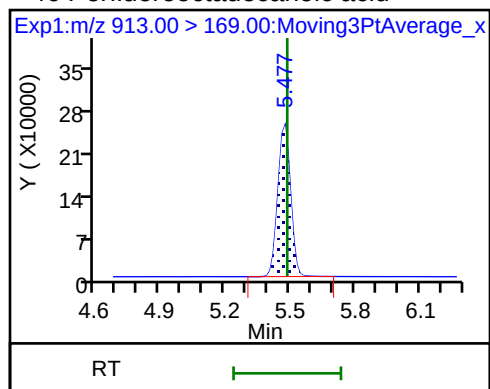
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 08:01:07 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK010

First Level Reviewer: phomsophat

Date: 08-Oct-2018 16:38:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.504	1.501	0.003	1.000	23189154	9.45		94.5	1021	
D 1 13C4 PFBA										
217.00 > 172.00	1.504	1.501	0.003	0.538	6769279	2.59		104	12321	
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	21127971	8.75		87.5	1671	
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	
D 47 13C3-PFBS										
301.90 > 83.00	1.838	1.834	0.004	0.657	80838	2.54		109	554	
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 M2-4:2FTS										
329.00 > 81.00	2.057	2.055	0.002	0.735	734803	2.29		98.1	1160	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.088	2.091	-0.003	1.000	20292846	8.91		89.1	3400	
313.00 > 119.00	2.088	2.091	-0.003	1.000	1649546		12.30(6.96-20.87)	89.1	2652	
D 7 13C2 PFHxA										
315.00 > 270.00	2.088	2.091	-0.003	0.746	6289956	2.51		100	13106	
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	27037175	8.14		81.4	3311	
363.00 > 169.00	2.425	2.431	-0.006	1.000	7342540		3.68(2.17-6.52)	81.4	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	5915187		3.37(1.90-5.70)	92.2	4636	
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(1.13-3.39)	77.7	14868	
D 12 M2-6:2FTS										
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	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.789	-0.007		6059836	2.33		95.4	7734	
* 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	7.60		75.9	1239	
413.00 > 169.00	2.798	2.800	-0.002	1.000	10143374		2.30(1.36-4.08)	75.9	7359	
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 72 13C8 PFOS										
507.00 > 99.00	3.171	3.171	0.0		982711	2.31		96.8	2092	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.179	-0.008	1.000	22007901	8.28		82.8	1803	
463.00 > 169.00	3.171	3.179	-0.008	1.000	4992291		4.41(2.68-8.03)	82.8	6662	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.179	-0.008	1.000	19075681	8.79		94.7	6077	
499.00 > 99.00	3.171	3.179	-0.008	1.000	4825845		3.95(2.04-6.12)	94.7	2962	
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	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.388	-0.005	1.067	19690091	8.55		91.8	4665	
D 21 13C8 FOSA										
506.00 > 78.00	3.480	3.480	0.0	1.244	2737891	2.53		101	4790	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.480	3.485	-0.005	1.000	27818096	8.56		85.6	8668	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.531	-0.004	1.112	12096985	9.44		98.3	6211	
549.00 > 99.00	3.527	3.531	-0.004	1.112	2199282		5.50(3.02-9.05)	98.3	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 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	96530	2.17		90.8	386	
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	8.11		81.1	2762	
513.00 > 169.00	3.541	3.541	0.0	1.000	2131612		11.52(7.12-21.35)	81.1	616	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.682	3.693	-0.011	1.316	3119751	2.68		107	579	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.696	3.699	-0.003	1.004	11135865	8.80		88.0	9721	
29 Perfluorodecane Sulfonic 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	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.873	-0.004	1.000	17127313	8.34		83.4	2723	
563.00 > 169.00	3.869	3.873	-0.004	1.000	1826350		9.38(5.24-15.72)	83.4	4597	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.873	-0.004	1.004	7991517	10.3		103	6864	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.873	-0.004	1.383	5627913	2.27		90.6	5364	
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	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.175	4.173	0.002	1.184	3870295	10.0		104	2578	
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	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.403	4.410	-0.007	1.389	1898212	10.5		108	1849	
699.00 > 99.00	4.403	4.410	-0.007	1.389	3329261		0.57(0.28-0.83)	108	4462	

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	4.434	4.441	-0.007	1.067	18276106	8.45		84.5	8160	
663.00 > 169.00	4.434	4.441	-0.007	1.067	3870046		4.72(3.09-9.27)	84.5	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	2407406		1.54(0.70-2.09)	108	4958	
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	15284163	8.77		87.7	3198	
813.00 > 169.00	5.108	5.118	-0.010	1.000	3285465		4.65(2.77-8.32)	87.7	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	2181720		5.06(2.55-7.64)	99.0	4046	

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\20181008-65481.b\2018.10.08LLICAL_008.d

Injection Date: 08-Oct-2018 16:19:26

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

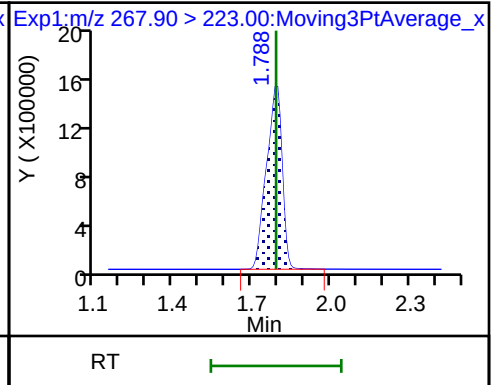
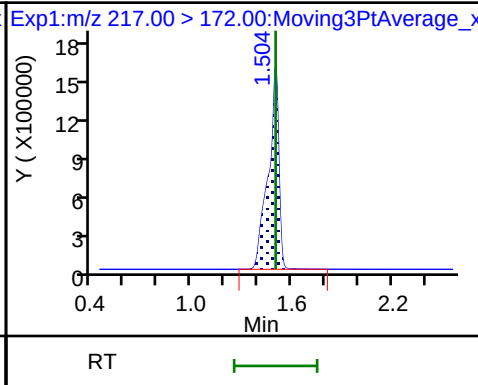
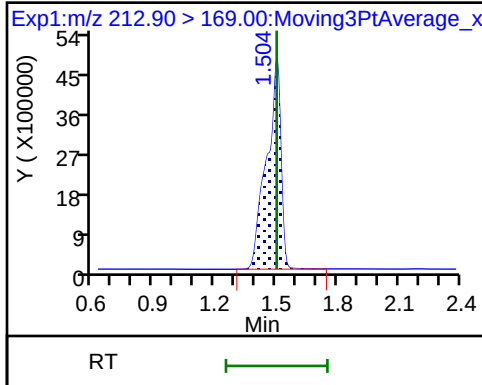
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

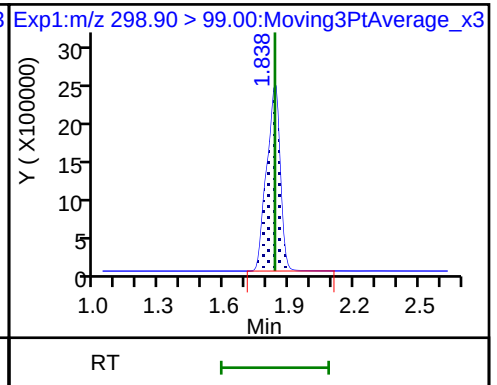
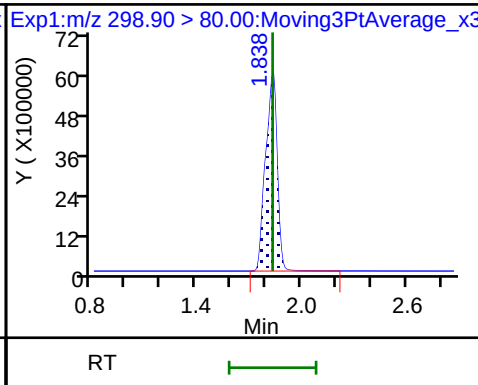
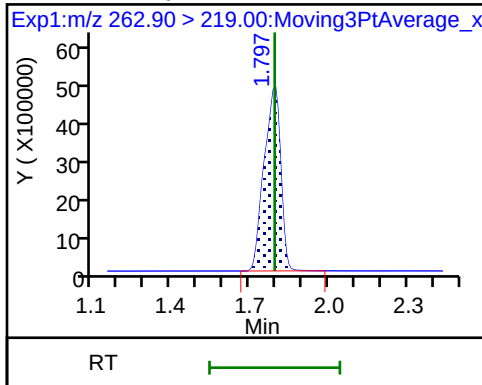
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

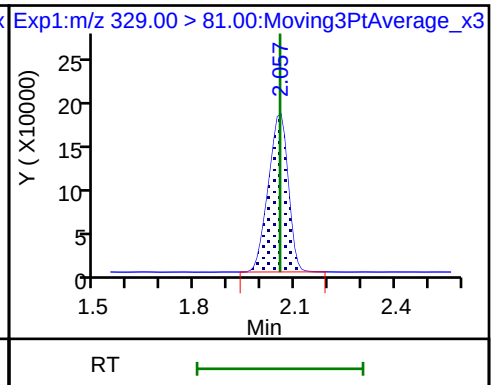
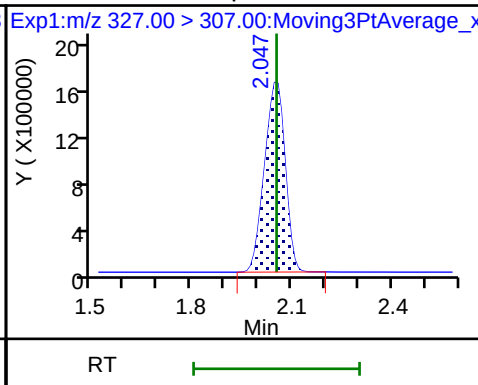
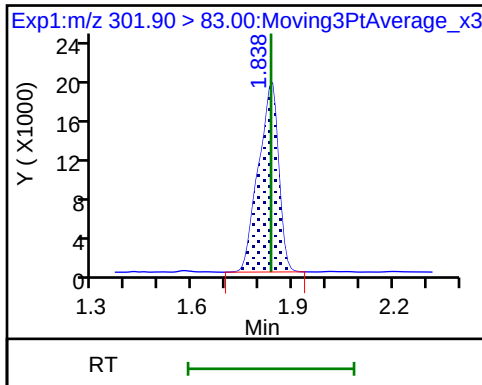
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

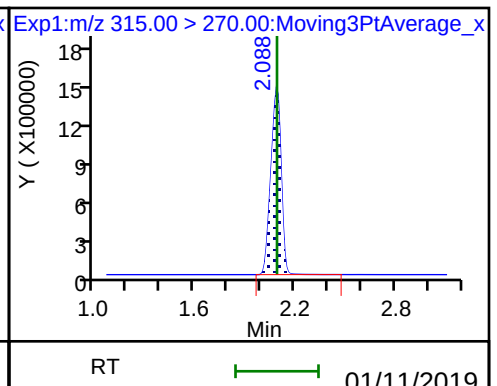
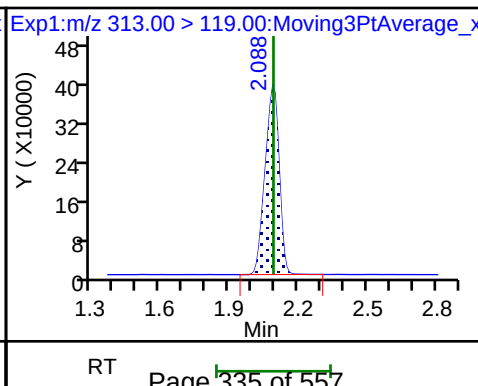
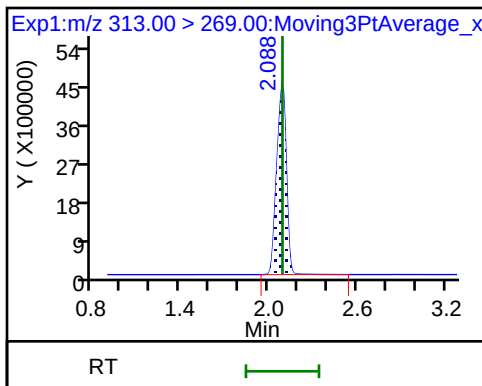
D 60 M2-4:2FTS

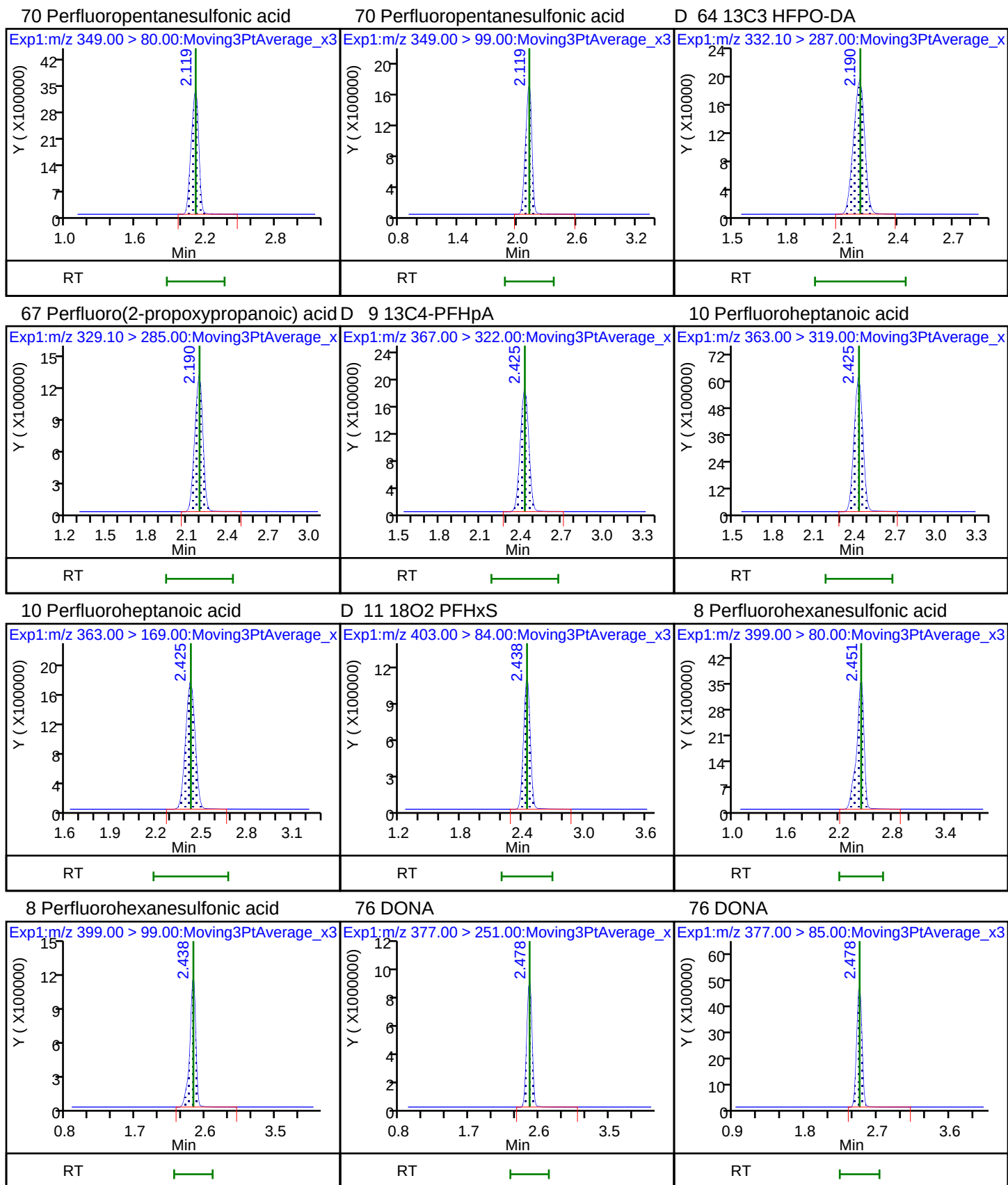


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

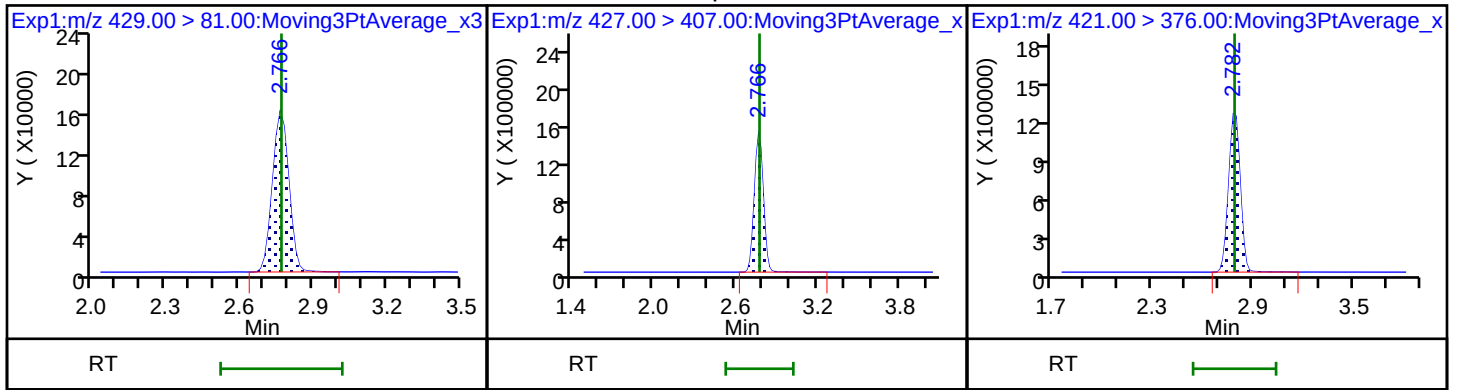
D 7 13C2 PFHxA





D 12 M2-6:2FTS

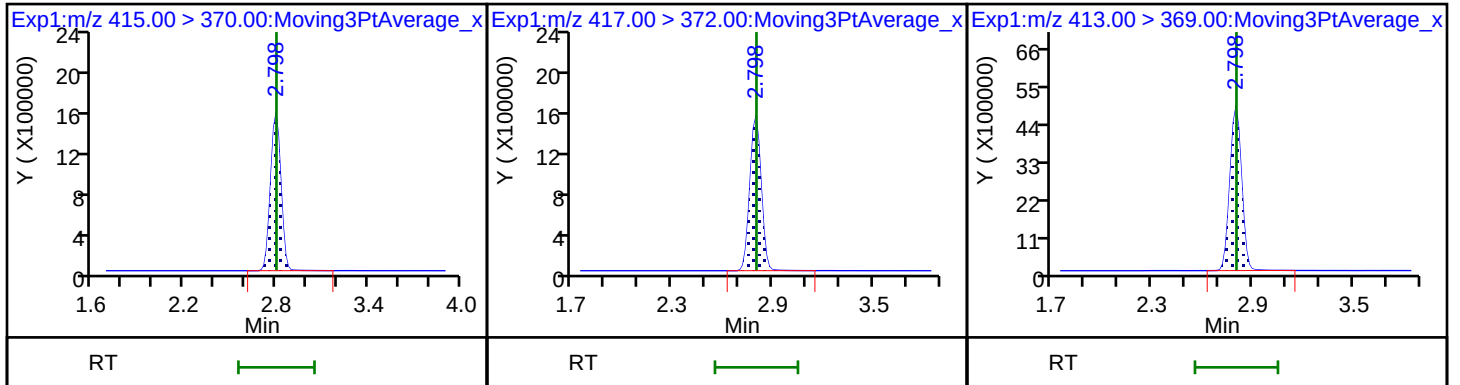
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



* 62 13C2-PFOA

D 14 13C4 PFOA

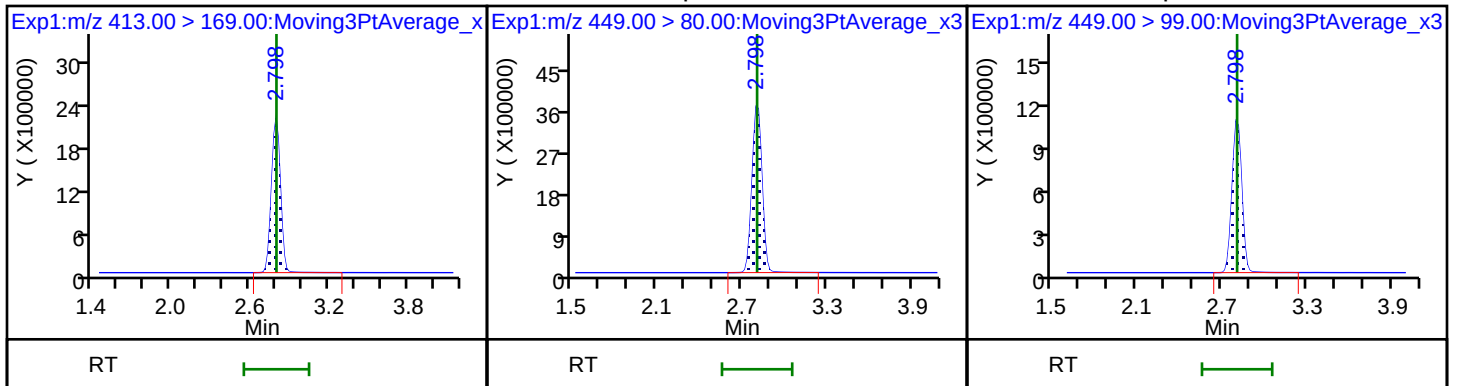
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

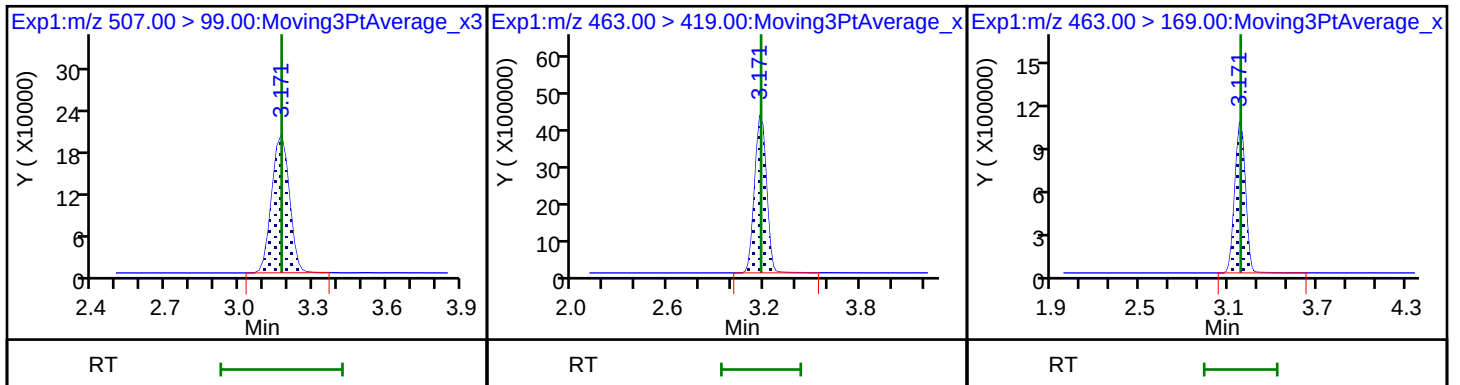
16 Perfluoroheptanesulfonic acid



D 72 13C8 PFOS

20 Perfluorononanoic acid

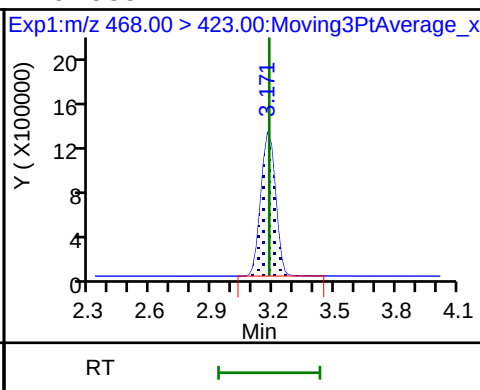
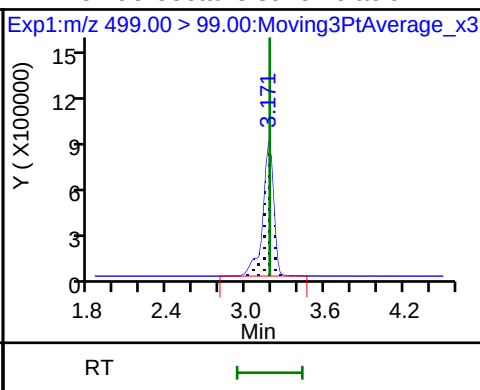
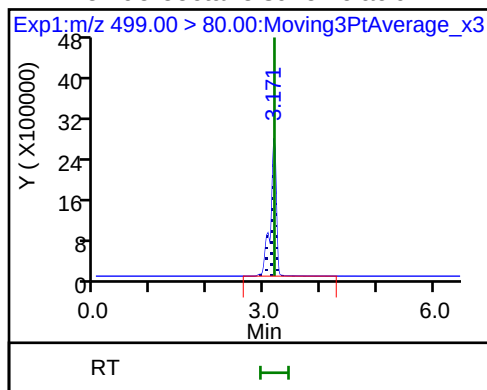
20 Perfluorononanoic acid



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

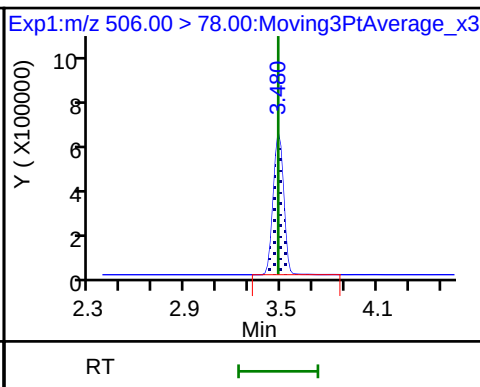
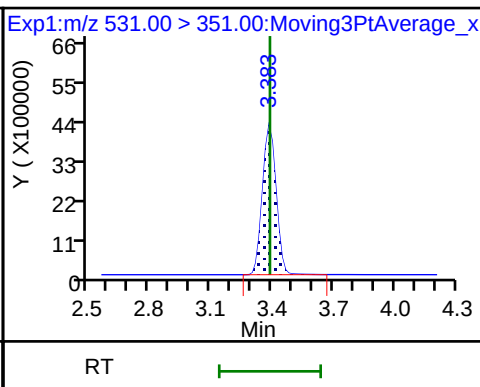
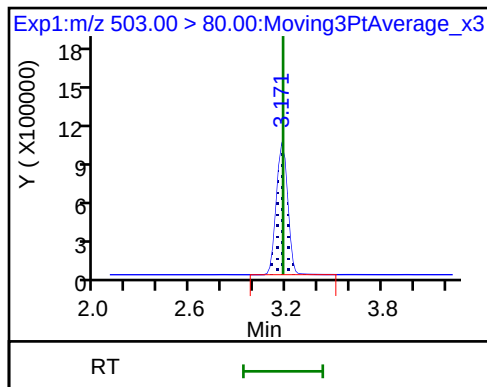
D 19 13C5 PFNA



D 18 13C4 PFOS

69 9-Chlorohexadecafluoro-3-oxanonane

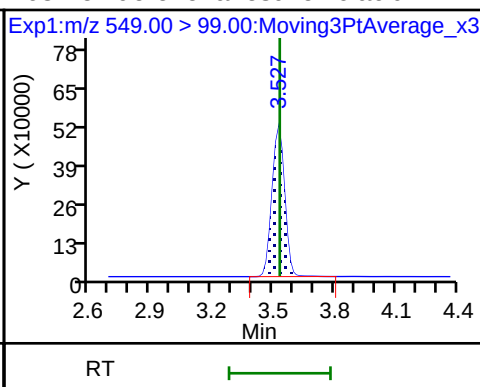
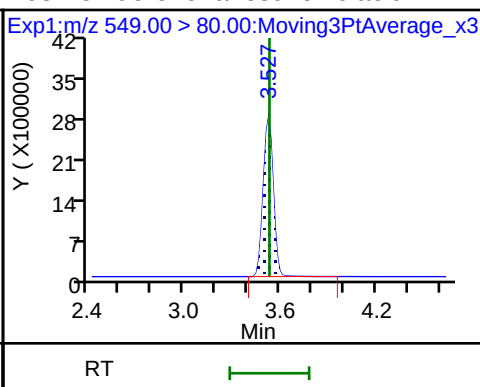
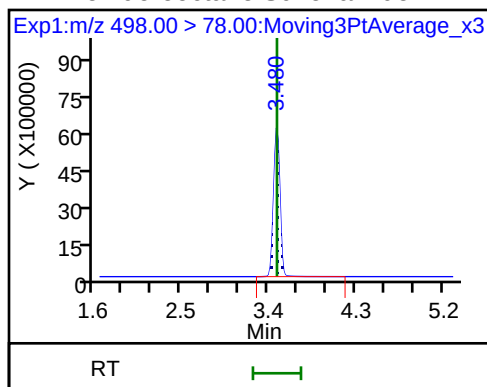
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

68 Perfluorononanesulfonic acid

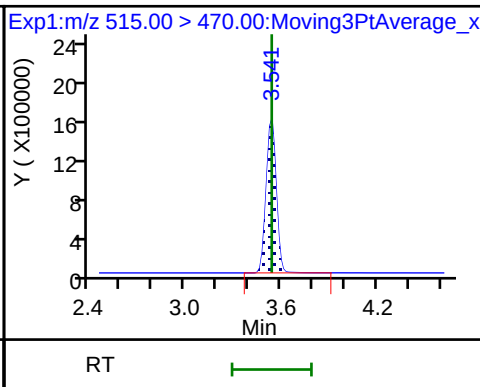
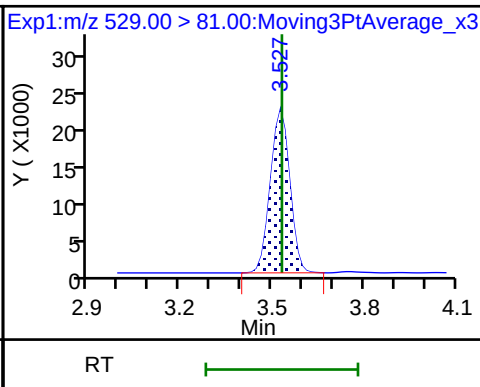
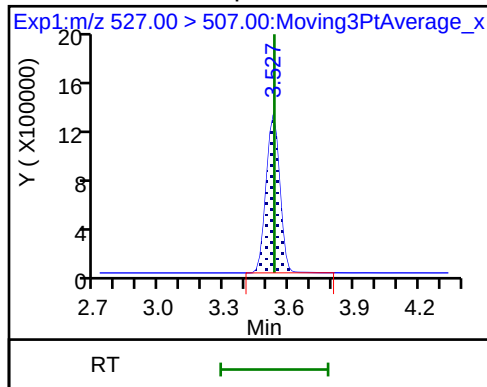
68 Perfluorononanesulfonic acid

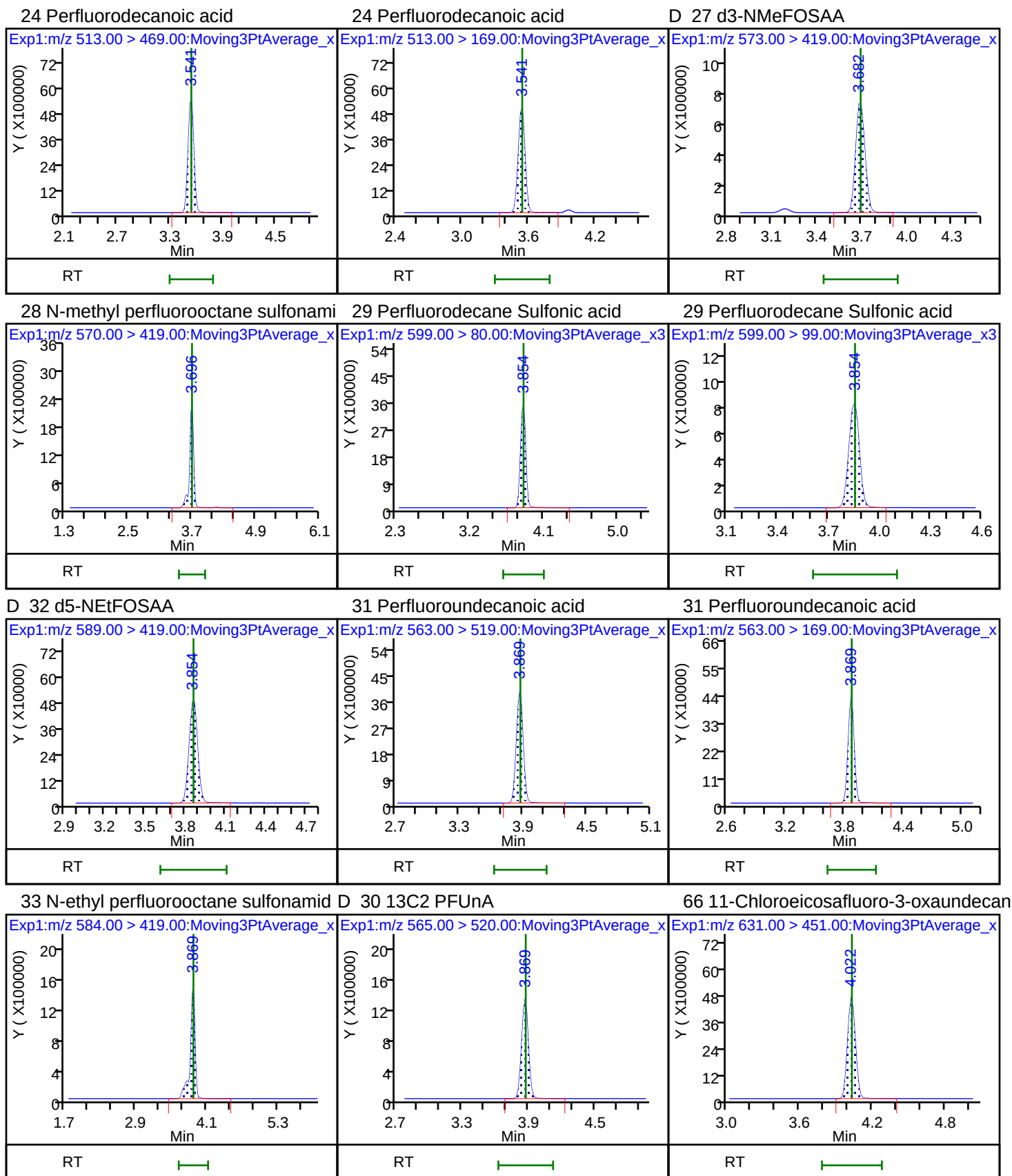


25 1H,1H,2H,2H-perfluorodecanesulfonamide

D 26 M2-8:2FTS

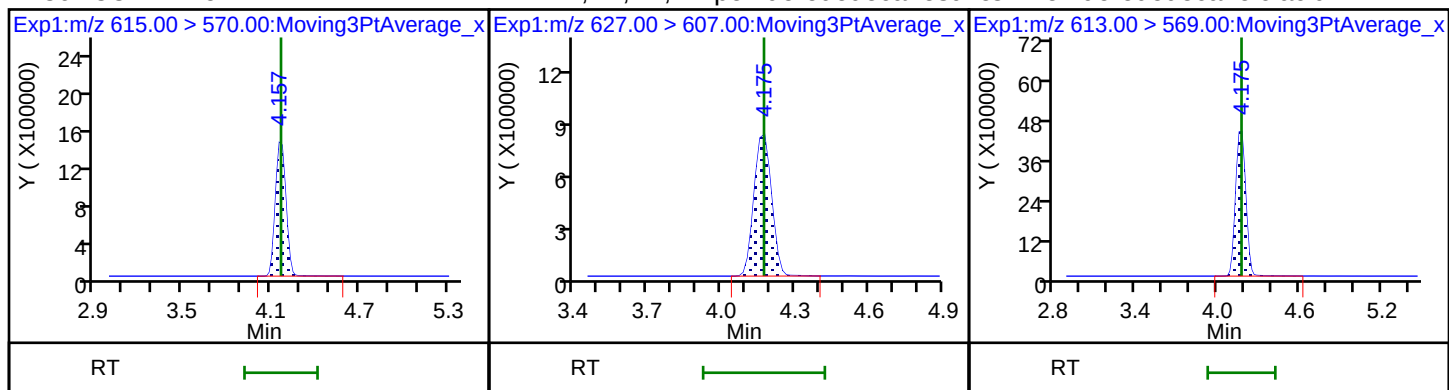
D 23 13C2 PFDA





D 36 13C2 PFDaA

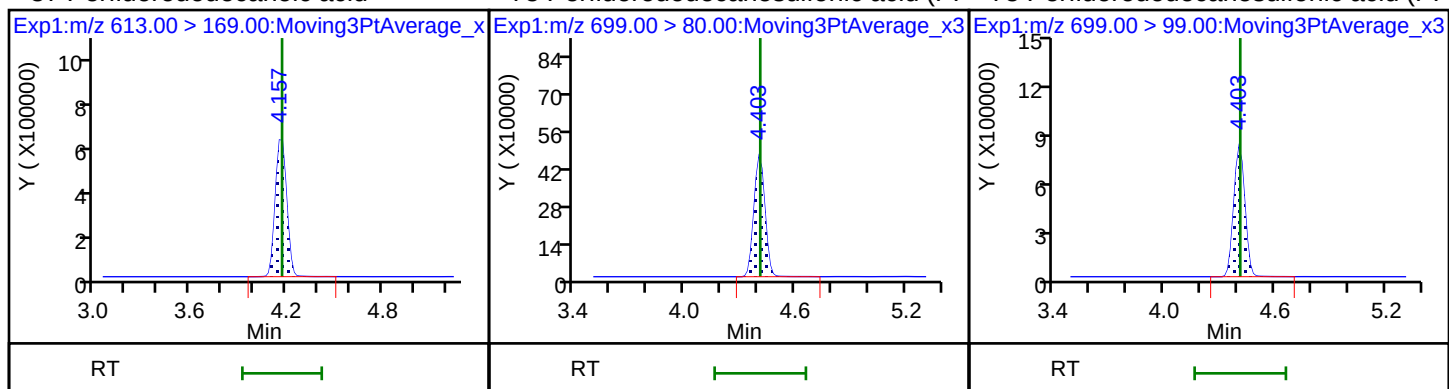
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

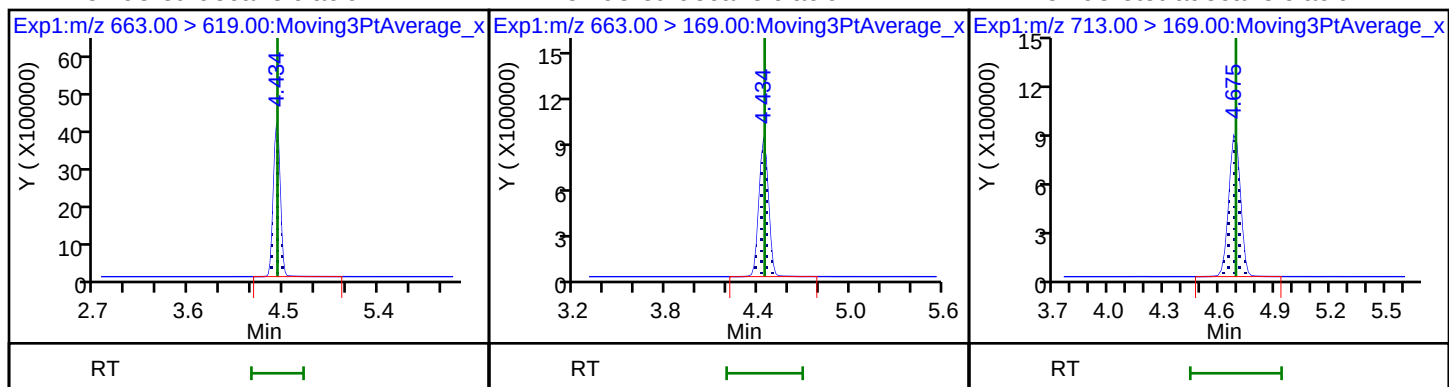
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

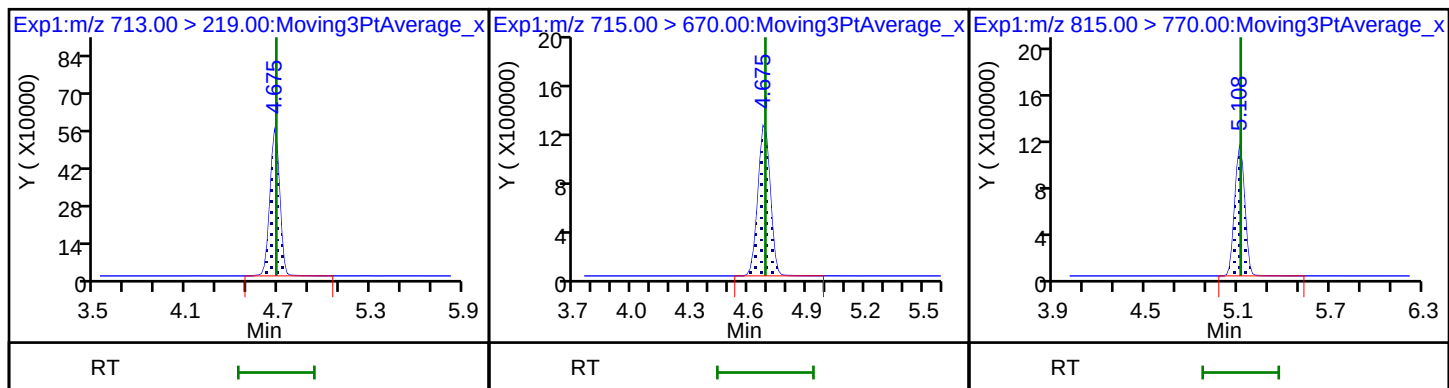
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

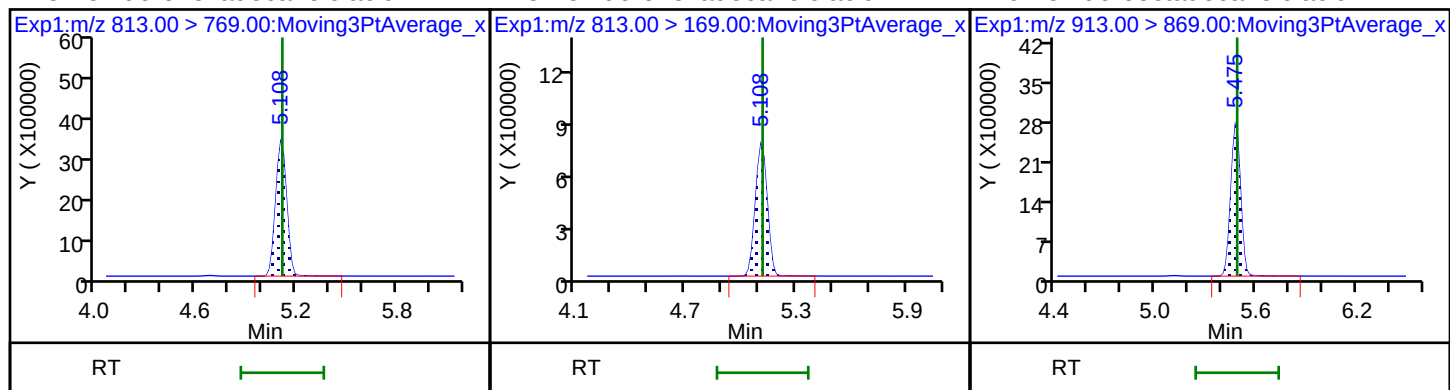
D 44 13C2-PFHxDA



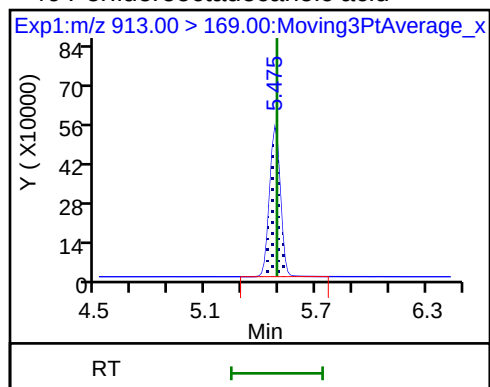
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: ICV 320-247100/13 Calibration Date: 09/21/2018 16:49

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.09.21LLBICAL_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	0.9167	0.9564		2.61	2.50	4.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.041		2.61	2.50	4.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	110.1		2.36	2.21	6.5	50.0
4:2 FTS	AveID	22.60	21.89		2.26	2.34	-3.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.8636		2.40	2.50	-4.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	53.32		2.59	2.35	10.2	50.0
HFPO-DA (GenX)	AveID	1.870	1.991		2.66	2.50	6.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.116		2.63	2.50	5.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.092		1.98	2.28	-13.2	40.0
DONA	AveID	2.645	2.645		2.36	2.36	0.0	50.0
6:2 FTS	AveID	2.182	2.145		2.34	2.38	-1.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.006		2.33	2.38	-1.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.087		2.59	2.50	3.6	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	0.9774		2.49	2.50	-0.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.093		2.39	2.31	3.2	40.0
F-53B Major	AveID	1.117	1.166		2.43	2.33	4.4	50.0
8:2 FTS	AveID	14.70	15.19		2.48	2.40	3.3	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6675		2.41	2.40	0.3	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.403		2.88	2.50	15.4	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.055		2.41	2.50	-3.8	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.088		2.83	2.50	13.3	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.9058		2.55	2.41	5.9	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	1.039		2.78	2.50	11.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.9178		2.54	2.50	1.8	40.0
F-53B Minor	AveID	1.316	1.301		2.33	2.36	-1.1	50.0
10:2 FTS	AveID	10.00	9.825		2.37	2.41	-1.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.015		2.53	2.50	1.3	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0910		2.30	2.42	-5.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7474		2.38	2.50	-4.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1511		2.30	2.50	-8.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9467		2.69	2.50	7.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: ICV 320-247100/13 Calibration Date: 09/21/2018 16:49
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.09.21LLBICAL_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	0.6480	0.6786		2.62	2.50	4.7	50.0
13C4 PFBA	Ave	0.9210	0.8951		2.43	2.50	-2.8	50.0
13C5 PFPeA	Ave	0.8374	0.8295		2.48	2.50	-0.9	50.0
13C3 PFBS	Ave	0.0114	0.0108		2.21	2.33	-5.0	50.0
M2-4:2 FTS	Ave	0.1043	0.0971		2.17	2.34	-6.9	50.0
13C2 PFHxA	Ave	0.8875	0.8955		2.52	2.50	0.9	50.0
13C3 HFPO-DA	Ave	0.0924	0.0901		2.44	2.50	-2.4	50.0
13C4 PFHpA	Ave	1.057	1.086		2.57	2.50	2.7	50.0
18O2 PFHxS	Ave	0.6816	0.6896		2.39	2.37	1.2	50.0
M2-6:2 FTS	Ave	0.1097	0.1008		2.18	2.38	-8.1	40.0
13C8 PFOA	Ave	3075368	2981909		2.37	2.45	-3.0	50.0
13C4 PFOA	Ave	1.001	0.9657		2.41	2.50	-3.5	50.0
13C4 PFOS	Ave	0.7065	0.7066		2.39	2.39	0.0	50.0
13C5 PFNA	Ave	0.9108	0.9172		2.52	2.50	0.7	50.0
13C8 PFOS	Ave	540497	524990		2.32	2.39	-2.9	50.0
13C8 FOSA	Ave	0.3770	0.3503		2.32	2.50	-7.1	50.0
M2-8:2 FTS	Ave	0.0139	0.0133		2.28	2.40	-4.7	40.0
13C2 PFDA	Ave	0.9435	0.9500		2.52	2.50	0.7	50.0
d3-NMeFOSAA	Ave	0.4182	0.3992		2.39	2.50	-4.5	50.0
13C2 PFUnA	Ave	0.8011	0.7754		2.42	2.50	-3.2	50.0
d5-NEtFOSAA	Ave	0.3276	0.3234		2.47	2.50	-1.3	50.0
13C2 PFDoA	Ave	0.9529	0.9854		2.59	2.50	3.4	50.0
13C2 PFTeDA	Ave	0.7508	0.7772		2.59	2.50	3.5	50.0
13C2 PFHxDA	Ave	0.7497	0.7862		2.62	2.50	4.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_013.d
 Lims ID: ICV Full
 Client ID:
 Sample Type: ICV
 Inject. Date: 21-Sep-2018 16:49:16 ALS Bottle#: 17 Worklist Smp#: 13
 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\20180921-64578.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 21-Sep-2018 17:02:09 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK005

First Level Reviewer: roycea

Date: 21-Sep-2018 17:01:06

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	1.494	1.494	0.0	0.540	7523646	2.43		97.2	9049	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.494	0.0	1.000	7195633	2.61			481	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.772	0.0	0.641	6972196	2.48		99.1	7197	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	7256020	2.61			608	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.814	0.0	0.656	84647	2.21		95.0	520	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.814	0.0	1.000	8865196	2.36			3884	
298.90 > 99.00	1.814	1.814	0.0	1.000	3016337		2.94(1.35-4.05)		2257	
D 60 M2-4:2FTS										
329.00 > 81.00	2.027	2.027	0.0	0.733	762179	2.17		93.1	1014	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	1862961	2.26			2984	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.068	0.0	0.748	7526596	2.52		101	16520	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.068	0.0	1.000	6500028	2.40			1466	
313.00 > 119.00	2.068	2.068	0.0	1.000	485053		13.40(6.96-20.87)		954	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.089	0.0	1.152	4561949	2.59			5074	
349.00 > 99.00	2.089	2.089	0.0	1.152	2071029		2.20(1.15-3.45)		3381	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	1508128	2.66			664	

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	2.160	2.160	0.0	0.781	757618	2.44		97.6	1528	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.400	2.400	0.0	1.000	10183550	2.63			1474	
363.00 > 169.00	2.400	2.400	0.0	1.000	2217663		4.59(2.17-6.52)		4415	
D 9 13C4-PFHpA										
367.00 > 322.00	2.400	2.400	0.0	0.867	9124655	2.57		103	7553	
D 11 18O2 PFHxS										
403.00 > 84.00	2.413	2.413	0.0	0.872	5483221	2.39		101	6598	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.413	2.413	0.0	1.000	5774067	1.98			2959	
399.00 > 99.00	2.413	2.413	0.0	1.000	1717208		3.36(1.90-5.70)		2316	
76 DONA										
377.00 > 251.00	2.439	2.439	0.0	0.778	14799002	2.36			21924	
377.00 > 85.00	2.439	2.439	0.0	0.778	7006125		2.11(1.13-3.39)		2679	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.734	0.0	1.000	1727203	2.34			2982	
D 12 M2-6:2FTS										
429.00 > 81.00	2.734	2.734	0.0	0.988	805108	2.18		91.9	1190	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.750	0.0		7298222	2.37		97.0	5725	
D 14 13C4 PFOA										
417.00 > 372.00	2.766	2.766	0.0	1.000	8117085	2.41		96.5	8243	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.766	2.766	0.0	1.000	8823928	2.59			461	
413.00 > 169.00	2.766	2.766	0.0	1.000	3082976		2.86(1.36-4.08)		2763	
* 62 13C2-PFOA										
415.00 > 370.00	2.766	2.766	0.0		8405327	2.50			7770	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.766	0.0	0.882	5673436	2.33			4268	
449.00 > 99.00	2.766	2.766	0.0	0.882	1399236		4.05(1.84-5.53)		2727	
D 72 13C8 PFOS										
507.00 > 99.00	3.135	3.135	0.0		1254725	2.32		97.1	2196	
D 19 13C5 PFNA										
468.00 > 423.00	3.135	3.135	0.0	1.133	7709534	2.52		101	9548	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.135	3.135	0.0	1.000	6007865	2.39			4695	
499.00 > 99.00	3.135	3.135	0.0	1.000	1355865		4.43(2.04-6.12)		1856	
D 18 13C4 PFOS										
503.00 > 80.00	3.135	3.135	0.0	1.133	5678061	2.39		100	3952	
20 Perfluorononanoic acid										
463.00 > 419.00	3.135	3.135	0.0	1.000	7535042	2.49			762	
463.00 > 169.00	3.135	3.135	0.0	1.000	1364915		5.52(2.68-8.03)		1840	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.351	3.351	0.0	1.069	6456316	2.43			3518	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.465	0.0	1.253	2944269	2.32		92.9	3775	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide	498.00 > 78.00	3.480	3.480	0.0	1.004	10019918	2.88		7698	
D 26 M2-8:2FTS	529.00 > 81.00	3.480	3.480	0.0	1.258	106677	2.28	95.3	576	
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.480	3.480	0.0	1.000	1623687	2.48		2664	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.480	3.480	0.0	1.110	3805862	2.41		3127	
549.00 > 99.00	3.480	3.480	0.0	1.110	606926		6.27(3.02-9.05)		2350	
D 23 13C2 PFDA	515.00 > 470.00	3.496	3.496	0.0	1.264	7984701	2.52	101	6921	
24 Perfluorodecanoic acid	513.00 > 469.00	3.496	3.496	0.0	1.000	8421577	2.41		1257	
513.00 > 169.00	3.496	3.496	0.0	1.000	590590		14.26(7.12-21.35)		1107	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.641	3.641	0.0	1.316	3355466	2.39	95.5	3757	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.655	3.655	0.0	1.004	3649724	2.83		1298	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.807	3.807	0.0	1.215	5191611	2.55		3880	
599.00 > 99.00	3.807	3.807	0.0	1.215	1158211		4.48(2.14-6.43)		3227	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.823	3.823	0.0	1.382	2718252	2.47	98.7	2698	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.823	3.823	0.0	1.000	2824650	2.78		3559	
D 30 13C2 PFUnA	565.00 > 520.00	3.823	3.823	0.0	1.382	6517464	2.42	96.8	9694	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.823	3.823	0.0	1.000	5981913	2.54		1097	
563.00 > 169.00	3.823	3.823	0.0	1.000	551780		10.84(5.24-15.72)		1800	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.976	3.976	0.0	1.268	7277826	2.33		8267	
D 36 13C2 PFDaA	615.00 > 570.00	4.122	4.122	0.0	1.490	8282464	2.59	103	7055	
37 Perfluorododecanoic acid	613.00 > 569.00	4.122	4.122	0.0	1.000	8402623	2.53		1666	
613.00 > 169.00	4.122	4.122	0.0	1.000	944289		8.90(4.68-14.05)		2108	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.122	4.122	0.0	1.184	1054681	2.37		1923	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.357	4.357	0.0	1.390	523083	2.30		883	
699.00 > 99.00	4.357	4.357	0.0	1.390	951253		0.55(0.28-0.83)		2546	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.388	4.388	0.0	1.064	6190673	2.38		1991	
663.00 > 169.00	4.388	4.388	0.0	1.064	1043313		5.93(3.09-9.27)		2229	
D 43 13C2-PFTeDA	715.00 > 670.00	4.627	4.627	0.0	1.673	6532802	2.59	104	6866	

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	4.627	0.0	1.000	987111	2.30			2734	
713.00 > 219.00	4.627	4.627	0.0	1.000	693421		1.42(0.70-2.09)		2338	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.041	5.041	0.0	1.822	6608456	2.62		105	13631	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.041	5.041	0.0	1.000	6256203	2.69			1280	
813.00 > 169.00	5.041	5.041	0.0	1.000	1136176		5.51(2.77-8.32)		2657	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.406	5.406	0.0	1.072	4484686	2.62			1271	
913.00 > 169.00	5.406	5.406	0.0	1.072	834796		5.37(2.55-7.64)		2596	

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_013.d

Injection Date: 21-Sep-2018 16:49:16

Instrument ID: A9

Lims ID: ICV Full

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 17

Worklist Smp#: 13

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

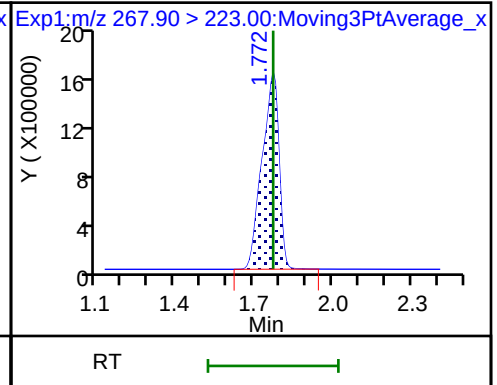
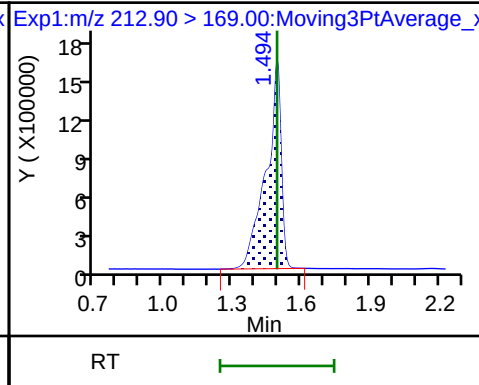
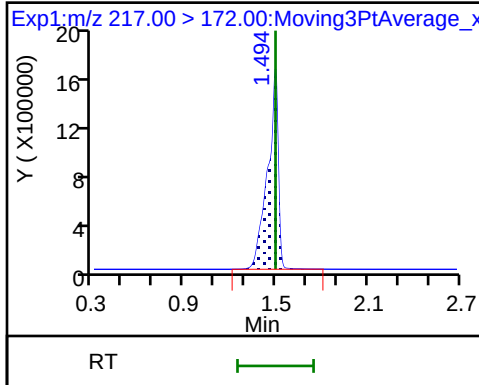
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

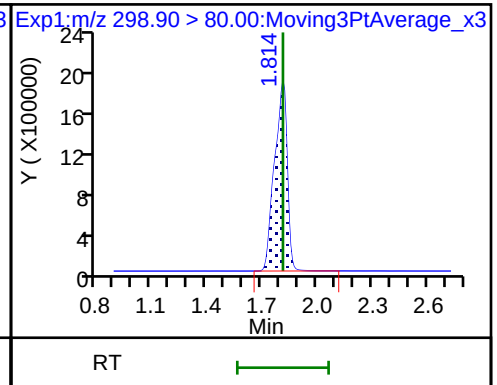
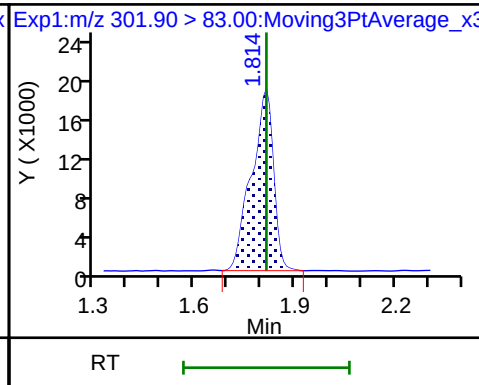
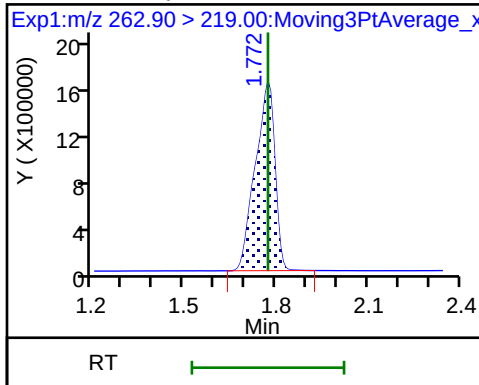
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

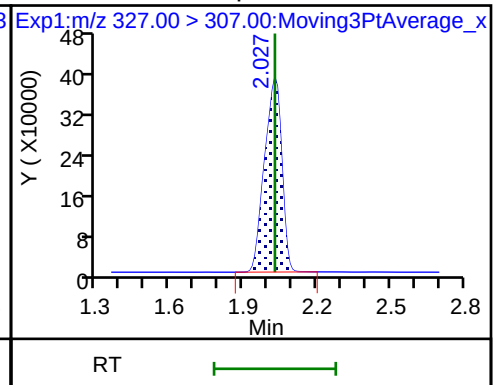
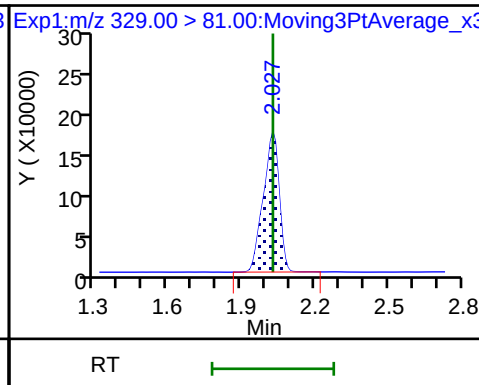
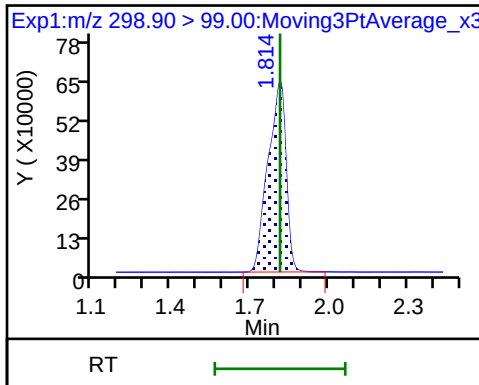
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

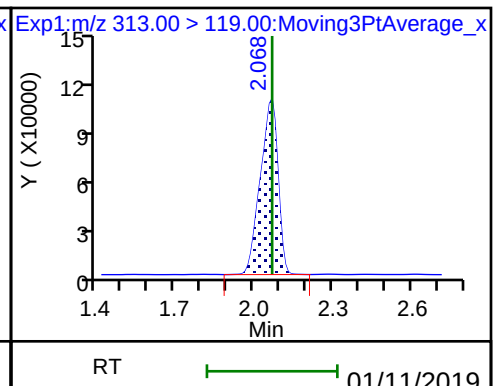
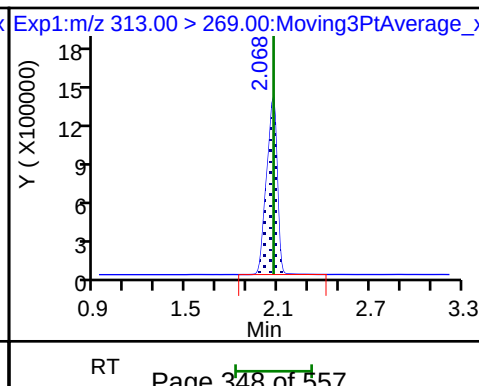
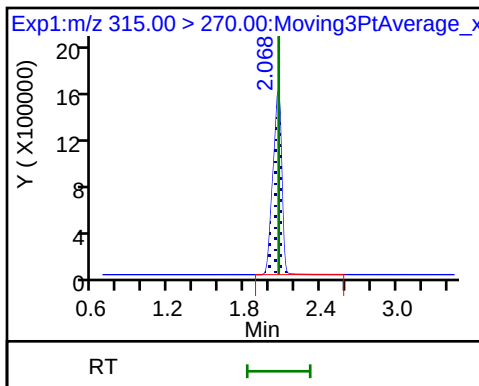
61 1H,1H,2H,2H-perfluorohexanesulfoni

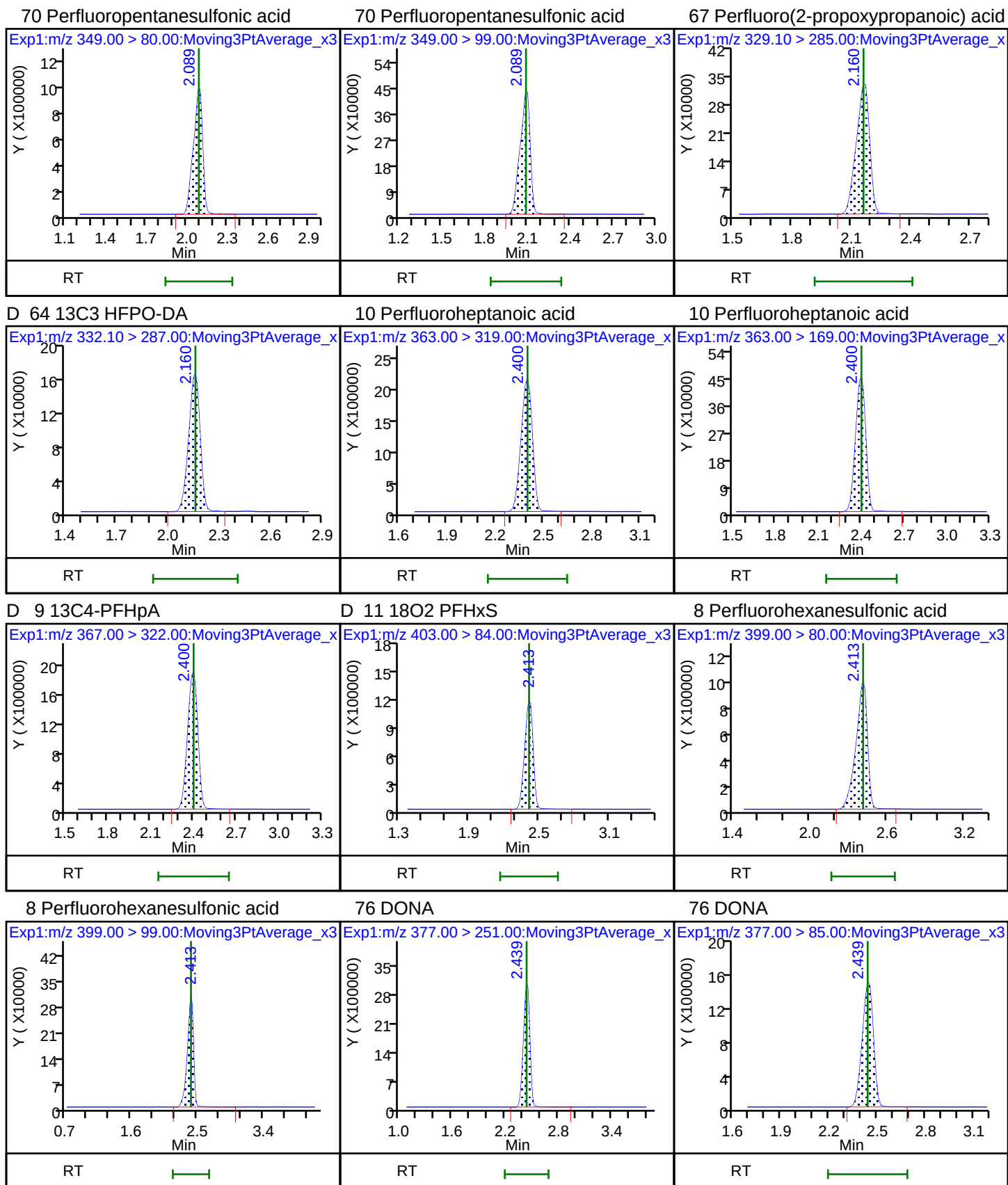


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

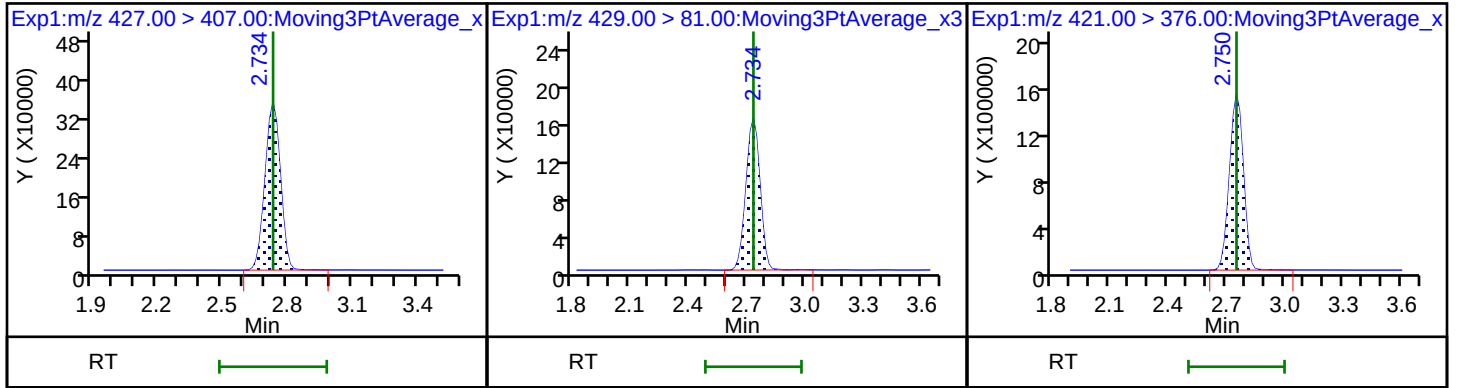
6 Perfluorohexanoic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

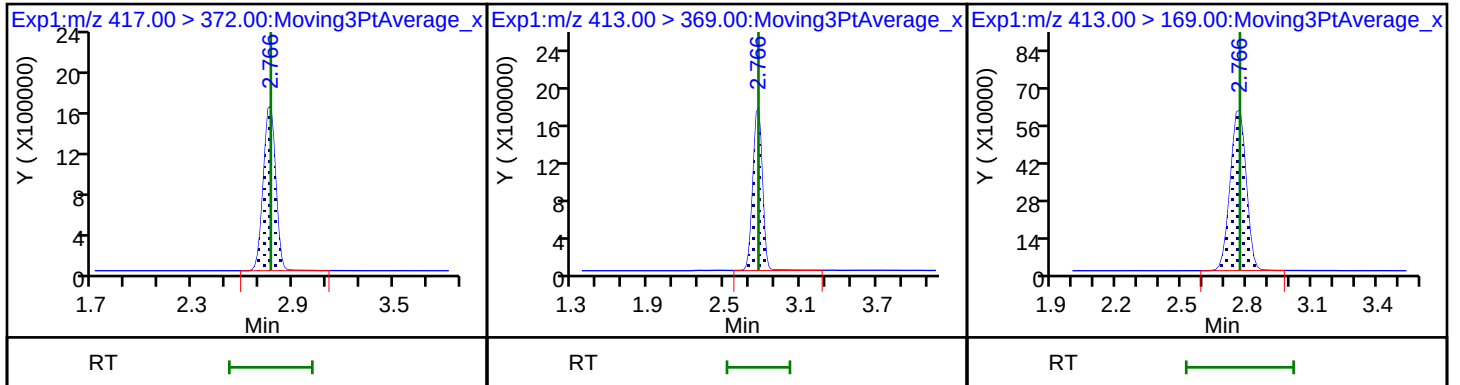
D 73 13C8 PFOA



D 14 13C4 PFOA

15 Perfluorooctanoic acid

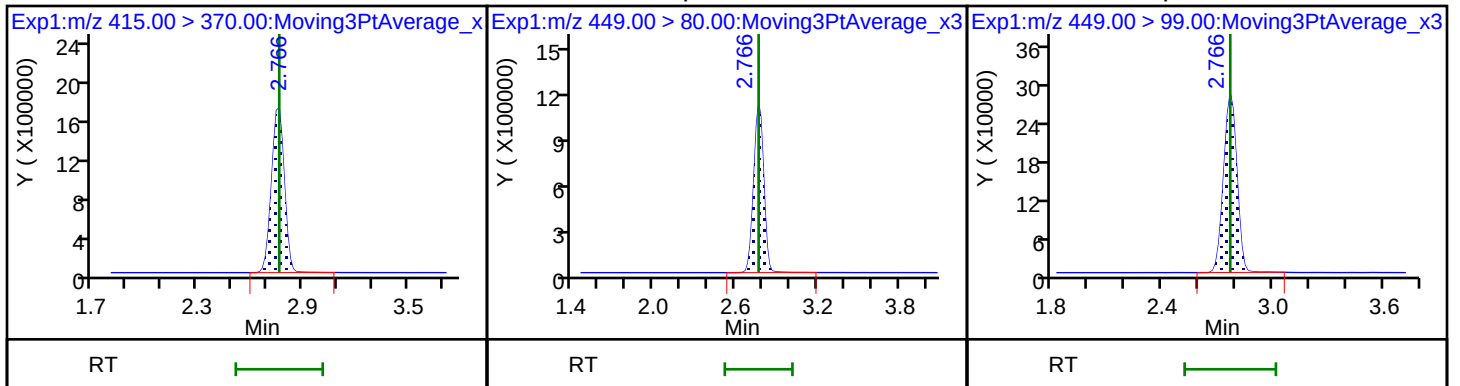
15 Perfluorooctanoic acid



* 62 13C2-PFOA

16 Perfluoroheptanesulfonic acid

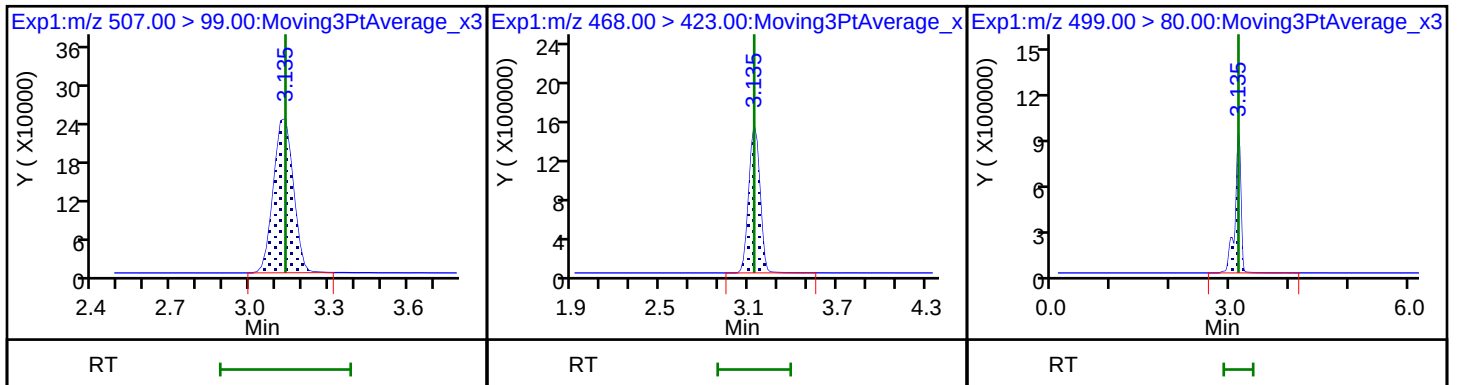
16 Perfluoroheptanesulfonic acid

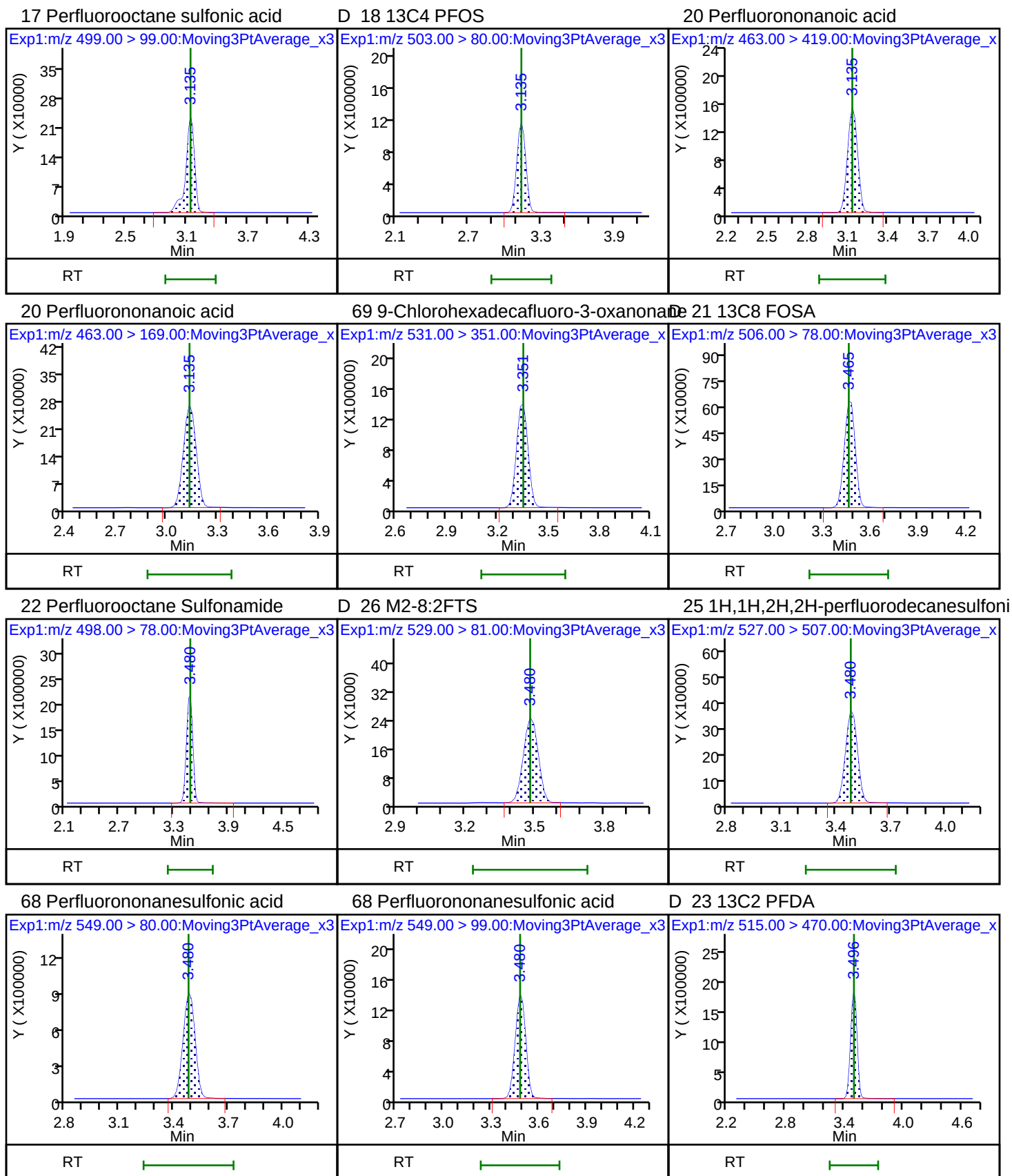


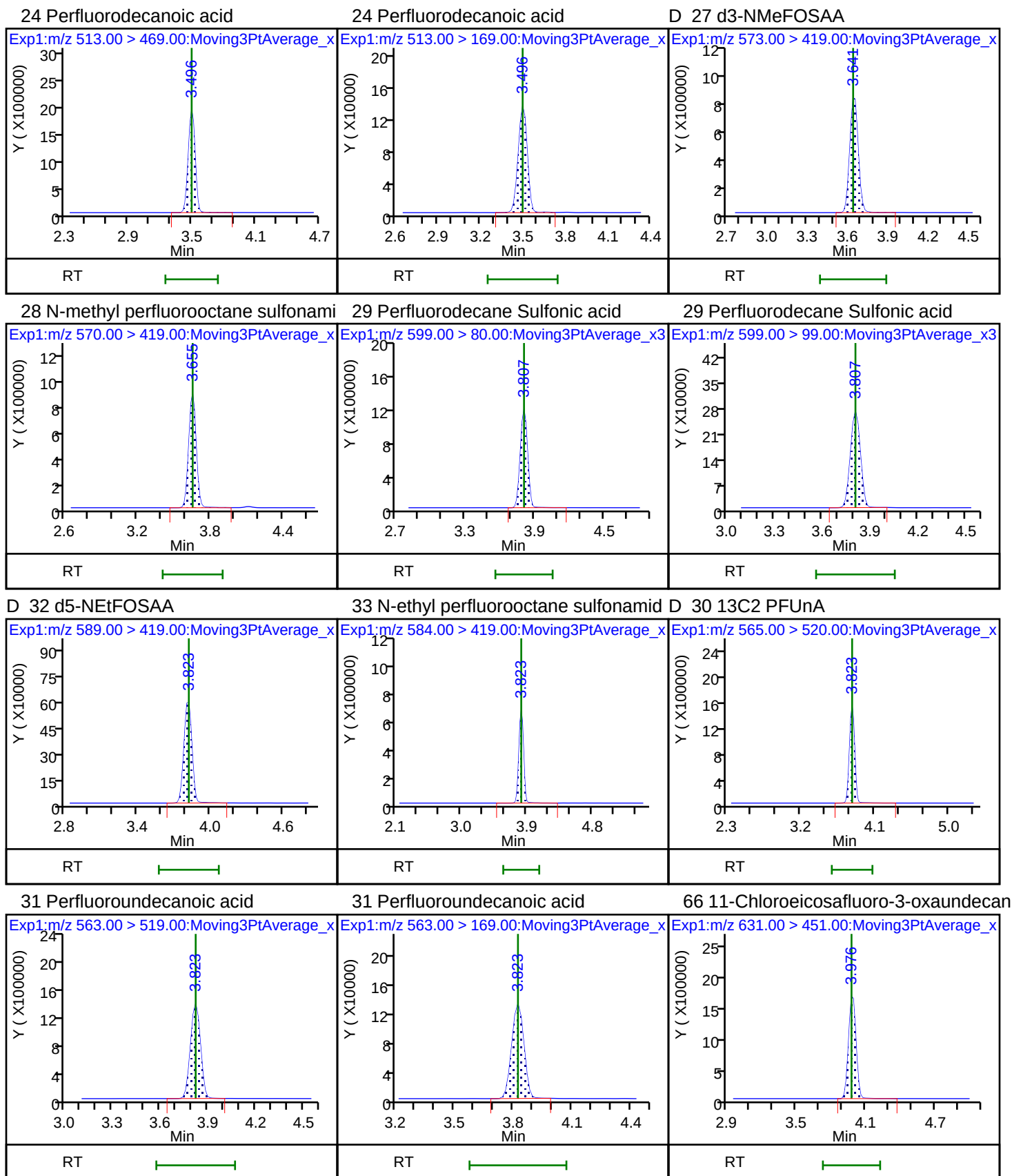
D 72 13C8 PFOS

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid



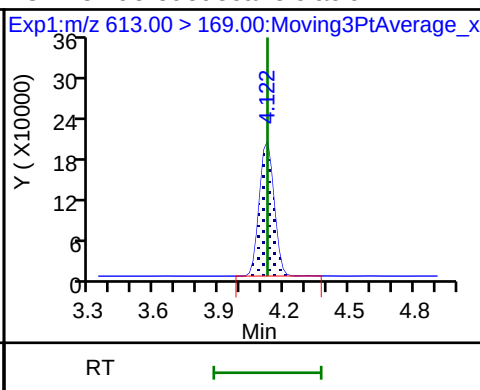
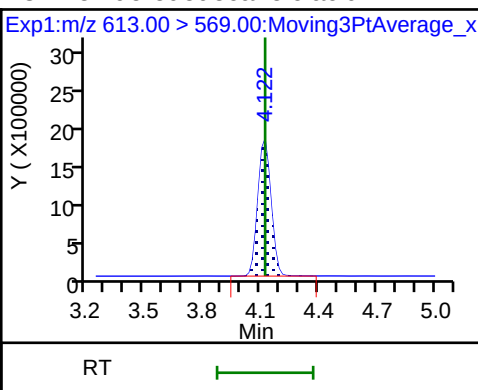
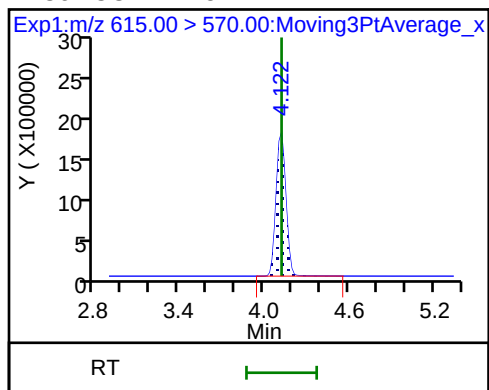




D 36 13C2 PFDaA

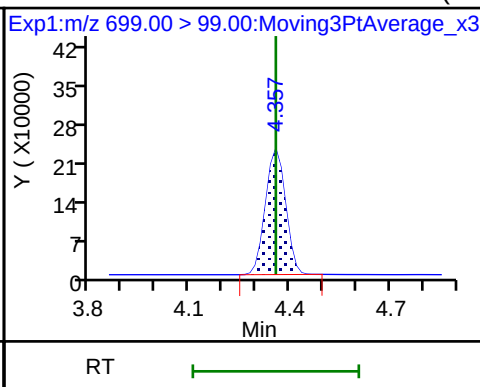
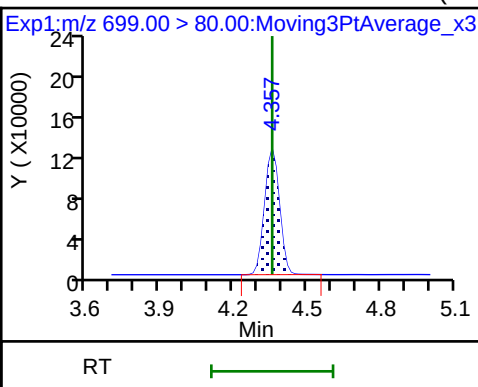
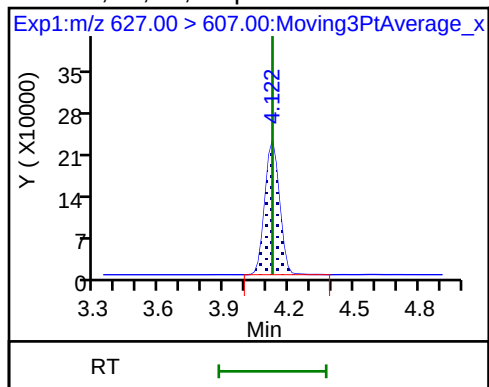
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF

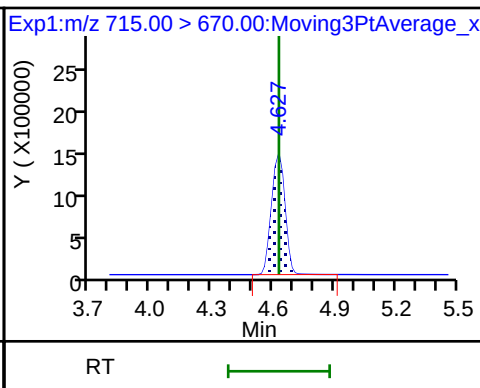
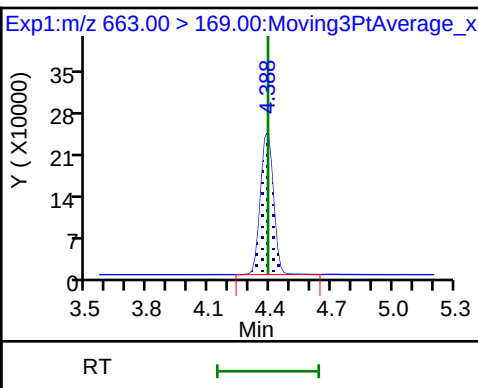
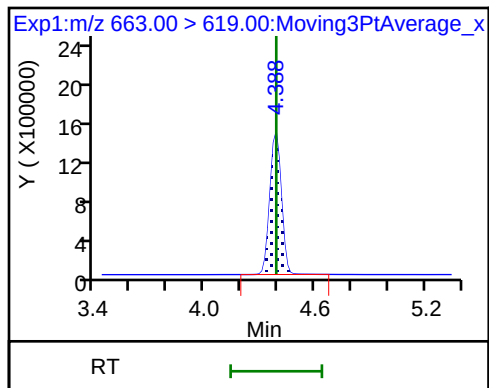
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

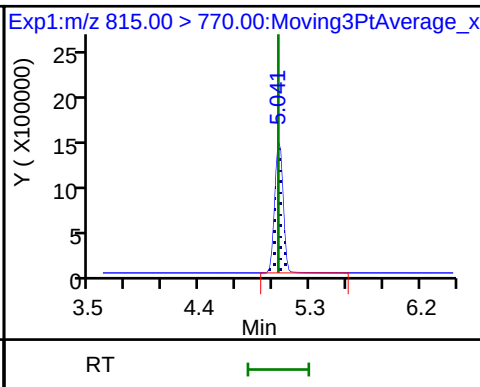
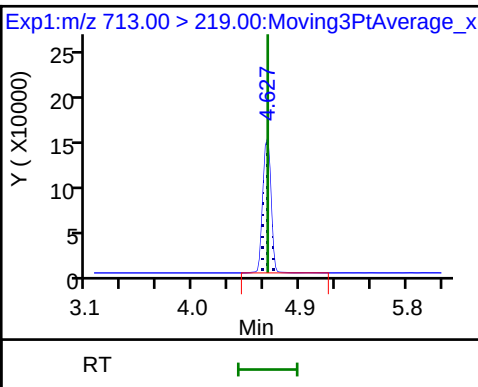
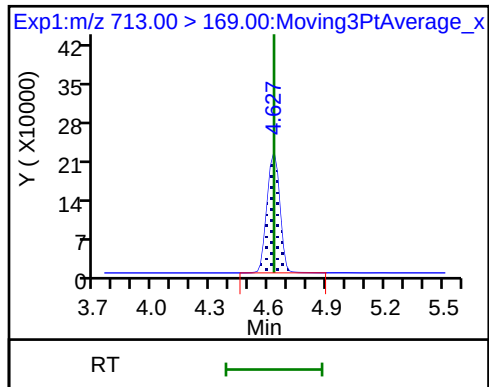
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

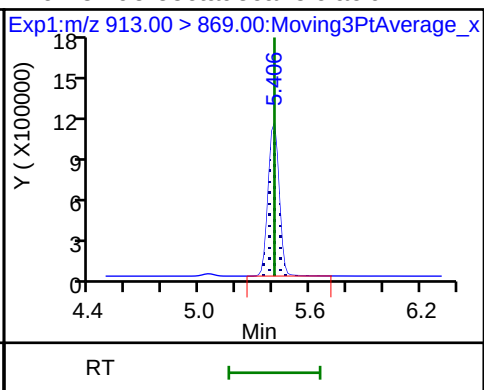
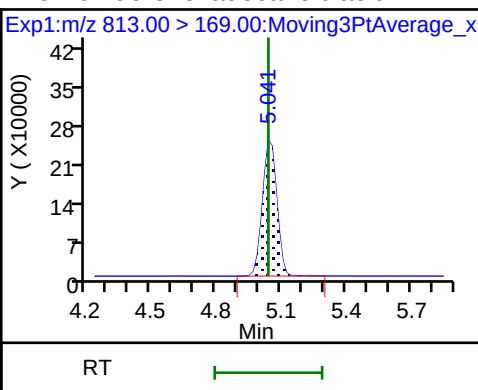
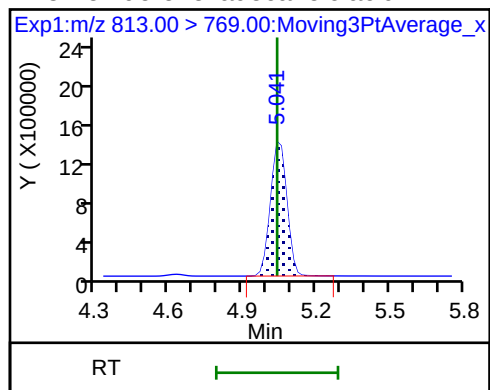
D 44 13C2-PFHxDA



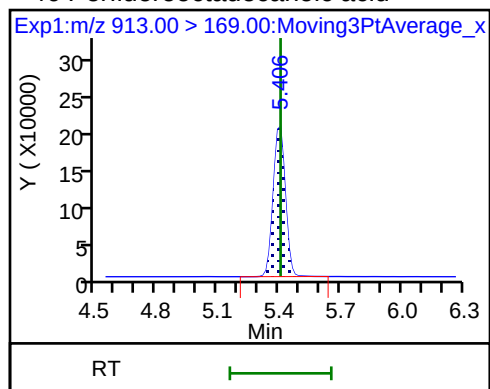
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCVL 320-248608/2 Calibration Date: 09/29/2018 11:10

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.09.29LLAA_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	0.9167	0.9264		0.0505	0.0500	1.1	50.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.110		0.0558	0.0500	11.5	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	107.6		0.0460	0.0442	4.1	50.0
4:2 FTS	AveID	22.60	21.83			0.0467	-3.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.9914		0.0551	0.0500	10.2	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	52.97		0.0513	0.0469	9.4	50.0
HFPO-DA (GenX)	AveID	1.870	1.551		0.0415	0.0500	-17.0	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.097		0.0517	0.0500	3.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.408		0.0509	0.0455	11.9	50.0
DONA	AveID	2.645	2.825		0.0503	0.0471	6.8	50.0
6:2 FTS	AveID	2.182	2.476		0.0538	0.0474	13.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.110		0.0530	0.0501	5.8	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	0.9398		0.0437	0.0476	-8.2	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	1.203		0.0612	0.0500	22.5	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	0.9388		0.0411	0.0464	-11.4	50.0
F-53B Major	AveID	1.117	1.112		0.0464	0.0466	-0.5	50.0
8:2 FTS	AveID	14.70	15.94		0.0519	0.0479	8.5	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.096		0.0500	0.0500	0.0	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6976		0.0503	0.0480	4.8	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.203		0.0543	0.0500	8.6	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	0.9531			0.0500	-0.7	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8189		0.0461	0.0482	-4.3	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	1.000		0.0535	0.0500	7.0	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	1.006		0.0558	0.0500	11.5	50.0
F-53B Minor	AveID	1.316	1.425		0.0510	0.0471	8.4	50.0
10:2 FTS	AveID	10.00	8.493		0.0410	0.0482	-15.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.087		0.0543	0.0500	8.6	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0999		0.0505	0.0484	4.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7716		0.0492	0.0500	-1.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1750		0.0533	0.0500	6.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.418		0.0537	0.0500	7.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-248608/2 Calibration Date: 09/29/2018 11:10
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.09.29LLAA_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	0.6480	0.6602		0.0509	0.0500	1.9	50.0
13C4 PFBA	Ave	0.9210	0.8848		2.40	2.50	-3.9	50.0
13C5 PFPeA	Ave	0.8374	0.8338		2.49	2.50	-0.4	50.0
13C3 PFBS	Ave	0.0114	0.0108		2.20	2.33	-5.5	50.0
M2-4:2 FTS	Ave	0.1043	0.1015		2.27	2.34	-2.6	50.0
13C2 PFHxA	Ave	0.8875	0.8893		2.50	2.50	0.2	50.0
13C3 HFPO-DA	Ave	0.0924	0.1154		3.12	2.50	24.9	50.0
13C4 PFHpA	Ave	1.057	1.047		2.48	2.50	-0.9	50.0
18O2 PFHxS	Ave	0.6816	0.6193		2.15	2.37	-9.1	50.0
M2-6:2 FTS	Ave	0.1097	0.1011		2.19	2.38	-7.8	50.0
13C4 PFOA	Ave	1.001	1.029		2.57	2.50	2.8	50.0
13C8 PFOA	Ave	3075368	2799298		2.23	2.45	-9.0	50.0
13C4 PFOS	Ave	0.7065	0.6953		2.35	2.39	-1.6	50.0
13C5 PFNA	Ave	0.9108	0.8791		2.41	2.50	-3.5	50.0
13C8 PFOS	Ave	540497	429630		1.90	2.39	-20.5	50.0
13C2 PFDA	Ave	0.9435	0.9748		2.58	2.50	3.3	50.0
13C8 FOSA	Ave	0.3770	0.3538		2.35	2.50	-6.2	50.0
M2-8:2 FTS	Ave	0.0139	0.0132		2.28	2.40	-4.9	50.0
d3-NMeFOSAA	Ave	0.4182	0.4093		2.45	2.50	-2.1	50.0
13C2 PFUnA	Ave	0.8011	0.8157		2.55	2.50	1.8	50.0
d5-NEtFOSAA	Ave	0.3276	0.3391		2.59	2.50	3.5	50.0
13C2 PFDoA	Ave	0.9529	0.9746		2.56	2.50	2.3	50.0
13C2 PFTeDA	Ave	0.7508	0.7210		2.40	2.50	-4.0	50.0
13C2 PFHxDA	Ave	0.7497	0.6972		2.32	2.50	-7.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64985.b\2018.09.29LLAA_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 29-Sep-2018 11:10:43 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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180929-64985.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 02-Oct-2018 15:02:03 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK005

First Level Reviewer: mongkols

Date: 02-Oct-2018 15:02:03

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	1.517	1.517	0.0	0.542	6806494	2.40		96.1	2656	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.517	1.517	0.0	1.000	126111	0.0505		101	16.0	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.805	1.814	-0.009	0.645	6414449	2.49		99.6	8799	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.805	1.814	-0.009	1.000	142431	0.0558		112	3.7	
D 47 13C3-PFBS										
301.90 > 83.00	1.847	1.855	-0.008	0.660	77120	2.20		94.5	525	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.847	1.855	-0.008	1.000	157761	0.0460		104	89.3	
298.90 > 99.00	1.847	1.855	-0.008	1.000	52724		2.99(1.35-4.05)		83.0	
D 60 M2-4:2FTS										
329.00 > 81.00	2.068	2.068	0.0	0.739	729505	2.27		97.4	855	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.068	2.068	0.0	1.120	33819	0.0451		96.6	275	
D 7 13C2 PFHxA										
315.00 > 270.00	2.109	2.109	0.0	0.754	6840856	2.50		100	6033	
6 Perfluorohexanoic acid										M
313.00 > 269.00	2.099	2.109	-0.010	0.995	135637	0.0551		110	7.4	
313.00 > 119.00	2.109	2.109	0.0	1.000	9917		13.68(6.96-20.87)		7.0	M
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.130	2.140	-0.010	1.153	82397	0.0513		109	207	
349.00 > 99.00	2.130	2.140	-0.010	1.153	39234		2.10(1.15-3.45)		113	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.211	2.211	0.0	0.790	887439	3.12		125	2091	

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	2.211	-0.010	0.995	27530	0.0415		83.0	16.3	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.439	2.439	0.0	1.000	176695	0.0517		103	26.1	
363.00 > 169.00	2.439	2.439	0.0	1.000	39022		4.53(2.17-6.52)		46.2	
D 9 13C4-PFHpA										
367.00 > 322.00	2.439	2.452	-0.013	0.872	8052032	2.48		99.1	13562	
D 11 18O2 PFHxS										
403.00 > 84.00	2.452	2.465	-0.013	0.876	4506742	2.15		90.9	6040	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.452	2.465	-0.013	1.000	122120	0.0509		112	165	
399.00 > 99.00	2.452	2.465	-0.013	1.000	35686		3.42(1.90-5.70)		90.1	
76 DONA										
377.00 > 251.00	2.478	2.491	-0.013	0.781	284706	0.0503		107	949	
377.00 > 85.00	2.478	2.491	-0.013	0.781	118220		2.41(1.13-3.39)		74.7	
D 12 M2-6:2FTS										
429.00 > 81.00	2.766	2.782	-0.016	0.989	739076	2.19		92.2	1147	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.766	2.782	-0.016	1.000	36526	0.0538		113	28.6	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.798	0.0		6851283	2.23		91.0	9793	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.798	0.0	1.000	7915172	2.57		103	7220	
* 62 13C2-PFOA										
415.00 > 370.00	2.798	2.798	0.0		7692671	2.50			9789	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.798	0.0	1.000	175845	0.0530		106	11.2	
413.00 > 169.00	2.798	2.798	0.0	1.000	64219		2.74(1.36-4.08)		108	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.814	0.0	0.887	95702	0.0437		91.8	132	
449.00 > 99.00	2.814	2.814	0.0	0.887	22497		4.25(1.84-5.53)		89.8	
D 72 13C8 PFOS										
507.00 > 99.00	3.172	3.171	0.001		1026815	1.90		79.5	1640	
17 Perfluorooctane sulfonic acid										M
499.00 > 80.00	3.172	3.171	0.001	1.000	93189	0.0411		88.6	117	M
499.00 > 99.00	3.172	3.171	0.001	1.000	21745		4.29(2.04-6.12)		102	
20 Perfluorononanoic acid										
463.00 > 419.00	3.172	3.171	0.001	1.000	162686	0.0612		122	22.6	
463.00 > 169.00	3.172	3.171	0.001	1.000	24881		6.54(2.68-8.03)		59.3	
D 19 13C5 PFNA										
468.00 > 423.00	3.172	3.190	-0.018	1.133	6762855	2.41		96.5	6448	
D 18 13C4 PFOS										
503.00 > 80.00	3.172	3.190	-0.018	1.133	5113109	2.35		98.4	3612	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.383	0.0	1.067	110845	0.0464		99.5	251	
D 21 13C8 FOSA										
506.00 > 78.00	3.527	3.527	0.0	1.261	2721450	2.35		93.8	3496	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.527	0.0	1.261	97446	2.28		95.1	422	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.527	3.527	0.0	1.000	174347	0.0543		109	209	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.527	0.0	1.000	31074	0.0519		108	137	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.527	0.0	1.112	71639	0.0503		105	250	
549.00 > 99.00	3.527	3.527	0.0	1.112	10475		6.84(3.02-9.05)		121	
D 23 13C2 PFDA										
515.00 > 470.00	3.527	3.541	-0.014	1.261	7498998	2.58		103	8995	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.527	3.542	-0.015	1.000	164407	0.0500		100	37.3	
513.00 > 169.00	3.527	3.542	-0.015	1.000	13396		12.27(7.12-21.35)		34.9	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.683	3.682	0.001	1.316	3148925	2.45		97.9	6369	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.683	3.697	-0.014	1.000	60022	0.0496		99.3	19.8	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.839	3.839	0.0	1.210	84444	0.0461		95.7	125	
599.00 > 99.00	3.839	3.839	0.0	1.210	16689		5.06(2.14-6.43)		90.6	
D 30 13C2 PFUnA										
565.00 > 520.00	3.855	3.854	0.0	1.378	6274632	2.55		102	8293	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.855	3.854	0.0	1.378	2608700	2.59		104	1929	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.855	3.854	0.0	1.000	52174	0.0535		107	111	M
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.855	3.854	0.0	1.000	126184	0.0558		112	34.8	
563.00 > 169.00	3.855	3.854	0.0	1.000	9775		12.91(5.24-15.72)		40.9	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.007	4.023	-0.016	1.263	143634	0.0510		108	430	
35 MeFOSA										
512.00 > 169.00	4.023	4.023	0.0		26962	NC			117	
D 36 13C2 PFDaA										
615.00 > 570.00	4.139	4.139	0.0	1.479	7497267	2.56		102	9012	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.139	4.157	-0.018	1.173	16655	0.0410		85.0	31.4	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.157	0.0	1.004	162950	0.0543		109	47.2	
613.00 > 169.00	4.157	4.157	0.0	1.004	16816		9.69(4.68-14.05)		38.9	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.212	4.212	0.0		33092	NC			88.4	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.388	0.0	1.384	10342	0.0505		104	19.8	
699.00 > 99.00	4.388	4.388	0.0	1.384	20526		0.50(0.28-0.83)		91.0	

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	4.419	-0.015	1.064	115697	0.0492		98.4	64.2	
663.00 > 169.00	4.404	4.419	-0.015	1.064	16896		6.85(3.09-9.27)		59.5	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.644	0.0	1.000	19412	0.0533		107	76.8	
713.00 > 219.00	4.644	4.644	0.0	1.000	12205		1.59(0.70-2.09)		58.1	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.644	4.644	0.0	1.660	5546515	2.40		96.0	11076	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.057	0.0	1.000	152104	0.0537		107	48.1	
813.00 > 169.00	5.057	5.057	0.0	1.000	23046		6.60(2.77-8.32)		68.1	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.057	5.057	0.0	1.807	5363182	2.32		93.0	7906	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.391	5.406	-0.015	1.066	70811	0.0509		102	34.1	
913.00 > 169.00	5.391	5.406	-0.015	1.066	12286		5.76(2.55-7.64)		93.4	

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\A9\20180929-64985.b\2018.09.29LLAA_005.d

Injection Date: 29-Sep-2018 11:10:43

Instrument ID: A9

Lims ID: CCVL

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

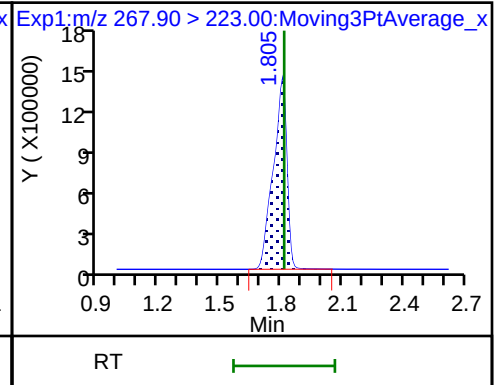
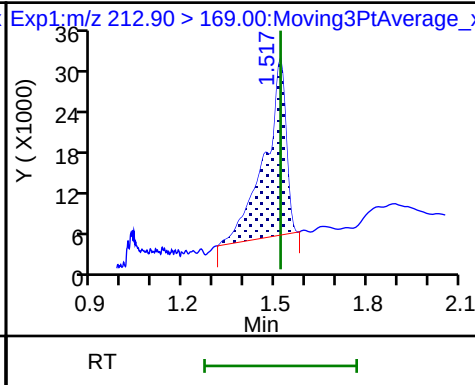
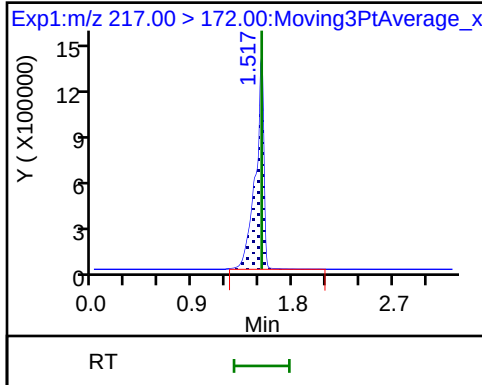
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

