



January 29, 2019

Jenelle Gaylord
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7019

**RE: Groundwater Sampling Summary Report
NYSDEC Site 808006
Townley Hill Road
Catlin, New York
NYSDEC Standby Contract Call Out ID: 136359
LaBella Project # 2161937.029**

Dear Ms. Gaylord,

LaBella Associates, D.P.C. (“LaBella”) is pleased to submit this groundwater sampling summary report to document recent groundwater sampling activities and associated laboratory analytical results from the property associated with the Townley Hill Road Dump Site located at the approximate address of 379-511 Townley Hill Road in the Town of Catlin, Chemung County, New York, herein referred to as the “Site.” LaBella was retained by the New York State Department of Environmental Conservation (NYSDEC) through the NYSDEC Division of Environmental Remediation to conduct one (1) groundwater sampling event under Call Out ID 136359. The groundwater sampling event was conducted at four (4) monitoring wells located on-site of the Townley Hill Road Dump Site. Figure 1 shows the Site location.

Scope of Work

Upon request by the NYSDEC, the following scope of work was completed by LaBella at the Site:

Task 1:

- Retrieve one (1) liter amber glass bottles and 500ml High Density Polyethylene (HDPE) PFAS-free bottles from Test America
- Collect depth to groundwater measurements in each of the four (4) wells
- Purge three (3) well volumes from each of the four (4) wells using PFAS-free High Density Polyethylene (HDPE) bailers and PFAS-free string
- Collect grab samples from the four (4) monitoring wells using PFAS-free High Density Polyethylene (HDPE) bailers and PFAS-free string for 1,4-dioxane and PFAS in accordance with “SECTION 6 GROUND WATER SAMPLING” of the US EPA Region 2 Standard Operating Procedures for Field Activities
- Preserve and ship samples in cooler(s) to the laboratory for analytical testing
- Prepare NYSDEC EQUIS EDD and submit to NYSDEC



- Submit a Summary Letter Report with DUSR and a Category B deliverable from the laboratory.
- Submit copies of all Inspection and Field Logs

Task 1: Monitoring Well Sampling for 1,4-Dioxane and PFAS

On November 09, 2018, one (1) LaBella Geologist mobilized to the Site to collect groundwater samples from the following four (4) monitoring wells for emerging contaminants (PFAS & 1,4-Dioxane):

- MW-1
- MW-2 (Note: MW-2 was dry at the time of this sampling event and therefore was not sampled.)
- MW-3
- MW-4

Sampling was performed in accordance with “SECTION 6 GROUND WATER SAMPLING” of the US EPA Region 2 Standard Operating Procedures for Field Activities (Dec 2006). Prior to purging the four (4) monitoring wells, the depth to groundwater was measured and recorded in the field notes. The exact depths to water for MW-3 and MW-4 were unable to be collected due to the PFAS-free groundwater meter sticking to the side of the PVC riser. For MW-3 and MW-4, an estimated depth of water was obtained using the 100-foot long PFAS-free string used for bailing. Monitoring well MW-2 was dry and therefore was not purged or sampled.

Three (3) well volumes were purged from each well prior to sample collection. All four (4) of the monitoring wells had a two (2) inch diameter riser. Purging was completed using PFAS-free High Density Polyethylene (HDPE) two (2) inch diameter bailers and PFAS-free string.

Quality Assurance and Quality Control (QA/QC) samples including a Blind Duplicate, MS/MSD, trip blank, and an equipment rinsate blank were also collected at the time of sampling. One (1) blind duplicate sample and one MS/MSD sample were collected from the monitoring well MW-1. The equipment rinsate blank, labeled “Equipment Blank”, was collected by pouring PFC-free water provided by a Test America laboratory through a freshly opened, clean PFC-free bailer and string. The equipment blank that was collected on November 09, 2018 was lost in transit to the Test America laboratory and was not analyzed.

Immediately following collection, samples were placed in a cooler on ice for preservation during handling and shipment to the analytical laboratory. The nine (9) samples, including the equipment blank, were sent to Test America, an appropriately accredited laboratory, and analyzed for the following parameters:

- Standard list PFAS/PFCs by modified EPA Method 537 (21 compounds)
- 1,4-Dioxane by EPA Method 8270 SIM

As directed by NYSDEC, the purge water evacuated from each well was discharged to the ground surface near its respective well. Figure 2 illustrates the locations of the four (4) wells sampled as part of this task. Groundwater purging and sampling logs are included in Attachment A of this report.



SAMPLE RESULTS

1,4-Dioxane and PFAS concentrations were detected in the following groundwater samples:

- 1,4-Dioxane – Was not detected in any sample above the method detection limit (MDL). There currently is no drinking water or groundwater guidance value established for this compound in New York State.
- PFAS – For all samples, the detected PFAS concentrations exceeded the MDL. N-methyl perfluorooctane sulfonamidoacetic acid, 1H, 1H, 2H, 2H-perfluorooctanesulfonic acid (6:2), and 1H, 1H, 2H, 2H-perfluorodecanesulfonic acid (8:2) concentrations were detected in the sample collected at monitoring well MW-1 at concentrations above the applicable USEPA health advisory guidance value of 70 ng/L . The total PFAS for all samples analyzed were also detected above the applicable USEPA health advisory guidance value of 70 ng/L.

Summarized laboratory data is presented in attached Table 1. The laboratory analytical data report is included in Attachment B of this report. A NYSDEC EQUIS EDD was prepared will be submitted for this sampling event to the NYSDEC database (a copy of the successful submittal receipt will be provided separately).

We appreciate the opportunity to serve your professional environmental engineering needs and look forward to working with you toward a successful completion of this project. If you have any questions please do not hesitate to contact me at 585-295-6268.

Respectfully submitted,

LaBella Associates

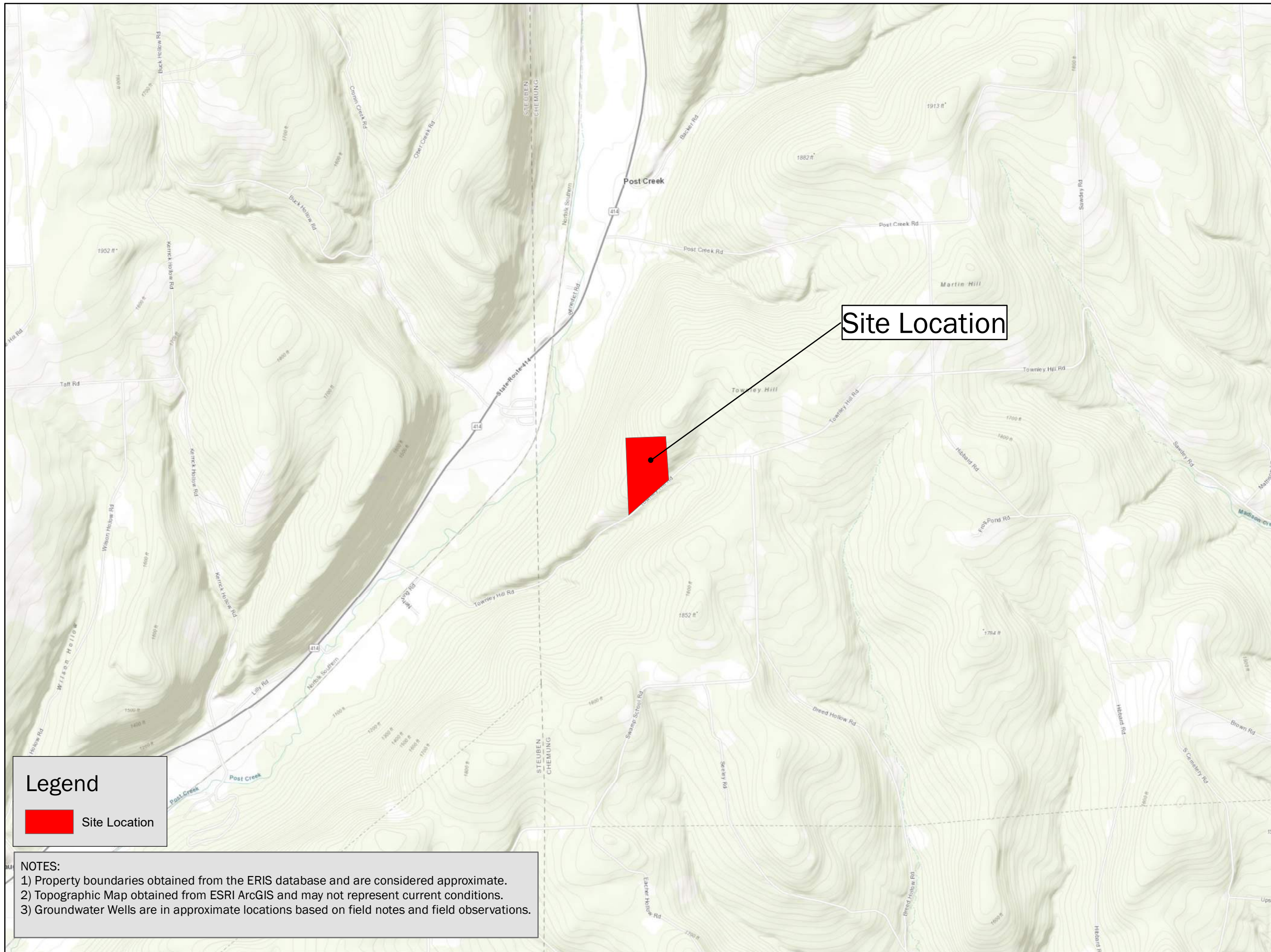
Alexander daSilva
Geologist

Attachments:

- Figure 1 – Site Location
- Figure 2 – Well Locations
- Table 1 – Summary of 1,4-Dioxane and PFAS/PFCs in Groundwater
- Attachment A – Field Logs
- Attachment B – Laboratory Analytical Reports



FIGURES

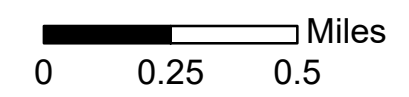
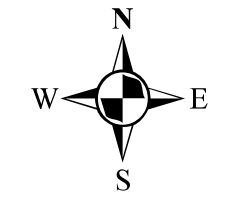


Legend

Site Location

NOTES:

- 1) Property boundaries obtained from the ERIS database and are considered approximate.
- 2) Topographic Map obtained from ESRI ArcGIS and may not represent current conditions.
- 3) Groundwater Wells are in approximate locations based on field notes and field observations.



1 inch = 2,000 feet
 INTENDED TO PRINT AS: 11" X 17"

CLIENT:
**NEW YORK STATE
 DEPARTMENT OF
 ENVIRONMENTAL
 CONSERVATION**

PROJECT:
**GROUNDWATER WELL
 SAMPLING
 TOWNLEY HILL ROAD,
 CATLIN,
 NEW YORK 14845**

DRAWING NAME:
SITE LOCATION

PROJECT #/DRAWING #/ DATE

[2161937.029]


[**FIGURE 1**]

1/29/2019



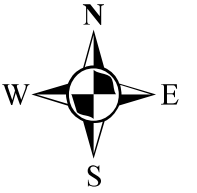
Legend

 Groundwater Monitoring Well

 Site Parcel

NOTES:

- 1) Property boundaries obtained from the ERIS database and are considered approximate.
- 2) Aerial image obtained from Google Earth Pro and may not represent current conditions.
- 3) Groundwater Wells are in approximate locations based on field notes and field observations.



0 25 50
 Feet
 1 inch = 50 feet

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CLIENT:
 NEW YORK STATE
 DEPARTMENT OF
 ENVIRONMENTAL
 CONSERVATION

PROJECT:
 GROUNDWATER WELL
 SAMPLING
 TOWNLEY HILL ROAD,
 CATLIN,
 NEW YORK 14845

DRAWING NAME:
 GROUNDWATER WELL
 LOCATIONS

PROJECT #/DRAWING #/ DATE

[2161937.029]

[FIGURE 2]

1/29/2019



TABLE 1

Table 1
Analytical Results of PFAS in Groundwater
Towney Hill Rd Dump Site
Townley Hill Road, Catlin NY
LaBella Project #2161937.029



Concentrations shown in nanograms per Liter (ng/L) or PPT

ANALYTE	LOCATION	USEPA Health Advisory Concentration in Drinking Water	Units	MW-1		MW-3		MW-4		DUPE (MW-1)	
	SAMPLING DATE			11/9/2019		11/9/2019		11/9/2019		11/9/2019	
				Results	Qual	Results	Qual	Results	Qual	Results	Qual
1,4-Dioxane		NA	ng/L	ND		ND		ND		ND	
PFAS											
Perfluorobutanoic acid (PFBA)		Not Listed	ng/L	5.12		4.54		0.34	U	2.76	
Perfluoropentanoic acid (PFPeA)			ng/L	0.61	J	0.48	U	0.47	U	0.55	J
Perfluorohexanoic acid (PFHxA)			ng/L	0.55	U	0.57	U	0.56	U	0.55	U
Perfluoroheptanoic acid (PFHpA)			ng/L	0.24	U	0.24	U	0.24	U	0.24	U
Perfluorooctanoic acid (PFOA)			ng/L	0.81	U	0.83	U	0.82	U	0.81	U
Perfluorononanoic acid (PFNA)			ng/L	0.26	U	0.26	U	0.26	U	0.26	U
Perfluorodecanoic acid (PFDA)			ng/L	0.29	U	0.30	U	0.30	U	0.30	U
Perfluoroundecanoic acid (PFUnA)			ng/L	1.05	U	1.07	U	1.06	U	1.05	U
Perfluorododecanoic acid (PFDoA)			ng/L	0.52	U	0.54	U	0.53	U	0.53	U
Perfluorotridecanoic Acid (PFTriA)			ng/L	1.24	U F1	1.27	U	1.25	U	1.24	U
Perfluorotetradecanoic acid (PFTeA)			ng/L	0.28	U	0.28	U	0.28	U	0.28	U
Perfluorobutanesulfonic Acid (PFBS)			ng/L	0.19	U	0.19	U	0.19	U	0.19	U
Perfluorohexanesulfonic Acid (PFHxS)			ng/L	0.25	J B	0.34	J B	0.27	J B	0.25	J B
Perfluoroheptanesulfonic Acid (PFHpS)			ng/L	0.18	U	0.19	U	0.18	U	0.18	U
Perfluorooctanesulfonic acid (PFOS)			ng/L	0.51	U	0.53	U	0.52	U	0.52	U
Perfluorodecanesulfonic acid (PFDS)			ng/L	0.30	U	0.31	U	0.31	U	0.31	U
Perfluorooctane Sulfonamide (FOSA)			ng/L	0.33	U	0.34	U	0.34	U	0.33	U
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)			ng/L	29.5	U	3.02	U	2.98	U	2.96	U
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)			ng/L	1.81	U	1.85	U	1.83	U	1.81	U
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)		ng/L	19.0	U	1.95	U	1.92	U	1.91	U	
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)		ng/L	19.0	U	1.95	U	1.92	U	1.91	U	
PFOA + PFOS		70	ng/L	0.00		0.00		0.00		0.00	
Total PFAS			ng/L	5.98		4.88		0.27		3.56	

NOTES:

PFAS Concentrations are shown in nanograms per Liter (ng/L) or parts per trillion (PPT)

Per- and Polyfluoroalkyl Substances (PFAS) compounds were analyzed via USEPA Method 537.

BOLD values indicated compound was detected above method detection limit (MDL).

Yellow highlighted concentrations indicate value exceeded USEPA Health Advisory drinking water guidance value of 70 ng/L for total PFAS.

"U" indicates the analyte was analyzed for but not detected.

"J" indicates an estimated value.

"B" indicates compound was found in blank and sample.

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

"NA" indicates not applicable or no applicable standard.

1,4-Dioxane does not currently have a NYSDEC TOGS 1.1.1 groundwater standard

USEPA - United States Environmental Protection Agency



ATTACHMENT - A

Christie Sobol : 585-794-9389

Person: Randy Skettler : (607) 734-2165 ext. 213 or (607) 731-3921

A-da-Silva arrived on site @ 0930. 30°F - Wet Snow.

To DO List

1) Purge 3-5 well volumes AFTER Recording GW Depth @ Each well.

- 2) Sample for PFCs via Test America w/:
- a) DUPE
 - b) MS/MSD
 - c) Equipment Blank

IN
AJS
Office
Dug Stamp

Need

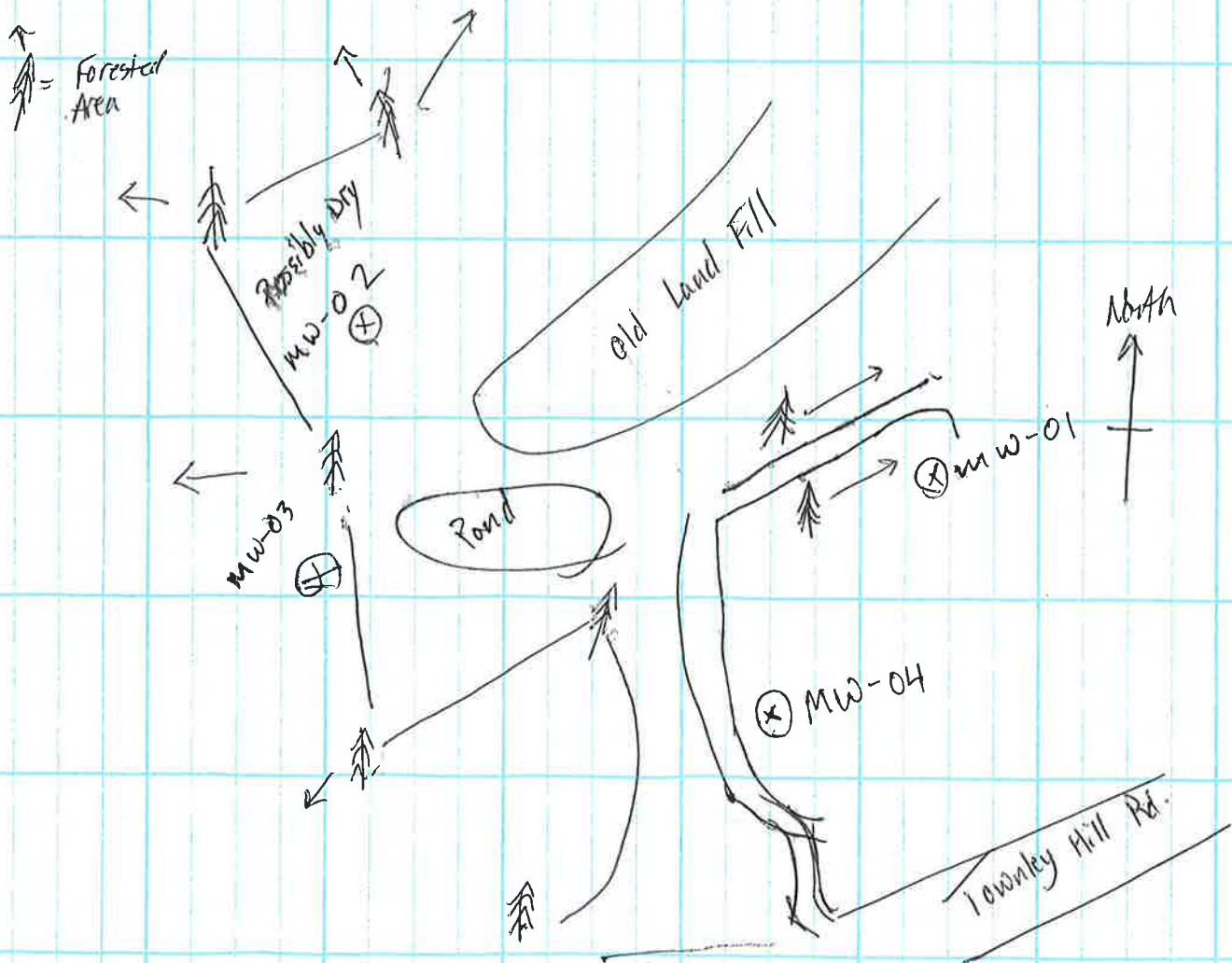
- 1) PFC Free material
- 2) PFC Free Bailers
- 3) water meter

3) Need to wear PFC free clothes + equipment

4) Check w/ EQUIS EAD + NYSDEC CAT B Deliverables.

5) Check 4th well to see if Dry

6) Mail Key Back to Randy J. Skettler 113 East Chemung Place Elmira, NY 14904



Bailer is 2in x 3ft
 Collection Time

Well ID	Depth to water	Depth to Bottom of well	Amount Purged	well Diameter	Sample ID	Collection Time
MW-01 Clear + Odor - well appears to be Locked and in good shape.	44.14 ft	~60 is stuck btw 60-88ft	2-3 well = 10-15 Bailer worth ~6-7gal ✓	2"	MW-01-Dio MW-01-PFA DUPE-2018-Dio 1110 DUPE-2018-PFA 1115	MW-01-2018-Dio 1045 MW-01-2018-PFA 1050
MW-2 NA - Well appears to be locked and in good shape.	Dry	~32 ft BGS	—	—	—	No Sample = Dry
MW-3 Clear + Odor - well appears to be locked and in good shape	Water level meter keeps getting stuck on sides @ 75 ft BGS - Roughly 85' Based on 100ft Rope w/ water Bailer	~90ft By Randy	10 Bailer ~5 gal only got ~3 gal - low Recharge Rate	2"	MW-3-2018-Dio MW-3-2018-PFA	1220 1225
MW-4 - well appears to be locked and in good shape	NA. Water Level meter keeps sticking to Riser and will not go past 15 ft BGS.	~19-20 ft By Randy	6 gal -	2"	MW-4-2018-Dio MW-4-2018-PFA	1310 1315

→ Equipment Blank @ 1140 - PFA

A. da Silva Leaves Site @ 1330/1345, Snowing Harder than @ 0930.

NOTE: NONE PFA water meter kept sticking on well Riser and A. da Silva was NOT able to get the GW Depth accurately from MW-3 & MW-4.



ATTACHMENT - B

ANALYTICAL REPORT

Job Number: 480-145071-1

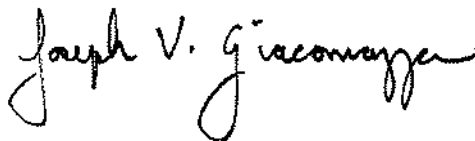
Job Description: Townley Hill Rd Dump Site#808006

Contract Number: C100700

For:

New York State D.E.C.
615 Erie Blvd., West
Syracuse, NY 13204

Attention: Jenelle Gaylord



Approved for release.
Joe V Giacomazza
Project Management Assistant II
12/18/2018 4:41 PM

Designee for
Orlette S Johnson, Senior Project Manager
10 Hazelwood Drive, Amherst, NY, 14228-2298
(484)685-0864
orlette.johnson@testamericainc.com
12/18/2018

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

TestAmerica Laboratories, Inc.

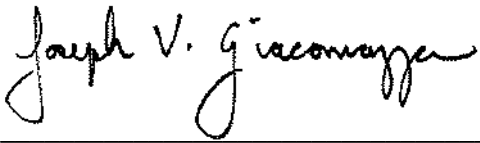
TestAmerica Buffalo 10 Hazelwood Drive, Amherst, NY 14228-2298
Tel (716) 691-2600 Fax (716) 691-7991 www.testamericainc.com



Job Number: 480-145071-1

Job Description: Townley Hill Rd Dump Site#808006

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
12/18/2018 4:41 PM

Designee for
Orlette S Johnson

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**Job Narrative
480-145071-1**

Comments

No additional comments.

Receipt

The samples were received on 11/10/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

LCMS

Method(s) 537 (modified): The matrix spike duplicate (MSD) recoveries for Perfluorotridecanoic acid (PFTriA) for preparation batch 320-260871 and analytical batch 320-263404 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 537 (modified): Results for samples MW-01-2018-PFA (480-145071-1), MW-01-2018-PFA (480-145071-1[MS]) and MW-01-2018-PFA (480-145071-1[MSD]) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recoveries are above the method recommended limit for 6:2 FTS in the 1X analysis of the following samples: MW-01-2018-PFA (480-145071-1) and MW-01-2018-PFA (480-145071-1[MSD]). This sample is reported at dilution with improved IDA recoveries, which are still above the method recommended limit. However, quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS in the following sample: MW-03-2018-PFA (480-145071-2) and MW-04-2018-PFA (480-145071-3). The samples were re-analyzed with concurring results. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Method(s) 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS and M2-8:2 FTS in the following sample: DUPE-2018-PFA (480-145071-4). The samples were re-analyzed with concurring results. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

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

Organic Prep

Method(s) 3535: The following samples were observed to contain sediment prior to extraction: MW-01-2018-PFA (480-145071-1), MW-01-2018-PFA (480-145071-1[MS]), MW-01-2018-PFA (480-145071-1[MSD]), MW-03-2018-PFA (480-145071-2), MW-04-2018-PFA (480-145071-3) and DUPE-2018-PFA (480-145071-4).

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

Definitions/Glossary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
*	Isotope Dilution analyte is outside acceptance limits.

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: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-145071-1	MW-01-2018-PFA	Water	11/09/18 10:50	11/10/18 09:30
480-145071-2	MW-03-2018-PFA	Water	11/09/18 12:25	11/10/18 09:30
480-145071-3	MW-04-2018-PFA	Water	11/09/18 13:15	11/10/18 09:30
480-145071-4	DUPE-2018-PFA	Water	11/09/18 11:15	11/10/18 09:30

Detection Summary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Client Sample ID: MW-01-2018-PFA

Lab Sample ID: 480-145071-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	5.12		1.90	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.61	J	1.90	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.90	0.16	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-03-2018-PFA

Lab Sample ID: 480-145071-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	4.54		1.95	0.34	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.34	J B	1.95	0.17	ng/L	1		537 (modified)	Total/NA

Client Sample ID: MW-04-2018-PFA

Lab Sample ID: 480-145071-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanesulfonic acid (PFHxS)	0.27	J B	1.92	0.16	ng/L	1		537 (modified)	Total/NA

Client Sample ID: DUPE-2018-PFA

Lab Sample ID: 480-145071-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	2.76		1.91	0.33	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.55	J	1.91	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.91	0.16	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Client Sample ID: MW-01-2018-PFA

Lab Sample ID: 480-145071-1

Date Collected: 11/09/18 10:50

Matrix: Water

Date Received: 11/10/18 09:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	5.12		1.90	0.33	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluoropentanoic acid (PFPeA)	0.61	J	1.90	0.47	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorohexanoic acid (PFHxA)	1.90		1.90	0.55	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluoroheptanoic acid (PFHpA)	1.90		1.90	0.24	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorooctanoic acid (PFOA)	1.90		1.90	0.81	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorononanoic acid (PFNA)	1.90		1.90	0.26	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorodecanoic acid (PFDA)	1.90		1.90	0.29	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluoroundecanoic acid (PFUnA)	1.90		1.90	1.05	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorododecanoic acid (PFDoA)	1.90		1.90	0.52	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorotridecanoic acid (PFTriA)	1.90	F1	1.90	1.24	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorotetradecanoic acid (PFTeA)	1.90		1.90	0.28	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorobutanesulfonic acid (PFBS)	1.90		1.90	0.19	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.90	0.16	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.90		1.90	0.18	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorooctanesulfonic acid (PFOS)	1.90		1.90	0.51	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorodecanesulfonic acid (PFDS)	1.90		1.90	0.30	ng/L		11/23/18 04:59	12/06/18 09:12	1
Perfluorooctanesulfonamide (FOSA)	1.90		1.90	0.33	ng/L		11/23/18 04:59	12/06/18 09:12	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.0		19.0	1.81	ng/L		11/23/18 04:59	12/06/18 09:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	67		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C5 PFPeA	92		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C2 PFHxA	82		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C4 PFHpA	95		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C4 PFOA	87		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C5 PFNA	112		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C2 PFDA	117		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C2 PFUnA	91		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C2 PFDoA	104		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C2 PFTeDA	88		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C3 PFBS	96		25 - 150	11/23/18 04:59	12/06/18 09:12	1
18O2 PFHxS	99		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C4 PFOS	111		25 - 150	11/23/18 04:59	12/06/18 09:12	1
13C8 FOSA	98		25 - 150	11/23/18 04:59	12/06/18 09:12	1
d5-NEtFOSAA	127		25 - 150	11/23/18 04:59	12/06/18 09:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	190		190	29.5	ng/L		11/23/18 04:59	12/14/18 23:39	10
6:2 FTS	190		190	19.0	ng/L		11/23/18 04:59	12/14/18 23:39	10
8:2 FTS	190		190	19.0	ng/L		11/23/18 04:59	12/14/18 23:39	10
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
d3-NMeFOSAA	99		25 - 150	11/23/18 04:59	12/14/18 23:39	10			
M2-6:2 FTS	193	*	25 - 150	11/23/18 04:59	12/14/18 23:39	10			
M2-8:2 FTS	99		25 - 150	11/23/18 04:59	12/14/18 23:39	10			

Client Sample Results

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Client Sample ID: MW-03-2018-PFA

Lab Sample ID: 480-145071-2

Date Collected: 11/09/18 12:25

Matrix: Water

Date Received: 11/10/18 09:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	4.54		1.95	0.34	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluoropentanoic acid (PFPeA)	1.95		1.95	0.48	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorohexanoic acid (PFHxA)	1.95		1.95	0.57	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluoroheptanoic acid (PFHpA)	1.95		1.95	0.24	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorooctanoic acid (PFOA)	1.95		1.95	0.83	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorononanoic acid (PFNA)	1.95		1.95	0.26	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorodecanoic acid (PFDA)	1.95		1.95	0.30	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluoroundecanoic acid (PFUnA)	1.95		1.95	1.07	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorododecanoic acid (PFDoA)	1.95		1.95	0.54	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorotridecanoic acid (PFTriA)	1.95		1.95	1.27	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorotetradecanoic acid (PFTeA)	1.95		1.95	0.28	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorobutanesulfonic acid (PFBS)	1.95		1.95	0.19	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorohexanesulfonic acid (PFHxS)	0.34	J B	1.95	0.17	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.95		1.95	0.19	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorooctanesulfonic acid (PFOS)	1.95		1.95	0.53	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorodecanesulfonic acid (PFDS)	1.95		1.95	0.31	ng/L		11/23/18 04:59	12/14/18 23:16	1
Perfluorooctanesulfonamide (FOSA)	1.95		1.95	0.34	ng/L		11/23/18 04:59	12/14/18 23:16	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.5		19.5	3.02	ng/L		11/23/18 04:59	12/14/18 23:16	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.5		19.5	1.85	ng/L		11/23/18 04:59	12/14/18 23:16	1
6:2 FTS	19.5		19.5	1.95	ng/L		11/23/18 04:59	12/14/18 23:16	1
8:2 FTS	19.5		19.5	1.95	ng/L		11/23/18 04:59	12/14/18 23:16	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	74		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C5 PFPeA	74		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C2 PFHxA	76		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C4 PFHpA	78		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C4 PFOA	79		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C5 PFNA	82		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C2 PFDA	79		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C2 PFUnA	76		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C2 PFDoA	74		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C2 PFTeDA	67		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C3 PFBS	75		25 - 150	11/23/18 04:59	12/14/18 23:16	1
18O2 PFHxS	76		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C4 PFOS	82		25 - 150	11/23/18 04:59	12/14/18 23:16	1
13C8 FOSA	69		25 - 150	11/23/18 04:59	12/14/18 23:16	1
d3-NMeFOSAA	80		25 - 150	11/23/18 04:59	12/14/18 23:16	1
d5-NEtFOSAA	90		25 - 150	11/23/18 04:59	12/14/18 23:16	1
M2-6:2 FTS	160 *		25 - 150	11/23/18 04:59	12/14/18 23:16	1
M2-8:2 FTS	97		25 - 150	11/23/18 04:59	12/14/18 23:16	1

Client Sample Results

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Client Sample ID: MW-04-2018-PFA

Lab Sample ID: 480-145071-3

Date Collected: 11/09/18 13:15

Matrix: Water

Date Received: 11/10/18 09:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	1.92		1.92	0.34	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluoropentanoic acid (PFPeA)	1.92		1.92	0.47	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorohexanoic acid (PFHxA)	1.92		1.92	0.56	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluoroheptanoic acid (PFHpA)	1.92		1.92	0.24	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorooctanoic acid (PFOA)	1.92		1.92	0.82	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorononanoic acid (PFNA)	1.92		1.92	0.26	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorodecanoic acid (PFDA)	1.92		1.92	0.30	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluoroundecanoic acid (PFUnA)	1.92		1.92	1.06	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorododecanoic acid (PFDoA)	1.92		1.92	0.53	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorotridecanoic acid (PFTriA)	1.92		1.92	1.25	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorotetradecanoic acid (PFTeA)	1.92		1.92	0.28	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorobutanesulfonic acid (PFBS)	1.92		1.92	0.19	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorohexanesulfonic acid (PFHxS)	0.27	J B	1.92	0.16	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.92		1.92	0.18	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorooctanesulfonic acid (PFOS)	1.92		1.92	0.52	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorodecanesulfonic acid (PFDS)	1.92		1.92	0.31	ng/L		11/23/18 04:59	12/14/18 23:24	1
Perfluorooctanesulfonamide (FOSA)	1.92		1.92	0.34	ng/L		11/23/18 04:59	12/14/18 23:24	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.2		19.2	2.98	ng/L		11/23/18 04:59	12/14/18 23:24	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.2		19.2	1.83	ng/L		11/23/18 04:59	12/14/18 23:24	1
6:2 FTS	19.2		19.2	1.92	ng/L		11/23/18 04:59	12/14/18 23:24	1
8:2 FTS	19.2		19.2	1.92	ng/L		11/23/18 04:59	12/14/18 23:24	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	81		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C5 PFPeA	90		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C2 PFHxA	93		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C4 PFHpA	93		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C4 PFOA	97		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C5 PFNA	102		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C2 PFDA	103		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C2 PFUnA	105		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C2 PFDoA	108		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C2 PFTeDA	114		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C3 PFBS	90		25 - 150	11/23/18 04:59	12/14/18 23:24	1
18O2 PFHxS	96		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C4 PFOS	101		25 - 150	11/23/18 04:59	12/14/18 23:24	1
13C8 FOSA	89		25 - 150	11/23/18 04:59	12/14/18 23:24	1
d3-NMeFOSAA	100		25 - 150	11/23/18 04:59	12/14/18 23:24	1
d5-NEtFOSAA	116		25 - 150	11/23/18 04:59	12/14/18 23:24	1
M2-6:2 FTS	175 *		25 - 150	11/23/18 04:59	12/14/18 23:24	1
M2-8:2 FTS	136		25 - 150	11/23/18 04:59	12/14/18 23:24	1

Client Sample Results

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Client Sample ID: DUPE-2018-PFA

Lab Sample ID: 480-145071-4

Date Collected: 11/09/18 11:15

Matrix: Water

Date Received: 11/10/18 09:30

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	2.76		1.91	0.33	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluoropentanoic acid (PFPeA)	0.55	J	1.91	0.47	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorohexanoic acid (PFHxA)	1.91		1.91	0.55	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluoroheptanoic acid (PFHpA)	1.91		1.91	0.24	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorooctanoic acid (PFOA)	1.91		1.91	0.81	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorononanoic acid (PFNA)	1.91		1.91	0.26	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorodecanoic acid (PFDA)	1.91		1.91	0.30	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluoroundecanoic acid (PFUnA)	1.91		1.91	1.05	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorododecanoic acid (PFDoA)	1.91		1.91	0.53	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorotridecanoic acid (PFTriA)	1.91		1.91	1.24	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorotetradecanoic acid (PFTeA)	1.91		1.91	0.28	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorobutanesulfonic acid (PFBS)	1.91		1.91	0.19	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.91	0.16	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	1.91		1.91	0.18	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorooctanesulfonic acid (PFOS)	1.91		1.91	0.52	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorodecanesulfonic acid (PFDS)	1.91		1.91	0.31	ng/L		11/23/18 04:59	12/14/18 23:31	1
Perfluorooctanesulfonamide (FOSA)	1.91		1.91	0.33	ng/L		11/23/18 04:59	12/14/18 23:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.1		19.1	2.96	ng/L		11/23/18 04:59	12/14/18 23:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.1		19.1	1.81	ng/L		11/23/18 04:59	12/14/18 23:31	1
6:2 FTS	19.1		19.1	1.91	ng/L		11/23/18 04:59	12/14/18 23:31	1
8:2 FTS	19.1		19.1	1.91	ng/L		11/23/18 04:59	12/14/18 23:31	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	66		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C5 PFPeA	82		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C2 PFHxA	87		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C4 PFHpA	96		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C4 PFOA	92		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C5 PFNA	99		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C2 PFDA	101		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C2 PFUnA	96		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C2 PFDoA	106		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C2 PFTeDA	99		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C3 PFBS	86		25 - 150	11/23/18 04:59	12/14/18 23:31	1
18O2 PFHxS	96		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C4 PFOS	96		25 - 150	11/23/18 04:59	12/14/18 23:31	1
13C8 FOSA	88		25 - 150	11/23/18 04:59	12/14/18 23:31	1
d3-NMeFOSAA	131		25 - 150	11/23/18 04:59	12/14/18 23:31	1
d5-NEtFOSAA	120		25 - 150	11/23/18 04:59	12/14/18 23:31	1
M2-6:2 FTS	226	*	25 - 150	11/23/18 04:59	12/14/18 23:31	1
M2-8:2 FTS	171	*	25 - 150	11/23/18 04:59	12/14/18 23:31	1

Isotope Dilution Summary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

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)
480-145071-1	MW-01-2018-PFA	67	92	82	95	87	112	117	91
480-145071-1 - DL	MW-01-2018-PFA								
480-145071-1 MS	MW-01-2018-PFA	70	89	93	95	92	96	97	99
480-145071-1 MS - DL	MW-01-2018-PFA								
480-145071-1 MSD	MW-01-2018-PFA	66	92	83	94	86	105	117	89
480-145071-1 MSD - DL	MW-01-2018-PFA								
480-145071-2	MW-03-2018-PFA	74	74	76	78	79	82	79	76
480-145071-3	MW-04-2018-PFA	81	90	93	93	97	102	103	105
480-145071-4	DUPE-2018-PFA	66	82	87	96	92	99	101	96
LCS 320-260871/2-A	Lab Control Sample	87	91	92	93	90	93	94	94
MB 320-260871/1-A	Method Blank	94	91	92	94	98	98	97	106

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	3C3-PFB (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	-NMeFOS (25-150)	-NEtFOS (25-150)
480-145071-1	MW-01-2018-PFA	104	88	96	99	111	98		127
480-145071-1 - DL	MW-01-2018-PFA							99	
480-145071-1 MS	MW-01-2018-PFA	98	96	90	88	90	89		129
480-145071-1 MS - DL	MW-01-2018-PFA							91	
480-145071-1 MSD	MW-01-2018-PFA	105	88	89	93	105	94		128
480-145071-1 MSD - DL	MW-01-2018-PFA							80	
480-145071-2	MW-03-2018-PFA	74	67	75	76	82	69	80	90
480-145071-3	MW-04-2018-PFA	108	114	90	96	101	89	100	116
480-145071-4	DUPE-2018-PFA	106	99	86	96	96	88	131	120
LCS 320-260871/2-A	Lab Control Sample	99	99	89	89	94	91	111	115
MB 320-260871/1-A	Method Blank	102	109	90	94	103	96	117	117

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
480-145071-1	MW-01-2018-PFA		
480-145071-1 - DL	MW-01-2018-PFA	193 *	99
480-145071-1 MS	MW-01-2018-PFA		
480-145071-1 MS - DL	MW-01-2018-PFA	130	93
480-145071-1 MSD	MW-01-2018-PFA		
480-145071-1 MSD - DL	MW-01-2018-PFA	174 *	95
480-145071-2	MW-03-2018-PFA	160 *	97
480-145071-3	MW-04-2018-PFA	175 *	136
480-145071-4	DUPE-2018-PFA	226 *	171 *
LCS 320-260871/2-A	Lab Control Sample	114	104
MB 320-260871/1-A	Method Blank	114	113

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

Isotope Dilution Summary

Client: New York State D.E.C.

TestAmerica Job ID: 480-145071-1

Project/Site: Townley Hill Rd Dump Site#808006

PFD_oA = 13C₂ PFD_oA
PFTDA = 13C₂ PFTeDA
13C₃-PFBS = 13C₃ PFBS
PFH_xS = 18O₂ PFH_xS
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: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-260871/1-A
Matrix: Water
Analysis Batch: 263404

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 260871

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	2.00		2.00	0.35	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluoropentanoic acid (PFPeA)	2.00		2.00	0.49	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorohexanoic acid (PFHxA)	2.00		2.00	0.58	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluoroheptanoic acid (PFHpA)	2.00		2.00	0.25	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorooctanoic acid (PFOA)	2.00		2.00	0.85	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorononanoic acid (PFNA)	2.00		2.00	0.27	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorodecanoic acid (PFDA)	2.00		2.00	0.31	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluoroundecanoic acid (PFUnA)	2.00		2.00	1.10	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorododecanoic acid (PFDoA)	2.00		2.00	0.55	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorotridecanoic acid (PFTriA)	2.00		2.00	1.30	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorotetradecanoic acid (PFTeA)	2.00		2.00	0.29	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorobutanesulfonic acid (PFBS)	2.00		2.00	0.20	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorohexanesulfonic acid (PFHxS)	0.313	J	2.00	0.17	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluoroheptanesulfonic Acid (PFHpS)	2.00		2.00	0.19	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorooctanesulfonic acid (PFOS)	2.00		2.00	0.54	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorodecanesulfonic acid (PFDS)	2.00		2.00	0.32	ng/L		11/23/18 04:59	12/06/18 08:57	1
Perfluorooctanesulfonamide (FOSA)	2.00		2.00	0.35	ng/L		11/23/18 04:59	12/06/18 08:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0		20.0	3.10	ng/L		11/23/18 04:59	12/06/18 08:57	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0		20.0	1.90	ng/L		11/23/18 04:59	12/06/18 08:57	1
6:2 FTS	20.0		20.0	2.00	ng/L		11/23/18 04:59	12/06/18 08:57	1
8:2 FTS	20.0		20.0	2.00	ng/L		11/23/18 04:59	12/06/18 08:57	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	94		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C5 PFPeA	91		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C2 PFHxA	92		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C4 PFHpA	94		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C4 PFOA	98		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C5 PFNA	98		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C2 PFDA	97		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C2 PFUnA	106		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C2 PFDoA	102		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C2 PFTeDA	109		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C3 PFBS	90		25 - 150	11/23/18 04:59	12/06/18 08:57	1
18O2 PFHxS	94		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C4 PFOS	103		25 - 150	11/23/18 04:59	12/06/18 08:57	1
13C8 FOSA	96		25 - 150	11/23/18 04:59	12/06/18 08:57	1
d3-NMeFOSAA	117		25 - 150	11/23/18 04:59	12/06/18 08:57	1
d5-NEtFOSAA	117		25 - 150	11/23/18 04:59	12/06/18 08:57	1
M2-6:2 FTS	114		25 - 150	11/23/18 04:59	12/06/18 08:57	1
M2-8:2 FTS	113		25 - 150	11/23/18 04:59	12/06/18 08:57	1

QC Sample Results

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

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

Lab Sample ID: LCS 320-260871/2-A
Matrix: Water
Analysis Batch: 263404

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 260871
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	41.93		ng/L		105	70 - 130
Perfluoropentanoic acid (PFPeA)	40.0	40.20		ng/L		100	66 - 126
Perfluorohexanoic acid (PFHxA)	40.0	40.33		ng/L		101	66 - 126
Perfluoroheptanoic acid (PFHpA)	40.0	37.26		ng/L		93	66 - 126
Perfluorooctanoic acid (PFOA)	40.0	39.77		ng/L		99	64 - 124
Perfluorononanoic acid (PFNA)	40.0	38.22		ng/L		96	68 - 128
Perfluorodecanoic acid (PFDA)	40.0	38.70		ng/L		97	69 - 129
Perfluoroundecanoic acid (PFUnA)	40.0	37.86		ng/L		95	60 - 120
Perfluorododecanoic acid (PFDoA)	40.0	34.68		ng/L		87	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	38.95		ng/L		97	72 - 132
Perfluorotetradecanoic acid (PFTeA)	40.0	37.90		ng/L		95	68 - 128
Perfluorobutanesulfonic acid (PFBS)	35.4	35.70		ng/L		101	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.10		ng/L		96	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.89		ng/L		102	68 - 128
Perfluorooctanesulfonic acid (PFOS)	37.1	36.60		ng/L		99	67 - 127
Perfluorodecanesulfonic acid (PFDS)	38.6	39.99		ng/L		104	68 - 128
Perfluorooctanesulfonamide (FOSA)	40.0	37.96		ng/L		95	70 - 130
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	37.72		ng/L		94	67 - 127
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	36.31		ng/L		91	65 - 125
6:2 FTS	37.9	39.61		ng/L		104	66 - 126
8:2 FTS	38.3	37.46		ng/L		98	67 - 127

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	87		25 - 150
13C5 PFPeA	91		25 - 150
13C2 PFHxA	92		25 - 150
13C4 PFHpA	93		25 - 150
13C4 PFOA	90		25 - 150
13C5 PFNA	93		25 - 150
13C2 PFDA	94		25 - 150
13C2 PFUnA	94		25 - 150
13C2 PFDoA	99		25 - 150
13C2 PFTeDA	99		25 - 150
13C3 PFBS	89		25 - 150
18O2 PFHxS	89		25 - 150
13C4 PFOS	94		25 - 150
13C8 FOSA	91		25 - 150
d3-NMeFOSAA	111		25 - 150
d5-NEtFOSAA	115		25 - 150

QC Sample Results

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

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

Lab Sample ID: LCS 320-260871/2-A
Matrix: Water
Analysis Batch: 263404

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 260871

<i>Isotope Dilution</i>	LCS LCS		<i>Limits</i>
	%Recovery	Qualifier	
M2-6:2 FTS	114		25 - 150
M2-8:2 FTS	104		25 - 150

Lab Sample ID: 480-145071-1 MS
Matrix: Water
Analysis Batch: 263404

Client Sample ID: MW-01-2018-PFA
Prep Type: Total/NA
Prep Batch: 260871
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Perfluorobutanoic acid (PFBA)	5.12		37.2	39.15		ng/L		91	70 - 130
Perfluoropentanoic acid (PFPeA)	0.61	J	37.2	37.67		ng/L		100	66 - 126
Perfluorohexanoic acid (PFHxA)	1.90		37.2	34.44		ng/L		93	66 - 126
Perfluoroheptanoic acid (PFHpA)	1.90		37.2	36.76		ng/L		99	66 - 126
Perfluorooctanoic acid (PFOA)	1.90		37.2	35.57		ng/L		96	64 - 124
Perfluorononanoic acid (PFNA)	1.90		37.2	36.08		ng/L		97	68 - 128
Perfluorodecanoic acid (PFDA)	1.90		37.2	35.51		ng/L		95	69 - 129
Perfluoroundecanoic acid (PFUnA)	1.90		37.2	36.05		ng/L		97	60 - 120
Perfluorododecanoic acid (PFDoA)	1.90		37.2	33.94		ng/L		91	71 - 131
Perfluorotridecanoic acid (PFTriA)	1.90	F1	37.2	34.38		ng/L		92	72 - 132
Perfluorotetradecanoic acid (PFTeA)	1.90		37.2	33.60		ng/L		90	68 - 128
Perfluorobutanesulfonic acid (PFBS)	1.90		32.9	33.17		ng/L		101	73 - 133
Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	33.9	32.08		ng/L		94	63 - 123
Perfluoroheptanesulfonic Acid (PFHpS)	1.90		35.4	36.51		ng/L		103	68 - 128
Perfluorooctanesulfonic acid (PFOS)	1.90		34.5	33.35		ng/L		97	67 - 127
Perfluorodecanesulfonic acid (PFDS)	1.90		35.9	32.88		ng/L		92	68 - 128
Perfluorooctanesulfonamide (FOSA)	1.90		37.2	35.01		ng/L		94	70 - 130
N-ethylperfluorooctanesulfonamide doacetic acid (NETFOSAA)	19.0		37.2	33.94		ng/L		91	65 - 125

<i>Isotope Dilution</i>	MS MS		<i>Limits</i>
	%Recovery	Qualifier	
13C4 PFBA	70		25 - 150
13C5 PFPeA	89		25 - 150
13C2 PFHxA	93		25 - 150
13C4 PFHpA	95		25 - 150
13C4 PFOA	92		25 - 150
13C5 PFNA	96		25 - 150
13C2 PFDA	97		25 - 150
13C2 PFUnA	99		25 - 150
13C2 PFDoA	98		25 - 150
13C2 PFTeDA	96		25 - 150
13C3 PFBS	90		25 - 150
18O2 PFHxS	88		25 - 150

QC Sample Results

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

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

Lab Sample ID: 480-145071-1 MS

Matrix: Water

Analysis Batch: 263404

Client Sample ID: MW-01-2018-PFA

Prep Type: Total/NA

Prep Batch: 260871

<i>Isotope Dilution</i>	<i>MS %Recovery</i>	<i>MS Qualifier</i>	<i>Limits</i>
13C4 PFOS	90		25 - 150
13C8 FOSA	89		25 - 150
d5-NEtFOSAA	129		25 - 150

Lab Sample ID: 480-145071-1 MSD

Matrix: Water

Analysis Batch: 263404

Client Sample ID: MW-01-2018-PFA

Prep Type: Total/NA

Prep Batch: 260871

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
Perfluorobutanoic acid (PFBA)	5.12		37.7	39.84		ng/L		92	70 - 130	2	30
Perfluoropentanoic acid (PFPeA)	0.61	J	37.7	37.65		ng/L		98	66 - 126	0	30
Perfluorohexanoic acid (PFHxA)	1.90		37.7	36.18		ng/L		96	66 - 126	5	30
Perfluoroheptanoic acid (PFHpA)	1.90		37.7	36.27		ng/L		96	66 - 126	1	30
Perfluorooctanoic acid (PFOA)	1.90		37.7	36.29		ng/L		96	64 - 124	2	30
Perfluorononanoic acid (PFNA)	1.90		37.7	35.62		ng/L		95	68 - 128	1	30
Perfluorodecanoic acid (PFDA)	1.90		37.7	34.56		ng/L		92	69 - 129	3	30
Perfluoroundecanoic acid (PFUnA)	1.90		37.7	37.59		ng/L		100	60 - 120	4	30
Perfluorododecanoic acid (PFDoA)	1.90		37.7	30.19		ng/L		80	71 - 131	12	30
Perfluorotridecanoic acid (PFTriA)	1.90	F1	37.7	25.49	F1	ng/L		68	72 - 132	30	30
Perfluorotetradecanoic acid (PFTeA)	1.90		37.7	35.33		ng/L		94	68 - 128	5	30
Perfluorobutanesulfonic acid (PFBS)	1.90		33.3	35.40		ng/L		106	73 - 133	6	30
Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	34.3	33.85		ng/L		98	63 - 123	5	30
Perfluoroheptanesulfonic Acid (PFHpS)	1.90		35.9	32.45		ng/L		90	68 - 128	12	30
Perfluorooctanesulfonic acid (PFOS)	1.90		35.0	32.83		ng/L		94	67 - 127	2	30
Perfluorodecanesulfonic acid (PFDS)	1.90		36.3	25.57		ng/L		70	68 - 128	25	30
Perfluorooctanesulfonamide (FOSA)	1.90		37.7	35.01		ng/L		93	70 - 130	0	30
N-ethylperfluorooctanesulfonami doacetic acid (NEtFOSAA)	19.0		37.7	37.97		ng/L		101	65 - 125	11	30

<i>Isotope Dilution</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
13C4 PFBA	66		25 - 150
13C5 PFPeA	92		25 - 150
13C2 PFHxA	83		25 - 150
13C4 PFHpA	94		25 - 150
13C4 PFOA	86		25 - 150
13C5 PFNA	105		25 - 150
13C2 PFDA	117		25 - 150
13C2 PFUnA	89		25 - 150
13C2 PFDoA	105		25 - 150
13C2 PFTeDA	88		25 - 150
13C3 PFBS	89		25 - 150

QC Sample Results

Client: New York State D.E.C.
 Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

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

Lab Sample ID: 480-145071-1 MSD
Matrix: Water
Analysis Batch: 263404

Client Sample ID: MW-01-2018-PFA
Prep Type: Total/NA
Prep Batch: 260871

<i>Isotope Dilution</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
18O2 PFHxS	93		25 - 150
13C4 PFOS	105		25 - 150
13C8 FOSA	94		25 - 150
d5-NEtFOSAA	128		25 - 150

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

Lab Sample ID: 480-145071-1 MS
Matrix: Water
Analysis Batch: 265427

Client Sample ID: MW-01-2018-PFA
Prep Type: Total/NA
Prep Batch: 260871

<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>Limits</i>
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA) - DL	190		37.2	34.23	J	ng/L		92	67 - 127
6:2 FTS - DL	190		35.3	39.20	J	ng/L		111	66 - 126
8:2 FTS - DL	190		35.7	36.69	J	ng/L		103	67 - 127

<i>Isotope Dilution</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
d3-NMeFOSAA - DL	91		25 - 150
M2-6:2 FTS - DL	130		25 - 150
M2-8:2 FTS - DL	93		25 - 150

Lab Sample ID: 480-145071-1 MSD
Matrix: Water
Analysis Batch: 265427

Client Sample ID: MW-01-2018-PFA
Prep Type: Total/NA
Prep Batch: 260871

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA) - DL	190		37.7	39.71	J	ng/L		105	67 - 127	15	30
6:2 FTS - DL	190		35.7	36.28	J	ng/L		102	66 - 126	8	30
8:2 FTS - DL	190		36.1	37.90	J	ng/L		105	67 - 127	3	30

<i>Isotope Dilution</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
d3-NMeFOSAA - DL	80		25 - 150
M2-6:2 FTS - DL	174	*	25 - 150
M2-8:2 FTS - DL	95		25 - 150

QC Association Summary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

LCMS

Prep Batch: 260871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145071-1 - DL	MW-01-2018-PFA	Total/NA	Water	3535	
480-145071-1	MW-01-2018-PFA	Total/NA	Water	3535	
480-145071-2	MW-03-2018-PFA	Total/NA	Water	3535	
480-145071-3	MW-04-2018-PFA	Total/NA	Water	3535	
480-145071-4	DUPE-2018-PFA	Total/NA	Water	3535	
MB 320-260871/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-260871/2-A	Lab Control Sample	Total/NA	Water	3535	
480-145071-1 MS - DL	MW-01-2018-PFA	Total/NA	Water	3535	
480-145071-1 MS	MW-01-2018-PFA	Total/NA	Water	3535	
480-145071-1 MSD - DL	MW-01-2018-PFA	Total/NA	Water	3535	
480-145071-1 MSD	MW-01-2018-PFA	Total/NA	Water	3535	

Analysis Batch: 263404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145071-1	MW-01-2018-PFA	Total/NA	Water	537 (modified)	260871
MB 320-260871/1-A	Method Blank	Total/NA	Water	537 (modified)	260871
LCS 320-260871/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	260871
480-145071-1 MS	MW-01-2018-PFA	Total/NA	Water	537 (modified)	260871
480-145071-1 MSD	MW-01-2018-PFA	Total/NA	Water	537 (modified)	260871

Analysis Batch: 265427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145071-1 - DL	MW-01-2018-PFA	Total/NA	Water	537 (modified)	260871
480-145071-2	MW-03-2018-PFA	Total/NA	Water	537 (modified)	260871
480-145071-3	MW-04-2018-PFA	Total/NA	Water	537 (modified)	260871
480-145071-4	DUPE-2018-PFA	Total/NA	Water	537 (modified)	260871
480-145071-1 MS - DL	MW-01-2018-PFA	Total/NA	Water	537 (modified)	260871
480-145071-1 MSD - DL	MW-01-2018-PFA	Total/NA	Water	537 (modified)	260871

Lab Chronicle

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

Client Sample ID: MW-01-2018-PFA

Date Collected: 11/09/18 10:50

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145071-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260871	11/23/18 04:59	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	263404	12/06/18 09:12	S1M	TAL SAC
Total/NA	Prep	3535	DL		260871	11/23/18 04:59	MYV	TAL SAC
Total/NA	Analysis	537 (modified)	DL	10	265427	12/14/18 23:39	S1M	TAL SAC

Client Sample ID: MW-03-2018-PFA

Date Collected: 11/09/18 12:25

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145071-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260871	11/23/18 04:59	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	265427	12/14/18 23:16	S1M	TAL SAC

Client Sample ID: MW-04-2018-PFA

Date Collected: 11/09/18 13:15

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145071-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260871	11/23/18 04:59	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	265427	12/14/18 23:24	S1M	TAL SAC

Client Sample ID: DUPE-2018-PFA

Date Collected: 11/09/18 11:15

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145071-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			260871	11/23/18 04:59	MYV	TAL SAC
Total/NA	Analysis	537 (modified)		1	265427	12/14/18 23:31	S1M	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: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

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: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145071-1

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

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11666	03-31-19

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
537 (modified)	3535	Water	6:2 FTS
537 (modified)	3535	Water	8:2 FTS
537 (modified)	3535	Water	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537 (modified)	3535	Water	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537 (modified)	3535	Water	Perfluorobutanesulfonic acid (PFBS)
537 (modified)	3535	Water	Perfluorobutanoic acid (PFBA)
537 (modified)	3535	Water	Perfluorodecanesulfonic acid (PFDS)
537 (modified)	3535	Water	Perfluorodecanoic acid (PFDA)
537 (modified)	3535	Water	Perfluorododecanoic acid (PFDoA)
537 (modified)	3535	Water	Perfluoroheptanesulfonic Acid (PFHpS)
537 (modified)	3535	Water	Perfluoroheptanoic acid (PFHpA)
537 (modified)	3535	Water	Perfluorohexanesulfonic acid (PFHxS)
537 (modified)	3535	Water	Perfluorohexanoic acid (PFHxA)
537 (modified)	3535	Water	Perfluorononanoic acid (PFNA)
537 (modified)	3535	Water	Perfluorooctanesulfonamide (FOSA)
537 (modified)	3535	Water	Perfluorooctanesulfonic acid (PFOS)
537 (modified)	3535	Water	Perfluorooctanoic acid (PFOA)
537 (modified)	3535	Water	Perfluoropentanoic acid (PFPeA)
537 (modified)	3535	Water	Perfluorotetradecanoic acid (PFTeA)
537 (modified)	3535	Water	Perfluorotridecanoic acid (PFTriA)
537 (modified)	3535	Water	Perfluoroundecanoic acid (PFUnA)

PFC_IDA

Fluorinated Alkyl Substances

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	M262FTS #	M282FTS #	d3NMFOS #
MW-01-2018-PFA DL	480-145071-1 DL	193 *	99	99
MW-01-2018-PFA MS DL	480-145071-1 MS DL	130	93	91
MW-01-2018-PFA MSD DL	480-145071-1 MSD DL	174 *	95	80

M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
d3NMFOS = d3-NMeFOSAA

QC LIMITS
25-150
25-150
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.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	M262FTS #	PFOA #
MW-03-2018-PFA	480-145071-2	74	74	75	76	78	76	160 *	79
MW-04-2018-PFA	480-145071-3	81	90	90	93	93	96	175 *	97
DUPE-2018-PFA	480-145071-4	66	82	86	87	96	96	226 *	92
	MB 320-260871/1-A	94	91	90	92	94	94	114	98
	LCS 320-260871/2-A	87	91	89	92	93	89	114	90

QC LIMITS

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

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
MW-03-2018-PFA	480-145071-2	82	82	69	97	79	80	90	76
MW-04-2018-PFA	480-145071-3	101	102	89	136	103	100	116	105
DUPE-2018-PFA	480-145071-4	96	99	88	171 *	101	131	120	96
	MB 320-260871/1-A	103	98	96	113	97	117	117	106
	LCS 320-260871/2-A	94	93	91	104	94	111	115	94

	<u>QC LIMITS</u>
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	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.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFDa #	PFTDA #
MW-03-2018-PFA	480-145071-2	74	67
MW-04-2018-PFA	480-145071-3	108	114
DUPE-2018-PFA	480-145071-4	106	99
	MB 320-260871/1-A	102	109
	LCS 320-260871/2-A	99	99

PFDa = 13C2 PFDa
PFTDA = 13C2 PFTeDA

QC LIMITS
25-150
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.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	PFBS #	PFHxA #	PFHpA #	PFHxS #	PFOA #	PFOS #
MW-01-2018-PFA	480-145071-1	67	92	96	82	95	99	87	111
MW-01-2018-PFA MS	480-145071-1 MS	70	89	90	93	95	88	92	90
MW-01-2018-PFA MSD	480-145071-1 MSD	66	92	89	83	94	93	86	105

PFBA = 13C4 PFBA
 PFPeA = 13C5 PFPeA
 PFBS = 13C3 PFBS
 PFHxA = 13C2 PFHxA
 PFHpA = 13C4 PFHpA
 PFHxS = 18O2 PFHxS
 PFOA = 13C4 PFOA
 PFOS = 13C4 PFOS

QC LIMITS

25-150
 25-150
 25-150
 25-150
 25-150
 25-150
 25-150
 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.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

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

Client Sample ID	Lab Sample ID	PFNA #	PFOSA #	PFDA #	d5NEFOS #	PFUnA #	PFDoA #	PFTDA #
MW-01-2018-PFA	480-145071-1	112	98	117	127	91	104	88
MW-01-2018-PFA MS	480-145071-1 MS	96	89	97	129	99	98	96
MW-01-2018-PFA MSD	480-145071-1 MSD	105	94	117	128	89	105	88

PFNA = 13C5 PFNA
 PFOSA = 13C8 FOSA
 PFDA = 13C2 PFDA
 d5NEFOS = d5-NEtFOSAA
 PFUnA = 13C2 PFUnA
 PFDoA = 13C2 PFDoA
 PFTDA = 13C2 PFTeDA

QC LIMITS

25-150
 25-150
 25-150
 25-150
 25-150
 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.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.12.05LLB_027.d

Lab ID: LCS 320-260871/2-A

Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	40.0	41.93	105	70-130	
Perfluoropentanoic acid (PFPeA)	40.0	40.20	100	66-126	
Perfluorohexanoic acid (PFHxA)	40.0	40.33	101	66-126	
Perfluoroheptanoic acid (PFHpA)	40.0	37.26	93	66-126	
Perfluorooctanoic acid (PFOA)	40.0	39.77	99	64-124	
Perfluorononanoic acid (PFNA)	40.0	38.22	96	68-128	
Perfluorodecanoic acid (PFDA)	40.0	38.70	97	69-129	
Perfluoroundecanoic acid (PFUnA)	40.0	37.86	95	60-120	
Perfluorododecanoic acid (PFDoA)	40.0	34.68	87	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	38.95	97	72-132	
Perfluorotetradecanoic acid (PFTeA)	40.0	37.90	95	68-128	
Perfluorobutanesulfonic acid (PFBS)	35.4	35.70	101	73-133	
Perfluorohexanesulfonic acid (PFHxS)	36.4	35.10	96	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	38.89	102	68-128	
Perfluorooctanesulfonic acid (PFOS)	37.1	36.60	99	67-127	
Perfluorodecanesulfonic acid (PFDS)	38.6	39.99	104	68-128	
Perfluorooctanesulfonamide (FOSA)	40.0	37.96	95	70-130	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	37.72	94	67-127	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	36.31	91	65-125	
6:2 FTS	37.9	39.61	104	66-126	
8:2 FTS	38.3	37.46	98	67-127	
13C4 PFBA	100	87.22	87	25-150	
13C5 PFPeA	100	90.76	91	25-150	
13C2 PFHxA	100	91.71	92	25-150	
13C4 PFHpA	100	93.45	93	25-150	
13C4 PFOA	100	90.21	90	25-150	
13C5 PFNA	100	93.48	93	25-150	
13C2 PFDA	100	93.60	94	25-150	
13C2 PFUnA	100	93.75	94	25-150	
13C2 PFDoA	100	99.05	99	25-150	
13C2 PFTeDA	100	99.35	99	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.12.05LLB_027.d
 Lab ID: LCS 320-260871/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
13C3 PFBS	93.0	82.45	89	25-150	
18O2 PFHxS	94.6	84.42	89	25-150	
13C4 PFOS	95.6	89.81	94	25-150	
13C8 FOSA	100	90.55	91	25-150	
d3-NMeFOSAA	100	110.6	111	25-150	
d5-NEtFOSAA	100	115.0	115	25-150	
M2-6:2 FTS	95.0	108.1	114	25-150	
M2-8:2 FTS	95.8	99.85	104	25-150	

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

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.12.05LLB_029.d

Lab ID: 480-145071-1 MS

Client ID: MW-01-2018-PFA MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorobutanoic acid (PFBA)	37.2	5.12	39.15	91	70-130	
Perfluoropentanoic acid (PFPeA)	37.2	0.61 J	37.67	100	66-126	
Perfluorohexanoic acid (PFHxA)	37.2	1.90	34.44	93	66-126	
Perfluoroheptanoic acid (PFHpA)	37.2	1.90	36.76	99	66-126	
Perfluorooctanoic acid (PFOA)	37.2	1.90	35.57	96	64-124	
Perfluorononanoic acid (PFNA)	37.2	1.90	36.08	97	68-128	
Perfluorodecanoic acid (PFDA)	37.2	1.90	35.51	95	69-129	
Perfluoroundecanoic acid (PFUnA)	37.2	1.90	36.05	97	60-120	
Perfluorododecanoic acid (PFDoA)	37.2	1.90	33.94	91	71-131	
Perfluorotridecanoic acid (PFTriA)	37.2	1.90	34.38	92	72-132	
Perfluorotetradecanoic acid (PFTeA)	37.2	1.90	33.60	90	68-128	
Perfluorobutanesulfonic acid (PFBS)	32.9	1.90	33.17	101	73-133	
Perfluorohexanesulfonic acid (PFHxS)	33.9	0.25 J	32.08	94	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	35.4	1.90	36.51	103	68-128	
Perfluorooctanesulfonic acid (PFOS)	34.5	1.90	33.35	97	67-127	
Perfluorodecanesulfonic acid (PFDS)	35.9	1.90	32.88	92	68-128	
Perfluorooctanesulfonamide (FOSA)	37.2	1.90	35.01	94	70-130	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	37.2	19.0	33.94	91	65-125	
13C4 PFBA	93.1	63.6	65.49	70	25-150	
13C5 PFPeA	93.1	87.2	83.03	89	25-150	
13C2 PFHxA	93.1	77.5	86.20	93	25-150	
13C4 PFHpA	93.1	90.7	88.34	95	25-150	
13C4 PFOA	93.1	82.2	85.28	92	25-150	
13C5 PFNA	93.1	106	89.66	96	25-150	
13C2 PFDA	93.1	111	90.40	97	25-150	
13C2 PFUnA	93.1	86.4	91.95	99	25-150	
13C2 PFDoA	93.1	99.2	91.43	98	25-150	
13C2 PFTeDA	93.1	83.2	89.60	96	25-150	
13C3 PFBS	86.6	84.7	78.31	90	25-150	
18O2 PFHxS	88.0	89.4	77.08	88	25-150	
13C4 PFOS	89.0	101	80.02	90	25-150	
13C8 FOSA	93.1	93.2	82.57	89	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: 2018.12.05LLB_029.d

Lab ID: 480-145071-1 MS Client ID: MW-01-2018-PFA MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
d5-NEtFOSAA	93.1	120	119.9	129	25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.12.14LLB_027.d
 Lab ID: 480-145071-1 MS DL Client ID: MW-01-2018-PFA MS DL

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	37.2	190	34.23 J	92	67-127	
6:2 FTS	35.3	190	39.20 J	111	66-126	
8:2 FTS	35.7	190	36.69 J	103	67-127	
d3-NMeFOSAA	93.1	93.7	85.11	91	25-150	
M2-6:2 FTS	88.4	174	115.3	130	25-150	
M2-8:2 FTS	89.2	89.8	83.05	93	25-150	

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

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 480-145071-1

SDG No.: _____

Matrix: Water Level: Low

Lab File ID: 2018.12.05LLB_030.d

Lab ID: 480-145071-1 MSD

Client ID: MW-01-2018-PFA MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorobutanoic acid (PFBA)	37.7	39.84	92	2	30	70-130	
Perfluoropentanoic acid (PFPeA)	37.7	37.65	98	0	30	66-126	
Perfluorohexanoic acid (PFHxA)	37.7	36.18	96	5	30	66-126	
Perfluoroheptanoic acid (PFHpA)	37.7	36.27	96	1	30	66-126	
Perfluorooctanoic acid (PFOA)	37.7	36.29	96	2	30	64-124	
Perfluorononanoic acid (PFNA)	37.7	35.62	95	1	30	68-128	
Perfluorodecanoic acid (PFDA)	37.7	34.56	92	3	30	69-129	
Perfluoroundecanoic acid (PFUnA)	37.7	37.59	100	4	30	60-120	
Perfluorododecanoic acid (PFDoA)	37.7	30.19	80	12	30	71-131	
Perfluorotridecanoic acid (PFTriA)	37.7	25.49	68	30	30	72-132	F1
Perfluorotetradecanoic acid (PFTeA)	37.7	35.33	94	5	30	68-128	
Perfluorobutanesulfonic acid (PFBS)	33.3	35.40	106	6	30	73-133	
Perfluorohexanesulfonic acid (PFHxS)	34.3	33.85	98	5	30	63-123	
Perfluoroheptanesulfonic Acid (PFHpS)	35.9	32.45	90	12	30	68-128	
Perfluorooctanesulfonic acid (PFOS)	35.0	32.83	94	2	30	67-127	
Perfluorodecanesulfonic acid (PFDS)	36.3	25.57	70	25	30	68-128	
Perfluorooctanesulfonamide (FOSA)	37.7	35.01	93	0	30	70-130	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	37.7	37.97	101	11	30	65-125	
13C4 PFBA	94.2	62.62	66			25-150	
13C5 PFPeA	94.2	86.44	92			25-150	
13C2 PFHxA	94.2	77.99	83			25-150	
13C4 PFHpA	94.2	89.01	94			25-150	
13C4 PFOA	94.2	81.28	86			25-150	
13C5 PFNA	94.2	99.22	105			25-150	
13C2 PFDA	94.2	110.4	117			25-150	
13C2 PFUnA	94.2	84.13	89			25-150	
13C2 PFDoA	94.2	99.13	105			25-150	
13C2 PFTeDA	94.2	82.73	88			25-150	
13C3 PFBS	87.6	77.88	89			25-150	
18O2 PFHxS	89.1	83.02	93			25-150	
13C4 PFOS	90.1	94.27	105			25-150	
13C8 FOSA	94.2	88.11	94			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.12.05LLB_030.d
 Lab ID: 480-145071-1 MSD Client ID: MW-01-2018-PFA MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
d5-NEtFOSAA	94.2	120.7	128			25-150	

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

FORM III
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: 2018.12.14LLB_028.d
 Lab ID: 480-145071-1 MSD DL Client ID: MW-01-2018-PFA MSD DL

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
N-methylperfluorooctanesulfona midoacetic acid (NMeFOSAA)	37.7	39.71 J	105	15	30	67-127	
6:2 FTS	35.7	36.28 J	102	8	30	66-126	
8:2 FTS	36.1	37.90 J	105	3	30	67-127	
d3-NMeFOSAA	94.2	75.75	80			25-150	
M2-6:2 FTS	89.5	156.0	174			25-150	*
M2-8:2 FTS	90.2	85.71	95			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.: 480-145071-1
 SDG No.: _____
 Lab File ID: 2018.12.05LLB_026.d Lab Sample ID: MB 320-260871/1-A
 Matrix: Water Date Extracted: 11/23/2018 04:59
 Instrument ID: A8_N Date Analyzed: 12/06/2018 08:57
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-260871/2-A	2018.12.05L LB 027.d	12/06/2018 09:05
MW-01-2018-PFA	480-145071-1	2018.12.05L LB 028.d	12/06/2018 09:12
MW-01-2018-PFA MS	480-145071-1 MS	2018.12.05L LB 029.d	12/06/2018 09:20
MW-01-2018-PFA MSD	480-145071-1 MSD	2018.12.05L LB 030.d	12/06/2018 09:27
MW-03-2018-PFA	480-145071-2	2018.12.14L LB 023.d	12/14/2018 23:16
MW-04-2018-PFA	480-145071-3	2018.12.14L LB 024.d	12/14/2018 23:24
DUPE-2018-PFA	480-145071-4	2018.12.14L LB 025.d	12/14/2018 23:31
MW-01-2018-PFA DL	480-145071-1 DL	2018.12.14L LB 026.d	12/14/2018 23:39
MW-01-2018-PFA MS DL	480-145071-1 MS DL	2018.12.14L LB 027.d	12/14/2018 23:46
MW-01-2018-PFA MSD DL	480-145071-1 MSD DL	2018.12.14L LB 028.d	12/14/2018 23:54

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Sample No.: IC 320-261834/5 Date Analyzed: 11/29/2018 07:09
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.11.29PFCICAL_0 Heated Purge: (Y/N) N
 Calibration ID: 42525

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	4928861	3.21				
UPPER LIMIT	7393292	3.41				
LOWER LIMIT	2464431	3.01				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-261834/9		4869064	3.21			
ICV 320-261834/10		4615006	3.20			
CCV 320-263400/3 CCVIS		5031352	3.21			

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = ± 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.: 480-145071-1
 SDG No.: _____
 Sample No.: CCV 320-263400/3 Date Analyzed: 12/06/2018 06:27
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.12.05LLB_006.d Heated Purge: (Y/N) N
 Calibration ID: 42525

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD	5031352	3.21				
UPPER LIMIT	7547028	3.41				
LOWER LIMIT	2515676	3.01				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCB 320-263400/1		5178484	3.21			
CCVL 320-263400/2		5317499	3.21			
CCV 320-263404/1		5067752	3.22			
MB 320-260871/1-A		5603735	3.22			
LCS 320-260871/2-A		5670321	3.22			
480-145071-1	MW-01-2018-PFA	4724746	3.23			
480-145071-1 MS	MW-01-2018-PFA MS	5667728	3.22			
480-145071-1 MSD	MW-01-2018-PFA MSD	5021579	3.22			
CCV 320-263404/11		5105225	3.23			

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

Area Limit = 50%-150% of internal standard area
 RT Limit = ± 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.: 480-145071-1
 SDG No.: _____
 Sample No.: IC 320-263887/5 Date Analyzed: 12/08/2018 05:39
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.12.07ICAL_008. Heated Purge: (Y/N) N
 Calibration ID: 42665

	13PFOA					
	AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT	4919904	3.19				
UPPER LIMIT	7379856	3.39				
LOWER LIMIT	2459952	2.99				
LAB SAMPLE ID	CLIENT SAMPLE ID					
ICB 320-263887/9		5105758	3.18			
ICV 320-263887/10		5075507	3.19			
CCV 320-265415/3 CCVIS		5270864	3.22			

13PFOA = 13C2 PFOA

Area Limit = 50%-150% of internal standard area
 RT Limit = ± 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.: 480-145071-1
 SDG No.: _____
 Sample No.: CCV 320-265415/3 Date Analyzed: 12/14/2018 21:09
 Instrument ID: A8_N GC Column: GeminiC18 3x100 ID: 3 (mm)
 Lab File ID (Standard): 2018.12.14LLB_006.d Heated Purge: (Y/N) N
 Calibration ID: 42665

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		5270864	3.22				
UPPER LIMIT		7906296	3.42				
LOWER LIMIT		2635432	3.02				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-265415/1		5457660	3.22				
CCVL 320-265415/2		5229326	3.22				
CCV 320-265427/1		5305497	3.22				
480-145071-2	MW-03-2018-PFA	6129049	3.22				
480-145071-3	MW-04-2018-PFA	6185319	3.21				
480-145071-4	DUPE-2018-PFA	6195760	3.22				
480-145071-1 DL	MW-01-2018-PFA DL	665385*	3.23				
480-145071-1 MS DL	MW-01-2018-PFA MS DL	720923*	3.21				
480-145071-1 MSD DL	MW-01-2018-PFA MSD DL	670910*	3.21				
CCV 320-265427/9		5420677	3.23				

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

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

Column used to flag values outside QC limits

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA Lab Sample ID: 480-145071-1
 Matrix: Water Lab File ID: 2018.12.05LLB_028.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 263.1 (mL) Date Analyzed: 12/06/2018 09:12
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	5.12		1.90	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.61	J	1.90	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.90		1.90	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.90		1.90	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	1.90		1.90	0.81
375-95-1	Perfluorononanoic acid (PFNA)	1.90		1.90	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.90		1.90	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.90		1.90	1.05
307-55-1	Perfluorododecanoic acid (PFDoA)	1.90		1.90	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.90	F1	1.90	1.24
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.90		1.90	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.90		1.90	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.90	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.90		1.90	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.90		1.90	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.90		1.90	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.90		1.90	0.33
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NETFOSAA)	19.0		19.0	1.81

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA Lab Sample ID: 480-145071-1
 Matrix: Water Lab File ID: 2018.12.05LLB_028.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 263.1 (mL) Date Analyzed: 12/06/2018 09:12
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	67		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	82		25-150
STL01892	13C4 PFHpA	95		25-150
STL00990	13C4 PFOA	87		25-150
STL00995	13C5 PFNA	112		25-150
STL00996	13C2 PFDA	117		25-150
STL00997	13C2 PFUnA	91		25-150
STL00998	13C2 PFDoA	104		25-150
STL02116	13C2 PFTeDA	88		25-150
STL02337	13C3 PFBS	96		25-150
STL00994	18O2 PFHxS	99		25-150
STL00991	13C4 PFOS	111		25-150
STL01056	13C8 FOSA	98		25-150
STL02117	d5-NEtFOSAA	127		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_028.d
 Lims ID: 480-145071-B-1-A
 Client ID: MW-01-2018-PFA
 Sample Type: Client
 Inject. Date: 06-Dec-2018 09:12:36 ALS Bottle#: 19 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-145071-b-1-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 14-Dec-2018 14:33:24 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0321

First Level Reviewer: mongkols Date: 14-Dec-2018 14:33:24
 Ratio Calibration: None

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	1.756	1.756	0.0	0.545	4829508	1.67	67.0	4127	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.756	1.763	-0.007	1.000	236737	0.1347		1.6		M
4 Perfluoropentanoic acid										
262.90 > 219.00	2.074	2.074	0.0	1.000	29235	0.0161		0.6		
D 3 13C5 PFPeA	267.90 > 223.00	2.074	2.074	0.0	0.643	4160884	2.29	91.8	3866	
D 47 13C3 PFBS	301.90 > 80.00	2.106	2.105	0.001	0.653	6160026	2.23	95.9	141228	
D 60 M2-4:2 FTS	329.00 > 81.00	2.356	2.383	-0.027	0.730	18007	0.0812	0.0	3.8	
D 7 13C2 PFHxA	315.00 > 270.00	2.437	2.432	0.005	0.756	3910554	2.04	81.5	6044	
D 64 13C3 HFPO-DA	332.10 > 287.00	2.553	2.541	0.012	0.792	241614	1.82	72.7	1747	
D 11 18O2 PFHxS	403.00 > 84.00	2.825	2.821	0.004	0.876	5051739	2.35	99.4	9743	
D 9 13C4 PFHpA	367.00 > 322.00	2.825	2.821	0.004	0.876	4495793	2.39	95.5	8809	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.825	2.830	-0.005	1.000	15012	0.006473	Target=3.00	3.7		M
399.00 > 99.00	2.825	2.830	-0.005	1.000	8205		1.83(1.50-4.49)	4.9		M
D 12 M2-6:2 FTS	429.00 > 81.00	3.200	3.197	0.003	0.992	1984003	5.99	252	811	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.208	3.197	0.011	1.003	2179	0.001676		0.3		

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	3.217	3.213	0.004	0.997	18665	0.006883	0.0	180	
D 14 13C4 PFOA	417.00 > 372.00	3.217	3.213	0.004	0.997	3980454	2.16	86.5	11172	
* 62 13C2 PFOA	415.00 > 370.00	3.225	3.222	0.003		4724746	2.50		9162	
15 Perfluorooctanoic acid										M
413.00 > 369.00	3.217	3.222	-0.005	1.000	17308	0.009584	Target=1.68	4.7		M
413.00 > 169.00	3.225	3.222	0.003	1.003	9048		1.91(0.84-2.52)	6.9		M
D 18 13C4 PFOS	503.00 > 80.00	3.598	3.590	0.008	1.116	3738608	2.66	111	740	
D 19 13C5 PFNA	468.00 > 423.00	3.613	3.606	0.007	1.120	4300259	2.79	112	10711	
20 Perfluorononanoic acid										
463.00 > 419.00	3.613	3.607	0.006	1.000	7351	0.004142	Target=3.79	4.3		
463.00 > 169.00	3.613	3.607	0.006	1.000	1835		4.01(1.90-5.69)	9.5		
D 21 13C8 FOSA	506.00 > 78.00	3.965	3.957	0.008	1.229	5086187	2.45	98.1	7053	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.949	3.959	-0.010	0.996	2477	0.001217		0.7		
D 23 13C2 PFDA	515.00 > 470.00	3.973	3.965	0.008	1.232	3930086	2.92	117	9535	
D 26 M2-8:2 FTS	529.00 > 81.00	3.973	3.965	0.008	1.232	2847990	7.98	333	1611	
D 27 d3-NMeFOSAA	573.00 > 419.00	4.134	4.125	0.009	1.282	2786858	4.24	170	5133	
D 30 13C2 PFUnA	565.00 > 520.00	4.296	4.282	0.014	1.332	2463851	2.27	91.0	6520	
D 32 d5-NEtFOSAA	589.00 > 419.00	4.296	4.282	0.014	1.332	2200713	3.17	127	3792	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.296	4.292	0.004	1.000	4014	0.004552	Target=4.24	4.4		
563.00 > 169.00	4.296	4.292	0.004	1.000	1468		2.73(2.12-6.36)	9.0		
D 36 13C2 PFDoA	615.00 > 570.00	4.576	4.569	0.007	1.419	3007526	2.61	104	11923	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.576	4.578	-0.002	1.000	3995	0.003054	Target=4.27	3.5		
613.00 > 169.00	4.586	4.578	0.008	1.002	1040		3.84(2.13-6.40)	6.3		
D 43 13C2 PFTeDA	715.00 > 670.00	5.082	5.070	0.012	1.576	3003394	2.19	87.5	10073	
D 44 13C2 PFHxDA	815.00 > 770.00	5.523	5.512	0.011	1.713	5191149	2.05	81.9	10141	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.523	5.523	0.0	1.000	47450	0.001550	Target=5.72	10.2		
813.00 > 169.00	5.523	5.523	0.0	1.000	8455		5.61(2.86-8.58)	61.3		

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_028.d

Injection Date: 06-Dec-2018 09:12:36

Instrument ID: A8_N

Lims ID: 480-145071-B-1-A

Lab Sample ID: 320-145071-1

Client ID: MW-01-2018-PFA

Operator ID: SACINSTLCMS01

ALS Bottle#: 19

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

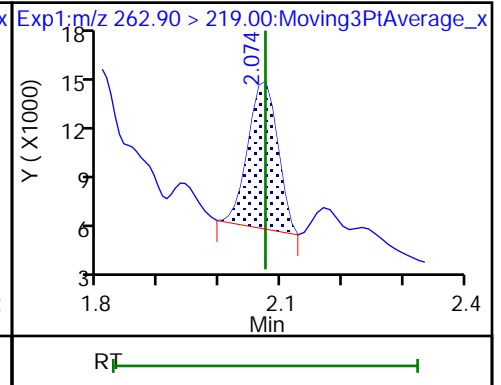
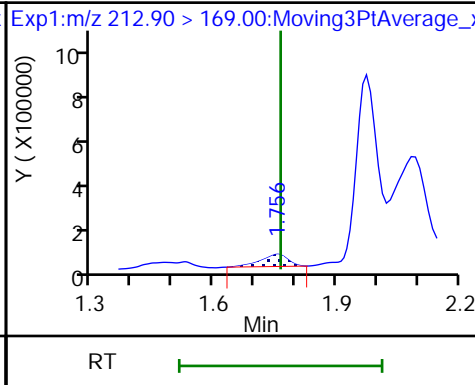
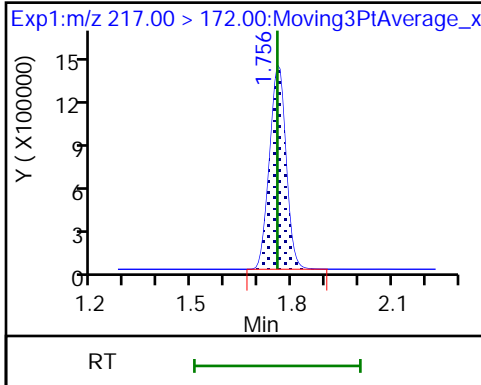
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

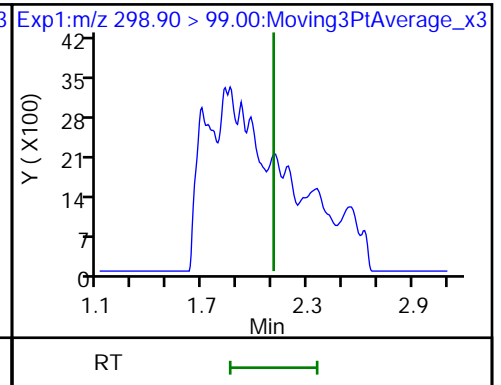
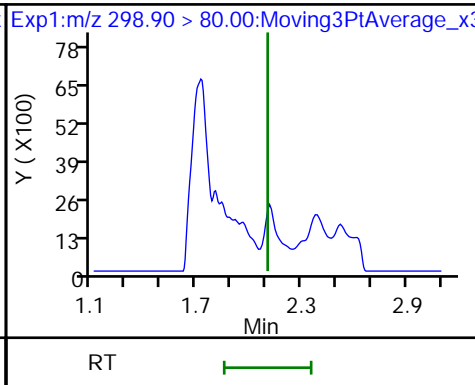
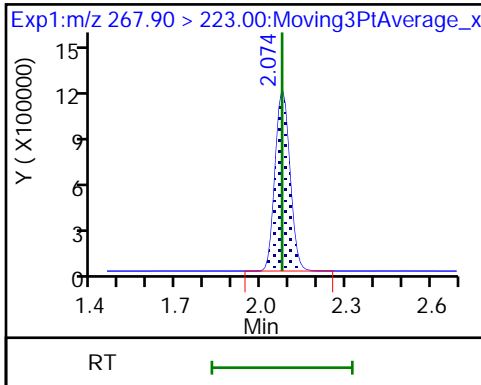
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid (ND)

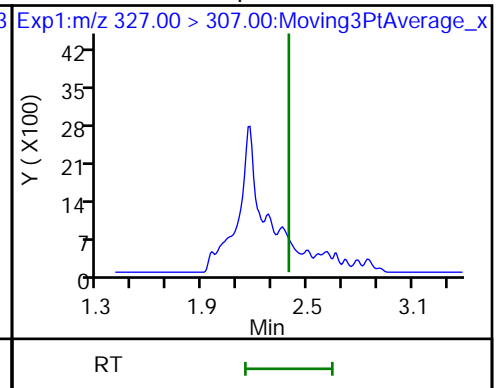
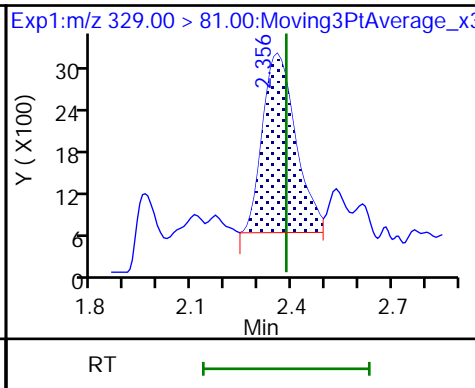
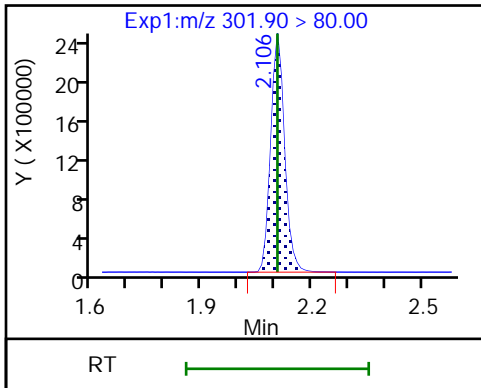
5 Perfluorobutanesulfonic acid (ND)



D 47 13C3 PFBS

D 60 M2-4:2 FTS

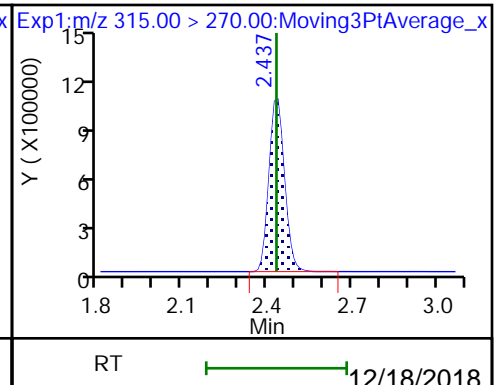
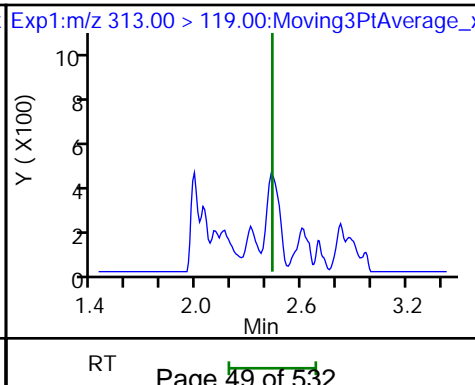
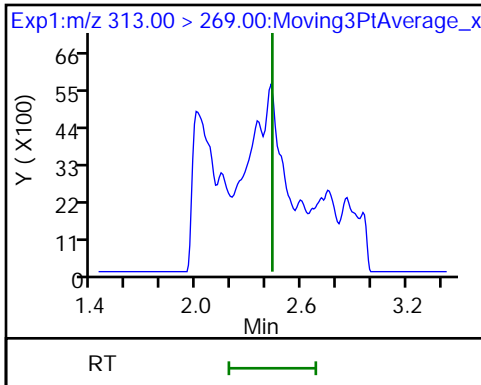
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



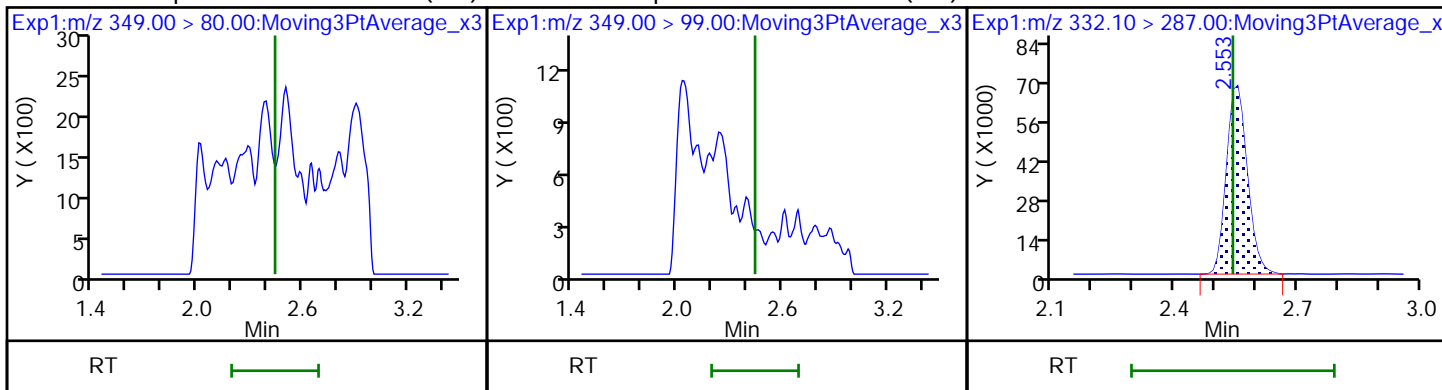
6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

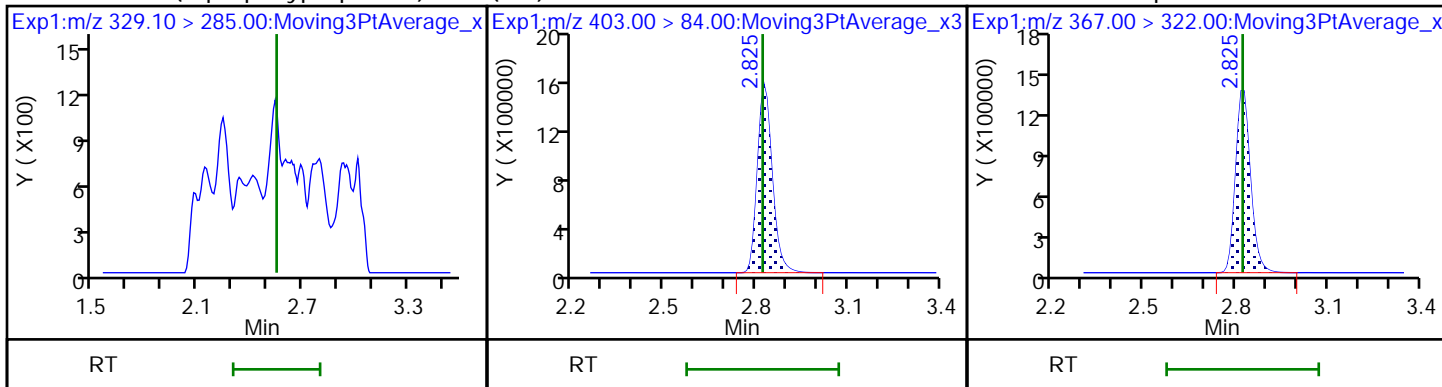
D 7 13C2 PFHxA



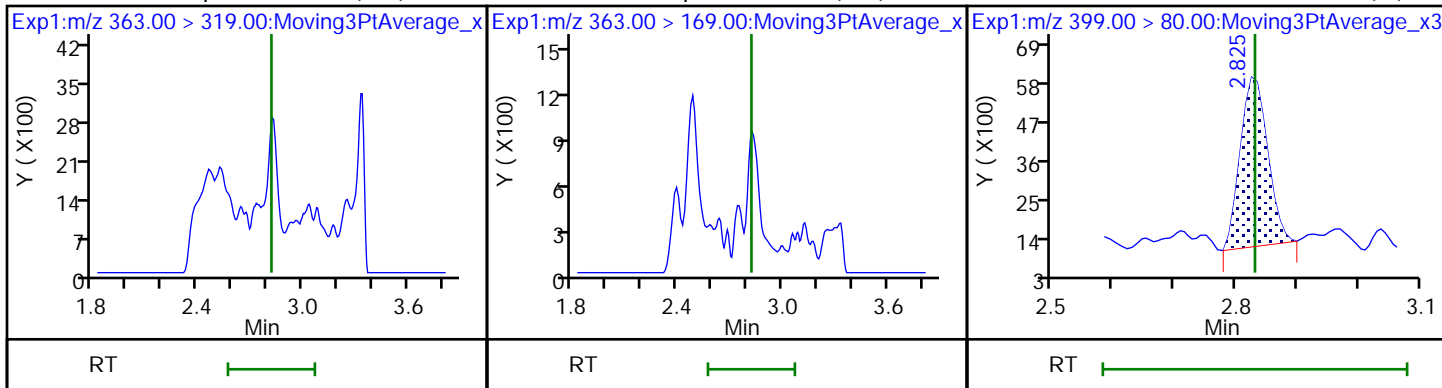
70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) D 64 13C3 HFPO-DA



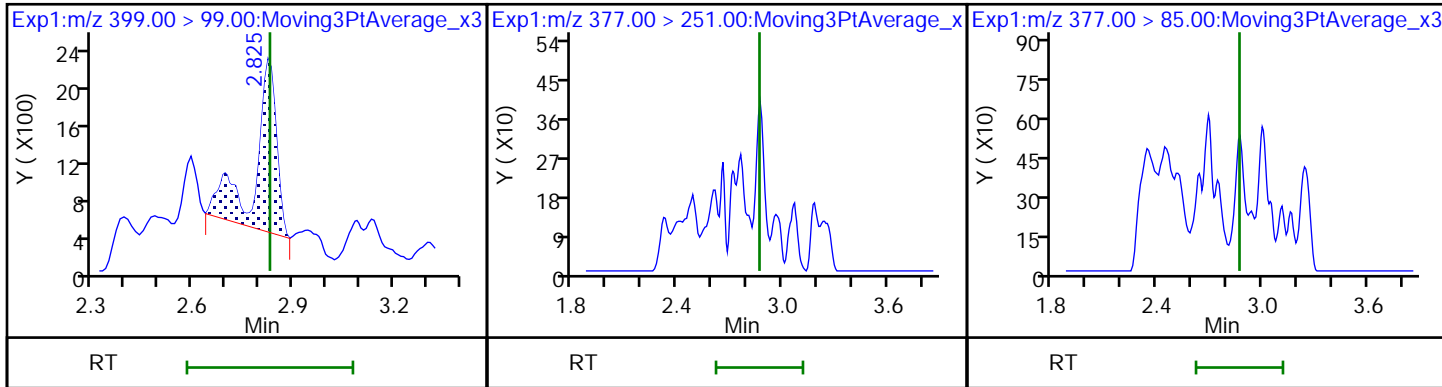
67 Perfluoro(2-propoxypropanoic) acid (ND) 18O2 PFHxS D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (ND) 10 Perfluoroheptanoic acid (ND) 8 Perfluorohexanesulfonic acid (M)

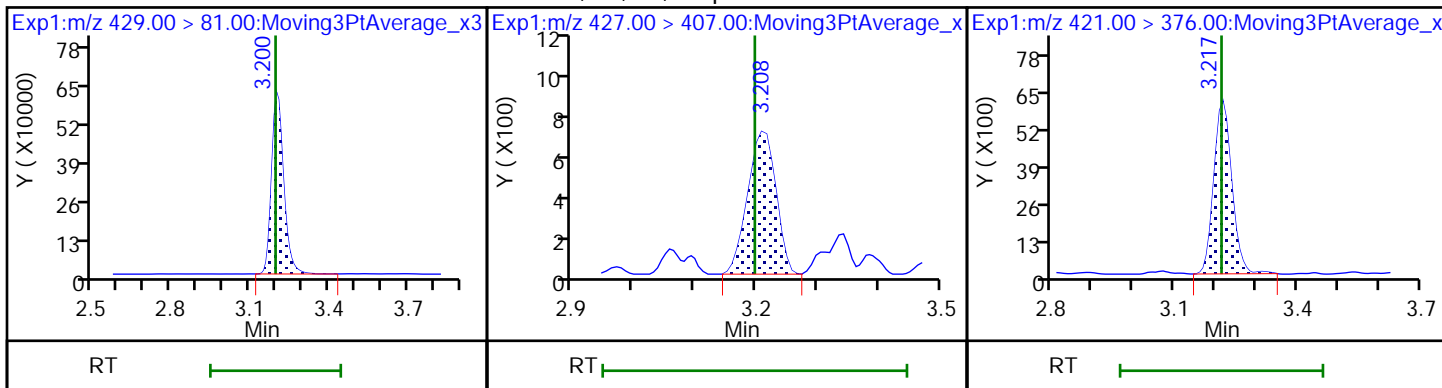


8 Perfluorohexanesulfonic acid (M) 77 DONA (ND) 77 DONA (ND)



D 12 M2-6:2 FTS

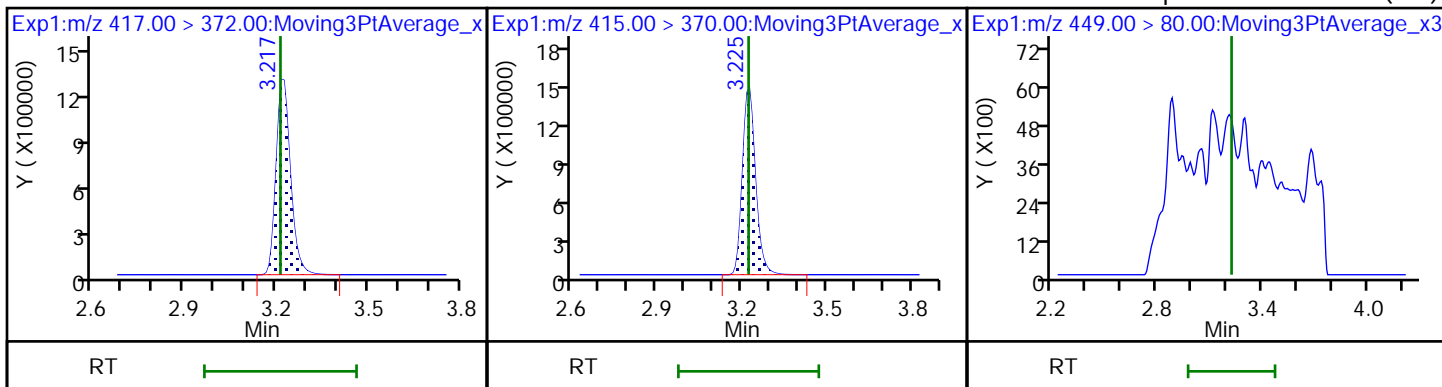
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

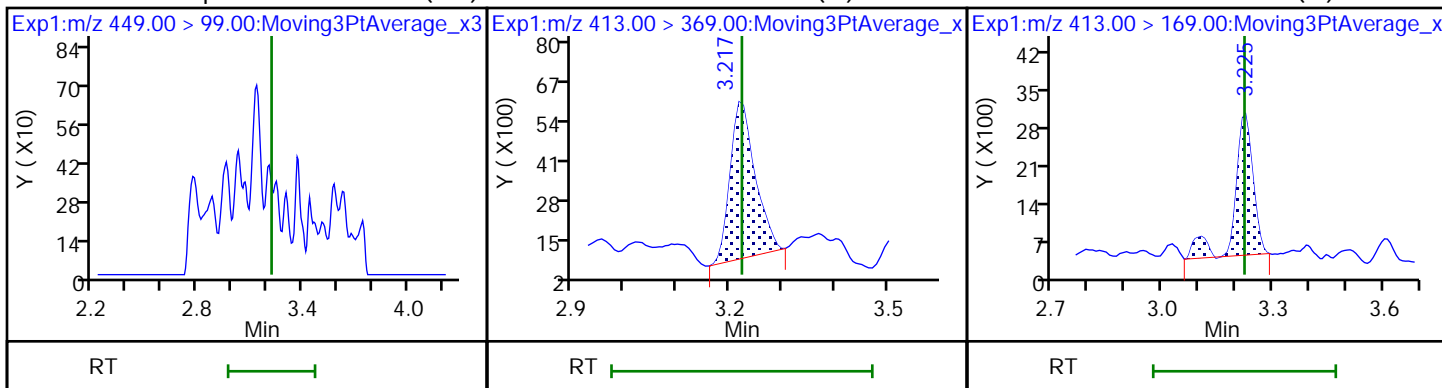
16 Perfluoroheptanesulfonic acid (ND)



16 Perfluoroheptanesulfonic acid (ND)

15 Perfluorooctanoic acid (M)

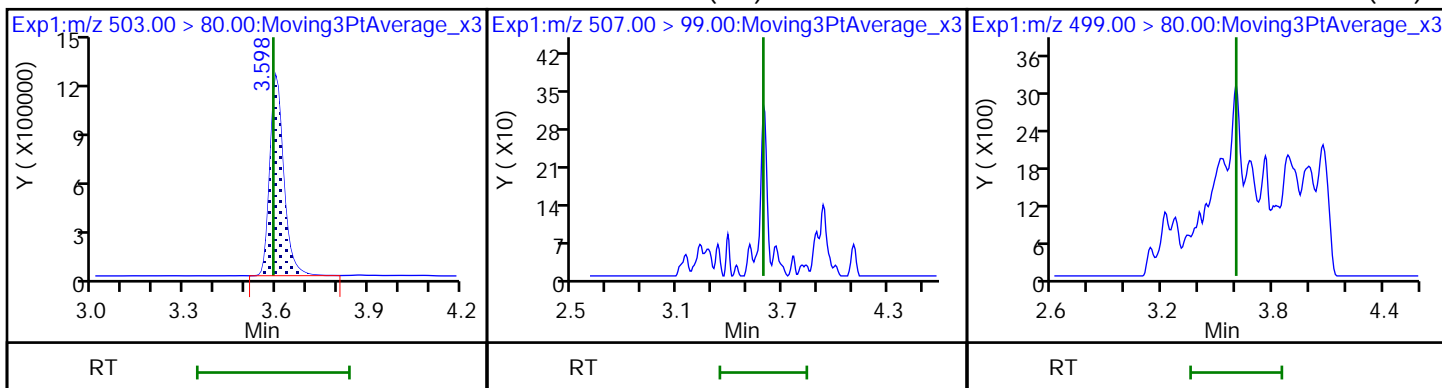
15 Perfluorooctanoic acid (M)



D 18 13C4 PFOS

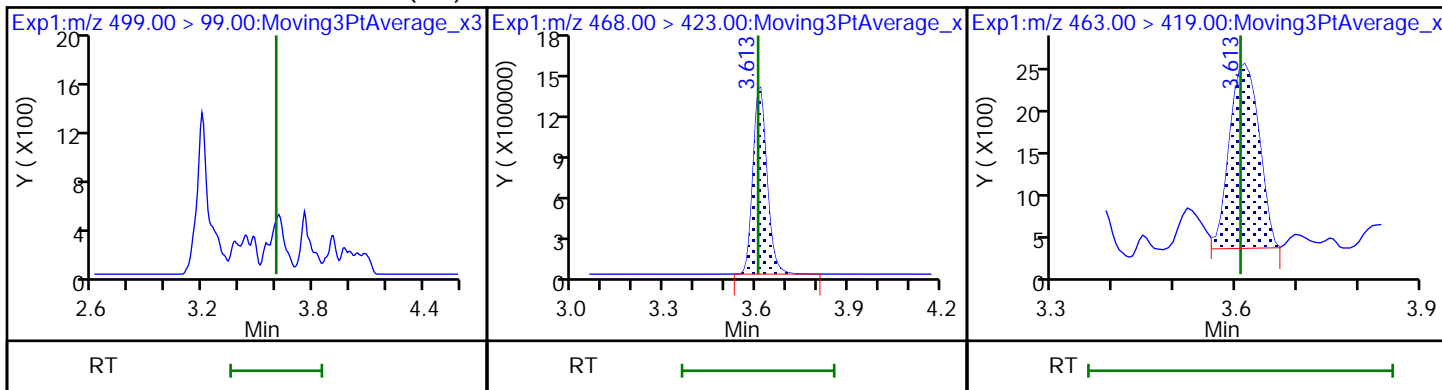
D 72 13C8 PFOS (ND)

17 Perfluorooctanesulfonic acid (ND)



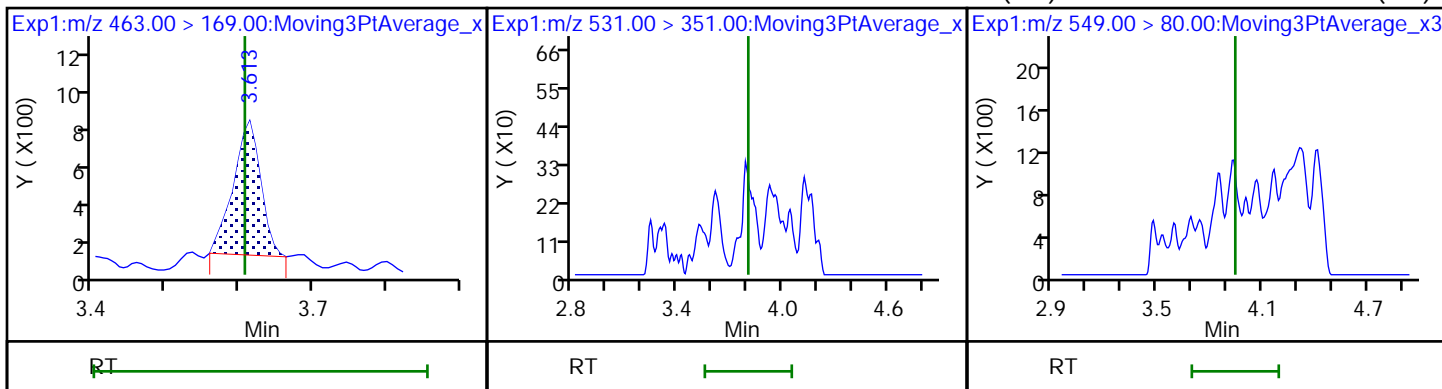
17 Perfluorooctanesulfonic acid (ND) D 19 13C5 PFNA

20 Perfluorononanoic acid



20 Perfluorononanoic acid

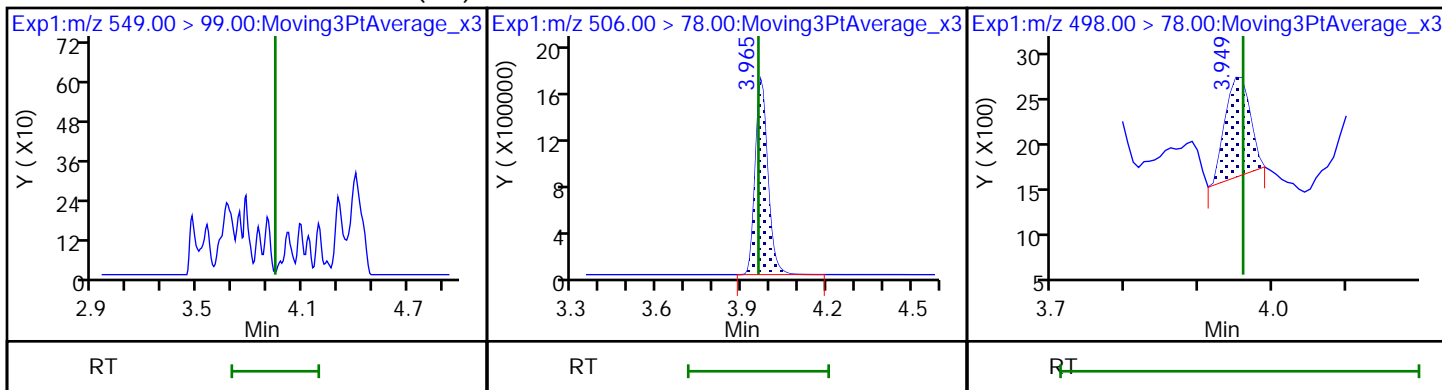
69 9-Chlorohexadecafluoro-3-oxanonanoic acid (ND) 61 Perfluoronanesulfonic acid (ND)



68 Perfluorononanesulfonic acid (ND)

D 21 13C8 FOSA

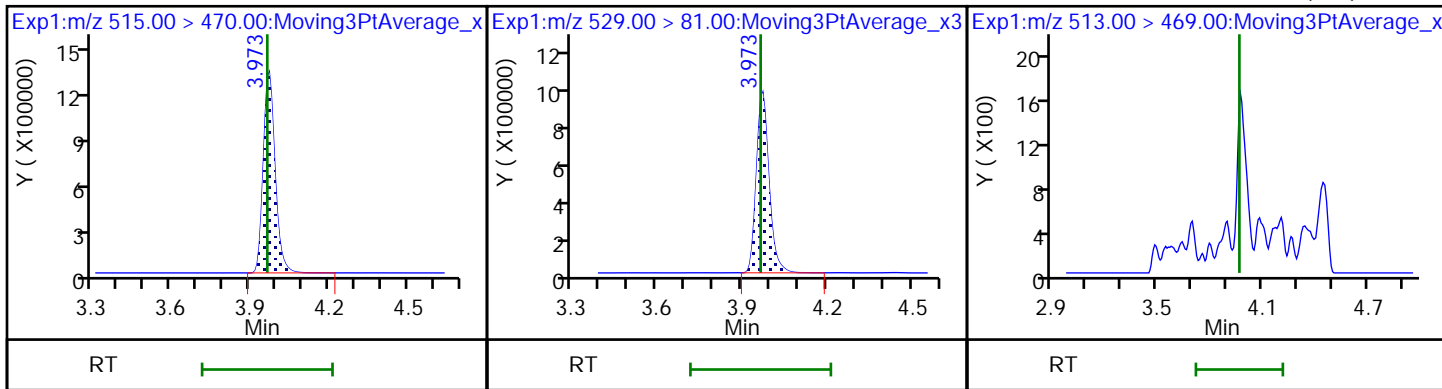
22 Perfluorooctanesulfonamide



D 23 13C2 PFDA

D 26 M2-8:2 FTS

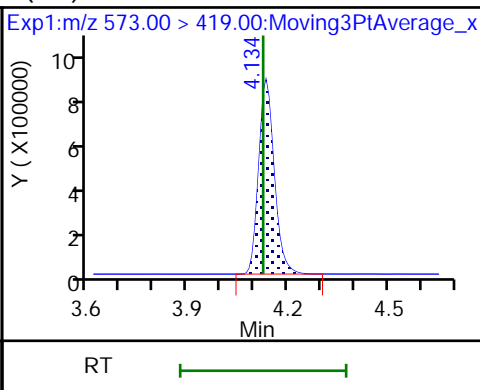
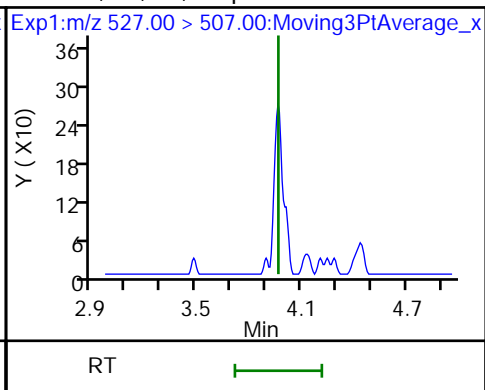
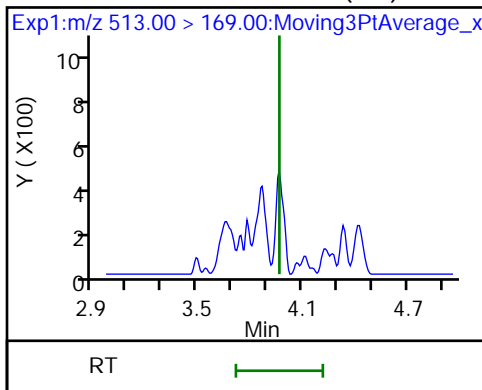
24 Perfluorodecanoic acid (ND)