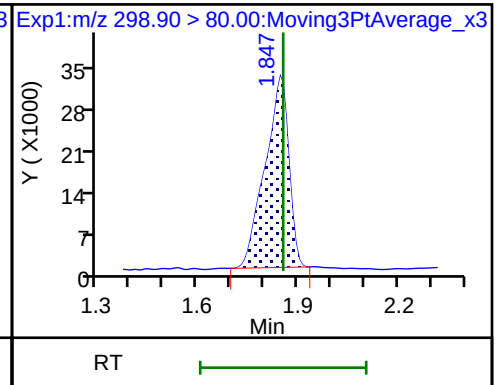
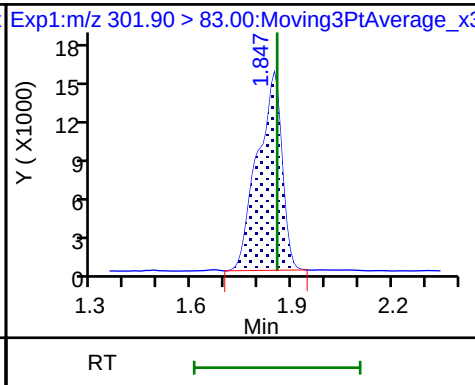
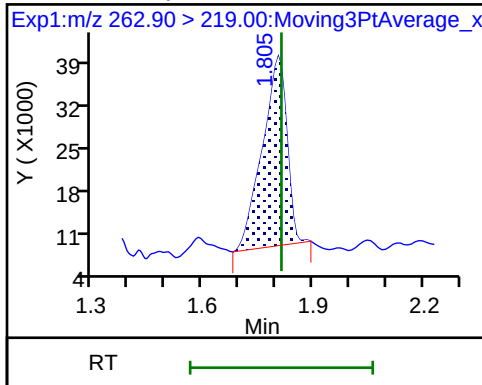
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

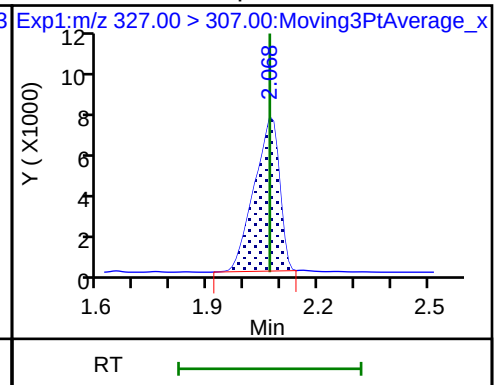
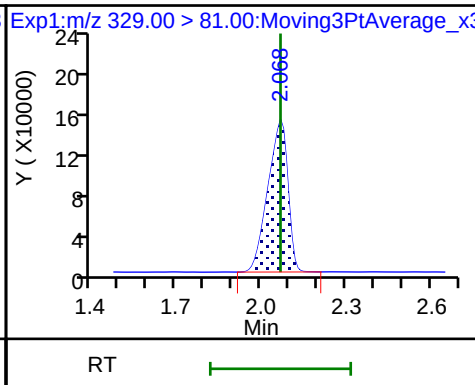
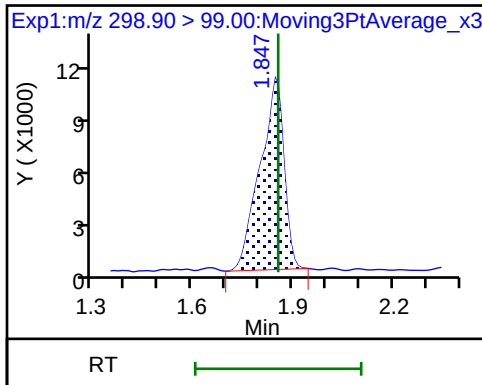
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

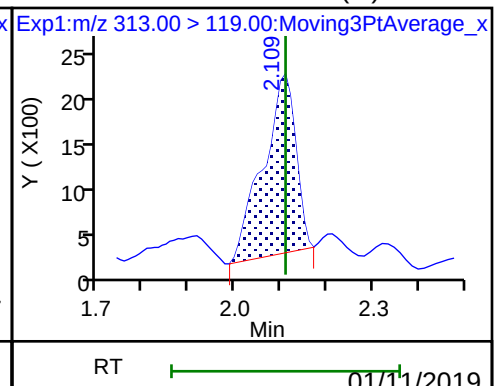
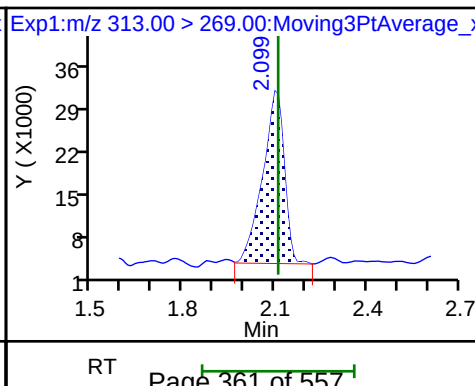
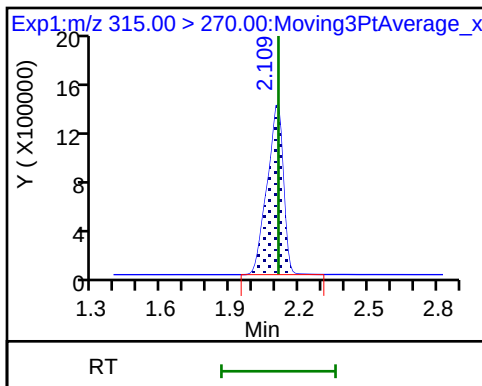
61 1H,1H,2H,2H-perfluorohexanesulfoni

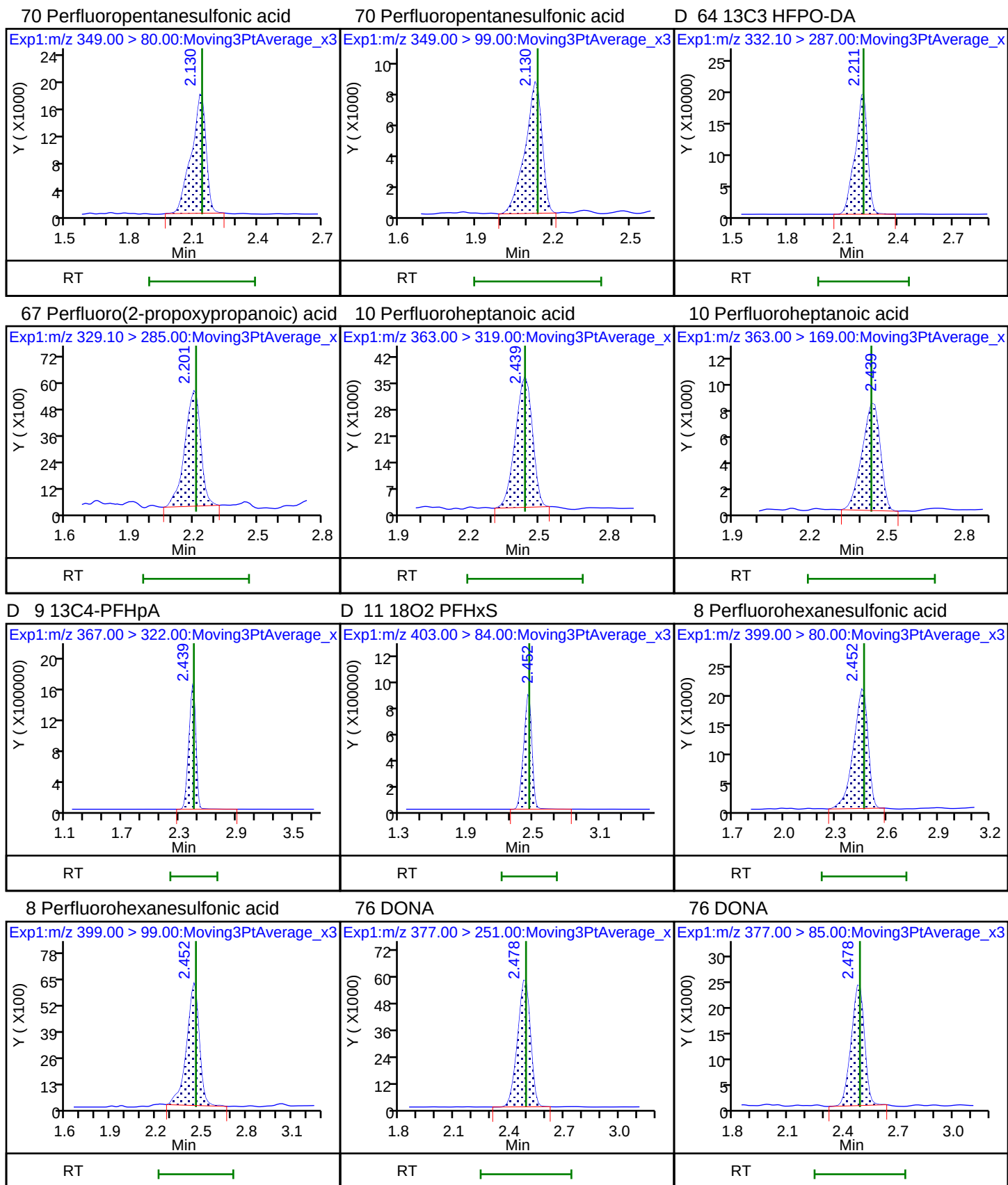


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

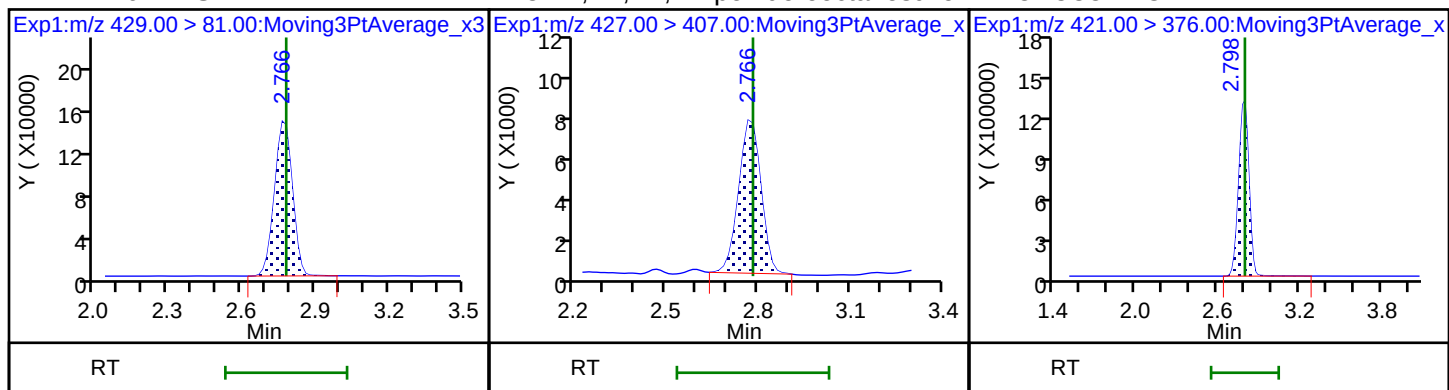
6 Perfluorohexanoic acid (M)





D 12 M2-6:2FTS

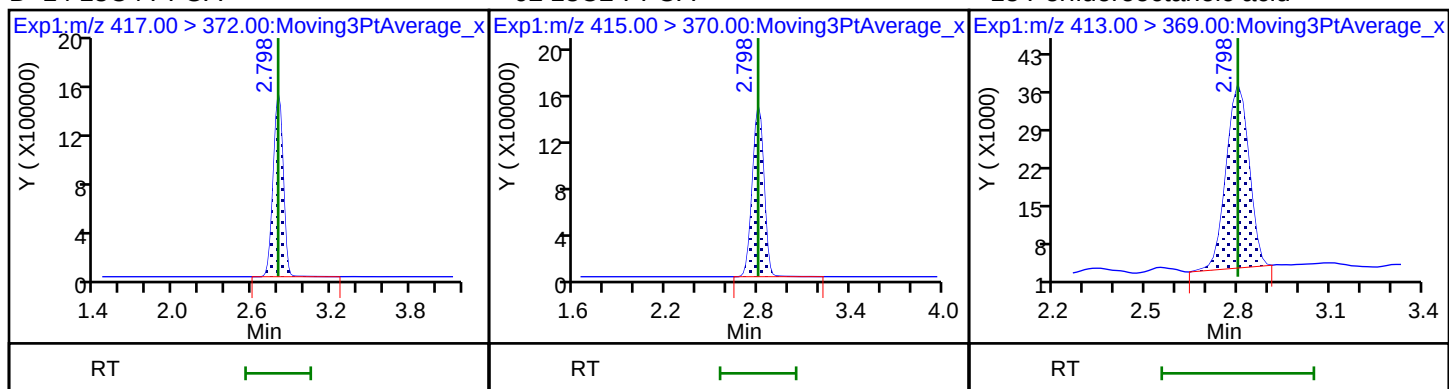
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

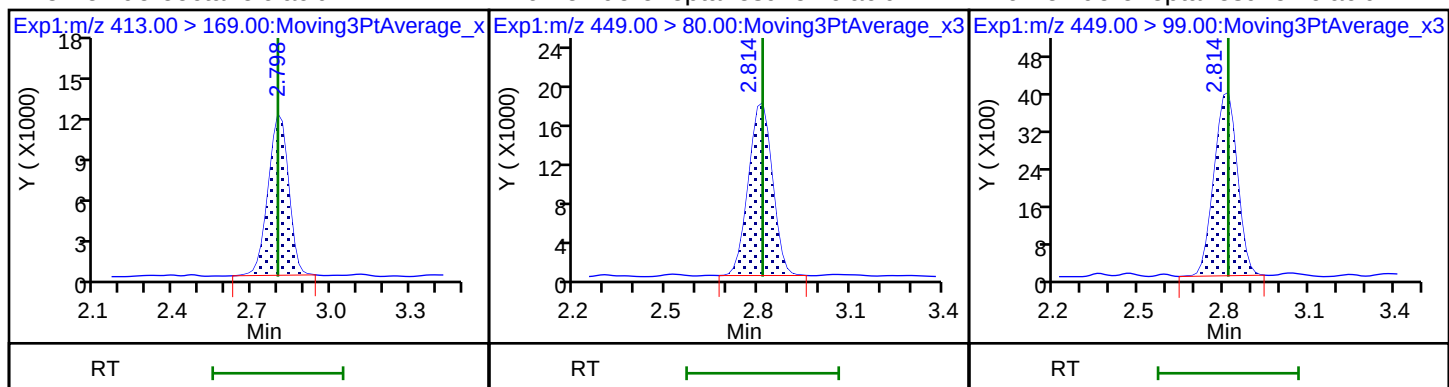
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

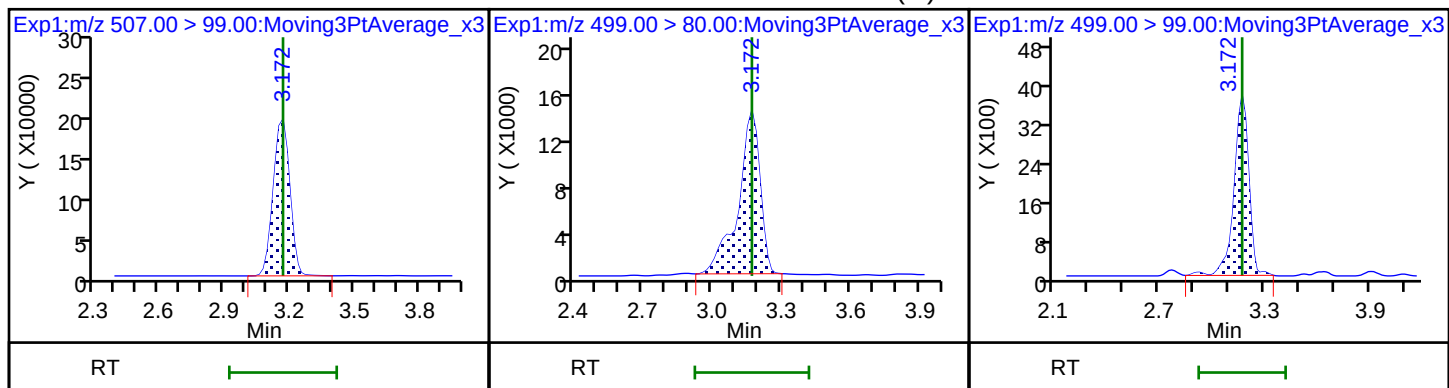
16 Perfluoroheptanesulfonic acid

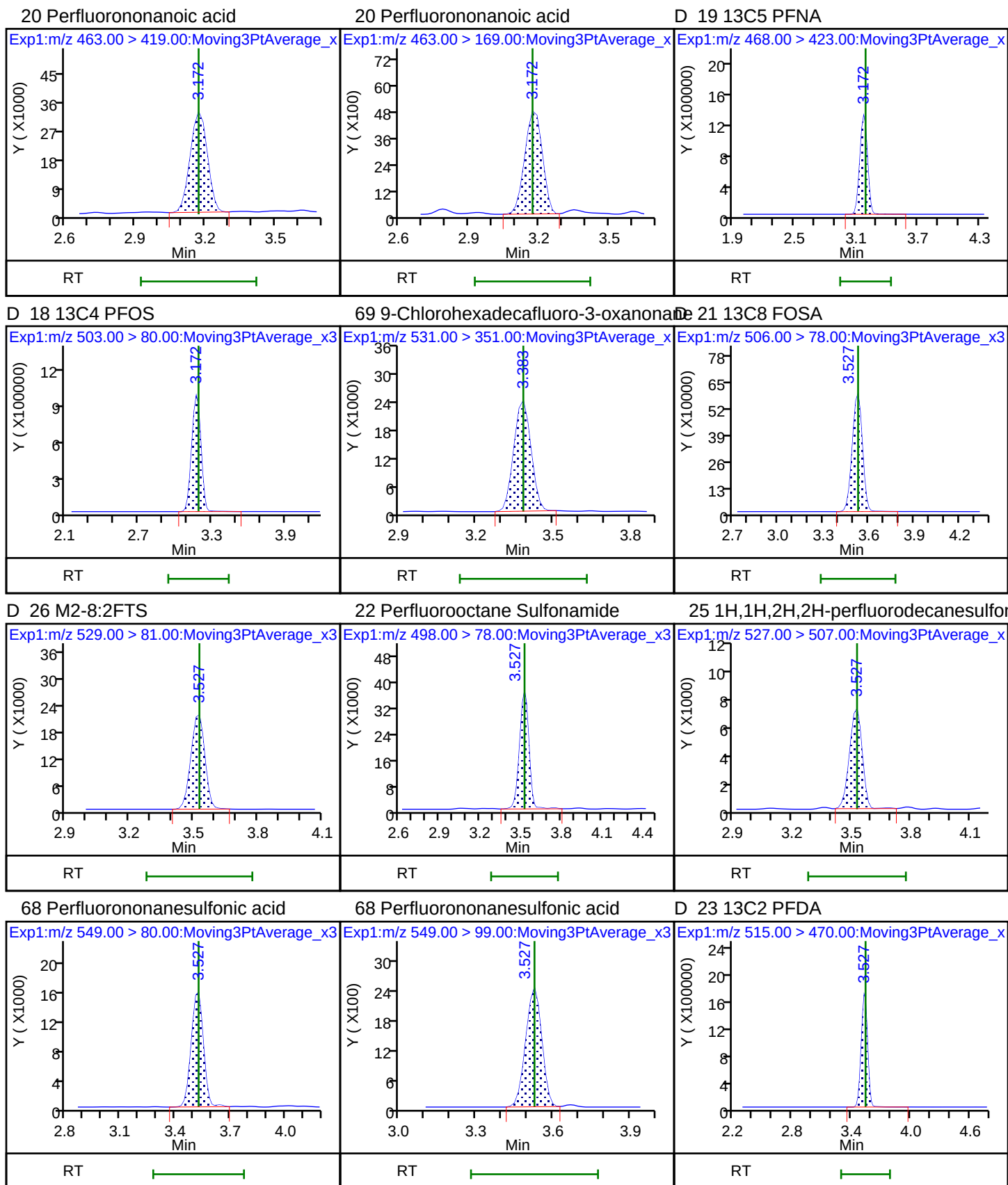


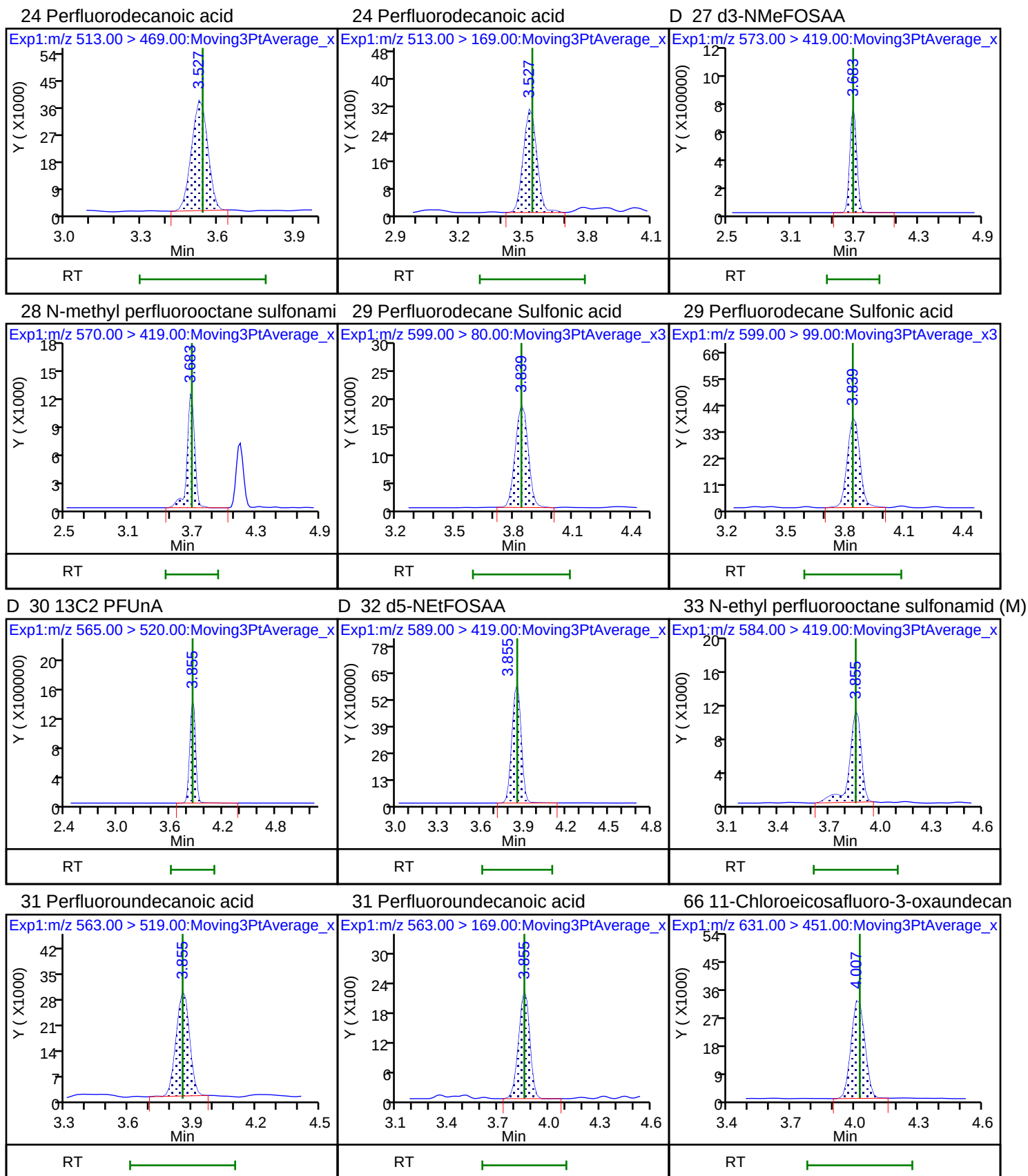
D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid

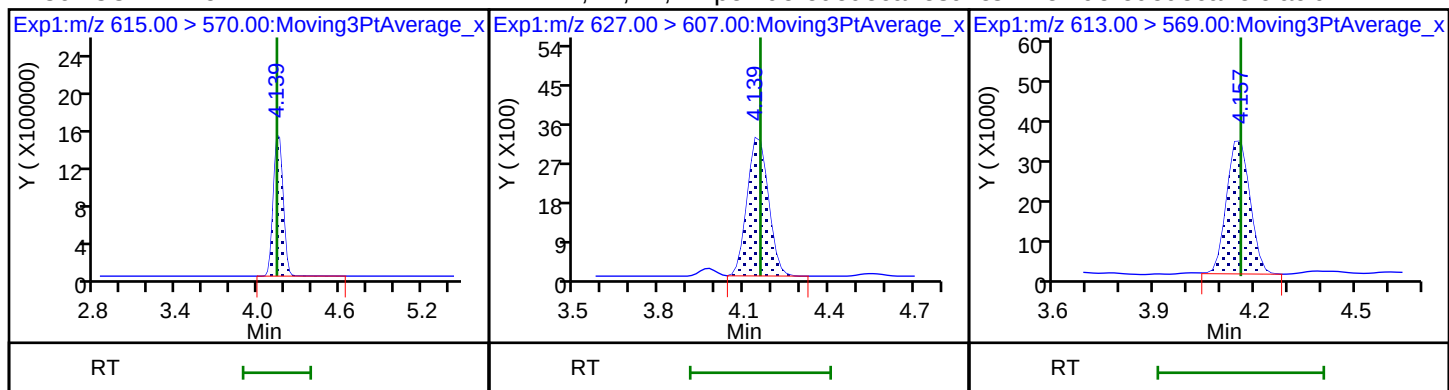






D 36 13C2 PFDaA

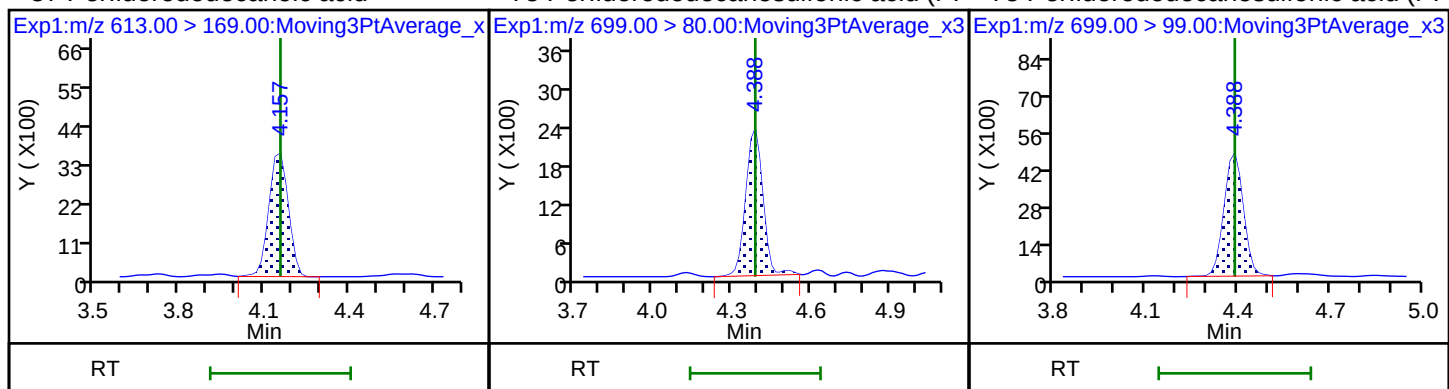
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

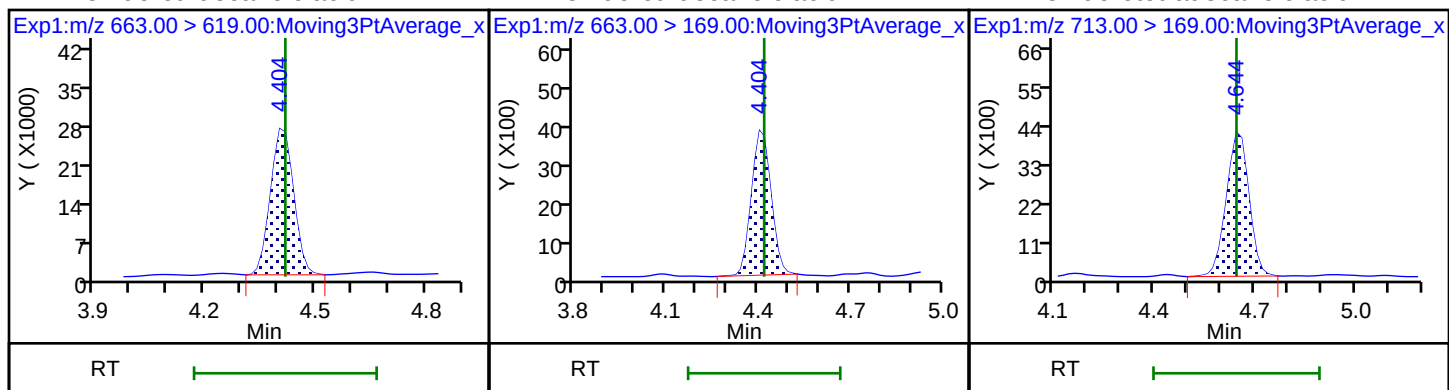
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

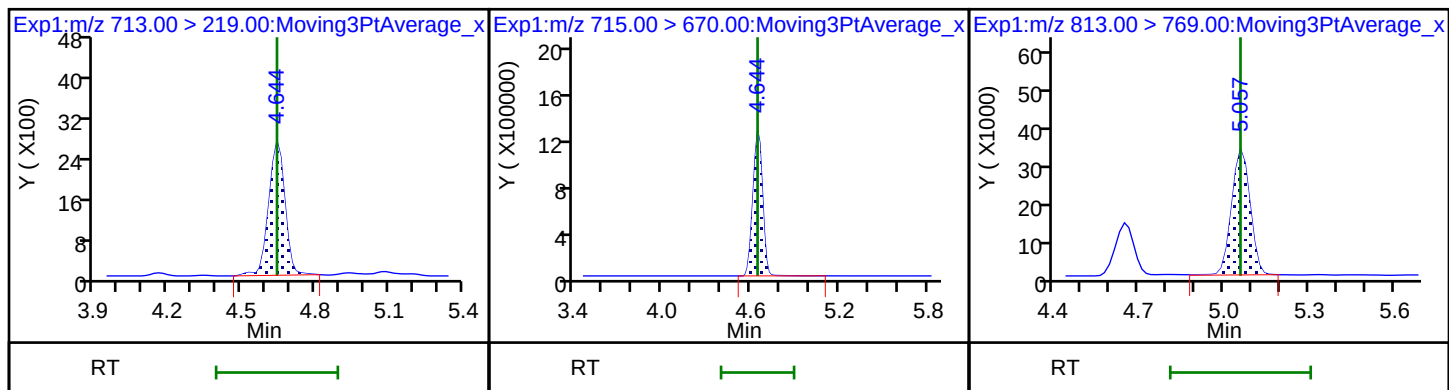
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

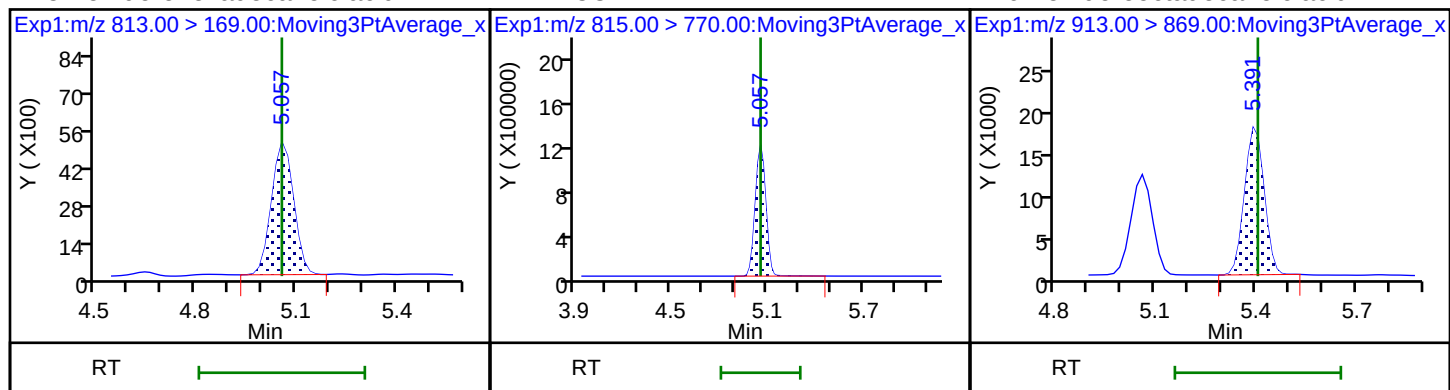
45 Perfluorohexadecanoic acid



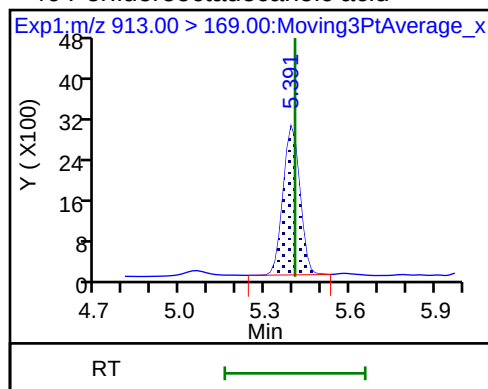
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

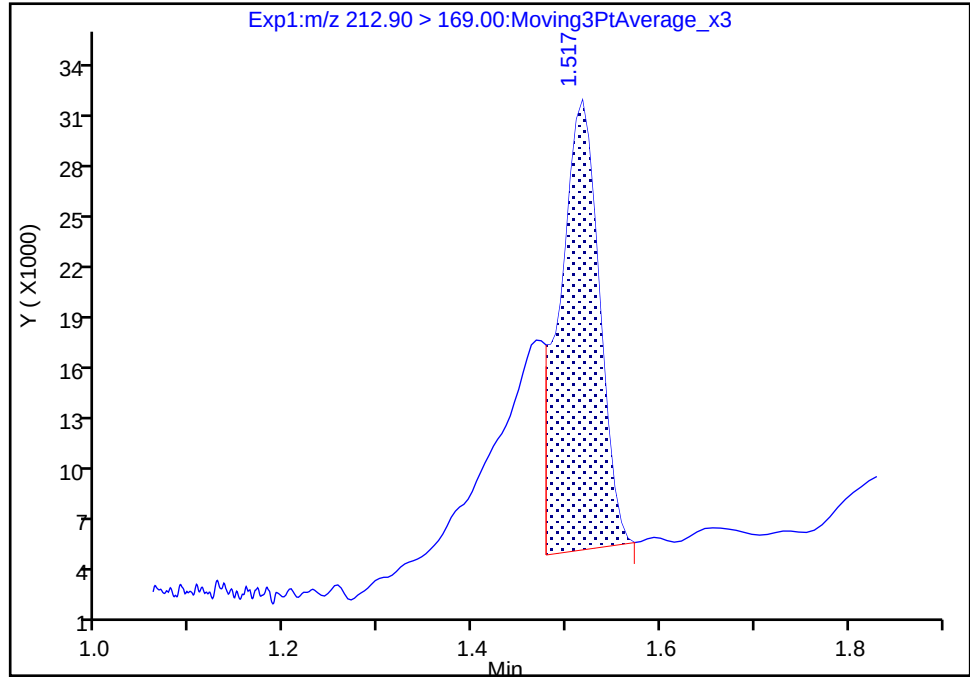
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64985.b\2018.09.29LLAA_005.d
Injection Date: 29-Sep-2018 11:10:43 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

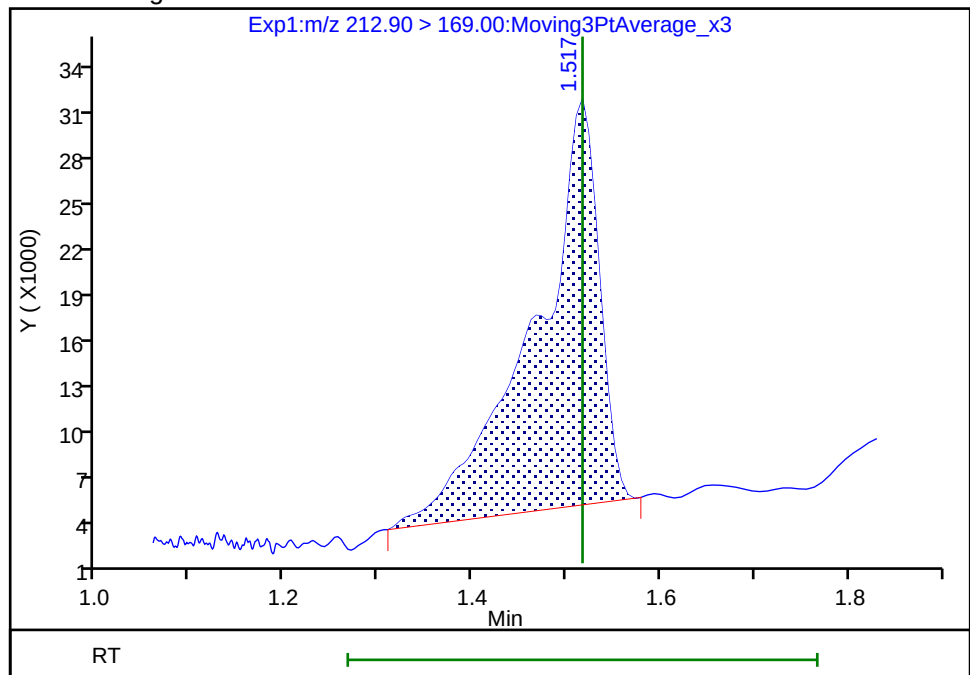
RT: 1.52
Area: 75394
Amount: 0.030209
Amount Units: ng/ml

Processing Integration Results



RT: 1.52
Area: 126111
Amount: 0.050530
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 02-Oct-2018 15:00:12

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64985.b\2018.09.29LLAA_005.d

Injection Date: 29-Sep-2018 11:10:43

Instrument ID: A9

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

Limit Group: LC PFC ICAL

Column:

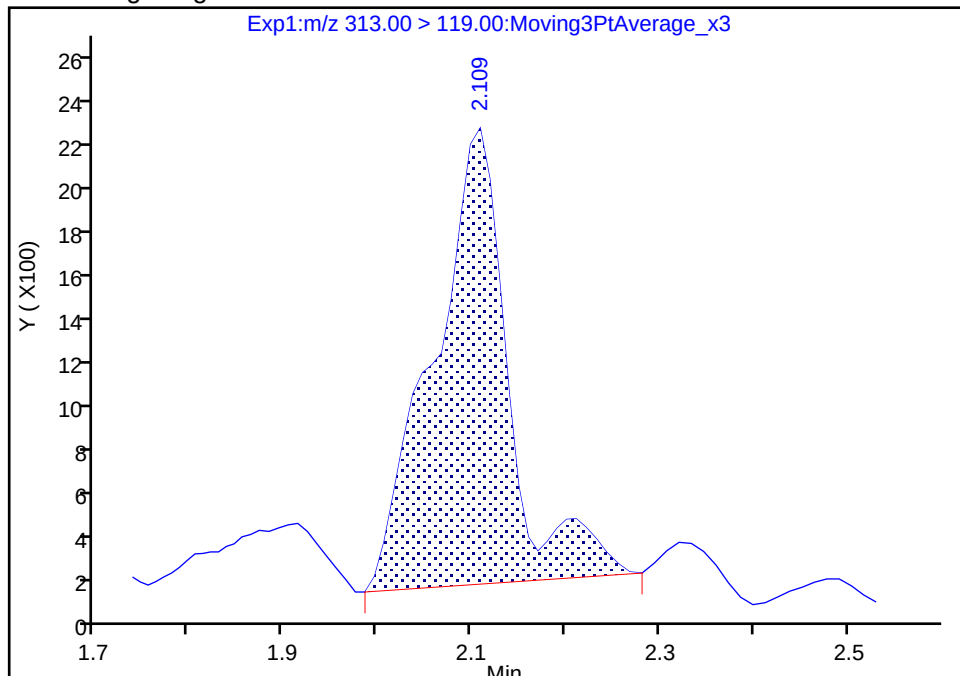
Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

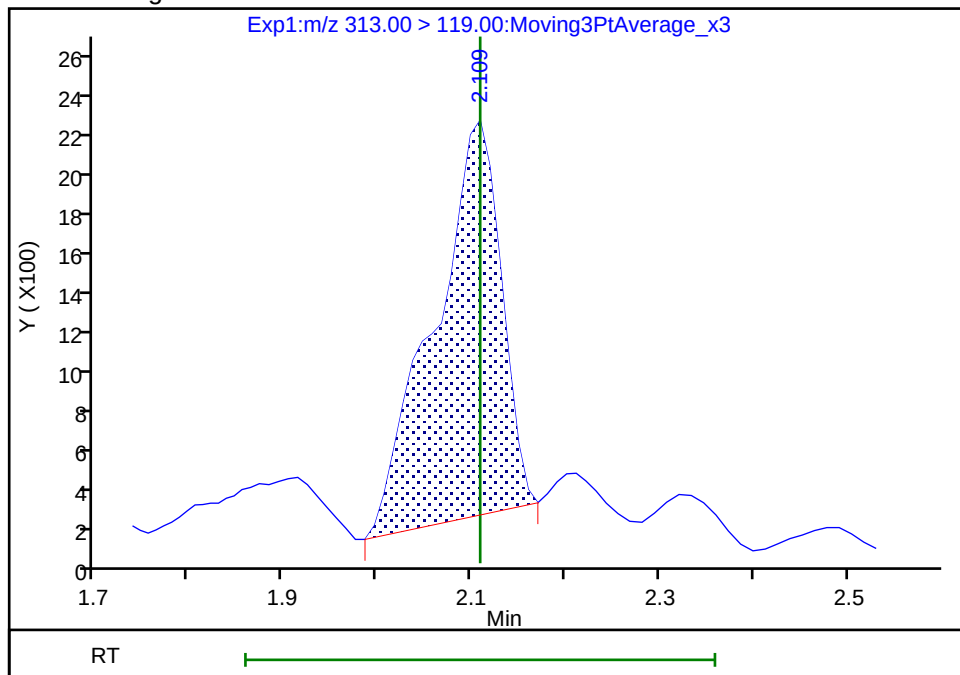
RT: 2.11
Area: 11644
Amount: 0.055120
Amount Units: ng/ml

Processing Integration Results



RT: 2.11
Area: 9917
Amount: 0.055120
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 02-Oct-2018 15:01:22

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

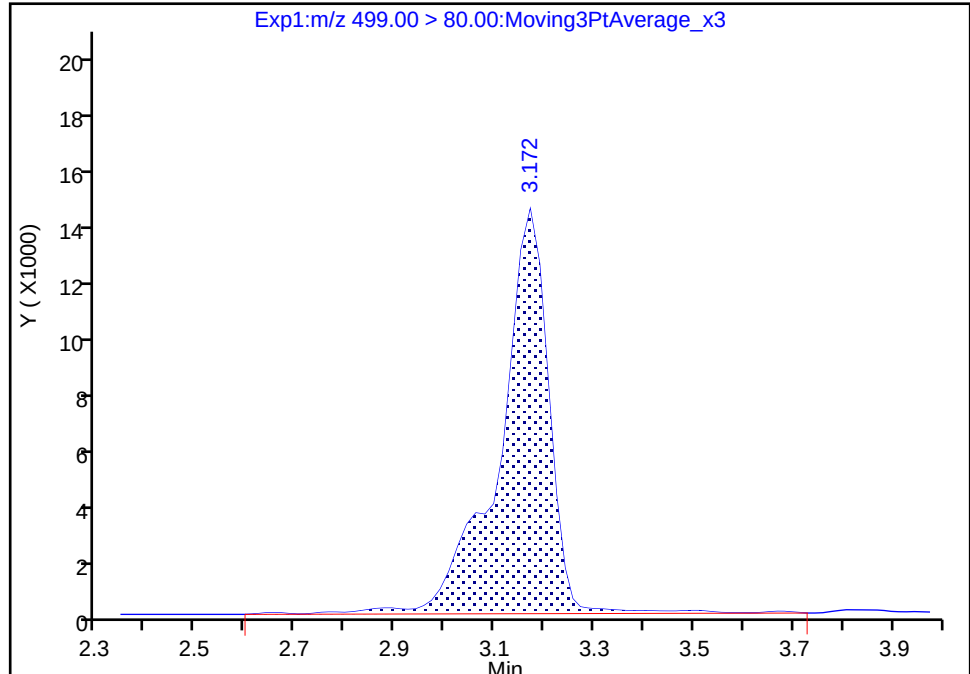
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64985.b\2018.09.29LLAA_005.d
Injection Date: 29-Sep-2018 11:10:43 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

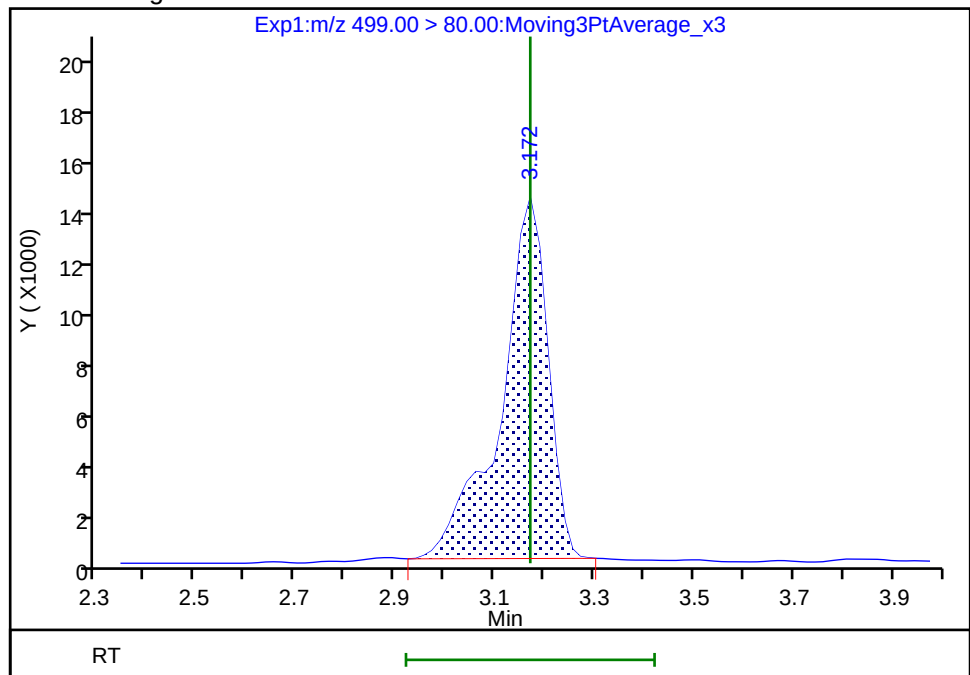
RT: 3.17
Area: 100140
Amount: 0.044188
Amount Units: ng/ml

Processing Integration Results



RT: 3.17
Area: 93189
Amount: 0.041121
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 02-Oct-2018 15:01:40

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

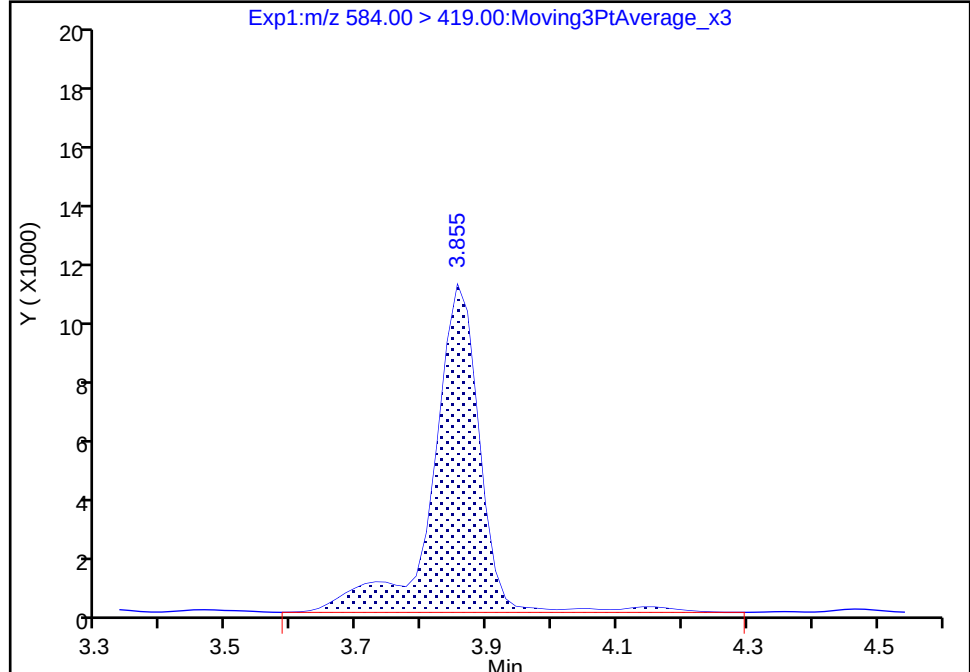
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64985.b\2018.09.29LLAA_005.d
Injection Date: 29-Sep-2018 11:10:43 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

33 N-ethyl perfluorooctane sulfonamidoacetic ac, CAS: 2991-50-6

Signal: 1

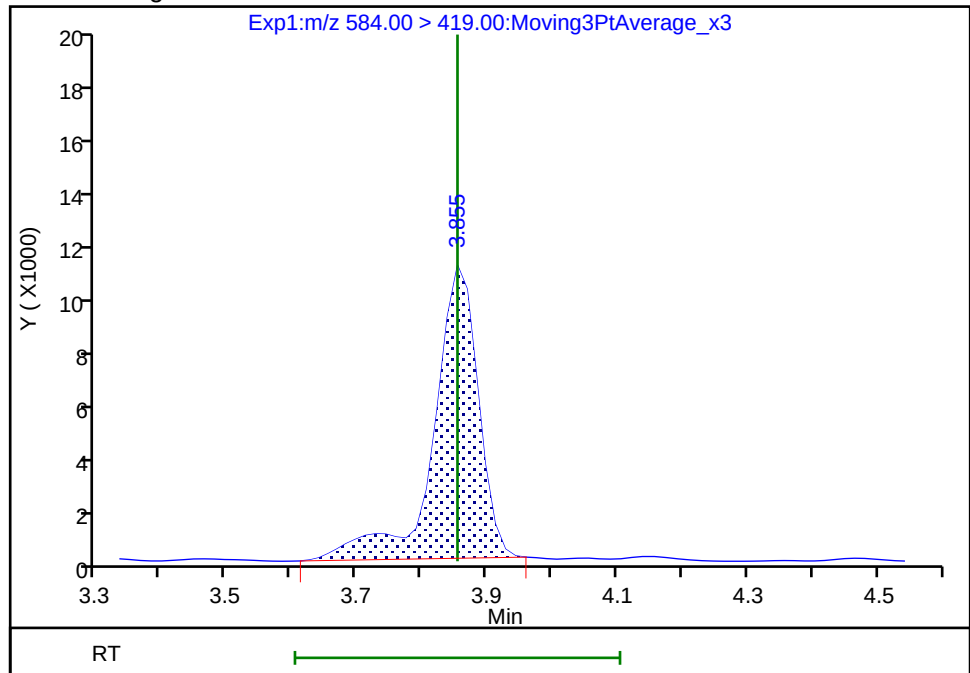
RT: 3.85
Area: 55694
Amount: 0.057133
Amount Units: ng/ml

Processing Integration Results



RT: 3.85
Area: 52174
Amount: 0.053522
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 02-Oct-2018 15:02:01
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 371 of 557

01/11/2019

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCV 320-248608/3 Calibration Date: 09/29/2018 11:18

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.09.29LLAA_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	0.9167	0.9465		1.03	1.00	3.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.012		1.02	1.00	1.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	110.4		0.944	0.884	6.8	50.0
4:2 FTS	AveID	22.60	21.49		0.888	0.934	-4.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.9175		1.02	1.00	2.0	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	47.71		0.925	0.938	-1.4	50.0
HFPO-DA (GenX)	AveID	1.870	1.523		0.814	1.00	-18.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.121		1.06	1.00	5.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.188		0.859	0.910	-5.6	40.0
DONA	AveID	2.645	3.038		1.08	0.942	14.9	50.0
6:2 FTS	AveID	2.182	2.352		1.02	0.948	7.8	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.149		1.10	1.00	9.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.054		0.980	0.952	2.9	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	1.072		1.09	1.00	9.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.073		0.940	0.928	1.3	40.0
F-53B Major	AveID	1.117	1.241		1.04	0.932	11.1	50.0
8:2 FTS	AveID	14.70	13.90		0.906	0.958	-5.5	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6829		0.985	0.960	2.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.190		1.08	1.00	8.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.153		1.05	1.00	5.2	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	0.9739		1.01	1.00	1.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8908		1.00	0.964	4.1	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9481		1.01	1.00	1.5	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.9504		1.05	1.00	5.4	40.0
F-53B Minor	AveID	1.316	1.539		1.10	0.942	17.0	50.0
10:2 FTS	AveID	10.00	8.482		0.818	0.964	-15.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.114		1.11	1.00	11.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0907		0.916	0.968	-5.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7811		0.997	1.00	-0.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1514		0.922	1.00	-7.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9035		0.973	1.00	-2.7	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCV 320-248608/3 Calibration Date: 09/29/2018 11:18
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.09.29LLAA_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	0.6480	0.6091		0.940	1.00	-6.0	50.0
13C4 PFBA	Ave	0.9210	0.9004		2.44	2.50	-2.2	50.0
13C5 PFPeA	Ave	0.8374	0.8782		2.62	2.50	4.9	50.0
13C3 PFBS	Ave	0.0114	0.0115		2.35	2.33	0.9	50.0
M2-4:2 FTS	Ave	0.1043	0.0951		2.13	2.34	-8.8	50.0
13C2 PFHxA	Ave	0.8875	0.9430		2.66	2.50	6.2	50.0
13C3 HFPO-DA	Ave	0.0924	0.1242		3.36	2.50	34.4	50.0
13C4 PFHpA	Ave	1.057	1.075		2.54	2.50	1.8	50.0
18O2 PFHxS	Ave	0.6816	0.6499		2.26	2.37	-4.6	50.0
M2-6:2 FTS	Ave	0.1097	0.0993		2.15	2.38	-9.5	40.0
13C4 PFOA	Ave	1.001	0.9739		2.43	2.50	-2.7	50.0
13C8 PFOA	Ave	3075368	2740028		2.18	2.45	-10.9	50.0
13C4 PFOS	Ave	0.7065	0.7047		2.38	2.39	-0.3	50.0
13C5 PFNA	Ave	0.9108	0.9289		2.55	2.50	2.0	50.0
13C8 PFOS	Ave	540497	445140		1.97	2.39	-17.6	50.0
13C8 FOSA	Ave	0.3770	0.3854		2.56	2.50	2.2	50.0
M2-8:2 FTS	Ave	0.0139	0.0153		2.63	2.40	9.9	40.0
13C2 PFDA	Ave	0.9435	1.010		2.68	2.50	7.0	50.0
d3-NMeFOSAA	Ave	0.4182	0.4092		2.45	2.50	-2.2	50.0
13C2 PFUnA	Ave	0.8011	0.8849		2.76	2.50	10.5	50.0
d5-NEtFOSAA	Ave	0.3276	0.3437		2.62	2.50	4.9	50.0
13C2 PFDoA	Ave	0.9529	0.9893		2.60	2.50	3.8	50.0
13C2 PFTeDA	Ave	0.7508	0.8022		2.67	2.50	6.8	50.0
13C2 PFHxDA	Ave	0.7497	0.8080		2.69	2.50	7.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64985.b\2018.09.29LLAA_006.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 29-Sep-2018 11:18:14 ALS Bottle#: 13 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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20180929-64985.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 02-Oct-2018 15:03:47 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK005

First Level Reviewer: mongkols

Date: 02-Oct-2018 15:03:47

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	1.517	1.517	0.0	0.542	6816393	2.44		97.8	5918	
2 Perfluorobutyric acid										
212.90 > 169.00	1.517	1.517	0.0	1.000	2580714	1.03		103	325	
D 3 13C5-PFPeA										
267.90 > 223.00	1.805	1.814	-0.009	0.645	6648680	2.62		105	10343	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.814	1.814	0.0	1.005	2692345	1.02		102	72.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.847	1.855	-0.008	0.660	80992	2.35		101	695	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.855	1.855	0.0	1.005	3398369	0.9442		107	1575	
298.90 > 99.00	1.855	1.855	0.0	1.005	1169818		2.91(1.35-4.05)		1378	
D 60 M2-4:2FTS										
329.00 > 81.00	2.068	2.068	0.0	0.739	672756	2.13		91.2	984	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.068	2.068	0.0	1.120	699343	0.8884		95.1	3015	
D 7 13C2 PFHxA										
315.00 > 270.00	2.109	2.109	0.0	0.754	7138896	2.66		106	9904	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.109	2.109	0.0	1.000	2619903	1.02		102	151	
313.00 > 119.00	2.109	2.109	0.0	1.000	180740		14.50(6.96-20.87)		134	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.140	2.140	0.0	1.158	1558992	0.9246		98.6	2292	
349.00 > 99.00	2.140	2.140	0.0	1.158	757943		2.06(1.15-3.45)		1463	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.211	2.211	0.0	0.790	940276	3.36		134	1544	

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	2.211	2.211	0.0	1.000	572676	0.8143		81.4	374	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.439	2.439	0.0	1.000	3650756	1.06		106	457	
363.00 > 169.00	2.439	2.439	0.0	1.000	779647		4.68(2.17-6.52)		783	
D 9 13C4-PFHpA										
367.00 > 322.00	2.439	2.452	-0.013	0.872	8140198	2.54		102	11826	
D 11 18O2 PFHxS										
403.00 > 84.00	2.465	2.465	0.0	0.881	4654656	2.26		95.4	5727	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.465	2.465	0.0	1.000	2128533	0.8592		94.4	1905	
399.00 > 99.00	2.465	2.465	0.0	1.000	606733		3.51(1.90-5.70)		807	
76 DONA										
377.00 > 251.00	2.491	2.491	0.0	0.786	6107020	1.08		115	9219	
377.00 > 85.00	2.491	2.491	0.0	0.786	2506557		2.44(1.13-3.39)		1582	
D 12 M2-6:2FTS										
429.00 > 81.00	2.782	2.782	0.0	0.994	713986	2.15		90.5	1116	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.782	0.0	1.000	670365	1.02		108	216	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.798	0.0		6706219	2.18		89.1	7697	
D 14 13C4 PFOA										
417.00 > 372.00	2.798	2.798	0.0	1.000	7372858	2.43		97.3	7161	
* 62 13C2-PFOA										
415.00 > 370.00	2.798	2.798	0.0		7570758	2.50			7770	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.798	0.0	1.000	3390789	1.10		110	206	
413.00 > 169.00	2.798	2.798	0.0	1.000	1173692		2.89(1.36-4.08)		1624	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.814	0.0	0.887	2140942	0.9800		103	1975	
449.00 > 99.00	2.814	2.814	0.0	0.887	529754		4.04(1.84-5.53)		1377	
D 72 13C8 PFOS										
507.00 > 99.00	3.171	3.171	0.0		1063884	1.97		82.4	1856	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.171	3.171	0.0	1.000	2124663	0.9398		101	1603	
499.00 > 99.00	3.171	3.171	0.0	1.000	483689		4.39(2.04-6.12)		1115	
20 Perfluorononanoic acid										
463.00 > 419.00	3.171	3.171	0.0	1.000	3015485	1.09		109	373	
463.00 > 169.00	3.171	3.171	0.0	1.000	518464		5.82(2.68-8.03)		1130	
D 19 13C5 PFNA										
468.00 > 423.00	3.171	3.190	-0.019	1.133	7032673	2.55		102	5994	
D 18 13C4 PFOS										
503.00 > 80.00	3.171	3.190	-0.019	1.133	5100536	2.38		99.7	3977	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.383	3.383	0.0	1.067	2467748	1.04		111	2086	
D 21 13C8 FOSA										
506.00 > 78.00	3.527	3.527	0.0	1.261	2917627	2.56		102	7138	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.527	0.0	1.261	110779	2.63		110	631	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.527	3.527	0.0	1.000	3722865	1.08		108	2773	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.527	0.0	1.000	615912	0.9057		94.5	1931	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.527	0.0	1.112	1399016	0.9848		103	2162	
549.00 > 99.00	3.527	3.527	0.0	1.112	247545		5.65(3.02-9.05)		1187	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.266	7644019	2.68		107	4514	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.542	0.0	1.000	3525192	1.05		105	675	
513.00 > 169.00	3.542	3.542	0.0	1.000	239495		14.72(7.12-21.35)		463	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.683	3.682	0.001	1.316	3098157	2.45		97.8	3691	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.697	0.0	1.004	1206877	1.01		101	401	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.839	3.839	0.0	1.210	1832593	1.00		104	2326	
599.00 > 99.00	3.839	3.839	0.0	1.210	388836		4.71(2.14-6.43)		1716	
D 30 13C2 PFUnA										
565.00 > 520.00	3.854	3.854	0.0	1.378	6699543	2.76		110	7265	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.854	3.854	0.0	1.378	2601816	2.62		105	3030	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.854	3.854	0.0	1.000	986717	1.01		101	1616	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.854	3.854	0.0	1.000	2546780	1.05		105	680	
563.00 > 169.00	3.854	3.854	0.0	1.000	216757		11.75(5.24-15.72)		847	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.023	0.0	1.268	3094198	1.10		117	3358	
35 MeFOSA										
512.00 > 169.00	4.023	4.023	0.0		653212	NC			627	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.139	0.018	1.486	7490044	2.60		104	7190	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.157	0.0	1.179	378190	0.8179		84.8	839	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.157	0.0	1.000	3336821	1.11		111	858	
613.00 > 169.00	4.157	4.157	0.0	1.000	333027		10.02(4.68-14.05)		702	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.212	4.212	0.0		634619	NC			367	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.388	0.0	1.384	187277	0.9163		94.7	489	
699.00 > 99.00	4.388	4.388	0.0	1.384	363594		0.52(0.28-0.83)		1478	

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	4.419	4.419	0.0	1.063	2340282	1.00		99.7	1069	
663.00 > 169.00	4.419	4.419	0.0	1.063	402128		5.82(3.09-9.27)		940	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.644	0.0	1.000	367740	0.9216		92.2	1187	
713.00 > 219.00	4.644	4.644	0.0	1.000	264873		1.39(0.70-2.09)		793	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.644	4.644	0.0	1.660	6072940	2.67		107	9831	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.057	0.0	1.000	2210781	0.9728		97.3	613	
813.00 > 169.00	5.057	5.057	0.0	1.000	379839		5.82(2.77-8.32)		1023	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.057	5.057	0.0	1.807	6117511	2.69		108	7806	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.406	5.406	0.0	1.069	1490573	0.9400		94.0	510	
913.00 > 169.00	5.391	5.406	-0.015	1.066	265488		5.61(2.55-7.64)		1127	

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\20180929-64985.b\2018.09.29LLAA_006.d

Injection Date: 29-Sep-2018 11:18:14

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

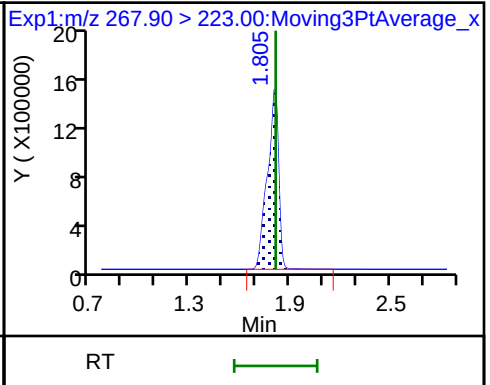
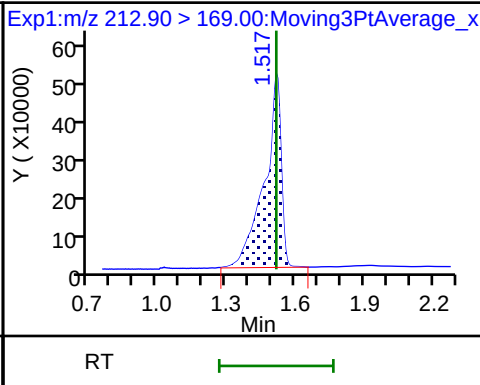
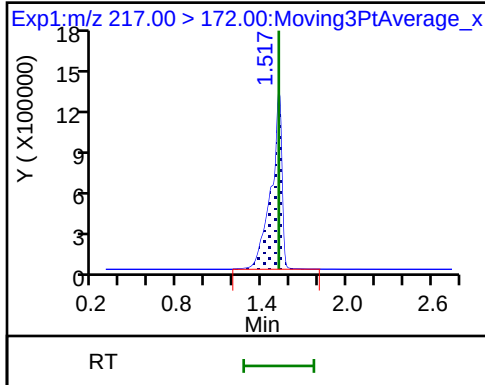
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

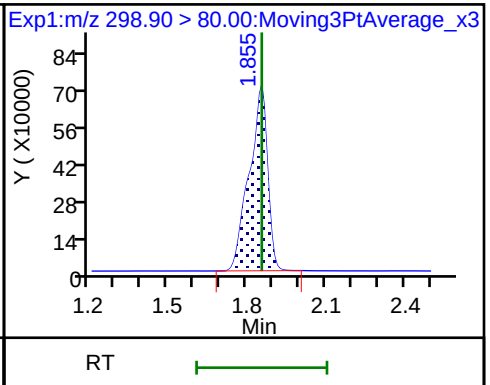
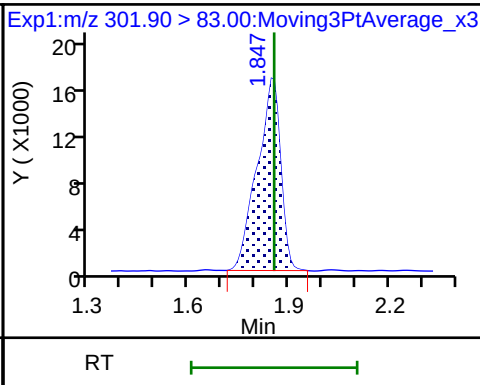
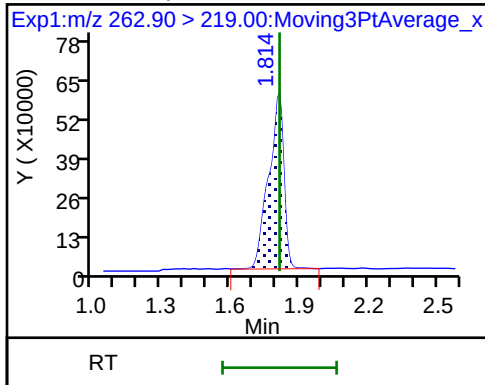
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

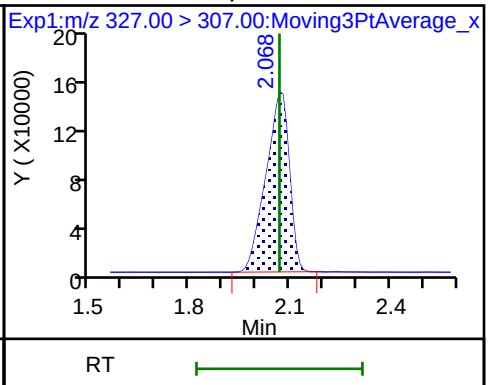
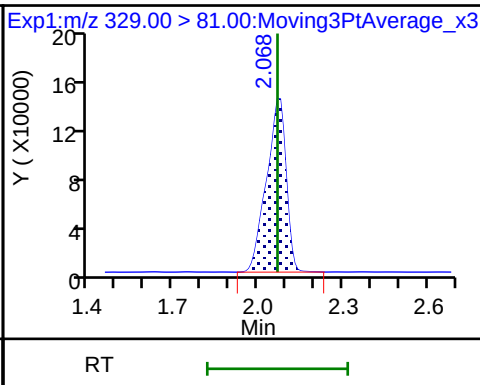
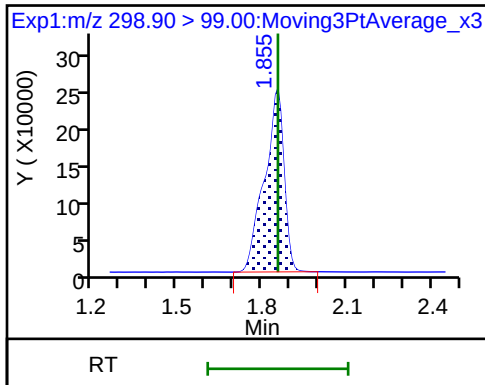
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

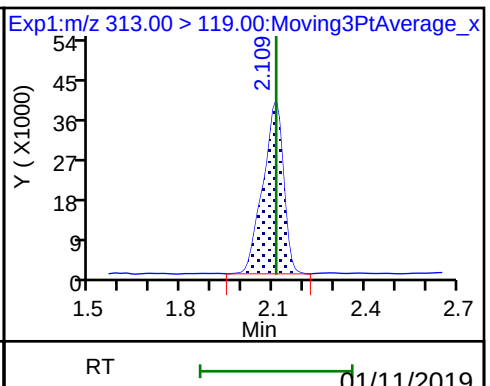
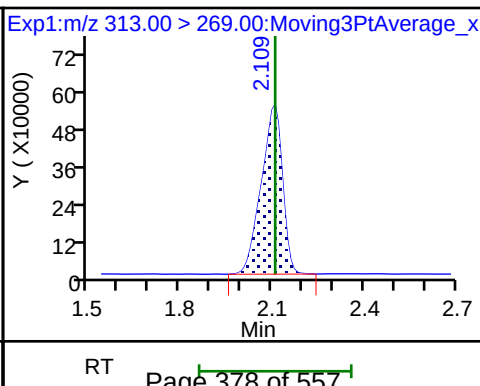
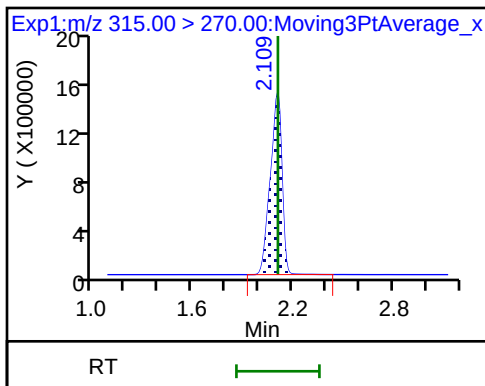
61 1H,1H,2H,2H-perfluorohexanesulfoni

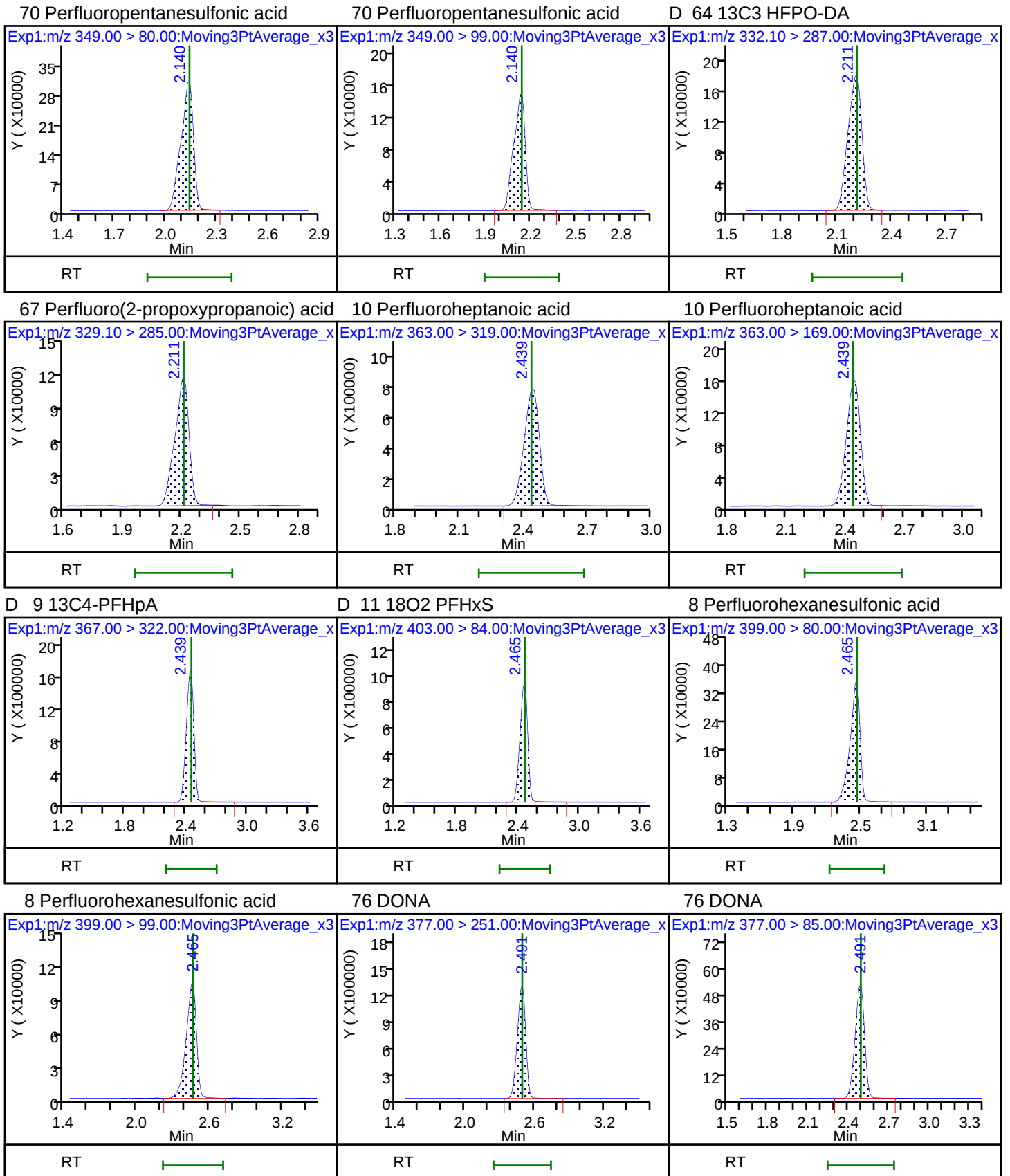


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

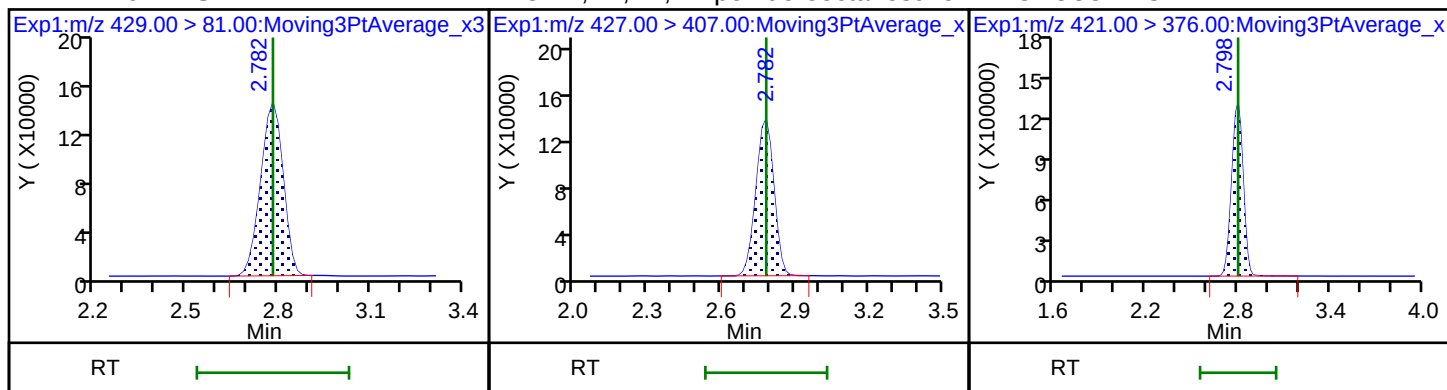
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

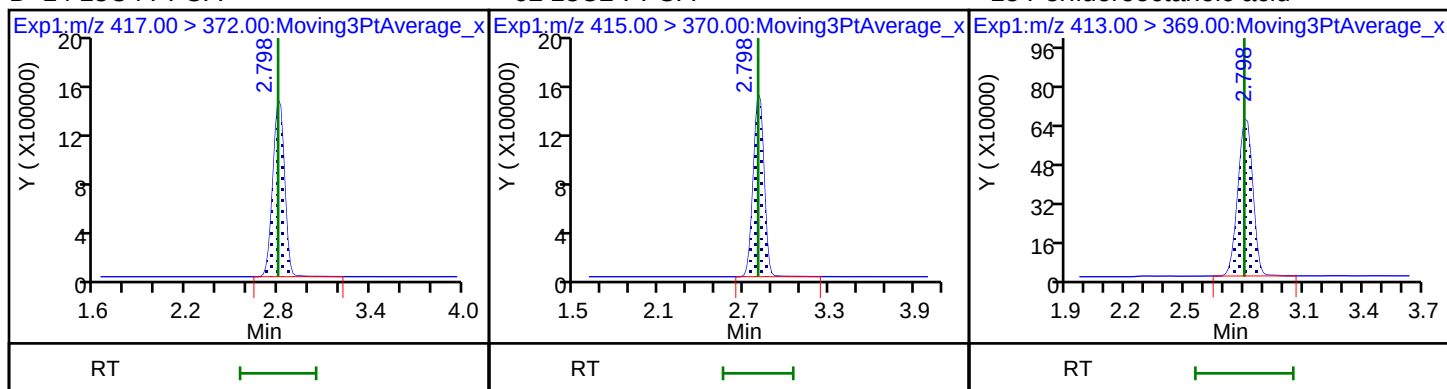
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D 14 13C4 PFOA

* 62 13C2-PFOA

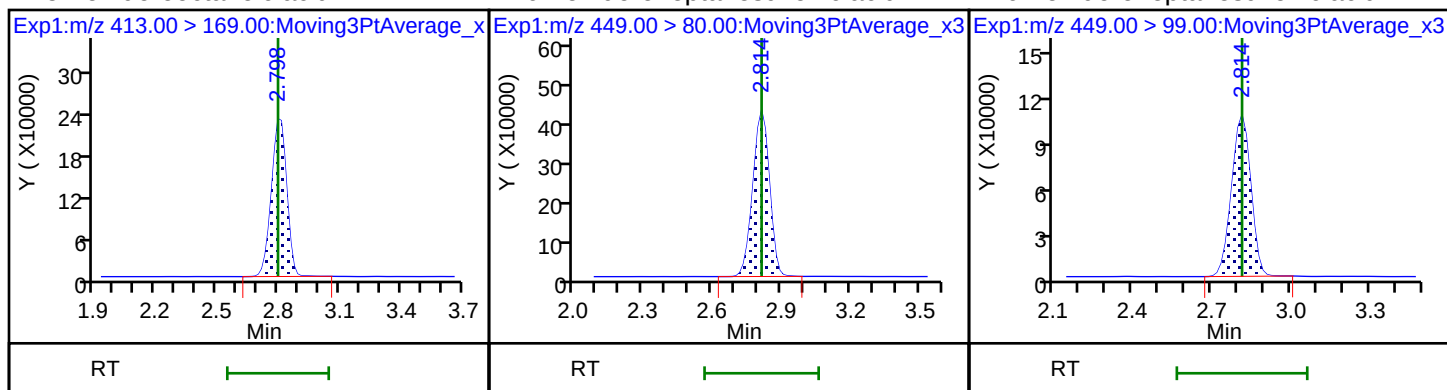
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

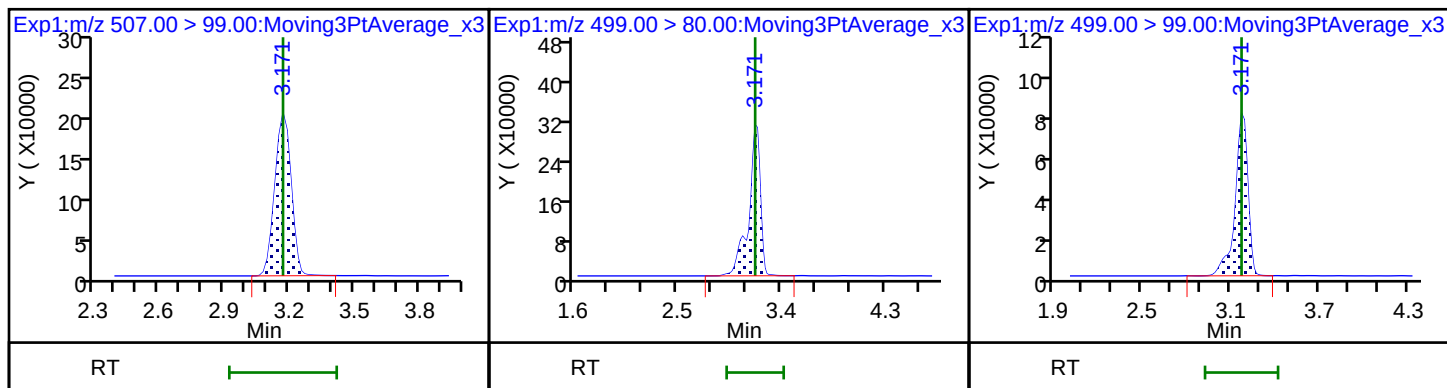
16 Perfluoroheptanesulfonic acid

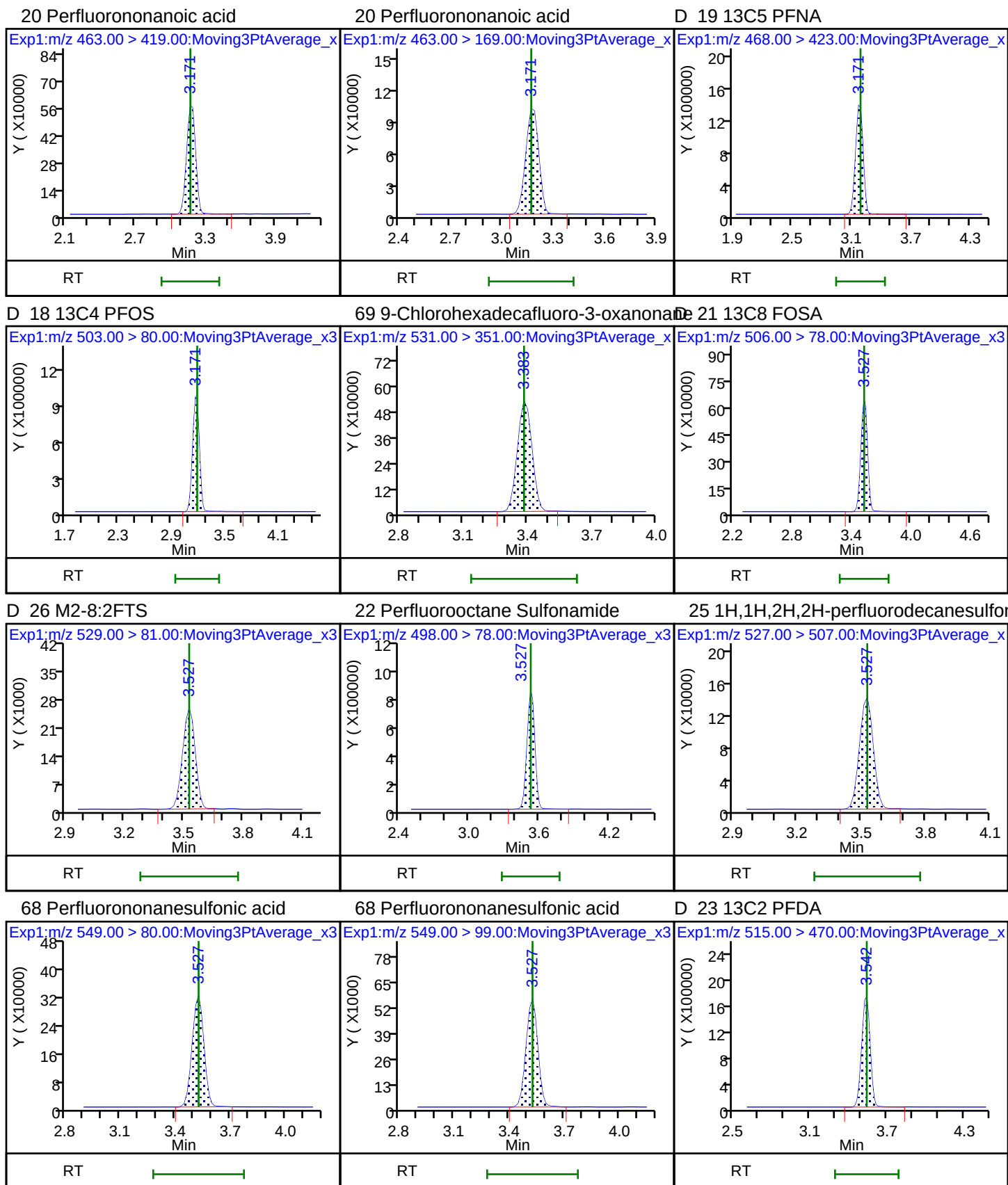


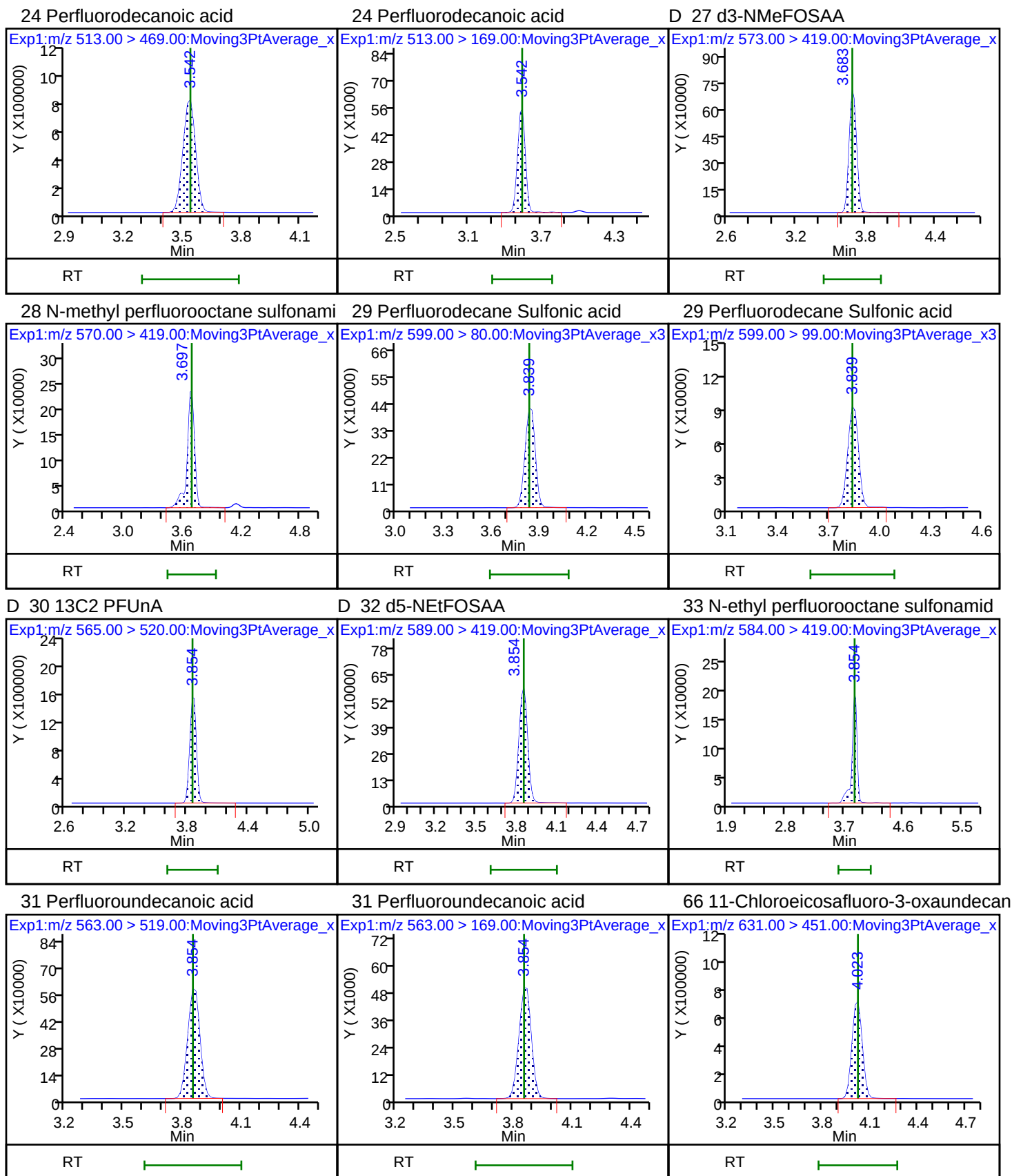
D 72 13C8 PFOS

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

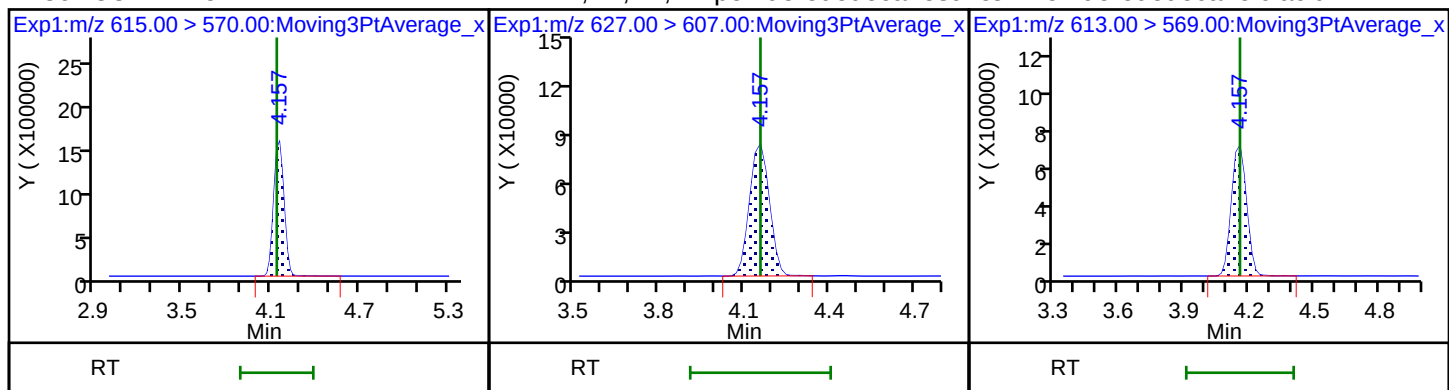






D 36 13C2 PFDaA

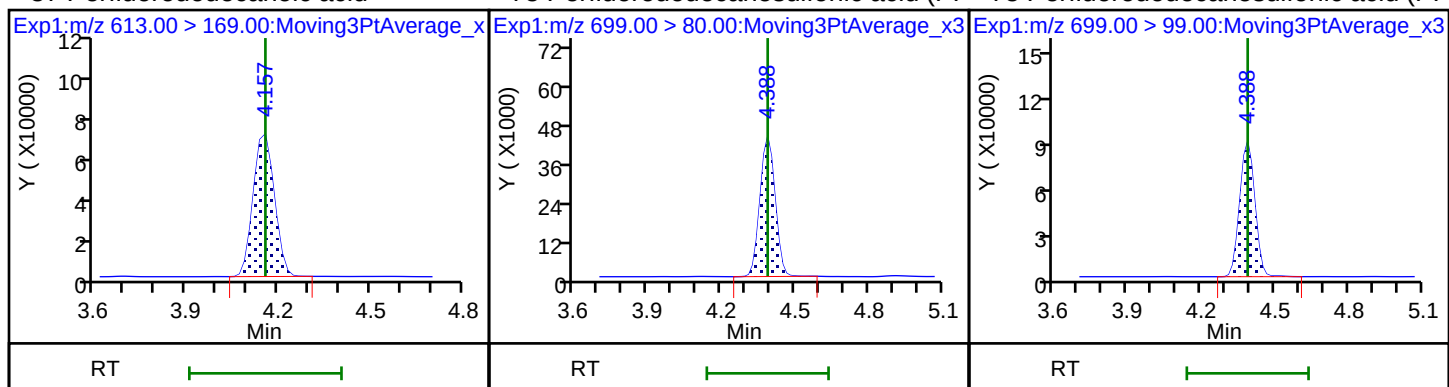
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

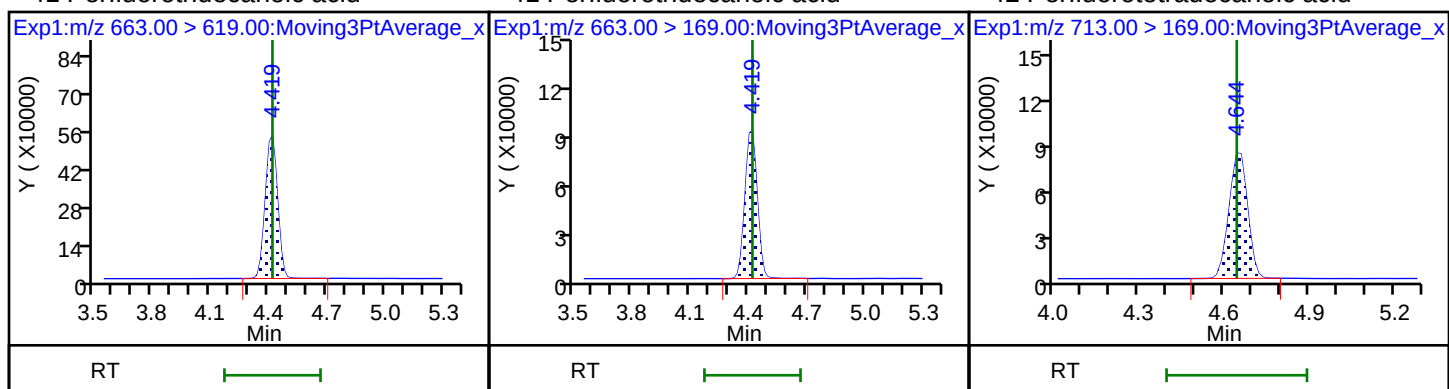
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

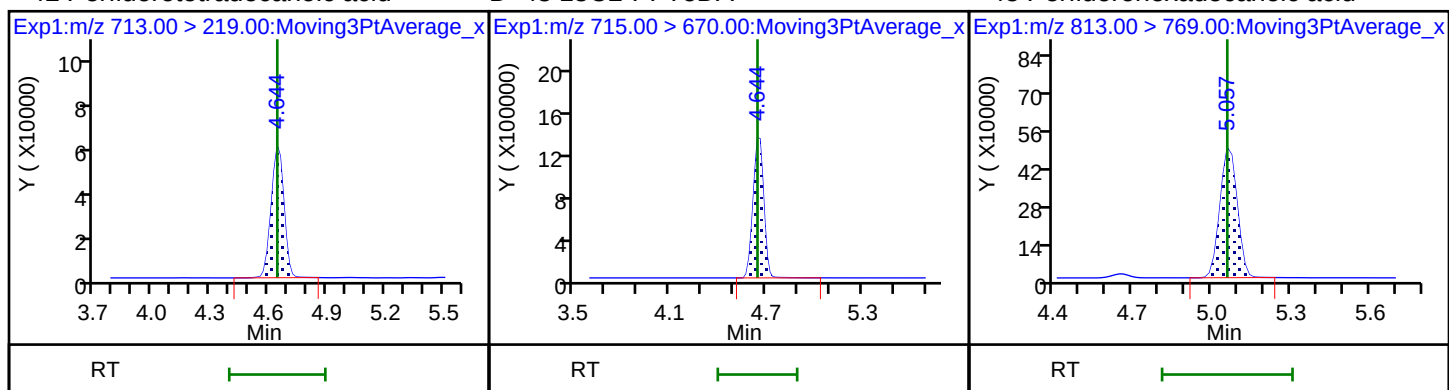
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

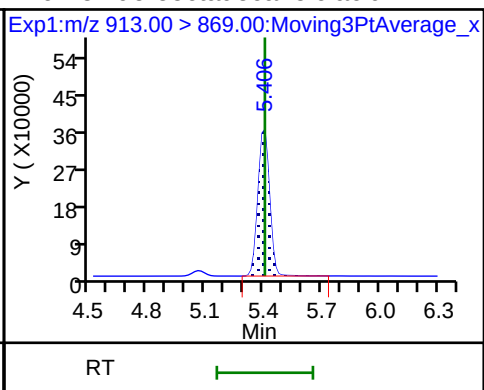
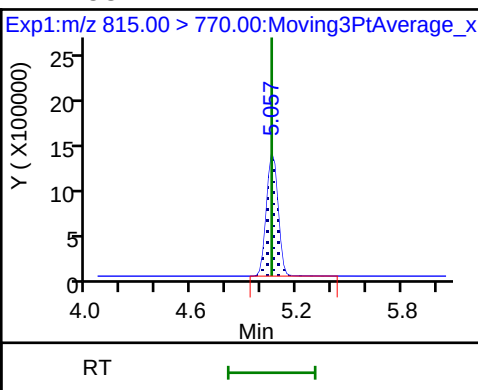
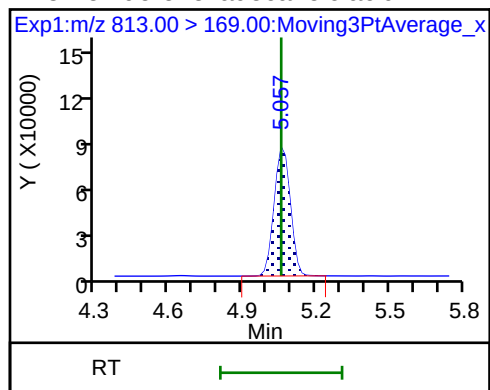
45 Perfluorohexadecanoic acid



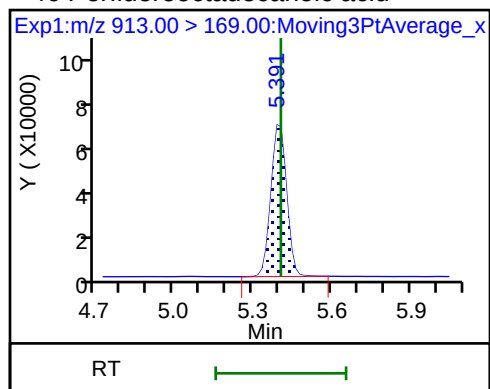
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCV 320-248611/1 Calibration Date: 09/29/2018 12:25

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.09.29LLAA_015.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9167	0.9192		2.51	2.50	0.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.013		2.54	2.50	1.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	110.2		2.36	2.21	6.7	50.0
4:2 FTS	AveID	22.60	12.99		1.34	2.34	-42.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.9093		2.53	2.50	1.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	51.60		2.50	2.35	6.6	50.0
HFPO-DA (GenX)	AveID	1.870	1.618		2.16	2.50	-13.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.098		2.58	2.50	3.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.244		2.25	2.28	-1.2	40.0
DONA	AveID	2.645	2.502		2.23	2.36	-5.4	50.0
6:2 FTS	AveID	2.182	2.661		2.89	2.37	22.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.057		2.46	2.38	3.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.051		2.51	2.50	0.2	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	0.9921		2.53	2.50	1.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.103		2.42	2.32	4.2	40.0
F-53B Major	AveID	1.117	1.114		2.32	2.33	-0.2	50.0
8:2 FTS	AveID	14.70	15.16		2.47	2.40	3.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.181		2.69	2.50	7.7	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6989		2.52	2.40	5.0	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.013		2.55	2.50	2.2	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	0.8952		2.33	2.50	-6.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8890		2.50	2.41	3.9	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9609		2.57	2.50	2.9	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.8246		2.29	2.50	-8.6	40.0
F-53B Minor	AveID	1.316	1.381		2.47	2.36	5.0	50.0
10:2 FTS	AveID	10.00	9.561		2.30	2.41	-4.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.064		2.66	2.50	6.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0794		2.01	2.42	-17.1	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7935		2.53	2.50	1.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1535		2.34	2.50	-6.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8821		2.41	2.50	-3.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCV 320-248611/1 Calibration Date: 09/29/2018 12:25
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.09.29LLAA_015.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	0.6480	0.6651		2.57	2.50	2.6	50.0
13C4 PFBA	Ave	0.9210	0.8852		2.40	2.50	-3.9	50.0
13C5 PFPeA	Ave	0.8374	0.8043		2.40	2.50	-3.9	50.0
13C3 PFBS	Ave	0.0114	0.0107		2.19	2.33	-6.0	50.0
M2-4:2 FTS	Ave	0.1043	0.0592		1.33	2.34	-43.2	50.0
13C2 PFHxA	Ave	0.8875	0.8196		2.31	2.50	-7.7	50.0
13C3 HFPO-DA	Ave	0.0924	0.1114		3.02	2.50	20.6	50.0
13C4 PFHpA	Ave	1.057	1.014		2.40	2.50	-4.1	50.0
18O2 PFHxS	Ave	0.6816	0.6785		2.35	2.37	-0.5	50.0
M2-6:2 FTS	Ave	0.1097	0.0810		1.75	2.38	-26.1	40.0
13C8 PFOA	Ave	3075368	2461564		1.96	2.45	-20.0	50.0
13C4 PFOA	Ave	1.001	0.9833		2.46	2.50	-1.8	50.0
13C8 PFOS	Ave	540497	443617		1.96	2.39	-17.9	50.0
13C4 PFOS	Ave	0.7065	0.7109		2.40	2.39	0.6	50.0
13C5 PFNA	Ave	0.9108	0.8494		2.33	2.50	-6.7	50.0
M2-8:2 FTS	Ave	0.0139	0.0121		2.08	2.40	-13.0	40.0
13C2 PFDA	Ave	0.9435	0.8392		2.22	2.50	-11.1	50.0
13C8 FOSA	Ave	0.3770	0.4353		2.89	2.50	15.4	50.0
d3-NMeFOSAA	Ave	0.4182	0.2411		1.44	2.50	-42.3	50.0
13C2 PFUnA	Ave	0.8011	0.7343		2.29	2.50	-8.3	50.0
d5-NEtFOSAA	Ave	0.3276	0.1892		1.44	2.50	-42.2	50.0
13C2 PFDoA	Ave	0.9529	0.7460		1.96	2.50	-21.7	50.0
13C2 PFTeDA	Ave	0.7508	0.5220		1.74	2.50	-30.5	50.0
13C2 PFHxDA	Ave	0.7497	0.4573		1.52	2.50	-39.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_015.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 29-Sep-2018 12:25:45 ALS Bottle#: 14 Worklist Smp#: 1
 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\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 11:54:45 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: barnettj

Date: 03-Oct-2018 11:19:17

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										M
212.90 > 169.00	1.523	1.523	0.0	1.000	6371657	2.51		100	712	M
D 1 13C4 PFBA										
217.00 > 172.00	1.523	1.523	0.0	0.541	6932079	2.40		96.1	8477	
D 3 13C5-PFPeA										
267.90 > 223.00	1.814	1.814	0.0	0.645	6298193	2.40		96.1	9007	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.814	1.814	0.0	1.000	6382194	2.54		102	178	
D 47 13C3-PFBS										
301.90 > 83.00	1.856	1.855	0.001	0.659	78077	2.19		94.0	563	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.856	1.856	0.0	1.000	8179320	2.36		107	7108	
298.90 > 99.00	1.856	1.856	0.0	1.000	2883374		2.84(1.35-4.05)		3122	
D 60 M2-4:2FTS										
329.00 > 81.00	2.079	2.078	0.001	0.739	433090	1.33		56.8	793	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.079	2.079	0.0	1.120	1018380	1.34		57.5	2171	
D 7 13C2 PFHxA										
315.00 > 270.00	2.119	2.119	0.0	0.753	6417770	2.31		92.3	9952	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.119	2.119	0.0	1.000	5835514	2.53		101	391	
313.00 > 119.00	2.119	2.119	0.0	1.000	438721		13.30(6.96-20.87)		305	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.140	2.140	0.0	1.153	4063185	2.50		107	4363	
349.00 > 99.00	2.140	2.140	0.0	1.153	1934860		2.10(1.15-3.45)		2260	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.222	2.211	0.011	0.789	872673	3.02		121	3322	

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	2.211	2.211	0.0	0.995	1412280	2.16		86.6	1026	
D 9 13C4-PFHpA										
367.00 > 322.00	2.452	2.452	0.0	0.871	7936486	2.40		95.9	11953	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.452	2.452	0.0	1.000	8713626	2.58		103	1276	
363.00 > 169.00	2.452	2.452	0.0	1.000	1886417		4.62(2.17-6.52)		1894	
D 11 18O2 PFHxS										
403.00 > 84.00	2.465	2.465	0.0	0.876	5026242	2.35		99.5	9601	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.465	2.465	0.0	1.000	6013253	2.25		98.8	3987	
399.00 > 99.00	2.465	2.465	0.0	1.000	1631286		3.69(1.90-5.70)		1296	
76 DONA										
377.00 > 251.00	2.491	2.491	0.0	0.781	13119388	2.23		94.6	11827	
377.00 > 85.00	2.491	2.491	0.0	0.781	5970202		2.20(1.13-3.39)		2891	
D 12 M2-6:2FTS										
429.00 > 81.00	2.782	2.782	0.0	0.989	602650	1.75		73.9	860	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.782	0.0	1.000	1600170	2.89		122	1343	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.798	0.0		6024679	1.96		80.0	6464	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	7700276	2.46		98.2	10671	
* 62 13C2-PFOA										
415.00 > 370.00	2.814	2.814	0.0		7830799	2.50			7463	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.814	2.814	0.0	1.000	8102783	2.51		100	1259	
413.00 > 169.00	2.814	2.814	0.0	1.000	2818214		2.88(1.36-4.08)		2976	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.814	0.0	0.882	5603418	2.46		103	3388	
449.00 > 99.00	2.814	2.814	0.0	0.882	1285954		4.36(1.84-5.53)		2488	
D 72 13C8 PFOS										
507.00 > 99.00	3.172	3.171	0.001		1060245	1.96		82.1	1935	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5321786	2.40		101	4462	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	6651535	2.33		93.3	5337	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.190	0.0	1.000	6599130	2.53		101	794	
463.00 > 169.00	3.190	3.190	0.0	1.000	1185400		5.57(2.68-8.03)		2428	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.190	0.0	1.000	5699685	2.42		104	2830	
499.00 > 99.00	3.190	3.190	0.0	1.000	1243890		4.58(2.04-6.12)		2035	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.400	3.400	0.0	1.066	5782136	2.32		99.8	2272	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3408394	2.89		115	3236	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.527	0.0	1.253	90765	2.08		87.0	416	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.527	0.0	1.000	1376044	2.47		103	3946	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.259	6571473	2.22		88.9	6711	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.542	3.542	0.0	1.110	3735119	2.52		105	4063	
549.00 > 99.00	3.542	3.542	0.0	1.110	615788		6.07(3.02-9.05)		1546	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.542	3.542	0.0	1.000	10269151	2.55		102	6752	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.542	0.0	1.000	7758158	2.69		108	2607	
513.00 > 169.00	3.542	3.542	0.0	1.000	510586		15.19(7.12-21.35)		473	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	1888353	1.44		57.7	383	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.697	0.0	1.000	1690395	2.33		93.3	805	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.854	0.015	1.375	1481666	1.44		57.8	1768	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.855	3.855	0.0	1.208	4770588	2.50		104	2460	
599.00 > 99.00	3.855	3.855	0.0	1.208	1002162		4.76(2.14-6.43)		1786	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.869	0.0	1.375	5750473	2.29		91.7	8328	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.869	0.0	1.000	1423751	2.57		103	3096	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.869	0.0	1.000	4741822	2.29		91.4	1160	
563.00 > 169.00	3.869	3.869	0.0	1.000	459435		10.32(5.24-15.72)		2101	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.023	0.0	1.261	7242139	2.47		105	3956	
35 MeFOSA										
512.00 > 169.00	4.040	4.040	0.0		1513590	NC			1118	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.157	0.0	1.477	5841785	1.96		78.3	8324	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.157	0.0	1.179	873194	2.30		95.6	1591	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.157	0.0	1.000	6213873	2.66		106	1798	
613.00 > 169.00	4.157	4.157	0.0	1.000	632211		9.83(4.68-14.05)		1584	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.212	4.212	0.0		1516372	NC			621	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.388	0.0	1.376	428025	2.01		82.9	1061	
699.00 > 99.00	4.388	4.388	0.0	1.376	813748		0.53(0.28-0.83)		2033	

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	4.419	4.419	0.0	1.063	4635527	2.53		101	2298	
663.00 > 169.00	4.419	4.419	0.0	1.063	686177		6.76(3.09-9.27)		1367	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.660	0.0	1.656	4087917	1.74		69.5	11590	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.660	0.0	1.000	627361	2.34		93.4	1564	
713.00 > 219.00	4.660	4.660	0.0	1.000	465331		1.35(0.70-2.09)		1348	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.058	5.057	0.001	1.797	3581244	1.52		61.0	6215	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.058	5.058	0.0	1.000	3159079	2.41		96.4	324	
813.00 > 169.00	5.058	5.058	0.0	1.000	563625		5.60(2.77-8.32)		1288	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.392	5.392	0.0	1.066	2381938	2.57		103	821	
913.00 > 169.00	5.392	5.392	0.0	1.066	431572		5.52(2.55-7.64)		1860	

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\A9\20180929-64986.b\2018.09.29LLAA_015.d

Injection Date: 29-Sep-2018 12:25:45

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 1

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

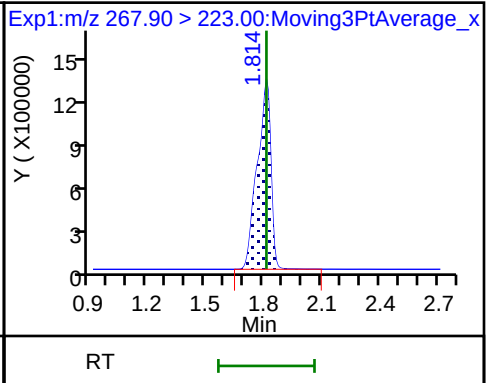
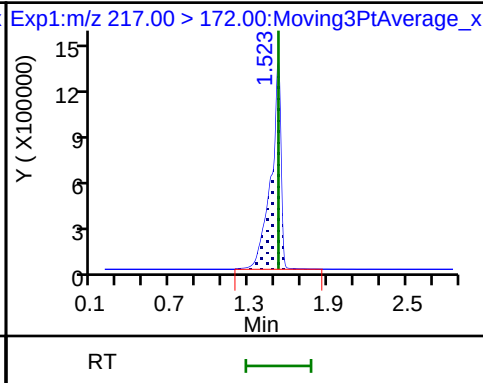
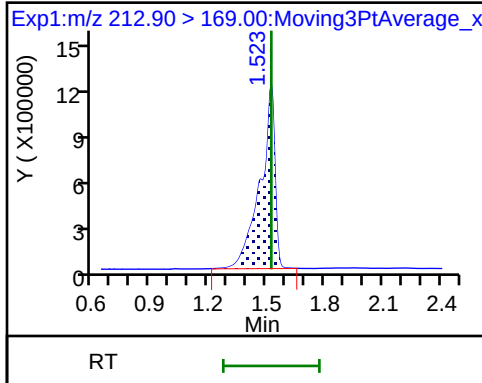
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid (M)

D 1 13C4 PFBA

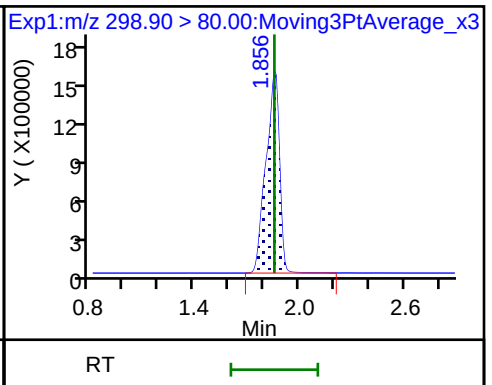
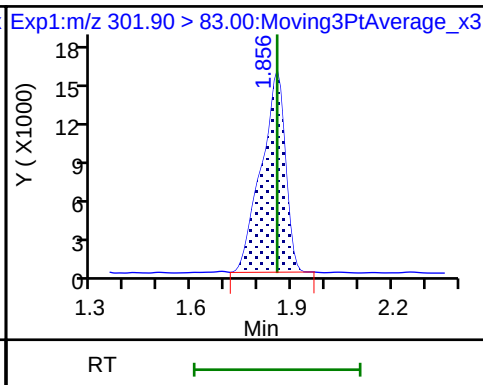
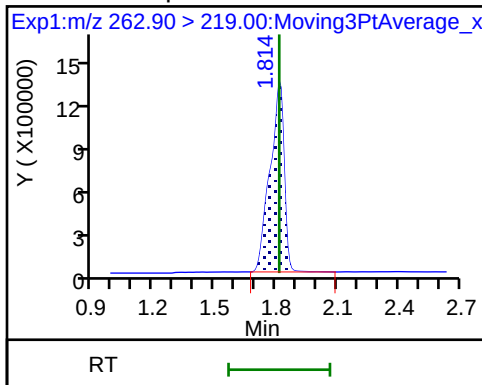
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

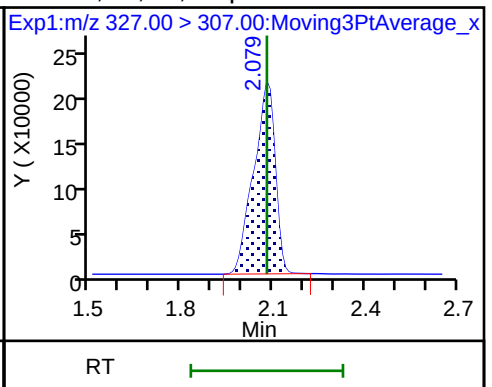
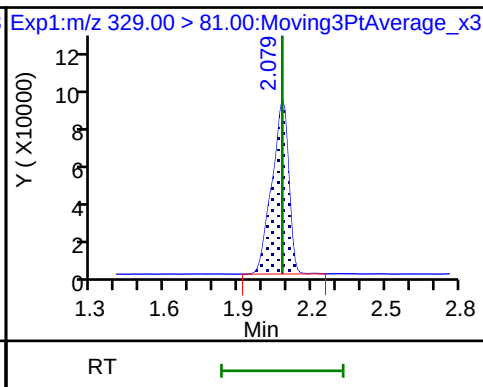
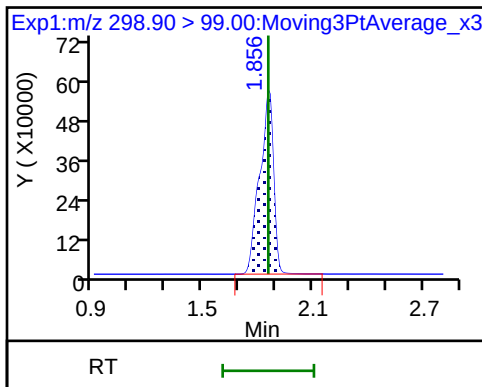
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

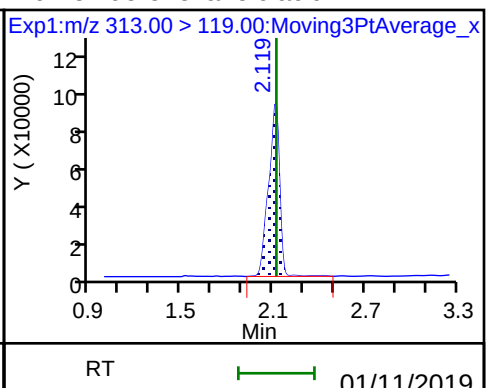
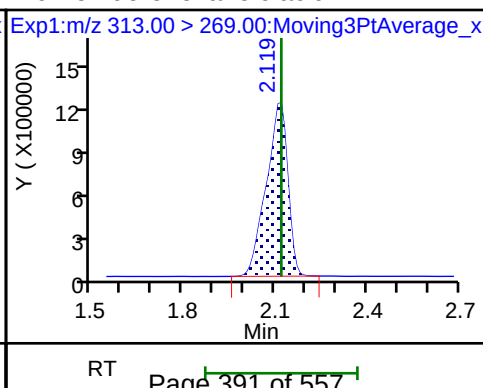
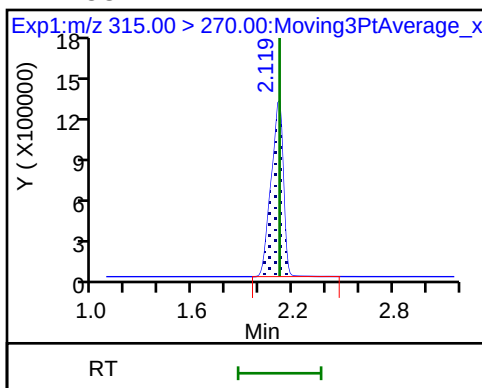
61 1H,1H,2H,2H-perfluorohexanesulfoni

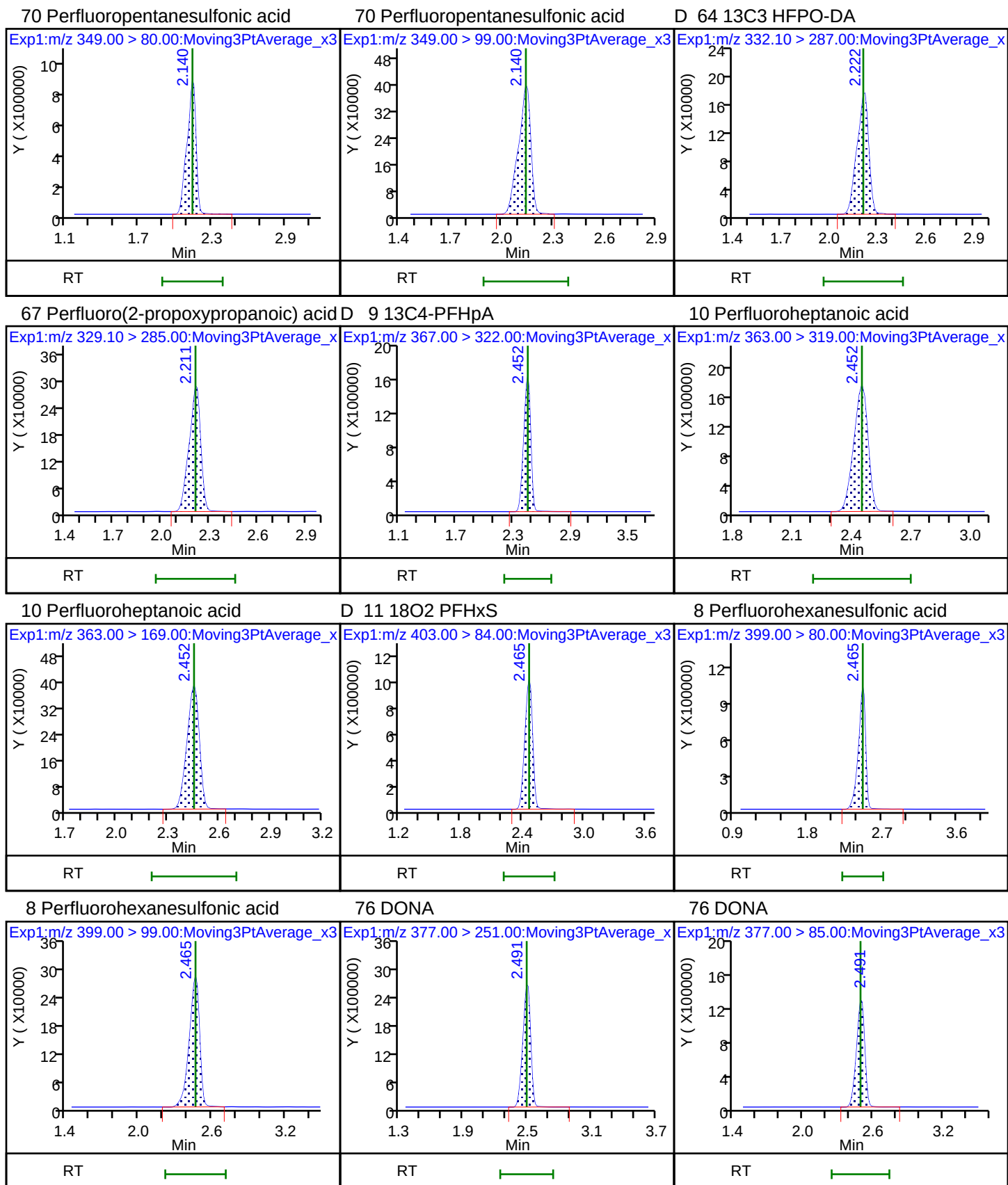


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

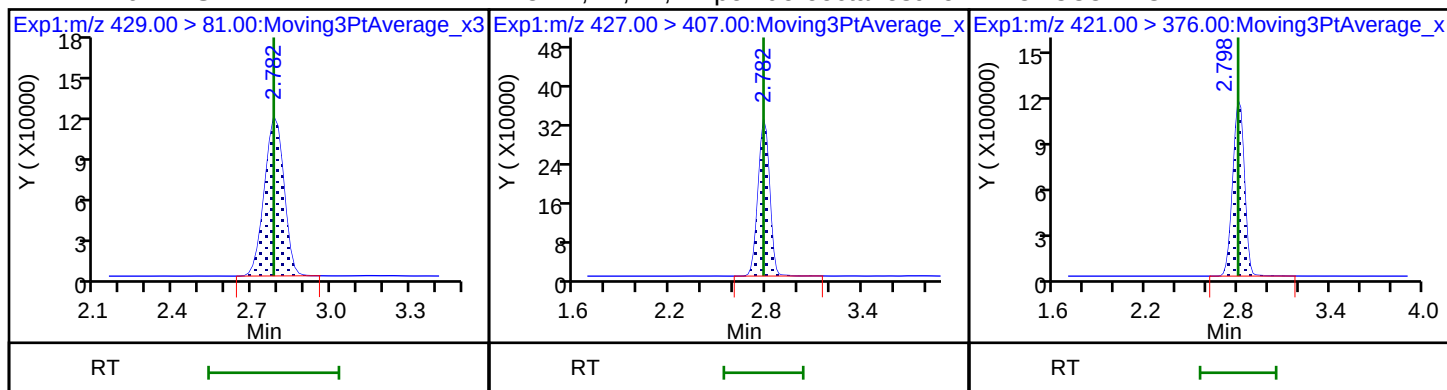
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

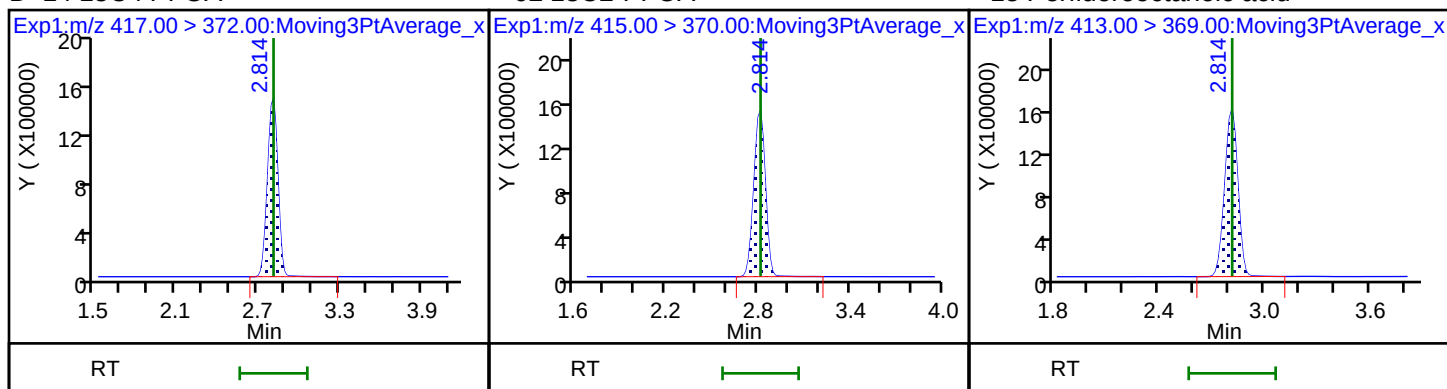
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D 14 13C4 PFOA

* 62 13C2-PFOA

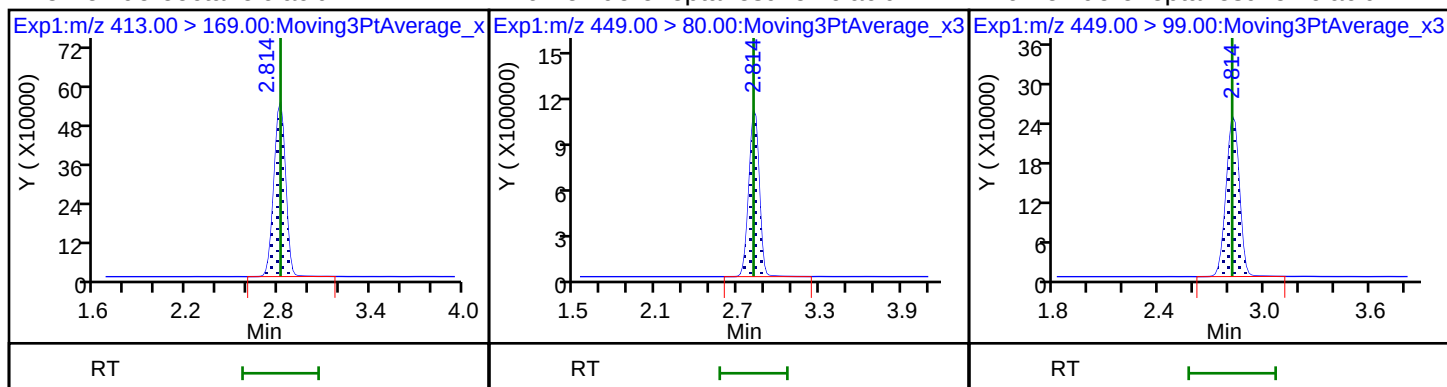
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

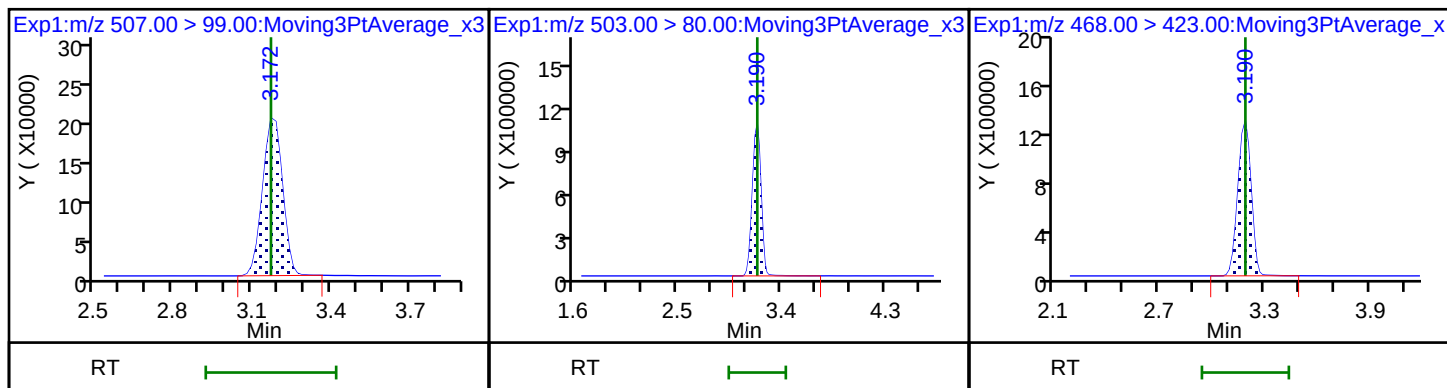
16 Perfluoroheptanesulfonic acid

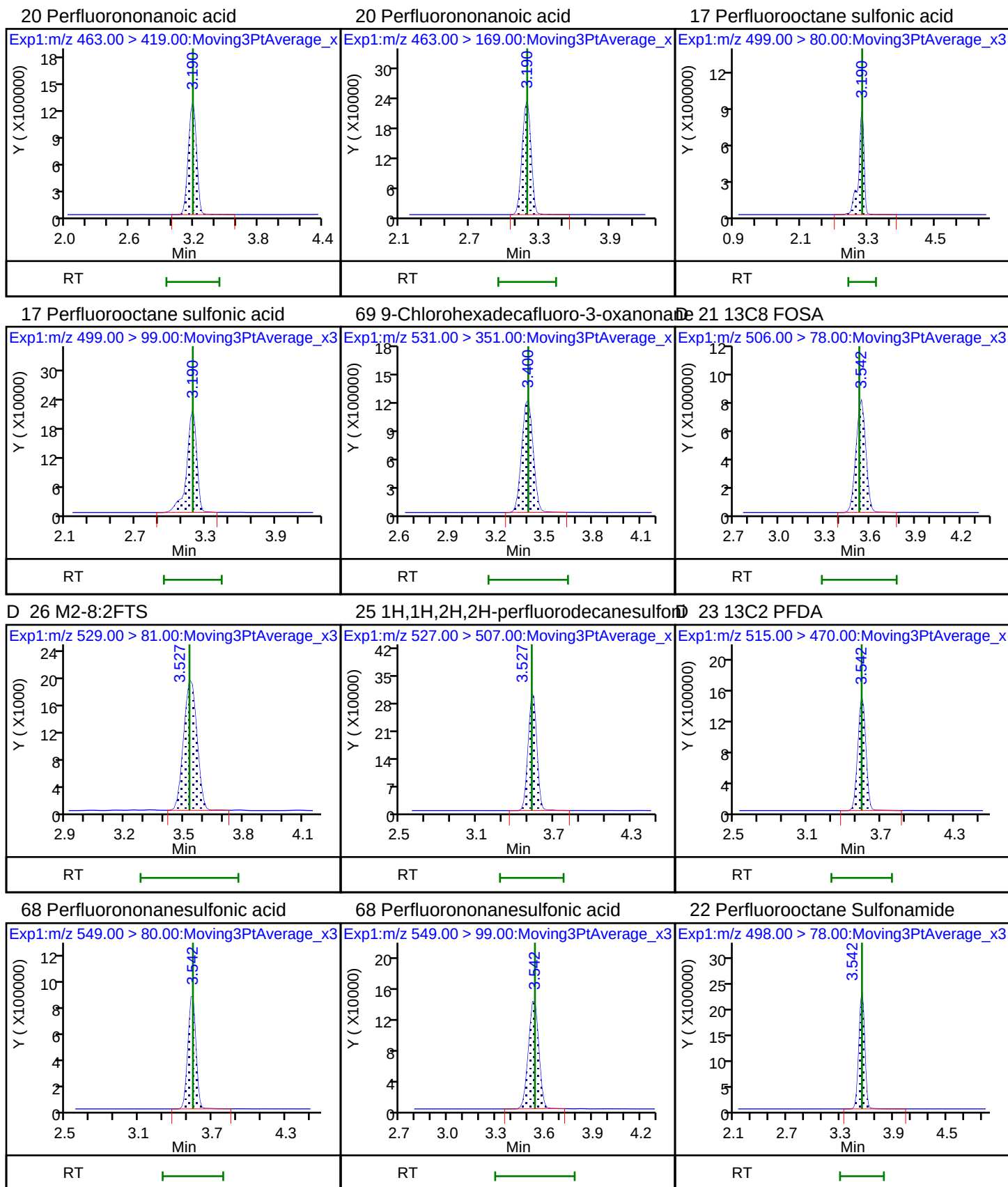


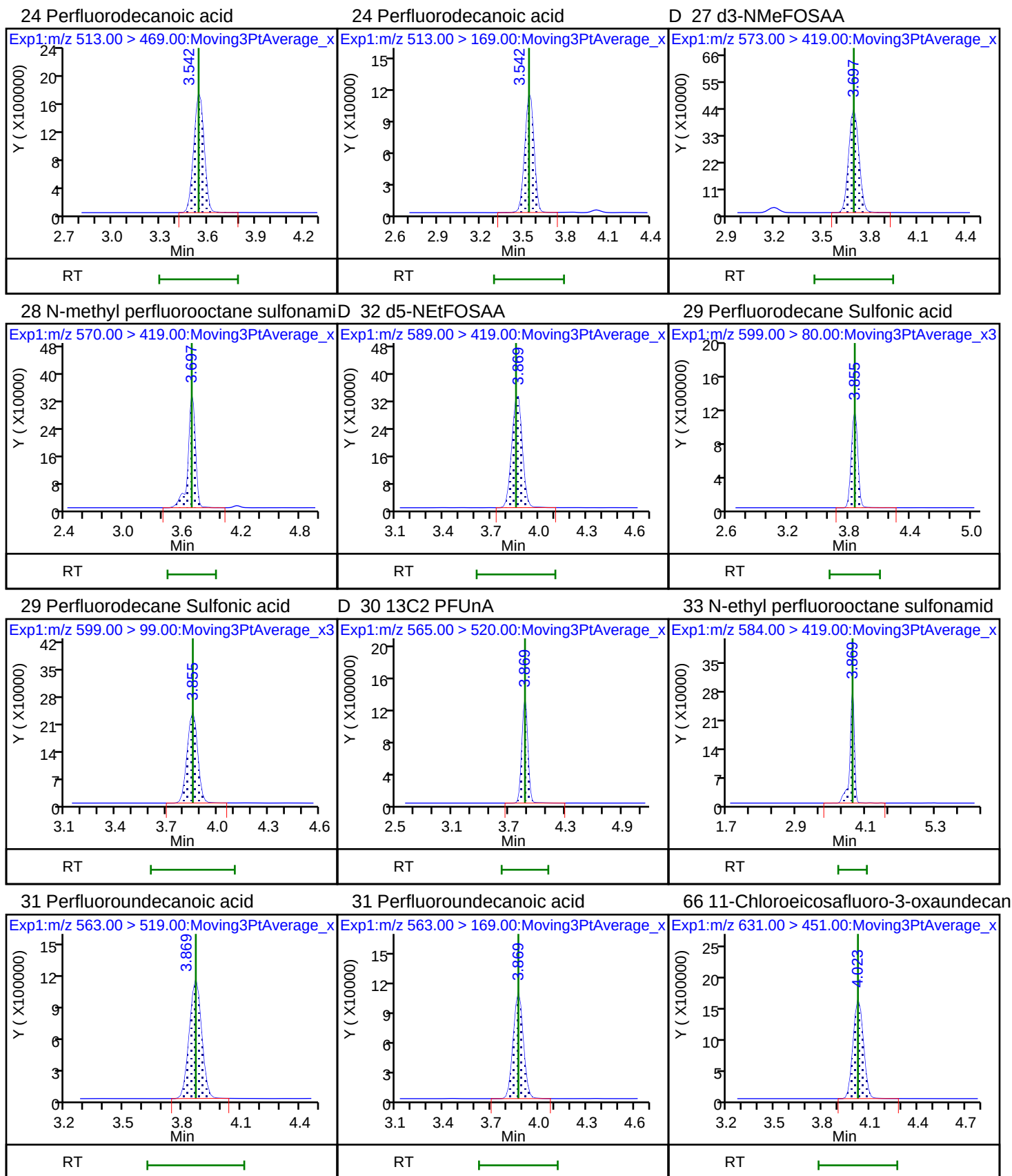
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA

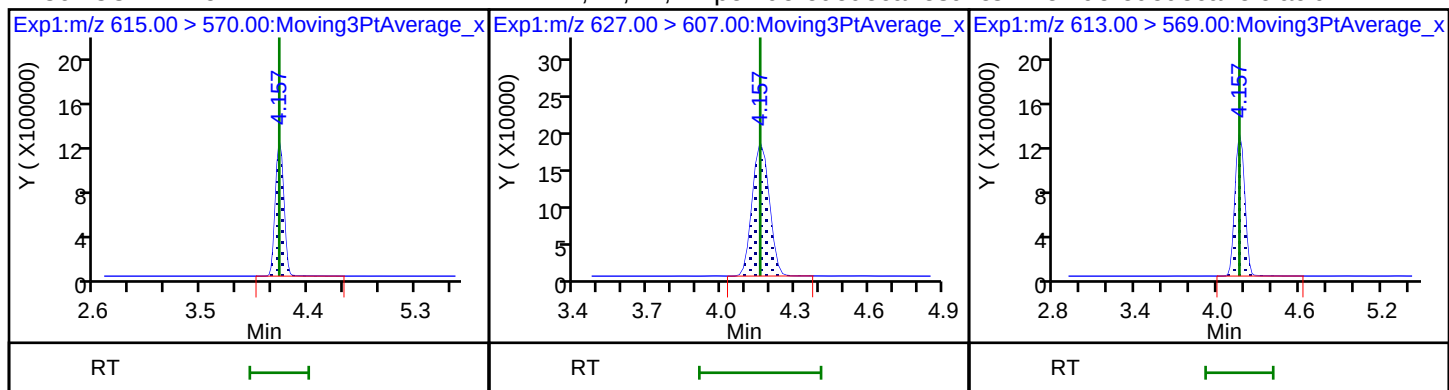






D 36 13C2 PFDaA

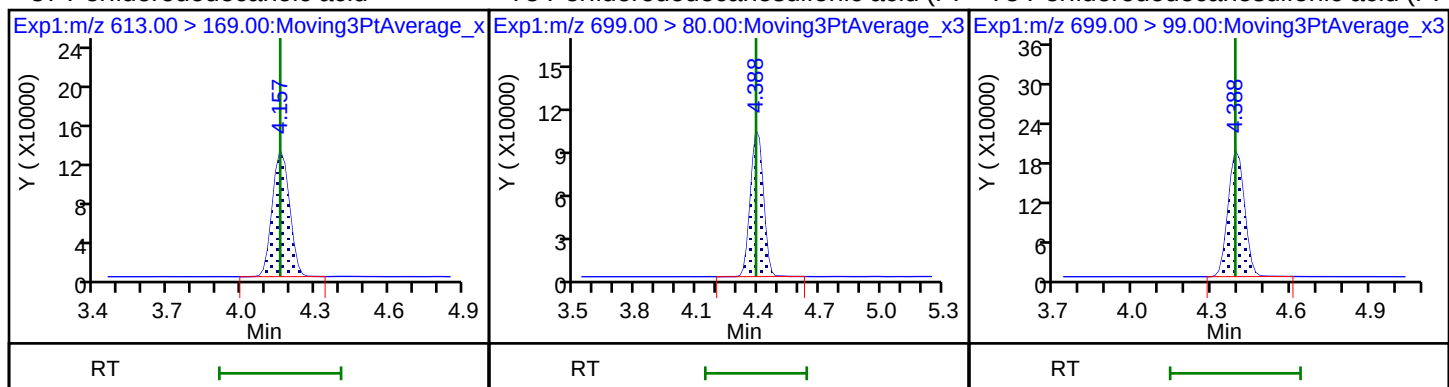
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

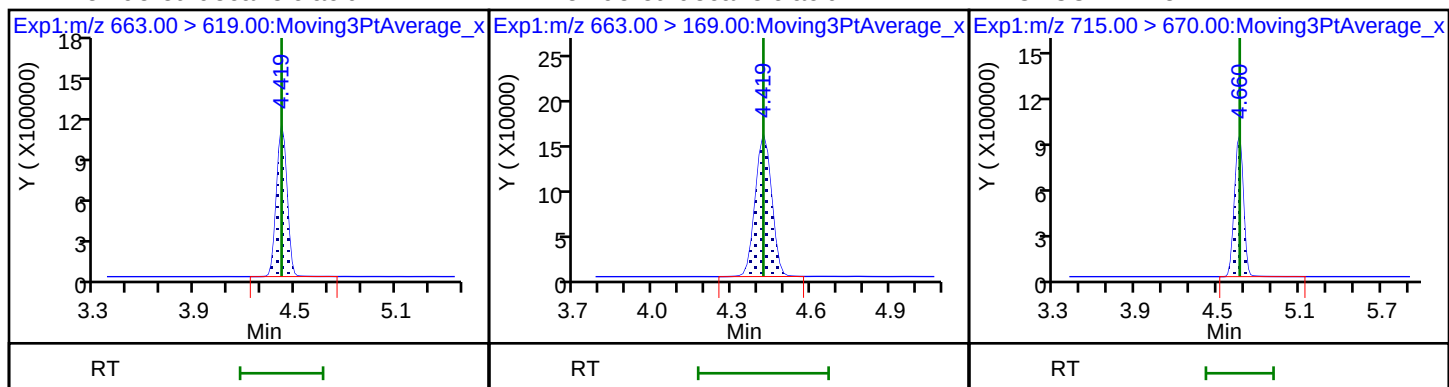
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

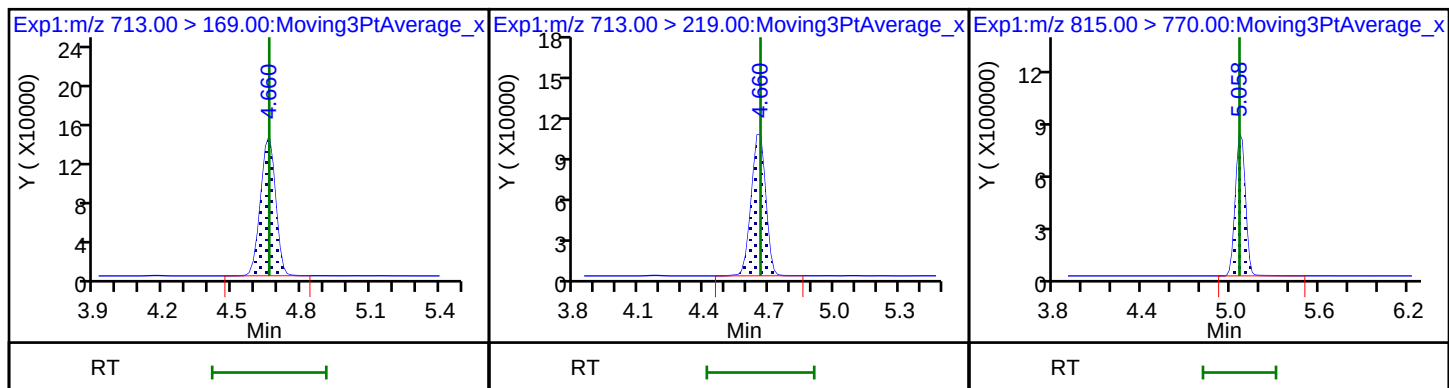
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

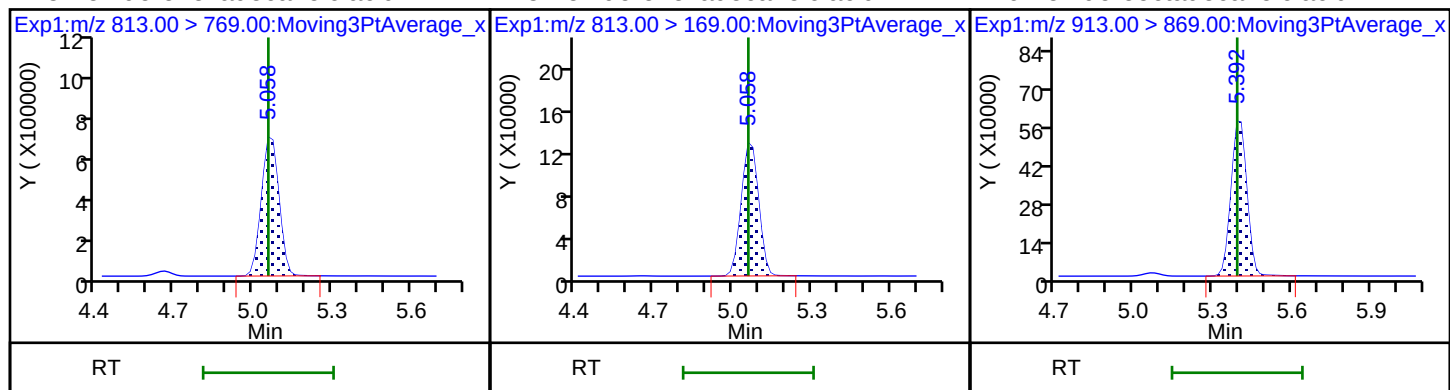
D 44 13C2-PFHxDA



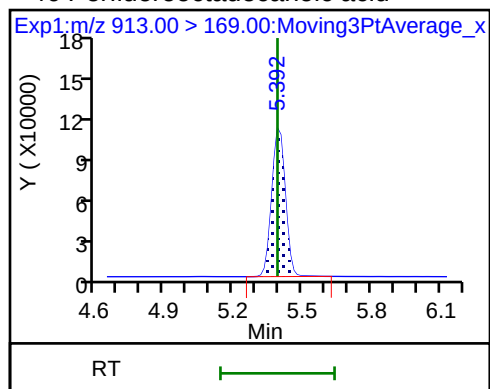
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

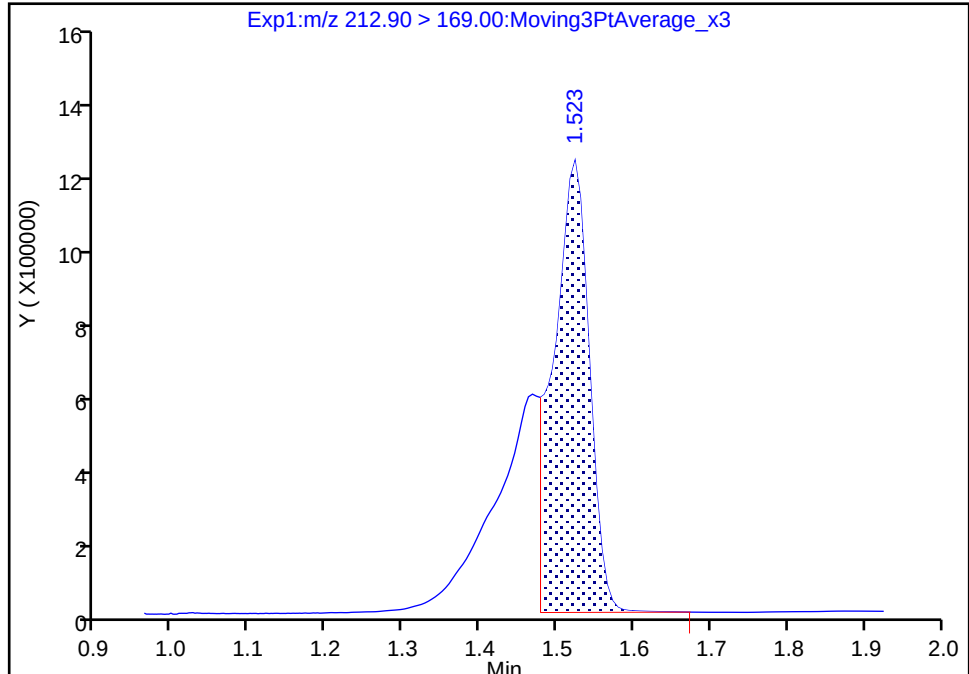
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_015.d
Injection Date: 29-Sep-2018 12:25:45 Instrument ID: A9
Lims ID: CCV L5
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

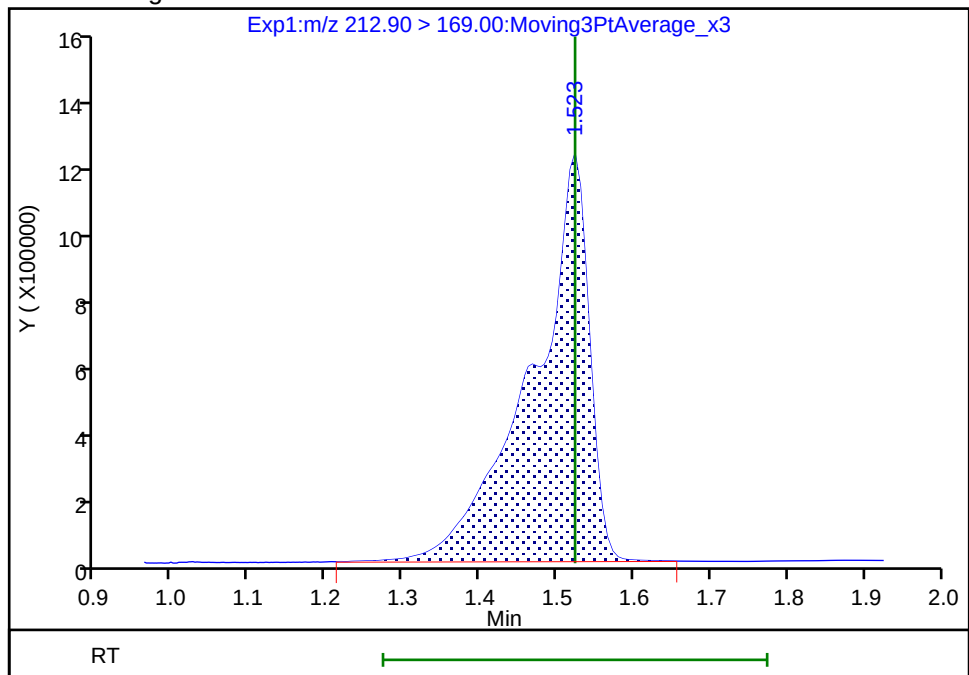
RT: 1.52
Area: 3903952
Amount: 1.535879
Amount Units: ng/ml

Processing Integration Results



RT: 1.52
Area: 6371657
Amount: 2.506715
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:18:45
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
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01/11/2019

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCV 320-248611/12 Calibration Date: 09/29/2018 13:48

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.09.29LLAA_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9167	0.9364		1.02	1.00	2.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.037		1.04	1.00	4.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	111.5		0.954	0.884	7.9	50.0
4:2 FTS	AveID	22.60	12.84		0.531	0.934	-43.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.9324		1.04	1.00	3.7	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	51.12		0.991	0.938	5.6	50.0
HFPO-DA (GenX)	AveID	1.870	1.629		0.871	1.00	-12.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.105		1.04	1.00	4.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.187		0.858	0.910	-5.7	40.0
DONA	AveID	2.645	2.782		0.991	0.942	5.2	50.0
6:2 FTS	AveID	2.182	2.246		0.976	0.948	3.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.073		0.998	0.952	4.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.095		1.05	1.00	4.4	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	1.072		1.09	1.00	9.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.064		0.932	0.928	0.4	40.0
F-53B Major	AveID	1.117	1.178		0.983	0.932	5.5	50.0
8:2 FTS	AveID	14.70	14.87		0.969	0.958	1.1	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.7318		1.06	0.960	9.9	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.177		1.07	1.00	7.4	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.108		1.05	1.00	5.4	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.033		1.08	1.00	7.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8251		0.930	0.964	-3.6	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9528		1.02	1.00	2.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.8593		0.953	1.00	-4.7	40.0
F-53B Minor	AveID	1.316	1.404		1.01	0.942	6.8	50.0
10:2 FTS	AveID	10.00	8.376		0.808	0.964	-16.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	0.9283		0.927	1.00	-7.3	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0797		0.806	0.968	-16.8	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7061		0.901	1.00	-9.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1574		0.958	1.00	-4.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9600		1.04	1.00	3.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCV 320-248611/12 Calibration Date: 09/29/2018 13:48
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.09.29LLAA_026.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	0.6480	0.6709		1.04	1.00	3.5	50.0
13C4 PFBA	Ave	0.9210	0.8923		2.42	2.50	-3.1	50.0
13C5 PFPeA	Ave	0.8374	0.8338		2.49	2.50	-0.4	50.0
13C3 PFBS	Ave	0.0114	0.0110		2.23	2.33	-4.0	50.0
M2-4:2 FTS	Ave	0.1043	0.0599		1.34	2.34	-42.6	50.0
13C2 PFHxA	Ave	0.8875	0.8614		2.43	2.50	-2.9	50.0
13C3 HFPO-DA	Ave	0.0924	0.1125		3.04	2.50	21.8	50.0
13C4 PFHpA	Ave	1.057	1.095		2.59	2.50	3.6	50.0
18O2 PFHxS	Ave	0.6816	0.7097		2.46	2.37	4.1	50.0
M2-6:2 FTS	Ave	0.1097	0.0908		1.97	2.38	-17.2	40.0
13C8 PFOA	Ave	3075368	2515145		2.00	2.45	-18.2	50.0
13C4 PFOA	Ave	1.001	0.9947		2.48	2.50	-0.6	50.0
13C8 PFOS	Ave	540497	462561		2.05	2.39	-14.4	50.0
13C4 PFOS	Ave	0.7065	0.7248		2.45	2.39	2.6	50.0
13C5 PFNA	Ave	0.9108	0.8746		2.40	2.50	-4.0	50.0
M2-8:2 FTS	Ave	0.0139	0.0154		2.65	2.40	10.6	40.0
13C2 PFDA	Ave	0.9435	0.8906		2.36	2.50	-5.6	50.0
13C8 FOSA	Ave	0.3770	0.4475		2.97	2.50	18.7	50.0
d3-NMeFOSAA	Ave	0.4182	0.2472		1.48	2.50	-40.9	50.0
d5-NEtFOSAA	Ave	0.3276	0.2015		1.54	2.50	-38.5	50.0
13C2 PFUnA	Ave	0.8011	0.7362		2.30	2.50	-8.1	50.0
13C2 PFDoA	Ave	0.9529	0.9058		2.38	2.50	-4.9	50.0
13C2 PFTeDA	Ave	0.7508	0.5270		1.75	2.50	-29.8	50.0
13C2 PFHxDA	Ave	0.7497	0.4785		1.60	2.50	-36.2	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_026.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 29-Sep-2018 13:48:13 ALS Bottle#: 13 Worklist Smp#: 12
 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\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 12:01:59 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: barnettj

Date: 03-Oct-2018 11:19:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.523	1.523	0.0	1.000	2595351	1.02		102	402	
D 1 13C4 PFBA										
217.00 > 172.00	1.523	1.523	0.0	0.541	6928930	2.42		96.9	5175	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.814	1.814	0.0	1.000	2685843	1.04		104	83.4	
D 3 13C5-PFPeA										
267.90 > 223.00	1.814	1.814	0.0	0.645	6474776	2.49		99.6	8238	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.855	1.855	0.0	1.000	3350836	0.9537		108	2970	
298.90 > 99.00	1.855	1.855	0.0	1.000	1199955		2.79(1.35-4.05)		1694	
D 47 13C3-PFBS										
301.90 > 83.00	1.855	1.855	0.0	0.659	79060	2.23		96.0	467	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.079	2.079	0.0	1.120	407851	0.5307		56.8	1634	
D 60 M2-4:2FTS										
329.00 > 81.00	2.079	2.078	0.0	0.739	434428	1.34		57.4	642	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.109	2.109	0.0	1.000	2494491	1.04		104	192	
313.00 > 119.00	2.109	2.109	0.0	1.000	179544		13.89(6.96-20.87)		153	
D 7 13C2 PFHxA										
315.00 > 270.00	2.109	2.119	-0.010	0.750	6688702	2.43		97.1	9169	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.140	2.140	0.0	1.153	1630538	0.99		106	2838	
349.00 > 99.00	2.140	2.140	0.0	1.153	770149		2.12(1.15-3.45)		1480	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.211	2.211	0.0	0.786	873550	3.04		122	3046	

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	2.211	2.211	0.0	1.000	569236	0.8713		87.1	422	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.452	2.452	0.0	1.000	3758347	1.04		104	694	
363.00 > 169.00	2.452	2.452	0.0	1.000	800447		4.70(2.17-6.52)		904	
D 9 13C4-PFHpA										
367.00 > 322.00	2.452	2.452	0.0	0.871	8499818	2.59		104	7926	
D 11 18O2 PFHxS										
403.00 > 84.00	2.465	2.465	0.0	0.876	5213370	2.46		104	6465	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.465	2.465	0.0	1.000	2380943	0.8580		94.3	1640	
399.00 > 99.00	2.465	2.465	0.0	1.000	666462		3.57(1.90-5.70)		611	
76 DONA										
377.00 > 251.00	2.491	2.491	0.0	0.781	5899204	0.99		105	5957	
377.00 > 85.00	2.491	2.491	0.0	0.781	2368451		2.49(1.13-3.39)		1337	
D 12 M2-6:2FTS										
429.00 > 81.00	2.782	2.782	0.0	0.989	669942	1.97		82.8	1570	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.782	0.0	1.000	600656	0.9760		103	652	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.798	0.0		6155818	2.00		81.8	7452	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	7723891	2.48		99.4	6381	
* 62 13C2-PFOA										
415.00 > 370.00	2.814	2.814	0.0		7765313	2.50			10762	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.814	2.814	0.0	1.000	3387401	1.05		104	564	
413.00 > 169.00	2.814	2.814	0.0	1.000	1109335		3.05(1.36-4.08)		1692	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.814	0.0	0.882	2300322	1.00		105	1881	
449.00 > 99.00	2.814	2.814	0.0	0.882	539023		4.27(1.84-5.53)		1564	
D 72 13C8 PFOS										
507.00 > 99.00	3.172	3.171	0.001		1105521	2.05		85.6	2920	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5380469	2.45		103	2976	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	6791742	2.40		96.0	7081	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.190	0.0	1.000	2912470	1.09		109	352	
463.00 > 169.00	3.190	3.190	0.0	1.000	474598		6.14(2.68-8.03)		1087	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.190	0.0	1.000	2222497	0.9320		100	2443	
499.00 > 99.00	3.190	3.190	0.0	1.000	522060		4.26(2.04-6.12)		962	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.400	3.400	0.0	1.066	2471269	0.9828		105	1186	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3474711	2.97		119	4051	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.527	0.0	1.253	114397	2.65		111	853	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.527	0.0	1.000	680449	0.9690		101	1731	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.527	0.0	1.106	1581632	1.06		110	2282	
549.00 > 99.00	3.527	3.527	0.0	1.106	262873		6.02(3.02-9.05)		2696	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.259	6915733	2.36		94.4	10331	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.542	3.542	0.0	1.000	4319789	1.05		105	2893	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.542	0.0	1.000	3256920	1.07		107	1287	
513.00 > 169.00	3.542	3.542	0.0	1.000	218435		14.91(7.12-21.35)		290	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	1919877	1.48		59.1	731	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.697	0.0	1.000	793417	1.08		108	531	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.855	3.854	0.001	1.370	1564851	1.54		61.5	1987	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.855	3.855	0.0	1.208	1790532	0.9296		96.4	3479	
599.00 > 99.00	3.855	3.855	0.0	1.208	385725		4.64(2.14-6.43)		1145	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.869	0.0	1.375	5716648	2.30		91.9	6572	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.869	0.0	1.004	596408	1.02		102	1453	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.869	0.0	1.000	1965014	0.9529		95.3	481	
563.00 > 169.00	3.869	3.869	0.0	1.000	192270		10.22(5.24-15.72)		1306	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.023	0.0	1.261	2978418	1.01		107	5120	
35 MeFOSA										
512.00 > 169.00	4.023	4.023	0.0		621965	NC			856	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.157	0.0	1.477	7033948	2.38		95.1	7672	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.157	0.0	1.179	385666	0.8077		83.8	852	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.157	0.0	1.000	2611859	0.9273		92.7	726	
613.00 > 169.00	4.157	4.157	0.0	1.000	284246		9.19(4.68-14.05)		935	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.212	4.212	0.0		641438	NC			651	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.388	0.0	1.375	173686	0.8055		83.2	756	
699.00 > 99.00	4.388	4.388	0.0	1.375	344935		0.50(0.28-0.83)		1077	

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	4.404	0.0	1.059	1986780	0.9009		90.1	1025	
663.00 > 169.00	4.404	4.404	0.0	1.059	346329		5.74(3.09-9.27)		1130	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.644	4.660	-0.016	1.650	4092662	1.75		70.2	9141	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.644	4.644	0.0	1.000	257732	0.9585		95.8	955	
713.00 > 219.00	4.644	4.644	0.0	1.000	160679		1.60(0.70-2.09)		557	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.057	5.057	0.0	1.797	3715583	1.60		63.8	6535	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.057	0.0	1.000	1426760	1.04		104	151	
813.00 > 169.00	5.057	5.057	0.0	1.000	234173		6.09(2.77-8.32)		649	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.391	5.391	0.0	1.066	997144	1.04		104	331	
913.00 > 169.00	5.391	5.391	0.0	1.066	172543		5.78(2.55-7.64)		1255	

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\20180929-64986.b\2018.09.29LLAA_026.d

Injection Date: 29-Sep-2018 13:48:13

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 12

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

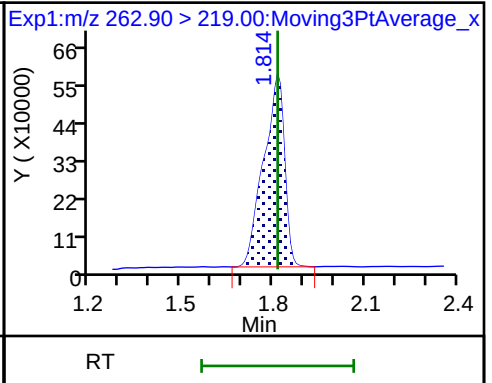
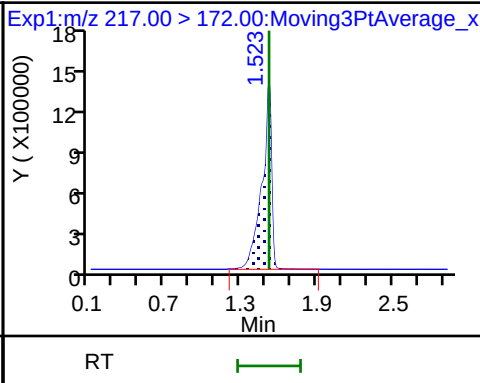
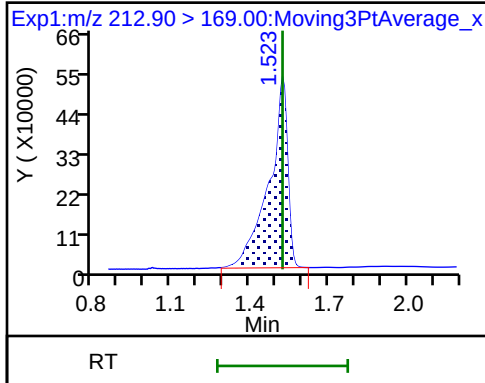
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

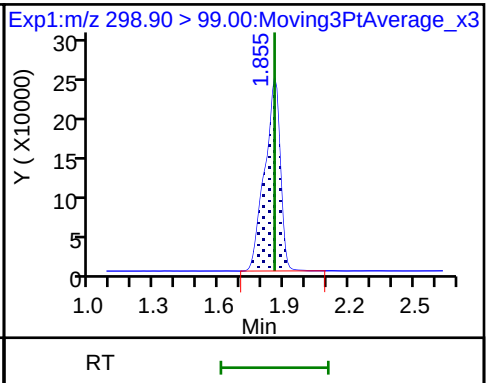
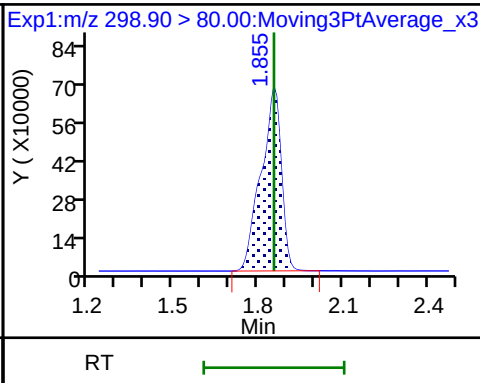
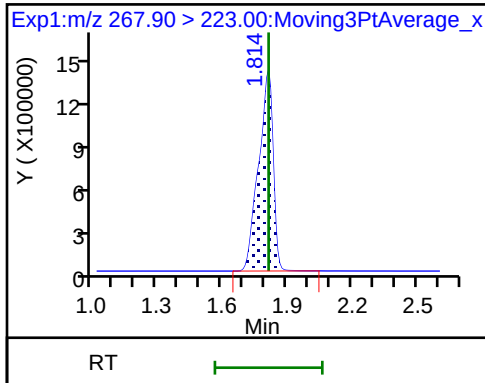
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

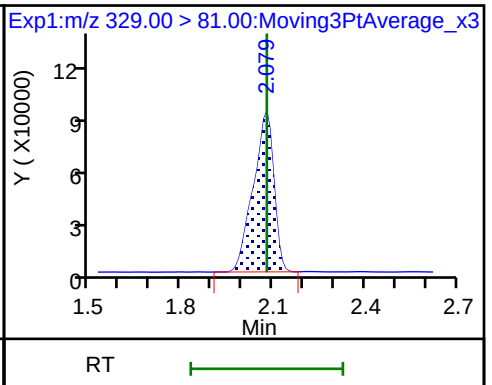
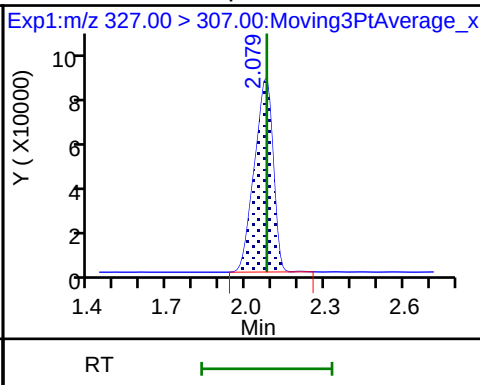
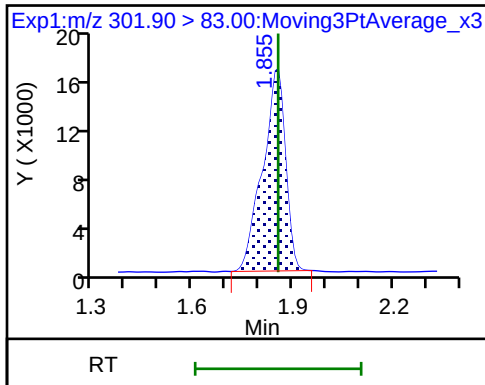
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

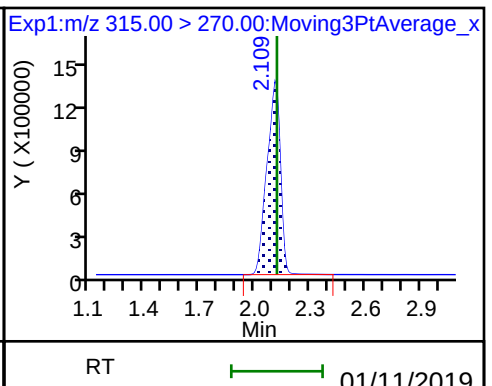
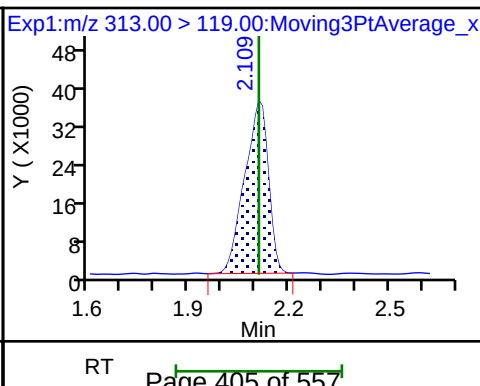
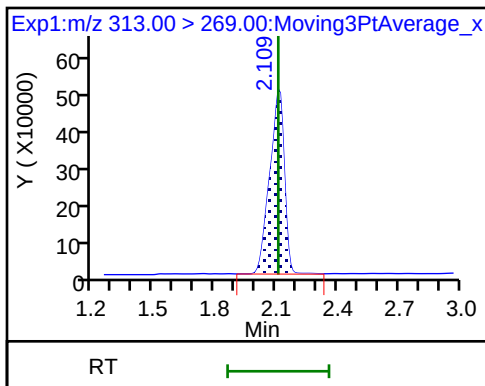
D 60 M2-4:2FTS

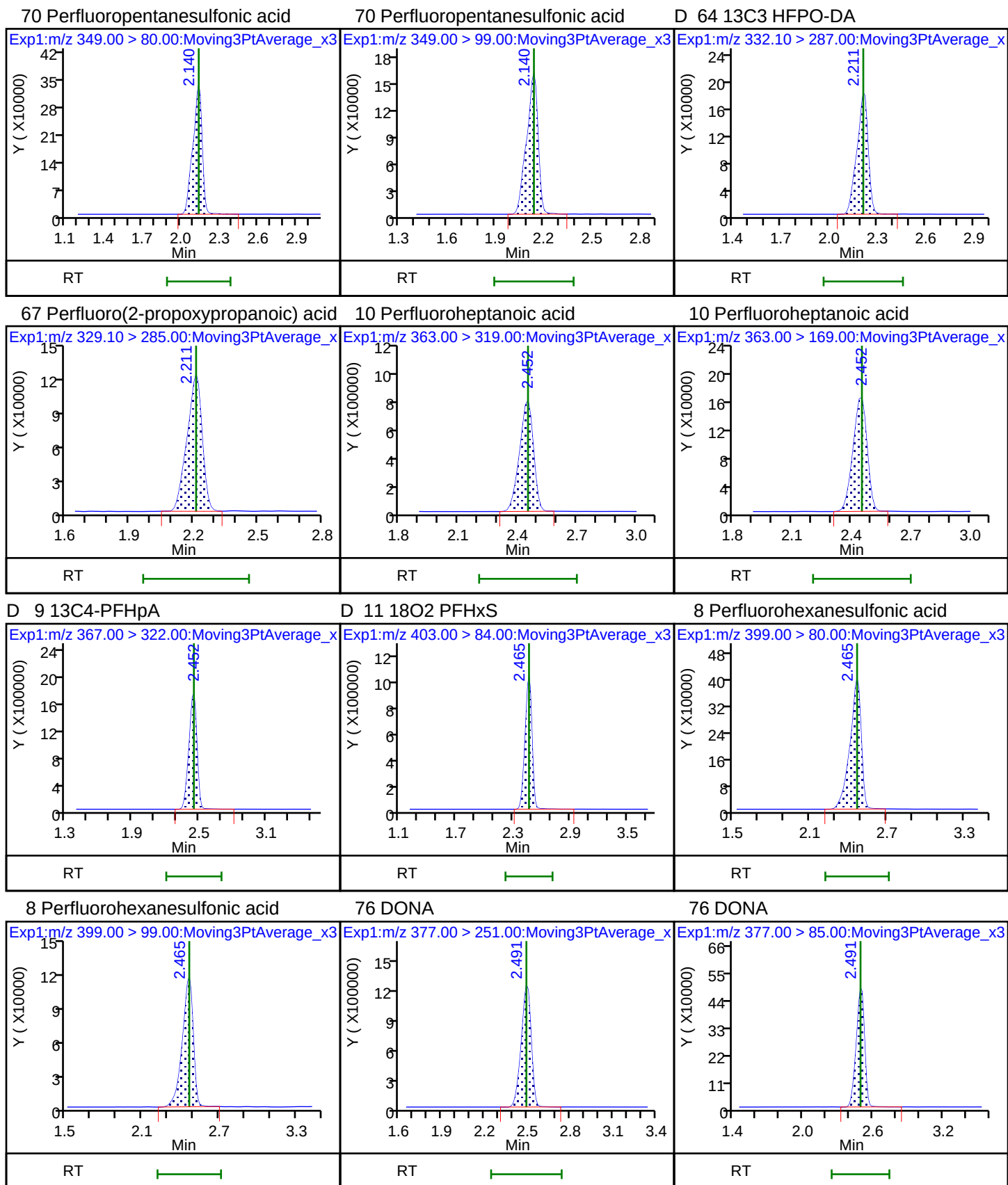


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

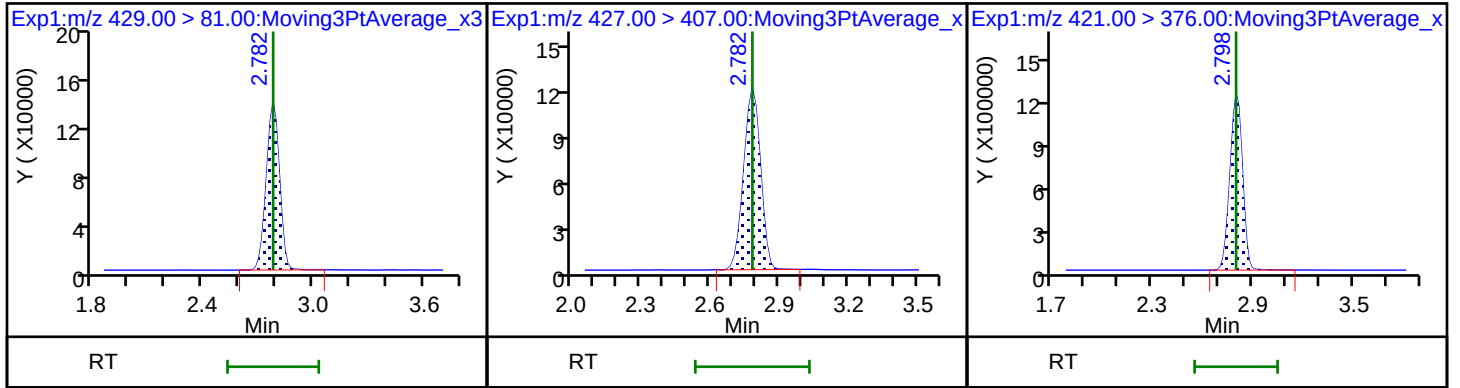
D 7 13C2 PFHxA





D 12 M2-6:2FTS

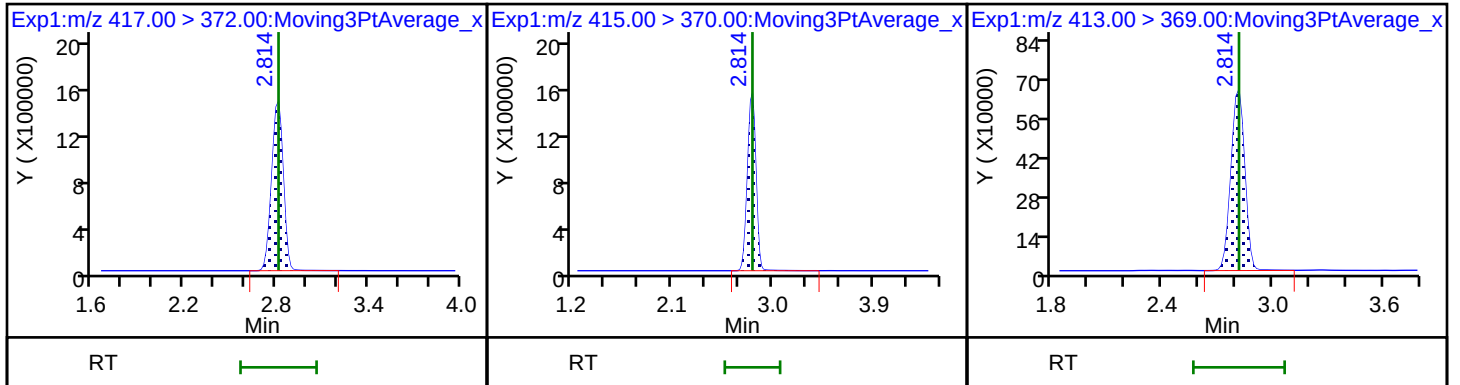
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

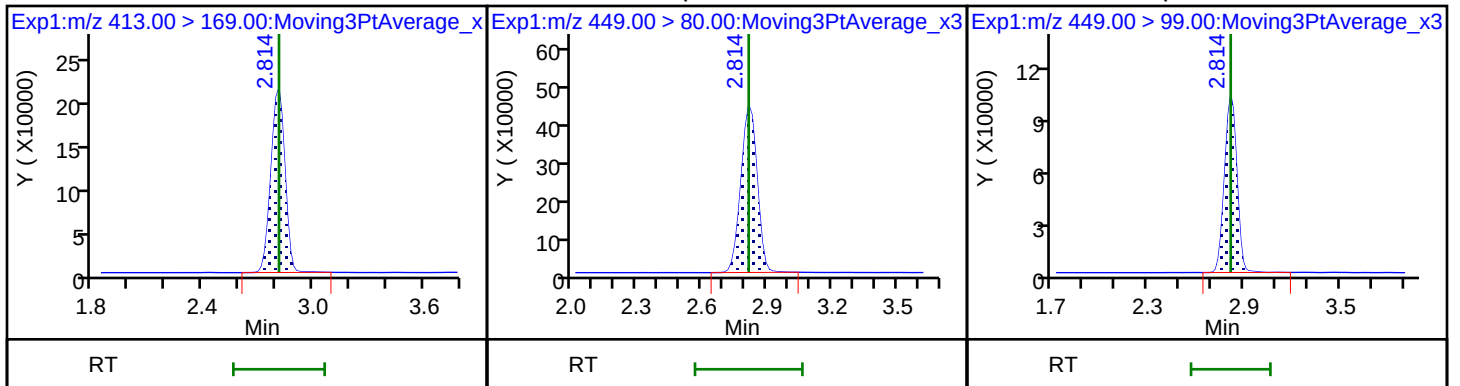
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

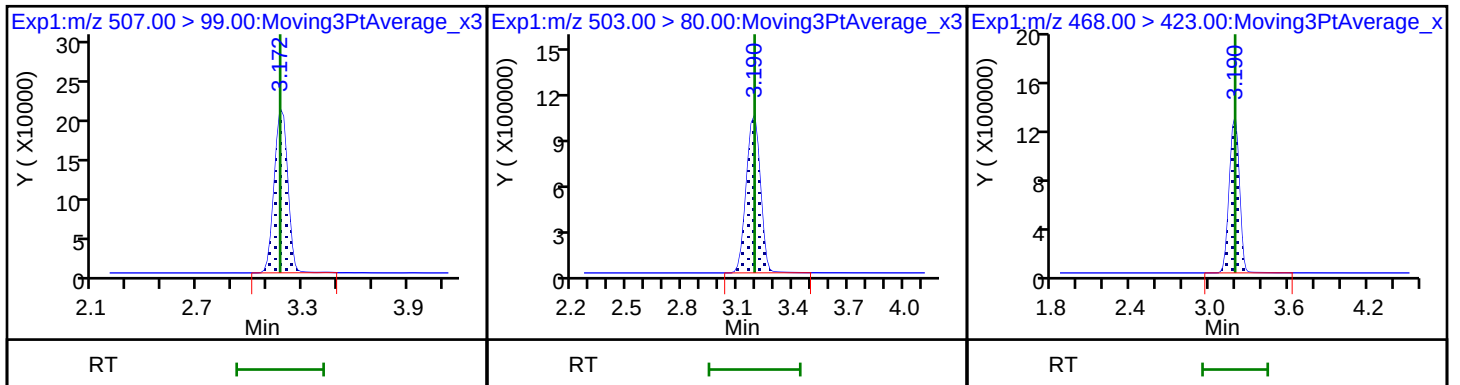
16 Perfluoroheptanesulfonic acid

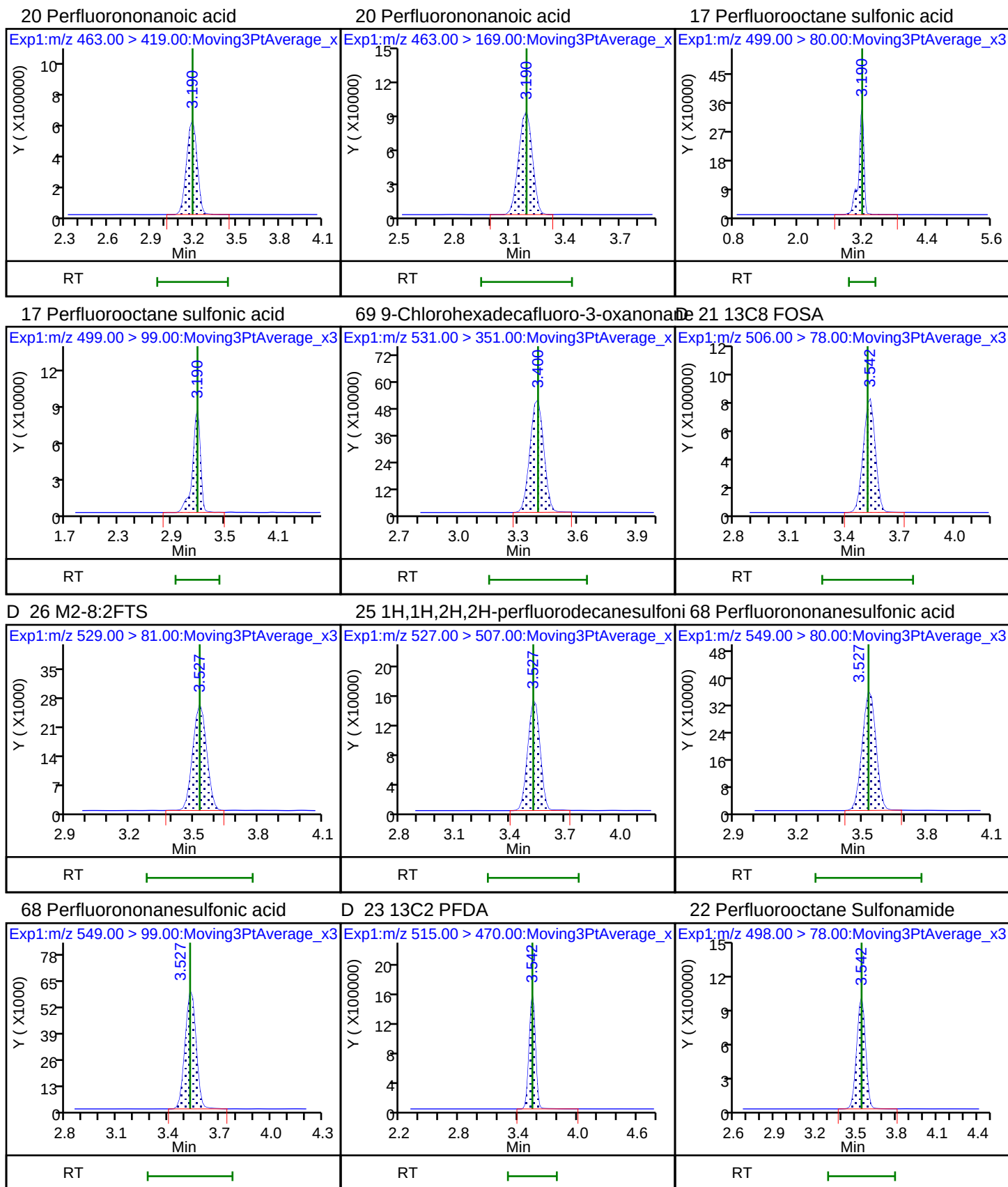


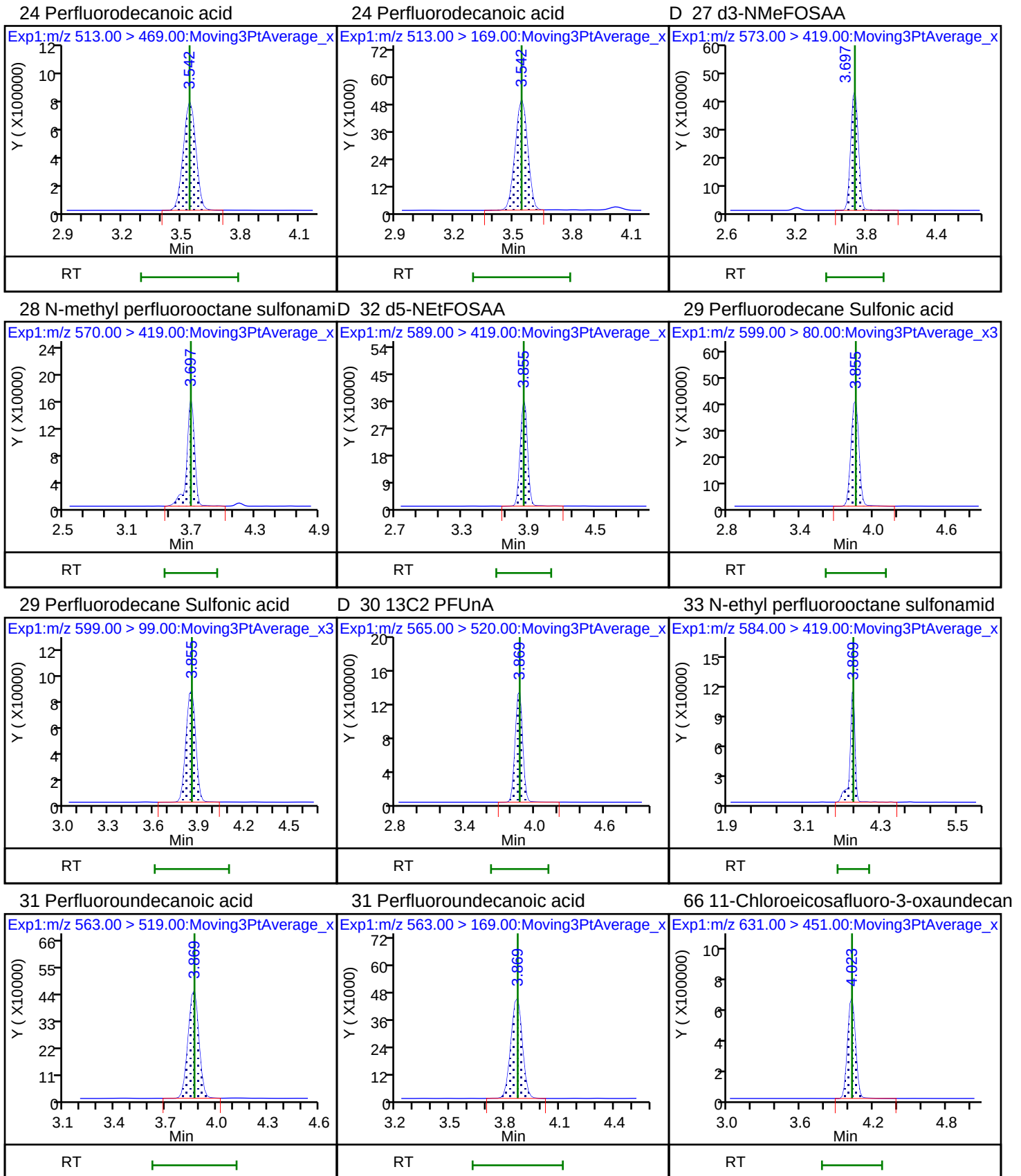
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA

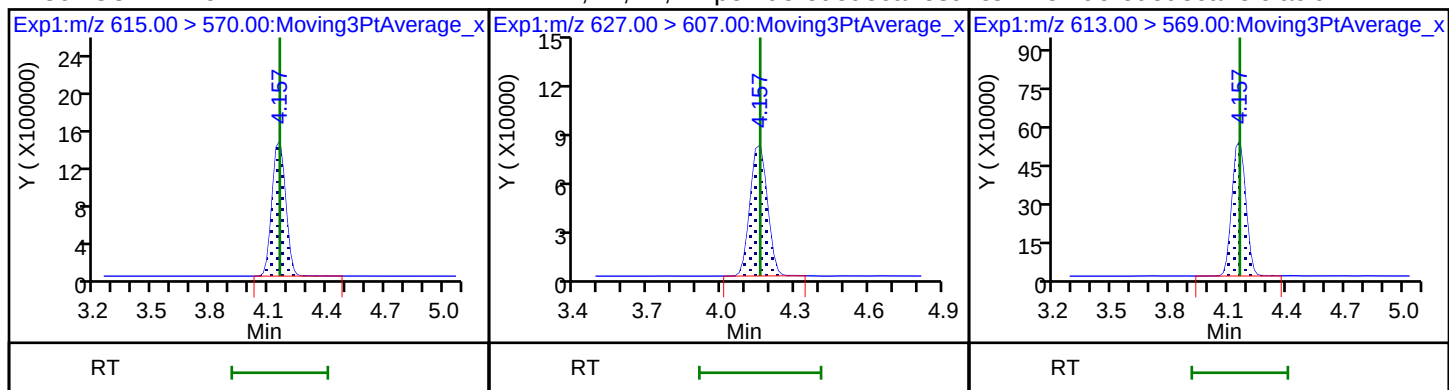






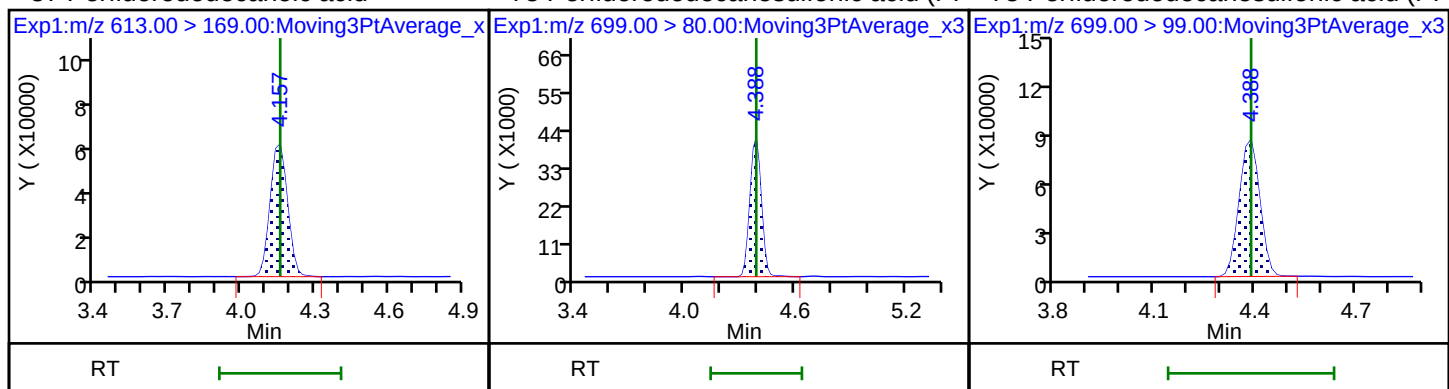
D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

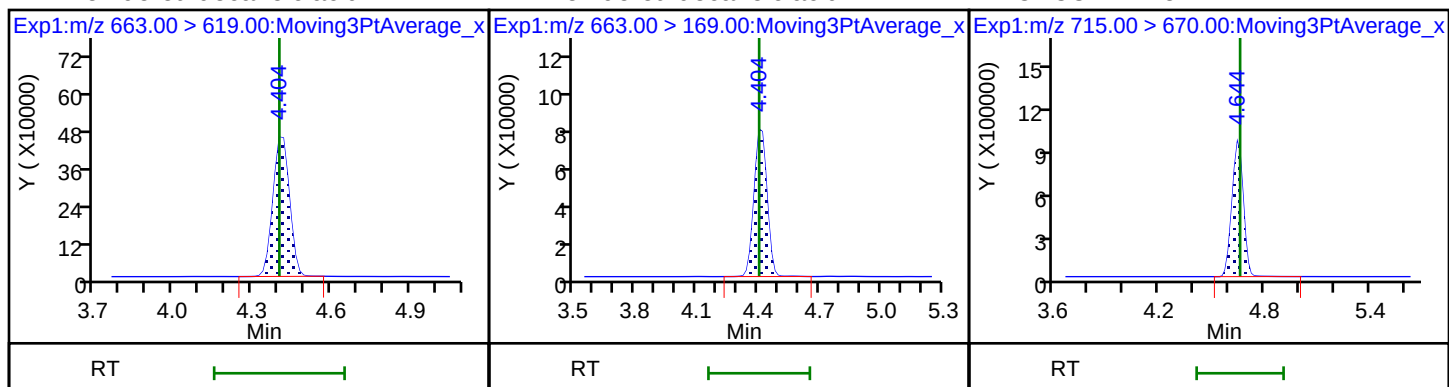
75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

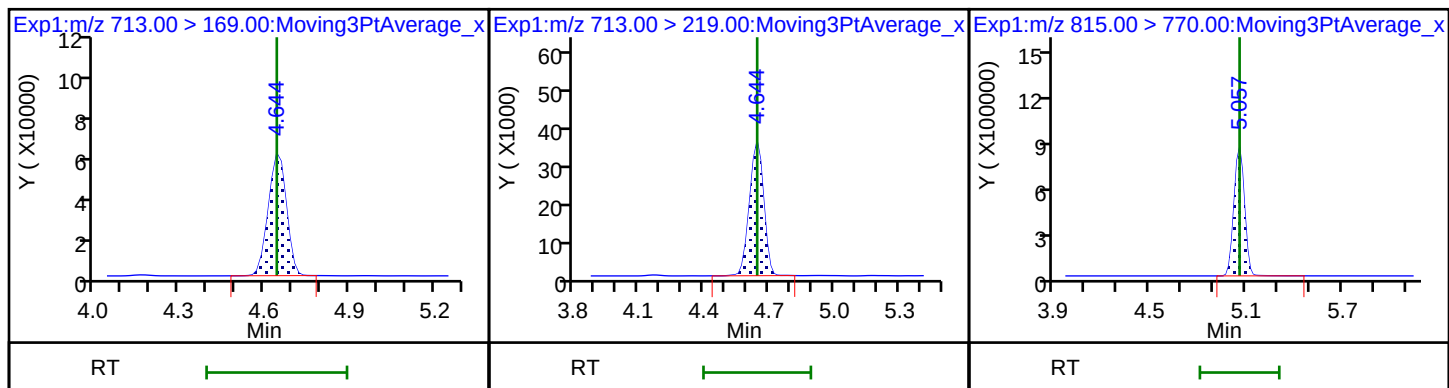
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

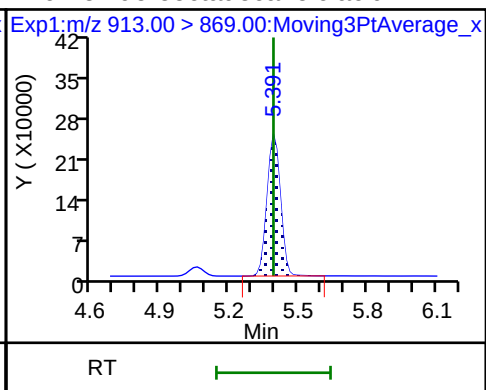
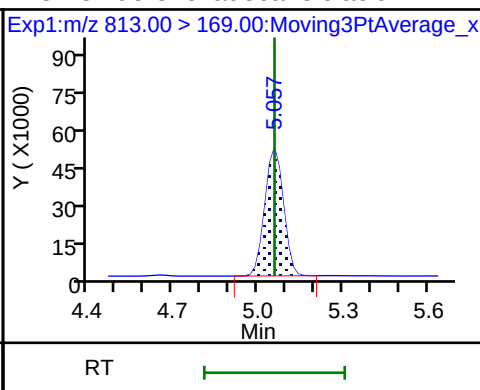
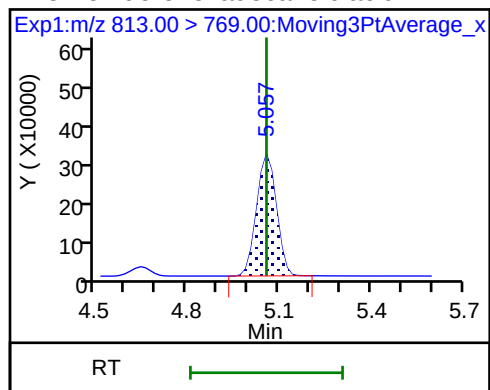
D 44 13C2-PFHxDA



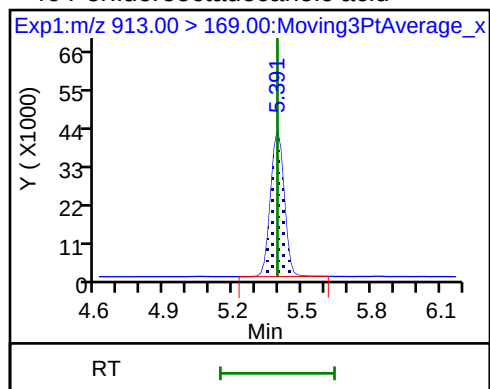
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCV 320-248611/23 Calibration Date: 09/29/2018 15:10

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.09.29LLAA_037.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9167	0.9435		2.57	2.50	2.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	0.997		2.50	2.50	0.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	116.1		2.48	2.21	12.3	50.0
4:2 FTS	AveID	22.60	13.85		1.43	2.34	-38.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.9023		2.51	2.50	0.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	53.72		2.60	2.35	11.0	50.0
HFPO-DA (GenX)	AveID	1.870	1.505		2.01	2.50	-19.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.108		2.61	2.50	4.3	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.256		2.27	2.28	-0.3	40.0
DONA	AveID	2.645	2.474		2.20	2.36	-6.5	50.0
6:2 FTS	AveID	2.182	2.317		2.52	2.37	6.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.020		2.37	2.38	-0.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.013		2.42	2.50	-3.5	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	0.9665		2.46	2.50	-1.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.047		2.29	2.32	-1.2	40.0
F-53B Major	AveID	1.117	1.143		2.39	2.33	2.4	50.0
8:2 FTS	AveID	14.70	15.70		2.56	2.40	6.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.183		2.70	2.50	7.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6638		2.39	2.40	-0.3	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.036		2.57	2.50	2.9	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	0.9845		2.56	2.50	2.6	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8743		2.46	2.41	2.2	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9185		2.46	2.50	-1.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.8252		2.29	2.50	-8.5	40.0
F-53B Minor	AveID	1.316	1.332		2.38	2.36	1.3	50.0
10:2 FTS	AveID	10.00	9.370		2.26	2.41	-6.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	1.030		2.57	2.50	2.9	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0748		1.89	2.42	-21.9	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7742		2.47	2.50	-1.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1550		2.36	2.50	-5.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9255		2.53	2.50	1.2	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCV 320-248611/23 Calibration Date: 09/29/2018 15:10
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.09.29LLAA_037.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	0.6480	0.6775		2.61	2.50	4.6	50.0
13C4 PFBA	Ave	0.9210	0.8834		2.40	2.50	-4.1	50.0
13C5 PFPeA	Ave	0.8374	0.8304		2.48	2.50	-0.8	50.0
13C3 PFBS	Ave	0.0114	0.0106		2.17	2.33	-6.9	50.0
M2-4:2 FTS	Ave	0.1043	0.0562		1.26	2.34	-46.1	50.0
13C2 PFHxA	Ave	0.8875	0.8523		2.40	2.50	-4.0	50.0
13C3 HFPO-DA	Ave	0.0924	0.1274		3.45	2.50	37.9	50.0
13C4 PFHpA	Ave	1.057	1.032		2.44	2.50	-2.4	50.0
18O2 PFHxS	Ave	0.6816	0.6679		2.32	2.37	-2.0	50.0
M2-6:2 FTS	Ave	0.1097	0.0886		1.92	2.38	-19.2	40.0
13C8 PFOA	Ave	3075368	2616244		2.08	2.45	-14.9	50.0
13C4 PFOA	Ave	1.001	0.9872		2.47	2.50	-1.4	50.0
13C4 PFOS	Ave	0.7065	0.7477		2.53	2.39	5.8	50.0
13C5 PFNA	Ave	0.9108	0.9081		2.49	2.50	-0.3	50.0
13C8 PFOS	Ave	540497	488486		2.16	2.39	-9.6	50.0
13C2 PFDA	Ave	0.9435	0.8499		2.25	2.50	-9.9	50.0
13C8 FOSA	Ave	0.3770	0.4341		2.88	2.50	15.2	50.0
M2-8:2 FTS	Ave	0.0139	0.0131		2.25	2.40	-6.1	40.0
d3-NMeFOSAA	Ave	0.4182	0.2376		1.42	2.50	-43.2	50.0
13C2 PFUnA	Ave	0.8011	0.7298		2.28	2.50	-8.9	50.0
d5-NEtFOSAA	Ave	0.3276	0.1982		1.51	2.50	-39.5	50.0
13C2 PFDoA	Ave	0.9529	0.8070		2.12	2.50	-15.3	50.0
13C2 PFTeDA	Ave	0.7508	0.5323		1.77	2.50	-29.1	50.0
13C2 PFHxDA	Ave	0.7497	0.5515		1.84	2.50	-26.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_037.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 29-Sep-2018 15:10:49 ALS Bottle#: 14 Worklist Smp#: 23
 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\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 11:55:45 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last Ical File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: barnettj

Date: 03-Oct-2018 11:18:03

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	1.523	1.523	0.0	0.541	7001403	2.40		95.9	14655	
2 Perfluorobutyric acid										
212.90 > 169.00	1.523	1.523	0.0	1.000	6605881	2.57		103	1027	
D 3 13C5-PFPeA										
267.90 > 223.00	1.814	1.814	0.0	0.645	6581497	2.48		99.2	10001	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.814	1.814	0.0	1.000	6562585	2.50		100	210	
D 47 13C3-PFBS										
301.90 > 83.00	1.855	1.855	0.0	0.659	78279	2.17		93.1	591	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.865	1.865	0.0	1.005	8635105	2.48		112	6683	
298.90 > 99.00	1.865	1.865	0.0	1.005	2995801		2.88(1.35-4.05)		3525	
D 60 M2-4:2FTS										
329.00 > 81.00	2.078	2.078	0.0	0.739	416266	1.26		53.9	639	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.078	2.078	0.0	1.120	1089036	1.43		61.3	2747	
D 7 13C2 PFHxA										
315.00 > 270.00	2.119	2.119	0.0	0.753	6755515	2.40		96.0	9059	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.119	2.119	0.0	1.000	6095499	2.51		100	489	
313.00 > 119.00	2.119	2.119	0.0	1.000	444332		13.72(6.96-20.87)		393	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.140	2.140	0.0	1.153	4241277	2.60		111	5184	
349.00 > 99.00	2.140	2.140	0.0	1.153	1975527		2.15(1.15-3.45)		3209	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.211	2.211	0.0	0.786	1009568	3.45		138	3216	

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	2.211	2.211	0.0	1.000	1518964	2.01		80.5	884	
D 9 13C4-PFHpA										
367.00 > 322.00	2.452	2.452	0.0	0.871	8177739	2.44		97.6	12933	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.452	2.452	0.0	1.000	9058086	2.61		104	1393	
363.00 > 169.00	2.452	2.452	0.0	1.000	1922591		4.71(2.17-6.52)		1709	
D 11 18O2 PFHxS										
403.00 > 84.00	2.465	2.465	0.0	0.876	5007514	2.32		98.0	4868	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.465	2.465	0.0	1.000	6048246	2.27		99.7	3281	
399.00 > 99.00	2.465	2.465	0.0	1.000	1659953		3.64(1.90-5.70)		1661	
76 DONA										
377.00 > 251.00	2.491	2.491	0.0	0.781	13810865	2.20		93.5	20251	
377.00 > 85.00	2.491	2.491	0.0	0.781	5881510		2.35(1.13-3.39)		2612	
D 12 M2-6:2FTS										
429.00 > 81.00	2.782	2.782	0.0	0.989	667051	1.92		80.8	1221	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.782	0.0	1.000	1542303	2.52		106	1297	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.798	0.0		6403258	2.08		85.1	6642	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	7824309	2.47		98.6	5828	
* 62 13C2-PFOA										
415.00 > 370.00	2.814	2.814	0.0		7925998	2.50			12818	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.814	2.814	0.0	1.000	7930399	2.42		96.5	1216	
413.00 > 169.00	2.814	2.814	0.0	1.000	2907493		2.73(1.36-4.08)		2629	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.814	0.0	0.882	5756529	2.37		99.7	3186	
449.00 > 99.00	2.814	2.814	0.0	0.882	1349154		4.27(1.84-5.53)		2141	
D 72 13C8 PFOS										
507.00 > 99.00	3.190	3.171	0.019		1167482	2.16		90.4	1812	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5665789	2.53		106	2284	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	7197272	2.49		99.7	9865	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.190	0.0	1.000	6956285	2.46		98.4	717	
463.00 > 169.00	3.190	3.190	0.0	1.000	1297112		5.36(2.68-8.03)		2835	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.190	0.0	1.000	5758172	2.29		98.8	2204	
499.00 > 99.00	3.190	3.190	0.0	1.000	1313230		4.38(2.04-6.12)		1144	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.400	3.400	0.0	1.066	6315361	2.39		102	2385	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3440970	2.88		115	5897	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.542	3.527	0.015	1.259	99108	2.25		93.9	614	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.527	0.0	0.996	1555751	2.56		107	2182	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.259	6736601	2.25		90.1	8234	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.542	3.542	0.0	1.110	3776519	2.39		99.7	2937	
549.00 > 99.00	3.527	3.542	-0.015	1.106	594912		6.35(3.02-9.05)		2539	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.542	3.542	0.0	1.000	10446466	2.57		103	5498	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.542	0.0	1.000	7969805	2.70		108	2406	
513.00 > 169.00	3.542	3.542	0.0	1.000	563455		14.14(7.12-21.35)		409	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	1883489	1.42		56.8	319	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.697	0.0	1.000	1854273	2.56		103	745	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.854	0.015	1.375	1570856	1.51		60.5	1999	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.854	3.854	0.0	1.208	4995019	2.46		102	5269	
599.00 > 99.00	3.854	3.854	0.0	1.208	1043239		4.79(2.14-6.43)		1970	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.869	0.0	1.375	5784398	2.28		91.1	7609	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.869	0.0	1.000	1442854	2.46		98.3	2871	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.869	0.0	1.000	4773072	2.29		91.5	726	
563.00 > 169.00	3.869	3.869	0.0	1.000	491298		9.72(5.24-15.72)		1924	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.023	0.0	1.261	7437000	2.38		101	7586	
35 MeFOSA										
512.00 > 169.00	4.039	4.039	0.0		1547226	NC			1175	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.157	0.0	1.477	6396332	2.12		84.7	7067	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.157	0.0	1.174	934461	2.26		93.7	1435	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.157	0.0	1.000	6588026	2.57		103	1470	
613.00 > 169.00	4.157	4.157	0.0	1.000	707882		9.31(4.68-14.05)		1543	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.231	4.231	0.0		1580104	NC			643	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.388	0.0	1.376	429143	1.89		78.1	875	
699.00 > 99.00	4.388	4.388	0.0	1.376	859936		0.50(0.28-0.83)		1898	

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	4.419	4.419	0.0	1.063	4951939	2.47		98.8	2223	
663.00 > 169.00	4.419	4.419	0.0	1.063	819579		6.04(3.09-9.27)		1888	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.660	0.0	1.656	4218664	1.77		70.9	7633	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.660	0.0	1.000	653893	2.36		94.4	2398	
713.00 > 219.00	4.644	4.660	-0.016	0.997	496561		1.32(0.70-2.09)		1980	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.057	5.057	0.0	1.797	4371202	1.84		73.6	8644	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.057	0.0	1.000	4045471	2.53		101	392	E
813.00 > 169.00	5.057	5.057	0.0	1.000	666999		6.07(2.77-8.32)		1511	E
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.391	5.391	0.0	1.066	2961401	2.61		105	1028	
913.00 > 169.00	5.391	5.391	0.0	1.066	526102		5.63(2.55-7.64)		2417	

QC Flag Legend

Processing Flags

NC - Not Calibrated

E - Exceeded Maximum Amount

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_037.d

Injection Date: 29-Sep-2018 15:10:49

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 23

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

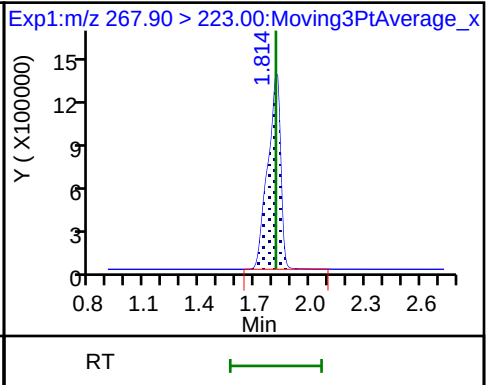
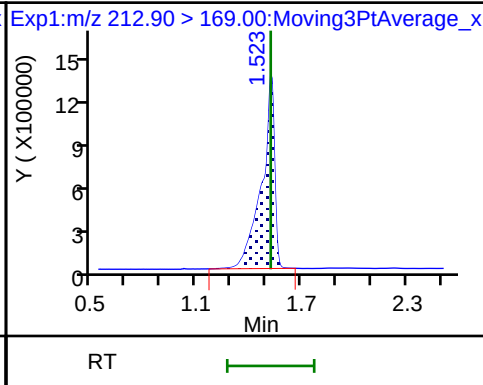
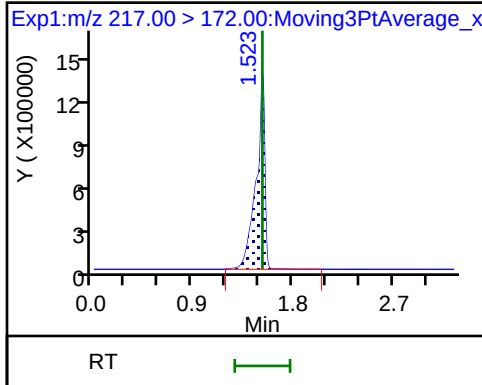
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

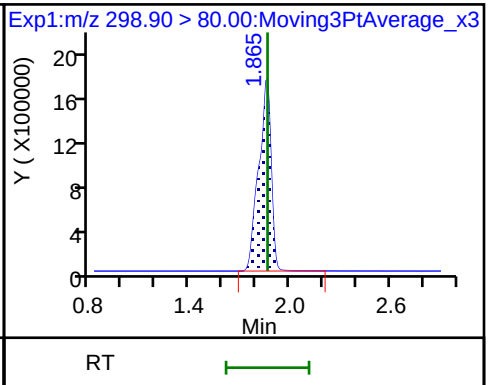
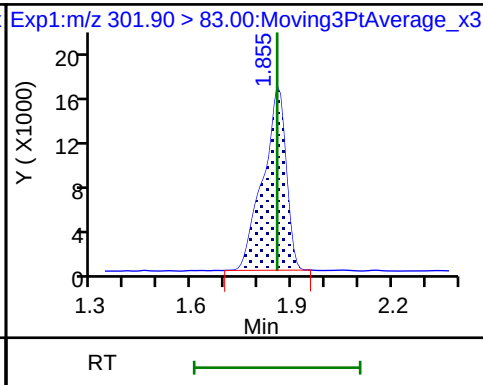
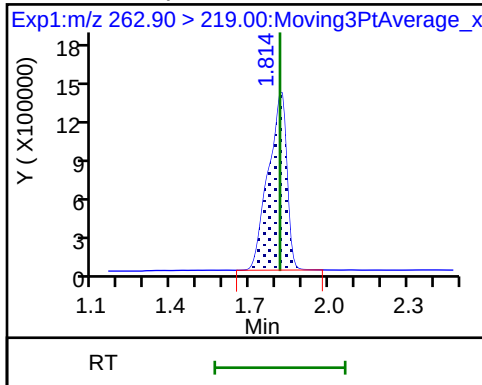
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

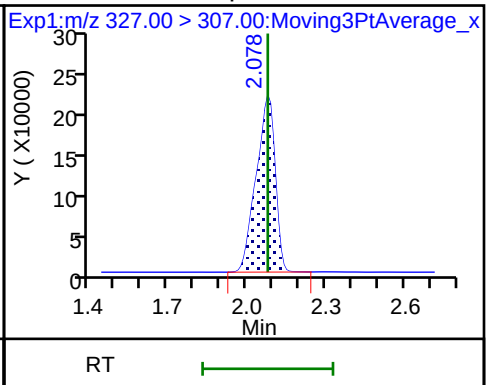
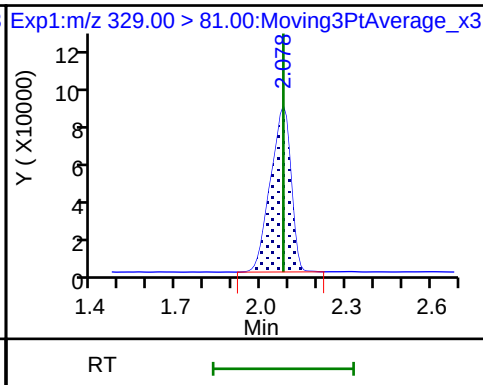
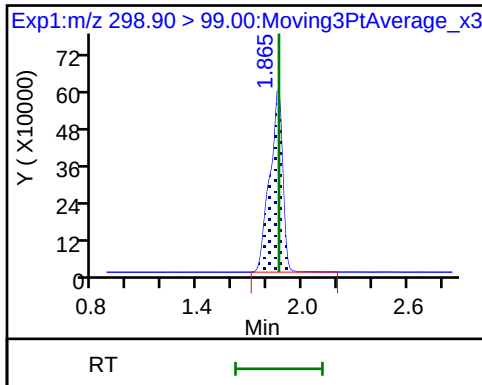
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