24 Perfluorodecanoic acid (ND)

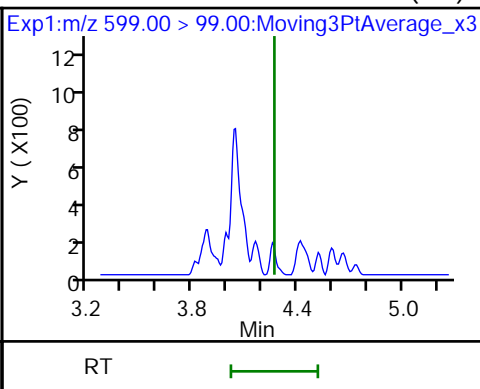
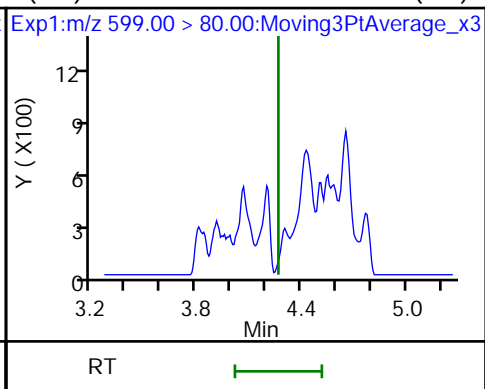
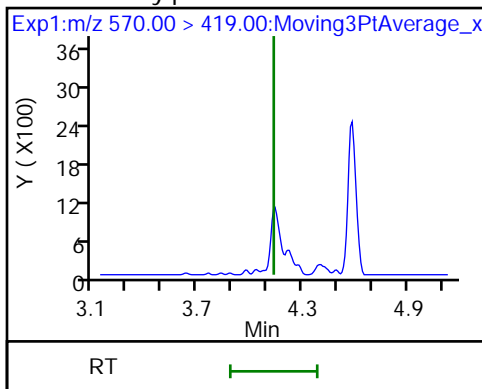
25 1H,1H,2H,2H-perfluorodecanesulfonamide (ND)

26 D13-NMeFOSAA



28 N-methylperfluorooctanesulfonamide (ND)

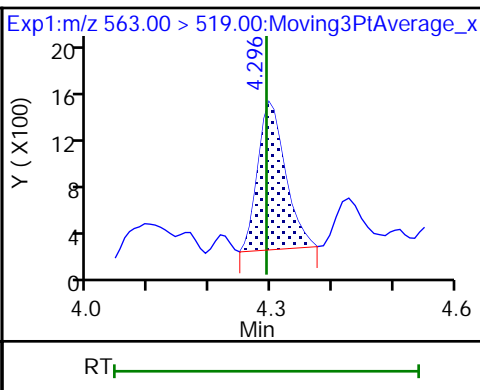
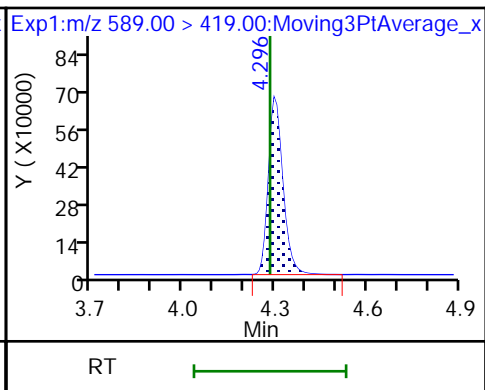
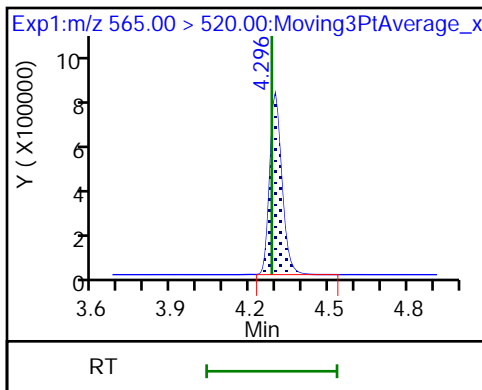
29 Perfluorodecanesulfonic acid (ND)



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

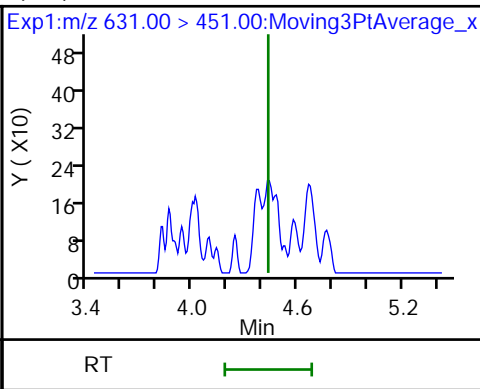
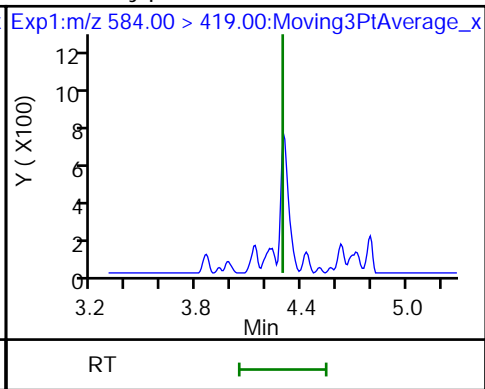
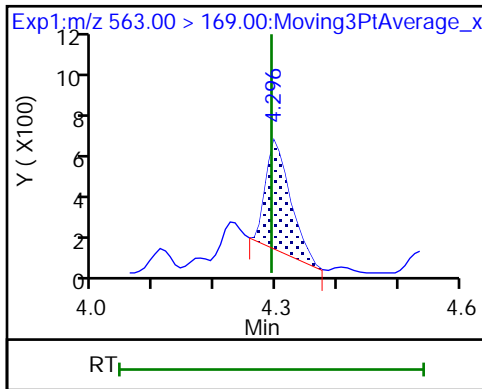
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

33 N-ethylperfluorooctanesulfonamide (ND)

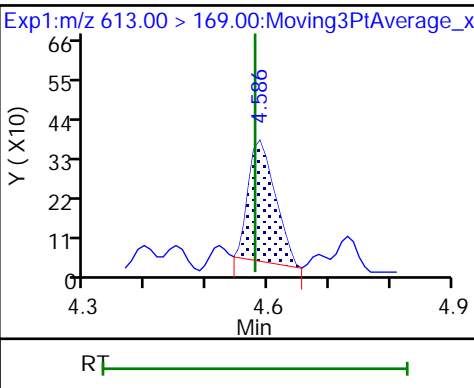
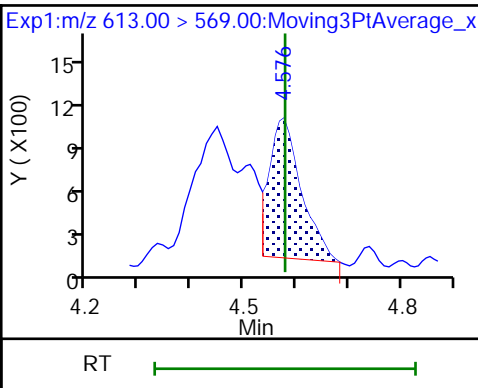
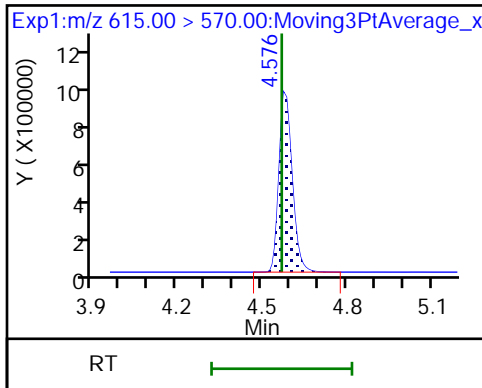
34 1-Chloroeicosafuoro-3-oxaundecan (ND)



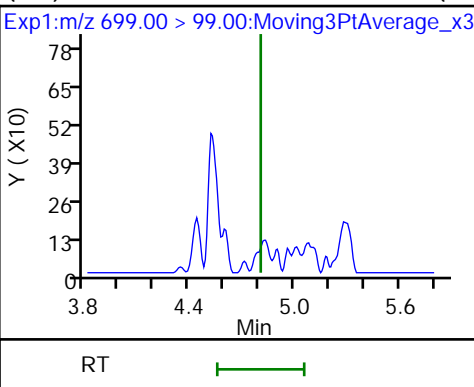
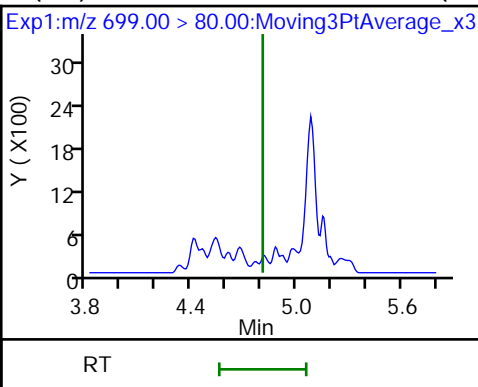
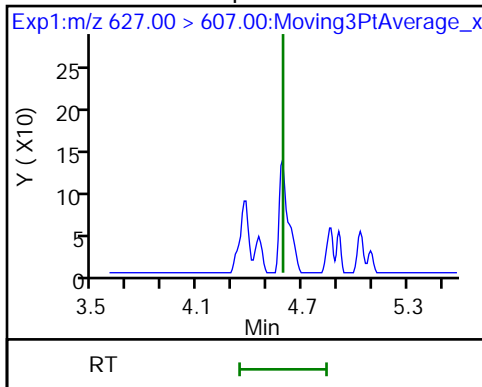
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



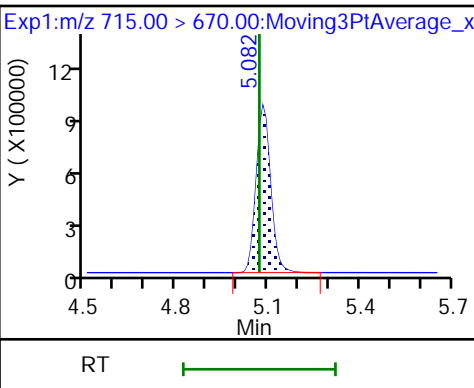
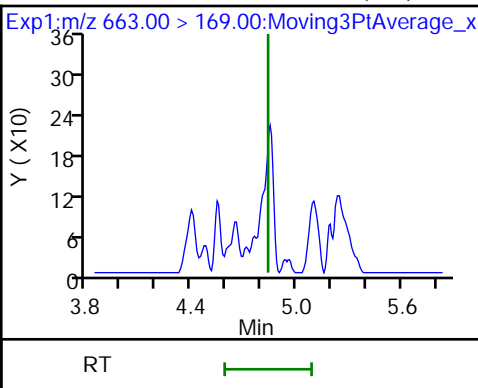
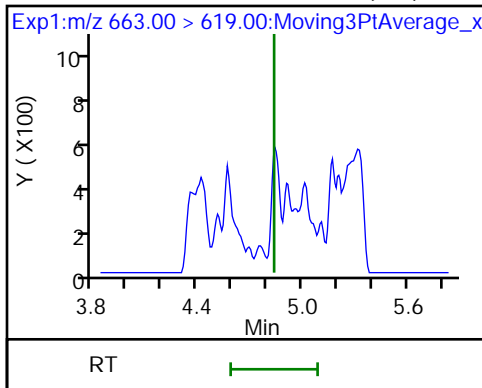
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) Perfluorododecanesulfonic acid (PF (ND)) Perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

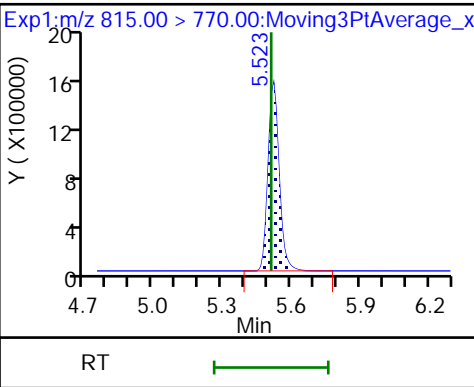
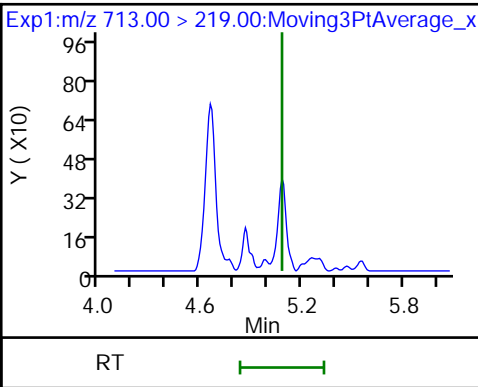
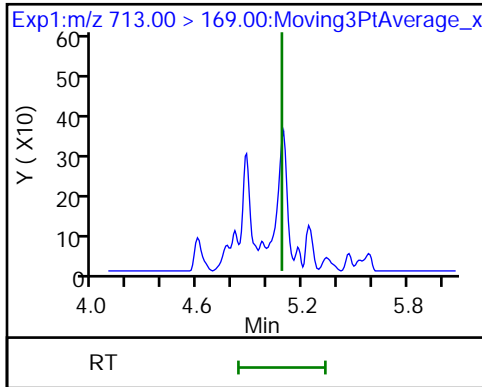
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid (ND)

42 Perfluorotetradecanoic acid (ND)

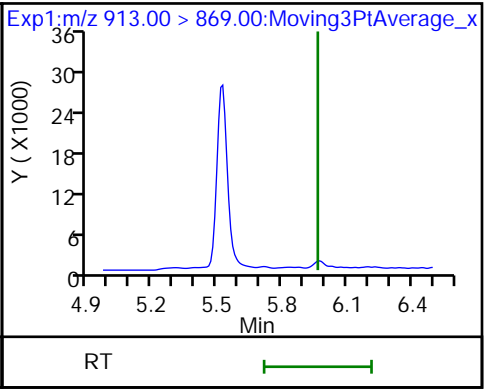
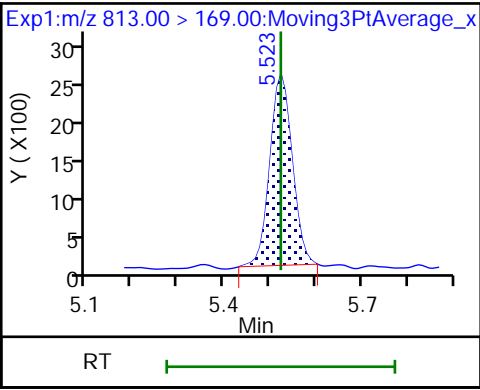
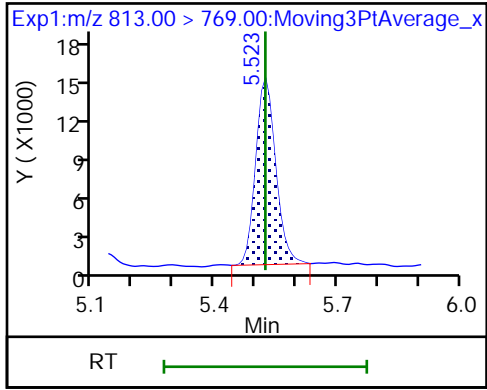
D 44 13C2 PFHxDA



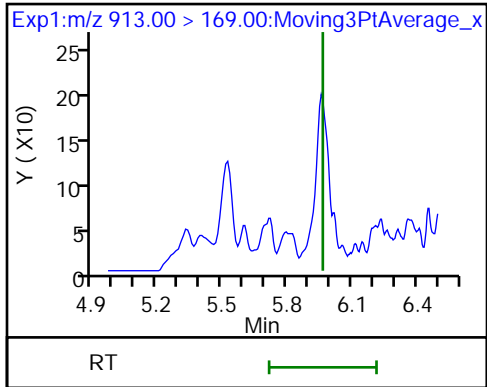
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



TestAmerica Sacramento

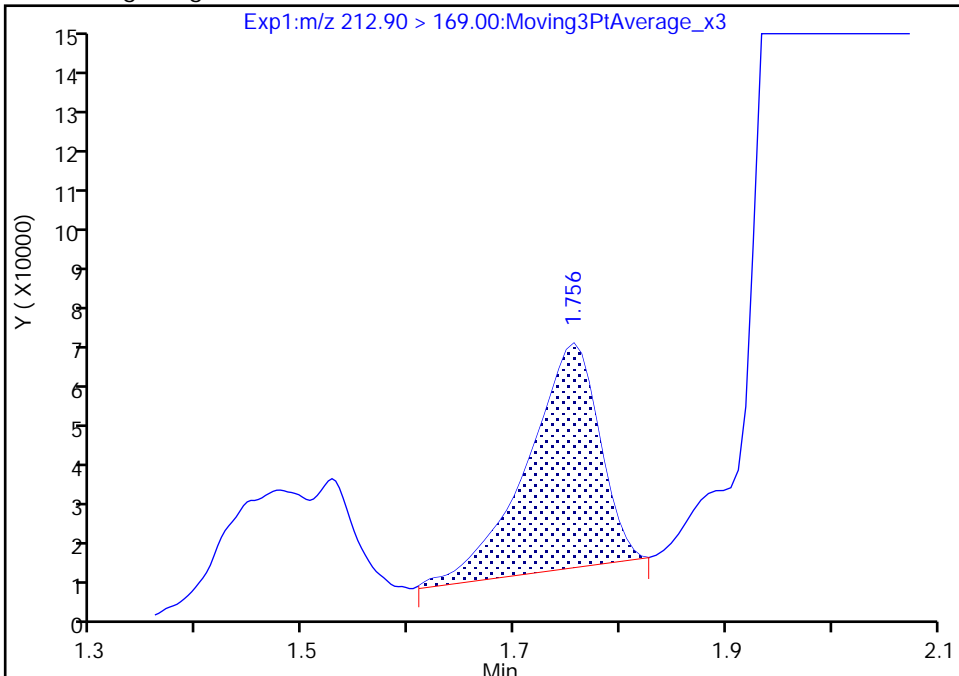
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_028.d
Injection Date: 06-Dec-2018 09:12:36 Instrument ID: A8_N
Lims ID: 480-145071-B-1-A Lab Sample ID: 320-145071-1
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

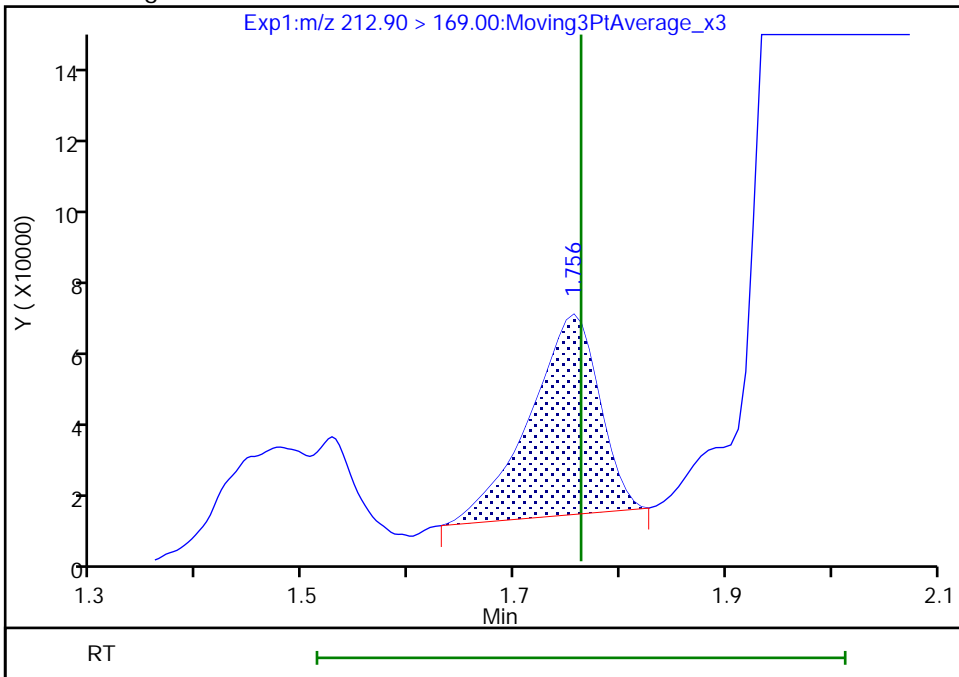
RT: 1.76
Area: 250665
Amount: 0.142580
Amount Units: ng/ml

Processing Integration Results



RT: 1.76
Area: 236737
Amount: 0.134658
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 14-Dec-2018 14:32:19
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

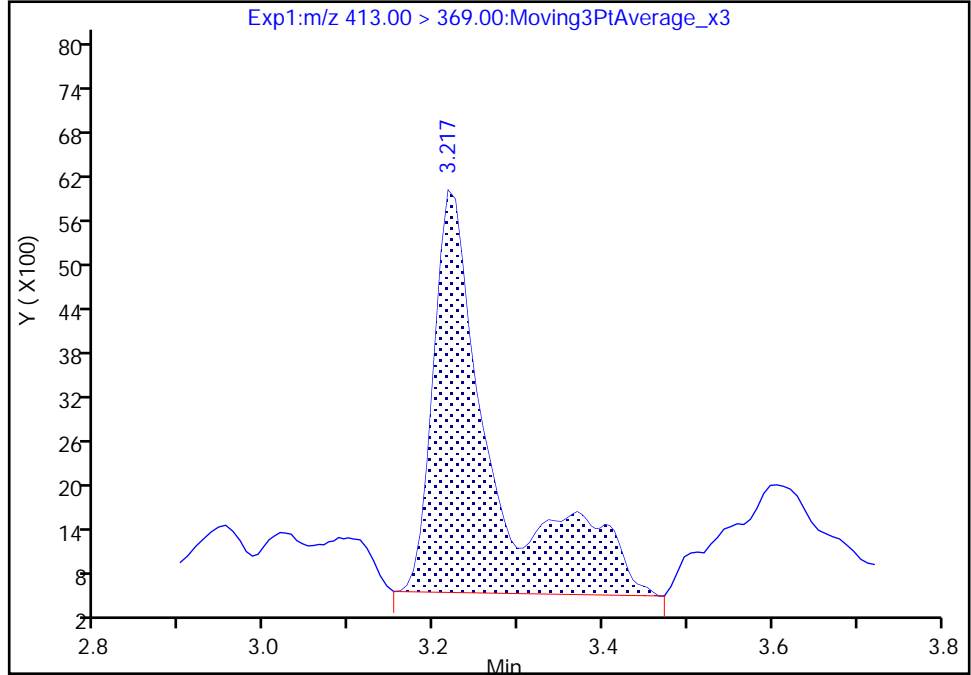
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_028.d
Injection Date: 06-Dec-2018 09:12:36 Instrument ID: A8_N
Lims ID: 480-145071-B-1-A Lab Sample ID: 320-145071-1
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

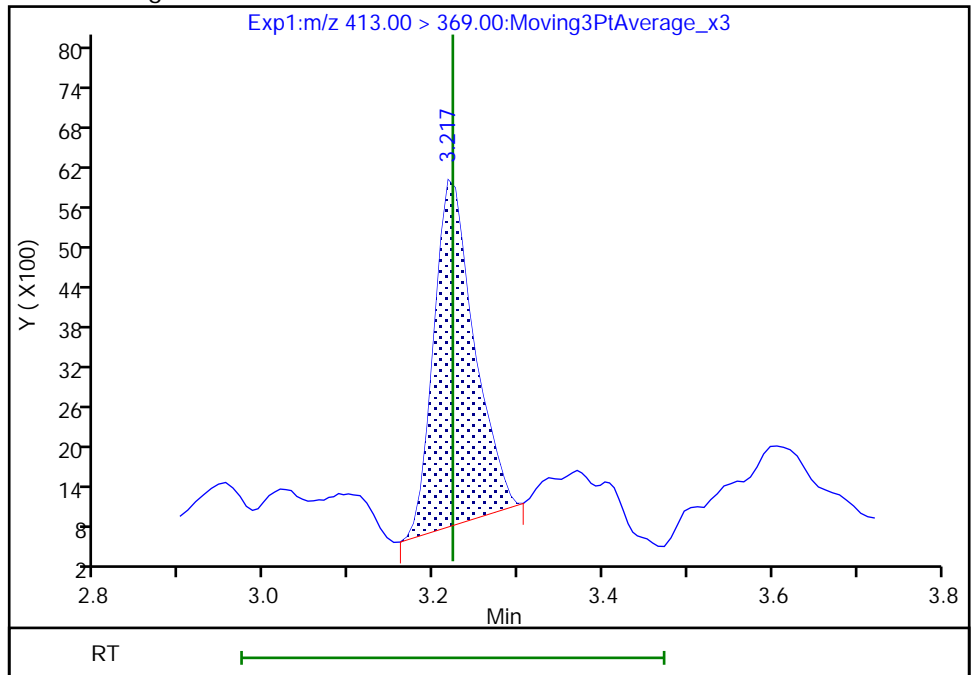
RT: 3.22
Area: 27088
Amount: 0.015000
Amount Units: ng/ml

Processing Integration Results



RT: 3.22
Area: 17308
Amount: 0.009584
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 14-Dec-2018 14:32:49
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 57 of 532

TestAmerica Sacramento

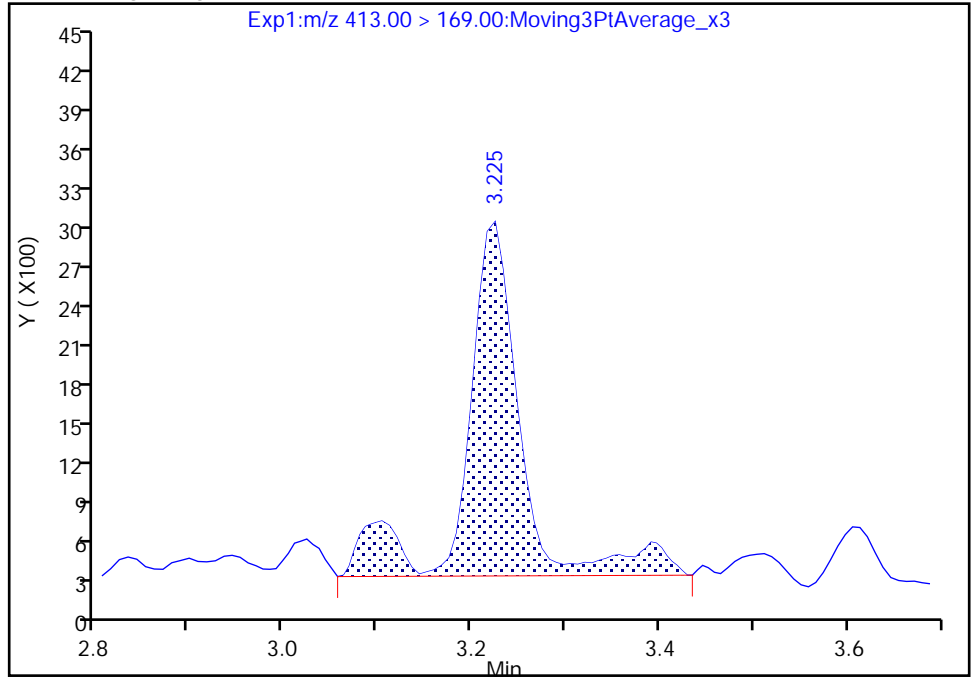
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_028.d
Injection Date: 06-Dec-2018 09:12:36 Instrument ID: A8_N
Lims ID: 480-145071-B-1-A Lab Sample ID: 320-145071-1
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

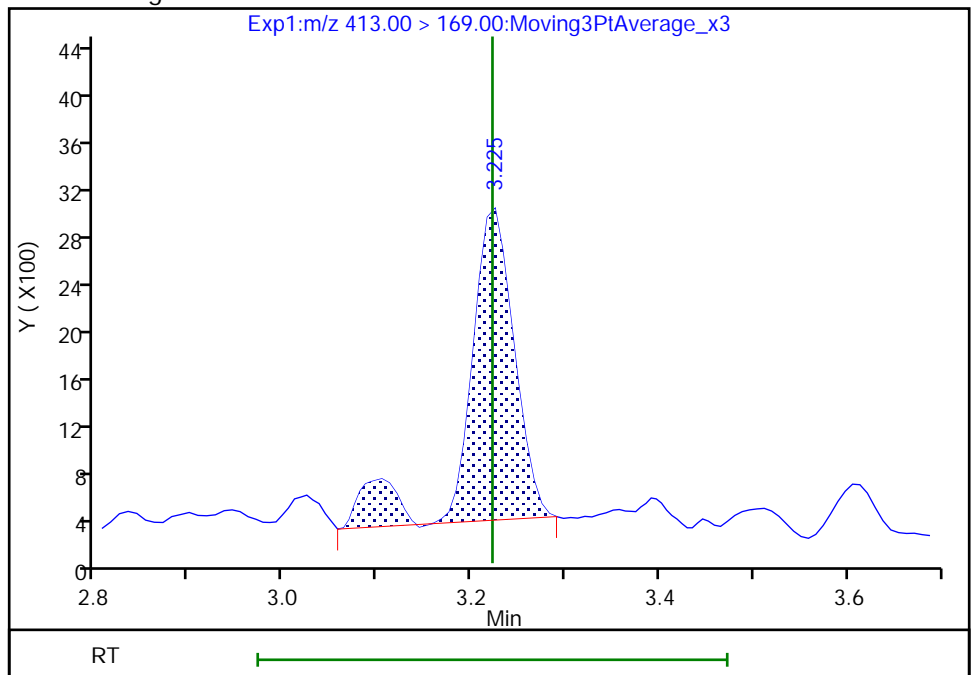
RT: 3.23
Area: 10834
Amount: 0.015000
Amount Units: ng/ml

Processing Integration Results



RT: 3.23
Area: 9048
Amount: 0.009584
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 14-Dec-2018 14:32:55

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

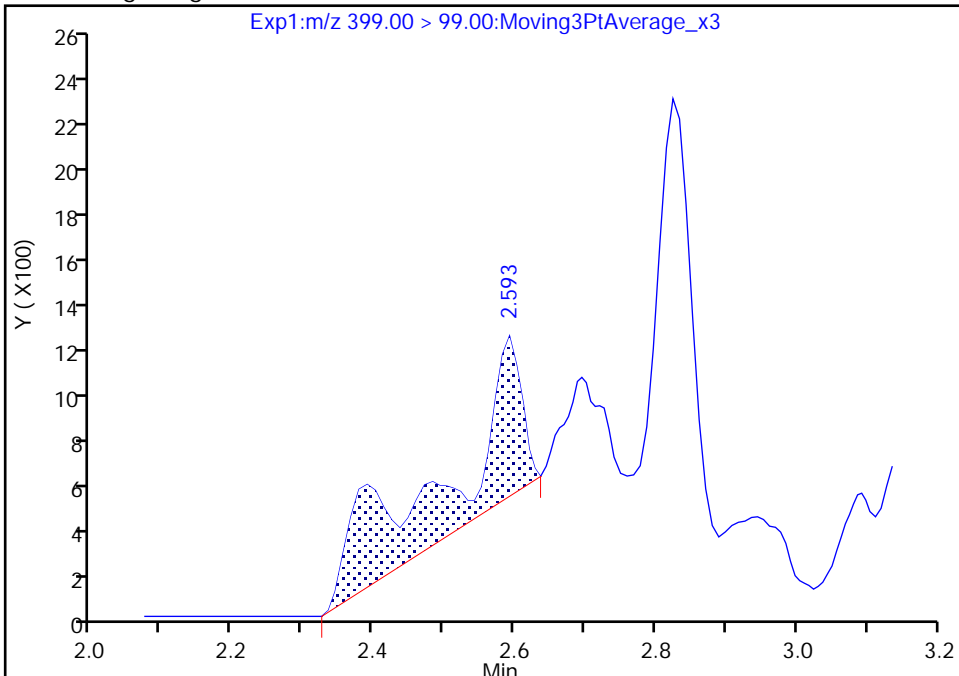
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_028.d
Injection Date: 06-Dec-2018 09:12:36 Instrument ID: A8_N
Lims ID: 480-145071-B-1-A Lab Sample ID: 320-145071-1
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

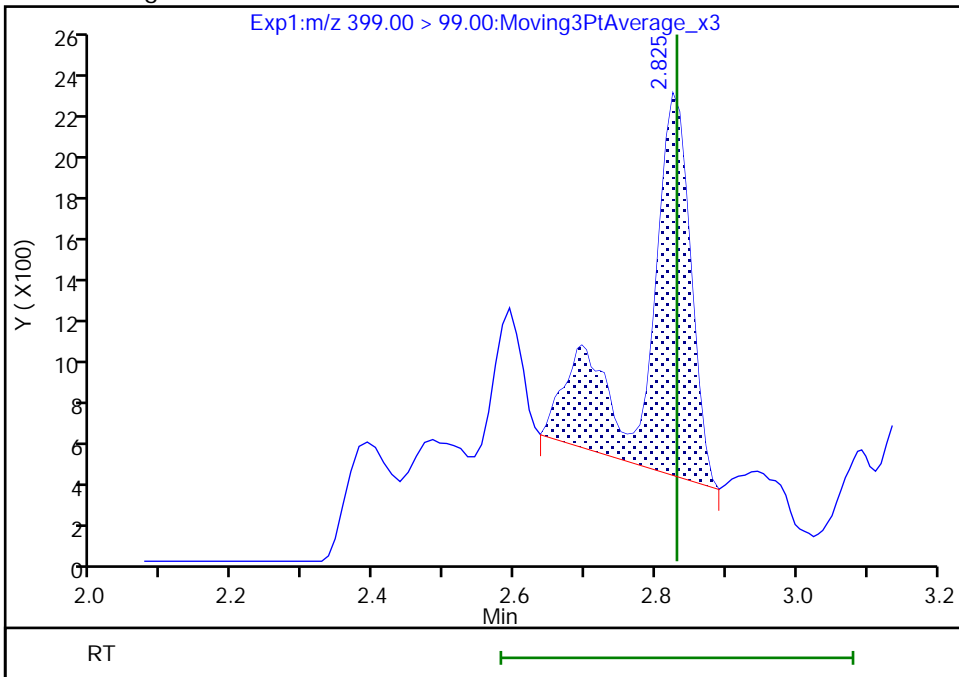
RT: 2.59
Area: 5009
Amount: 0.013203
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 8205
Amount: 0.006473
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 14-Dec-2018 14:32:40
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

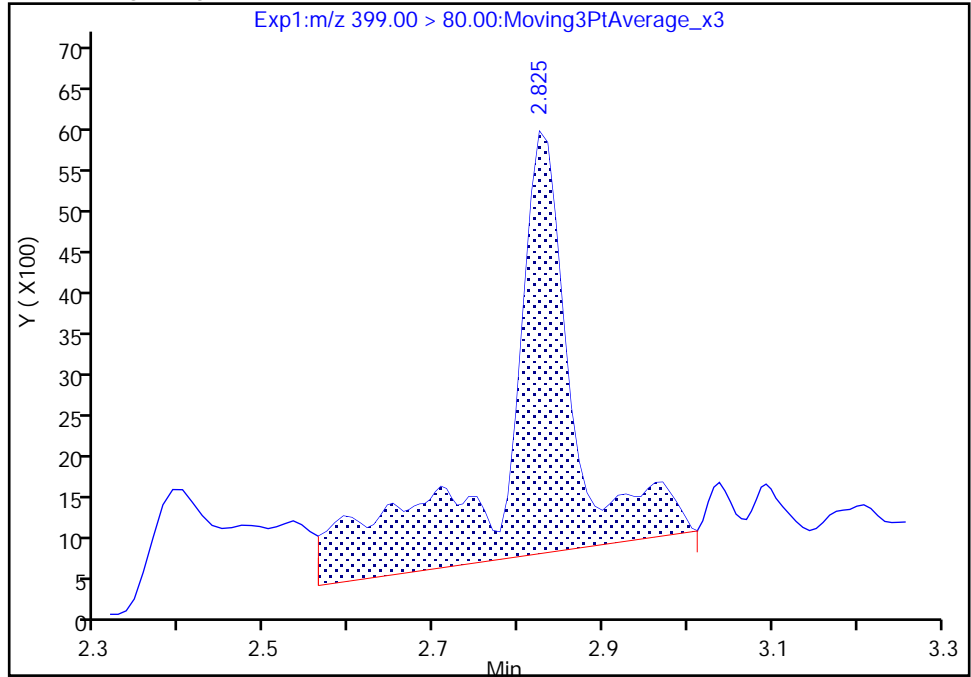
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_028.d
Injection Date: 06-Dec-2018 09:12:36 Instrument ID: A8_N
Lims ID: 480-145071-B-1-A Lab Sample ID: 320-145071-1
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

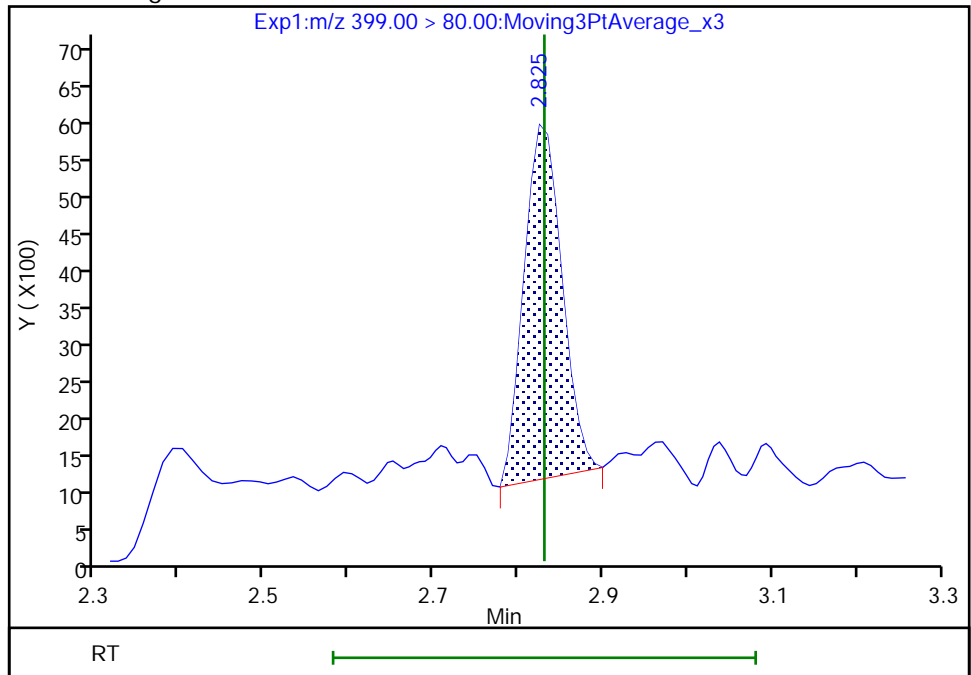
RT: 2.82
Area: 30619
Amount: 0.013203
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 15012
Amount: 0.006473
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA DL Lab Sample ID: 480-145071-1 DL
 Matrix: Water Lab File ID: 2018.12.14LLB_026.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 263.1 (mL) Date Analyzed: 12/14/2018 23:39
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 10
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 265427 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	190		190	29.5
27619-97-2	6:2 FTS	190		190	19.0
39108-34-4	8:2 FTS	190		190	19.0

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02118	d3-NMeFOSAA	99		25-150
STL02279	M2-6:2 FTS	193	*	25-150
STL02280	M2-8:2 FTS	99		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_026.d
 Lims ID: 480-145071-B-1-A
 Client ID: MW-01-2018-PFA
 Sample Type: Client
 Inject. Date: 14-Dec-2018 23:39:26 ALS Bottle#: 14 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 480-145071-b-1-a 10X
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Dec-2018 14:08:13 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0324

First Level Reviewer: mongkols Date: 17-Dec-2018 14:08:12
 Ratio Calibration: None

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	1.769	1.763	0.006	0.548	830145	0.2073	82.9	481	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.762	1.769	-0.007	0.996	43233	0.0143		1.7		M
4 Perfluoropentanoic acid										
262.90 > 219.00	2.094	2.072	0.022	1.005	2347	0.000994		0.2		
D 3 13C5 PFPeA	267.90 > 223.00	2.083	2.074	0.009	0.645	538671	0.2050	82.0	584	
D 47 13C3 PFBS	301.90 > 80.00	2.115	2.105	0.010	0.655	747896	0.1838	79.1	44173	
D 60 M2-4:2 FTS	329.00 > 81.00	2.381	2.393	-0.012	0.737	1470	0.004401	0.0	3.2	
D 7 13C2 PFHxA	315.00 > 270.00	2.441	2.432	0.009	0.756	611501	0.2228	89.1	808	
D 64 13C3 HFPO-DA	332.10 > 287.00	2.560	2.551	0.009	0.792	35985	0.1817	72.7	278	
D 9 13C4 PFHpA	367.00 > 322.00	2.830	2.816	0.014	0.876	567108	0.2153	86.1	1335	
D 11 18O2 PFHxS	403.00 > 84.00	2.830	2.826	0.004	0.876	623759	0.1966	83.1	3832	
D 12 M2-6:2 FTS	429.00 > 81.00	3.206	3.193	0.013	0.992	218555	0.4591	193	534	
13 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.206	3.193	0.013	1.000	5300	0.003702		8.4		
D 73 13C8 PFOA	421.00 > 376.00	3.222	3.209	0.013	0.997	3727	0.000929	0.0	18.6	
D 14 13C4 PFOA	417.00 > 372.00	3.222	3.218	0.004	0.997	570765	0.2211	88.4	1362	

Ratio Calibration: None

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	3.230	3.218	0.012		665385	0.2500		1504	
D 18 13C4 PFOS	503.00 > 80.00	3.604	3.598	0.006	1.116	436724	0.2088	87.4	715	
D 19 13C5 PFNA	468.00 > 423.00	3.612	3.605	0.007	1.118	484873	0.2222	88.9	2040	
D 21 13C8 FOSA	506.00 > 78.00	3.963	3.957	0.006	1.227	561644	0.1803	72.1	2786	
D 23 13C2 PFDA	515.00 > 470.00	3.971	3.965	0.006	1.229	432928	0.2208	88.3	1733	
D 26 M2-8:2 FTS	529.00 > 81.00	3.971	3.965	0.006	1.229	122295	0.2362	98.6	577	
D 27 d3-NMeFOSAA	573.00 > 419.00	4.132	4.125	0.007	1.279	255630	0.2464	98.6	1011	
D 30 13C2 PFUnA	565.00 > 520.00	4.294	4.282	0.012	1.329	334907	0.2157	86.3	1900	
D 32 d5-NEtFOSAA	589.00 > 419.00	4.294	4.291	0.003	1.329	299162	0.2746	110	526	
D 36 13C2 PFDoA	615.00 > 570.00	4.573	4.577	-0.004	1.416	353670	0.2211	88.5	1219	
D 43 13C2 PFTeDA	715.00 > 670.00	5.086	5.081	0.005	1.575	353581	0.1903	76.1	1720	
D 44 13C2 PFHxDA	815.00 > 770.00	5.526	5.513	0.013	1.711	635874	0.1948	77.9	2349	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_026.d

Injection Date: 14-Dec-2018 23:39:26

Instrument ID: A8_N

Lims ID: 480-145071-B-1-A

Lab Sample ID: 320-145071-1

Client ID: MW-01-2018-PFA

Operator ID: SACINSTLCMS01

ALS Bottle#: 14 Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 10.0000

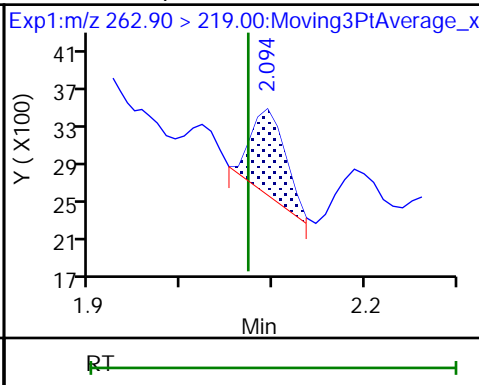
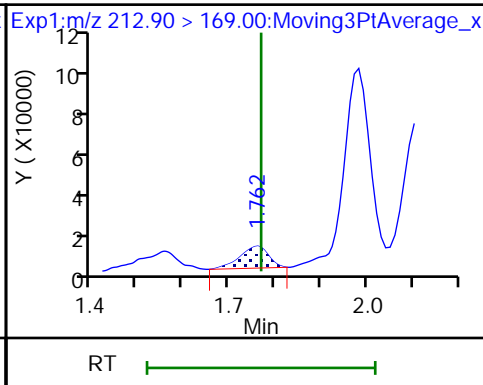
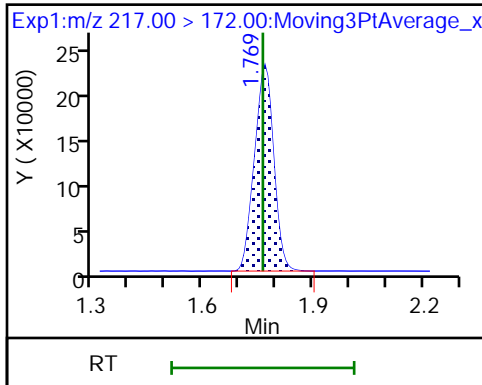
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

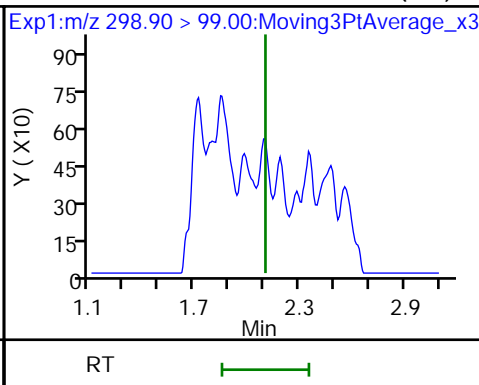
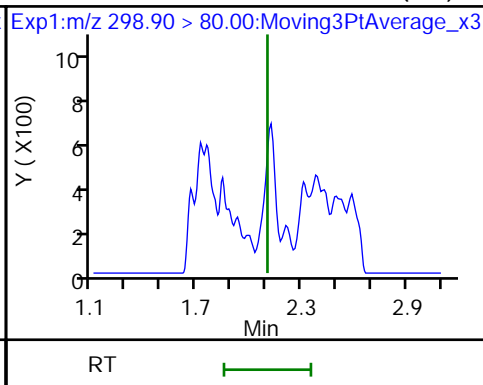
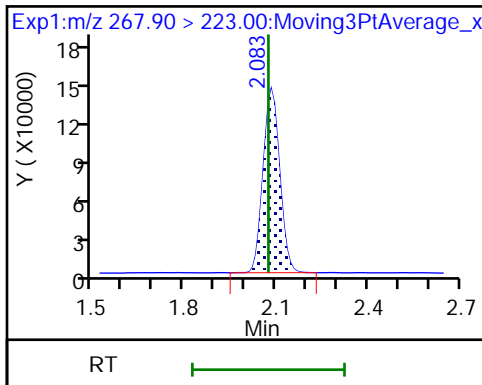
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid (ND)

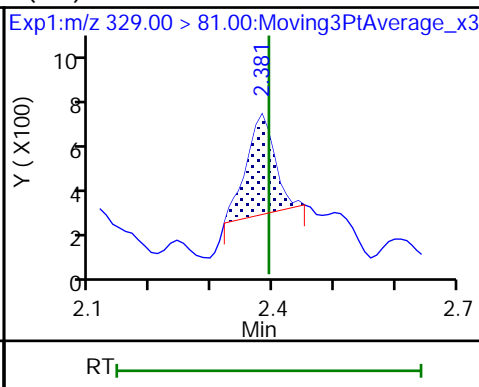
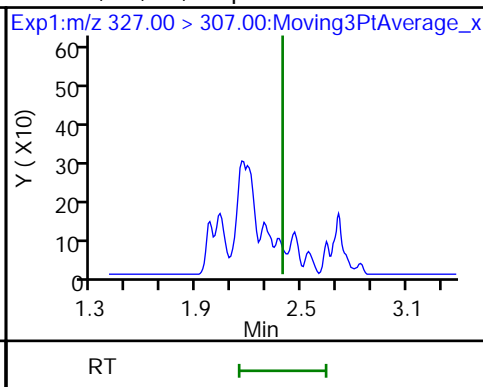
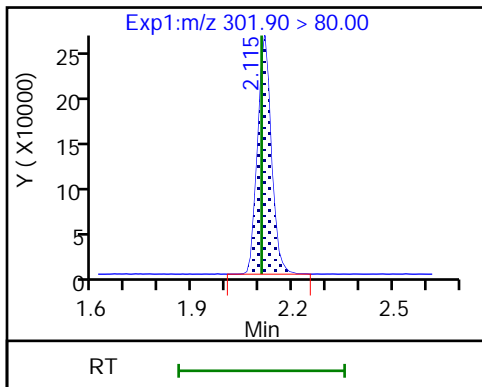
5 Perfluorobutanesulfonic acid (ND)



D 47 13C3 PFBS

61 1H,1H,2H,2H-perfluorohexanesulfonic acid (ND)

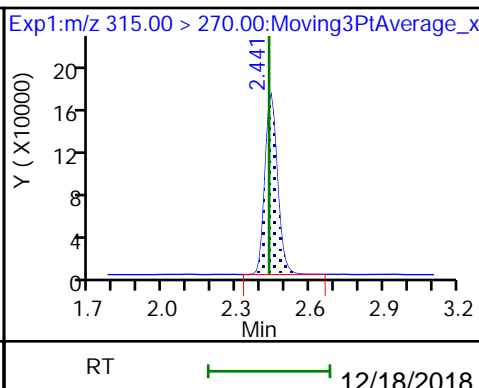
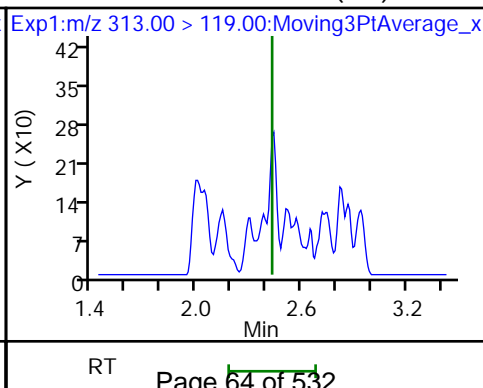
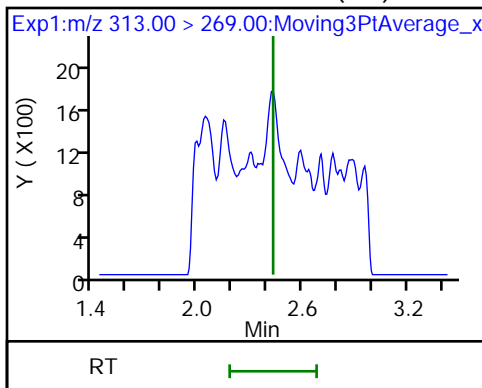
60 M2-4:2 FTS



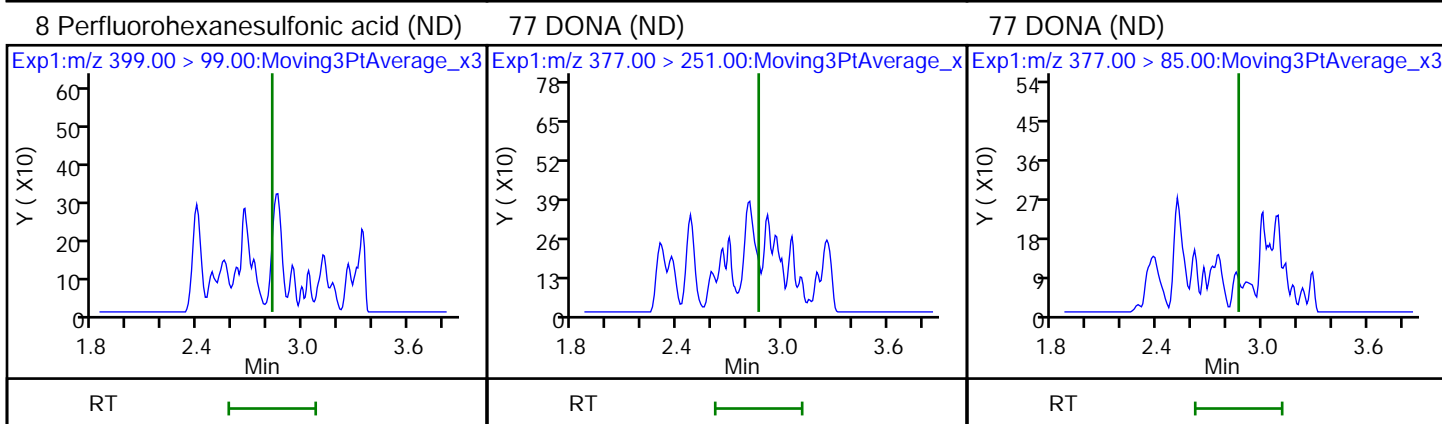
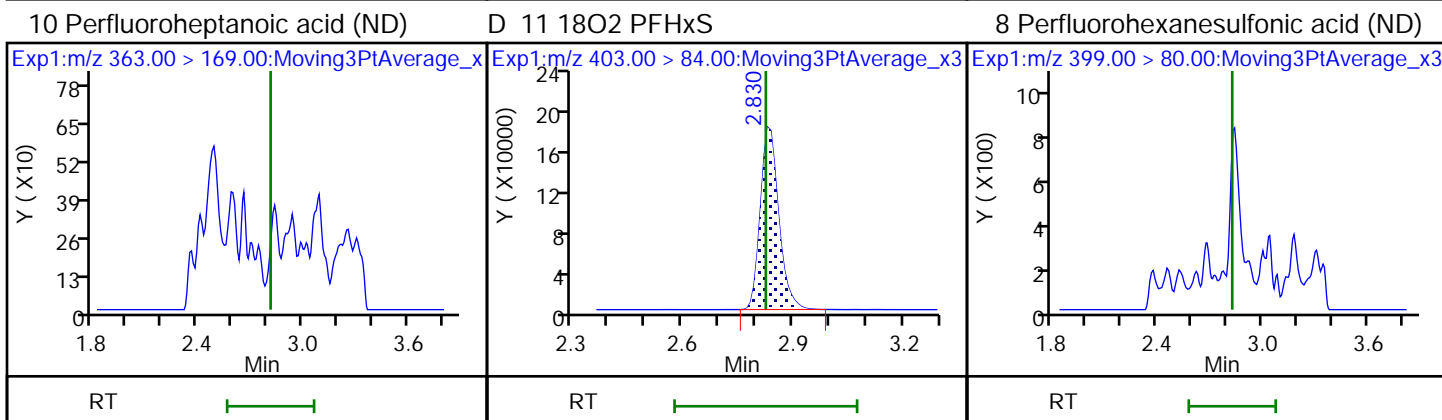
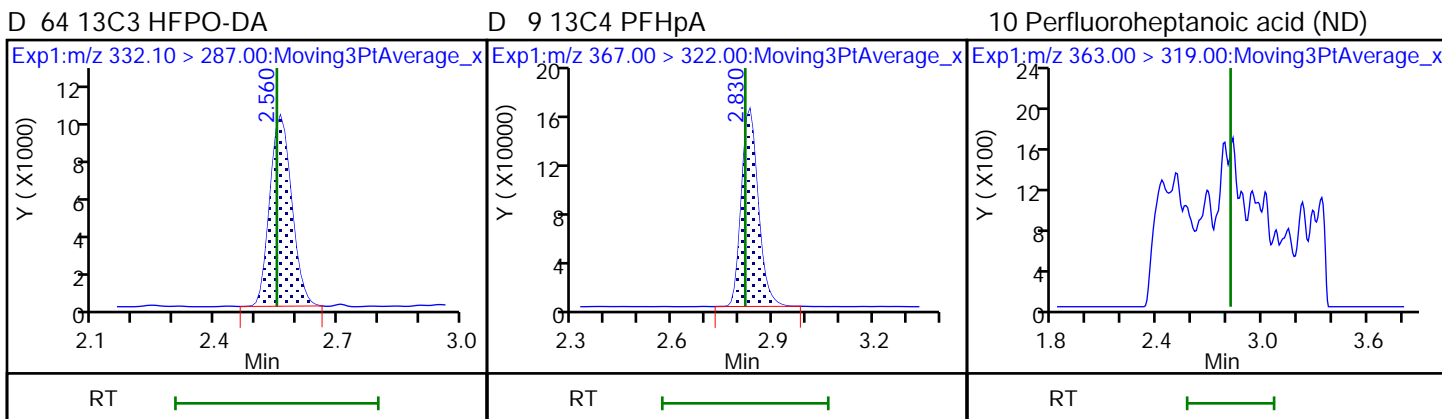
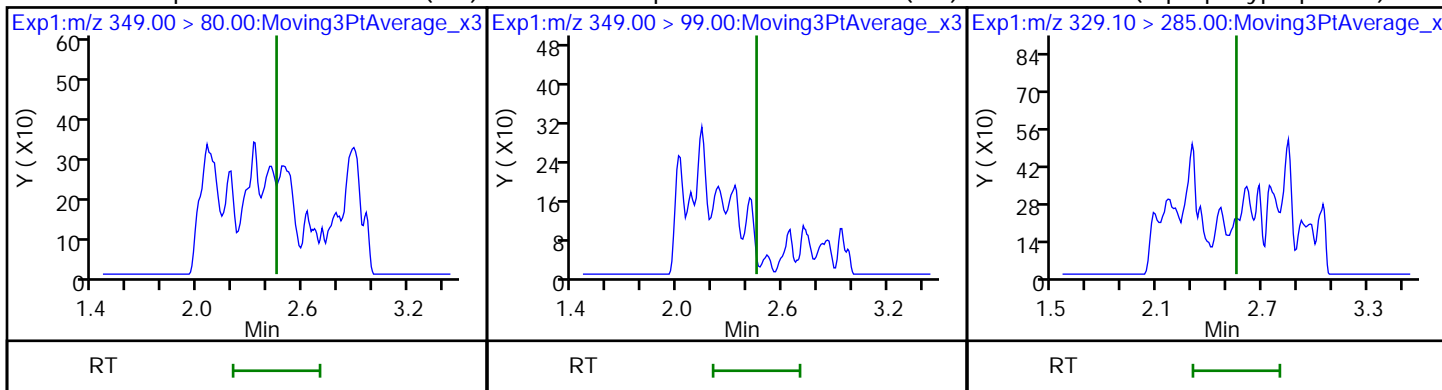
6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

D 7 13C2 PFHxA

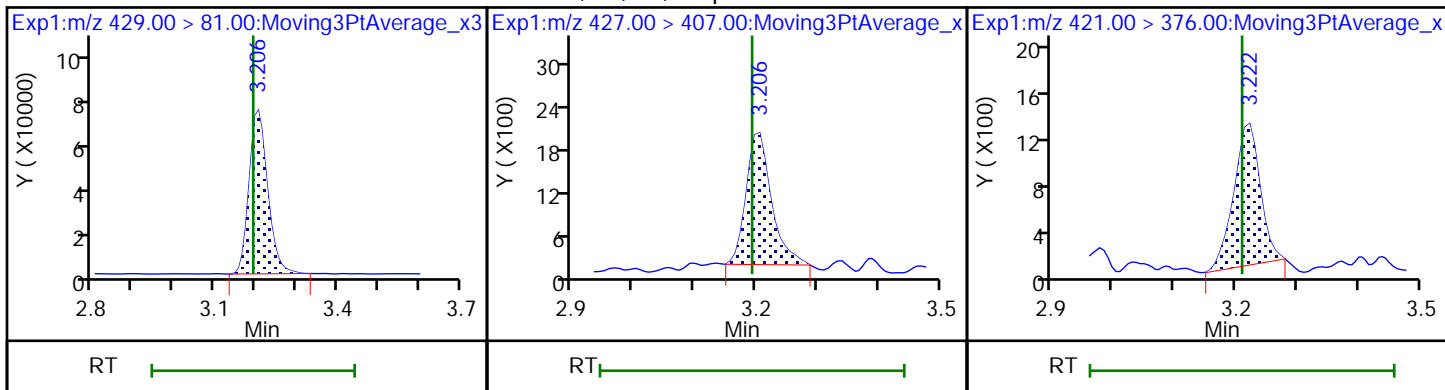


70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) 67 Perfluoro(2-propoxypropanoic) acid (ND)



D 12 M2-6:2 FTS

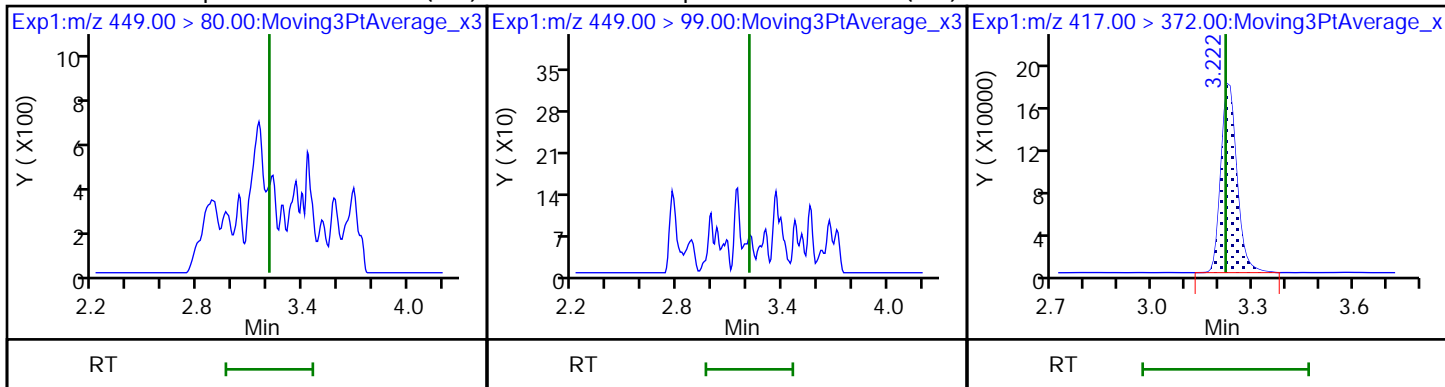
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



16 Perfluoroheptanesulfonic acid (ND)

16 Perfluoroheptanesulfonic acid (ND)

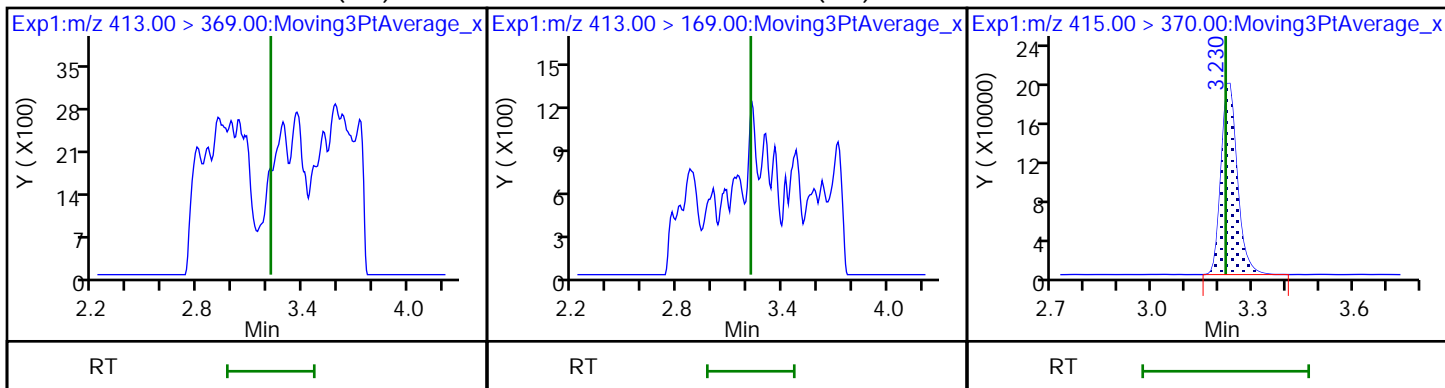
D 14 13C4 PFOA



15 Perfluorooctanoic acid (ND)

15 Perfluorooctanoic acid (ND)

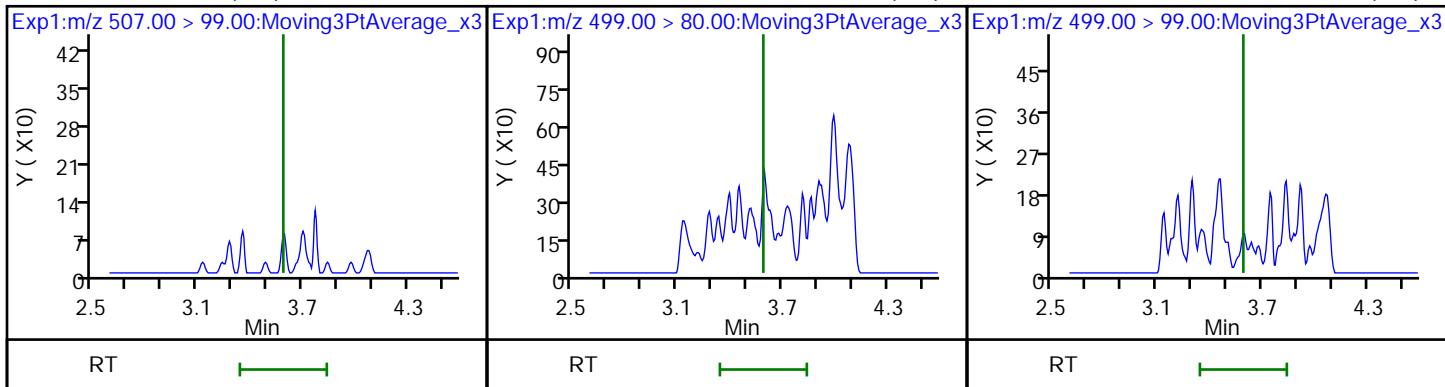
* 62 13C2 PFOA



D 72 13C8 PFOS (ND)

17 Perfluorooctanesulfonic acid (ND)

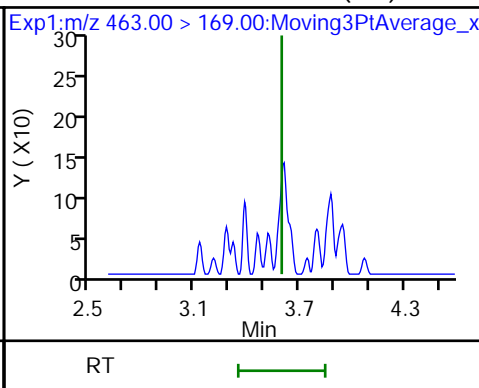
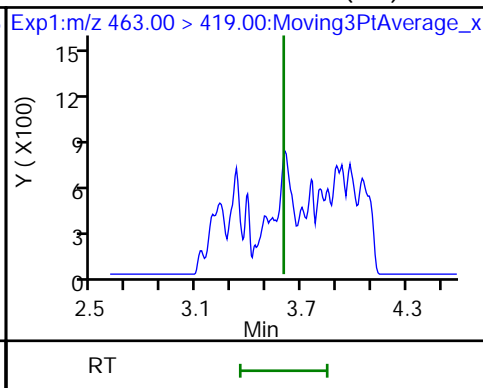
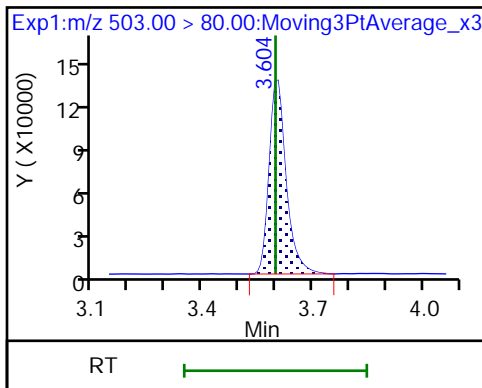
17 Perfluorooctanesulfonic acid (ND)



D 18 13C4 PFOS

20 Perfluorononanoic acid (ND)

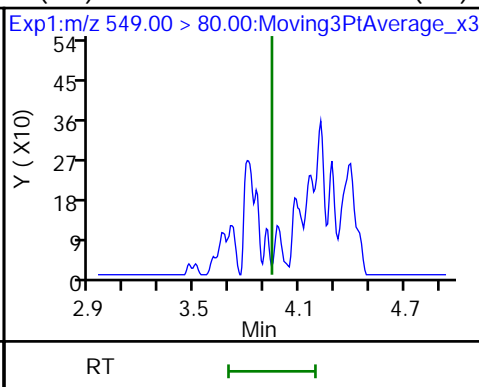
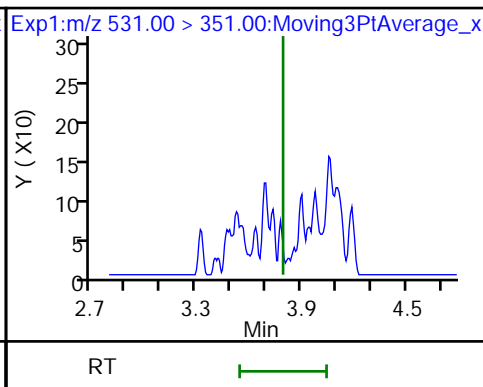
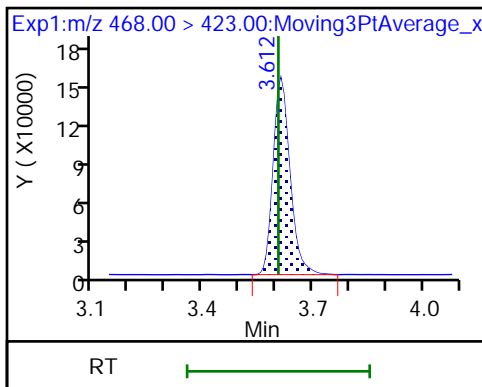
20 Perfluorononanoic acid (ND)



D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonanoic acid (ND)

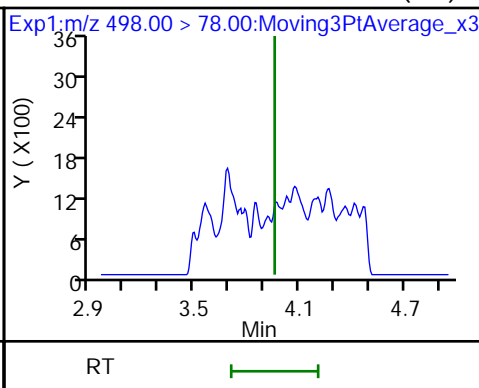
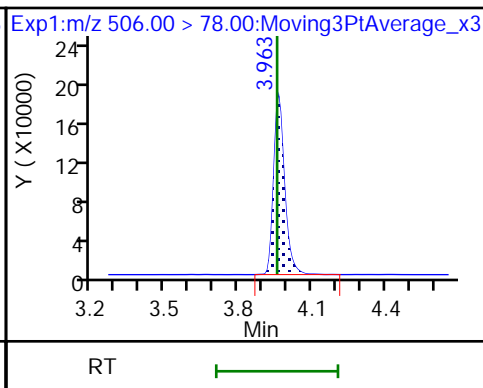
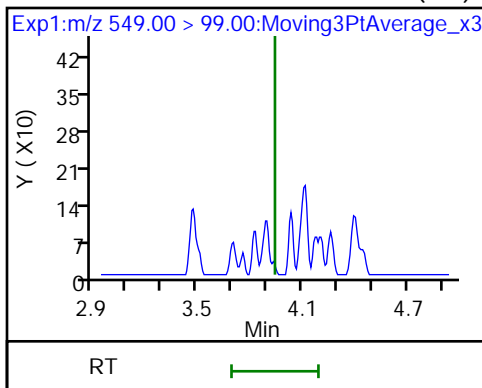
69 Perfluorononanesulfonic acid (ND)



68 Perfluorononanesulfonic acid (ND)

D 21 13C8 FOSA

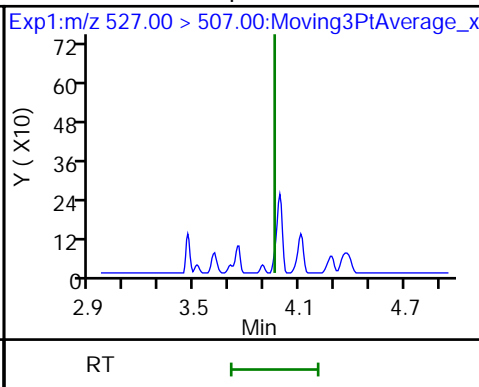
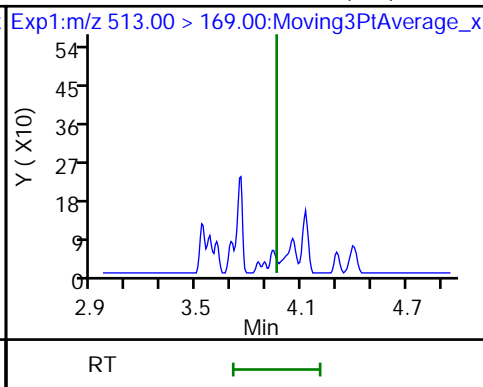
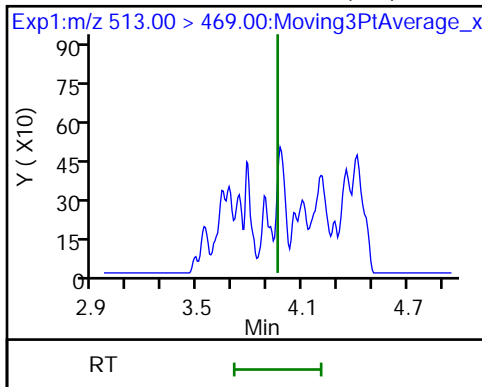
22 Perfluorooctanesulfonamide (ND)



24 Perfluorodecanoic acid (ND)

24 Perfluorodecanoic acid (ND)

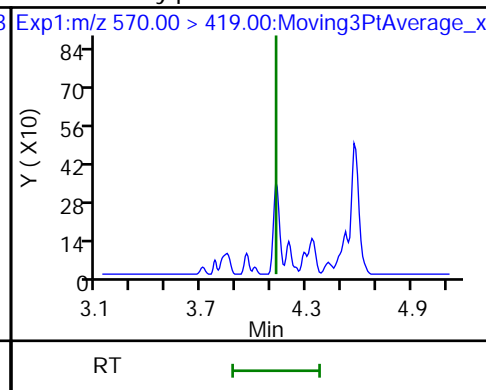
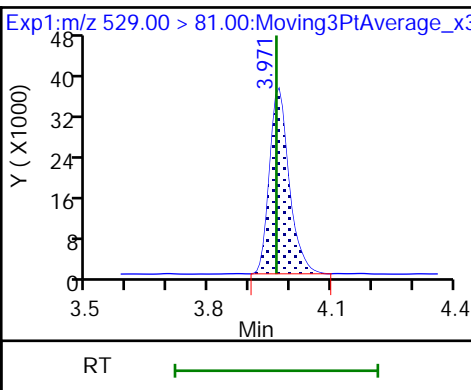
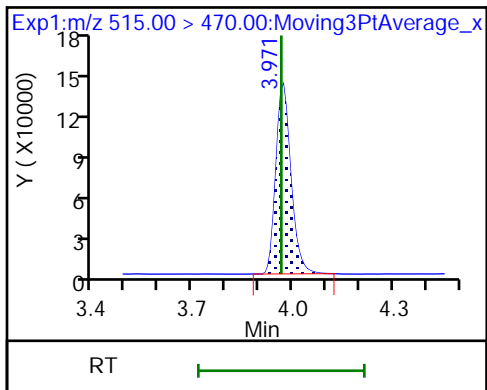
25 1H,1H,2H,2H-perfluorodecanesulfoni (ND)



D 23 13C2 PFDA

D 26 M2-8:2 FTS

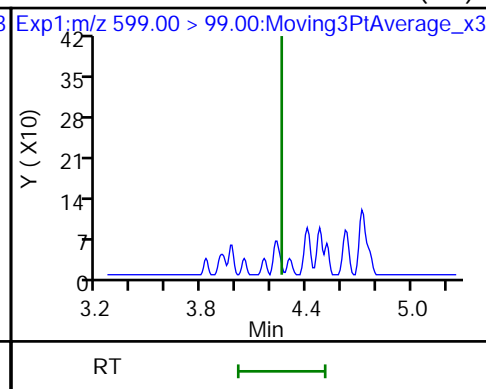
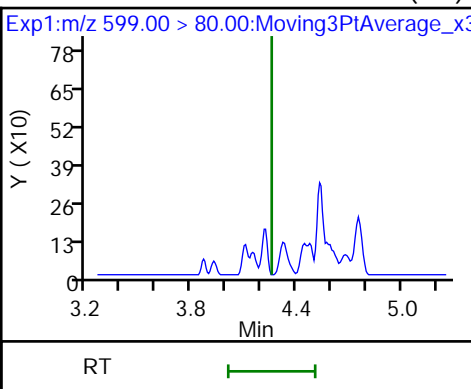
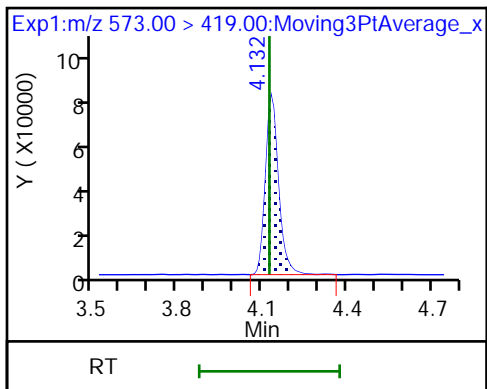
28 N-methylperfluorooctanesulfonamido (ND)



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid (ND)

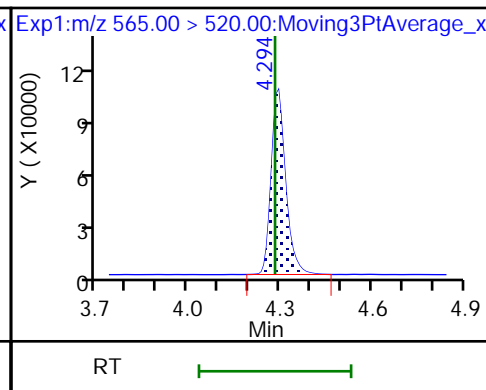
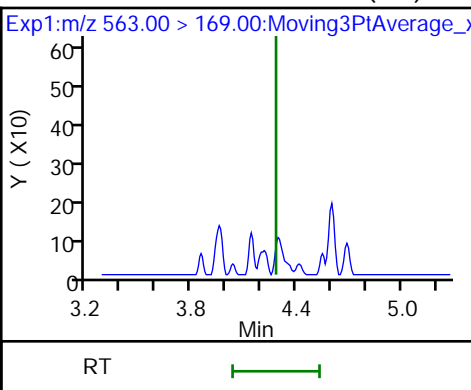
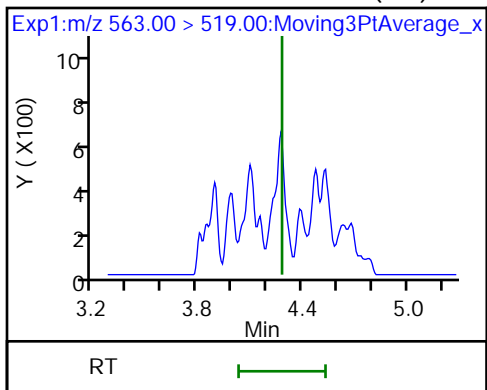
29 Perfluorodecanesulfonic acid (ND)



31 Perfluoroundecanoic acid (ND)

31 Perfluoroundecanoic acid (ND)

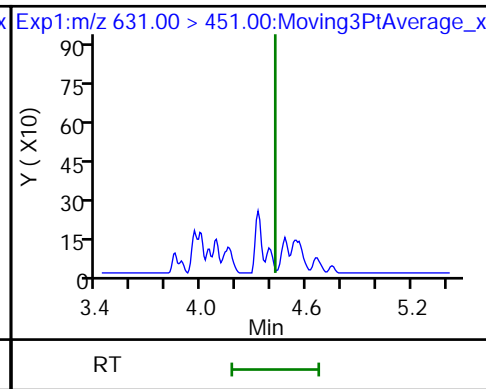
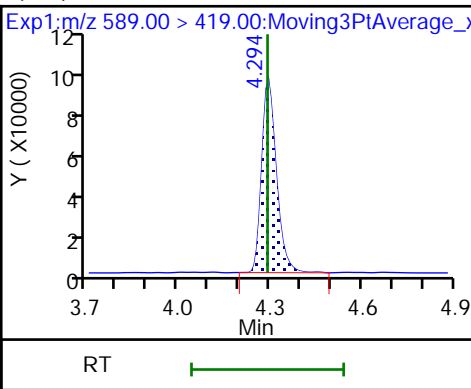
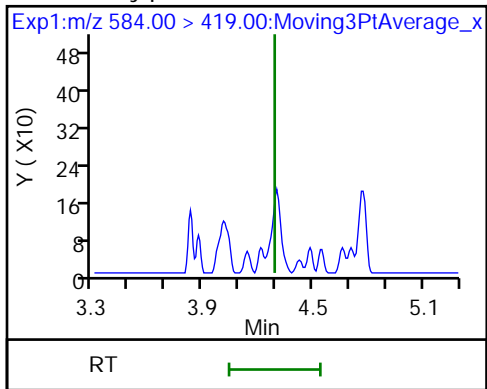
D 30 13C2 PFUnA



33 N-ethylperfluorooctanesulfonamido (ND)

D (ND) d5-NEtFOSAA

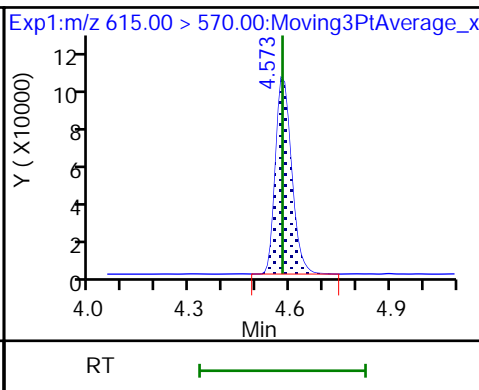
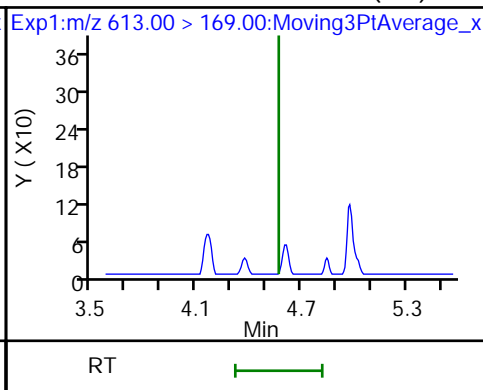
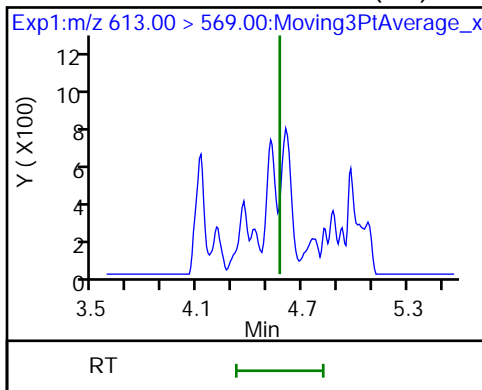
66 11-Chloroeicosafuoro-3-oxaundecan (ND)



37 Perfluorododecanoic acid (ND)

37 Perfluorododecanoic acid (ND)

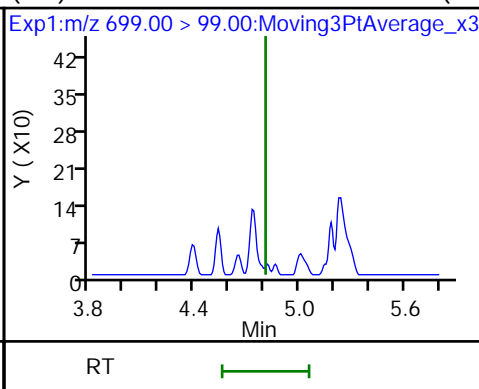
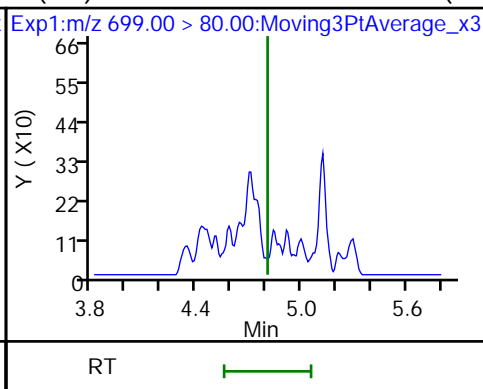
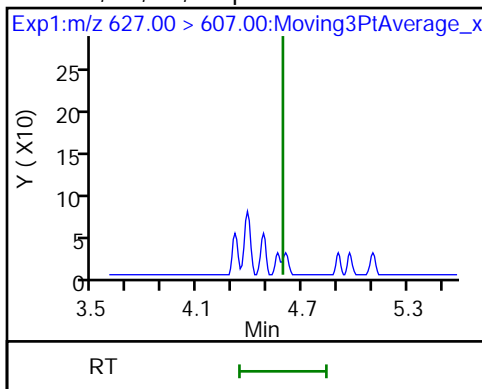
D 36 13C2 PFDa



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

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

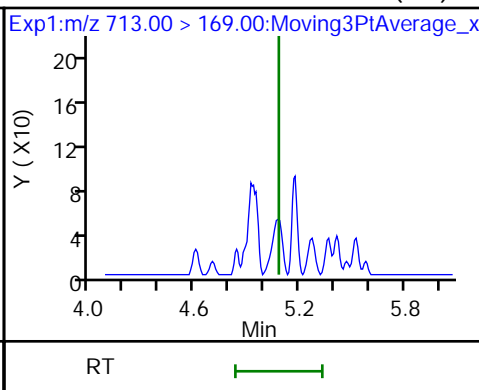
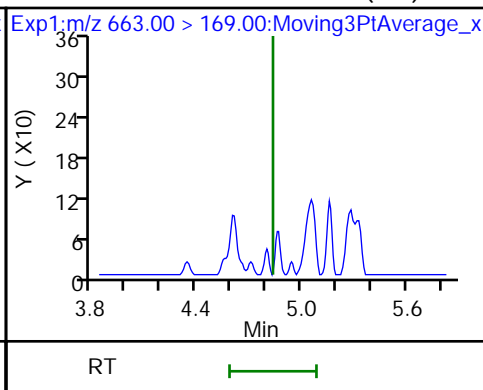
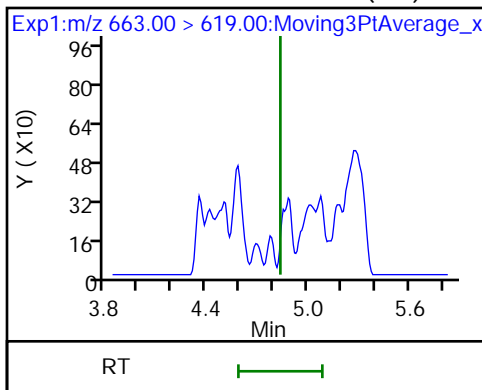
D 36 13C2 PFDoA



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

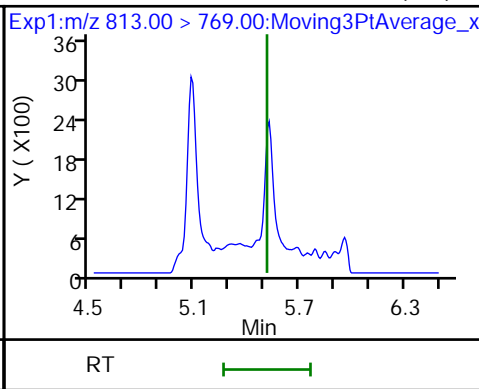
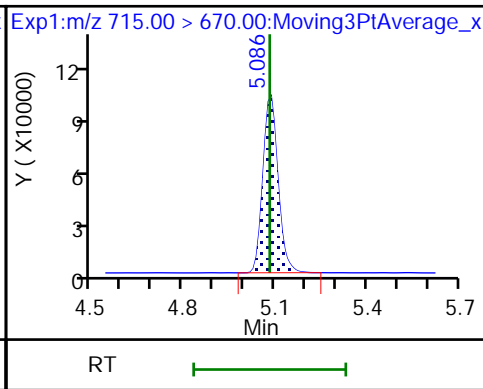
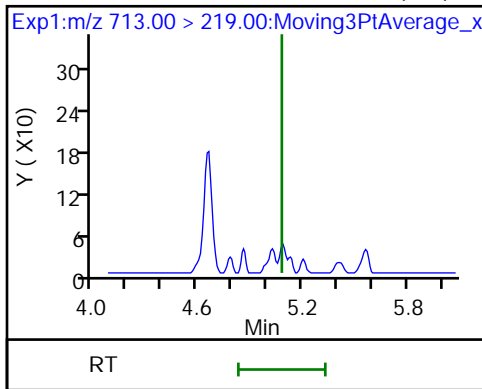
42 Perfluorotetradecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)

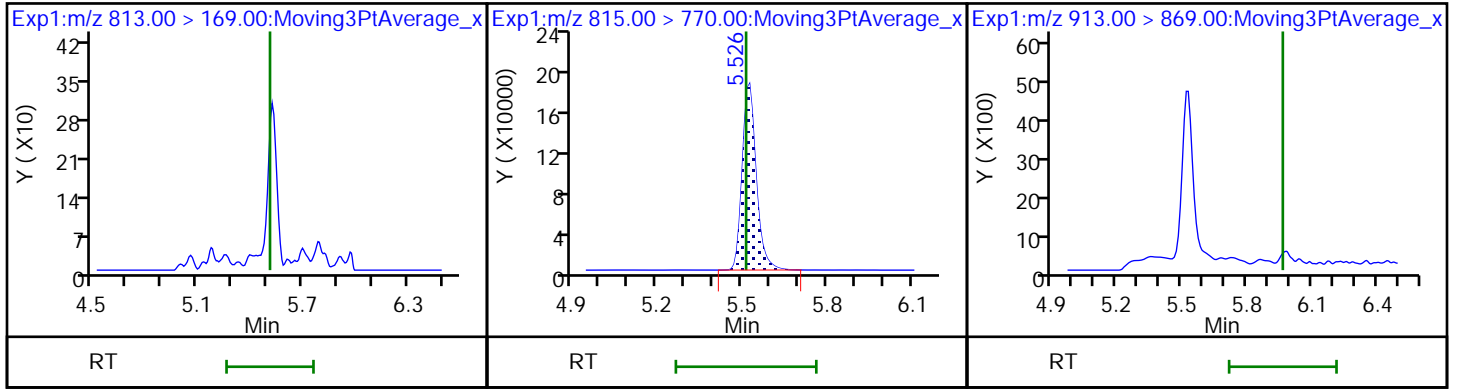
D 43 13C2 PFTeDA

45 Perfluorohexadecanoic acid (ND)

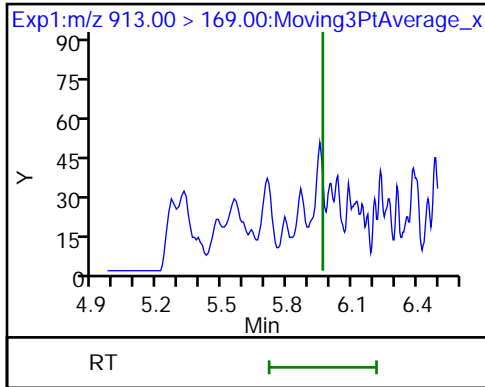


45 Perfluorohexadecanoic acid (ND) D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-03-2018-PFA Lab Sample ID: 480-145071-2
 Matrix: Water Lab File ID: 2018.12.14LLB_023.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 12:25
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 256.5 (mL) Date Analyzed: 12/14/2018 23:16
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 265427 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	4.54		1.95	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.95		1.95	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	1.95		1.95	0.57
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.95		1.95	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	1.95		1.95	0.83
375-95-1	Perfluorononanoic acid (PFNA)	1.95		1.95	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.95		1.95	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.95		1.95	1.07
307-55-1	Perfluorododecanoic acid (PFDoA)	1.95		1.95	0.54
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.95		1.95	1.27
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.95		1.95	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.95		1.95	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.34	J B	1.95	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.95		1.95	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.95		1.95	0.53
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.95		1.95	0.31
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.95		1.95	0.34
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.5		19.5	3.02
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.5		19.5	1.85
27619-97-2	6:2 FTS	19.5		19.5	1.95
39108-34-4	8:2 FTS	19.5		19.5	1.95

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-145071-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-03-2018-PFA</u>	Lab Sample ID: <u>480-145071-2</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.12.14LLB_023.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>11/09/2018 12:25</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>11/23/2018 04:59</u>
Sample wt/vol: <u>256.5 (mL)</u>	Date Analyzed: <u>12/14/2018 23:16</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>265427</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	74		25-150
STL01893	13C5 PFPeA	74		25-150
STL00993	13C2 PFHxA	76		25-150
STL01892	13C4 PFHpA	78		25-150
STL00990	13C4 PFOA	79		25-150
STL00995	13C5 PFNA	82		25-150
STL00996	13C2 PFDA	79		25-150
STL00997	13C2 PFUnA	76		25-150
STL00998	13C2 PFDoA	74		25-150
STL02116	13C2 PFTeDA	67		25-150
STL02337	13C3 PFBS	75		25-150
STL00994	18O2 PFHxS	76		25-150
STL00991	13C4 PFOS	82		25-150
STL01056	13C8 FOSA	69		25-150
STL02118	d3-NMeFOSAA	80		25-150
STL02117	d5-NEtFOSAA	90		25-150
STL02279	M2-6:2 FTS	160	*	25-150
STL02280	M2-8:2 FTS	97		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_023.d
 Lims ID: 480-145071-B-2-A
 Client ID: MW-03-2018-PFA
 Sample Type: Client
 Inject. Date: 14-Dec-2018 23:16:57 ALS Bottle#: 11 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-145071-b-2- (#260871)
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Dec-2018 13:58:59 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0324

First Level Reviewer: mongkols Date: 17-Dec-2018 13:58:59
 Ratio Calibration: None

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	1.762	1.763	-0.001	0.548	6783496	1.84	73.6	3341	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.769	-0.014	0.996	288383	0.1164		4.7	
4 Perfluoropentanoic acid	262.90 > 219.00	2.073	2.072	0.001	1.000	18360	0.009376		1.0	M
D 3 13C5 PFPeA	267.90 > 223.00	2.073	2.074	-0.001	0.644	4469440	1.85	73.9	3270	
D 47 13C3 PFBS	301.90 > 80.00	2.105	2.105	0.0	0.654	6523634	1.74	74.9	251922	
6 Perfluorohexanoic acid	313.00 > 269.00	2.432	2.431	0.001	1.000	12916	0.006663	Target=10.07	2.1	M
	313.00 > 119.00	2.432	2.431	0.001	1.000	1097		11.77(5.03-15.10)	3.0	
D 7 13C2 PFHxA	315.00 > 270.00	2.432	2.432	0.0	0.755	4788031	1.89	75.8	4294	
D 9 13C4 PFHpA	367.00 > 322.00	2.820	2.816	0.004	0.876	4752842	1.96	78.4	5925	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.820	2.817	0.003	1.000	7103	0.003311	Target=2.27	1.9	
	363.00 > 169.00	2.829	2.817	0.012	1.003	2667		2.66(1.13-3.40)	3.3	
D 11 18O2 PFHxS	403.00 > 84.00	2.829	2.826	0.003	0.879	5227937	1.79	75.6	13403	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.829	2.826	0.003	1.000	20599	0.008773	Target=3.00	14.1	M
	399.00 > 99.00	2.829	2.826	0.003	1.000	4742		4.34(1.50-4.49)	7.2	M
D 12 M2-6:2 FTS	429.00 > 81.00	3.202	3.193	0.009	0.995	1666167	3.80	160	1976	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00 > 407.00	3.194	3.193	0.001	0.997	4031	0.003694		6.3	
D 14 13C4 PFOA	417.00 > 372.00	3.219	3.218	0.001	1.000	4779652	1.98	79.2	6352	
15 Perfluorooctanoic acid	413.00 > 369.00	3.227	3.218	0.009	1.003	15405	0.007173	Target=1.68	2.8	M
	413.00 > 169.00	3.227	3.218	0.009	1.003	11791	1.31(0.84-2.52)		7.6	M
* 62 13C2 PFOA	415.00 > 370.00	3.219	3.218	0.001		6129049	2.50		7697	
D 18 13C4 PFOS	503.00 > 80.00	3.593	3.598	-0.005	1.116	3787556	1.97	82.3	3111	
D 19 13C5 PFNA	468.00 > 423.00	3.609	3.605	0.004	1.121	4103539	2.04	81.7	7493	
D 21 13C8 FOSA	506.00 > 78.00	3.962	3.957	0.005	1.231	4944987	1.72	68.9	7162	
D 23 13C2 PFDA	515.00 > 470.00	3.970	3.965	0.005	1.233	3559154	1.97	78.8	8270	
D 26 M2-8:2 FTS	529.00 > 81.00	3.962	3.965	-0.003	1.231	1112926	2.33	97.4	2831	
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	4.131	4.125	0.006	1.000	7215	0.0101		9.5	M
D 27 d3-NMeFOSAA	573.00 > 419.00	4.131	4.125	0.006	1.283	1921867	2.01	80.4	3910	
31 Perfluoroundecanoic acid	563.00 > 519.00	4.285	4.282	0.003	1.000	7968	0.007990	Target=4.24	15.4	
	563.00 > 169.00	4.285	4.282	0.003	1.000	1720	4.63(2.12-6.36)		11.4	
D 30 13C2 PFUnA	565.00 > 520.00	4.285	4.282	0.003	1.331	2728575	1.91	76.3	6881	
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	4.301	4.291	0.010	1.002	6837	0.008871		18.5	M
D 32 d5-NEtFOSAA	589.00 > 419.00	4.293	4.291	0.002	1.334	2255236	2.25	89.9	2265	
D 36 13C2 PFDoA	615.00 > 570.00	4.572	4.577	-0.005	1.420	2738780	1.86	74.4	6424	
D 43 13C2 PFTeDA	715.00 > 670.00	5.076	5.081	-0.005	1.577	2876755	1.68	67.2	10852	

QC Flag Legend

Review Flags

M - Manually Integrated

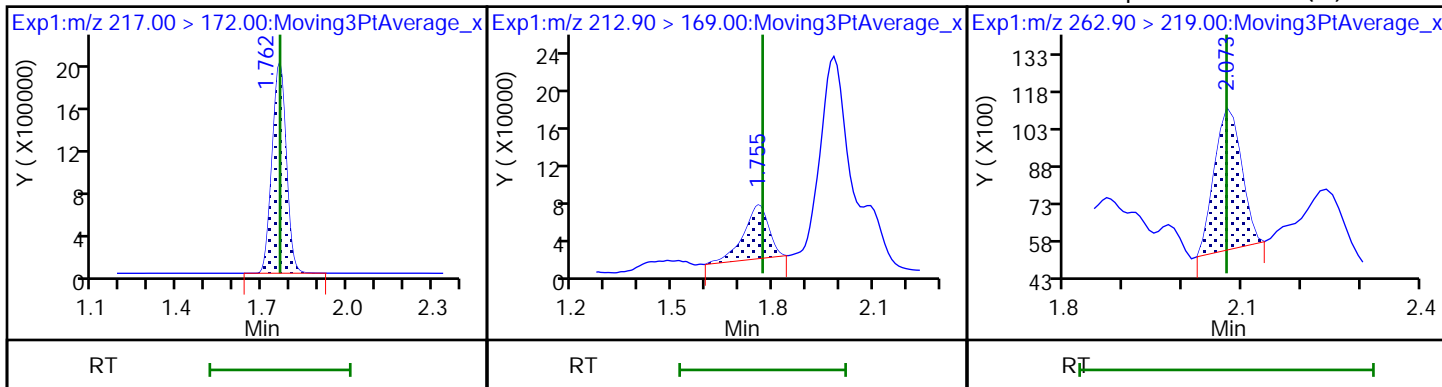
TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_023.d
Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

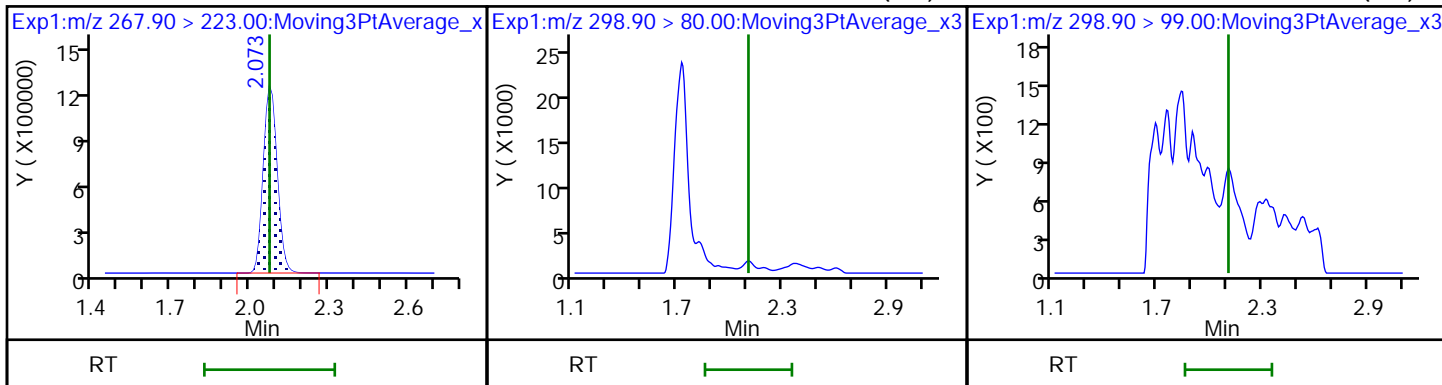
4 Perfluoropentanoic acid (M)



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid (ND)

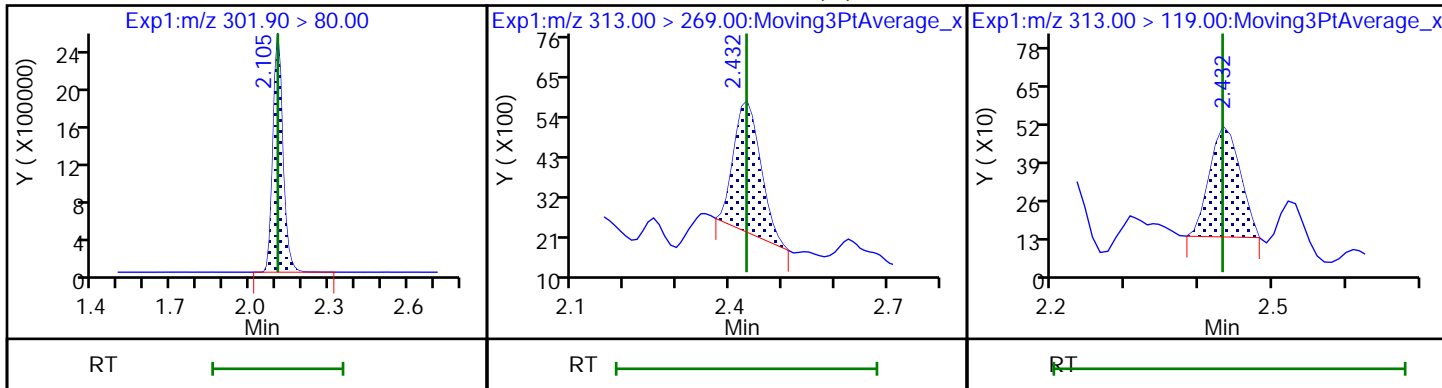
5 Perfluorobutanesulfonic acid (ND)



D 47 13C3 PFBS

6 Perfluorohexanoic acid (M)

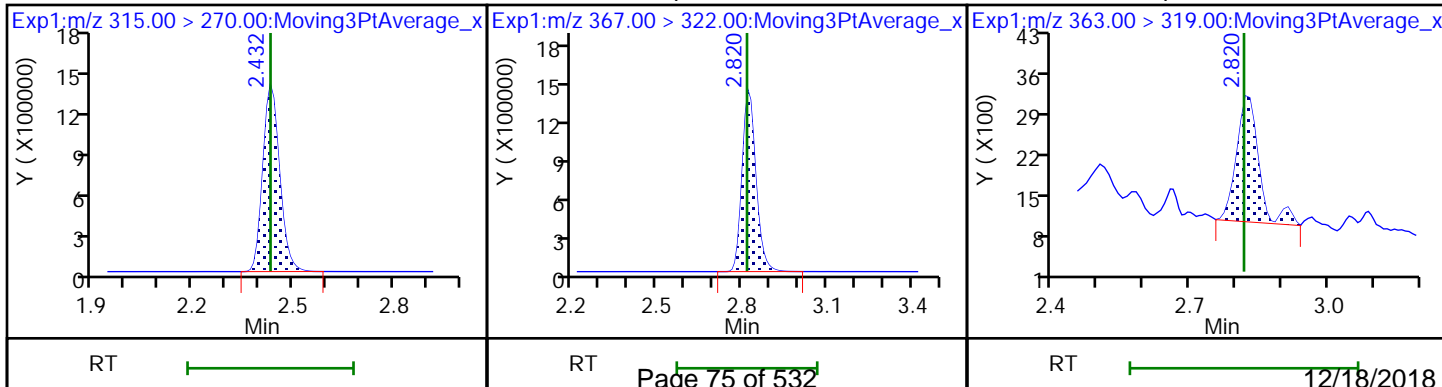
6 Perfluorohexanoic acid

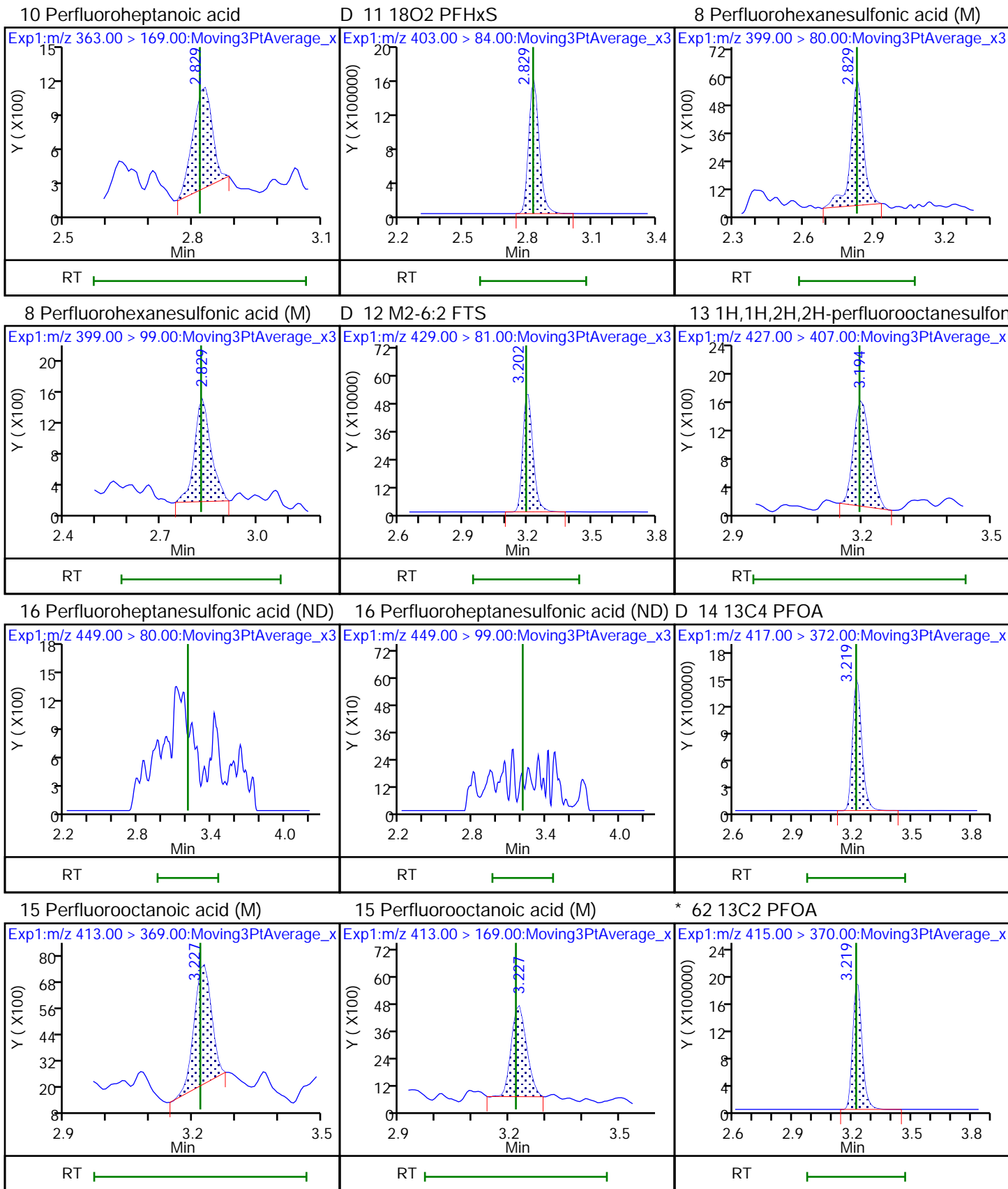


D 7 13C2 PFHxA

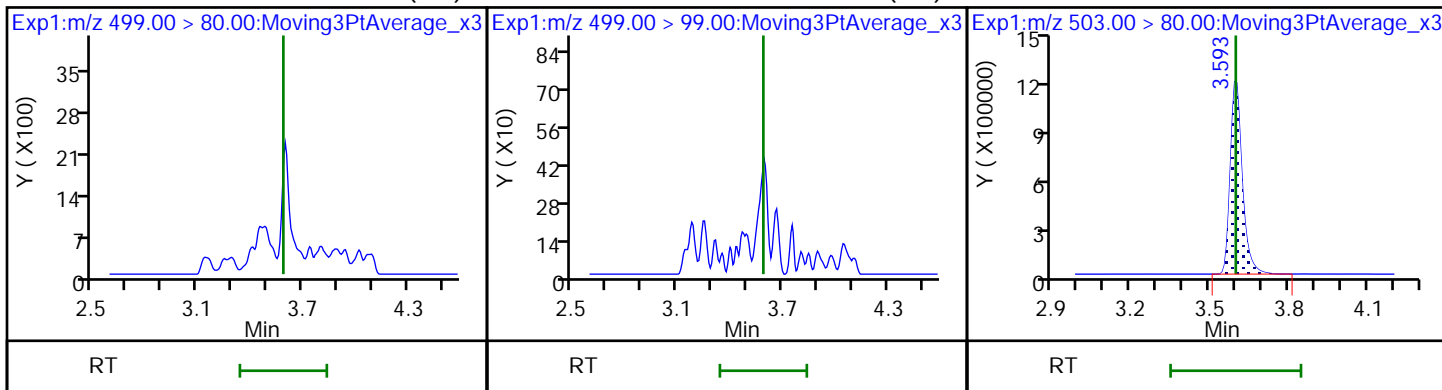
D 9 13C4 PFHpA

10 Perfluoroheptanoic acid

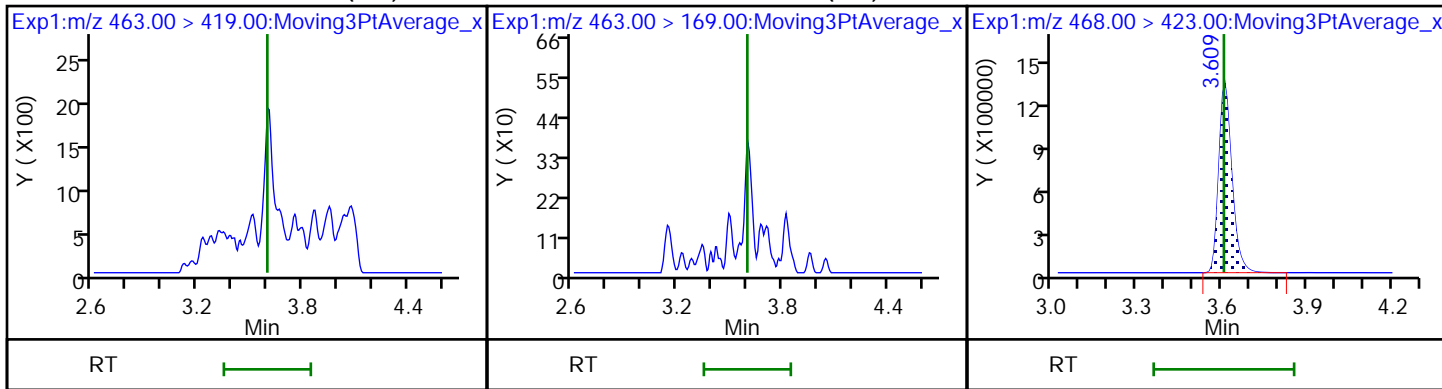




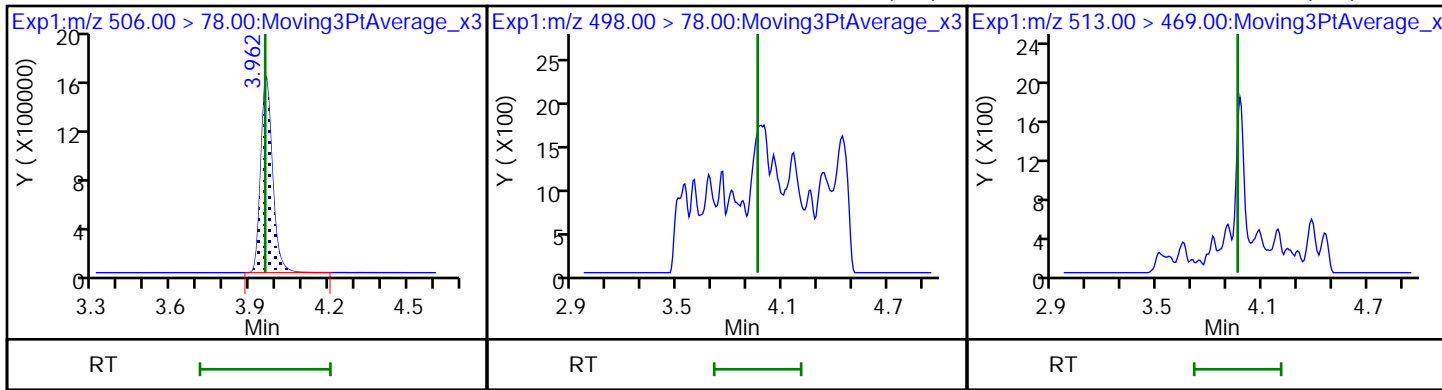
17 Perfluorooctanesulfonic acid (ND) 17 Perfluorooctanesulfonic acid (ND) D 18 13C4 PFOS



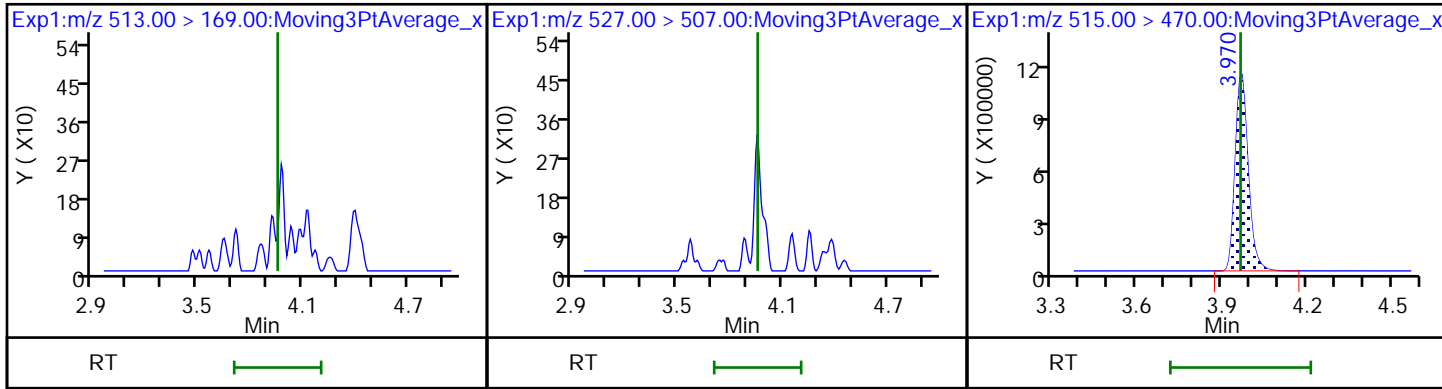
20 Perfluorononanoic acid (ND) 20 Perfluorononanoic acid (ND) D 19 13C5 PFNA



D 21 13C8 FOSA 22 Perfluorooctanesulfonamide (ND) 24 Perfluorodecanoic acid (ND)

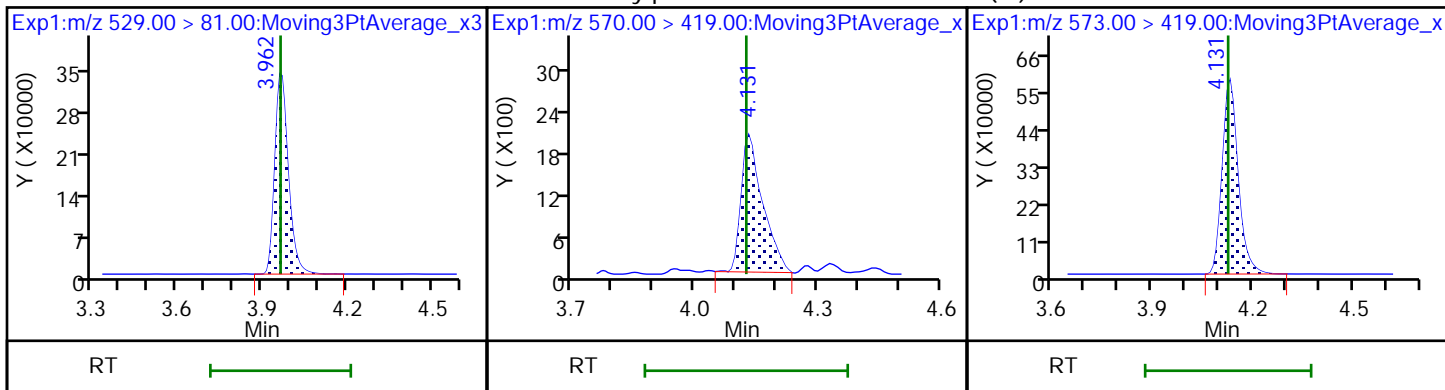


24 Perfluorodecanoic acid (ND) 25 1H,1H,2H,2H-perfluorodecanesulfonamide (ND) D 18 13C2 PFDA



D 26 M2-8:2 FTS

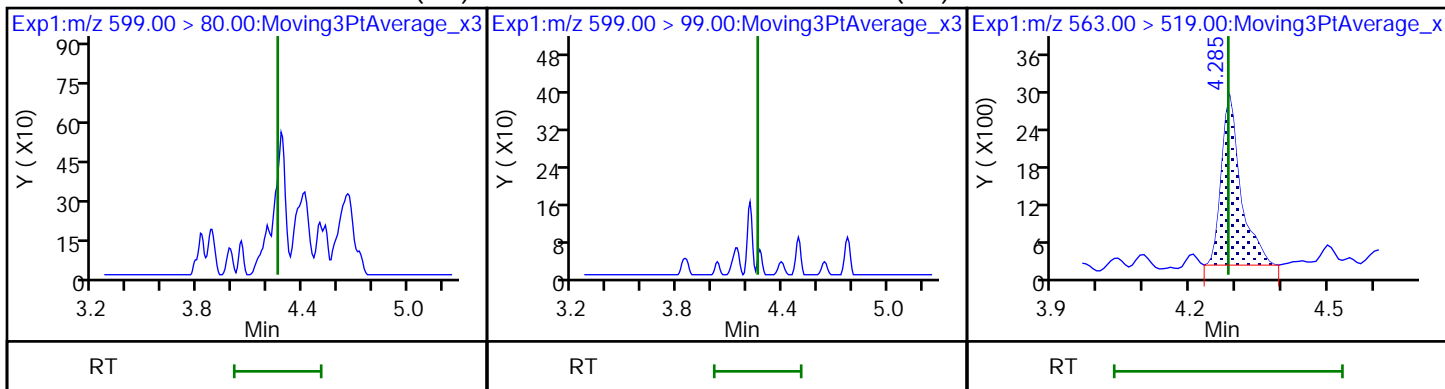
28 N-methylperfluorooctanesulfonamid(D) d3-NMeFOSAA



29 Perfluorodecanesulfonic acid (ND)

29 Perfluorodecanesulfonic acid (ND)

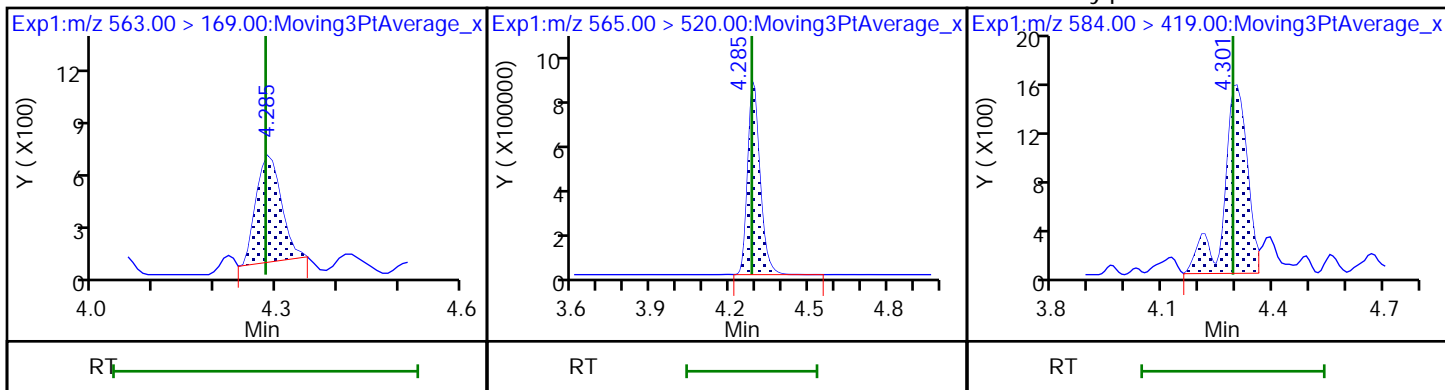
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

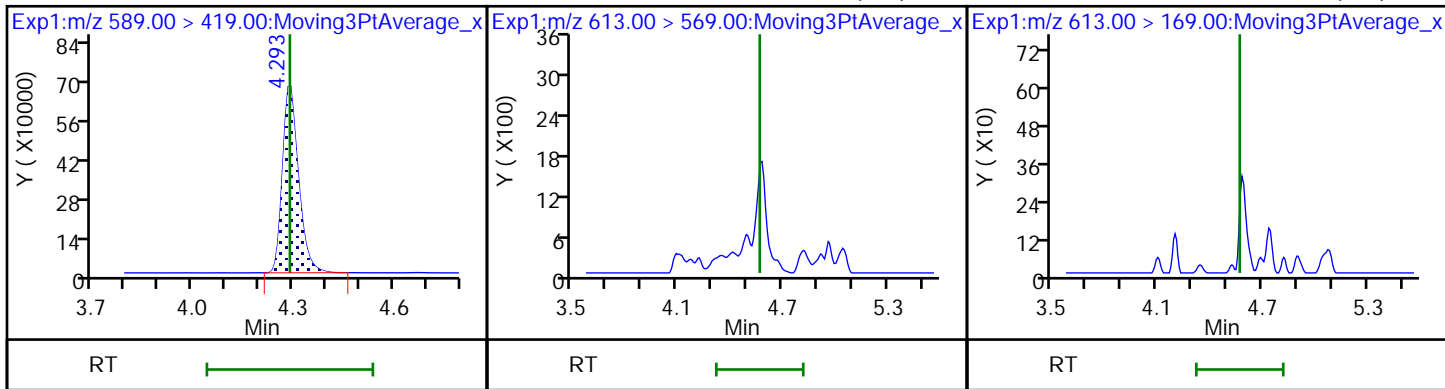
33 N-ethylperfluorooctanesulfonamidoa (M)



D 32 d5-NEtFOSAA

37 Perfluorododecanoic acid (ND)

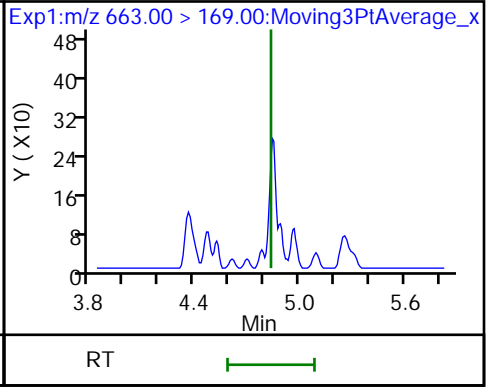
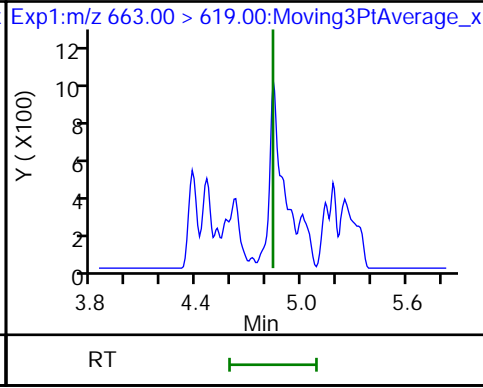
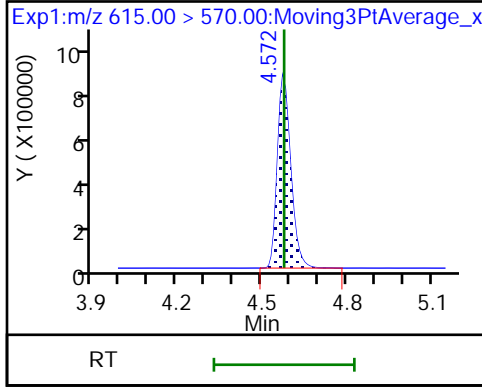
37 Perfluorododecanoic acid (ND)



D 36 13C2 PFDaA

41 Perfluorotridecanoic acid (ND)

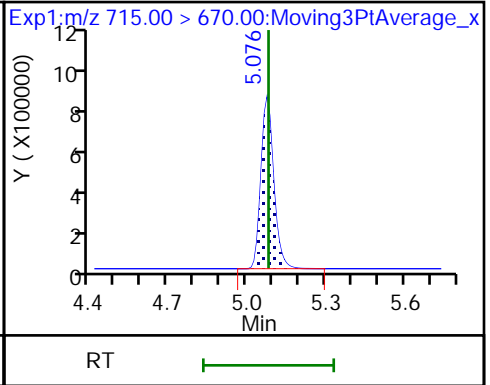
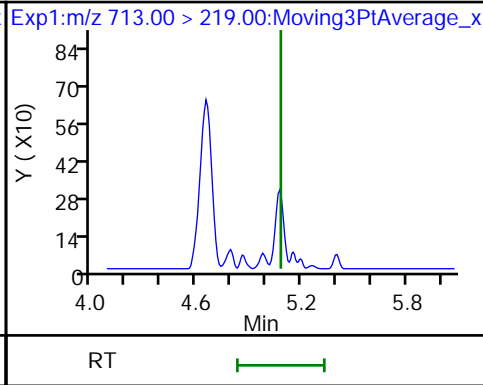
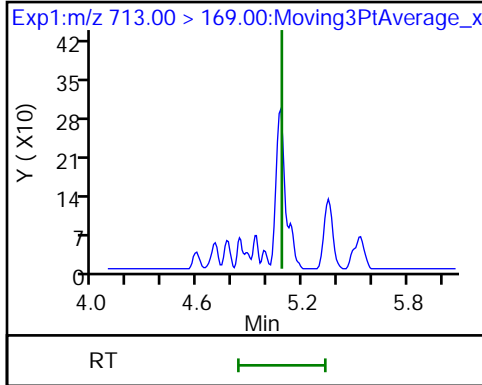
41 Perfluorotridecanoic acid (ND)



42 Perfluorotetradecanoic acid (ND)

42 Perfluorotetradecanoic acid (ND)

D 43 13C2 PFTeDA



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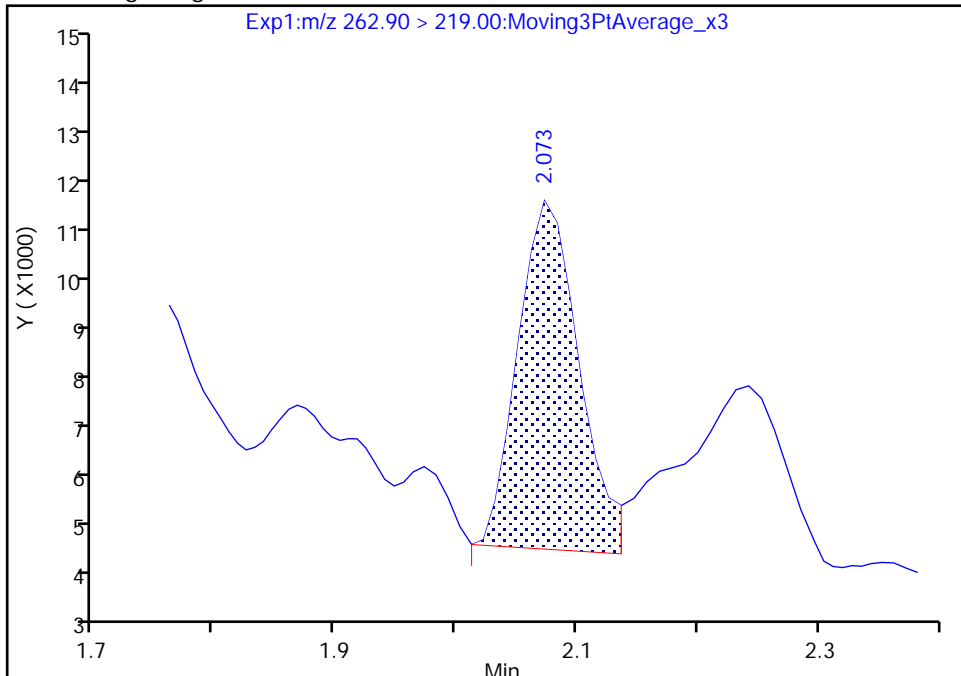
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Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

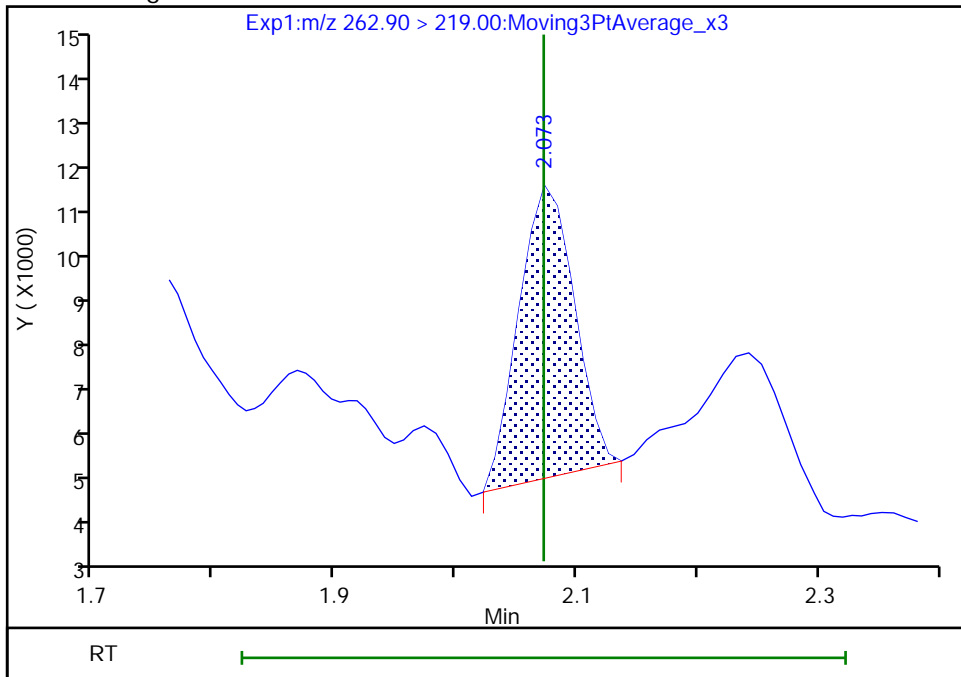
RT: 2.07
Area: 21660
Amount: 0.011061
Amount Units: ng/ml

Processing Integration Results



RT: 2.07
Area: 18360
Amount: 0.009376
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 13:55:42
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

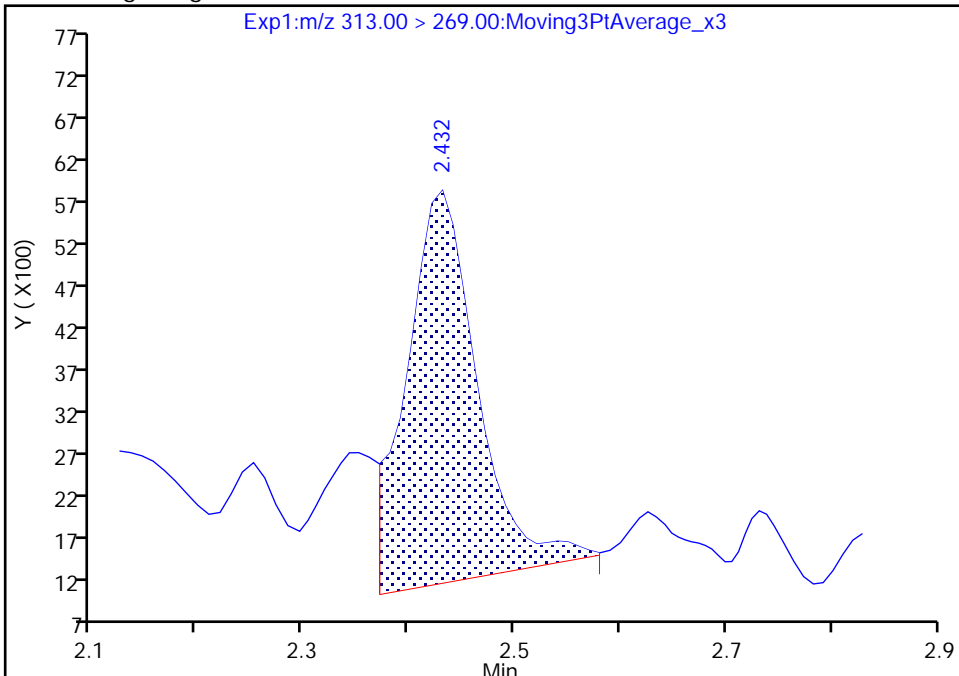
Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_023.d
Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

6 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

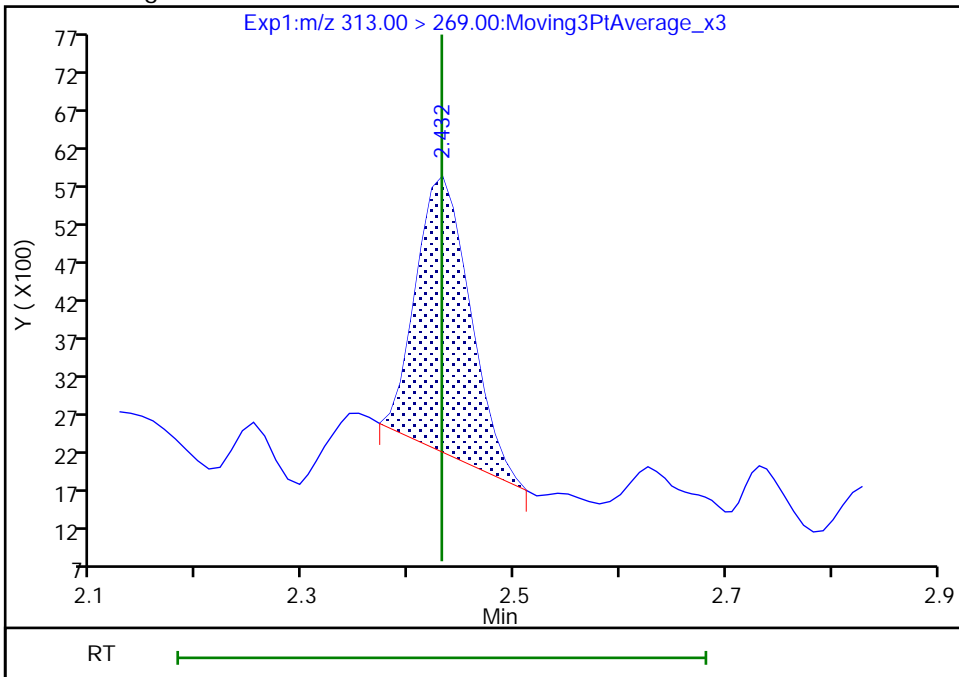
RT: 2.43
Area: 21760
Amount: 0.011226
Amount Units: ng/ml

Processing Integration Results



RT: 2.43
Area: 12916
Amount: 0.006663
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 13:57:55
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

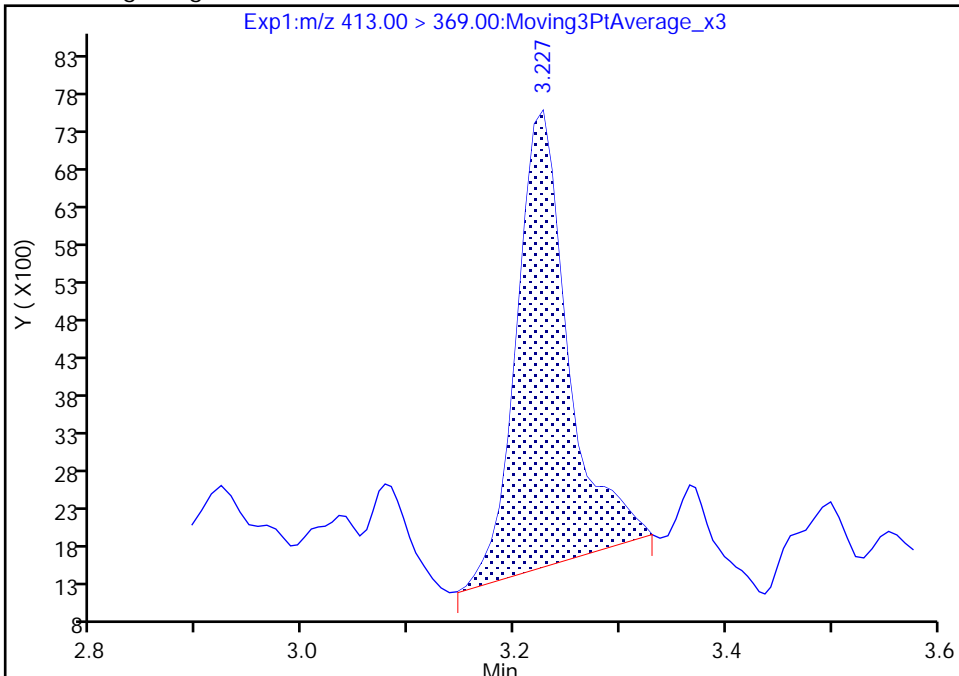
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Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

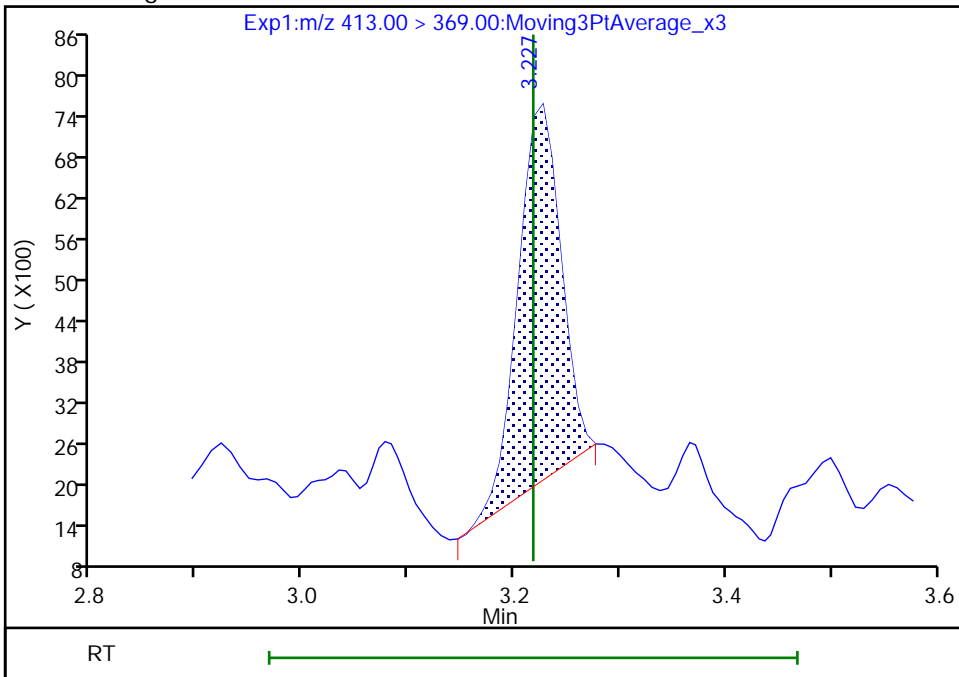
RT: 3.23
Area: 20367
Amount: 0.009484
Amount Units: ng/ml

Processing Integration Results



RT: 3.23
Area: 15405
Amount: 0.007173
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 13:58:19
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

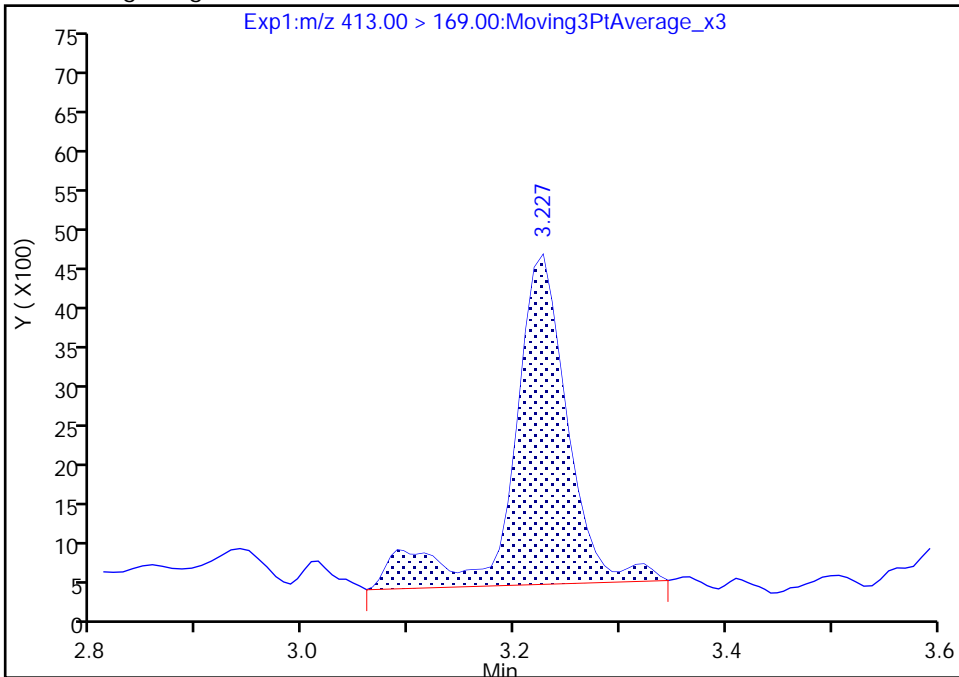
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Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

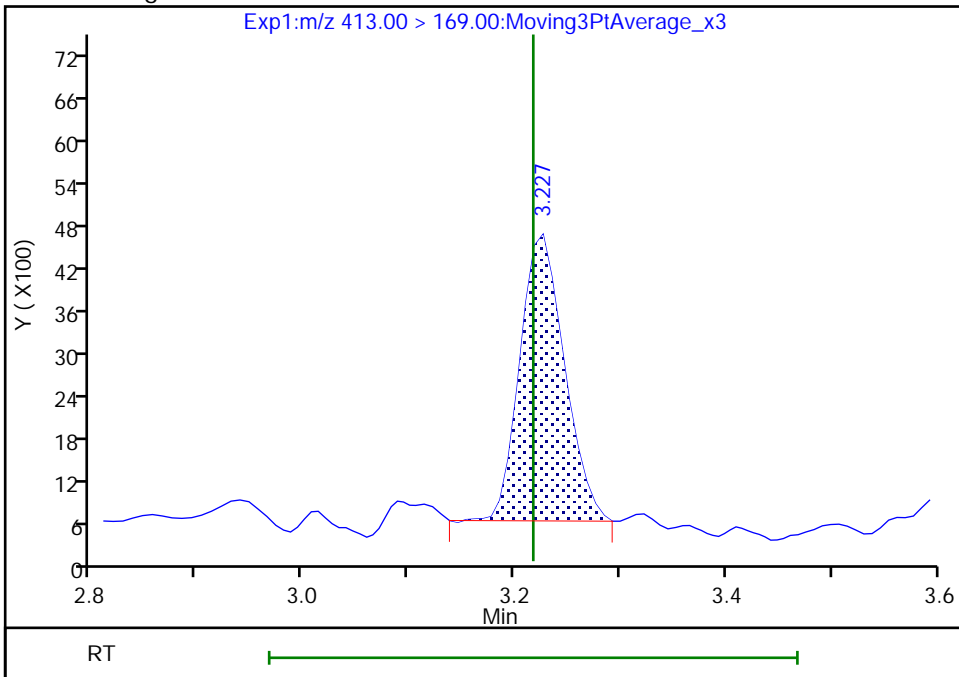
RT: 3.23
Area: 15345
Amount: 0.009484
Amount Units: ng/ml

Processing Integration Results



RT: 3.23
Area: 11791
Amount: 0.007173
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 13:58:23

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

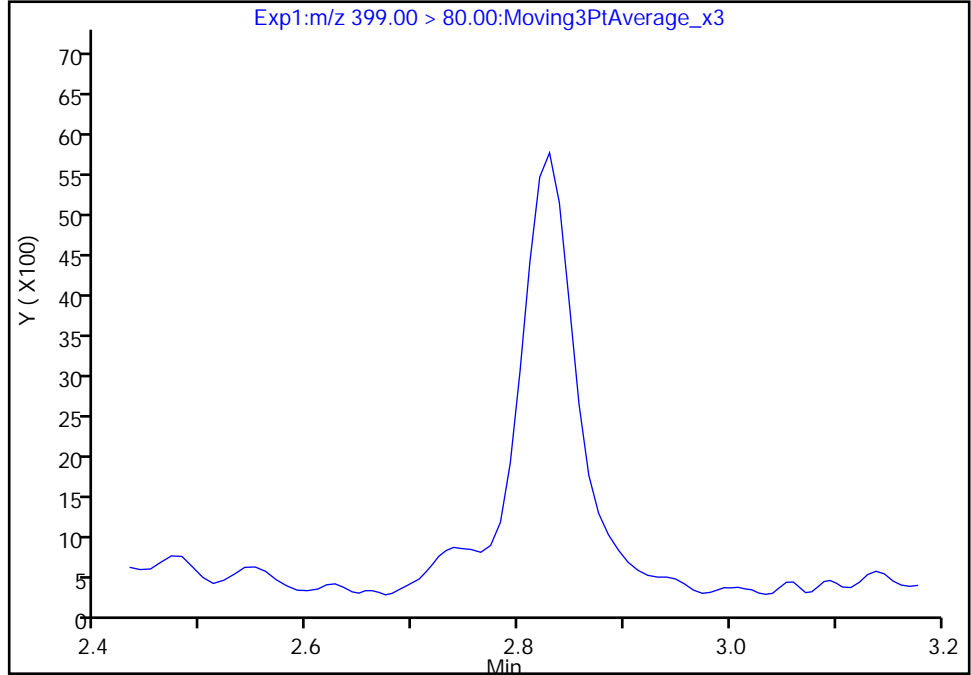
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Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

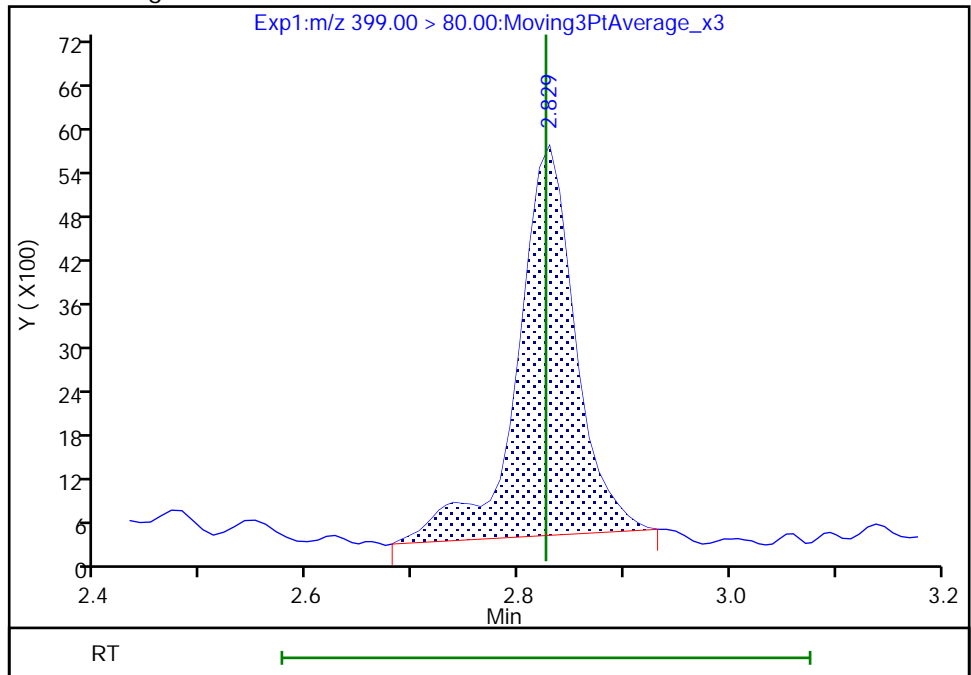
Not Detected
Expected RT: 2.83

Processing Integration Results



Manual Integration Results

RT: 2.83
Area: 20599
Amount: 0.008773
Amount Units: ng/ml



Reviewer: mongkols, 17-Dec-2018 13:58:08
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

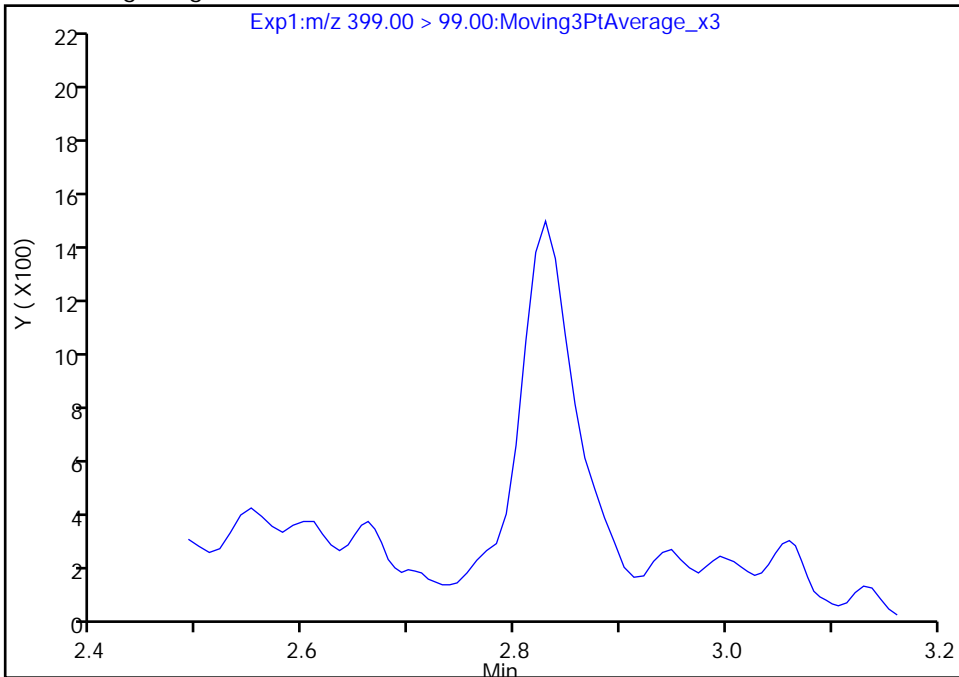
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Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

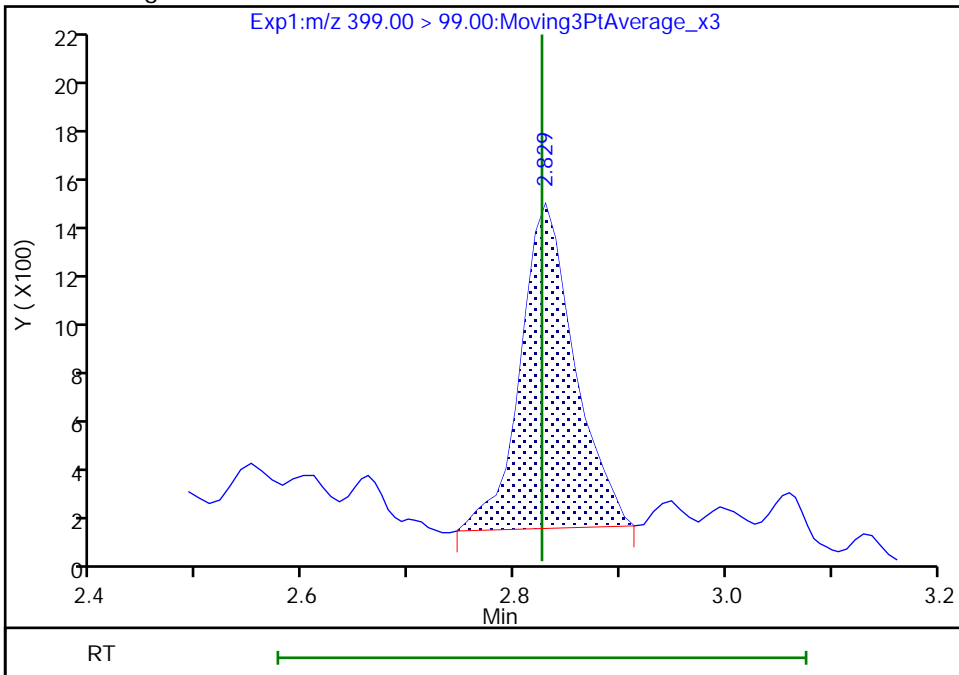
Not Detected
Expected RT: 2.83

Processing Integration Results



Manual Integration Results

RT: 2.83
Area: 4742
Amount: 0.008773
Amount Units: ng/ml



Reviewer: mongkols, 17-Dec-2018 13:58:11

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

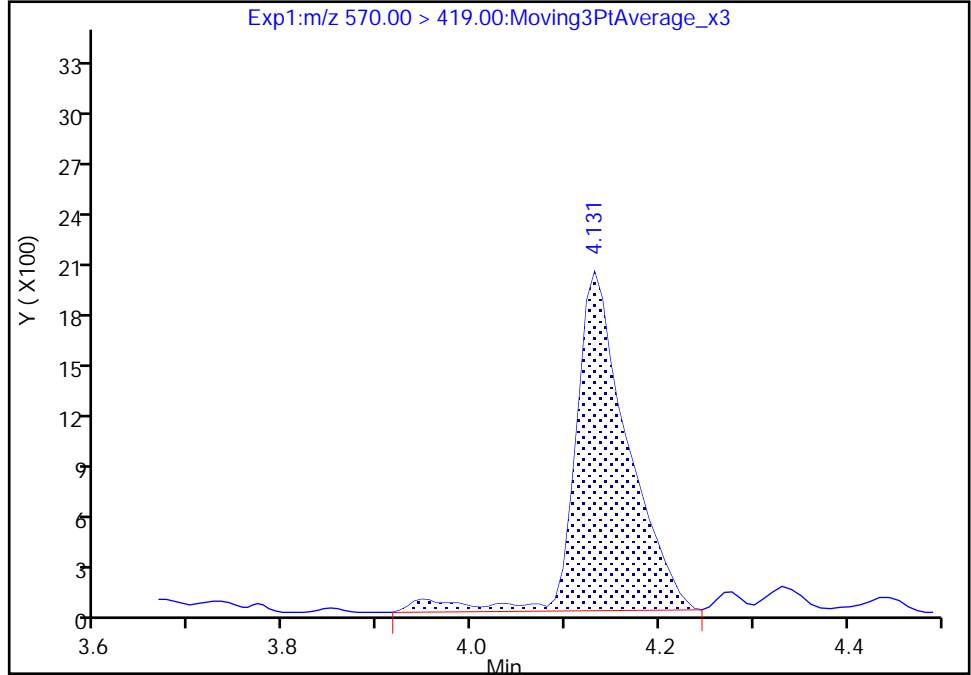
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Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

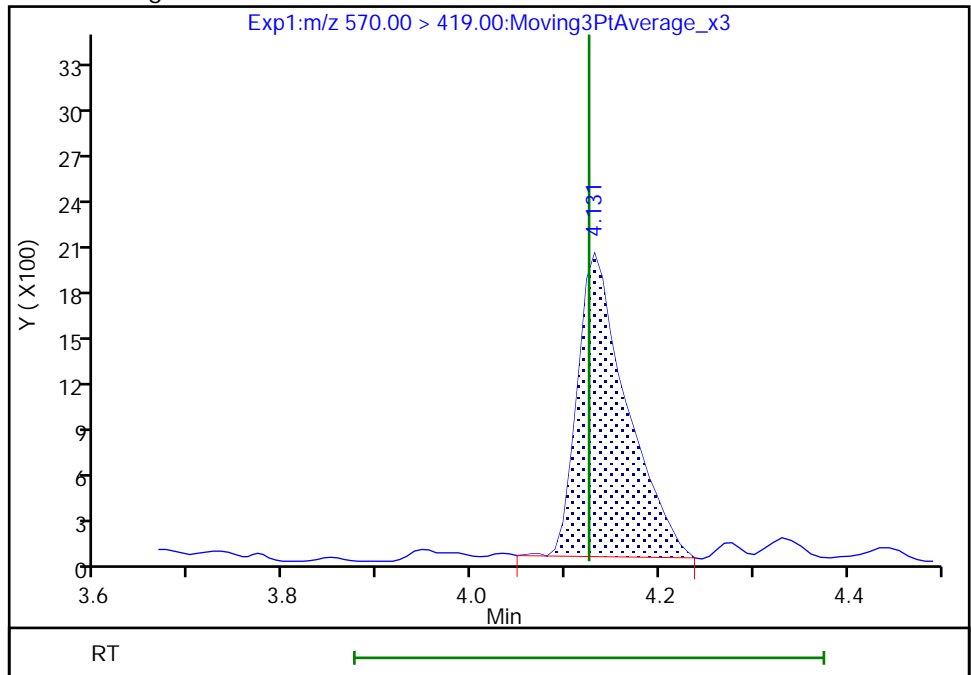
RT: 4.13
Area: 7779
Amount: 0.010943
Amount Units: ng/ml

Processing Integration Results



RT: 4.13
Area: 7215
Amount: 0.010149
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

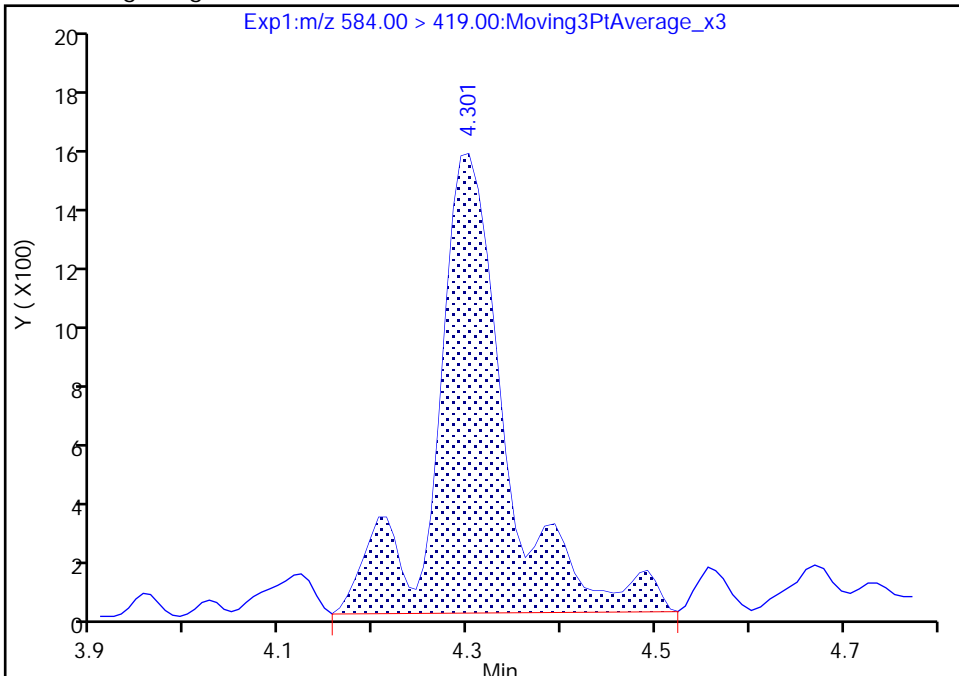
Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_023.d
Injection Date: 14-Dec-2018 23:16:57 Instrument ID: A8_N
Lims ID: 480-145071-B-2-A Lab Sample ID: 320-145071-2
Client ID: MW-03-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

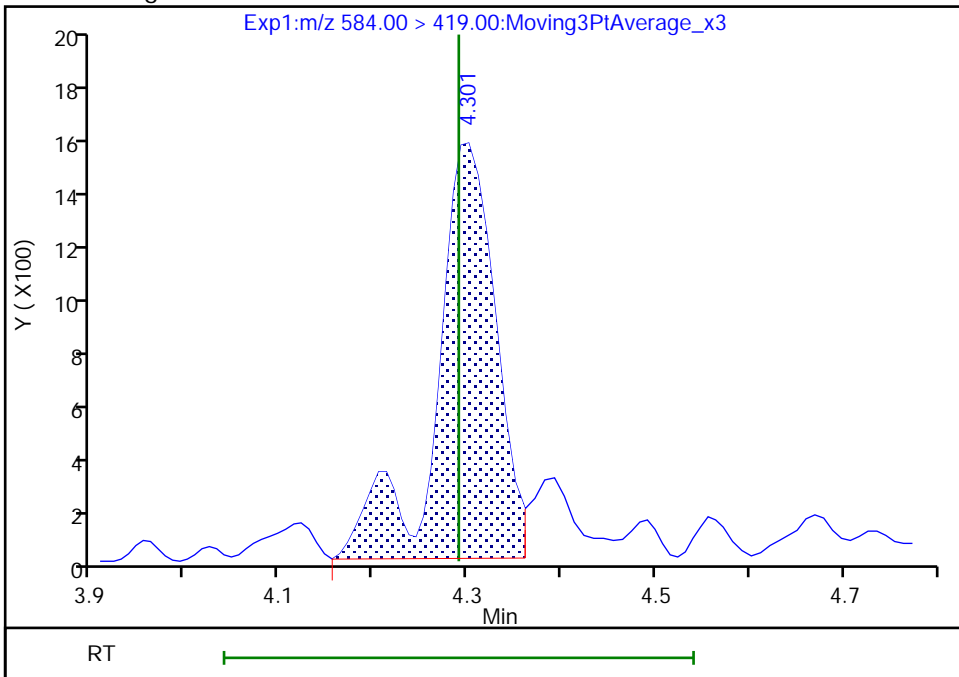
RT: 4.30
Area: 8118
Amount: 0.010533
Amount Units: ng/ml

Processing Integration Results



RT: 4.30
Area: 6837
Amount: 0.008871
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 13:58:54
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-04-2018-PFA Lab Sample ID: 480-145071-3
 Matrix: Water Lab File ID: 2018.12.14LLB_024.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 13:15
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 260 (mL) Date Analyzed: 12/14/2018 23:24
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 265427 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	1.92		1.92	0.34
2706-90-3	Perfluoropentanoic acid (PFPeA)	1.92		1.92	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.92		1.92	0.56
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.92		1.92	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	1.92		1.92	0.82
375-95-1	Perfluorononanoic acid (PFNA)	1.92		1.92	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.92		1.92	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.92		1.92	1.06
307-55-1	Perfluorododecanoic acid (PFDoA)	1.92		1.92	0.53
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.92		1.92	1.25
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.92		1.92	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.92		1.92	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.27	J B	1.92	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.92		1.92	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.92		1.92	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.92		1.92	0.31
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.92		1.92	0.34
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.2		19.2	2.98
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.2		19.2	1.83
27619-97-2	6:2 FTS	19.2		19.2	1.92
39108-34-4	8:2 FTS	19.2		19.2	1.92

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: <u>TestAmerica Sacramento</u>	Job No.: <u>480-145071-1</u>
SDG No.: _____	
Client Sample ID: <u>MW-04-2018-PFA</u>	Lab Sample ID: <u>480-145071-3</u>
Matrix: <u>Water</u>	Lab File ID: <u>2018.12.14LLB_024.d</u>
Analysis Method: <u>537 (modified)</u>	Date Collected: <u>11/09/2018 13:15</u>
Extraction Method: <u>3535</u>	Date Extracted: <u>11/23/2018 04:59</u>
Sample wt/vol: <u>260 (mL)</u>	Date Analyzed: <u>12/14/2018 23:24</u>
Con. Extract Vol.: <u>10.00 (mL)</u>	Dilution Factor: <u>1</u>
Injection Volume: <u>20 (uL)</u>	GC Column: <u>GeminiC18 3x100 ID: 3 (mm)</u>
% Moisture: _____	GPC Cleanup: (Y/N) <u>N</u>
Analysis Batch No.: <u>265427</u>	Units: <u>ng/L</u>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	81		25-150
STL01893	13C5 PFPeA	90		25-150
STL00993	13C2 PFHxA	93		25-150
STL01892	13C4 PFHpA	93		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	102		25-150
STL00996	13C2 PFDA	103		25-150
STL00997	13C2 PFUnA	105		25-150
STL00998	13C2 PFDoA	108		25-150
STL02116	13C2 PFTeDA	114		25-150
STL02337	13C3 PFBS	90		25-150
STL00994	18O2 PFHxS	96		25-150
STL00991	13C4 PFOS	101		25-150
STL01056	13C8 FOSA	89		25-150
STL02118	d3-NMeFOSAA	100		25-150
STL02117	d5-NEtFOSAA	116		25-150
STL02279	M2-6:2 FTS	175	*	25-150
STL02280	M2-8:2 FTS	136		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_024.d
 Lims ID: 480-145071-A-3-A
 Client ID: MW-04-2018-PFA
 Sample Type: Client
 Inject. Date: 14-Dec-2018 23:24:27 ALS Bottle#: 12 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-145071-a-3-
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Dec-2018 14:03:36 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0324

First Level Reviewer: mongkols Date: 17-Dec-2018 14:03:36
 Ratio Calibration: None

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	1.762	1.763	-0.001	0.548	7535867	2.02	81.0	4213	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.755	1.769	-0.014	0.996	10975	0.003987		1.1		M
4 Perfluoropentanoic acid										M
262.90 > 219.00	2.073	2.072	0.001	1.000	8738	0.003635		0.4		M
D 3 13C5 PFPeA	267.90 > 223.00	2.073	2.074	-0.001	0.645	5486590	2.25	89.9	3802	
D 47 13C3 PFBS	301.90 > 80.00	2.104	2.105	-0.001	0.655	7930346	2.10	90.2	401749	
D 7 13C2 PFHxA	315.00 > 270.00	2.431	2.432	-0.001	0.756	5944192	2.33	93.2	5705	
D 9 13C4 PFHpA	367.00 > 322.00	2.821	2.816	0.005	0.878	5706647	2.33	93.2	6894	
D 11 18O2 PFHxS	403.00 > 84.00	2.821	2.826	-0.005	0.878	6692079	2.27	95.9	13799	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.821	2.826	-0.005	1.000	21331	0.007097	Target=3.00	33.4		M
399.00 > 99.00	2.821	2.826	-0.005	1.000	7031		3.03(1.50-4.49)	19.0		M
D 12 M2-6:2 FTS	429.00 > 81.00	3.190	3.193	-0.003	0.992	1837153	4.15	175	4193	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.190	3.193	-0.003	1.000	1324	0.001100		2.2		
D 14 13C4 PFOA	417.00 > 372.00	3.214	3.218	-0.004	1.000	5924878	2.43	97.2	5132	

Ratio Calibration: None

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	3.214	3.218	-0.004	1.000	18256	0.006858	Target=1.68		2.0	
413.00 > 169.00	3.214	3.218	-0.004	1.000	10605		1.72(0.84-2.52)		4.7	
* 62 13C2 PFOA										
415.00 > 370.00	3.214	3.218	-0.004		6185319	2.50			5560	
D 18 13C4 PFOS										
503.00 > 80.00	3.587	3.598	-0.011	1.116	4691190	2.41		101	7502	
D 19 13C5 PFNA										
468.00 > 423.00	3.603	3.605	-0.002	1.121	5166614	2.55		102	11100	
D 21 13C8 FOSA										
506.00 > 78.00	3.954	3.957	-0.003	1.230	6476253	2.24		89.5	5394	
D 23 13C2 PFDA										
515.00 > 470.00	3.962	3.965	-0.003	1.233	4695351	2.58		103	11514	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.962	3.965	-0.003	1.233	1565517	3.25		136	3935	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.122	4.125	-0.003	1.283	2422443	2.51		100	6053	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.285	4.282	0.003	1.000	7615	0.005499	Target=4.24		12.6	
563.00 > 169.00	4.285	4.282	0.003	1.000	1558		4.89(2.12-6.36)		20.2	
D 30 13C2 PFUnA										
565.00 > 520.00	4.285	4.282	0.003	1.333	3788740	2.63		105	9622	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.285	4.291	-0.006	1.333	2935662	2.90		116	2923	
D 36 13C2 PFDoA										
615.00 > 570.00	4.572	4.577	-0.005	1.422	4002394	2.69		108	7282	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.076	5.081	-0.005	1.000	2182	0.004399	Target=1.42		24.9	R
713.00 > 219.00	5.076	5.081	-0.005	1.000	936		2.33(0.71-2.13)		6.5	R
D 43 13C2 PFTeDA										
715.00 > 670.00	5.076	5.081	-0.005	1.579	4900984	2.84		114	9651	

QC Flag Legend

Processing Flags

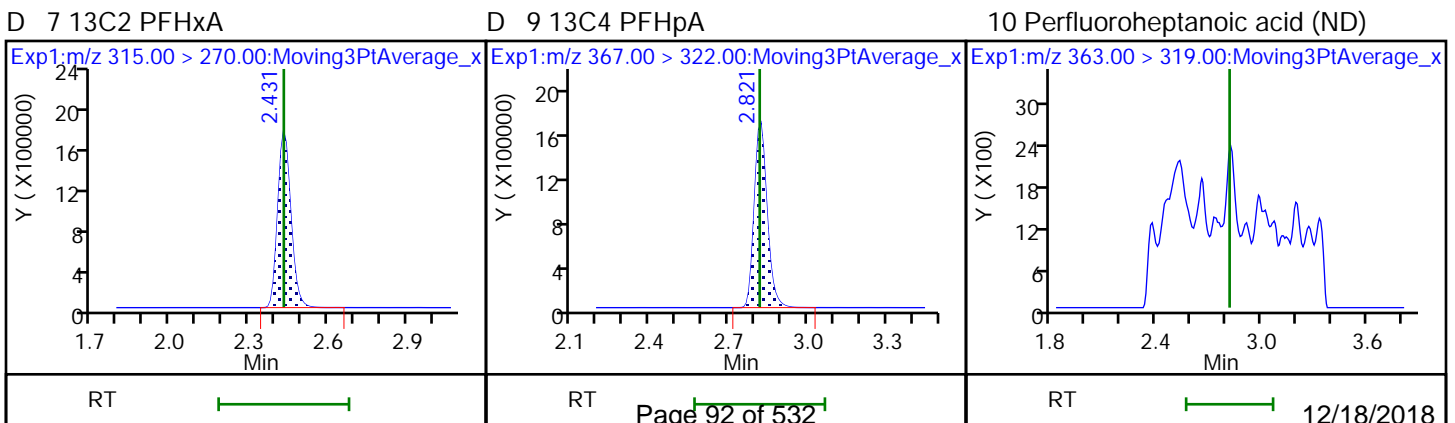
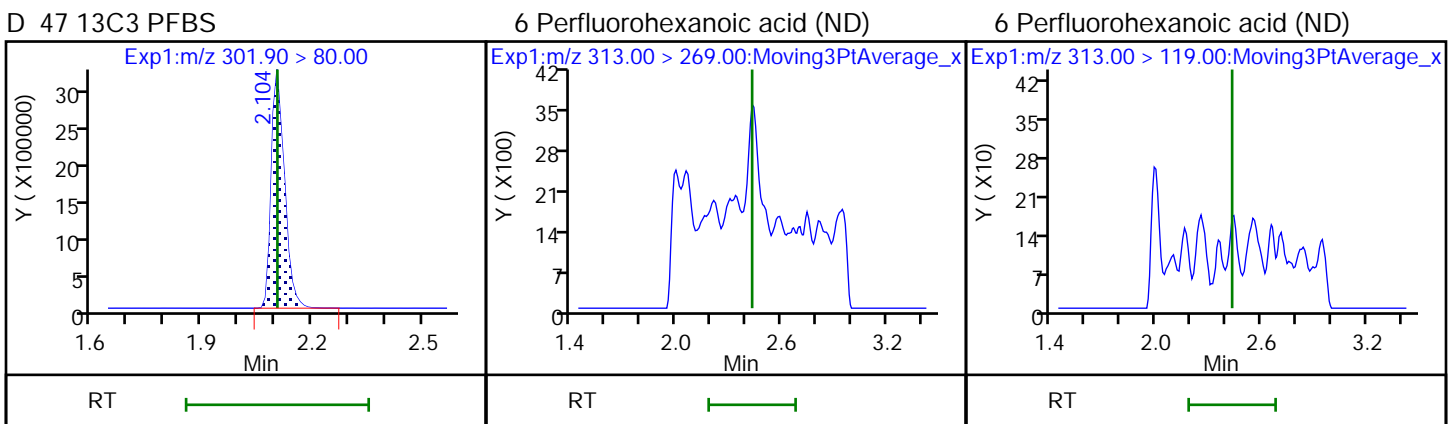
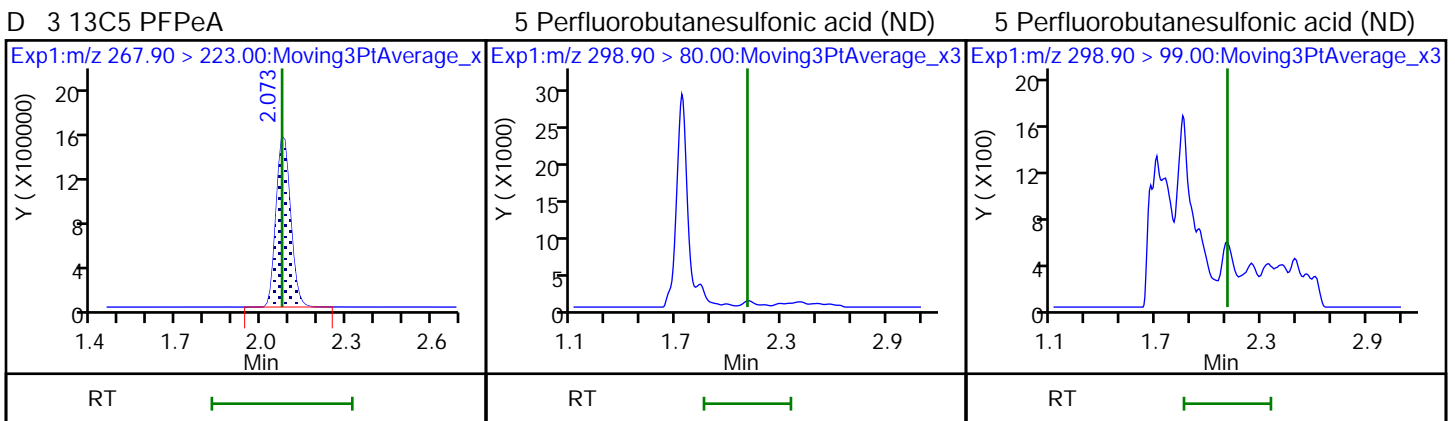
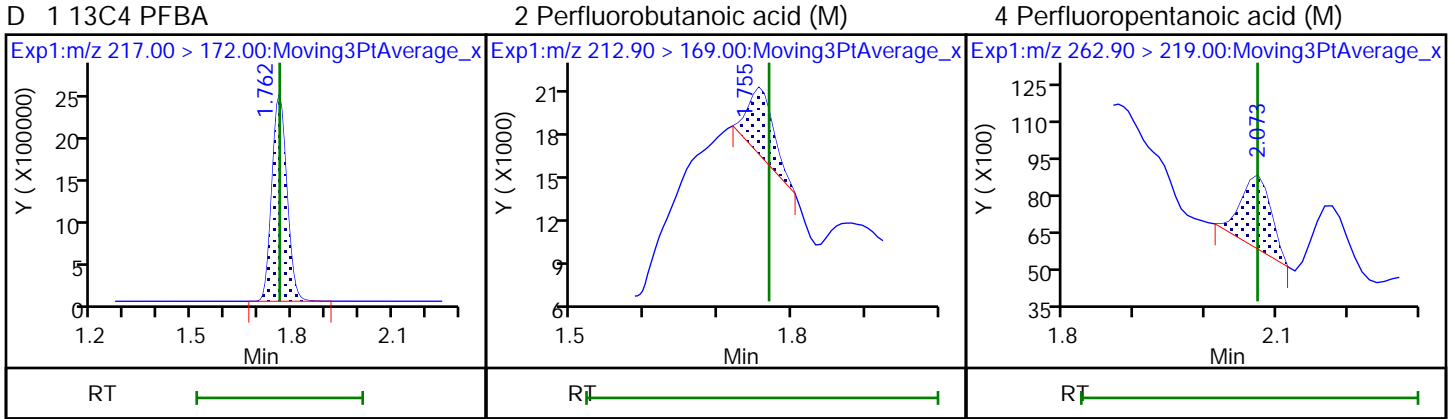
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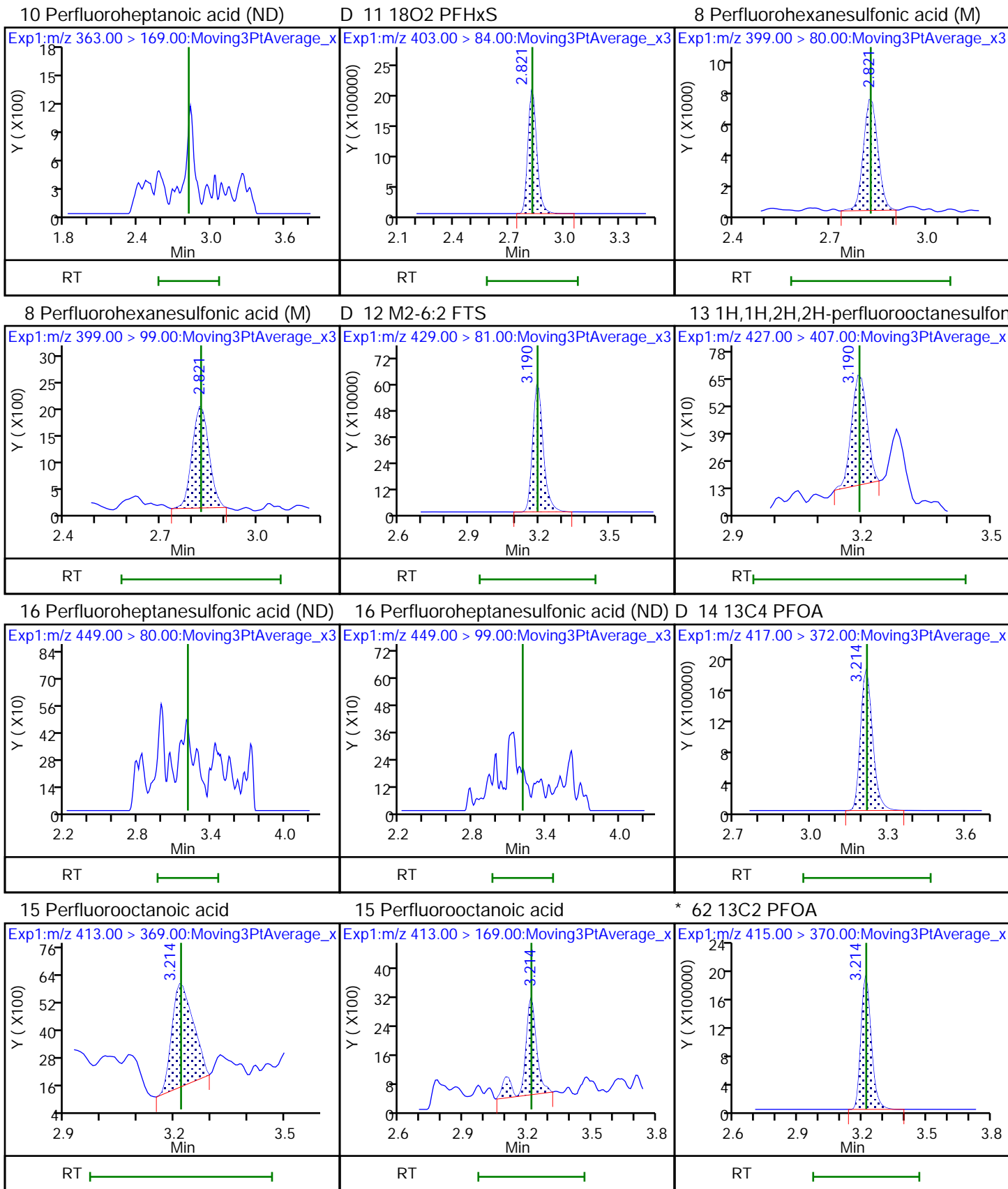
Review Flags

M - Manually Integrated

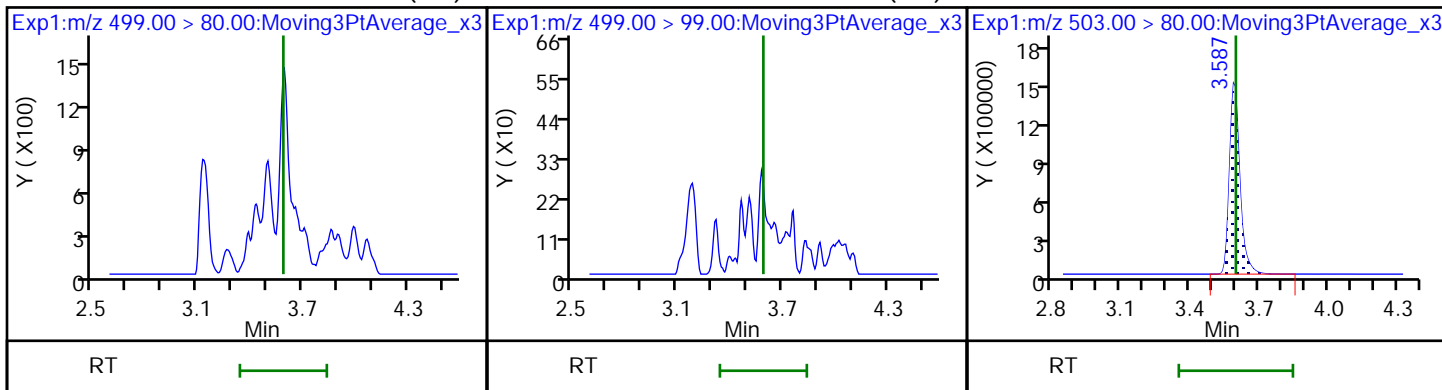
TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_024.d
Injection Date: 14-Dec-2018 23:24:27 Instrument ID: A8_N
Lims ID: 480-145071-A-3-A Lab Sample ID: 320-145071-3
Client ID: MW-04-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL

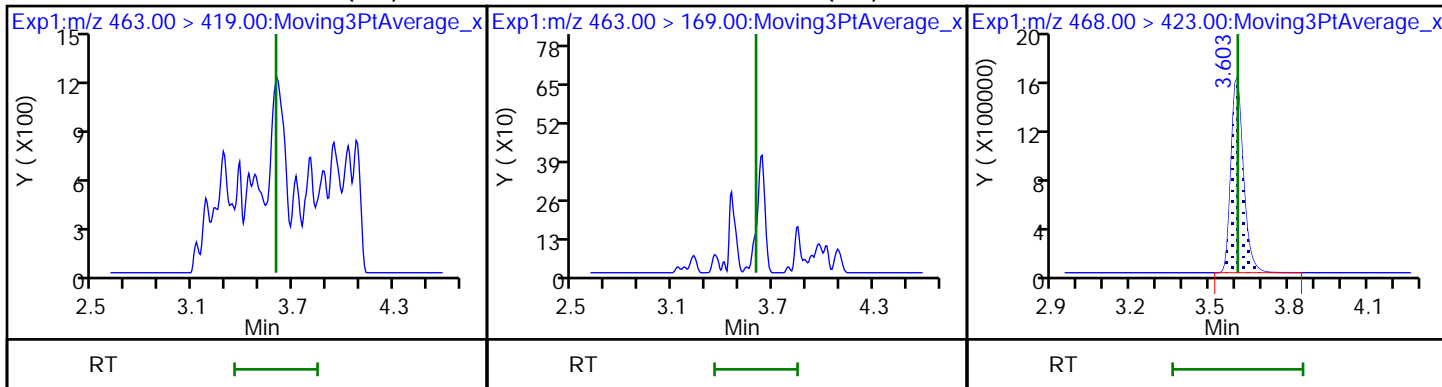




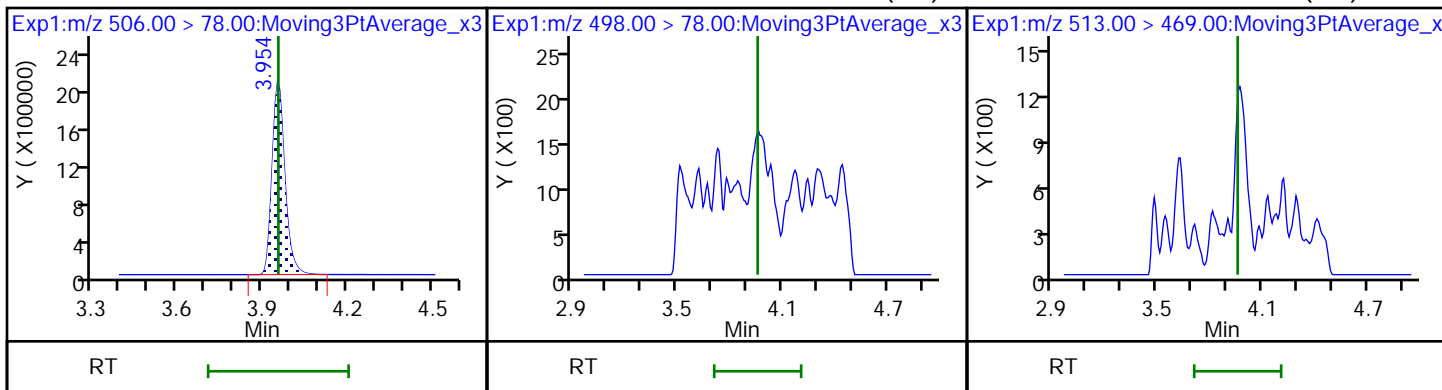
17 Perfluorooctanesulfonic acid (ND) 17 Perfluorooctanesulfonic acid (ND) D 18 13C4 PFOS



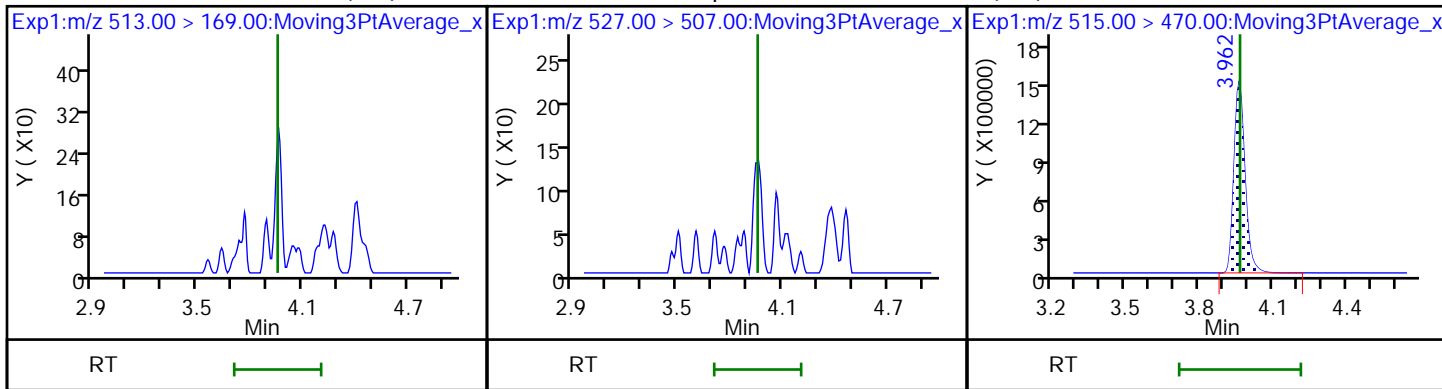
20 Perfluorononanoic acid (ND) 20 Perfluorononanoic acid (ND) D 19 13C5 PFNA



D 21 13C8 FOSA 22 Perfluorooctanesulfonamide (ND) 24 Perfluorodecanoic acid (ND)

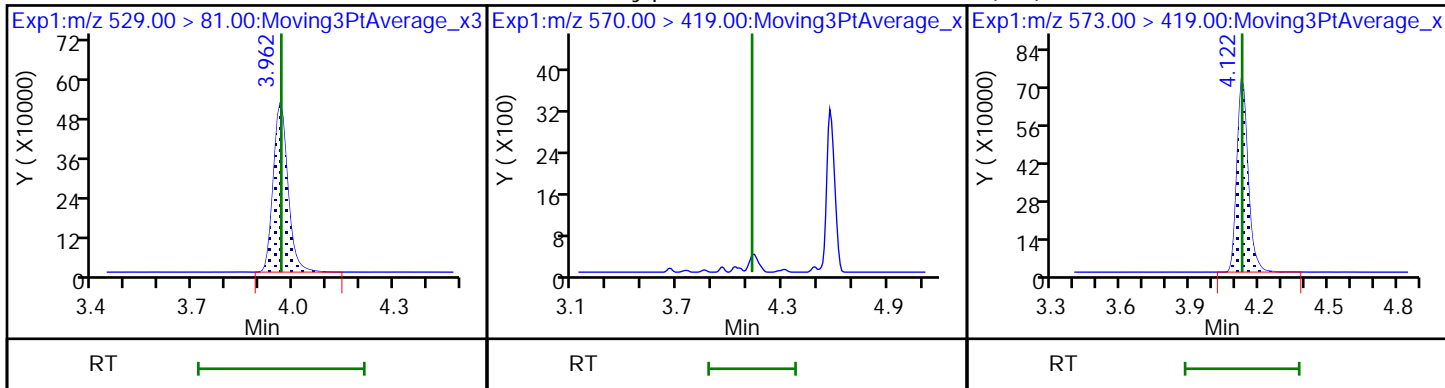


24 Perfluorodecanoic acid (ND) 25 1H,1H,2H,2H-perfluorodecanesulfonamide (ND) D 20 13C2 PFDA



D 26 M2-8:2 FTS

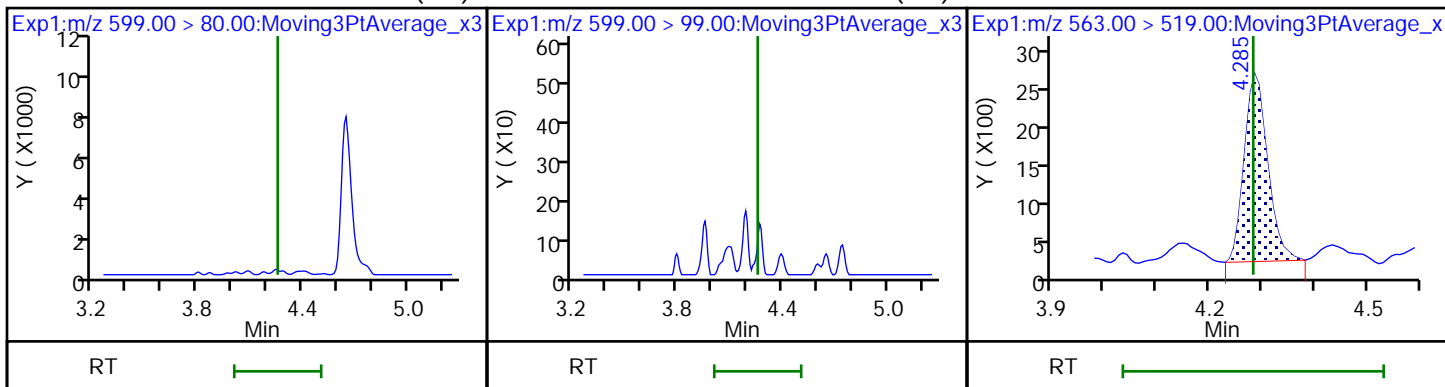
28 N-methylperfluorooctanesulfonamid (ND) D3-NMeFOSAA



29 Perfluorodecanesulfonic acid (ND)

29 Perfluorodecanesulfonic acid (ND)

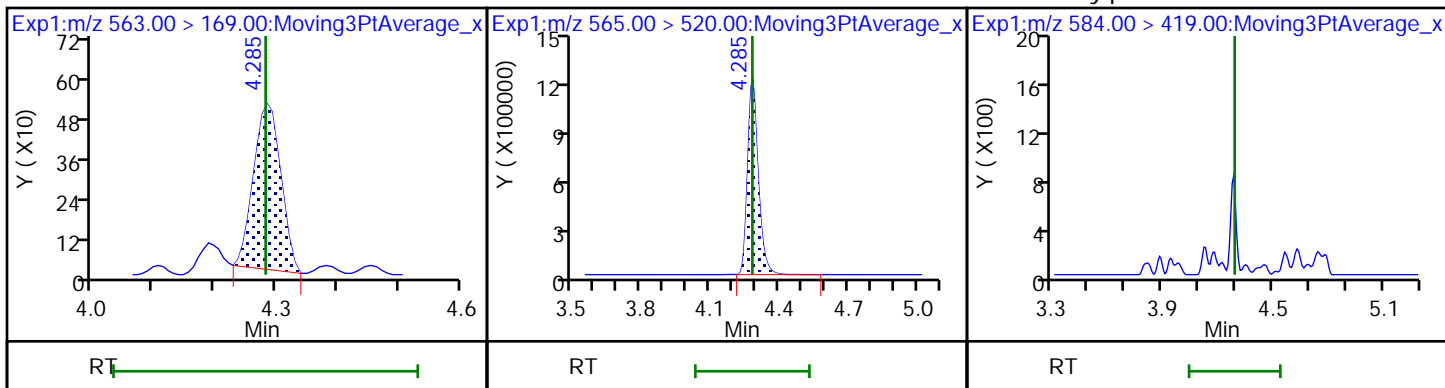
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

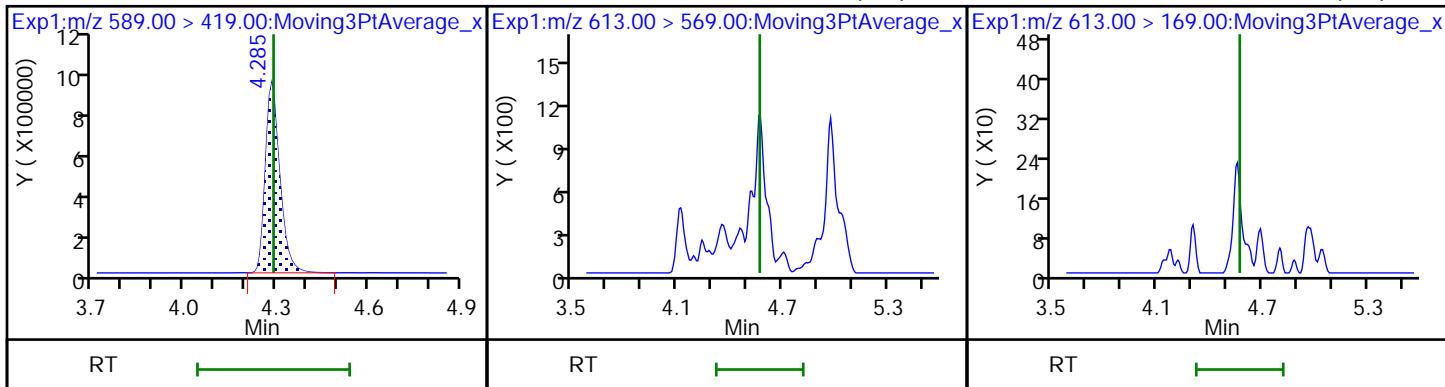
33 N-ethylperfluorooctanesulfonamidoa (ND)



D 32 d5-NEtFOSAA

37 Perfluorododecanoic acid (ND)

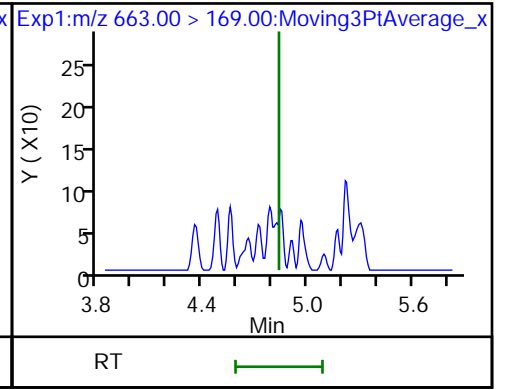
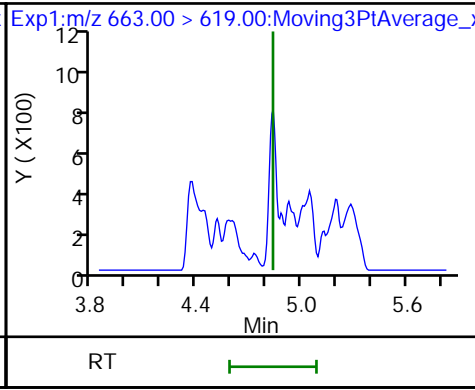
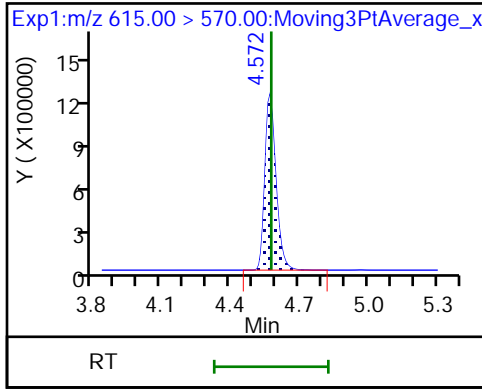
37 Perfluorododecanoic acid (ND)



D 36 13C2 PFDaA

41 Perfluorotridecanoic acid (ND)

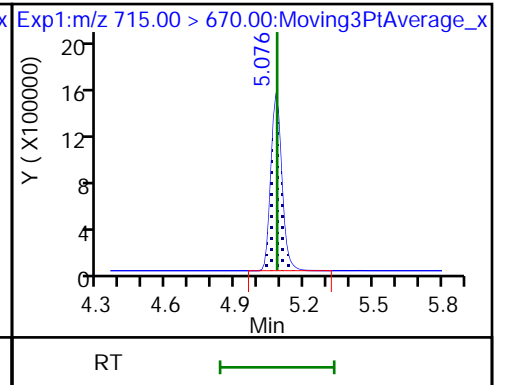
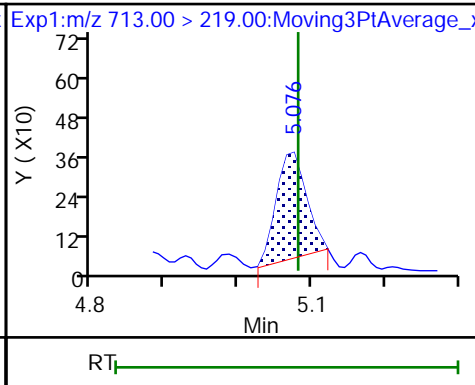
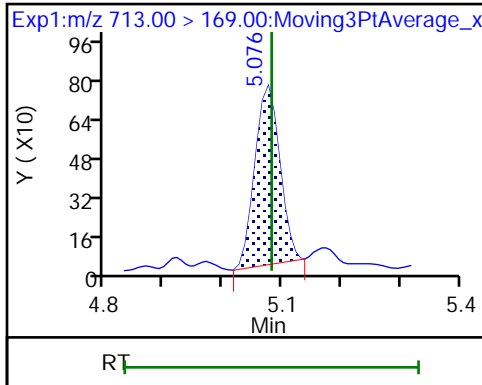
41 Perfluorotridecanoic acid (ND)



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA



TestAmerica Sacramento

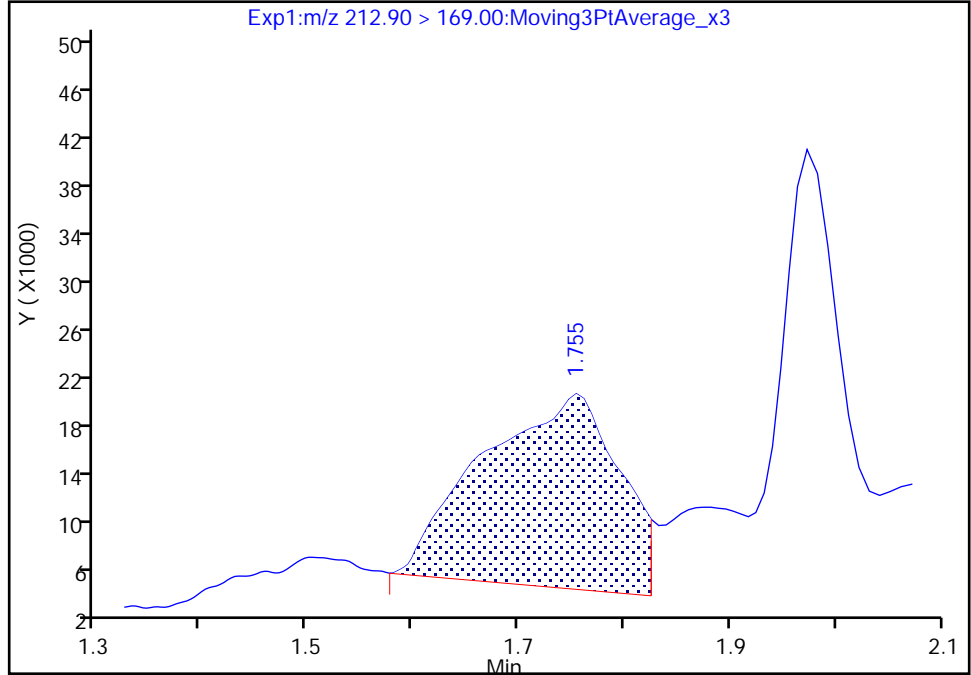
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Injection Date: 14-Dec-2018 23:24:27 Instrument ID: A8_N
Lims ID: 480-145071-A-3-A Lab Sample ID: 320-145071-3
Client ID: MW-04-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

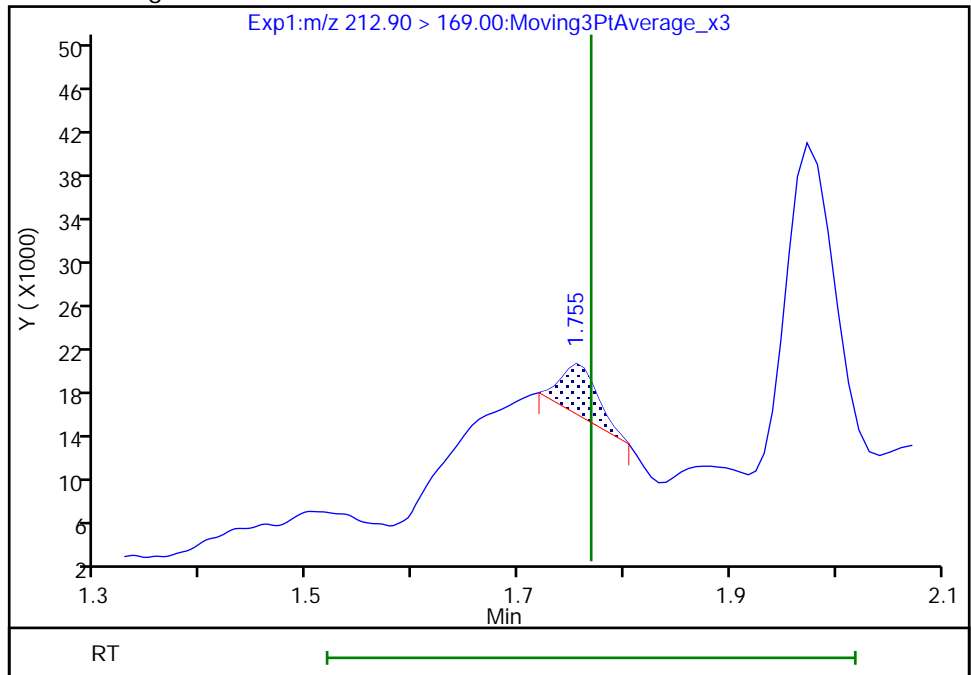
RT: 1.75
Area: 140925
Amount: 0.051193
Amount Units: ng/ml

Processing Integration Results



RT: 1.75
Area: 10975
Amount: 0.003987
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:02:32
Audit Action: Manually Integrated

TestAmerica Sacramento

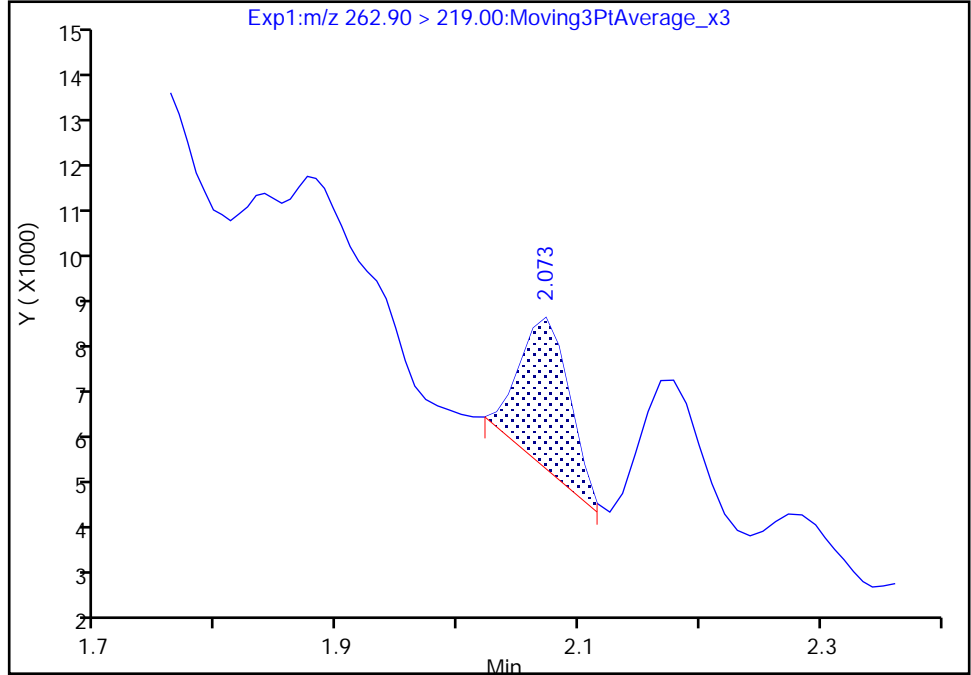
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Injection Date: 14-Dec-2018 23:24:27 Instrument ID: A8_N
Lims ID: 480-145071-A-3-A Lab Sample ID: 320-145071-3
Client ID: MW-04-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

4 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

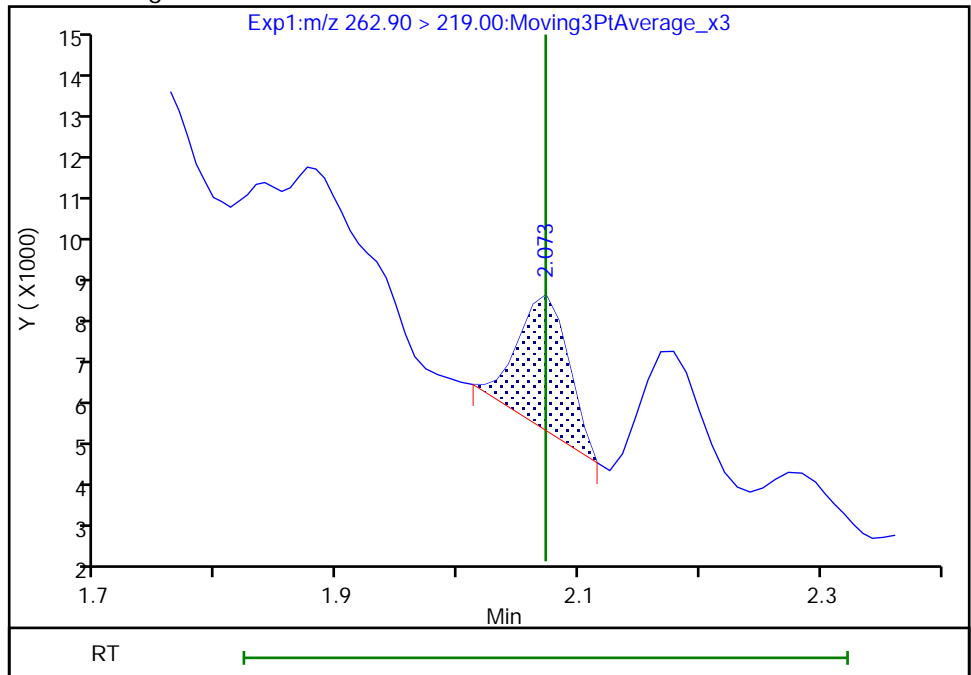
RT: 2.07
Area: 8723
Amount: 0.003629
Amount Units: ng/ml

Processing Integration Results



RT: 2.07
Area: 8738
Amount: 0.003635
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:02:42
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

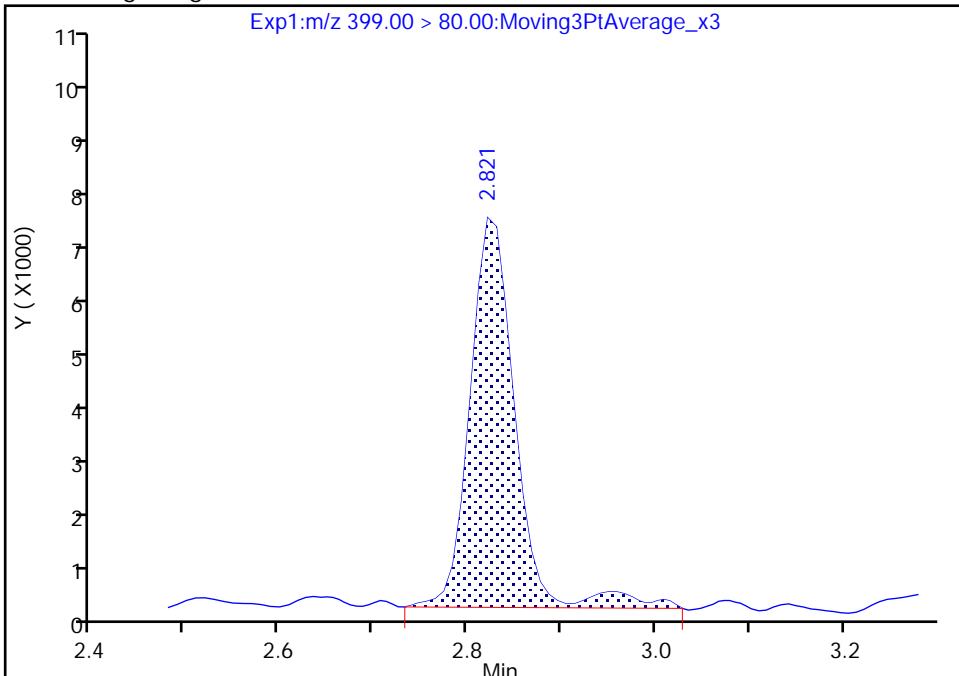
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Injection Date: 14-Dec-2018 23:24:27 Instrument ID: A8_N
Lims ID: 480-145071-A-3-A Lab Sample ID: 320-145071-3
Client ID: MW-04-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

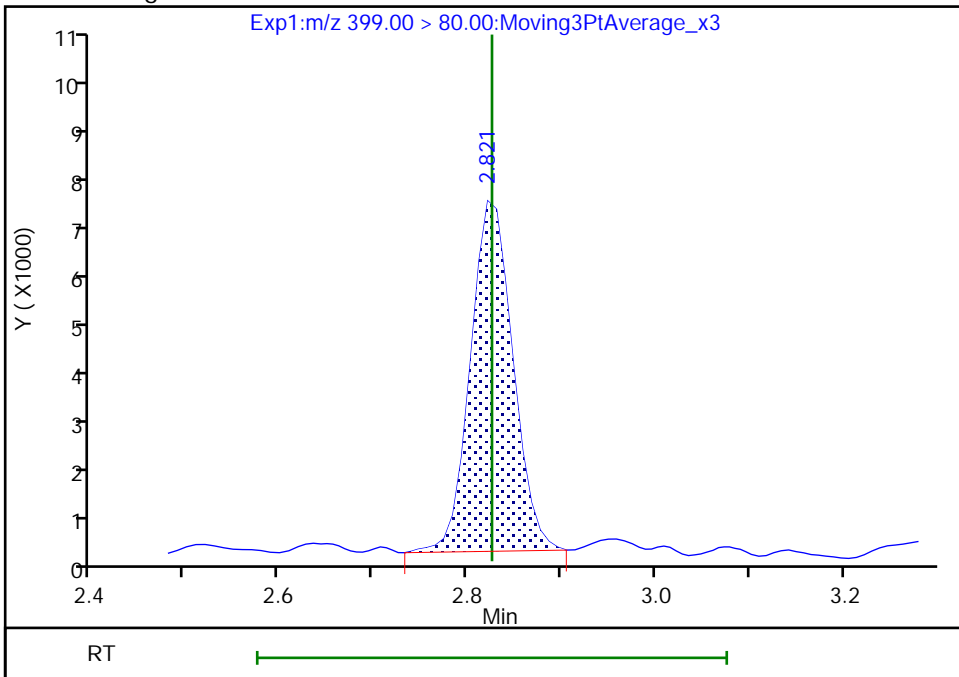
RT: 2.82
Area: 22864
Amount: 0.007607
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 21331
Amount: 0.007097
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:03:00
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

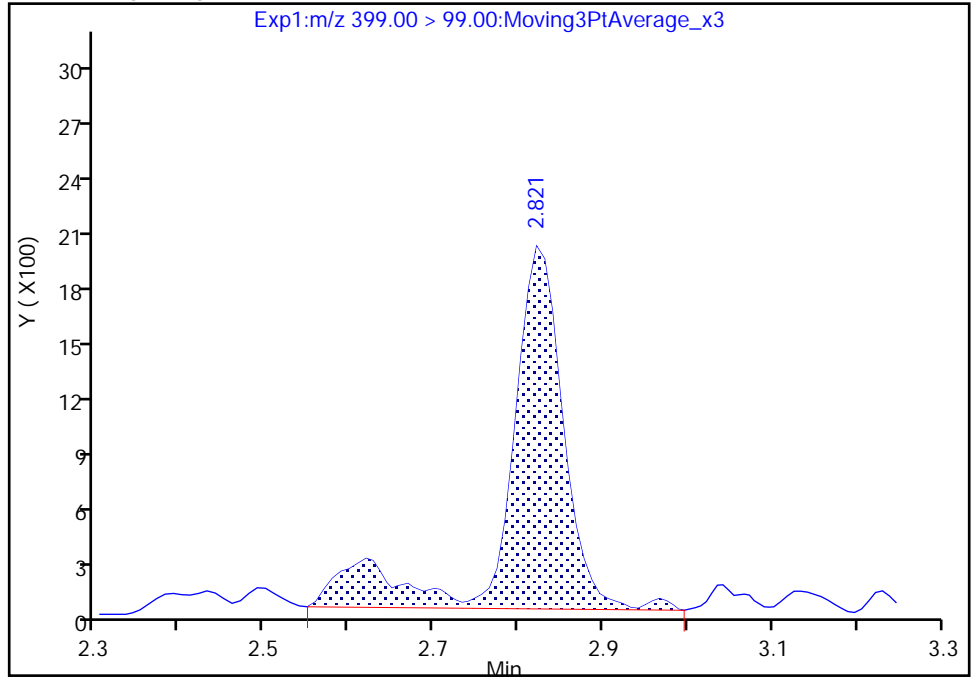
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Injection Date: 14-Dec-2018 23:24:27 Instrument ID: A8_N
Lims ID: 480-145071-A-3-A Lab Sample ID: 320-145071-3
Client ID: MW-04-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

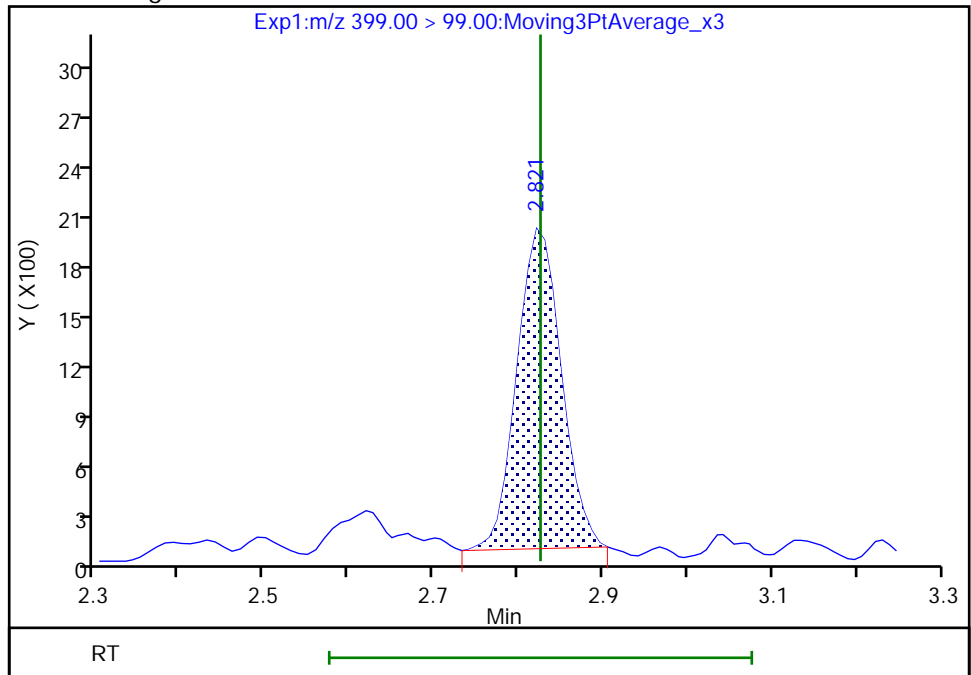
RT: 2.82
Area: 9139
Amount: 0.007607
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 7031
Amount: 0.007097
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:03:03

Audit Action: Manually Integrated

Audit Reason: Baseline
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: DUPE-2018-PFA Lab Sample ID: 480-145071-4
 Matrix: Water Lab File ID: 2018.12.14LLB_025.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 11:15
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 261.8 (mL) Date Analyzed: 12/14/2018 23:31
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 265427 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.76		1.91	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	0.55	J	1.91	0.47
307-24-4	Perfluorohexanoic acid (PFHxA)	1.91		1.91	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	1.91		1.91	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	1.91		1.91	0.81
375-95-1	Perfluorononanoic acid (PFNA)	1.91		1.91	0.26
335-76-2	Perfluorodecanoic acid (PFDA)	1.91		1.91	0.30
2058-94-8	Perfluoroundecanoic acid (PFUnA)	1.91		1.91	1.05
307-55-1	Perfluorododecanoic acid (PFDoA)	1.91		1.91	0.53
72629-94-8	Perfluorotridecanoic acid (PFTriA)	1.91		1.91	1.24
376-06-7	Perfluorotetradecanoic acid (PFTeA)	1.91		1.91	0.28
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.91		1.91	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.25	J B	1.91	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	1.91		1.91	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.91		1.91	0.52
335-77-3	Perfluorodecanesulfonic acid (PFDS)	1.91		1.91	0.31
754-91-6	Perfluorooctanesulfonamide (FOSA)	1.91		1.91	0.33
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	19.1		19.1	2.96
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	19.1		19.1	1.81
27619-97-2	6:2 FTS	19.1		19.1	1.91
39108-34-4	8:2 FTS	19.1		19.1	1.91

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: DUPE-2018-PFA Lab Sample ID: 480-145071-4
 Matrix: Water Lab File ID: 2018.12.14LLB_025.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 11:15
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 261.8 (mL) Date Analyzed: 12/14/2018 23:31
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 265427 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	66		25-150
STL01893	13C5 PFPeA	82		25-150
STL00993	13C2 PFHxA	87		25-150
STL01892	13C4 PFHpA	96		25-150
STL00990	13C4 PFOA	92		25-150
STL00995	13C5 PFNA	99		25-150
STL00996	13C2 PFDA	101		25-150
STL00997	13C2 PFUnA	96		25-150
STL00998	13C2 PFDoA	106		25-150
STL02116	13C2 PFTeDA	99		25-150
STL02337	13C3 PFBS	86		25-150
STL00994	18O2 PFHxS	96		25-150
STL00991	13C4 PFOS	96		25-150
STL01056	13C8 FOSA	88		25-150
STL02118	d3-NMeFOSAA	131		25-150
STL02117	d5-NEtFOSAA	120		25-150
STL02279	M2-6:2 FTS	226	*	25-150
STL02280	M2-8:2 FTS	171	*	25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_025.d
 Lims ID: 480-145071-B-4-A
 Client ID: DUPE-2018-PFA
 Sample Type: Client
 Inject. Date: 14-Dec-2018 23:31:56 ALS Bottle#: 13 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-145071-b-4-a
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Dec-2018 14:07:05 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0324

First Level Reviewer: mongkols Date: 17-Dec-2018 14:07:05
 Ratio Calibration: None

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	1.769	1.763	0.006	0.549	6135766	1.65	65.8	3493	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.762	1.769	-0.007	0.996	161892	0.0722			3.0	M
4 Perfluoropentanoic acid										
262.90 > 219.00	2.084	2.072	0.012	1.000	31819	0.0145			0.6	
D 3 13C5 PFPeA	267.90 > 223.00	2.084	2.074	0.010	0.647	5008114	2.05	81.9	3536	
D 47 13C3 PFBS	301.90 > 80.00	2.115	2.105	0.010	0.656	7580706	2.00	86.1	245882	
D 7 13C2 PFHxA	315.00 > 270.00	2.442	2.432	0.010	0.758	5553120	2.17	86.9	4651	
D 9 13C4 PFHpA	367.00 > 322.00	2.822	2.816	0.006	0.876	5863260	2.39	95.6	5909	
D 11 18O2 PFHxS	403.00 > 84.00	2.831	2.826	0.005	0.878	6708135	2.27	96.0	15717	
8 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.831	2.826	0.005	1.000	19761	0.006559	Target=3.00		12.3	M
399.00 > 99.00	2.831	2.826	0.005	1.000	8547		2.31(1.50-4.49)		9.7	M
D 12 M2-6:2 FTS	429.00 > 81.00	3.198	3.193	0.005	0.992	2380537	5.37	226	2104	
13 1H,1H,2H,2H-perfluorooctanesulfoni										M
427.00 > 407.00	3.206	3.193	0.013	1.003	2377	0.001525			2.1	M
D 14 13C4 PFOA	417.00 > 372.00	3.223	3.218	0.005	1.000	5613570	2.30	92.0	8647	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										M
413.00 > 369.00	3.223	3.218	0.005	1.000	18094	0.007174	Target=1.68		3.7	M
413.00 > 169.00	3.223	3.218	0.005	1.000	11075		1.63(0.84-2.52)		5.8	M
* 62 13C2 PFOA										
415.00 > 370.00	3.223	3.218	0.005		6195760	2.50			8237	
D 18 13C4 PFOS										
503.00 > 80.00	3.595	3.598	-0.003	1.116	4490623	2.31		96.5	2559	
D 19 13C5 PFNA										
468.00 > 423.00	3.611	3.605	0.006	1.121	5015265	2.47		98.7	9080	
D 21 13C8 FOSA										
506.00 > 78.00	3.962	3.957	0.005	1.229	6352429	2.19		87.6	8930	
D 23 13C2 PFDA										
515.00 > 470.00	3.970	3.965	0.005	1.232	4618094	2.53		101	10072	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.970	3.965	0.005	1.232	1974876	4.10		171	2348	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.131	4.125	0.006	1.282	3152809	3.26		131	5931	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.293	4.282	0.011	1.000	7722	0.006082	Target=4.24		12.8	
563.00 > 169.00	4.301	4.282	0.019	1.002	1723		4.48(2.12-6.36)		14.9	
D 30 13C2 PFUnA										
565.00 > 520.00	4.293	4.282	0.011	1.332	3473951	2.40		96.1	5878	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.293	4.291	0.002	1.332	3032162	2.99		120	4192	
D 36 13C2 PFDoA										
615.00 > 570.00	4.574	4.577	-0.003	1.419	3947208	2.65		106	8096	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.081	5.081	0.0	1.000	815	0.001882	Target=1.42		9.1	R
713.00 > 219.00	5.071	5.081	-0.010	0.998	1320		0.62(0.71-2.13)		6.4	R
D 43 13C2 PFTeDA										
715.00 > 670.00	5.081	5.081	0.0	1.577	4278923	2.47		98.9	10896	