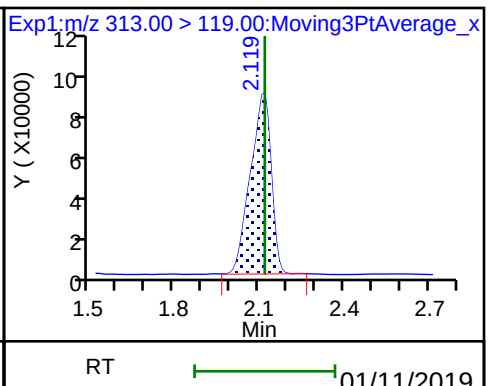
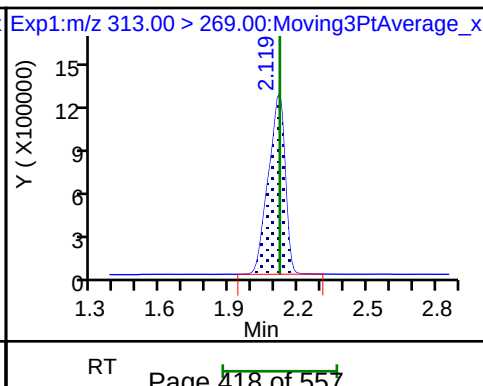
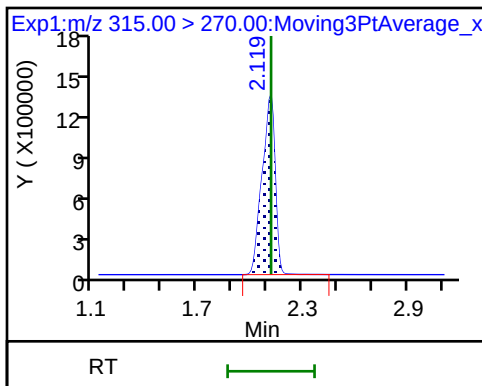
61 1H,1H,2H,2H-perfluorohexanesulfoni

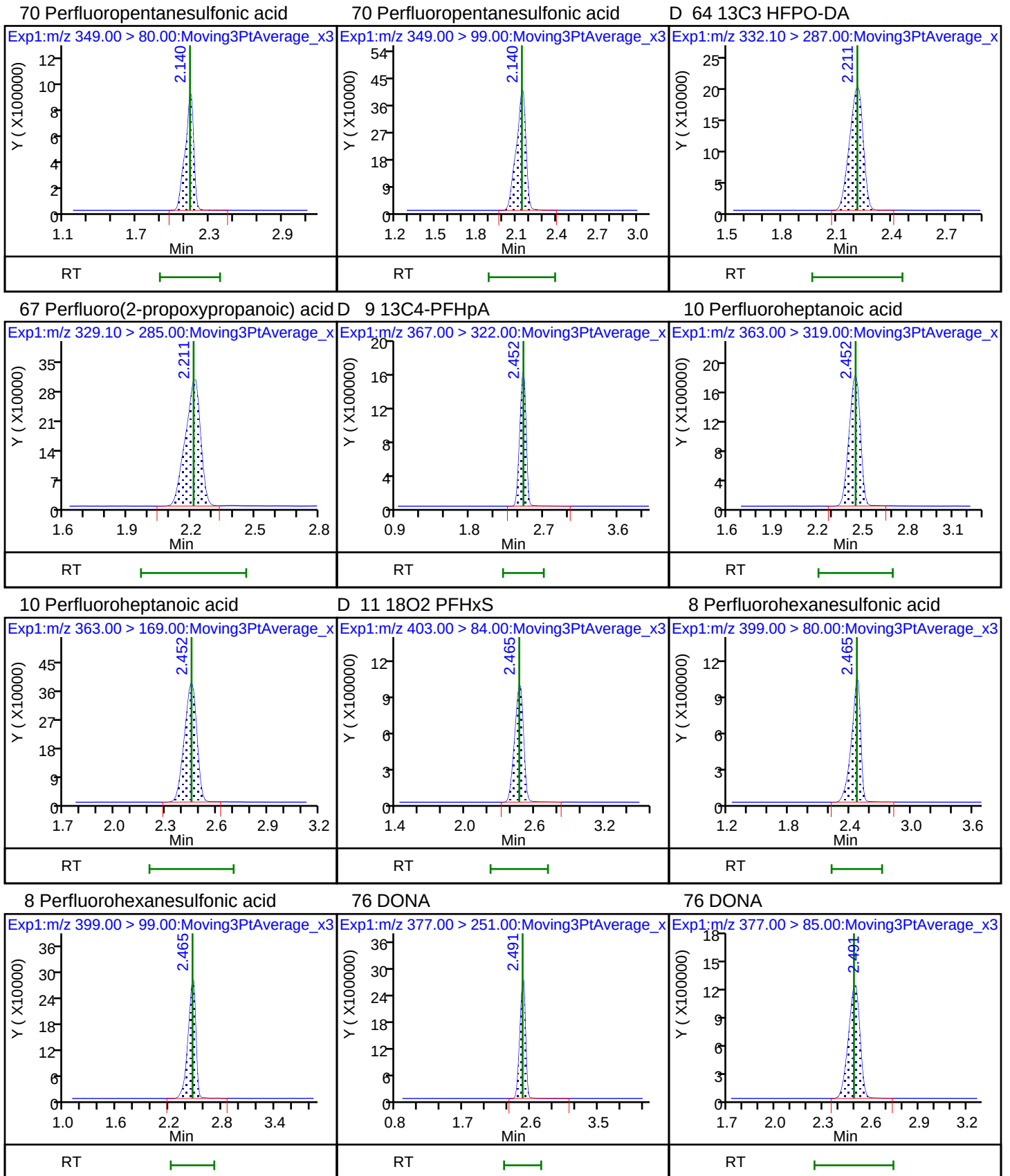


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

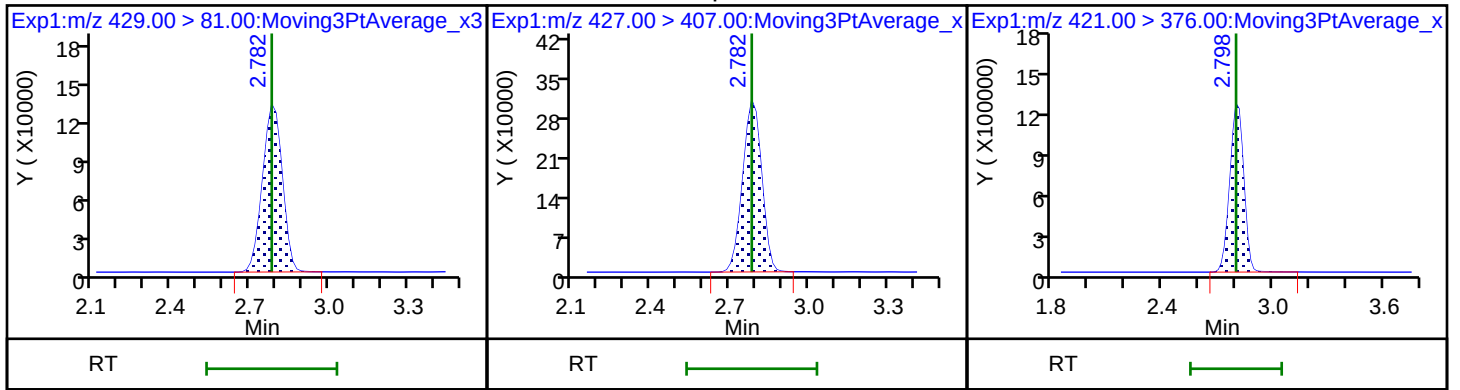
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

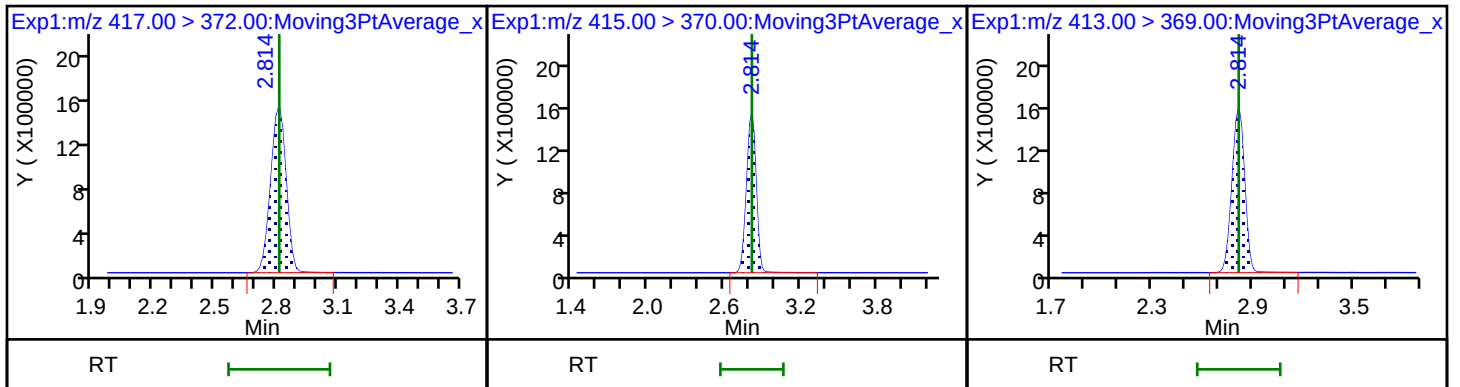
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

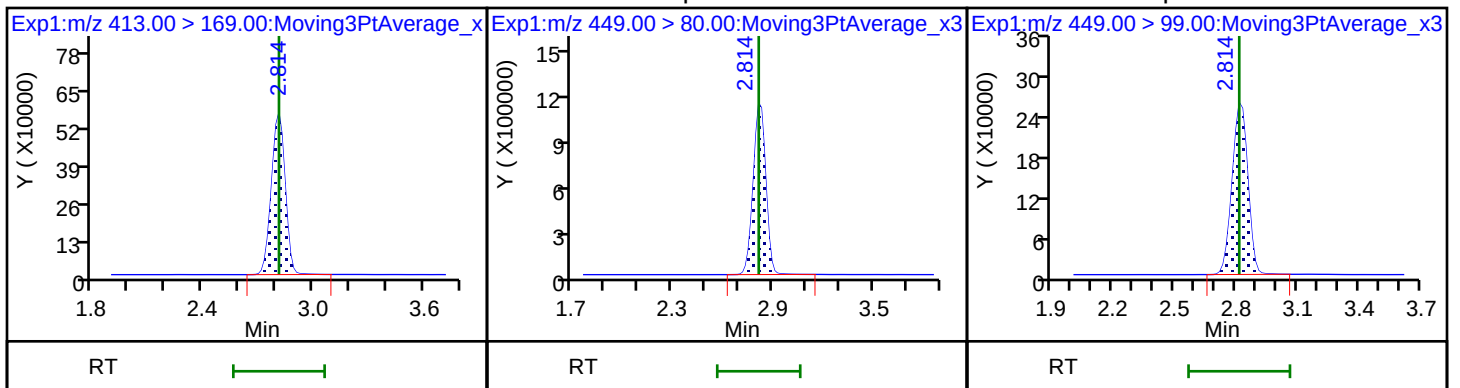
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

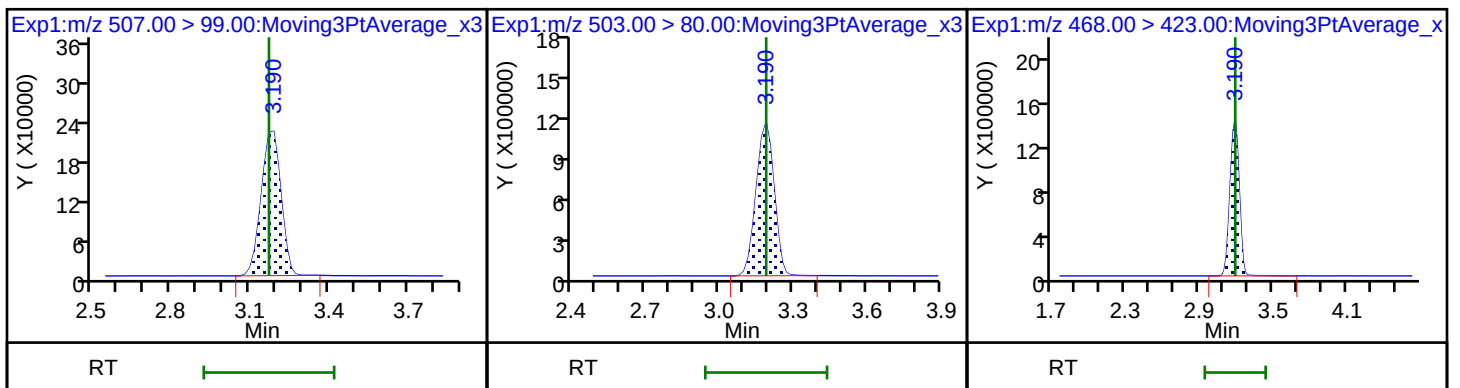
16 Perfluoroheptanesulfonic acid

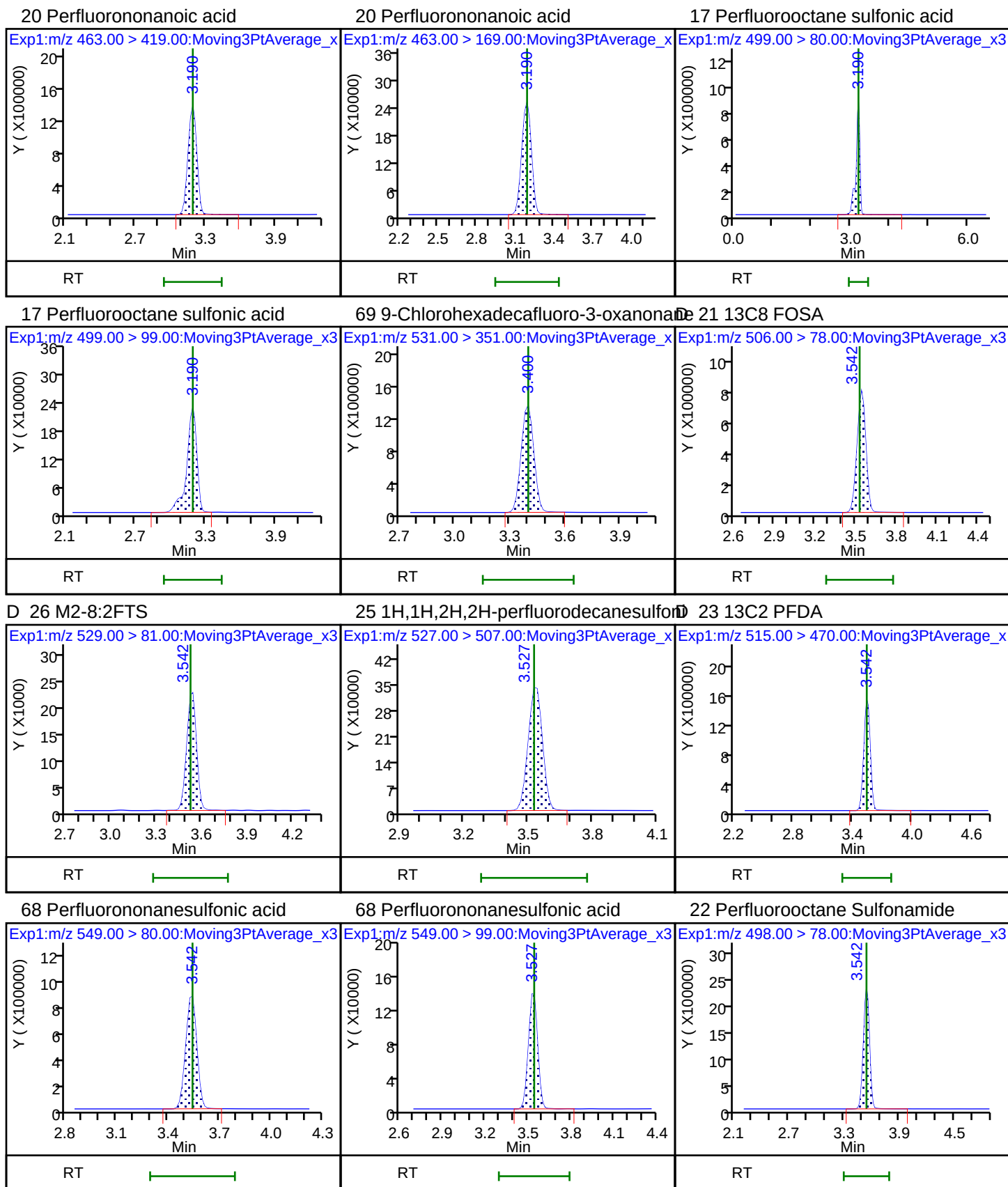


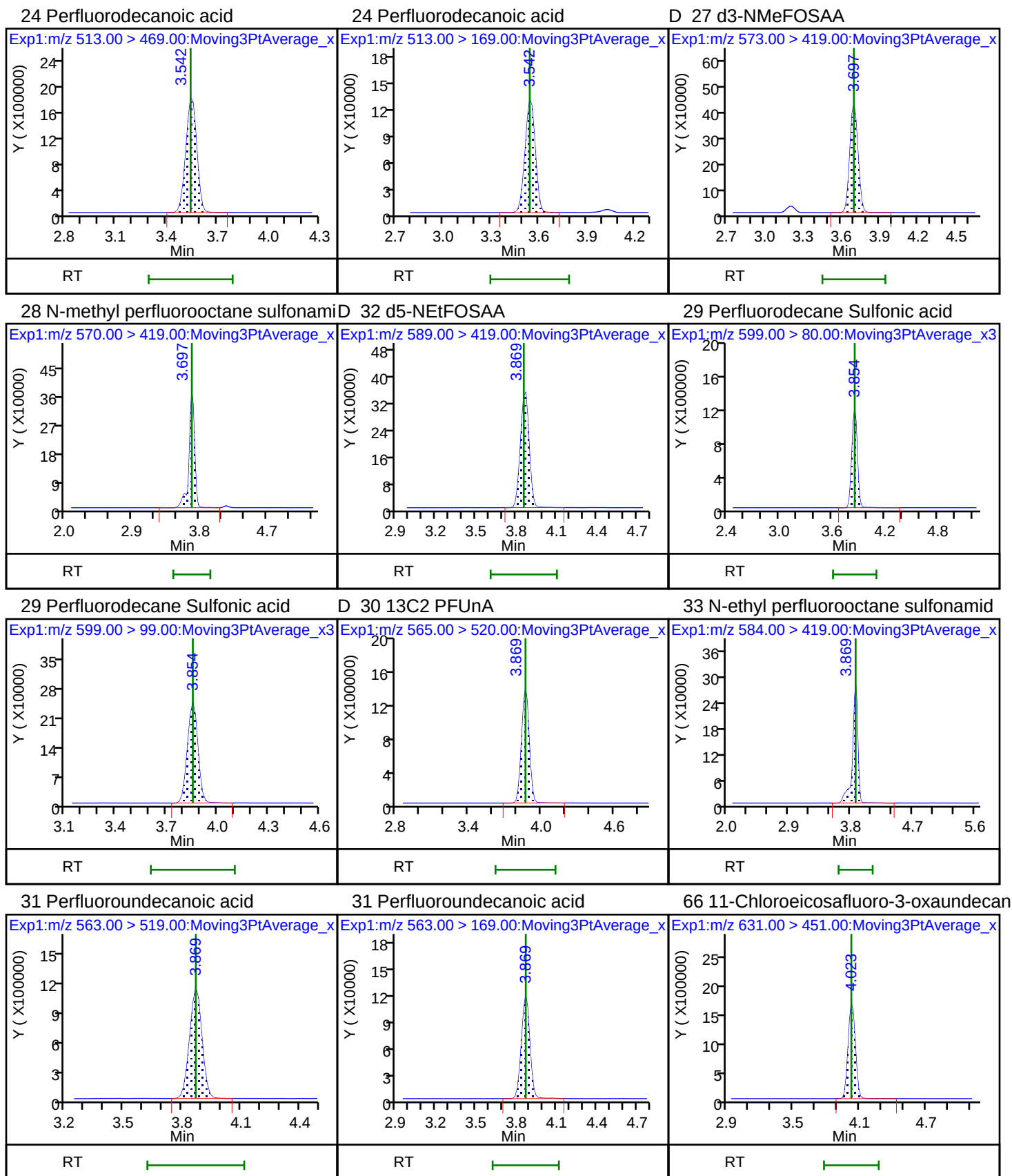
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA

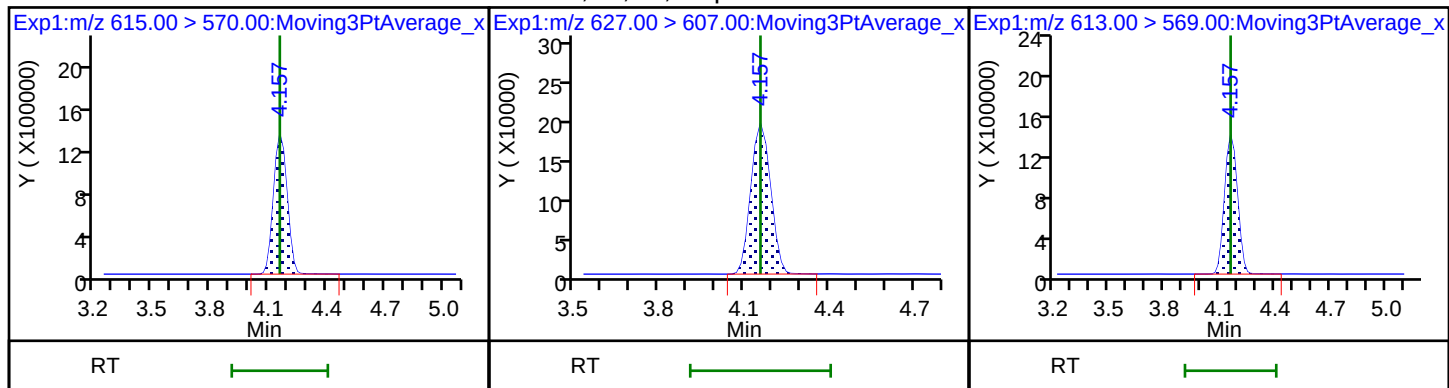






D 36 13C2 PFD0A

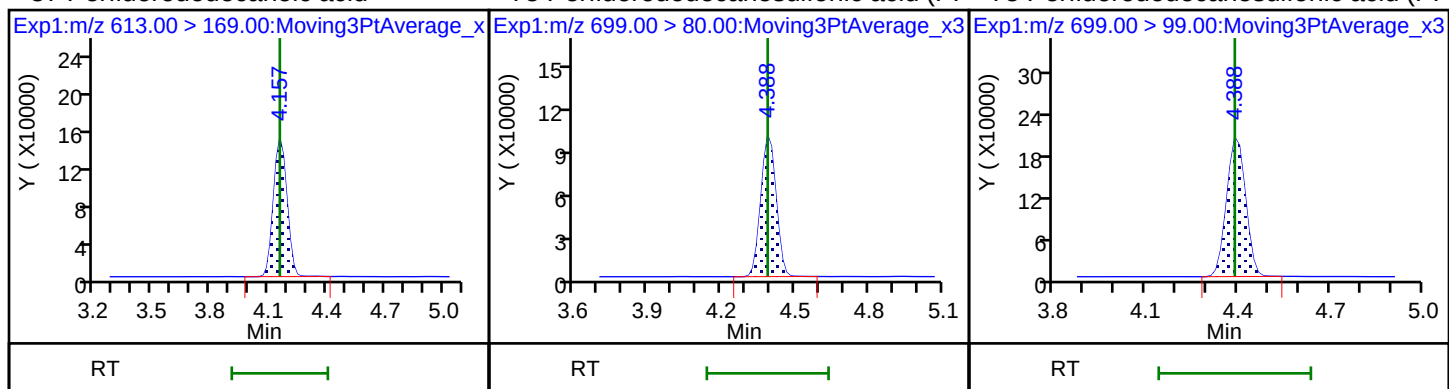
74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

75 Perfluorododecanesulfonic acid (PF

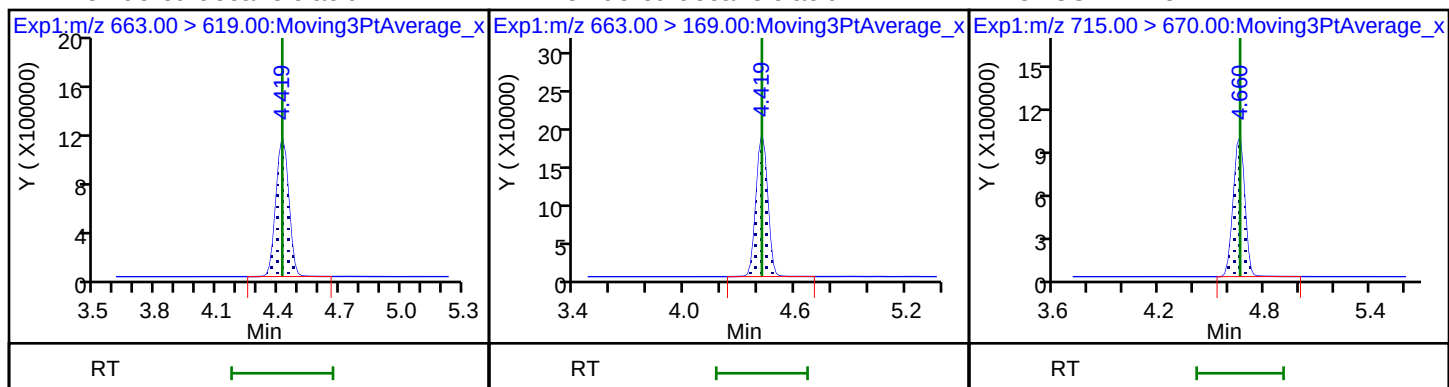
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

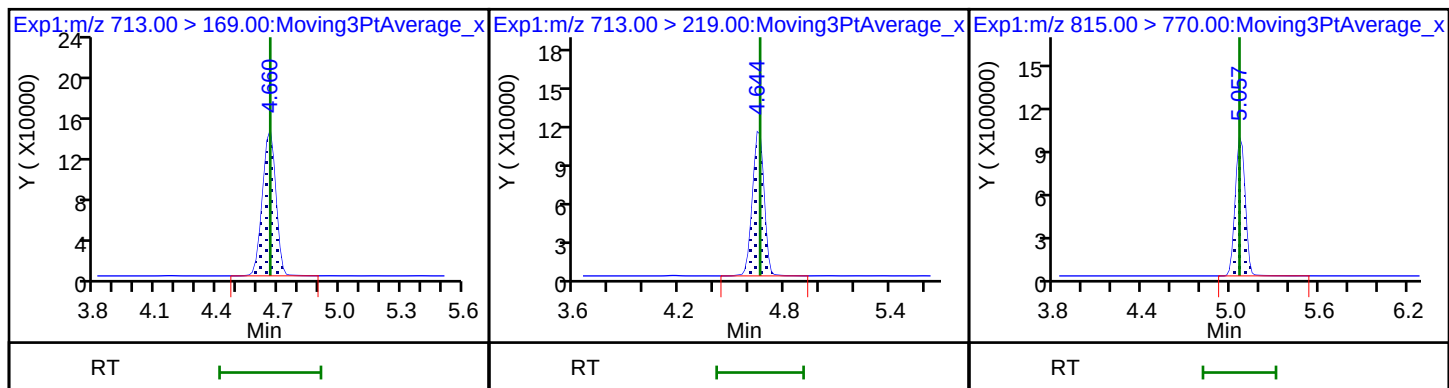
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

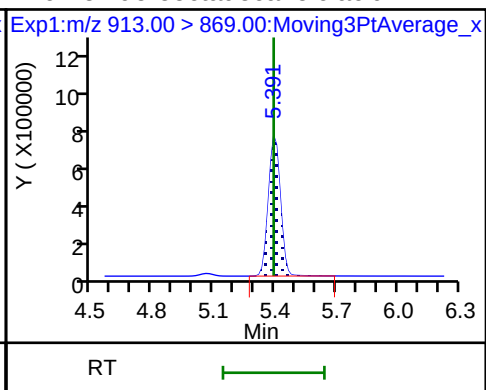
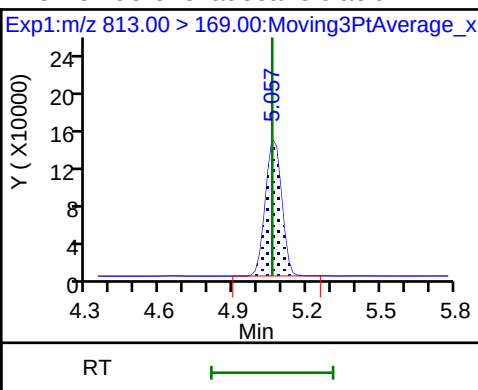
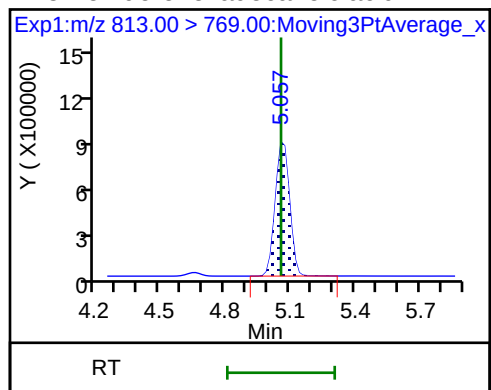
D 44 13C2-PFHxDA



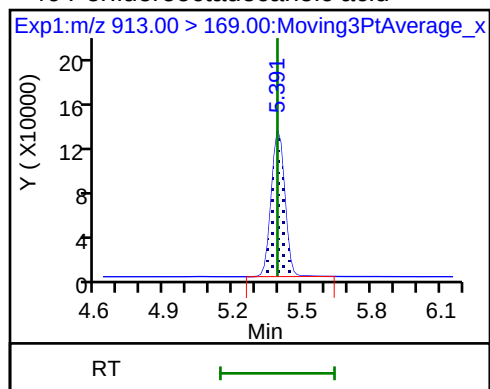
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCV 320-248611/27 Calibration Date: 09/29/2018 15:40

Instrument ID: A9 Calib Start Date: 09/21/2018 13:35

GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36

Lab File ID: 2018.09.29LLAA_041.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9167	0.9057		0.988	1.00	-1.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.996	1.029		1.03	1.00	3.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	103.3	112.7		0.964	0.884	9.0	50.0
4:2 FTS	AveID	22.60	14.91		0.616	0.934	-34.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.8993	0.9099		1.01	1.00	1.2	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	48.40	53.97		1.05	0.938	11.5	50.0
HFPO-DA (GenX)	AveID	1.870	1.674		0.895	1.00	-10.5	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.062	1.088		1.02	1.00	2.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.259	1.083		0.783	0.910	-14.0	40.0
DONA	AveID	2.645	2.613		0.931	0.942	-1.2	50.0
6:2 FTS	AveID	2.182	2.299		0.999	0.948	5.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.024	1.089		1.01	0.952	6.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.049	1.042		0.995	1.00	-0.6	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9822	1.040		1.06	1.00	5.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.059	1.073		0.940	0.928	1.3	40.0
F-53B Major	AveID	1.117	1.166		0.973	0.932	4.4	50.0
8:2 FTS	AveID	14.70	14.64		0.954	0.958	-0.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6656	0.6941		1.00	0.960	4.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.096	1.204		1.10	1.00	9.9	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.949	3.250		1.10	1.00	10.2	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9598	1.060		1.10	1.00	10.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8555	0.8404		0.947	0.964	-1.8	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9342	0.9626		1.03	1.00	3.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9018	0.9184		1.02	1.00	1.8	40.0
F-53B Minor	AveID	1.316	1.380		0.988	0.942	4.9	50.0
10:2 FTS	AveID	10.00	7.522		0.725	0.964	-24.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.001	0.9708		0.970	1.00	-3.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0958	0.0916		0.926	0.968	-4.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7839	0.7686		0.980	1.00	-2.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1643	0.1604		0.976	1.00	-2.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8846		0.952	1.00	-4.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCV 320-248611/27 Calibration Date: 09/29/2018 15:40
 Instrument ID: A9 Calib Start Date: 09/21/2018 13:35
 GC Column: Acquity ID: 2.10 (mm) Calib End Date: 09/21/2018 15:36
 Lab File ID: 2018.09.29LLAA_041.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	0.6480	0.6625		1.02	1.00	2.2	50.0
13C4 PFBA	Ave	0.9210	0.9052		2.46	2.50	-1.7	50.0
13C5 PFPeA	Ave	0.8374	0.8070		2.41	2.50	-3.6	50.0
13C3 PFBS	Ave	0.0114	0.0106		2.15	2.33	-7.4	50.0
M2-4:2 FTS	Ave	0.1043	0.0593		1.33	2.34	-43.2	50.0
13C2 PFHxA	Ave	0.8875	0.8360		2.35	2.50	-5.8	50.0
13C3 HFPO-DA	Ave	0.0924	0.1094		2.96	2.50	18.4	50.0
13C4 PFHpA	Ave	1.057	1.045		2.47	2.50	-1.1	50.0
18O2 PFHxS	Ave	0.6816	0.7104		2.47	2.37	4.2	50.0
M2-6:2 FTS	Ave	0.1097	0.0933		2.02	2.38	-14.9	40.0
13C8 PFOA	Ave	3075368	2580981		2.05	2.45	-16.1	50.0
13C4 PFOA	Ave	1.001	0.9794		2.45	2.50	-2.2	50.0
13C8 PFOS	Ave	540497	479189		2.12	2.39	-11.3	50.0
13C4 PFOS	Ave	0.7065	0.7140		2.42	2.39	1.1	50.0
13C5 PFNA	Ave	0.9108	0.8618		2.37	2.50	-5.4	50.0
M2-8:2 FTS	Ave	0.0139	0.0146		2.51	2.40	4.7	40.0
13C2 PFDA	Ave	0.9435	0.8754		2.32	2.50	-7.2	50.0
13C8 FOSA	Ave	0.3770	0.4211		2.79	2.50	11.7	50.0
d3-NMeFOSAA	Ave	0.4182	0.2241		1.34	2.50	-46.4	50.0
d5-NEtFOSAA	Ave	0.3276	0.1899		1.45	2.50	-42.0	50.0
13C2 PFUnA	Ave	0.8011	0.6993		2.18	2.50	-12.7	50.0
13C2 PFDoA	Ave	0.9529	0.8316		2.18	2.50	-12.7	50.0
13C2 PFTeDA	Ave	0.7508	0.5227		1.74	2.50	-30.4	50.0
13C2 PFHxDA	Ave	0.7497	0.4725		1.58	2.50	-37.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_041.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 29-Sep-2018 15:40:54 ALS Bottle#: 13 Worklist Smp#: 27
 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\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 11:55:54 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d

Column 1 : Det: EXP1

Process Host: XAWRK023

First Level Reviewer: barnettj

Date: 03-Oct-2018 11:17:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.517	1.517	0.0	1.004	2630573	0.9880		98.8	427	
D 1 13C4 PFBA										
217.00 > 172.00	1.511	1.523	-0.012	0.537	7261236	2.46		98.3	2529	
D 3 13C5-PFPeA										
267.90 > 223.00	1.806	1.814	-0.008	0.642	6473626	2.41		96.4	6657	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.806	1.806	0.0	1.000	2664279	1.03		103	91.3	
D 47 13C3-PFBS										
301.90 > 83.00	1.847	1.855	-0.008	0.656	78759	2.15		92.6	611	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.847	1.847	0.0	1.000	3373709	0.9639		109	2713	
298.90 > 99.00	1.847	1.847	0.0	1.000	1190192		2.83(1.35-4.05)		1523	
D 60 M2-4:2FTS										
329.00 > 81.00	2.068	2.078	-0.010	0.735	444034	1.33		56.8	658	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.068	2.068	0.0	1.120	471624	0.6161		66.0	1686	
D 7 13C2 PFHxA										
315.00 > 270.00	2.109	2.119	-0.010	0.750	6706177	2.35		94.2	5704	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.109	2.109	0.0	1.000	2440675	1.01		101	209	
313.00 > 119.00	2.109	2.109	0.0	1.000	175226		13.93(6.96-20.87)		170	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.140	2.140	0.0	1.158	1714801	1.05		112	2898	
349.00 > 99.00	2.140	2.140	0.0	1.158	790684		2.17(1.15-3.45)		1328	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.212	2.211	0.001	0.786	877443	2.96		118	3368	

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	2.212	2.212	0.0	1.000	587667	0.8955		89.5	529	
D 9 13C4-PFHpA										
367.00 > 322.00	2.439	2.452	-0.013	0.867	8384676	2.47		98.9	7981	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.439	2.439	0.0	1.000	3650141	1.02		102	673	
363.00 > 169.00	2.439	2.439	0.0	1.000	781758		4.67(2.17-6.52)		1149	
D 11 18O2 PFHxS										
403.00 > 84.00	2.465	2.465	0.0	0.876	5391219	2.47		104	8843	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.465	2.465	0.0	1.000	2246502	0.7829		86.0	2152	
399.00 > 99.00	2.465	2.465	0.0	1.000	666965		3.37(1.90-5.70)		679	
76 DONA										
377.00 > 251.00	2.492	2.492	0.0	0.781	5638339	0.9306		98.8	7678	
377.00 > 85.00	2.492	2.492	0.0	0.781	2315227		2.44(1.13-3.39)		1191	
D 12 M2-6:2FTS										
429.00 > 81.00	2.782	2.782	0.0	0.989	711036	2.02		85.1	1190	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.782	2.782	0.0	1.000	652532	1.00		105	732	
D 73 13C8 PFOA										
421.00 > 376.00	2.798	2.798	0.0		6316951	2.05		83.9	5656	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	7856660	2.45		97.8	6592	
* 62 13C2-PFOA										
415.00 > 370.00	2.814	2.814	0.0		8022122	2.50			6007	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.814	2.814	0.0	1.000	3278098	0.99		99.4	500	
413.00 > 169.00	2.814	2.814	0.0	1.000	1194490		2.74(1.36-4.08)		1807	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.814	2.814	0.0	0.882	2374464	1.01		106	1712	
449.00 > 99.00	2.814	2.814	0.0	0.882	563296		4.22(1.84-5.53)		1305	
D 72 13C8 PFOS										
507.00 > 99.00	3.172	3.171	0.001		1145261	2.12		88.7	2067	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5475477	2.42		101	2454	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	6913189	2.37		94.6	7958	
20 Perfluorononanoic acid										
463.00 > 419.00	3.190	3.190	0.0	1.000	2875767	1.06		106	383	
463.00 > 169.00	3.190	3.190	0.0	1.000	507695		5.66(2.68-8.03)		1293	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.190	0.0	1.000	2282254	0.9404		101	1863	
499.00 > 99.00	3.190	3.190	0.0	1.000	535152		4.26(2.04-6.12)		1085	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.400	3.400	0.0	1.066	2488860	0.9727		104	1324	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3377843	2.79		112	4673	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.527	0.0	1.253	111888	2.51		105	505	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.527	0.0	1.000	655099	0.9538		99.6	1885	
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.259	7022176	2.32		92.8	11260	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.527	0.0	1.106	1526528	1.00		104	2184	
549.00 > 99.00	3.527	3.527	0.0	1.106	236104		6.47(3.02-9.05)		753	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.542	3.542	0.0	1.000	4391618	1.10		110	2620	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.542	3.542	0.0	1.000	3383064	1.10		110	1416	
513.00 > 169.00	3.542	3.542	0.0	1.000	230775		14.66(7.12-21.35)		403	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	1797841	1.34		53.6	541	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.697	0.0	1.000	762145	1.10		110	327	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.855	3.854	0.001	1.370	1523716	1.45		58.0	1460	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.855	3.855	0.0	1.208	1856035	0.9469		98.2	2718	
599.00 > 99.00	3.855	3.855	0.0	1.208	401746		4.62(2.14-6.43)		1168	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.869	0.0	1.375	5609999	2.18		87.3	4392	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.869	0.0	1.004	586718	1.03		103	1611	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.869	3.869	0.0	1.000	2060785	1.02		102	519	
563.00 > 169.00	3.869	3.869	0.0	1.000	189323		10.89(5.24-15.72)		597	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.023	0.0	1.261	2978393	0.9882		105	4878	
35 MeFOSA										
512.00 > 169.00	4.040	4.040	0.0		630359	NC			1001	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.157	0.0	1.477	6671513	2.18		87.3	5889	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.157	4.157	0.0	1.179	338751	0.7254		75.2	670	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.157	4.157	0.0	1.000	2590574	0.9697		97.0	701	
613.00 > 169.00	4.157	4.157	0.0	1.000	274134		9.45(4.68-14.05)		722	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.231	4.231	0.0		636922	NC			517	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.388	4.388	0.0	1.376	203238	0.9263		95.7	789	
699.00 > 99.00	4.388	4.388	0.0	1.376	374345		0.54(0.28-0.83)		1205	

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	4.419	4.419	0.0	1.063	2051001	0.9805		98.0	1190	
663.00 > 169.00	4.419	4.419	0.0	1.063	324546		6.32(3.09-9.27)		894	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.660	4.660	0.0	1.656	4193339	1.74		69.6	9021	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.660	0.0	1.000	268962	0.9762		97.6	940	
713.00 > 219.00	4.644	4.660	-0.016	0.997	183638		1.46(0.70-2.09)		741	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.058	5.057	0.001	1.797	3790100	1.58		63.0	6004	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.058	5.058	0.0	1.000	1341043	0.9520		95.2	125	
813.00 > 169.00	5.058	5.058	0.0	1.000	233549		5.74(2.77-8.32)		780	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.392	5.392	0.0	1.066	1004404	1.02		102	403	
913.00 > 169.00	5.392	5.392	0.0	1.066	175920		5.71(2.55-7.64)		1250	

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\20180929-64986.b\2018.09.29LLAA_041.d

Injection Date: 29-Sep-2018 15:40:54

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 27

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

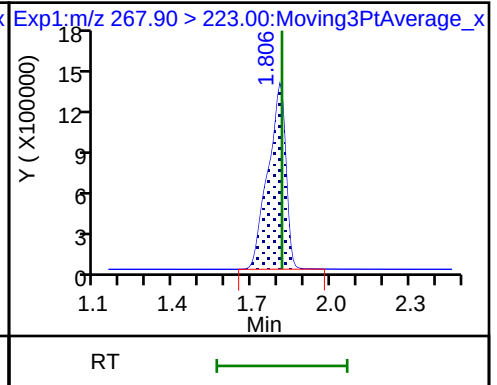
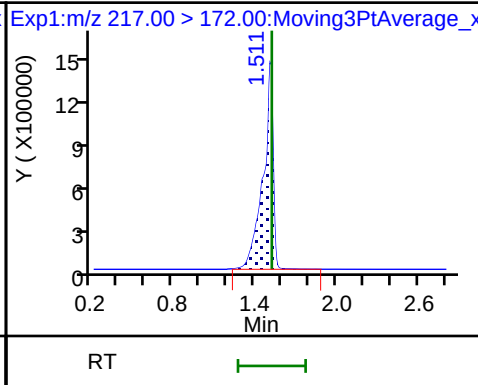
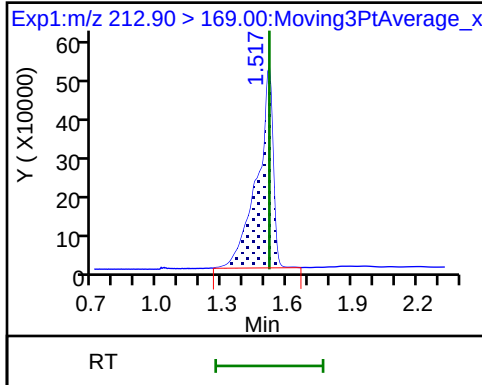
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

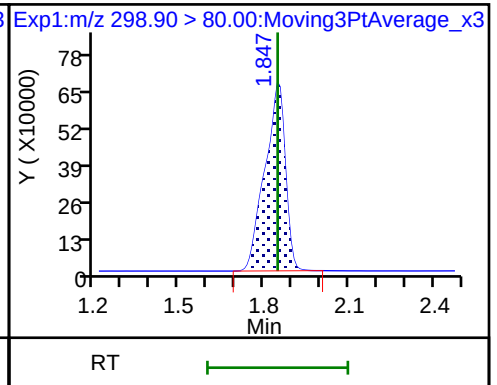
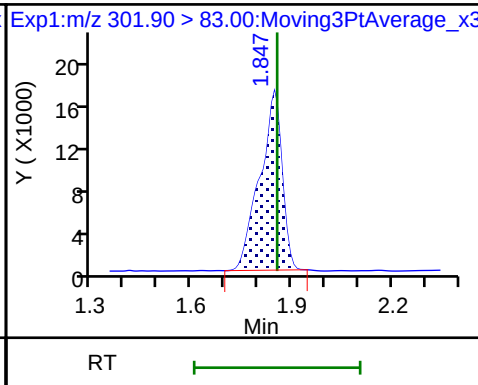
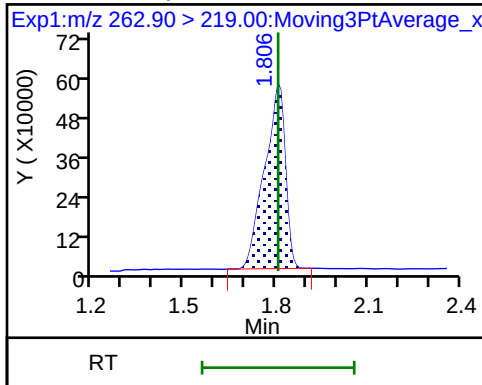
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

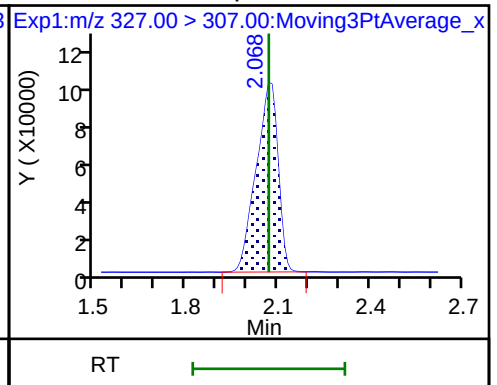
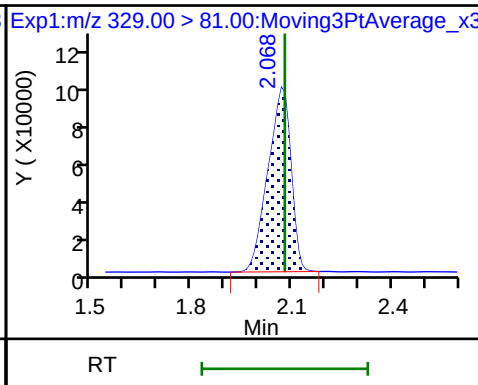
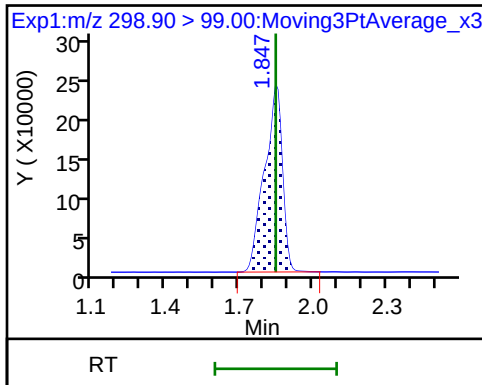
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2FTS

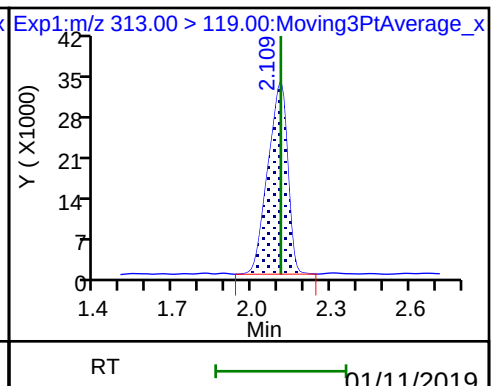
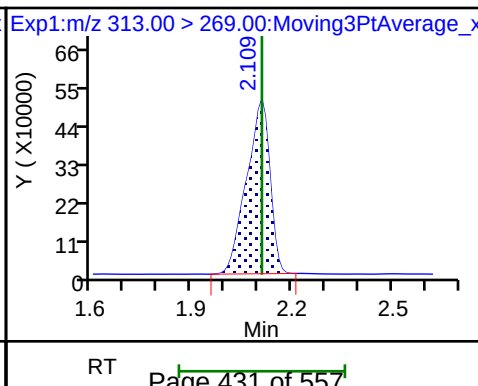
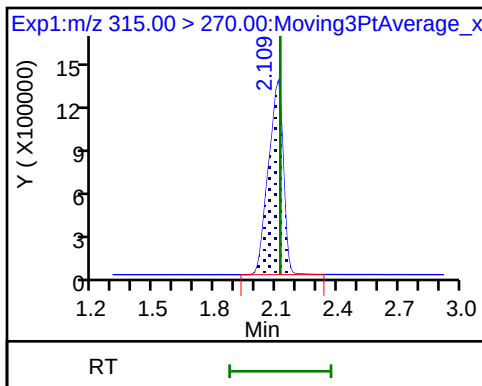
61 1H,1H,2H,2H-perfluorohexanesulfoni

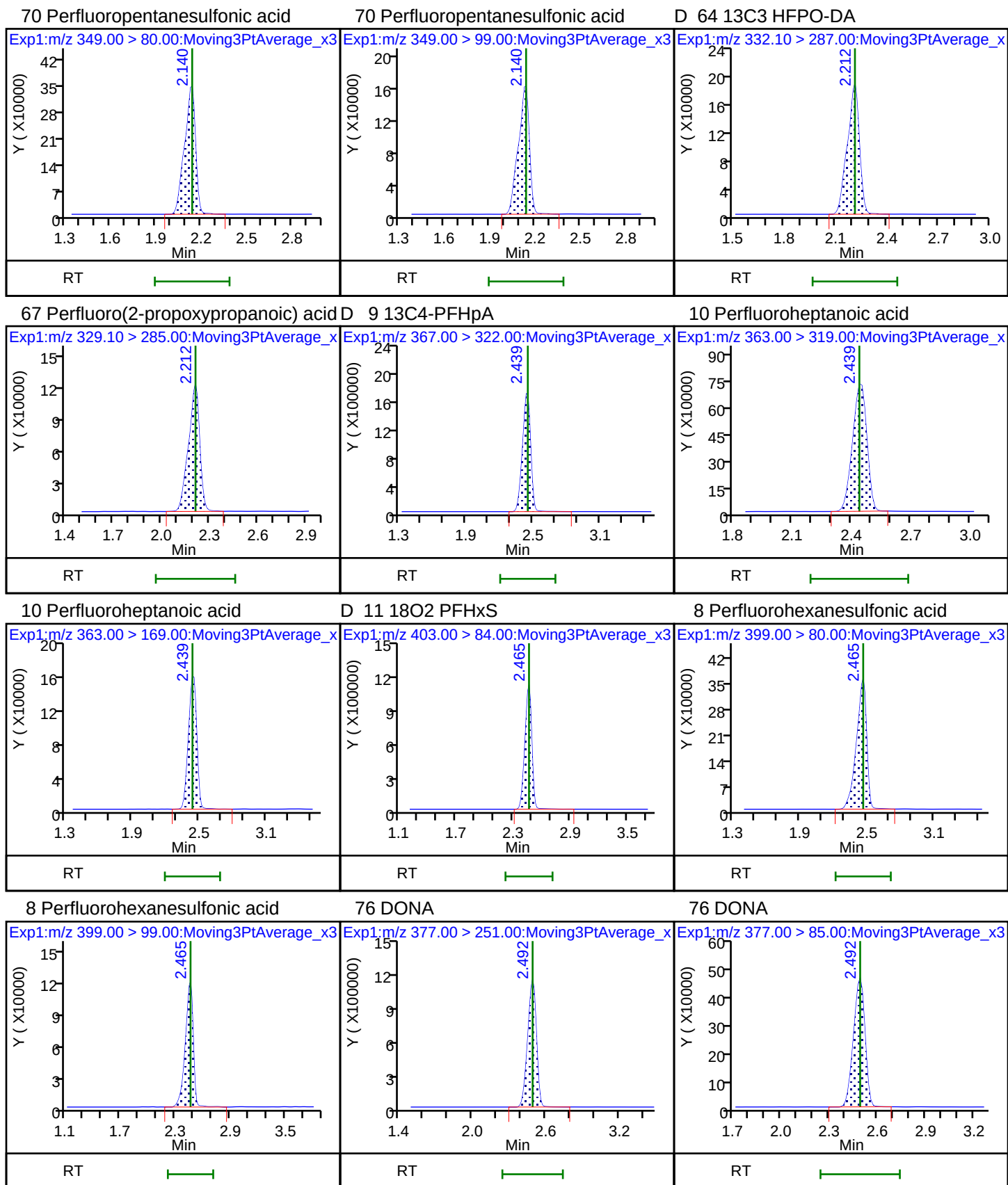


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

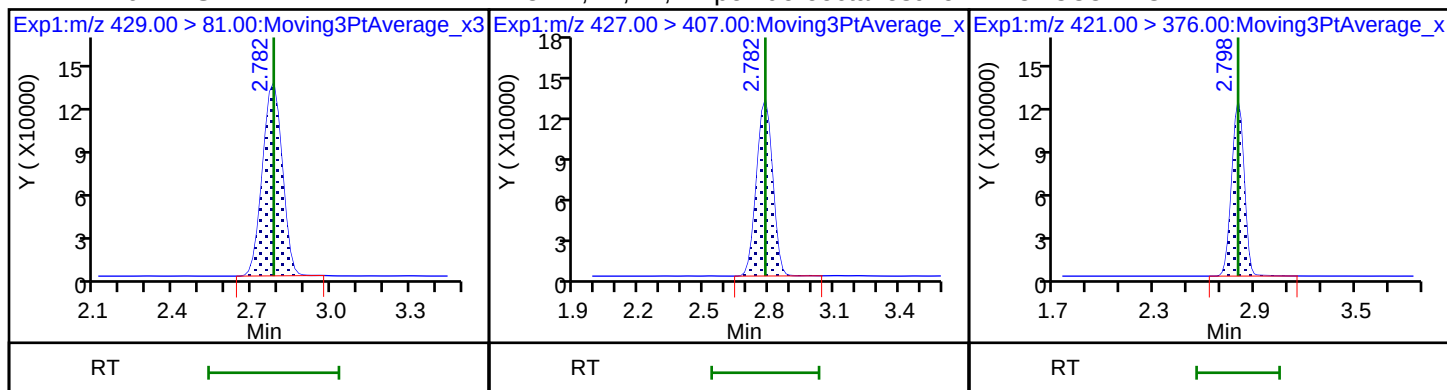
6 Perfluorohexanoic acid





D 12 M2-6:2FTS

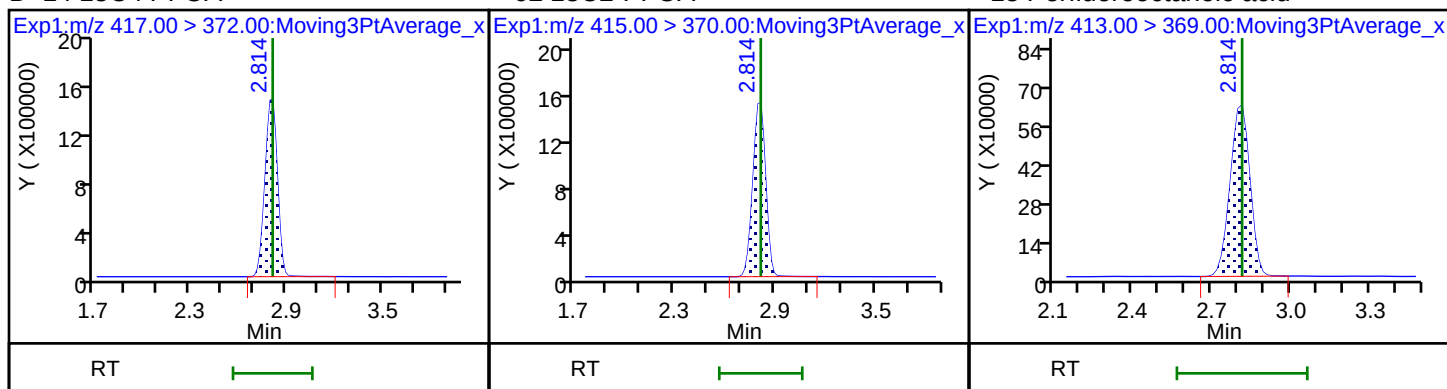
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

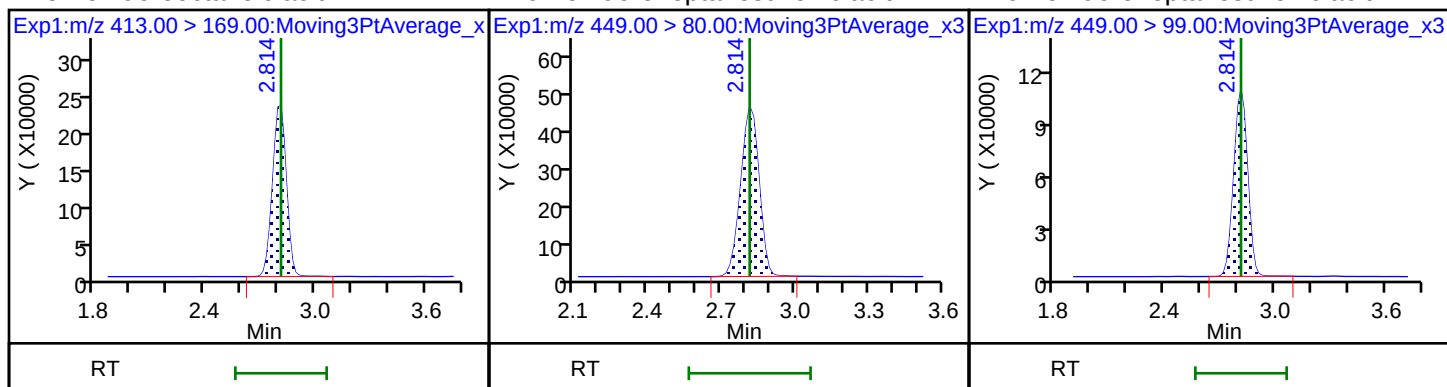
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

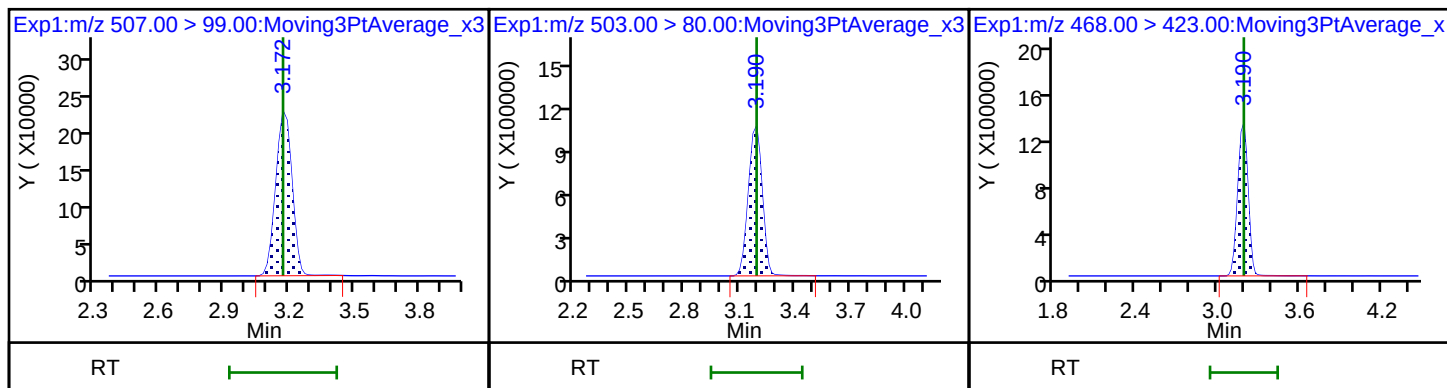
16 Perfluoroheptanesulfonic acid

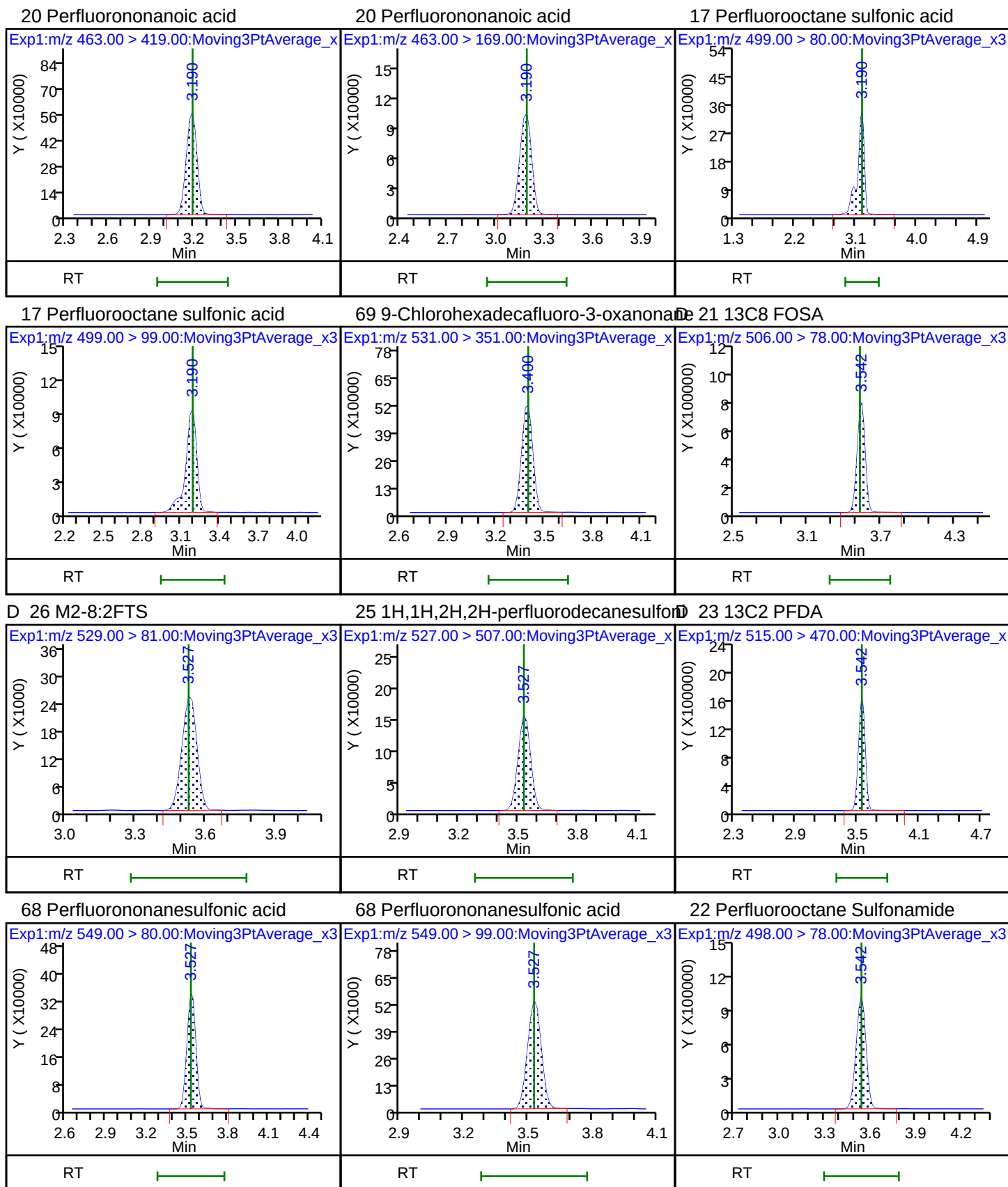


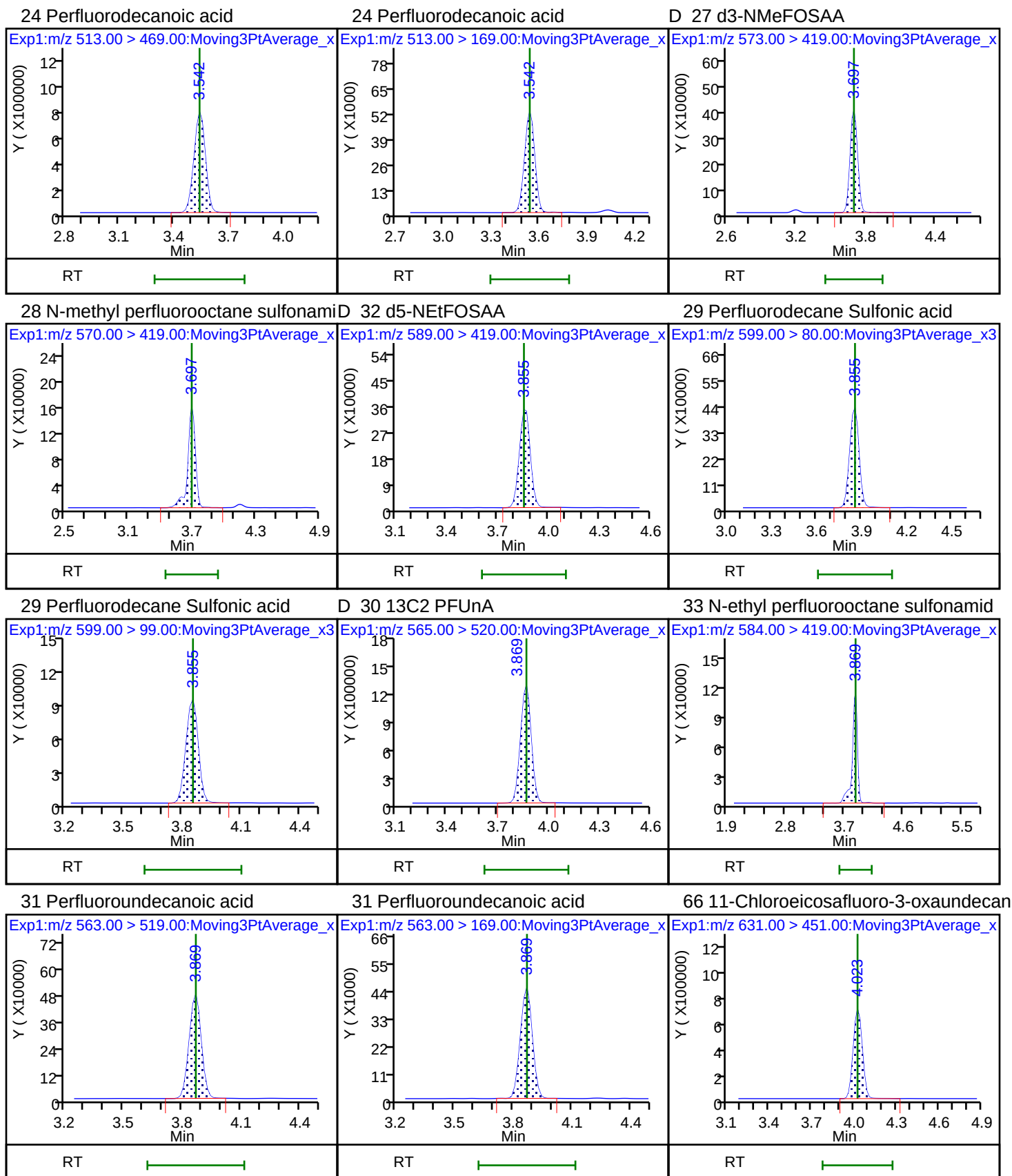
D 72 13C8 PFOS

D 18 13C4 PFOS

D 19 13C5 PFNA

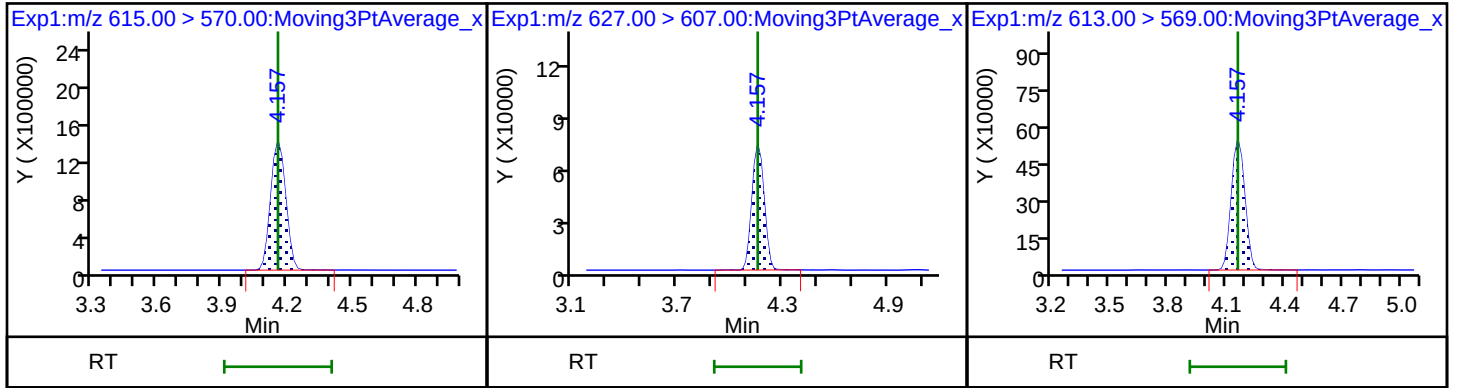






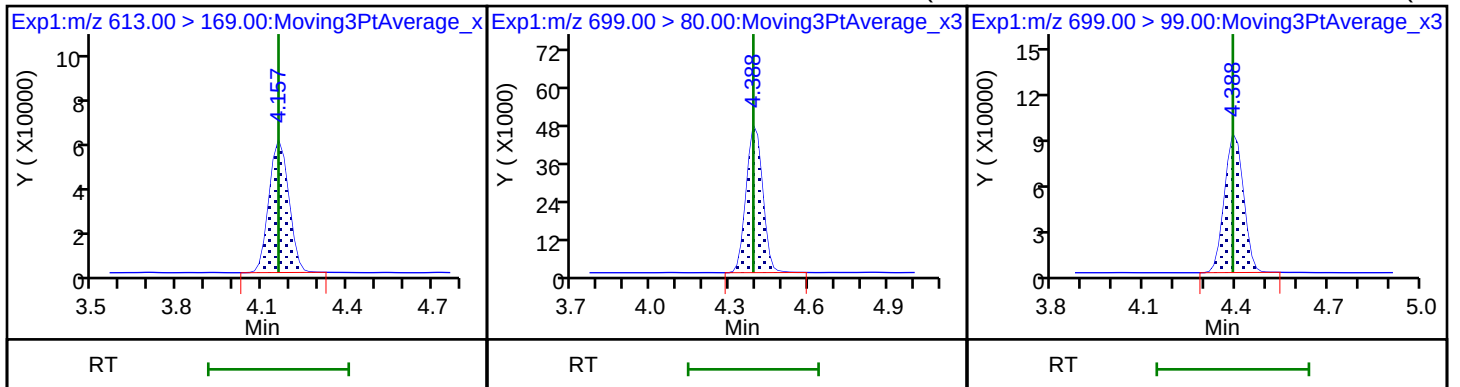
D 36 13C2 PFD0a

74 1H,1H,2H,2H-perfluorododecanesulfo37 Perfluorododecanoic acid



37 Perfluorododecanoic acid

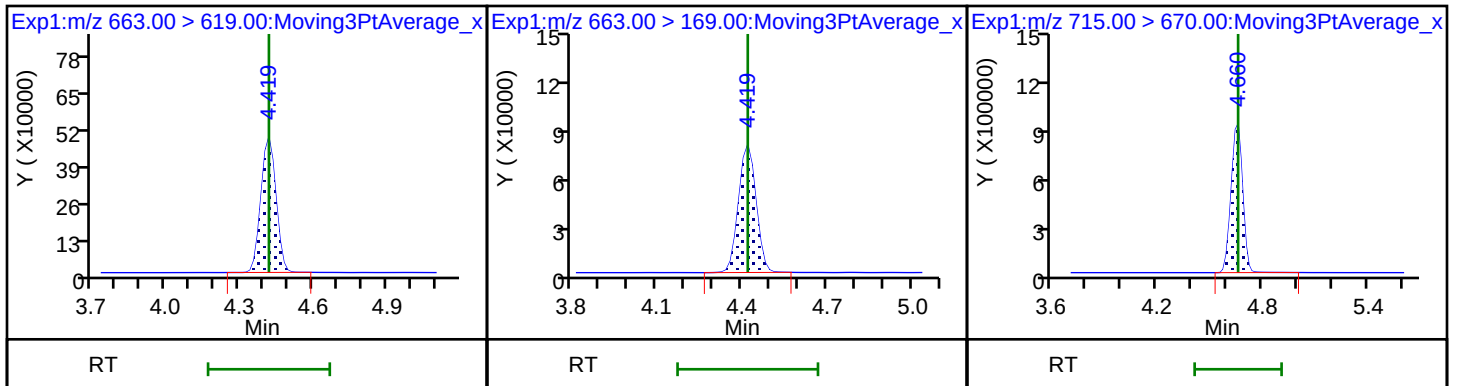
75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

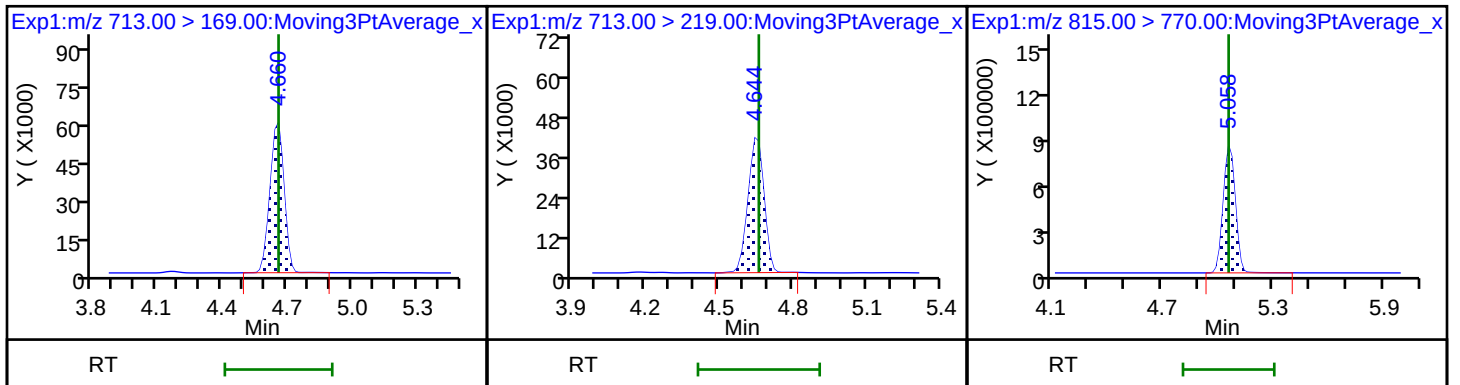
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

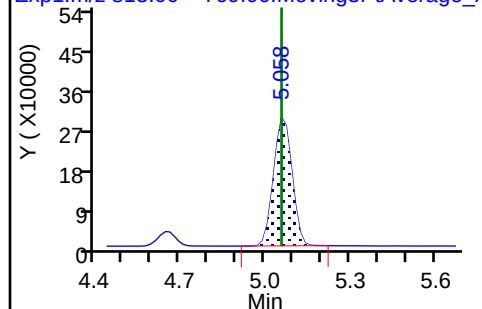


45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

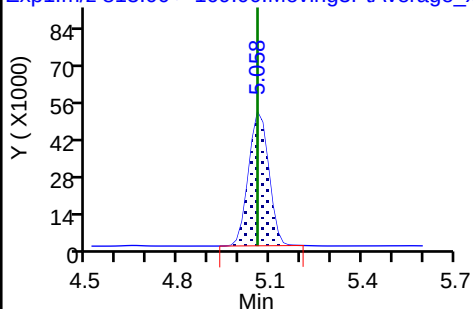
46 Perfluorooctadecanoic acid

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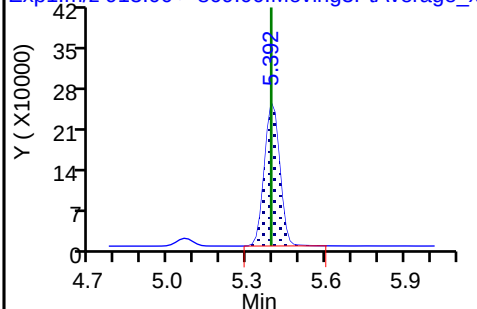
RT

Exp1:m/z 813.00 > 169.00:Moving3PtAverage_x



RT

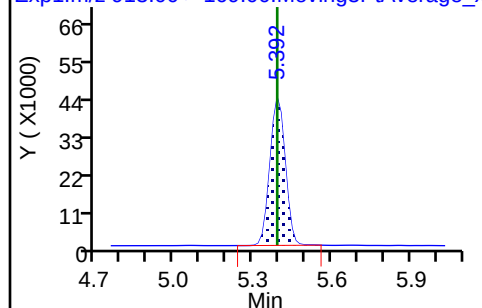
Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



RT

46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



RT

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: ICV 320-250597/10 Calibration Date: 10/08/2018 16:34

Instrument ID: A9 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	0.9058	0.9258		2.56	2.50	2.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.010	0.9907		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	0.9054	0.8518		2.35	2.50	-5.9	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	1.073	1.057		2.46	2.50	-1.5	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	1.085	1.029		2.37	2.50	-5.2	40.0
Perfluorononanoic acid (PFNA)	AveID	1.015	0.9939		2.45	2.50	-2.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	1.087		2.33	2.31	0.8	40.0
F-53B Major	AveID	1.144	1.214		2.47	2.33	6.1	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	0.6369	0.7258		2.74	2.40	14.0	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.108	1.045		2.36	2.50	-5.6	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.014	1.084		2.67	2.50	6.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.9412		2.58	2.41	7.0	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9150	1.064		2.91	2.50	16.2	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9124	0.9010		2.47	2.50	-1.2	40.0
F-53B Minor	AveID	1.353	1.461		2.54	2.36	7.9	50.0
10:2 FTS	AveID	9.585	10.30		2.59	2.41	7.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	1.066		2.62	2.50	4.6	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0902	0.0880		2.36	2.42	-2.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7667	0.8489		2.77	2.50	10.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1564		2.45	2.50	-1.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9564		2.67	2.50	7.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: ICV 320-250597/10 Calibration Date: 10/08/2018 16:34
 Instrument ID: A9 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	0.9146	0.9070		2.48	2.50	-0.8	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
13C8 PFOA	Ave	2595399	2501931		2.36	2.45	-3.6	50.0
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 PFOS	Ave	424896	421146		2.37	2.39	-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

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.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
 Sublist:
 Method: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 08:25:21 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK010

First Level Reviewer: phomsophat

Date: 08-Oct-2018 17:20:04

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	1.501	0.004	0.538	6614151	2.48		99.2	18704	
2 Perfluorobutyric acid										
212.90 > 169.00	1.505	1.501	0.004	1.000	6123614	2.56			303	
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	5904875	2.45			536	
D 47 13C3-PFBS										
301.90 > 83.00	1.839	1.834	0.005	0.657	72765	2.24		96.4	478	
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	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.058	2.053	0.005	1.119	1857552	2.35			5665	
D 60 M2-4:2FTS										
329.00 > 81.00	2.058	2.055	0.003	0.736	733850	2.24		96.0	1304	
D 7 13C2 PFHxA										
315.00 > 270.00	2.089	2.091	-0.002	0.746	6428620	2.51		100	10193	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.091	-0.002	1.000	5475937	2.35			1067	
313.00 > 119.00	2.089	2.091	-0.002	1.000	396069		13.83(6.96-20.87)		735	
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	8212355	2.46			1347	
363.00 > 169.00	2.426	2.431	-0.005	1.000	1794655		4.58(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	1434221		3.64(1.90-5.70)		1652	
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(1.13-3.39)		3669	
D 12 M2-6:2FTS										
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	
D 73 13C8 PFOA										
421.00 > 376.00	2.782	2.789	-0.007		6123477	2.36		96.4	10151	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.798	2.800	-0.002	1.000	7913233	2.37			488	
413.00 > 169.00	2.798	2.800	-0.002	1.000	2877584		2.75(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	
D 72 13C8 PFOS										
507.00 > 99.00	3.172	3.171	0.001		1006540	2.37		99.1	2708	
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	
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 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.172	3.179	-0.007	1.000	5013414	2.33			2555	
499.00 > 99.00	3.172	3.179	-0.007	1.000	1190161		4.21(2.04-6.12)		1967	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.384	3.388	-0.004	1.067	5638302	2.47			3319	
D 21 13C8 FOSA										
506.00 > 78.00	3.481	3.480	0.001	1.244	2698306	2.44		97.7	5654	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.481	3.485	-0.004	1.000	8677264	2.71			5935	
D 26 M2-8:2FTS										
529.00 > 81.00	3.527	3.531	-0.004	1.261	99429	2.19		91.6	450	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.527	3.531	-0.004	1.000	1447142	2.34			3747	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.527	3.531	-0.004	1.112	3473085	2.74			3093	
549.00 > 99.00	3.527	3.531	-0.004	1.112	566393		6.13(3.02-9.05)		2817	
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	7709261	2.36			1029	
513.00 > 169.00	3.542	3.541	0.001	1.000	520887		14.80(7.12-21.35)		1301	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.693	0.004	1.321	3088848	2.60		104	1792	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.697	3.699	-0.002	1.000	3347353	2.67			1185	
29 Perfluorodecane Sulfonic 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	915826		4.94(2.14-6.43)		1611	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.855	3.861	-0.006	1.378	2407828	2.40		96.1	2960	
D 30 13C2 PFUnA										
565.00 > 520.00	3.870	3.873	-0.003	1.383	6174203	2.43		97.4	7370	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.870	3.873	-0.003	1.004	2561223	2.91			4456	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.870	3.873	-0.003	1.000	5563186	2.47			1068	
563.00 > 169.00	3.870	3.873	-0.003	1.000	498773		11.15(5.24-15.72)		1510	
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	
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	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.158	4.173	-0.015	1.179	1030593	2.59			1117	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.404	4.410	-0.006	1.388	424794	2.36			529	
699.00 > 99.00	4.404	4.410	-0.006	1.388	792684		0.54(0.28-0.83)		1938	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.435	4.441	-0.006	1.067	6149665	2.77			2994	
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	

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	4.676	4.686	-0.010	1.000	853973	2.45			1659	
713.00 > 219.00	4.676	4.686	-0.010	1.000	587869		1.45(0.70-2.09)		1787	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.108	5.115	-0.007	1.825	4837426	2.59		103	6114	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.108	5.118	-0.010	1.000	4626324	2.67			1169	
813.00 > 169.00	5.108	5.118	-0.010	1.000	781222		5.92(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	538757		5.21(2.55-7.64)		1542	

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181008-65481.b\2018.10.08LLICAL_010.d

Injection Date: 08-Oct-2018 16:34:27

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

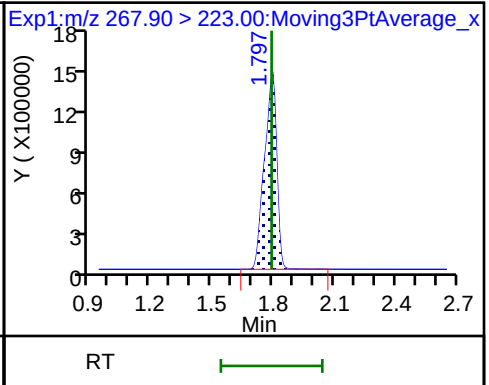
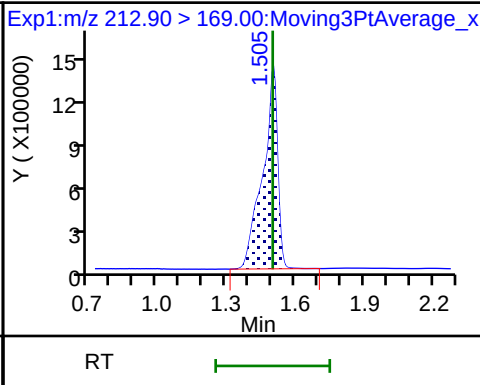
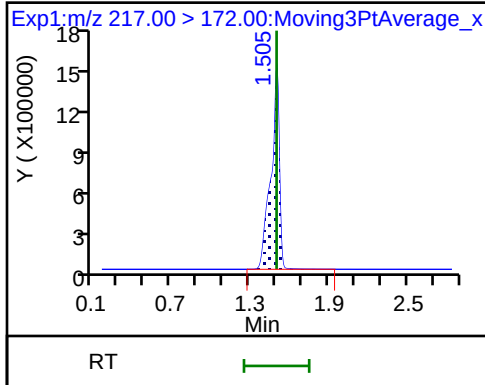
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

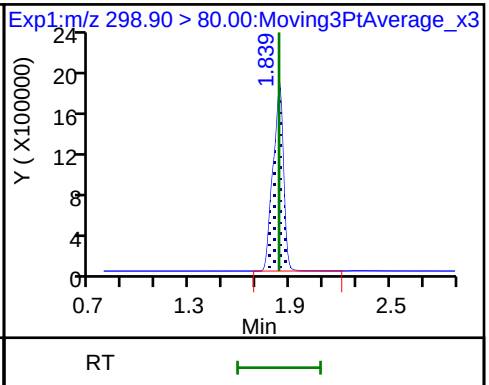
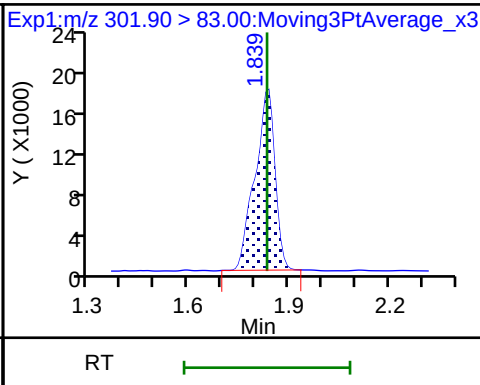
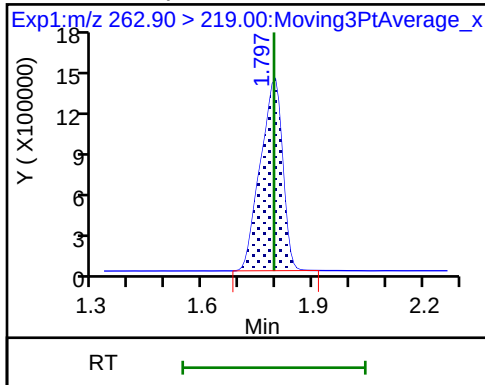
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

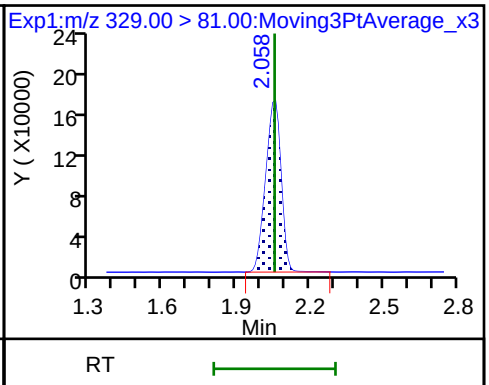
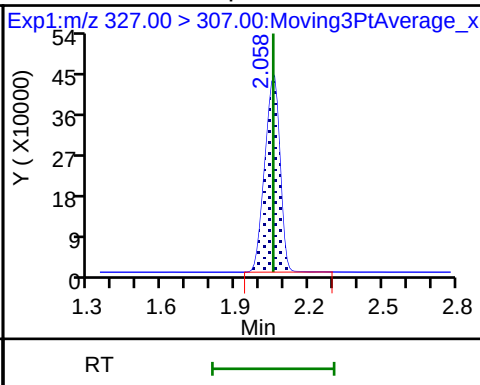
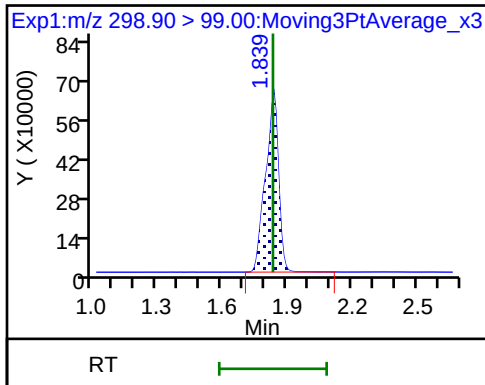
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

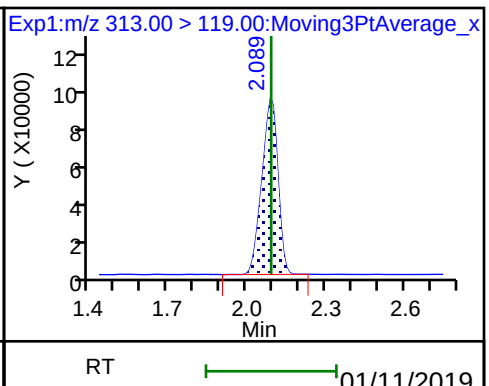
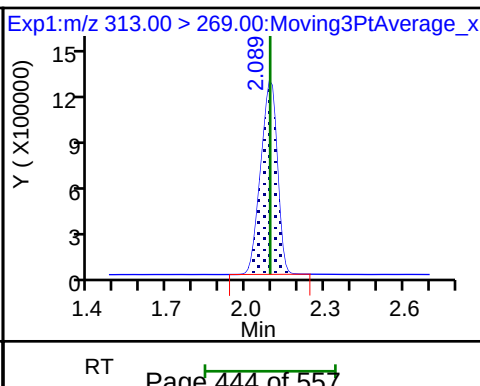
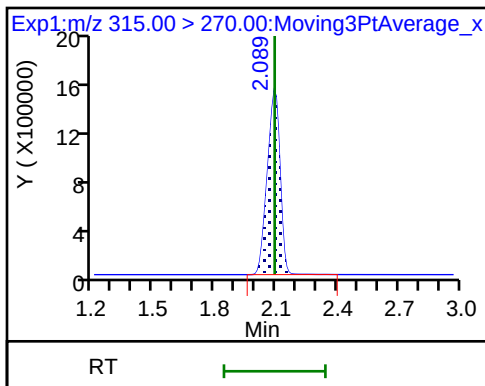
D 60 M2-4:2FTS

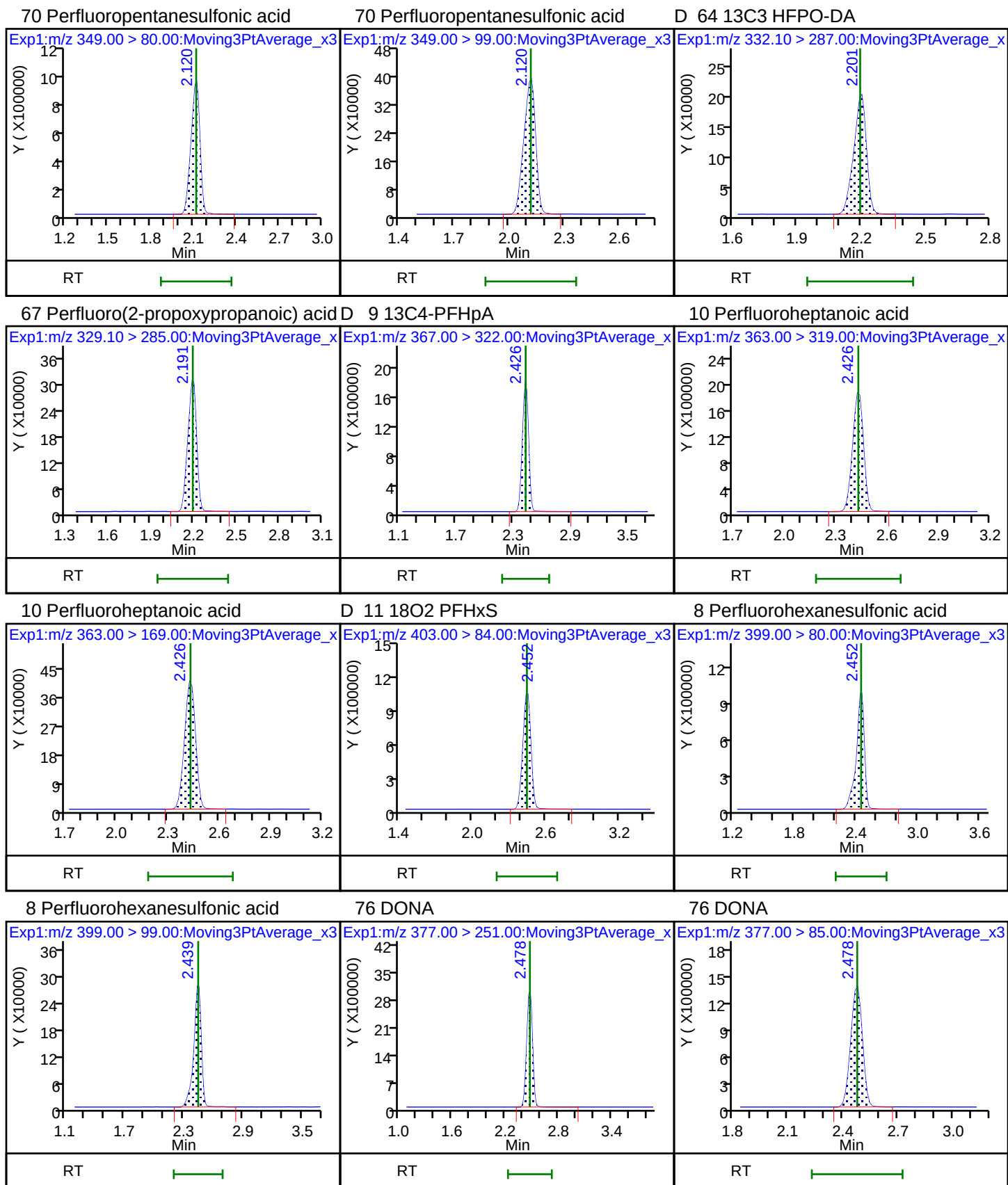


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

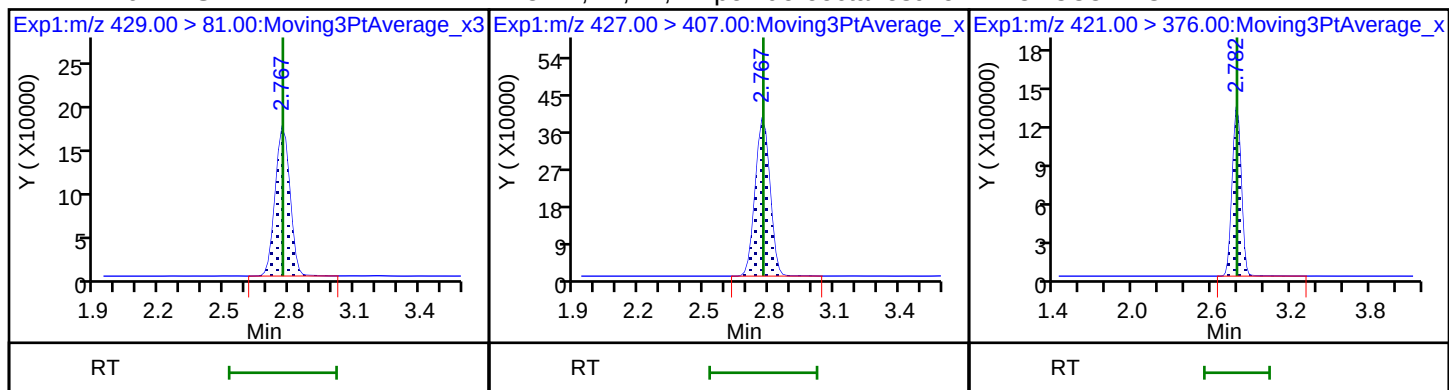
6 Perfluorohexanoic acid





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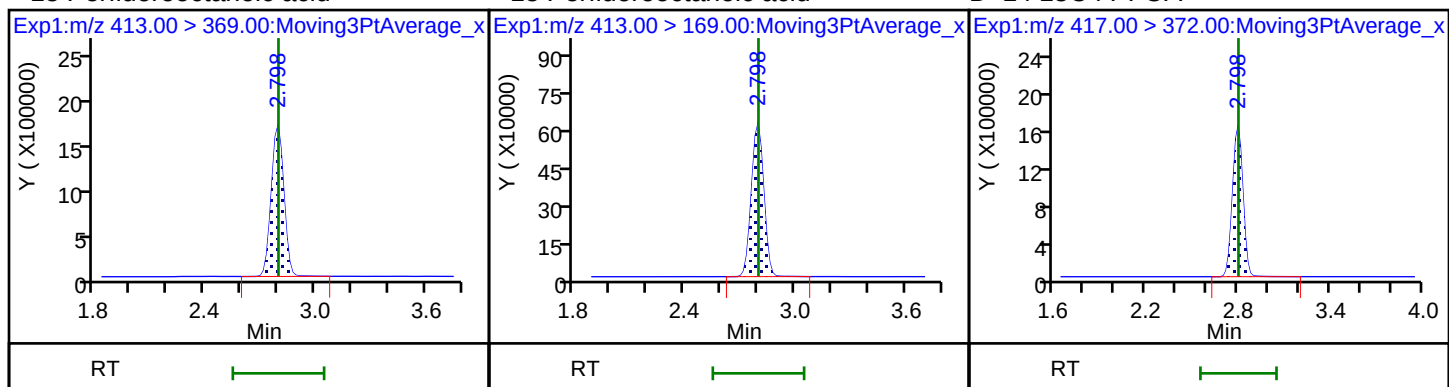
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

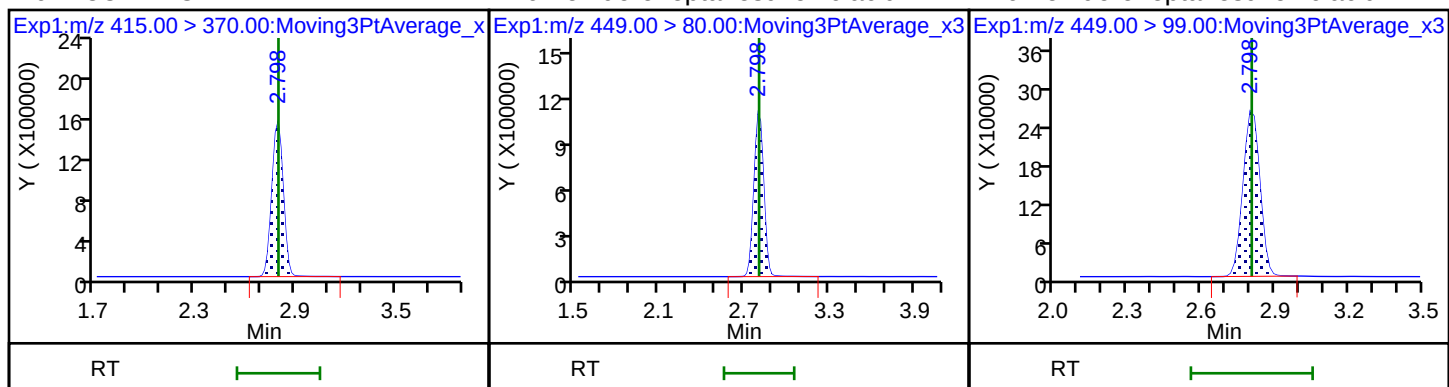
D 14 13C4 PFOA



* 62 13C2-PFOA

16 Perfluoroheptanesulfonic acid

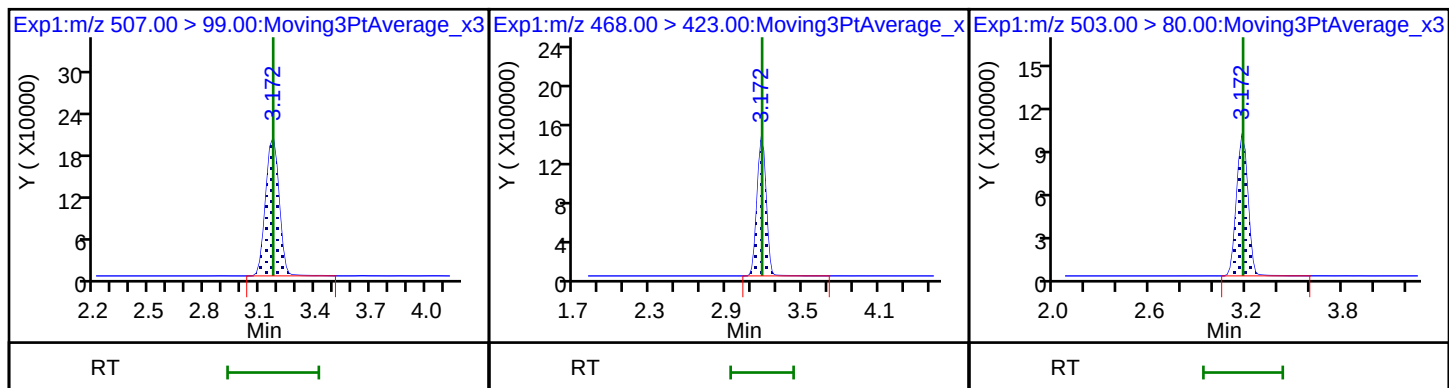
16 Perfluoroheptanesulfonic acid

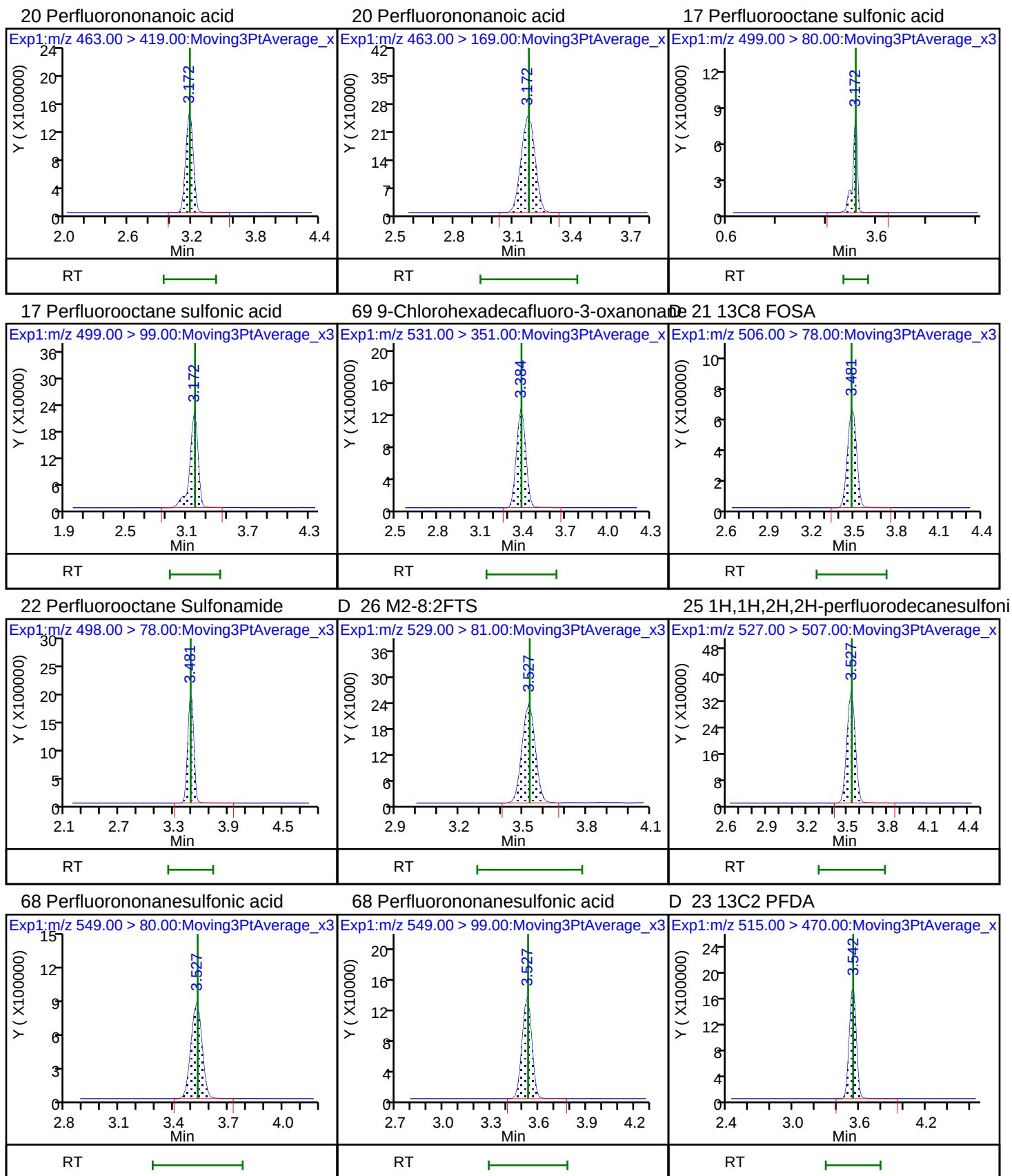


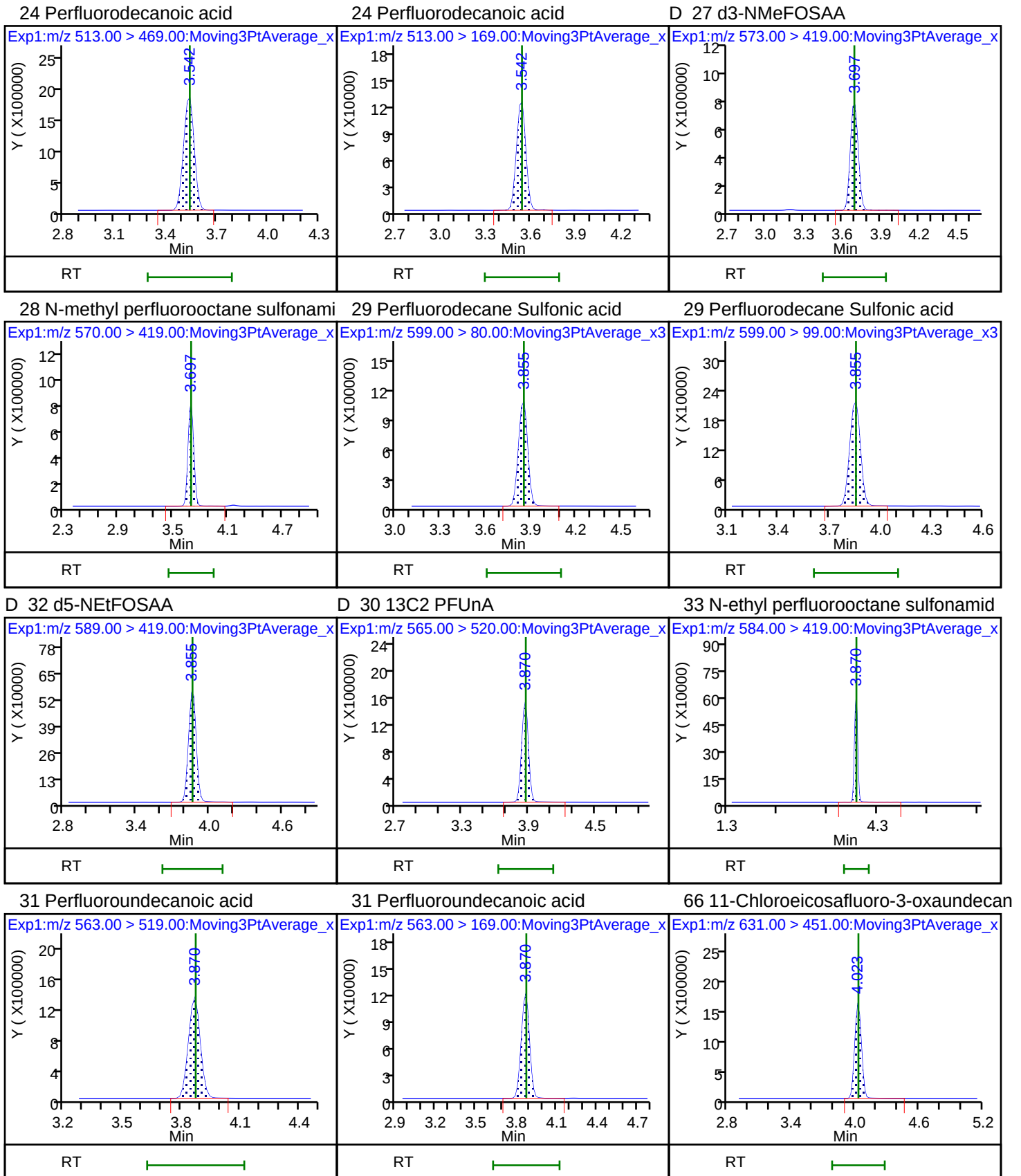
D 72 13C8 PFOS

D 19 13C5 PFNA

D 18 13C4 PFOS



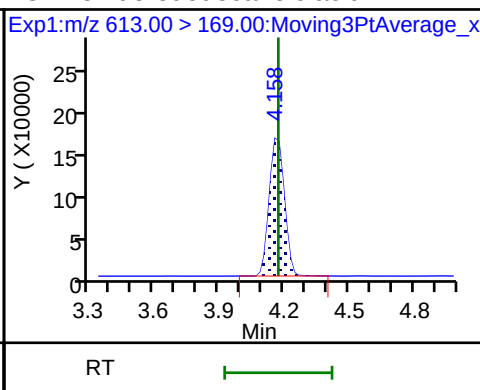
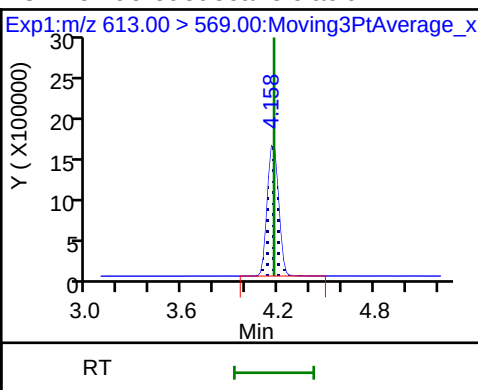
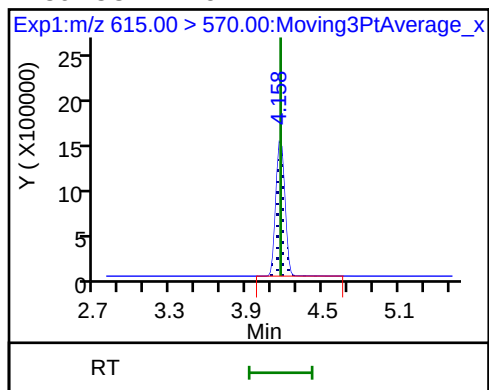