QC Flag Legend

Processing Flags

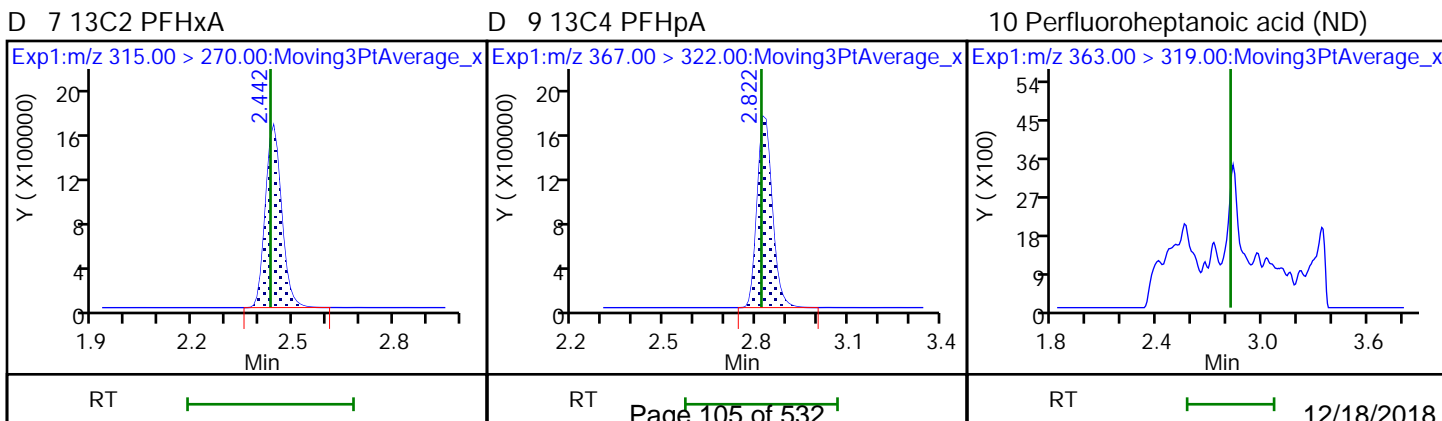
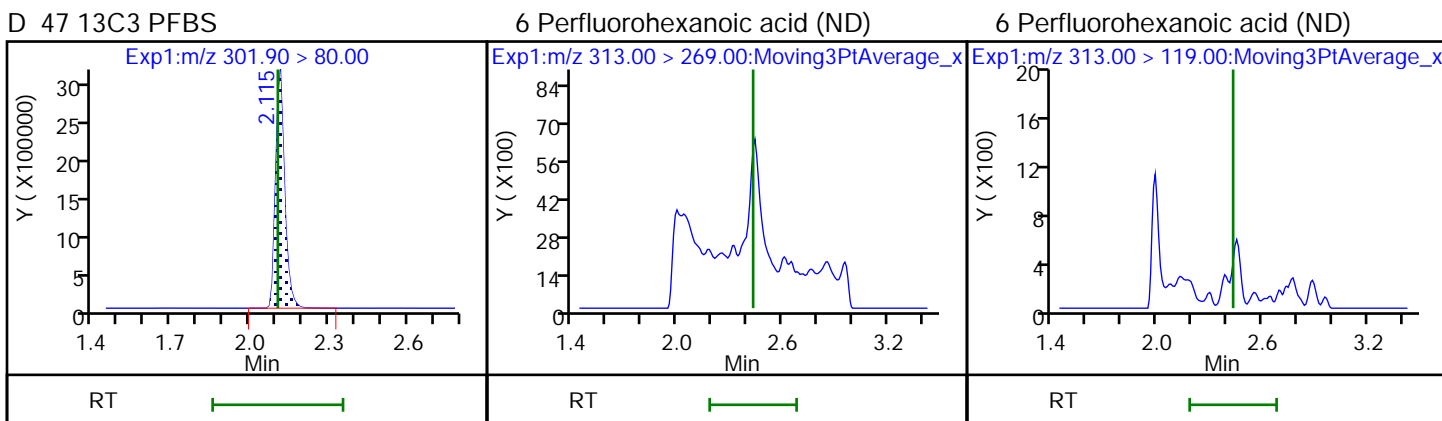
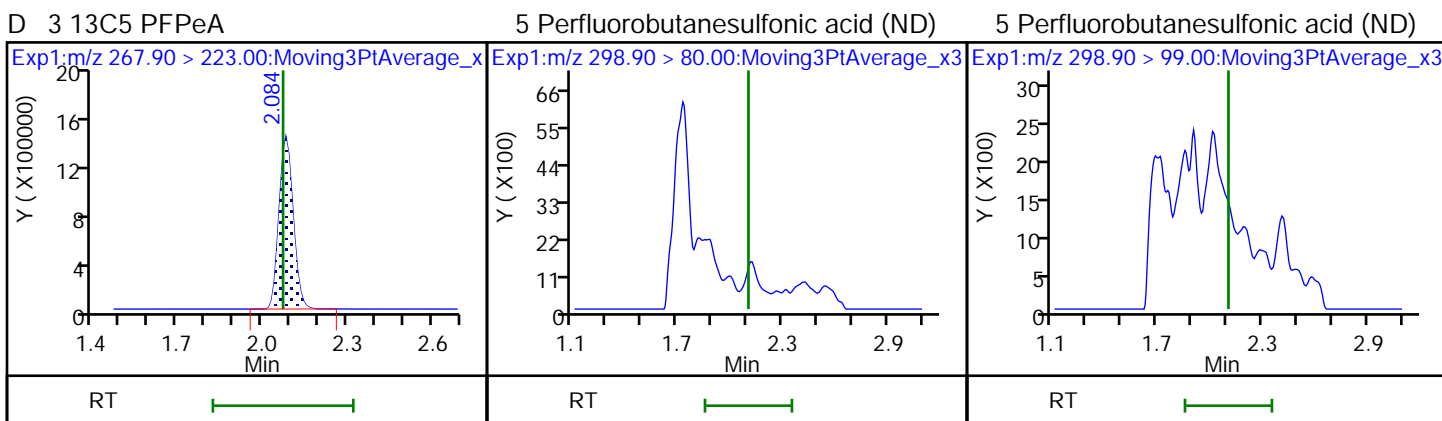
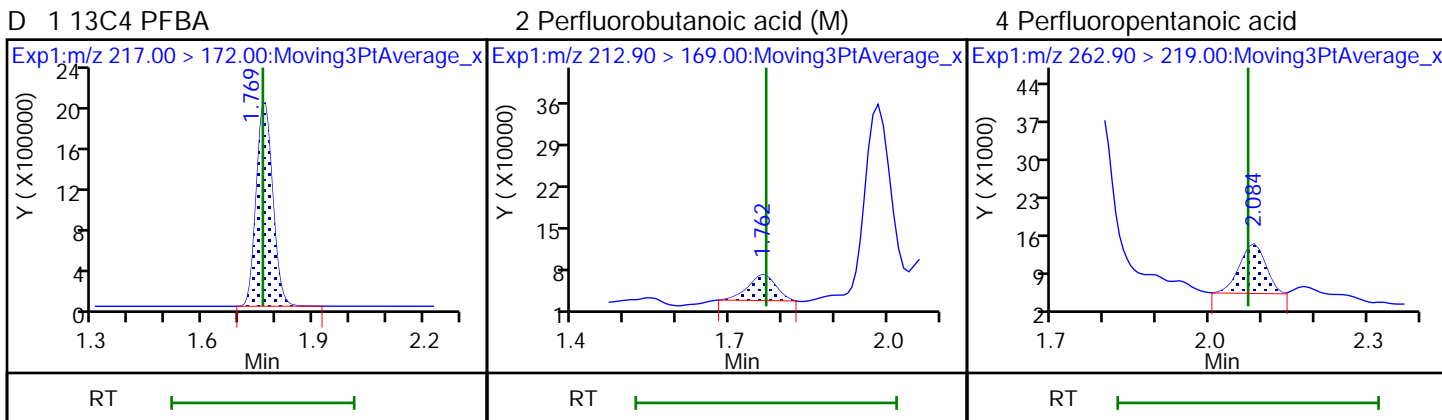
R - Failed Signal Ratio Test

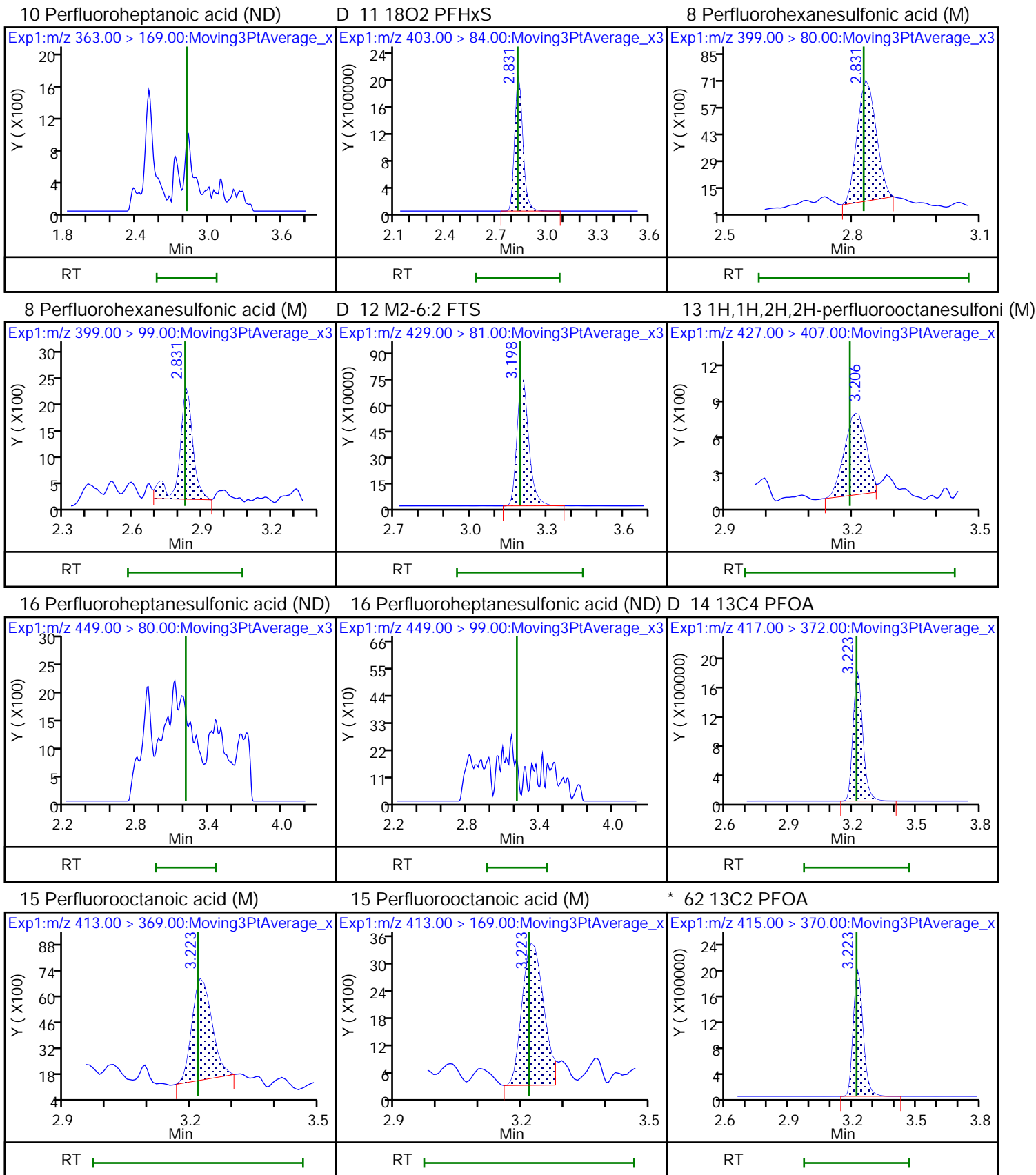
Review Flags

M - Manually Integrated

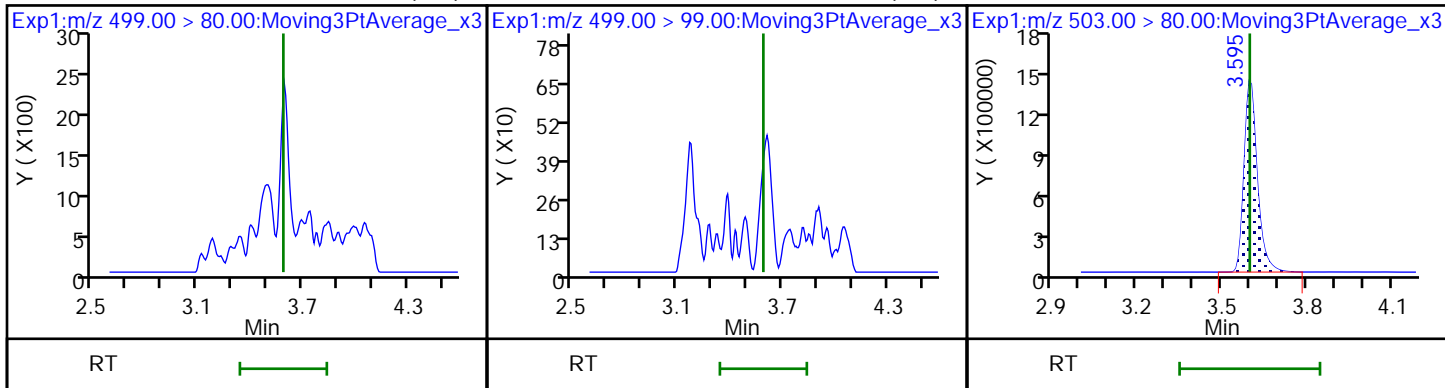
TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_025.d
Injection Date: 14-Dec-2018 23:31:56 Instrument ID: A8_N
Lims ID: 480-145071-B-4-A Lab Sample ID: 320-145071-4
Client ID: DUPE-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL

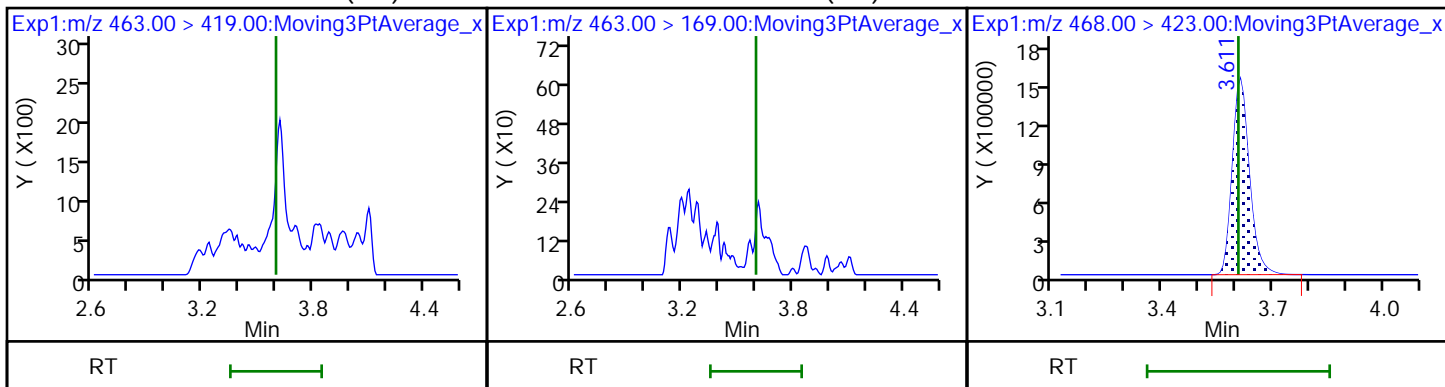




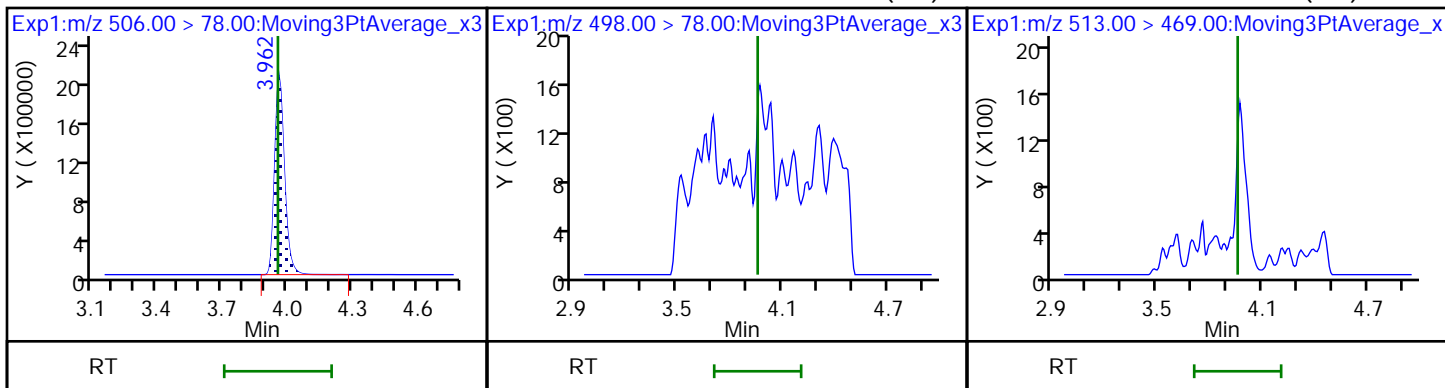
17 Perfluorooctanesulfonic acid (ND) 17 Perfluorooctanesulfonic acid (ND) D 18 13C4 PFOS



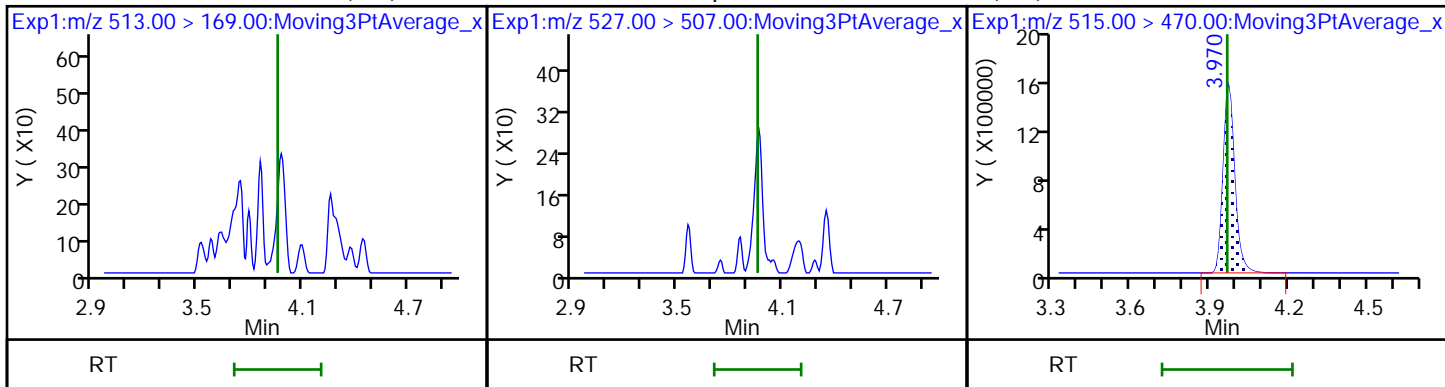
20 Perfluorononanoic acid (ND) 20 Perfluorononanoic acid (ND) D 19 13C5 PFNA



D 21 13C8 FOSA 22 Perfluorooctanesulfonamide (ND) 24 Perfluorodecanoic acid (ND)

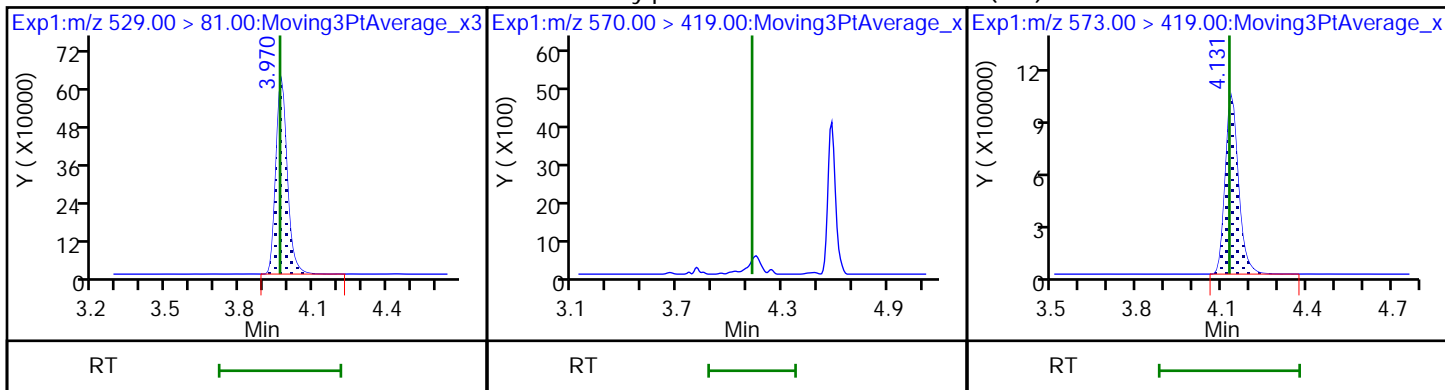


24 Perfluorodecanoic acid (ND) 25 1H,1H,2H,2H-perfluorodecanesulfonamide (ND) D 20 13C2 PFDA



D 26 M2-8:2 FTS

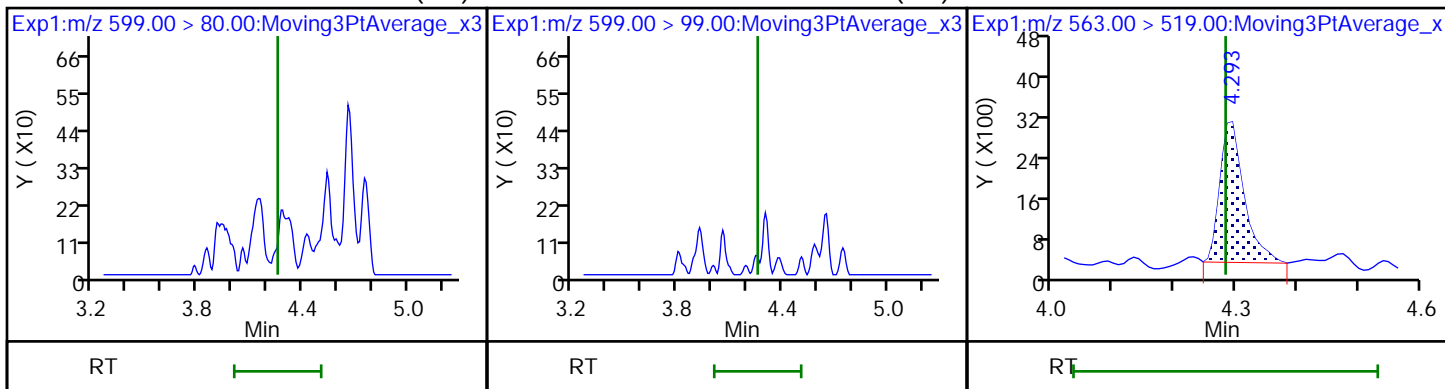
28 N-methylperfluorooctanesulfonamid (ND) D3-NMeFOSAA



29 Perfluorodecanesulfonic acid (ND)

29 Perfluorodecanesulfonic acid (ND)

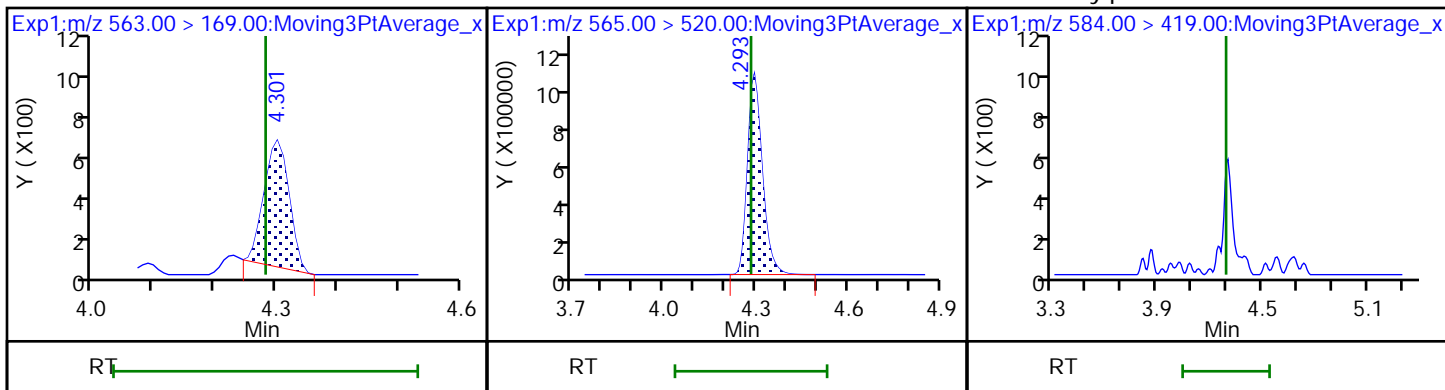
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

D 30 13C2 PFUnA

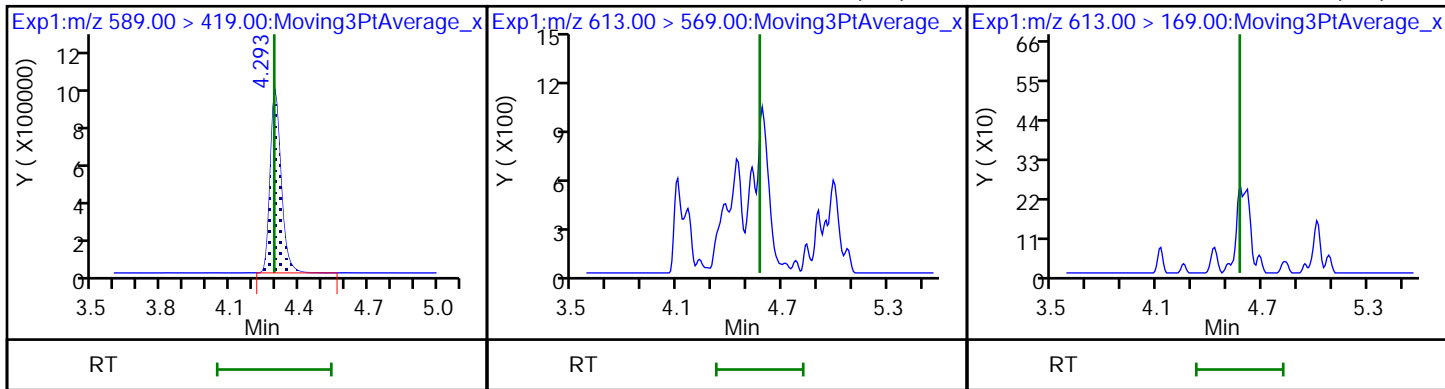
33 N-ethylperfluorooctanesulfonamidoa (ND)



D 32 d5-NEtFOSAA

37 Perfluorododecanoic acid (ND)

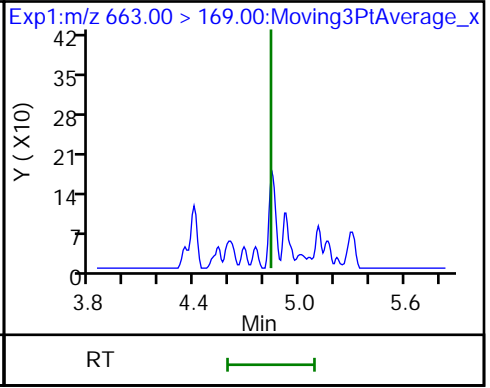
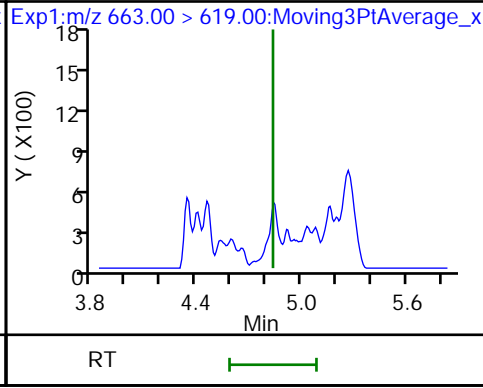
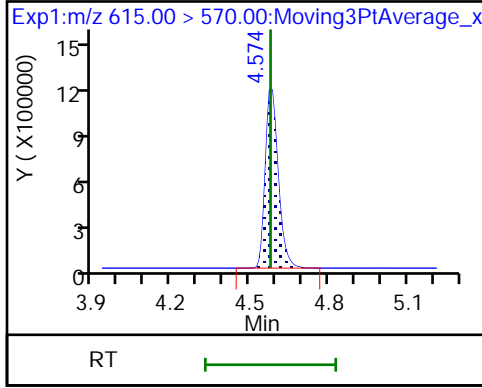
37 Perfluorododecanoic acid (ND)



D 36 13C2 PFDaA

41 Perfluorotridecanoic acid (ND)

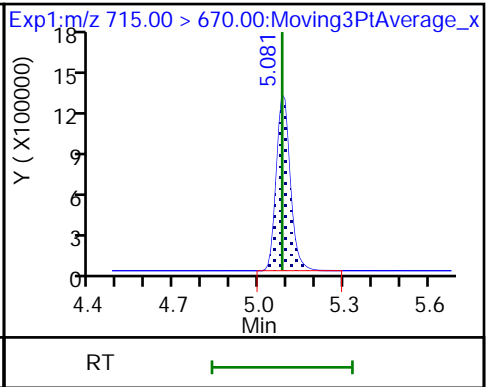
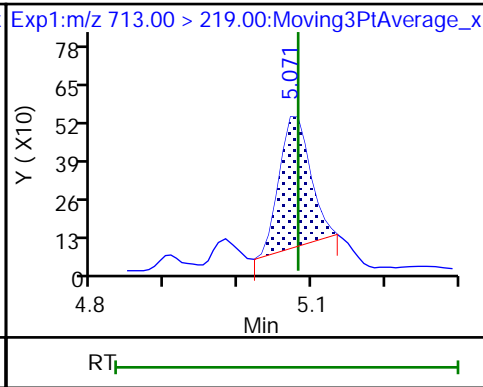
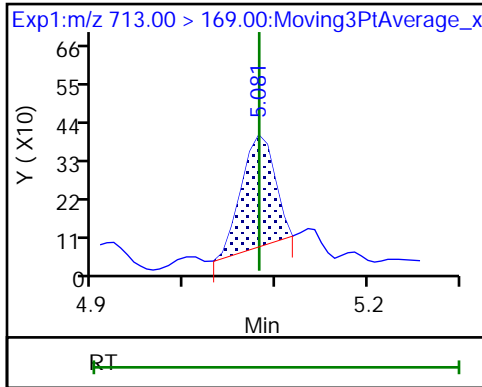
41 Perfluorotridecanoic acid (ND)



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA



TestAmerica Sacramento

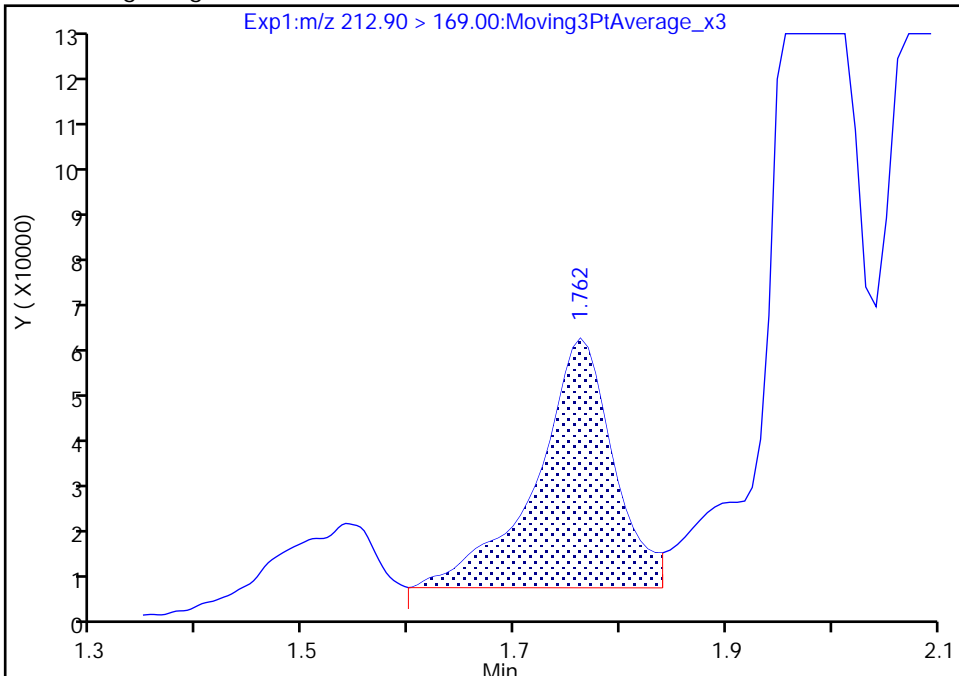
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Injection Date: 14-Dec-2018 23:31:56 Instrument ID: A8_N
Lims ID: 480-145071-B-4-A Lab Sample ID: 320-145071-4
Client ID: DUPE-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

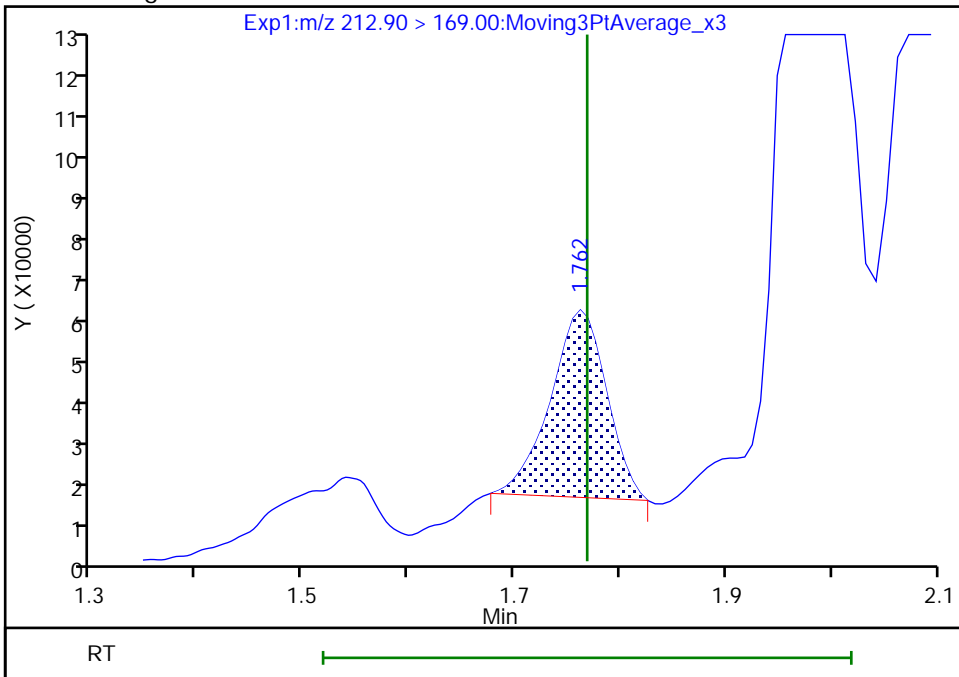
RT: 1.76
Area: 269409
Amount: 0.120198
Amount Units: ng/ml

Processing Integration Results



RT: 1.76
Area: 161892
Amount: 0.072229
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:05:24
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

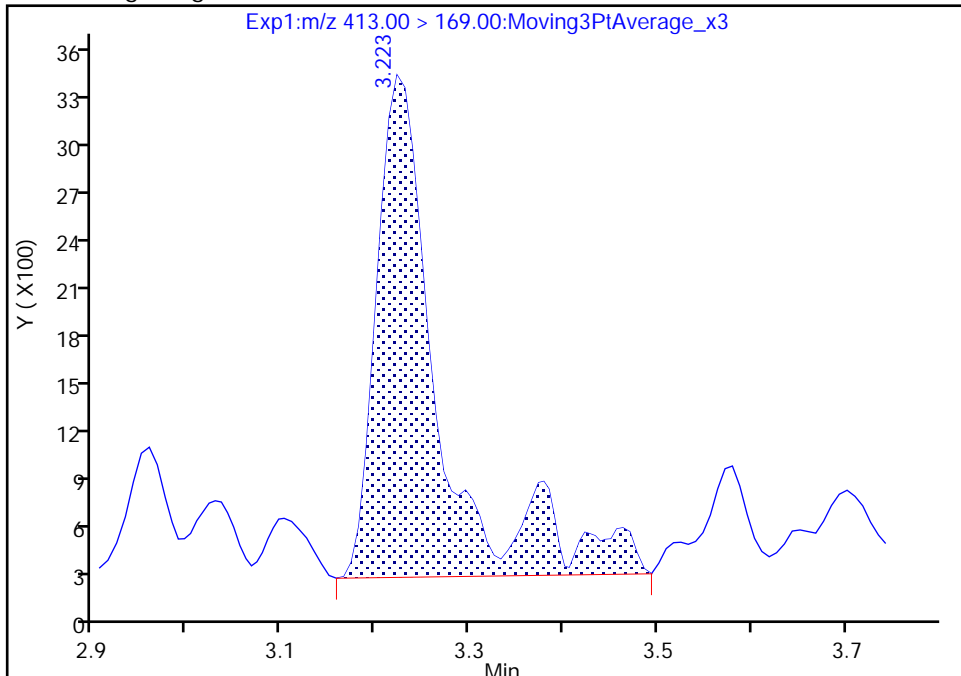
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Injection Date: 14-Dec-2018 23:31:56 Instrument ID: A8_N
Lims ID: 480-145071-B-4-A Lab Sample ID: 320-145071-4
Client ID: DUPE-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

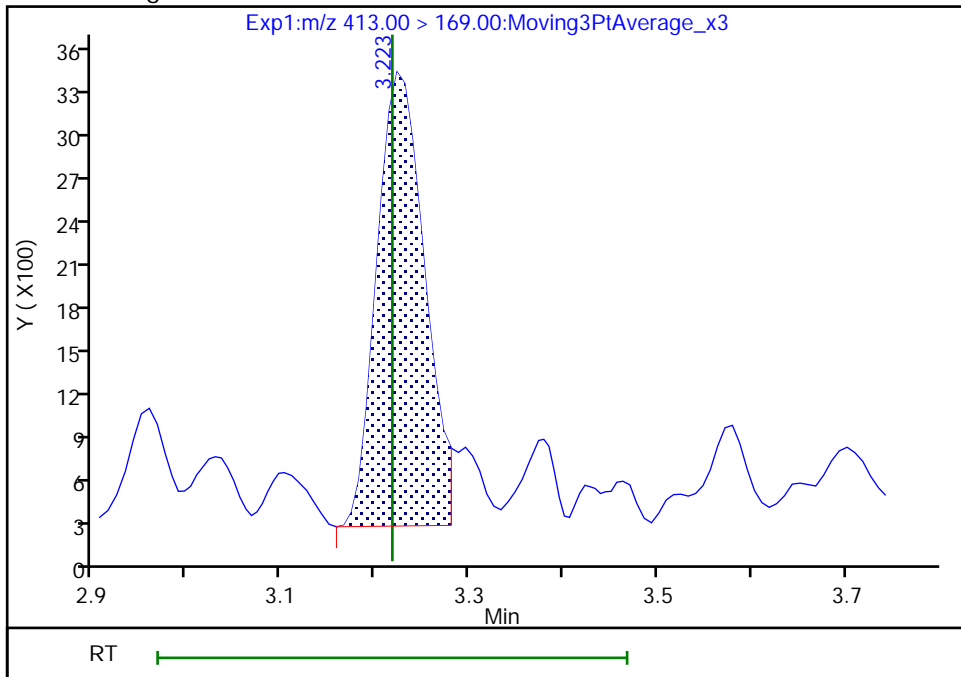
RT: 3.22
Area: 14673
Amount: 0.007697
Amount Units: ng/ml

Processing Integration Results



RT: 3.22
Area: 11075
Amount: 0.007174
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:06:54
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

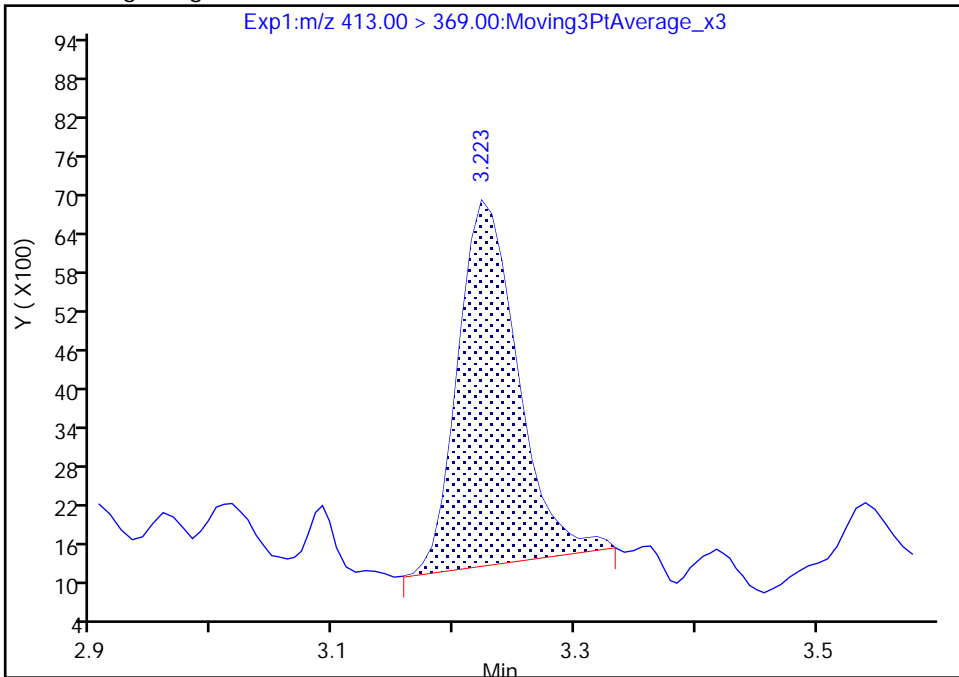
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Injection Date: 14-Dec-2018 23:31:56 Instrument ID: A8_N
Lims ID: 480-145071-B-4-A Lab Sample ID: 320-145071-4
Client ID: DUPE-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

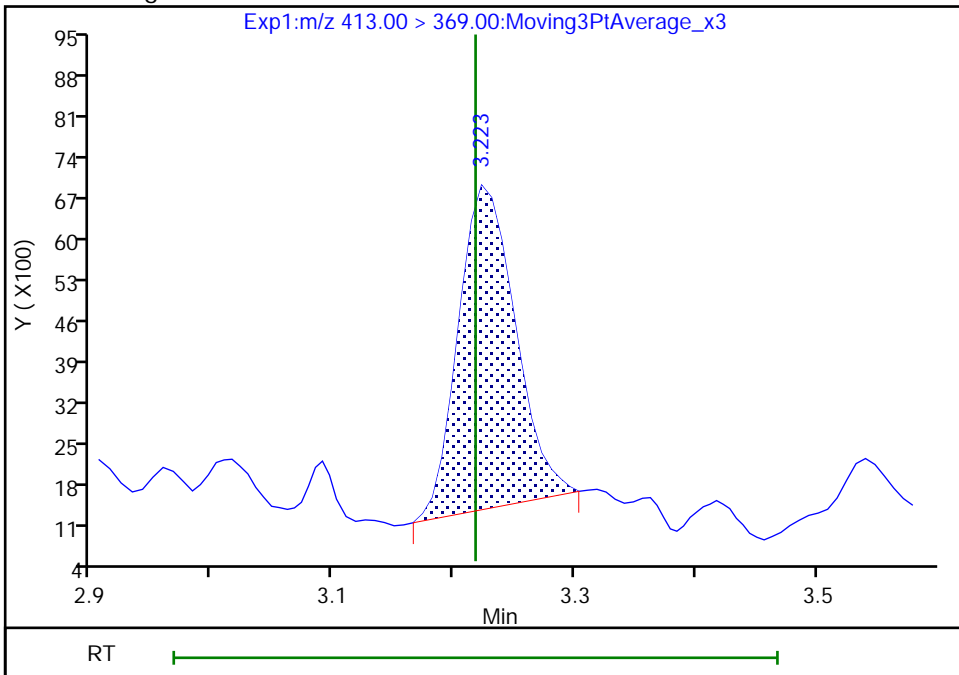
RT: 3.22
Area: 19414
Amount: 0.007697
Amount Units: ng/ml

Processing Integration Results



RT: 3.22
Area: 18094
Amount: 0.007174
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

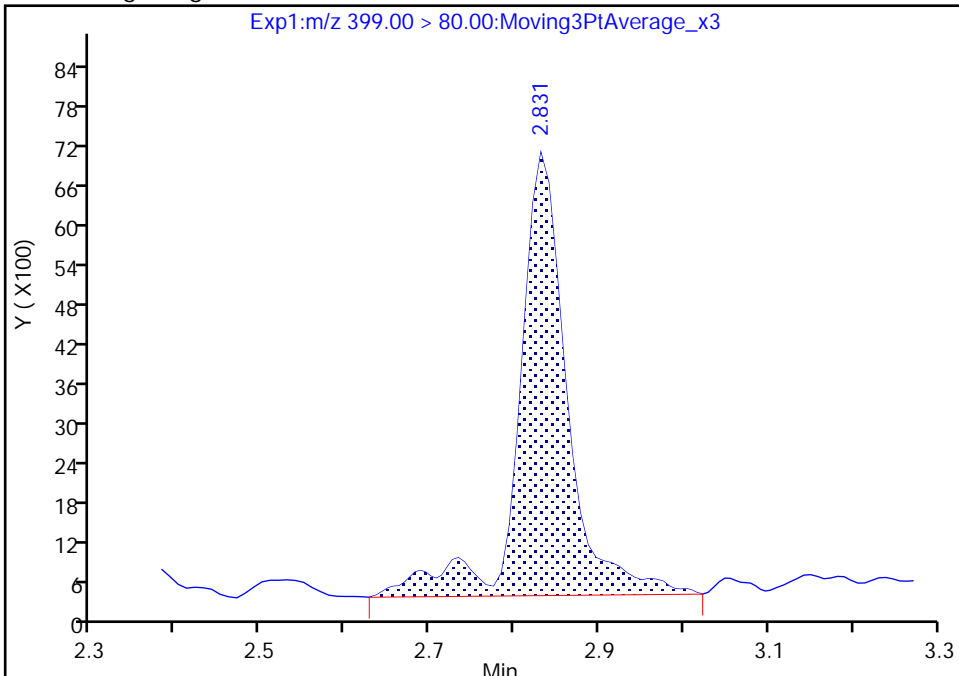
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Injection Date: 14-Dec-2018 23:31:56 Instrument ID: A8_N
Lims ID: 480-145071-B-4-A Lab Sample ID: 320-145071-4
Client ID: DUPE-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

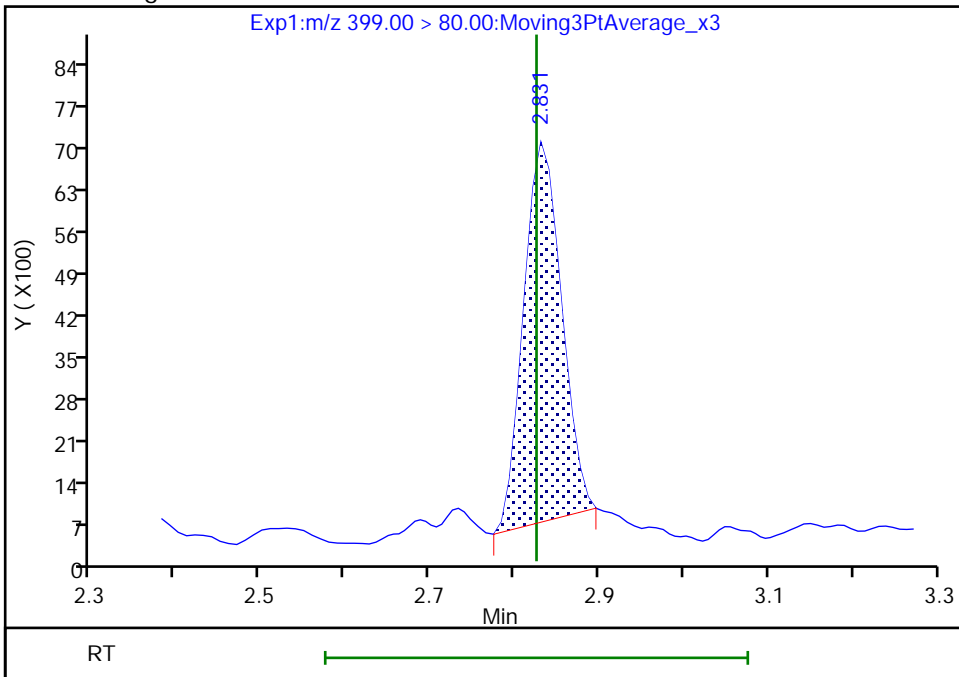
RT: 2.83
Area: 26797
Amount: 0.008894
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 19761
Amount: 0.006559
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:06:07
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

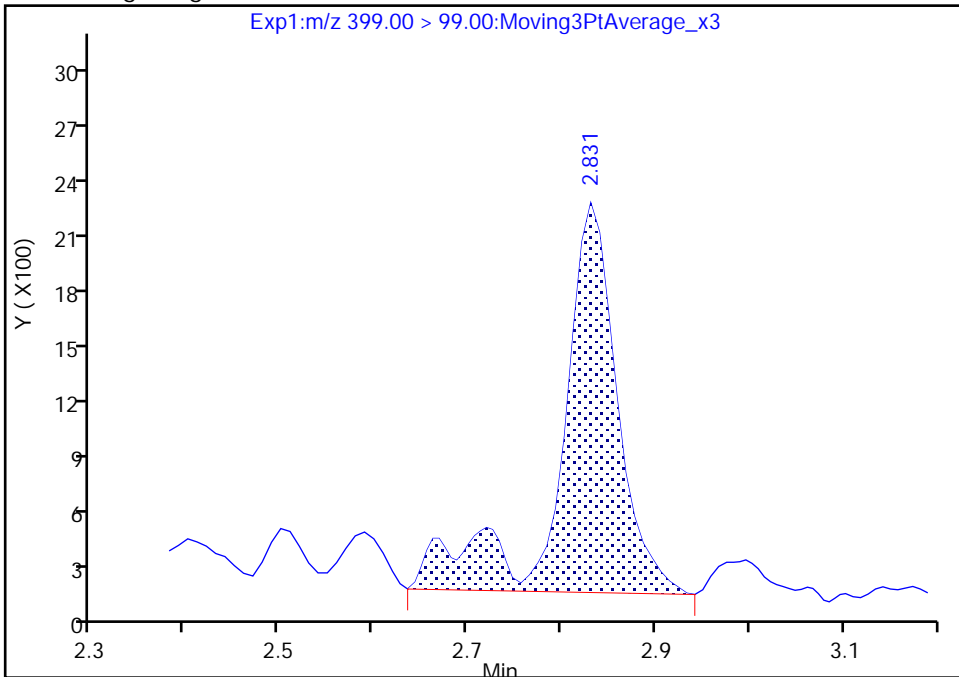
Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_025.d
Injection Date: 14-Dec-2018 23:31:56 Instrument ID: A8_N
Lims ID: 480-145071-B-4-A Lab Sample ID: 320-145071-4
Client ID: DUPE-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

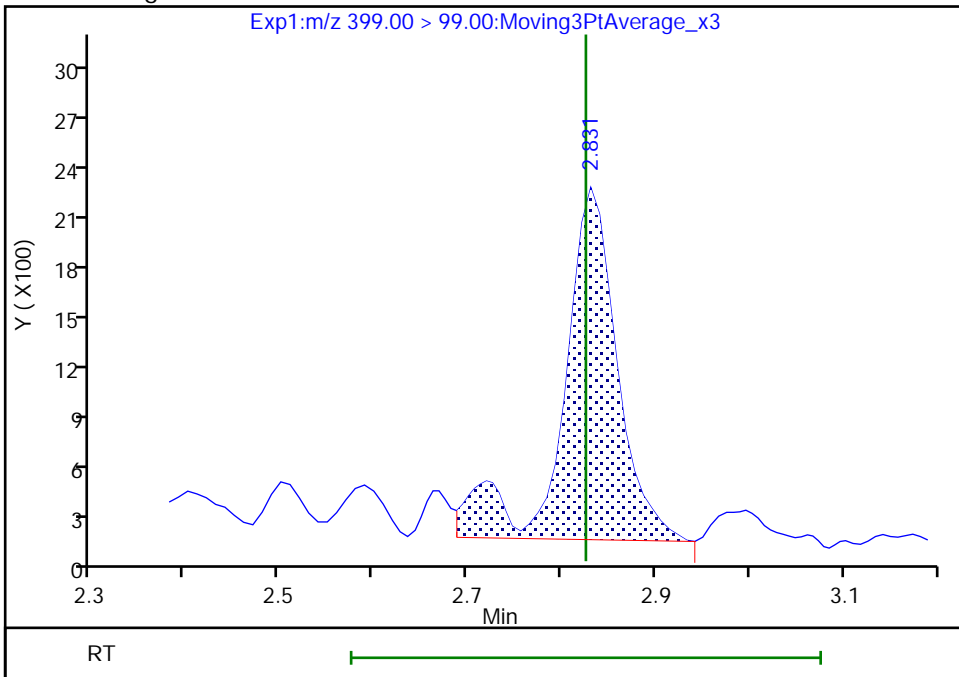
RT: 2.83
Area: 9088
Amount: 0.008894
Amount Units: ng/ml

Processing Integration Results



RT: 2.83
Area: 8547
Amount: 0.006559
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:06:34

Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

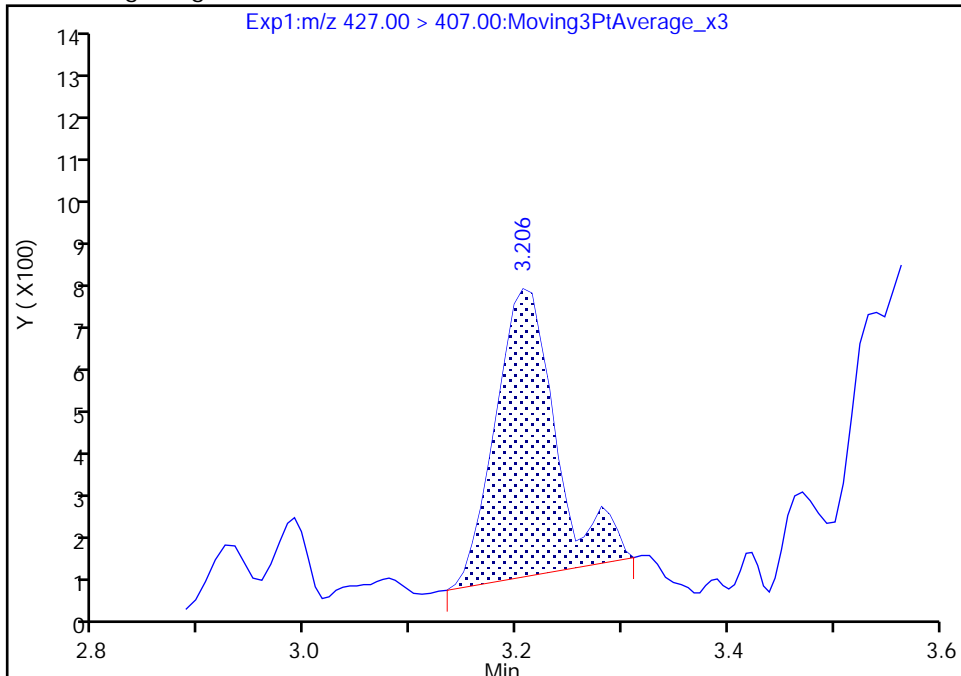
Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_025.d
Injection Date: 14-Dec-2018 23:31:56 Instrument ID: A8_N
Lims ID: 480-145071-B-4-A Lab Sample ID: 320-145071-4
Client ID: DUPE-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

13 1H,1H,2H,2H-perfluorooctanesulfonic acid (6:, CAS: 27619-97-2

Signal: 1

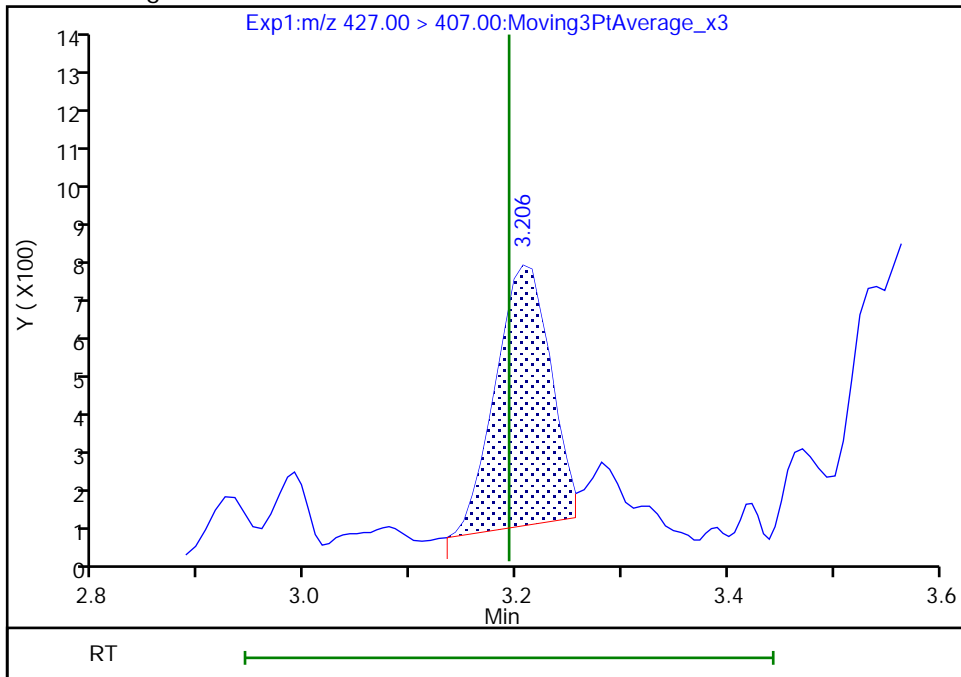
RT: 3.21
Area: 2619
Amount: 0.001680
Amount Units: ng/ml

Processing Integration Results



RT: 3.21
Area: 2377
Amount: 0.001525
Amount Units: ng/ml

Manual Integration Results



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 261834

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/29/2018 06:46 Calibration End Date: 11/29/2018 07:31 Calibration ID: 42525

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-261834/2	2018.11.29PFCICAL_005.d
Level 2	IC 320-261834/3	2018.11.29PFCICAL_006.d
Level 3	IC 320-261834/4	2018.11.29PFCICAL_007.d
Level 4	IC 320-261834/5	2018.11.29PFCICAL_008.d
Level 5	IC 320-261834/6	2018.11.29PFCICAL_009.d
Level 6	IC 320-261834/7	2018.11.29PFCICAL_010.d
Level 7	IC 320-261834/8	2018.11.29PFCICAL_011.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
Perfluorobutanoic acid (PFBA)	0.8889 0.9304	0.8847 0.8791	0.9043	0.9294	0.9537	AveID		0.9101			3.1		35.0				
Perfluoropentanoic acid (PFPeA)	1.0823 1.1021	1.1187 1.0372	1.1151	1.0528	1.1203	AveID		1.0898			3.1		35.0				
Perfluorobutanesulfonic acid (PFBS)	0.9827 0.9623	0.9877 0.8741	0.9824	1.0151	0.9893	AveID		0.9705			4.7		50.0				
4:2 FTS	0.2105 0.1807	0.1922 0.1920	0.1975	0.1950	0.1808	AveID		0.1927			5.3		50.0				
Perfluorohexanoic acid (PFHxA)	1.0811 1.0007	0.9662 0.9253	1.0189	1.0080	1.0191	AveID		1.0027			4.8		35.0				
Perfluoropentanesulfonic acid (PFPeS)	0.8225 0.8645	0.8758 0.7572	0.8972	0.9254	0.8703	AveID		0.8590			6.4		50.0				
HFPO-DA (GenX)	3.4021 3.5034	3.2391 3.4522	3.4880	3.4786	3.2994	AveID		3.4090			3.0		35.0				
Perfluoroheptanoic acid (PFHpA)	1.0310 1.0431	1.1198 1.0385	1.0902	1.0544	1.0674	AveID		1.0635			3.0		35.0				
Perfluorohexanesulfonic acid (PFHxS)	1.3625 1.0586	1.0836 1.0394	1.0156	0.9997	1.0404	AveID		1.0857			11.5		35.0				
DONA	4.1377 3.7857	4.2071 3.1659	4.1853	4.1799	4.0808	AveID		3.9632			9.6		50.0				
6:2 FTS	1.4058 1.6370	1.5845 1.6049	1.4804	1.6140	1.5681	AveID		1.5564			5.3		35.0				
Perfluoroheptanesulfonic Acid (PFHpS)	1.2990 1.3040	1.3701 1.2356	1.3012	1.2848	1.3728	AveID		1.3097			3.7		50.0				
Perfluorooctanoic acid (PFOA)	1.2960 1.0780	1.1611 1.0304	1.1348	1.0993	1.1399	AveID		1.1342			7.4		35.0				
Perfluorooctanesulfonic acid (PFOS)	1.0880 1.1146	1.1562 1.1352	1.0834	1.0926	1.1341	AveID		1.1149			2.5		35.0				

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

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento

Job No.: 480-145071-1

Analy Batch No.: 261834

SDG No.: _____

Instrument ID: A8_N

GC Column: GeminiC18 3 ID: 3(mm)

Heated Purge: (Y/N) N

Calibration Start Date: 11/29/2018 06:46

Calibration End Date: 11/29/2018 07:31

Calibration ID: 42525

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
Perfluorononanoic acid (PFNA)	1.0425 1.0168	1.0805 1.0261	0.9947	1.0178	1.0431	AveID		1.0316			2.6		35.0				
F-53B Major	1.9528 2.0673	1.9687 1.9224	1.9966	2.0301	2.0993	AveID		2.0053			3.2		50.0				
Perfluorononanesulfonic acid (PFNS)	0.7291 0.7629	0.8199 0.7700	0.7750	0.7665	0.8213	AveID		0.7778			4.2		50.0				
8:2 FTS	1.2199 1.3077	1.2910 1.2978	1.4441	1.3084	1.3001	AveID		1.3099			5.1		35.0				
Perfluorodecanoic acid (PFDA)	0.9405 1.0290	1.0029 0.9650	1.0310	0.9455	0.9923	AveID		0.9866			3.8		35.0				
Perfluorooctanesulfonamide (FOSA)	1.0507 0.9919	1.0367 0.9465	0.9594	1.0072	1.0130	AveID		1.0008			3.8		35.0				
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.7923 1.0542	0.8935 0.9840	0.9392	1.0047	0.9183	AveID		0.9409			9.1		35.0				
Perfluorodecanesulfonic acid (PFDS)	0.6330 0.6606	0.6710 0.6366	0.6261	0.6232	0.6842	AveID		0.6478			3.7		50.0				
Perfluoroundecanoic acid (PFUnA)	0.9241 0.8902	0.9655 0.9072	0.8525	0.8291	0.8943	AveID		0.8947			5.0		35.0				
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.8032 0.8224	0.9597 0.9256	0.8465	0.7933	0.8653	AveID		0.8594			7.3		35.0				
F-53B Minor	2.8836 2.9076	3.0611 2.5208	3.0850	3.1449	3.0397	AveID		2.9490			7.2		50.0				
Perfluorododecanoic acid (PFDoA)	1.1926 1.1267	1.1309 1.0313	1.0247	1.0348	1.0710	AveID		1.0874			5.9		35.0				
10:2 FTS	0.9504 0.9352	1.0042 0.9781	0.9841	0.8628	0.9235	AveID		0.9483			5.0		50.0				
Perfluorododecanesulfonic acid (PFDoS)	0.2975 0.3068	0.2883 0.2958	0.2826	0.2888	0.3067	AveID		0.2952			3.2		50.0				
Perfluorotridecanoic acid (PFTriA)	1.0697 1.0845	1.0231 0.9907	1.0192	1.0690	1.1418	AveID		1.0569			4.8		50.0				
Perfluorotetradecanoic acid (PFTeA)	0.2654 0.2569	0.2632 0.2562	0.2599	0.2534	0.2560	AveID		0.2587			1.7		50.0				
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7362 0.8846	1.2759 0.8486	0.9494	0.8745	0.9032	L2ID	0.0215	0.8656						0.9990		0.9900	
Perfluoro-n-octadecanoic acid (PFODA)	1.0992 1.1927	1.1761 1.1885	1.1360	1.1523	1.1738	AveID		1.1598			2.9		50.0				
13C4 PFBA	1.4910 1.5651	1.5255 1.5747	1.4994	1.5228	1.5052	Ave		1.5262			2.1		50.0				
13C5 PFPeA	0.9535 0.9882	0.9459 0.9655	0.9449	0.9761	0.9441	Ave		0.9597			1.8		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.: 480-145071-1 Analy Batch No.: 261834
 SDG No.: _____
 Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
 Calibration Start Date: 11/29/2018 06:46 Calibration End Date: 11/29/2018 07:31 Calibration ID: 42525

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
13C3 PFBS	1.4058 1.5086	1.4279 1.5523	1.3891	1.4532	1.5007	Ave		1.4625			4.1		50.0				
M2-4:2 FTS	0.1191 0.1158	0.1141 0.1191	0.1205	0.1155	0.1172	Ave		0.1173			2.0		50.0				
13C2 PFHxA	0.9790 1.0472	1.0267 1.0401	0.9997	1.0223	0.9911	Ave		1.0152			2.5		50.0				
13C3 HFPO-DA	0.0719 0.0698	0.0700 0.0712	0.0699	0.0667	0.0729	Ave		0.0703			2.8		50.0				
13C4 PFHpA	0.9819 1.0113	0.9994 0.9624	1.0181	1.0121	0.9906	Ave		0.9965			2.0		50.0				
18O2 PFHxS	1.0740 1.1305	1.2038 1.0823	1.1428	1.1713	1.1547	Ave		1.1371			4.1		50.0				
M2-6:2 FTS	0.1749 0.1784	0.1768 0.1666	0.1781	0.1785	0.1731	Ave		0.1752			2.4		50.0				
13C8 PFOA	1.4111 1.4586	1.4497 1.4841	1.3964	1.4145	1.4304	Ave		1.4350			2.1		50.0				
13C4 PFOA	0.9701 0.9833	1.0139 0.9731	0.9486	0.9899	0.9350	Ave		0.9734			2.7		50.0				
13C8 PFOS	0.3873 0.3908	0.3918 0.3878	0.3897	0.3918	0.4037	Ave		0.3918			1.4		50.0				
13C4 PFOS	0.7338 0.7553	0.7174 0.7471	0.7368	0.7695	0.7393	Ave		0.7427			2.2		50.0				
13C5 PFNA	0.7852 0.8385	0.8210 0.8070	0.8094	0.8455	0.8030	Ave		0.8157			2.6		50.0				
13C2 PFDA	0.7268 0.7260	0.7134 0.6961	0.6829	0.7211	0.7182	Ave		0.7121			2.3		50.0				
M2-8:2 FTS	0.1853 0.1987	0.1820 0.1932	0.1766	0.1987	0.1881	Ave		0.1889			4.4		50.0				
13C8 FOSA	1.0707 1.1327	1.0930 1.0778	1.0984	1.1113	1.0973	Ave		1.0973			1.9		50.0				
d3-NMeFOSAA	0.3329 0.3377	0.3510 0.3673	0.3526	0.3394	0.3541	Ave		0.3479			3.4		50.0				
13C2 PFUnA	0.5765 0.5836	0.5812 0.5602	0.5770	0.5715	0.5630	Ave		0.5733			1.5		50.0				
d5-NEtFOSAA	0.3728 0.3821	0.3669 0.3489	0.3565	0.3787	0.3672	Ave		0.3676			3.2		50.0				
13C2 PFDoA	0.5731 0.6127	0.6260 0.6357	0.6125	0.6164	0.5933	Ave		0.6099			3.4		50.0				
13C2 PFTeDA	0.7036 0.7271	0.7456 0.7316	0.7128	0.7431	0.7189	Ave		0.7261			2.1		50.0				

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

FORM VI
 LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
 CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 261834

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/29/2018 06:46 Calibration End Date: 11/29/2018 07:31 Calibration ID: 42525

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
13C2 PFHxDA	1.3297	1.3363	1.3596	1.3827	1.3412	Ave		1.3412			2.1		50.0				
	1.3473	1.2916															

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

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 261834

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/29/2018 06:46 Calibration End Date: 11/29/2018 07:31 Calibration ID: 42525

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-261834/2	2018.11.29PFCICAL_005.d
Level 2	IC 320-261834/3	2018.11.29PFCICAL_006.d
Level 3	IC 320-261834/4	2018.11.29PFCICAL_007.d
Level 4	IC 320-261834/5	2018.11.29PFCICAL_008.d
Level 5	IC 320-261834/6	2018.11.29PFCICAL_009.d
Level 6	IC 320-261834/7	2018.11.29PFCICAL_010.d
Level 7	IC 320-261834/8	2018.11.29PFCICAL_011.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7				LVL 6	LVL 7			
Perfluorobutanoic acid (PFBA)		AveID	65657 13756884	130666 24891473	662304	2790150	6980294	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	51127 10289557	102447 18006131	514658	2026058	5143281	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	60500 12124929	120709 21566859	589215	2571053	6382050	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	13693 2405142	24814 5005640	125150	521837	1232150	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	52437 9899875	96038 17305595	497507	2031527	4911287	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	53730 11557824	113572 19824089	571024	2487059	5957020	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	12125 2309065	21936 4421628	119023	457407	1169370	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	50154 9966359	108355 17969899	542116	2104050	5141963	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	65974 10289418	114919 18406603	515880	2100762	5315886	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	141689 25445940	275242 40063210	1418906	5973468	13820561	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	11547 2615324	25717 4558705	122083	538498	1251547	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	44955 8858103	90590 15802673	445810	1855617	4698739	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanoic acid (PFOA)		AveID	62345 10024286	114091 18048805	526320	2147524	5187467	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	36702 7380472	74516 14152728	361827	1538297	3783829	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	40555 8055062	85878 14888913	393227	1696607	4073348	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.: 480-145071-1 Analy Batch No.: 261834

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/29/2018 06:46 Calibration End Date: 11/29/2018 07:31 Calibration ID: 42525

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	66160 13747857	127433 24068785	669716	2870396	7034075	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)		AveID	25444 5226088	54663 9931006	267772	1116371	2834694	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
8:2 FTS		AveID	10729 2351661	21789 4318341	119347	490997	1139190	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorodecanoic acid (PFDA)		AveID	33865 7057683	69265 12077597	343916	1344142	3465543	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonamide (FOSA)		AveID	55733 10614611	109703 18343130	514716	2206863	5404973	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	13069 3362979	30364 6499096	161753	672200	1581217	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	22181 4543700	44921 8243780	217226	911397	2371422	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	26393 4908272	54326 9137882	240258	934199	2448410	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	14832 2969135	34087 5806185	147414	592262	1544938	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	98746 19543573	200270 31900637	1045868	4494356	10294451	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	33859 6521952	68540 11788317	306538	1257557	3089872	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	8411 1692240	17055 3275032	81838	325826	814296	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	10467 2119013	19381 3847145	98452	424090	1067276	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	30368 6277573	62006 11323876	304915	1299171	3294032	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	9253 1765058	18999 3370185	90499	371267	895015	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	114371 11259468	165063 19709139	630453	2383980	5890709	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	72411 15180752	152162 27602403	754372	3141313	7655054	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	7386574 7393124	7384438 7078750	7323675	7505630	7319376	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	4723734 4668056	4578962 4340201	4615307	4810976	4590990	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	6477164 6627498	6428444 6489578	6309899	6661324	6786470	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	551078 511130	515716 500173	549636	531878	532434	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.: 480-145071-1 Analy Batch No.: 261834

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/29/2018 06:46 Calibration End Date: 11/29/2018 07:31 Calibration ID: 42525

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	4850277 4946631	4970004 4675743	4882930	5038683	4819322	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	356396 329543	338614 320201	341234	328731	354416	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	4864514 4777339	4837987 4326076	4972673	4988562	4817159	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5033594 5052099	5512544 4602353	5280390	5461569	5311560	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	823121 800502	813210 711627	826416	835878	799833	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C8 PFOA	13PF OA	Ave	6843940 6745396	6870209 6531432	6677309	6825287	6809611	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C4 PFOA	13PF OA	Ave	4805875 4644760	4908199 4374502	4633463	4878940	4546414	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOS	13PF OA	Ave	1834174 1764823	1813033 1666550	1819800	1846120	1876592	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C4 PFOS	13PF OA	Ave	3475238 3410756	3319786 3210717	3440581	3625860	3437024	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	3890167 3960946	3974069 3627582	3953315	4167325	3904861	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	3600777 3429499	3453391 3128982	3335607	3554030	3492597	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	879504 899152	843874 831856	826435	938184	876218	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C8 FOSA	13PF OA	Ave	5304468 5350524	5291146 4844768	5364881	5477482	5335678	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1649399 1595051	1699195 1651188	1722247	1672640	1721823	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	2856107 2756810	2813319 2518085	2818121	2816787	2737752	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1846668 1805208	1775996 1568223	1741443	1866342	1785526	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	2839024 2894227	3030334 2857578	2991622	3038168	2884956	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	3485874 3434816	3609415 3288566	3481834	3662726	3495868	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	6587541 6364224	6468739 5806225	6640808	6815230	6521815	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 261834

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 11/29/2018 06:46 Calibration End Date: 11/29/2018 07:31 Calibration ID: 42525

Curve Type Legend:

Ave = Average ISTD AveID = Average isotope dilution L2ID = Linear 1/conc ² IsoDil
--

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_005.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 29-Nov-2018 06:46:43 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 1
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37

Method: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 29-Nov-2018 10:25:05 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0326

First Level Reviewer: phomsophat Date: 29-Nov-2018 09:39:37

Ratio Calibration: None

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	1.748	1.749	-0.001	0.545	7386574	2.44	97.7	6263	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.753	0.002	1.004	65657	0.0244	97.7	12.3	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.061	0.002	0.644	4723734	2.48	99.3	7744	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.062	0.001	1.000	51127	0.0248	99.3	8.9	
D 47 13C3 PFBS	301.90 > 80.00	2.094	2.091	0.003	0.653	6477164	2.23	96.1	550730	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.094	0.0	1.000	60500	0.0224	Target=2.49	101	71.6
	298.90 > 99.00	2.094	2.094	0.0	1.000	24627	2.46(1.25-3.74)	101	15.0	
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.740	551078	2.37	101	913	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.374	-0.002	1.133	13693	0.0255	109	155	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.413	-0.001	1.000	52437	0.0270	Target=10.07	108	20.4
	313.00 > 119.00	2.412	2.413	-0.001	1.000	4495	11.67(5.03-15.10)	108	13.4	
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.413	-0.001	0.753	4850277	2.41	96.4	5821	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.432	2.432	0.0	1.161	53730	0.0225	Target=2.71	95.7	301
	349.00 > 99.00	2.432	2.432	0.0	1.161	19751	2.72(1.36-4.07)	95.7	167	
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.531	2.531	0.0	1.000	12125	0.0249	99.8	14.3	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	2.531	2.532	-0.001	0.790	356396	2.56		102	1844	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.801	2.800	0.001	1.000	50154	0.0242	Target=2.27	96.9	13.7	
363.00 > 169.00	2.801	2.800	0.001	1.000	22646		2.21(1.13-3.40)	96.9	26.9	
D 9 13C4 PFHpA										
367.00 > 322.00	2.801	2.802	-0.001	0.874	4864514	2.46		98.5	8569	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.811	2.807	0.004	1.000	65974	0.0286	Target=3.00	125	316	
399.00 > 99.00	2.811	2.807	0.004	1.000	21228		3.11(1.50-4.49)	125	102	
D 11 18O2 PFHxS										
403.00 > 84.00	2.811	2.807	0.004	0.877	5033594	2.23		94.5	7152	
77 DONA										
377.00 > 251.00	2.848	2.851	-0.003	0.796	141689	0.0246	Target=1.69	104	153	
377.00 > 85.00	2.848	2.851	-0.003	0.796	80204		1.77(0.85-2.54)	104	353	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.181	3.178	0.003	0.992	823121	2.37		99.8	5012	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.181	3.181	0.0	1.000	11547	0.0214		90.3	4.7	
D 73 13C8 PFOA										
421.00 > 376.00	3.197	3.195	0.002	0.997	6843940	2.41		98.3	13162	
D 14 13C4 PFOA										
417.00 > 372.00	3.197	3.200	-0.003	0.997	4805875	2.49		99.7	10274	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.197	3.200	-0.003	0.893	44955	0.0236	Target=3.88	99.2	302	
449.00 > 99.00	3.197	3.200	-0.003	0.893	11711		3.84(1.94-5.82)	99.2	98.8	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.205	3.201	0.004	1.003	62345	0.0286	Target=1.68	114	6.5	M
413.00 > 169.00	3.205	3.201	0.004	1.003	37279		1.67(0.84-2.52)	114	20.1	M
* 62 13C2 PFOA										
415.00 > 370.00	3.205	3.201	0.004		4954081	2.50			7159	
D 72 13C8 PFOS										
507.00 > 99.00	3.579	3.576	0.003	1.117	1834174	2.36		98.8	10283	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.579	3.581	-0.002	1.000	36702	0.0226	Target=4.62	97.6	73.3	M
499.00 > 99.00	3.579	3.581	-0.002	1.000	9234		3.97(2.31-6.93)	97.6	69.8	
D 18 13C4 PFOS										
503.00 > 80.00	3.579	3.581	-0.002	1.117	3475238	2.36		98.8	7822	
D 19 13C5 PFNA										
468.00 > 423.00	3.587	3.590	-0.003	1.119	3890167	2.41		96.3	10557	
20 Perfluorononanoic acid										
463.00 > 419.00	3.587	3.590	-0.003	1.000	40555	0.0253	Target=3.79	101	24.2	
463.00 > 169.00	3.595	3.590	0.005	1.002	9227		4.40(1.90-5.69)	101	66.5	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.783	3.783	0.0	1.057	66160	0.0227		97.4	249	

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	3.930	3.931	-0.001	1.098	25444	0.0225	Target=2.65	93.7	364	
549.00 > 99.00	3.930	3.931	-0.001	1.098	10039		2.53(1.33-3.97)	93.7	72.3	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.946	3.948	-0.002	1.000	10729	0.0223		93.1	110	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.946	3.948	-0.002	1.000	33865	0.0238	Target=4.73	95.3	40.3	
513.00 > 169.00	3.946	3.948	-0.002	1.000	5931		5.71(2.36-7.09)	95.3	36.7	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.946	3.948	-0.002	1.231	879504	2.35		98.1	5895	
D 23 13C2 PFDA										
515.00 > 470.00	3.946	3.948	-0.002	1.231	3600777	2.55		102	11147	
D 21 13C8 FOSA										
506.00 > 78.00	3.962	3.962	0.0	1.236	5304468	2.44		97.6	6689	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.962	3.962	0.0	1.000	55733	0.0262		105	3.9	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.105	4.111	-0.006	1.281	1649399	2.39		95.7	4072	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.114	4.115	-0.001	1.002	13069	0.0211		84.2	12.7	M
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.244	4.247	-0.003	1.186	22181	0.0235	Target=2.77	97.7	237	
599.00 > 99.00	4.244	4.247	-0.003	1.186	7104		3.12(1.39-4.16)	97.7	121	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.268	4.270	-0.002	1.000	26393	0.0258	Target=4.24	103	32.7	
563.00 > 169.00	4.268	4.270	-0.002	1.000	7223		3.65(2.12-6.36)	103	55.5	
D 30 13C2 PFUnA										
565.00 > 520.00	4.268	4.270	-0.002	1.332	2856107	2.51		101	8238	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.268	4.271	-0.003	1.332	1846668	2.54		101	2323	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.284	4.279	0.005	1.004	14832	0.0234		93.5	94.3	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.410	4.412	-0.002	1.232	98746	0.0230		97.8	347	
35 MeFOSA										
512.00 > 169.00	4.462	4.465	-0.003		14904	NC			41.4	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.553	4.556	-0.003	1.000	33859	0.0274	Target=4.27	110	33.8	
613.00 > 169.00	4.553	4.556	-0.003	1.000	8156		4.15(2.13-6.40)	110	83.2	
D 36 13C2 PFDaA										
615.00 > 570.00	4.553	4.556	-0.003	1.421	2839024	2.35		94.0	7681	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.569	4.569	0.0	1.158	8411	0.0242		100	120	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.646	4.643	0.003		14724	NC			110	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.779	4.785	-0.006	1.335	10467	0.0244	Target=0.00	101	99.7	
699.00 > 99.00	4.779	4.785	-0.006	1.335	14358		0.73(0.00-0.00)	101	124	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.812	4.815	-0.003	1.057	30368	0.0253	Target=2.51	101	33.4	
663.00 > 169.00	4.812	4.815	-0.003	1.057	11071		2.74(1.25-3.76)	101	132	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.053	5.053	0.0	1.000	9253	0.0256	Target=1.42	103	117	
713.00 > 219.00	5.053	5.053	0.0	1.000	7442		1.24(0.71-2.13)	103	172	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.053	5.054	-0.001	1.577	3485874	2.42		96.9	6995	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.477	5.481	-0.004	1.709	6587541	2.48		99.1	9885	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.487	5.484	0.003	1.002	114371	0.0253	Target=5.72	101	13.7	
813.00 > 169.00	5.477	5.484	-0.007	1.000	19520		5.86(2.86-8.58)	101	180	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.900	5.904	-0.004	1.077	72411	0.0237	Target=7.65	94.8	9.9	M
913.00 > 169.00	5.900	5.904	-0.004	1.077	9424		7.68(3.83-11.48)	94.8	119	M

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_005.d

Injection Date: 29-Nov-2018 06:46:43

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

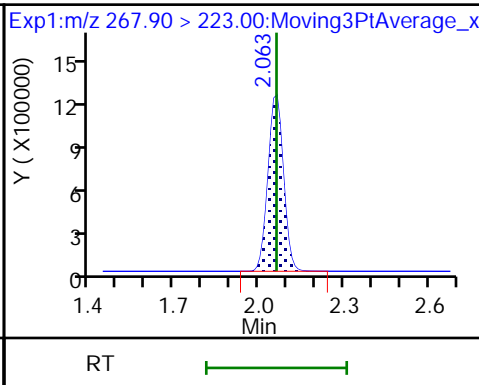
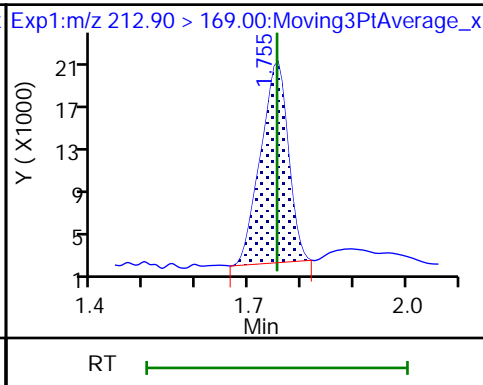
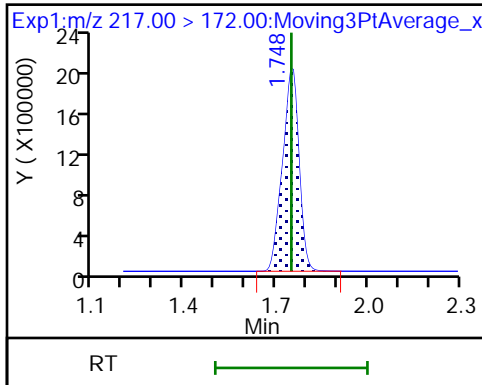
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

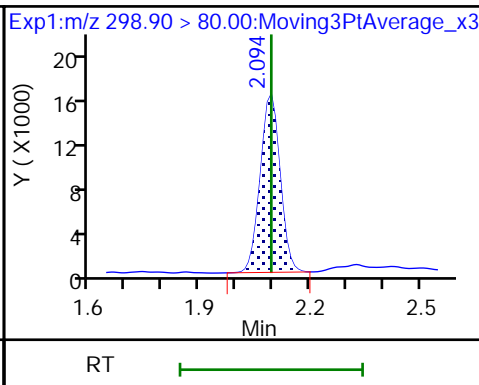
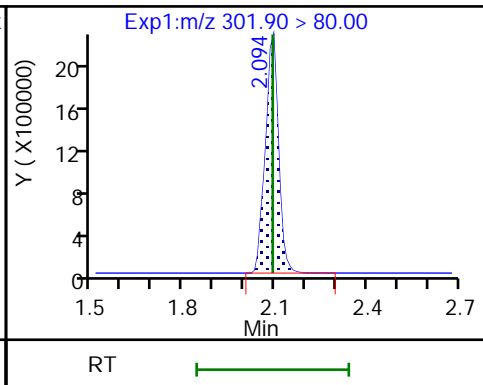
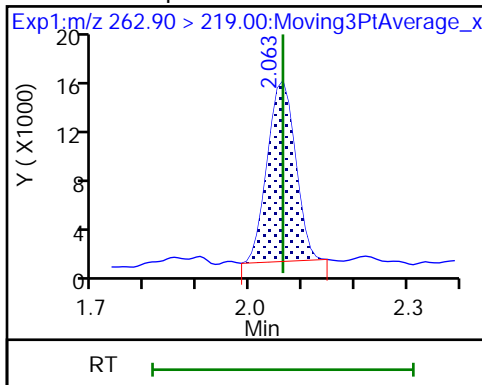
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

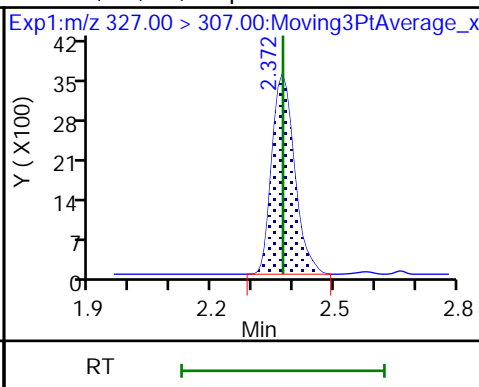
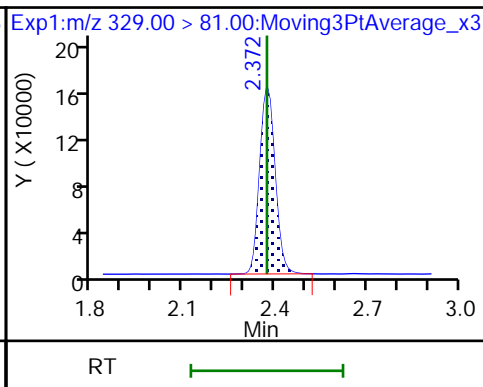
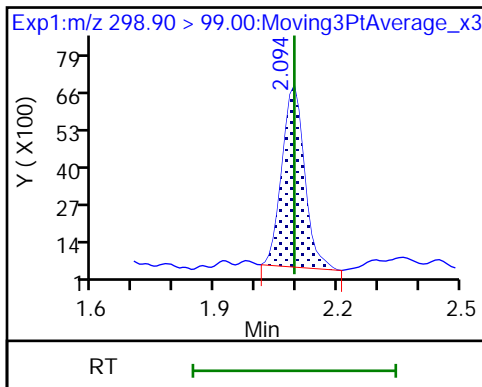
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

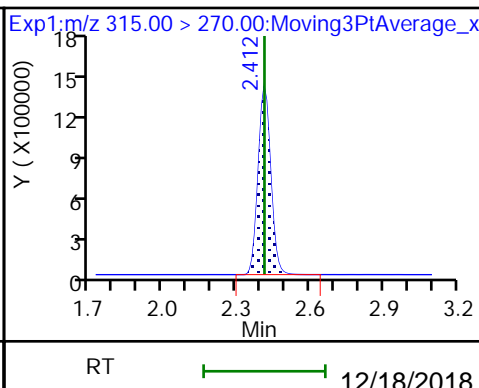
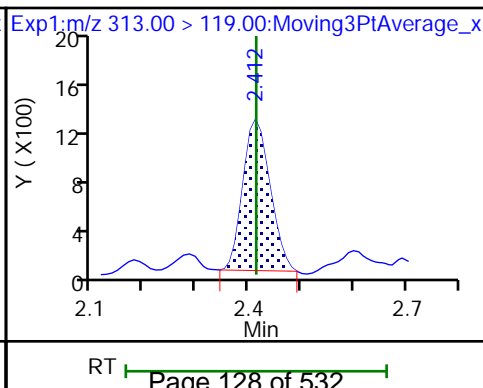
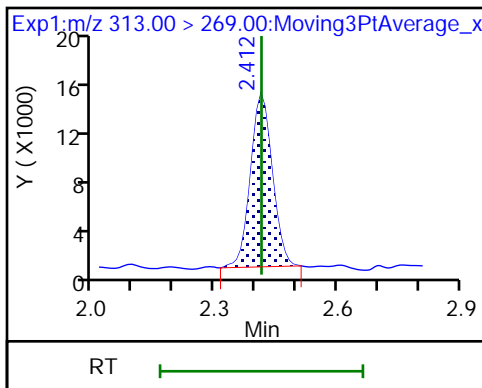
61 1H,1H,2H,2H-perfluorohexanesulfoni

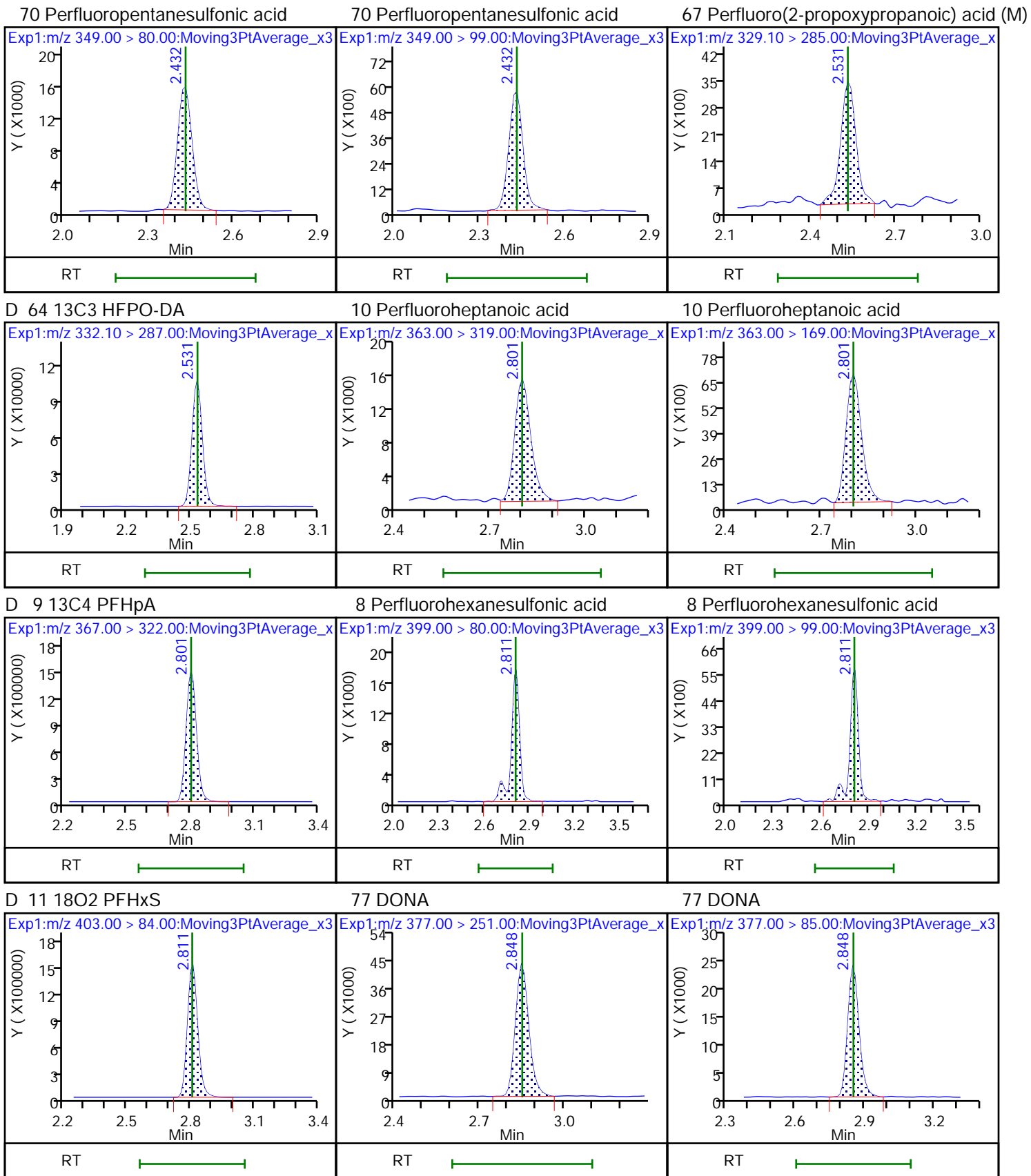


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

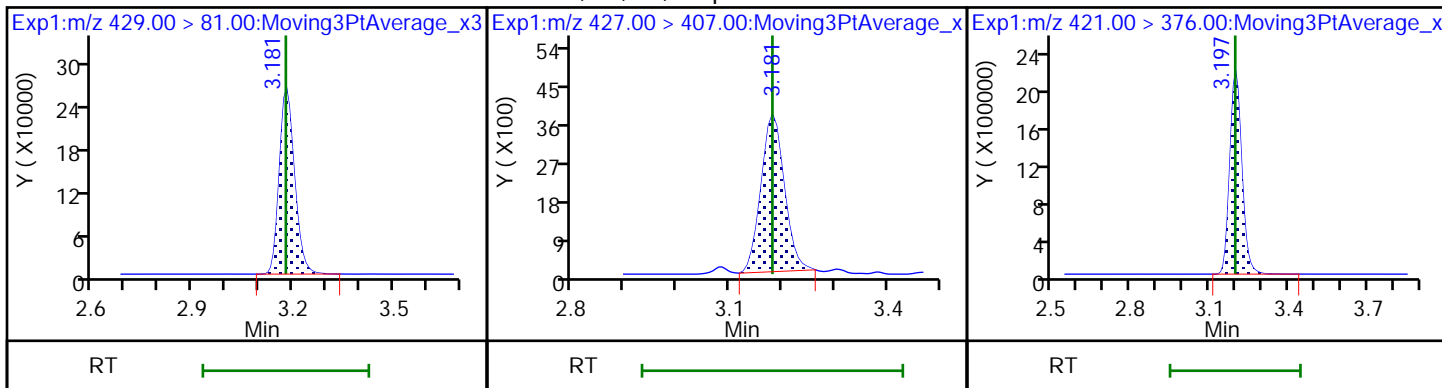
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

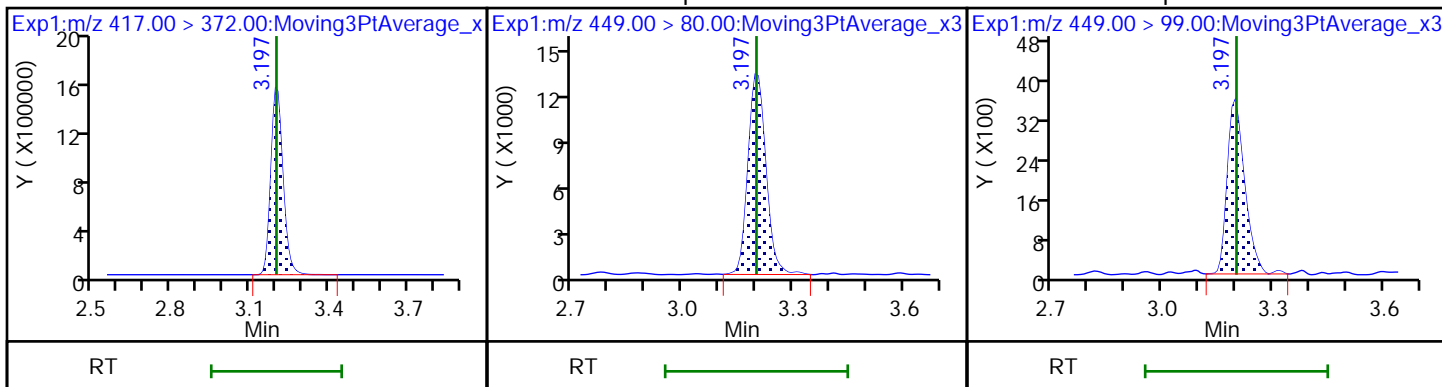
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

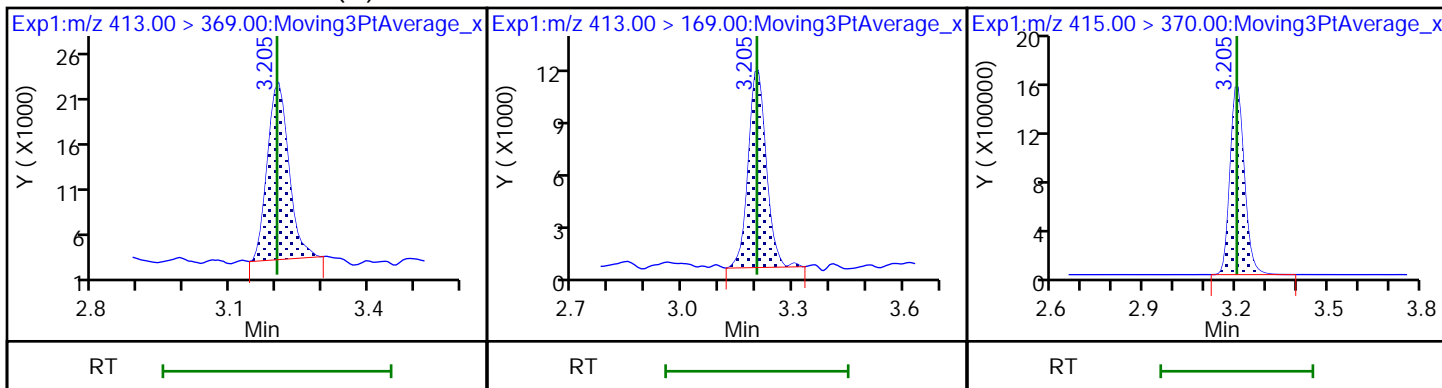
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid (M)

15 Perfluorooctanoic acid

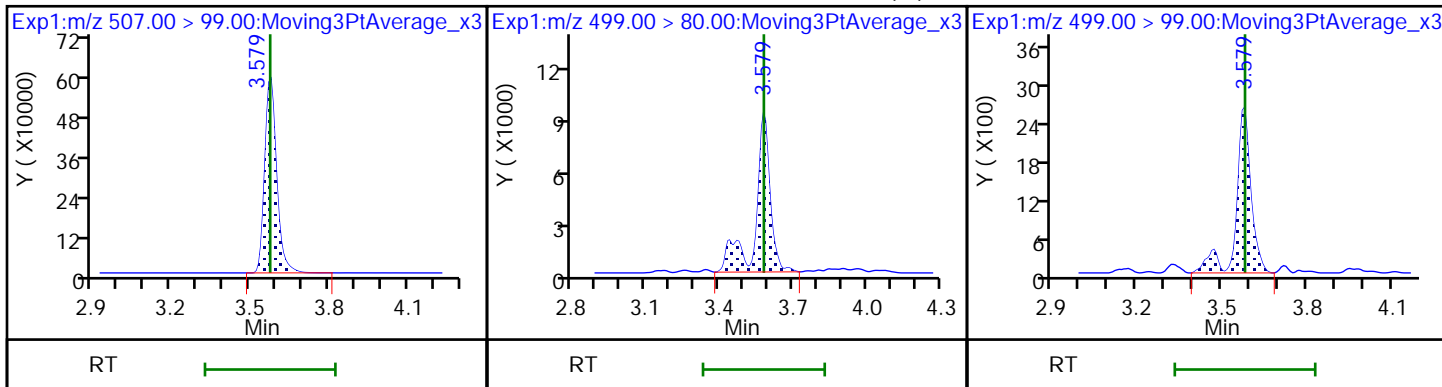
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid (M)

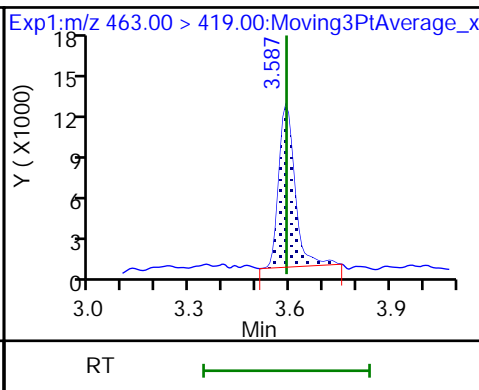
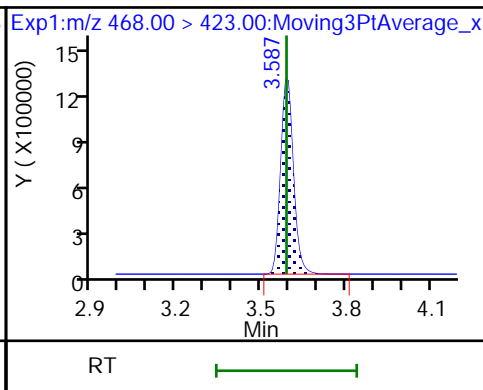
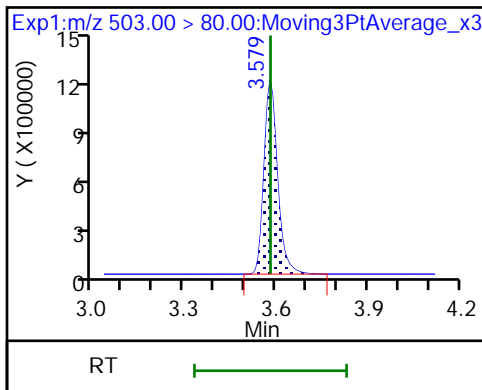
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

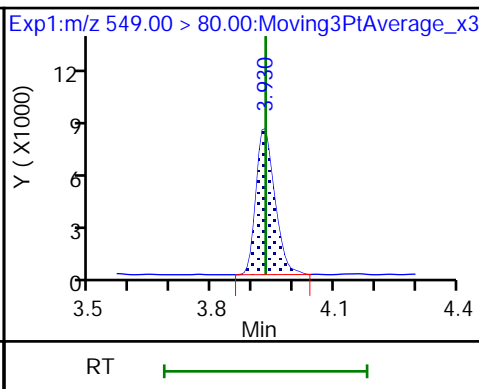
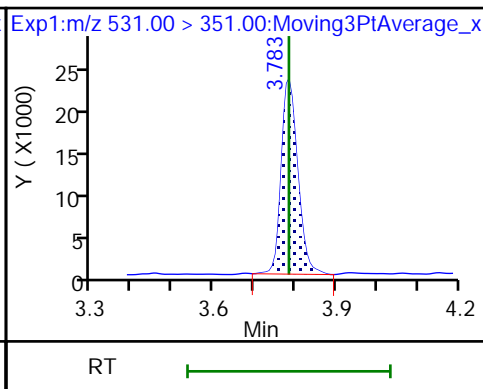
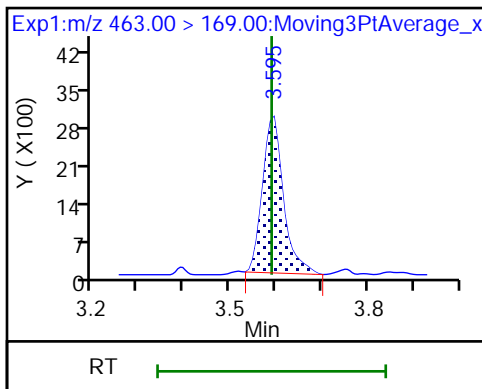
D 19 13C5 PFNA

20 Perfluorononanoic acid



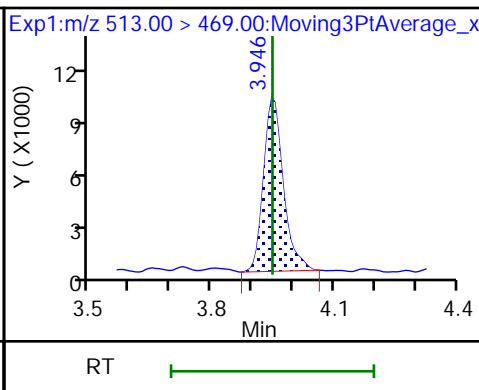
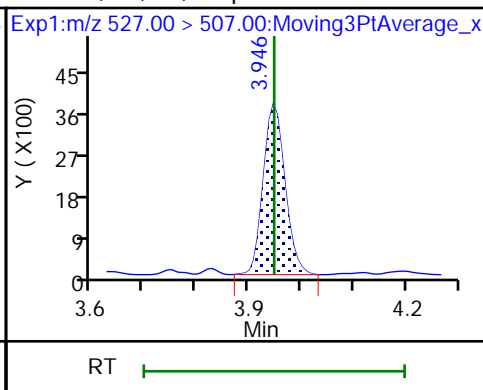
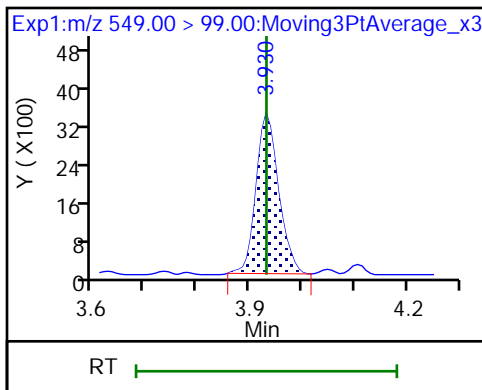
20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid



68 Perfluoronanesulfonic acid

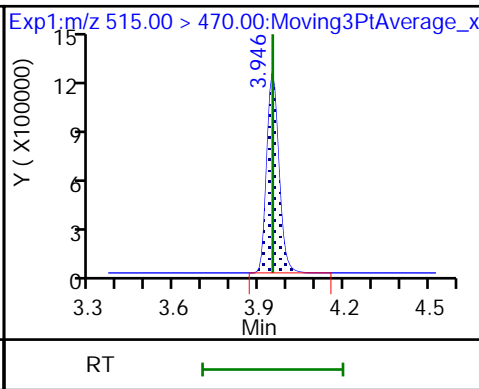
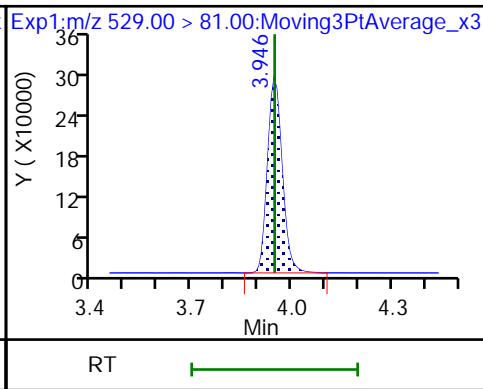
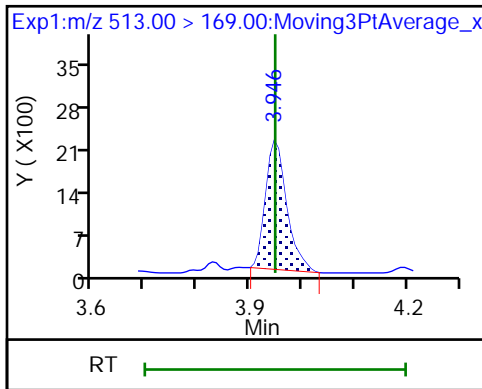
25 1H,1H,2H,2H-perfluorodecanesulfoni 24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 26 M2-8:2 FTS

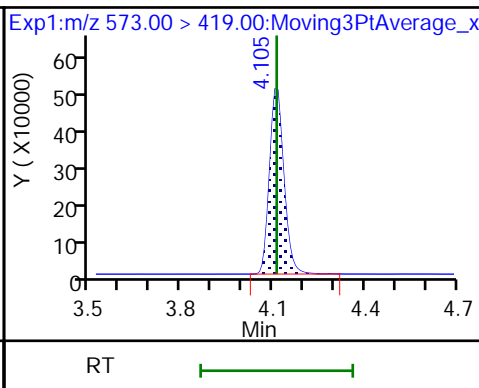
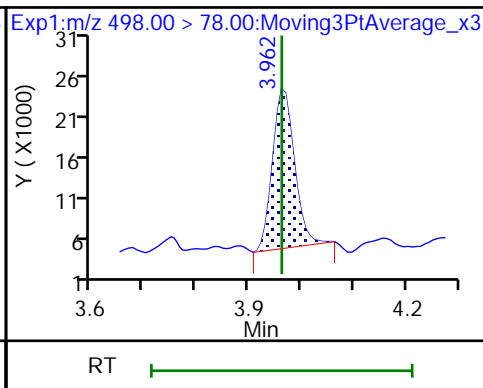
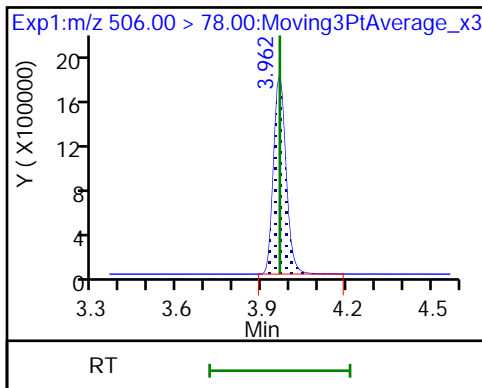
D 23 13C2 PFDA



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

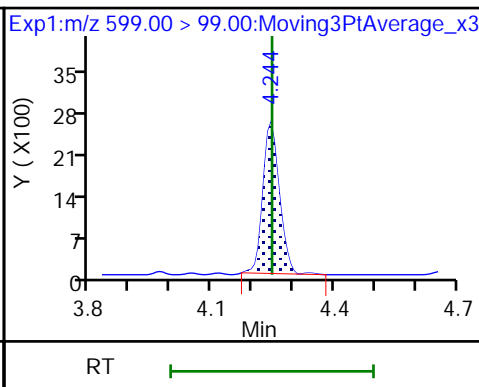
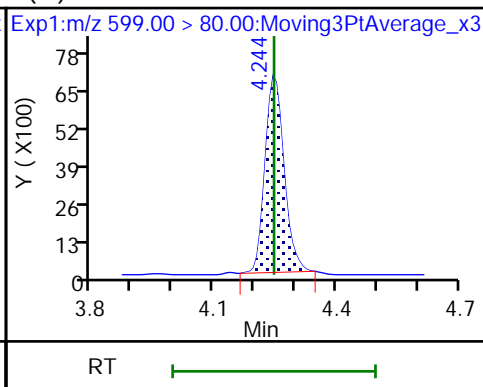
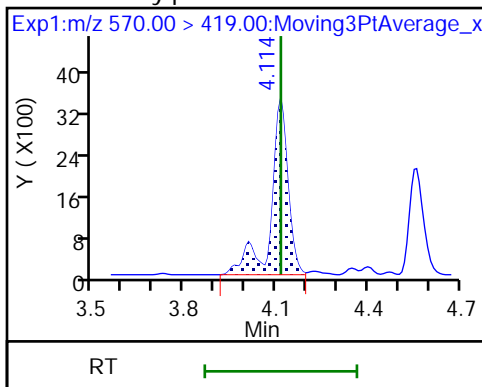
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamide

29 Perfluorodecanesulfonic acid

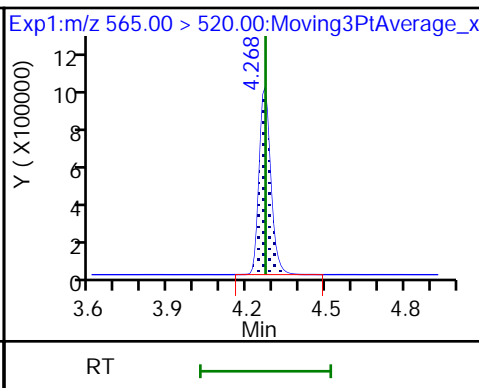
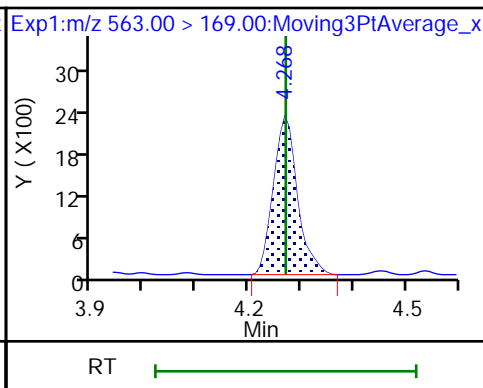
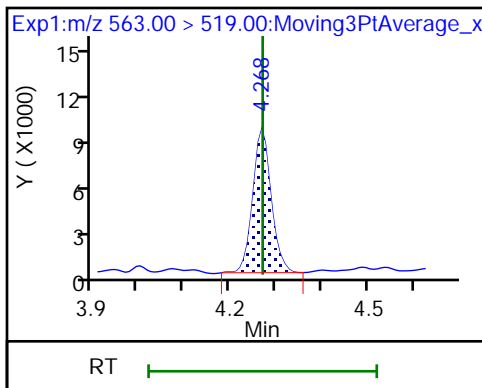
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

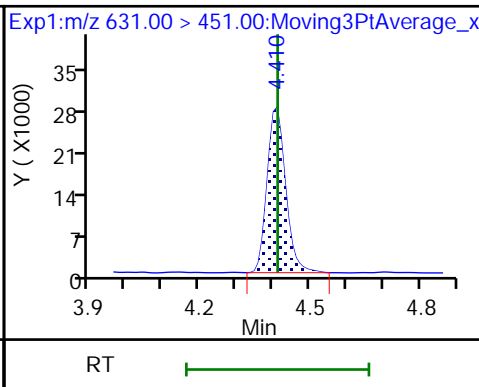
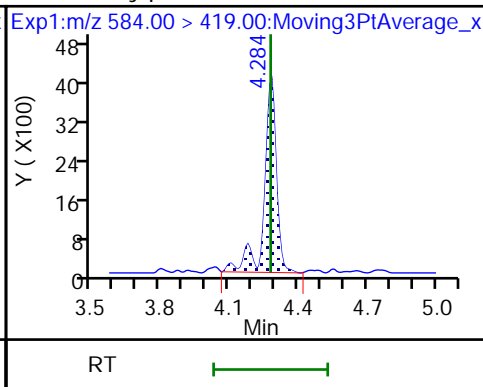
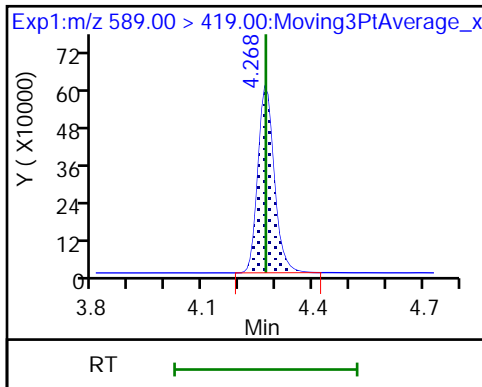
D 30 13C2 PFUnA

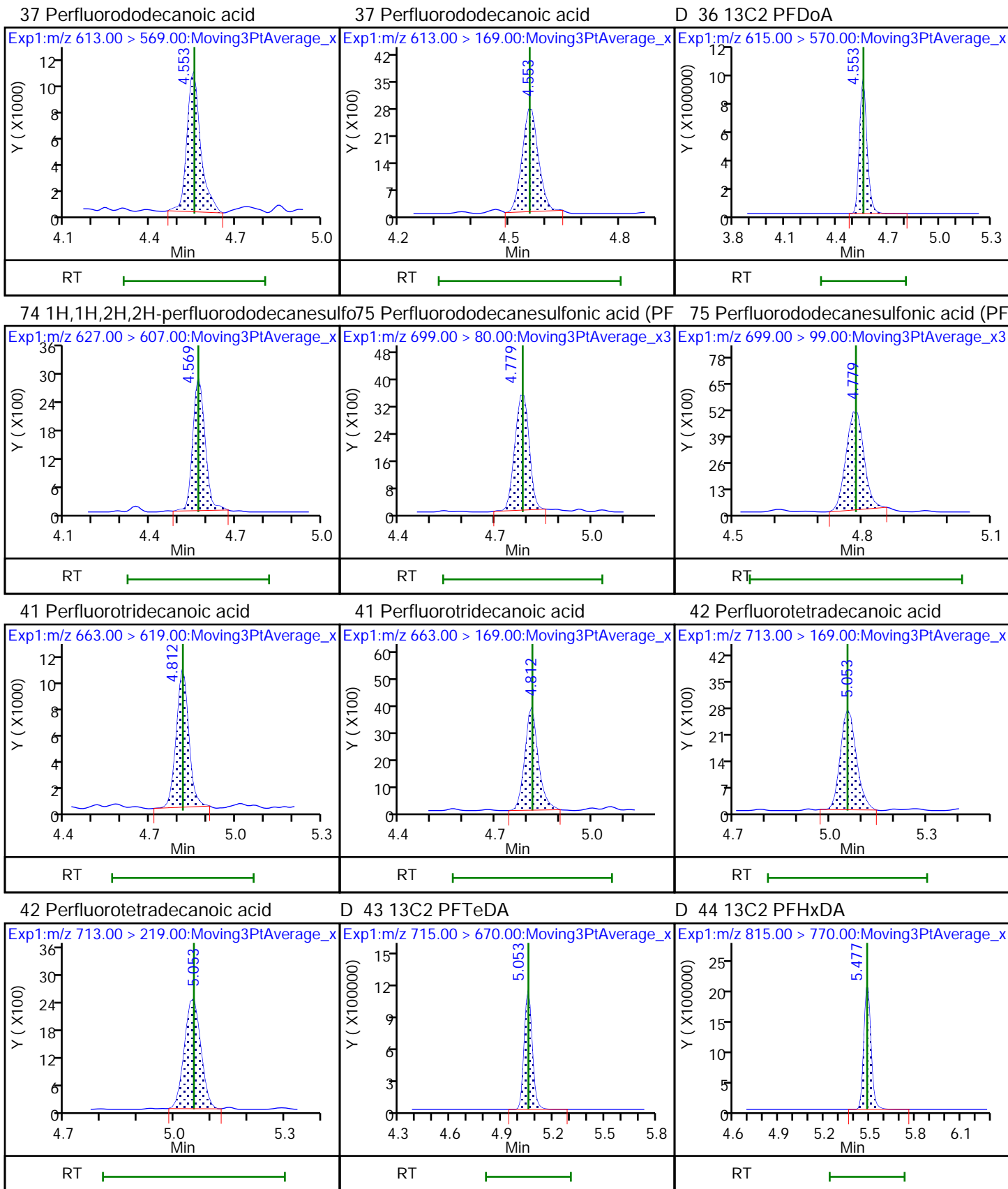


D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamide

66 11-Chloroeicosafuoro-3-oxaundecan

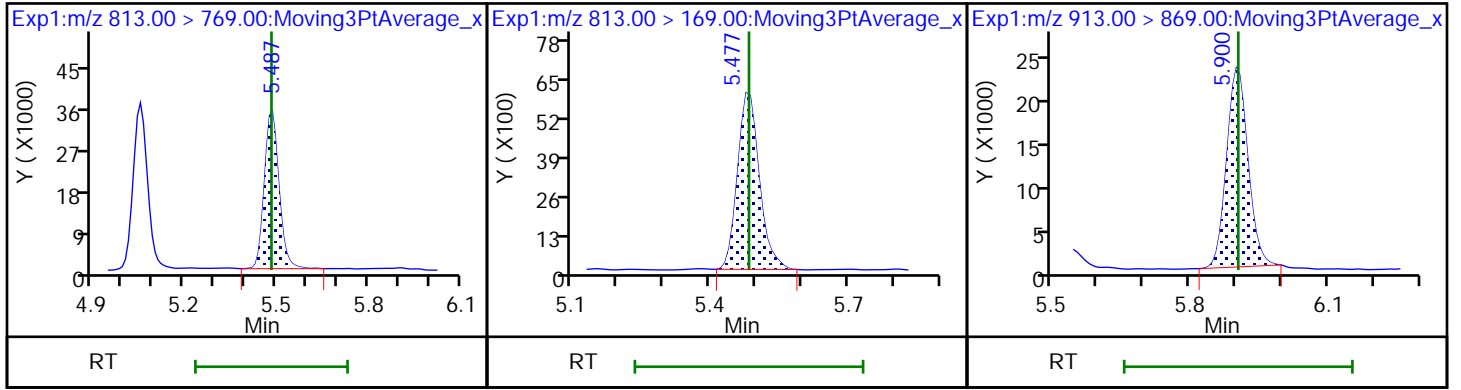




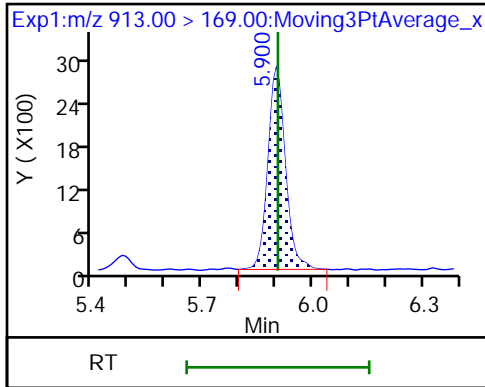
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid (M)



TestAmerica Sacramento

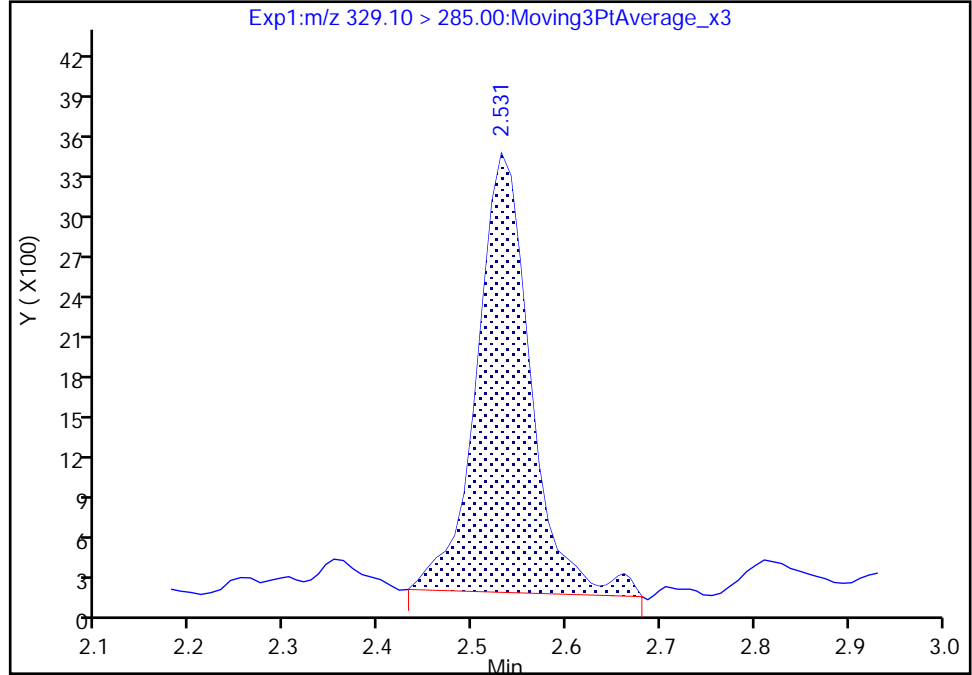
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_005.d
Injection Date: 29-Nov-2018 06:46:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

67 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

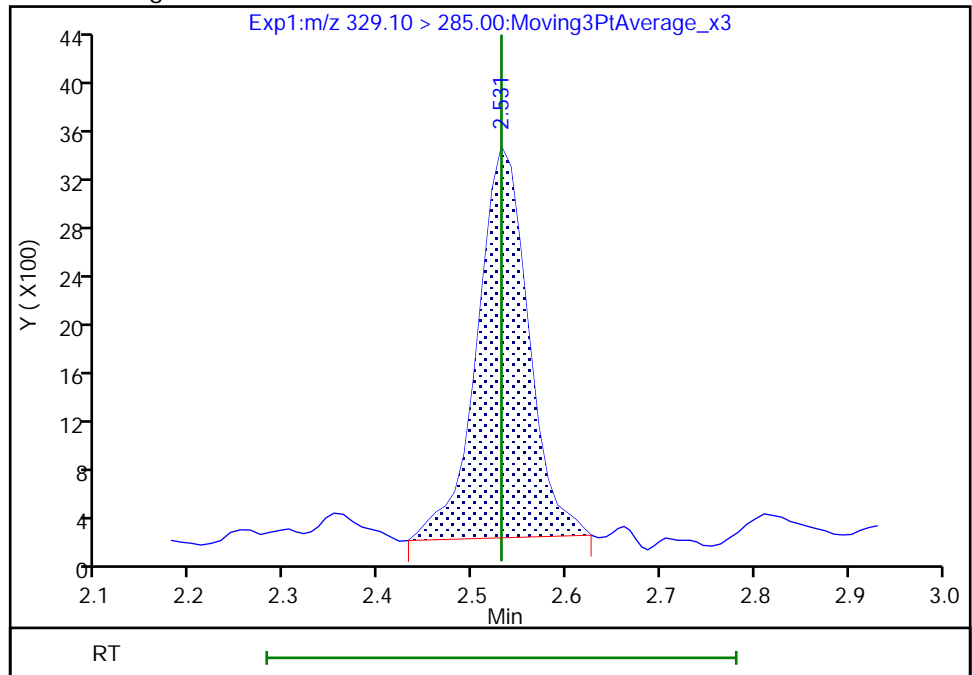
RT: 2.53
Area: 12943
Amount: 0.026189
Amount Units: ng/ml

Processing Integration Results



RT: 2.53
Area: 12125
Amount: 0.024950
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:06:27

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

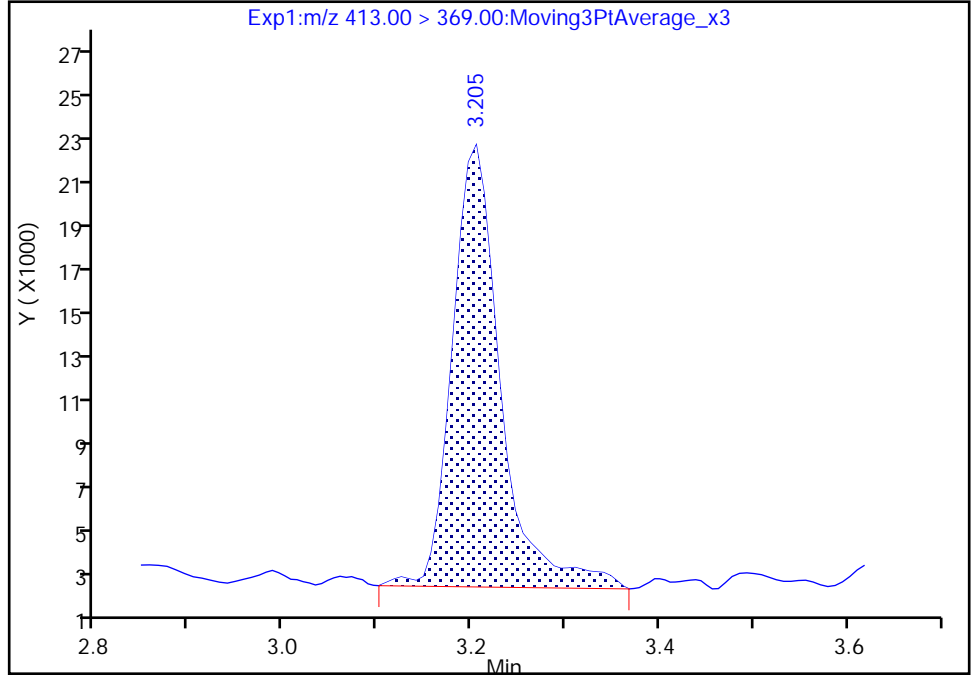
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_005.d
Injection Date: 29-Nov-2018 06:46:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

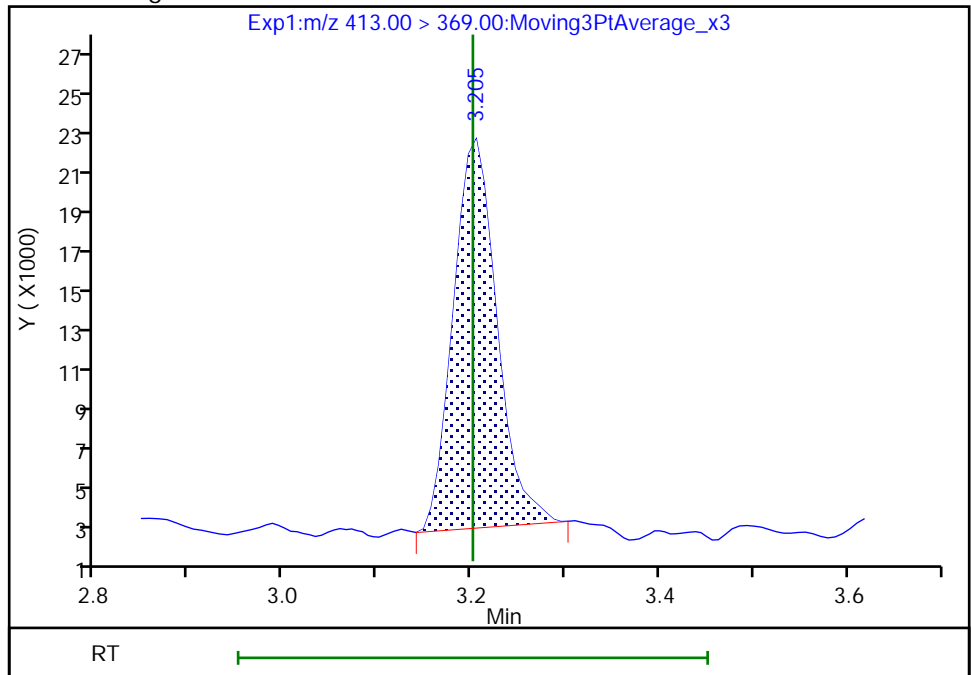
RT: 3.20
Area: 70991
Amount: 0.031560
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 62345
Amount: 0.028594
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:06:36
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

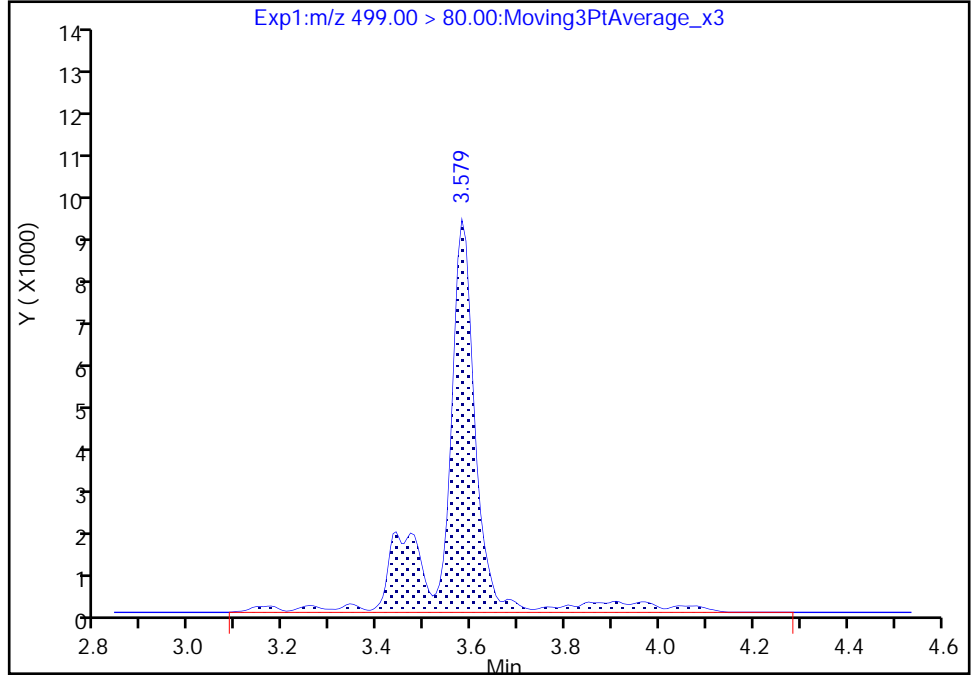
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_005.d
Injection Date: 29-Nov-2018 06:46:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

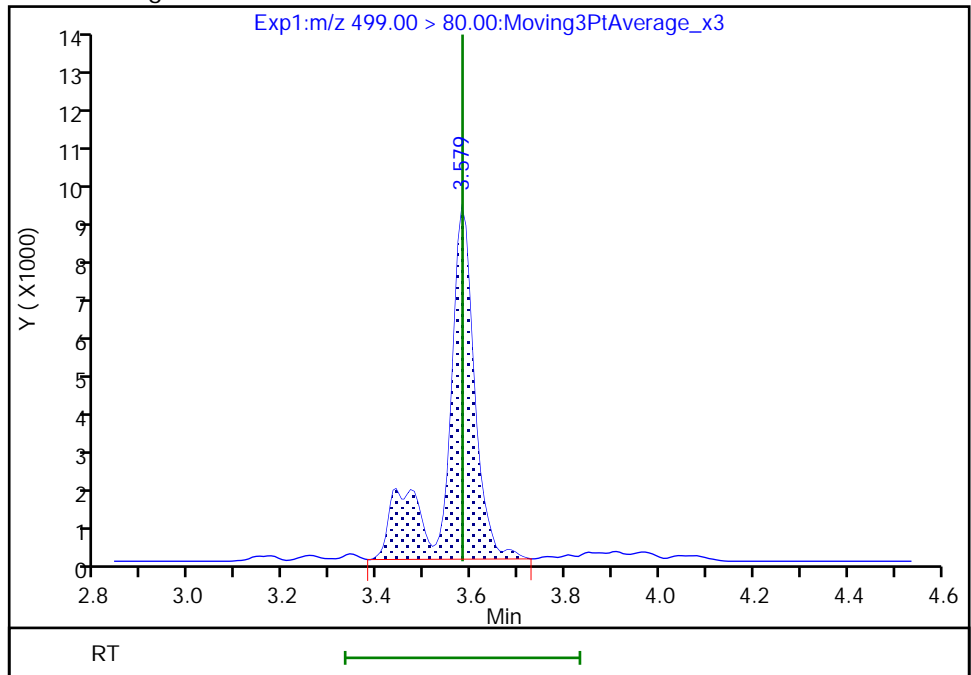
RT: 3.58
Area: 42853
Amount: 0.025711
Amount Units: ng/ml

Processing Integration Results



RT: 3.58
Area: 36702
Amount: 0.022640
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:06:45
Audit Action: Manually Integrated

Audit Reason: Baseline
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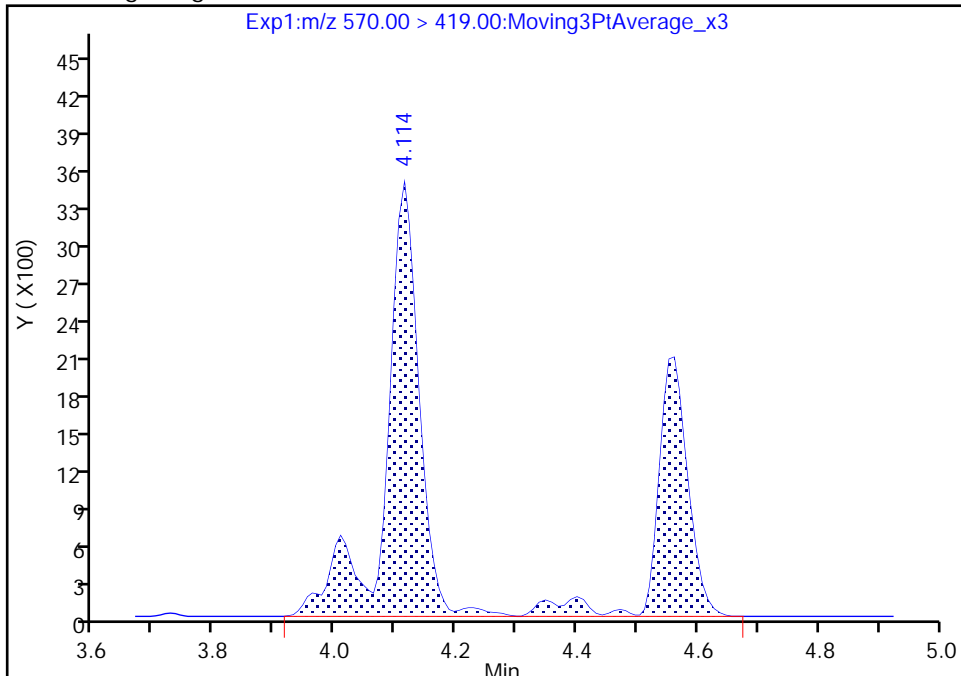
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_005.d
Injection Date: 29-Nov-2018 06:46:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

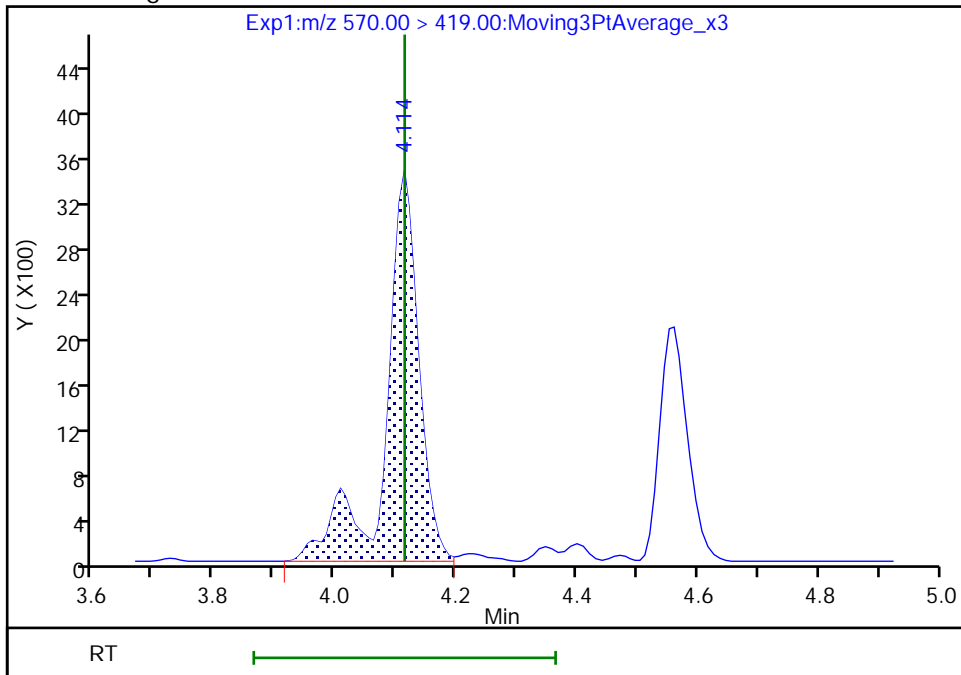
RT: 4.11
Area: 20692
Amount: 0.031098
Amount Units: ng/ml

Processing Integration Results



RT: 4.11
Area: 13069
Amount: 0.021053
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:07:00

Audit Action: Manually Integrated

Audit Reason: Split Peak

TestAmerica Sacramento

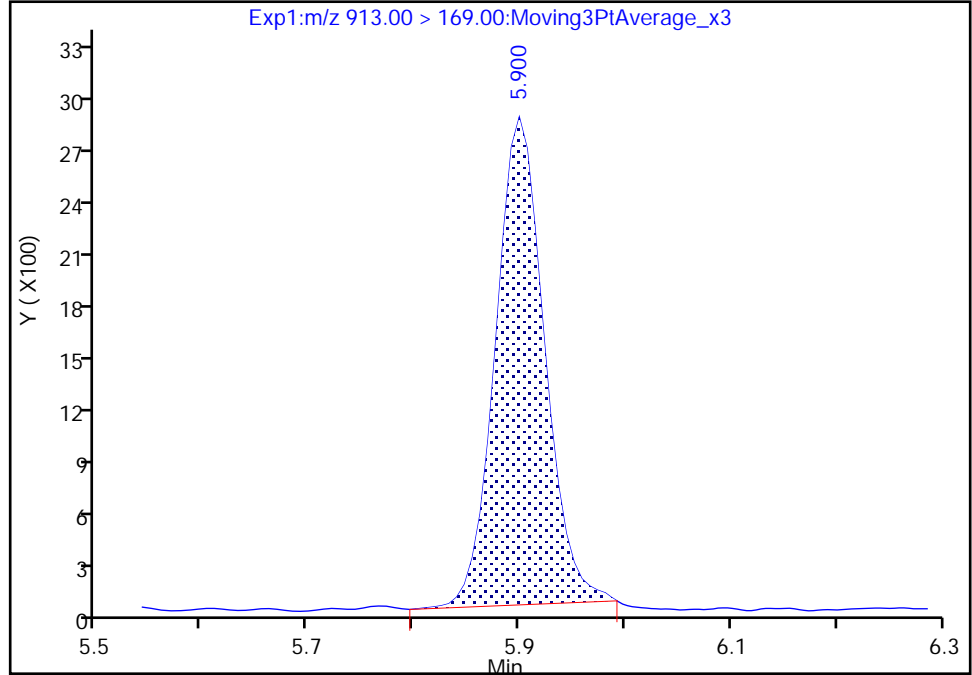
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_005.d
Injection Date: 29-Nov-2018 06:46:43 Instrument ID: A8_N
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

46 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 2

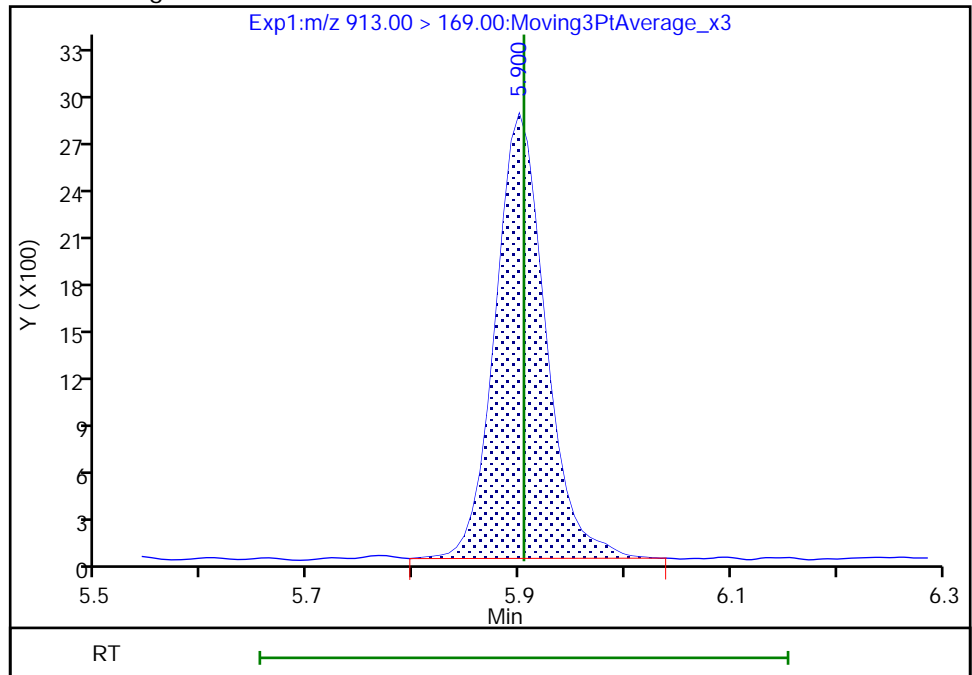
RT: 5.90
Area: 9112
Amount: 0.023694
Amount Units: ng/ml

Processing Integration Results



RT: 5.90
Area: 9424
Amount: 0.023694
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:07:21
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_006.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 29-Nov-2018 06:54:14 ALS Bottle#: 11 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37

Method: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 29-Nov-2018 10:25:10 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0326

First Level Reviewer: westendorfc Date: 29-Nov-2018 10:08:23

Ratio Calibration: None

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	1.748	1.749	-0.001	0.547	7384438	2.50	100.0	6313	
2 Perfluorobutanoic acid	212.90 > 169.00	1.748	1.753	-0.005	1.000	130666	0.0486	97.2	26.8	
D 3 13C5 PFPeA	267.90 > 223.00	2.051	2.061	-0.010	0.642	4578962	2.46	98.6	6260	
4 Perfluoropentanoic acid	262.90 > 219.00	2.062	2.062	0.0	1.005	102447	0.0513	103	16.1	
D 47 13C3 PFBS	301.90 > 80.00	2.083	2.091	-0.008	0.651	6428444	2.27	97.6	556213	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.094	0.0	1.005	120709	0.0450	Target=2.49	102	148
	298.90 > 99.00	2.094	2.094	0.0	1.005	53527	2.26(1.25-3.74)	102	32.1	
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.742	515716	2.27	97.2	956	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.374	-0.002	1.138	24814	0.0466	99.7	423	
6 Perfluorohexanoic acid	313.00 > 269.00	2.411	2.413	-0.002	1.000	96038	0.0482	Target=10.07	96.4	32.9
	313.00 > 119.00	2.411	2.413	-0.002	1.000	7884	12.18(5.03-15.10)	96.4	30.4	
D 7 13C2 PFHxA	315.00 > 270.00	2.411	2.413	-0.002	0.754	4970004	2.53	101	6607	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.431	2.432	-0.001	1.167	113572	0.0478	Target=2.71	102	584
	349.00 > 99.00	2.421	2.432	-0.011	1.162	41225	2.75(1.36-4.07)	102	219	
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.530	2.531	-0.001	1.000	21936	0.0475	95.0	29.6	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	2.530	2.532	-0.002	0.791	338614	2.49		99.5	2600	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.793	2.800	-0.007	1.000	108355	0.0526	Target=2.27	105	30.3	
363.00 > 169.00	2.793	2.800	-0.007	1.000	40940		2.65(1.13-3.40)	105	51.4	
D 9 13C4 PFHpA										
367.00 > 322.00	2.793	2.802	-0.009	0.874	4837987	2.51		100	8277	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.803	2.807	-0.004	1.000	114919	0.0454	Target=3.00	99.8	533	
399.00 > 99.00	2.803	2.807	-0.004	1.000	37494		3.06(1.50-4.49)	99.8	135	
D 11 18O2 PFHxS										
403.00 > 84.00	2.803	2.807	-0.004	0.877	5512544	2.50		106	9216	
77 DONA										
377.00 > 251.00	2.849	2.851	-0.002	0.796	275242	0.0500	Target=1.69	106	308	
377.00 > 85.00	2.849	2.851	-0.002	0.796	159774		1.72(0.85-2.54)	106	702	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.174	3.178	-0.004	0.993	813210	2.40		101	3470	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.182	3.181	0.001	1.003	25717	0.0483		102	9.0	
D 73 13C8 PFOA										
421.00 > 376.00	3.189	3.195	-0.006	0.998	6870209	2.47		101	13590	
D 14 13C4 PFOA										
417.00 > 372.00	3.197	3.200	-0.003	1.000	4908199	2.60		104	9169	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.197	3.200	-0.003	0.893	90590	0.0498	Target=3.88	105	573	
449.00 > 99.00	3.189	3.200	-0.011	0.891	23782		3.81(1.94-5.82)	105	219	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.197	3.201	-0.004	1.000	114091	0.0512	Target=1.68	102	12.9	M
413.00 > 169.00	3.197	3.201	-0.004	1.000	60529		1.88(0.84-2.52)	102	33.1	M
* 62 13C2 PFOA										
415.00 > 370.00	3.197	3.201	-0.004		4840743	2.50			7175	
D 72 13C8 PFOS										
507.00 > 99.00	3.571	3.576	-0.005	1.117	1813033	2.39		100.0	11616	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.579	3.581	-0.002	1.000	74516	0.0481	Target=4.62	104	136	M
499.00 > 99.00	3.579	3.581	-0.002	1.000	17343		4.30(2.31-6.93)	104	129	M
D 18 13C4 PFOS										
503.00 > 80.00	3.579	3.581	-0.002	1.119	3319786	2.31		96.6	9256	
D 19 13C5 PFNA										
468.00 > 423.00	3.587	3.590	-0.003	1.122	3974069	2.52		101	9954	
20 Perfluorononanoic acid										
463.00 > 419.00	3.587	3.590	-0.003	1.000	85878	0.0524	Target=3.79	105	50.7	
463.00 > 169.00	3.587	3.590	-0.003	1.000	21736		3.95(1.90-5.69)	105	191	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.778	3.783	-0.005	1.055	127433	0.0457		98.2	530	

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	3.931	3.931	-0.001	1.098	54663	0.0506	Target=2.65	105	435	
549.00 > 99.00	3.923	3.931	-0.008	1.096	18614		2.94(1.33-3.97)	105	155	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.946	3.948	-0.002	1.000	21789	0.0472		98.6	198	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.946	3.948	-0.002	1.000	69265	0.0508	Target=4.73	102	86.9	
513.00 > 169.00	3.946	3.948	-0.002	1.000	12467		5.56(2.36-7.09)	102	86.7	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.946	3.948	-0.002	1.234	843874	2.31		96.3	4926	
D 23 13C2 PFDA										
515.00 > 470.00	3.946	3.948	-0.002	1.234	3453391	2.50		100	8518	
D 21 13C8 FOSA										
506.00 > 78.00	3.962	3.962	0.0	1.239	5291146	2.49		99.6	5945	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.962	3.962	0.0	1.000	109703	0.0518		104	7.0	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.106	4.111	-0.005	1.284	1699195	2.52		101	3724	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.106	4.115	-0.009	1.000	30364	0.0475		95.0	28.2	M
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.244	4.247	-0.003	1.186	44921	0.0499	Target=2.77	104	343	
599.00 > 99.00	4.244	4.247	-0.003	1.186	15199		2.96(1.39-4.16)	104	132	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.268	4.270	-0.002	1.000	54326	0.0540	Target=4.24	108	60.0	M
563.00 > 169.00	4.268	4.270	-0.002	1.000	11422		4.76(2.12-6.36)	108	78.6	M
D 30 13C2 PFUnA										
565.00 > 520.00	4.268	4.270	-0.002	1.335	2813319	2.53		101	5543	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.268	4.271	-0.003	1.335	1775996	2.50		99.8	3128	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.276	4.279	-0.003	1.002	34087	0.0558		112	206	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.411	4.412	-0.001	1.232	200270	0.0489		104	632	
35 MeFOSA										
512.00 > 169.00	4.462	4.465	-0.003		27577	NC			110	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.553	4.556	-0.003	1.000	68540	0.0520	Target=4.27	104	69.0	
613.00 > 169.00	4.553	4.556	-0.003	1.000	12828		5.34(2.13-6.40)	104	144	
D 36 13C2 PFDaA										
615.00 > 570.00	4.553	4.556	-0.003	1.424	3030334	2.57		103	7332	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.561	4.569	-0.008	1.156	17055	0.0510		106	227	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.637	4.643	-0.006		33360	NC			218	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.779	4.785	-0.006	1.335	19381	0.0473	Target=0.00	97.7	274	
699.00 > 99.00	4.779	4.785	-0.006	1.335	28317		0.68(0.00-0.00)	97.7	321	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.812	4.815	-0.003	1.057	62006	0.0484	Target=2.51	96.8	62.2	
663.00 > 169.00	4.812	4.815	-0.003	1.057	20121		3.08(1.25-3.76)	96.8	263	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.043	5.053	-0.010	0.998	18999	0.0509	Target=1.42	102	405	
713.00 > 219.00	5.043	5.053	-0.010	0.998	13819		1.37(0.71-2.13)	102	396	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.053	5.054	-0.001	1.580	3609415	2.57		103	10819	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.478	5.481	-0.003	1.713	6468739	2.49		99.6	10883	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.478	5.484	-0.006	1.000	165063	0.0488	Target=5.72	97.7	20.9	
813.00 > 169.00	5.478	5.484	-0.006	1.000	31149		5.30(2.86-8.58)	97.7	279	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.900	5.904	-0.004	1.077	152162	0.0507	Target=7.65	101	19.5	
913.00 > 169.00	5.900	5.904	-0.004	1.077	19157		7.94(3.83-11.48)	101	237	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00009

Amount Added: 1.00

Units: mL

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_006.d

Injection Date: 29-Nov-2018 06:54:14

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

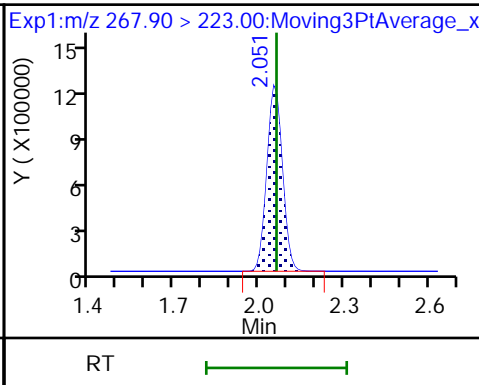
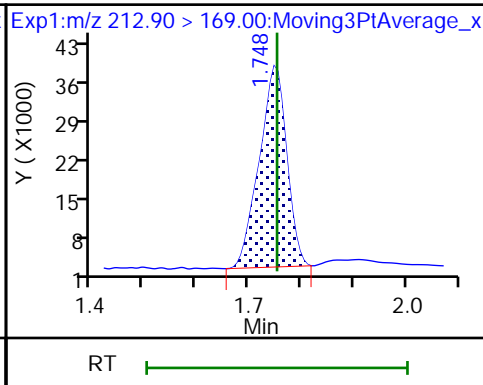
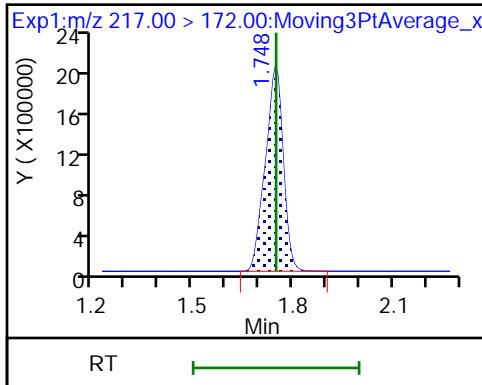
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

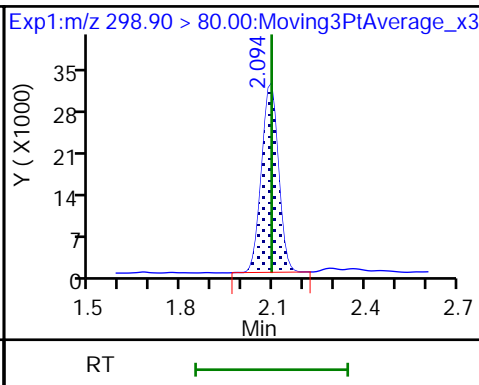
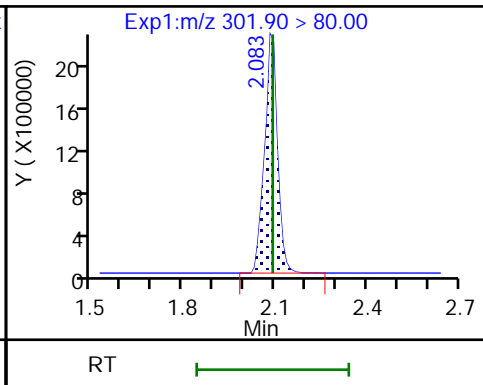
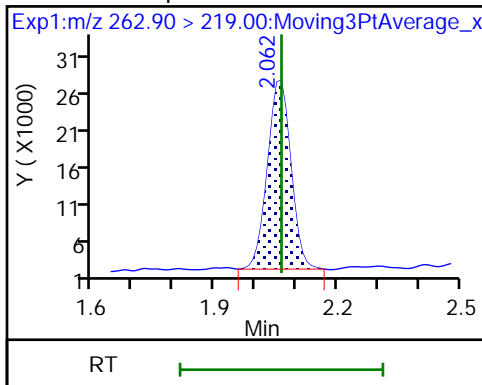
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

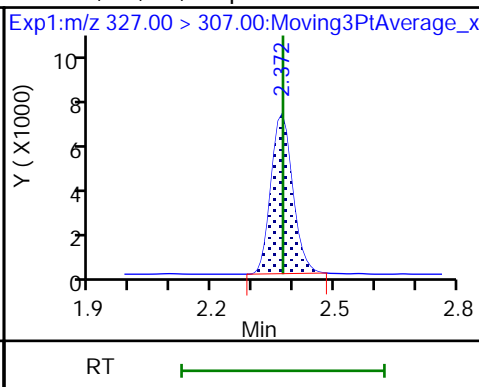
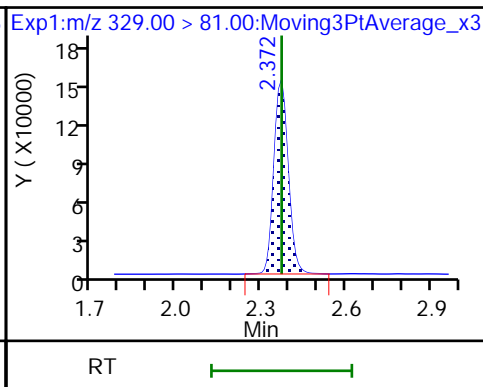
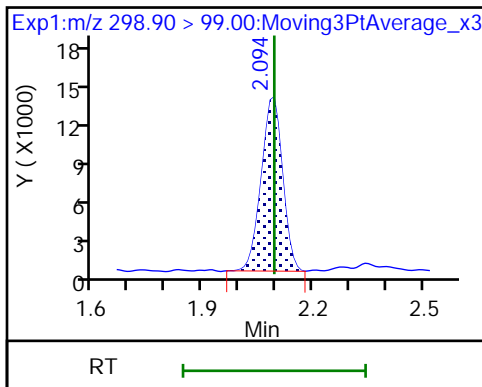
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

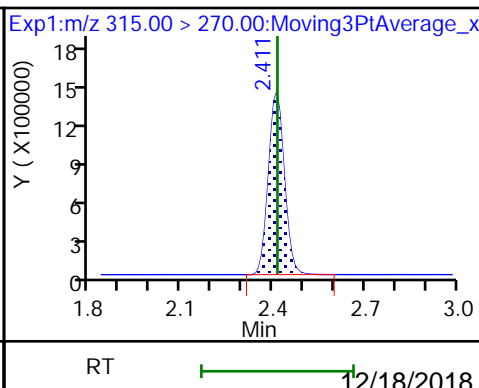
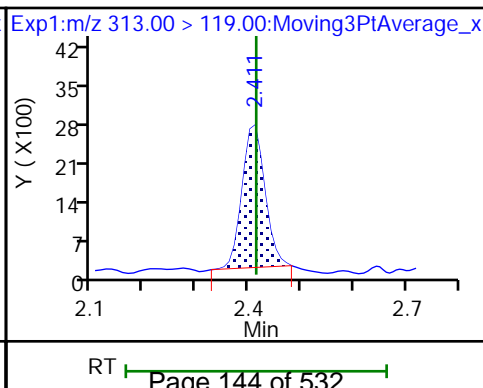
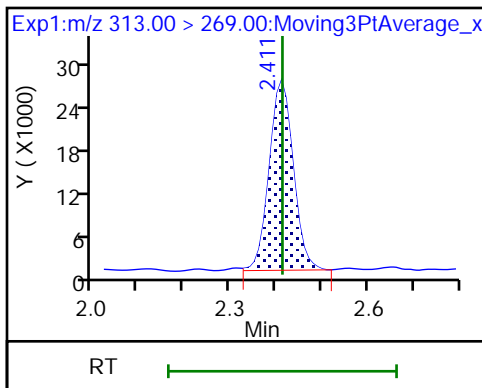
61 1H,1H,2H,2H-perfluorohexanesulfoni

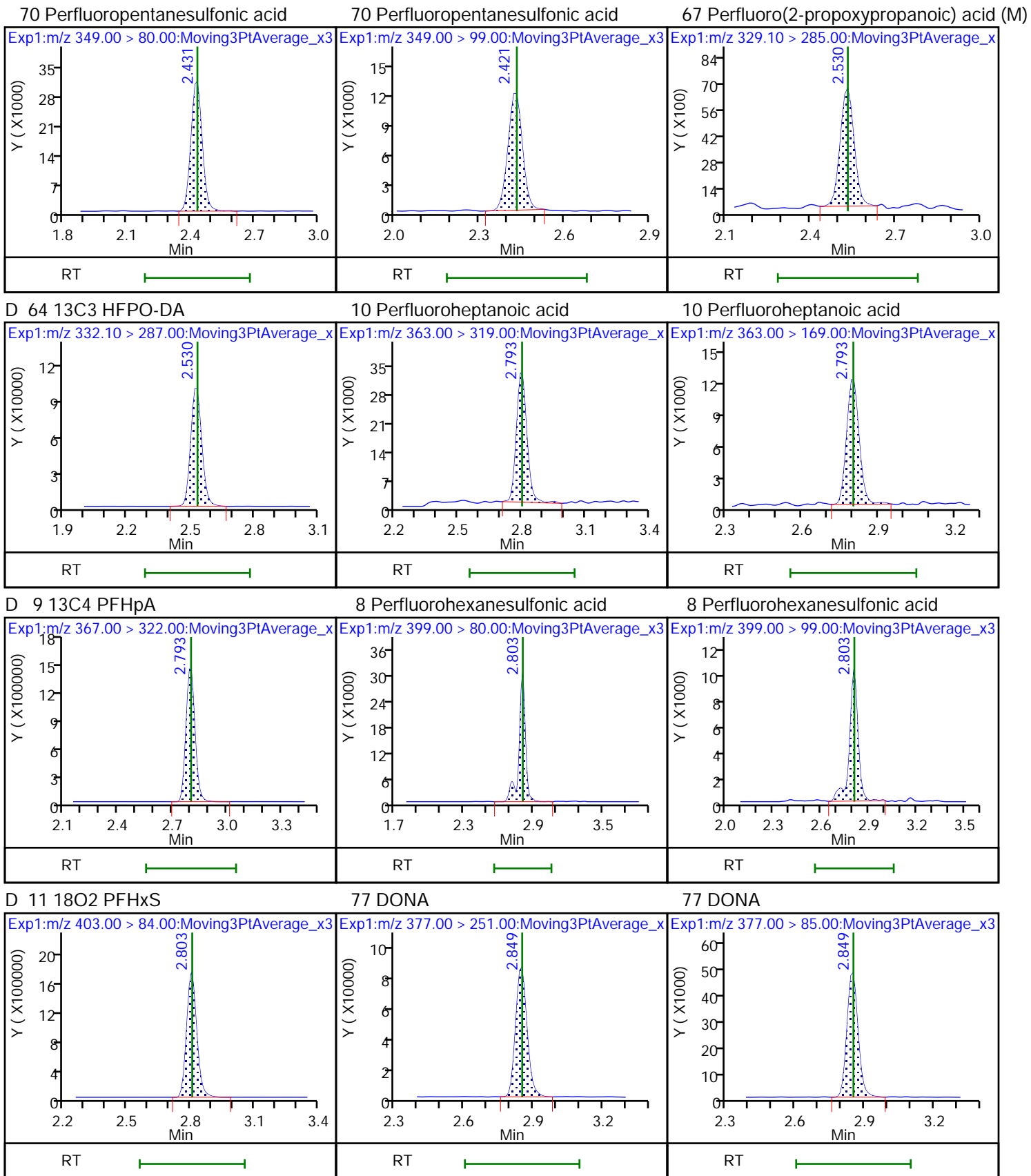


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

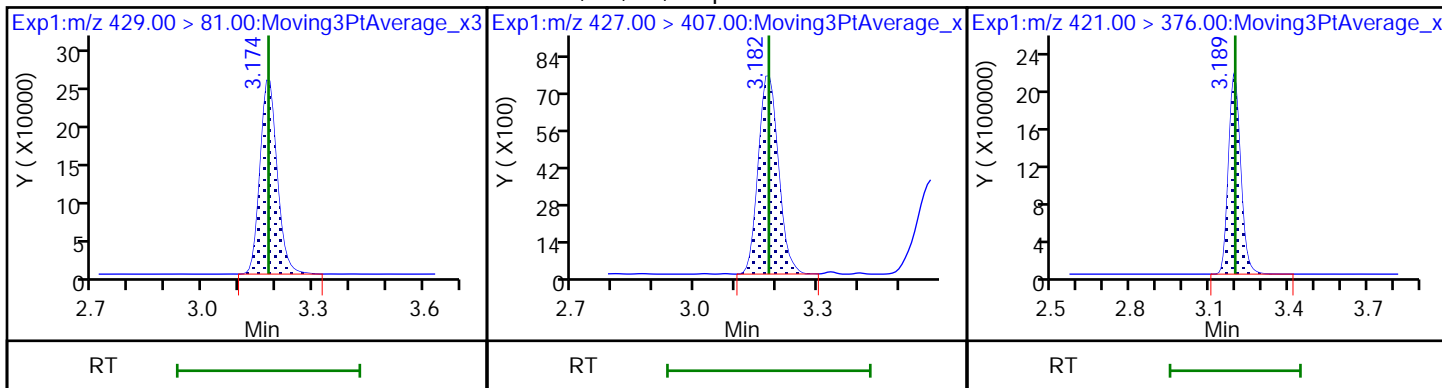
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

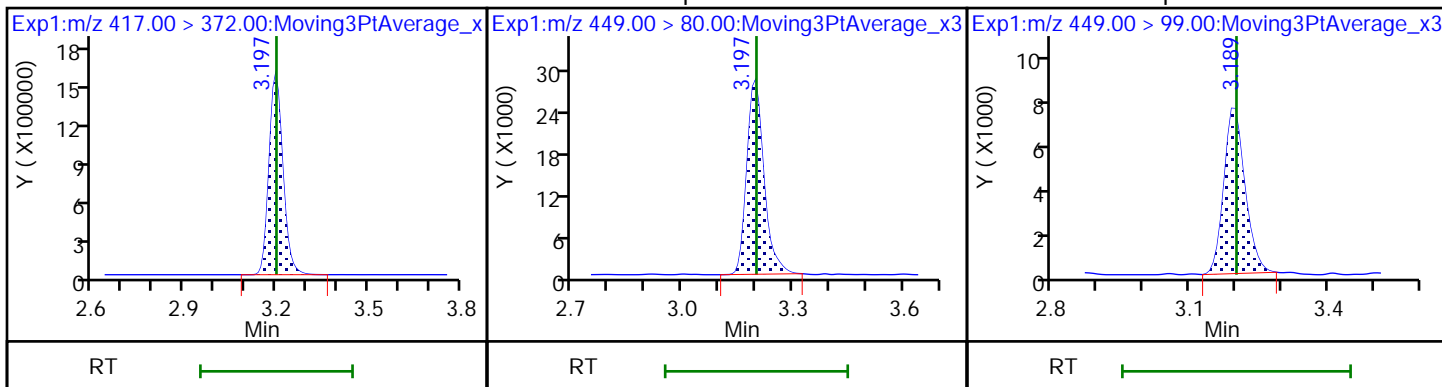
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

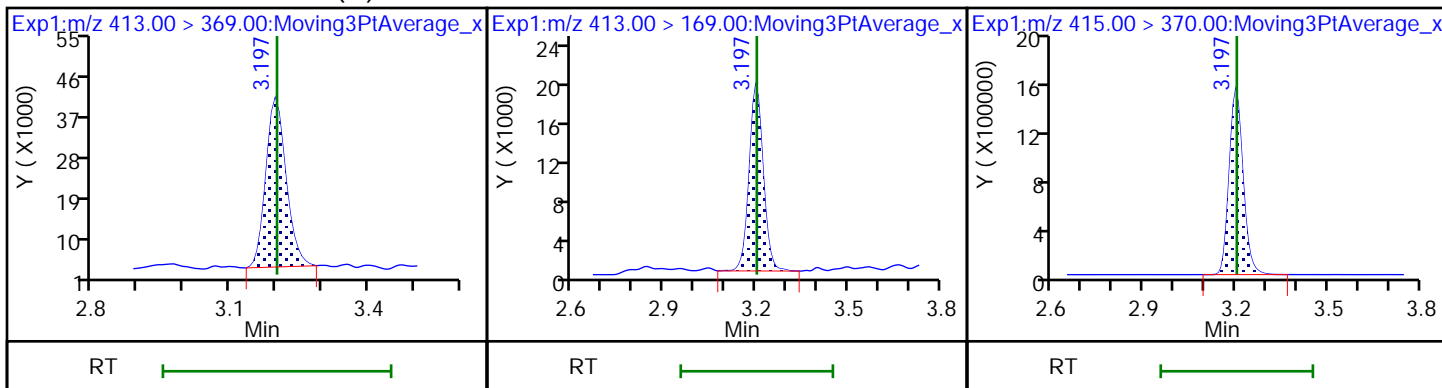
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid (M)

15 Perfluorooctanoic acid

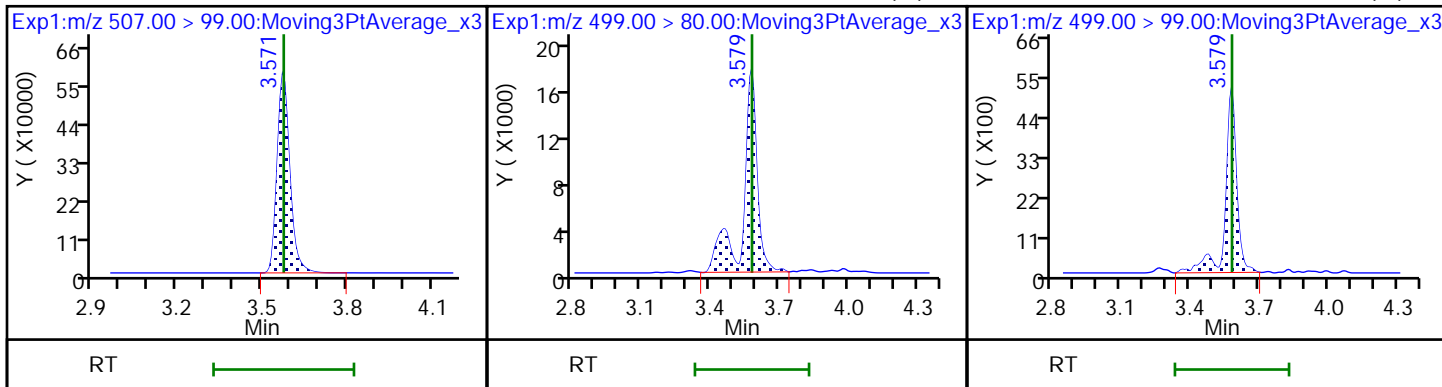
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid (M)

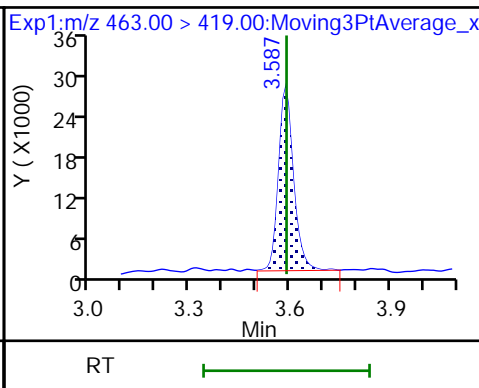
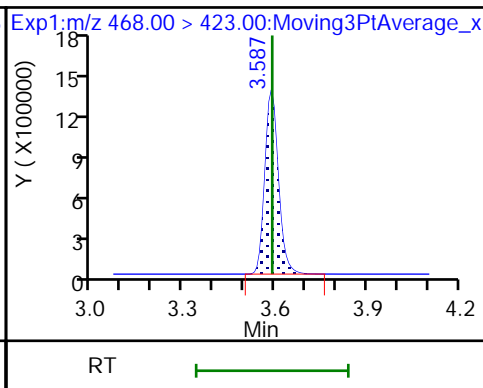
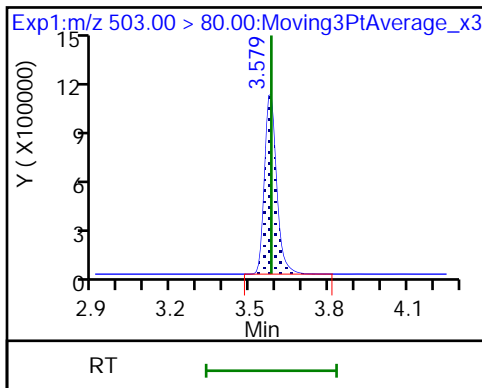
17 Perfluorooctanesulfonic acid (M)



D 18 13C4 PFOS

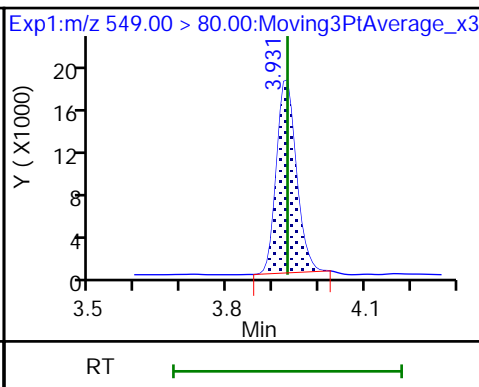
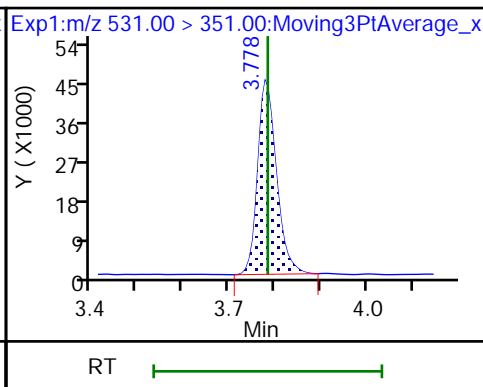
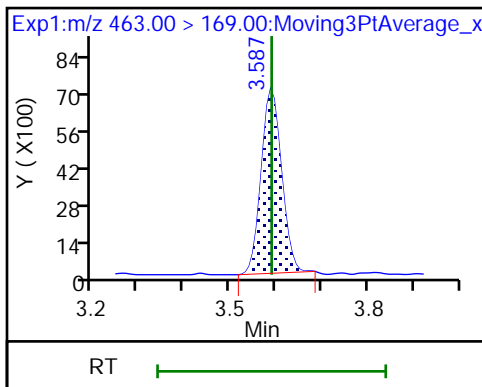
D 19 13C5 PFNA

20 Perfluorononanoic acid



20 Perfluorononanoic acid

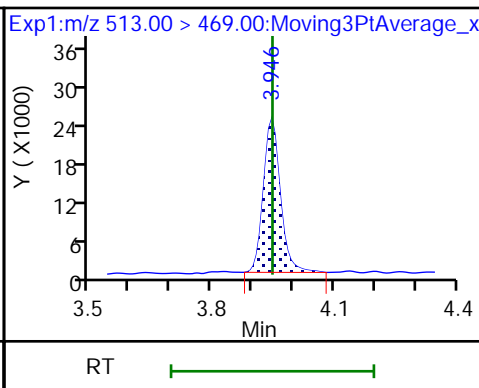
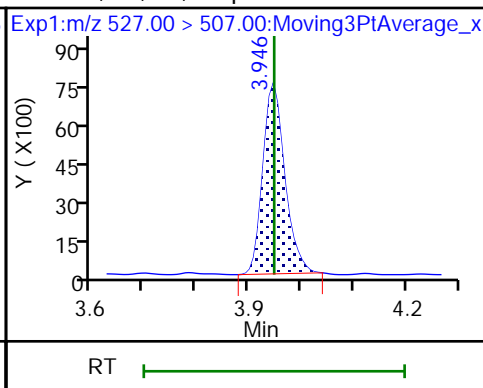
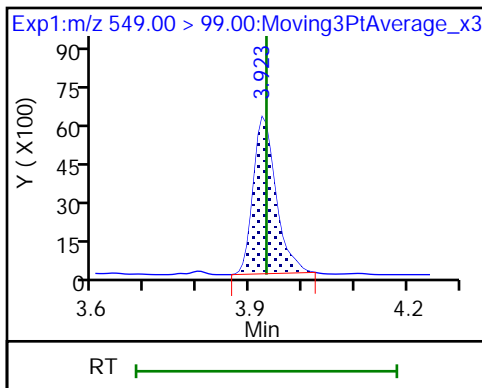
69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid



68 Perfluorononanesulfonic acid

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

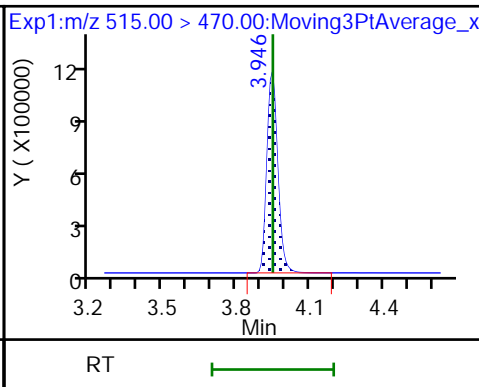
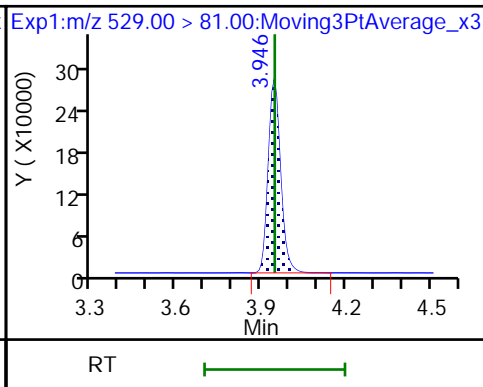
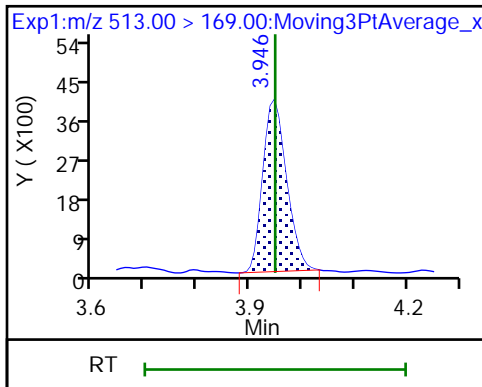
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 26 M2-8:2 FTS

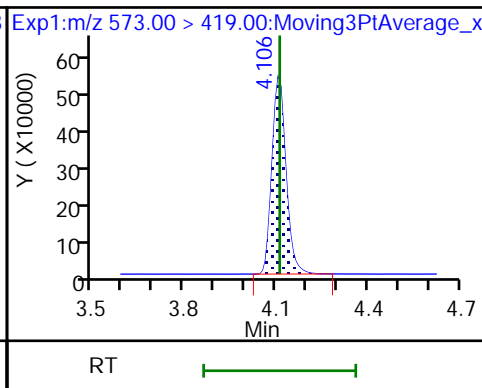
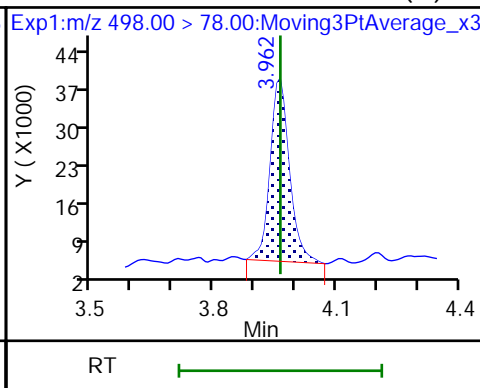
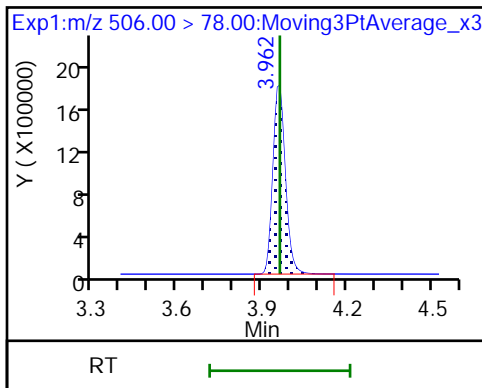
D 23 13C2 PFDA



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide (M)

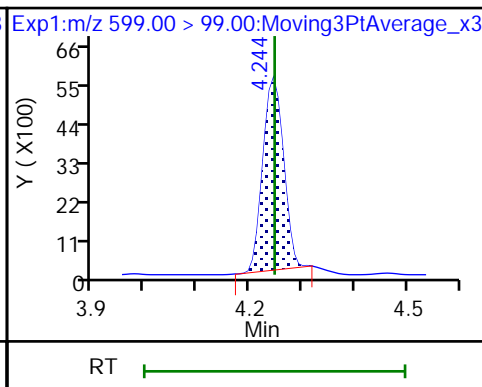
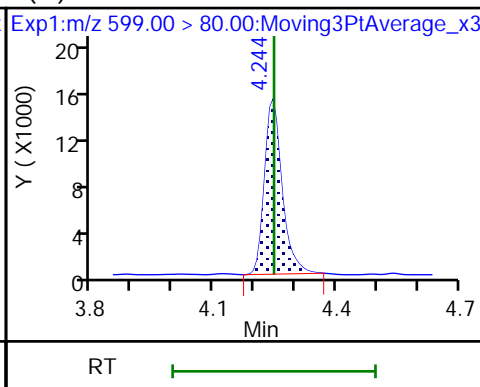
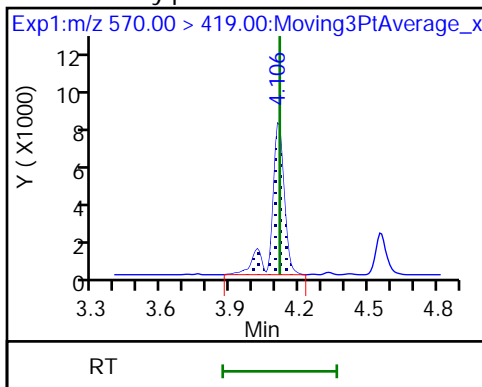
D 27 d3-NMeFOSA



28 N-methylperfluorooctanesulfonamide (M)

29 Perfluorodecanesulfonic acid

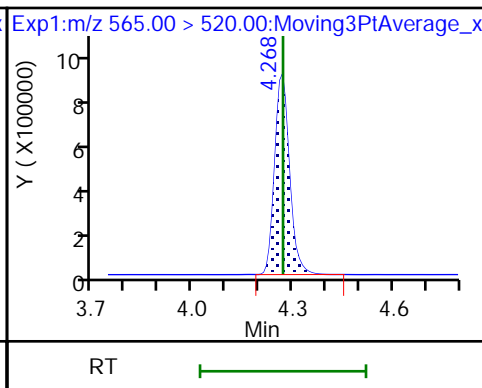
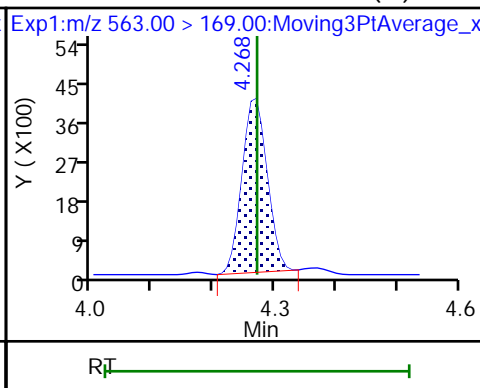
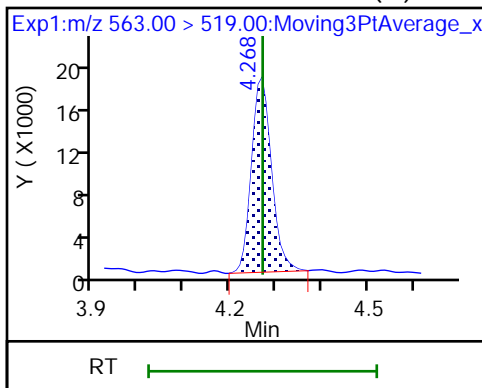
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid (M)

31 Perfluoroundecanoic acid (M)

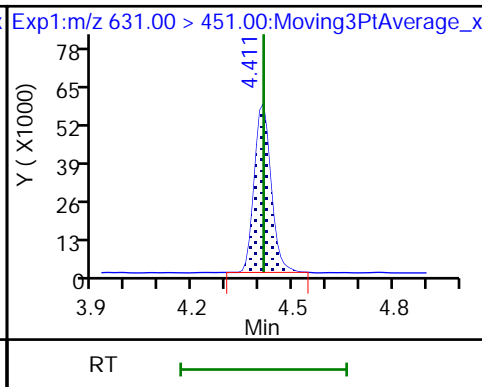
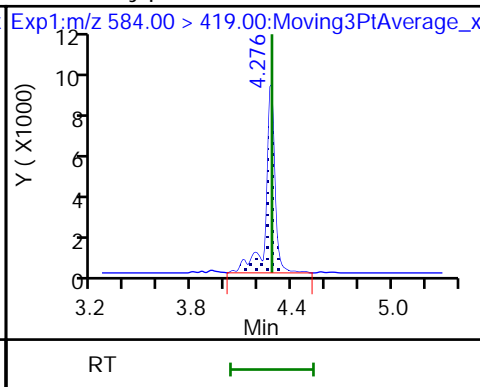
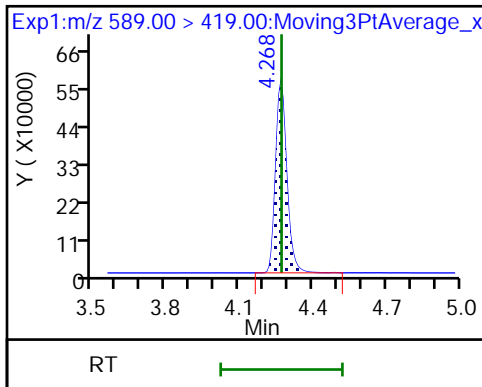
D 30 13C2 PFUnA

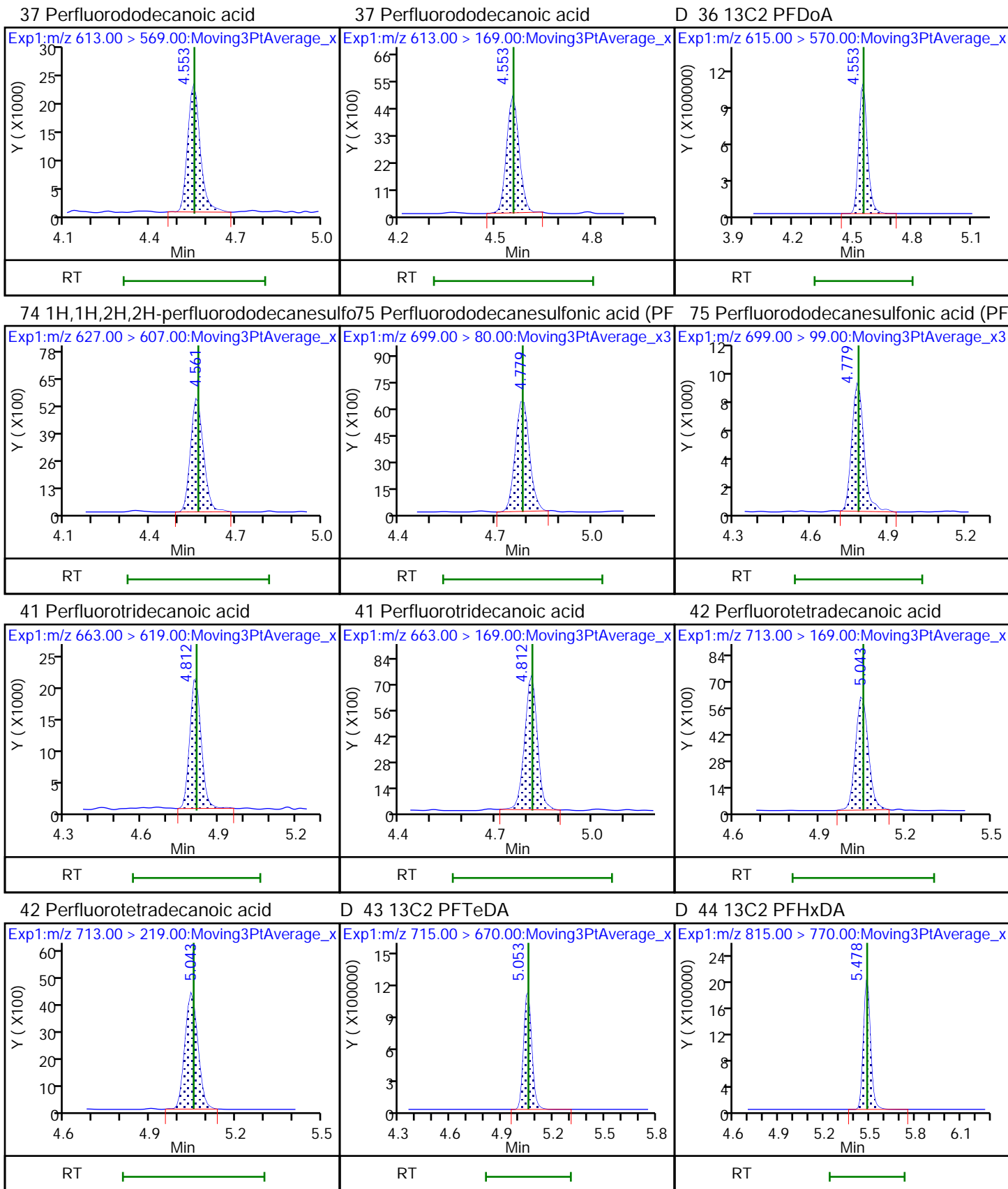


D 32 d5-NEtFOSA

33 N-ethylperfluorooctanesulfonamide

66 11-Chloroeicosafluoro-3-oxaundecan

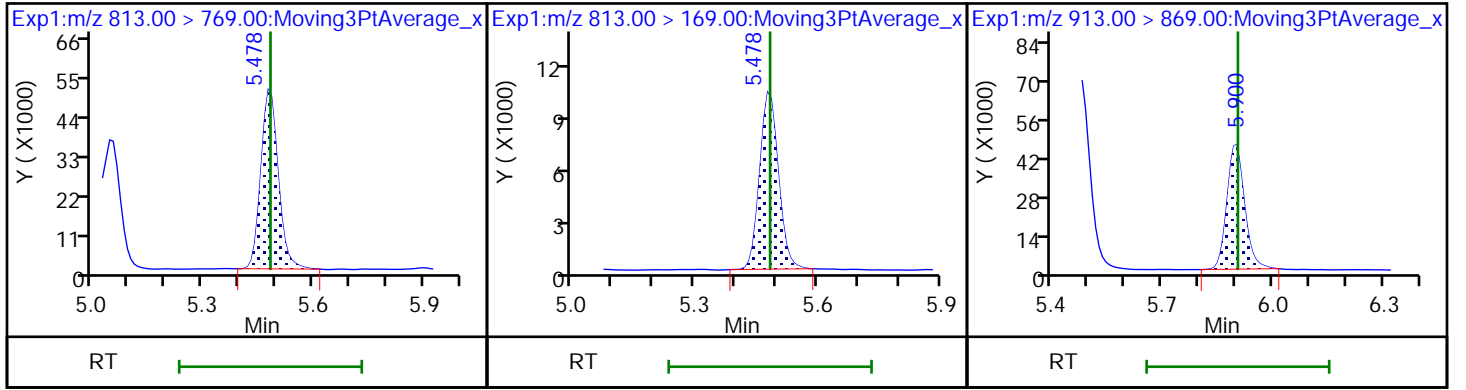




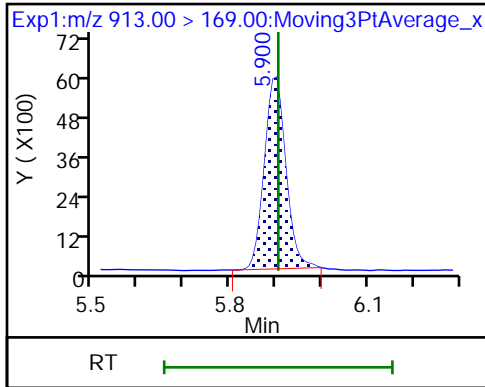
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

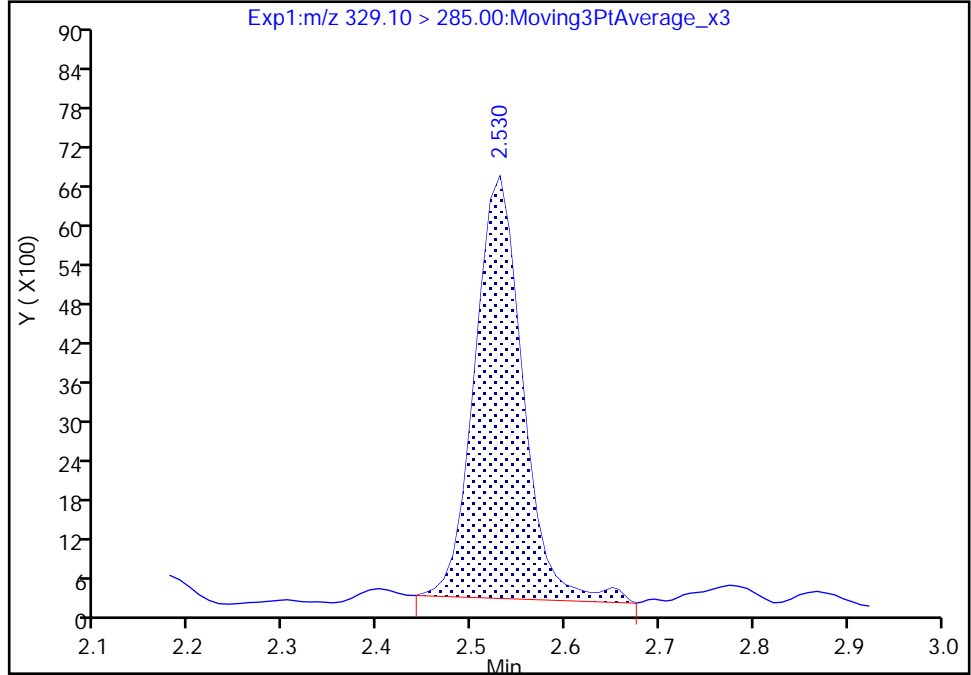
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Injection Date: 29-Nov-2018 06:54:14 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

67 Perfluoro(2-propoxypropanoic) acid, CAS: 13252-13-6

Signal: 1

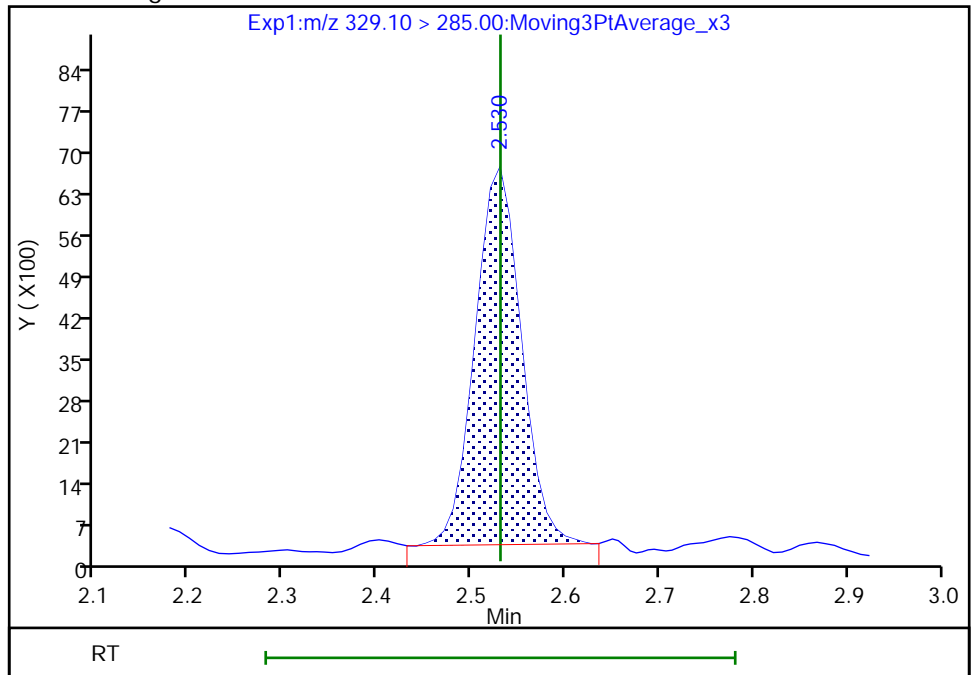
RT: 2.53
Area: 23120
Amount: 0.049708
Amount Units: ng/ml

Processing Integration Results



RT: 2.53
Area: 21936
Amount: 0.047508
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:07:56
Audit Action: Manually Integrated

Audit Reason: Baseline
Page 151 of 532

TestAmerica Sacramento

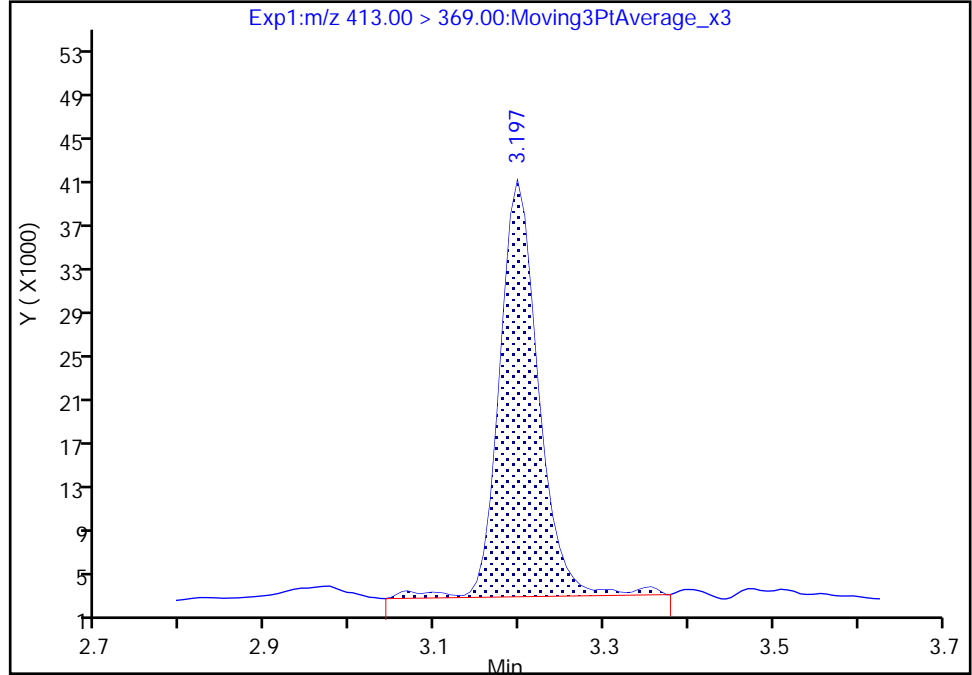
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Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

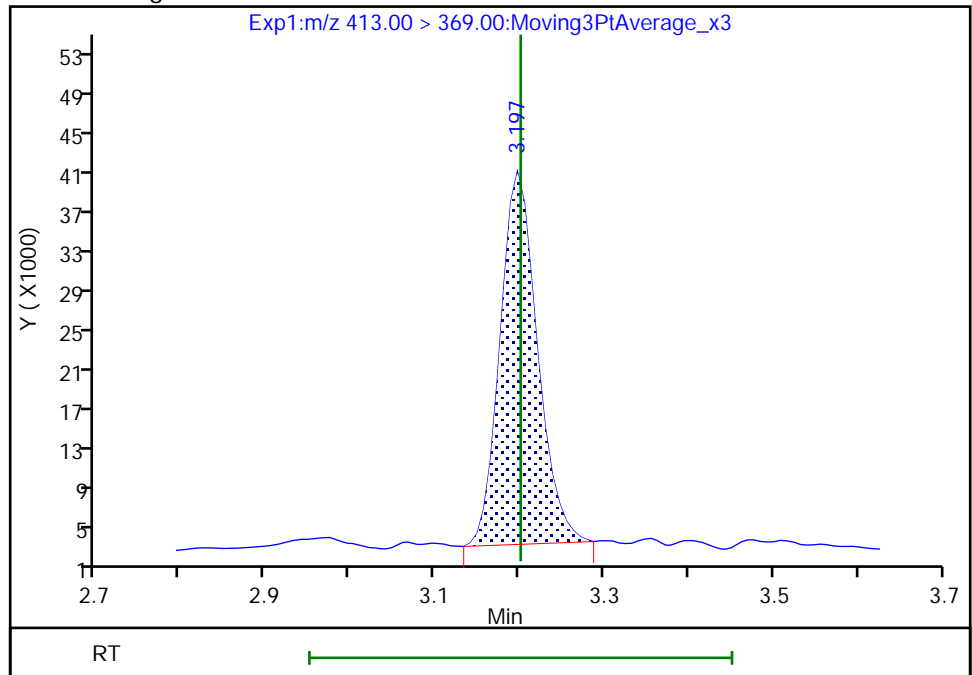
RT: 3.20
Area: 121133
Amount: 0.053912
Amount Units: ng/ml

Processing Integration Results



RT: 3.20
Area: 114091
Amount: 0.051236
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:08:07

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

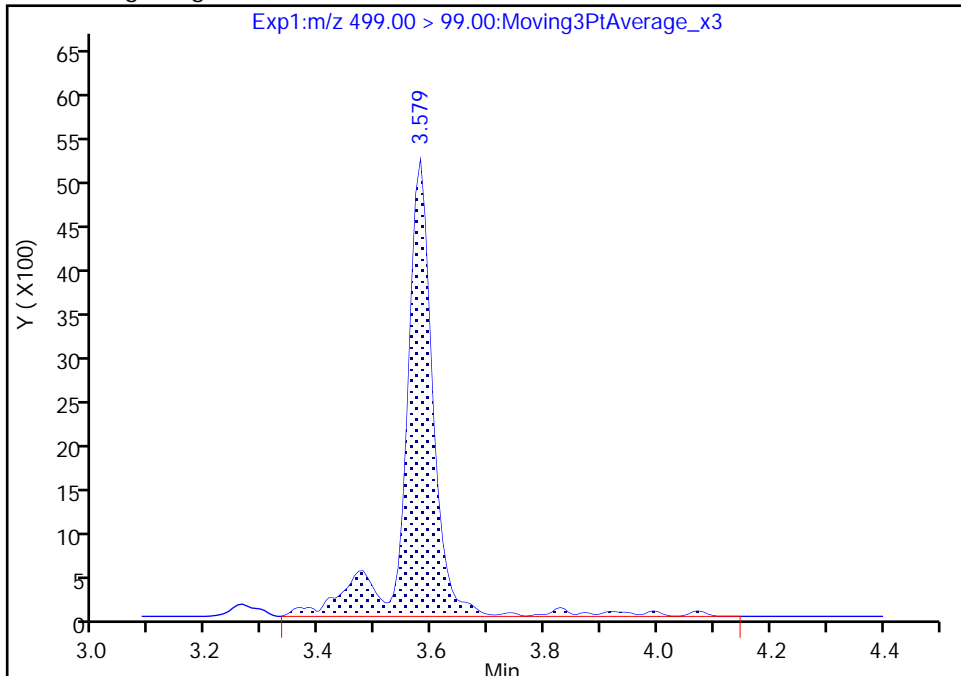
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Injection Date: 29-Nov-2018 06:54:14 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

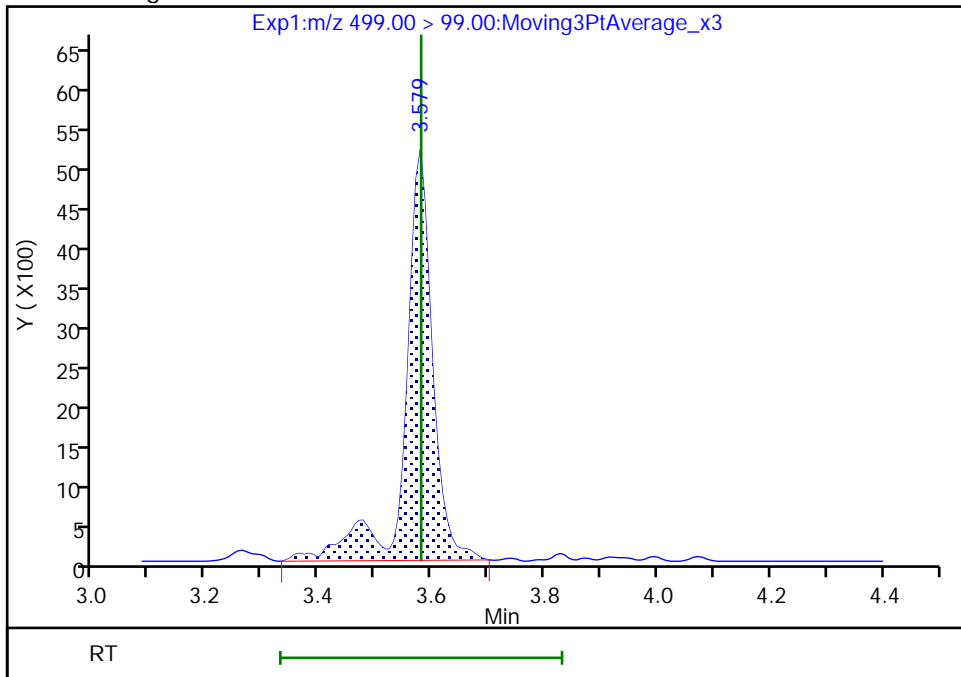
RT: 3.58
Area: 18267
Amount: 0.049132
Amount Units: ng/ml

Processing Integration Results



RT: 3.58
Area: 17343
Amount: 0.048119
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:08:13
Audit Action: Manually Integrated

TestAmerica Sacramento

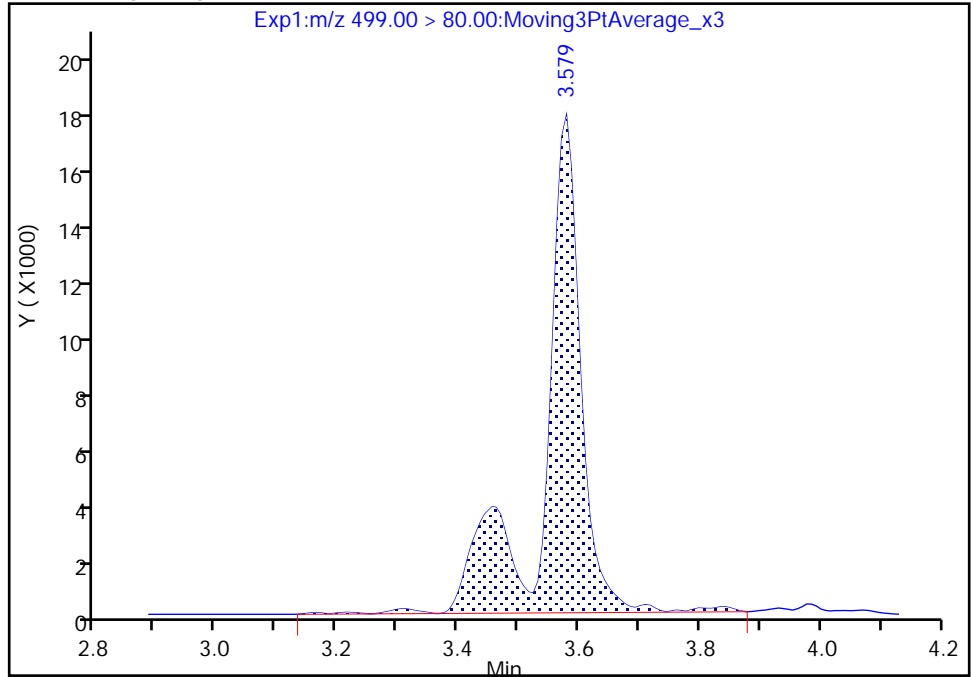
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Injection Date: 29-Nov-2018 06:54:14 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

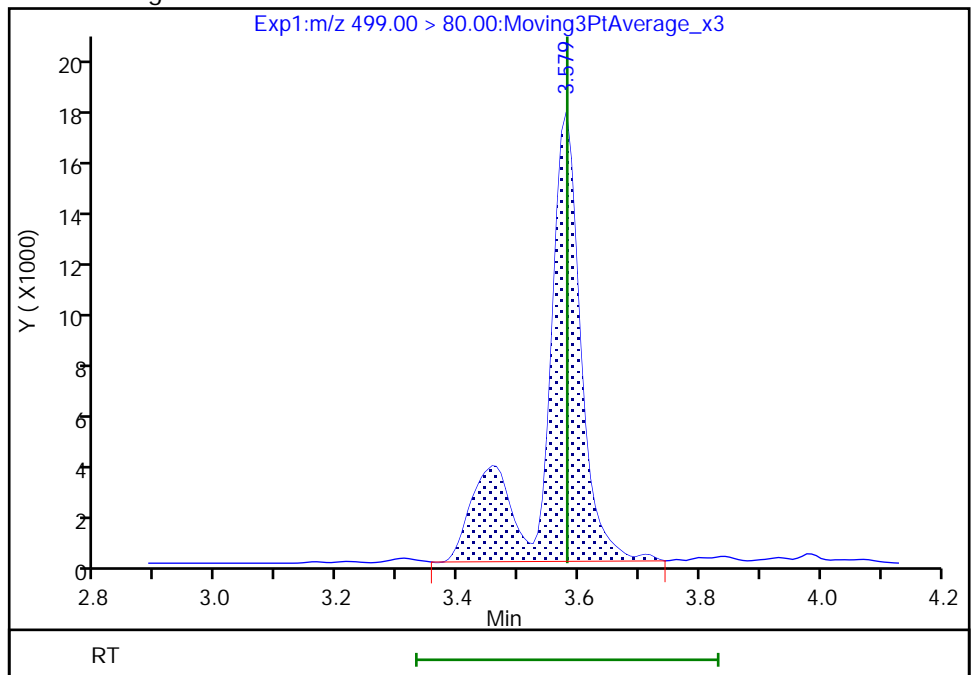
RT: 3.58
Area: 76450
Amount: 0.049132
Amount Units: ng/ml

Processing Integration Results



RT: 3.58
Area: 74516
Amount: 0.048119
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:08:17

Audit Action: Manually Integrated

TestAmerica Sacramento

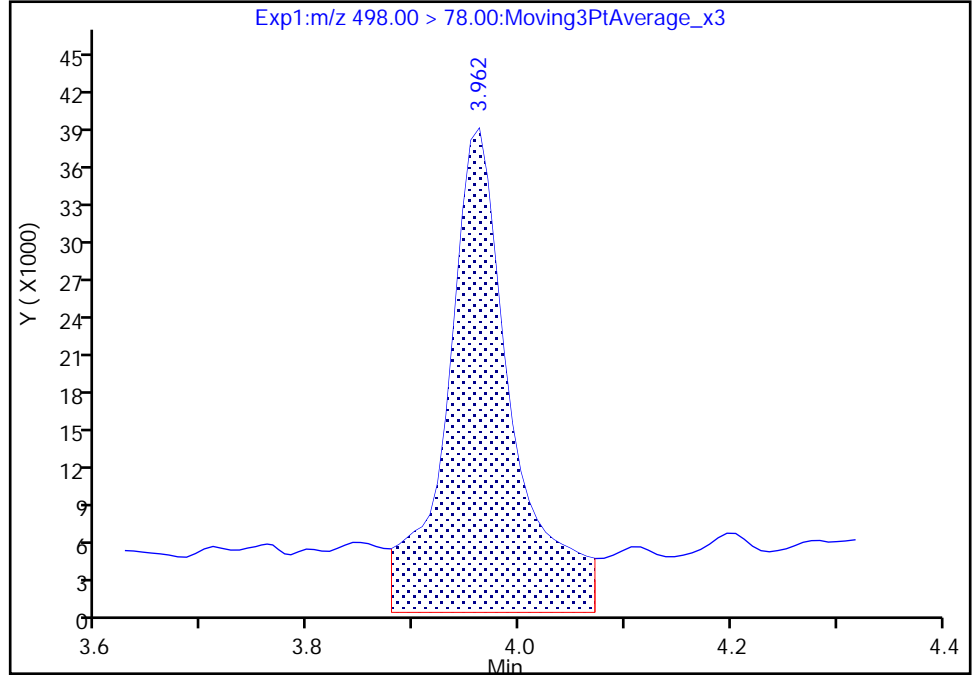
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Injection Date: 29-Nov-2018 06:54:14 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

22 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

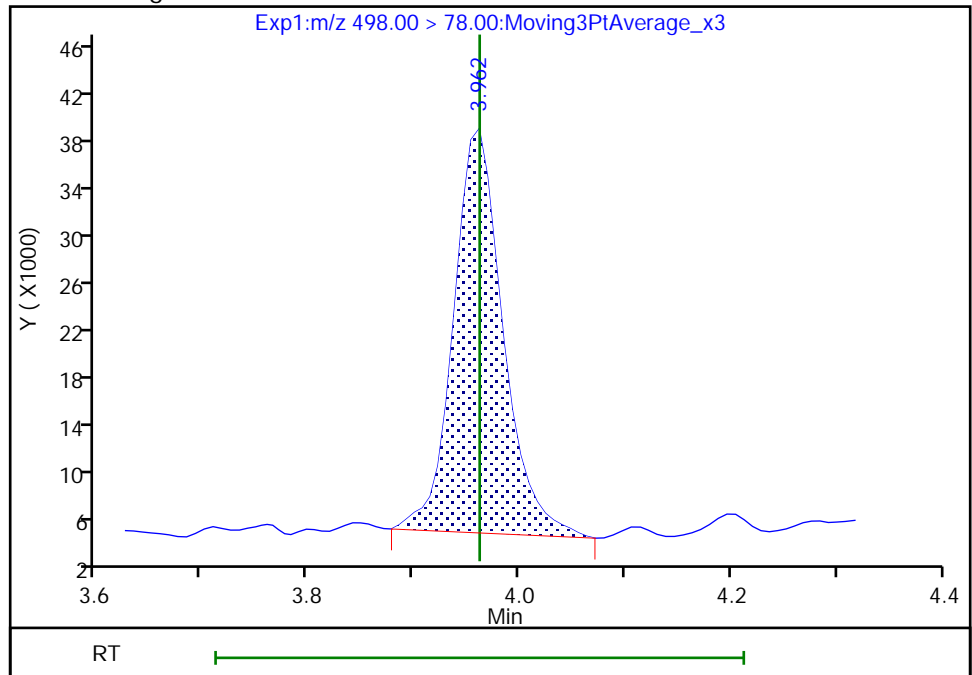
RT: 3.96
Area: 163614
Amount: 0.071521
Amount Units: ng/ml

Processing Integration Results



RT: 3.96
Area: 109703
Amount: 0.051793
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:08:53

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

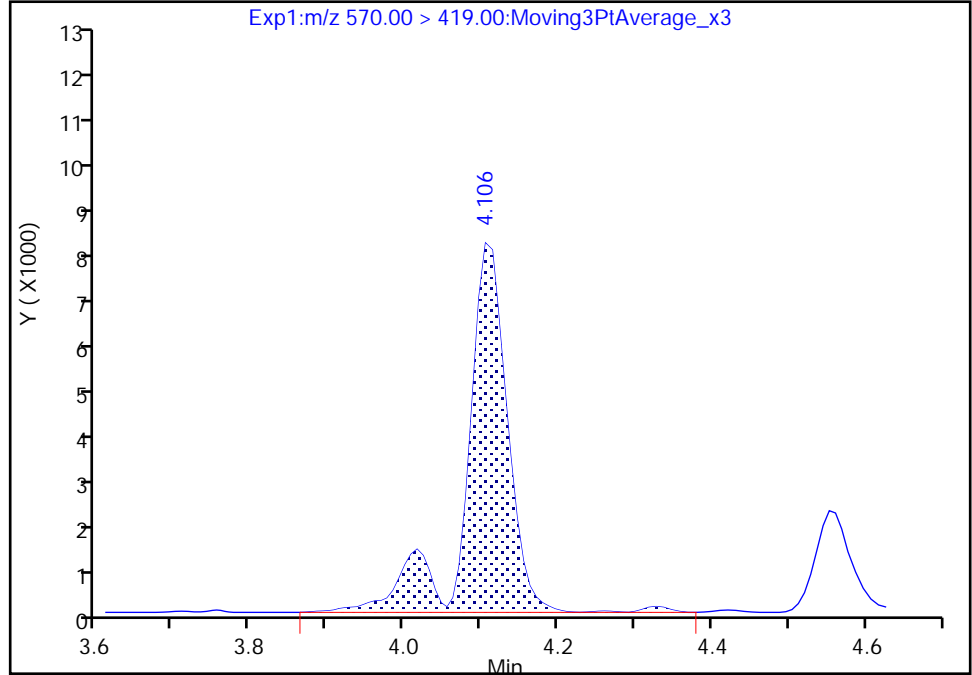
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_006.d
Injection Date: 29-Nov-2018 06:54:14 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

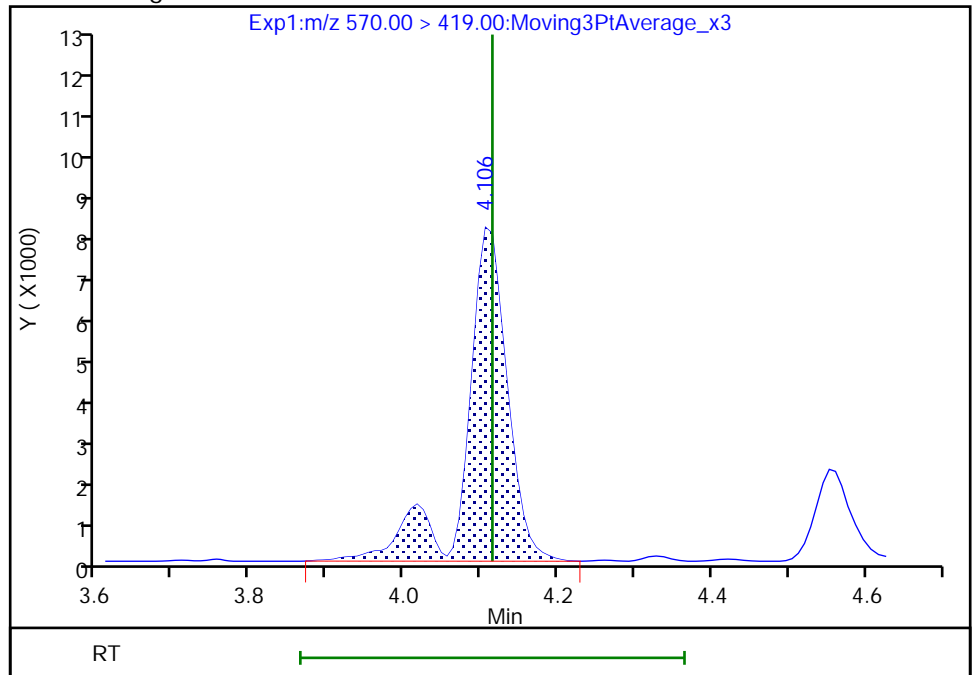
RT: 4.11
Area: 30747
Amount: 0.047997
Amount Units: ng/ml

Processing Integration Results



RT: 4.11
Area: 30364
Amount: 0.047480
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:09:00
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

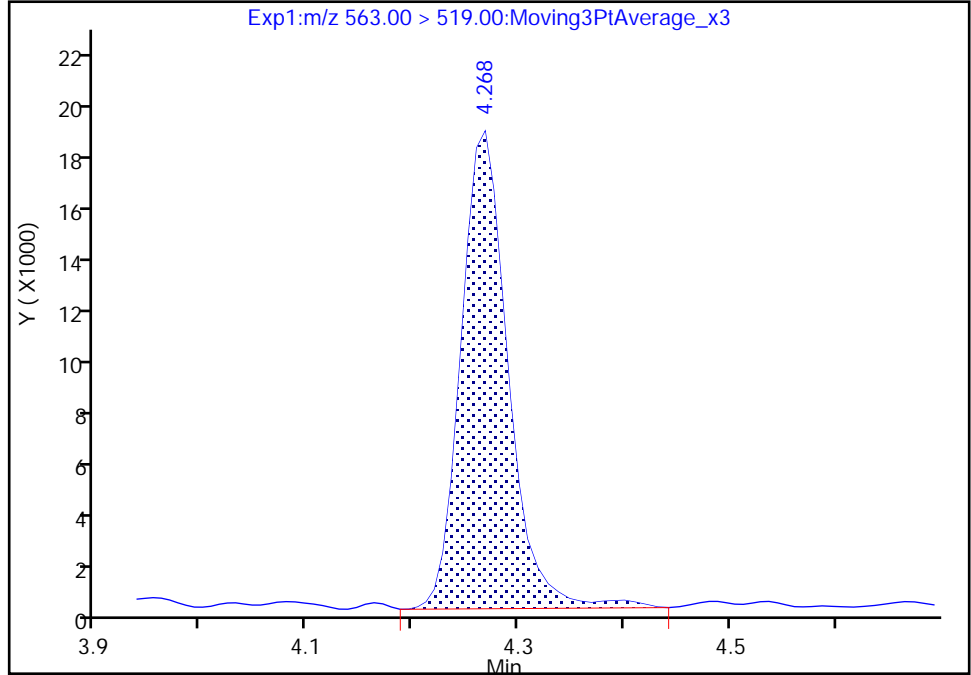
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Injection Date: 29-Nov-2018 06:54:14 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

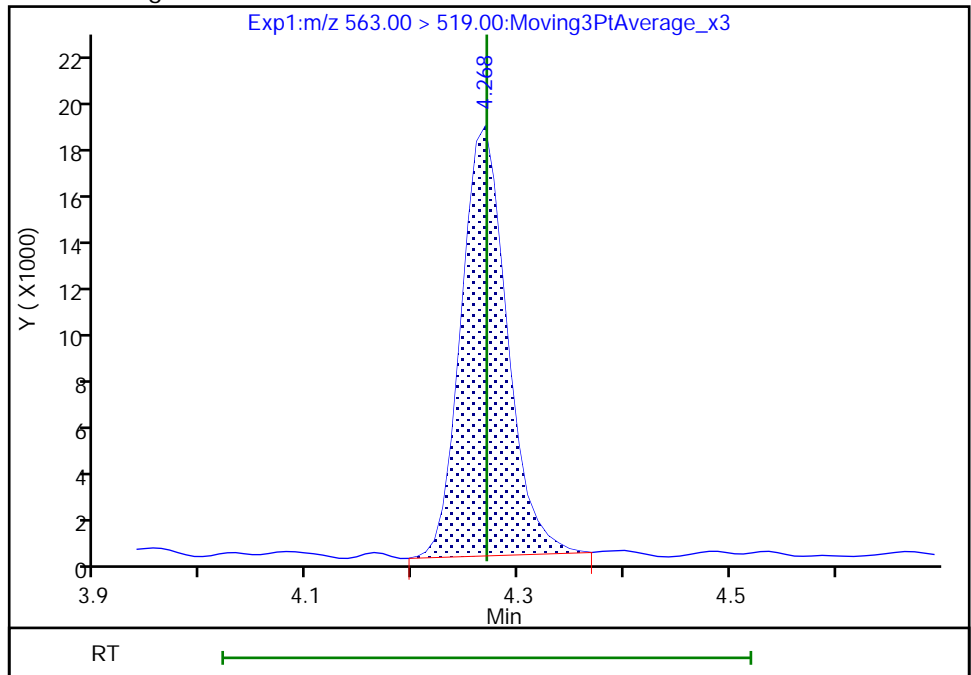
RT: 4.27
Area: 56177
Amount: 0.055503
Amount Units: ng/ml

Processing Integration Results



RT: 4.27
Area: 54326
Amount: 0.053956
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:09:07
Audit Action: Manually Integrated

Audit Reason: Baseline
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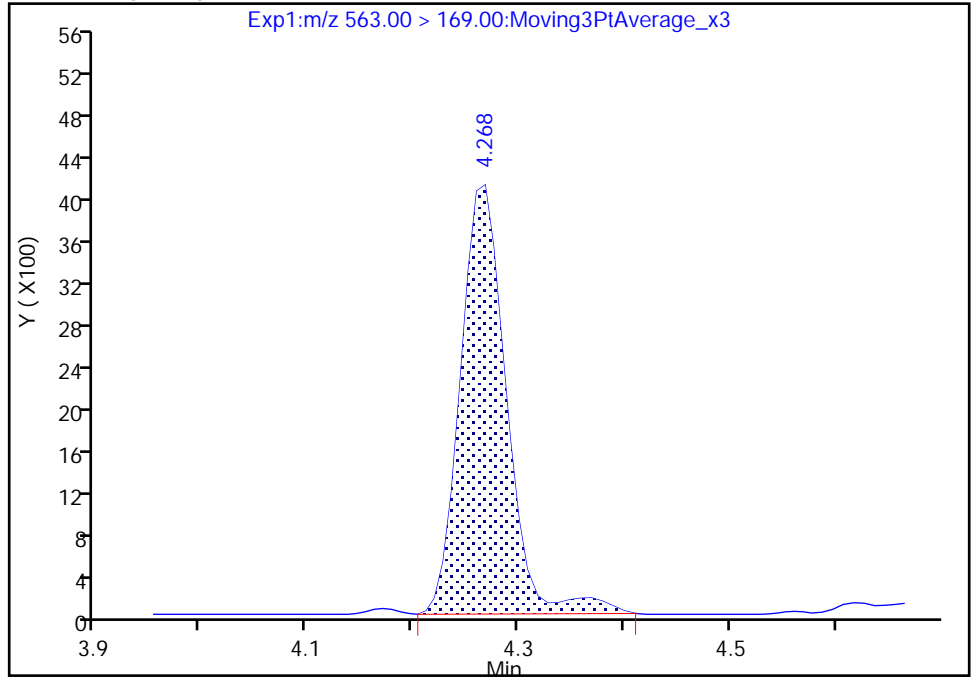
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Injection Date: 29-Nov-2018 06:54:14 Instrument ID: A8_N
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