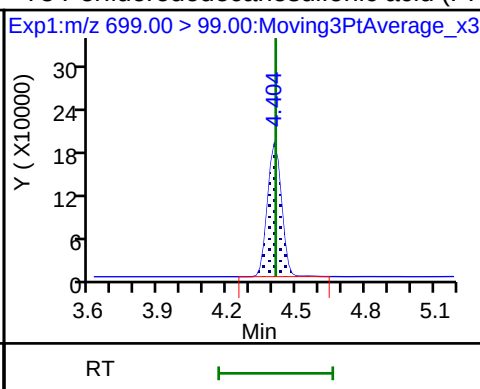
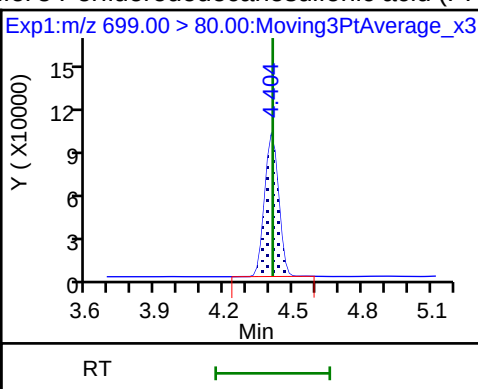
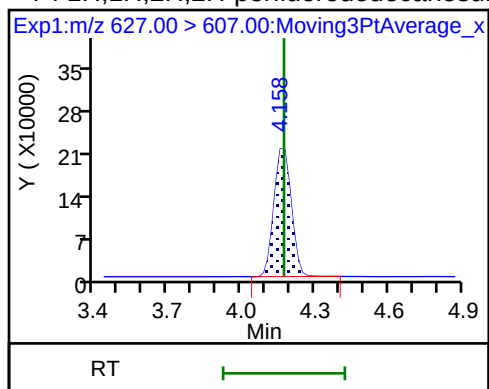
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



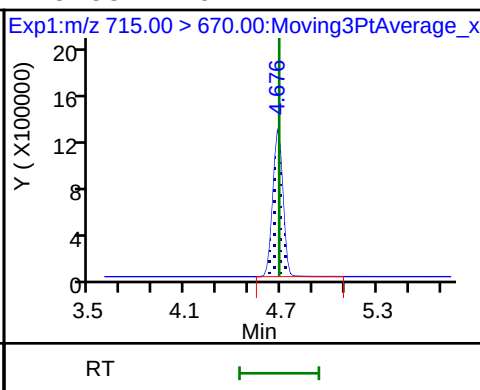
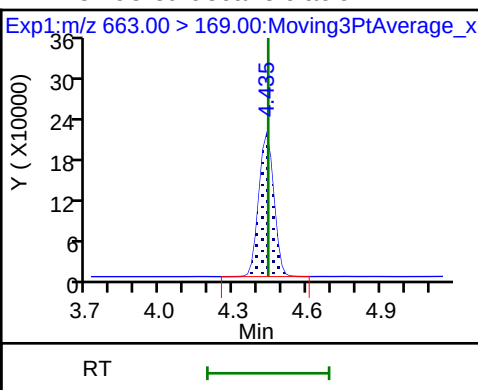
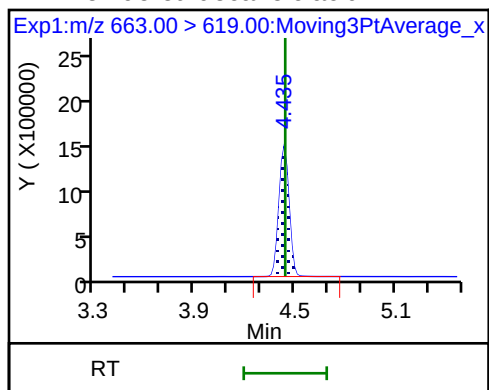
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

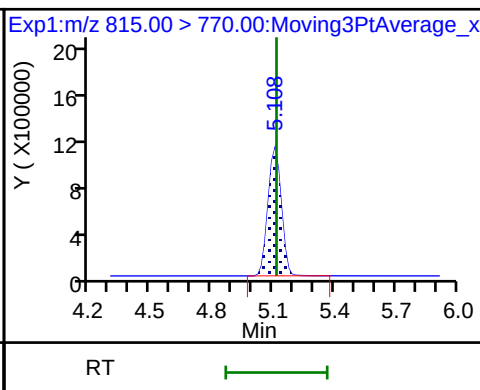
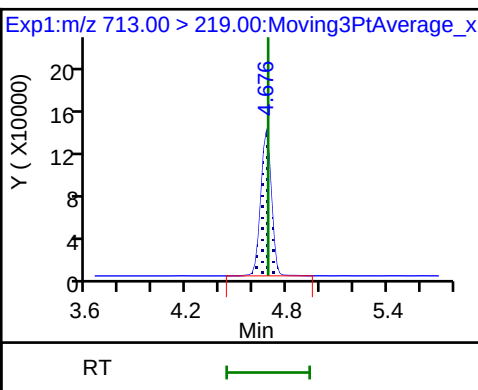
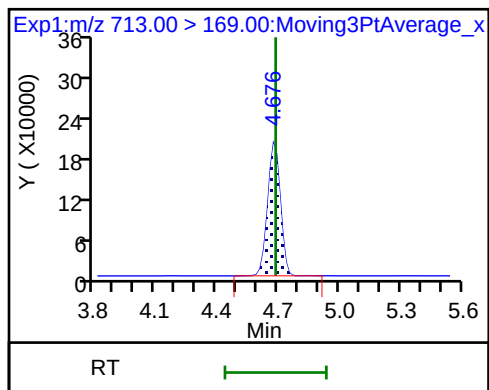
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

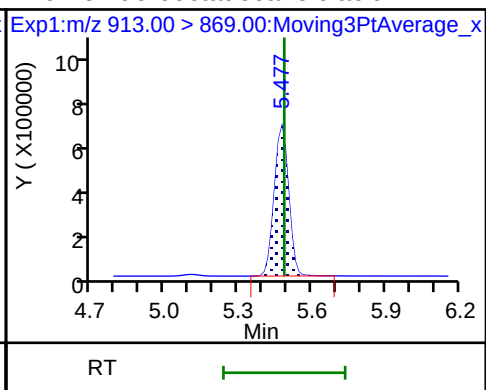
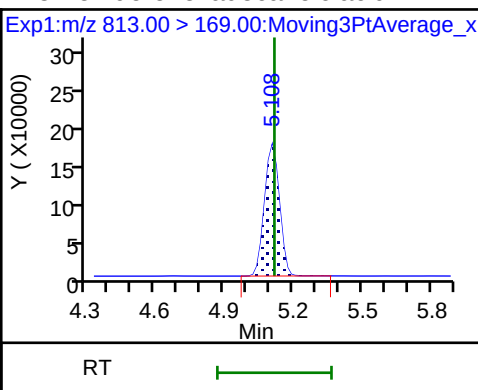
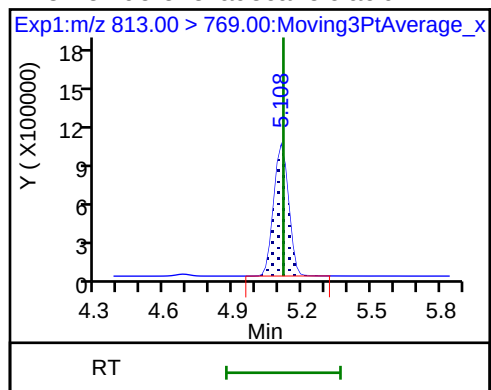
D 44 13C2-PFHxDA



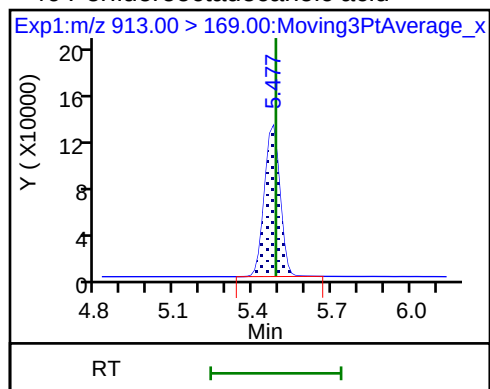
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCVL 320-250706/2 Calibration Date: 10/09/2018 05:05

Instrument ID: A9 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: 2018.10.08LLE_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9058	0.8454		0.0467	0.0500	-6.7	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.010	1.086		0.0538	0.0500	7.6	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	107.0	95.96		0.0396	0.0442	-10.3	50.0
4:2 FTS	AveID	25.29	22.61		0.418	0.467	-10.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9054	0.9479		0.0523	0.0500	4.7	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.19	47.75		0.0455	0.0469	-2.9	50.0
HFPO-DA (GenX)	AveID	1.690	1.648		0.0487	0.0500	-2.5	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.073	1.091		0.0508	0.0500	1.7	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.233	1.112		0.0410	0.0455	-9.9	50.0
DONA	AveID	2.679	2.500		0.0440	0.0471	-6.7	50.0
6:2 FTS	AveID	2.149	2.983		0.658	0.474	38.8	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.020	1.077		0.0503	0.0476	5.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.085	1.140		0.0526	0.0501	5.1	50.0
Perfluorononanoic acid (PFNA)	AveID	1.015	0.9703		0.0478	0.0500	-4.4	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	1.022		0.0440	0.0464	-5.2	50.0
F-53B Major	AveID	1.144	1.110		0.0452	0.0466	-3.0	50.0
8:2 FTS	AveID	14.90	12.97		0.417	0.479	-13.0	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6369	0.5741		0.0433	0.0480	-9.9	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.069		0.0517	0.0500	3.4	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.108	1.090		0.0492	0.0500	-1.6	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.014	0.9795		0.483	0.500	-3.4	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.7765		0.0425	0.0482	-11.7	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9150	0.8706		0.476	0.500	-4.9	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9124	0.9836		0.0539	0.0500	7.8	50.0
F-53B Minor	AveID	1.353	1.341		0.0467	0.0471	-0.9	50.0
10:2 FTS	AveID	9.585	9.172		0.0461	0.0482	-4.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	1.029		0.0505	0.0500	0.9	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0902	0.1014		0.0544	0.0484	12.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7667	0.7615		0.0497	0.0500	-0.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1679		0.0527	0.0500	5.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.324		0.0477	0.0500	-4.6	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-250706/2 Calibration Date: 10/09/2018 05:05
 Instrument ID: A9 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: 2018.10.08LLE_003.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	0.6388		0.0562	0.0500	12.3	50.0
13C4 PFBA	Ave	0.9146	0.8668		2.37	2.50	-5.2	50.0
13C5 PFPeA	Ave	0.8136	0.7926		2.44	2.50	-2.6	50.0
13C3 PFBS	Ave	0.0111	0.0107		2.24	2.33	-3.7	50.0
M2-4:2 FTS	Ave	0.1123	0.0992		2.06	2.34	-11.7	50.0
13C2 PFHxA	Ave	0.8780	0.8508		2.42	2.50	-3.1	50.0
13C3 HFPO-DA	Ave	0.1093	0.1164		2.66	2.50	6.5	50.0
13C4 PFHpA	Ave	1.076	0.9810		2.28	2.50	-8.8	50.0
18O2 PFHxS	Ave	0.6688	0.6660		2.36	2.37	-0.4	50.0
M2-6:2 FTS	Ave	0.1183	0.1115		2.24	2.38	-5.8	50.0
13C8 PFOA	Ave	2595399	2327120		2.19	2.45	-10.3	50.0
13C4 PFOA	Ave	1.007	1.013		2.52	2.50	0.6	50.0
13C4 PFOS	Ave	0.7027	0.6701		2.28	2.39	-4.6	50.0
13C5 PFNA	Ave	0.9276	0.8942		2.41	2.50	-3.6	50.0
13C8 PFOS	Ave	424896	416158		2.34	2.39	-2.1	50.0
13C8 FOSA	Ave	0.3786	0.3571		2.36	2.50	-5.7	50.0
M2-8:2 FTS	Ave	0.0155	0.0152		2.33	2.40	-2.5	50.0
13C2 PFDA	Ave	0.9902	0.9490		2.40	2.50	-4.2	50.0
d3-NMeFOSAA	Ave	0.4080	0.3982		2.44	2.50	-2.4	50.0
d5-NEtFOSAA	Ave	0.3434	0.3200		2.33	2.50	-6.8	50.0
13C2 PFUnA	Ave	0.8697	0.7791		2.24	2.50	-10.4	50.0
13C2 PFDoA	Ave	0.9853	0.9946		2.52	2.50	0.9	50.0
13C2 PFTeDA	Ave	0.7441	0.7250		2.44	2.50	-2.6	50.0
13C2 PFHxDA	Ave	0.6411	0.6901		2.69	2.50	7.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65513.b\2018.10.08LLE_003.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 09-Oct-2018 05:05:08 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
 Sublist: chrom-PFAS_A9*sub6
 Method: \\ChromNA\Sacramento\ChromData\A9\20181009-65513.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 11:39:30 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK047

First Level Reviewer: hannigana

Date: 09-Oct-2018 11:38:44

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	6139432	2.37		94.8	10304	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.489	1.494	-0.005	1.000	103802	0.0467		93.3	3.3	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.780	-0.008	0.644	5613245	2.44		97.4	9460	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.781	-0.009	1.000	121929	0.0538		108	12.2	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.814	0.0	1.000	128889	0.0396		89.7	57.8	
298.90 > 99.00	1.814	1.814	0.0	1.000	45456		2.84(1.35-4.05)		41.0	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.822	-0.008	0.659	70654	2.24		96.3	457	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.028	2.027	0.001	1.118	320909	0.4176		89.4	1204	
D 60 M2-4:2FTS										
329.00 > 81.00	2.028	2.038	-0.010	0.737	655922	2.06		88.3	1024	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.058	2.068	-0.010	1.000	114238	0.0523		105	22.9	
313.00 > 119.00	2.058	2.068	-0.010	1.000	8747		13.06(6.96-20.87)		13.9	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.078	-0.020	0.748	6025874	2.42		96.9	6959	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.089	0.0	1.152	68049	0.0455		97.1	132	
349.00 > 99.00	2.089	2.089	0.0	1.152	35248		1.93(1.15-3.45)		80.4	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	27163	0.0487		97.5	19.2	

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	2.160	2.170	-0.010	0.785	824176	2.66		107	2107	
D 9 13C4-PFHpA										
367.00 > 322.00	2.387	2.400	-0.013	0.868	6947611	2.28		91.2	8339	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.387	2.400	-0.013	1.000	151579	0.0508		102	29.7	
363.00 > 169.00	2.387	2.400	-0.013	1.000	32924		4.60(2.17-6.52)		71.6	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.400	2.413	-0.013	1.000	95444	0.0410		90.1	102	
399.00 > 99.00	2.400	2.413	-0.013	1.000	28203		3.38(1.90-5.70)		38.2	
D 11 18O2 PFHxS										
403.00 > 84.00	2.400	2.426	-0.026	0.872	4462358	2.36		99.6	3988	
76 DONA										
377.00 > 251.00	2.439	2.439	0.0	0.783	223540	0.0440		93.3	605	
377.00 > 85.00	2.426	2.439	-0.013	0.778	98285		2.27(1.13-3.39)		91.0	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.719	0.0	1.000	446565	0.6579		139	777	
D 12 M2-6:2FTS										
429.00 > 81.00	2.719	2.734	-0.015	0.988	750163	2.24		94.2	996	
D 73 13C8 PFOA										
421.00 > 376.00	2.735	2.750	-0.015		5695625	2.19		89.7	7760	
* 62 13C2-PFOA										
415.00 > 370.00	2.751	2.750	0.001		7082550	2.50			7414	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.751	2.750	0.001	1.000	163777	0.0526		105	10.8	
413.00 > 169.00	2.751	2.750	0.001	1.000	60372		2.71(1.36-4.08)		94.2	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.751	2.750	0.001	0.882	97307	0.0503		106	137	
449.00 > 99.00	2.751	2.750	0.001	0.882	21228		4.58(1.84-5.53)		74.9	
D 14 13C4 PFOA										
417.00 > 372.00	2.751	2.766	-0.015	1.000	7177593	2.52		101	6320	
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.117	0.0	1.000	122900	0.0478		95.6	12.6	
463.00 > 169.00	3.117	3.117	0.0	1.000	18088		6.79(2.68-8.03)		48.4	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.117	3.117	0.0	1.000	90026	0.0440		94.8	68.5	
499.00 > 99.00	3.117	3.117	0.0	1.000	23364		3.85(2.04-6.12)		60.6	
D 72 13C8 PFOS										
507.00 > 99.00	3.117	3.135	-0.018		994617	2.34		97.9	2094	
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.135	-0.018	1.133	4537038	2.28		95.4	3148	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.135	-0.018	1.133	6333233	2.41		96.4	5173	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.335	3.334	0.001	1.070	98221	0.0452		97.0	112	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.465	0.0	1.260	2529001	2.36		94.3	6223	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	155217	0.0517		103	287	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.465	3.465	0.0	1.112	52316	0.0433		90.1	188	
549.00 > 99.00	3.465	3.465	0.0	1.112	8113		6.45(3.02-9.05)		39.6	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.465	3.465	0.0	1.000	266605	0.4169		87.0	1073	
D 26 M2-8:2FTS										
529.00 > 81.00	3.465	3.481	-0.015	1.260	102796	2.33		97.5	634	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.481	3.481	0.0	1.000	146490	0.0492		98.4	24.0	
513.00 > 169.00	3.481	3.481	0.0	1.000	8771		16.70(7.12-21.35)		25.7	
D 23 13C2 PFDA										
515.00 > 470.00	3.481	3.496	-0.015	1.265	6721025	2.40		95.8	9798	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.628	3.641	-0.013	1.000	552407	0.4831		96.6	208	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.628	3.655	-0.027	1.319	2819938	2.44		97.6	3765	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.792	3.791	0.001	1.217	71051	0.0425		88.3	59.9	
599.00 > 99.00	3.792	3.791	0.001	1.217	16136		4.40(2.14-6.43)		64.9	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.807	3.807	0.0	1.004	394642	0.4757		95.1	657	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.807	3.807	0.0	1.000	108546	0.0539		108	23.6	
563.00 > 169.00	3.792	3.807	-0.015	0.996	9751		11.13(5.24-15.72)		47.3	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.792	3.823	-0.031	1.379	2266554	2.33		93.2	3096	
D 30 13C2 PFUnA										
565.00 > 520.00	3.807	3.823	-0.016	1.384	5517953	2.24		89.6	5617	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.960	3.960	0.0	1.270	119939	0.0467		99.1	529	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.089	4.106	-0.017	1.000	144909	0.0505		101	34.3	
613.00 > 169.00	4.089	4.106	-0.017	1.000	12629		11.47(4.68-14.05)		28.5	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.089	4.106	-0.017	1.180	18975	0.0461		95.7	33.4	
D 36 13C2 PFDaA										
615.00 > 570.00	4.089	4.122	-0.033	1.487	7044530	2.52		101	6075	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.342	4.342	0.0	1.393	9315	0.0544		112	12.4	
699.00 > 99.00	4.342	4.342	0.0	1.393	14163		0.66(0.28-0.83)		46.4	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.357	4.373	-0.016	1.066	107293	0.0497		99.3	51.9	
663.00 > 169.00	4.357	4.373	-0.016	1.066	20395		5.26(3.09-9.27)		47.1	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	17243	0.0527		105	42.0	
713.00 > 219.00	4.591	4.609	-0.018	0.996	12096		1.43(0.70-2.09)		50.8	

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	4.609	4.627	-0.018	1.676	5134696	2.44		97.4	7182	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.024	5.024	0.0	1.000	129406	0.0477		95.4	45.5	
813.00 > 169.00	5.024	5.024	0.0	1.000	23422		5.52(2.77-8.32)		57.2	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.024	5.041	-0.017	1.827	4887766	2.69		108	9034	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.377	5.376	0.001	1.070	62443	0.0562		112	36.4	
913.00 > 169.00	5.363	5.376	-0.013	1.068	10170		6.14(2.55-7.64)		56.2	

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\A9\20181009-65513.b\2018.10.08LLE_003.d

Injection Date: 09-Oct-2018 05:05:08

Instrument ID: A9

Lims ID: CCVL

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

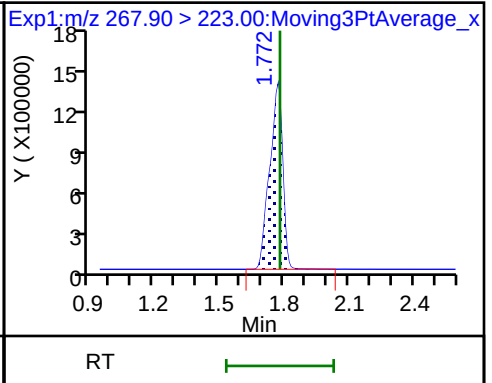
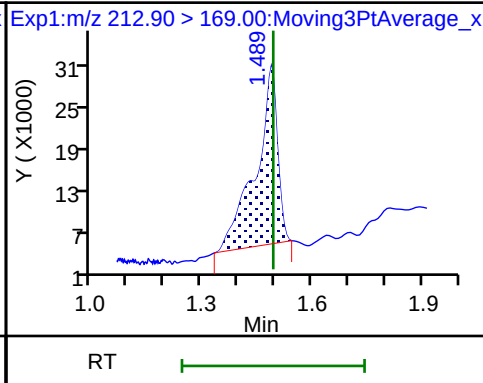
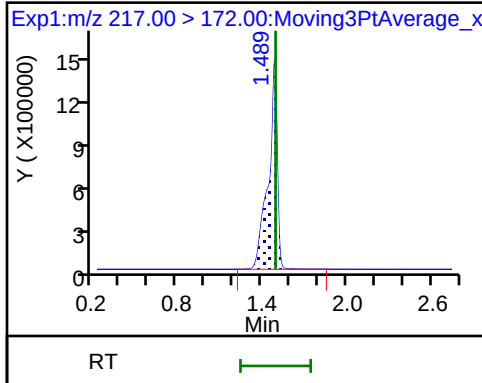
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

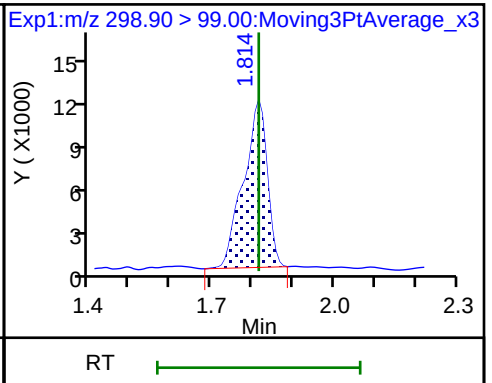
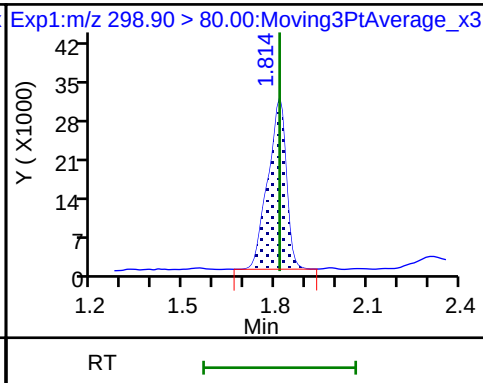
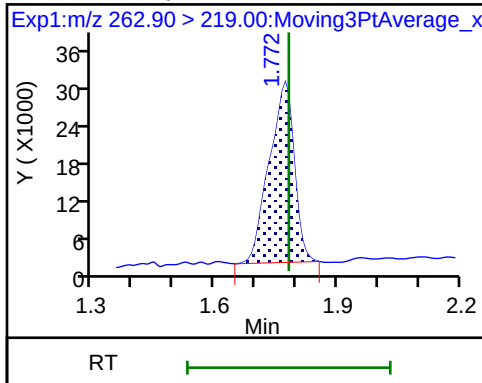
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

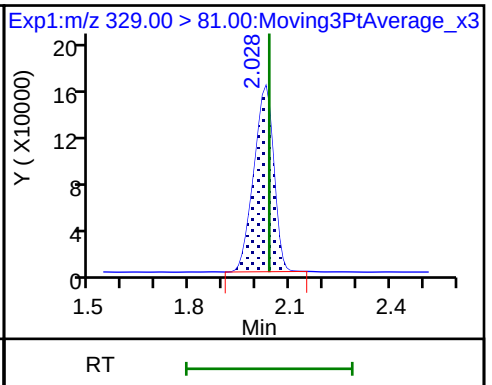
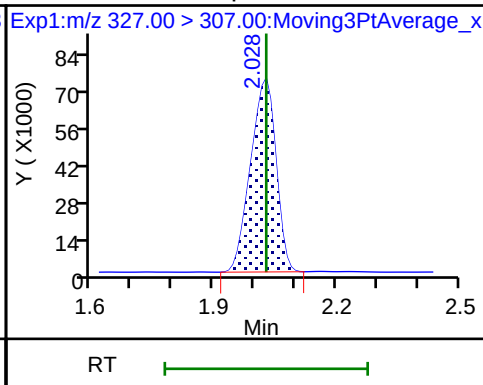
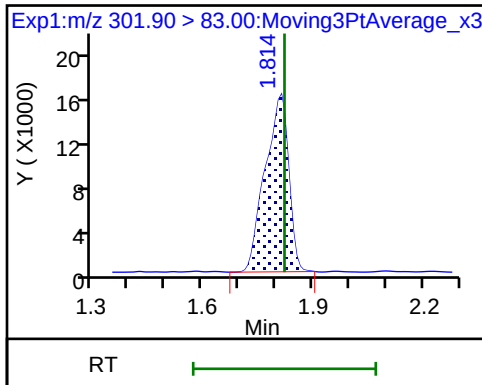
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

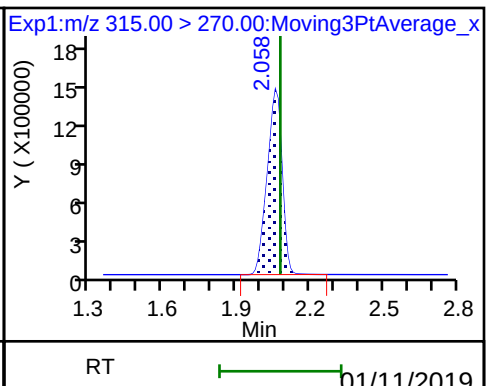
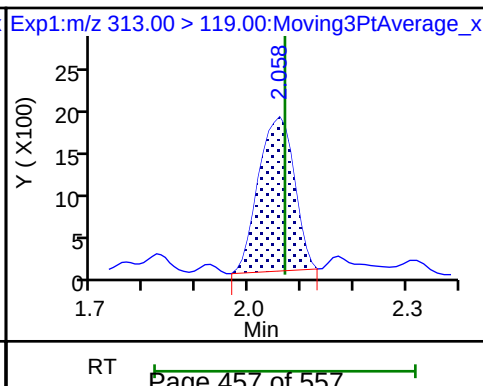
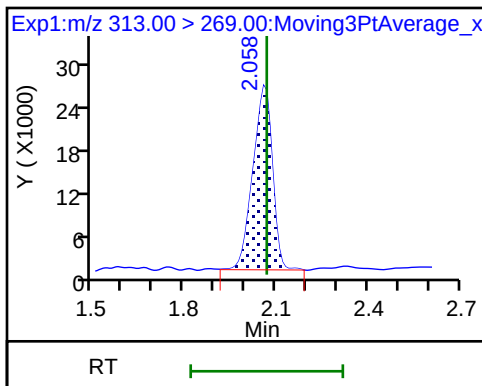
D 60 M2-4:2FTS

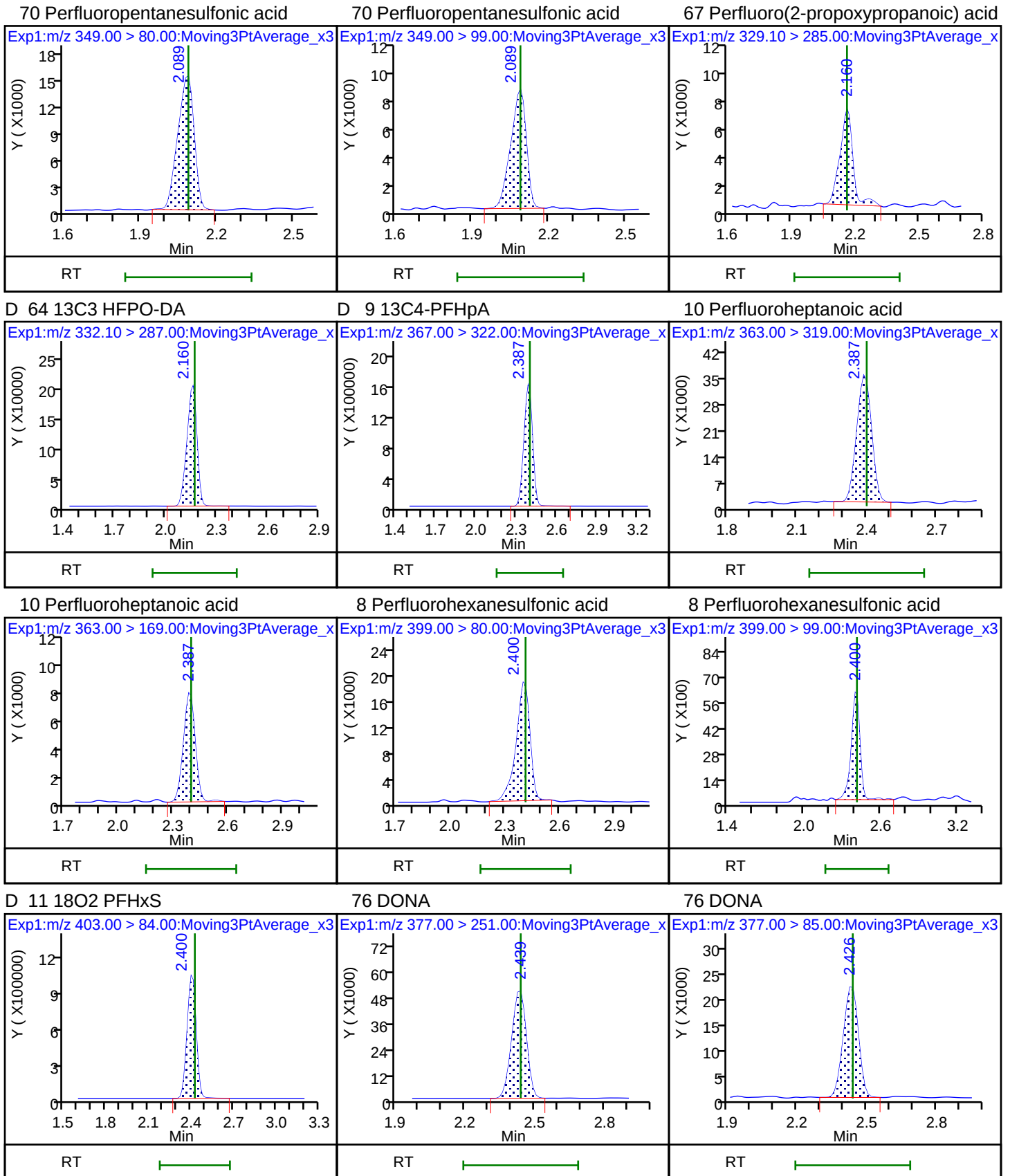


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

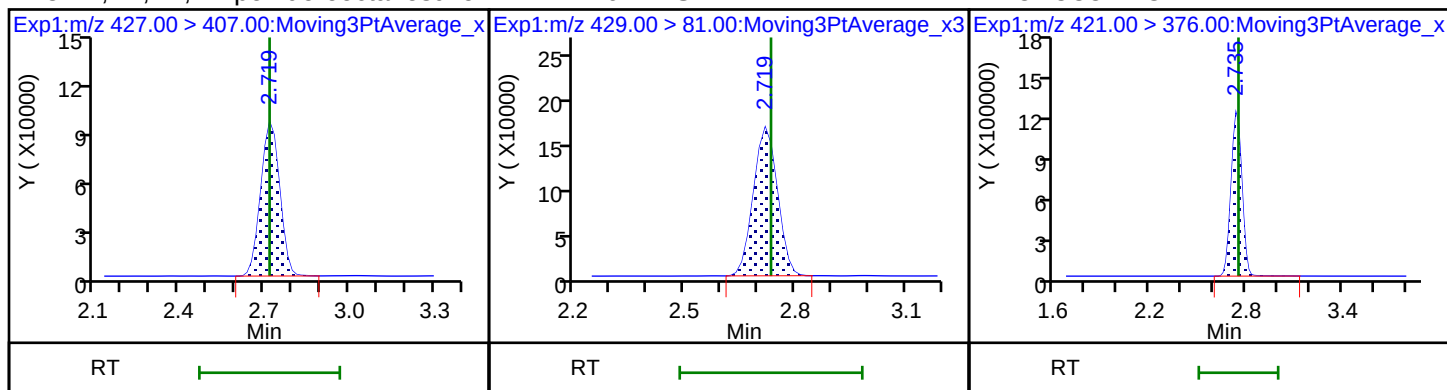
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

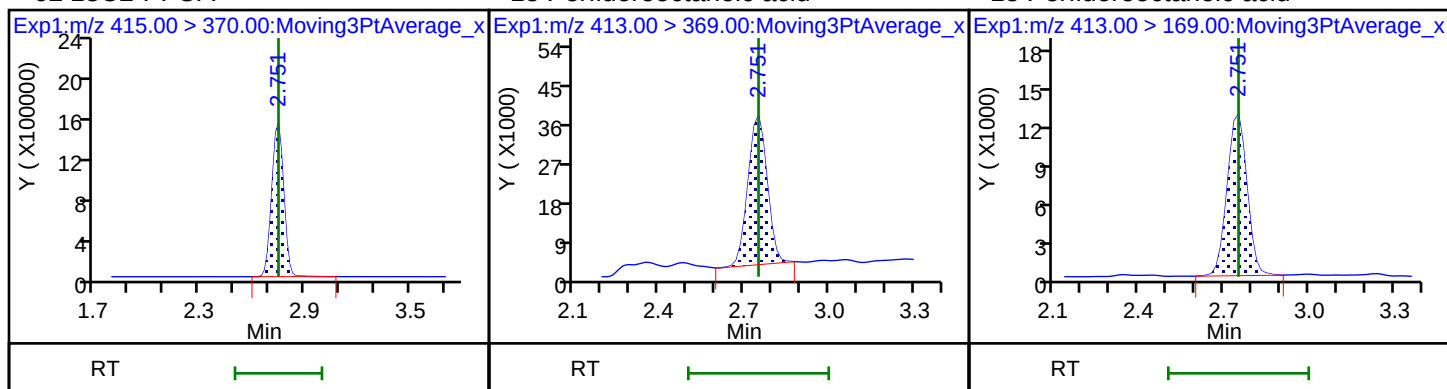
D 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

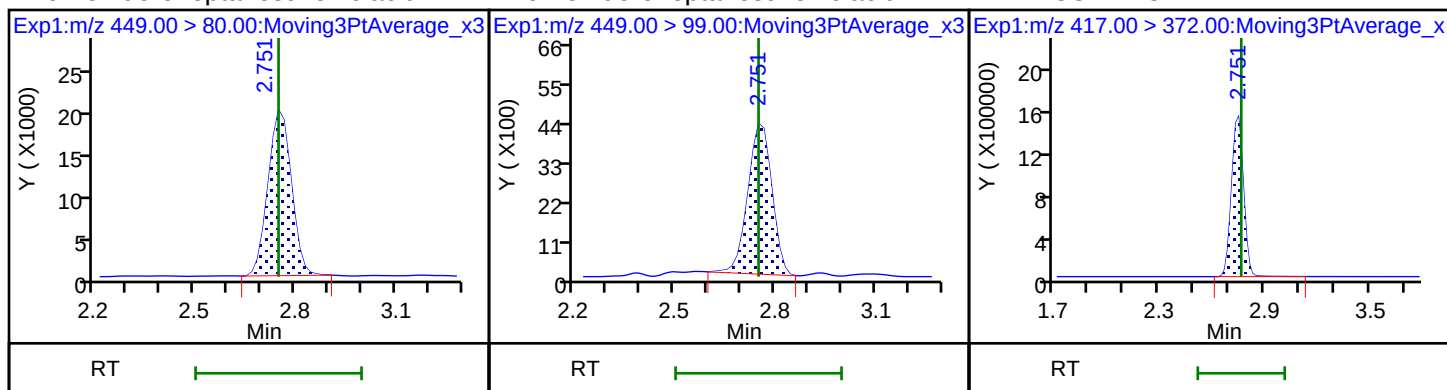
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

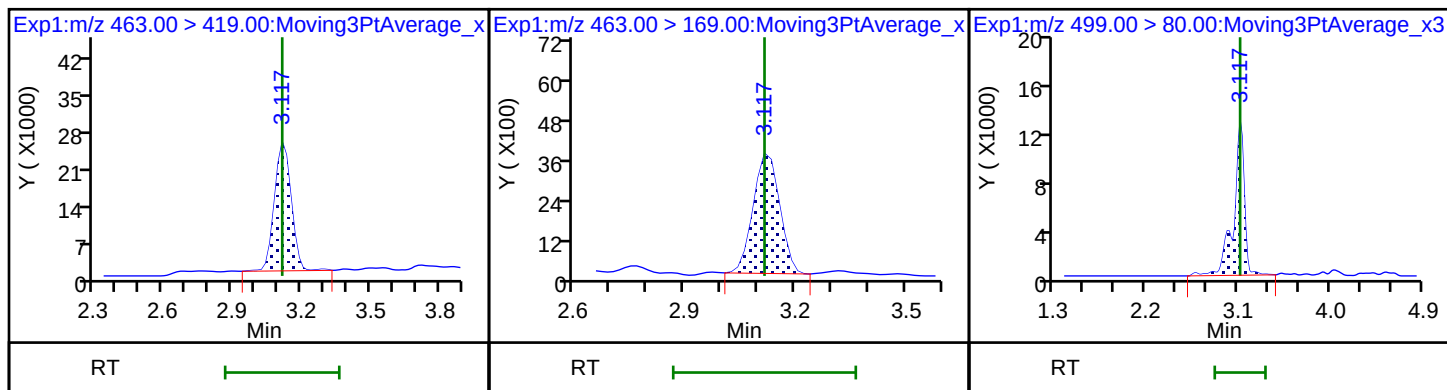
D 14 13C4 PFOA



20 Perfluorononanoic acid

20 Perfluorononanoic acid

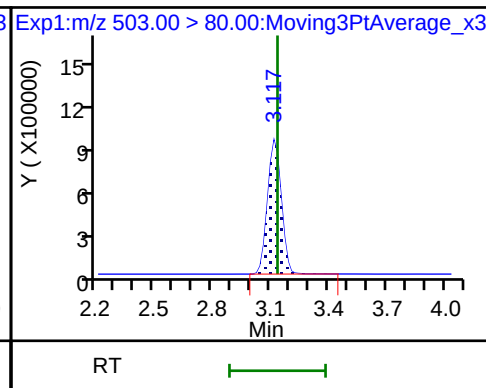
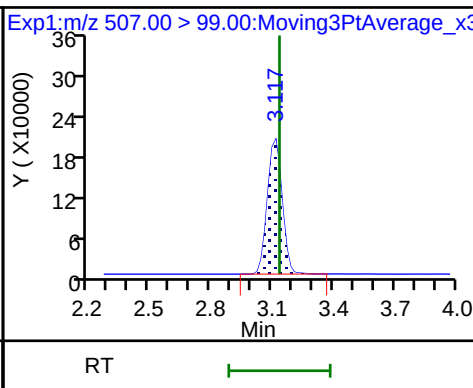
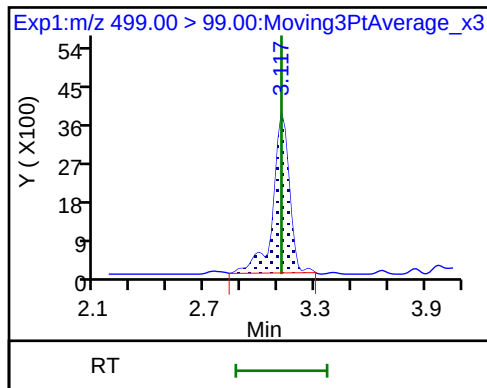
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 72 13C8 PFOS

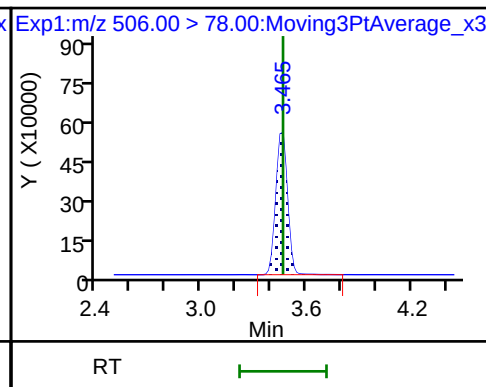
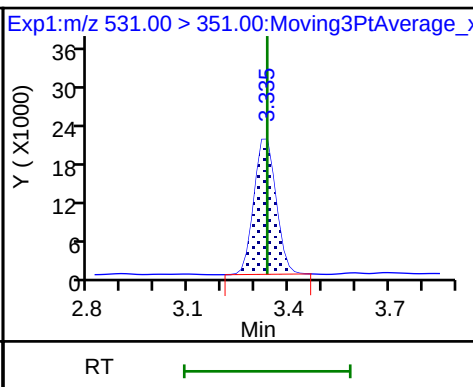
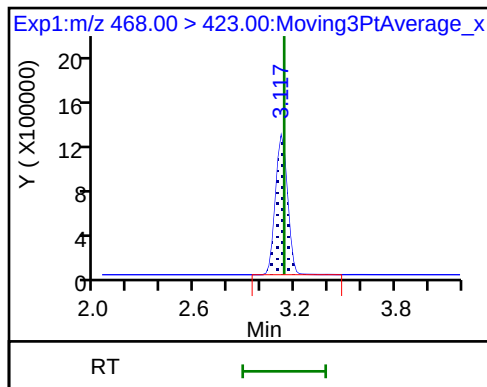
D 18 13C4 PFOS



D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonane

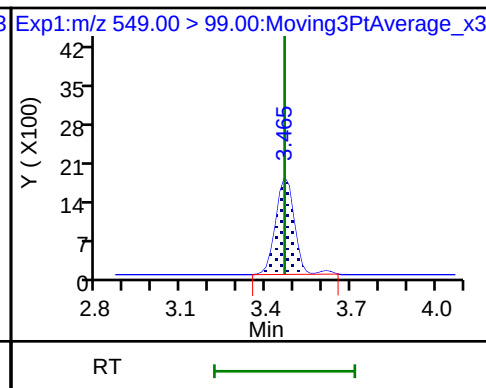
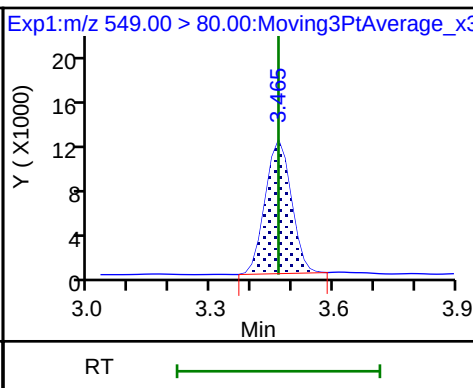
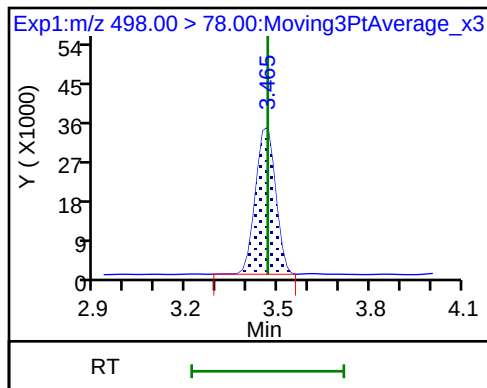
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

68 Perfluorononanesulfonic acid

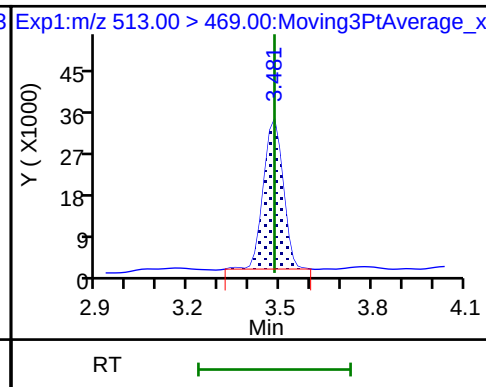
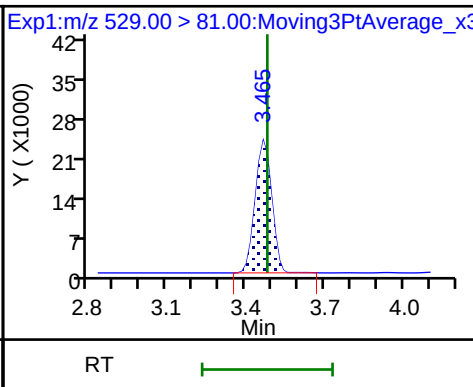
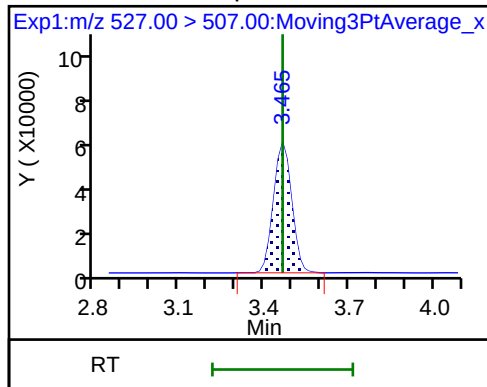
68 Perfluorononanesulfonic acid

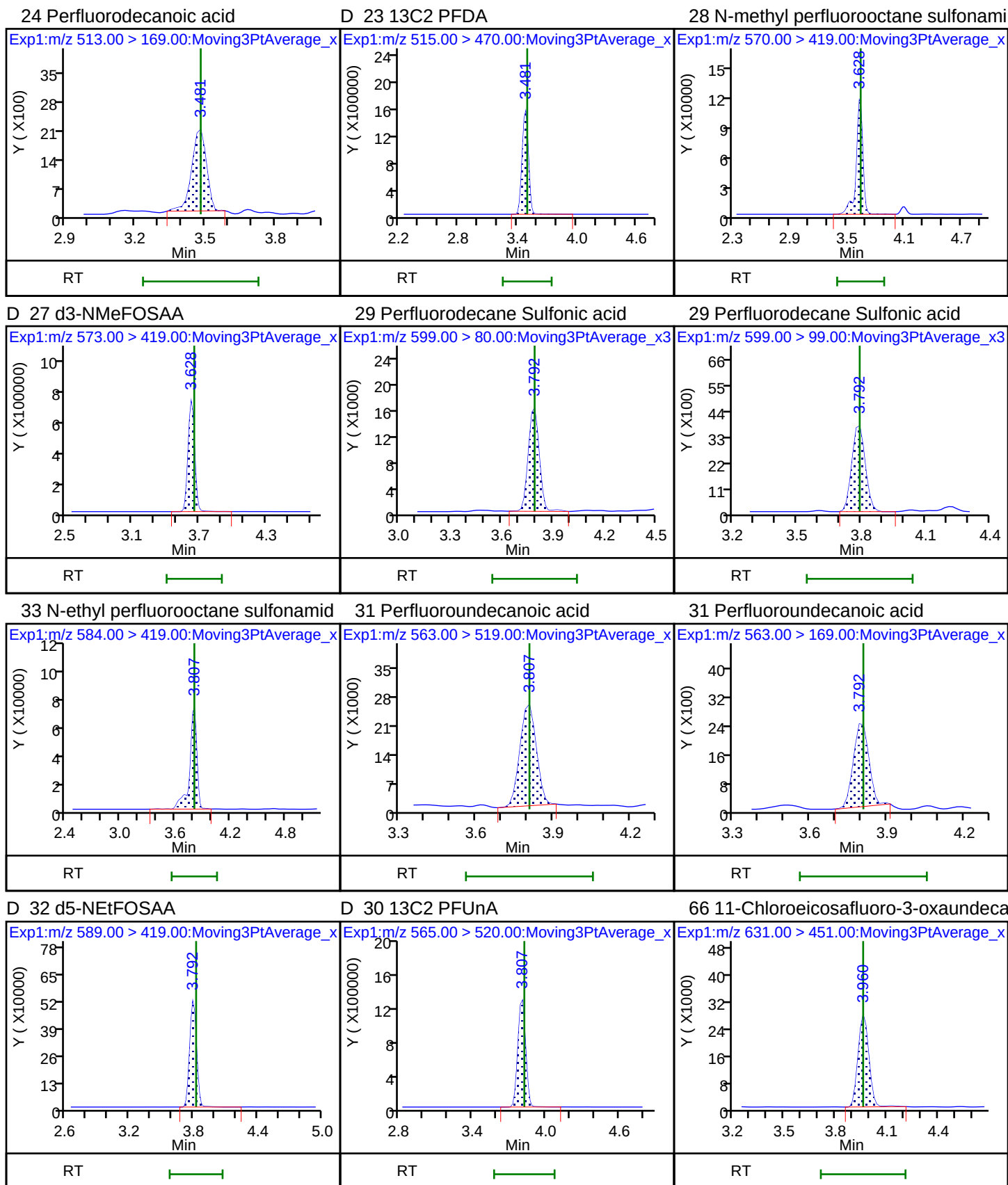


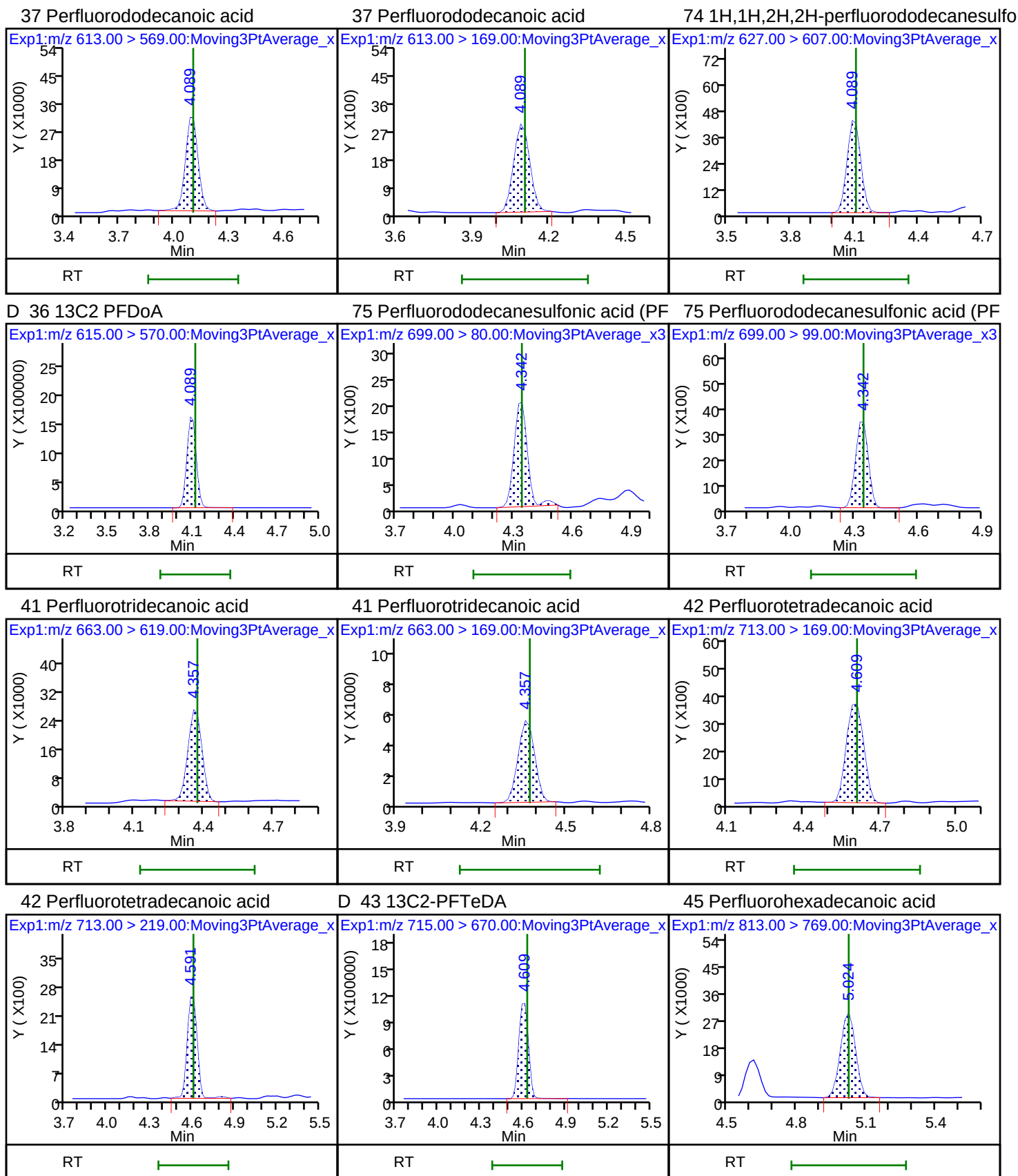
25 1H,1H,2H,2H-perfluorodecanesulfonamide

D 26 M2-8:2FTS

24 Perfluorodecanoic acid



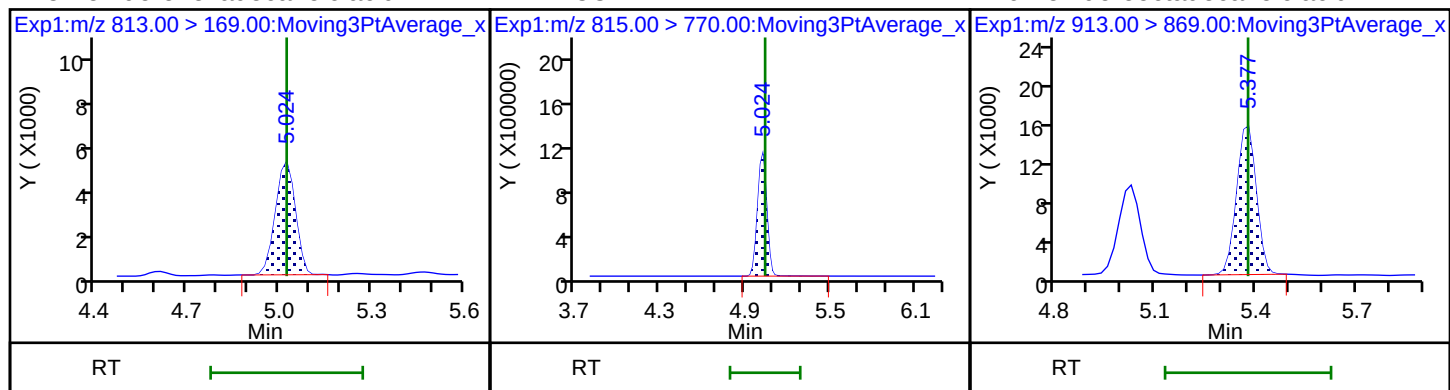




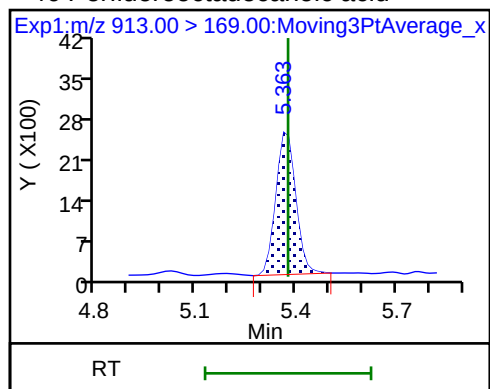
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

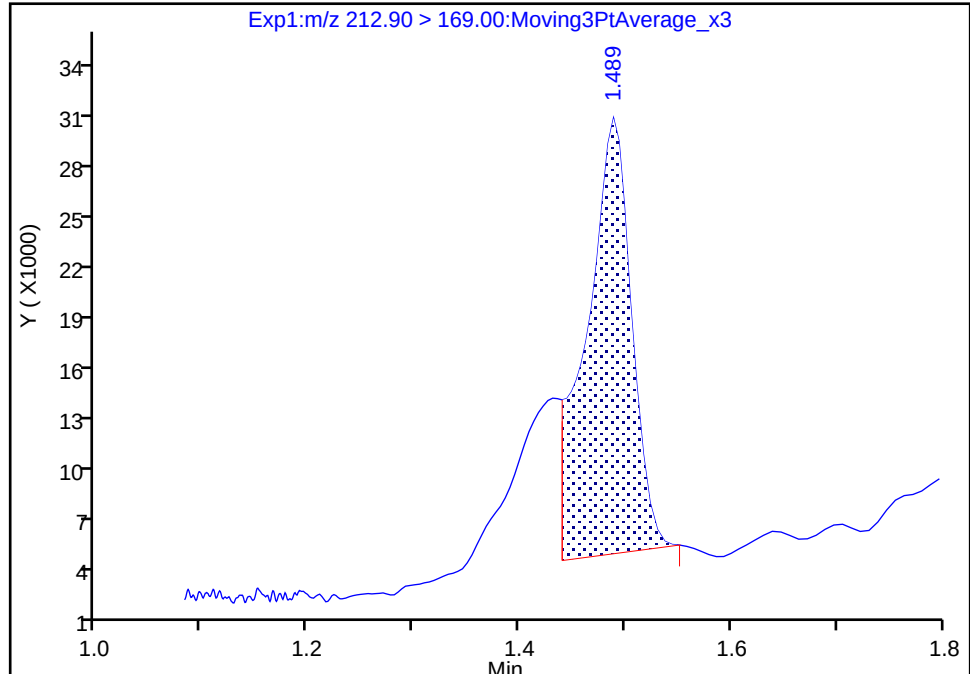
Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65513.b\2018.10.08LLE_003.d
Injection Date: 09-Oct-2018 05:05:08 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 21 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

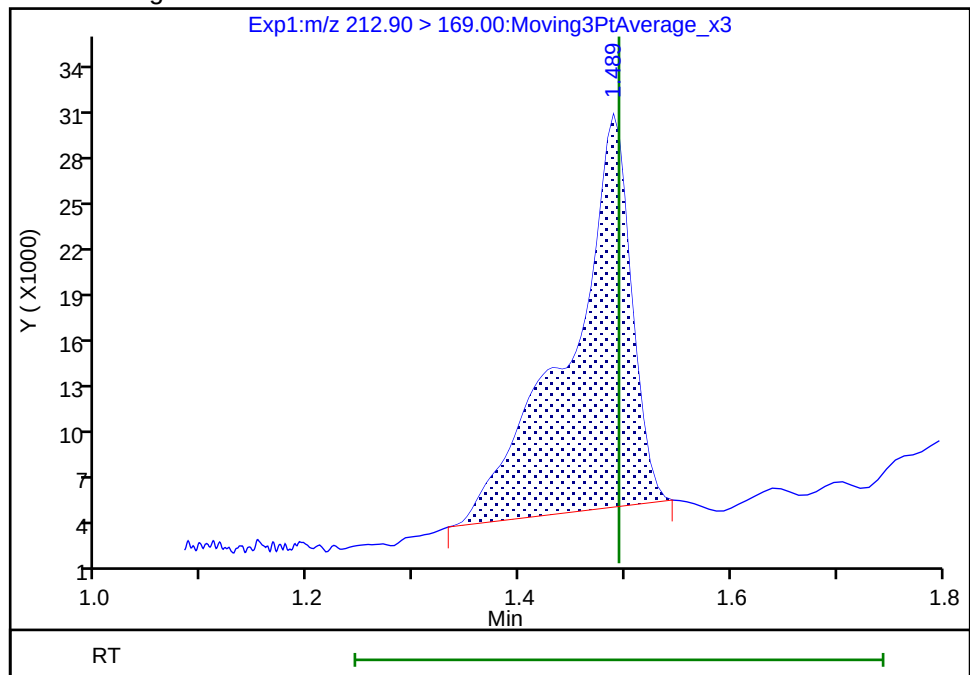
RT: 1.49
Area: 74406
Amount: 0.033450
Amount Units: ng/ml

Processing Integration Results



RT: 1.49
Area: 103802
Amount: 0.046666
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 09-Oct-2018 11:38:30
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 464 of 557

01/11/2019

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCV 320-250706/3 Calibration Date: 10/09/2018 05:12

Instrument ID: A9 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: 2018.10.08LLE_004.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9058	0.9225		1.02	1.00	1.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.010	1.009		1.00	1.00	-0.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	107.0	104.2		0.861	0.884	-2.6	50.0
4:2 FTS	AveID	25.29	22.48		0.830	0.934	-11.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9054	0.8653		0.956	1.00	-4.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.19	47.43		0.905	0.938	-3.6	50.0
HFPO-DA (GenX)	AveID	1.690	1.515		0.896	1.00	-10.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.073	1.058		0.986	1.00	-1.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.233	1.216		0.897	0.910	-1.4	40.0
DONA	AveID	2.679	2.845		1.00	0.942	6.2	50.0
6:2 FTS	AveID	2.149	2.158		0.952	0.948	0.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.020	0.9883		0.923	0.952	-3.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.085	1.112		1.03	1.00	2.5	40.0
Perfluorononanoic acid (PFNA)	AveID	1.015	1.031		1.02	1.00	1.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	1.041		0.896	0.928	-3.5	40.0
F-53B Major	AveID	1.144	1.185		0.965	0.932	3.5	50.0
8:2 FTS	AveID	14.90	15.17		0.975	0.958	1.8	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6369	0.6418		0.967	0.960	0.8	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.358		1.13	1.00	13.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.108	1.152		1.04	1.00	4.0	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.014	1.079		1.06	1.00	6.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.9372		1.03	0.964	6.5	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9150	0.8049		0.880	1.00	-12.0	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9124	1.006		1.10	1.00	10.2	40.0
F-53B Minor	AveID	1.353	1.425		0.992	0.942	5.3	50.0
10:2 FTS	AveID	9.585	12.07		1.21	0.964	25.9	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	1.065		1.05	1.00	4.5	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0902	0.0872		0.936	0.968	-3.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7667	0.8709		1.14	1.00	13.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1591		0.999	1.00	-0.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8844		0.972	1.00	-2.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCV 320-250706/3 Calibration Date: 10/09/2018 05:12
 Instrument ID: A9 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: 2018.10.08LLE_004.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	0.5843		1.03	1.00	2.7	50.0
13C4 PFBA	Ave	0.9146	0.8812		2.41	2.50	-3.6	50.0
13C5 PFPeA	Ave	0.8136	0.7950		2.44	2.50	-2.3	50.0
13C3 PFBS	Ave	0.0111	0.0107		2.22	2.33	-4.3	50.0
M2-4:2 FTS	Ave	0.1123	0.0934		1.94	2.34	-16.8	50.0
13C2 PFHxA	Ave	0.8780	0.8544		2.43	2.50	-2.7	50.0
13C3 HFPO-DA	Ave	0.1093	0.1226		2.81	2.50	12.2	50.0
13C4 PFHpA	Ave	1.076	1.049		2.44	2.50	-2.5	50.0
18O2 PFHxS	Ave	0.6688	0.6370		2.25	2.37	-4.8	50.0
M2-6:2 FTS	Ave	0.1183	0.1056		2.12	2.38	-10.8	40.0
13C8 PFOA	Ave	2595399	2449040		2.31	2.45	-5.6	50.0
13C4 PFOA	Ave	1.007	0.9859		2.45	2.50	-2.1	50.0
13C4 PFOS	Ave	0.7027	0.6930		2.36	2.39	-1.4	50.0
13C5 PFNA	Ave	0.9276	0.9134		2.46	2.50	-1.5	50.0
13C8 PFOS	Ave	424896	393518		2.21	2.39	-7.4	50.0
13C8 FOSA	Ave	0.3786	0.3541		2.34	2.50	-6.5	50.0
M2-8:2 FTS	Ave	0.0155	0.0124		1.92	2.40	-20.0	40.0
13C2 PFDA	Ave	0.9902	0.8976		2.27	2.50	-9.4	50.0
d3-NMeFOSAA	Ave	0.4080	0.3647		2.23	2.50	-10.6	50.0
d5-NEtFOSAA	Ave	0.3434	0.3516		2.56	2.50	2.4	50.0
13C2 PFUnA	Ave	0.8697	0.7855		2.26	2.50	-9.7	50.0
13C2 PFDoA	Ave	0.9853	0.9113		2.31	2.50	-7.5	50.0
13C2 PFTeDA	Ave	0.7441	0.7149		2.40	2.50	-3.9	50.0
13C2 PFHxDA	Ave	0.6411	0.7157		2.79	2.50	11.6	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65513.b\2018.10.08LLE_004.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 09-Oct-2018 05:12:38 ALS Bottle#: 13 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
 Sublist: chrom-PFAS_A9*sub5
 Method: \\ChromNA\Sacramento\ChromData\A9\20181009-65513.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 11:39:34 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK047

First Level Reviewer: hannigana

Date: 09-Oct-2018 11:39:19

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	1.494	1.494	0.0	0.543	6172666	2.41		96.4	11772	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.494	0.0	1.000	2277773	1.02		102	70.3	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.780	-0.008	0.644	5568455	2.44		97.7	9957	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.781	1.781	0.0	1.005	2248475	1.00		100.0	229	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.814	0.0	1.000	2749622	0.8612		97.4	1130	
298.90 > 99.00	1.814	1.814	0.0	1.000	1004644		2.74(1.35-4.05)		839	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.822	-0.008	0.659	69393	2.22		95.7	396	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	626601	0.8302		88.9	2279	
D 60 M2-4:2FTS										
329.00 > 81.00	2.027	2.038	-0.011	0.737	611067	1.94		83.2	767	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.068	0.0	1.000	2071329	0.9557		95.6	401	
313.00 > 119.00	2.068	2.068	0.0	1.000	146089		14.18(6.96-20.87)		308	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.078	-0.010	0.752	5984498	2.43		97.3	8793	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.089	0.0	1.152	1327963	0.9046		96.4	1763	
349.00 > 99.00	2.089	2.089	0.0	1.152	644932		2.06(1.15-3.45)		1346	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	520668	0.8965		89.6	353	

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	2.160	2.170	-0.010	0.785	859000	2.81		112	2428	
D 9 13C4-PFHpA										
367.00 > 322.00	2.386	2.400	-0.014	0.868	7346314	2.44		97.5	6662	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.400	2.400	0.0	1.005	3110318	0.9864		98.6	573	
363.00 > 169.00	2.386	2.400	-0.014	1.000	703142		4.42(2.17-6.52)		1318	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.413	2.413	0.0	1.000	1974560	0.8969		98.6	1318	
399.00 > 99.00	2.413	2.413	0.0	1.000	541601		3.65(1.90-5.70)		817	
D 11 18O2 PFHxS										
403.00 > 84.00	2.413	2.426	-0.013	0.877	4221179	2.25		95.2	5871	
76 DONA										
377.00 > 251.00	2.439	2.439	0.0	0.783	5203309	1.00		106	8004	
377.00 > 85.00	2.439	2.439	0.0	0.783	2303944		2.26(1.13-3.39)		2421	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.719	0.0	1.000	605070	0.9520		100	882	
D 12 M2-6:2FTS										
429.00 > 81.00	2.719	2.734	-0.015	0.988	702460	2.12		89.2	962	
D 73 13C8 PFOA										
421.00 > 376.00	2.734	2.750	-0.016		5994026	2.31		94.4	8036	
* 62 13C2-PFOA										
415.00 > 370.00	2.750	2.750	0.0		7004646	2.50			9844	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	3073618	1.03		102	193	
413.00 > 169.00	2.750	2.750	0.0	1.000	1070902		2.87(1.36-4.08)		1792	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.750	2.750	0.0	0.882	1826803	0.9228		96.9	2018	
449.00 > 99.00	2.750	2.750	0.0	0.882	491068		3.72(1.84-5.53)		1334	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.766	-0.016	1.000	6906180	2.45		97.9	7648	
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.117	0.0	1.000	2638029	1.02		102	266	
463.00 > 169.00	3.117	3.117	0.0	1.000	462505		5.70(2.68-8.03)		1359	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.117	3.117	0.0	1.000	1875548	0.8957		96.5	779	
499.00 > 99.00	3.117	3.117	0.0	1.000	436667		4.30(2.04-6.12)		1103	
D 72 13C8 PFOS										
507.00 > 99.00	3.117	3.135	-0.018		940509	2.21		92.6	2543	
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.135	-0.018	1.133	4640352	2.36		98.6	3344	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.135	-0.018	1.133	6398039	2.46		98.5	5402	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.334	3.334	0.0	1.070	2143878	0.9650		104	1767	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.465	0.0	1.260	2480017	2.34		93.5	4788	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	3330988	1.13		113	3822	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.465	3.465	0.0	1.112	1196270	0.9674		101	2031	
549.00 > 99.00	3.465	3.465	0.0	1.112	207591		5.76(3.02-9.05)		988	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.465	3.465	0.0	1.000	506322	0.9751		102	1839	
D 26 M2-8:2FTS										
529.00 > 81.00	3.465	3.481	-0.015	1.260	83464	1.92		80.0	441	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.481	3.481	0.0	1.000	2897759	1.04		104	446	
513.00 > 169.00	3.481	3.481	0.0	1.000	189410		15.30(7.12-21.35)		270	
D 23 13C2 PFDA										
515.00 > 470.00	3.481	3.496	-0.015	1.265	6287028	2.27		90.6	5204	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.641	3.641	0.0	1.004	1102197	1.06		106	437	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.655	-0.028	1.319	2554859	2.23		89.4	3225	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.791	3.791	0.0	1.217	1754120	1.03		107	1287	
599.00 > 99.00	3.791	3.791	0.0	1.217	333936		5.25(2.14-6.43)		1121	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.807	3.807	0.0	1.004	792834	0.8796		88.0	1324	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.807	3.807	0.0	1.000	2213646	1.10		110	457	
563.00 > 169.00	3.807	3.807	0.0	1.000	203543		10.88(5.24-15.72)		824	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.823	-0.032	1.379	2462674	2.56		102	2602	
D 30 13C2 PFUnA										
565.00 > 520.00	3.807	3.823	-0.016	1.384	5502032	2.26		90.3	4733	
35 MeFOSA										
512.00 > 169.00	3.960	3.960	0.0		581873	NC			681	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.960	3.960	0.0	1.271	2605700	0.99		105	4065	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.106	4.106	0.0	1.000	2719017	1.05		105	645	
613.00 > 169.00	4.106	4.106	0.0	1.000	290201		9.37(4.68-14.05)		451	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.106	4.106	0.0	1.185	405559	1.21		126	852	
D 36 13C2 PFDaA										
615.00 > 570.00	4.106	4.122	-0.016	1.493	6382965	2.31		92.5	5311	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.139	4.139	0.0		621521	NC			510	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.342	4.342	0.0	1.393	163914	0.9356		96.7	249	
699.00 > 99.00	4.342	4.342	0.0	1.393	282303		0.58(0.28-0.83)		816	

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	4.373	4.373	0.0	1.065	2223515	1.14		114	1020	
663.00 > 169.00	4.373	4.373	0.0	1.065	346998		6.41(3.09-9.27)		731	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	318653	1.00		99.9	729	
713.00 > 219.00	4.609	4.609	0.0	1.000	211391		1.51(0.70-2.09)		625	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.609	4.627	-0.018	1.676	5007616	2.40		96.1	8764	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.024	5.024	0.0	1.000	1773324	0.9722		97.2	556	
813.00 > 169.00	5.024	5.024	0.0	1.000	301965		5.87(2.77-8.32)		716	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.024	5.041	-0.017	1.827	5012857	2.79		112	6713	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.376	5.376	0.0	1.070	1171555	1.03		103	552	
913.00 > 169.00	5.376	5.376	0.0	1.070	211804		5.53(2.55-7.64)		1293	

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\20181009-65513.b\2018.10.08LLE_004.d

Injection Date: 09-Oct-2018 05:12:38

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

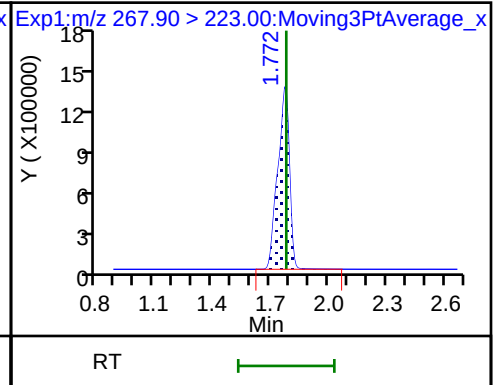
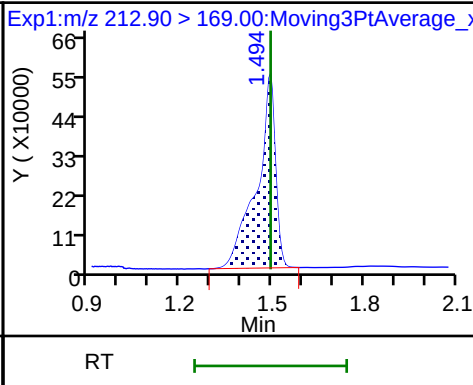
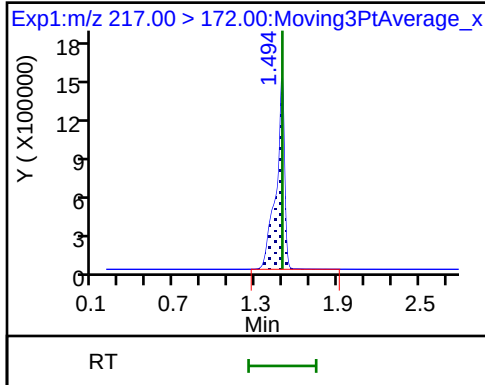
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

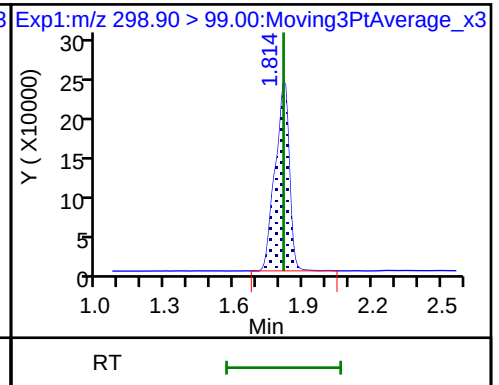
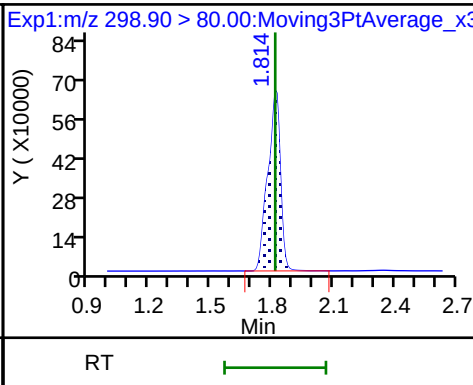
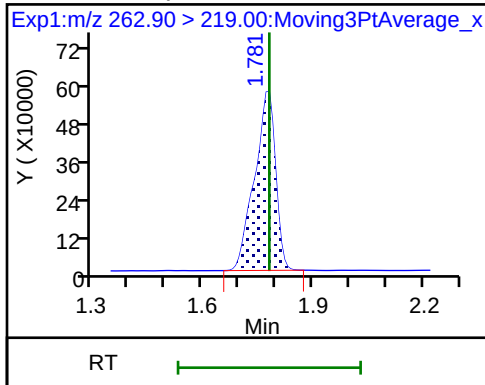
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

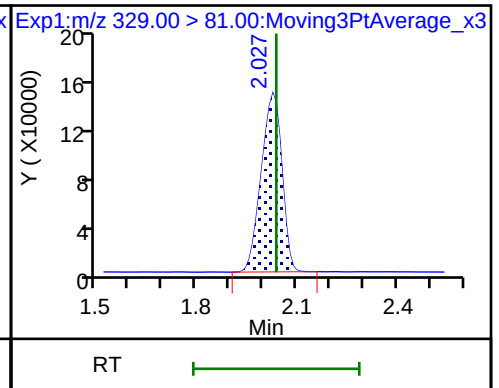
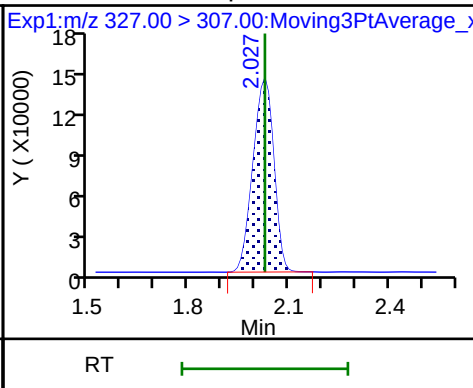
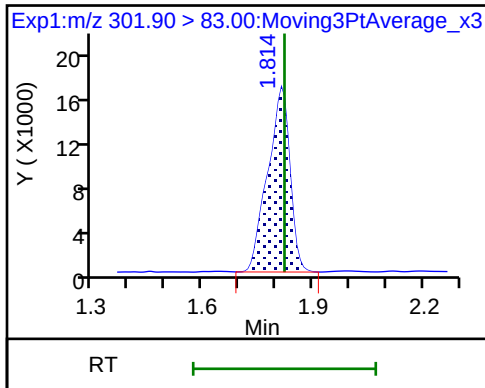
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

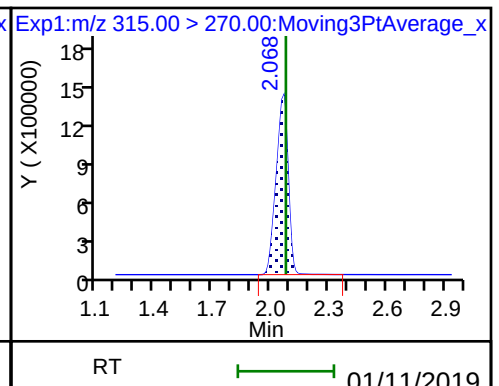
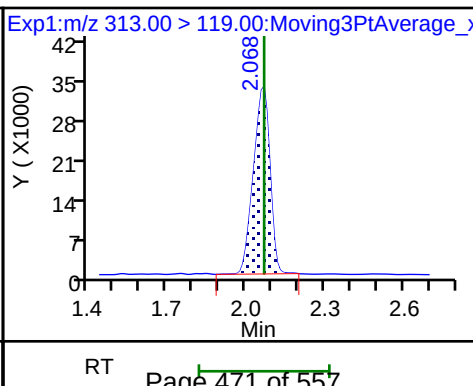
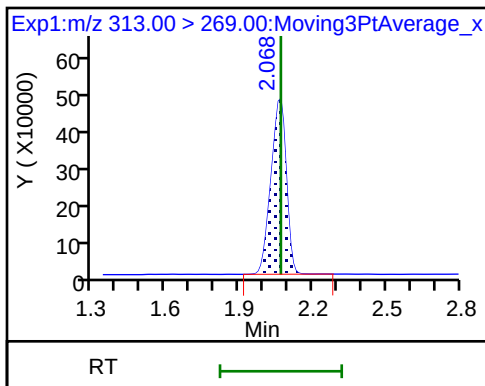
D 60 M2-4:2FTS

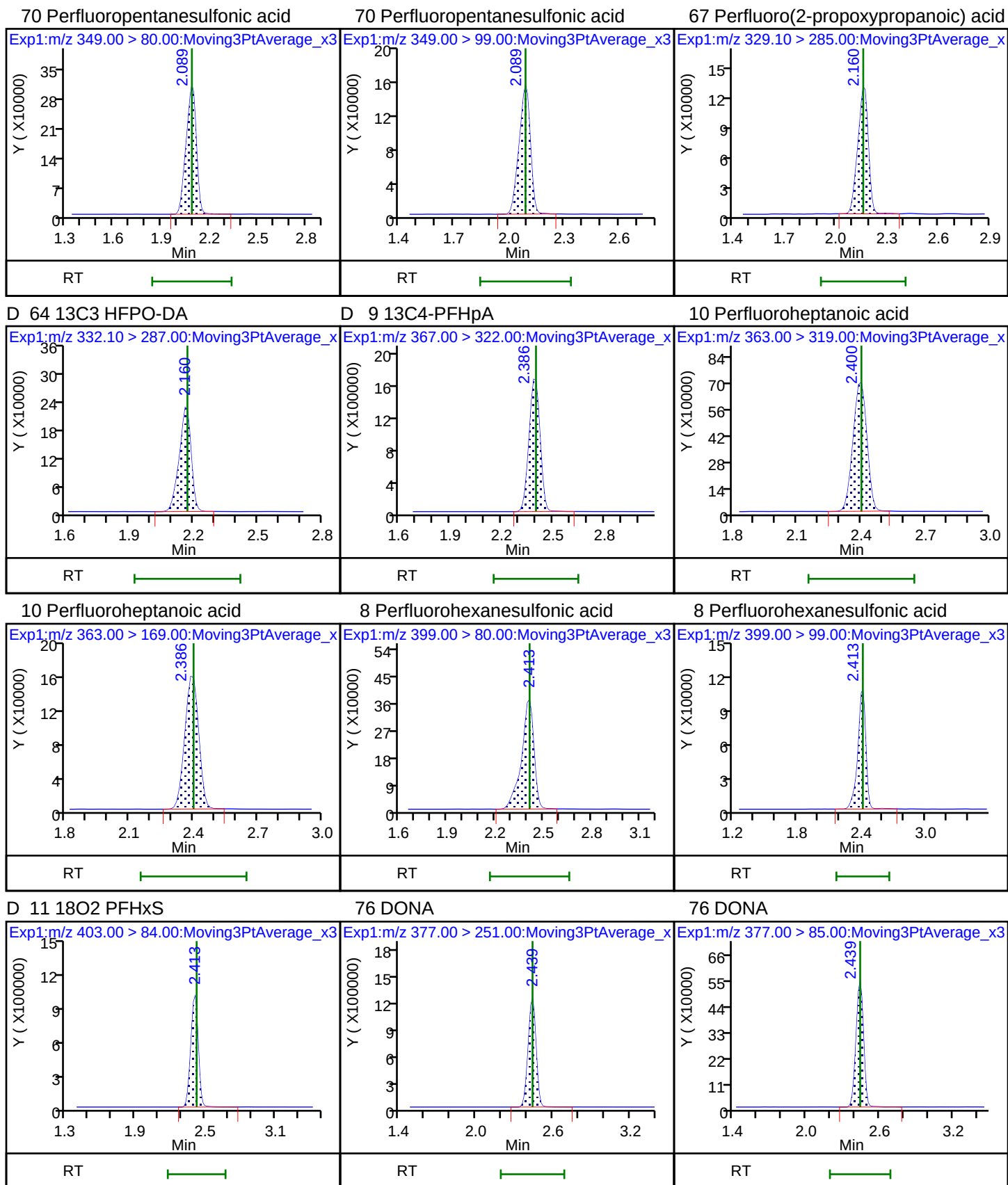


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

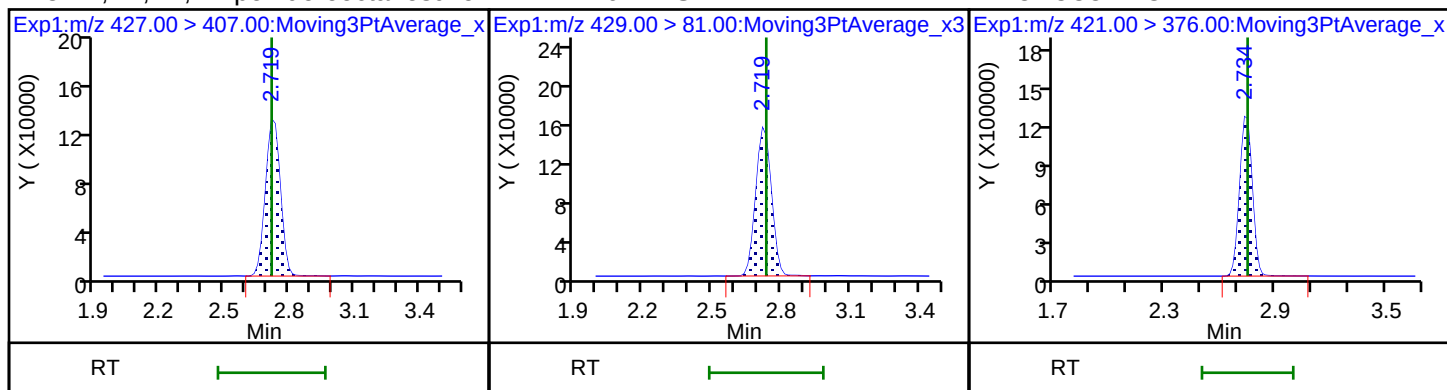
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

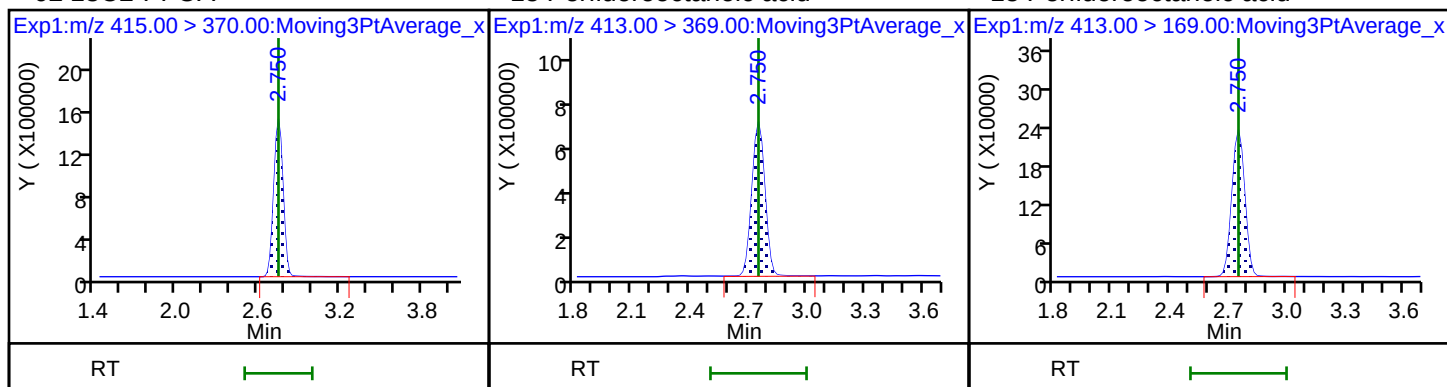
D 73 13C8 PFOA



* 62 13C2-PFOA

15 Perfluorooctanoic acid

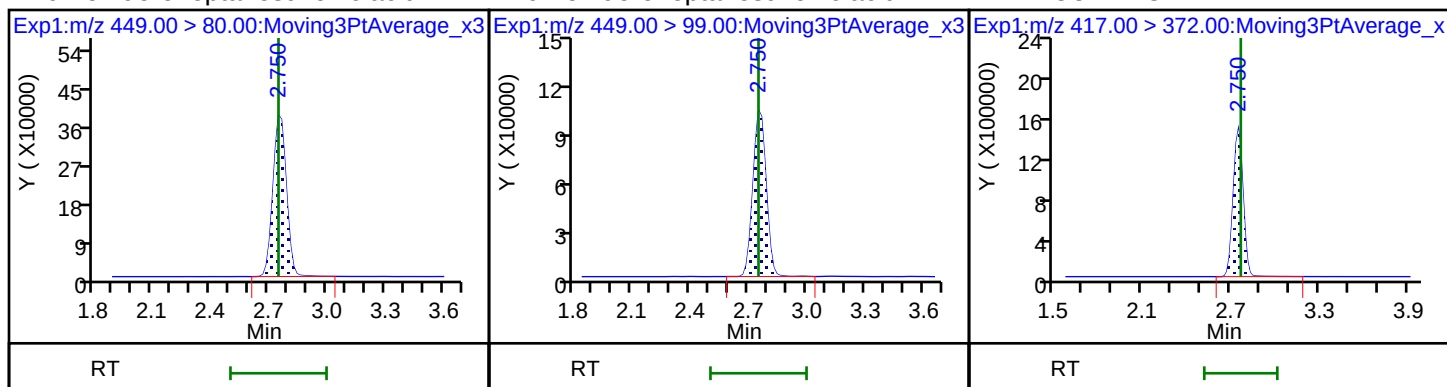
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

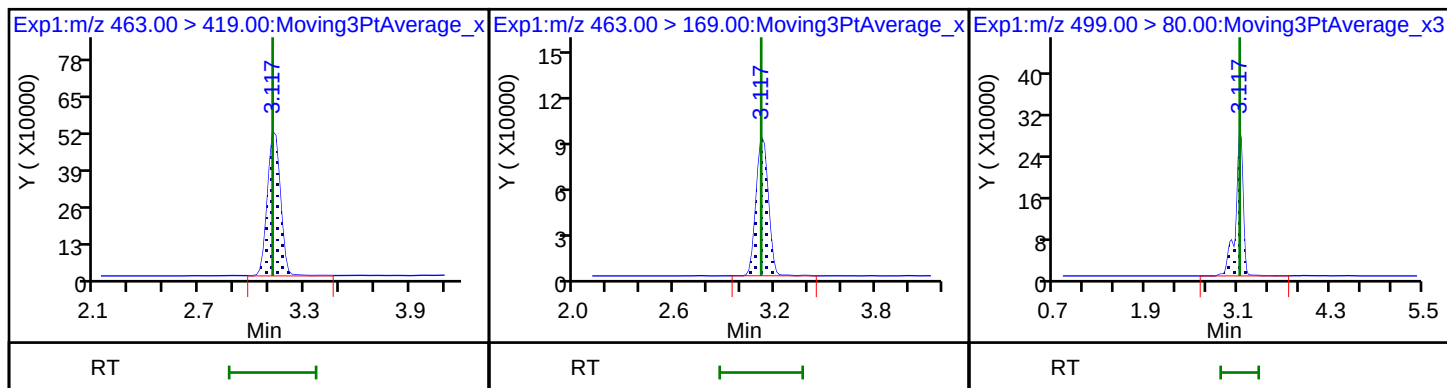
D 14 13C4 PFOA



20 Perfluorononanoic acid

20 Perfluorononanoic acid

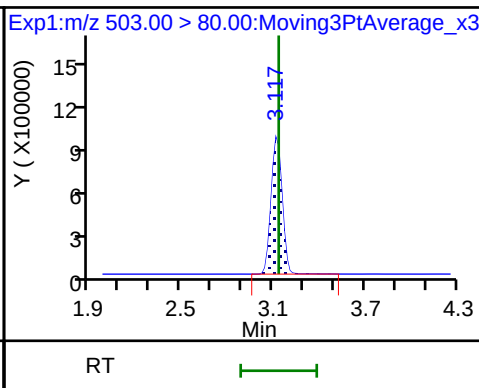
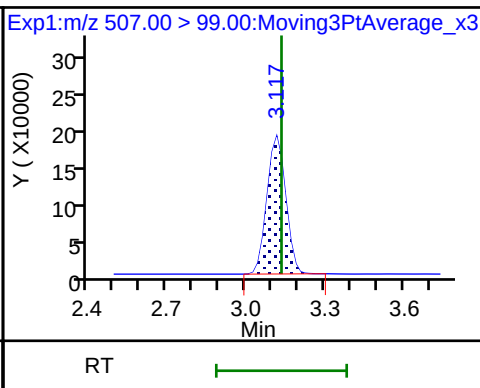
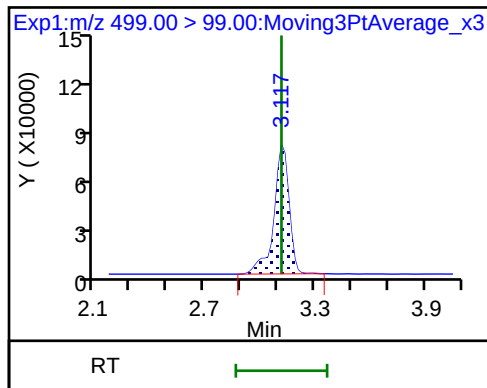
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 72 13C8 PFOS

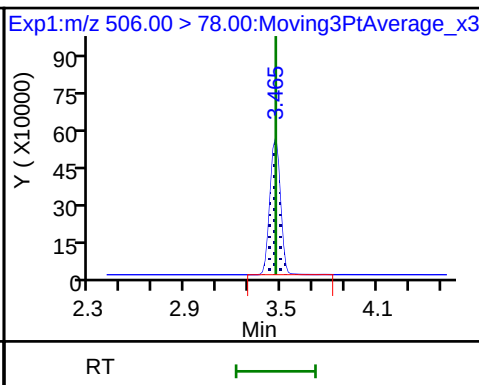
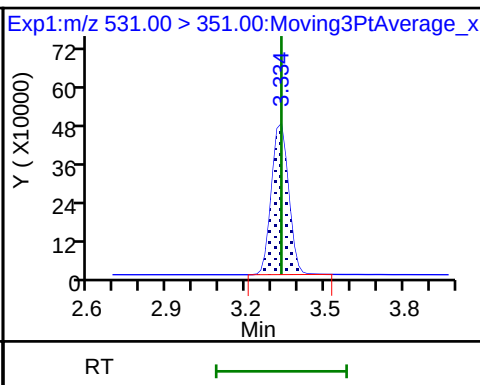
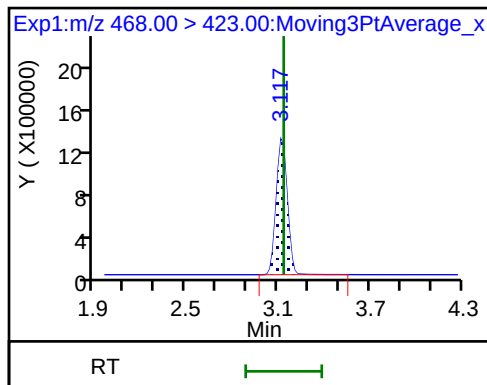
D 18 13C4 PFOS



D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonadecanoic acid

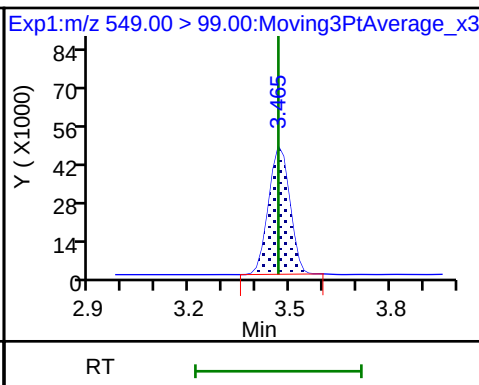
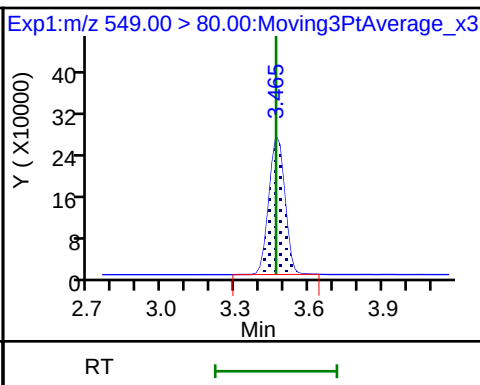
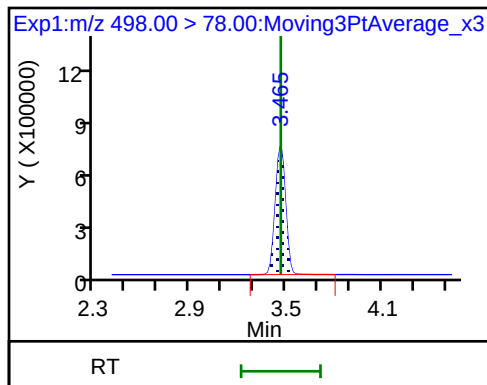
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide

68 Perfluorononanesulfonic acid

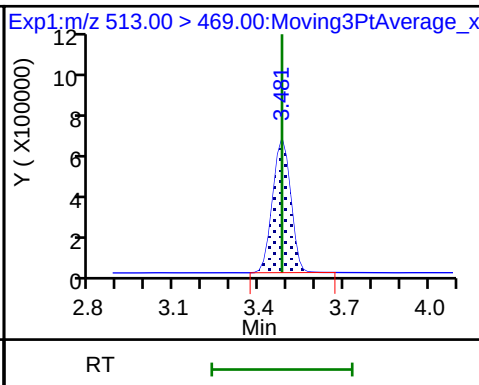
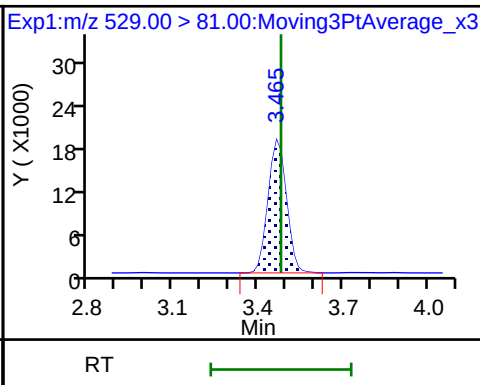
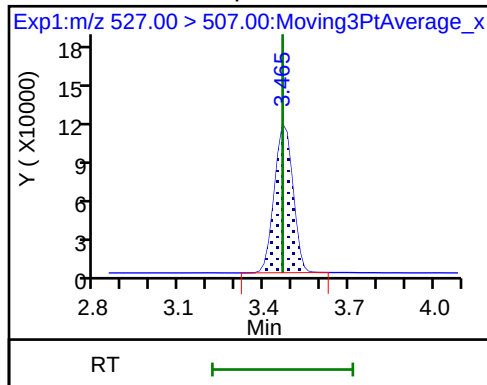
68 Perfluorononanesulfonic acid