31 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

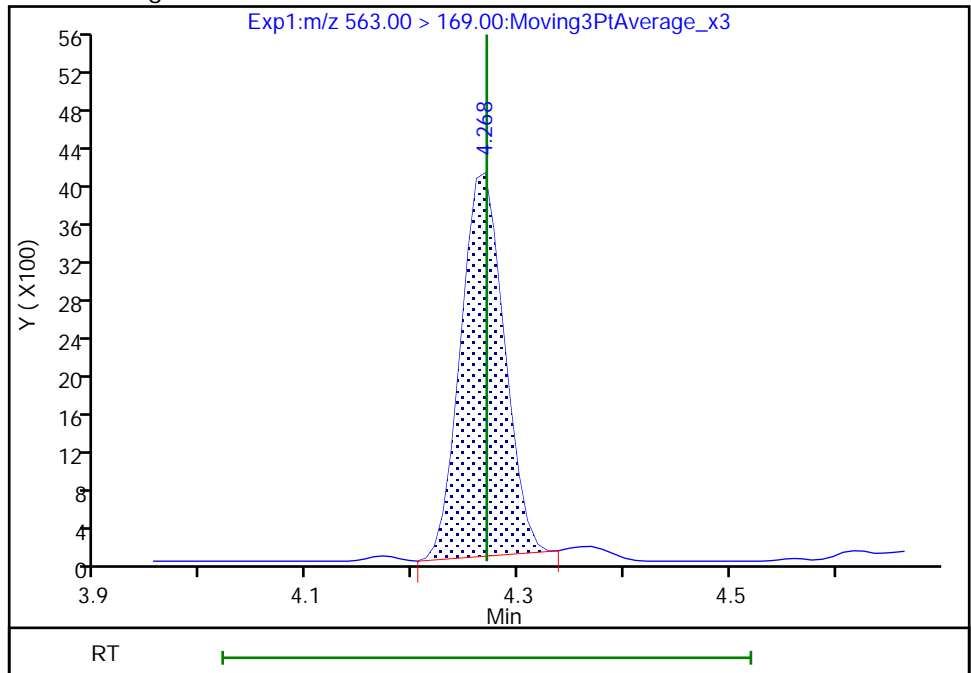
RT: 4.27
Area: 12268
Amount: 0.055503
Amount Units: ng/ml

Processing Integration Results



RT: 4.27
Area: 11422
Amount: 0.053956
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:09:09

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_007.d
 Lims ID: IC L3 Full
 Client ID:
 Sample Type: IC Calib Level: 3
 Inject. Date: 29-Nov-2018 07:01:44 ALS Bottle#: 12 Worklist Smp#: 4
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 3
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37

Method: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 29-Nov-2018 10:25:15 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0326

First Level Reviewer: westendorfc Date: 29-Nov-2018 10:10:15

Ratio Calibration: None

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	1.756	1.749	0.007	0.548	7323675	2.46	98.2	5832	
2 Perfluorobutanoic acid	212.90 > 169.00	1.756	1.753	0.003	1.000	662304	0.2484	99.4	138	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.061	0.002	0.644	4615307	2.46	98.5	6449	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.062	0.001	1.000	514658	0.2558	102	84.2	
D 47 13C3 PFBS	301.90 > 80.00	2.095	2.091	0.004	0.654	6309899	2.21	95.0	449220	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.095	2.094	0.001	1.000	589215	0.2237	Target=2.49	101	679
	298.90 > 99.00	2.095	2.094	0.001	1.000	257430	2.29(1.25-3.74)	101	171	
D 60 M2-4:2 FTS	329.00 > 81.00	2.373	2.372	0.001	0.740	549636	2.40	103	1146	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.383	2.374	0.009	1.137	125150	0.2394	103	1206	
6 Perfluorohexanoic acid	313.00 > 269.00	2.423	2.413	0.010	1.000	497507	0.2540	Target=10.07	102	190
	313.00 > 119.00	2.423	2.413	0.010	1.000	47037	10.58(5.03-15.10)	102	150	
D 7 13C2 PFHxA	315.00 > 270.00	2.423	2.413	0.010	0.756	4882930	2.46	98.5	6359	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.432	2.432	0.0	1.161	571024	0.2449	Target=2.71	104	2594
	349.00 > 99.00	2.432	2.432	0.0	1.161	217536	2.62(1.36-4.07)	104	1176	
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.532	2.531	0.001	0.996	119023	0.2558	102	129	

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	2.541	2.532	0.009	0.793	341234	2.48		99.3	1432	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.802	2.800	0.002	0.997	542116	0.2563	Target=2.27	103	148	
363.00 > 169.00	2.811	2.800	0.011	1.000	201073		2.70(1.13-3.40)	103	259	
D 9 13C4 PFHpA										
367.00 > 322.00	2.811	2.802	0.009	0.877	4972673	2.55		102	8021	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.811	2.807	0.004	1.000	515880	0.2128	Target=3.00	93.5	1882	
399.00 > 99.00	2.811	2.807	0.004	1.000	173682		2.97(1.50-4.49)	93.5	831	
D 11 18O2 PFHxS										
403.00 > 84.00	2.811	2.807	0.004	0.877	5280390	2.38		101	9881	
77 DONA										
377.00 > 251.00	2.858	2.851	0.007	0.797	1418906	0.2487	Target=1.69	106	1357	
377.00 > 85.00	2.858	2.851	0.007	0.797	836354		1.70(0.85-2.54)	106	2385	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.189	3.178	0.011	0.995	826416	2.41		102	4908	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.189	3.181	0.008	1.000	122083	0.2254		95.1	54.2	
D 73 13C8 PFOA										
421.00 > 376.00	3.205	3.195	0.010	1.000	6677309	2.38		97.3	10425	
D 14 13C4 PFOA										
417.00 > 372.00	3.205	3.200	0.005	1.000	4633463	2.44		97.5	11086	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.205	3.200	0.005	0.893	445810	0.2365	Target=3.88	99.4	2359	
449.00 > 99.00	3.205	3.200	0.005	0.893	116891		3.81(1.94-5.82)	99.4	923	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.205	3.201	0.004	1.000	526320	0.2504	Target=1.68	100	53.3	
413.00 > 169.00	3.205	3.201	0.004	1.000	280281		1.88(0.84-2.52)	100	141	
* 62 13C2 PFOA										
415.00 > 370.00	3.205	3.201	0.004		4884470	2.50			8089	
D 72 13C8 PFOS										
507.00 > 99.00	3.579	3.576	0.003	1.117	1819800	2.38		99.5	7172	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.587	3.581	0.006	1.000	361827	0.2254	Target=4.62	97.2	609	M
499.00 > 99.00	3.587	3.581	0.006	1.000	74831		4.84(2.31-6.93)	97.2	411	M
D 18 13C4 PFOS										
503.00 > 80.00	3.587	3.581	0.006	1.119	3440581	2.37		99.2	9438	
D 19 13C5 PFNA										
468.00 > 423.00	3.595	3.590	0.005	1.122	3953315	2.48		99.2	13790	
20 Perfluorononanoic acid										
463.00 > 419.00	3.595	3.590	0.005	1.000	393227	0.2410	Target=3.79	96.4	219	
463.00 > 169.00	3.595	3.590	0.005	1.000	99683		3.94(1.90-5.69)	96.4	763	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.791	3.783	0.008	1.057	669716	0.2320		99.6	2415	

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	3.938	3.931	0.007	1.098	267772	0.2391	Target=2.65	99.6	2079	
549.00 > 99.00	3.938	3.931	0.007	1.098	93185		2.87(1.33-3.97)	99.6	486	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.954	3.948	0.006	1.000	119347	0.2640		110	1170	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.954	3.948	0.006	1.000	343916	0.2613	Target=4.73	105	337	
513.00 > 169.00	3.954	3.948	0.006	1.000	64699		5.32(2.36-7.09)	105	325	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.954	3.948	0.006	1.234	826435	2.24		93.5	5168	
D 23 13C2 PFDA										
515.00 > 470.00	3.954	3.948	0.006	1.234	3335607	2.40		95.9	8127	
D 21 13C8 FOSA										
506.00 > 78.00	3.970	3.962	0.008	1.239	5364881	2.50		100	7089	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.970	3.962	0.008	1.000	514716	0.2397		95.9	35.8	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.122	4.111	0.011	1.286	1722247	2.53		101	3978	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.122	4.115	0.007	1.000	161753	0.2495		99.8	70.3	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.252	4.247	0.005	1.185	217226	0.2329	Target=2.77	96.7	1364	
599.00 > 99.00	4.252	4.247	0.005	1.185	77311		2.81(1.39-4.16)	96.7	1062	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.276	4.270	0.006	1.000	240258	0.2382	Target=4.24	95.3	283	
563.00 > 169.00	4.276	4.270	0.006	1.000	61503		3.91(2.12-6.36)	95.3	491	
D 30 13C2 PFUnA										
565.00 > 520.00	4.276	4.270	0.006	1.334	2818121	2.52		101	7312	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.276	4.271	0.005	1.334	1741443	2.42		97.0	3016	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.284	4.279	0.005	1.002	147414	0.2462		98.5	601	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.421	4.412	0.009	1.232	1045868	0.2464		105	3249	
35 MeFOSA										
512.00 > 169.00	4.472	4.465	0.007		171050	NC			315	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.561	4.556	0.005	1.000	306538	0.2356	Target=4.27	94.2	299	
613.00 > 169.00	4.561	4.556	0.005	1.000	77860		3.94(2.13-6.40)	94.2	1126	
D 36 13C2 PFDaA										
615.00 > 570.00	4.561	4.556	0.005	1.423	2991622	2.51		100	8231	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.577	4.569	0.008	1.158	81838	0.2501		104	672	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.647	4.643	0.004		164168	NC			437	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.797	4.785	0.012	1.337	98452	0.2317	Target=0.00	95.7	1187	
699.00 > 99.00	4.797	4.785	0.012	1.337	159453		0.62(0.00-0.00)	95.7	1581	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.820	4.815	0.005	1.057	304915	0.2411	Target=2.51	96.4	344	
663.00 > 169.00	4.820	4.815	0.005	1.057	104624		2.91(1.25-3.76)	96.4	931	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.063	5.053	0.010	1.000	90499	0.2511	Target=1.42	100	1181	
713.00 > 219.00	5.053	5.053	0.0	0.998	66077		1.37(0.71-2.13)	100	897	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.063	5.054	0.009	1.580	3481834	2.45		98.2	8953	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.487	5.481	0.006	1.712	6640808	2.53		101	10041	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.487	5.484	0.003	1.000	630453	0.2493	Target=5.72	99.7	77.2	
813.00 > 169.00	5.487	5.484	0.003	1.000	113894		5.54(2.86-8.58)	99.7	876	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.907	5.904	0.003	1.077	754372	0.2449	Target=7.65	97.9	87.9	
913.00 > 169.00	5.907	5.904	0.003	1.077	92039		8.20(3.83-11.48)	97.9	826	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00009

Amount Added: 1.00

Units: mL

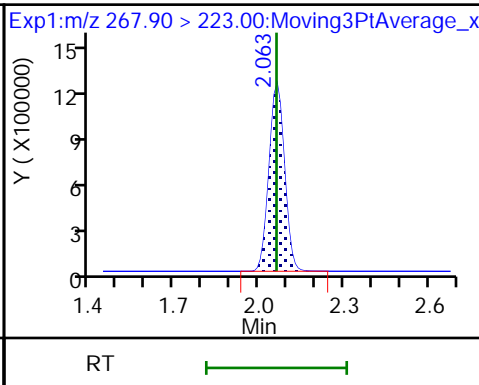
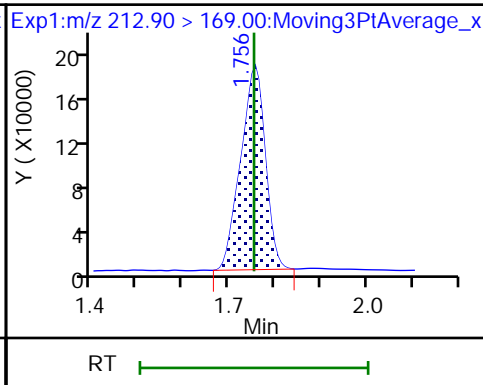
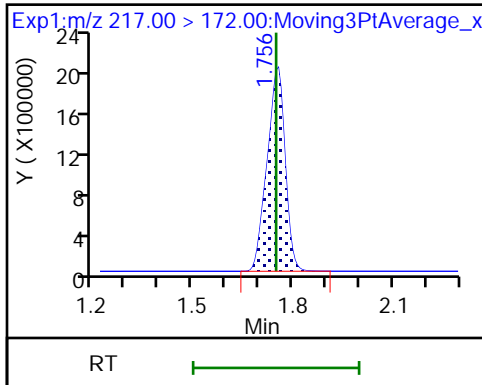
TestAmerica Sacramento

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_007.d
Injection Date: 29-Nov-2018 07:01:44 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

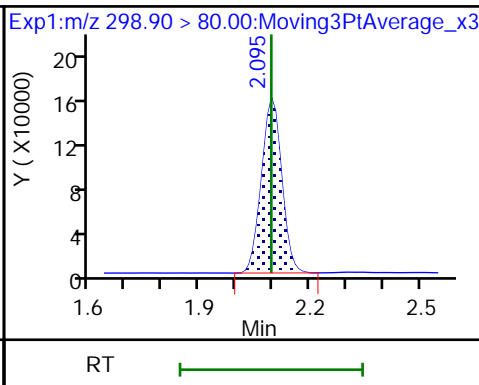
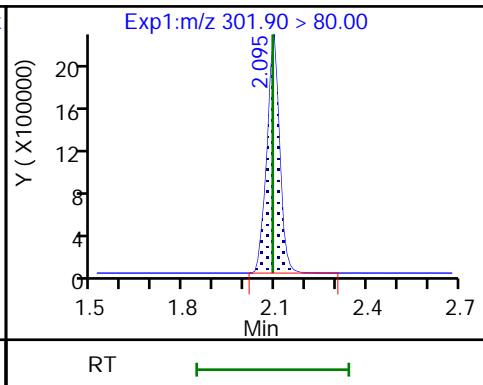
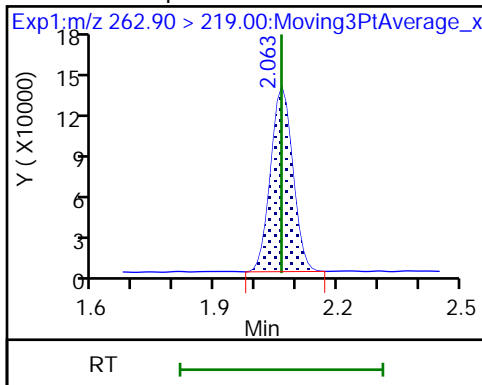
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

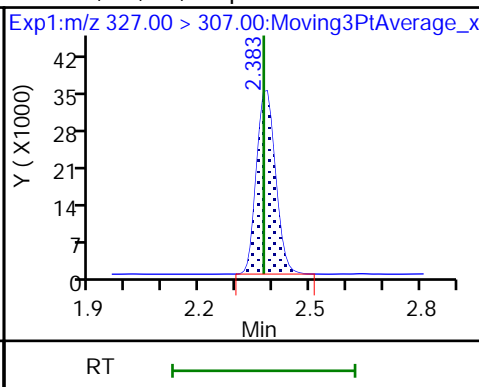
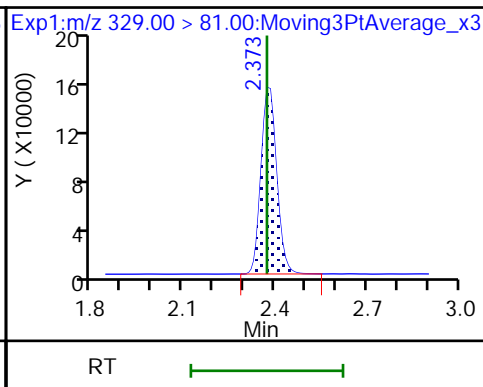
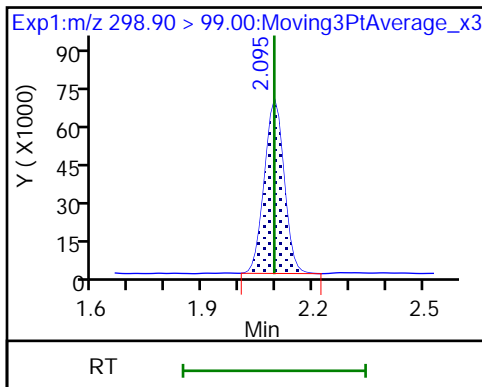
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

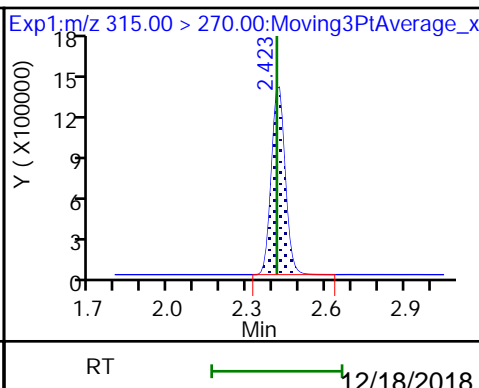
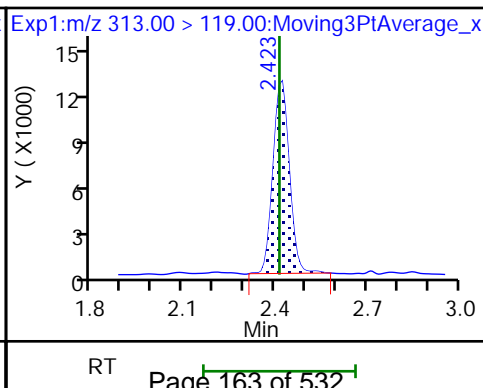
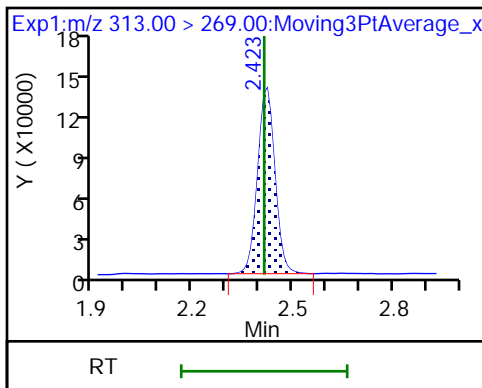
61 1H,1H,2H,2H-perfluorohexanesulfoni

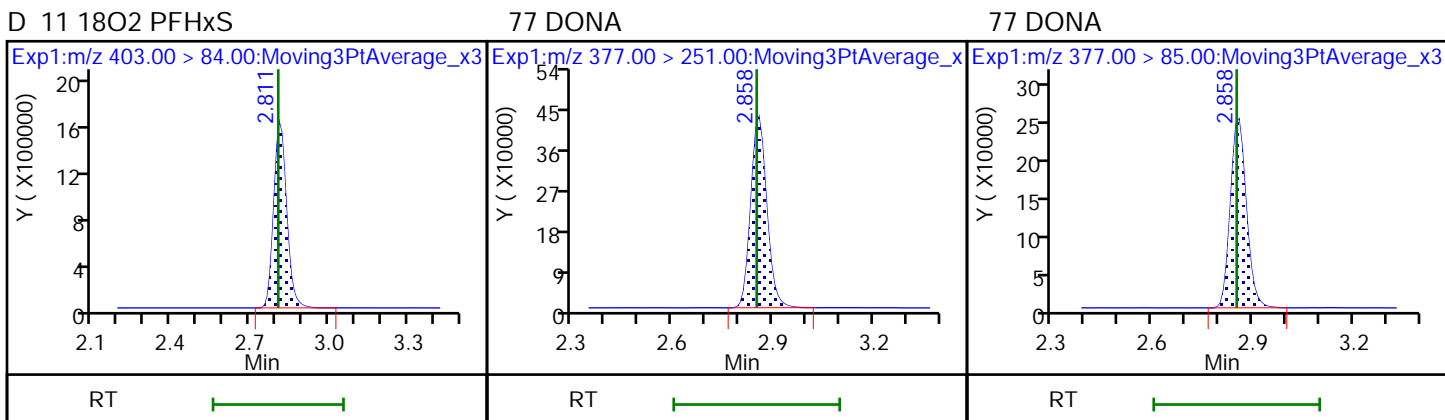
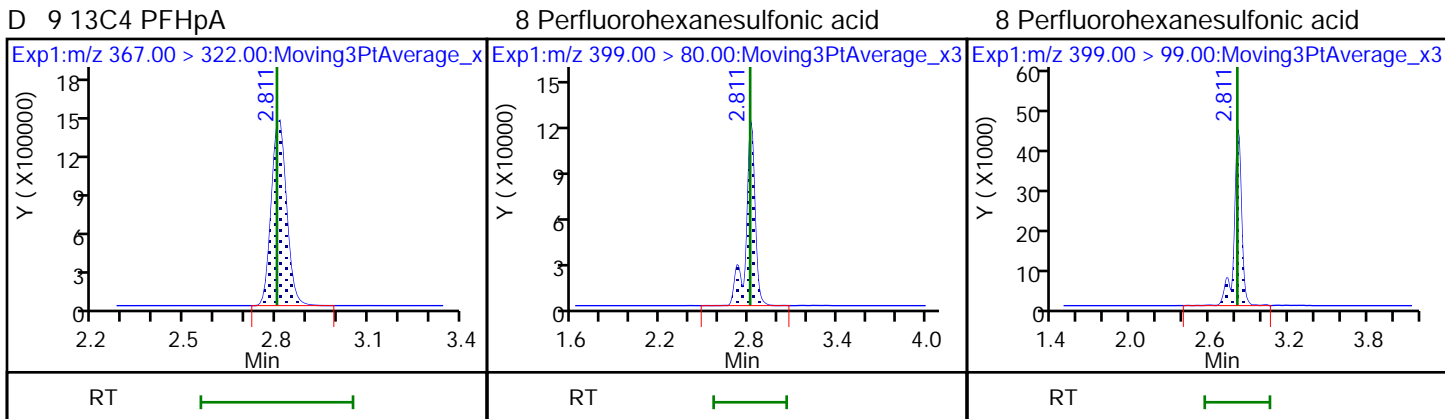
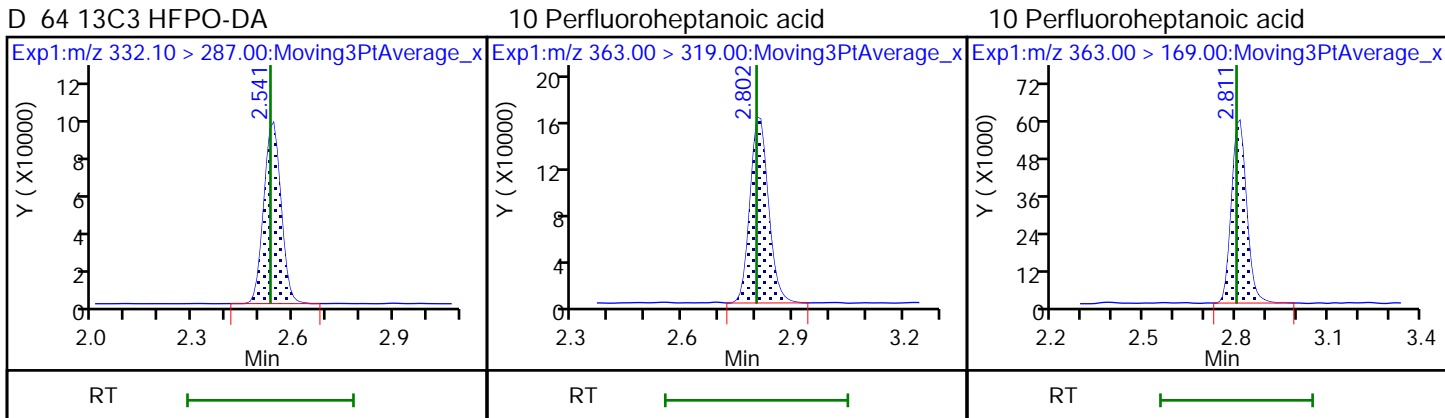
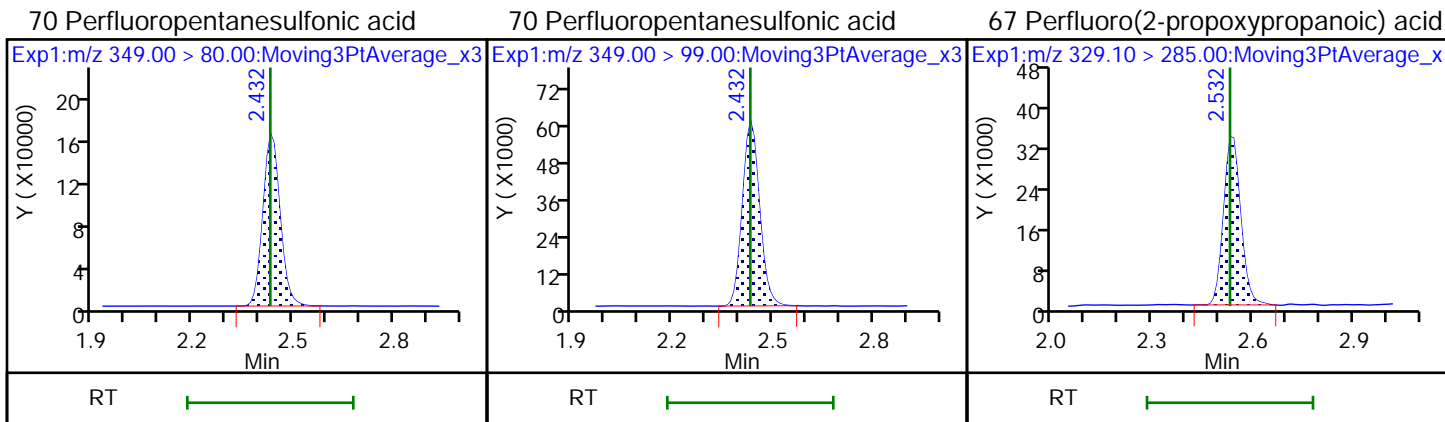


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

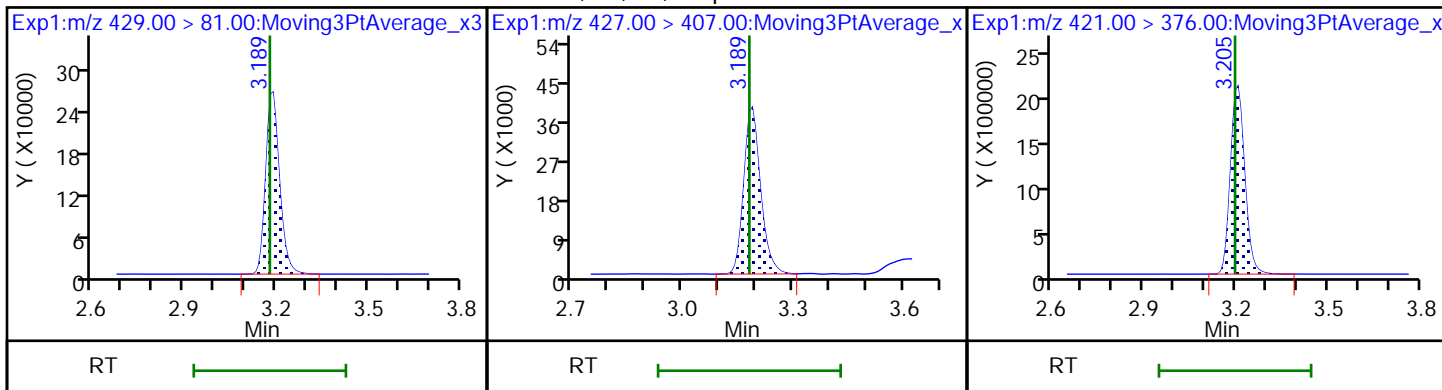
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

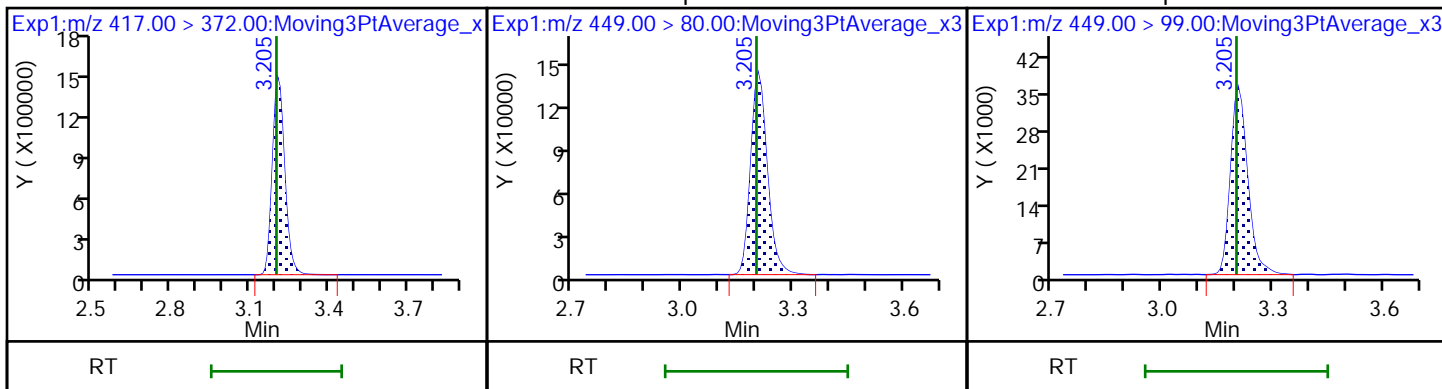
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D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

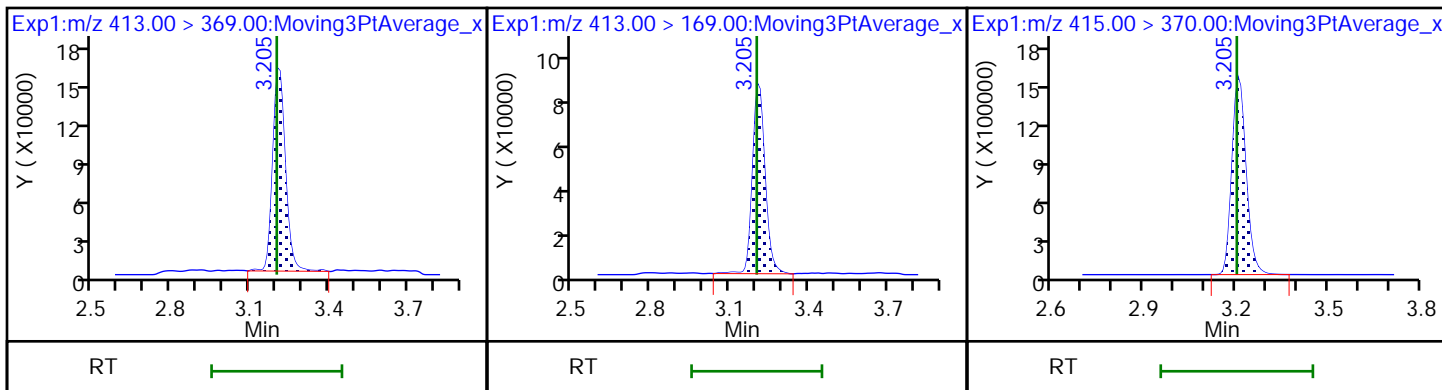
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

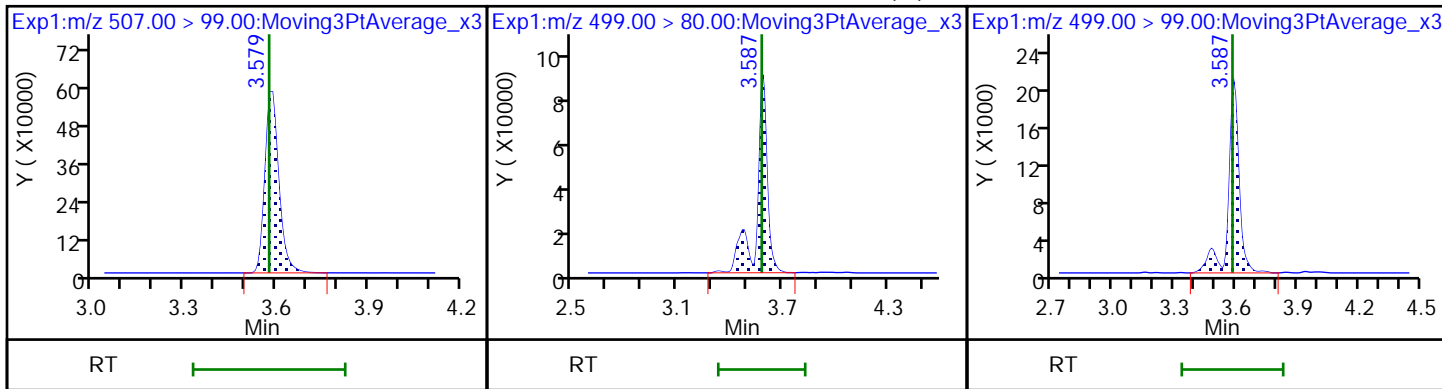
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid (M)

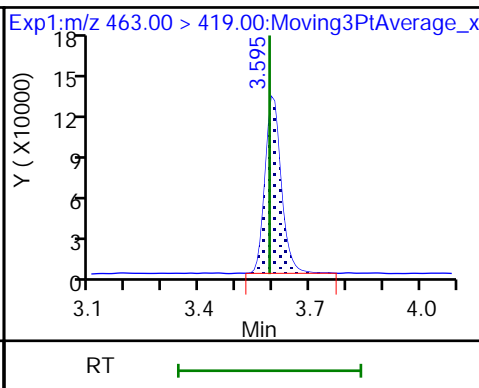
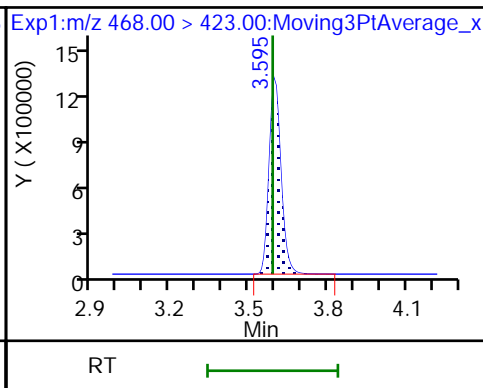
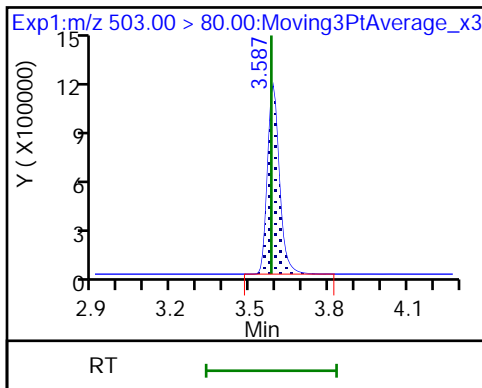
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

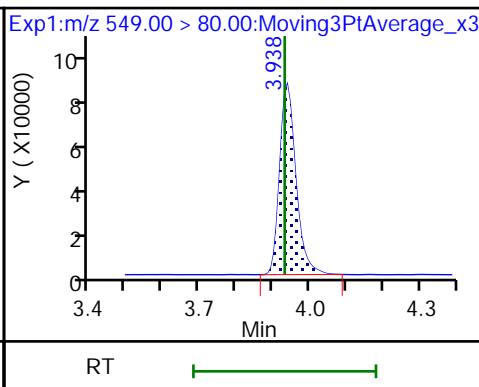
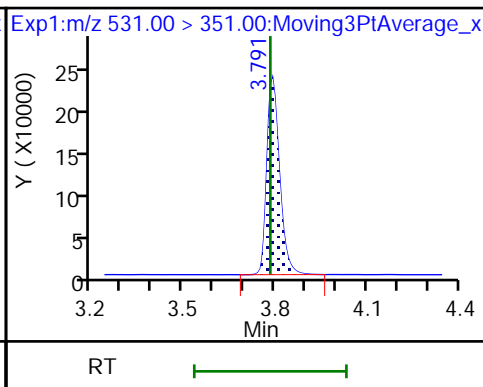
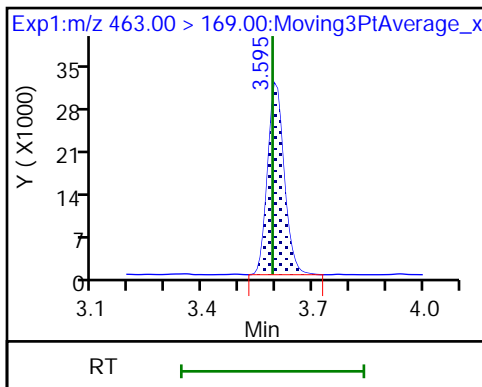
D 19 13C5 PFNA

20 Perfluorononanoic acid



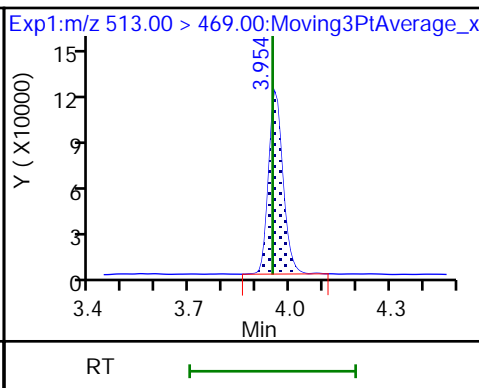
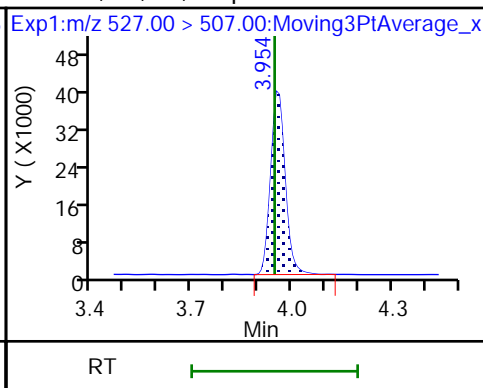
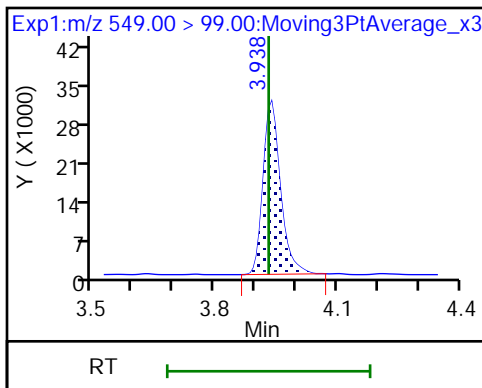
20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid



68 Perfluorononanesulfonic acid

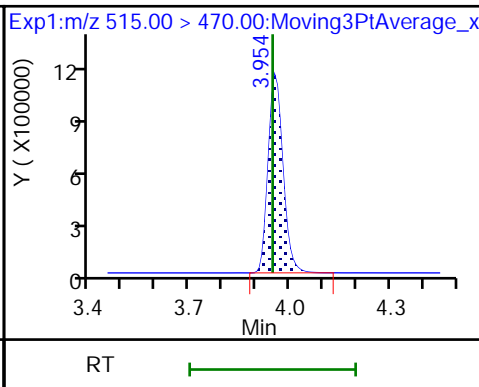
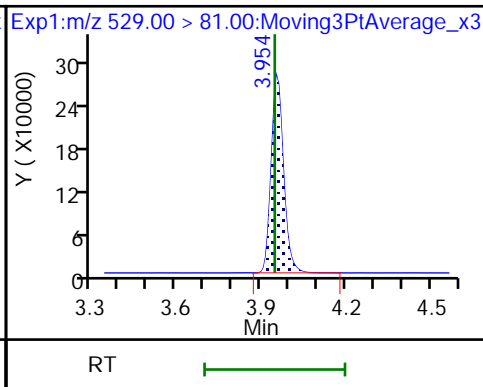
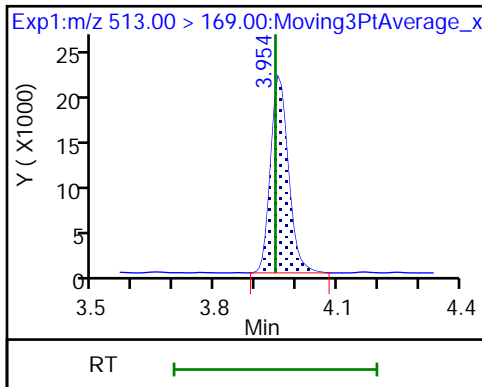
25 1H,1H,2H,2H-perfluorodecanesulfoni 24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 26 M2-8:2 FTS

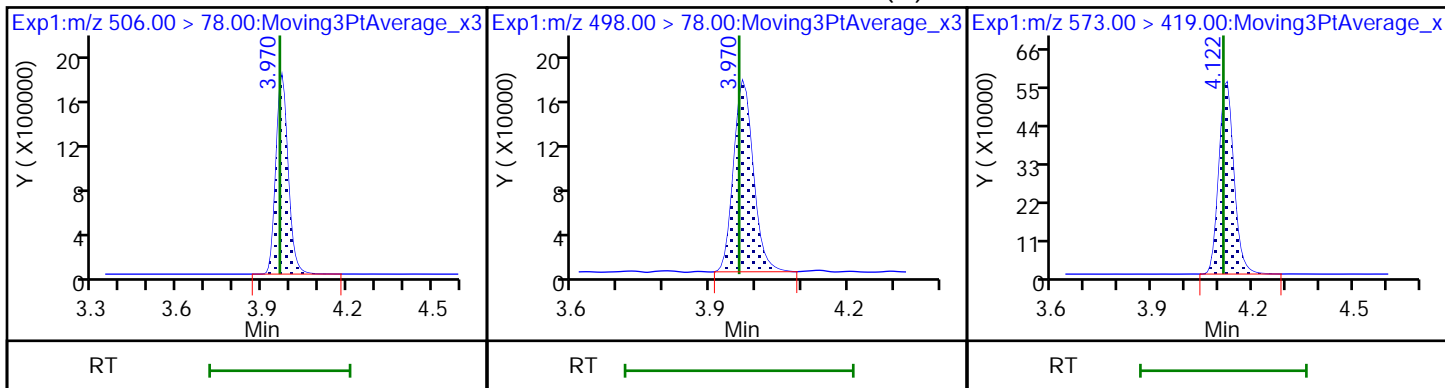
D 23 13C2 PFDA



D 21 13C8 FOSA

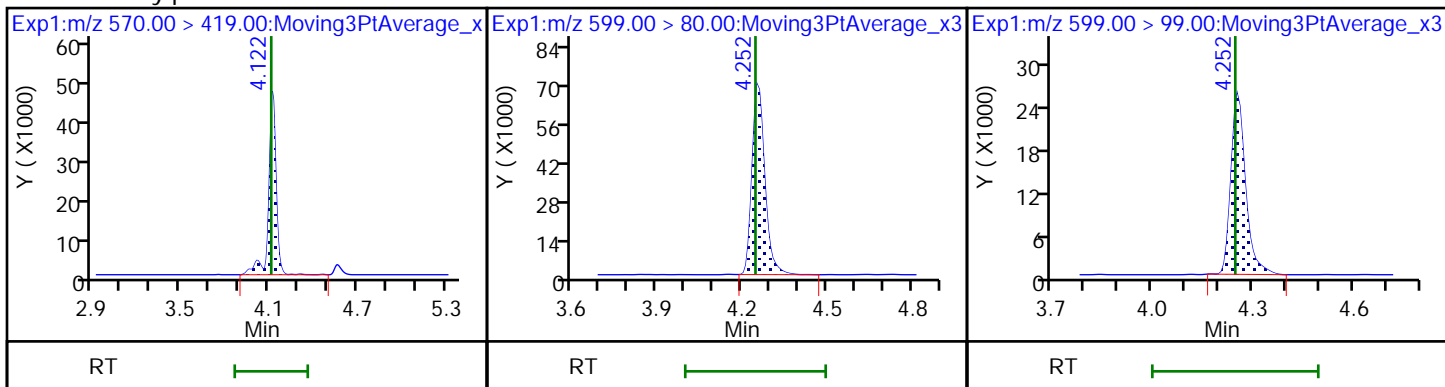
22 Perfluorooctanesulfonamide (M)

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

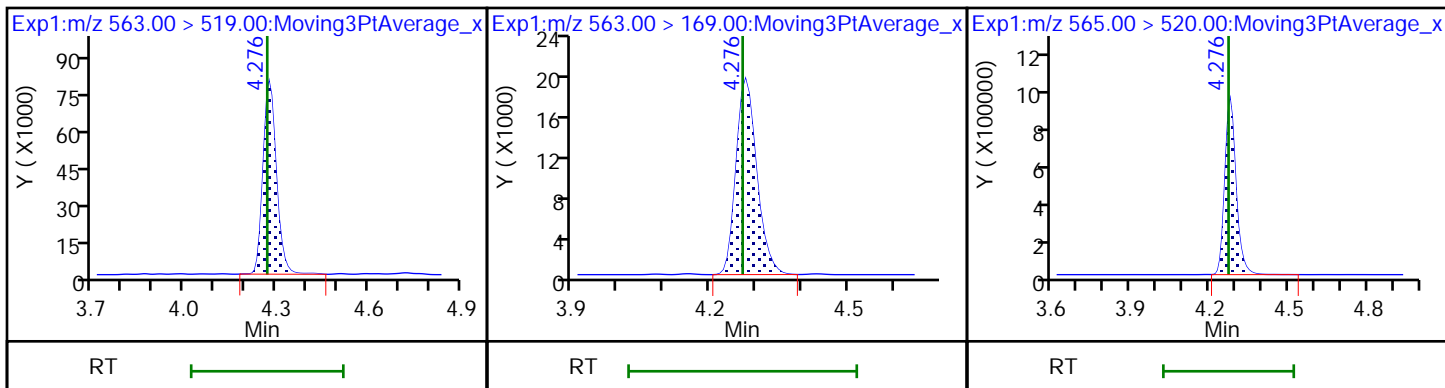
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

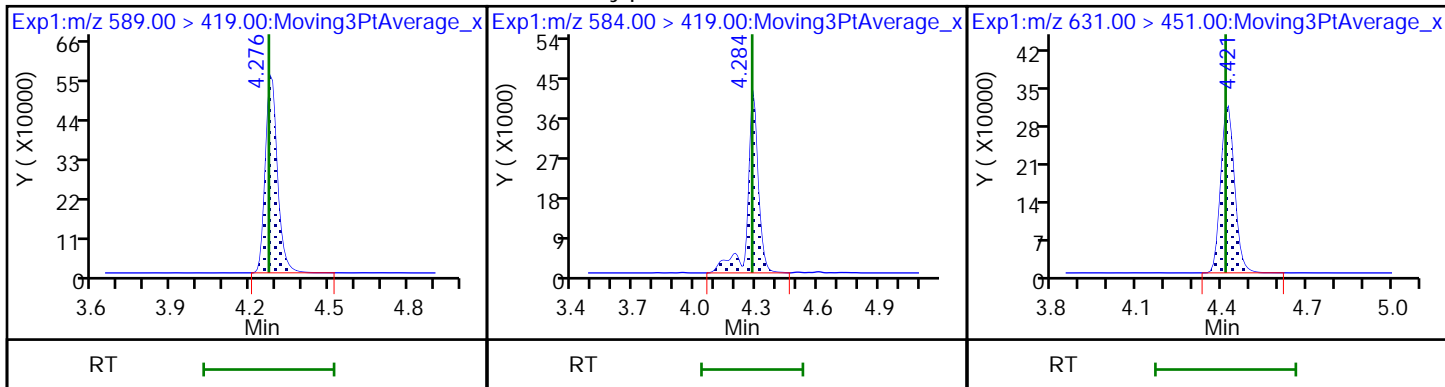
D 30 13C2 PFUnA

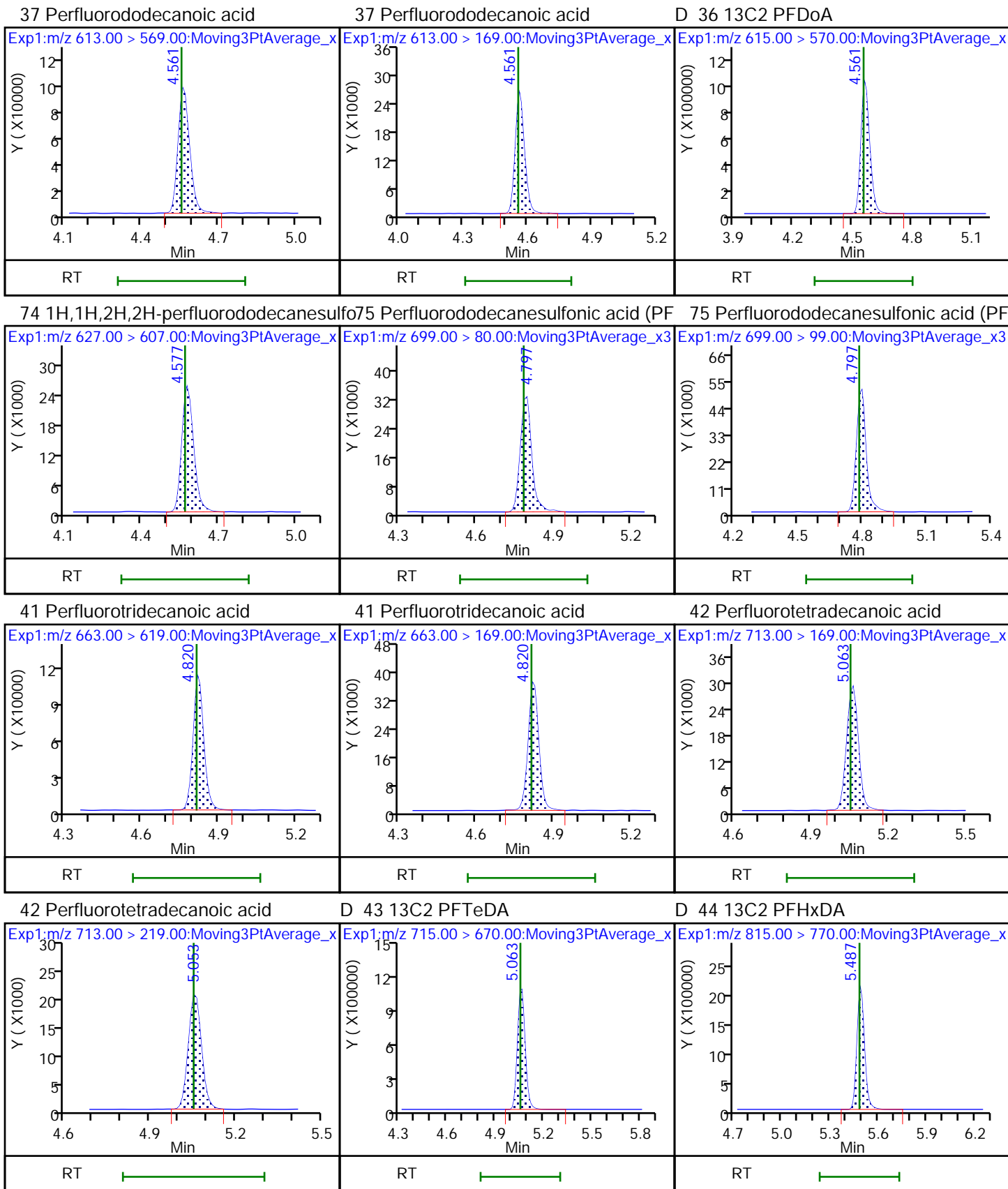


D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

66 11-Chloroeicosafuoro-3-oxaundecan

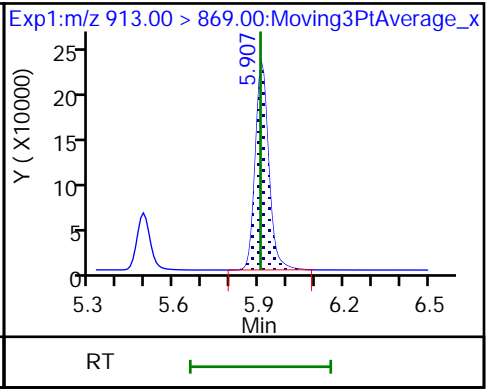
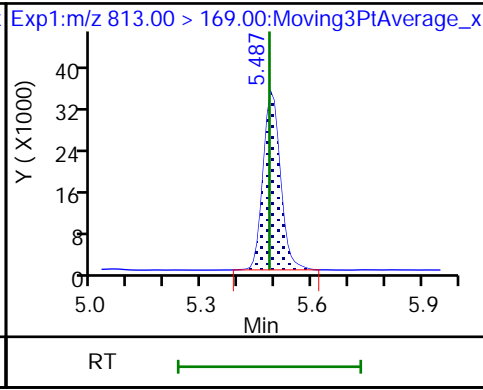
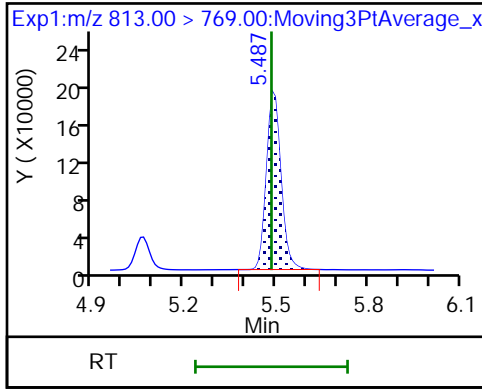




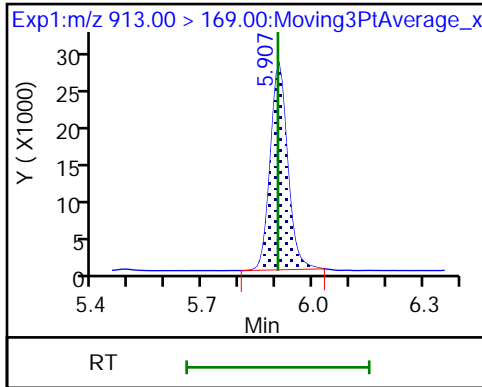
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

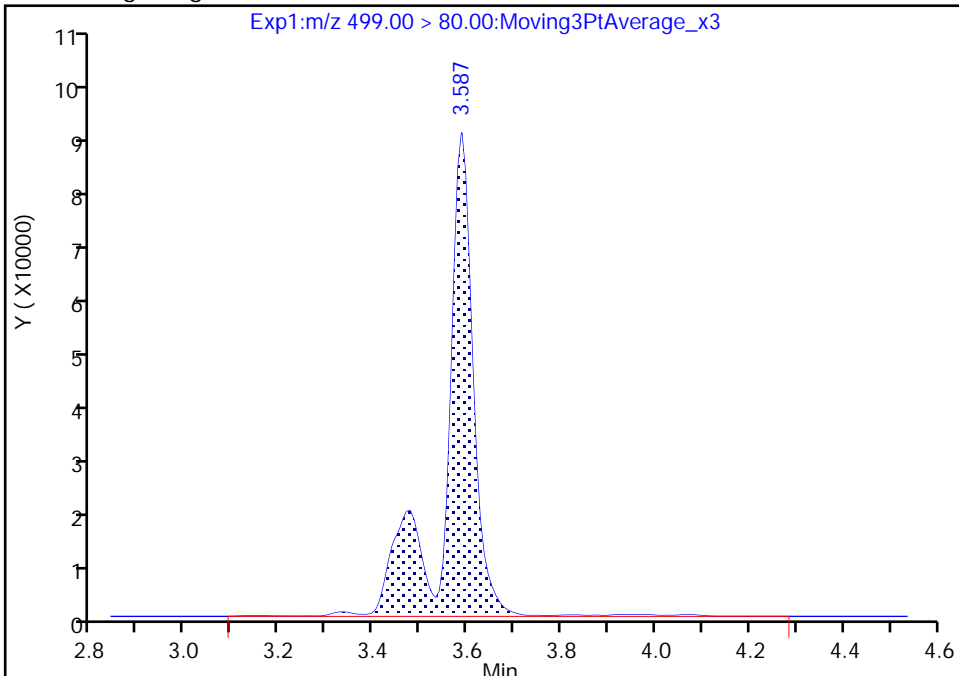
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_007.d
Injection Date: 29-Nov-2018 07:01:44 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

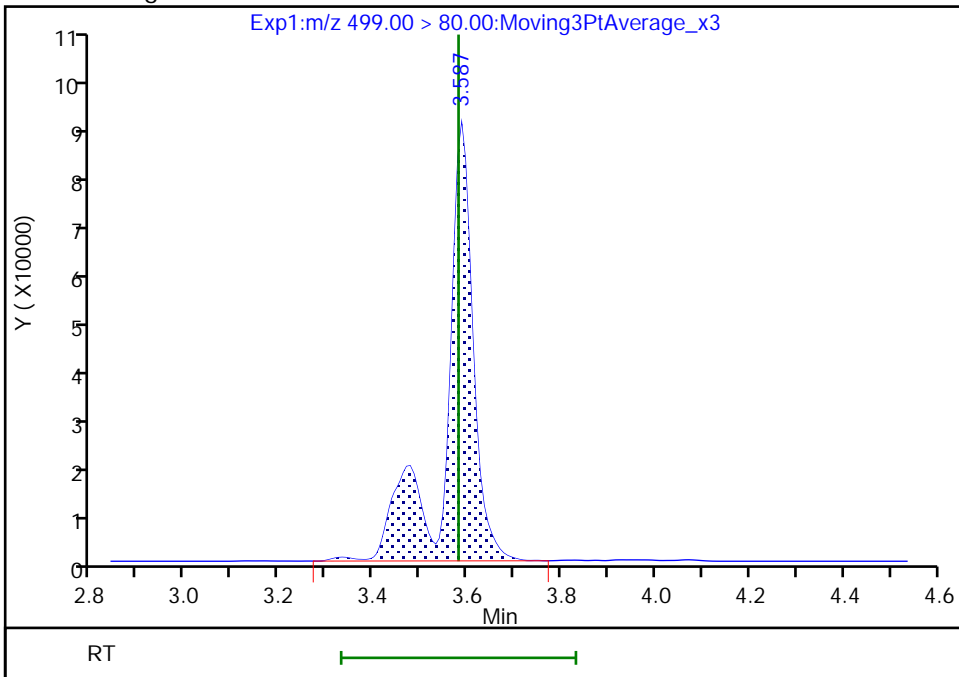
RT: 3.59
Area: 368415
Amount: 0.229334
Amount Units: ng/ml

Processing Integration Results



RT: 3.59
Area: 361827
Amount: 0.225446
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:09:51
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

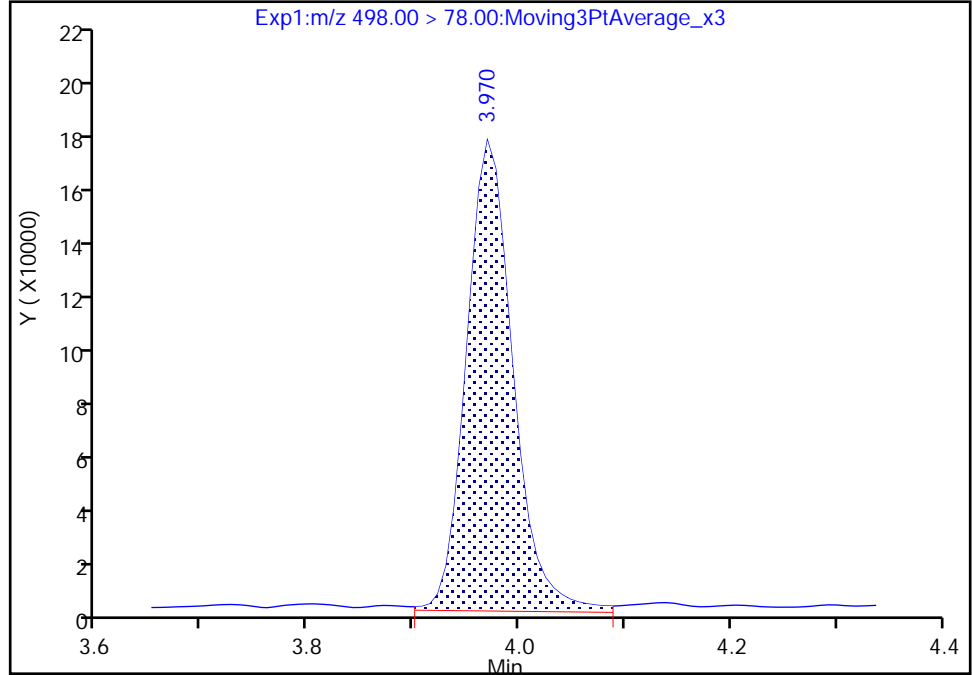
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_007.d
Injection Date: 29-Nov-2018 07:01:44 Instrument ID: A8_N
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

22 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

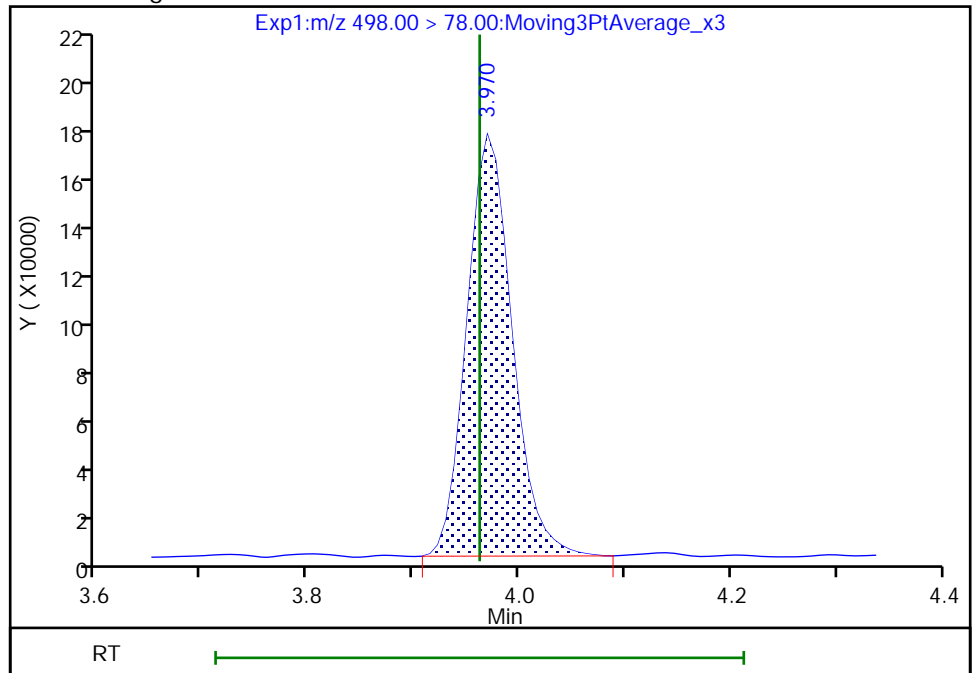
RT: 3.97
Area: 535618
Amount: 0.247588
Amount Units: ng/ml

Processing Integration Results



RT: 3.97
Area: 514716
Amount: 0.239667
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:09:59

Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_008.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 29-Nov-2018 07:09:11 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37

Method: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 29-Nov-2018 10:25:20 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0326

First Level Reviewer: westendorfc Date: 29-Nov-2018 10:11:12

Ratio Calibration: None

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	1.748	1.749	-0.001	0.546	7505630	2.49	99.8	6160	
2 Perfluorobutanoic acid	212.90 > 169.00	1.748	1.753	-0.005	1.000	2790150	1.02	102	550	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.061	0.002	0.644	4810976	2.54	102	5976	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.062	0.001	1.000	2026058	0.9661	96.6	314	
D 47 13C3 PFBS	301.90 > 80.00	2.095	2.091	0.004	0.654	6661324	2.31	99.4	738857	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.095	2.094	0.001	1.000	2571053	0.9246	Target=2.49	105	2582
	298.90 > 99.00	2.095	2.094	0.001	1.000	1085012		2.37(1.25-3.74)	105	662
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.740	531878	2.30	98.5	1085	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.374	-0.002	1.133	521837	0.9454	101	7426	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.413	-0.001	1.000	2031527	1.01	Target=10.07	101	771
	313.00 > 119.00	2.412	2.413	-0.001	1.000	179600		11.31(5.03-15.10)	101	514
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.413	-0.001	0.753	5038683	2.52	101	6523	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.432	2.432	0.0	1.161	2487059	1.01	Target=2.71	108	8991
	349.00 > 99.00	2.432	2.432	0.0	1.161	892866		2.79(1.36-4.07)	108	5287
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.531	2.531	0.0	1.000	457407	1.02	102	536	

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	2.531	2.532	-0.001	0.790	328731	2.37		94.8	1412	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.802	2.800	0.002	1.000	2104050	0.99	Target=2.27	99.1	572	
363.00 > 169.00	2.802	2.800	0.002	1.000	840774		2.50(1.13-3.40)	99.1	782	
D 9 13C4 PFHpA										
367.00 > 322.00	2.802	2.802	0.0	0.874	4988562	2.54		102	8308	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.811	2.807	0.004	1.000	2100762	0.8379	Target=3.00	92.1	4667	
399.00 > 99.00	2.811	2.807	0.004	1.000	715396		2.94(1.50-4.49)	92.1	2284	
D 11 18O2 PFHxS										
403.00 > 84.00	2.811	2.807	0.004	0.877	5461569	2.44		103	10131	
77 DONA										
377.00 > 251.00	2.848	2.851	-0.003	0.794	5973468	0.99	Target=1.69	105	5097	
377.00 > 85.00	2.848	2.851	-0.003	0.794	3668381		1.63(0.85-2.54)	105	10236	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.180	3.178	0.002	0.992	835878	2.42		102	5352	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.180	3.181	-0.001	1.000	538498	0.9831		104	180	
D 73 13C8 PFOA										
421.00 > 376.00	3.196	3.195	0.001	0.997	6825287	2.41		98.6	11745	
D 14 13C4 PFOA										
417.00 > 372.00	3.205	3.200	0.005	1.000	4878940	2.54		102	8838	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.205	3.200	0.005	0.893	1855617	0.9339	Target=3.88	98.1	4728	
449.00 > 99.00	3.205	3.200	0.005	0.893	485365		3.82(1.94-5.82)	98.1	2643	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.205	3.201	0.004	1.000	2147524	0.9702	Target=1.68	96.9	234	
413.00 > 169.00	3.205	3.201	0.004	1.000	1161979		1.85(0.84-2.52)	96.9	580	
* 62 13C2 PFOA										
415.00 > 370.00	3.205	3.201	0.004		4928861	2.50			8299	
D 72 13C8 PFOS										
507.00 > 99.00	3.579	3.576	0.003	1.117	1846120	2.39		100.0	6695	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.587	3.581	0.006	1.000	1538297	0.9095	Target=4.62	98.0	1819	M
499.00 > 99.00	3.579	3.581	-0.002	0.998	335723		4.58(2.31-6.93)	98.0	1478	M
D 18 13C4 PFOS										
503.00 > 80.00	3.587	3.581	0.006	1.119	3625860	2.48		104	11813	
D 19 13C5 PFNA										
468.00 > 423.00	3.595	3.590	0.005	1.122	4167325	2.59		104	10741	
20 Perfluorononanoic acid										
463.00 > 419.00	3.595	3.590	0.005	1.000	1696607	0.9866	Target=3.79	98.7	976	
463.00 > 169.00	3.595	3.590	0.005	1.000	405275		4.19(1.90-5.69)	98.7	2957	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.783	3.783	0.0	1.055	2870396	0.9435		101	8865	

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	3.930	3.931	-0.001	1.096	1116371	0.9460	Target=2.65	98.5	4599	
549.00 > 99.00	3.930	3.931	-0.001	1.096	386398		2.89(1.33-3.97)	98.5	1672	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.954	3.948	0.006	1.000	490997	0.9569		99.9	3623	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.954	3.948	0.006	1.000	1344142	0.9584	Target=4.73	95.8	1397	
513.00 > 169.00	3.954	3.948	0.006	1.000	269657		4.98(2.36-7.09)	95.8	422	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.954	3.948	0.006	1.234	938184	2.52		105	4260	
D 23 13C2 PFDA										
515.00 > 470.00	3.954	3.948	0.006	1.234	3554030	2.53		101	15200	
D 21 13C8 FOSA										
506.00 > 78.00	3.962	3.962	0.0	1.236	5477482	2.53		101	7665	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.962	3.962	0.0	1.000	2206863	1.01		101	144	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.114	4.111	0.003	1.284	1672640	2.44		97.6	3357	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.122	4.115	0.007	1.002	672200	1.07		107	332	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.254	4.247	0.007	1.186	911397	0.9274	Target=2.77	96.2	6898	
599.00 > 99.00	4.254	4.247	0.007	1.186	303159		3.01(1.39-4.16)	96.2	2571	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.270	4.270	0.0	1.000	934199	0.9267	Target=4.24	92.7	1141	
563.00 > 169.00	4.270	4.270	0.0	1.000	227415		4.11(2.12-6.36)	92.7	1512	
D 30 13C2 PFUnA										
565.00 > 520.00	4.270	4.270	0.0	1.333	2816787	2.49		99.7	6205	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.279	4.271	0.008	1.335	1866342	2.58		103	3174	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.279	4.279	0.0	1.000	592262	0.9231		92.3	1163	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.416	4.412	0.004	1.231	4494356	1.00		107	9500	
35 MeFOSA										
512.00 > 169.00	4.468	4.465	0.003		649815	NC			556	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.559	4.556	0.003	1.000	1257557	0.9516	Target=4.27	95.2	1102	
613.00 > 169.00	4.559	4.556	0.003	1.000	334478		3.76(2.13-6.40)	95.2	2216	
D 36 13C2 PFDaA										
615.00 > 570.00	4.559	4.556	0.003	1.423	3038168	2.53		101	6851	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.575	4.569	0.006	1.157	325826	0.8771		91.0	3281	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.644	4.643	0.001		657759	NC			416	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.786	4.785	0.001	1.334	424090	0.9469	Target=0.00	97.8	3176	
699.00 > 99.00	4.786	4.785	0.001	1.334	675387		0.63(0.00-0.00)	97.8	4825	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.818	4.815	0.003	1.057	1299171	1.01	Target=2.51	101	1506	
663.00 > 169.00	4.818	4.815	0.003	1.057	434215		2.99(1.25-3.76)	101	2899	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.055	5.053	0.002	1.000	371267	0.9794	Target=1.42	97.9	4030	
713.00 > 219.00	5.055	5.053	0.002	1.000	267109		1.39(0.71-2.13)	97.9	2867	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.055	5.054	0.001	1.577	3662726	2.56		102	9424	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.488	5.481	0.007	1.713	6815230	2.58		103	9063	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.488	5.484	0.004	1.000	2383980	0.9854	Target=5.72	98.5	230	
813.00 > 169.00	5.488	5.484	0.004	1.000	449833		5.30(2.86-8.58)	98.5	2983	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.914	5.904	0.010	1.078	3141313	0.99	Target=7.65	99.4	317	
913.00 > 169.00	5.914	5.904	0.010	1.078	396222		7.93(3.83-11.48)	99.4	2589	

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: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_008.d

Injection Date: 29-Nov-2018 07:09:11

Instrument ID: A8_N

Lims ID: IC L4 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

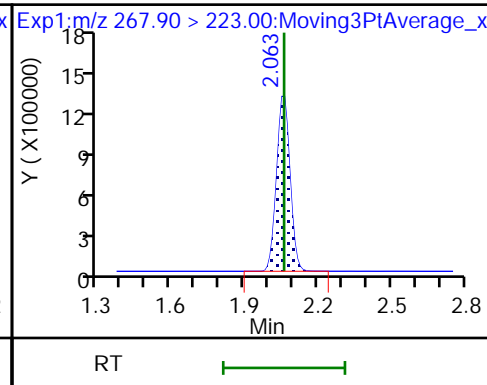
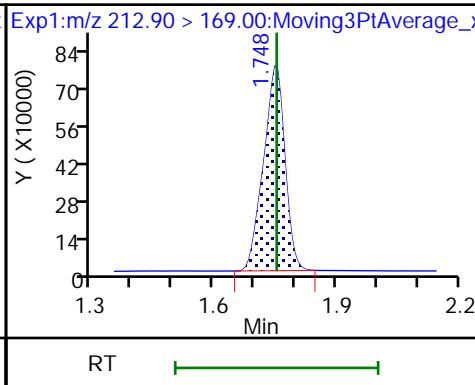
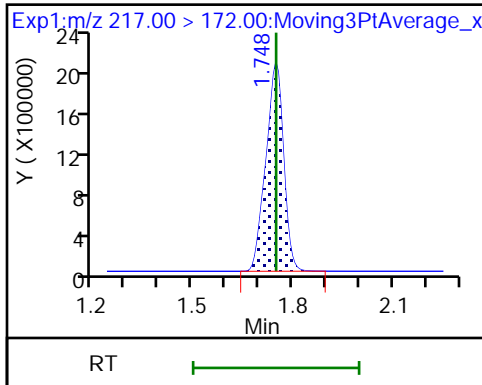
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

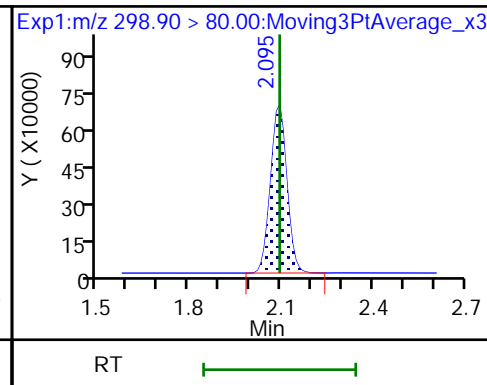
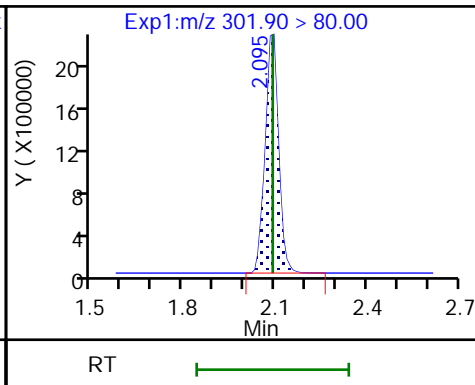
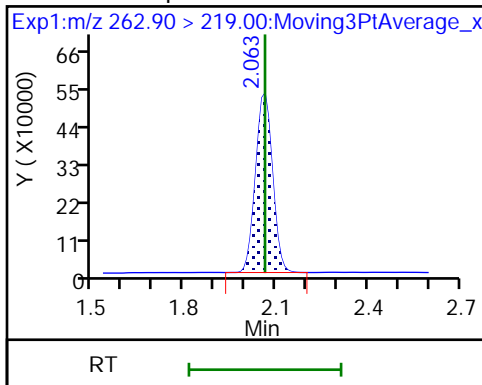
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

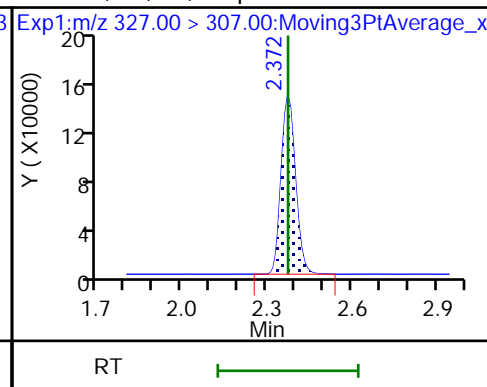
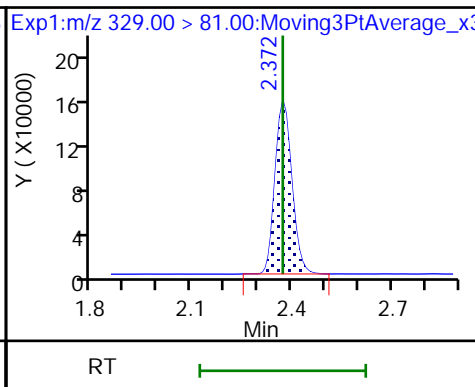
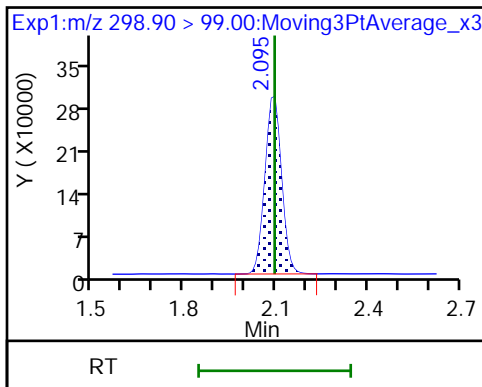
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

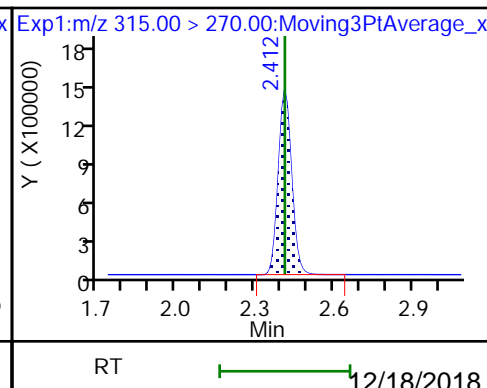
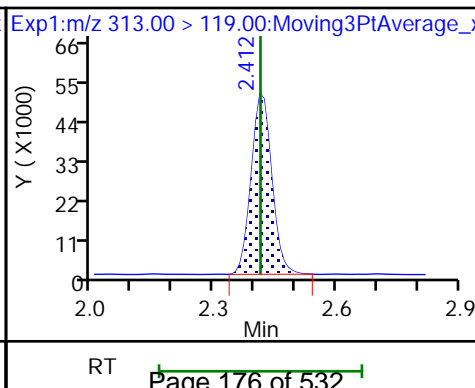
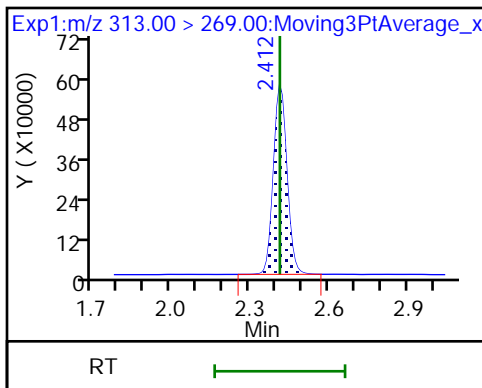
61 1H,1H,2H,2H-perfluorohexanesulfoni

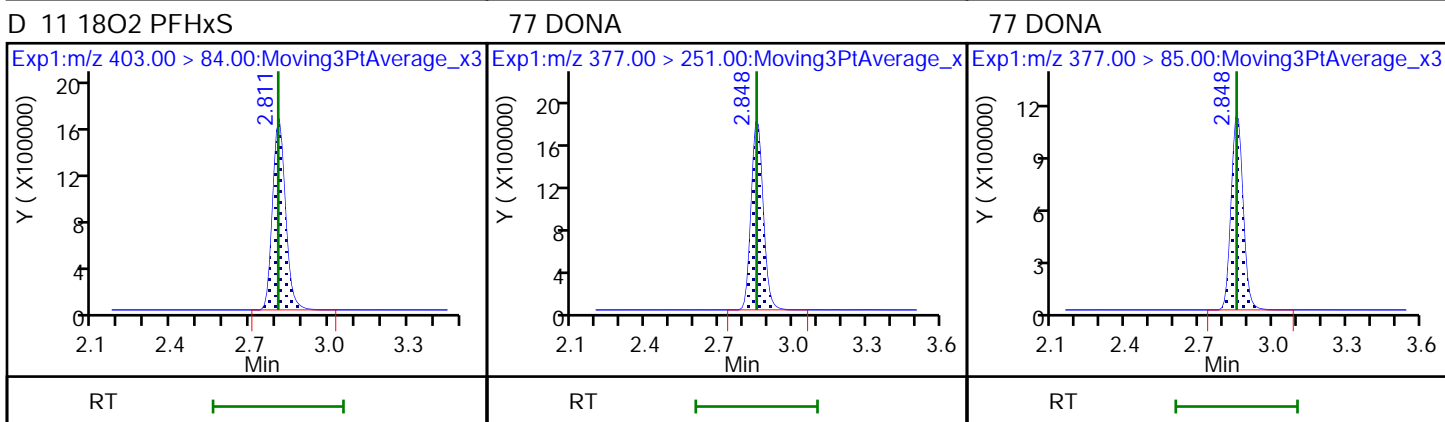
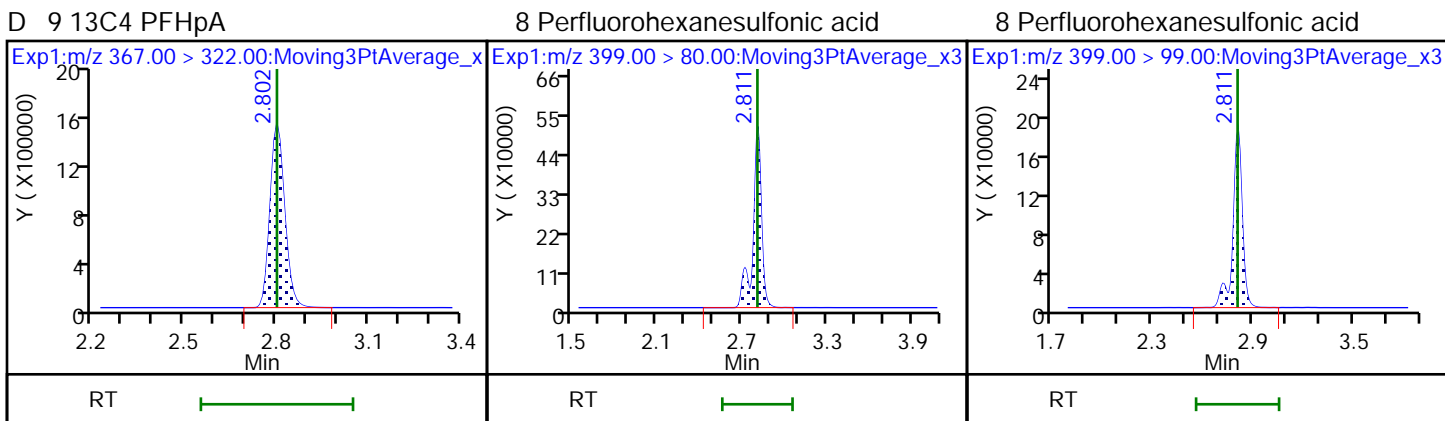
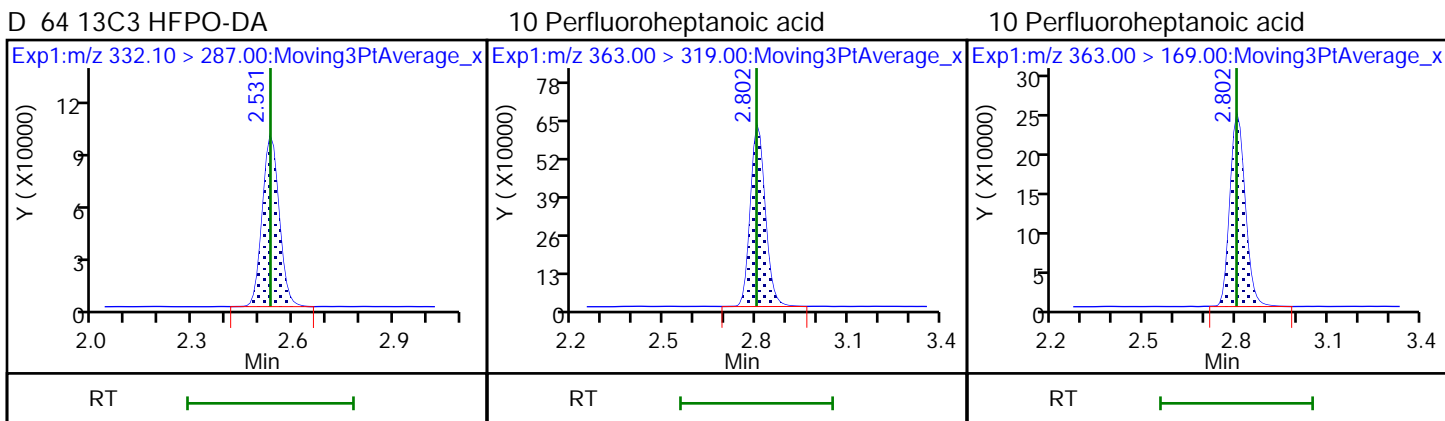
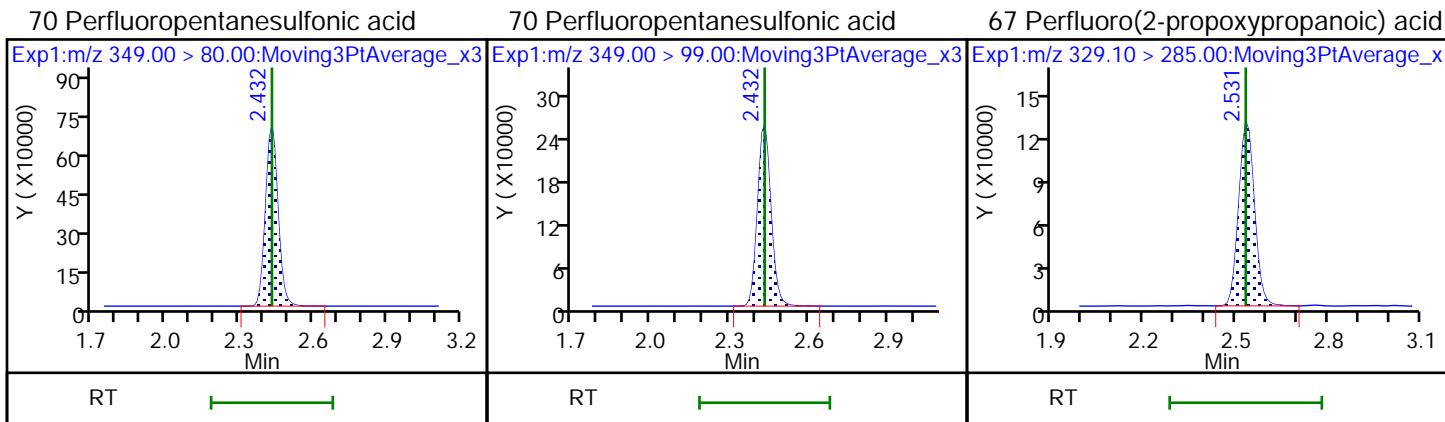


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

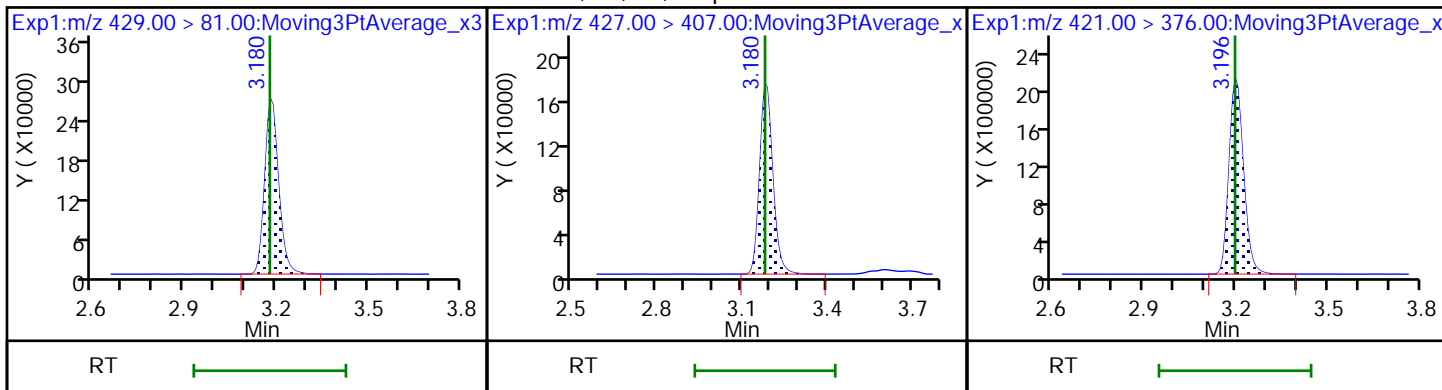
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

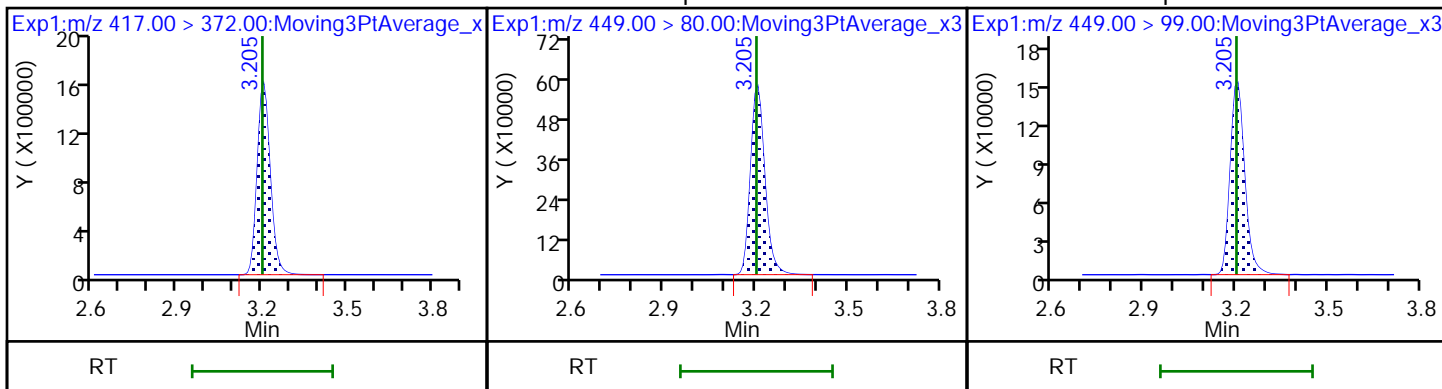
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

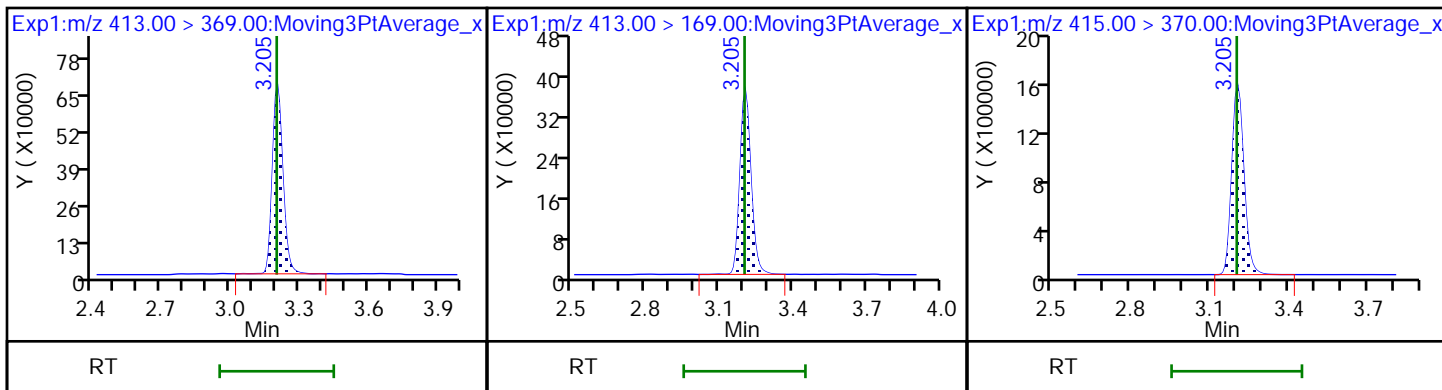
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

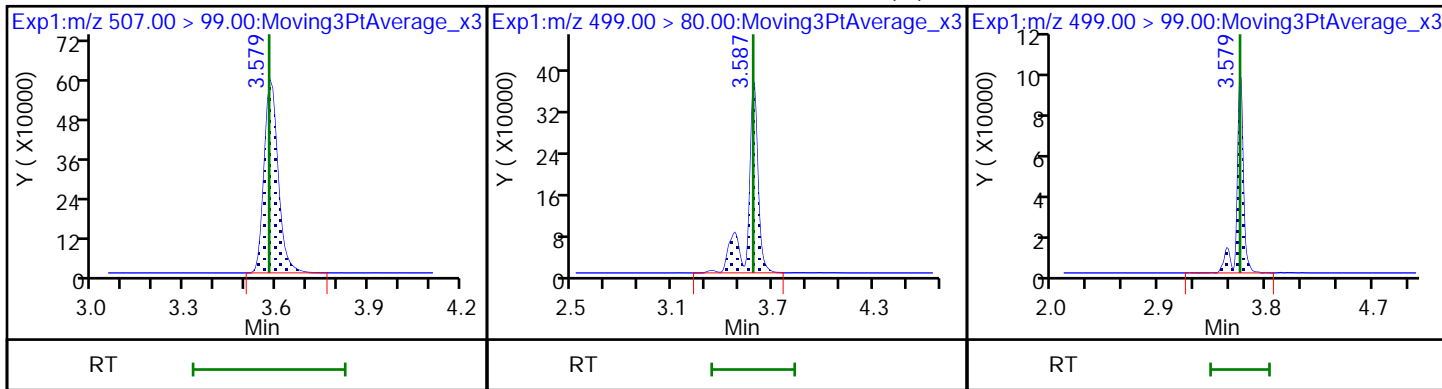
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid (M)

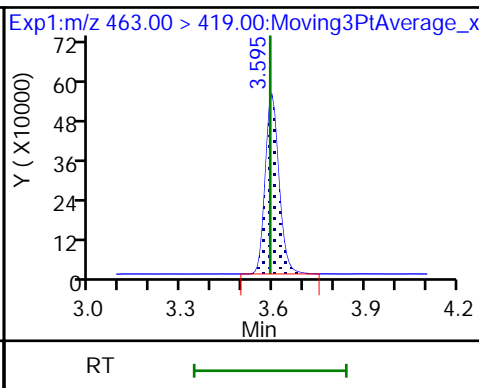
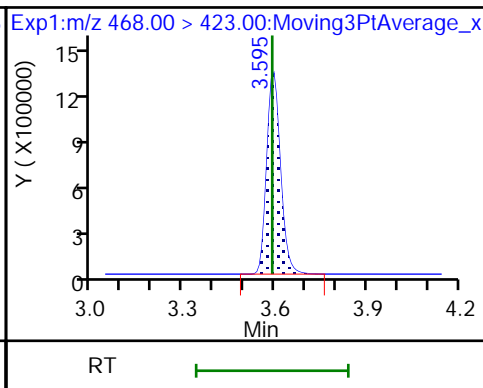
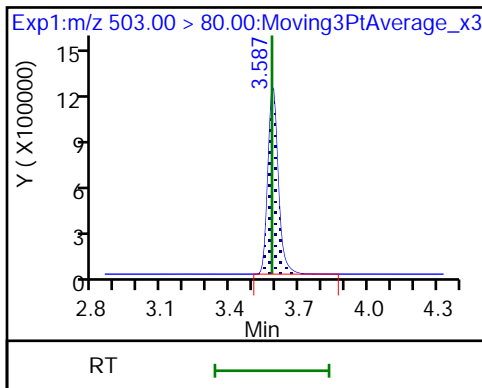
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

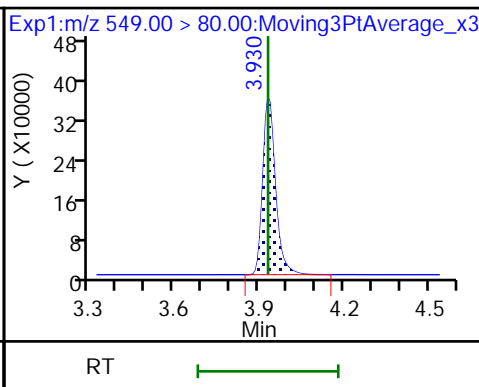
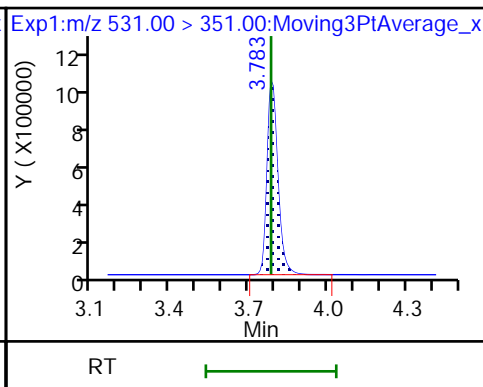
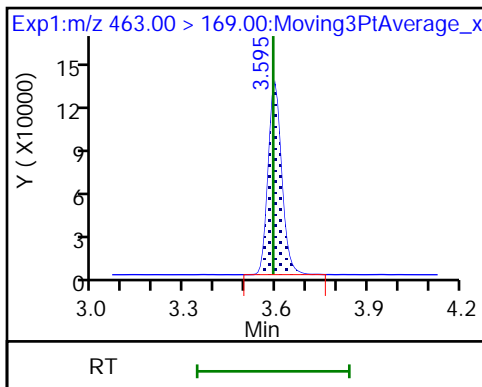
D 19 13C5 PFNA

20 Perfluorononanoic acid



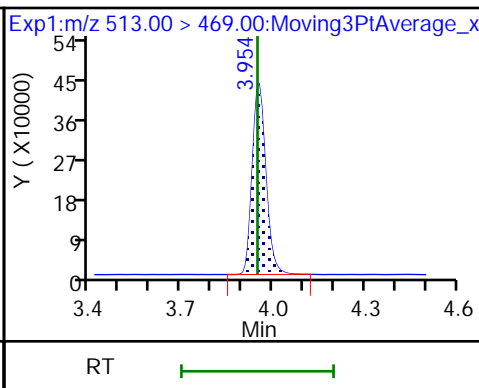
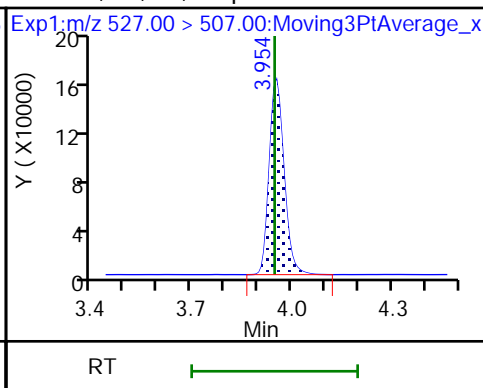
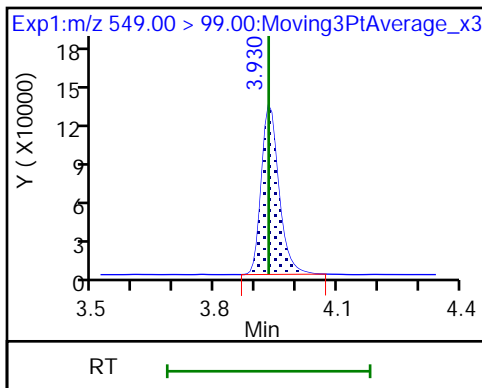
20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluorononanesulfonic acid



68 Perfluorononanesulfonic acid

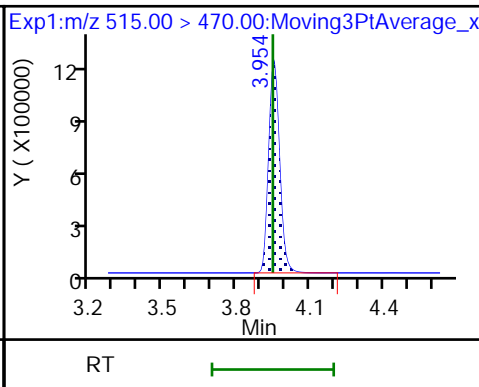
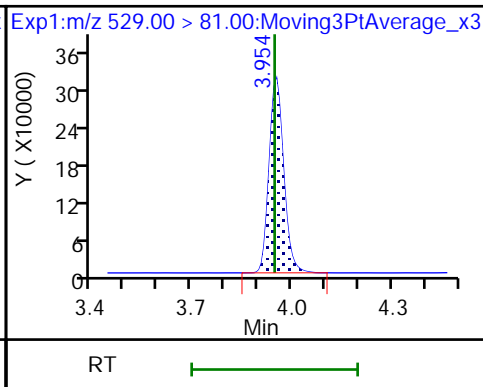
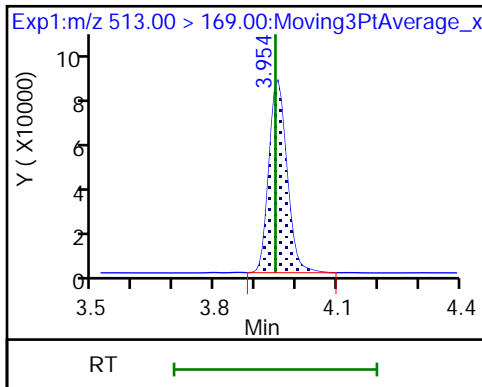
25 1H,1H,2H,2H-perfluorodecanesulfoni 24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 26 M2-8:2 FTS

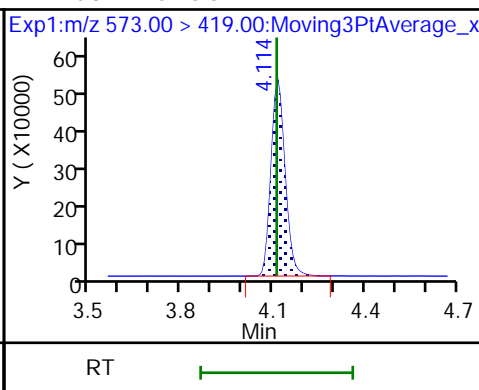
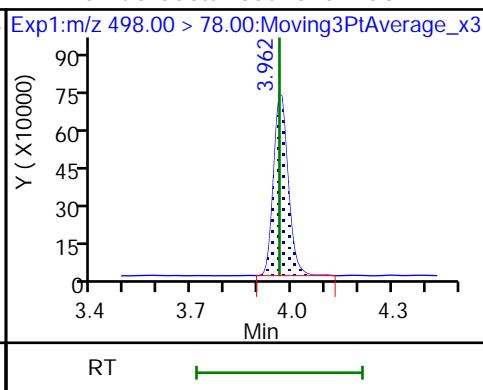
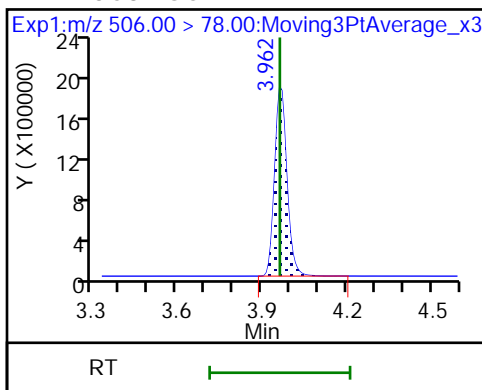
D 23 13C2 PFDA



D 21 13C8 FOSA

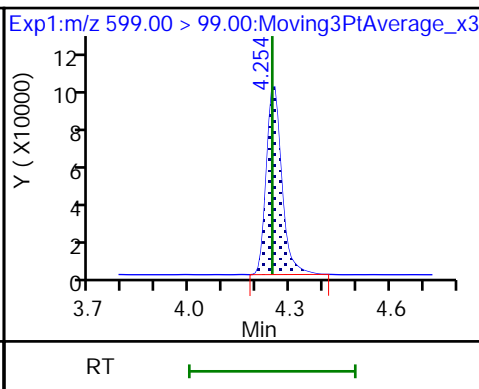
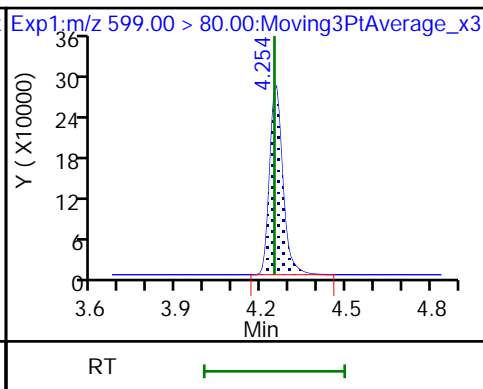
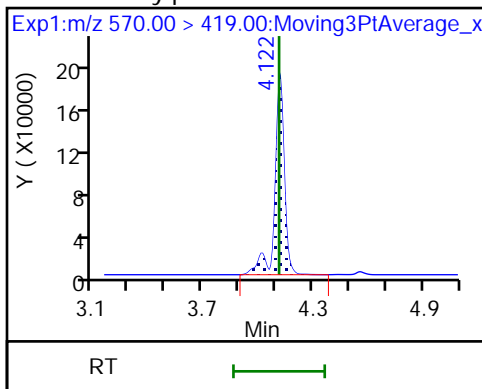
22 Perfluorooctanesulfonamide

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

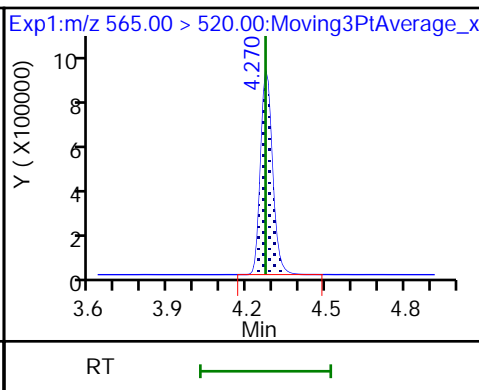
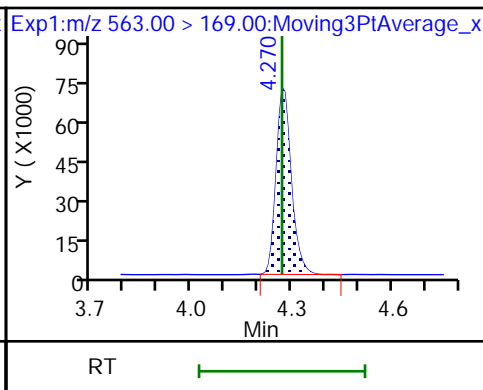
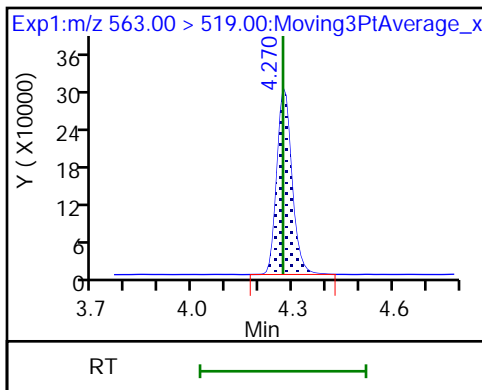
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

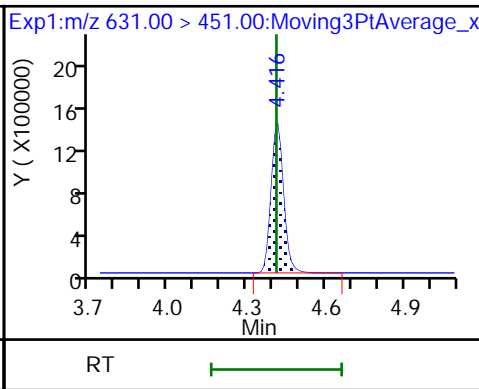
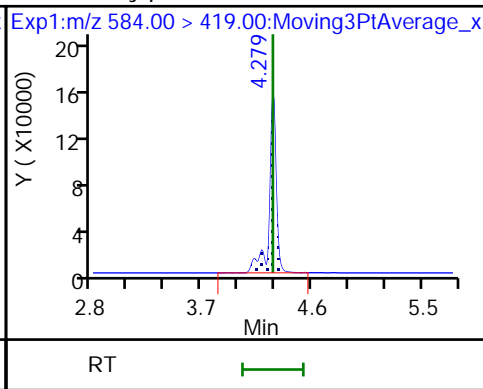
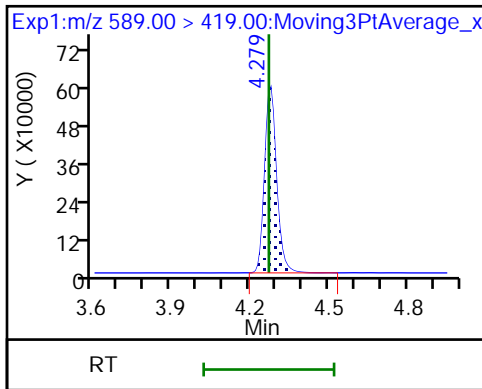
D 30 13C2 PFUnA

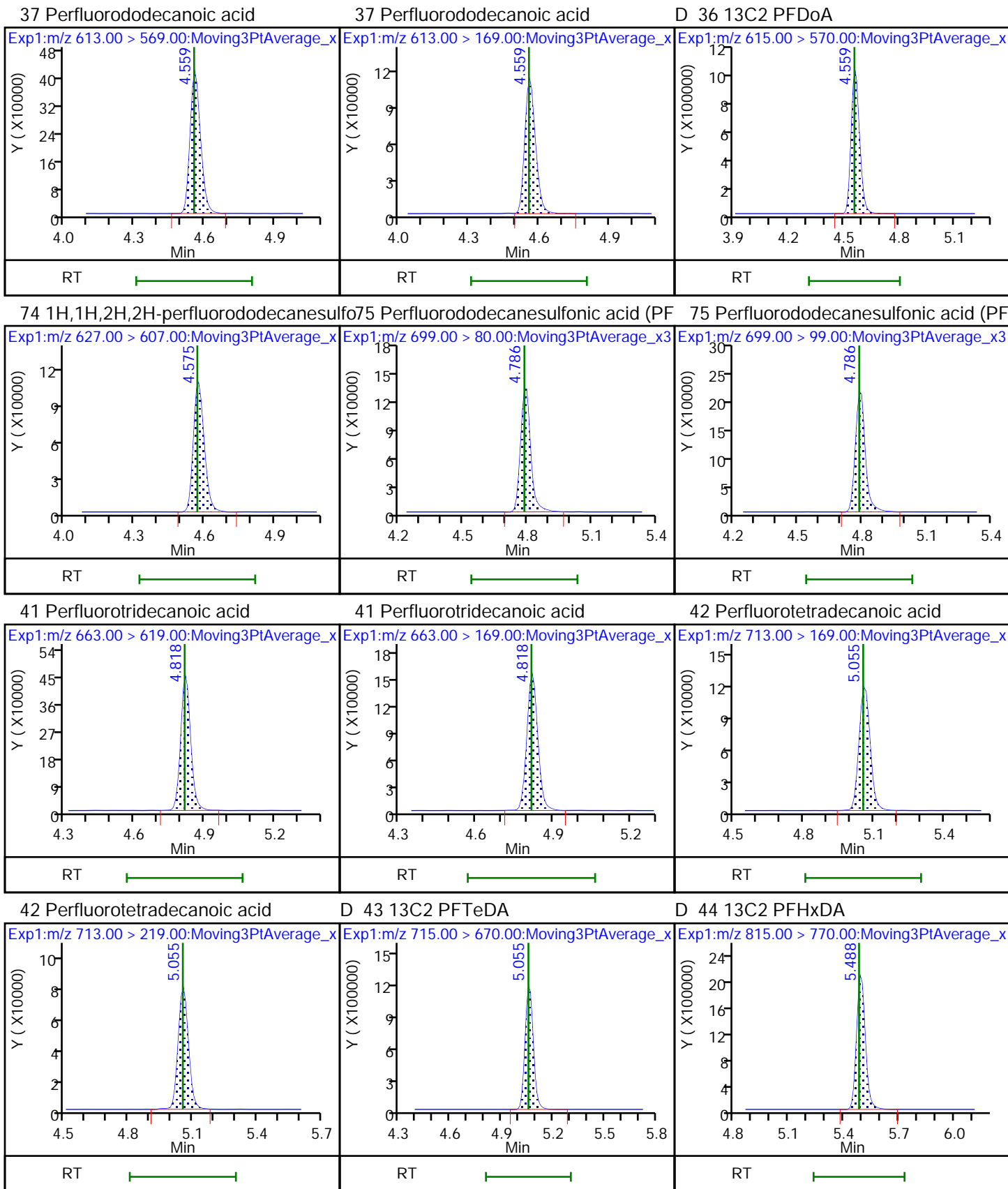


D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

66 11-Chloroeicosafuoro-3-oxaundecan

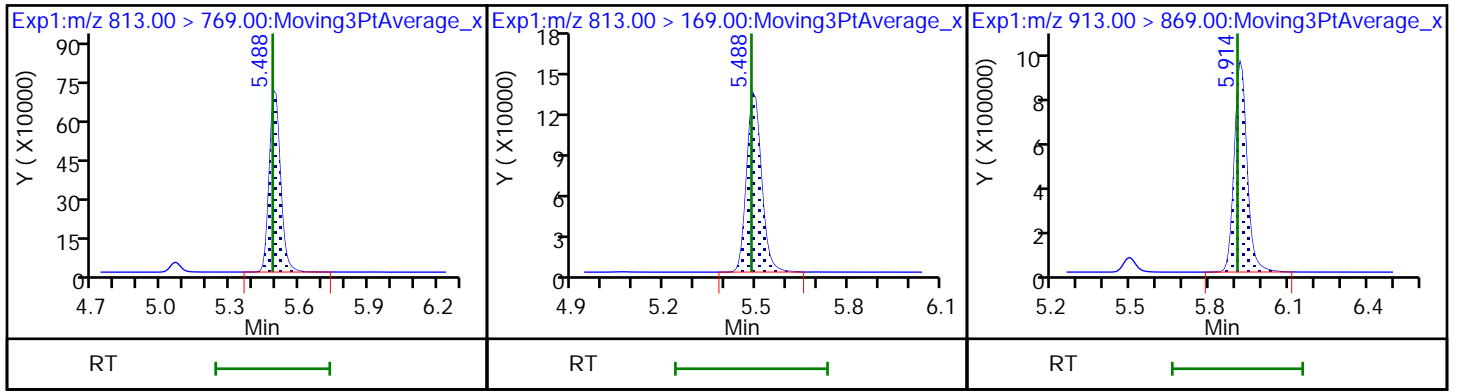




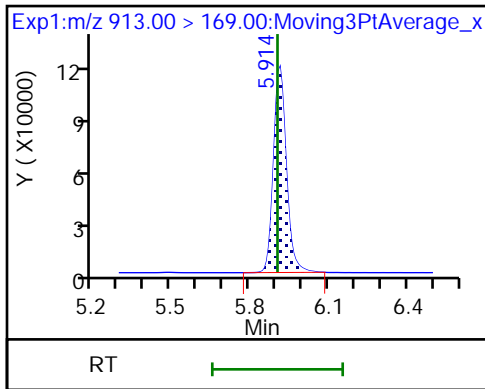
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

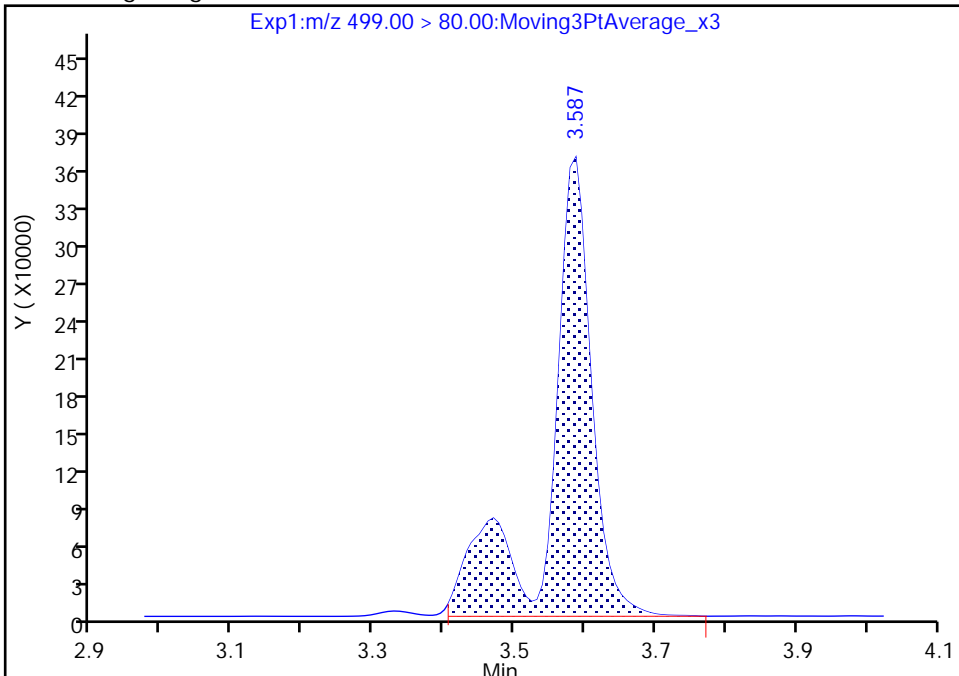
Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_008.d
Injection Date: 29-Nov-2018 07:09:11 Instrument ID: A8_N
Lims ID: IC L4 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

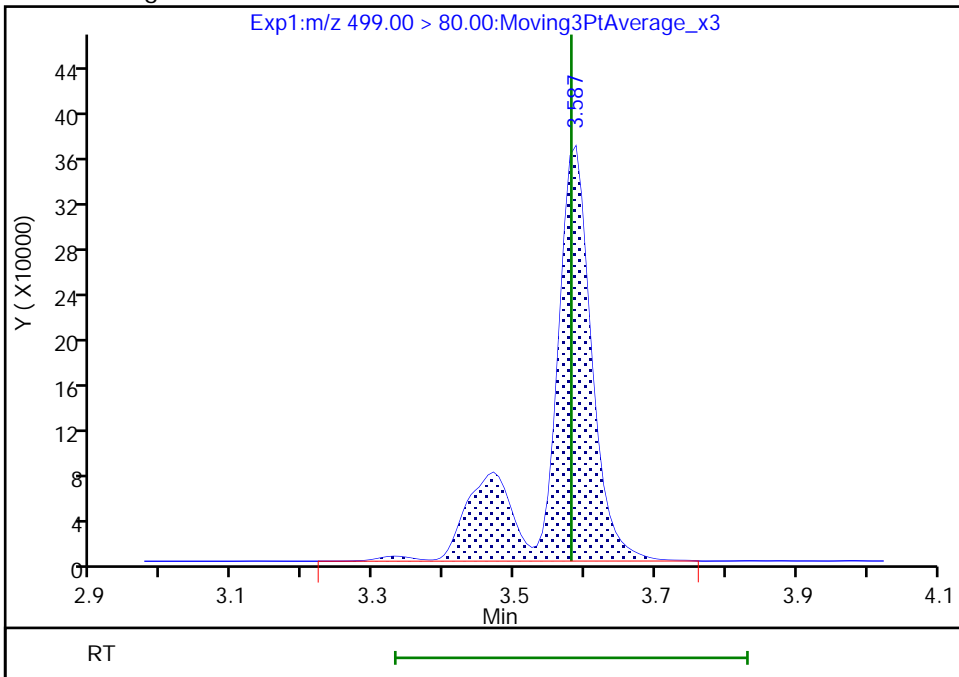
RT: 3.59
Area: 1520926
Amount: 0.900653
Amount Units: ng/ml

Processing Integration Results



RT: 3.59
Area: 1538297
Amount: 0.909500
Amount Units: ng/ml

Manual Integration Results



Reviewer: westendorfc, 29-Nov-2018 10:10:59
Audit Action: Manually Integrated

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_009.d
 Lims ID: IC L5 Full
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 29-Nov-2018 07:16:42 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37

Method: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 29-Nov-2018 10:25:24 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1

Process Host: CTX0326

First Level Reviewer: phomsophat Date: 29-Nov-2018 09:43:35

Ratio Calibration: None

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	1.748	1.749	-0.001	0.547	7319376	2.47	98.6	5609	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.753	0.002	1.004	6980294	2.62	105	1428	
D 3 13C5 PFPeA	267.90 > 223.00	2.062	2.061	0.001	0.645	4590990	2.46	98.4	6302	
4 Perfluoropentanoic acid	262.90 > 219.00	2.062	2.062	0.0	1.000	5143281	2.57	103	842	
D 47 13C3 PFBS	301.90 > 80.00	2.094	2.091	0.003	0.655	6786470	2.39	103	466370	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.094	0.0	1.000	6382050	2.25	Target=2.49	102	4977
	298.90 > 99.00	2.094	2.094	0.0	1.000	2665527	2.39(1.25-3.74)	102	1572	
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.742	532434	2.33	99.9	836	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.374	-0.002	1.133	1232150	2.19	93.8	7765	
6 Perfluorohexanoic acid	313.00 > 269.00	2.411	2.413	-0.002	1.000	4911287	2.54	Target=10.07	102	1572
	313.00 > 119.00	2.411	2.413	-0.002	1.000	439606	11.17(5.03-15.10)	102	1207	
D 7 13C2 PFHxA	315.00 > 270.00	2.411	2.413	-0.002	0.754	4819322	2.44	97.6	5557	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.431	2.432	-0.001	1.161	5957020	2.38	Target=2.71	101	7687
	349.00 > 99.00	2.431	2.432	-0.001	1.161	2180285	2.73(1.36-4.07)	101	5928	
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.530	2.531	-0.001	1.000	1169370	2.42	96.8	1180	

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	2.530	2.532	-0.002	0.791	354416	2.59		104	1908	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.803	2.800	0.003	1.000	5141963	2.51	Target=2.27	100	1361	
363.00 > 169.00	2.803	2.800	0.003	1.000	2019240		2.55(1.13-3.40)	100	2021	
D 9 13C4 PFHpA										
367.00 > 322.00	2.803	2.802	0.001	0.877	4817159	2.49		99.4	8688	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.803	2.807	-0.004	1.000	5315886	2.18	Target=3.00	95.8	6906	
399.00 > 99.00	2.803	2.807	-0.004	1.000	1809463		2.94(1.50-4.49)	95.8	5138	
D 11 18O2 PFHxS										
403.00 > 84.00	2.803	2.807	-0.004	0.877	5311560	2.40		102	11355	
77 DONA										
377.00 > 251.00	2.849	2.851	-0.002	0.797	13820561	2.42	Target=1.69	103	8037	
377.00 > 85.00	2.849	2.851	-0.002	0.797	8474090		1.63(0.85-2.54)	103	11583	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.174	3.178	-0.004	0.993	799833	2.35		98.8	5161	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.174	3.181	-0.007	1.000	1251547	2.39		101	471	
D 73 13C8 PFOA										
421.00 > 376.00	3.189	3.195	-0.006	0.998	6809611	2.44		99.7	10880	
D 14 13C4 PFOA										
417.00 > 372.00	3.197	3.200	-0.003	1.000	4546414	2.40		96.1	7772	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.197	3.200	-0.003	0.895	4698739	2.49	Target=3.88	105	5544	
449.00 > 99.00	3.197	3.200	-0.003	0.895	1193902		3.94(1.94-5.82)	105	4476	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.197	3.201	-0.004	1.000	5187467	2.51	Target=1.68	100	565	
413.00 > 169.00	3.197	3.201	-0.004	1.000	2822683		1.84(0.84-2.52)	100	1288	
* 62 13C2 PFOA										
415.00 > 370.00	3.197	3.201	-0.004		4862673	2.50			7879	
D 72 13C8 PFOS										
507.00 > 99.00	3.574	3.576	-0.002	1.118	1876592	2.46		103	7164	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.574	3.581	-0.007	1.000	3783829	2.36	Target=4.62	102	4202	
499.00 > 99.00	3.574	3.581	-0.007	1.000	788651		4.80(2.31-6.93)	102	2705	
D 18 13C4 PFOS										
503.00 > 80.00	3.574	3.581	-0.007	1.118	3437024	2.38		99.5	7525	
D 19 13C5 PFNA										
468.00 > 423.00	3.582	3.590	-0.008	1.120	3904861	2.46		98.5	9481	
20 Perfluorononanoic acid										
463.00 > 419.00	3.582	3.590	-0.008	1.000	4073348	2.53	Target=3.79	101	2197	
463.00 > 169.00	3.582	3.590	-0.008	1.000	1012863		4.02(1.90-5.69)	101	7340	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.780	3.783	-0.003	1.058	7034075	2.44		105	15465	

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	3.925	3.931	-0.006	1.098	2834694	2.53	Target=2.65	106	7817	
549.00 > 99.00	3.925	3.931	-0.006	1.098	978992		2.90(1.33-3.97)	106	3601	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.940	3.948	-0.008	1.000	1139190	2.38		99.3	12634	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.940	3.948	-0.008	1.000	3465543	2.51	Target=4.73	101	3759	
513.00 > 169.00	3.940	3.948	-0.008	1.000	639983		5.42(2.36-7.09)	101	419	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.940	3.948	-0.008	1.232	876218	2.38		99.6	5139	
D 23 13C2 PFDA										
515.00 > 470.00	3.940	3.948	-0.008	1.232	3492597	2.52		101	13743	
D 21 13C8 FOSA										
506.00 > 78.00	3.956	3.962	-0.006	1.237	5335678	2.50		100	5341	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.956	3.962	-0.006	1.000	5404973	2.53		101	332	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.108	4.111	-0.003	1.285	1721823	2.54		102	5314	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.108	4.115	-0.007	1.000	1581217	2.44		97.6	1250	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.240	4.247	-0.007	1.186	2371422	2.55	Target=2.77	106	7658	
599.00 > 99.00	4.240	4.247	-0.007	1.186	745901		3.18(1.39-4.16)	106	4622	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.265	4.270	-0.005	1.000	2448410	2.50	Target=4.24	100.0	2731	
563.00 > 169.00	4.265	4.270	-0.005	1.000	576286		4.25(2.12-6.36)	100.0	3211	
D 30 13C2 PFUnA										
565.00 > 520.00	4.265	4.270	-0.005	1.334	2737752	2.46		98.2	5776	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.265	4.271	-0.006	1.334	1785526	2.50		99.9	2730	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.273	4.279	-0.006	1.002	1544938	2.52		101	4061	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.408	4.412	-0.004	1.234	10294451	2.43		103	13277	
35 MeFOSA										
512.00 > 169.00	4.460	4.465	-0.005		1671600	NC			609	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.552	4.556	-0.004	1.000	3089872	2.46	Target=4.27	98.5	3235	
613.00 > 169.00	4.552	4.556	-0.004	1.000	787546		3.92(2.13-6.40)	98.5	5850	
D 36 13C2 PFDaA										
615.00 > 570.00	4.552	4.556	-0.004	1.424	2884956	2.43		97.3	5803	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.568	4.569	-0.001	1.159	814296	2.35		97.4	6788	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.636	4.643	-0.007		1667356	NC			533	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.778	4.785	-0.007	1.337	1067276	2.51	Target=0.00	104	9261	
699.00 > 99.00	4.787	4.785	0.002	1.340	1622264		0.66(0.00-0.00)	104	15978	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.812	4.815	-0.003	1.057	3294032	2.70	Target=2.51	108	3328	
663.00 > 169.00	4.812	4.815	-0.003	1.057	1035454		3.18(1.25-3.76)	108	7786	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.047	5.053	-0.006	1.000	895015	2.47	Target=1.42	99.0	6572	
713.00 > 219.00	5.047	5.053	-0.006	1.000	668033		1.34(0.71-2.13)	99.0	2153	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.047	5.054	-0.007	1.578	3495868	2.48		99.0	9985	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.480	5.481	-0.001	1.714	6521815	2.50		100	8780	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.480	5.484	-0.004	1.000	5890709	2.58	Target=5.72	103	567	
813.00 > 169.00	5.480	5.484	-0.004	1.000	1056813		5.57(2.86-8.58)	103	4491	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.900	5.904	-0.004	1.077	7655054	2.53	Target=7.65	101	744	
913.00 > 169.00	5.900	5.904	-0.004	1.077	965138		7.93(3.83-11.48)	101	4404	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_009.d

Injection Date: 29-Nov-2018 07:16:42

Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

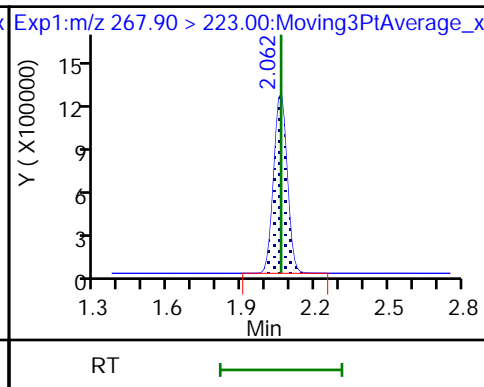
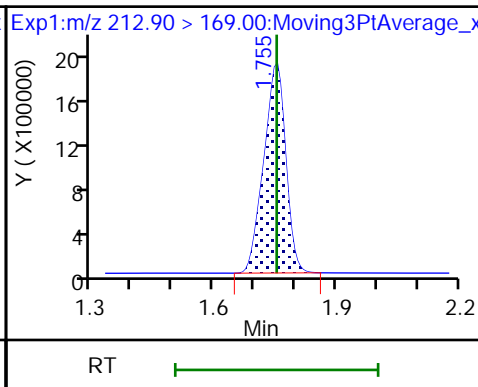
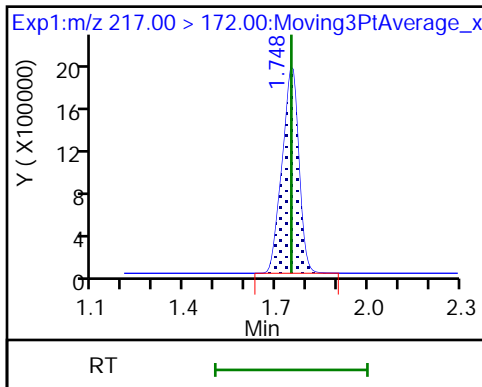
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

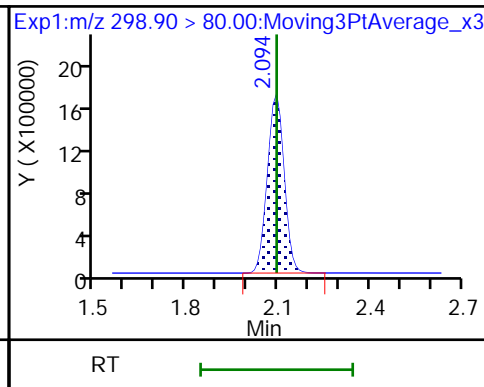
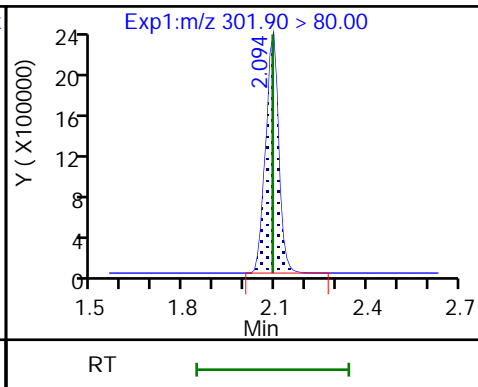
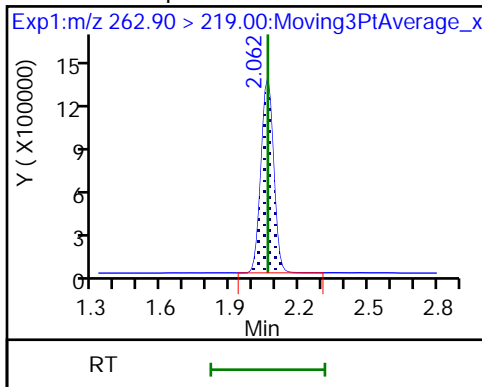
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

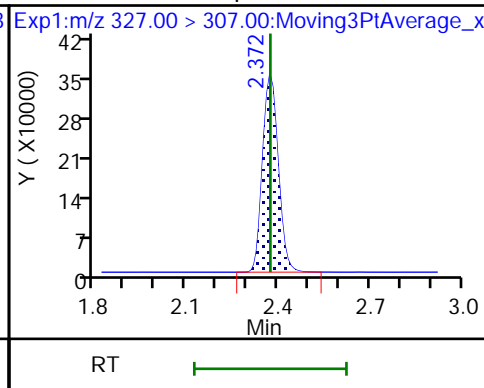
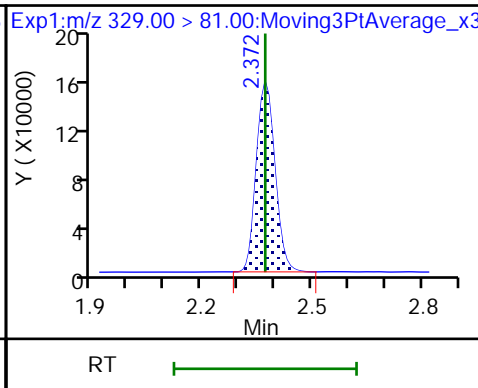
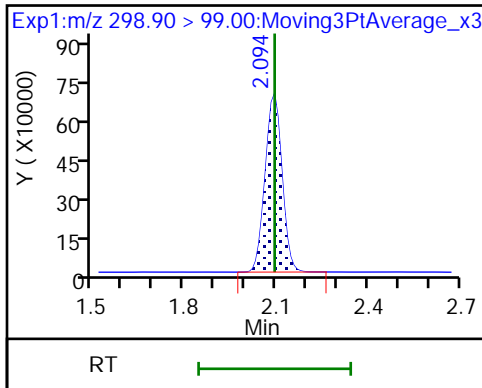
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

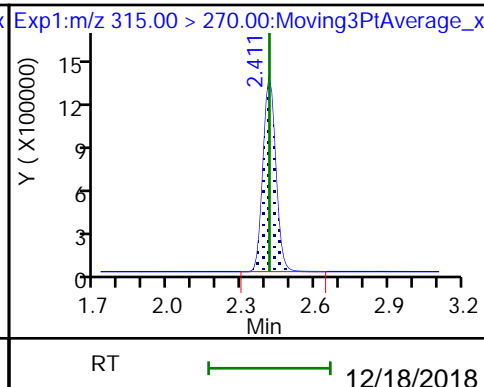
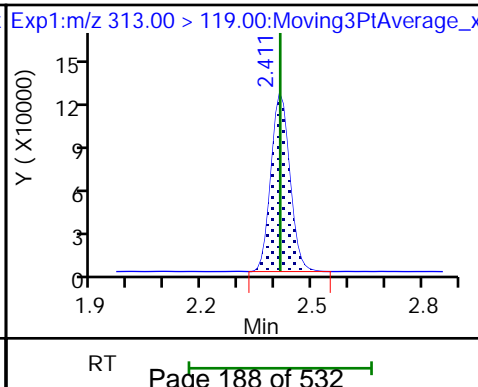
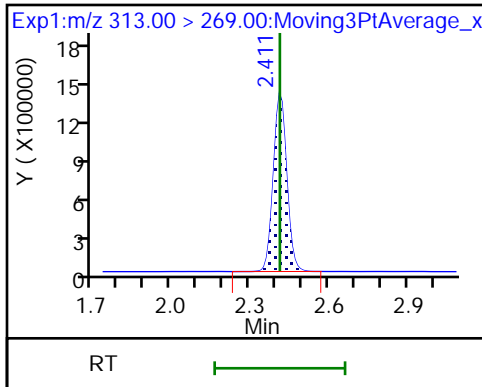
61 1H,1H,2H,2H-perfluorohexanesulfoni

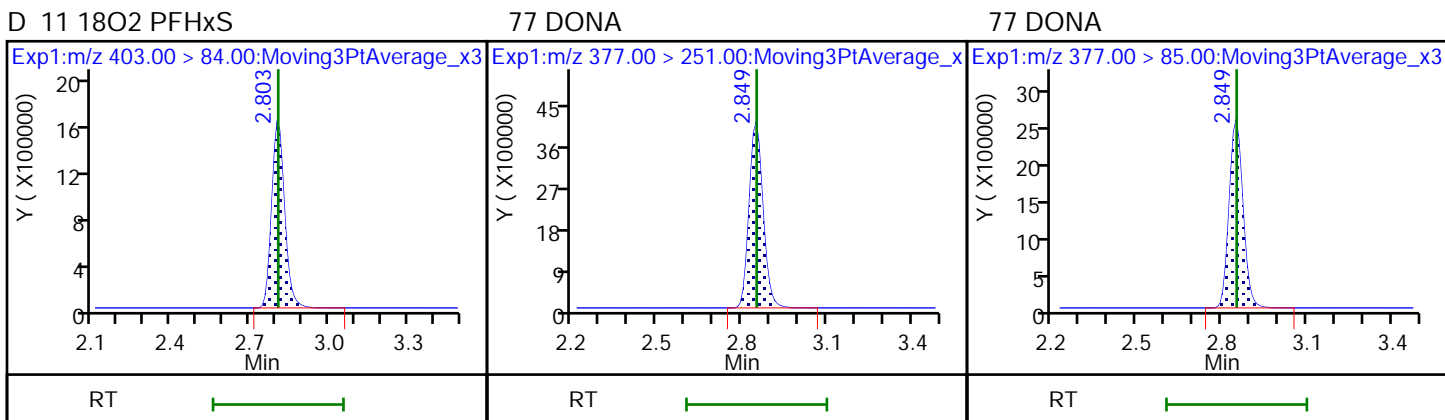
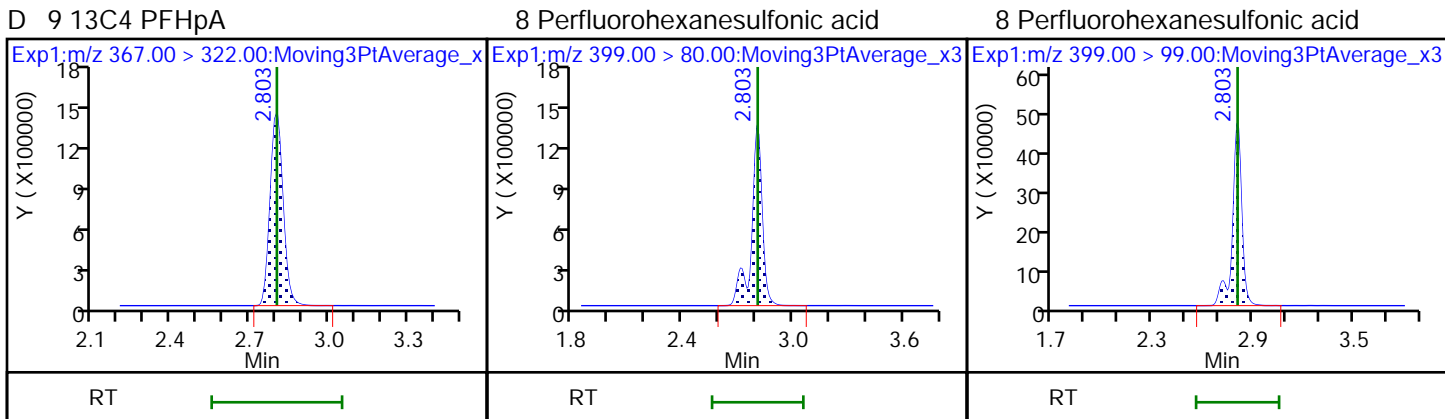
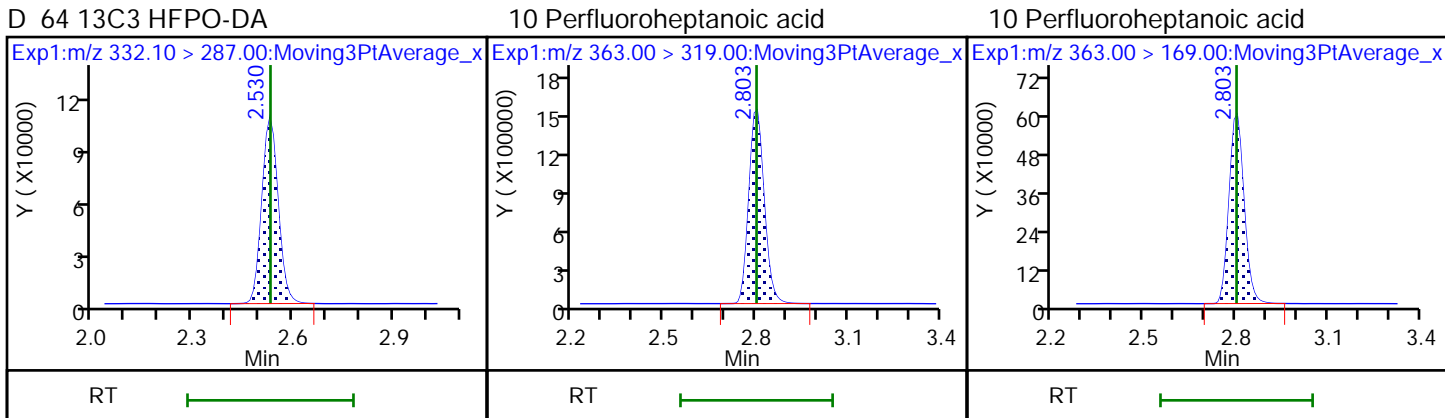
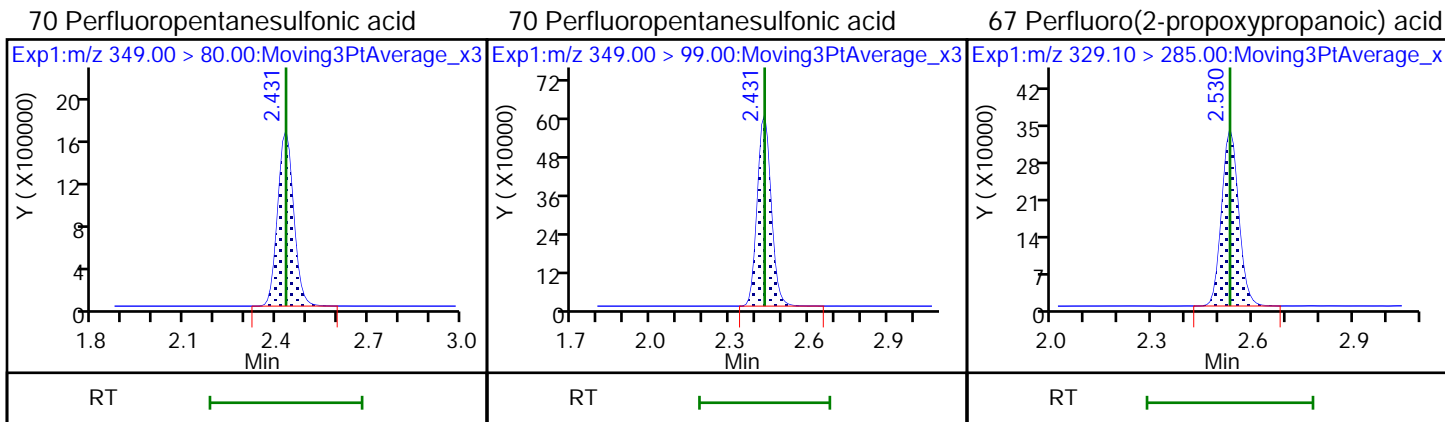


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

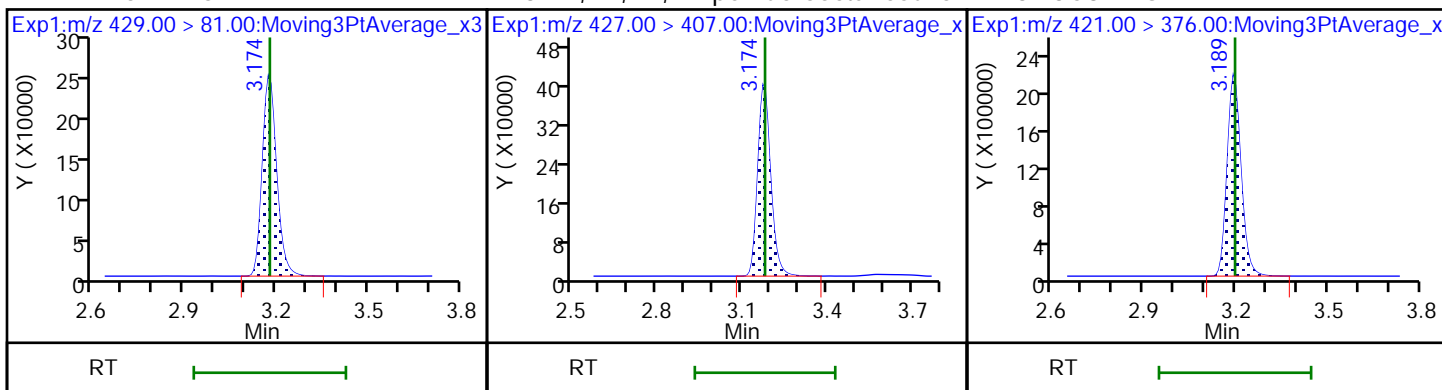
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

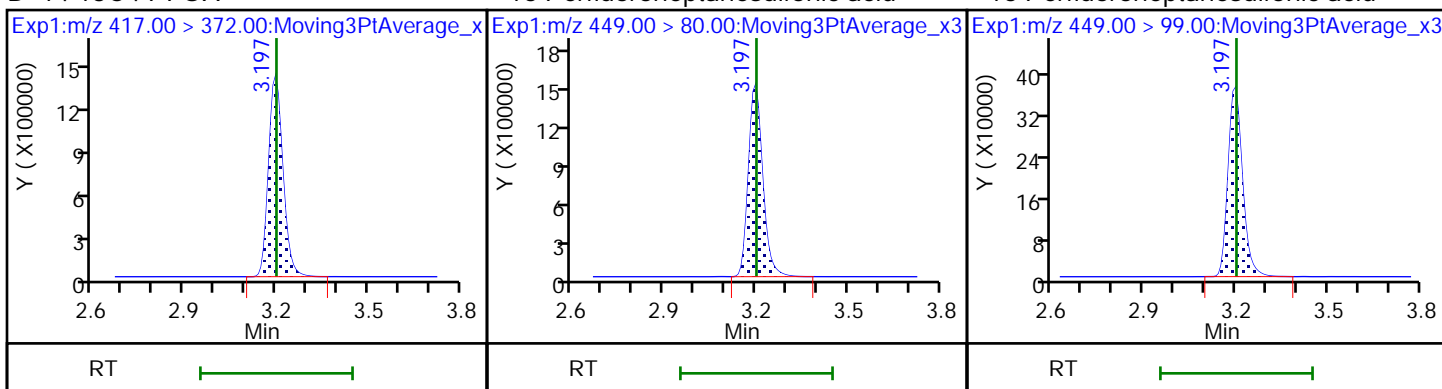
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

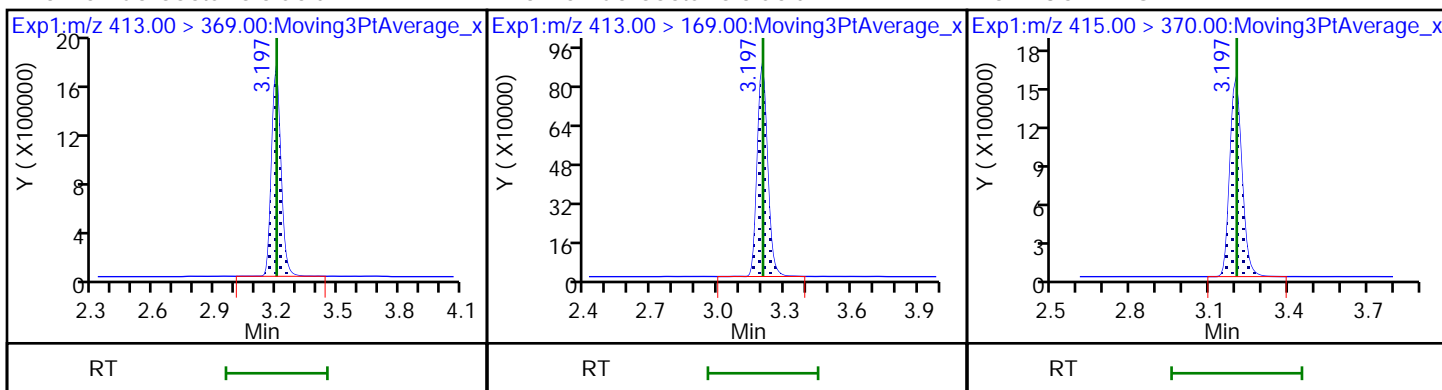
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

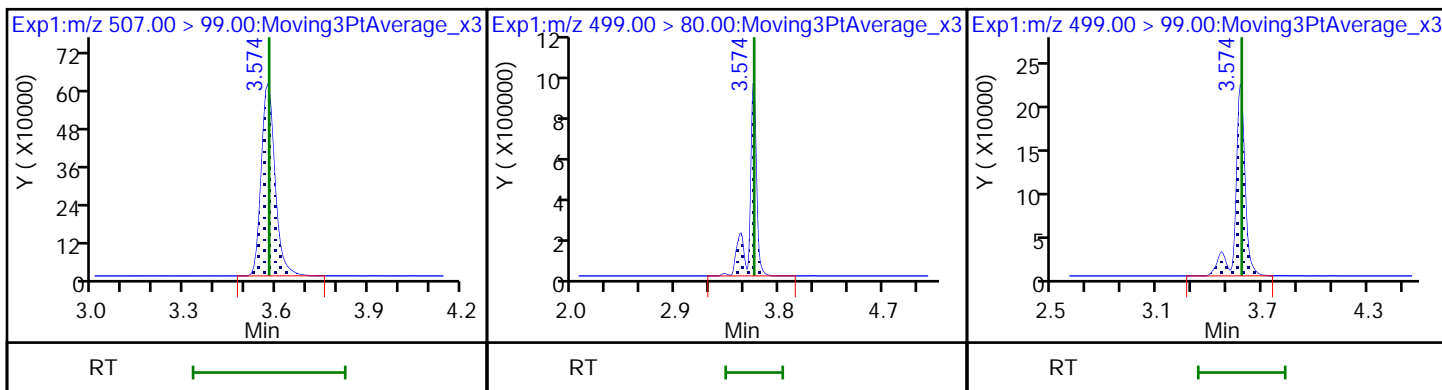
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

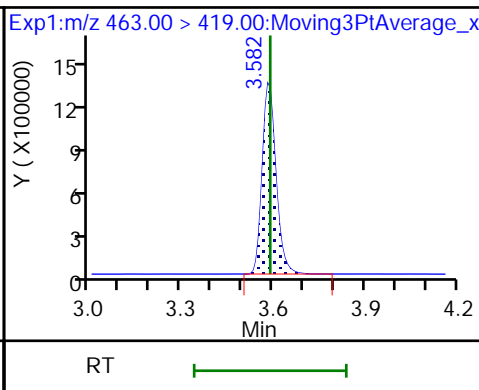
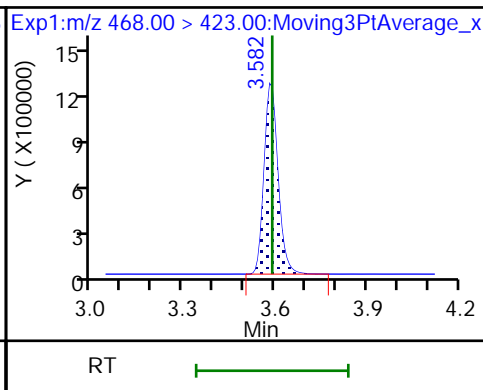
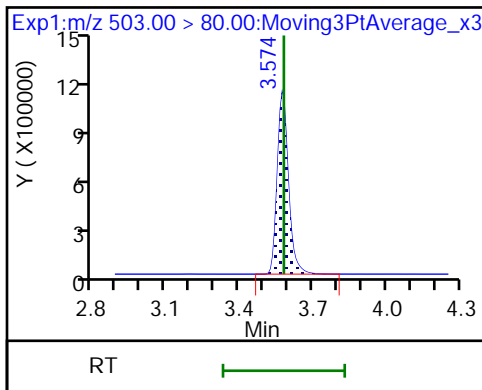
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

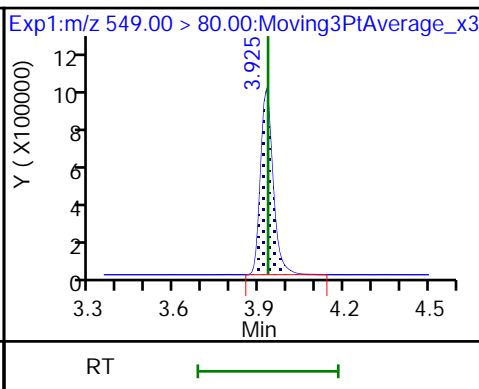
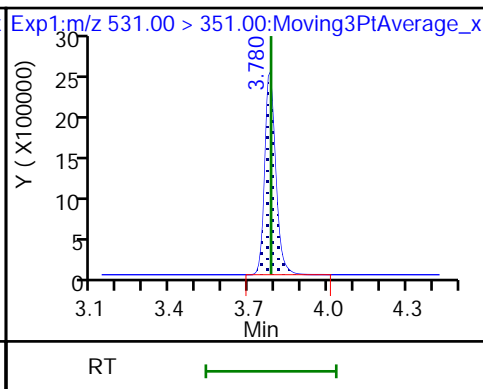
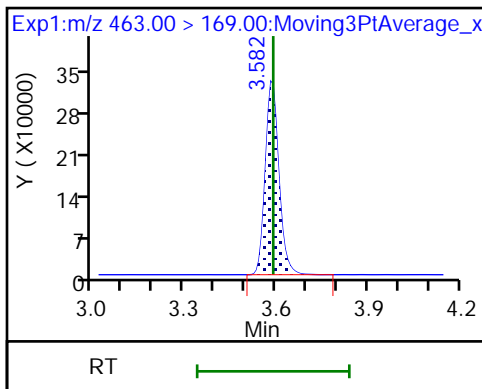
D 19 13C5 PFNA

20 Perfluorononanoic acid



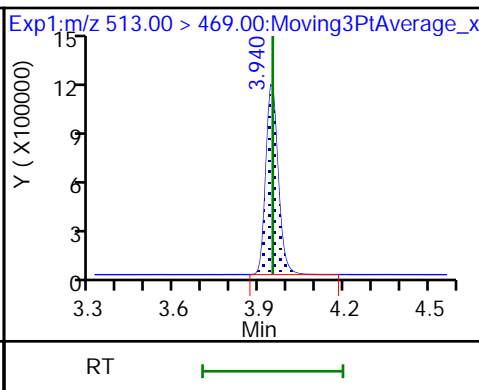
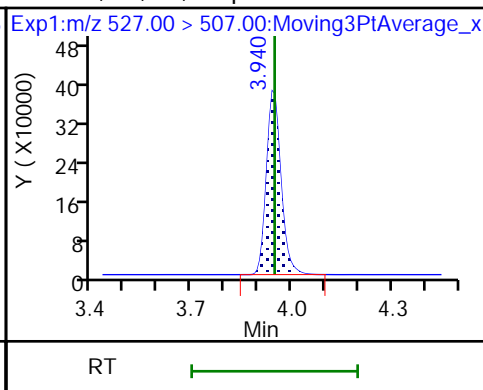
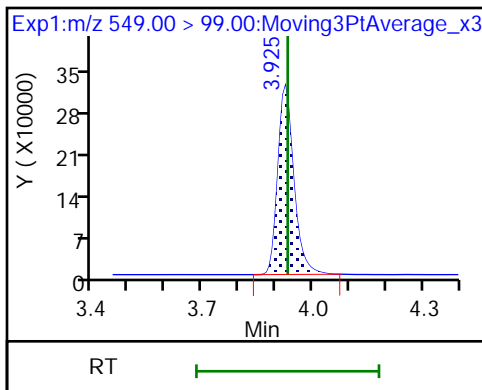
20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluorononanesulfonic acid



68 Perfluorononanesulfonic acid

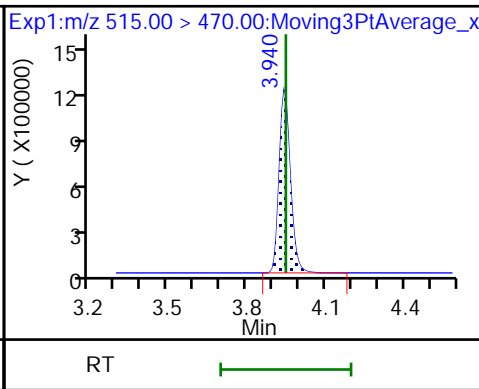
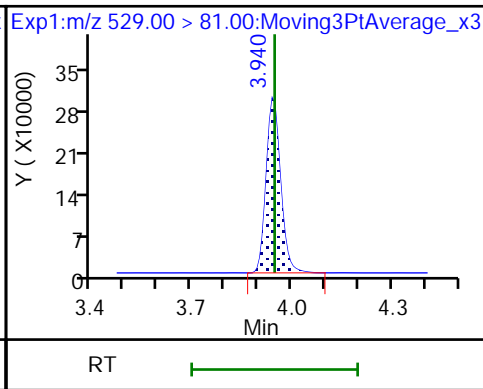
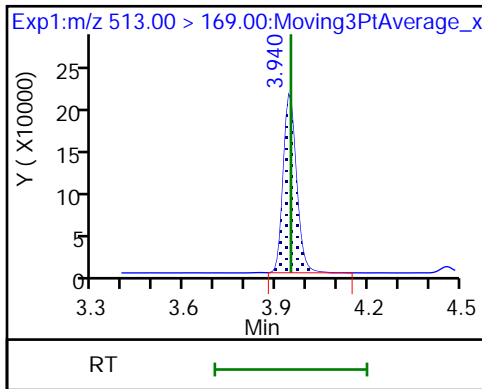
25 1H,1H,2H,2H-perfluorodecanesulfoni 24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 26 M2-8:2 FTS

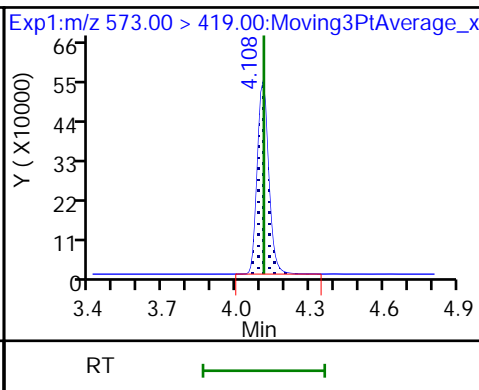
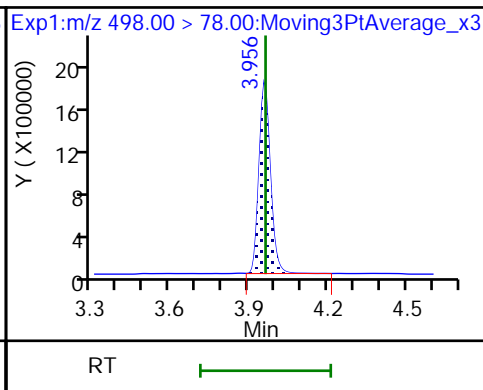
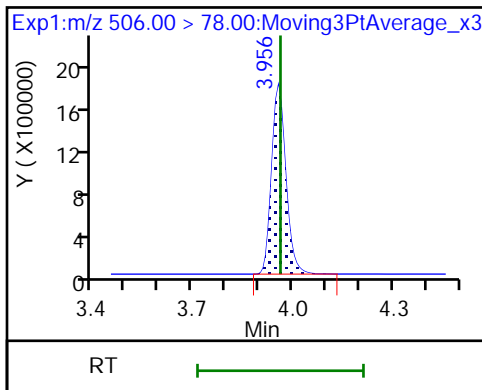
D 23 13C2 PFDA



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

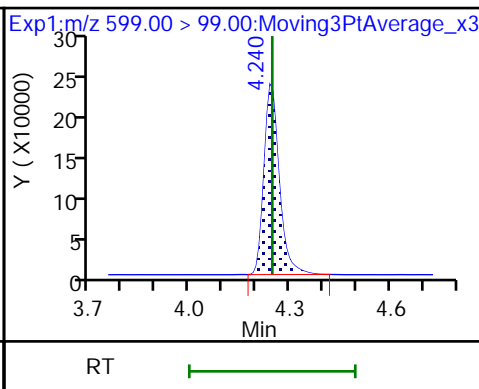
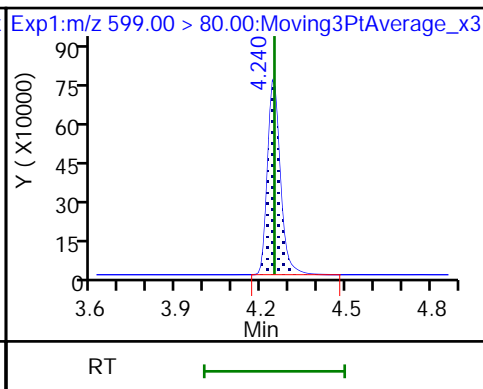
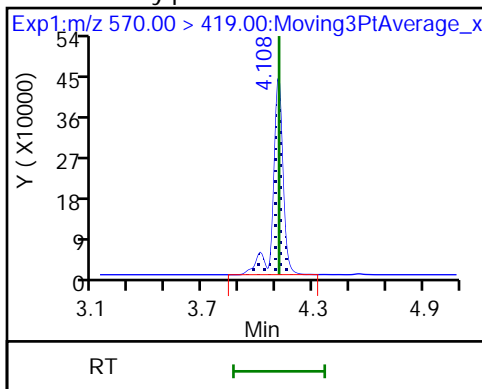
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

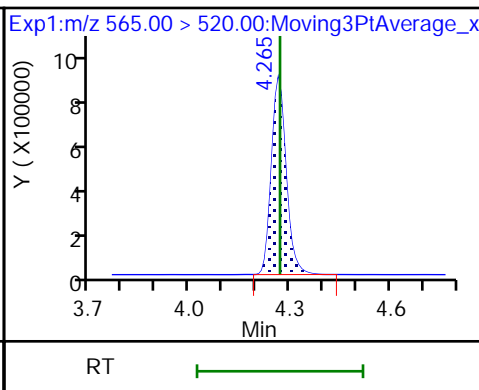
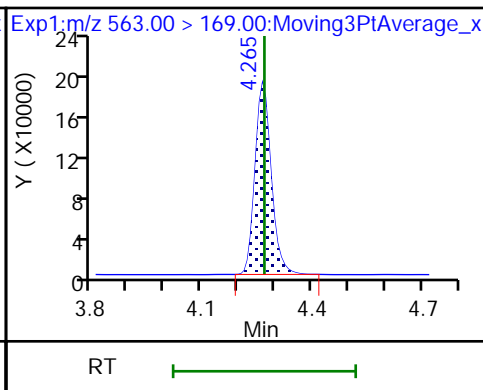
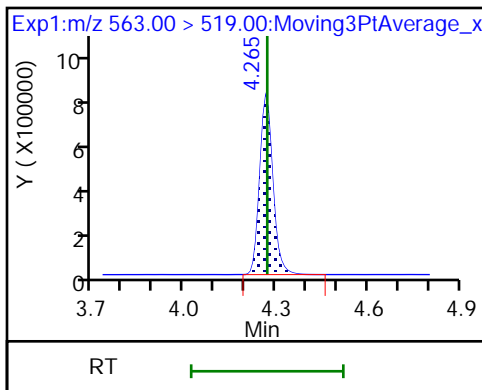
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

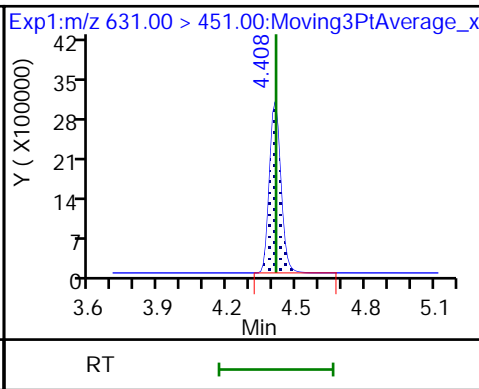
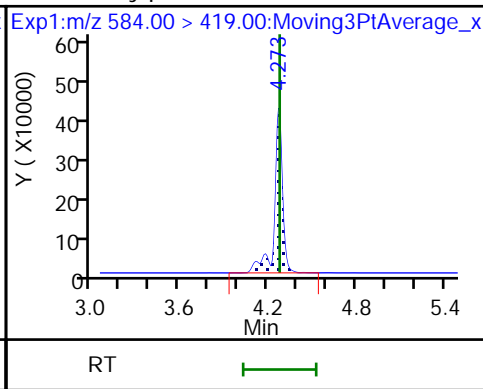
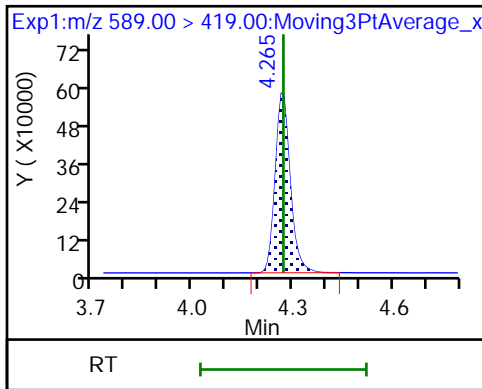
D 30 13C2 PFUnA

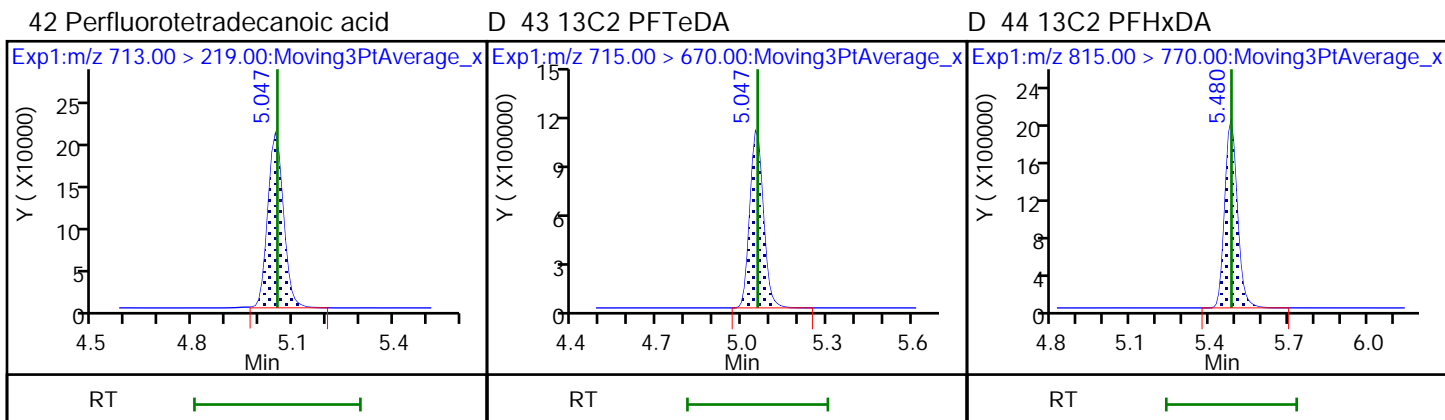
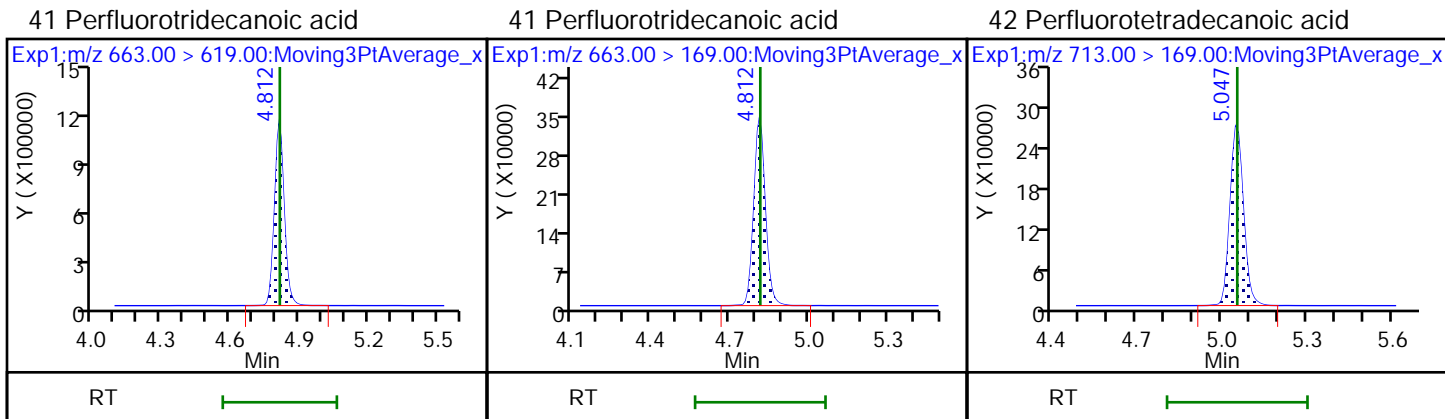
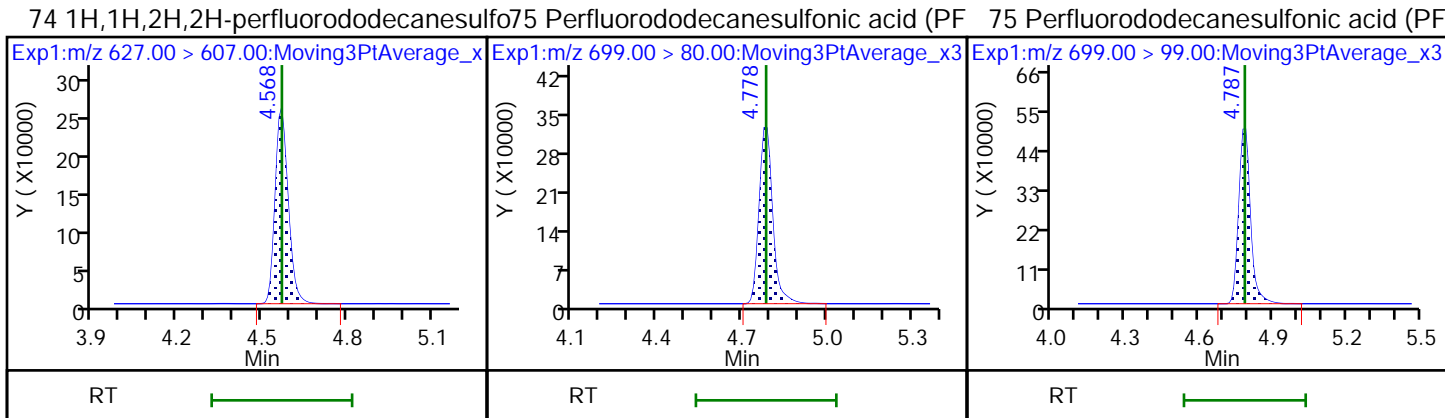
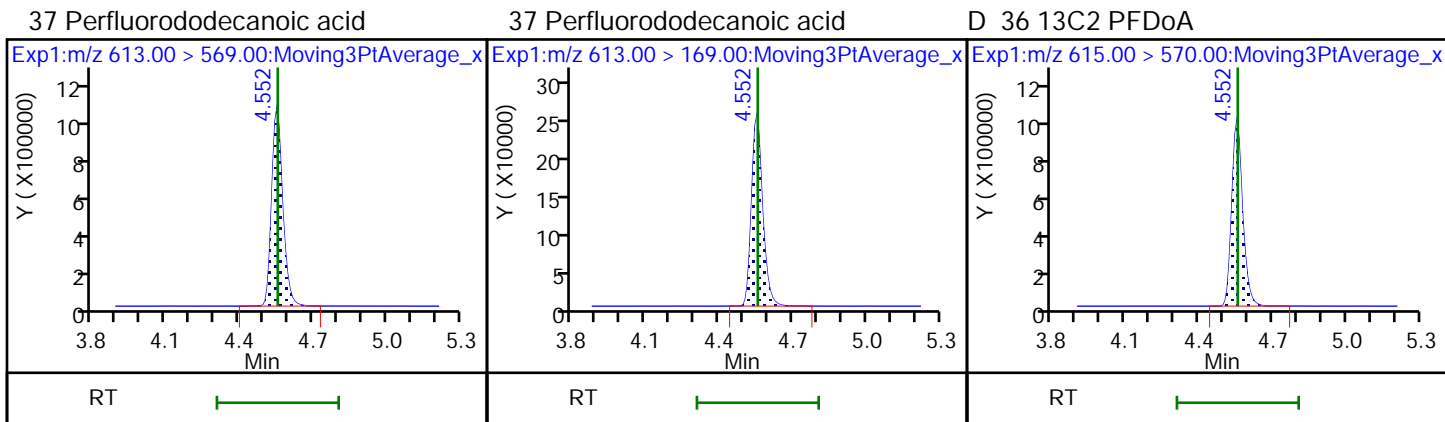


D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

66 11-Chloroeicosafuoro-3-oxaundecan

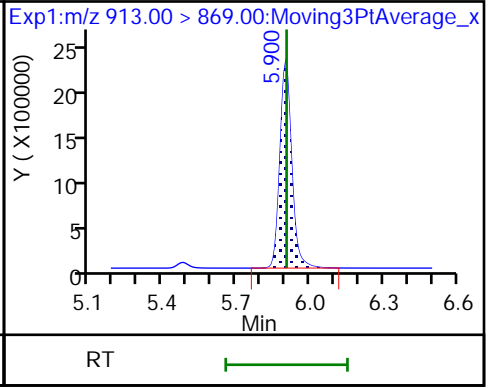
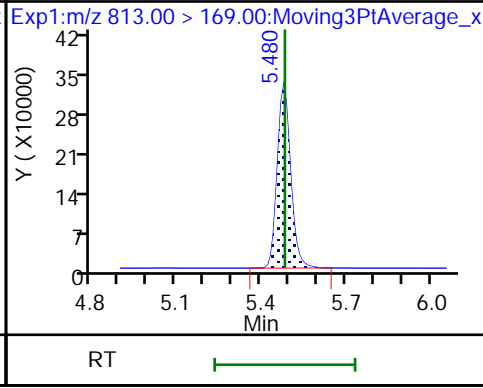
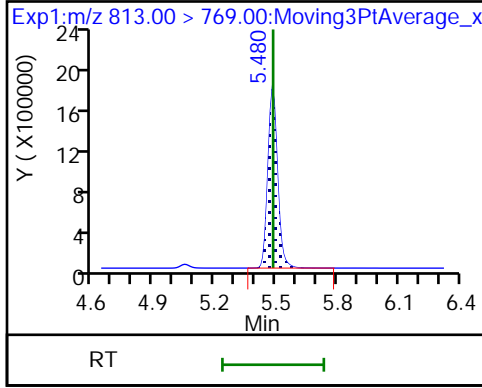




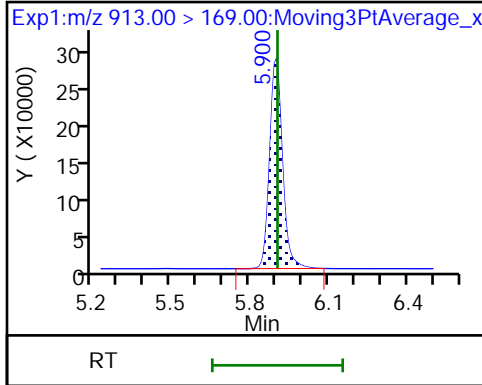
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

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 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 29-Nov-2018 07:24:09 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 6
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
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 Limit Group: LC PFC ICAL
 Last Update: 29-Nov-2018 10:25:28 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
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Column 1 : Det: EXP1

Process Host: CTX0326

Ratio Calibration: None

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	1.748	1.749	-0.001	0.547	7393124	2.56	103	5510	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.753	0.002	1.004	13756884	5.11	102	2311	
D 3 13C5 PFPeA	267.90 > 223.00	2.062	2.061	0.001	0.645	4668056	2.57	103	7228	
4 Perfluoropentanoic acid	262.90 > 219.00	2.062	2.062	0.0	1.000	10289557	5.06	101	1582	
D 47 13C3 PFBS	301.90 > 80.00	2.094	2.091	0.003	0.655	6627498	2.40	103	382966	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.094	0.0	1.000	12124929	4.38	Target=2.49	99.2	10022
	298.90 > 99.00	2.094	2.094	0.0	1.000	5336533		2.27(1.25-3.74)	99.2	3045
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.742	511130	2.31	98.7	1108	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.374	-0.002	1.133	2405142	4.38	93.8	11428	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.413	-0.001	1.000	9899875	4.99	Target=10.07	99.8	3140
	313.00 > 119.00	2.412	2.413	-0.001	1.000	881226		11.23(5.03-15.10)	99.8	2002
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.413	-0.001	0.754	4946631	2.58	103	5548	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.431	2.432	-0.001	1.161	11557824	4.72	Target=2.71	101	10748
	349.00 > 99.00	2.431	2.432	-0.001	1.161	4421247		2.61(1.36-4.07)	101	8323
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.530	2.531	-0.001	1.000	2309065	5.14	103	2314	

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	2.530	2.532	-0.002	0.791	329543	2.48		99.2	1904	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.803	2.800	0.003	1.000	9966359	4.90	Target=2.27	98.1	2448	
363.00 > 169.00	2.803	2.800	0.003	1.000	4128039		2.41(1.13-3.40)	98.1	3713	
D 9 13C4 PFHpA										
367.00 > 322.00	2.803	2.802	0.001	0.877	4777339	2.54		101	8034	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.803	2.807	-0.004	1.000	10289418	4.44	Target=3.00	97.5	9693	
399.00 > 99.00	2.803	2.807	-0.004	1.000	3405326		3.02(1.50-4.49)	97.5	5826	
D 11 18O2 PFHxS										
403.00 > 84.00	2.803	2.807	-0.004	0.877	5052099	2.35		99.4	13461	
77 DONA										
377.00 > 251.00	2.850	2.851	-0.001	0.797	25445940	4.50	Target=1.69	95.5	10295	
377.00 > 85.00	2.850	2.851	-0.001	0.797	16046404		1.59(0.85-2.54)	95.5	14274	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.174	3.178	-0.004	0.993	800502	2.42		102	5628	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.182	3.181	0.001	1.003	2615324	4.99		105	1020	
D 73 13C8 PFOA										
421.00 > 376.00	3.198	3.195	0.003	1.000	6745396	2.49		102	13495	
D 14 13C4 PFOA										
417.00 > 372.00	3.198	3.200	-0.002	1.000	4644760	2.53		101	8163	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.198	3.200	-0.002	0.894	8858103	4.74	Target=3.88	99.6	6662	
449.00 > 99.00	3.198	3.200	-0.002	0.894	2356634		3.76(1.94-5.82)	99.6	6071	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.198	3.201	-0.003	1.000	10024286	4.76	Target=1.68	95.0	1019	
413.00 > 169.00	3.198	3.201	-0.003	1.000	5687348		1.76(0.84-2.52)	95.0	2557	
* 62 13C2 PFOA										
415.00 > 370.00	3.198	3.201	-0.003		4723860	2.50			7304	
D 72 13C8 PFOS										
507.00 > 99.00	3.576	3.576	0.0	1.118	1764823	2.38		99.7	5969	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.576	3.581	-0.005	1.000	7380472	4.64	Target=4.62	100.0	4265	
499.00 > 99.00	3.576	3.581	-0.005	1.000	1567512		4.71(2.31-6.93)	100.0	5965	
D 18 13C4 PFOS										
503.00 > 80.00	3.576	3.581	-0.005	1.118	3410756	2.43		102	7663	
D 19 13C5 PFNA										
468.00 > 423.00	3.592	3.590	0.002	1.123	3960946	2.57		103	9191	
20 Perfluorononanoic acid										
463.00 > 419.00	3.592	3.590	0.002	1.000	8055062	4.93	Target=3.79	98.6	3375	
463.00 > 169.00	3.592	3.590	0.002	1.000	1934920		4.16(1.90-5.69)	98.6	6812	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.783	3.783	0.0	1.058	13747857	4.80		103	18046	

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	3.930	3.931	-0.001	1.099	5226088	4.71	Target=2.65	98.1	8087	
549.00 > 99.00	3.930	3.931	-0.001	1.099	1868639		2.80(1.33-3.97)	98.1	9577	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.945	3.948	-0.003	1.000	2351661	4.78		99.8	10004	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.945	3.948	-0.003	1.000	7057683	5.21	Target=4.73	104	5555	
513.00 > 169.00	3.945	3.948	-0.003	1.000	1291039		5.47(2.36-7.09)	104	435	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.945	3.948	-0.003	1.234	899152	2.52		105	5166	
D 23 13C2 PFDA										
515.00 > 470.00	3.945	3.948	-0.003	1.234	3429499	2.55		102	11944	
D 21 13C8 FOSA										
506.00 > 78.00	3.961	3.962	-0.001	1.239	5350524	2.58		103	7037	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.961	3.962	-0.001	1.000	10614611	4.96		99.1	635	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.113	4.111	0.002	1.286	1595051	2.43		97.1	5098	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.113	4.114	-0.001	1.000	3362979	5.60		112	1237	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.244	4.247	-0.003	1.187	4543700	4.91	Target=2.77	102	10784	
599.00 > 99.00	4.244	4.247	-0.003	1.187	1495683		3.04(1.39-4.16)	102	6513	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.268	4.270	-0.002	1.000	4908272	4.97	Target=4.24	99.5	4696	
563.00 > 169.00	4.268	4.270	-0.002	1.000	1136156		4.32(2.12-6.36)	99.5	3930	
D 30 13C2 PFUnA										
565.00 > 520.00	4.268	4.270	-0.002	1.335	2756810	2.55		102	6871	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.268	4.271	-0.003	1.335	1805208	2.60		104	2061	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.277	4.279	-0.002	1.002	2969135	4.78		95.7	4832	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.405	4.412	-0.007	1.232	19543573	4.64		98.6	19239	
35 MeFOSA										
512.00 > 169.00	4.467	4.465	0.002		3366643	NC			638	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.558	4.556	0.002	1.000	6521952	5.18	Target=4.27	104	4864	
613.00 > 169.00	4.558	4.556	0.002	1.000	1582310		4.12(2.13-6.40)	104	5347	
D 36 13C2 PFDoA										
615.00 > 570.00	4.558	4.556	0.002	1.425	2894227	2.51		100	7563	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.566	4.569	-0.003	1.157	1692240	4.75		98.6	7340	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.643	4.643	0.0		3393528	NC			571	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.785	4.785	0.0	1.338	2119013	5.03	Target=0.00	104	7794	
699.00 > 99.00	4.785	4.785	0.0	1.338	3161985		0.67(0.00-0.00)	104	11249	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.817	4.815	0.002	1.057	6277573	5.13	Target=2.51	103	6231	
663.00 > 169.00	4.817	4.815	0.002	1.057	2024716		3.10(1.25-3.76)	103	8842	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.056	5.053	0.003	1.000	1765058	4.97	Target=1.42	99.3	7893	
713.00 > 219.00	5.046	5.053	-0.007	0.998	1250072		1.41(0.71-2.13)	99.3	2182	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.056	5.054	0.002	1.581	3434816	2.50		100	10045	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.479	5.481	-0.002	1.713	6364224	2.51		100	8971	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.479	5.484	-0.005	1.000	11259468	5.08	Target=5.72	102	986	
813.00 > 169.00	5.479	5.484	-0.005	1.000	2041228		5.52(2.86-8.58)	102	6527	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.900	5.904	-0.004	1.077	15180752	5.14	Target=7.65	103	1265	
913.00 > 169.00	5.900	5.904	-0.004	1.077	1930529		7.86(3.83-11.48)	103	5988	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

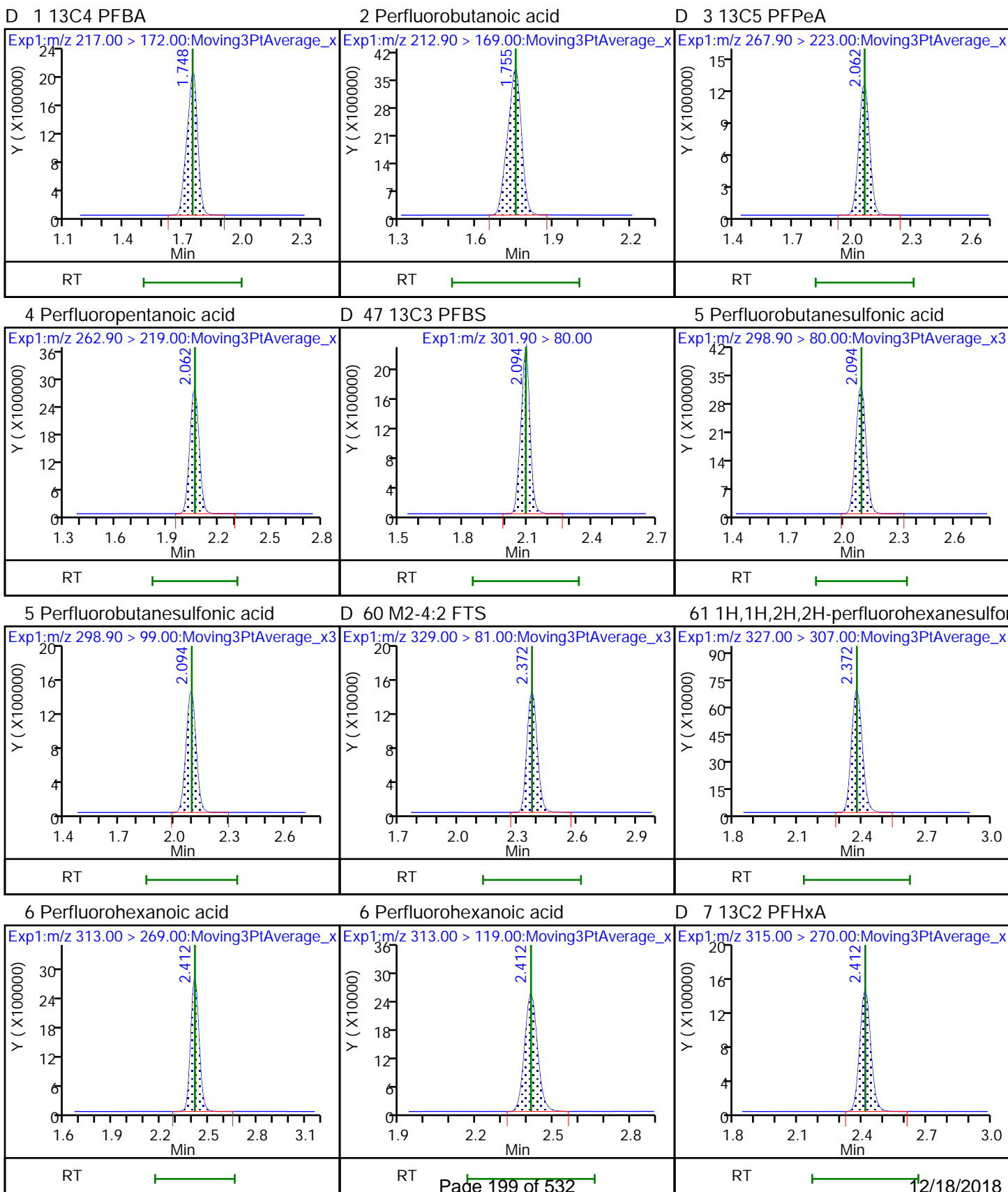
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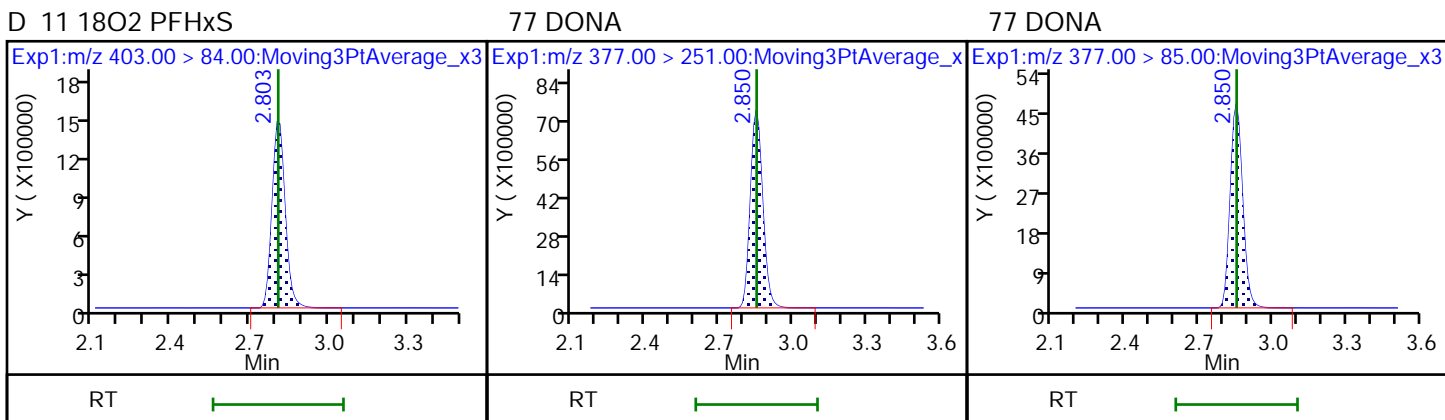
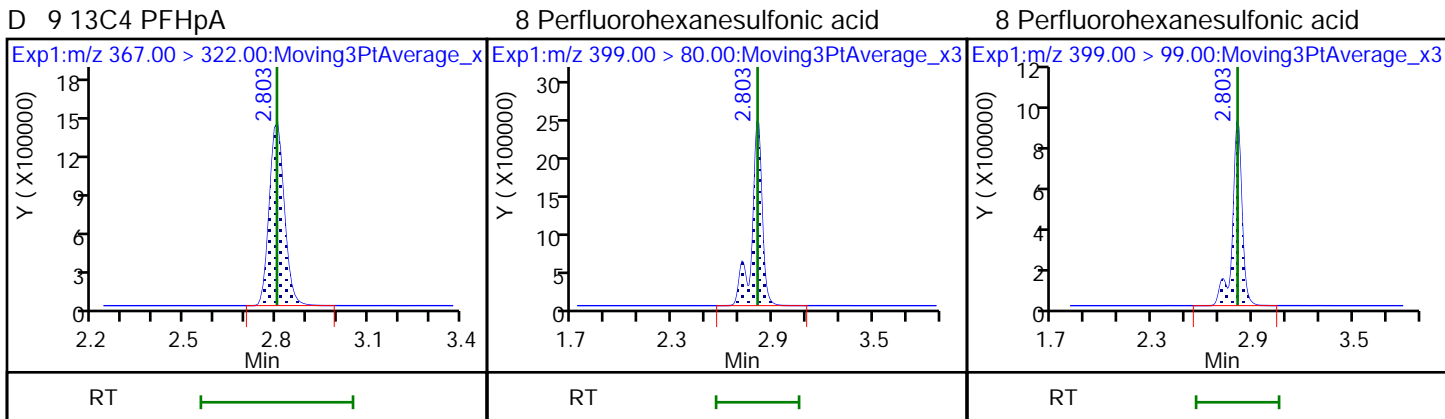
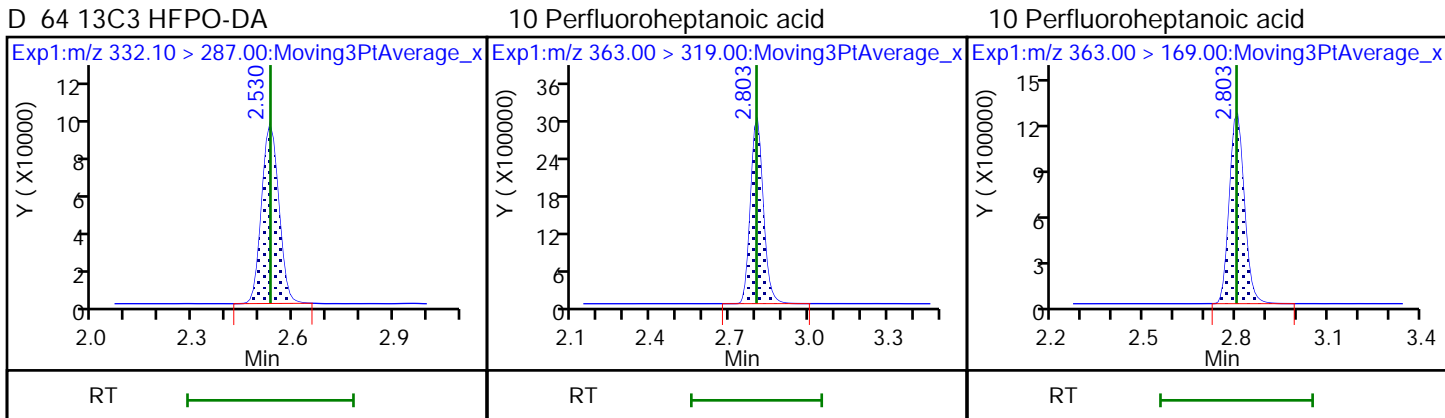
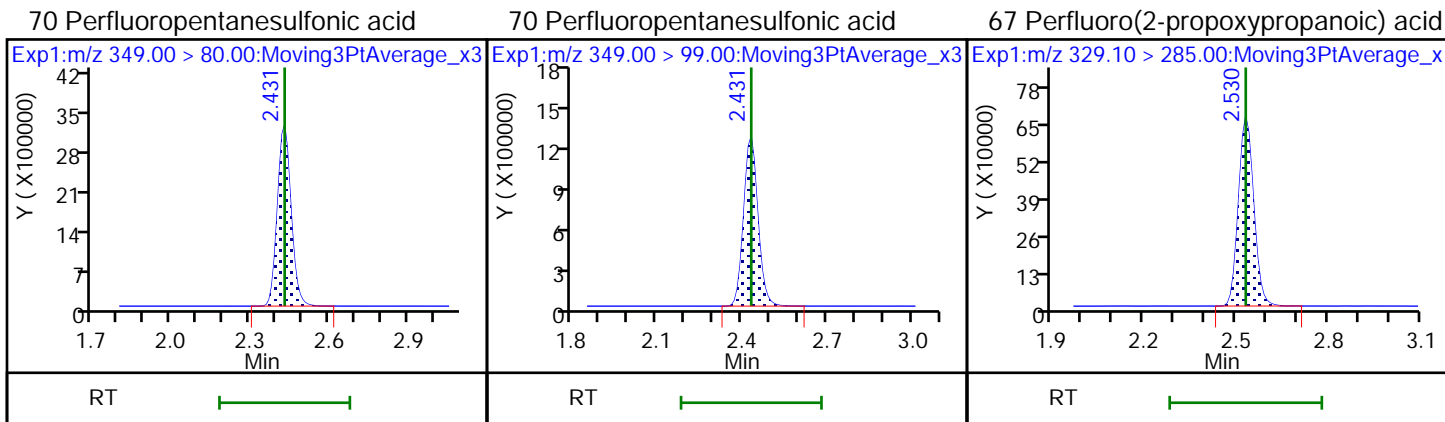
Amount Added: 1.00

Units: mL

TestAmerica Sacramento

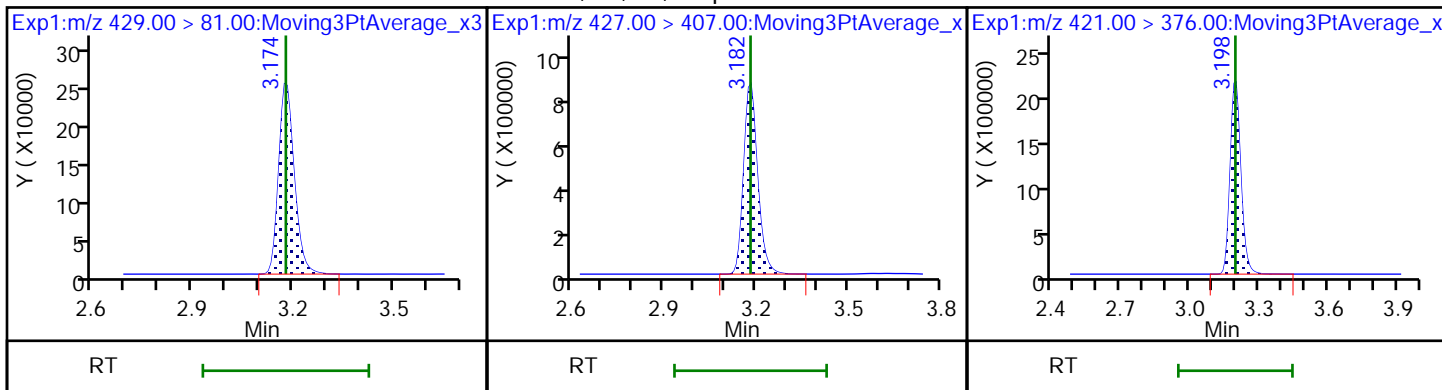
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Injection Date: 29-Nov-2018 07:24:09 Instrument ID: A8_N
Lims ID: IC L6 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL





D 12 M2-6:2 FTS

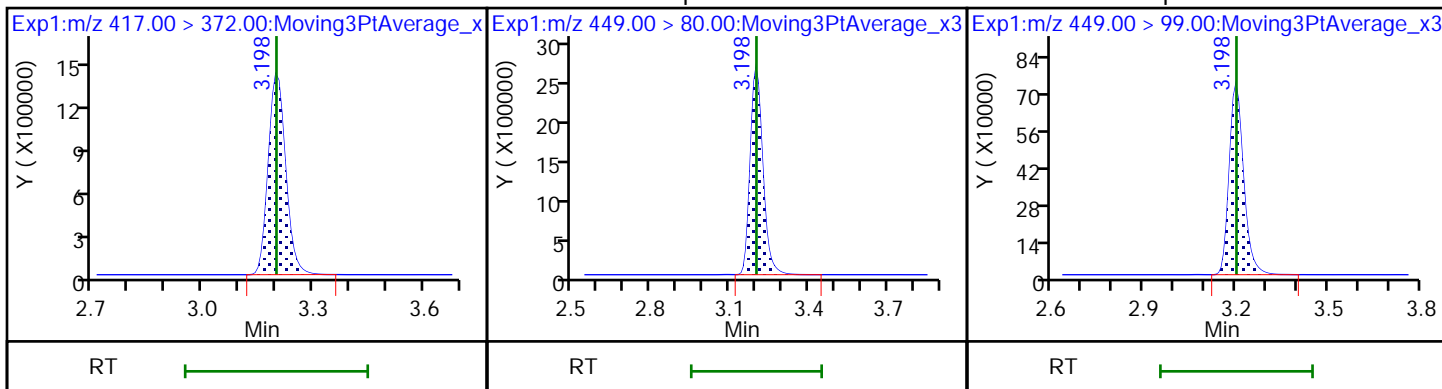
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

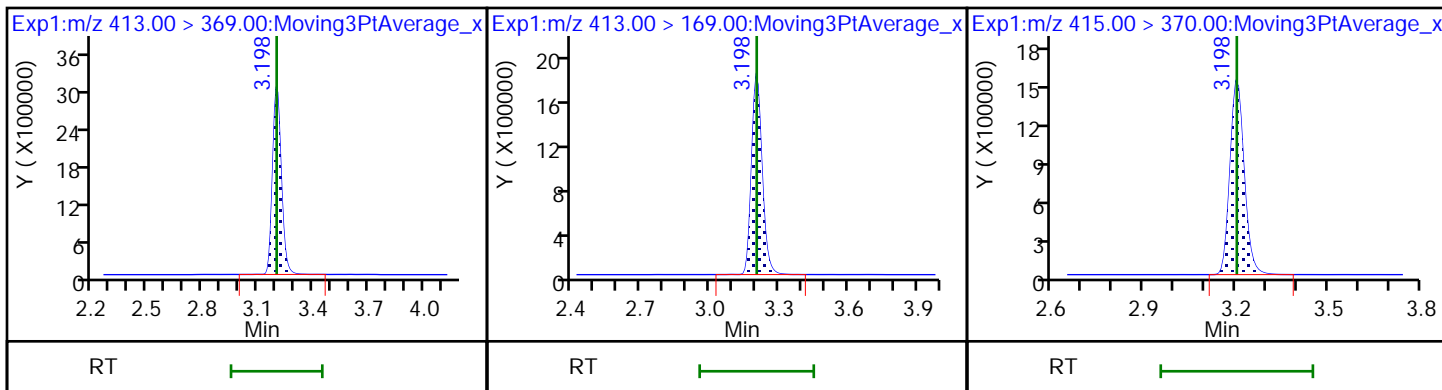
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

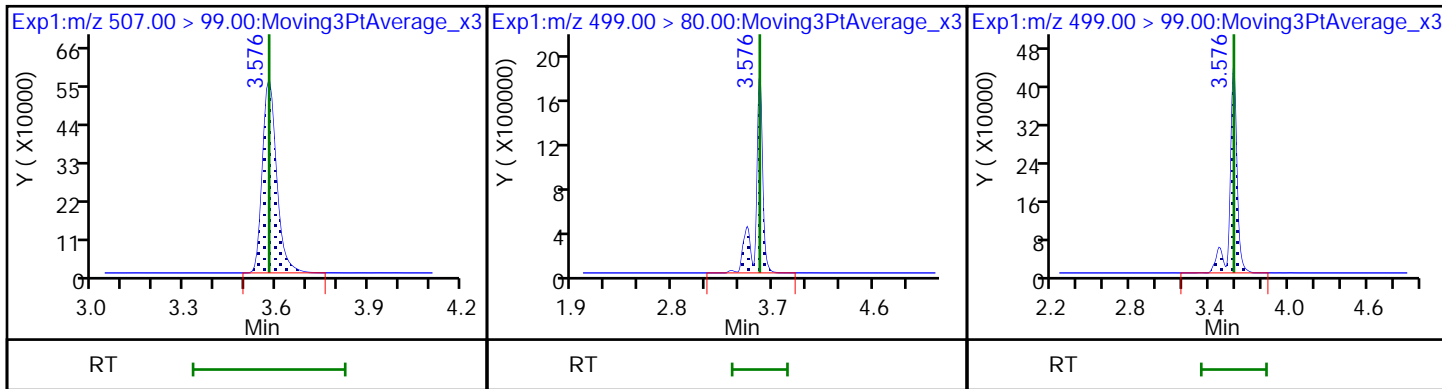
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

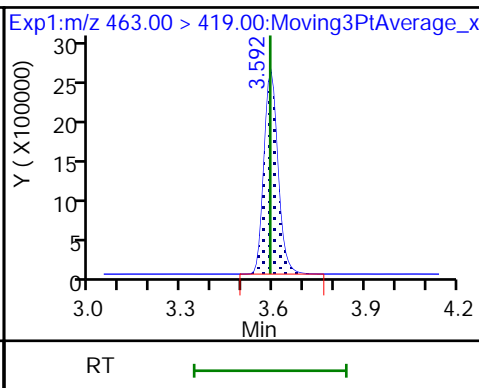
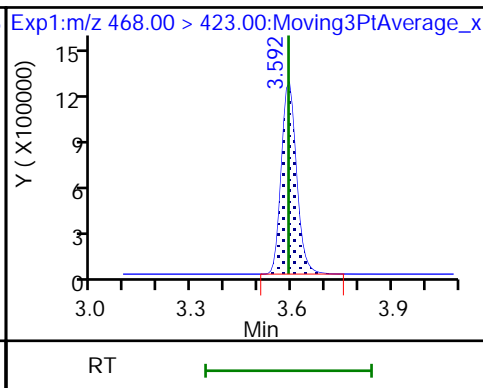
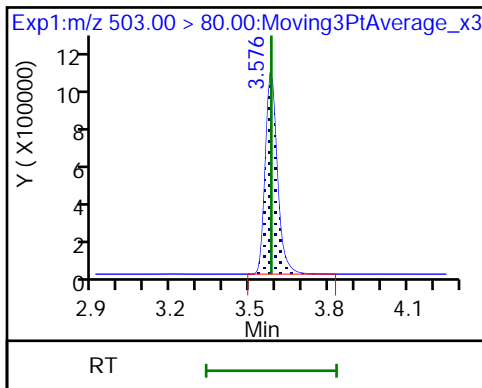
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

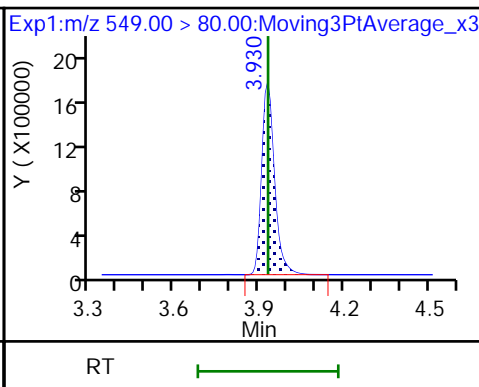
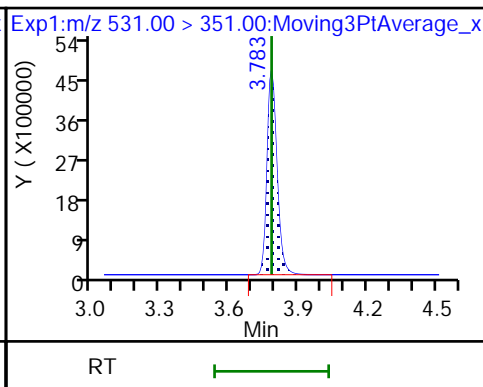
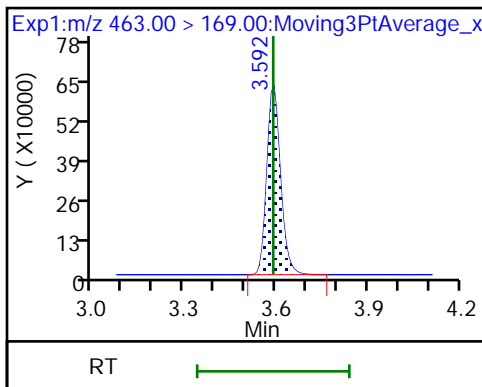
D 19 13C5 PFNA

20 Perfluorononanoic acid



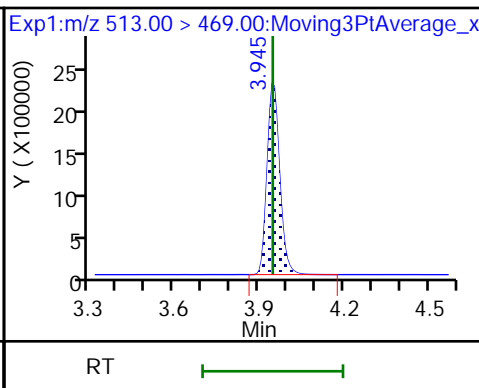
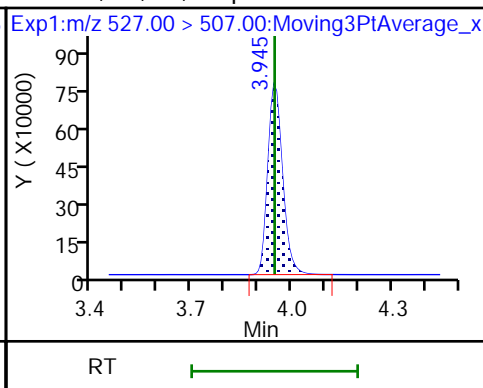
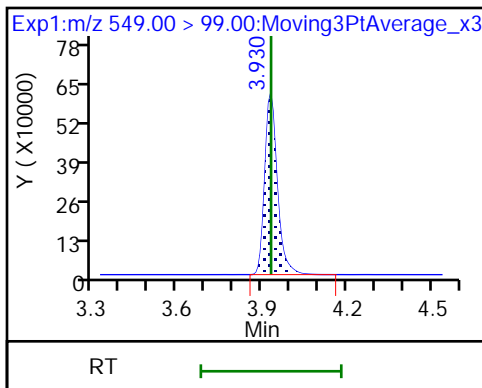
20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid



68 Perfluorononanesulfonic acid

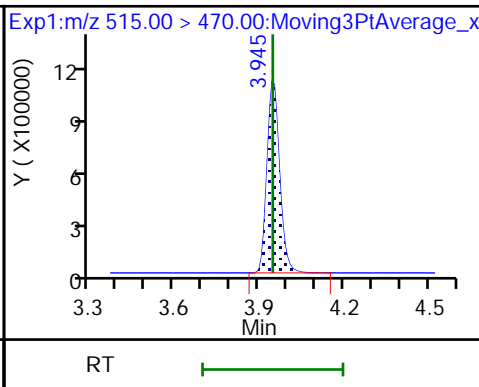
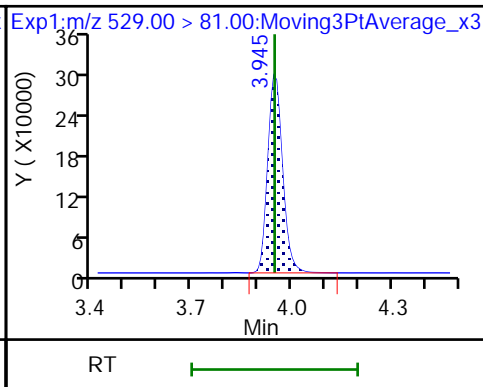
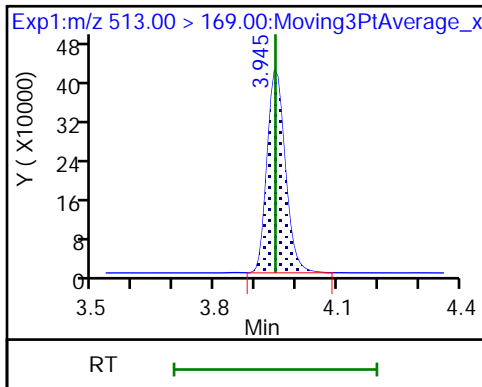
25 1H,1H,2H,2H-perfluorodecanesulfoni 24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 26 M2-8:2 FTS

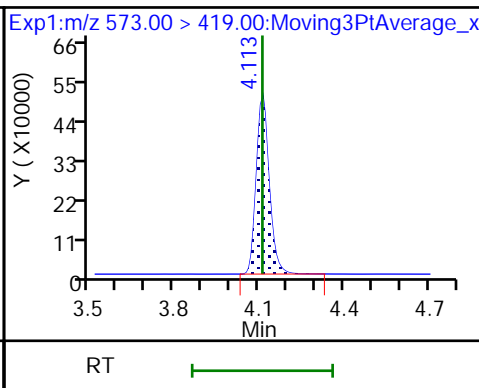
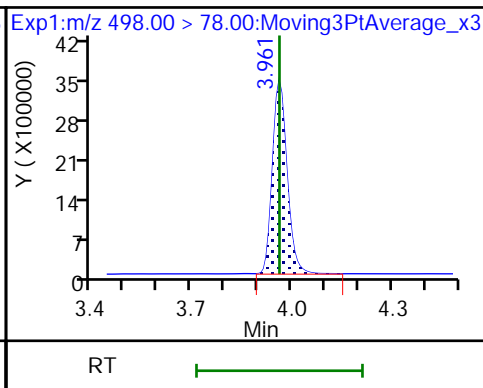
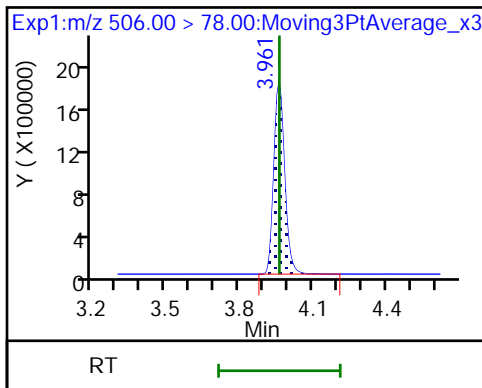
D 23 13C2 PFDA



D 21 13C8 FOSA

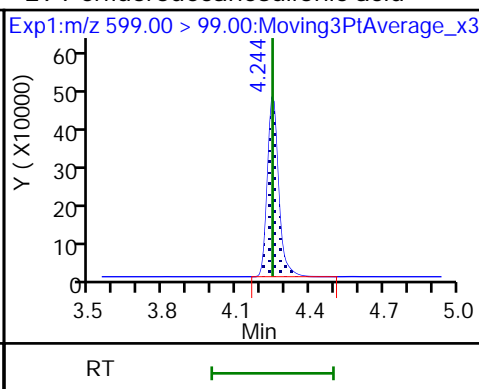
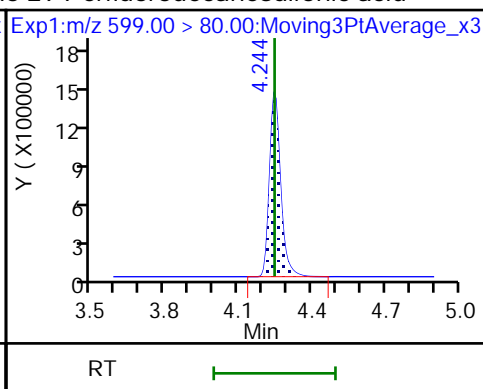
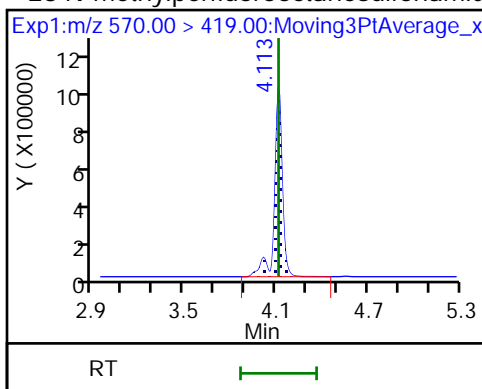
22 Perfluorooctanesulfonamide

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

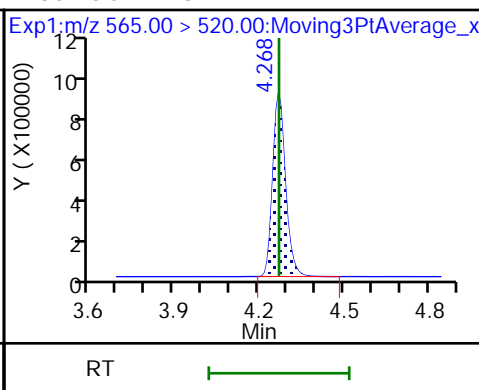
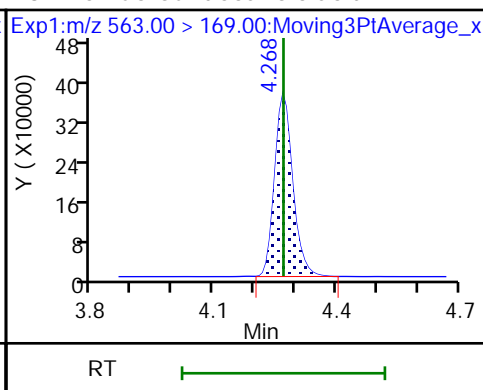
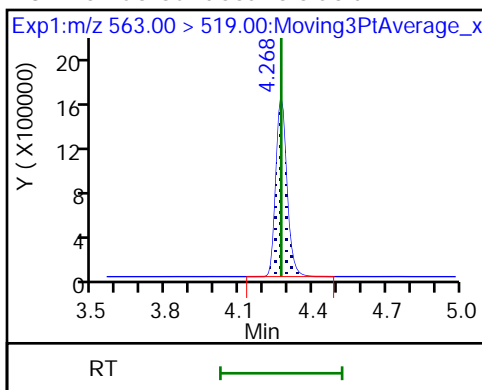
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

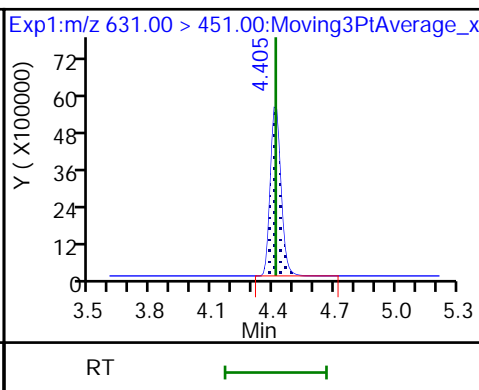
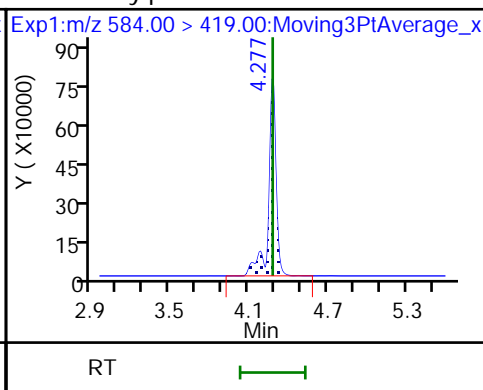
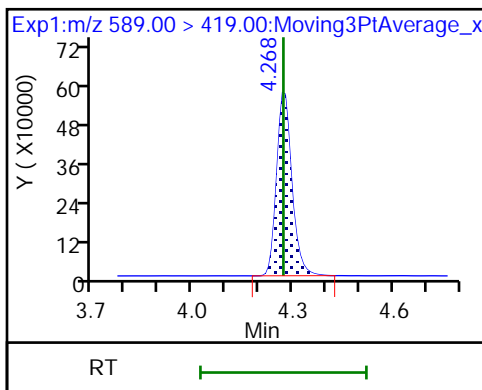
D 30 13C2 PFUnA

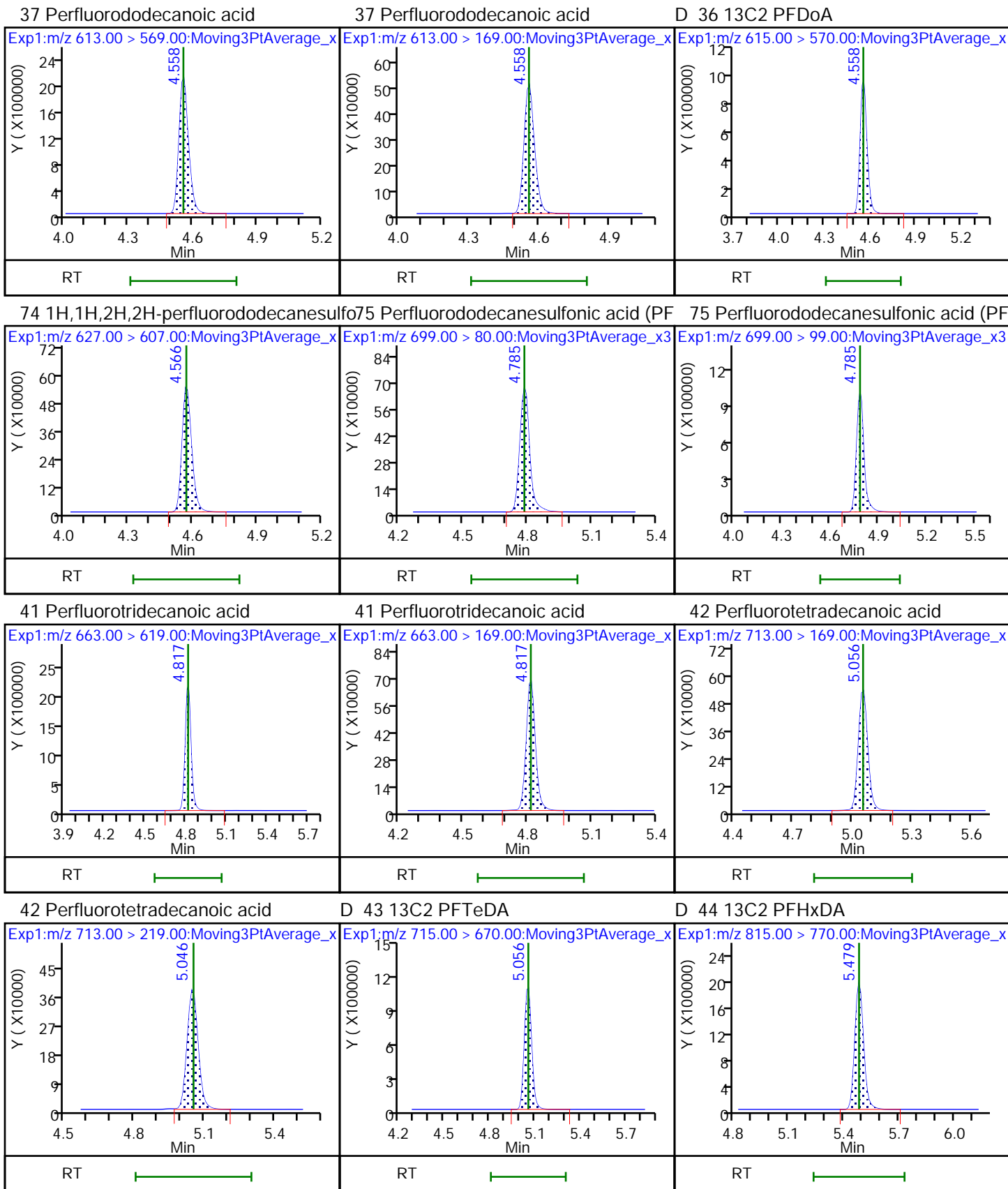


D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

66 11-Chloroeicosafuoro-3-oxaundecan

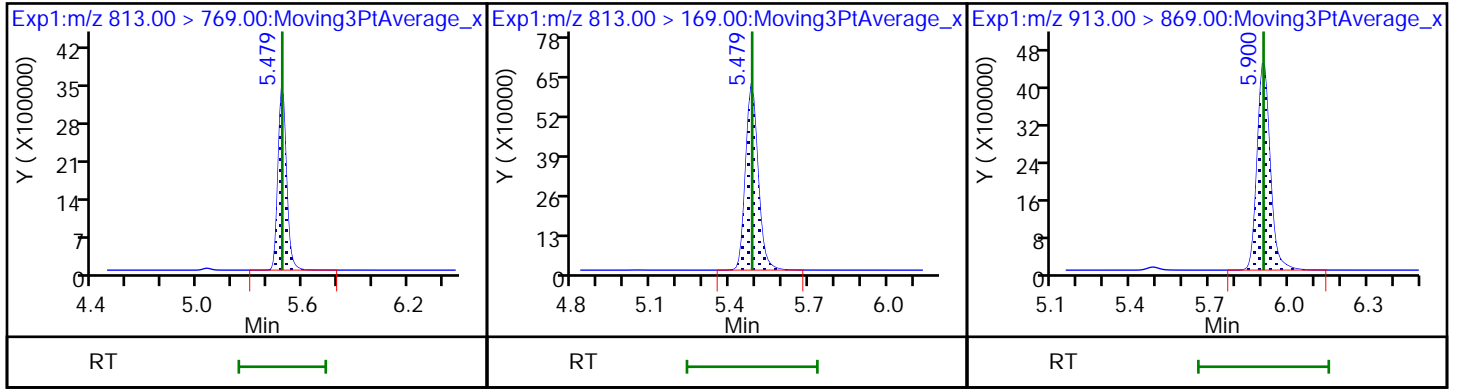




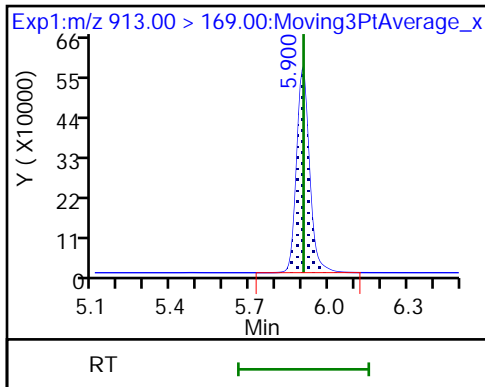
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

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 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 29-Nov-2018 07:31:36 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 7
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37

Method: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 29-Nov-2018 10:25:33 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0326

First Level Reviewer: westendorfc Date: 29-Nov-2018 10:13:01

Ratio Calibration: None

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	1.748	1.749	-0.001	0.546	7078750	2.58	103	5399	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.753	0.002	1.004	24891473	9.66	96.6	4359	
D 3 13C5 PFPeA	267.90 > 223.00	2.062	2.061	0.001	0.644	4340201	2.52	101	6074	
4 Perfluoropentanoic acid	262.90 > 219.00	2.062	2.062	0.0	1.000	18006131	9.52	95.2	2470	
D 47 13C3 PFBS	301.90 > 80.00	2.083	2.091	-0.008	0.651	6489578	2.47	106	555934	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.094	0.0	1.005	21566859	7.96	Target=2.49	90.1	14984
	298.90 > 99.00	2.094	2.094	0.0	1.005	9877003		2.18(1.25-3.74)	90.1	5258
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.741	500173	2.37	102	828	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.374	-0.002	1.139	5005640	9.31	99.7	11999	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.413	-0.001	1.000	17305595	9.23	Target=10.07	92.3	4464
	313.00 > 119.00	2.412	2.413	-0.001	1.000	1657496		10.44(5.03-15.10)	92.3	3755
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.413	-0.001	0.753	4675743	2.56	102	6768	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.431	2.432	-0.001	1.167	19824089	8.27	Target=2.71	88.1	10435
	349.00 > 99.00	2.431	2.432	-0.001	1.167	8050155		2.46(1.36-4.07)	88.1	9983
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.530	2.531	-0.001	1.000	4421628	10.1	101	3867	

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	2.530	2.532	-0.002	0.790	320201	2.53		101	2052	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.798	2.800	-0.002	1.000	17969899	9.76	Target=2.27	97.6	3488	
363.00 > 169.00	2.798	2.800	-0.002	1.000	7502598		2.40(1.13-3.40)	97.6	5882	
D 9 13C4 PFHpA										
367.00 > 322.00	2.798	2.802	-0.004	0.874	4326076	2.41		96.6	7522	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.808	2.807	0.001	1.000	18406603	8.71	Target=3.00	95.7	7678	
399.00 > 99.00	2.808	2.807	0.001	1.000	6276828		2.93(1.50-4.49)	95.7	7384	
D 11 18O2 PFHxS										
403.00 > 84.00	2.808	2.807	0.001	0.877	4602353	2.25		95.2	9086	
77 DONA										
377.00 > 251.00	2.854	2.851	0.003	0.797	40063210	7.52	Target=1.69	79.9	12326	
377.00 > 85.00	2.845	2.851	-0.006	0.794	26132829		1.53(0.85-2.54)	79.9	13190	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.177	3.178	-0.001	0.992	711627	2.26		95.1	3643	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.177	3.181	-0.004	1.000	4558705	9.78		103	1643	
D 73 13C8 PFOA										
421.00 > 376.00	3.193	3.195	-0.002	0.997	6531432	2.53		103	9904	
D 14 13C4 PFOA										
417.00 > 372.00	3.201	3.200	0.001	1.000	4374502	2.50		100.0	6758	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.201	3.200	0.001	0.894	15802673	8.98	Target=3.88	94.3	6021	
449.00 > 99.00	3.201	3.200	0.001	0.894	4210738		3.75(1.94-5.82)	94.3	6525	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.201	3.201	0.0	1.000	18048805	9.09	Target=1.68	90.9	1704	
413.00 > 169.00	3.201	3.201	0.0	1.000	10391088		1.74(0.84-2.52)	90.9	4099	
* 62 13C2 PFOA										
415.00 > 370.00	3.201	3.201	0.0		4495261	2.50			5977	
D 72 13C8 PFOS										
507.00 > 99.00	3.573	3.576	-0.003	1.116	1666550	2.37		99.0	6362	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.581	3.581	0.0	1.000	14152728	9.45	Target=4.62	102	4978	M
499.00 > 99.00	3.581	3.581	0.0	1.000	2970133		4.77(2.31-6.93)	102	5789	M
D 18 13C4 PFOS										
503.00 > 80.00	3.581	3.581	0.0	1.119	3210717	2.40		101	5486	
D 19 13C5 PFNA										
468.00 > 423.00	3.589	3.590	-0.001	1.121	3627582	2.47		98.9	8255	
20 Perfluorononanoic acid										
463.00 > 419.00	3.589	3.590	-0.001	1.000	14888913	9.95	Target=3.79	99.5	6948	
463.00 > 169.00	3.589	3.590	-0.001	1.000	3792897		3.93(1.90-5.69)	99.5	10005	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.785	3.783	0.002	1.057	24068785	8.93		95.9	20243	