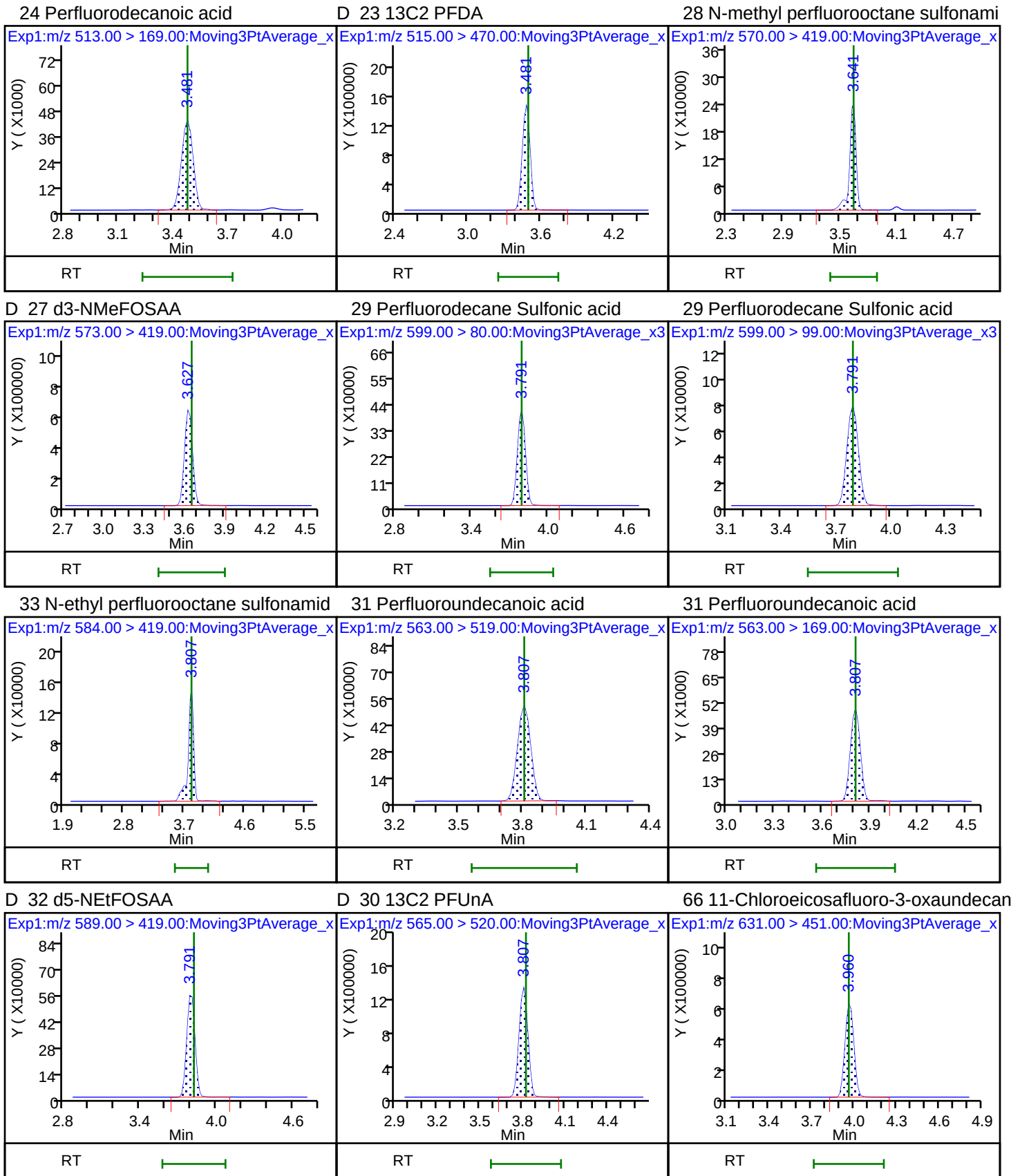


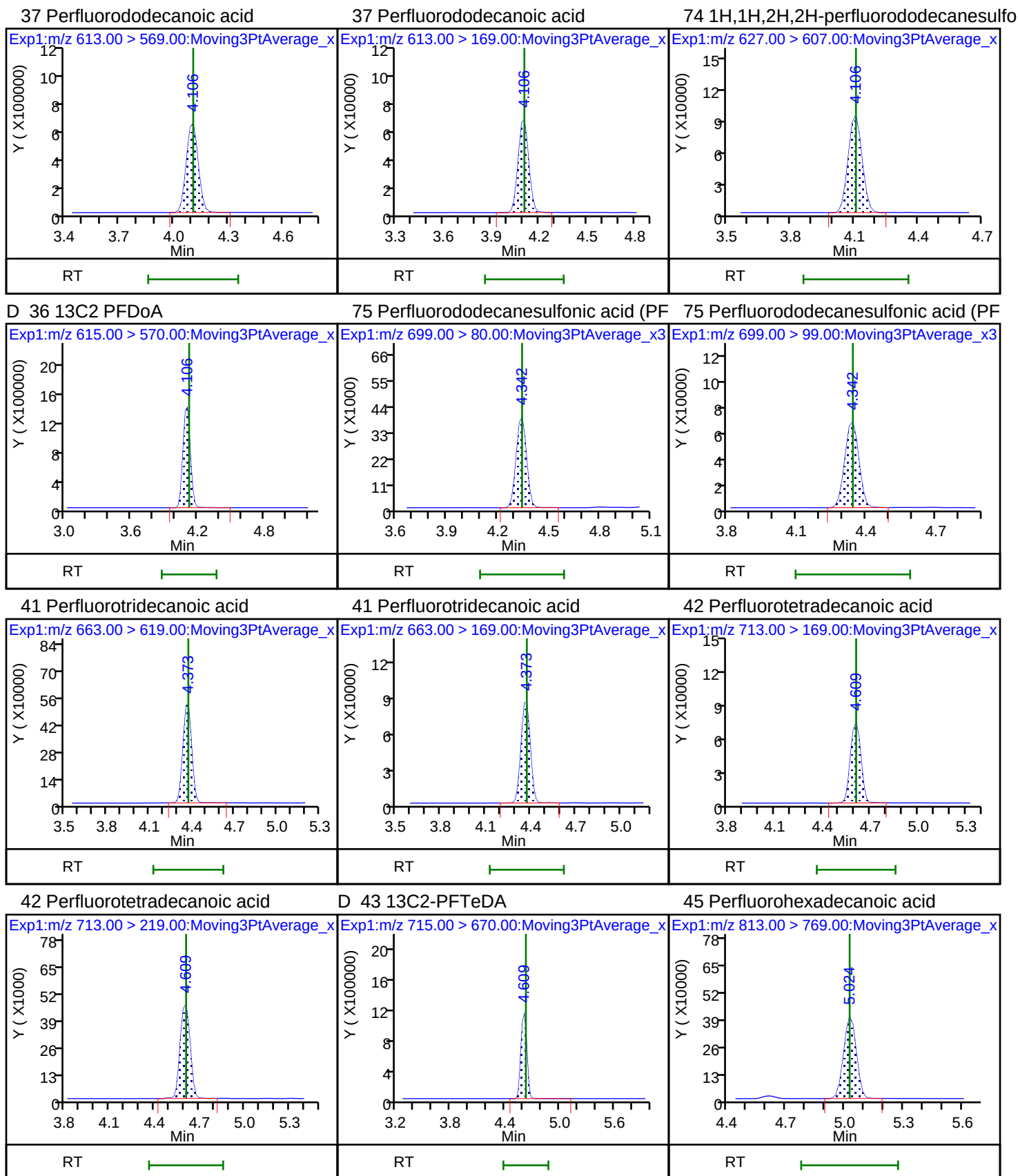
25 1H,1H,2H,2H-perfluorodecanesulfonamide

D 26 M2-8:2FTS

24 Perfluorodecanoic acid



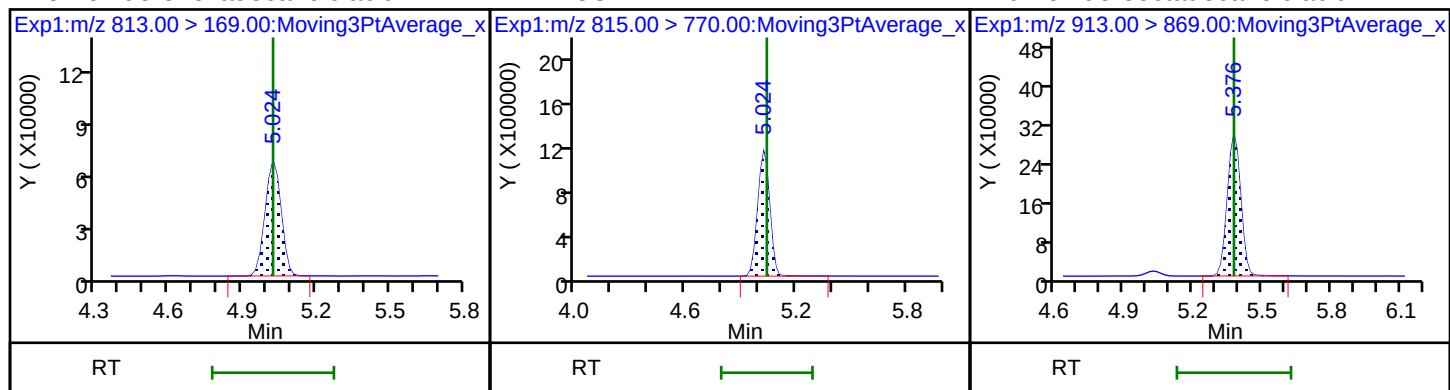




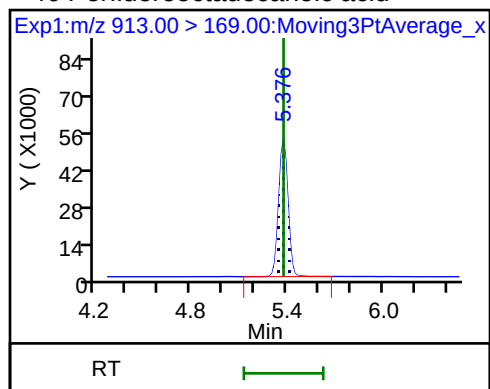
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCV 320-250745/1 Calibration Date: 10/09/2018 06:20

Instrument ID: A9 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: 2018.10.08LLE_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	0.9058	0.9407		2.60	2.50	3.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.010	0.9733		2.41	2.50	-3.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	107.0	109.8		2.27	2.21	2.7	50.0
4:2 FTS	AveID	25.29	22.11		2.04	2.34	-12.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9054	0.8796		2.43	2.50	-2.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.19	52.15		2.49	2.35	6.0	50.0
HFPO-DA (GenX)	AveID	1.690	1.626		2.40	2.50	-3.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.073	1.065		2.48	2.50	-0.7	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.233	1.115		2.06	2.28	-9.6	40.0
DONA	AveID	2.679	2.892		2.54	2.36	8.0	50.0
6:2 FTS	AveID	2.149	2.351		2.59	2.37	9.4	40.0
Perfluorooctanoic acid (PFOA)	AveID	1.085	1.034		2.39	2.50	-4.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.020	1.090		2.54	2.38	6.9	50.0
Perfluorononanoic acid (PFNA)	AveID	1.015	1.126		2.77	2.50	11.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	1.118		2.41	2.32	3.7	40.0
F-53B Major	AveID	1.144	1.165		2.37	2.33	1.8	50.0
8:2 FTS	AveID	14.90	14.39		2.31	2.40	-3.4	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6369	0.6334		2.39	2.40	-0.5	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.282		2.76	2.50	10.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.108	1.119		2.52	2.50	1.0	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.014	0.995		2.45	2.50	-1.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.8737		2.39	2.41	-0.7	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9150	0.9584		2.62	2.50	4.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9124	0.9443		2.59	2.50	3.5	40.0
F-53B Minor	AveID	1.353	1.437		2.50	2.36	6.2	50.0
10:2 FTS	AveID	9.585	10.60		2.66	2.41	10.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	0.9807		2.41	2.50	-3.7	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0902	0.0920		2.47	2.42	2.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7667	0.8327		2.72	2.50	8.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1601		2.51	2.50	0.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9277		2.59	2.50	3.7	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCV 320-250745/1 Calibration Date: 10/09/2018 06:20
 Instrument ID: A9 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: 2018.10.08LLE_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	0.5686	0.6547		2.88	2.50	15.1	50.0
13C4 PFBA	Ave	0.9146	0.8999		2.46	2.50	-1.6	50.0
13C5 PFPeA	Ave	0.8136	0.8358		2.57	2.50	2.7	50.0
13C3 PFBS	Ave	0.0111	0.0111		2.32	2.33	-0.3	50.0
M2-4:2 FTS	Ave	0.1123	0.0990		2.06	2.34	-11.8	50.0
13C2 PFHxA	Ave	0.8780	0.8766		2.50	2.50	-0.2	50.0
13C3 HFPO-DA	Ave	0.1093	0.1169		2.67	2.50	7.0	50.0
13C4 PFHpA	Ave	1.076	1.062		2.47	2.50	-1.3	50.0
18O2 PFHxS	Ave	0.6688	0.7001		2.48	2.37	4.7	50.0
M2-6:2 FTS	Ave	0.1183	0.1019		2.04	2.38	-13.9	40.0
13C4 PFOA	Ave	1.007	1.001		2.48	2.50	-0.6	50.0
13C8 PFOA	Ave	2595399	2423411		2.29	2.45	-6.6	50.0
13C4 PFOS	Ave	0.7027	0.6916		2.35	2.39	-1.6	50.0
13C5 PFNA	Ave	0.9276	0.8503		2.29	2.50	-8.3	50.0
13C8 PFOS	Ave	424896	436917		2.46	2.39	2.8	50.0
13C8 FOSA	Ave	0.3786	0.3606		2.38	2.50	-4.7	50.0
13C2 PFDA	Ave	0.9902	0.9469		2.39	2.50	-4.4	50.0
M2-8:2 FTS	Ave	0.0155	0.0134		2.06	2.40	-13.8	40.0
d3-NMeFOSAA	Ave	0.4080	0.3807		2.33	2.50	-6.7	50.0
13C2 PFUnA	Ave	0.8697	0.7576		2.18	2.50	-12.9	50.0
d5-NEtFOSAA	Ave	0.3434	0.3125		2.28	2.50	-9.0	50.0
13C2 PFDoA	Ave	0.9853	0.9921		2.52	2.50	0.7	50.0
13C2 PFTeDA	Ave	0.7441	0.7375		2.48	2.50	-0.9	50.0
13C2 PFHxDA	Ave	0.6411	0.7212		2.81	2.50	12.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\2018.10.08LLE_013.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 09-Oct-2018 06:20:12 ALS Bottle#: 14 Worklist Smp#: 1
 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\20181009-65522.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 14:40:05 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK047

First Level Reviewer: hannigana

Date: 09-Oct-2018 14:40:05

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	1.494	1.494	0.0	0.543	6140686	2.46		98.4	8723	
2 Perfluorobutyric acid										
212.90 > 169.00	1.494	1.494	0.0	1.000	5776763	2.60		104	167	
D 3 13C5-PFPeA										
267.90 > 223.00	1.780	1.780	0.0	0.647	5703232	2.57		103	10337	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.780	0.0	1.000	5551056	2.41		96.4	504	
D 47 13C3-PFBS										
301.90 > 83.00	1.822	1.822	0.0	0.662	70469	2.32		99.7	361	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.822	0.0	1.000	7356228	2.27		103	2878	
298.90 > 99.00	1.822	1.822	0.0	1.000	2590955		2.84(1.35-4.05)		1892	
D 60 M2-4:2FTS										
329.00 > 81.00	2.038	2.027	0.011	0.741	630807	2.06		88.2	960	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.038	2.038	0.0	1.118	1564874	2.04		87.4	5294	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.068	0.0	0.752	5981937	2.50		99.8	10635	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.068	0.0	1.000	5261869	2.43		97.2	947	
313.00 > 119.00	2.068	2.068	0.0	1.000	408392		12.88(6.96-20.87)		812	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.099	2.099	0.0	1.152	3706448	2.49		106	3609	
349.00 > 99.00	2.089	2.099	-0.010	1.146	1682978		2.20(1.15-3.45)		1952	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.160	2.160	0.0	0.785	797523	2.67		107	2073	

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	2.170	2.170	0.0	1.005	1296378	2.40		96.2	865	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.399	2.399	0.0	1.000	7720006	2.48		99.3	1165	
363.00 > 169.00	2.399	2.399	0.0	1.000	1698056		4.55(2.17-6.52)		2712	
D 9 13C4-PFHpA										
367.00 > 322.00	2.399	2.399	0.0	0.872	7247458	2.47		98.7	7797	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.413	2.413	0.0	1.000	4847883	2.06		90.4	2986	
399.00 > 99.00	2.413	2.413	0.0	1.000	1420032		3.41(1.90-5.70)		1570	
D 11 18O2 PFHxS										
403.00 > 84.00	2.413	2.413	0.0	0.877	4519428	2.48		105	6795	
76 DONA										
377.00 > 251.00	2.439	2.439	0.0	0.783	12856215	2.54		108	13546	
377.00 > 85.00	2.439	2.439	0.0	0.783	5812002		2.21(1.13-3.39)		3643	
D 12 M2-6:2FTS										
429.00 > 81.00	2.718	2.718	0.0	0.988	660523	2.04		86.1	1117	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.718	2.718	0.0	1.000	1549857	2.59		109	2338	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.750	0.0	1.000	6831890	2.48		99.4	6963	
D 73 13C8 PFOA										
421.00 > 376.00	2.750	2.750	0.0		5931299	2.29		93.4	10893	
* 62 13C2-PFOA										
415.00 > 370.00	2.750	2.750	0.0		6823885	2.50			9102	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	7072928	2.39		95.3	425	
413.00 > 169.00	2.750	2.750	0.0	1.000	2570570		2.75(1.36-4.08)		2888	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.766	0.0	0.888	4897051	2.54		107	3483	
449.00 > 99.00	2.766	2.766	0.0	0.888	1208290		4.05(1.84-5.53)		2441	
D 72 13C8 PFOS										
507.00 > 99.00	3.117	3.116	0.001		1044232	2.46		103	2762	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.116	0.001	1.133	5802324	2.29		91.7	5954	
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.116	0.001	1.133	4511745	2.35		98.4	2645	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.117	3.117	0.0	1.000	4898380	2.41		104	2483	
499.00 > 99.00	3.117	3.117	0.0	1.000	1154960		4.24(2.04-6.12)		1511	
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.117	0.0	1.000	6535579	2.77		111	550	
463.00 > 169.00	3.117	3.117	0.0	1.000	1109499		5.89(2.68-8.03)		1338	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.334	3.334	0.0	1.070	5125263	2.37		102	2590	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	8076832	2.76		111	4015	

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	0.996	1260663	2.31	96.6	3087	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.465	3.465	0.0	1.112	2869754	2.39	99.5	2448	
	549.00 > 99.00	3.465	3.465	0.0	1.112	490896	5.85(3.02-9.05)		1180	
D 21 13C8 FOSA	506.00 > 78.00	3.465	3.465	0.0	1.260	2460935	2.38	95.3	3697	
D 26 M2-8:2FTS	529.00 > 81.00	3.480	3.465	0.015	1.265	87616	2.06	86.2	494	
24 Perfluorodecanoic acid	513.00 > 469.00	3.480	3.480	0.0	1.000	7229451	2.52	101	1024	
	513.00 > 169.00	3.480	3.480	0.0	1.000	507912	14.23(7.12-21.35)		400	
D 23 13C2 PFDA	515.00 > 470.00	3.480	3.480	0.0	1.265	6461445	2.39	95.6	8825	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.627	3.627	0.0	1.319	2597673	2.33	93.3	4021	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.641	3.641	0.0	1.004	2584856	2.45	98.1	793	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.791	3.791	0.0	1.217	3974763	2.39	99.3	2196	
	599.00 > 99.00	3.791	3.791	0.0	1.217	887257	4.48(2.14-6.43)		2069	
D 30 13C2 PFUnA	565.00 > 520.00	3.807	3.807	0.0	1.384	5169583	2.18	87.1	5727	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.807	3.807	0.0	1.384	2132749	2.28	91.0	2457	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.807	3.807	0.0	1.000	4881376	2.59	103	840	
	563.00 > 169.00	3.807	3.807	0.0	1.000	447262	10.91(5.24-15.72)		1209	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.807	3.807	0.0	1.000	2044064	2.62	105	2522	
35 MeFOSA	512.00 > 169.00	3.960	3.960	0.0		1410037	NC		747	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.960	3.960	0.0	1.271	6388135	2.50	106	5575	
37 Perfluorododecanoic acid	613.00 > 569.00	4.106	4.106	0.0	1.000	6639082	2.41	96.3	1411	
	613.00 > 169.00	4.106	4.106	0.0	1.000	756854	8.77(4.68-14.05)		914	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.106	4.106	0.0	1.180	934376	2.66	111	1713	
D 36 13C2 PFDaA	615.00 > 570.00	4.106	4.106	0.0	1.493	6769827	2.52	101	7079	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.139	4.139	0.0		1561627	NC		575	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.342	4.342	0.0	1.393	420487	2.47	102	543	
	699.00 > 99.00	4.342	4.342	0.0	1.393	735716	0.57(0.28-0.83)		1872	

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	4.373	4.373	0.0	1.065	5637010	2.72		109	2077	
663.00 > 169.00	4.373	4.373	0.0	1.065	934600		6.03(3.09-9.27)		1204	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.609	4.609	0.0	1.676	5032802	2.48		99.1	7792	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	805819	2.51		101	1522	
713.00 > 219.00	4.609	4.609	0.0	1.000	575300		1.40(0.70-2.09)		1799	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.024	5.024	0.0	1.000	4565324	2.59		104	1353	
813.00 > 169.00	5.024	5.024	0.0	1.000	796749		5.73(2.77-8.32)		1656	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.024	5.024	0.0	1.827	4921293	2.81		112	8217	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.377	5.377	0.0	1.070	3222014	2.88		115	1346	
913.00 > 169.00	5.377	5.377	0.0	1.070	575657		5.60(2.55-7.64)		2054	

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\20181009-65522.b\2018.10.08LLE_013.d

Injection Date: 09-Oct-2018 06:20:12

Instrument ID: A9

Lims ID: CCV L5

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 14

Worklist Smp#: 1

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

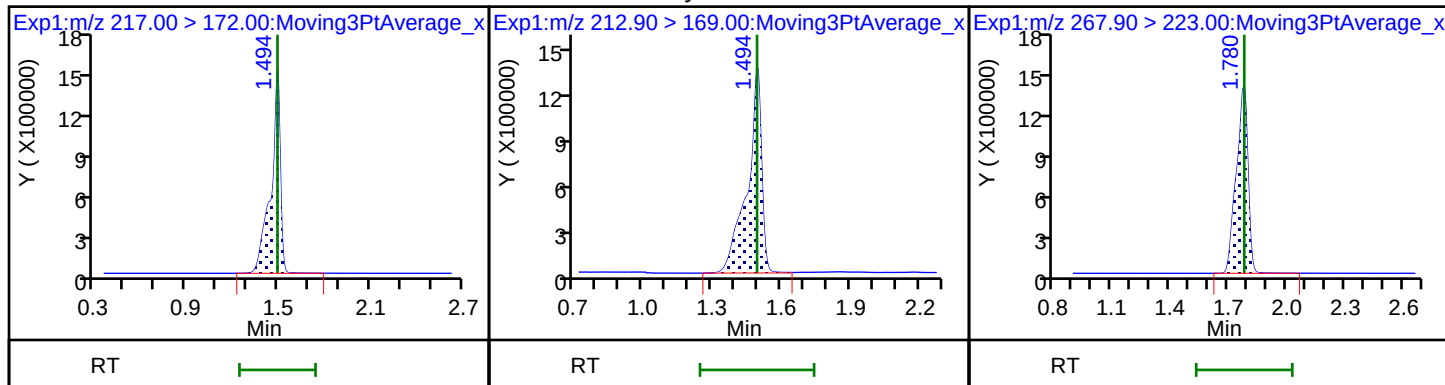
Method: PFAS_A9

Limit Group: LC PFC ICAL

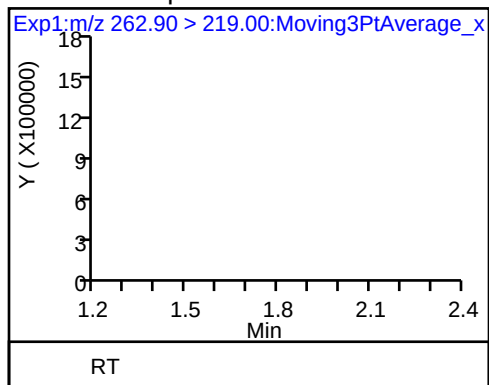
D 1 13C4 PFBA

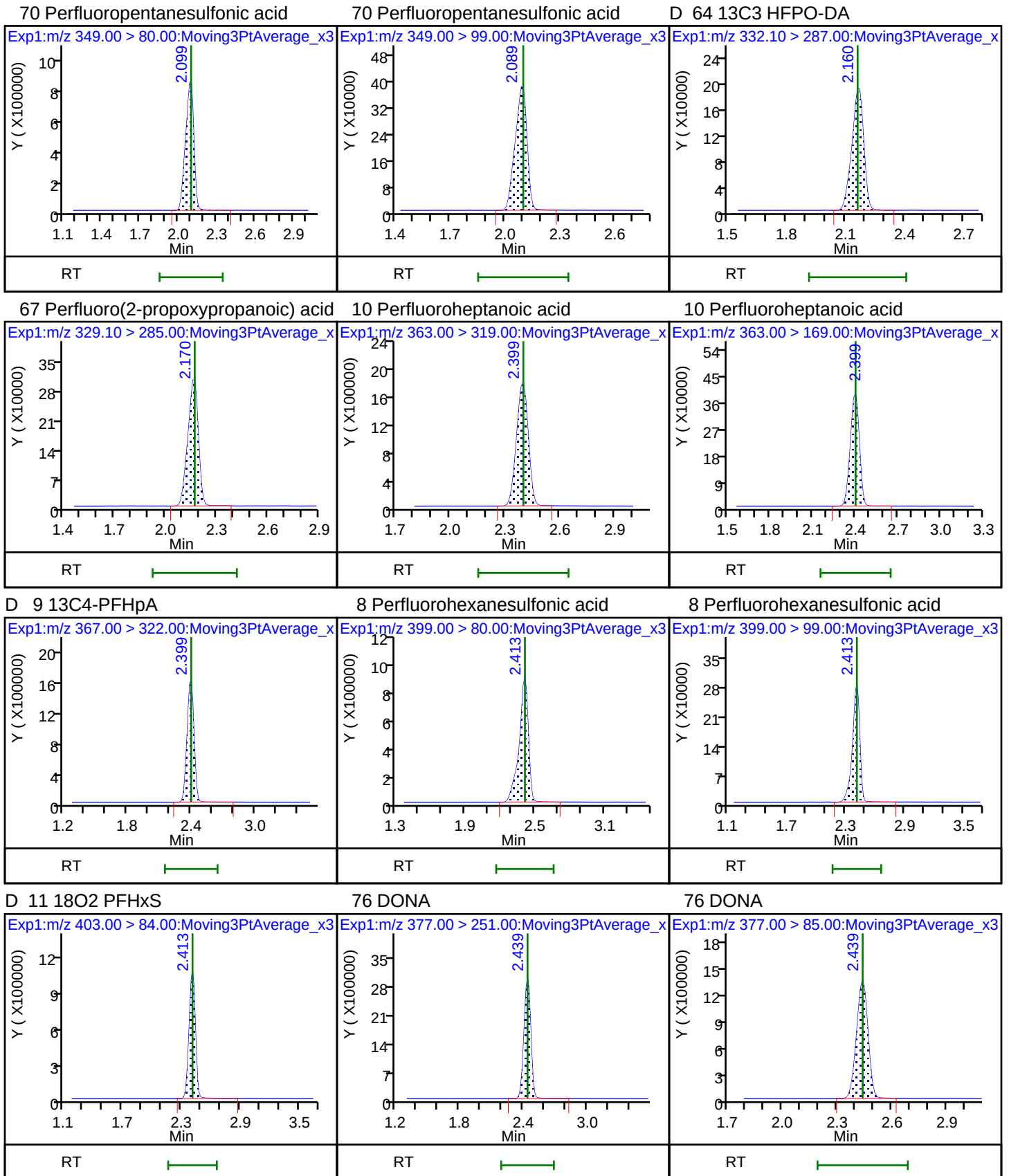
2 Perfluorobutyric acid

D 3 13C5-PFPeA



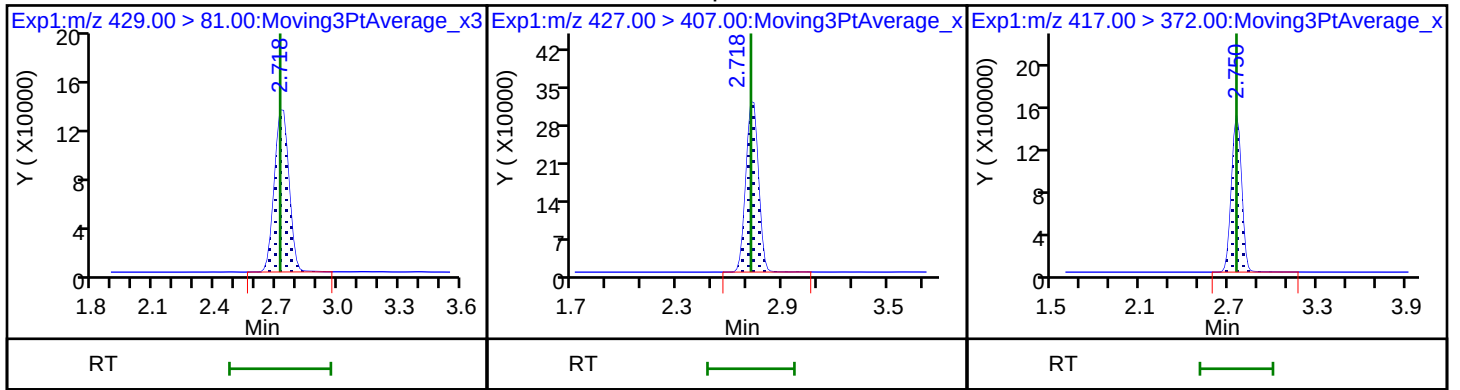
4 Perfluoropentanoic acid





D 12 M2-6:2FTS

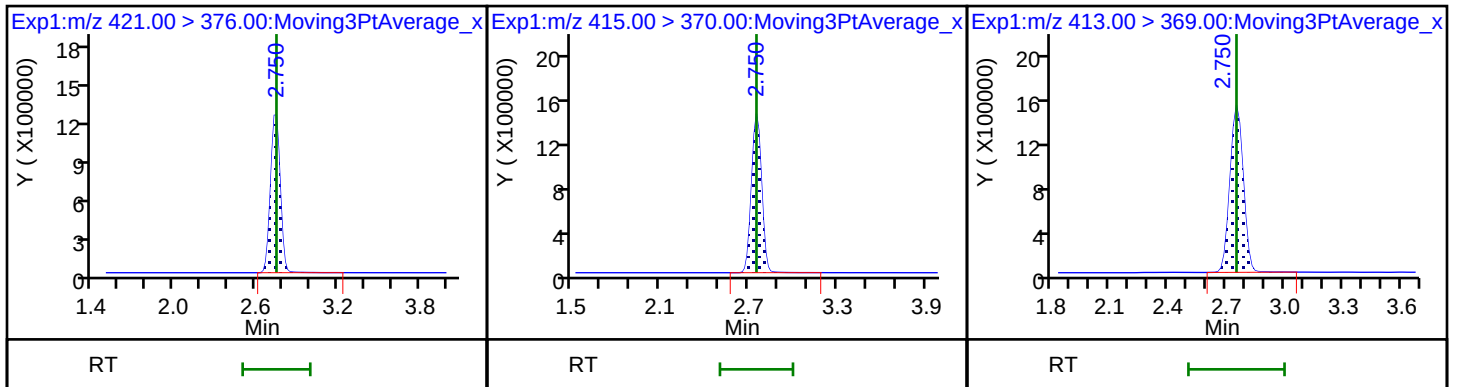
13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA



D 73 13C8 PFOA

* 62 13C2-PFOA

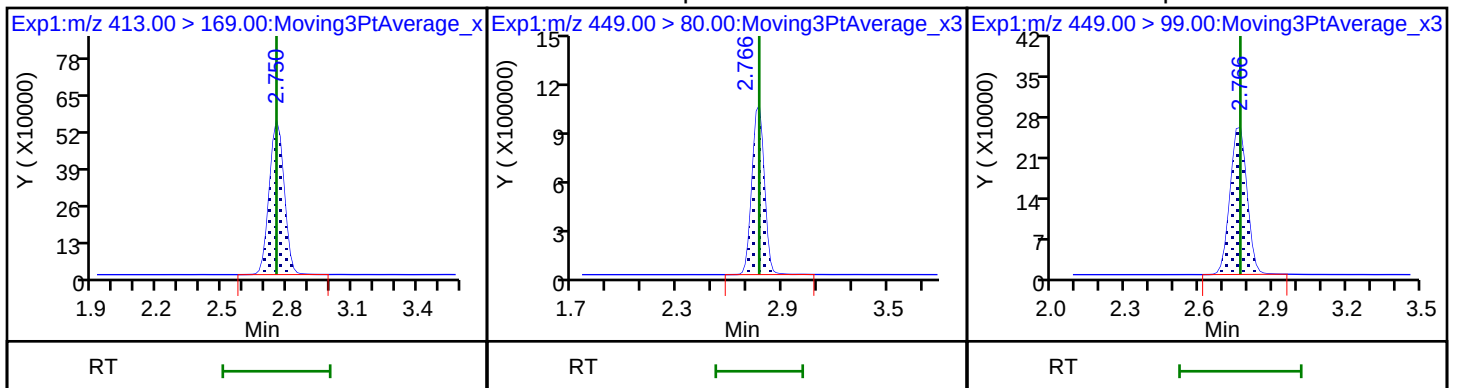
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

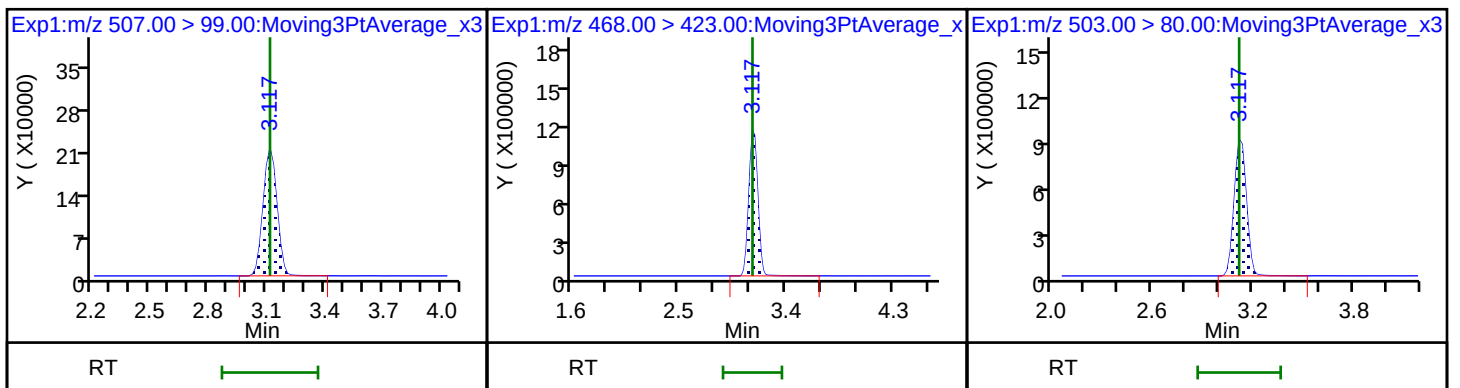
16 Perfluoroheptanesulfonic acid

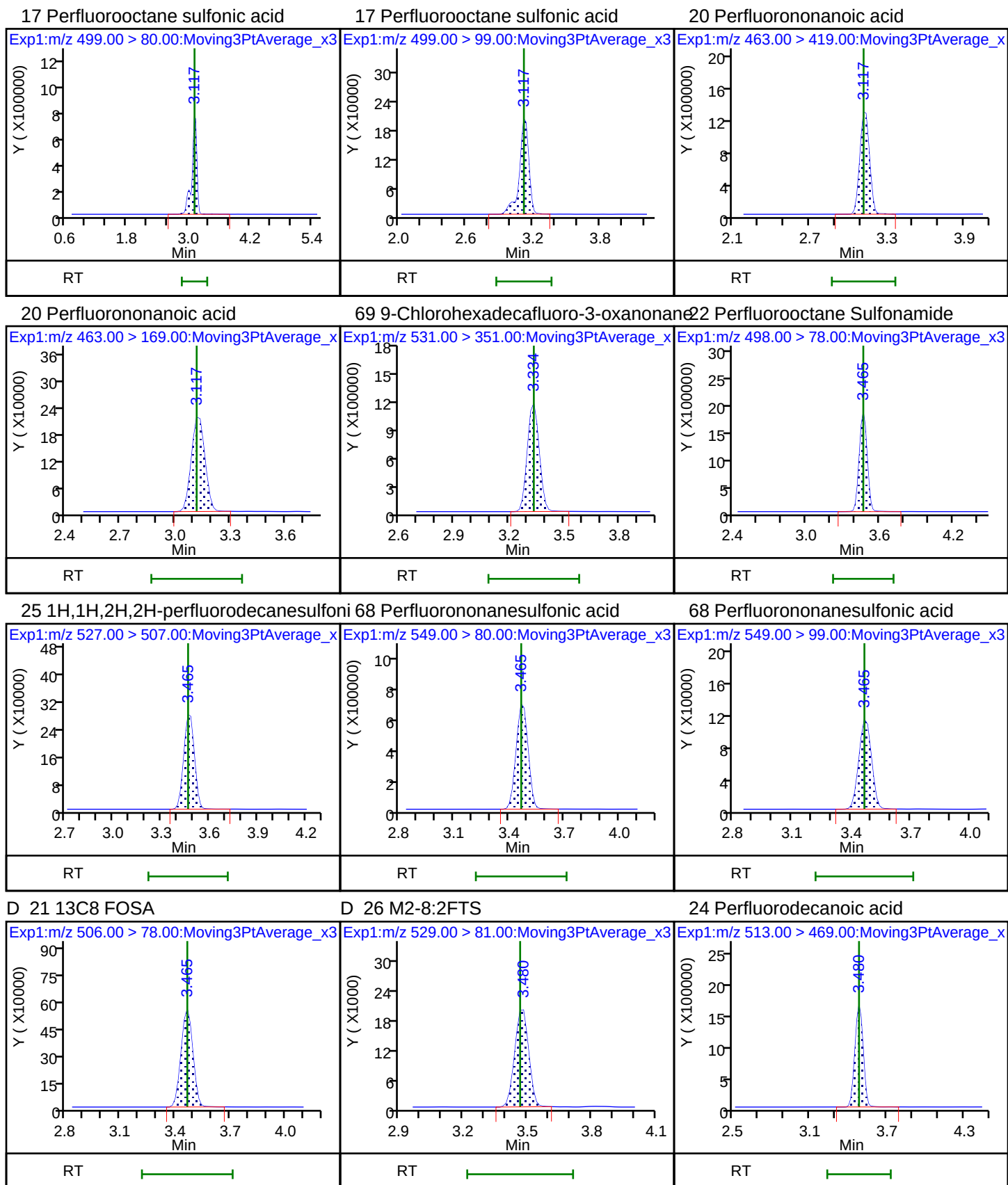


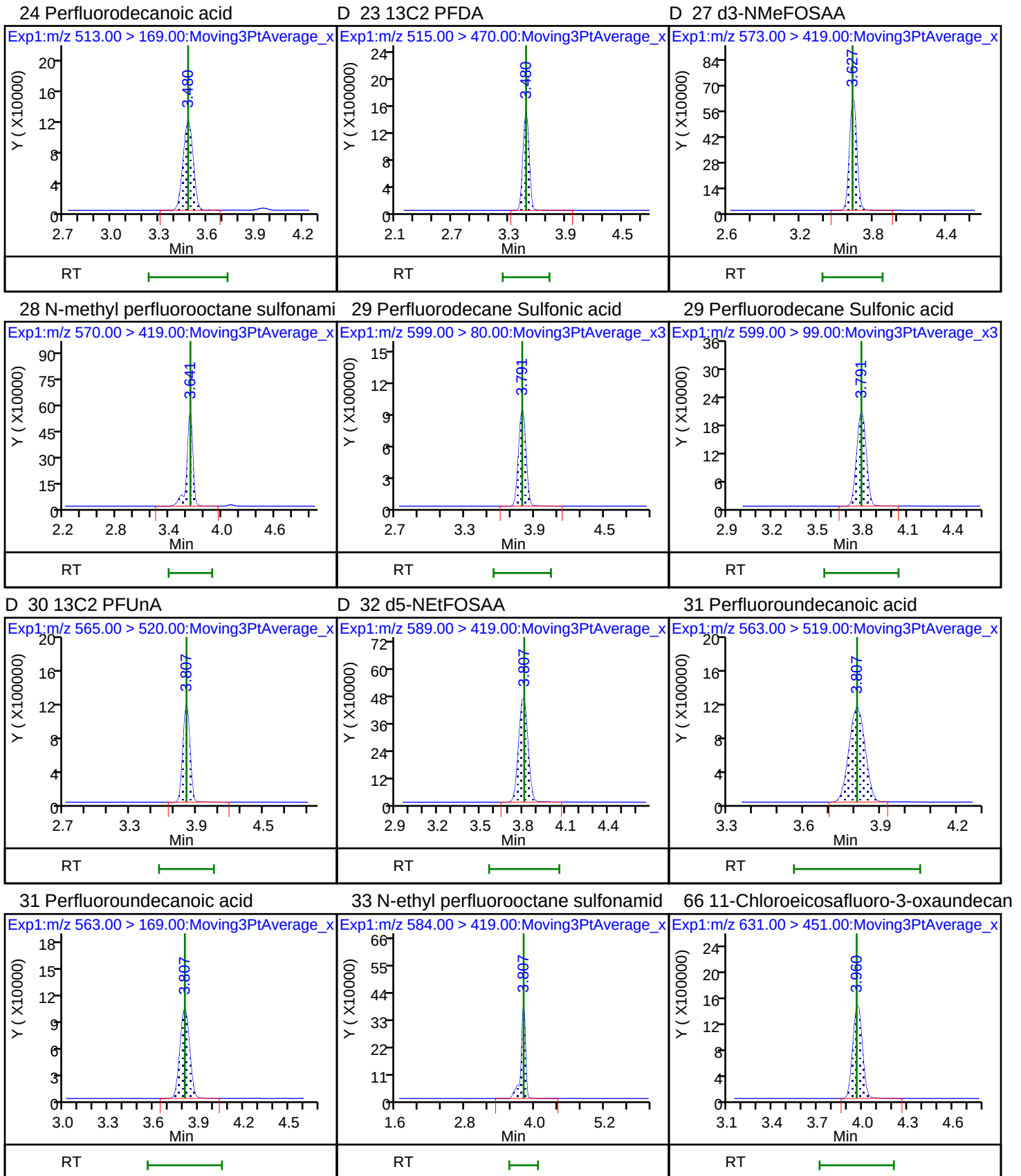
D 72 13C8 PFOS

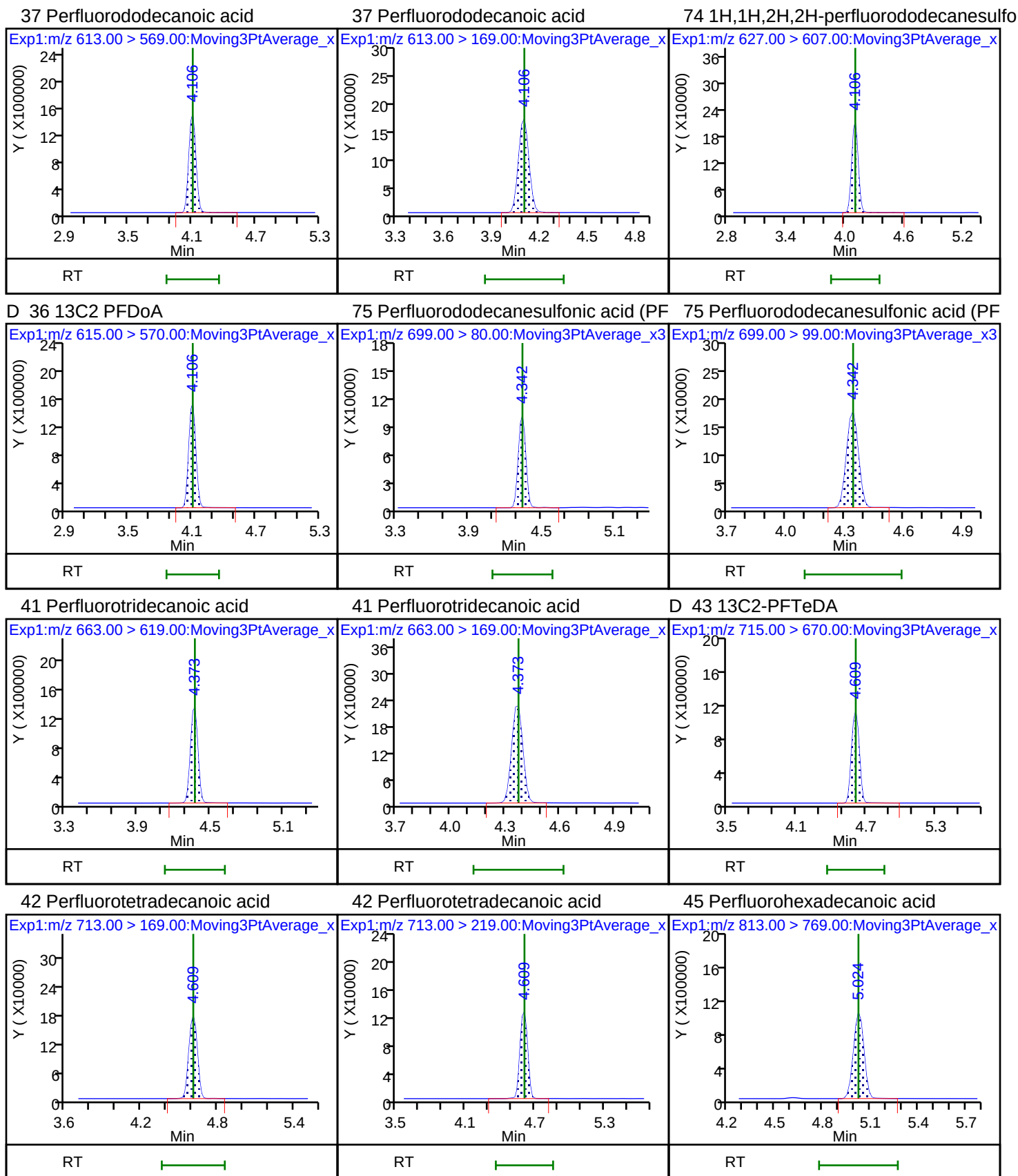
D 19 13C5 PFNA

D 18 13C4 PFOS





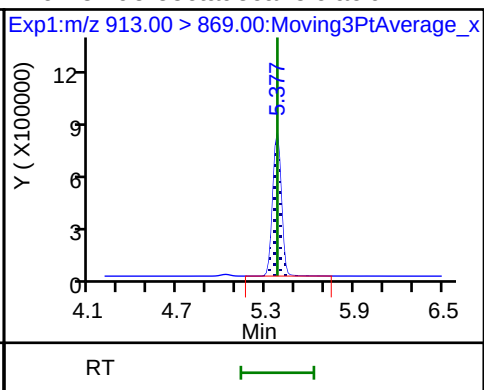
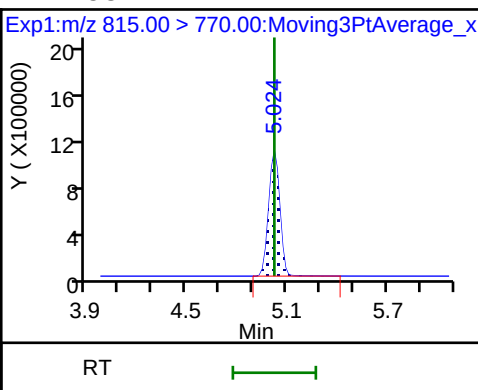
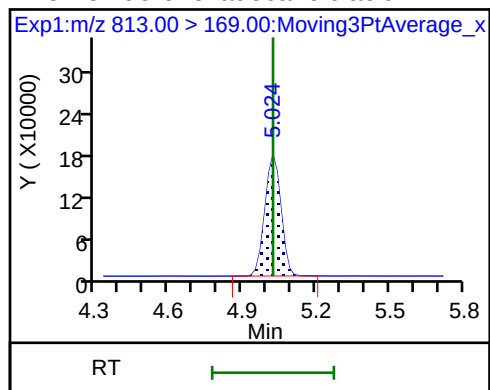




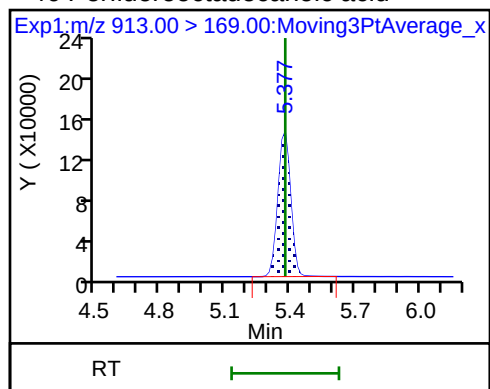
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Lab Sample ID: CCV 320-250745/8 Calibration Date: 10/09/2018 07:12

Instrument ID: A9 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: 2018.10.08LLE_020.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9058	0.9386		1.04	1.00	3.6	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.010	1.002		0.992	1.00	-0.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	107.0	106.2		0.878	0.884	-0.7	50.0
4:2 FTS	AveID	25.29	22.36		0.826	0.934	-11.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9054	0.8894		0.982	1.00	-1.8	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	49.19	47.80		0.912	0.938	-2.8	50.0
HFPO-DA (GenX)	AveID	1.690	1.727		1.02	1.00	2.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.073	1.094		1.02	1.00	1.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.233	1.129		0.833	0.910	-8.5	40.0
DONA	AveID	2.679	3.070		1.08	0.942	14.6	50.0
6:2 FTS	AveID	2.149	2.363		1.04	0.948	10.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.020	1.085		1.01	0.952	6.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.085	1.143		1.05	1.00	5.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.015	0.995		0.980	1.00	-2.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.079	1.029		0.885	0.928	-4.6	40.0
F-53B Major	AveID	1.144	1.147		0.935	0.932	0.3	50.0
8:2 FTS	AveID	14.90	12.53		0.806	0.958	-15.9	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6369	0.7016		1.06	0.960	10.2	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	2.969	3.173		1.07	1.00	6.9	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.108	1.231		1.11	1.00	11.1	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	1.014	0.9405		0.928	1.00	-7.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8799	0.8482		0.929	0.964	-3.6	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.9150	0.9304		1.02	1.00	1.7	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9124	0.9196		1.01	1.00	0.8	40.0
F-53B Minor	AveID	1.353	1.377		0.959	0.942	1.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.019	1.020		1.00	1.00	0.1	40.0
10:2 FTS	AveID	9.585	9.758		0.981	0.964	1.8	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0902	0.0905		0.971	0.968	0.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.7667	0.7943		1.04	1.00	3.6	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1593	0.1588		0.997	1.00	-0.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.996		1.10	1.00	9.9	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1
 SDG No.: _____
 Lab Sample ID: CCV 320-250745/8 Calibration Date: 10/09/2018 07:12
 Instrument ID: A9 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: 2018.10.08LLE_020.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	0.6224		1.09	1.00	9.5	50.0
13C4 PFBA	Ave	0.9146	0.8884		2.43	2.50	-2.9	50.0
13C5 PFPeA	Ave	0.8136	0.8069		2.48	2.50	-0.8	50.0
13C3 PFBS	Ave	0.0111	0.0111		2.32	2.33	-0.1	50.0
M2-4:2 FTS	Ave	0.1123	0.1069		2.22	2.34	-4.8	50.0
13C2 PFHxA	Ave	0.8780	0.8643		2.46	2.50	-1.6	50.0
13C3 HFPO-DA	Ave	0.1093	0.1097		2.51	2.50	0.4	50.0
13C4 PFHpA	Ave	1.076	1.080		2.51	2.50	0.4	50.0
18O2 PFHxS	Ave	0.6688	0.6656		2.35	2.37	-0.5	50.0
M2-6:2 FTS	Ave	0.1183	0.1133		2.27	2.38	-4.2	40.0
13C8 PFOA	Ave	2595399	2557021		2.41	2.45	-1.5	50.0
13C4 PFOA	Ave	1.007	0.9775		2.43	2.50	-2.9	50.0
13C4 PFOS	Ave	0.7027	0.6891		2.34	2.39	-1.9	50.0
13C5 PFNA	Ave	0.9276	0.8848		2.38	2.50	-4.6	50.0
13C8 PFOS	Ave	424896	451583		2.54	2.39	6.3	50.0
13C8 FOSA	Ave	0.3786	0.3614		2.39	2.50	-4.5	50.0
M2-8:2 FTS	Ave	0.0155	0.0146		2.25	2.40	-6.2	40.0
13C2 PFDA	Ave	0.9902	0.9541		2.41	2.50	-3.6	50.0
d3-NMeFOSAA	Ave	0.4080	0.3923		2.40	2.50	-3.8	50.0
d5-NEtFOSAA	Ave	0.3434	0.3353		2.44	2.50	-2.4	50.0
13C2 PFUnA	Ave	0.8697	0.8299		2.39	2.50	-4.6	50.0
13C2 PFDoA	Ave	0.9853	0.9939		2.52	2.50	0.9	50.0
13C2 PFTeDA	Ave	0.7441	0.7542		2.53	2.50	1.4	50.0
13C2 PFHxDA	Ave	0.6411	0.7019		2.74	2.50	9.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\2018.10.08LLE_020.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 09-Oct-2018 07:12:48 ALS Bottle#: 13 Worklist Smp#: 8
 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\20181009-65522.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 14:58:43 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\20181008-65481.b\2018.10.08LLICAL_008.d

Column 1 : Det: EXP1

Process Host: XAWRK047

First Level Reviewer: hannigana

Date: 09-Oct-2018 14:47:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.493	1.493	0.0	1.000	2437297	1.04		104	73.6	
D 1 13C4 PFBA										
217.00 > 172.00	1.493	1.494	-0.001	0.543	6491672	2.43		97.1	9847	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	2362979	0.99		99.2	220	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.780	-0.008	0.644	5896034	2.48		99.2	7129	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.813	1.813	0.0	1.000	3051362	0.8775		99.3	1233	
298.90 > 99.00	1.813	1.813	0.0	1.000	1046429		2.92(1.35-4.05)		759	
D 47 13C3-PFBS										
301.90 > 83.00	1.813	1.822	-0.009	0.659	75576	2.32		99.9	557	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	678852	0.8259		88.4	2971	
D 60 M2-4:2FTS										
329.00 > 81.00	2.027	2.027	0.0	0.737	729372	2.22		95.2	941	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.057	2.057	0.0	1.000	2246775	0.9824		98.2	426	
313.00 > 119.00	2.057	2.057	0.0	1.000	163106		13.77(6.96-20.87)		313	
D 7 13C2 PFHxA										
315.00 > 270.00	2.057	2.068	-0.011	0.748	6315183	2.46		98.4	6840	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.088	2.088	0.0	1.152	1457446	0.9116		97.2	1729	
349.00 > 99.00	2.088	2.088	0.0	1.152	705913		2.06(1.15-3.45)		1758	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	553491	1.02		102	384	

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	2.160	2.160	0.0	0.785	801371	2.51		100	2121	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.386	2.386	0.0	1.000	3453181	1.02		102	620	
363.00 > 169.00	2.386	2.386	0.0	1.000	768297		4.49(2.17-6.52)		1490	
D 9 13C4-PFHpA										
367.00 > 322.00	2.386	2.399	-0.013	0.868	7893486	2.51		100	14294	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.412	2.412	0.0	1.000	1998823	0.8330		91.5	1271	
399.00 > 99.00	2.399	2.412	-0.013	0.995	587852		3.40(1.90-5.70)		812	
D 11 18O2 PFHxS										
403.00 > 84.00	2.412	2.413	-0.001	0.877	4600499	2.35		99.5	7407	
76 DONA										
377.00 > 251.00	2.438	2.438	0.0	0.783	5824660	1.08		115	10846	
377.00 > 85.00	2.438	2.438	0.0	0.783	2395688		2.43(1.13-3.39)		2236	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.718	2.718	0.0	1.000	742208	1.04		110	1456	
D 12 M2-6:2FTS										
429.00 > 81.00	2.718	2.718	0.0	0.988	786743	2.27		95.8	1004	
* 62 13C2-PFOA										
415.00 > 370.00	2.750	2.750	0.0		7306912	2.50			4365	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.750	2.750	0.0	0.882	2080178	1.01		106	1924	
449.00 > 99.00	2.750	2.750	0.0	0.882	517525		4.02(1.84-5.53)		1245	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	3268533	1.05		105	208	
413.00 > 169.00	2.750	2.750	0.0	1.000	1086872		3.01(1.36-4.08)		1446	
D 73 13C8 PFOA										
421.00 > 376.00	2.734	2.750	-0.016		6258309	2.41		98.5	6284	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.750	0.0	1.000	7142717	2.43		97.1	7152	
20 Perfluorononanoic acid										
463.00 > 419.00	3.116	3.116	0.0	1.000	2573161	0.9802		98.0	208	
463.00 > 169.00	3.116	3.116	0.0	1.000	464628		5.54(2.68-8.03)		870	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.116	3.116	0.0	1.000	1922461	0.8850		95.4	1078	
499.00 > 99.00	3.116	3.116	0.0	1.000	450406		4.27(2.04-6.12)		964	
D 18 13C4 PFOS										
503.00 > 80.00	3.116	3.116	0.0	1.133	4813838	2.34		98.1	2304	
D 19 13C5 PFNA										
468.00 > 423.00	3.116	3.116	0.0	1.133	6464891	2.38		95.4	7107	
D 72 13C8 PFOS										
507.00 > 99.00	3.116	3.116	0.0		1079283	2.54		106	2213	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.317	3.317	0.0	1.065	2153946	0.9345		100	1461	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.464	3.464	0.0	1.000	3351835	1.07		107	4148	

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	3.464	3.464	0.0	1.000	511452	0.8055	84.1	1207	
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.464	3.464	0.0	1.112	1356633	1.06	110	1505	
	549.00 > 99.00	3.464	3.464	0.0	1.112	216797	6.26(3.02-9.05)		999	
D 21 13C8 FOSA	506.00 > 78.00	3.464	3.465	-0.001	1.260	2640795	2.39	95.5	3397	
D 26 M2-8:2FTS	529.00 > 81.00	3.464	3.465	-0.001	1.260	102062	2.25	93.8	684	
24 Perfluorodecanoic acid	513.00 > 469.00	3.480	3.480	0.0	1.000	3433481	1.11	111	534	
	513.00 > 169.00	3.480	3.480	0.0	1.000	222961	15.40(7.12-21.35)		255	
D 23 13C2 PFDA	515.00 > 470.00	3.480	3.480	0.0	1.266	6971846	2.41	96.4	4845	
28 N-methyl perfluorooctane sulfonami	570.00 > 419.00	3.627	3.627	0.0	1.000	1078491	0.9277	92.8	424	
D 27 d3-NMeFOSAA	573.00 > 419.00	3.627	3.627	0.0	1.319	2866774	2.40	96.2	3696	
29 Perfluorodecane Sulfonic acid	599.00 > 80.00	3.791	3.791	0.0	1.217	1646860	0.9293	96.4	1128	
	599.00 > 99.00	3.791	3.791	0.0	1.217	339167	4.86(2.14-6.43)		880	
33 N-ethyl perfluorooctane sulfonamid	584.00 > 419.00	3.807	3.807	0.0	1.004	911680	1.02	102	1161	
31 Perfluoroundecanoic acid	563.00 > 519.00	3.807	3.807	0.0	1.000	2230587	1.01	101	455	
	563.00 > 169.00	3.807	3.807	0.0	1.000	196276	11.36(5.24-15.72)		894	
D 32 d5-NEtFOSAA	589.00 > 419.00	3.791	3.807	-0.016	1.379	2449829	2.44	97.6	2921	
D 30 13C2 PFUnA	565.00 > 520.00	3.807	3.807	0.0	1.384	6063968	2.39	95.4	8199	
35 MeFOSA	512.00 > 169.00	3.943	3.943	0.0		597147	NC		741	
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	3.959	3.959	0.0	1.271	2612420	0.9586	102	4331	
37 Perfluorododecanoic acid	613.00 > 569.00	4.089	4.089	0.0	1.000	2962873	1.00	100	683	
	613.00 > 169.00	4.089	4.089	0.0	1.000	305266	9.71(4.68-14.05)		435	
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.105	4.105	0.0	1.185	400880	0.9814	102	539	
D 36 13C2 PFDaA	615.00 > 570.00	4.089	4.106	-0.017	1.487	7262298	2.52	101	10250	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.138	4.138	0.0		652014	NC		462	
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.326	4.326	0.0	1.388	176417	0.9707	100	200	
	699.00 > 99.00	4.326	4.326	0.0	1.388	309470	0.57(0.28-0.83)		755	

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	4.357	4.357	0.0	1.066	2307412	1.04		104	1041	
663.00 > 169.00	4.357	4.357	0.0	1.066	384502		6.00(3.09-9.27)		646	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	349986	1.00		99.7	780	
713.00 > 219.00	4.590	4.609	-0.019	0.996	243979		1.43(0.70-2.09)		862	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.609	4.609	0.0	1.676	5510779	2.53		101	7644	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.023	5.023	0.0	1.000	2044221	1.10		110	704	
813.00 > 169.00	5.023	5.023	0.0	1.000	321426		6.36(2.77-8.32)		624	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.023	5.024	-0.001	1.827	5129003	2.74		109	7168	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.377	5.377	0.0	1.070	1276904	1.09		109	567	
913.00 > 169.00	5.363	5.377	-0.015	1.068	221313		5.77(2.55-7.64)		1055	

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\20181009-65522.b\2018.10.08LLE_020.d

Injection Date: 09-Oct-2018 07:12:48

Instrument ID: A9

Lims ID: CCV L4

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 13

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

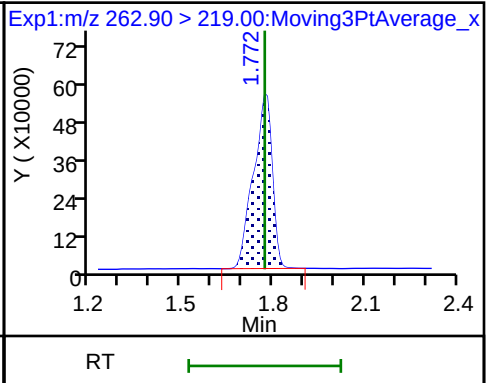
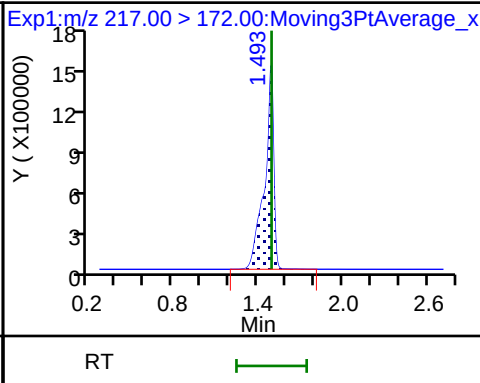
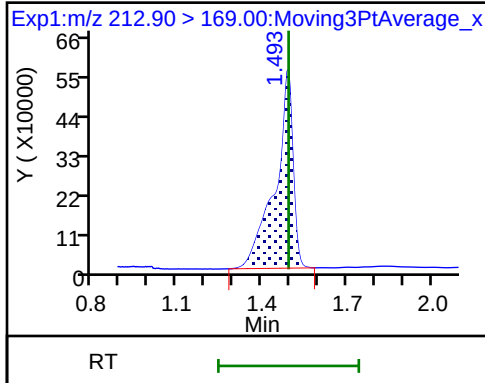
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

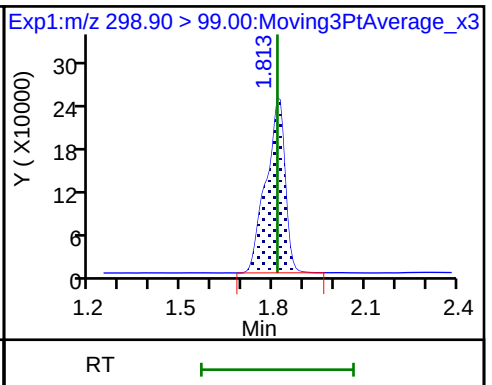
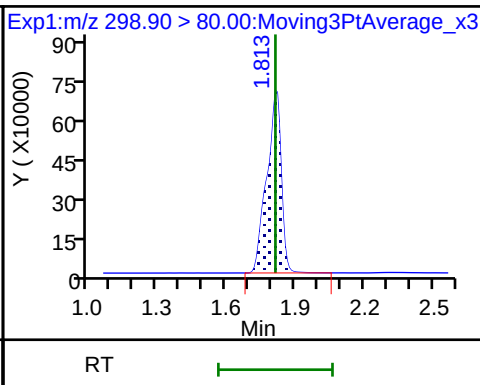
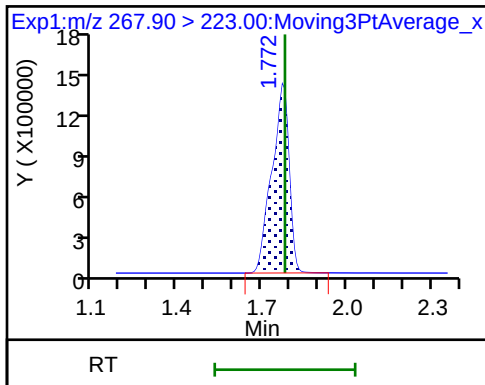
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

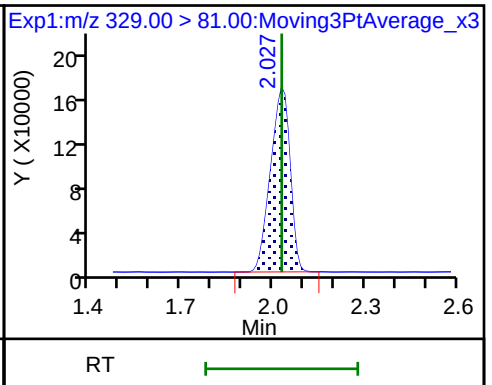
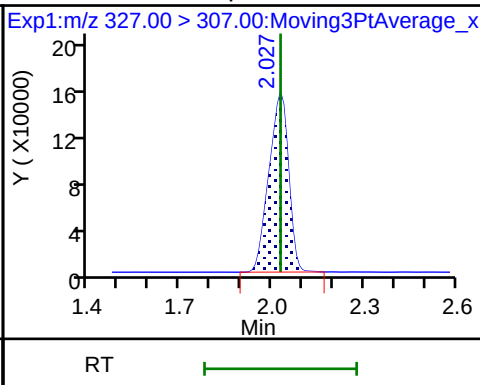
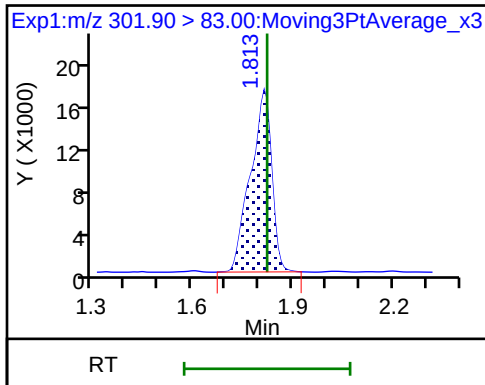
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonate

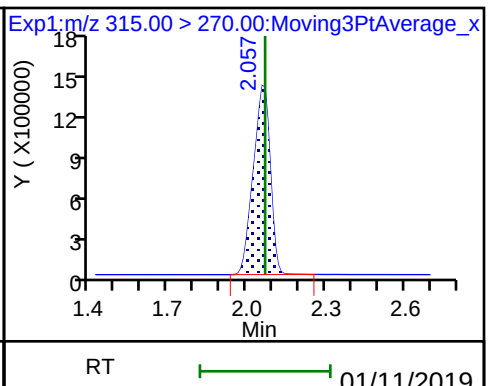
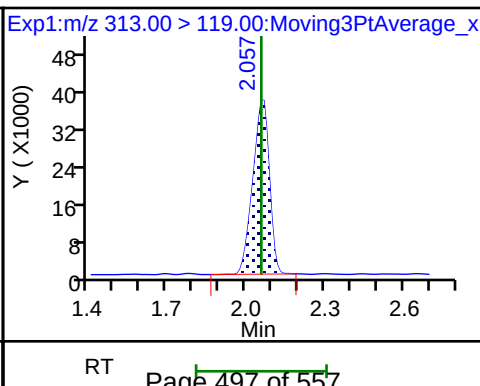
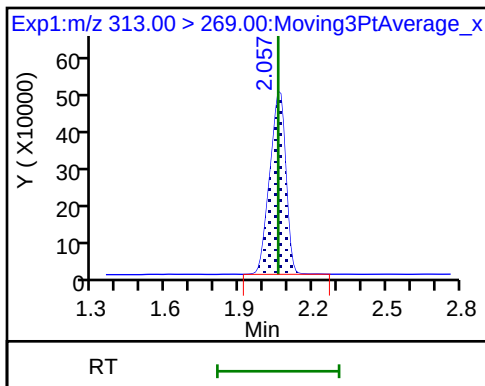
D 60 M2-4:2FTS

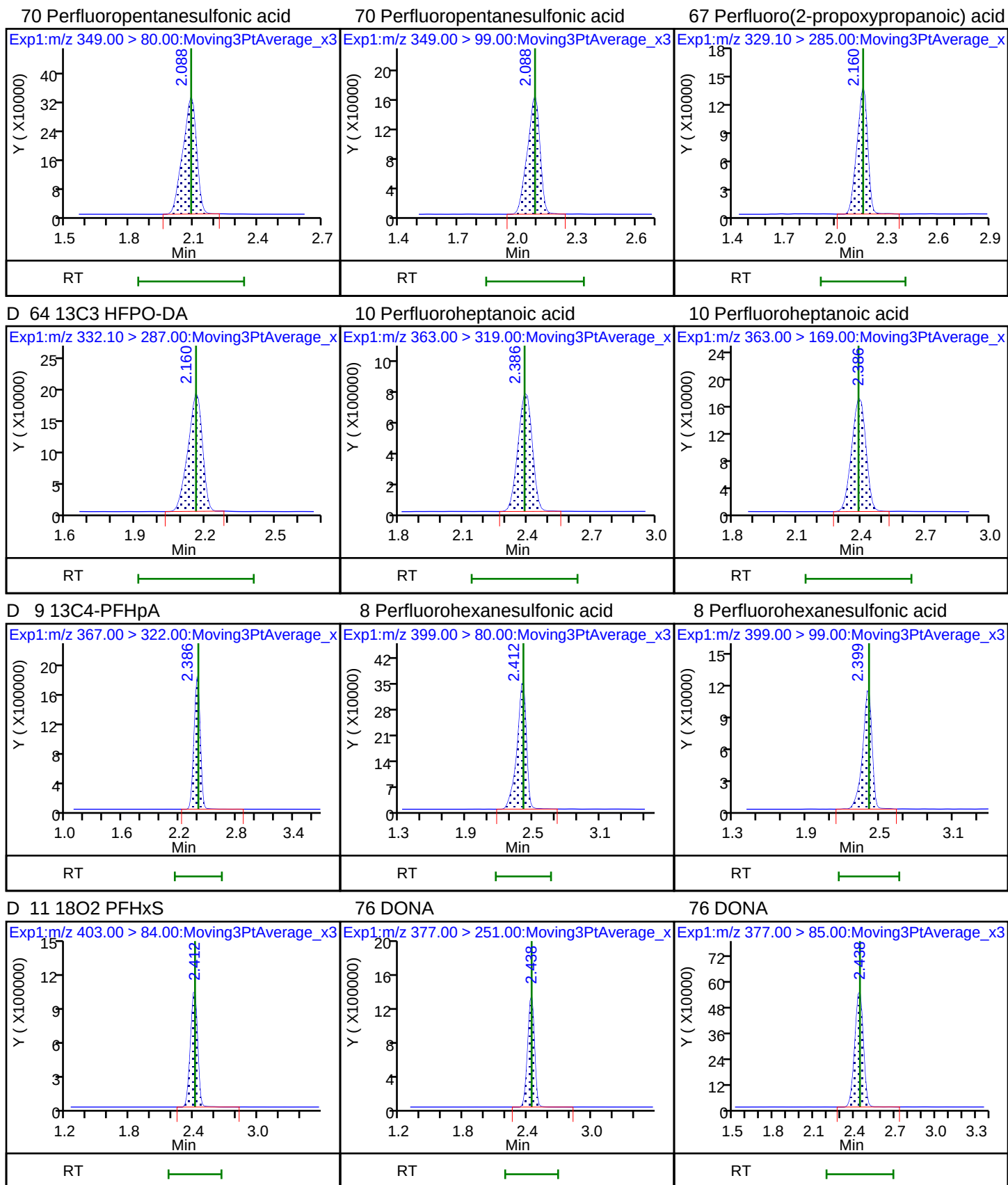


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

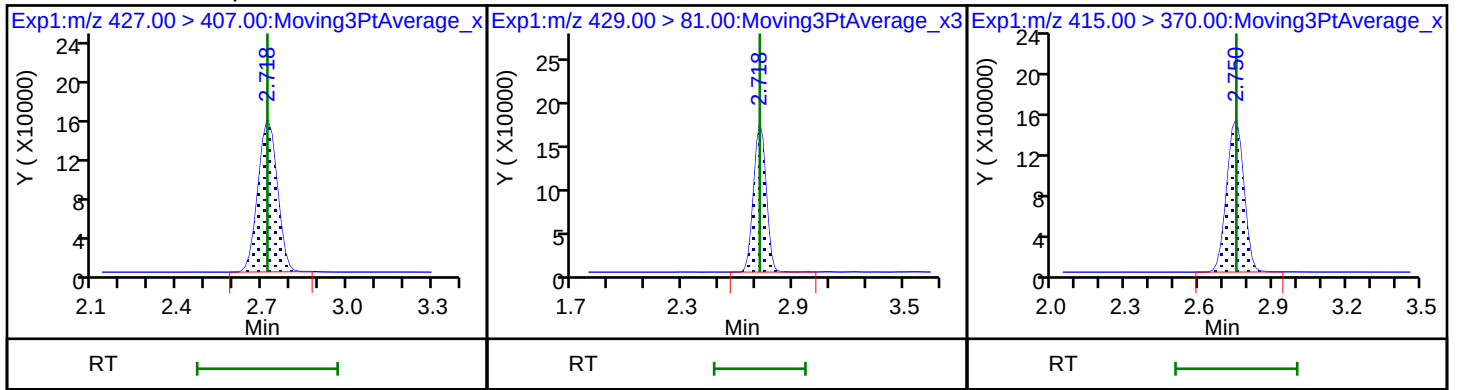
D 7 13C2 PFHxA





13 1H,1H,2H,2H-perfluorooctanesulfonD 12 M2-6:2FTS

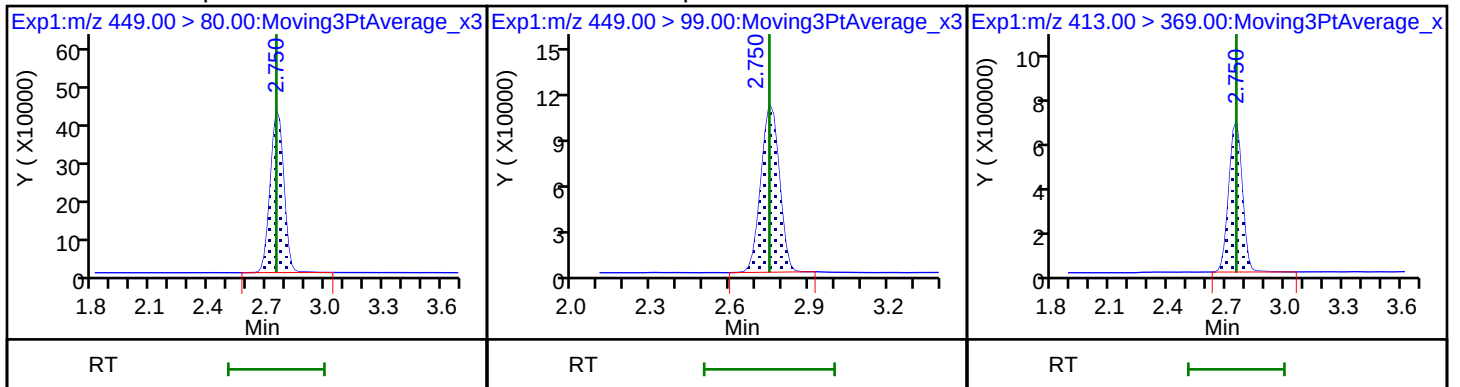
* 62 13C2-PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

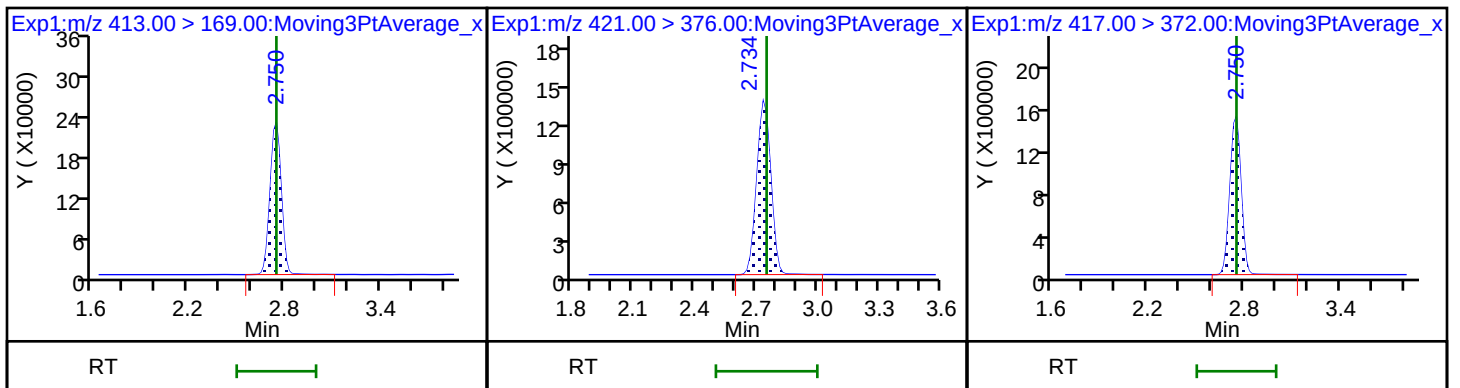
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 73 13C8 PFOA

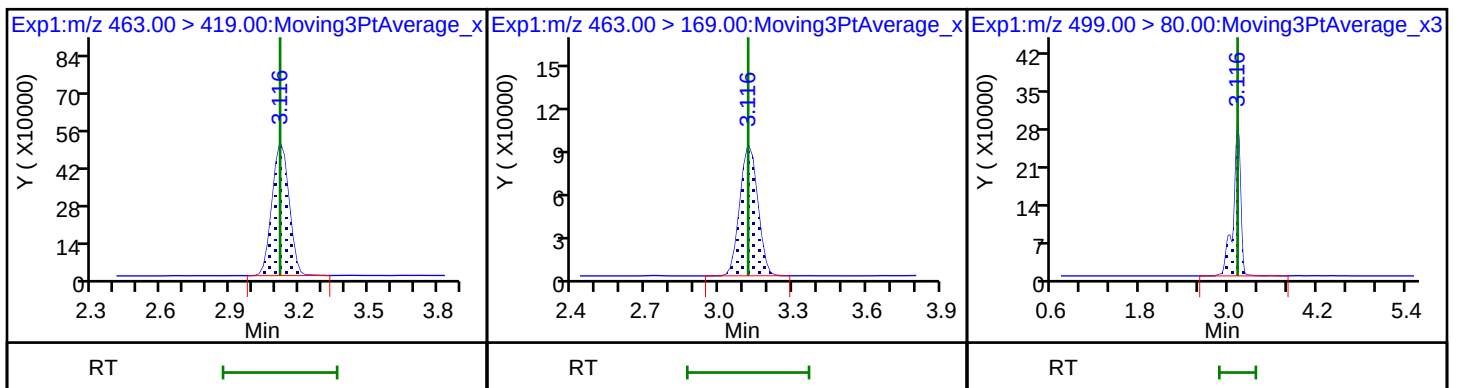
D 14 13C4 PFOA



20 Perfluorononanoic acid

20 Perfluorononanoic acid

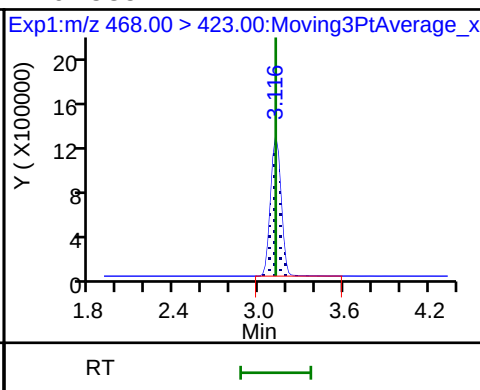
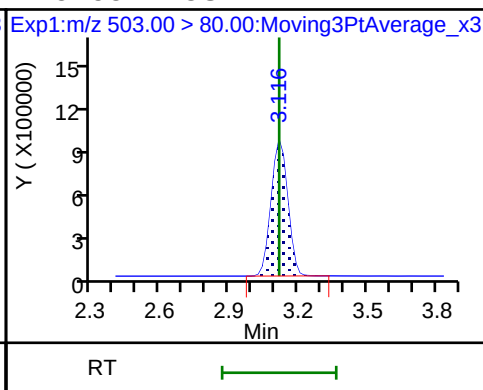
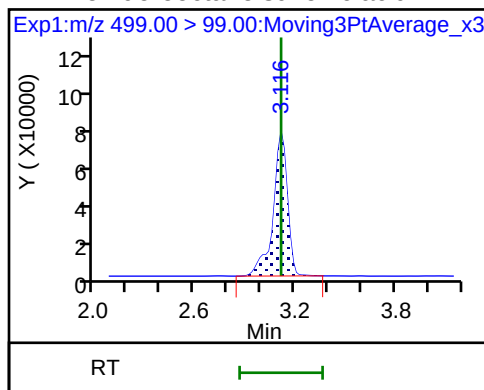
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

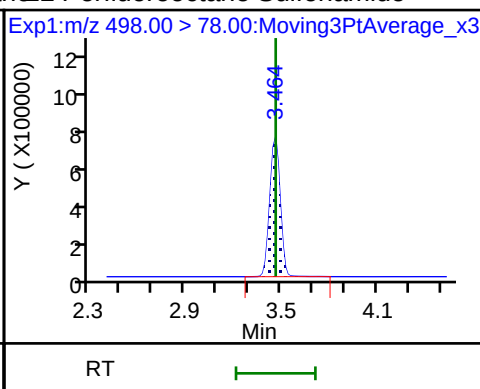
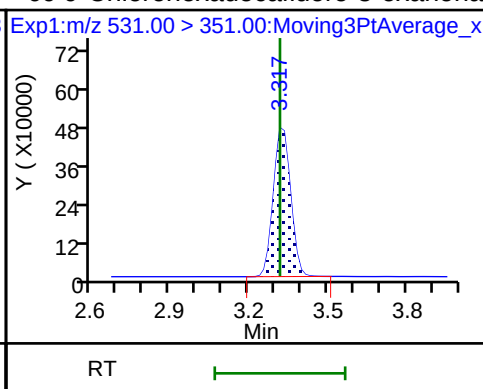
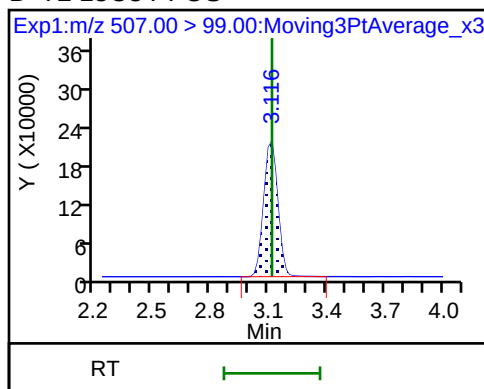
D 18 13C4 PFOS

D 19 13C5 PFNA

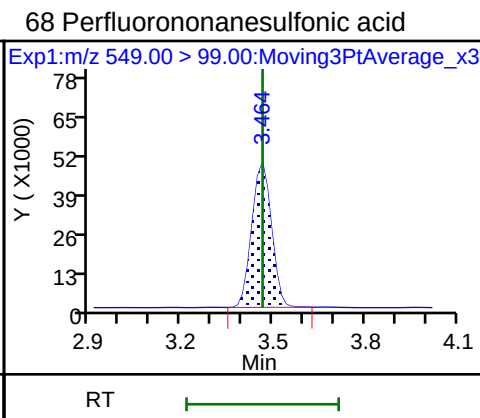
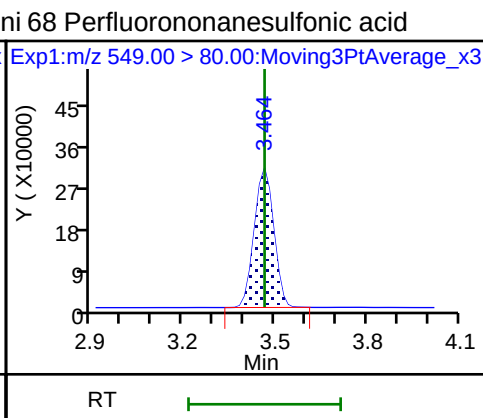
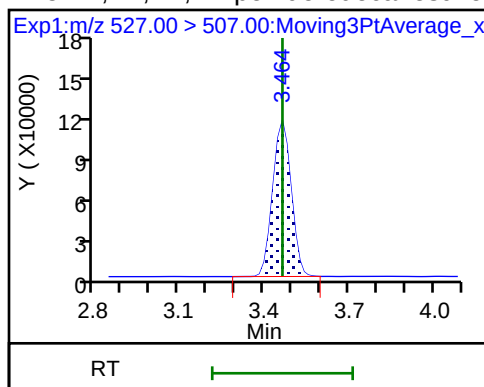


D 72 13C8 PFOS

69 9-Chlorohexadecafluoro-3-oxanonan-2 Perfluorooctane Sulfonamide



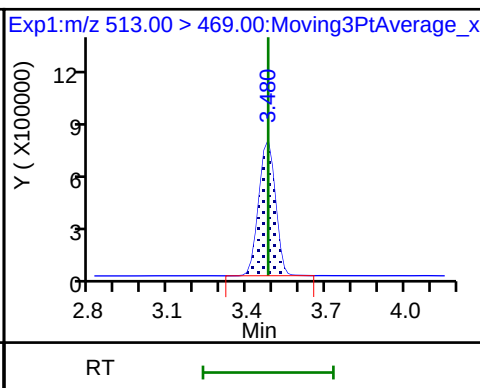
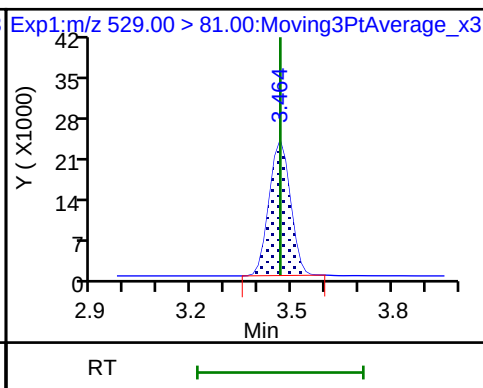
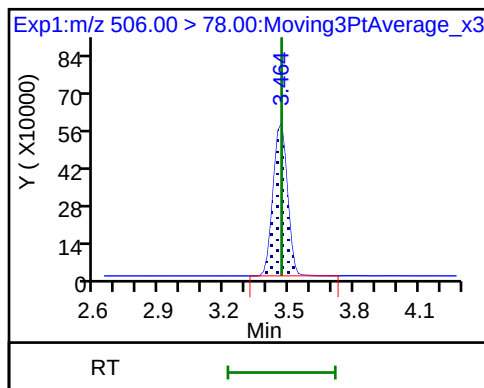
25 1H,1H,2H,2H-perfluorodecanesulfoni

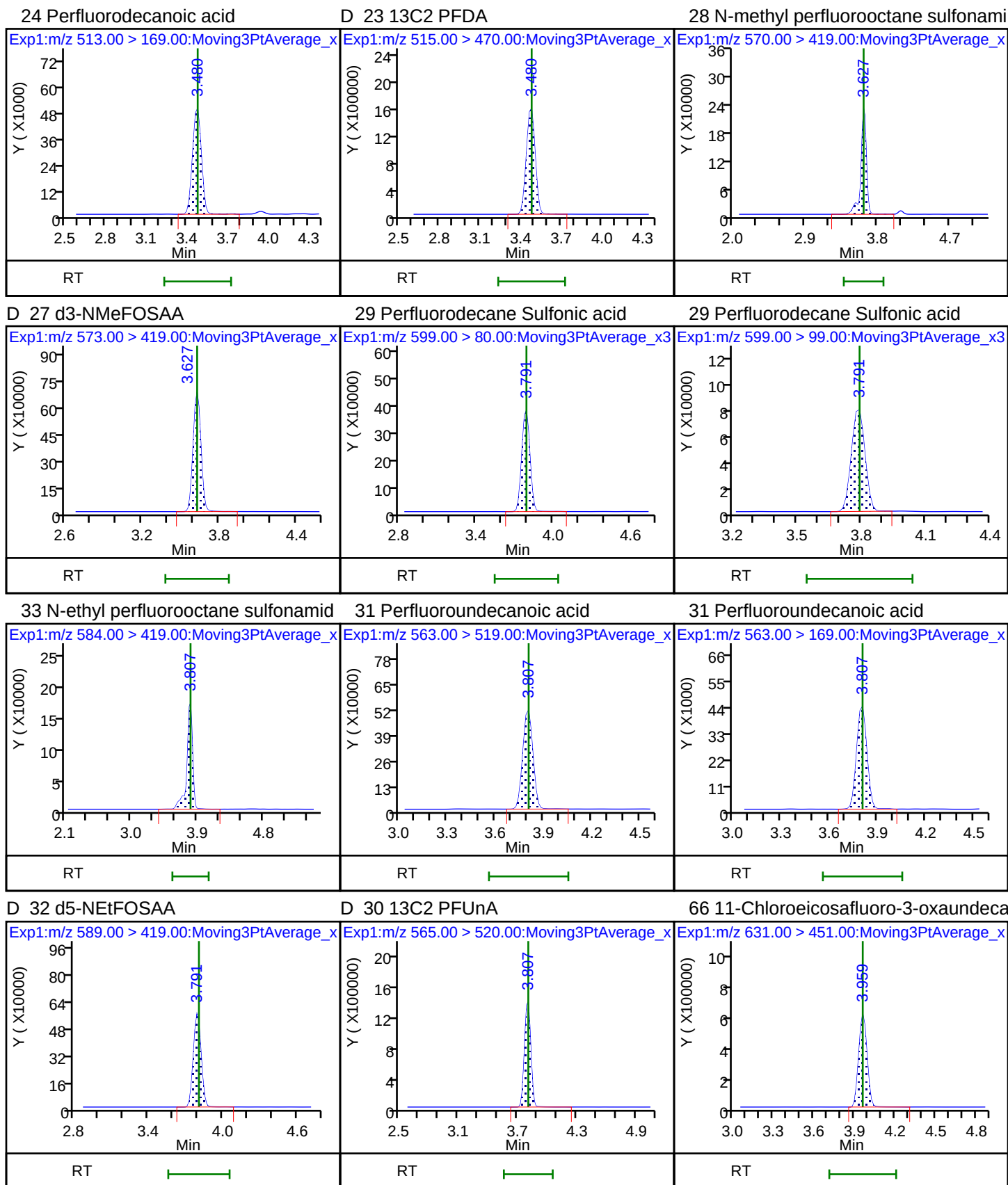


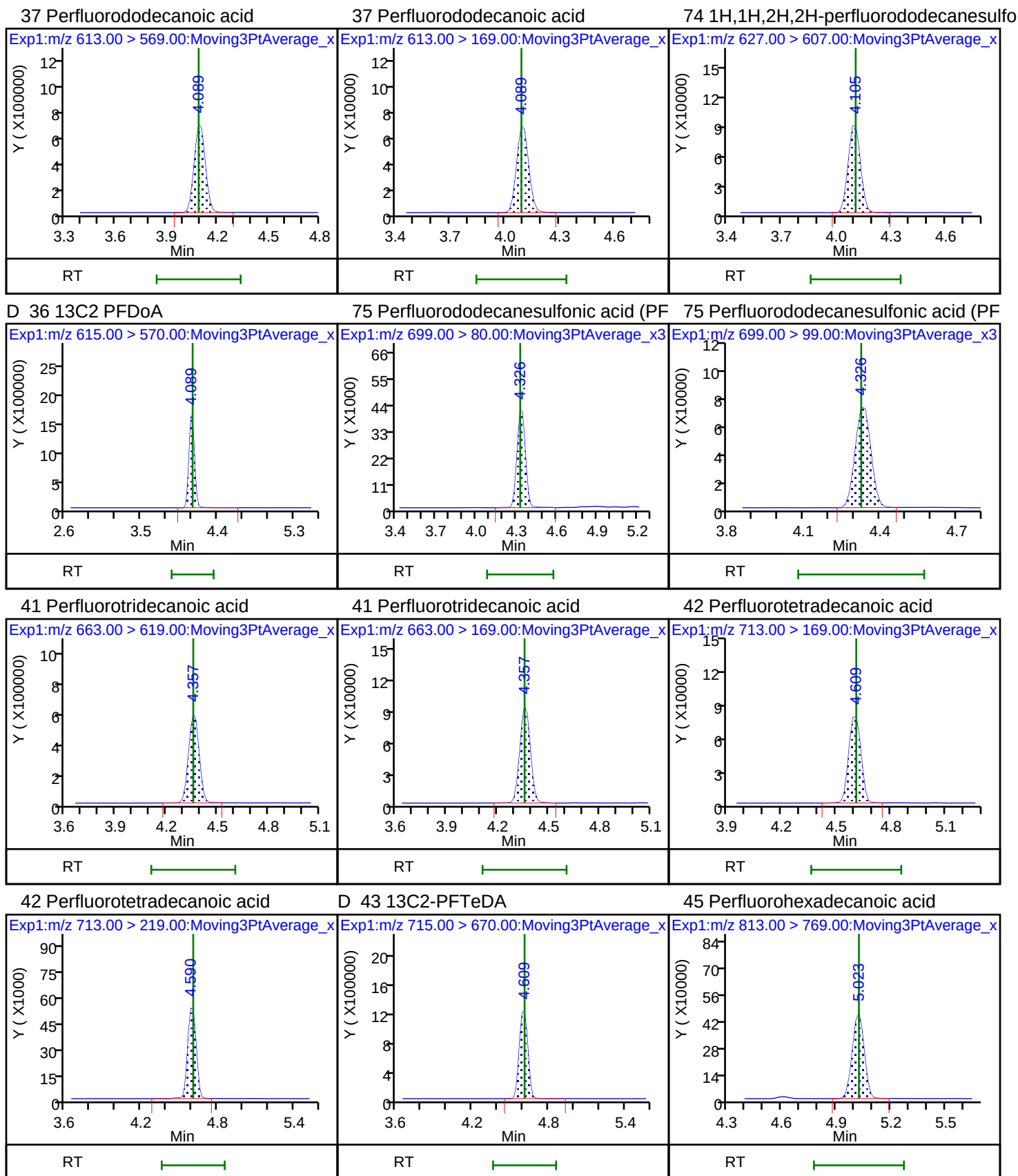
D 21 13C8 FOSA

D 26 M2-8:2FTS

24 Perfluorodecanoic acid



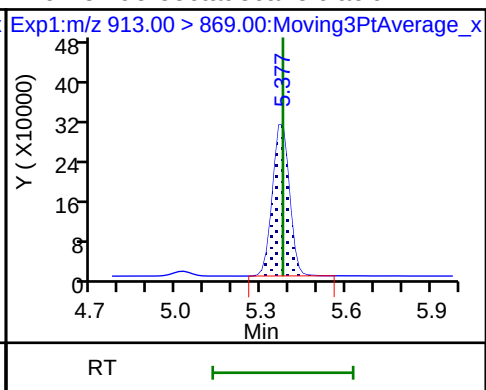
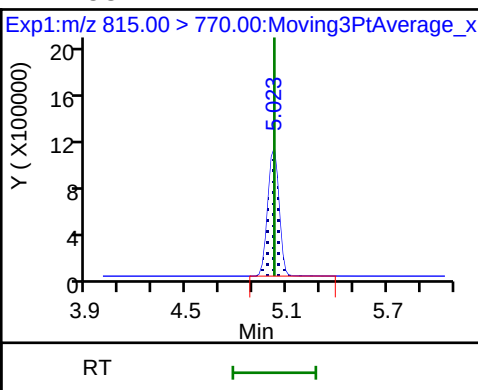
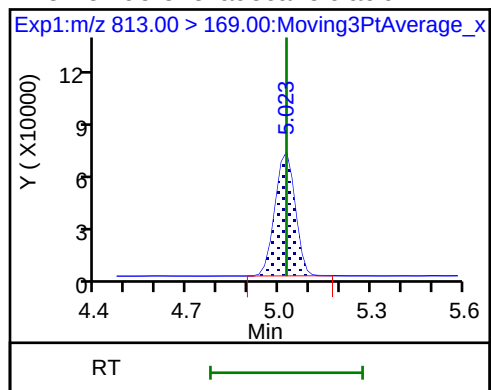




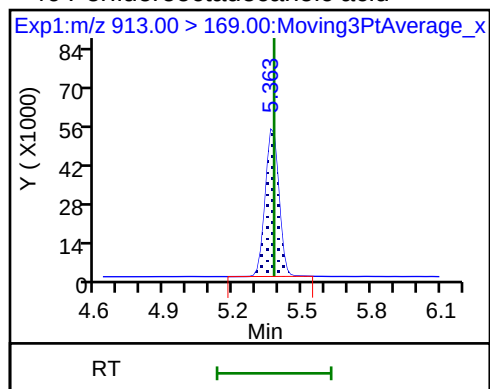
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-248335/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_016.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>09/29/2018 12:33</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	ND		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	ND		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	ND		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	ND		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.331	J	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	ND		20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>MB 320-248335/1-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.09.29LLAA_016.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>09/29/2018 12:33</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>248611</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	96		25-150
STL01893	13C5 PFPeA	98		25-150
STL00993	13C2 PFHxA	96		25-150
STL01892	13C4 PFHpA	97		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	97		25-150
STL00996	13C2 PFDA	92		25-150
STL00997	13C2 PFUnA	97		25-150
STL00998	13C2 PFDoA	89		25-150
STL02116	13C2 PFTeDA	92		25-150
STL02337	13C3 PFBS	95		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	99		25-150
STL01056	13C8 FOSA	114		25-150
STL02118	d3-NMeFOSAA	57		25-150
STL02117	d5-NEtFOSAA	61		25-150
STL02279	M2-6:2 FTS	83		25-150
STL02280	M2-8:2 FTS	100		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_016.d
 Lims ID: MB 320-248335/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 29-Sep-2018 12:33:14 ALS Bottle#: 8 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-248335/1-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 03-Oct-2018 11:54:45 Calib Date: 21-Sep-2018 15:36:08
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\A9\20180921-64578.b\2018.09.21LLBICAL_006.d
 Column 1 : Det: EXP1
 Process Host: XAWRK023

First Level Reviewer: barnettj

Date: 03-Oct-2018 11:21:58

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	1.530	1.523	0.007	0.544	7128961	2.40		95.9	9045	
2 Perfluorobutyric acid										
212.90 > 169.00	1.530	1.523	0.007	1.000	6541	0.002502			1.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.822	1.814	0.008	0.647	6634607	2.45		98.1	10752	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.839	1.814	0.025	1.009	4701	0.001779			0.3	
D 47 13C3-PFBS										
301.90 > 83.00	1.865	1.855	0.010	0.663	81246	2.21		94.9	520	
D 7 13C2 PFHxA										
315.00 > 270.00	2.119	2.119	0.0	0.753	6875406	2.40		96.0	9352	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.089	2.119	-0.030	0.986	11131	0.004501			0.7	
313.00 > 119.00	2.130	2.119	0.011	1.005	1173		9.49(6.96-20.87)		1.1	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.222	2.211	0.011	0.789	1008215	3.38		135	3864	
D 9 13C4-PFHpA										
367.00 > 322.00	2.452	2.452	0.0	0.871	8246606	2.42		96.7	15500	
D 11 18O2 PFHxS										
403.00 > 84.00	2.478	2.465	0.013	0.881	5067701	2.30		97.4	6146	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.478	2.465	0.013	1.000	22334	0.008280			43.2	
399.00 > 99.00	2.478	2.465	0.013	1.000	7964		2.80(1.90-5.70)		10.8	
D 12 M2-6:2FTS										
429.00 > 81.00	2.798	2.782	0.016	0.994	695873	1.96		82.7	1377	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.798	2.782	0.016	1.000	12640	0.0198			19.9	

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	2.814	2.798	0.016		6357	0.002067		0.0	35.1	
D 14 13C4 PFOA										
417.00 > 372.00	2.814	2.814	0.0	1.000	8179471	2.53		101	17704	
* 62 13C2-PFOA										
415.00 > 370.00	2.814	2.814	0.0		8073273	2.50			10281	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.814	2.814	0.0	1.000	20066	0.005848			3.9	
413.00 > 169.00	2.830	2.814	0.016	1.006	9217		2.18(1.36-4.08)		17.3	
D 18 13C4 PFOS										
503.00 > 80.00	3.190	3.190	0.0	1.134	5412982	2.37		99.3	3952	
D 19 13C5 PFNA										
468.00 > 423.00	3.190	3.190	0.0	1.134	7151235	2.43		97.3	4737	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.190	3.190	0.0	1.000	8607	0.003588			6.1	
499.00 > 99.00	3.190	3.190	0.0	1.000	0		0.00(2.04-6.12)			
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.400	3.400	0.0	1.066	4978	0.001968			3.8	
D 21 13C8 FOSA										
506.00 > 78.00	3.542	3.527	0.015	1.259	3481324	2.86		114	7316	
D 26 M2-8:2FTS										
529.00 > 81.00	3.542	3.527	0.015	1.259	107422	2.39		99.9	559	
25 1H,1H,2H,2H-perfluorodecanesulfoni										M
527.00 > 507.00	3.527	3.527	0.0	0.996	2734	0.004146			14.6	M
D 23 13C2 PFDA										
515.00 > 470.00	3.542	3.541	0.001	1.259	7016371	2.30		92.1	7631	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.542	3.542	0.0	1.000	11203	0.002728			13.5	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.697	3.697	0.0	1.314	1917817	1.42		56.8	4268	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.712	3.697	0.015	1.004	5949	0.008080			2.6	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.869	3.854	0.015	1.375	1622084	1.53		61.3	2295	
D 30 13C2 PFUnA										
565.00 > 520.00	3.869	3.869	0.0	1.375	6264647	2.42		96.9	6359	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.869	3.869	0.0	1.000	4542	0.007493			12.7	
31 Perfluoroundecanoic acid										M
563.00 > 519.00	3.869	3.869	0.0	1.000	22949	0.0102			6.6	M
563.00 > 169.00	3.869	3.869	0.0	1.000	1618		14.18(5.24-15.72)		8.9	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.023	4.023	0.0	1.261	6073	0.002038			21.1	
D 36 13C2 PFDaA										
615.00 > 570.00	4.157	4.157	0.0	1.477	6818024	2.22		88.6	12823	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.248	4.212	0.036		1314	NC			4.5	

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	4.660	4.660	0.0	1.656	5597714	2.31		92.3	12037	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.660	4.660	0.0	1.000	2250	0.006118			10.3	
713.00 > 219.00	4.660	4.660	0.0	1.000	1286		1.75(0.70-2.09)		4.9	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.057	5.057	0.0	1.797	3756135	1.55		62.1	5174	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.057	5.058	-0.001	1.000	39822	0.004730			4.5	
813.00 > 169.00	5.057	5.058	-0.001	1.000	7148		5.57(2.77-8.32)		24.7	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.391	5.392	-0.001	1.066	5651	0.005804			2.6	
913.00 > 169.00	5.406	5.392	0.014	1.069	871		6.49(2.55-7.64)		5.9	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_016.d

Injection Date: 29-Sep-2018 12:33:14

Instrument ID: A9

Lims ID: MB 320-248335/1-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 8

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

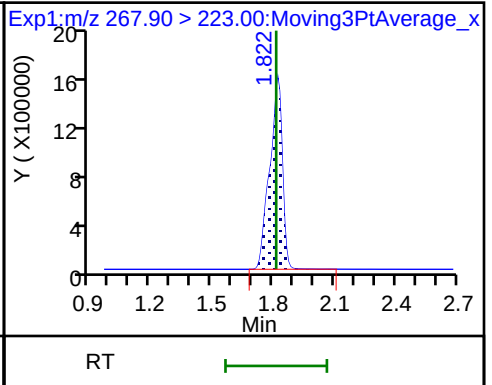
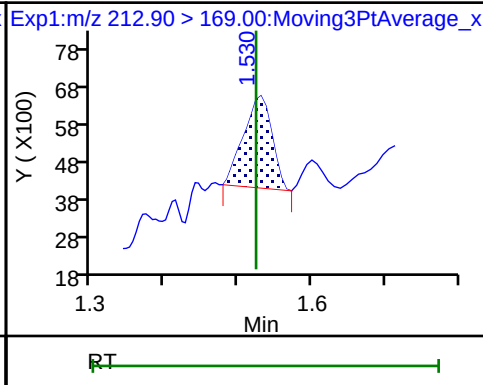
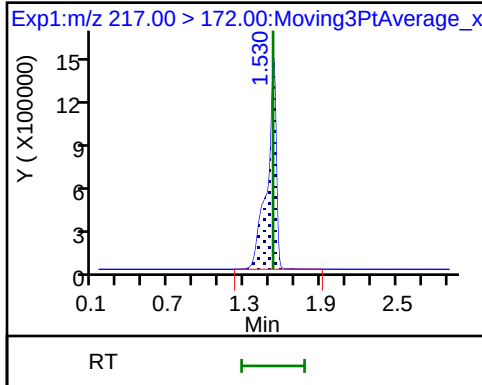
Method: PFAS_A9

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

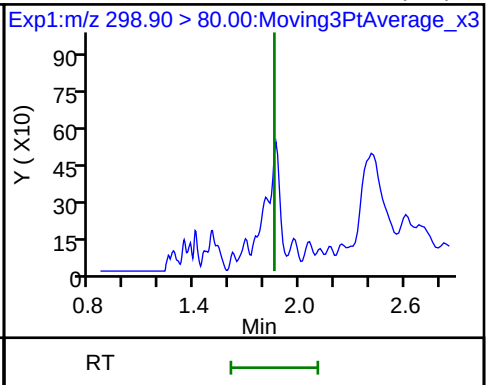
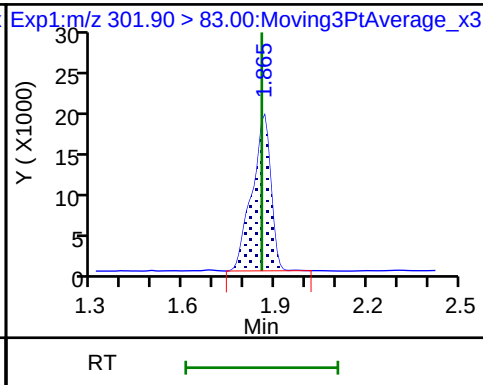
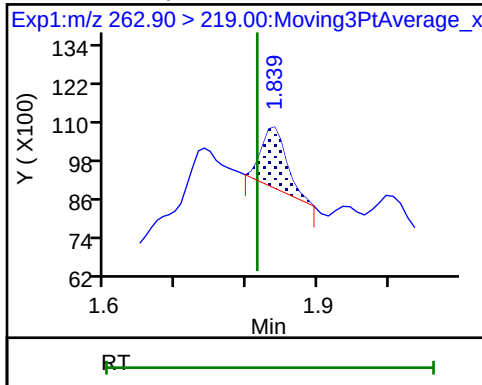
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

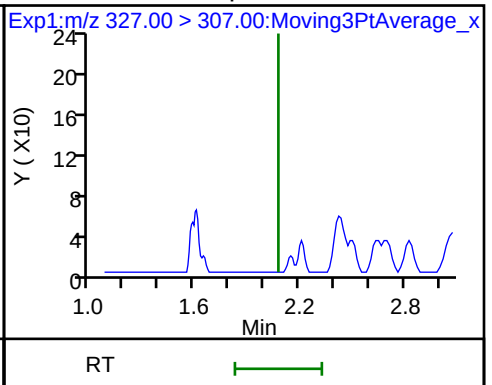
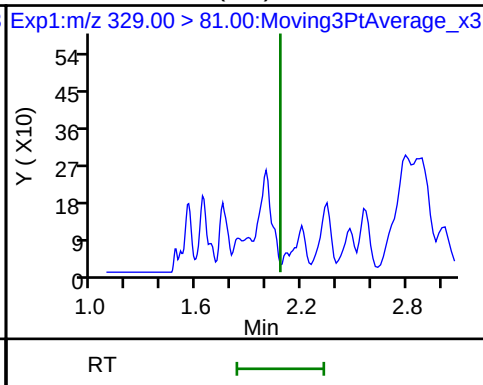
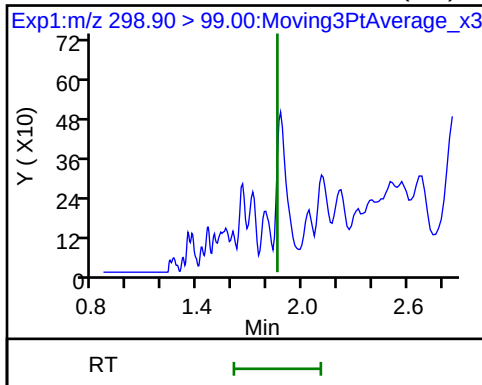
5 Perfluorobutanesulfonic acid (ND)



5 Perfluorobutanesulfonic acid (ND)

D 60 M2-4:2FTS (ND)

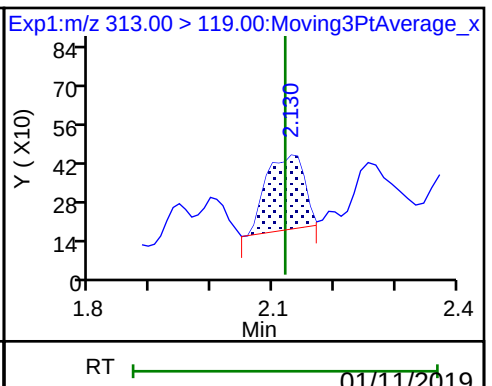
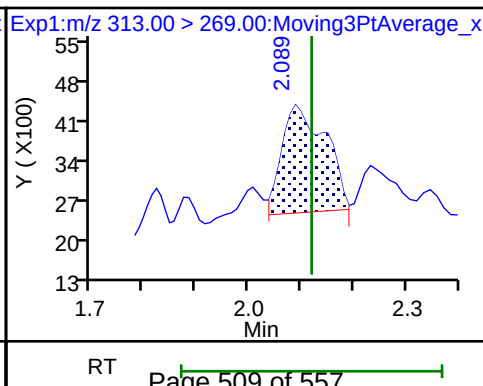
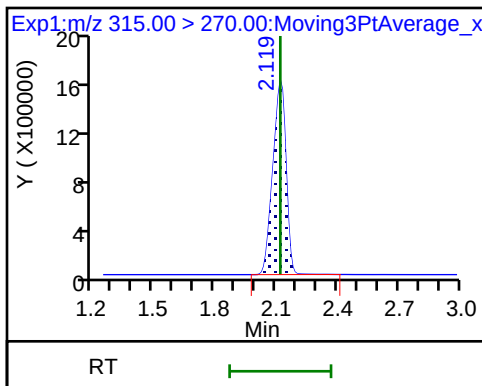
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



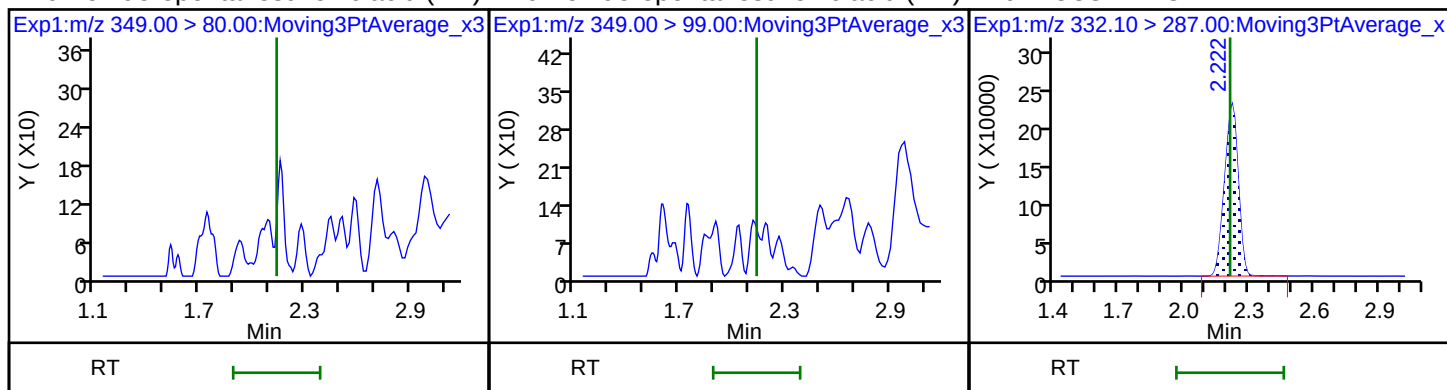
D 7 13C2 PFHxA

6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

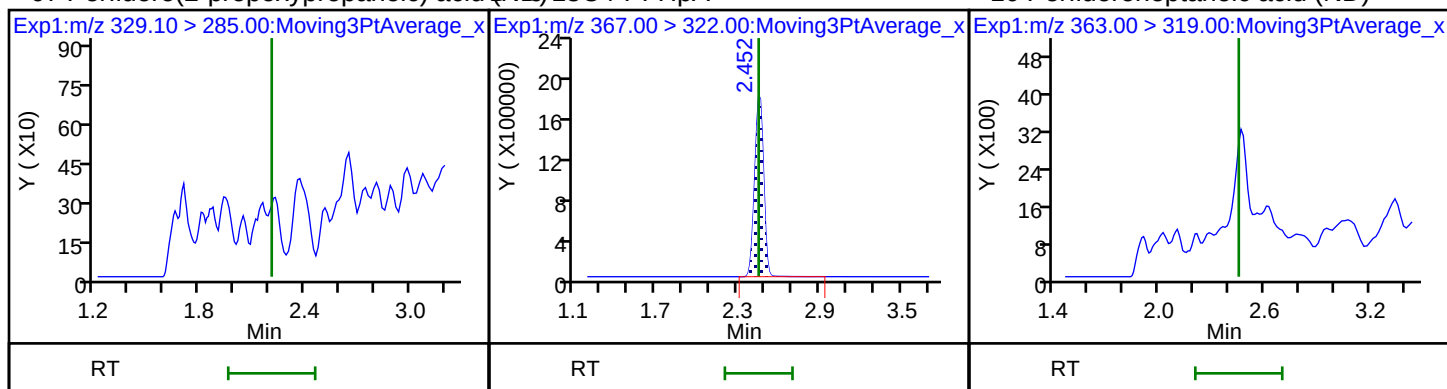


70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) D 64 13C3 HFPO-DA



67 Perfluoro(2-propoxypropanoic) acid (ND) 13C4-PFHpA

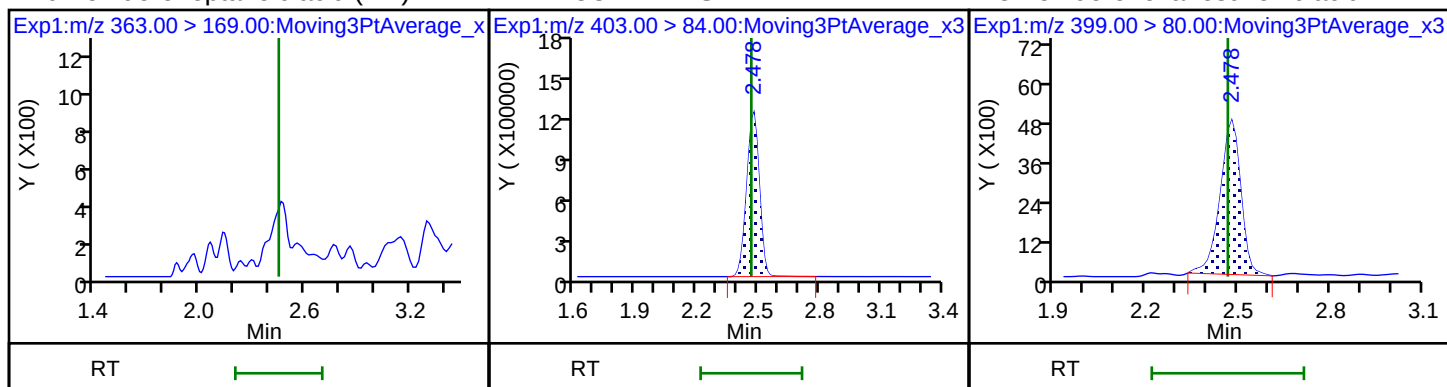
10 Perfluoroheptanoic acid (ND)



10 Perfluoroheptanoic acid (ND)

D 11 18O2 PFHxS

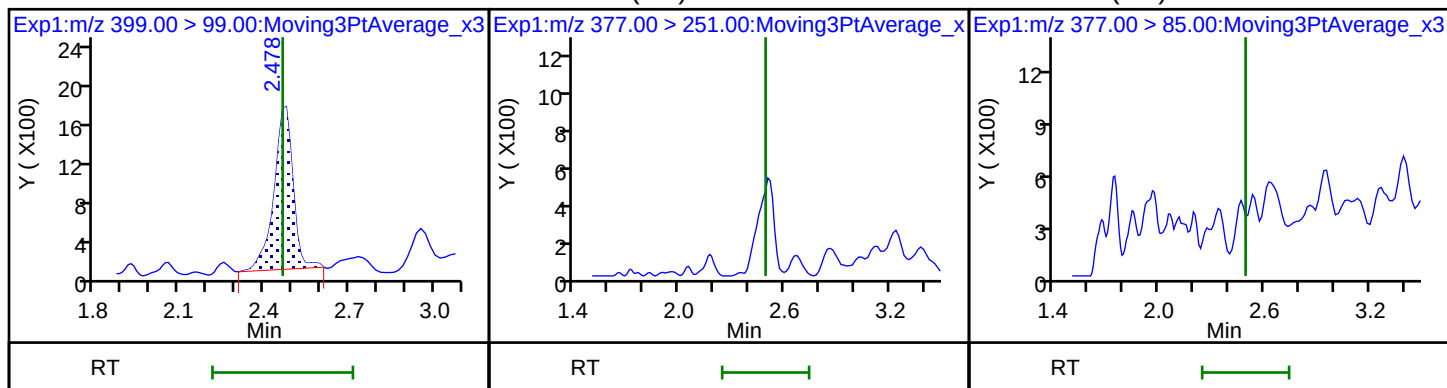
8 Perfluorohexanesulfonic acid



8 Perfluorohexanesulfonic acid

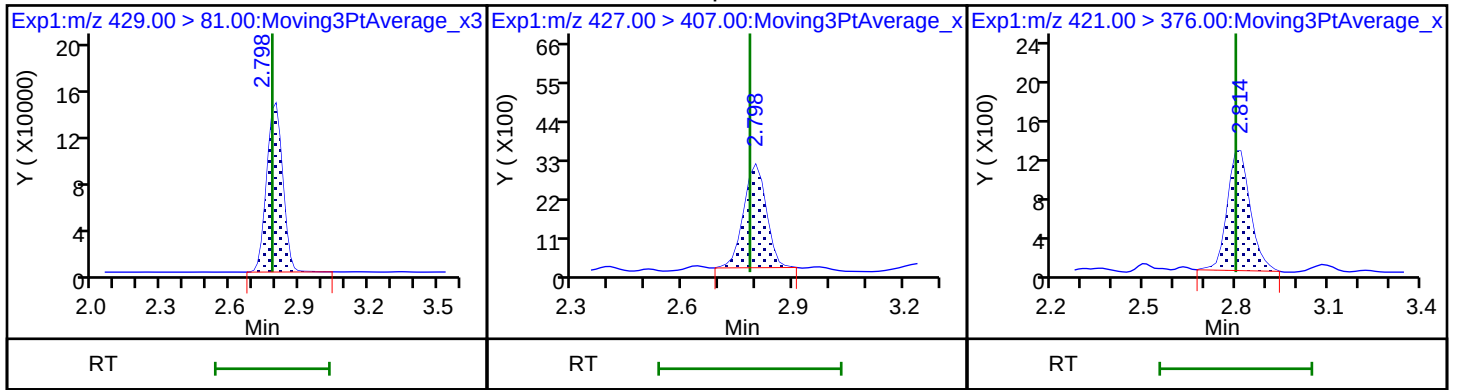
76 DONA (ND)

76 DONA (ND)



D 12 M2-6:2FTS

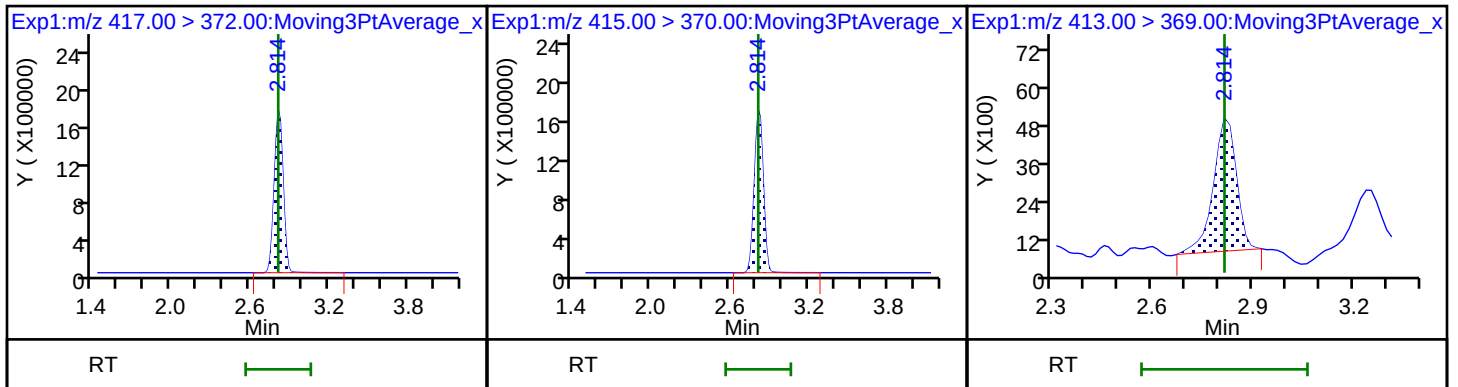
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2-PFOA

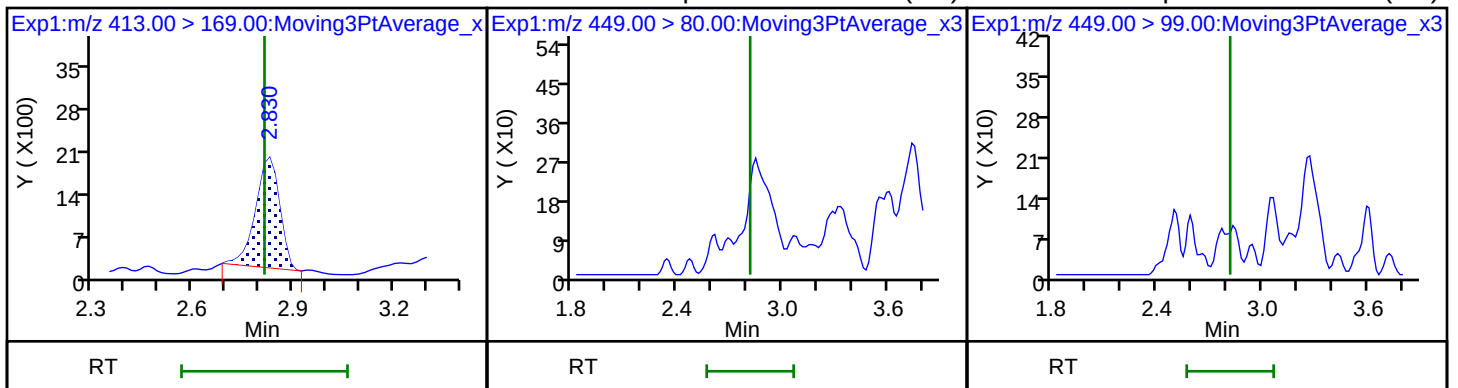
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid (ND)

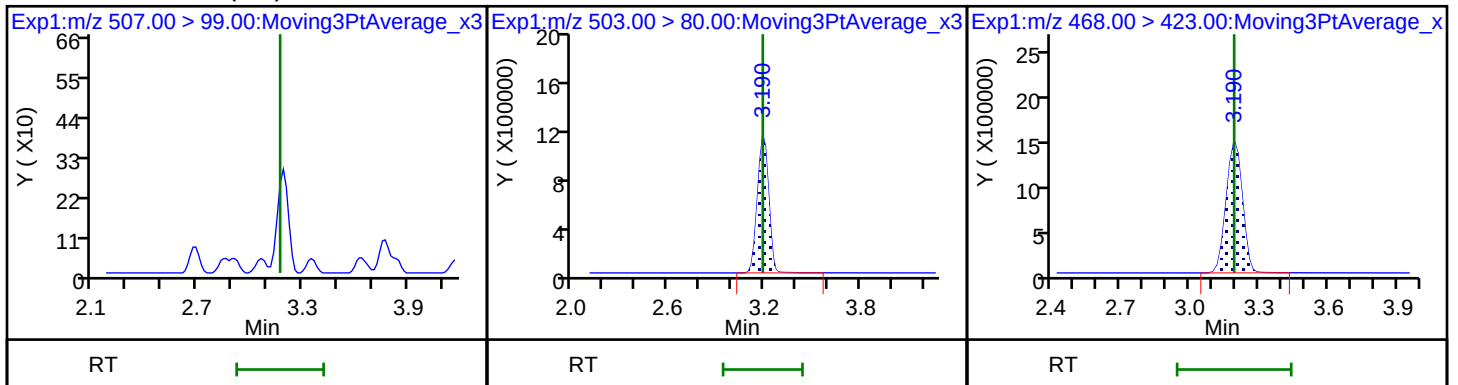
16 Perfluoroheptanesulfonic acid (ND)

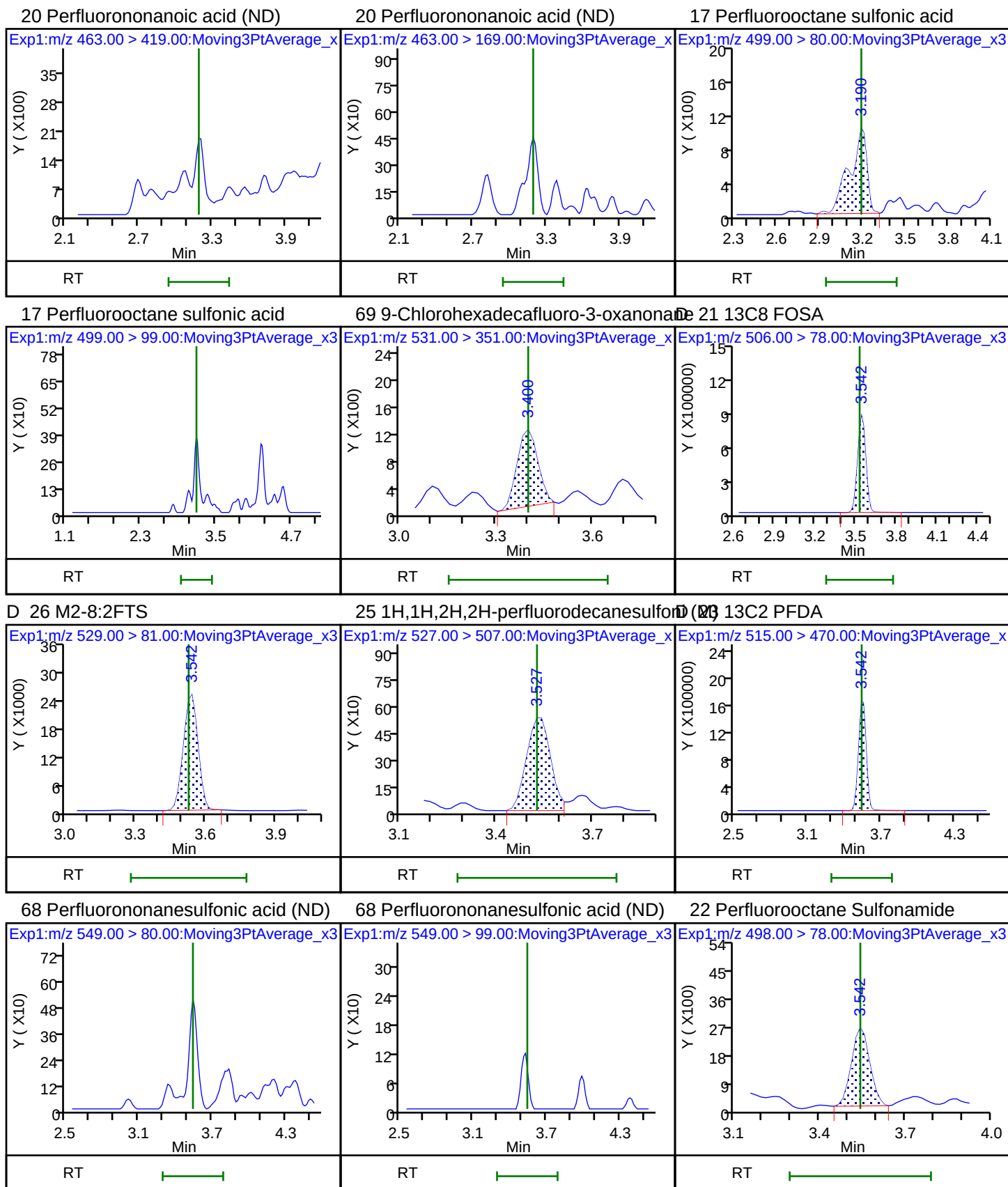


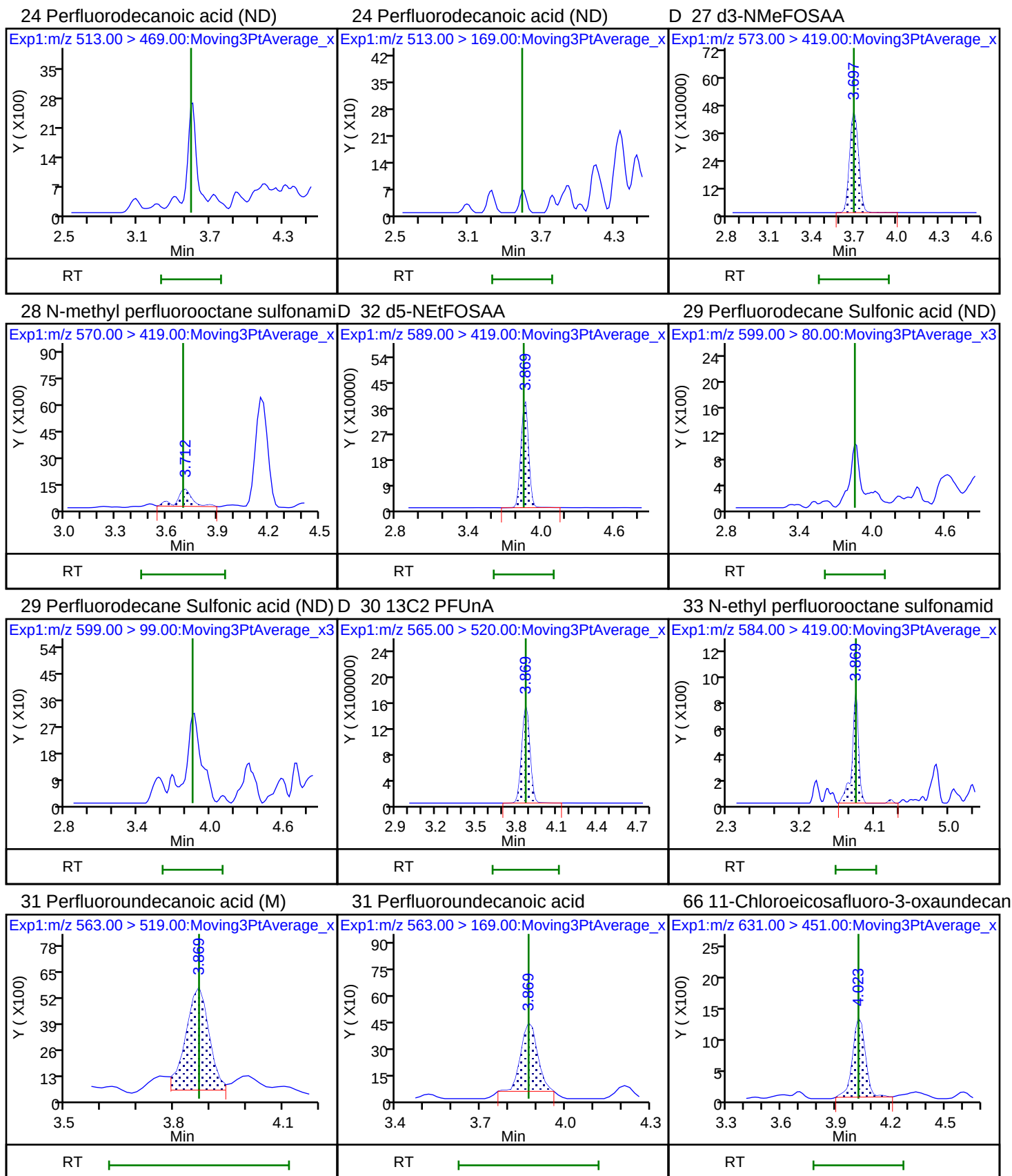
D 72 13C8 PFOS (ND)

D 18 13C4 PFOS

D 19 13C5 PFNA



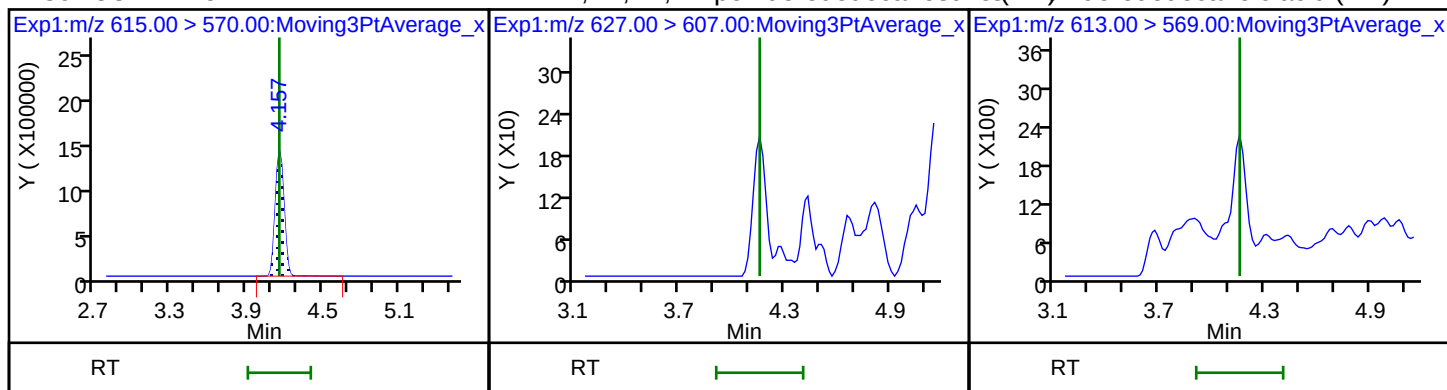




D 36 13C2 PFDaA

74 1H,1H,2H,2H-perfluorododecanesulfonic acid (ND)

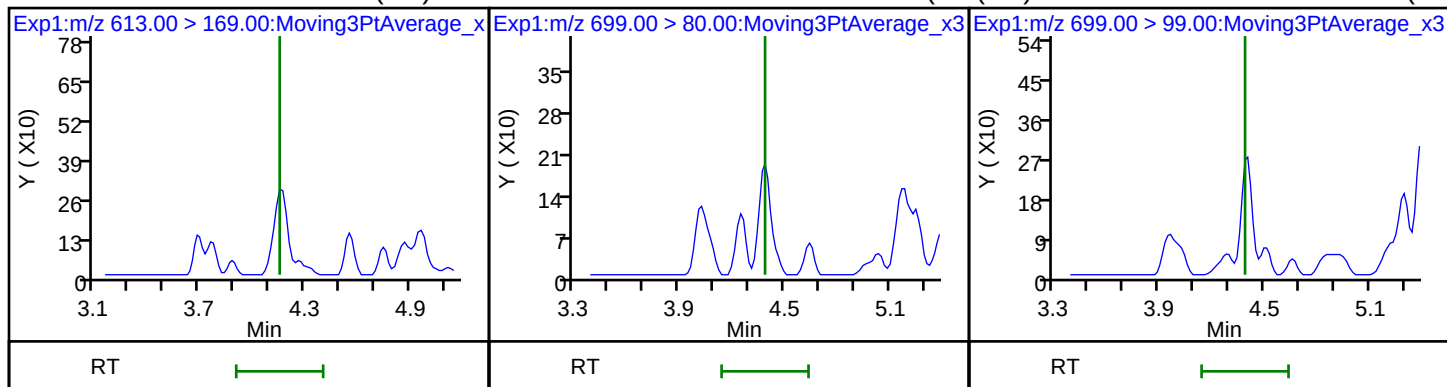
75 Perfluorododecanesulfonic acid (ND)



37 Perfluorododecanoic acid (ND)

75 Perfluorododecanesulfonic acid (PF (ND))

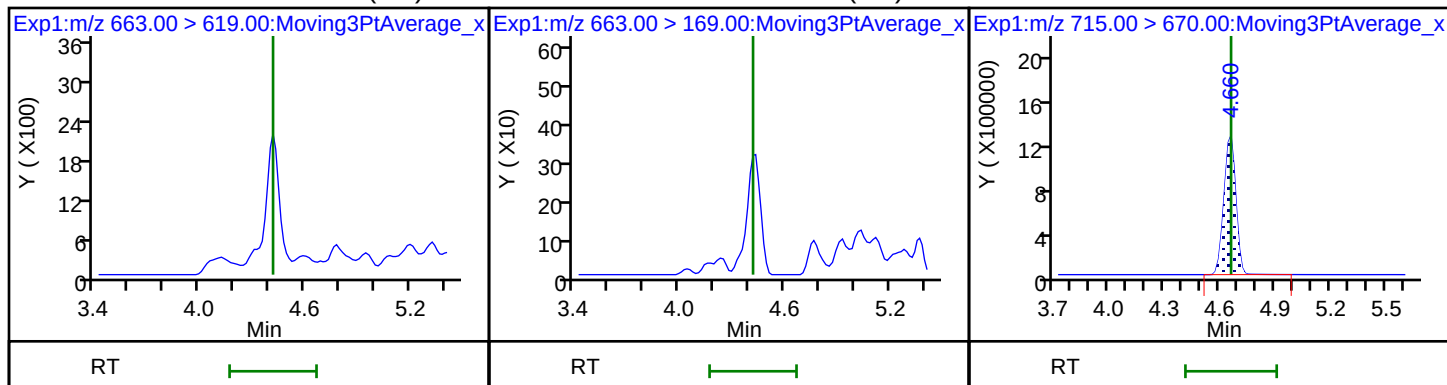
75 Perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

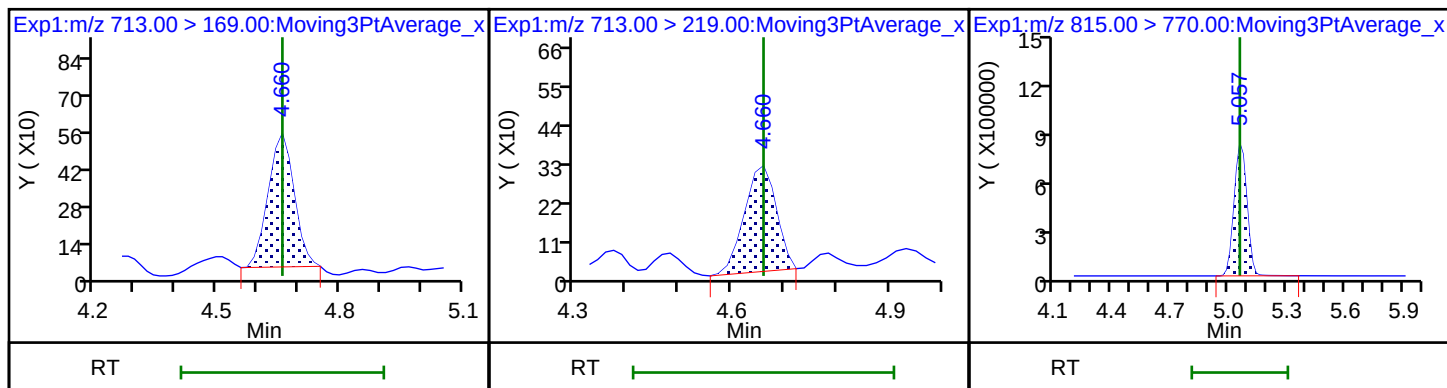
D 43 13C2-PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

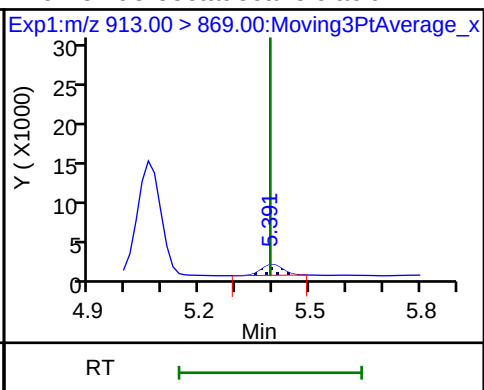
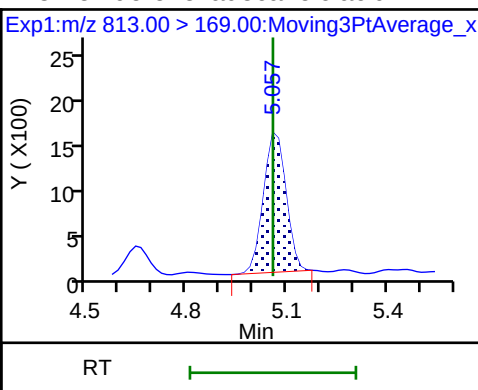
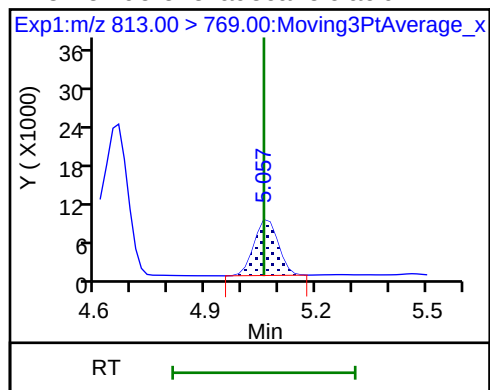
D 44 13C2-PFHxDA



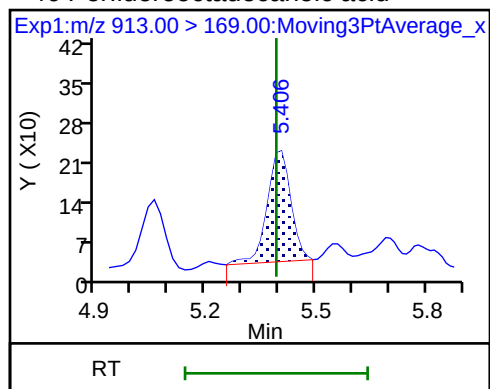
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

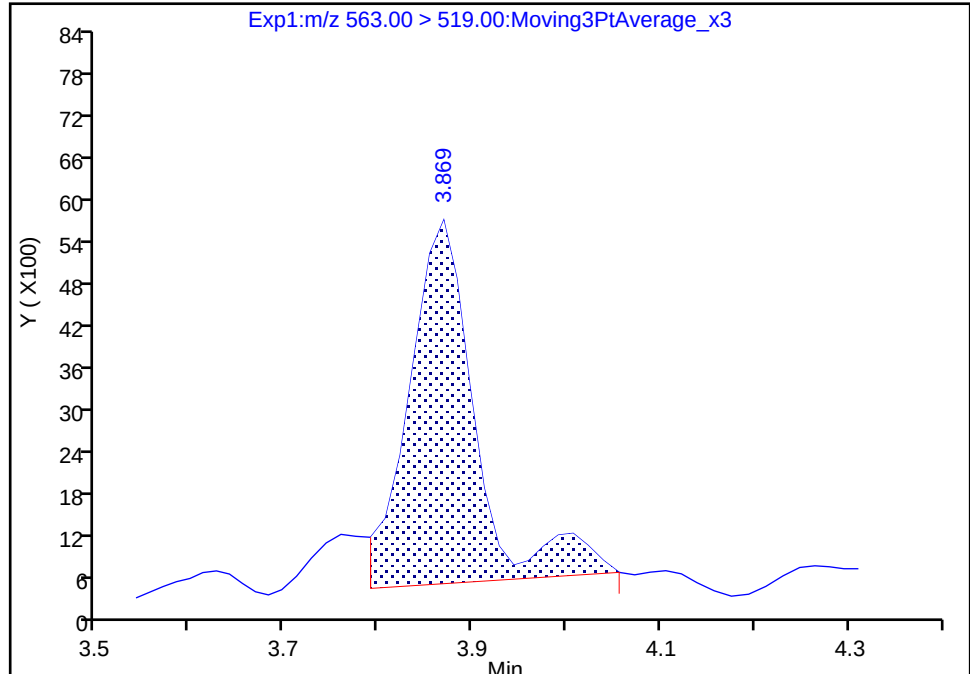
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_016.d
Injection Date: 29-Sep-2018 12:33:14 Instrument ID: A9
Lims ID: MB 320-248335/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

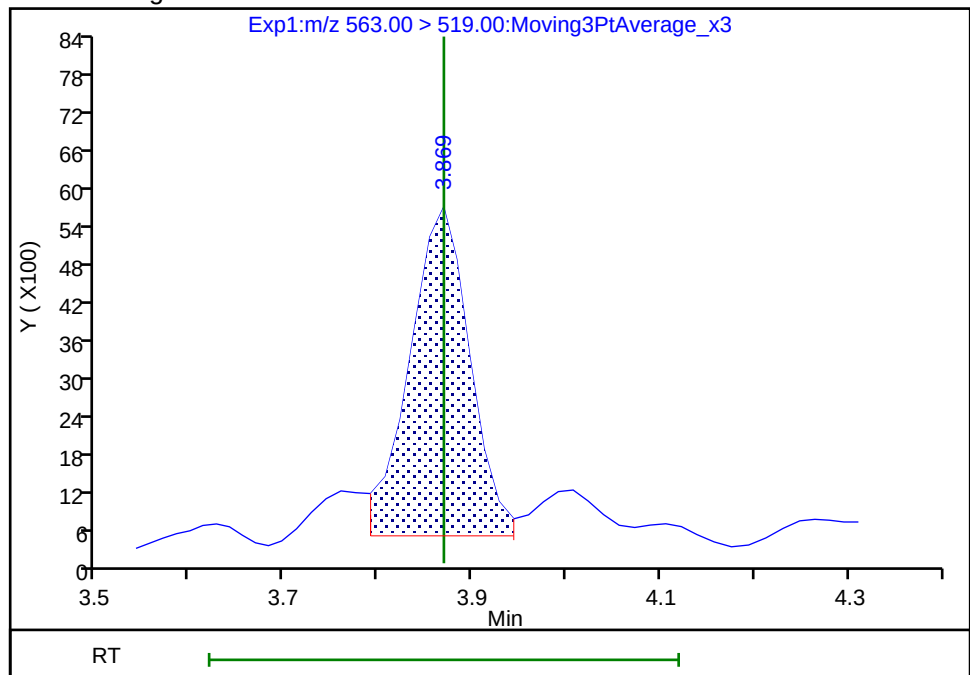
RT: 3.87
Area: 25371
Amount: 0.011227
Amount Units: ng/ml

Processing Integration Results



RT: 3.87
Area: 22949
Amount: 0.010155
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:21:37
Audit Action: Manually Integrated

Audit Reason: Split Peak
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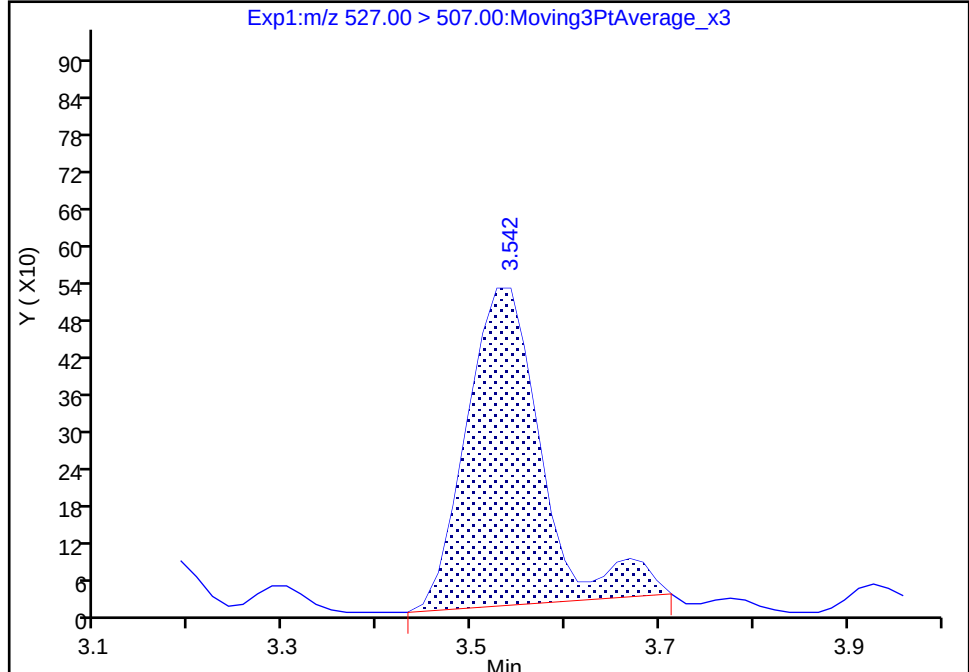
Data File: \\ChromNA\Sacramento\ChromData\A9\20180929-64986.b\2018.09.29LLAA_016.d
Injection Date: 29-Sep-2018 12:33:14 Instrument ID: A9
Lims ID: MB 320-248335/1-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

25 1H,1H,2H,2H-perfluorodecanesulfonic acid (8:, CAS: 39108-34-4

Signal: 1

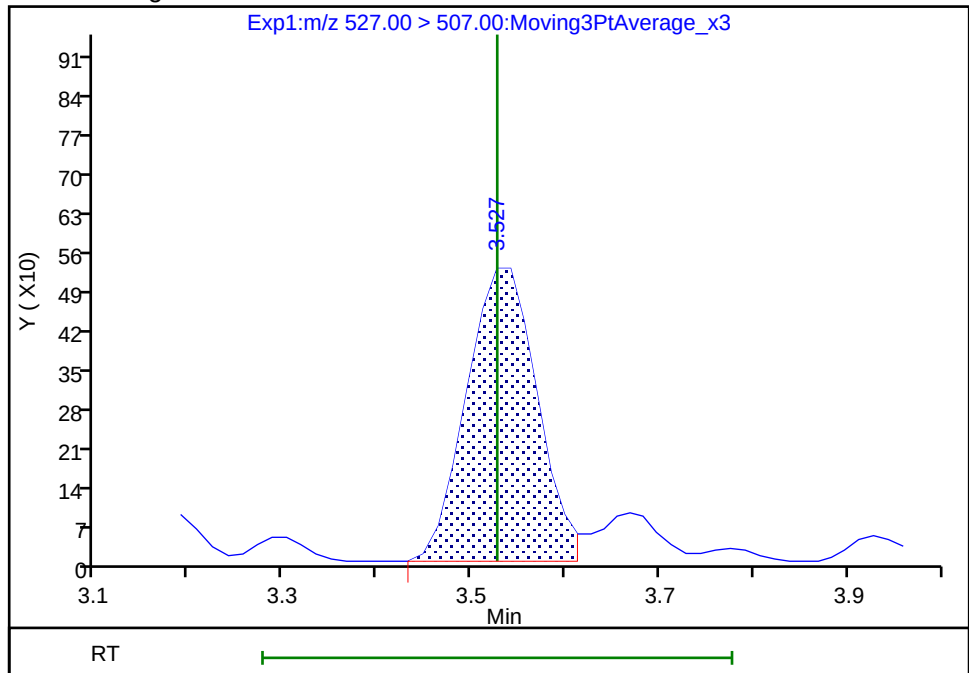
RT: 3.54
Area: 2861
Amount: 0.004339
Amount Units: ng/ml

Processing Integration Results



RT: 3.53
Area: 2734
Amount: 0.004146
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 03-Oct-2018 11:21:14
Audit Action: Manually Integrated

Audit Reason: Split Peak
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-248335/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.08LLE_014.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/09/2018 06:27</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>250745</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	40.4		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	40.2		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	39.7		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	39.2		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	39.5		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	38.5		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	41.4		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	39.7		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	38.5		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	43.7		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	39.7		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33.3		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	36.1		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	41.3		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	37.0		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	42.9		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	43.4		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	39.1		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	37.3		20	1.9
27619-97-2	6:2 FTS	42.0		20	2.0
39108-34-4	8:2 FTS	44.7		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCS 320-248335/2-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.08LLE_014.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/09/2018 06:27</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>250745</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	97		25-150
STL01893	13C5 PFPeA	102		25-150
STL00993	13C2 PFHxA	95		25-150
STL01892	13C4 PFHpA	103		25-150
STL00990	13C4 PFOA	101		25-150
STL00995	13C5 PFNA	100		25-150
STL00996	13C2 PFDA	92		25-150
STL00997	13C2 PFUnA	92		25-150
STL00998	13C2 PFDoA	99		25-150
STL02116	13C2 PFTeDA	98		25-150
STL02337	13C3 PFBS	104		25-150
STL00994	18O2 PFHxS	99		25-150
STL00991	13C4 PFOS	96		25-150
STL01056	13C8 FOSA	94		25-150
STL02118	d3-NMeFOSAA	99		25-150
STL02117	d5-NEtFOSAA	105		25-150
STL02279	M2-6:2 FTS	98		25-150
STL02280	M2-8:2 FTS	75		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\2018.10.08LLE_014.d
 Lims ID: LCS 320-248335/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 09-Oct-2018 06:27:43 ALS Bottle#: 8 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-248335/2-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 14:40:50 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\20181008-65481.b\2018.10.08LLICAL_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK047

First Level Reviewer: hannigana

Date: 09-Oct-2018 14:40:50

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	1.494	1.494	0.0	0.543	6663228	2.43		97.3	11532	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.494	1.494	0.0	1.000	2440419	1.01		101	70.6	M
D 3 13C5-PFPeA										
267.90 > 223.00	1.780	1.780	0.0	0.647	6187484	2.54		102	8487	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.780	1.780	0.0	1.000	2512884	1.01		101	242	
D 47 13C3-PFBS										
301.90 > 83.00	1.813	1.822	-0.009	0.659	80428	2.41		104	532	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.822	1.822	0.0	1.005	3084526	0.8336		94.3	1311	
298.90 > 99.00	1.822	1.822	0.0	1.005	1047051		2.95(1.35-4.05)		798	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.038	-0.011	1.118	797994	0.9122		97.7	4329	
D 7 13C2 PFHxA										
315.00 > 270.00	2.068	2.068	0.0	0.752	6228807	2.37		94.7	7439	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.068	2.068	0.0	1.000	2240824	0.99		99.3	425	
313.00 > 119.00	2.068	2.068	0.0	1.000	169065		13.25(6.96-20.87)		327	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.088	2.099	-0.011	1.152	1501938	0.8827		94.1	2225	
349.00 > 99.00	2.088	2.099	-0.011	1.152	703622		2.13(1.15-3.45)		1108	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.160	2.160	0.0	0.785	1006499	3.08		123	2588	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.170	-0.010	1.000	576713	0.8475		84.7	422	

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	2.399	2.399	0.0	1.000	3509469	0.9809		98.1	624	
363.00 > 169.00	2.399	2.399	0.0	1.000	801567		4.38(2.17-6.52)		1640	
D 9 13C4-PFHpA										
367.00 > 322.00	2.399	2.399	0.0	0.872	8336039	2.59		103	14046	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.412	2.413	-0.001	1.000	2202449	0.9032		99.3	1723	
399.00 > 99.00	2.412	2.413	-0.001	1.000	634237		3.47(1.90-5.70)		771	
D 11 18O2 PFHxS										
403.00 > 84.00	2.412	2.413	-0.001	0.877	4675250	2.33		98.7	6396	
76 DONA										
377.00 > 251.00	2.439	2.439	0.0	0.783	5537277	1.02		108	8342	
377.00 > 85.00	2.439	2.439	0.0	0.783	2241533		2.47(1.13-3.39)		1933	
D 12 M2-6:2FTS										
429.00 > 81.00	2.734	2.718	0.016	0.994	820791	2.32		97.5	1020	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.734	2.718	0.016	1.000	779365	1.05		111	1687	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.750	0.0	1.000	7586029	2.51		101	6535	
* 62 13C2-PFOA										
415.00 > 370.00	2.750	2.750	0.0		7487803	2.50			8574	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	3246588	0.9864		98.5	220	
413.00 > 169.00	2.750	2.750	0.0	1.000	1144740		2.84(1.36-4.08)		1642	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.766	2.766	0.0	0.888	2139403	1.03		109	2307	
449.00 > 99.00	2.766	2.766	0.0	0.888	529653		4.04(1.84-5.53)		1519	
D 19 13C5 PFNA										
468.00 > 423.00	3.116	3.116	0.0	1.133	6944708	2.50		100.0	7166	
D 18 13C4 PFOS										
503.00 > 80.00	3.116	3.116	0.0	1.133	4850996	2.30		96.4	2511	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.116	3.117	-0.001	1.000	2025167	0.9251		99.7	749	
499.00 > 99.00	3.116	3.117	-0.001	1.000	476608		4.25(2.04-6.12)		1137	
20 Perfluorononanoic acid										
463.00 > 419.00	3.116	3.117	-0.001	1.000	2711350	0.9615		96.2	234	
463.00 > 169.00	3.116	3.117	-0.001	1.000	509897		5.32(2.68-8.03)		1055	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.334	3.334	0.0	1.070	2234453	0.9621		103	1746	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.465	0.0	1.000	3439423	1.09		109	3888	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.465	3.465	0.0	1.000	579623	1.12		117	1730	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.465	3.465	0.0	1.112	1325551	1.03		107	1824	
549.00 > 99.00	3.465	3.465	0.0	1.112	234099		5.66(3.02-9.05)		1352	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.465	0.0	1.260	2668097	2.35		94.1	5866	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.465	3.465	0.0	1.260	83414	1.79		74.8	380	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.480	3.480	0.0	1.000	3141712	1.04		104	464	
513.00 > 169.00	3.480	3.480	0.0	1.000	213661		14.70(7.12-21.35)		512	
D 23 13C2 PFDA										
515.00 > 470.00	3.480	3.480	0.0	1.265	6842288	2.31		92.3	6089	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.627	0.0	1.319	3032634	2.48		99.3	3944	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.641	3.641	0.0	1.004	1201588	0.9770		97.7	2909	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.791	3.791	0.0	1.217	1913185	1.07		111	1234	
599.00 > 99.00	3.791	3.791	0.0	1.217	362114		5.28(2.14-6.43)		1142	
D 30 13C2 PFUnA										
565.00 > 520.00	3.807	3.807	0.0	1.384	5998126	2.30		92.1	6821	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.807	-0.016	1.379	2703513	2.63		105	2918	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.807	3.807	0.0	1.000	2175371	0.99		99.4	420	
563.00 > 169.00	3.807	3.807	0.0	1.000	222653		9.77(5.24-15.72)		771	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.807	3.807	0.0	1.004	923704	0.9335		93.3	1107	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.959	3.960	-0.001	1.271	2580537	0.9397		99.8	3578	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.105	4.106	-0.001	1.000	2867178	0.9619		96.2	637	
613.00 > 169.00	4.105	4.106	-0.001	1.000	286484		10.01(4.68-14.05)		483	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.105	4.106	-0.001	1.185	433193	1.30		135	840	
D 36 13C2 PFDaA										
615.00 > 570.00	4.105	4.106	-0.001	1.493	7313992	2.48		99.1	7541	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.341	4.342	-0.001	1.393	183640	1.00		104	221	
699.00 > 99.00	4.341	4.342	-0.001	1.393	334502		0.55(0.28-0.83)		869	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.372	4.373	-0.001	1.065	2451738	1.09		109	938	
663.00 > 169.00	4.357	4.373	-0.016	1.061	380389		6.45(3.09-9.27)		582	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.609	4.609	0.0	1.676	5472300	2.46		98.2	7422	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	345778	0.99		99.2	832	
713.00 > 219.00	4.609	4.609	0.0	1.000	237527		1.46(0.70-2.09)		741	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.023	5.024	-0.001	1.000	1787948	0.9712		97.1	587	
813.00 > 169.00	5.023	5.024	-0.001	1.000	316956		5.64(2.77-8.32)		611	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.023	5.024	-0.001	1.827	5059640	2.63		105	5614	

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	5.377	5.377	0.0	1.070	1096872	0.9531		95.3	489	
913.00 > 169.00	5.377	5.377	0.0	1.070	195341		5.62(2.55-7.64)		810	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\2018.10.08LLE_014.d

Injection Date: 09-Oct-2018 06:27:43

Instrument ID: A9

Lims ID: LCS 320-248335/2-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 8

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

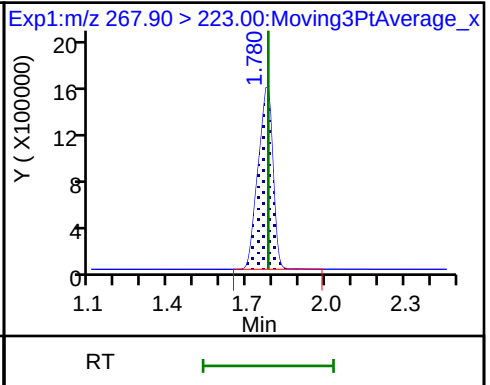
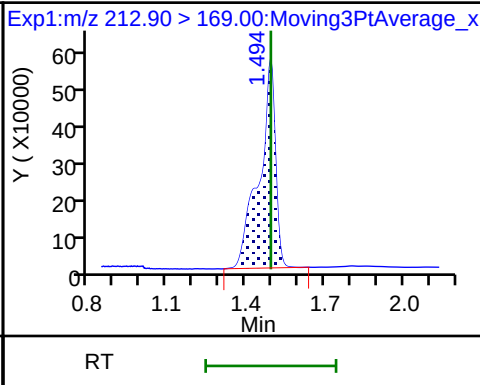
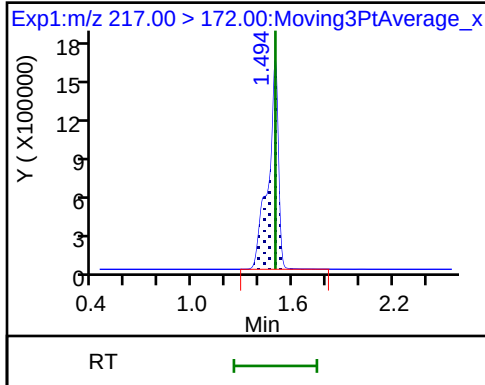
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Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

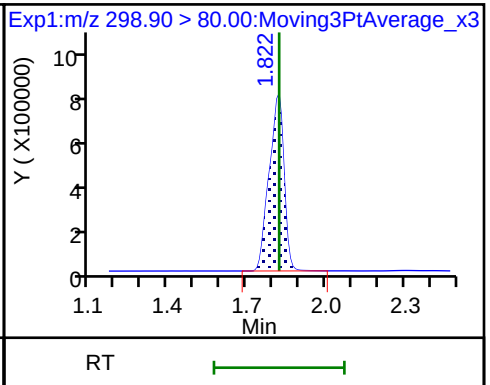
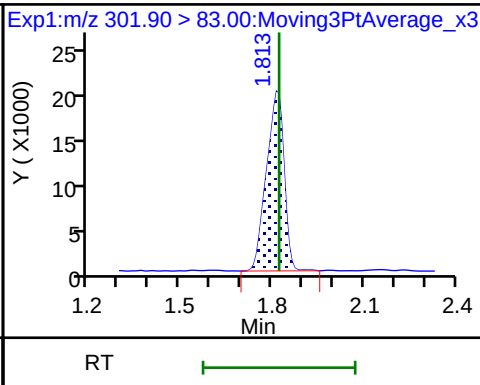
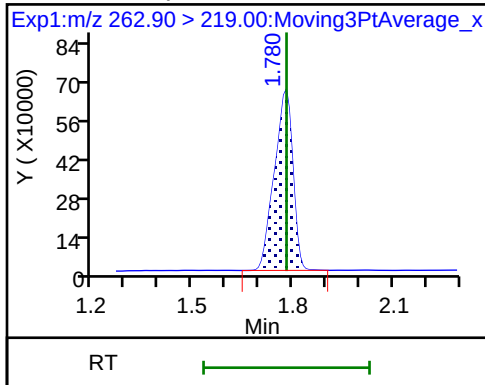
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

D 47 13C3-PFBS

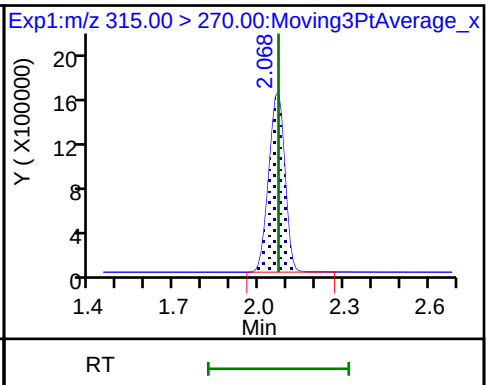
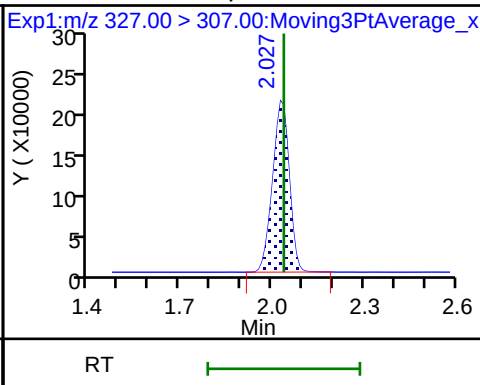
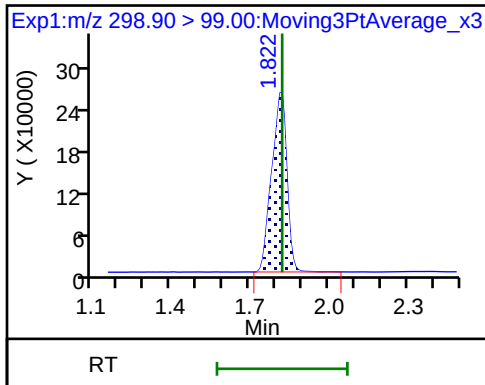
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

61 1H,1H,2H,2H-perfluorohexanesulfonate

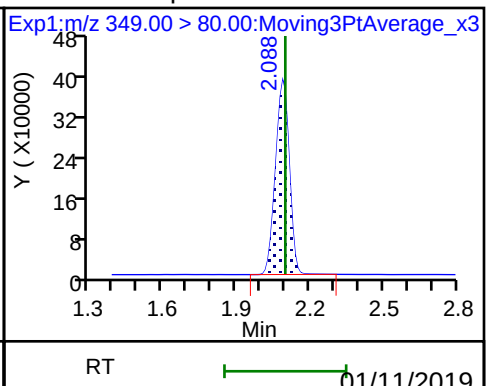
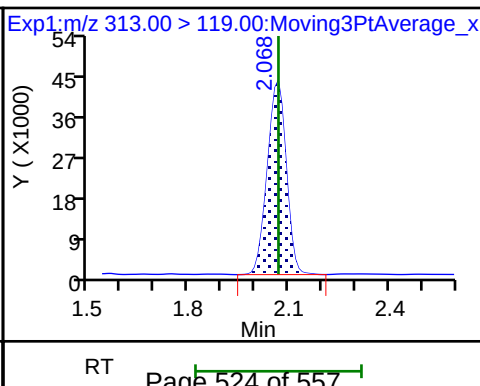
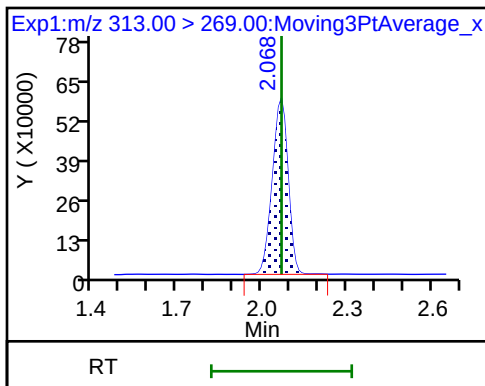
D 7 13C2 PFHxA

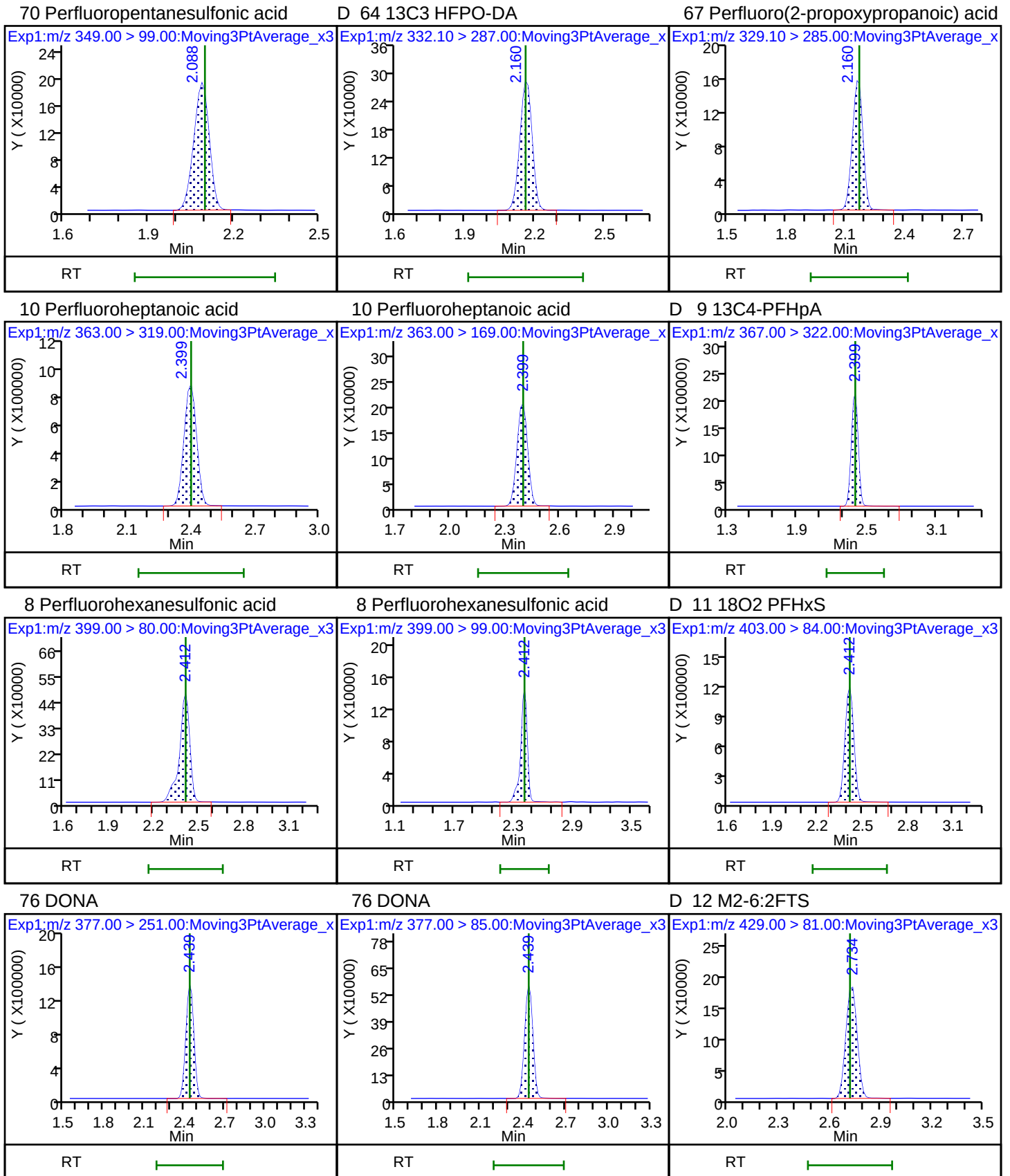


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

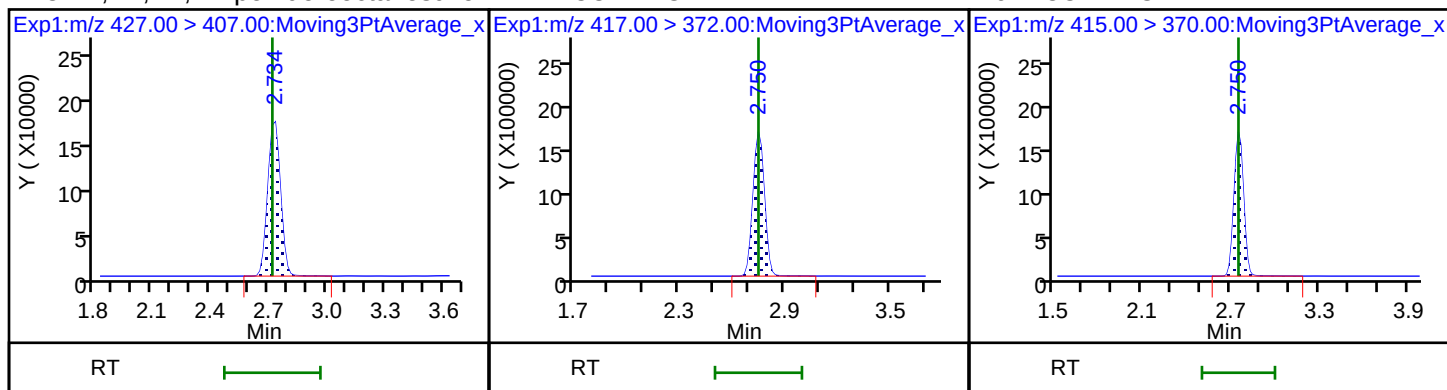
70 Perfluoropentanesulfonic acid





13 1H,1H,2H,2H-perfluorooctanesulfonD 14 13C4 PFOA

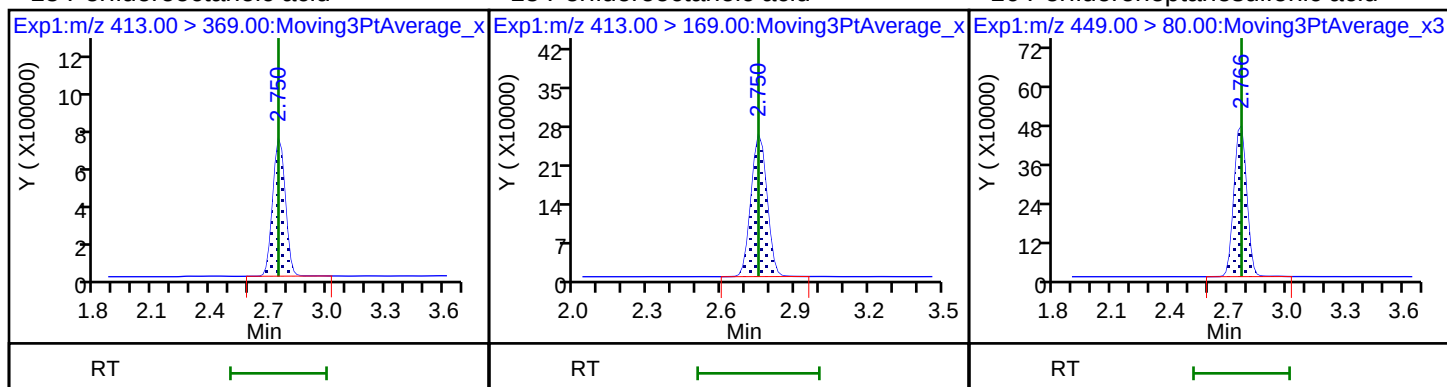
* 62 13C2-PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

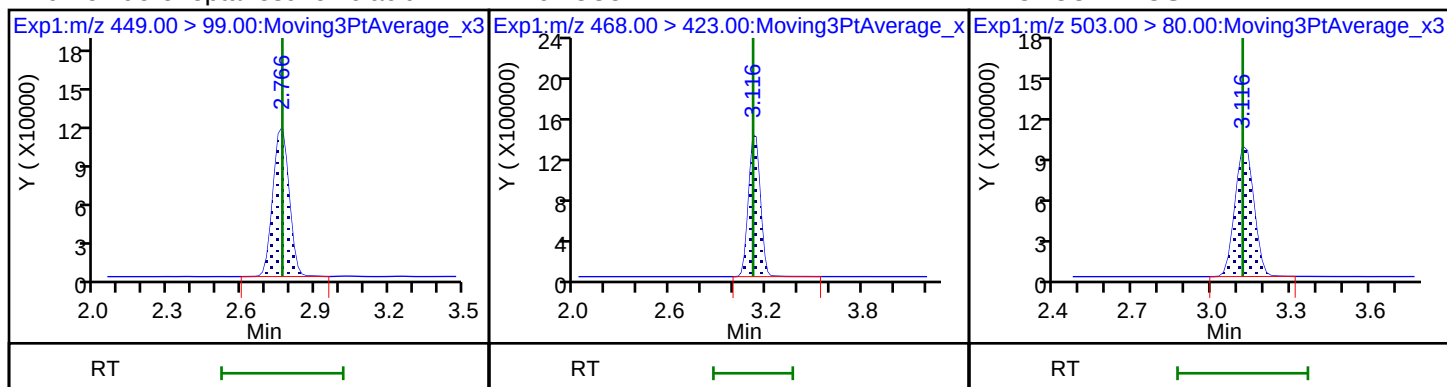
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

D 19 13C5 PFNA

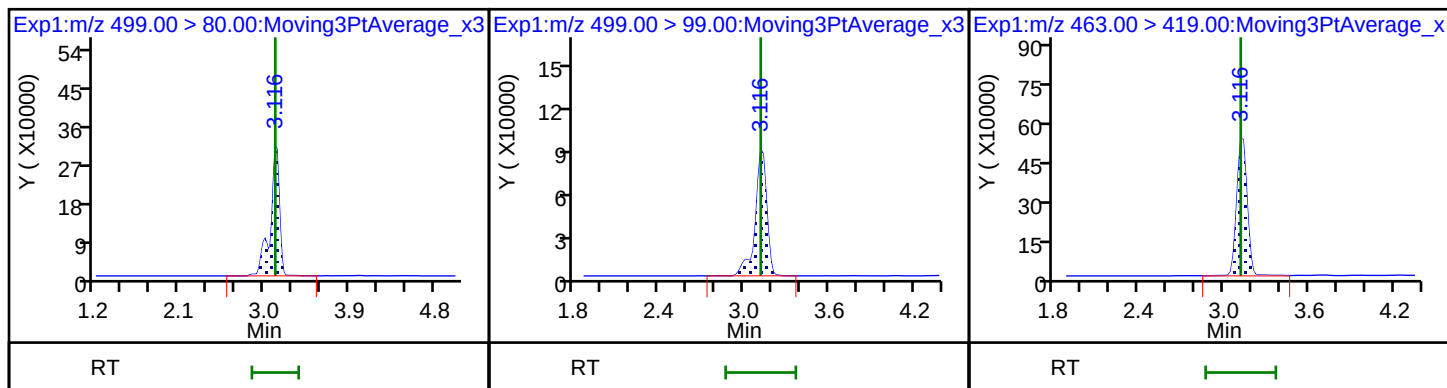
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17 Perfluorooctane sulfonic acid

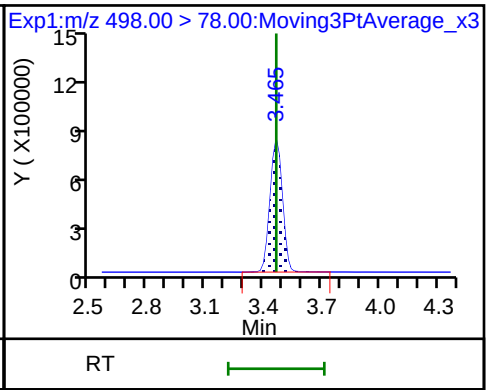
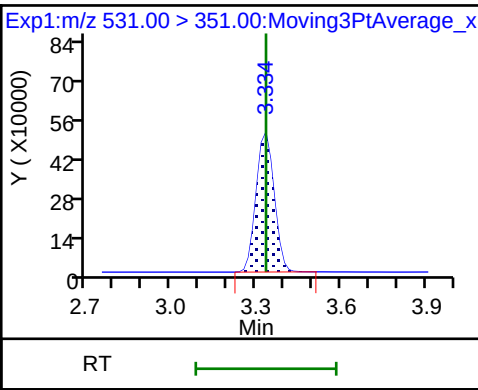
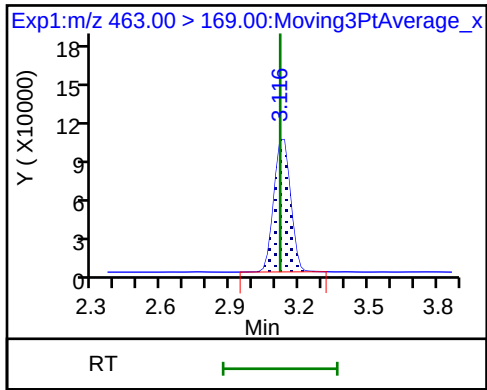
17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

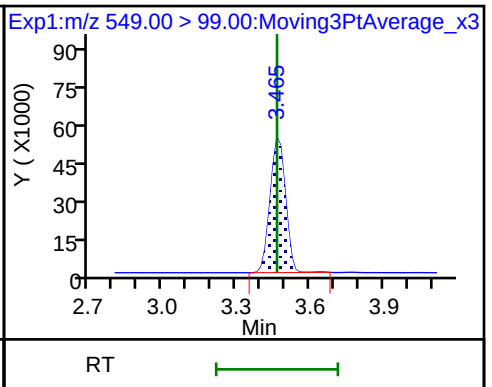
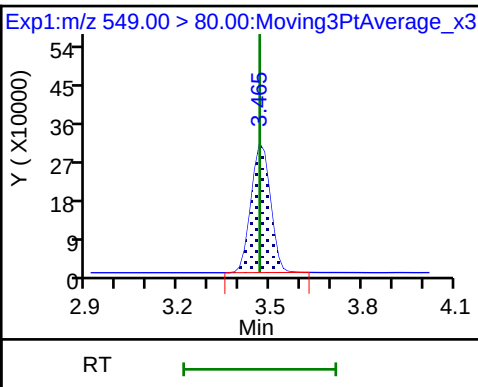
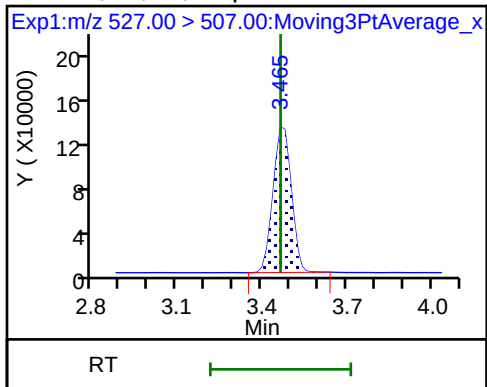


20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan-22 Perfluorooctane Sulfonamide



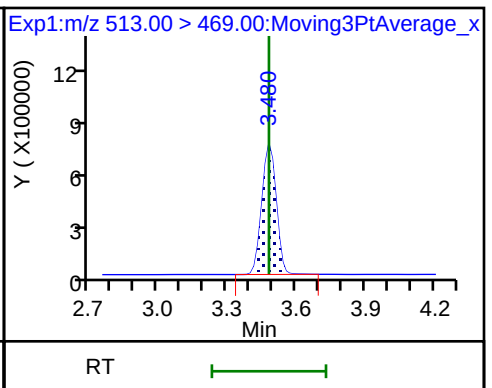
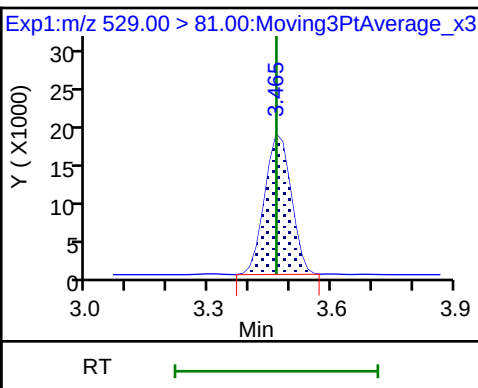
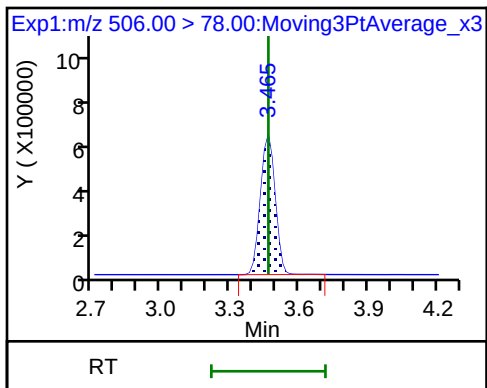
25 1H,1H,2H,2H-perfluorodecanesulfoni



D 21 13C8 FOSA

D 26 M2-8:2FTS

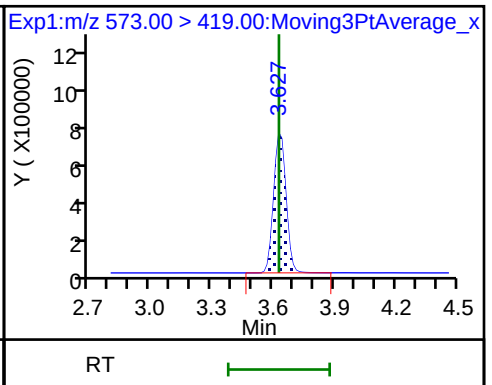
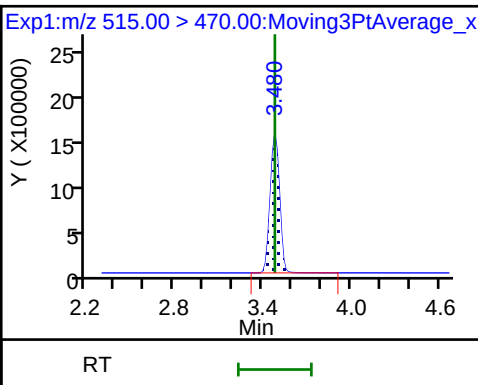
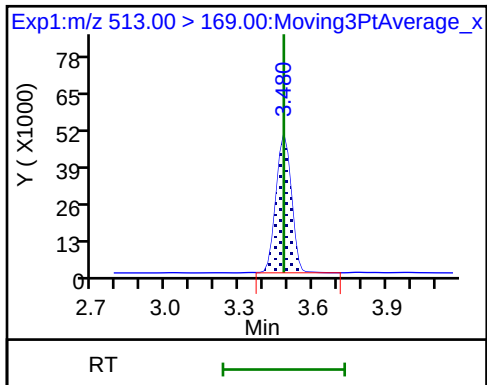
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 23 13C2 PFDA

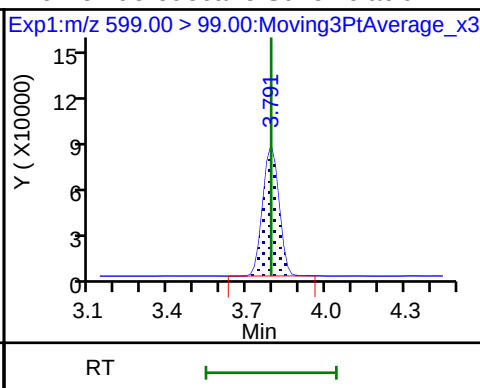
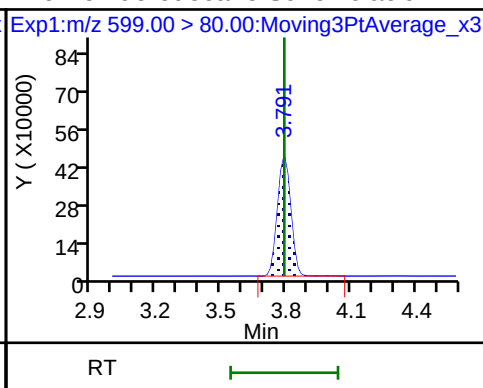
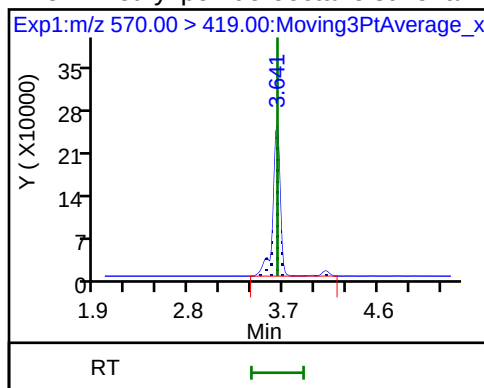
D 27 d3-NMeFOSAA



28 N-methyl perfluorooctane sulfonami

29 Perfluorodecane Sulfonic acid

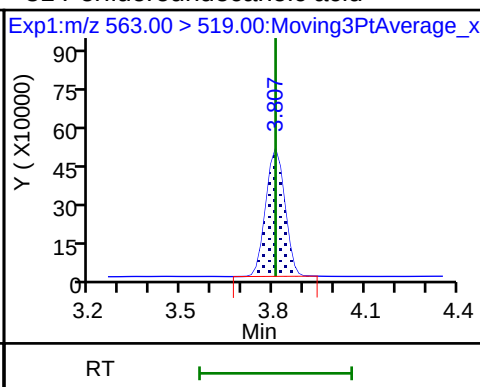
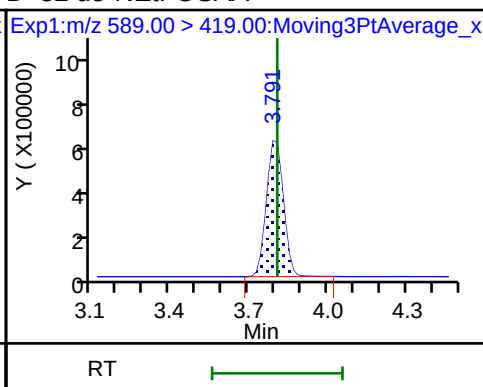
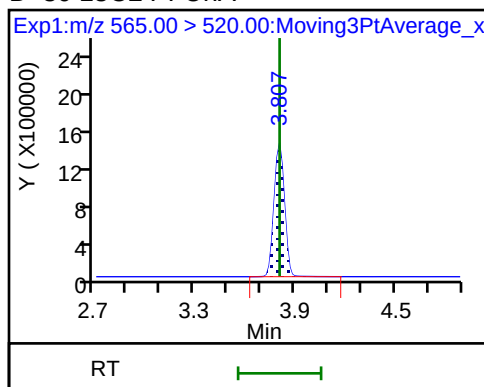
29 Perfluorodecane Sulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

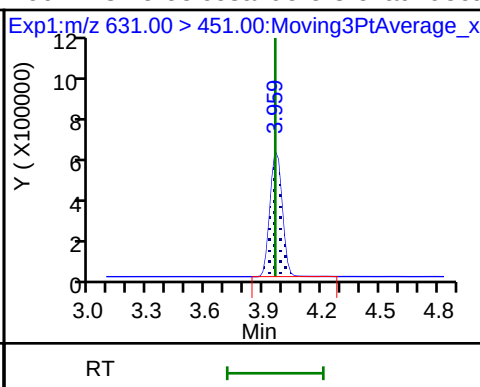
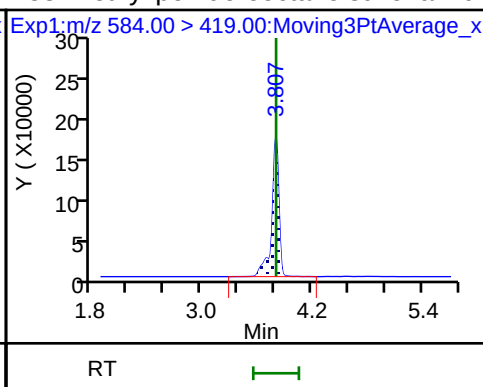
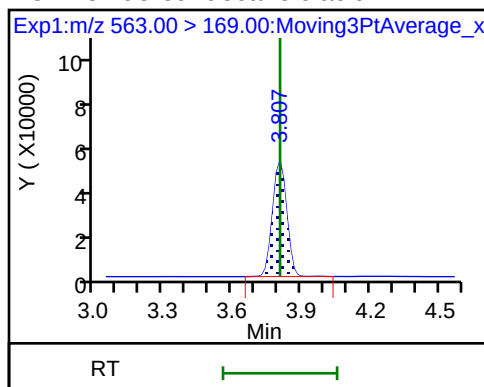
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid

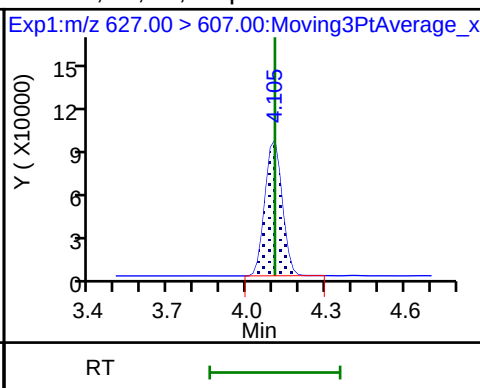
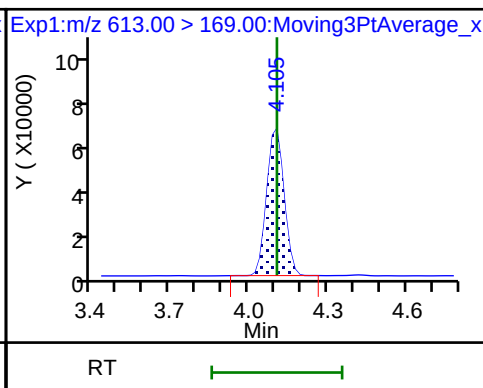
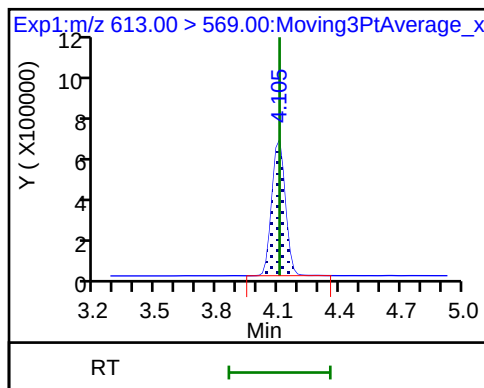
66 11-Chloroeicosafluoro-3-oxaundecan



37 Perfluorododecanoic acid

37 Perfluorododecanoic acid

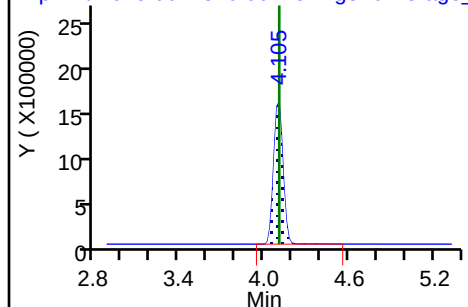
74 1H,1H,2H,2H-perfluorododecanesulfo



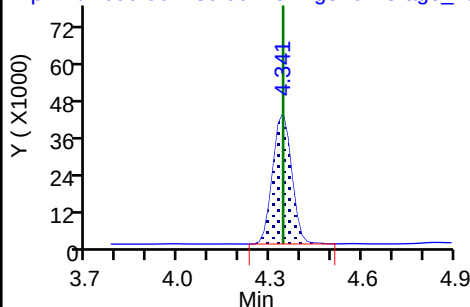
D 36 13C2 PFDaA

75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF

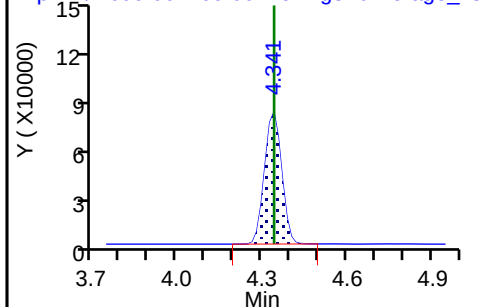
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Exp1:m/z 699.00 > 99.00:Moving3PtAverage_x3

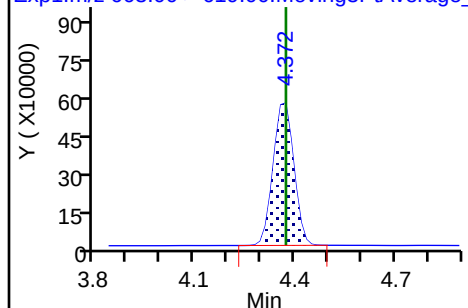


41 Perfluorotridecanoic acid

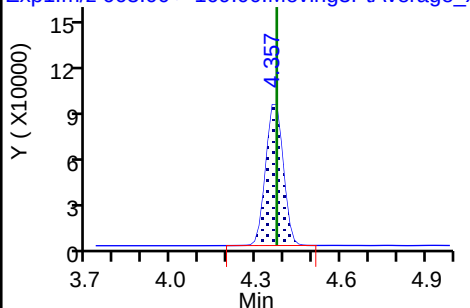
41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

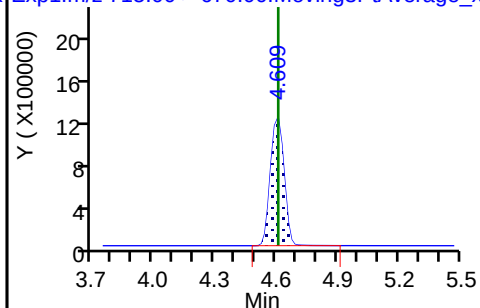
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Exp1:m/z 663.00 > 169.00:Moving3PtAverage_x



Exp1:m/z 715.00 > 670.00:Moving3PtAverage_x

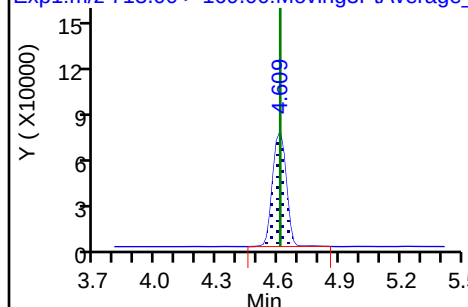


42 Perfluorotetradecanoic acid

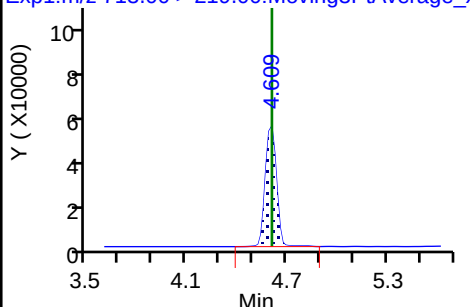
42 Perfluorotetradecanoic acid

45 Perfluorohexadecanoic acid

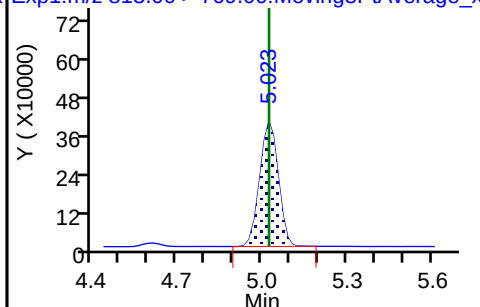
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Exp1:m/z 813.00 > 769.00:Moving3PtAverage_x

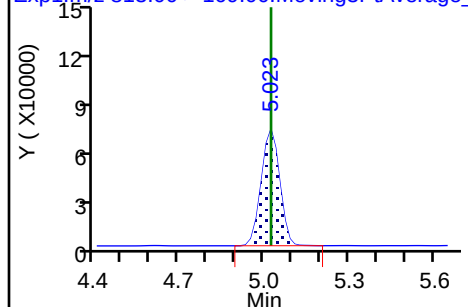


45 Perfluorohexadecanoic acid

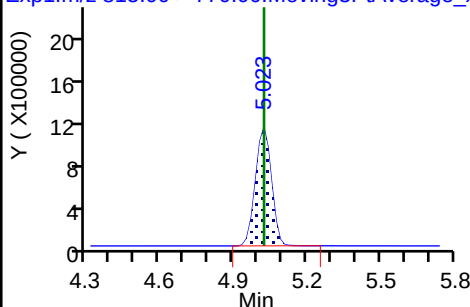
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46 Perfluorooctadecanoic acid

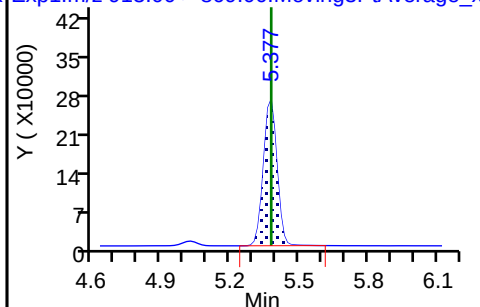
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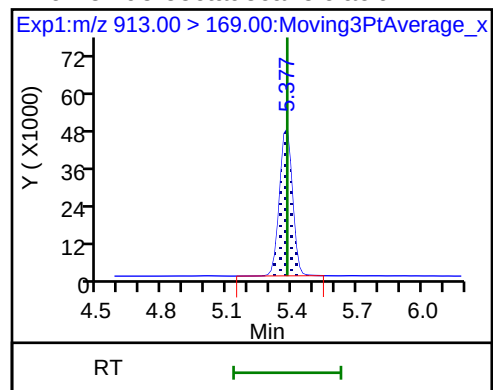
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Exp1:m/z 913.00 > 869.00:Moving3PtAverage_x



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

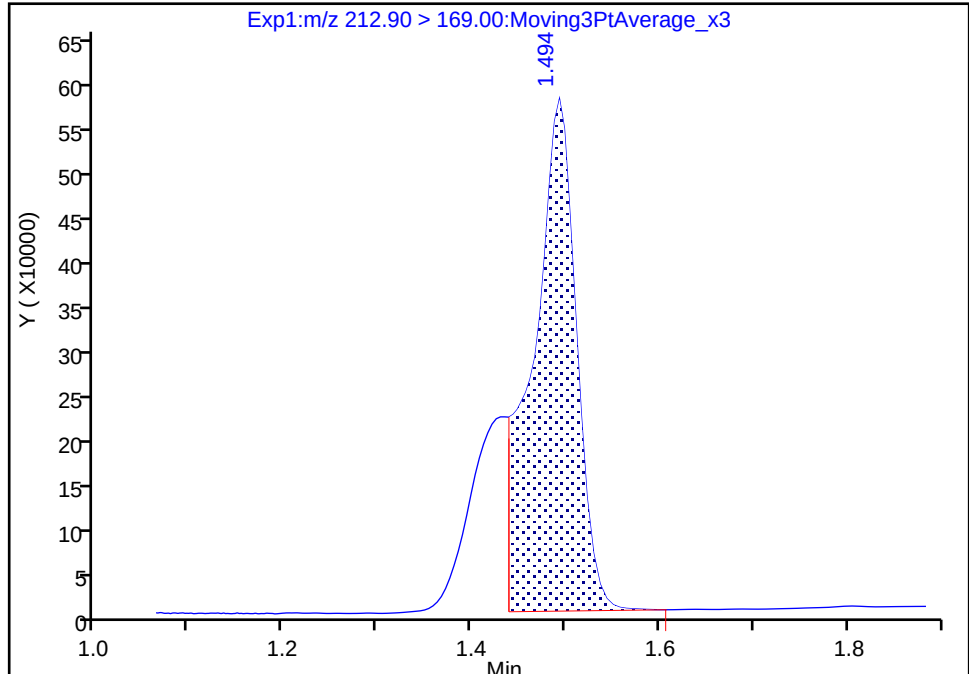
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Injection Date: 09-Oct-2018 06:27:43 Instrument ID: A9
Lims ID: LCS 320-248335/2-A
Client ID:
Operator ID: A9\Administrator ALS Bottle#: 8 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutyric acid, CAS: 375-22-4

Signal: 1

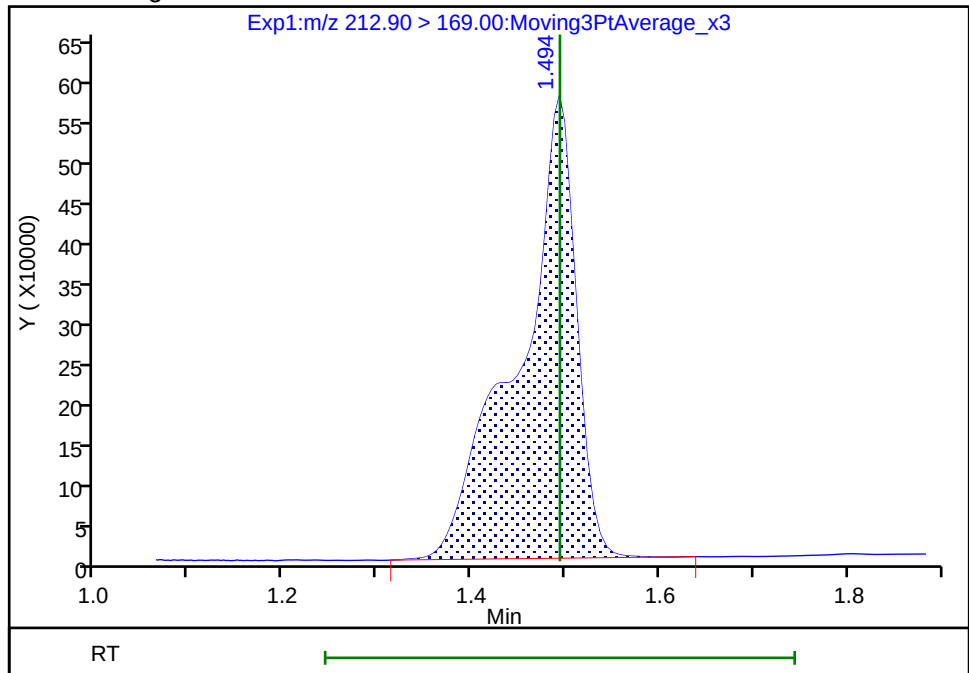
RT: 1.49
Area: 1830574
Amount: 0.758265
Amount Units: ng/ml

Processing Integration Results



RT: 1.49
Area: 2440419
Amount: 1.010877
Amount Units: ng/ml

Manual Integration Results



Reviewer: hannigana, 09-Oct-2018 14:40:36
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 531 of 557

01/11/2019

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCSD 320-248335/3-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.08LLE_015.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/09/2018 06:35</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>250745</u>	Units: <u>ng/L</u>

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.3		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	40.7		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	39.0		2.0	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	41.0		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	40.2		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	43.6		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	40.3		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	41.3		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	37.9		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	43.9		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	41.2		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36.8		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	34.9		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	39.3		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	36.2		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	37.5		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	44.5		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	39.0		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	39.8		20	1.9
27619-97-2	6:2 FTS	44.1		20	2.0
39108-34-4	8:2 FTS	36.4		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-142274-1</u>
SDG No.: _____	
Client Sample ID: _____	Lab Sample ID: <u>LCSD 320-248335/3-A</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.10.08LLE_015.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: _____
Extraction Method: <u>3535</u>	Date Extracted: <u>09/28/2018 07:48</u>
Sample wt/vol: <u>250.00 (mL)</u>	Date Analyzed: <u>10/09/2018 06:35</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>250745</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	99		25-150
STL01893	13C5 PFPeA	100		25-150
STL00993	13C2 PFHxA	103		25-150
STL01892	13C4 PFHpA	100		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	96		25-150
STL00997	13C2 PFUnA	98		25-150
STL00998	13C2 PFDoA	99		25-150
STL02116	13C2 PFTeDA	107		25-150
STL02337	13C3 PFBS	97		25-150
STL00994	18O2 PFHxS	97		25-150
STL00991	13C4 PFOS	101		25-150
STL01056	13C8 FOSA	92		25-150
STL02118	d3-NMeFOSAA	102		25-150
STL02117	d5-NEtFOSAA	104		25-150
STL02279	M2-6:2 FTS	100		25-150
STL02280	M2-8:2 FTS	93		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\2018.10.08LLE_015.d
 Lims ID: LCSD 320-248335/3-A
 Client ID:
 Sample Type: LCSD
 Inject. Date: 09-Oct-2018 06:35:15 ALS Bottle#: 9 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: lcsd 320-248335/3-a
 Misc. Info.: Plate: 1 Rack: 2
 Operator ID: A9\Administrator Instrument ID: A9
 Method: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\PFAS_A9.m
 Limit Group: LC PFC ICAL
 Last Update: 09-Oct-2018 14:47:51 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\20181008-65481.b\2018.10.08LLICAL_008.d
 Column 1 : Det: EXP1
 Process Host: XAWRK047

First Level Reviewer: hannigana

Date: 09-Oct-2018 14:41:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.489	1.493	-0.004	1.000	2516838	1.03		103	72.5	
D 1 13C4 PFBA										
217.00 > 172.00	1.489	1.494	-0.005	0.541	6735988	2.46		98.5	11449	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.772	1.772	0.0	1.000	2496509	1.02		102	241	
D 3 13C5-PFPeA										
267.90 > 223.00	1.772	1.780	-0.008	0.644	6075854	2.50		99.9	8261	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.814	1.813	0.001	1.000	3185193	0.9189		104	1459	
298.90 > 99.00	1.814	1.813	0.001	1.000	1090313		2.92(1.35-4.05)		806	
D 47 13C3-PFBS										
301.90 > 83.00	1.814	1.822	-0.008	0.659	75338	2.26		97.3	592	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.027	2.027	0.0	1.118	801550	0.9782		105	4278	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.058	2.057	0.001	1.000	2383383	0.9756		97.6	483	
313.00 > 119.00	2.058	2.057	0.001	1.000	183532		12.99(6.96-20.87)		425	
D 7 13C2 PFHxA										
315.00 > 270.00	2.058	2.068	-0.010	0.748	6745664	2.57		103	11157	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.089	2.088	0.001	1.152	1548848	0.9718		104	2681	
349.00 > 99.00	2.089	2.088	0.001	1.152	745744		2.08(1.15-3.45)		1259	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.160	2.160	0.0	1.000	585128	0.8429		84.3	399	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.160	2.160	0.0	0.785	1026677	3.14		126	2668	

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	2.400	2.386	0.014	1.005	3535037	1.02		102	649	
363.00 > 169.00	2.386	2.386	0.0	1.000	759681		4.65(2.17-6.52)		1532	
D 9 13C4-PFHpA										
367.00 > 322.00	2.386	2.399	-0.013	0.868	8040936	2.50		100	14577	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.413	2.412	0.001	1.000	2085553	0.8725		95.9	1587	
399.00 > 99.00	2.413	2.412	0.001	1.000	606689		3.44(1.90-5.70)		724	
D 11 18O2 PFHxS										
403.00 > 84.00	2.413	2.413	0.0	0.877	4583116	2.29		96.9	9499	
76 DONA										
377.00 > 251.00	2.439	2.438	0.001	0.783	5859101	1.03		109	10269	
377.00 > 85.00	2.439	2.438	0.001	0.783	2447555		2.39(1.13-3.39)		2459	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	2.719	2.718	0.001	1.000	840172	1.10		116	2103	
D 12 M2-6:2FTS										
429.00 > 81.00	2.719	2.718	0.001	0.988	842918	2.38		100	1252	
* 62 13C2-PFOA										
415.00 > 370.00	2.750	2.750	0.0		7474133	2.50			9545	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	2.750	2.750	0.0	0.882	2134998	0.9832		103	1957	
449.00 > 99.00	2.750	2.750	0.0	0.882	524380		4.07(1.84-5.53)		1448	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.750	2.750	0.0	1.000	3218190	1.00		100	225	
413.00 > 169.00	2.750	2.750	0.0	1.000	1190243		2.70(1.36-4.08)		1878	
D 14 13C4 PFOA										
417.00 > 372.00	2.750	2.750	0.0	1.000	7380711	2.45		98.0	8378	
20 Perfluorononanoic acid										
463.00 > 419.00	3.117	3.116	0.001	1.000	3135239	1.09		109	273	
463.00 > 169.00	3.117	3.116	0.001	1.000	524833		5.97(2.68-8.03)		956	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.117	3.116	0.001	1.000	2079463	0.9054		97.6	647	
499.00 > 99.00	3.117	3.116	0.001	1.000	454658		4.57(2.04-6.12)		1069	
D 18 13C4 PFOS										
503.00 > 80.00	3.117	3.116	0.001	1.133	5089594	2.42		101	2638	
D 19 13C5 PFNA										
468.00 > 423.00	3.117	3.116	0.001	1.133	7083376	2.55		102	5606	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.334	3.317	0.017	1.070	2328593	0.9556		103	1742	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.465	3.464	0.001	1.000	3457500	1.11		111	2915	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.465	3.464	0.001	1.000	584109	0.9110		95.1	1500	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.465	3.464	0.001	1.112	1278894	0.9429		98.2	1683	
549.00 > 99.00	3.465	3.464	0.001	1.112	201603		6.34(3.02-9.05)		1014	
D 21 13C8 FOSA										
506.00 > 78.00	3.465	3.465	0.0	1.260	2617332	2.31		92.5	3368	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2FTS										
529.00 > 81.00	3.465	3.465	0.0	1.260	103068	2.22		92.6	435	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.480	3.480	0.0	1.000	3171021	1.01		101	470	
513.00 > 169.00	3.480	3.480	0.0	1.000	216288		14.66(7.12-21.35)		351	
D 23 13C2 PFDA										
515.00 > 470.00	3.480	3.480	0.0	1.265	7110829	2.40		96.1	7031	
28 N-methyl perfluorooctane sulfonami										
570.00 > 419.00	3.627	3.627	0.0	1.000	1231846	0.9757		97.6	470	
D 27 d3-NMeFOSAA										
573.00 > 419.00	3.627	3.627	0.0	1.319	3113425	2.55		102	3487	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.791	3.791	0.0	1.217	1754825	0.9365		97.2	1097	
599.00 > 99.00	3.791	3.791	0.0	1.217	377402		4.65(2.14-6.43)		1041	
33 N-ethyl perfluorooctane sulfonamid										
584.00 > 419.00	3.807	3.807	0.0	1.004	968517	1.00		99.6	1367	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.807	3.807	0.0	1.000	2402361	1.03		103	460	
563.00 > 169.00	3.807	3.807	0.0	1.000	217077		11.07(5.24-15.72)		657	
D 32 d5-NEtFOSAA										
589.00 > 419.00	3.791	3.807	-0.016	1.379	2657695	2.59		104	2991	
D 30 13C2 PFUnA										
565.00 > 520.00	3.807	3.807	0.0	1.384	6381187	2.45		98.2	5589	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	3.960	3.959	0.001	1.271	2833138	0.9833		104	3826	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.089	4.089	0.0	1.000	2819378	0.9465		94.6	589	
613.00 > 169.00	4.089	4.089	0.0	1.000	328407		8.59(4.68-14.05)		553	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.089	4.105	-0.016	1.180	415050	1.01		104	743	
D 36 13C2 PFDoA										
615.00 > 570.00	4.089	4.106	-0.017	1.487	7309430	2.48		99.3	7809	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.326	4.326	0.0	1.388	188158	0.9792		101	220	
699.00 > 99.00	4.326	4.326	0.0	1.388	307328		0.61(0.28-0.83)		777	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.357	4.357	0.0	1.066	2458493	1.10		110	1074	
663.00 > 169.00	4.357	4.357	0.0	1.066	387876		6.34(3.09-9.27)		756	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	4.609	4.609	0.0	1.000	390422	1.03		103	732	
713.00 > 219.00	4.591	4.609	-0.018	0.996	242642		1.61(0.70-2.09)		939	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.609	4.609	0.0	1.676	5945211	2.67		107	9973	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.024	5.023	0.001	1.000	1866601	1.05		105	577	
813.00 > 169.00	5.024	5.023	0.001	1.000	303993		6.14(2.77-8.32)		695	
D 44 13C2-PFHxDA										
815.00 > 770.00	5.024	5.024	0.0	1.827	4889224	2.55		102	7558	

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\2018.10.08LLE_015.d

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	5.362	5.377	-0.015	1.067	1164002	1.05		105	477	
913.00 > 169.00	5.362	5.377	-0.015	1.067	211283		5.51(2.55-7.64)		922	

TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\A9\20181009-65522.b\2018.10.08LLE_015.d

Injection Date: 09-Oct-2018 06:35:15

Instrument ID: A9

Lims ID: LCSD 320-248335/3-A

Client ID:

Operator ID: A9\Administrator

ALS Bottle#: 9

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

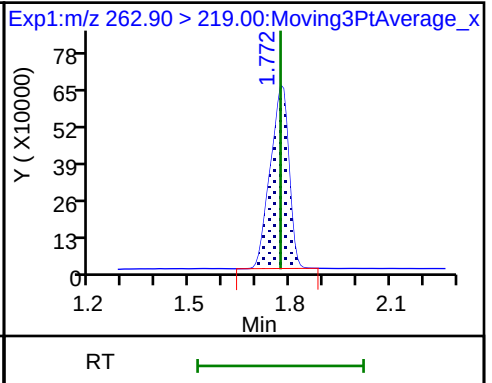
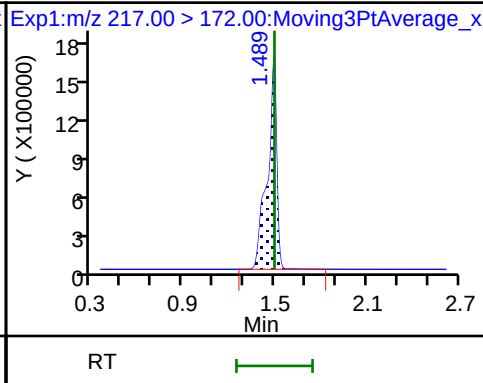
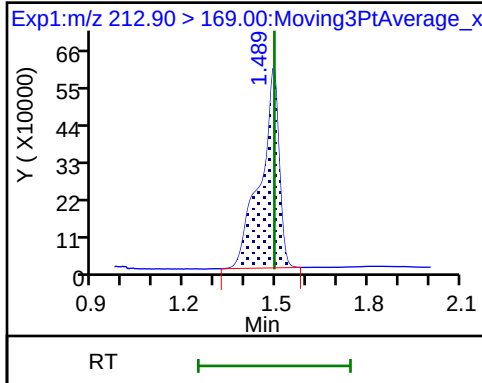
Method: PFAS_A9

Limit Group: LC PFC ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

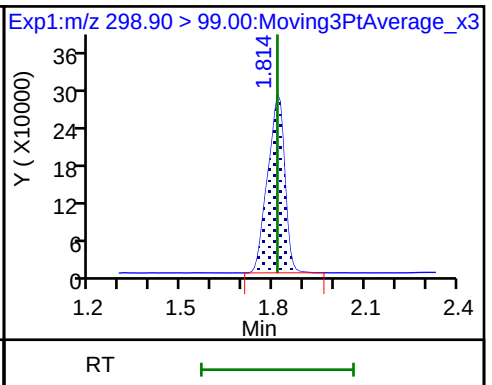
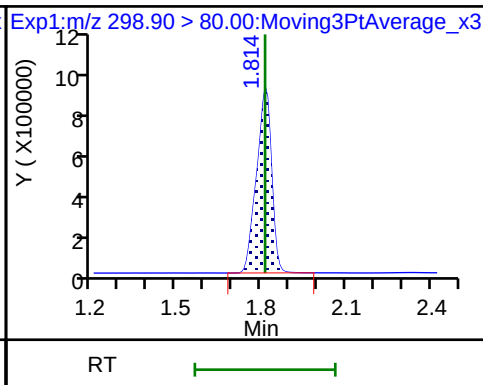
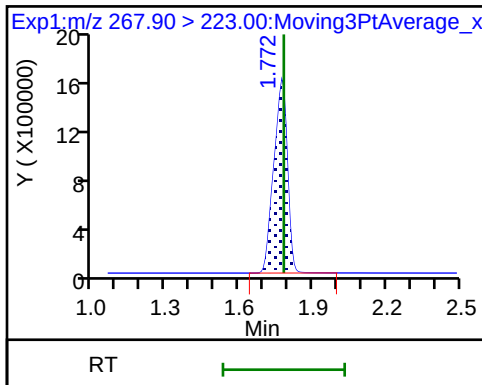
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

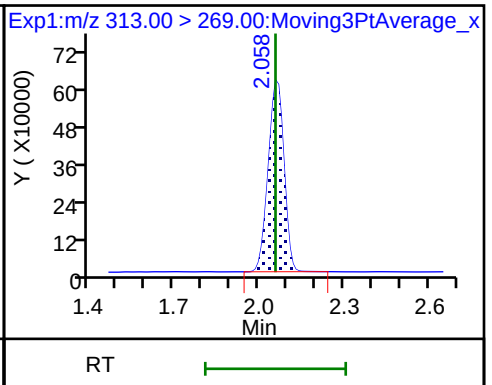
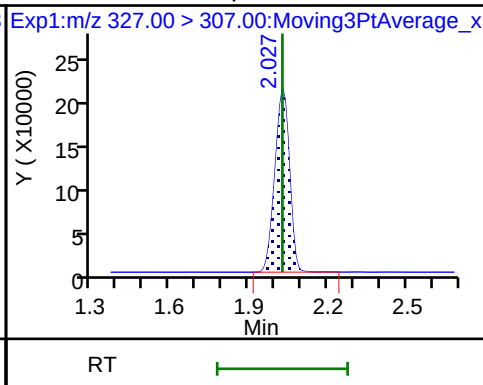
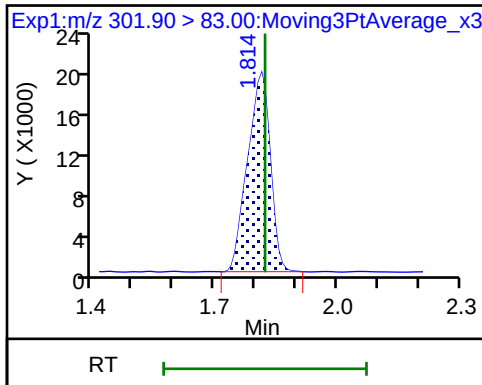
5 Perfluorobutanesulfonic acid



D 47 13C3-PFBS

61 1H,1H,2H,2H-perfluorohexanesulfoni

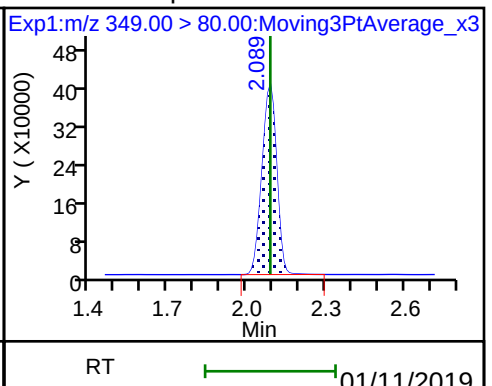
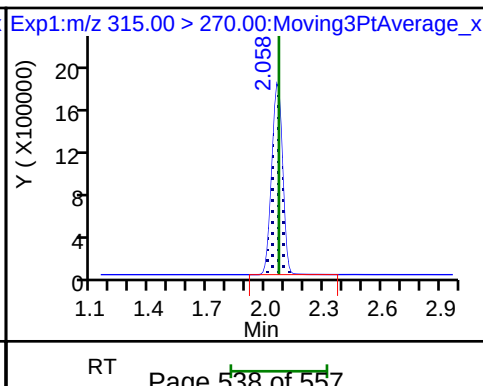
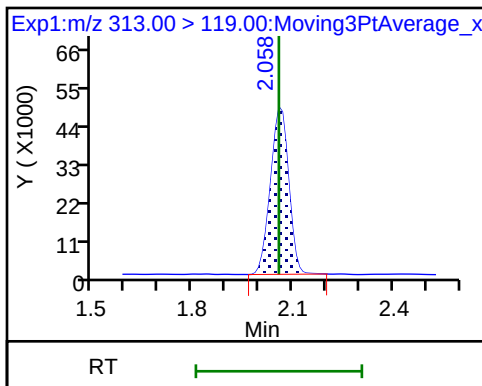
6 Perfluorohexanoic acid



6 Perfluorohexanoic acid

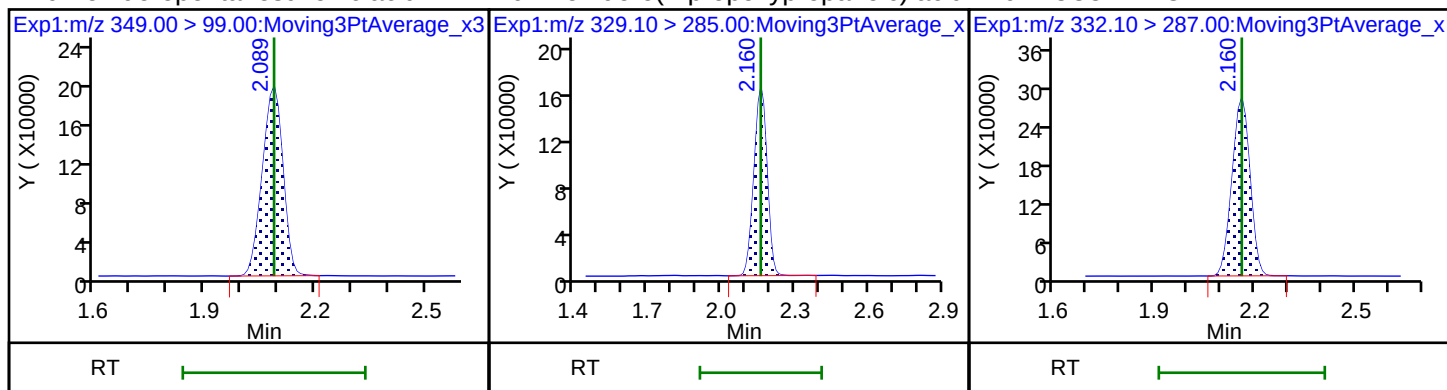
D 7 13C2 PFHxA

70 Perfluoropentanesulfonic acid



70 Perfluoropentanesulfonic acid

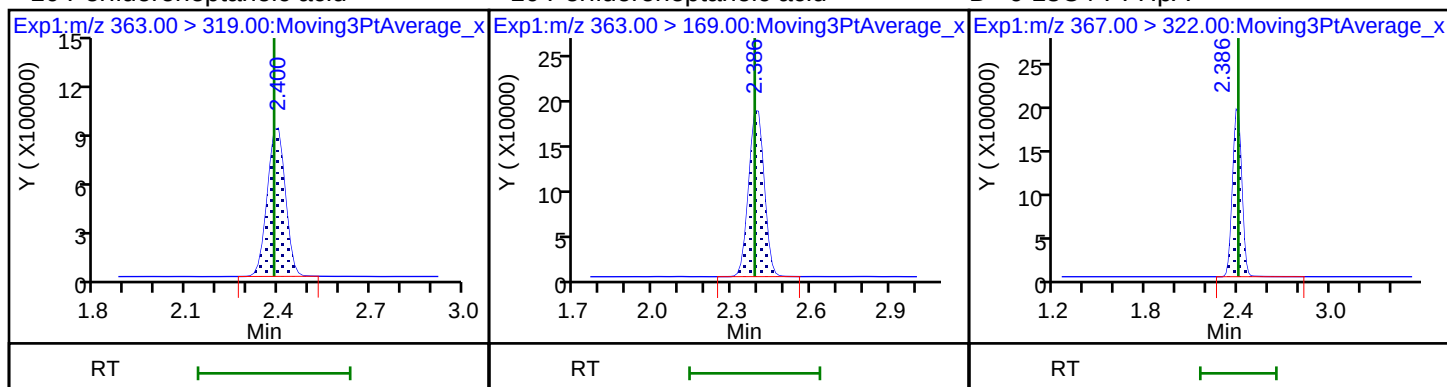
67 Perfluoro(2-propoxypropanoic) acid D 64 13C3 HFPO-DA



10 Perfluoroheptanoic acid

10 Perfluoroheptanoic acid

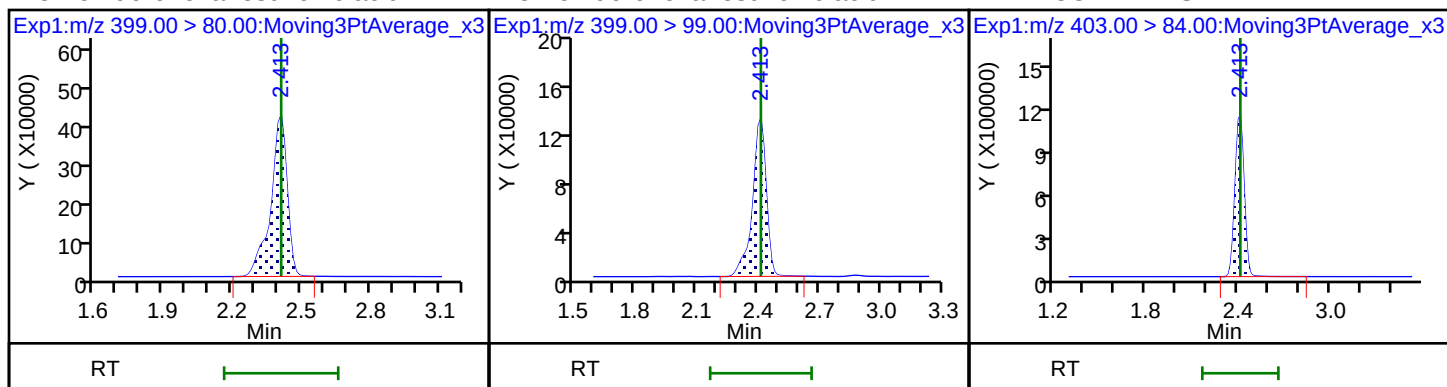
D 9 13C4-PFHpA



8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid

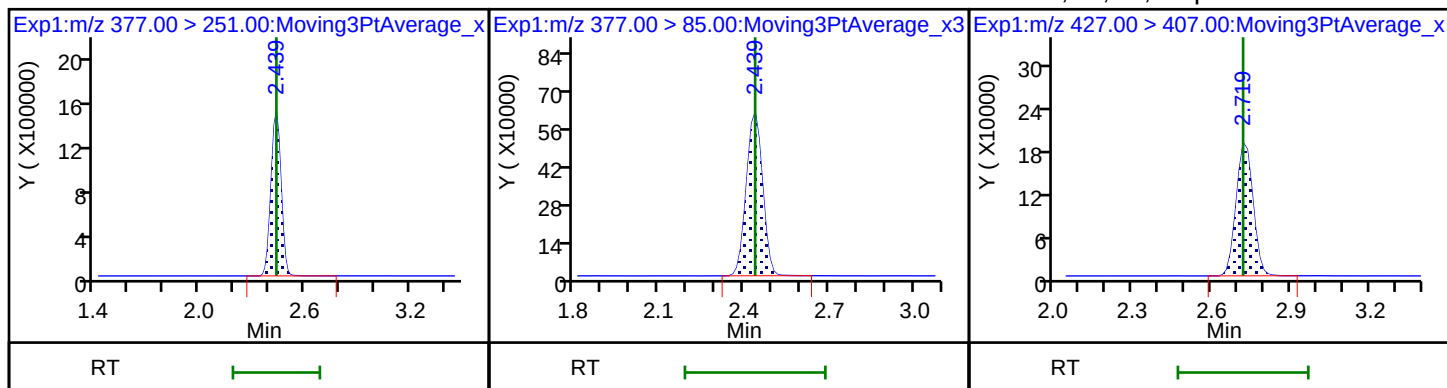
D 11 18O2 PFHxS



76 DONA

76 DONA

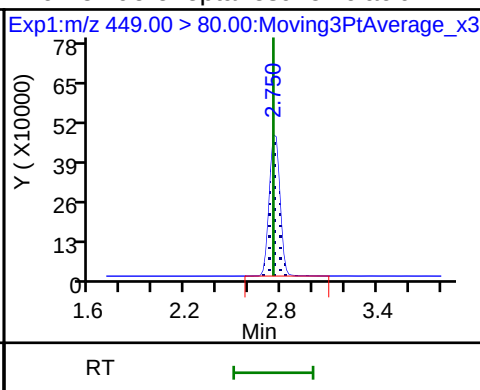
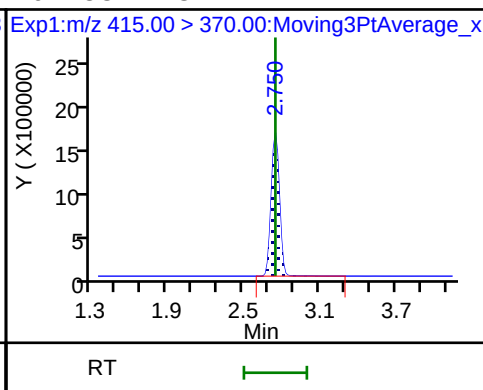
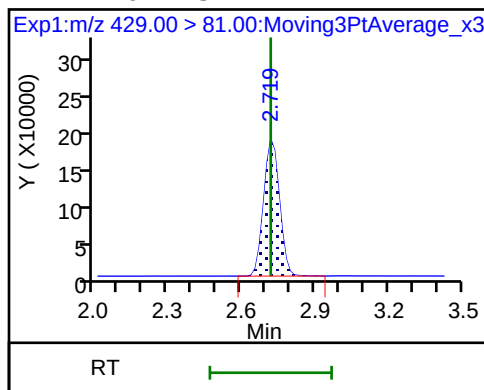
13 1H,1H,2H,2H-perfluorooctanesulfoni



D 12 M2-6:2FTS

* 62 13C2-PFOA

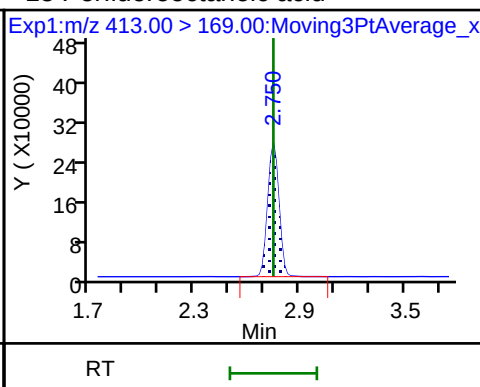
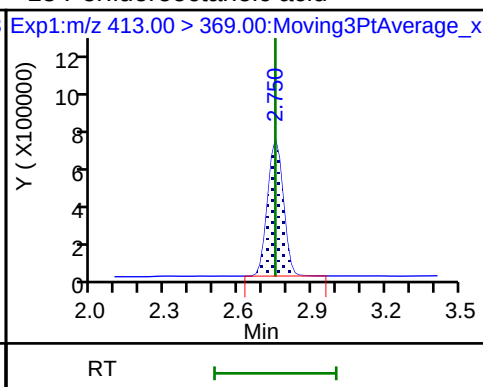
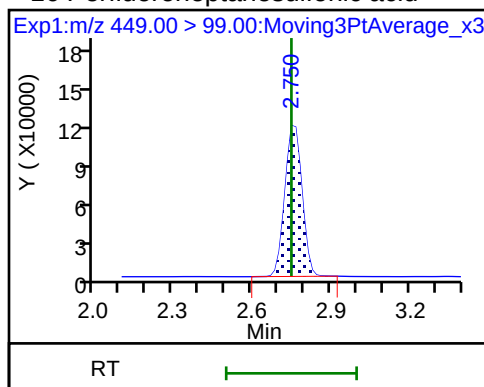
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

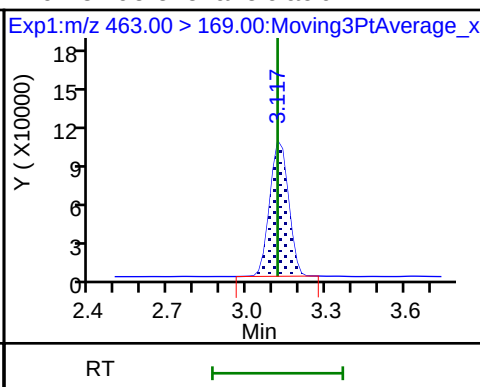
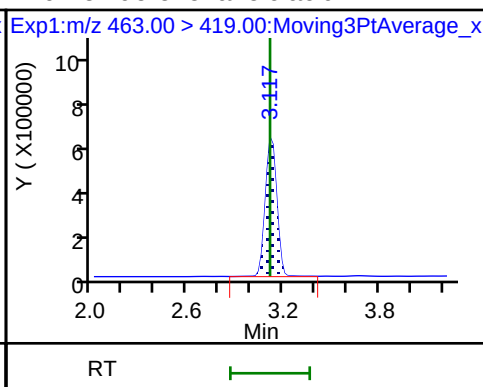
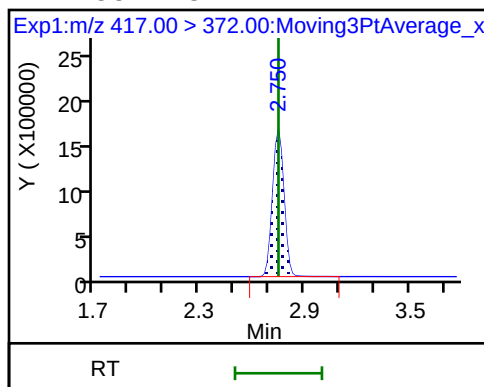
15 Perfluorooctanoic acid



D 14 13C4 PFOA

20 Perfluorononanoic acid

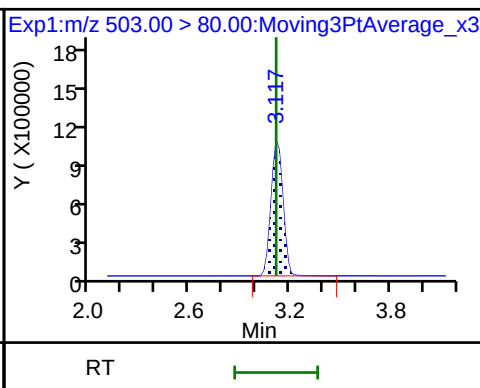
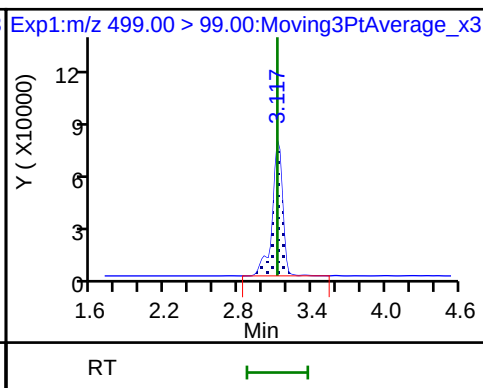
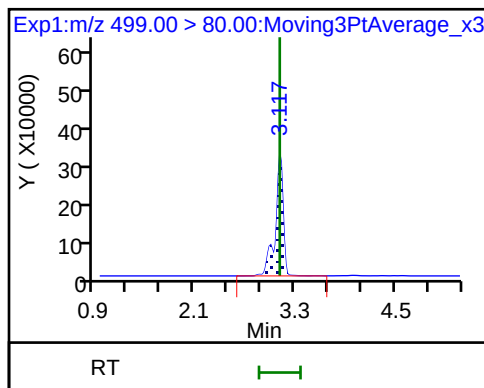
20 Perfluorononanoic acid



17 Perfluorooctane sulfonic acid

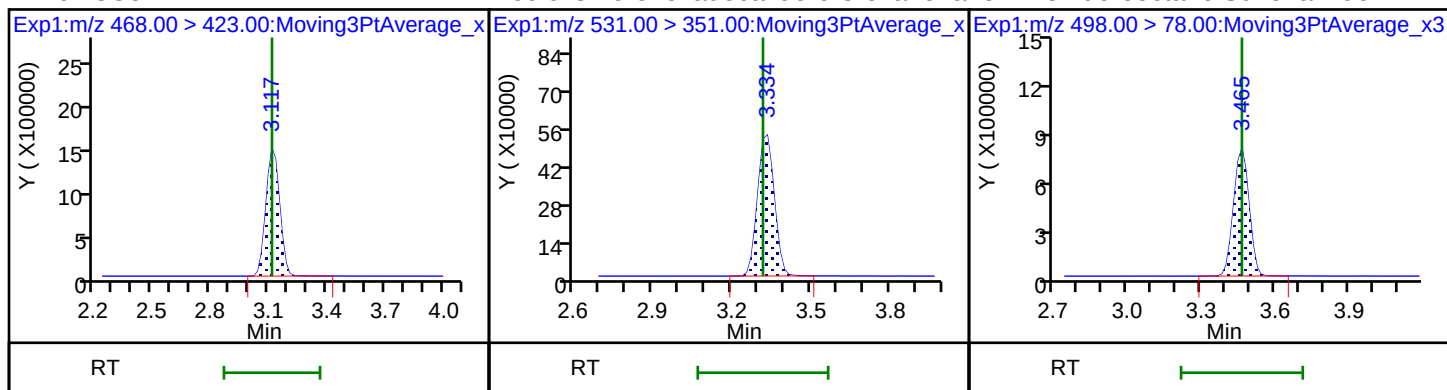
17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS



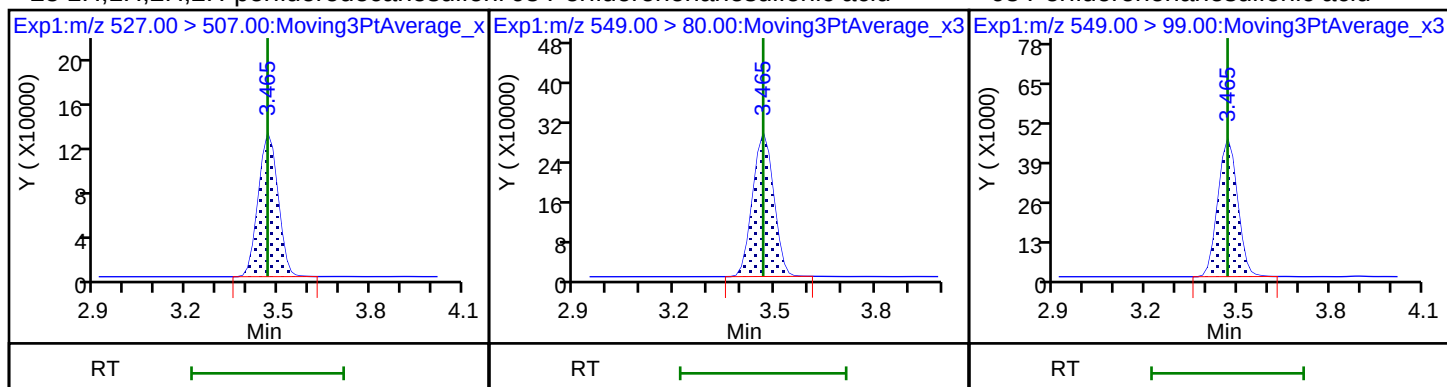
D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonan-22 Perfluorooctane Sulfonamide



25 1H,1H,2H,2H-perfluorodecanesulfoni 68 Perfluorononanesulfonic acid

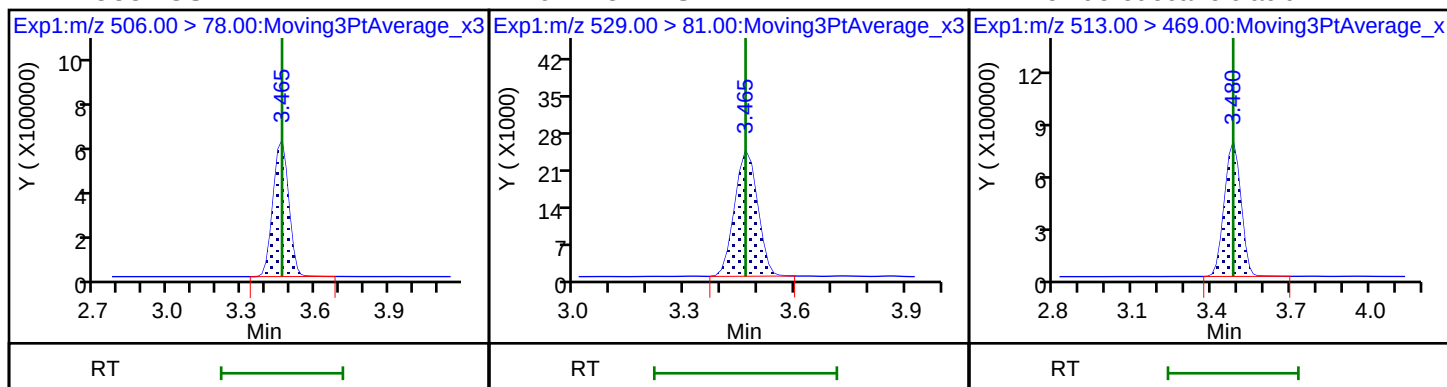
68 Perfluorononanesulfonic acid



D 21 13C8 FOSA

D 26 M2-8:2FTS

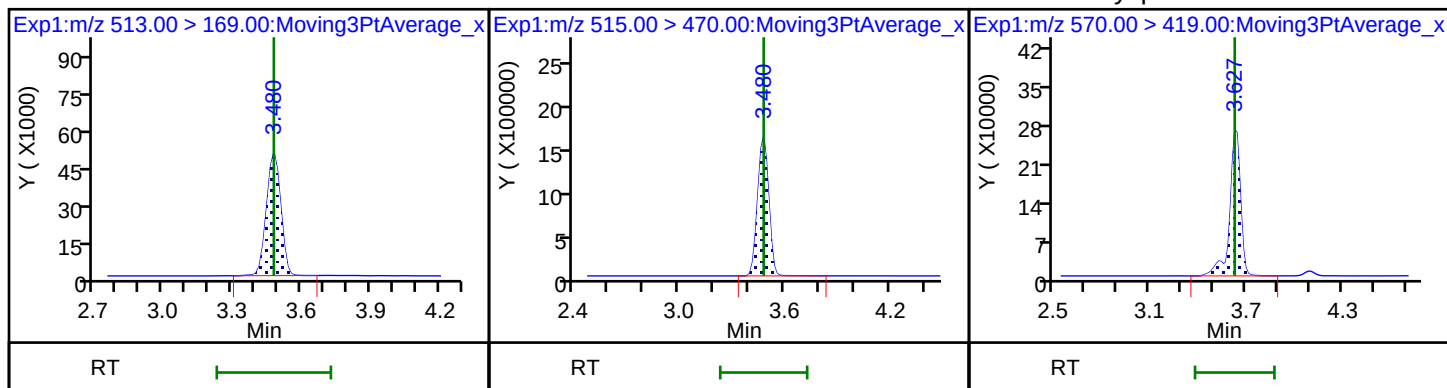
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 23 13C2 PFDA

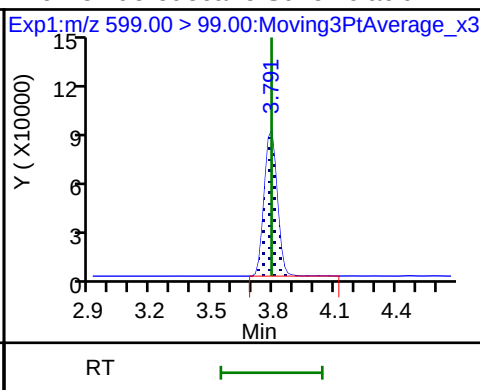
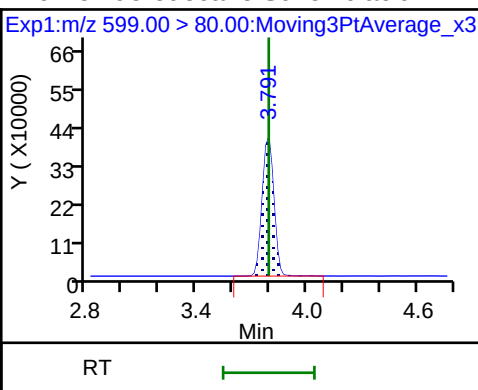
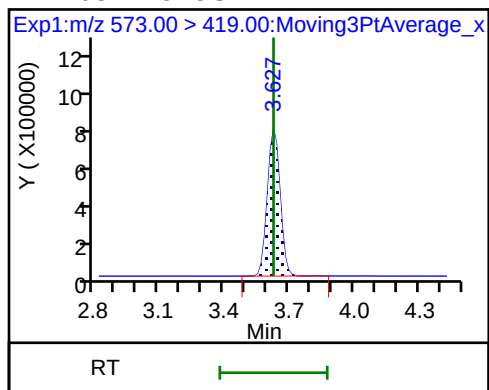
28 N-methyl perfluorooctane sulfonami



D 27 d3-NMeFOSAA

29 Perfluorodecane Sulfonic acid

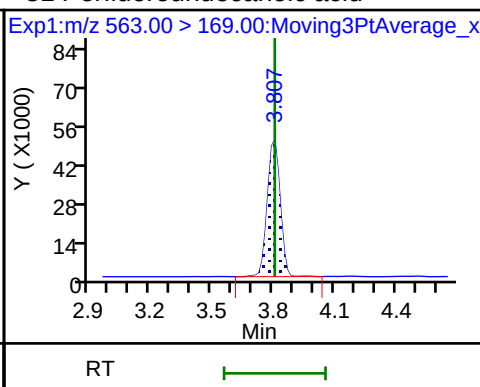
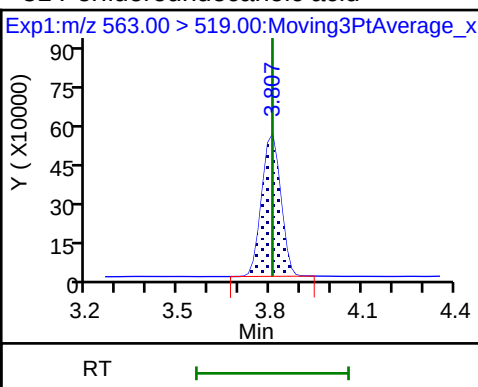
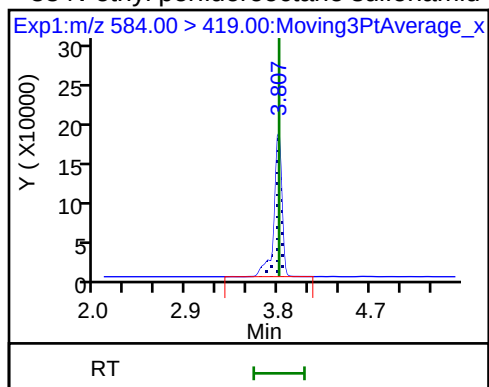
29 Perfluorodecane Sulfonic acid



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

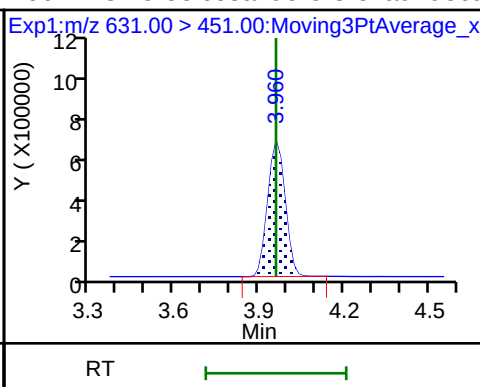
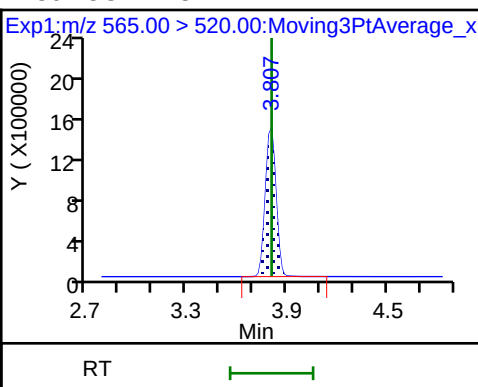
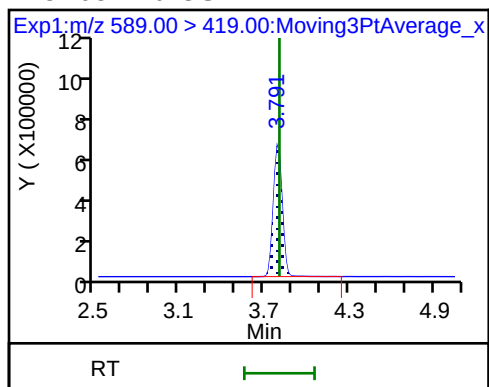
31 Perfluoroundecanoic acid



D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

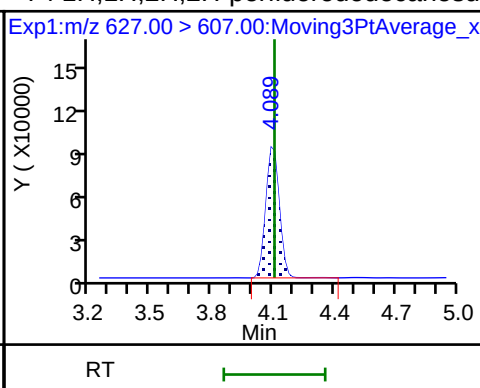
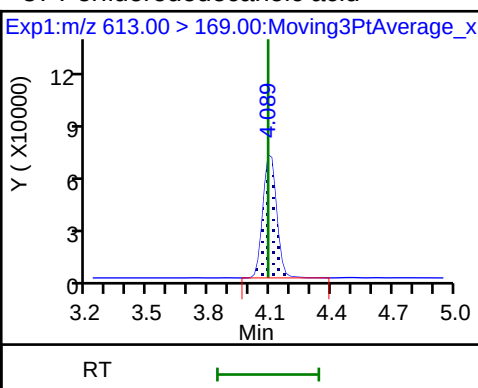
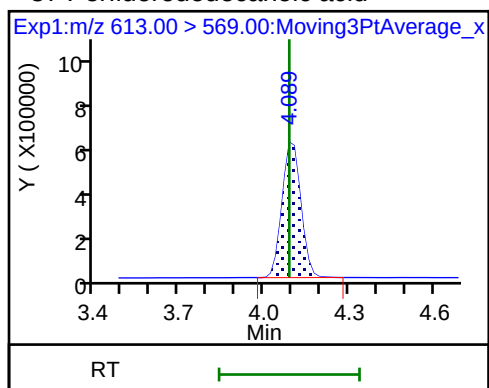
66 11-Chloroeicosafluoro-3-oxaundecan



37 Perfluorododecanoic acid

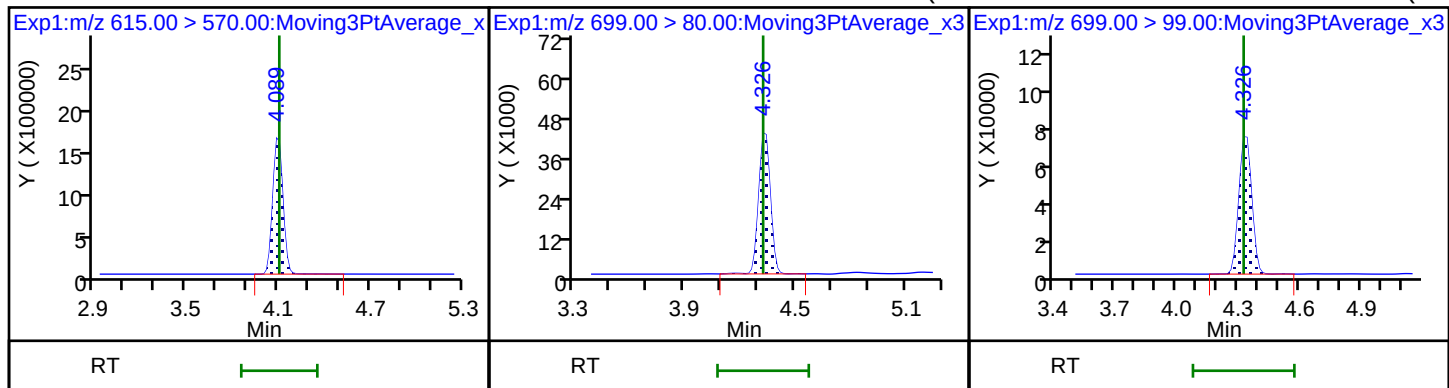
37 Perfluorododecanoic acid

74 1H,1H,2H,2H-perfluorododecanesulfo



D 36 13C2 PFDaA

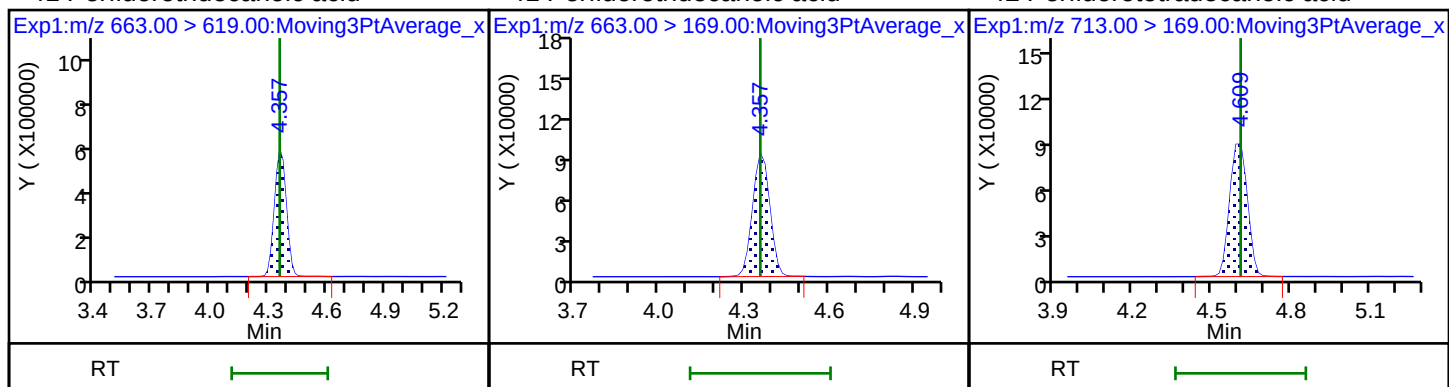
75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

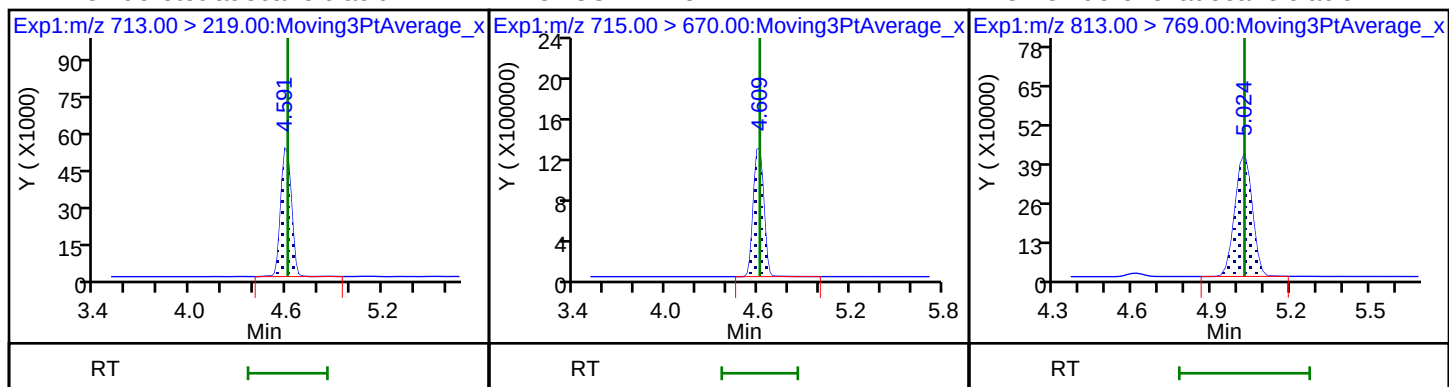
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

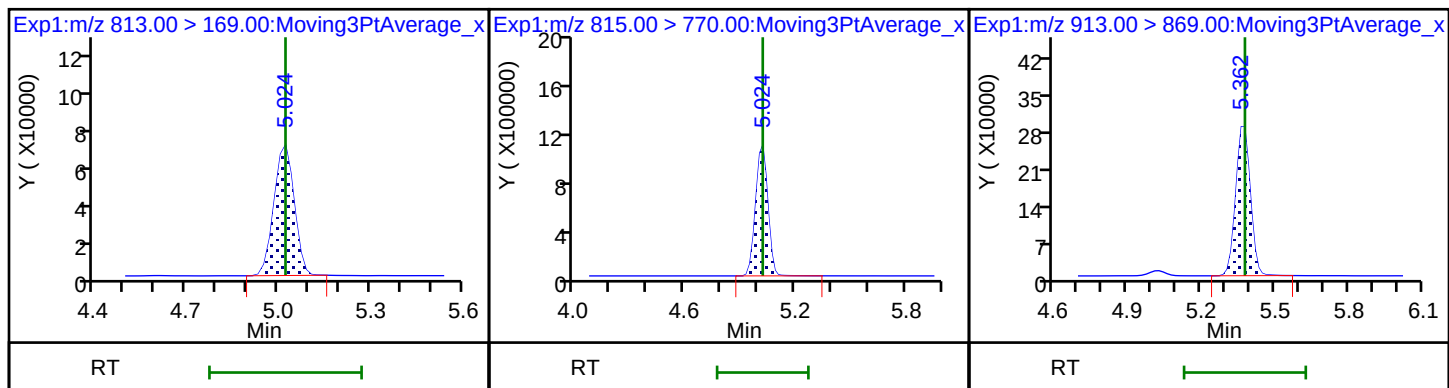
45 Perfluorohexadecanoic acid



45 Perfluorohexadecanoic acid

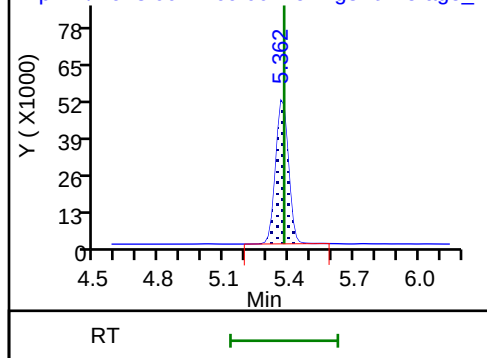
D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 169.00:Moving3PtAverage_x



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Instrument ID: A9 Start Date: 09/21/2018 13:35Analysis Batch Number: 247100 End Date: 09/21/2018 16:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-247100/2		09/21/2018 13:35	1	2018.09.21LLAIC AL 005.d	Acquity 2.1 (mm)
IC 320-247100/4		09/21/2018 13:51	1	2018.09.21LLAIC AL 007.d	Acquity 2.1 (mm)
IC 320-247100/5 ICIS		09/21/2018 13:58	1	2018.09.21LLAIC AL 008.d	Acquity 2.1 (mm)
IC 320-247100/6		09/21/2018 14:06	1	2018.09.21LLAIC AL 009.d	Acquity 2.1 (mm)
IC 320-247100/7		09/21/2018 14:13	1	2018.09.21LLAIC AL 010.d	Acquity 2.1 (mm)
IC 320-247100/8		09/21/2018 14:21	1	2018.09.21LLAIC AL 011.d	Acquity 2.1 (mm)
IC 320-247100/11		09/21/2018 15:36	1	2018.09.21LLBIC AL 006.d	Acquity 2.1 (mm)
ICB 320-247100/12		09/21/2018 16:41	1	2018.09.21LLBIC AL 012.d	Acquity 2.1 (mm)
ICV 320-247100/13		09/21/2018 16:49	1	2018.09.21LLBIC AL 013.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Instrument ID: A9 Start Date: 09/29/2018 11:03Analysis Batch Number: 248608 End Date: 09/29/2018 12:18

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-248608/1		09/29/2018 11:03	1	2018.09.29LLAA_ 004.d	Acquity 2.1 (mm)
CCVL 320-248608/2		09/29/2018 11:10	1	2018.09.29LLAA_ 005.d	Acquity 2.1 (mm)
CCV 320-248608/3 CCVIS		09/29/2018 11:18	1	2018.09.29LLAA_ 006.d	Acquity 2.1 (mm)
ZZZZZ		09/29/2018 11:25	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 11:33	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 11:40	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 11:48	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 11:55	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 12:03	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 12:10	1		Acquity 2.1 (mm)
CCV 320-248608/11		09/29/2018 12:18	1		Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica SacramentoJob No.: 480-142274-1

SDG No.: _____

Instrument ID: A9Start Date: 09/29/2018 12:25Analysis Batch Number: 248611End Date: 09/29/2018 15:40

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-248611/1		09/29/2018 12:25	1	2018.09.29LLAA_ 015.d	Acquity 2.1 (mm)
MB 320-248335/1-A		09/29/2018 12:33	1	2018.09.29LLAA_ 016.d	Acquity 2.1 (mm)
ZZZZZ		09/29/2018 12:40	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 12:48	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 12:55	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 13:03	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 13:10	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 13:18	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 13:25	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 13:33	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 13:40	1		Acquity 2.1 (mm)
CCV 320-248611/12		09/29/2018 13:48	1	2018.09.29LLAA_ 026.d	Acquity 2.1 (mm)
ZZZZZ		09/29/2018 13:55	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 14:03	1		Acquity 2.1 (mm)
480-142274-2		09/29/2018 14:10	1	2018.09.29LLAA_ 029.d	Acquity 2.1 (mm)
480-142274-3		09/29/2018 14:18	1	2018.09.29LLAA_ 030.d	Acquity 2.1 (mm)
480-142274-4		09/29/2018 14:25	1	2018.09.29LLAA_ 031.d	Acquity 2.1 (mm)
ZZZZZ		09/29/2018 14:33	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 14:40	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 14:48	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 14:55	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 15:03	1		Acquity 2.1 (mm)
CCV 320-248611/23		09/29/2018 15:10	1	2018.09.29LLAA_ 037.d	Acquity 2.1 (mm)
ZZZZZ		09/29/2018 15:18	1		Acquity 2.1 (mm)
ZZZZZ		09/29/2018 15:25	1		Acquity 2.1 (mm)
480-142274-1		09/29/2018 15:33	1	2018.09.29LLAA_ 040.d	Acquity 2.1 (mm)
CCV 320-248611/27		09/29/2018 15:40	1	2018.09.29LLAA_ 041.d	Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Instrument ID: A9 Start Date: 10/08/2018 15:34Analysis Batch Number: 250597 End Date: 10/08/2018 16:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-250597/2		10/08/2018 15:34	1	2018.10.08LLICA L 002.d	Acquity 2.1 (mm)
IC 320-250597/3		10/08/2018 15:41	1	2018.10.08LLICA L 003.d	Acquity 2.1 (mm)
IC 320-250597/4		10/08/2018 15:49	1	2018.10.08LLICA L 004.d	Acquity 2.1 (mm)
IC 320-250597/5 ICIS		10/08/2018 15:56	1	2018.10.08LLICA L 005.d	Acquity 2.1 (mm)
IC 320-250597/6		10/08/2018 16:04	1	2018.10.08LLICA L 006.d	Acquity 2.1 (mm)
IC 320-250597/7		10/08/2018 16:11	1	2018.10.08LLICA L 007.d	Acquity 2.1 (mm)
IC 320-250597/8		10/08/2018 16:19	1	2018.10.08LLICA L 008.d	Acquity 2.1 (mm)
ICB 320-250597/9		10/08/2018 16:26	1	2018.10.08LLICA L 009.d	Acquity 2.1 (mm)
ICV 320-250597/10		10/08/2018 16:34	1	2018.10.08LLICA L 010.d	Acquity 2.1 (mm)
ZZZZZ		10/08/2018 16:49	1		Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Instrument ID: A9 Start Date: 10/09/2018 04:57Analysis Batch Number: 250706 End Date: 10/09/2018 06:12

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-250706/1		10/09/2018 04:57	1	2018.10.08LLE_0 02.d	Acquity 2.1 (mm)
CCVL 320-250706/2		10/09/2018 05:05	1	2018.10.08LLE_0 03.d	Acquity 2.1 (mm)
CCV 320-250706/3 CCVIS		10/09/2018 05:12	1	2018.10.08LLE_0 04.d	Acquity 2.1 (mm)
ZZZZZ		10/09/2018 05:20	1		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 05:27	10		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 05:35	10		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 05:42	10		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 05:50	10		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 05:57	10		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 06:05	10		Acquity 2.1 (mm)
CCV 320-250706/11		10/09/2018 06:12	1		Acquity 2.1 (mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Instrument ID: A9 Start Date: 10/09/2018 06:20Analysis Batch Number: 250745 End Date: 10/09/2018 07:12

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-250745/1		10/09/2018 06:20	1	2018.10.08LLE_0 13.d	Acquity 2.1 (mm)
LCS 320-248335/2-A		10/09/2018 06:27	1	2018.10.08LLE_0 14.d	Acquity 2.1 (mm)
LCSD 320-248335/3-A		10/09/2018 06:35	1	2018.10.08LLE_0 15.d	Acquity 2.1 (mm)
ZZZZZ		10/09/2018 06:42	50		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 06:50	20		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 06:57	10		Acquity 2.1 (mm)
ZZZZZ		10/09/2018 07:05	1		Acquity 2.1 (mm)
CCV 320-250745/8		10/09/2018 07:12	1	2018.10.08LLE_0 20.d	Acquity 2.1 (mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-142274-1

SDG No.: _____

Batch Number: 248335 Batch Start Date: 09/28/18 07:48 Batch Analyst: Kouchari, ShamiranBatch Method: 3535 Batch End Date: 09/28/18 15:30

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC ALL_SU 00108	LCPFC-IS 00091
MB 320-248335/1		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCS 320-248335/2		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCSD 320-248335/3		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
480-142274-D-2	MW-11S	3535, 537 (modified)	T	282.33 g	29.02 g	253.3 mL	10.00 mL	500 uL	500 uL
480-142274-D-3	MW-11S DUP	3535, 537 (modified)	T	287.10 g	28.45 g	258.7 mL	10.00 mL	500 uL	500 uL
480-142274-C-4	EB	3535, 537 (modified)	T	280.11 g	29.36 g	250.8 mL	10.00 mL	500 uL	500 uL
480-142274-D-1	MW-7S	3535, 537 (modified)	T	290.18 g	28.68 g	261.5 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00188					
MB 320-248335/1		3535, 537 (modified)							
LCS 320-248335/2		3535, 537 (modified)		500 uL					
LCSD 320-248335/3		3535, 537 (modified)		500 uL					
480-142274-D-2	MW-11S	3535, 537 (modified)	T						
480-142274-D-3	MW-11S DUP	3535, 537 (modified)	T						
480-142274-C-4	EB	3535, 537 (modified)	T						
480-142274-D-1	MW-7S	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.: 480-142274-1

SDG No.: _____

Batch Number: 248335 Batch Start Date: 09/28/18 07:48 Batch Analyst: Kouchari, ShamiranBatch Method: 3535 Batch End Date: 09/28/18 15:30

Batch Notes	
Balance ID	QA-070
Batch Comment	Client labels match TA labels, SKD 09/28/18
H2O ID	09/26/18
Hexane ID	1353799
Manifold ID	A, I, N
Methanol ID	1378803
Sodium Hydroxide ID	1370360
Analyst ID - Reagent Drop	SKD
Analyst ID - IS Reagent Drop	SKD
Analyst ID - IS Reagent Drop Witness	TWL
Solvent Lot #	1369994
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



CHAIN OF CUSTODY

Client: New York State Dept. of
Environmental Conservation

FED-EX Tracking #

Lab Quote #

Lab Log

Lab Order Control #



480-142274 COF

REQUESTED ANALYSIS (see Test Code sheet)

BILLING INFORMATION

PROJECT INFORMATION

CLIENT/REPORTING INFORMATION

Groundwater & Environmental Services, Inc.
415 Lawrence Bell Drive, Williamsville, NY 14221
Project Manager: Eric D. Popken
Phone #: 800-287-7857
PM Email: NERegion@gesonline.com
866-902-2187 fax

Project Name: NYSDEC/Gainesville/NY/BroughtonRd
Project Address: Broughton Road, Gainesville, NY
Project PSID #: 737282

NYSDEC DER
NYSDEC Project Manager: Heidi Dudek
Phone #: 518-402-9813
Invoice Instructions
NYSDEC Site No: 961005
Lab Project Manager: Orlette Johnson

Sampler(s) Name:

Sampler(s) Name:

number of preserved bottles

Lab Sample #	Field ID / Point of Collection (Sys Loc code)	Depth Interval (ft)	Date Sampled	Time Sampled	Sampler	Matrix	Total # Bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	Amber	1,4-Dioxane via 8270D SIM	MS/MSD	VOCs
	MW-2R	NA	9/24/18	1625	BD	WG	12	3	1	1		7					X		
	MW-7S	NA	9/26/18	1505	BD	WG	12	3	1	1		7					X		
	MW-11S	NA	9/26/18	1535	BD	WG	12	3	1	1		7					X		
	MW-11S DUP	NA	9/26/18	1610	BD	WG	12	3	1	1		7					X		
	EB4	NA			NA	WG													X
	Trip Blank	NA			NA	WG													

Turnaround Time (Business Days) Approved By (Lab PM) / Date

☒ Standard 10 Business

☐ 1 day RUSH

☐ Other

Laboratory Information

Lab: TestAmerica Buffalo
Address: 10 Hazelwood Dr, Amherst, NY 14228
Phone: 484-685-0864
Lab PM: Orlette Johnson
Lab PM Email: orlette.johnson@testamericainc.com

Data Deliverable Information

- ☐ Commercial 'A' (Level 1) = Results Only
- ☐ Commercial 'B' (Level 2) = Results + QC Summary
- ☐ FULL T1 (Level 3 & 4)
- ☐ NI Reduced = Results + QC Summary + Partial Raw Data
- ☐ Commercial 'C'
- ☐ NI Data of Known Quality Protocol Reporting
- ☐ NYASP Category A
- ☐ NYASP Category B
- ☒ State Forms
- ☒ GES EQEDD EQUIS EDD
- ☒ NYDEC EDD

Please Email the EQ EDD Package to ges@equisonline.com

EQEDD Name: NYSDEC/Gainesville/NY/BroughtonRd_LabReport#.30435.EQEDD.zip

Relinquished By	Date / Time	Received By	Date / Time
1. <i>Brian Dunn</i>	9/24/18 10:00	1. <i>Brian Dunn</i>	9/24/18 10:00
2. <i>Gary L. Hayes</i>	9/21/18 21:00	2. <i>Walter J. King</i>	9/21/18 21:00
3. <i>Gary L. Hayes</i>		3. <i>Walter J. King</i>	

Sample Custody must be documented below each time samples change possession, including courier.

Custody Seal Number: ☐ Intact ☐ Not Intact ☐ Preserved where applicable ☐ On Ice ☐ Cooler Temp

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-142274-1

Login Number: 142274
List Number: 1
Creator: Kinecki, Kenneth P

List Source: TestAmerica Buffalo

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	GES
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: New York State D.E.C.

Job Number: 480-142274-1

Login Number: 142274
List Number: 2
Creator: Aguayo, Alonso

List Source: TestAmerica Sacramento
List Creation: 09/27/18 01:45 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	646175,646176
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	0.7C 1.0C
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?	False	Received project as a subcontract.
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	

Appendix B – DUSR

Quality Assessment Data Usability Summary Report

RemVer Project #2018GE10 Client Project # 0901753-02-840			
Site:	ETE Sanitation and Landfill Gainesville, NY		Site #: 961005
Client:	NYSDEC via GES, Inc.		Site Owner: -N/A-
Sample Delivery Groups (SDGs)	See Table 1		
Sample Matrix:	☐ Drinking water ☒ Groundwater ☐ Surface water ☐ Soil ☐ Sediment ☐ Air ☐ Biota (tissue, type: _____) ☐ Other: _____		

Introduction

Groundwater & Environmental Services (GES) contracted RemVer to perform a data quality assessment (DQA) on the analytical data for groundwater samples. reported in multiple Sample Delivery Groups (SDGs) from Test America. Table 1 (attached) lists four (4) SDGs. Table 2 provides a cross-list of the samples associated with each SDG; some samples occur in two different SDGs to ensure application of selected analytical methods to the sample set.

RemVer prepared a separate DQA sub-report for each SDG, evaluating the performance of the analytical procedures and the quality of the resulting data. RemVer followed the requirements of the New York State Department of Environmental Conservation (NYSDEC) Data Usability Summary Report (DUSR) guidelines for an Analytical Services Protocol (ASP) Category B Data Deliverable. Each sub-report includes a narrative discussion of sample results qualified during the DQA/DUSR.

Reported Methods

☐ Method 1311 TCLP ☐ Method 1312 SPLP ☒ Method 6010A, B & C / 6020 Trace Metals ☐ Method 7000 Metals ☐ Method 7196 Hexavalent Chromium (other: _____) ☒ Method 7470A or 7471 Mercury ☐ Method 8021 Volatile Organic Compounds (VOCs) GC ☐ Method 8081B or ☒ 608 Pesticides ☐ Method 8082 or ☒ 608 PCBs ☐ Method 8151 Chlorinated Herbicides ☒ Method 8260C VOCs GC/MS ☒ Method 8270D Semi-VOCs (sVOCs) GC/MS or SIM ☒ Method 9010/9012/9014 Cyanides (_____)	☐ Method TO-13A PAHs (air) ☐ Method TO-14A / -15 VOCs (air, summa) (_____) ☐ Method TO-17 VOCs (air, sorbent) ☒ Method 537 PFCs via SPE & LC/MS-MS ☐ Volatile Petroleum Hydrocarbons (VPH) Method ☐ Extractable Petroleum Hydrocarbons (EPH) ☒ Other Methods: ☒ Method 3535 Solid-Phase Extraction (SPE) ☒ Method 3510C Liquid-Liquid Extraction ☒ Method 5030C Purge & Trap ☒ Method 3005A Total Metals Prep.

Intended Use of Data Under Review

NYSDEC contracted GES to perform a 2018 site-wide comprehensive groundwater monitoring event at the referenced site. The monitoring event (17–27 September) was to update the existing groundwater dataset with current synoptic conditions. Sampling was to provide analyses of groundwater conditions for the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) including 1,4 Dioxane, Cyanide, and metals/metalloids. Additionally, groundwater samples from pre-selected locations were analyzed for the presence of emerging contaminants including perfluoroalkyl and polyfluoroalkyl substances/compounds (PFAS or PFCs).

Significant Data Usability Issues

The laboratory (Test America) reported the data in four separate laboratory reports, under distinct Sample Delivery Group (SDG) numbers. RemVer prepared one DUSR per SDG. RemVer rejected no results; therefore, all results are acceptable for use, although the results of some analytes are flagged due to sample handling, or laboratory accuracy or precision issues. Please refer to the Lab Results and Data Usability Narrative section in each DUSR sub-report for further detail.

- DQA/DUSR Sub-report for SDG #320-43696 reviewed the analytical results of one sample.
- DQA/DUSR Sub-report for SDG #480-142273 reviewed the analytical results of twelve (12) samples (including spikes, duplicate, and blanks [equipment and trip]).
- DQA/DUSR Sub-report for SDG #480-142274 reviewed the analytical results of four (4) samples spikes, duplicate, and blank [equipment]).
- DQA/DUSR Sub-report for SDG #480-142503 reviewed the analytical results of two samples.

References

- NYSDEC, 2010, *Technical Guidance for Site Investigation and Remediation*, "DER-10," Division of Environmental Remediation: Albany, NY, May, 232p
- NYSDEC, 2010, *Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, Appendix 2B IN *Technical Guidance for Site Investigation and Remediation*, Division of Environmental Remediation: Albany, NY, May, 232p
- USEPA, 2008, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER 9240.1-48, USEPA-540-R-08-01, Office of Superfund Remediation and Technology Innovation: Washington, DC, June, 225p
- USEPA, 2010, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, OSWER 9240.1-51, USEPA-540-R-10-011, Office of Superfund Remediation and Technology Innovation: Washington, DC, January, 110p
- USEPA, 2012, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Current Online Revision: <http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>, accessed April 2012

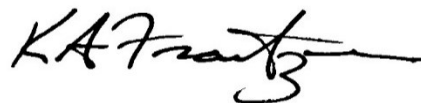
Attachments

Biography
Qualifier Flags

Tables

1. Sample Data Group List
2. Sample and SDG Cross-List

Prepared by: Kurt A. Frantzen, PhD
February 12, 2019



GES PO#747941-1109

Attachment

Biography

Data Usability Reviewer: Kurt A. Frantzen, PhD

Experience

2014-Present	AECC	Senior EHS Consultant
2013-Present	d/b/a RemVer	Owner
2011-2012	RemVer, Inc.	President
2006-2011	Kleinfelder	Senior Principal Scientist
2005	Kleinfelder	Principal Scientist, Part-Time/On Call
2004-2006	d/b/a Environmental Risk Group	Owner
2004-2006	RemVer, Inc., Larchmont, NY	Founder, President
1999-2004	VHB, Inc.	ERM Director & Associate
1997-1998	GEI Consultants, Inc.	Senior Project Manager
1992-1997	Ecology and Environment, Inc.	Technical Chief
1991-1992	EA Engineering, Science, & Technology, Inc.	Project Manager III
1990-1991	Ecology and Environment, Inc.	Technical Group Manager
1986-1990	Ecology and Environment, Inc.	Senior Environmental Scientist

Education

Am Cancer Soc. Post-Doctoral Fellow, U Washington 1985-1986
PhD—Life Sci. / Biochem, NU—Lincoln 1985
MS—Plant Pathology, Kansas State Univ. 1980
BS—Biology, NU—Omaha 1978

Registrations

Certified Hazardous Materials Manager, since 2007-2018, #14143

Professional Affiliations

Society Risk Analysis ('09 & '11 Chair, Eco-Risk Assessment)	Am. Chemistry Society
Am. Assoc. Advance Science	NY Academy of Science
LSP Association	Am. Institute of Biological Sciences

Other

- CERCLA & RCRA experience, as well as DOD (Air Force & Army) & DOE (INEL)
- NE Regional Experience—NY BCP; Mass MCP; & various sites in CT, RI & NH
- National Experience: NE, SE, Gulf & West Coast, Mid-west, Inter-mountain, California, Alaska
- International: Germany, Israel, Kuwait, Australia
- Selected Publications
 - *Using Risk Appraisals to Manage Environmentally Impaired Properties*, 2000, VHB Site Works, Report 108
 - *Risk-Based Analysis for Environmental Managers*, 2001, CRC/Lewis
 - Chapter 7 Risk Assessment, *Managing Hazardous Materials*, 2002 & 2009, IHMM
 - Chapter 22 Cleanup Goals, *Brownfields Law & Practice*, 2004-Present, Lexis/Nexis
 - *Use of Risk Assessment in Risk Management of Contaminated Sites*, 2008, ITRC
- 61 Conference Papers & Invited Professional Presentations
 - 1999-2018, Visiting Lecturer, Brownfields Program, Harvard Graduate School of Design
 - 2010-2013, Invited Lecturer, Pace University Law School

Attachment Qualifier Flags

Qualifier	Quality Implication
U	Analyte analyzed for, but not detected above the sample's reported quantitation limit
J	Analyte positively identified at a numerical value that is the approximate concentration of the analyte in the sample
J +	Sample likely to have a high bias
J –	Sample likely to have a low bias
UJ	Analyte not detected above the sample quantitation limit; the associated quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
R	Sample result rejected due to serious deficiency in ability to analyze sample and meet quality control criteria; the presence or absence of the analyte cannot be confirmed. This qualifier also may apply when more than one sample result is generated for a target analyte (<i>i.e.</i> , dilutions or re-analyses), the most technically acceptable result is considered acceptable.
B EB TB BB	An analyte identified in method blank (B), aqueous equipment (EB), trip (TB), or bottle blanks (BB) used to assess field contamination associated with soil or sediment samples mandates these qualifiers for only soil and sediment sample results.
P	Use professional judgment based on data use. It usually has an "M" with it, which indicates that a manual check should be made if the data that are qualified with the "P" are important to the data user. In addition, "PM" also means a decision is necessary from the Project Manager (or a delegate) concerning the need for further review of the data (<i>see below</i>).
PM	A manual review of the raw data is recommended to determine if the defect affects data use, as in "R" above. This review should include consideration of potential affects that could result from using the "P" qualified data. For example, in the case of holding-time exceedance, the Project Manager or delegate can decide to use the data with no qualification when analytes of interest are known not to be adversely affected by holding-time exceedances. Another example is the case where soil sample duplicate analyses for metals exceed the precision criteria; because this is likely due to sample non-homogeneity rather than contract laboratory error, then the manager or delegate must decide how to use the data.

Table 1**Sample Data Group List**

ETE Sanitation and Landfill NYSDEC Site #961005

Gainesville, New York

RemVer

Count	SDG	Report Date	# of Samples	Receipt by Lab	# of Coolers	Temps (°C)		
1	320-43696	10/25/18	1	9/29/18 @ 09:20	1	1.3		
2	480-142273	01/29/19	12	9/21/18 @ 09:20	3	2.2	2.6	3.6
3	480-142274	01/11/19	4	9/21/18 @ 09:20	3	3.0	3.0	4.0
4	480-142503	01/17/19	2	9/27/18 @ 16:55	1	4.3		

Table 2**Sample List and Sample Data Group Cross-List**

ETE Sanitation and Landfill NYSDEC Site #961005

Gainesville, New York

RemVer

Count	Sample ID	QA/QC	Sample Date	Lab-SDG-#	Receipt by Lab	Lab-SDG-#	Receipt by Lab
1	MW-2R		09/27/2018 11:20	320-43696-1	09/29/2018 09:20	480-142503-1	09/27/2018 16:55
2	MW-3S		09/18/2018 17:10	480-142273-1	09/21/2018 21:20		
3	MW-3D		09/18/2018 18:50	480-142273-2	09/21/2018 21:20		
4	MW-6S		09/19/2018 09:50	480-142273-3	09/21/2018 21:20		
5	MW-6D		09/19/2018 13:00	480-142273-4	09/21/2018 21:20		
6	MW-7S		09/18/2018 12:00	480-142273-5	09/21/2018 21:20	480-142274-1	09/21/18 21:20
7	MW-7D		09/18/2018 14:40	480-142273-6	09/21/2018 21:20		
8	MW-9S		09/19/2018 15:50	480-142273-7	09/21/2018 21:20		
9	MW-9D		09/19/2018 18:15	480-142273-8	09/21/2018 21:20		
10	MW-11S		09/20/2018 15:05	480-142273-9	09/21/2018 21:20	480-142274-2	09/21/18 21:20
11	MW-11S DUP	X	09/20/2018 15:35	480-142273-10	09/21/2018 21:20	480-142274-3	09/21/18 21:20
12	EB	X	09/20/2018 16:10	480-142273-11	09/21/2018 21:20	480-142274-4	09/21/18 21:20
13	TB	X	09/19/2018 00:00	480-142273-12	09/21/2018 21:20		
14	MW-7S		09/18/2018 11:25	480-142274-1	09/21/2018 21:20	480-142273-5	09/21/18 21:20
15	MW-11S		09/20/2018 15:05	480-142274-2	09/21/2018 21:20	480-142273-9	09/21/18 21:20
16	MW-11S DUP	X	09/20/2018 15:35	480-142274-3	09/21/2018 21:20	480-142273-10	09/21/18 21:20
17	EB	X	09/20/2018 16:10	480-142274-4	09/21/2018 21:20	480-142273-11	09/21/18 21:20
18	MW-2R		09/27/2018 11:20	480-142503-1	09/27/2018 16:55	320-43696-1	09/29/18 09:20
19	MW-11D		09/27/2018 15:05	480-142503-2	09/27/2018 16:55		

Quality Assessment Data Usability Summary Report

RemVer Project #2018GE10 Client Project # 0901753-02-840			
Site:	ETE Sanitation and Landfill Gainesville, NY		Site #: 961005
Client:	NYSDEC via GES, Inc.		Site Owner: -N/A-
Sample Delivery Groups (SDGs)	320-43696		
Sample Matrix:	☐ Drinking water ☒ Groundwater ☐ Surface water ☐ Soil ☐ Sediment ☐ Air ☐ Biota (tissue, type: _____) ☐ Other: _____		

Introduction

RemVer performed a data quality assessment (DQA) on the analytical data for groundwater samples reported in Sample Delivery Groups (SDGs) #320-43696 from Test America (TA). A DQA is an evaluation of the performance of analytical procedures and quality of the resulting data. RemVer followed the requirements of the New York State Department of Environmental Conservation (NYSDEC) Data Usability Summary Report (DUSR) guidelines for an Analytical Services Protocol (ASP) Category B Data Deliverable. This report includes a narrative discussion of sample results qualified during the DQA. Attached to the main report is a list describing the final reported qualification flags applied to the data by RemVer during this DQA process.

Reported Methods

☐ Method 1311 TCLP ☐ Method 1312 SPLP ☐ Method 6010A, B & C / 6020 Trace Metals ☐ Method 7000 Metals ☐ Method 7196 Hexavalent Chromium (other: _____) ☐ Method 7470A or 7471 Mercury ☐ Method 8021 Volatile Organic Compounds (VOCs) GC ☐ Method 8081B Pesticides ☐ Method 8082 PCBs ☐ Method 8151 Chlorinated Herbicides ☐ Method 8260C VOCs GC/MS ☐ Method 8270D Semi-VOCs (sVOCs) GC/MS or SIM ☐ Method 9010/9012/9014 Cyanides (_____)	☐ Method TO-13A PAHs (air) ☐ Method TO-14A / -15 VOCs (air, summa) (_____) ☐ Method TO-17 VOCs (air, sorbent) ☒ Method 537 PFCs via SPE & LC/MS-MS ☐ Volatile Petroleum Hydrocarbons (VPH) Method ☐ Extractable Petroleum Hydrocarbons (EPH) ☒ Other Methods: ☒ Method 3535 Solid-Phase Extraction (SPE)

Quality Control Requirements Summary

☒ Duplicate ☐ Matrix Spike [MS] / Matrix Spike Duplicate [MSD] ☒ Method Blanks & Trip Blank ☒ Equipment, Method, &/or Rinsate Blank	☒ Other Field QC: Field notes regarding sampling ☐ Special QAPP Requirements: _____ _____

Intended Use of Data under Review

NYSDEC contracted GES to perform a 2018 site-wide comprehensive groundwater monitoring event at the referenced site. The monitoring event (17–27 September) was to update the existing groundwater dataset with current synoptic conditions. Sampling was to provide analyses of groundwater conditions for the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) including 1,4 Dioxane, Cyanide, and metals/metalloids. Additionally, groundwater samples from pre-selected locations were analyzed for the presence of emerging contaminants including perfluoroalkyl and polyfluoroalkyl substances/compounds (PFAS or PFCs).

This DUSR addresses SDG #320-43696, the samples of which came from a collection event on 27 September 2018. Groundwater monitoring evaluation of PFAS from the listed wells was the purpose of this sampling event.

Significant Data Usability Issues In SDG: 320-43696

RemVer reviewed the analytical results for a single sample and rejected no PFAS results. The results are acceptable for use although the results of some analytes are flagged due to sample handling, or laboratory accuracy or precision issues. Please refer to the Lab Results and Data Usability Narrative section for further detail.

The samples associated with this SDG contained no Field Duplicate samples or Blanks (Trip, Field, or Equipment). Regardless, the analytical Method Blanks and Duplicates met their RPD performance criteria. This was a multi-day sampling event covered by multiple SDGs; herein the reader will find a cross-listing of the samples and their association with other SDGs. RemVer did not find this to be a significant quality issue as it can be handled by GES directly (note: *if the Relative Percent Difference [RPD] between the original sample and its associated replicate are less than 20%, then sampling performance precision is within acceptable limits*).

Detailed Quality Review

Field Notes Review

	Y	N	NA	COMMENTS
Sampling notes	☒	☐	☐	No issues noted
Field meteorological data	☐	☐	☒	No review required under QAPP
Associated sampling location and plan included	☐	☒	☐	See RAP/QAPP
Associated drilling logs available, reviewed	☐	☐	☒	No review required under QAPP
Identification of QC samples in notes	☒	☐	☐	Sample IDs
Sampling instrument decontamination records	☐	☐	☒	No review required under QAPP
Sampling instrument calibration logs	☐	☐	☒	No review required under QAPP
Chain of custody included	☒	☐	☐	With analytical report
Notes include communication logs	☐	☒	☐	
Any corrective action (CA) reports	☐	☒	☐	If so, CA documentation of results required.
Any deviation from methods noted? If so, explain	☐	☒	☐	None
Any electronic data deliverables	☐	☒	☐	None
Sampling Report (by Field Team Leader)	☐	☒	☐	

Lab Report Contents (Test America SDG Reports: #320-43696)

☒ SDG Narrative	☒ Spike recoveries
☒ Contract Lab Sample Information Sheets	☒ Duplicate results
☒ Data Package Summary Forms	☒ Confirmation (lab check/QC) samples
☒ Chain-of-Custody (COC) Forms	☒ Internal standard area & retention time summary
☒ Test Results (no tentatively identified compounds [TICs])	☒ Chromatograms
☒ Calibration standards	☒ Raw data files
☒ Surrogate recoveries	☒ Other specific information
☒ Blank results	

The SDG reported the following samples:

Sample ID	SDG #320-43696 -Sample #	Matrix	Sampled	Received	Reported in Other SDGs
MW-2R	#-1	Water	09/27/18	09/29/18	480-142503-1

The SDG included the following samples with their analyses:

138505	Well	VOCs	SVOCs	SIM-ID	TAL & Hg	Hex-Cr	Pest	PCBs	PFAS
#-1	MW-2R	—	—	—	—	—	—	—	X

VOC: Volatile Organic Compounds (8260) | SVOC: Semi-VOCs (8270) | SIM-ID: SVOC Ion Monitor w/ Isotope Dilution (8270)
 TAL: Total Analyte List (6010) | Hg: Mercury (7470) | Hex-Cr: Hexavalent Chromium (7196) | Pest: Pesticides (608)
 PCBs via 608 | PFAS: Perfluoroalkyl & Polyfluoroalkyl Substances (537) | * Dry, no sample † No sample

Is the data package complete as defined under the requirements for the NYSDEC ASP Category B?		
Laboratory Report	Complete (Y/N)	Comments
320-43696	Y	No

Sample Preservation Requirements & Holding Times Met?			
Laboratory Report	Hold Times (Y/N)	Preservation (Y/N)	Exception Comment
320-43696	Y	Y	No

Do the QC data fall within the protocol required limits and specifications? (1) blanks, (2) instrument tunings, (3) calibration standards, (4) calibration verifications, (5) surrogate recoveries, (6) spike recoveries, (7) replicate analyses, (8) laboratory controls, (9) and sample data									
SDG	1	2	3	4	5	6	7	8	9
320-43696	☒	☐	☐	☐	☐	☒	☐	☐	☐
The narrative section, below, discusses these deficiencies in detail, see Attachment 2 as well.									

Have the data been generated using established and agreed upon analytical protocols?		
Laboratory Report	Protocols (Y/N)	Exception Comment
320-43696	Y	No

Do the raw data confirm the results provided in the data summary sheets and quality control verification forms?		
Laboratory Report	Confirmation (Y/N)	Exception Comment
320-43696	Y	No

Have the correct data qualifiers been used and are they consistent with the most current guidance?		
Laboratory Report	Qualifiers (Y/N)	Comment
320-43696	Y	The laboratory generally applied appropriate qualifiers.

Have any quality control (QC) exceedances been specifically noted in this DUSR and the corresponding QC summary sheets from the data packages referenced?		
Laboratory Report	QC Exceedances Documented (Y/N)	Comment
320-43696	Y	Several data qualifications were applied as described below

The following PFAS compound abbreviations are used in this DUSR:

Perfluorobutanoic acid (PFBA)	Perfluorobutanesulfonic acid (PFBS)
Perfluoropentanoic acid (PFPeA)	Perfluorohexanesulfonic acid (PFHxS)
Perfluorohexanoic acid (PFHxA)	Perfluoroheptanesulfonic Acid (PFHpS)
Perfluoroheptanoic acid (PFHpA)	Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanoic acid (PFOA)	Perfluorodecanesulfonic acid (PFDS)
Perfluorononanoic acid (PFNA)	Perfluorooctane Sulfonamide (PFOSA)
Perfluorodecanoic acid (PFDA)	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)
Perfluoroundecanoic acid (PFUnA)	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)
Perfluorododecanoic acid (PFDoA)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)
Perfluorotridecanoic Acid (PFTriA)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)
Perfluorotetradecanoic acid (PFTeA)	

Data Quality and Usability Narrative

Field Notes Inspection

The groundwater samples came from a multi-day collection event between September 17th through September 27, 2018; and this single sample was collected on 27 Sept. A review of the field notes provided the following information pertaining to data usability:

- MW-2R had a purge volume of 5.5 gal with low flow procedures and produced sufficient sample volume for the analyses, including matrix spike.
- The notes indicate a Trip Blank was included but was subsequently crossed-off of in the notes, likely because it was only for volatiles and not PFAS analytes.

Laboratory Report Inspection

TA produced one SDG report #320-43696 (dated 25-Oct-18), which contained the required data and information.

Chain of Custody (COC) Evaluation

NYSDEC/GES produced a COC for the referenced fieldwork (GES Project PSID#724941): SDG: #320-43696—single, one-page COC. The laboratory noted the inclusion of a Trip Blank on the COC, but not included in the sample cooler at the time of acceptance. This is not a quality issue.

Sample Preservation & Holding Time Evaluation

Laboratory received one cooler with samples on 9/29/2018 @ 09:20 AM (designated as SDG-#320-43696) in proper condition and, where required, on ice. The temperature of the cooler at receipt was measured as 1.3°C. The samples arrived within holding times and preservation requirements were met.

Detection Limits

Analytical detection limits were acceptable for all analytes causing no QA issues; however, if an analyte was above the MDL but below the RL, then it was flagged as “UJ”.

Blank Evaluation

The Method Blanks (MBs) for Method 537 Analysis Batch: Prep Batch: (batch 251297 [preparation] & 252302 [analytical]) had a detection of Perfluorohexanesulfonic acid (PFHxS) greater than the Method Detection Limit (MDL) but less than the Reporting Limit (RL). Therefore, detected concentrations of PFBA should be considered as estimates and flagged UJB or JB, but only if the associated sample reported a result greater than the respective MDL or RL.

The samples included in this SDG included no field generated Blanks (either Equipment, Field, or Trip). This poses a limitation on the samples in this SDG in that it provides no quality measure of operational performance of the sampling itself. Because this was a multi-day sampling event covered by multiple SDGs, this is not a significant quality issue. Herein the reader will find a cross-listing of the samples and their association with other SDGs.

Laboratory Control Samples (LCS)

The various LCS' were within the acceptable range for their particular analyses in SDG #320-43696 with no exceptions.

Surrogates

Surrogates added to a sample allow testing of preparatory and instrument behavior resulting in recoveries within appropriate method ranges for the analytes. In this SDGs, there were no quality exceptions as the method uses isotope dilution (see discussion below).

Site-Specific Matrix Spikes and Matrix Spike Duplicates

The matrix spike/matrix spike duplicate (MS/MSD) runs for the analyses used Sample #-1 (MW-2R). Both the MS and MSD met the QA criteria, with the following exception:

- The MSD recoveries for PFDS (Batch 251297/252302) were control limits (< Lower Control Limit [LCL]), likely due to sample non-homogeneity. The associated LCS recovery was within acceptance limits. RemVer flagged the results for this analyte as UJ or J.

Tentatively Identified Compounds (TICs)

The SDGs had no analysis of TICs.

Duplicates

The samples associated with this SDG did not have an accompanying field replicate. RemVer did not evaluate a field duplicate to judge sampling performance in this instance; however, as this was a multi-day sampling event covered by multiple SDGs. Therefore, this is not a significant quality issue. Regardless, the analytical Method Duplicates met their RPD performance criteria.

Isotope Dilution Analyte

Isotope Dilution Analyte (IDA) recovery was acceptable. Quantitation by isotope dilution generally precludes adverse effects on data quality due to elevated IDA recoveries.

Sample Result and Usability Evaluation

Due to certain sample issues or laboratory performance, some results were qualified; however, the data are usable. No data received an R (rejected) flag.

References

- NYSDEC, 2010, *Technical Guidance for Site Investigation and Remediation*, "DER-10," Division of Environmental Remediation: Albany, NY, May, 232p
- NYSDEC, 2010, *Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, Appendix 2B IN *Technical Guidance for Site Investigation and Remediation*, Division of Environmental Remediation: Albany, NY, May, 232p
- USEPA, 2008, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER 9240.1-48, USEPA-540-R-08-01, Office of Superfund Remediation and Technology Innovation: Washington, DC, June, 225p
- USEPA, 2010, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, OSWER 9240.1-51, USEPA-540-R-10-011, Office of Superfund Remediation and Technology Innovation: Washington, DC, January, 110p
- USEPA, 2012, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Current Online Revision: <http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>, accessed April 2012

Attachments

1. DQA Detail Worksheet
2. DQA Non-Conformance Summary Workheet
3. SDG 320-43696 Annotated EDD with Validation (separate EXCEL workbook, attached)

Prepared by: Kurt A. Frantzen, PhD, CHMM
February 10, 2019



GES PO #747941-1109

Attachment 1 DQA Detail Worksheet

BLANKS	>RL?	Compounds	Notes
Method Blank: PFAS	Yes	PFAS	Flag UJB if sample >MDL Flag JB if sample >RDL
—	—	—	—

LCS	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
PFAS	—	—	—	—	—
	—	—	—	All Others	No Comment

SURROGATES	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
PFAS	—	—	—	—	—
	—	—	—	All Others	No Comment

MS/MSDs	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	QC Source	RPDs	Notes
PFAS	—	X	—	PFDS	—	Flag UJ/J
	—	—	—	All Others	—	No Comment

FIELD DUPLICATES RPDs	QC Source	Soil RPD > 50%	Water RPD > 20%	Compounds	Notes
None	Unknown	N/A	—	—	Did Not Evaluate
None	Unknown	N/A	—	—	

LAB DUPLICATES					
-----	Batch	N/A	—	As listed	No Comment

Reasonable Confidence Achieved	☐ Y	☐ N—Not Applicable
Significant QC Variances Noted	☒ Y	☐ N
Requested Reporting Limits Achieved	☒ Y	☐ N
Preservation Requirements Met	☒ Y	☐ N
Holding Time Requirements Met	☒ Y	☐ N

Abbreviations:

RL = Reporting Limit LCS = Laboratory Control Sample SV = Significant QC Variance
 RPD = Relative Percent Difference LCL= RCP Lower Control Limit UCL= RCP Upper Control Limit
 VOCs = Volatile Organic Compounds SVOCs = Semi-volatile Organic Compounds Pest = Pesticides
 EPH = Extractable Petroleum Hydrocarbons VPH = Volatile Petroleum Hydrocarbons ETPH = EPH-Total
 PCBs = Polychlorinated Biphenyls N/A = Not Applicable N/C = Not Collected -- = nothing to report

Notes: * Typical lab contaminants, not site-related

Attachment 2

DQA Non-Conformance Summary Worksheet

Only Flagged Results Shown Below

Sample Number(s)	Compound(s)	QC Non-Conformance	% Recovery	% RPD †	High or Low Bias ‡	Comments
MW-2R #1	Various PFAS	Method Blank	If >Limits	—	High	Flag UB / B
	PFDS	MSD	<LCL	—	—	Flag UJ / J
	—	—	—	—	—	—

Notes: † RPD—Relative Percent Difference

‡ Bias High—Reported result may be lower, Reporting Limit (RL) is acceptable as reported. Bias Low—Reported results may be higher, RL may be higher than reported.

Quality Assessment Data Usability Summary Report

RemVer Project #2018GE10 Client Project # 0901753-02-840			
Site:	ETE Sanitation and Landfill Gainesville, NY		Site #: 961005
Client:	NYSDEC via GES, Inc.		Site Owner: -N/A-
Sample Delivery Groups (SDGs)	480-142274		
Sample Matrix:	☐ Drinking water ☒ Groundwater ☐ Surface water ☐ Soil ☐ Sediment ☐ Air ☐ Biota (tissue, type: _____) ☐ Other: _____		

Introduction

RemVer performed a data quality assessment (DQA) on the analytical data for groundwater samples reported in Sample Delivery Groups (SDGs) #480-142274 from Test America (TA). A DQA is an evaluation of the performance of analytical procedures and quality of the resulting data. RemVer followed the requirements of the New York State Department of Environmental Conservation (NYSDEC) Data Usability Summary Report (DUSR) guidelines for an Analytical Services Protocol (ASP) Category B Data Deliverable. This report includes a narrative discussion of sample results qualified during the DQA. Attached to the main report is a list describing the final reported qualification flags applied to the data by RemVer during this DQA process.

Reported Methods

☐ Method 1311 TCLP ☐ Method 1312 SPLP ☐ Method 6010A, B & C / 6020 Trace Metals ☐ Method 7000 Metals ☐ Method 7196 Hexavalent Chromium (other: _____) ☐ Method 7470A or 7471 Mercury ☐ Method 8021 Volatile Organic Compounds (VOCs) GC ☐ Method 8081B Pesticides ☐ Method 8082 PCBs ☐ Method 8151 Chlorinated Herbicides ☐ Method 8260C VOCs GC/MS ☒ Method 8270D Semi-VOCs (sVOCs) GC/MS or SIM ☐ Method 9010/9012/9014 Cyanides (_____)	☐ Method TO-13A PAHs (air) ☐ Method TO-14A / -15 VOCs (air, summa) (_____) ☐ Method TO-17 VOCs (air, sorbent) ☒ Method 537 PFCs via SPE & LC/MS-MS ☐ Volatile Petroleum Hydrocarbons (VPH) Method ☐ Extractable Petroleum Hydrocarbons (EPH) ☒ Other Methods: ☒ Method 3535 Solid-Phase Extraction (SPE)

Quality Control Requirements Summary

☒ Duplicate ☐ Matrix Spike [MS] / Matrix Spike Duplicate [MSD] ☒ Method Blanks & Trip Blank ☒ Equipment, Method, &/or Rinsate Blank	☒ Other Field QC: Field notes regarding sampling ☐ Special QAPP Requirements: _____ _____

Intended Use of Data under Review

NYSDEC contracted GES to perform a 2018 site-wide comprehensive groundwater monitoring event at the referenced site. The monitoring event (17–27 September) was to update the existing groundwater dataset with current synoptic conditions. Sampling was to provide analyses of groundwater conditions for the presence of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) including 1,4-Dioxane, Cyanide, and metals/metalloids. Additionally, groundwater samples from pre-selected locations were analyzed for the presence of emerging contaminants including perfluoroalkyl and polyfluoroalkyl substances/compounds (PFAS or PFCs).

This DUSR addresses SDG #480-142274, the samples of which came from a collection event on 18 & 20 September 2018. Groundwater monitoring evaluation of PFAS and 1,4-Dioxane from the listed wells was the purpose of this sampling event.

Significant Data Usability Issues In SDG: 480-142274

This was a multi-day sampling event covered by multiple SDGs; herein the reader will find a cross-listing of the samples and their association with other SDGs. Of the four samples discussed herein, RemVer rejected no results. The results are acceptable for use although the results of some analytes are flagged due to sample handling, or laboratory accuracy or precision issues. Please refer to the Lab Results and Data Usability Narrative section for further detail.

Detailed Quality Review

Field Notes Review

	Y	N	NA	COMMENTS
Sampling notes	☒	☐	☐	
Field meteorological data	☐	☐	☒	No review required under QAPP
Associated sampling location and plan included	☐	☒	☐	See RAP/QAPP
Associated drilling logs available, reviewed	☐	☐	☒	No review required under QAPP
Identification of QC samples in notes	☒	☐	☐	Sample IDs
Sampling instrument decontamination records	☐	☐	☒	No review required under QAPP
Sampling instrument calibration logs	☐	☐	☒	No review required under QAPP
Chain of custody included	☒	☐	☐	With analytical report
Notes include communication logs	☐	☒	☐	
Any corrective action (CA) reports	☐	☒	☐	If so, CA documentation of results required.
Any deviation from methods noted? If so, explain	☐	☒	☐	None
Any electronic data deliverables	☐	☒	☐	None
Sampling Report (by Field Team Leader)	☐	☒	☐	

Lab Report Contents (Test America SDG Reports: #480-142274)

☒ SDG Narrative	☒ Spike recoveries
☒ Contract Lab Sample Information Sheets	☒ Duplicate results
☒ Data Package Summary Forms	☒ Confirmation (lab check/QC) samples
☒ Chain-of-Custody (COC) Forms	☒ Internal standard area & retention time summary
☒ Test Results (no tentatively identified compounds [TICs])	☒ Chromatograms
☒ Calibration standards	☒ Raw data files
☒ Surrogate recoveries	☒ Other specific information
☒ Blank results	

The SDG reported the following samples:

Sample ID	SDG #480-142274 -Sample #	Matrix	Sampled	Received	Reported in Other SDGs
MW-7S	#-1	Water	09/18/18	09/21/18	480-142273-5
MW-11S	#-2	Water	09/20/18	09/21/18	480-142273-9
MW-11S DUP	#-3	Water	09/20/18	09/21/18	480-142273-10
EB	#-4	Water	09/20/18	09/21/18	480-142273-11

The SDG included the following samples with their analyses:

138505	Well	VOCs	SVOCs	SIM-ID	TAL & Hg	Cyanide	Pest	PCBs	PFAS
#-1	MW-7S	—	—	X	—	—	—	—	X
#-2	MW-11S	—	—	X	—	—	—	—	X
#-3	MW-11S DUP	—	—	X	—	—	—	—	X
#-4	EB	—	—	X	—	—	—	—	X

VOC: Volatile Organic Compounds (8260) | SVOC: Semi-VOCs (8270) | SIM-ID: SVOC Ion Monitor w/ Isotope Dilution (8270)
 TAL: Total Analyte List (6010) | Hg: Mercury (7470) | Hex-Cr: Hexavalent Chromium (7196) | Pest: Pesticides (608)
 PCBs via 608 | PFAS: Perfluoroalkyl & Polyfluoroalkyl Substances (537) | * Dry, no sample † No sample

Is the data package complete as defined under the requirements for the NYSDEC ASP Category B?		
Laboratory Report	Complete (Y/N)	Comments
480-142274	Y	No

Sample Preservation Requirements & Holding Times Met?			
Laboratory Report	Hold Times (Y/N)	Preservation (Y/N)	Exception Comment
480-142274	Y	Y	No

Do the QC data fall within the protocol required limits and specifications? (1) blanks, (2) instrument tunings, (3) calibration standards, (4) calibration verifications, (5) surrogate recoveries, (6) spike recoveries, (7) replicate analyses, (8) laboratory controls, (9) and sample data									
SDG	1	2	3	4	5	6	7	8	9
480-142274	☒	☐	☐	☐	☐	☐	☐	☐	☐
The narrative section, below, discusses these deficiencies in detail, see Attachment 2 as well.									

Have the data been generated using established and agreed upon analytical protocols?		
Laboratory Report	Protocols (Y/N)	Exception Comment
480-142274	Y	No

Do the raw data confirm the results provided in the data summary sheets and quality control verification forms?		
Laboratory Report	Confirmation (Y/N)	Exception Comment
480-142274	Y	No

Have the correct data qualifiers been used and are they consistent with the most current guidance?		
Laboratory Report	Qualifiers (Y/N)	Comment
480-142274	Y	The laboratory generally applied appropriate qualifiers.

Have any quality control (QC) exceedances been specifically noted in this DUSR and the corresponding QC summary sheets from the data packages referenced?		
Laboratory Report	QC Exceedances Documented (Y/N)	Comment
480-142274	Y	Several data qualifications were applied as described below

The following PFAS compound abbreviations are used in this DUSR:

Perfluorobutanoic acid (PFBA)	Perfluorobutanesulfonic acid (PFBS)
Perfluoropentanoic acid (PFPeA)	Perfluorohexanesulfonic acid (PFHxS)
Perfluorohexanoic acid (PFHxA)	Perfluoroheptanesulfonic Acid (PFHpS)
Perfluoroheptanoic acid (PFHpA)	Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanoic acid (PFOA)	Perfluorodecanesulfonic acid (PFDS)
Perfluorononanoic acid (PFNA)	Perfluorooctane Sulfonamide (PFOSA)
Perfluorodecanoic acid (PFDA)	N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)
Perfluoroundecanoic acid (PFUnA)	N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)
Perfluorododecanoic acid (PFDoA)	1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)
Perfluorotridecanoic Acid (PFTriA)	1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)
Perfluorotetradecanoic acid (PFTeA)	

Data Quality and Usability Narrative

Field Notes Inspection

The groundwater samples came from a multi-day collection event between September 17th through September 27, 2018; and this group of four samples were collected on 18 & 20 September 2018. A review of the field notes indicated no quality issues associated with the sampling.

Laboratory Report Inspection

TA produced one SDG report #480-142274 (dated 11-Jan-19), which contained the required data and information.

Chain of Custody (COC) Evaluation

NYSDEC/GES produced a COC for the referenced fieldwork (GES Project PSID#737282): SDG: #480-142274—single, one-page COC, laboratory noted no issues at the time of acceptance.

Sample Preservation & Holding Time Evaluation

Laboratory received three coolers with samples on 9/21/2018 @ 21:20 PM (designated as SDG-#480-142274) in proper condition and, where required, on ice. The temperature of the coolers at receipt was measured as 3.0, 3.0, and 4.0 °C. The laboratory received the samples and performed preparation and analyses within holding times. Preservation requirements were met.

Blank Evaluation

The Method Blanks (MBs) for Method 537 (Batch Prep-248335/Analysis-248611) had a detection of Perfluorohexanesulfonic acid (PFHxS) greater than the Method Detection Limit (MDL) but less than the Reporting Limit (RL). Therefore, detected concentrations of PFBA should be considered as estimates and flagged UJB or JB, but only if the associated sample reported a result greater than the respective MDL or RL.

Laboratory Control Samples (LCS)

The various LCS' were within the acceptable range for their particular analyses in SDG #480-142274, except for the isotope dilution (see discussion below).

Surrogates

Surrogates added to a sample allow testing of preparatory and instrument behavior resulting in recoveries within appropriate method ranges for the analytes. In this SDGs, there were no quality exceptions as the method uses isotope dilution (see discussion below).

Site-Specific Matrix Spikes and Matrix Spike Duplicates

The matrix spike/matrix spike duplicate (MS/MSD) runs were not required for these samples under these methods.

Tentatively Identified Compounds (TICs)

The SDGs had no analysis of TICs.

RemVer

Duplicates

In this SDG Samples #-2 and #-3 (MW-11s & MW-11s-duplicate, respectively) were run to provide an appropriate field replicate to evaluate field-related precision. The 1,4-Dioxane and PFAS analytes met the RPD performance criteria of <20%, with no exceptions.

Detection Limits

Analytical detection limits were acceptable for all analytes causing no QA issues; however, if an analyte was above the MDL but below the RL, then it was flagged as "UJ".

Isotope Dilution Analyte

Isotope Dilution Analyte (IDA) recovery was acceptable. Quantitation by isotope dilution generally precludes adverse effects on data quality due to elevated IDA recoveries.

Sample Result and Usability Evaluation

Due to certain sample issues or laboratory performance, some results were qualified; however, the data are usable. No data received an R (rejected) flag.

References

NYSDEC, 2010, *Technical Guidance for Site Investigation and Remediation*, "DER-10," Division of Environmental Remediation: Albany, NY, May, 232p

NYSDEC, 2010, *Guidance for Data Deliverables and the Development of Data Usability Summary Reports*, Appendix 2B IN *Technical Guidance for Site Investigation and Remediation*, Division of Environmental Remediation: Albany, NY, May, 232p

USEPA, 2008, *Contract Laboratory Program National Functional Guidelines for Organic Data Review*, OSWER 9240.1-48, USEPA-540-R-08-01, Office of Superfund Remediation and Technology Innovation: Washington, DC, June, 225p

USEPA, 2010, *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, OSWER 9240.1-51, USEPA-540-R-10-011, Office of Superfund Remediation and Technology Innovation: Washington, DC, January, 110p

USEPA, 2012, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Current Online Revision: <http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>, accessed April 2012

Attachments

1. DQA Detail Worksheet
2. DQA Non-Conformance Summary Worksheet
3. SDG 480-142274 Annotated EDD with Validation (separate EXCEL workbook, attached)



Prepared by: Kurt A. Frantzen, PhD, CHMM
February 11, 2019

GES PO #747941-1109

Attachment 1 DQA Detail Worksheet

BLANKS	>RL?	Compounds	Notes
Method Blank: PFAS	Yes	PFHxS	Flag UJB if >MDL Flag JB if >RDL
—	—	—	—

LCS	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
PFAS	—	—	—	All Others	No Comment
	—	—	—	All Others	No Comment

SURROGATES	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	Compound(s)	Notes
PFAS	—	—	—	All Others	No Comment
	—	—	—	All Others	No Comment

MS/MSDs	SV <10%	Low Bias > 10% & < LCL	High Bias >UCL	QC Source	RPDs	Notes
PFAS	—	—	—	All Others	—	No Comment
	—	—	—	All Others	—	No Comment

FIELD DUPLICATES RPDs	QC Source	Soil RPD > 50%	Water RPD > 20%	Compounds	Notes
None	Unknown	N/A	—	—	Did Not Evaluate
None	Unknown	N/A	—	—	

LAB DUPLICATES					
-----	Batch	N/A	—	As listed	No Comment

Reasonable Confidence Achieved	☐ Y	☐ N—Not Applicable
Significant QC Variances Noted	☒ Y	☐ N
Requested Reporting Limits Achieved	☒ Y	☐ N
Preservation Requirements Met	☒ Y	☐ N
Holding Time Requirements Met	☒ Y	☐ N

Abbreviations:

RL = Reporting Limit LCS = Laboratory Control Sample SV = Significant QC Variance
 RPD = Relative Percent Difference LCL= RCP Lower Control Limit UCL= RCP Upper Control Limit
 VOCs = Volatile Organic Compounds SVOCs = Semi-volatile Organic Compounds Pest = Pesticides
 EPH = Extractable Petroleum Hydrocarbons VPH = Volatile Petroleum Hydrocarbons ETPH = EPH-Total
 PCBs = Polychlorinated Biphenyls N/A = Not Applicable N/C = Not Collected -- = nothing to report

Notes: * Typical lab contaminants, not site-related

Attachment 2

DQA Non-Conformance Summary Worksheet

Only Flagged Results Shown Below

Sample Number(s)	Compound(s)	QC Non-Conformance	% Recovery	% RPD †	High or Low Bias ‡	Comments
#-1	PFHxS	Method Blank	If >Limits	—	High	Flag UB / B
#-2	PFHxS	Method Blank	If >Limits	—	High	Flag UB / B
#-3	PFHxS	Method Blank	If >Limits	—	High	Flag UB / B
#-4	PFHxS	Method Blank	If >Limits	—	High	Flag UB / B

Notes: † RPD—Relative Percent Difference

‡ Bias High—Reported result may be lower, Reporting Limit (RL) is acceptable as reported. Bias Low—Reported results may be higher, RL may be higher than reported.