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	3.932	3.931	0.001	1.098	9931006	9.50	Target=2.65	99.0	9339	
549.00 > 99.00	3.925	3.931	-0.006	1.096	3564438		2.79(1.33-3.97)	99.0	12679	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.948	3.948	0.0	1.000	4318341	9.49		99.1	7731	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.948	3.948	0.0	1.000	12077597	9.78	Target=4.73	97.8	7545	
513.00 > 169.00	3.948	3.948	0.0	1.000	2355497		5.13(2.36-7.09)	97.8	400	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.948	3.948	0.0	1.233	831856	2.45		102	6830	
D 23 13C2 PFDA										
515.00 > 470.00	3.948	3.948	0.0	1.233	3128982	2.44		97.8	11002	
D 21 13C8 FOSA										
506.00 > 78.00	3.964	3.962	0.002	1.238	4844768	2.46		98.2	8213	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.964	3.962	0.002	1.000	18343130	9.46		94.6	1004	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.108	4.111	-0.003	1.283	1651188	2.64		106	3244	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.116	4.114	0.002	1.002	6499096	10.5		105	2718	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.248	4.247	0.001	1.186	8243780	9.47	Target=2.77	98.3	14076	
599.00 > 99.00	4.248	4.247	0.001	1.186	2701558		3.05(1.39-4.16)	98.3	8621	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.273	4.270	0.003	1.000	9137882	10.1	Target=4.24	101	6544	
563.00 > 169.00	4.273	4.270	0.003	1.000	2177292		4.20(2.12-6.36)	101	4994	
D 30 13C2 PFUnA										
565.00 > 520.00	4.273	4.270	0.003	1.335	2518085	2.44		97.7	5422	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.273	4.271	0.002	1.335	1568223	2.37		94.9	2978	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.281	4.279	0.002	1.002	5806185	10.8		108	5540	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.409	4.412	-0.003	1.231	31900637	8.05		85.5	26298	
35 MeFOSA										
512.00 > 169.00	4.461	4.465	-0.004		6428566	NC			667	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.554	4.556	-0.002	1.000	11788317	9.48	Target=4.27	94.8	8981	
613.00 > 169.00	4.554	4.556	-0.002	1.000	3012620		3.91(2.13-6.40)	94.8	11958	
D 36 13C2 PFDaA										
615.00 > 570.00	4.554	4.556	-0.002	1.422	2857578	2.61		104	7260	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.570	4.569	0.001	1.157	3275032	9.94		103	12849	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.647	4.643	0.004		6862320	NC			644	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.789	4.785	0.004	1.337	3847145	9.70	Target=0.00	100	14896	
699.00 > 99.00	4.789	4.785	0.004	1.337	6004289		0.64(0.00-0.00)	100	12008	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.813	4.815	-0.002	1.057	11323876	9.37	Target=2.51	93.7	8549	
663.00 > 169.00	4.813	4.815	-0.002	1.057	3688453		3.07(1.25-3.76)	93.7	11651	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.053	5.053	0.0	1.000	3370185	9.90	Target=1.42	99.0	20380	
713.00 > 219.00	5.053	5.053	0.0	1.000	2327812		1.45(0.71-2.13)	99.0	2117	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.053	5.054	-0.001	1.578	3288566	2.52		101	7763	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.479	5.481	-0.002	1.711	5806225	2.41		96.3	7503	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.488	5.484	0.004	1.002	19709139	9.78	Target=5.72	97.8	1598	
813.00 > 169.00	5.488	5.484	0.004	1.002	3839306		5.13(2.86-8.58)	97.8	9033	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.907	5.904	0.003	1.078	27602403	10.2	Target=7.65	102	2020	
913.00 > 169.00	5.900	5.904	-0.004	1.077	3841879		7.18(3.83-11.48)	102	8216	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00009

Amount Added: 1.00

Units: mL

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Injection Date: 29-Nov-2018 07:31:36

Instrument ID: A8_N

Lims ID: IC L7 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

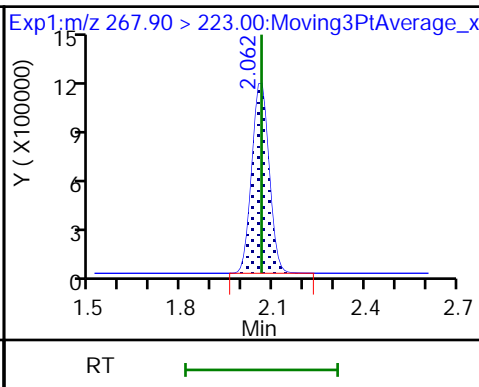
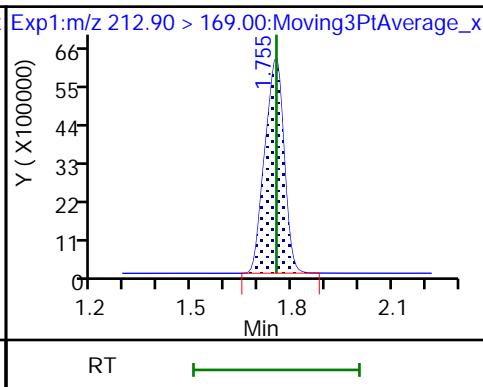
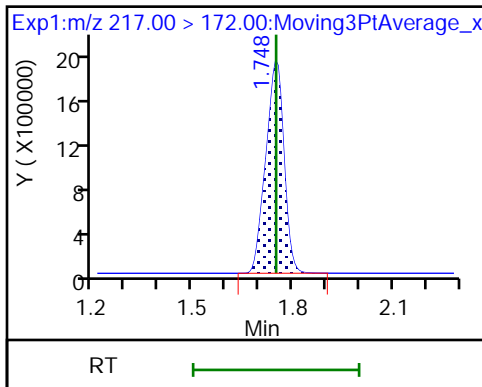
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

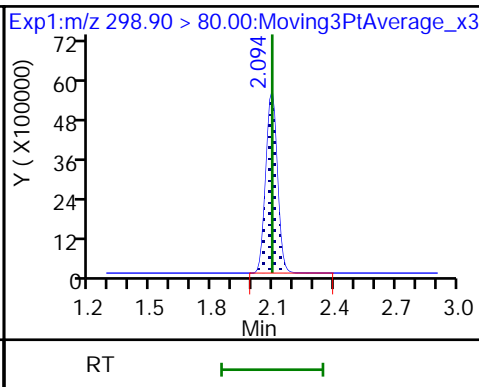
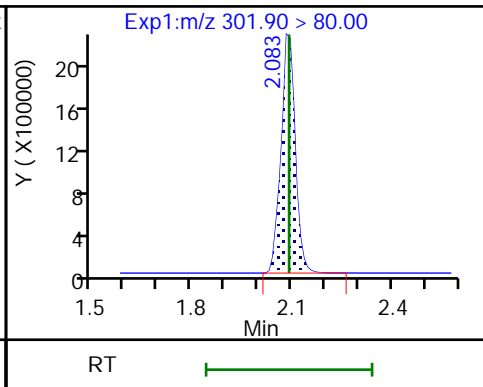
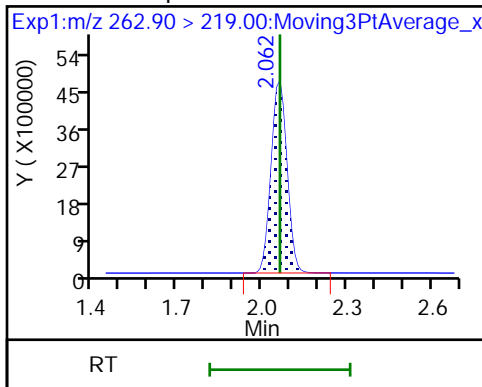
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

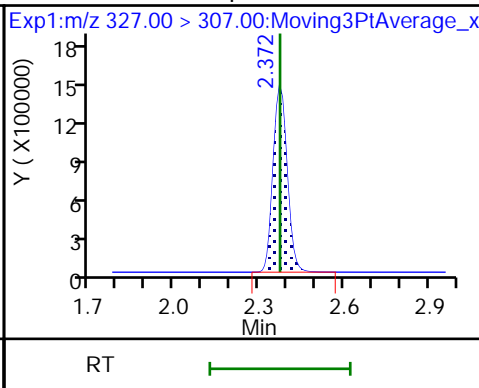
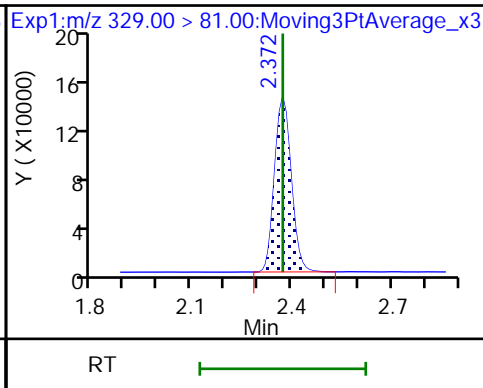
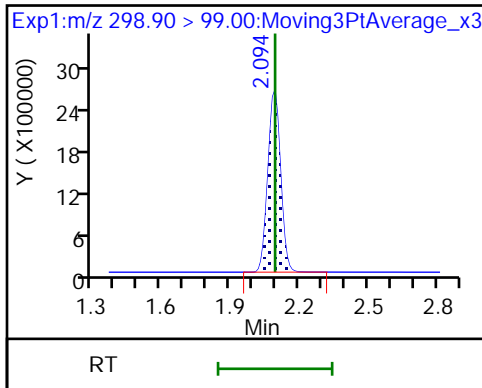
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

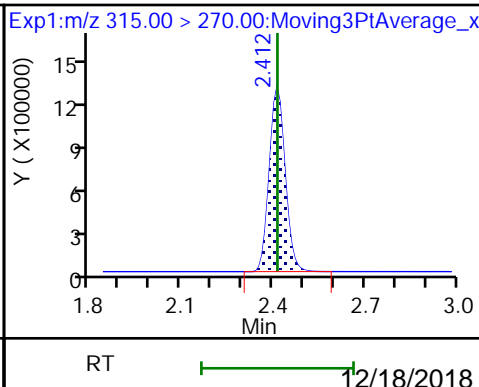
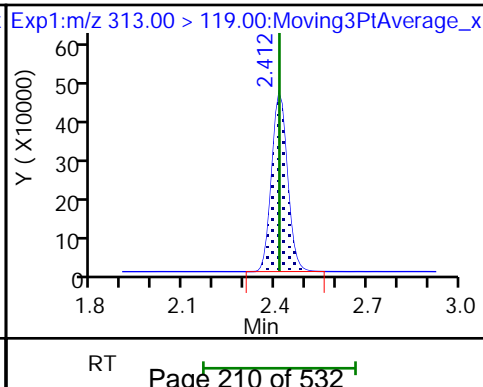
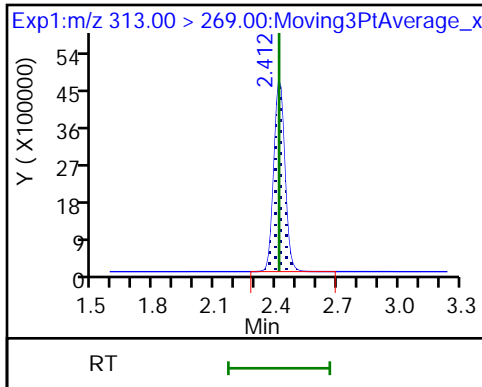
61 1H,1H,2H,2H-perfluorohexanesulfoni

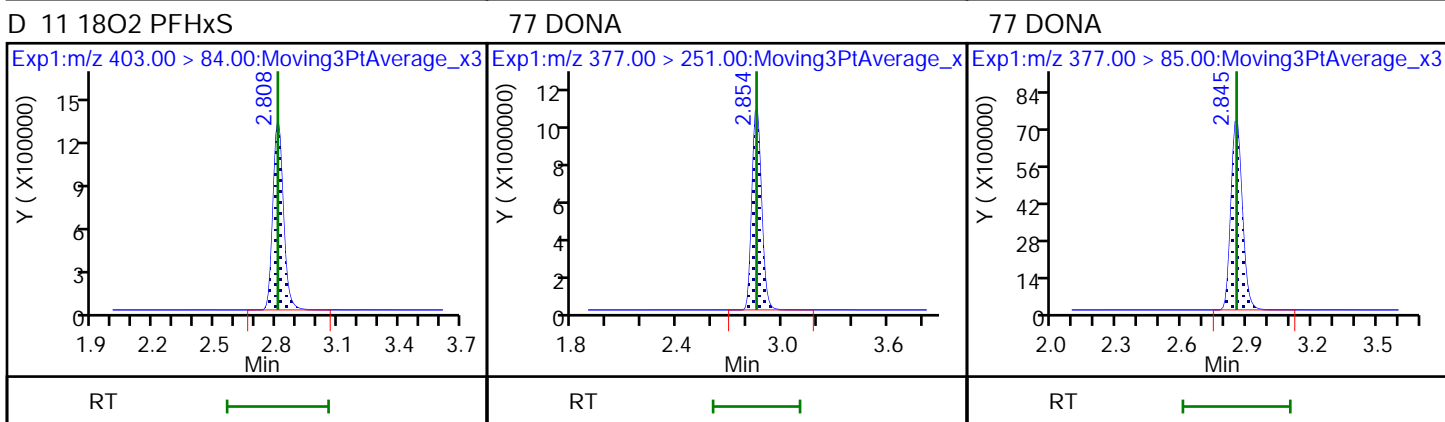
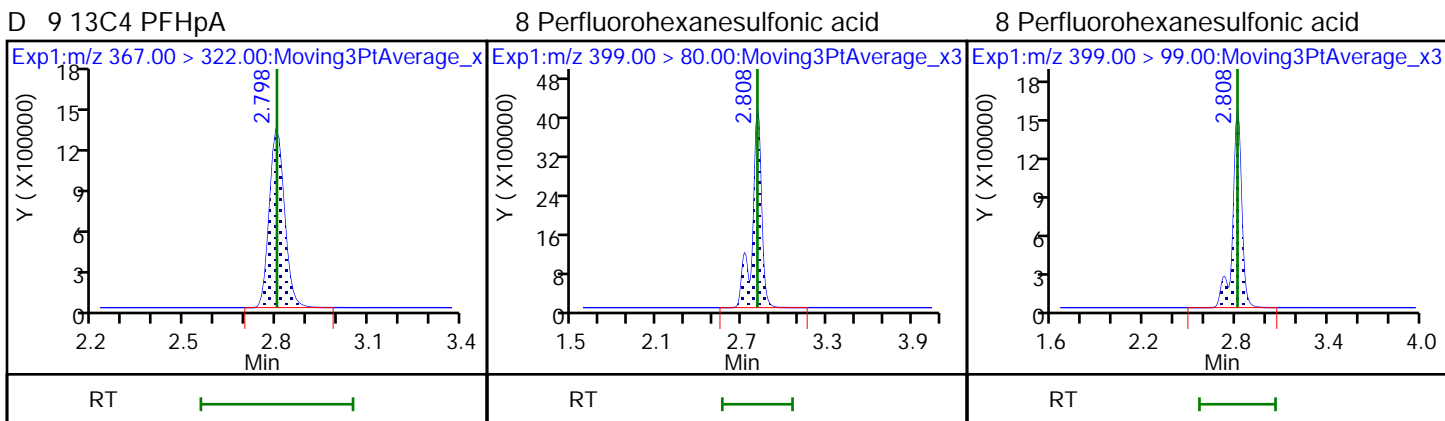
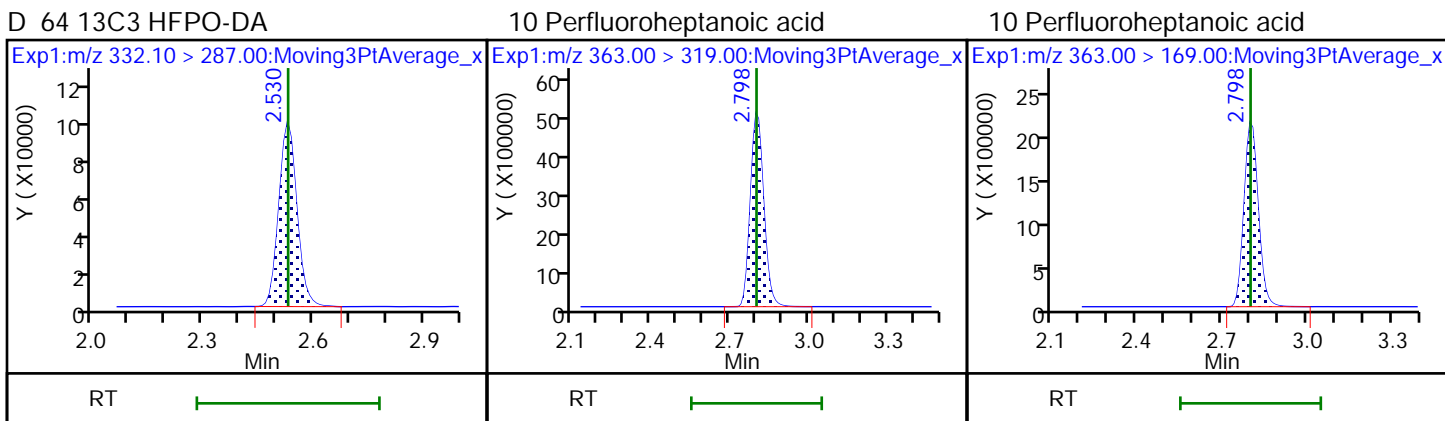
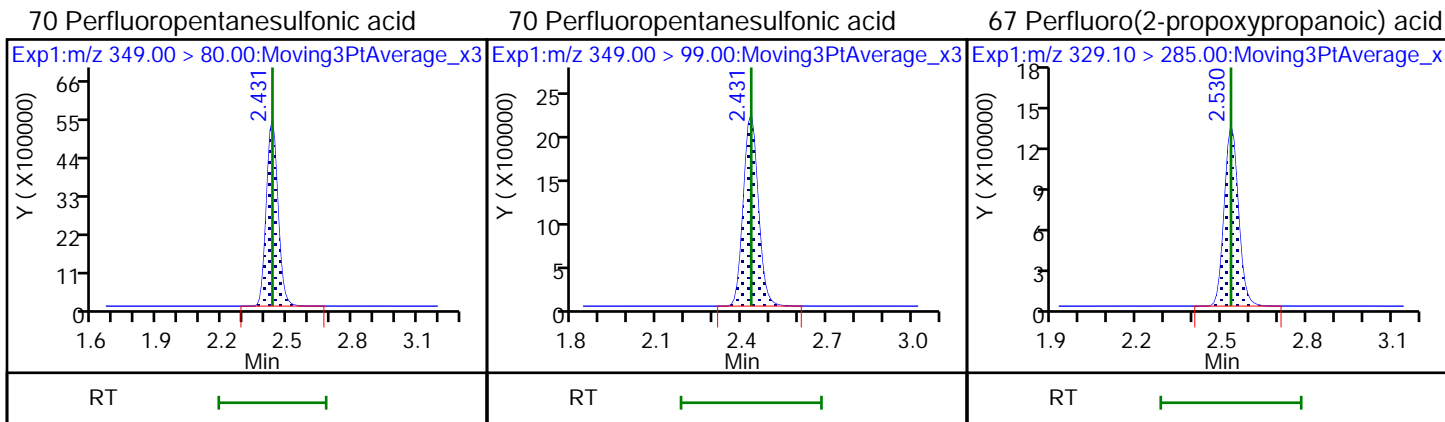


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

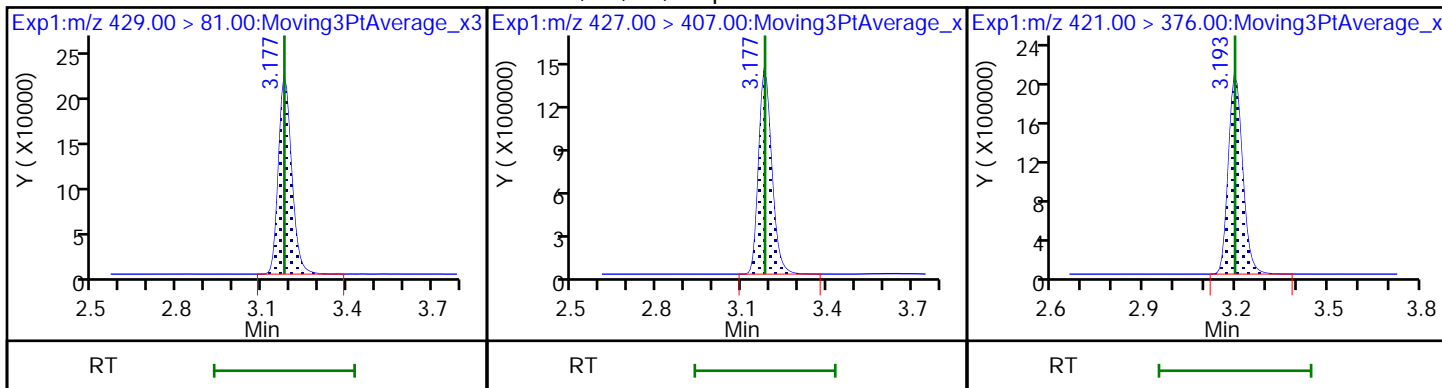
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

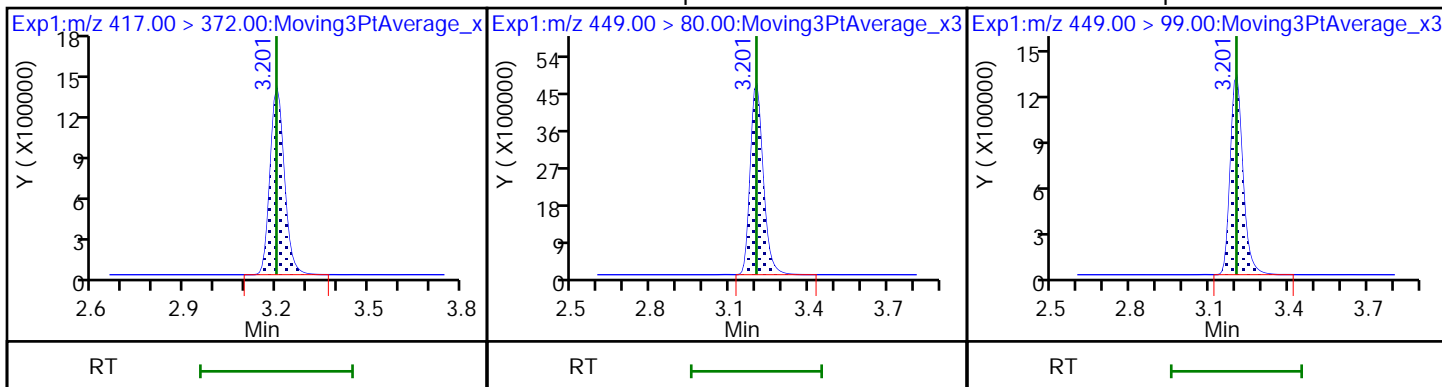
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

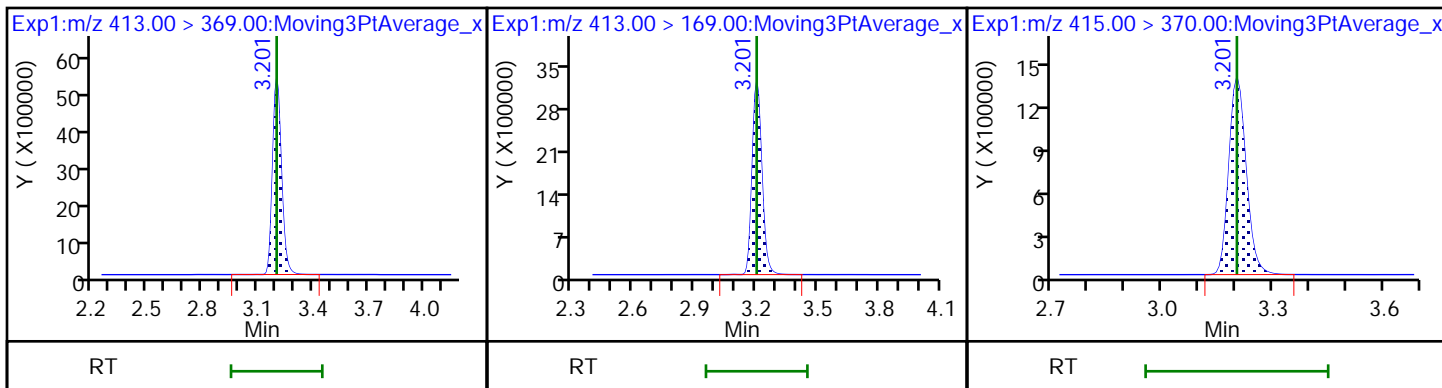
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

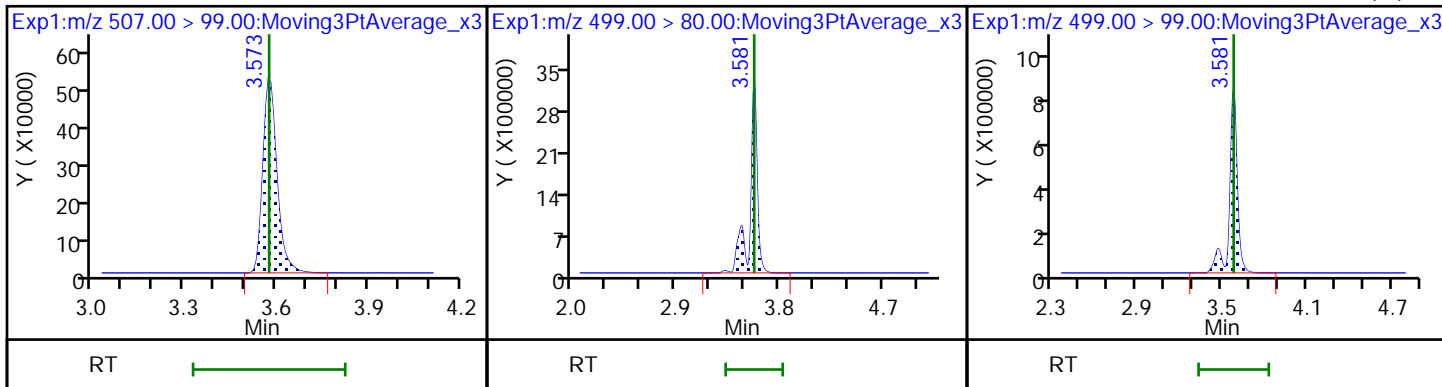
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

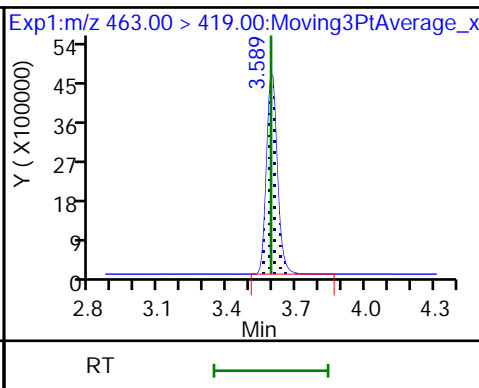
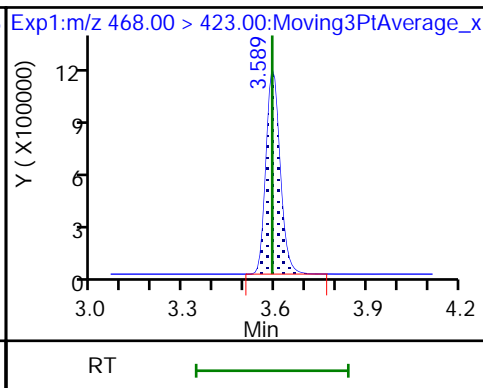
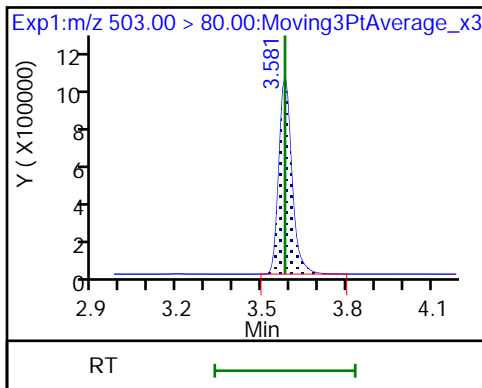
17 Perfluorooctanesulfonic acid (M)



D 18 13C4 PFOS

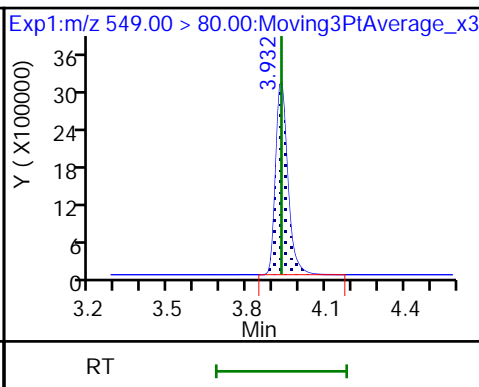
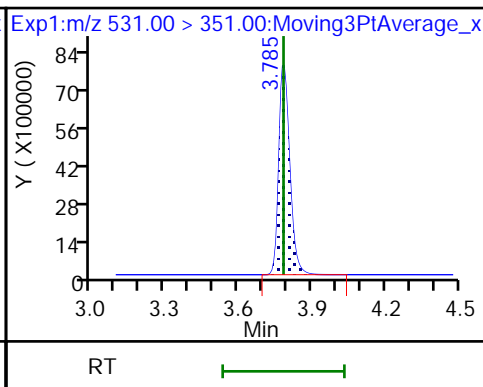
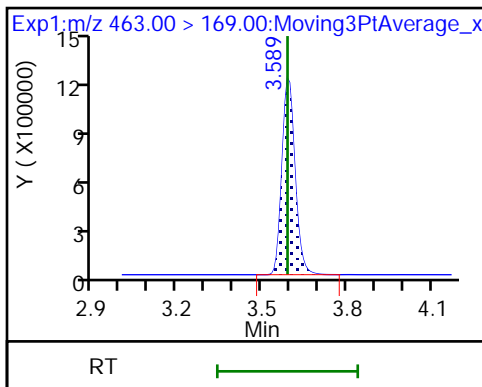
D 19 13C5 PFNA

20 Perfluorononanoic acid



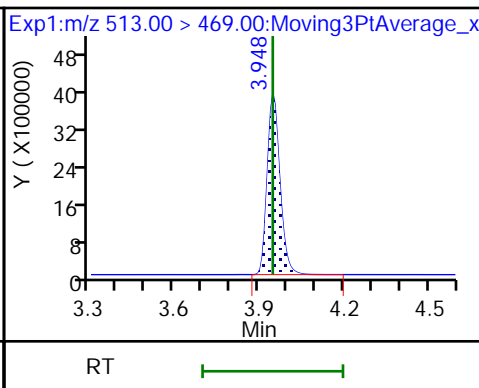
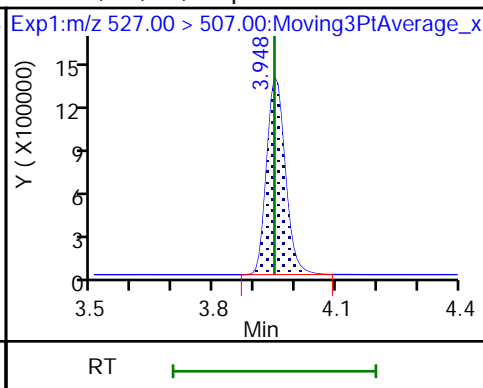
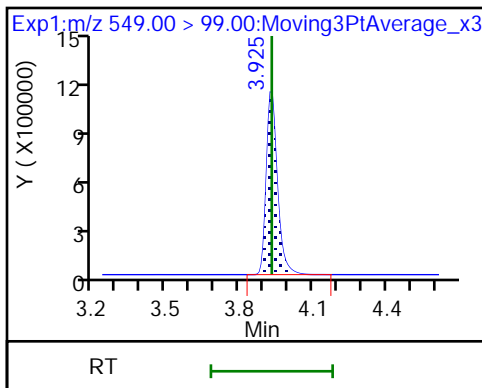
20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid



68 Perfluoronanesulfonic acid

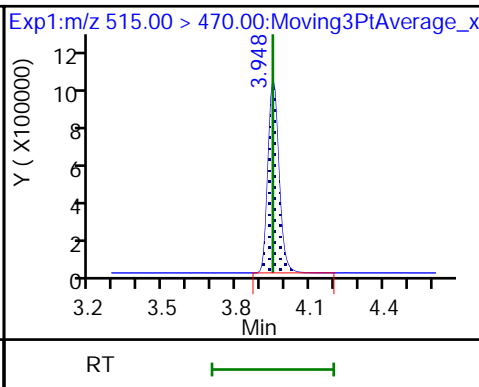
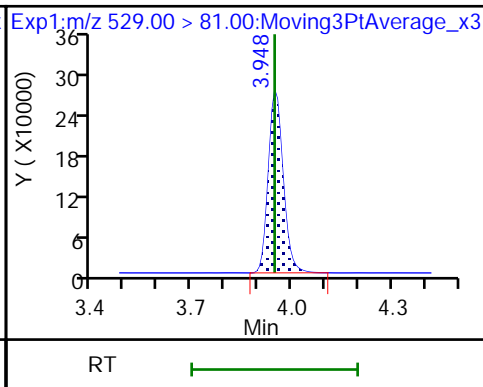
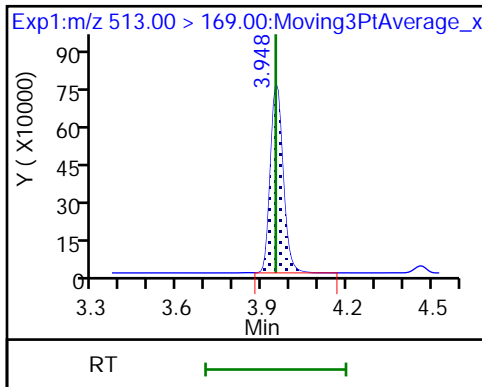
25 1H,1H,2H,2H-perfluorodecanesulfoni 24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 26 M2-8:2 FTS

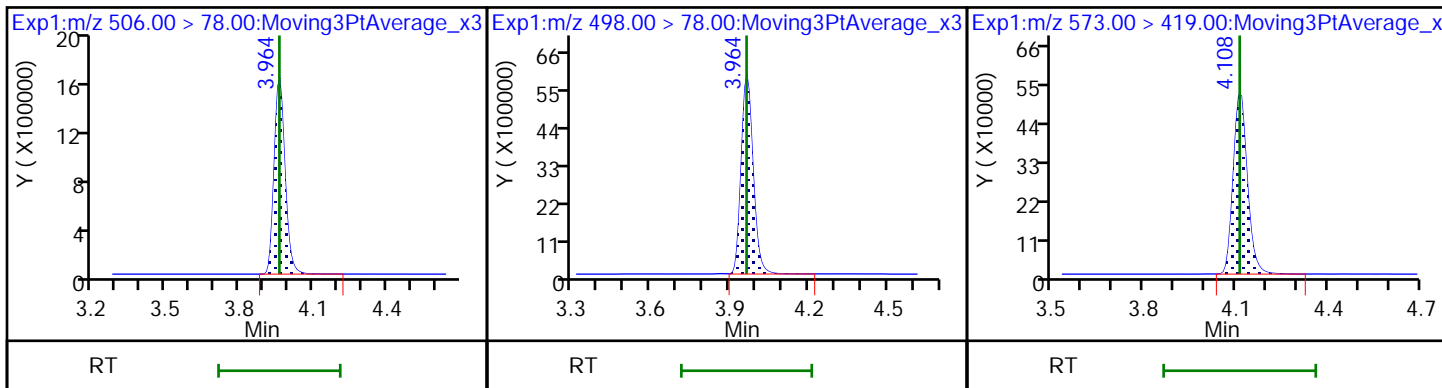
D 23 13C2 PFDA



D 21 13C8 FOSA

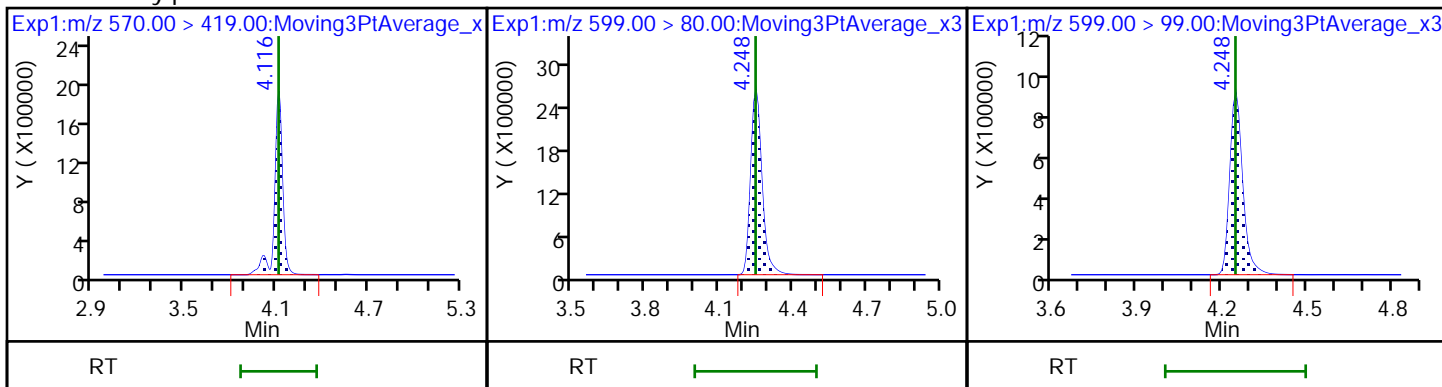
22 Perfluorooctanesulfonamide

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido 29 Perfluorodecanesulfonic acid

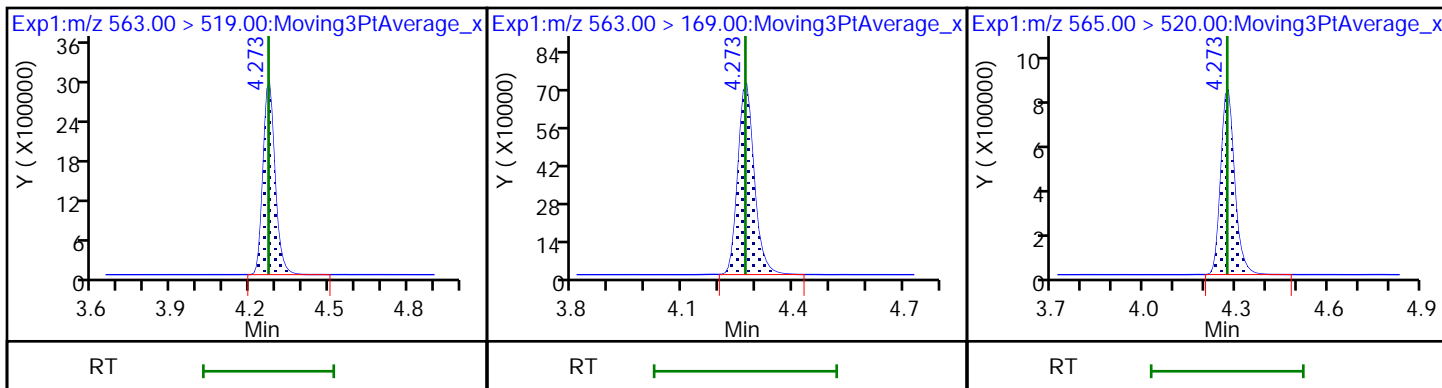
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

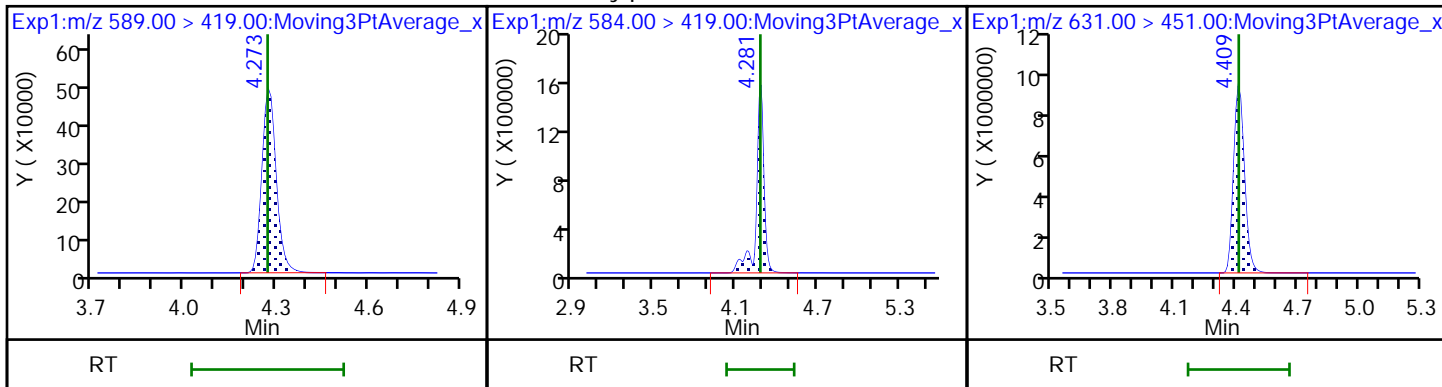
D 30 13C2 PFUnA

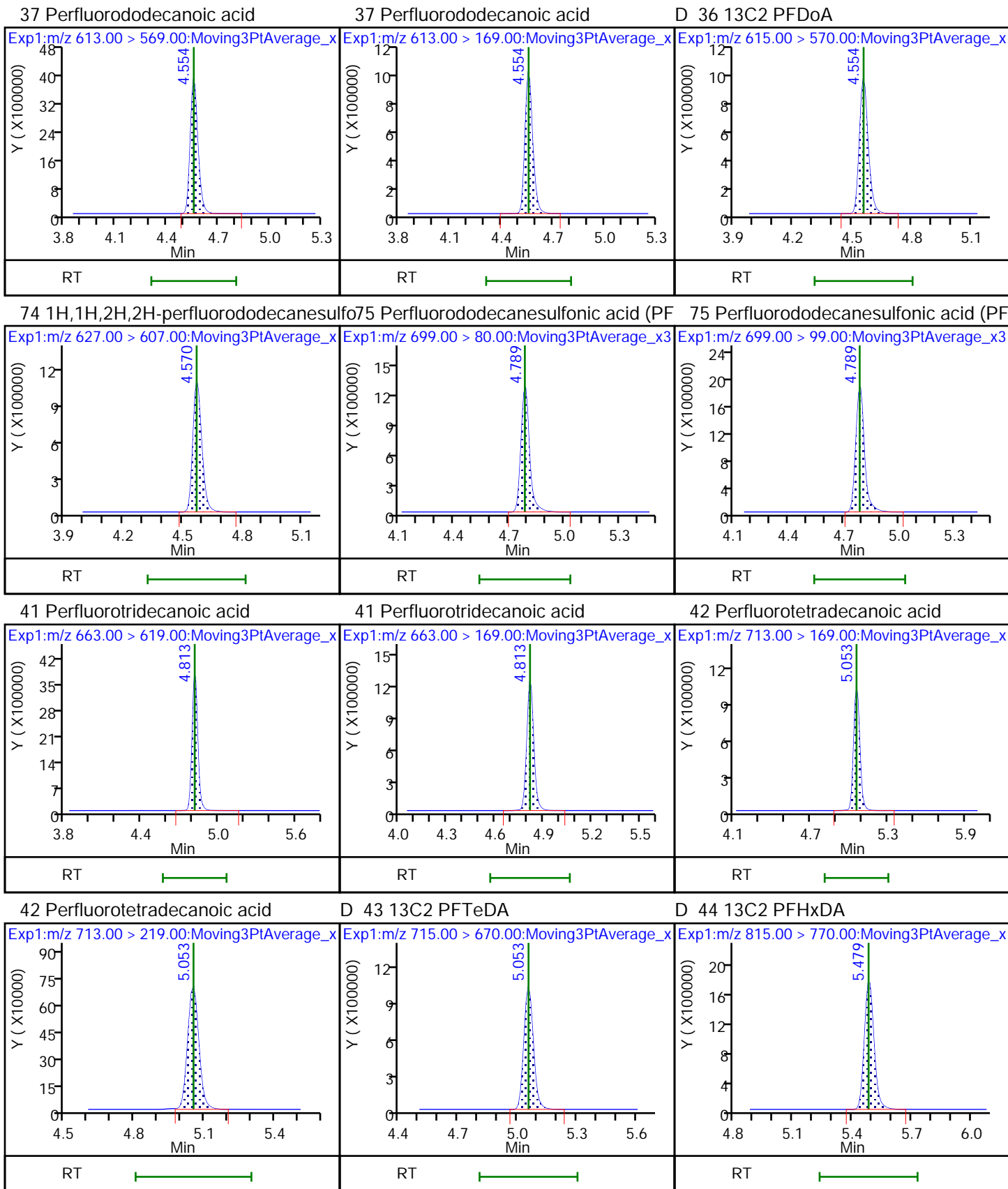


D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

66 11-Chloroeicosafuoro-3-oxaundecan

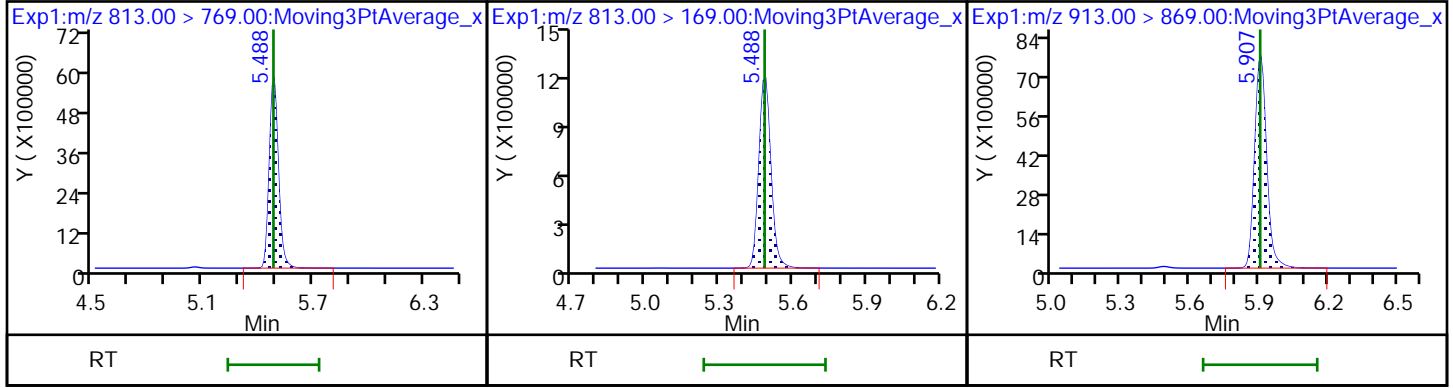




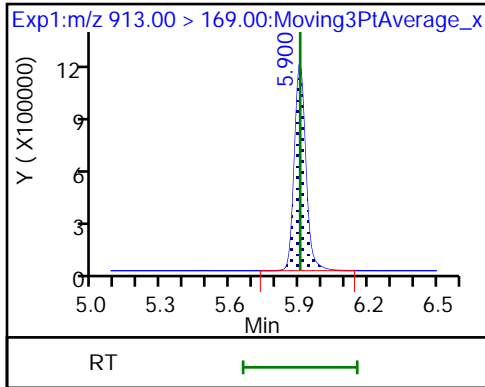
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

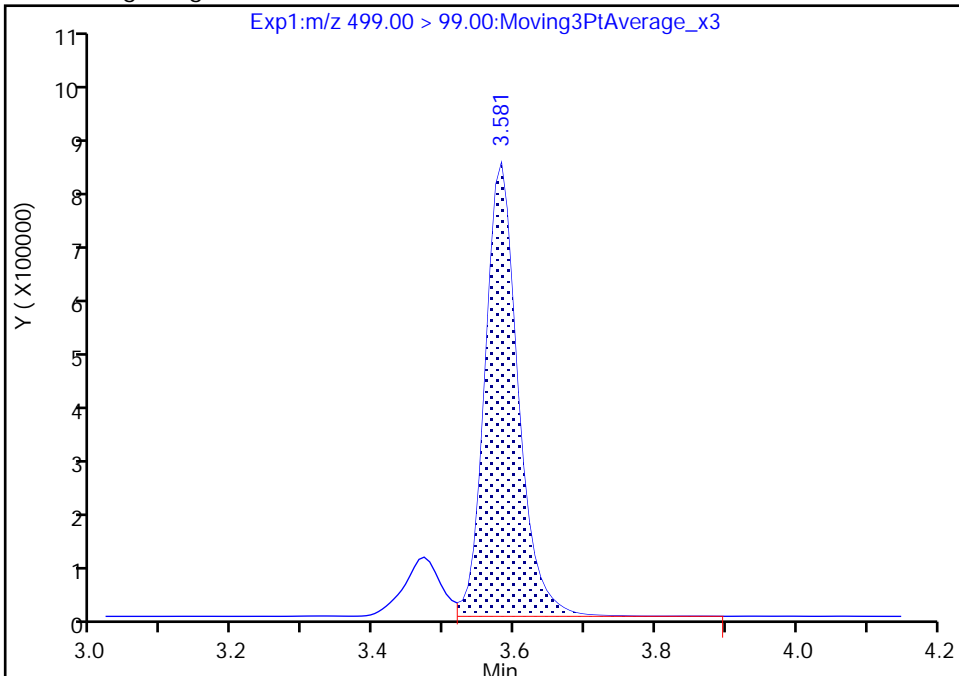
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Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

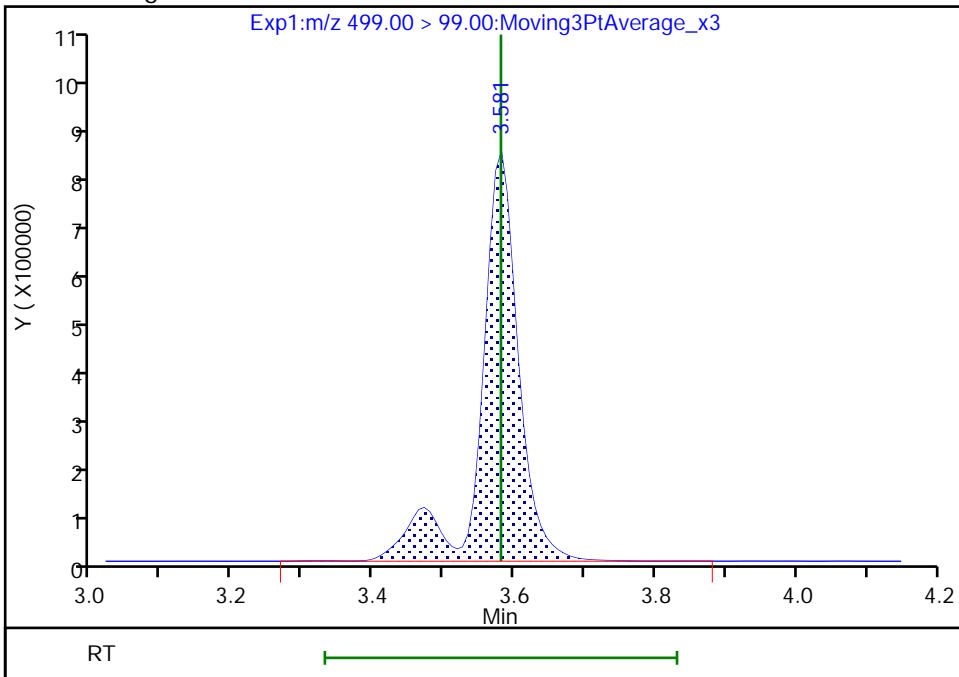
RT: 3.58
Area: 2591785
Amount: 9.449557
Amount Units: ng/ml

Processing Integration Results



RT: 3.58
Area: 2970133
Amount: 9.449557
Amount Units: ng/ml

Manual Integration Results



FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 263887

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/08/2018 05:16 Calibration End Date: 12/08/2018 06:01 Calibration ID: 42665

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-263887/2	2018.12.07ICAL_005.d
Level 2	IC 320-263887/3	2018.12.07ICAL_006.d
Level 3	IC 320-263887/4	2018.12.07ICAL_007.d
Level 4	IC 320-263887/5	2018.12.07ICAL_008.d
Level 5	IC 320-263887/6	2018.12.07ICAL_009.d
Level 6	IC 320-263887/7	2018.12.07ICAL_010.d
Level 7	IC 320-263887/8	2018.12.07ICAL_011.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
Perfluorobutanoic acid (PFBA)	0.8738 0.9428	0.8977 0.8815	0.9256	0.9333	0.9382	AveID		0.9132			3.1		35.0				
Perfluoropentanoic acid (PFPeA)	1.1564 1.0622	1.1741 1.0853	1.0226	1.0800	1.0870	AveID		1.0954			4.8		35.0				
Perfluorobutanesulfonic acid (PFBS)	1.0406 0.9780	0.9901 0.8804	0.9700	1.0004	1.0523	AveID		0.9874			5.7		50.0				
4:2 FTS	0.1760 0.1999	0.1931 0.1819	0.1970	0.1822	0.1947	AveID		0.1892			4.8		50.0				
Perfluorohexanoic acid (PFHxA)	1.0819 1.0096	1.0277 0.9896	0.9786	0.9590	1.0385	AveID		1.0121			4.1		35.0				
Perfluoropentanesulfonic acid (PFPeS)	0.8686 0.8582	0.8543 0.7615	0.8837	0.8939	0.9299	AveID		0.8643			6.0		50.0				
HFPO-DA (GenX)	++++ 3.0544	3.5292 3.6499	3.1950	3.4234	3.2852	AveID		3.3562			6.6		35.0				
Perfluoroheptanoic acid (PFHpA)	1.1228 1.0842	1.4212 1.0406	1.0823	1.1103	1.0381	AveID		1.1285			11.8		35.0				
Perfluorohexanesulfonic acid (PFHxS)	1.2214 1.0554	1.1343 0.9858	0.9947	1.0048	1.0388	AveID		1.0622			8.1		35.0				
DONA	3.9971 3.7166	3.8479 3.1466	4.1935	4.3761	4.1037	AveID		3.9117			10.3		50.0				
6:2 FTS	1.5612 1.5997	1.4390 1.5545	1.6269	1.4851	1.6224	AveID		1.5556			4.6		35.0				
Perfluoroheptanesulfonic Acid (PFHpS)	1.2438 1.3014	1.2652 1.2483	1.2684	1.3448	1.3291	AveID		1.2859			3.1		50.0				
Perfluorooctanoic acid (PFOA)	1.3197 1.0523	1.1530 1.0242	1.1327	1.0877	1.0935	AveID		1.1233			8.6		35.0				
Perfluorooctanesulfonic acid (PFOS)	1.1071 1.1350	1.0794 1.1428	1.1384	1.1281	1.1129	AveID		1.1205			2.0		35.0				

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

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento

Job No.: 480-145071-1

Analy Batch No.: 263887

SDG No.: _____

Instrument ID: A8_N

GC Column: GeminiC18 3 ID: 3(mm)

Heated Purge: (Y/N) N

Calibration Start Date: 12/08/2018 05:16

Calibration End Date: 12/08/2018 06:01

Calibration ID: 42665

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
Perfluorononanoic acid (PFNA)	1.2144 1.0604	1.0109 0.9992	1.0071	1.0493	1.0271	AveID		1.0526			7.1		35.0				
F-53B Major	1.7642 1.8906	1.8625 1.8812	1.9133	1.9493	2.0174	AveID		1.8969			4.1		50.0				
Perfluoronananesulfonic acid (PFNS)	0.6719 0.7836	0.7680 0.8276	0.8109	0.8116	0.8003	AveID		0.7820			6.7		50.0				
Perfluorodecanoic acid (PFDA)	0.8639 0.9579	1.0326 1.0026	1.0074	0.9378	0.9778	AveID		0.9686			5.8		35.0				
8:2 FTS	1.3830 1.3128	1.3008 1.2724	1.3361	1.2158	1.3326	AveID		1.3076			4.1		35.0				
Perfluorooctanesulfonamide (FOSA)	0.9004 0.9228	0.8946 0.9223	0.9511	0.9661	1.0052	AveID		0.9375			4.2		35.0				
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.8781 0.9144	0.9529 0.9907	0.9540	0.8772	0.9056	AveID		0.9247			4.6		35.0				
Perfluorodecanesulfonic acid (PFDS)	0.5741 0.6823	0.5841 0.6736	0.6262	0.6658	0.6689	AveID		0.6393			7.0		50.0				
Perfluoroundecanoic acid (PFUnA)	1.0364 0.9384	0.9140 0.8641	0.8873	0.8681	0.8880	AveID		0.9137			6.6		35.0				
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.8570 0.8534	0.9110 0.8681	0.8139	0.8334	0.8436	AveID		0.8543			3.6		35.0				
F-53B Minor	2.6540 2.7409	2.9756 2.5309	2.9045	3.1156	2.9253	AveID		2.8352			7.1		50.0				
Perfluorododecanoic acid (PFDoA)	1.1801 1.0153	1.1268 1.0270	1.0535	0.9928	1.0602	AveID		1.0651			6.2		35.0				
10:2 FTS	0.6980 0.8939	0.9152 0.9332	0.9047	0.9153	0.9691	AveID		0.8899			9.9		50.0				
Perfluorododecanesulfonic acid (PFDoS)	0.2271 0.2935	0.2607 0.2964	0.3028	0.3016	0.2918	AveID		0.2820			9.9		50.0				
Perfluorotridecanoic acid (PFTriA)	0.9078 1.0666	0.9763 1.0277	1.0235	1.0455	1.0372	AveID		1.0121			5.3		50.0				
Perfluorotetradecanoic acid (PFTeA)	0.2757 0.2573	0.2402 0.2521	0.2483	0.2492	0.2484	AveID		0.2530			4.4		50.0				
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.7110 0.8962	1.2619 0.8287	0.9826	0.8993	0.9050	L2ID	0.0206	0.8757						0.9990		0.9900	
Perfluoro-n-octadecanoic acid (PFODA)	1.1446 1.1915	1.1519 1.1494	1.1293	1.1336	1.2369	AveID		1.1624			3.3		50.0				
13C4 PFBA	1.4703 1.5185	1.4909 1.5549	1.4813	1.5445	1.4723	Ave		1.5047			2.3		50.0				
13C5 PFPeA	0.9979 1.0153	0.9563 0.9974	1.0052	0.9968	0.9412	Ave		0.9872			2.8		50.0				

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

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LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 263887
 SDG No.: _____
 Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
 Calibration Start Date: 12/08/2018 05:16 Calibration End Date: 12/08/2018 06:01 Calibration ID: 42665

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R ² OR COD	#	MIN R ² OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
13C3 PFBS	1.5192 1.5466	1.4753 1.6087	1.5172	1.5953	1.4392	Ave		1.5288			4.0		50.0				
M2-4:2 FTS	0.1261 0.1269	0.1249 0.1344	0.1196	0.1215	0.1251	Ave		0.1255			3.8		50.0				
13C2 PFHxA	0.9921 1.0259	1.0295 1.0137	1.0347	1.1059	1.0158	Ave		1.0311			3.5		50.0				
13C3 HFPO-DA	0.0652 0.0855	0.0747 0.0762	0.0727	0.0728	0.0739	Ave		0.0744			8.1		50.0				
13C4 PFHpA	0.9529 0.9857	1.0218 0.9715	1.0048	1.0121	0.9786	Ave		0.9896			2.5		50.0				
18O2 PFHxS	1.2023 1.1723	1.1866 1.1726	1.2291	1.2419	1.1393	Ave		1.1920			3.0		50.0				
M2-6:2 FTS	0.1760 0.1733	0.1855 0.1805	0.1718	0.1885	0.1765	Ave		0.1789			3.5		50.0				
13C8 PFOA	1.4317 1.5063	1.4815 1.5763	1.5370	1.5288	1.4884	Ave		1.5071			3.1		50.0				
13C4 PFOA	0.9844 0.9779	0.9817 1.0052	0.9718	0.9889	0.9865	Ave		0.9852			1.1		50.0				
13C8 PFOS	0.4196 0.4081	0.4119 0.4265	0.4321	0.4346	0.4257	Ave		0.4226			2.3		50.0				
13C4 PFOS	0.8187 0.7829	0.7945 0.7742	0.7763	0.7861	0.7681	Ave		0.7858			2.1		50.0				
13C5 PFNA	0.7976 0.8136	0.8100 0.8568	0.8314	0.8296	0.7996	Ave		0.8198			2.6		50.0				
M2-8:2 FTS	0.1963 0.1998	0.1923 0.2043	0.1870	0.1983	0.1839	Ave		0.1946			3.7		50.0				
13C2 PFDA	0.7178 0.7686	0.7340 0.7325	0.7219	0.7725	0.7083	Ave		0.7365			3.4		50.0				
13C8 FOSA	1.1691 1.1922	1.1572 1.1613	1.1808	1.1958	1.1353	Ave		1.1702			1.8		50.0				
d3-NMeFOSAA	0.3880 0.4036	0.3763 0.3966	0.3634	0.4178	0.3828	Ave		0.3898			4.6		50.0				
13C2 PFUnA	0.5718 0.5740	0.5831 0.6032	0.5999	0.5905	0.5611	Ave		0.5834			2.7		50.0				
d5-NEtFOSAA	0.4024 0.4093	0.4002 0.4074	0.4195	0.4191	0.4076	Ave		0.4094			1.8		50.0				
13C2 PFDoA	0.5935 0.5886	0.5826 0.6293	0.6206	0.6070	0.5849	Ave		0.6009			3.1		50.0				
13C2 PFTeDA	0.6745 0.7110	0.6904 0.7088	0.7151	0.6967	0.6902	Ave		0.6981			2.1		50.0				

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

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 CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 263887

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/08/2018 05:16 Calibration End Date: 12/08/2018 06:01 Calibration ID: 42665

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
13C2 PFHxDA	1.1695	1.2168	1.2559	1.2695	1.1865	Ave		1.2263			3.0		50.0				
	1.2382	1.2477															

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

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 263887

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/08/2018 05:16 Calibration End Date: 12/08/2018 06:01 Calibration ID: 42665

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-263887/2	2018.12.07ICAL_005.d
Level 2	IC 320-263887/3	2018.12.07ICAL_006.d
Level 3	IC 320-263887/4	2018.12.07ICAL_007.d
Level 4	IC 320-263887/5	2018.12.07ICAL_008.d
Level 5	IC 320-263887/6	2018.12.07ICAL_009.d
Level 6	IC 320-263887/7	2018.12.07ICAL_010.d
Level 7	IC 320-263887/8	2018.12.07ICAL_011.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7				LVL 6	LVL 7			
Perfluorobutanoic acid (PFBA)		AveID	63016 14118065	134242 25337129	664779	2836773	6931695	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	56606 10634903	112622 20010869	498455	2118586	5134540	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	68547 13186942	129521 23143967	630804	2776349	6718429	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	12248 2847272	26686 5052888	135338	534200	1313185	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	52650 10214491	106123 18543964	490978	2087126	5293796	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	60710 12277369	118586 21241019	609830	2632513	6300001	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	++++ 2573983	26440 5141360	112551	490391	1217829	++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	52481 10539567	145665 18687199	527327	2211469	5098162	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	65546 11103494	122851 19445678	539488	2234673	5404770	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
DONA		AveID	151216 27031089	288877 42422451	1487004	6377168	14900766	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	12779 2591676	25382 4916435	128485	522288	1362440	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	47555 9565336	95994 17007871	454534	1980624	4877217	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanoic acid (PFOA)		AveID	63790 10158282	113649 19048878	534239	2118930	5419118	0.0250 5.01	0.0501 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	41260 8132457	79827 15178857	397681	1619534	3981079	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	47511 8508441	82133 15826170	405985	1713219	4121000	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 263887

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/08/2018 05:16 Calibration End Date: 12/08/2018 06:01 Calibration ID: 42665

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	66034 13604481	138338 25093428	671236	2810482	7247501	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)		AveID	25905 5808111	58754 11370348	293038	1205356	2961609	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	30421 7260982	76021 13575847	352629	1425656	3475850	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	12759 2477992	24039 4603116	116067	454602	1178186	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
Perfluorooctanesulfonamide (FOSA)		AveID	51631 10850361	103838 19798058	544592	2273469	5727143	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	16712 3639349	35967 7262923	168100	721364	1739614	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	22226 5078014	44878 9293520	227222	992860	2485603	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	29065 5312027	53452 9634066	258113	1008854	2500097	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	16917 3445041	36571 6537164	165534	687377	1725506	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	100404 19934562	223386 34121646	1029909	4540281	10621847	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
Perfluorododecanoic acid (PFDoA)		AveID	34353 5893515	65846 11946248	317033	1185940	3112000	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	6480 1697894	17020 3397238	79079	344395	862148	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluorododecanesulfonic acid (PFDoS)		AveID	8829 2193633	20115 4105878	110321	451678	1088723	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	26426 6191846	57051 11953632	308014	1248800	3044284	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	9121 1804130	16635 3302713	86101	341601	860320	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	98151 10943142	154012 19113106	598388	2246706	5388602	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	65659 14549840	140583 26509405	687692	2832133	7364838	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
13C4 PFBA	13PF OA	Ave	7212121 7487416	7477257 7185819	7182487	7598815	7388621	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	4894993 5006239	4796125 4609410	4874212	4904349	4723411	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	6930116 7092378	6880944 6913885	6841707	7299426	6716967	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	577704 584338	585142 580268	541506	558501	586220	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.: 480-145071-1 Analy Batch No.: 263887
 SDG No.: _____
 Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N
 Calibration Start Date: 12/08/2018 05:16 Calibration End Date: 12/08/2018 06:01 Calibration ID: 42665

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	4866369 5058915	5162925 4684854	5017316	5440869	5097441	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	319899 421354	374591 352158	352271	358115	370698	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	4674198 4860579	5124572 4489560	4872311	4979356	4910967	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	5578850 5468316	5629433 5126377	5637965	5780156	5408539	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	820248 811783	883771 792328	791407	881057	841523	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C8 PFOA	13PF OA	Ave	6875357 7271529	7273970 7131649	7296100	7363386	7312402	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C4 PFOA	13PF OA	Ave	4828869 4821820	4923339 4645140	4711848	4865135	4950786	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOS	13PF OA	Ave	1967588 1923884	1975089 1884210	2002884	2044015	2042306	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C4 PFOS	13PF OA	Ave	3839340 3690547	3809435 3420592	3598667	3697359	3685010	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	3912198 4012004	4062511 3959575	4031300	4081734	4012443	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	922564 943788	924043 904430	868680	934799	884111	2.40 2.40	2.40 2.40	2.40	2.40	2.40
13C2 PFDA	13PF OA	Ave	3521168 3790048	3681074 3385143	3500314	3800614	3554606	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	5734441 5878788	5803663 5366514	5725680	5883149	5697512	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d3-NMeFOSAA	13PF OA	Ave	1903135 1990092	1887162 1832735	1762047	2055768	1920937	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	2804546 2830496	2924195 2787447	2908878	2905371	2815537	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1973935 2018360	2007117 1882597	2033921	2061954	2045443	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	2911099 2902486	2921731 2908000	3009330	2986227	2935236	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	3308673 3505989	3462400 3275425	3467600	3427528	3463798	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	5736420 6105593	6102314 5766093	6089785	6245988	5954497	2.50 2.50	2.50 2.50	2.50	2.50	2.50

FORM VI
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1 Analy Batch No.: 263887

SDG No.: _____

Instrument ID: A8_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/08/2018 05:16 Calibration End Date: 12/08/2018 06:01 Calibration ID: 42665

Curve Type Legend:

Ave = Average ISTD AveID = Average isotope dilution L2ID = Linear 1/conc ² IsoDil
--

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_005.d
 Lims ID: IC L1 Full
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 08-Dec-2018 05:16:51 ALS Bottle#: 10 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 1
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 08-Dec-2018 10:19:43 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0329

First Level Reviewer: phomsophat Date: 08-Dec-2018 09:49:01

Ratio Calibration: None

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	1.756	1.753	0.003	0.550	7212121	2.44	97.7	6331	
2 Perfluorobutanoic acid	212.90 > 169.00	1.756	1.754	0.002	1.000	63016	0.0239	95.7	11.7	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.063	0.0	0.647	4894993	2.53	101	6946	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.063	0.0	1.000	56606	0.0264	106	4.0	
D 47 13C3 PFBS	301.90 > 80.00	2.095	2.093	0.002	0.657	6930116	2.31	99.4	325522	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.095	2.096	-0.001	1.000	68547	0.0233	Target=2.49	105	99.3
	298.90 > 99.00	2.105	2.096	0.009	1.005	27478		2.49(1.25-3.74)	105	34.7
D 60 M2-4:2 FTS	329.00 > 81.00	2.373	2.372	0.001	0.744	577704	2.35	100	1581	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.373	2.372	0.001	1.133	12248	0.0217	93.0	150	
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.412	0.0	0.756	4866369	2.41	96.2	6945	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.412	0.0	1.000	52650	0.0267	Target=10.07	107	20.0
	313.00 > 119.00	2.412	2.412	0.0	1.000	4855		10.84(5.03-15.10)	107	17.7
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.432	2.429	0.003	1.161	60710	0.0236	Target=2.71	100	313
	349.00 > 99.00	2.432	2.429	0.003	1.161	22716		2.67(1.36-4.07)	100	86.1
D 64 13C3 HFPO-DA	332.10 > 287.00	2.531	2.527	0.004	0.794	319899	2.19	87.6	1994	

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	2.531	2.528	0.003	1.000	14783	0.0344	138	9.0	
D 9 13C4 PFHpA	367.00	> 322.00	2.793	2.792	0.001	0.876	4674198	2.41	96.3	8179	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.802	2.793	0.009	1.003	52481	0.0249	Target=2.27	99.5	16.2
	363.00	> 169.00	2.793	2.793	0.0	1.000	19668		2.67(1.13-3.40)	99.5	31.1
D 11 18O2 PFHxS	403.00	> 84.00	2.802	2.797	0.005	0.879	5578850	2.39	101	9856	
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.802	2.799	0.003	1.000	65546	0.0262	Target=3.00	115	294
	399.00	> 99.00	2.802	2.799	0.003	1.000	26568		2.47(1.50-4.49)	115	102
77 DONA	377.00	> 251.00	2.839	2.839	0.0	0.795	151216	0.0241	Target=1.69	102	373
	377.00	> 85.00	2.839	2.839	0.0	0.795	83551		1.81(0.85-2.54)	102	412
D 12 M2-6:2 FTS	429.00	> 81.00	3.173	3.167	0.006	0.995	820248	2.34	98.4	4324	
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.173	3.167	0.006	1.000	12779	0.0238	100	8.7	
D 73 13C8 PFOA	421.00	> 376.00	3.189	3.180	0.009	1.000	6875357	2.33	95.0	12278	
D 14 13C4 PFOA	417.00	> 372.00	3.189	3.185	0.004	1.000	4828869	2.50	99.9	8899	
* 62 13C2 PFOA	415.00	> 370.00	3.189	3.185	0.004		4905193	2.50		9679	
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.189	3.185	0.004	0.893	47555	0.0230	Target=3.88	96.7	334
	449.00	> 99.00	3.189	3.185	0.004	0.893	12383		3.84(1.94-5.82)	96.7	66.0
15 Perfluorooctanoic acid	413.00	> 369.00	3.189	3.185	0.004	1.000	63790	0.0294	Target=1.68	117	7.6
	413.00	> 169.00	3.189	3.185	0.004	1.000	34216		1.86(0.84-2.52)	117	44.3
D 72 13C8 PFOS	507.00	> 99.00	3.564	3.559	0.005	1.118	1967588	2.37	99.3	7163	
D 18 13C4 PFOS	503.00	> 80.00	3.572	3.562	0.010	1.120	3839340	2.49	104	7165	
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.572	3.562	0.010	1.000	41260	0.0229	Target=4.62	98.8	190
	499.00	> 99.00	3.572	3.562	0.010	1.000	10089		4.09(2.31-6.93)	98.8	41.3
D 19 13C5 PFNA	468.00	> 423.00	3.580	3.573	0.007	1.123	3912198	2.43	97.3	6901	
20 Perfluorononanoic acid	463.00	> 419.00	3.580	3.573	0.007	1.000	47511	0.0288	Target=3.79	115	26.2
	463.00	> 169.00	3.572	3.573	-0.001	0.998	9861		4.82(1.90-5.69)	115	61.4
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.772	3.766	0.006	1.056	66034	0.0217	93.0	447	

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	3.916	3.910	0.006	1.096	25905	0.0206	Target=2.65	85.9	225	
549.00 > 99.00	3.916	3.910	0.006	1.096	8054		3.22(1.33-3.97)	85.9	55.7	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.939	3.928	0.011	1.235	922564	2.42		101	6256	
D 23 13C2 PFDA										
515.00 > 470.00	3.939	3.929	0.010	1.235	3521168	2.44		97.5	12393	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.931	3.929	0.002	0.998	30421	0.0223	Target=4.73	89.2	36.6	
513.00 > 169.00	3.939	3.929	0.010	1.000	7162		4.25(2.36-7.09)	89.2	35.8	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.939	3.930	0.009	1.000	12759	0.0253		106	105	
D 21 13C8 FOSA										
506.00 > 78.00	3.947	3.943	0.004	1.238	5734441	2.50		99.9	8110	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.954	3.944	0.010	1.002	51631	0.0240		96.0	14.6	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.098	4.092	0.006	1.285	1903135	2.49		99.5	4159	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.098	4.096	0.002	1.000	16712	0.0237		95.0	7.8	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.237	4.228	0.009	1.186	22226	0.0216	Target=2.77	89.8	220	
599.00 > 99.00	4.237	4.228	0.009	1.186	7446		2.98(1.39-4.16)	89.8	88.1	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.253	4.250	0.003	0.998	29065	0.0284	Target=4.24	113	35.2	
563.00 > 169.00	4.253	4.250	0.003	0.998	6933		4.19(2.12-6.36)	113	65.0	
D 30 13C2 PFUnA										
565.00 > 520.00	4.261	4.251	0.010	1.336	2804546	2.45		98.0	5994	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.261	4.253	0.008	1.336	1973935	2.46		98.3	2844	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.269	4.260	0.009	1.002	16917	0.0251		100	92.3	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.403	4.393	0.010	1.233	100404	0.0220		93.6	431	
35 MeFOSA										
512.00 > 169.00	4.465	4.450	0.015		14823	NC			69.1	
D 36 13C2 PFDoA										
615.00 > 570.00	4.539	4.536	0.003	1.423	2911099	2.47		98.8	7653	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.539	4.537	0.002	1.000	34353	0.0277	Target=4.27	111	39.0	
613.00 > 169.00	4.548	4.537	0.011	1.002	9529		3.61(2.13-6.40)	111	77.7	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.556	4.552	0.004	1.157	6480	0.0189		78.4	88.2	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.632	4.628	0.004		16788	NC			107	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.773	4.766	0.007	1.336	8829	0.0195	Target=0.00	80.5	152	
699.00 > 99.00	4.773	4.766	0.007	1.336	15828		0.56(0.00-0.00)	80.5	122	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.799	4.798	0.001	1.057	26426	0.0224	Target=2.51	89.7	31.7	
663.00 > 169.00	4.799	4.798	0.001	1.057	10511		2.51(1.25-3.76)	89.7	99.6	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.036	5.036	0.0	1.579	3308673	2.42		96.6	7268	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.036	5.036	0.0	1.000	9121	0.0272	Target=1.42	109	112	
713.00 > 219.00	5.036	5.036	0.0	1.000	6996		1.30(0.71-2.13)	109	174	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.469	5.465	0.004	1.715	5736420	2.38		95.4	7222	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.469	5.467	0.002	1.000	98151	0.0253	Target=5.72	101	13.9	
813.00 > 169.00	5.469	5.467	0.002	1.000	19621		5.00(2.86-8.58)	101	257	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.884	5.885	-0.001	1.076	65659	0.0246	Target=7.65	98.5	9.7	
913.00 > 169.00	5.884	5.885	-0.001	1.076	8360		7.85(3.83-11.48)	98.5	115	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL1_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_005.d

Injection Date: 08-Dec-2018 05:16:51

Instrument ID: A8_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

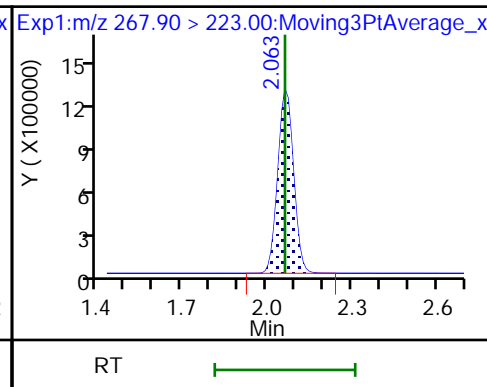
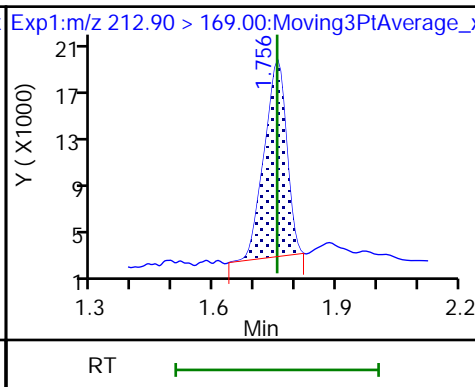
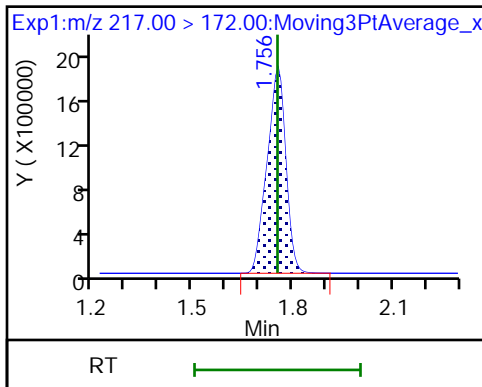
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

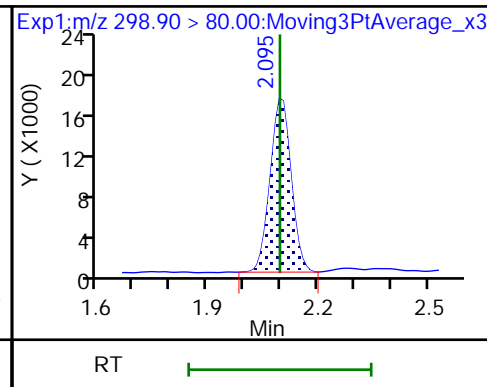
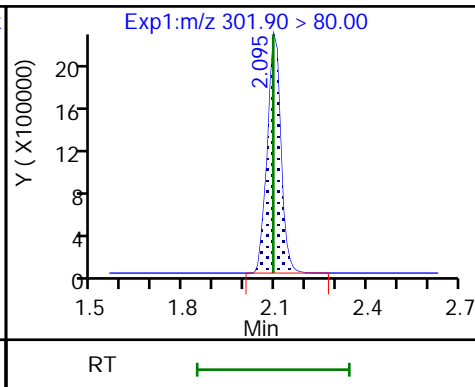
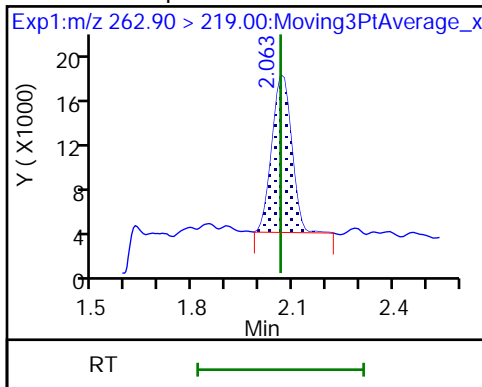
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

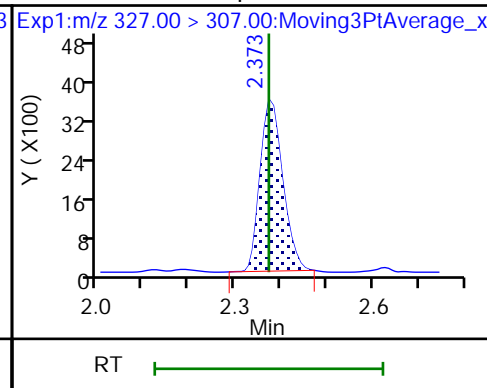
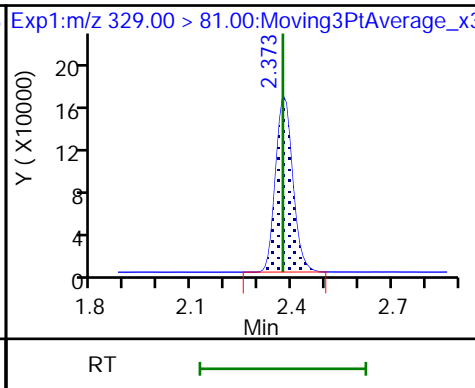
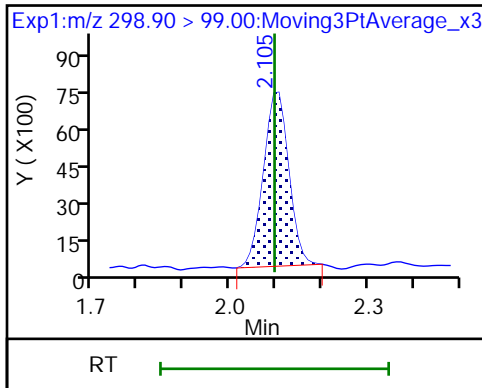
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

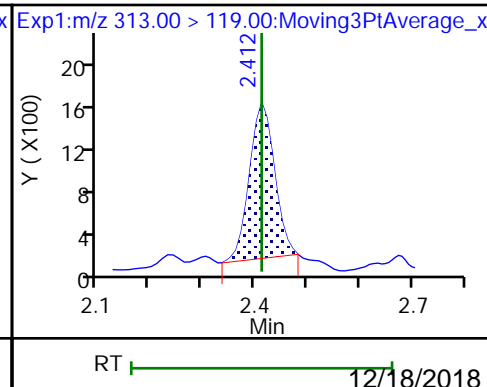
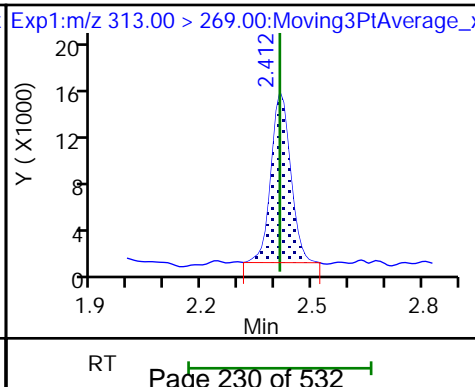
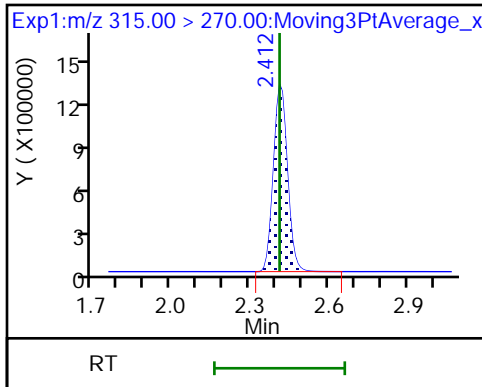
61 1H,1H,2H,2H-perfluorohexanesulfoni

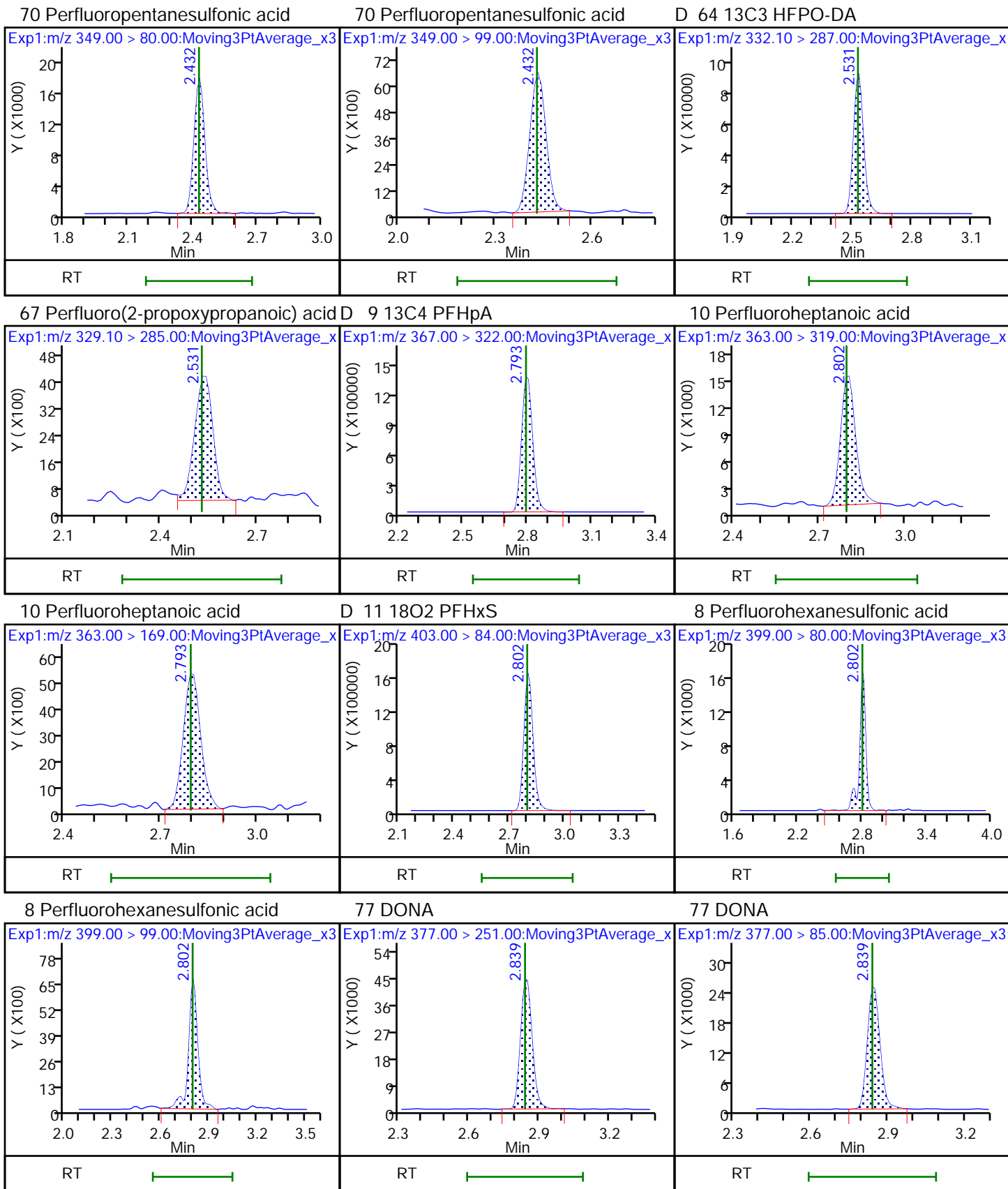


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

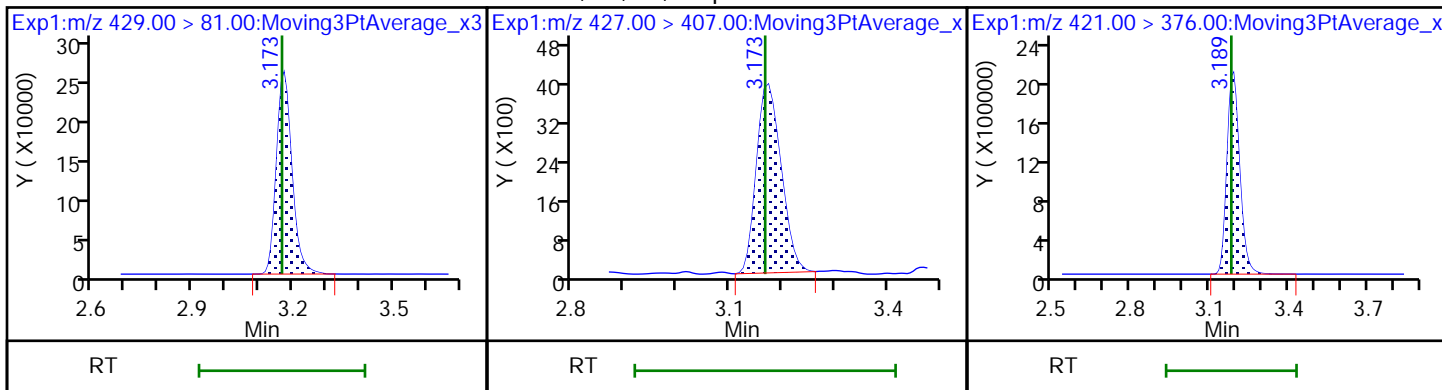
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

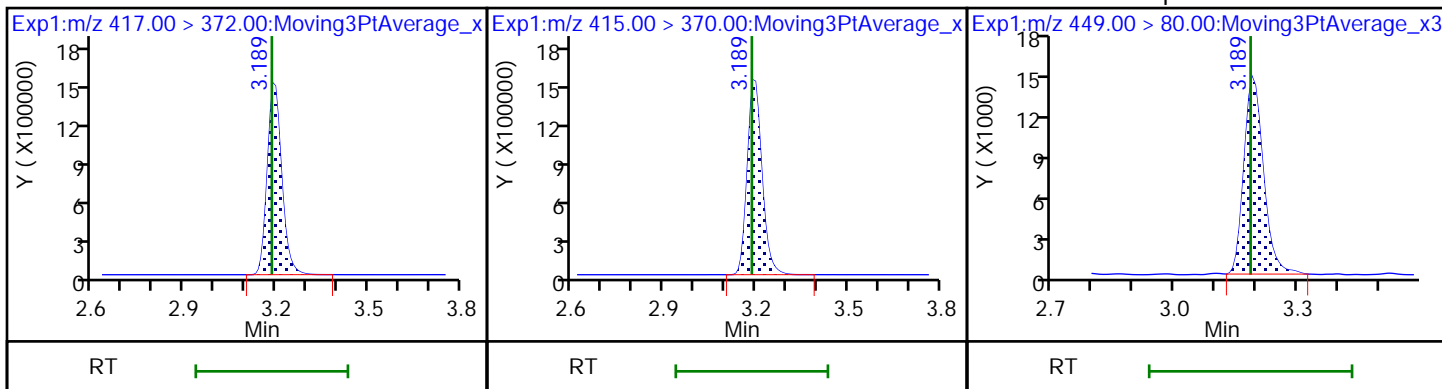
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D 14 13C4 PFOA

* 62 13C2 PFOA

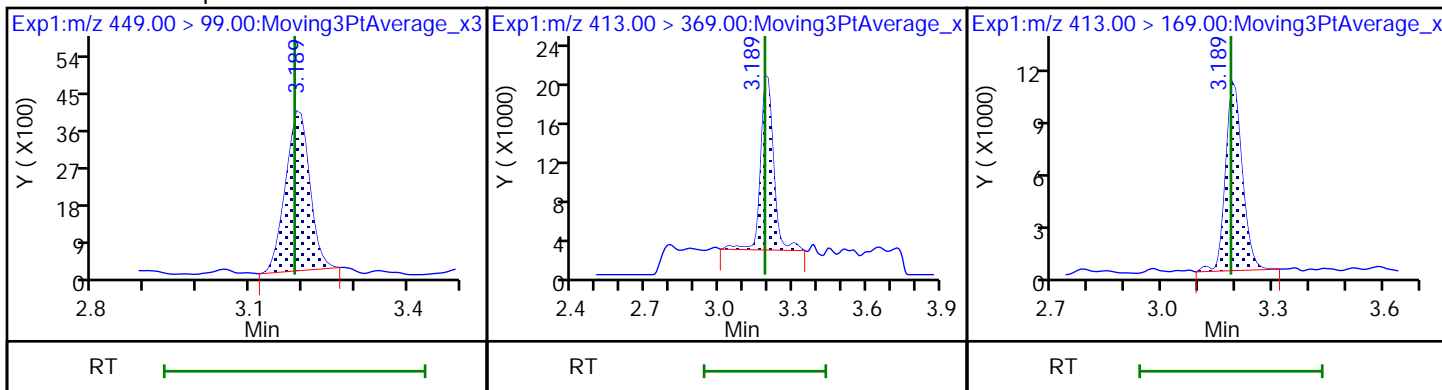
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

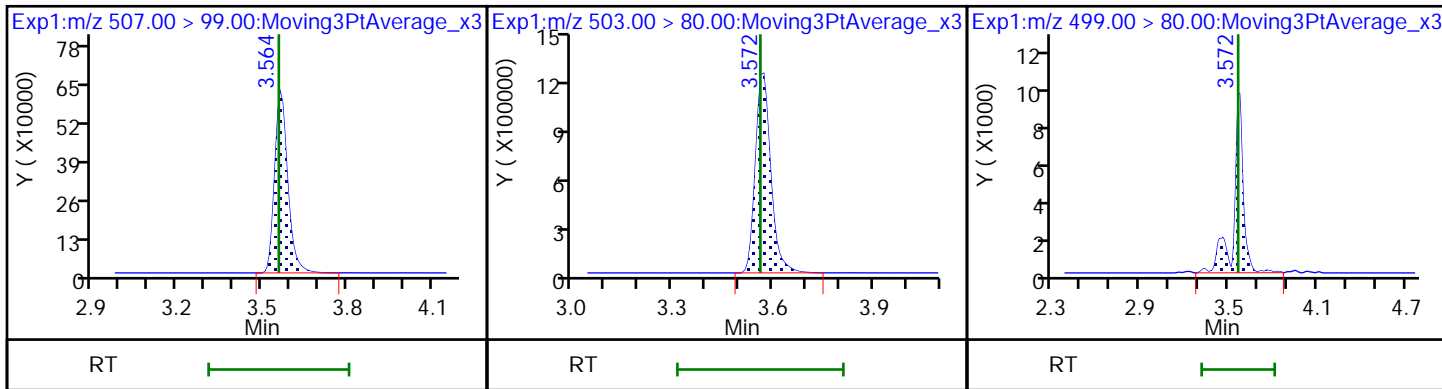
15 Perfluorooctanoic acid

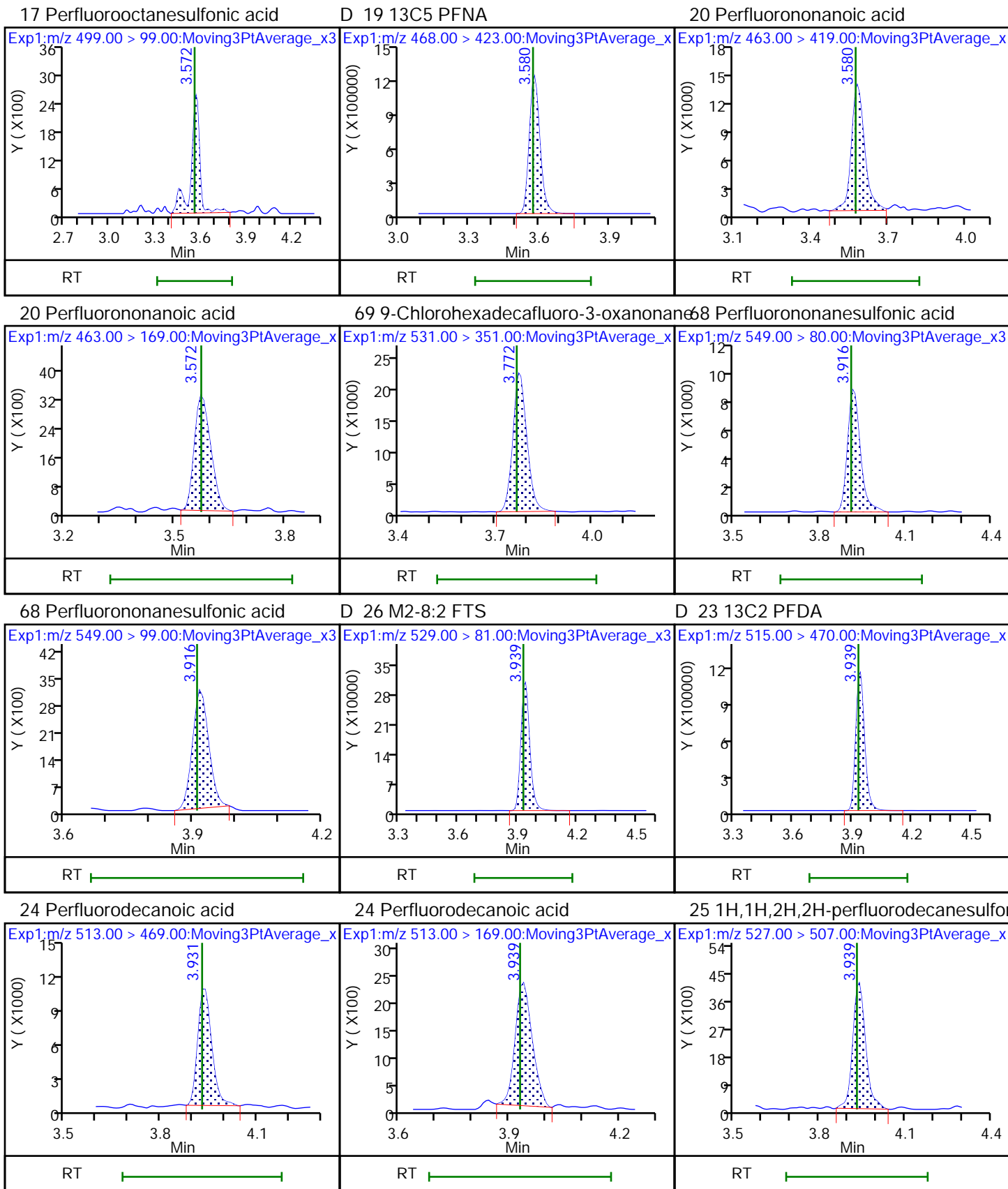


D 72 13C8 PFOS

D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid

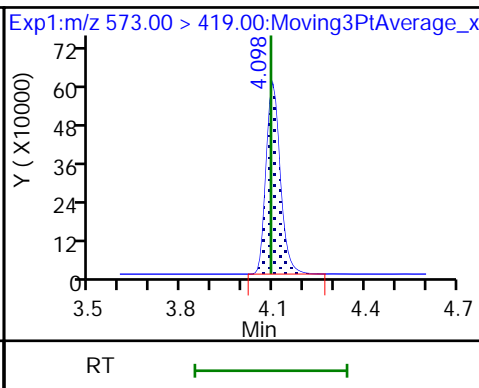
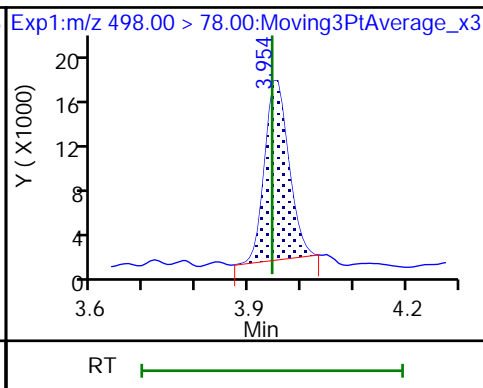
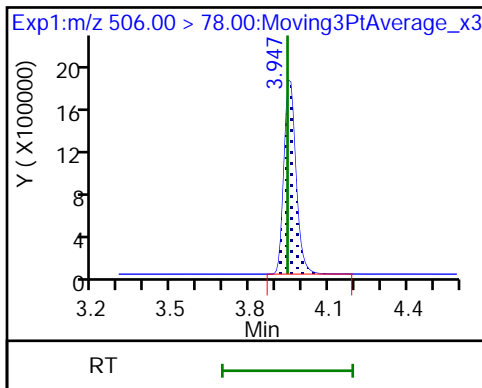




D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

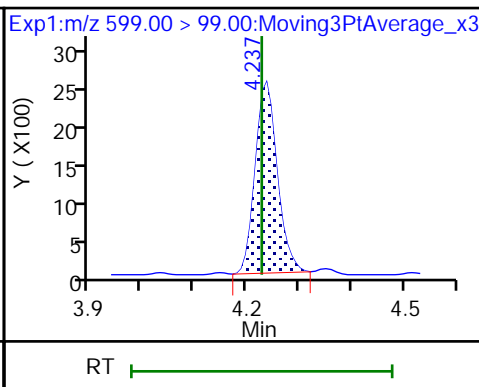
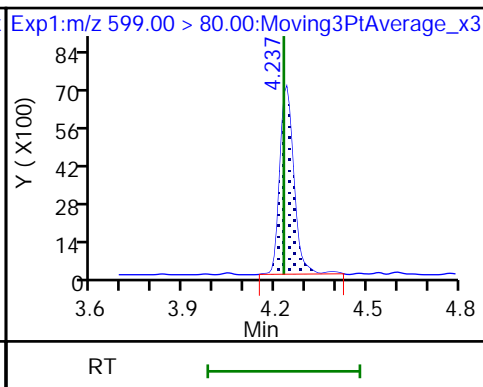
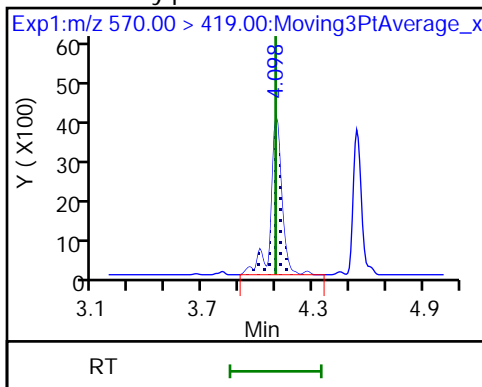
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

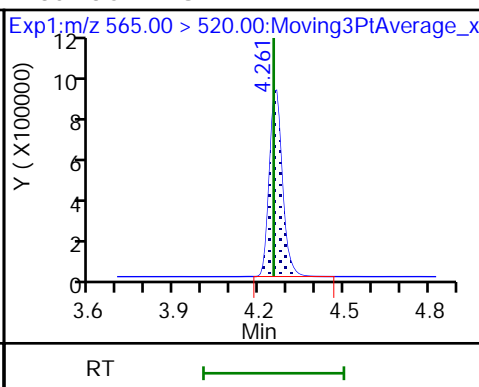
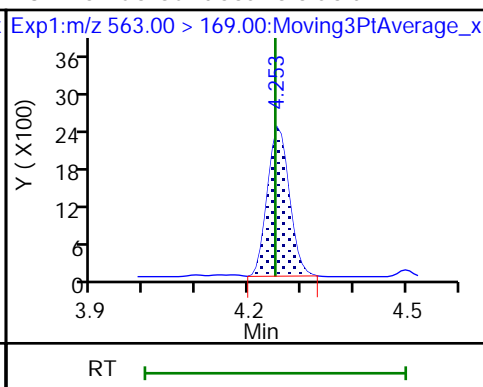
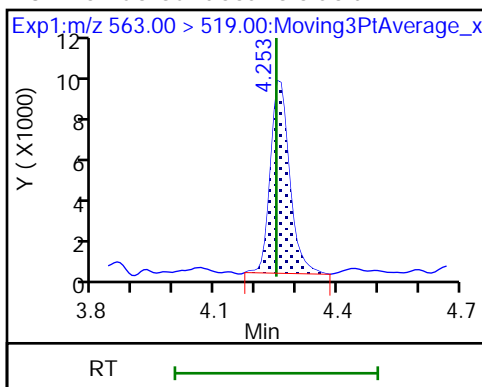
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

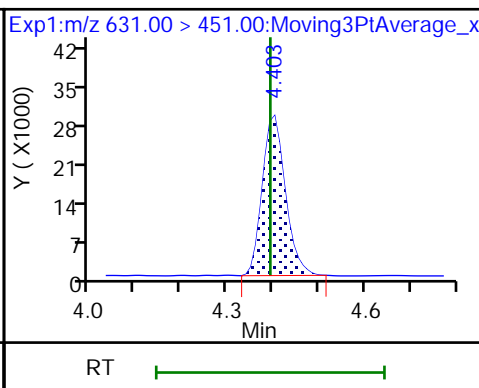
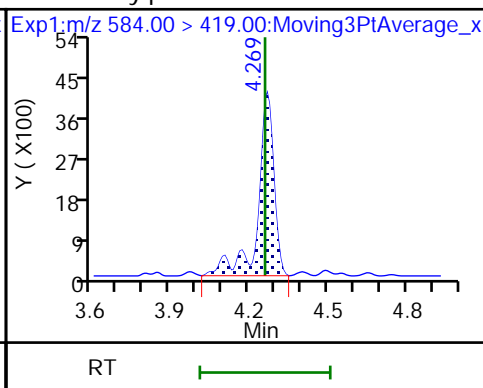
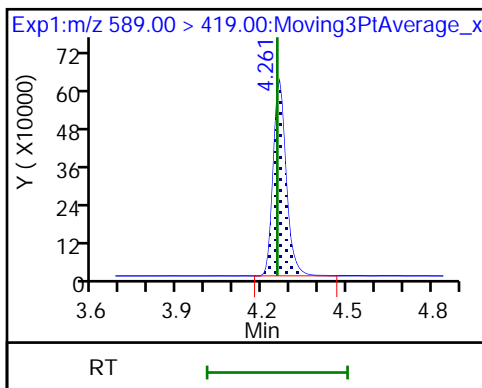
D 30 13C2 PFUnA



D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

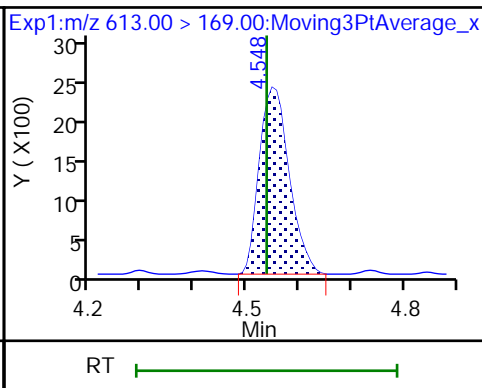
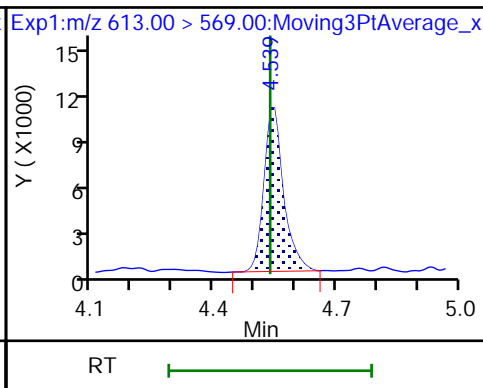
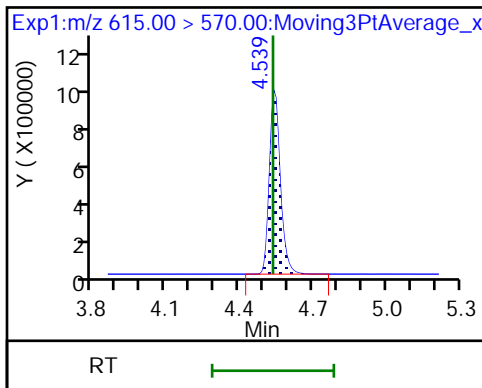
66 11-Chloroeicosafuoro-3-oxaundecan



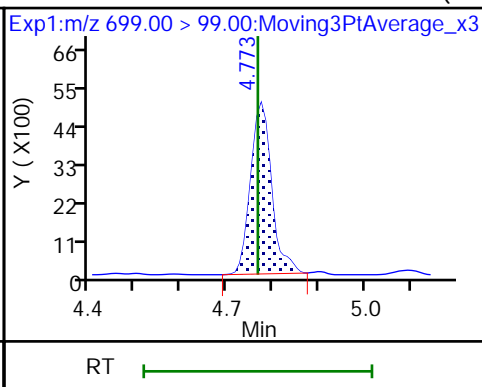
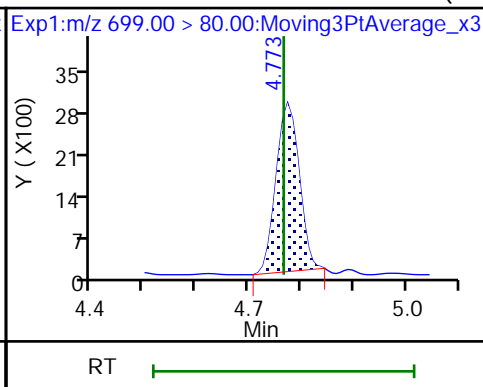
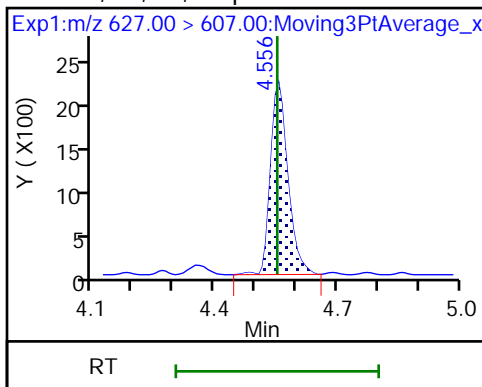
D 36 13C2 PFDa

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



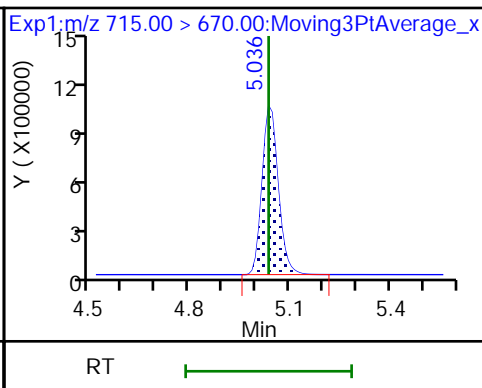
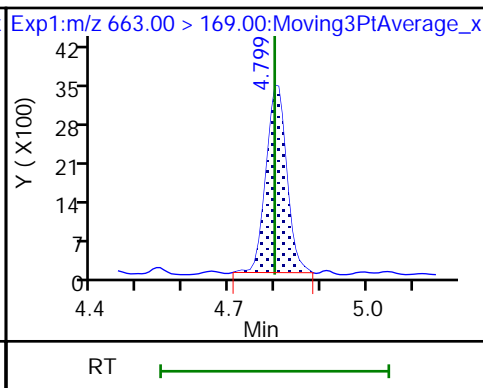
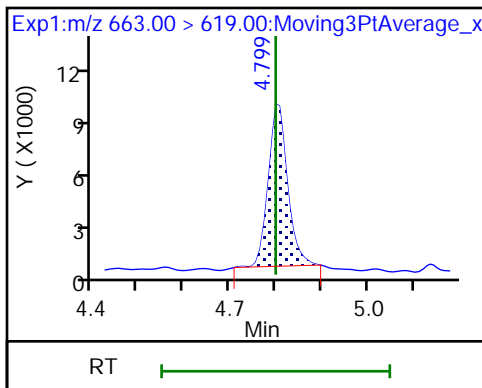
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41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

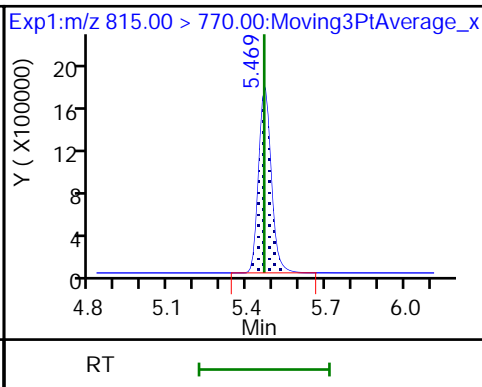
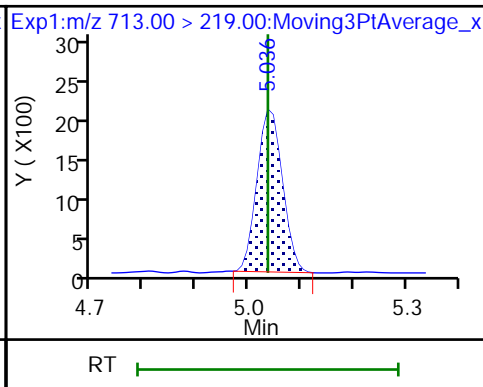
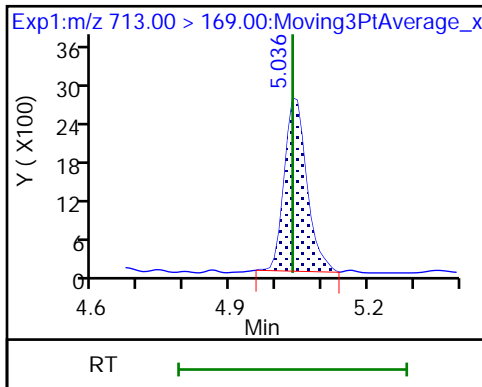
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

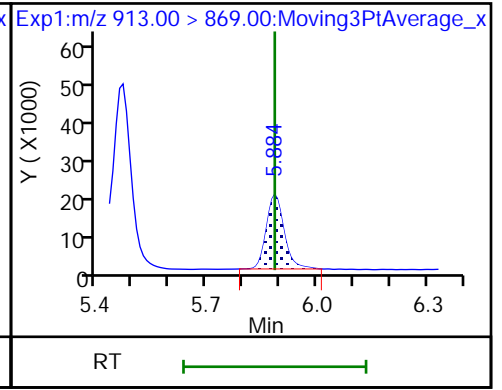
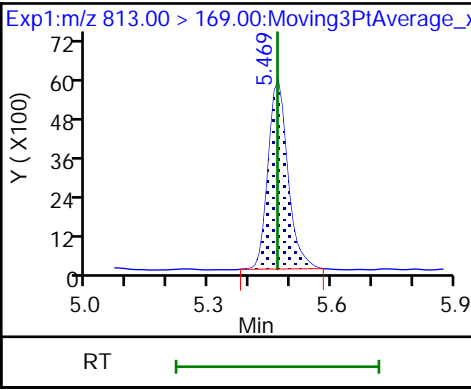
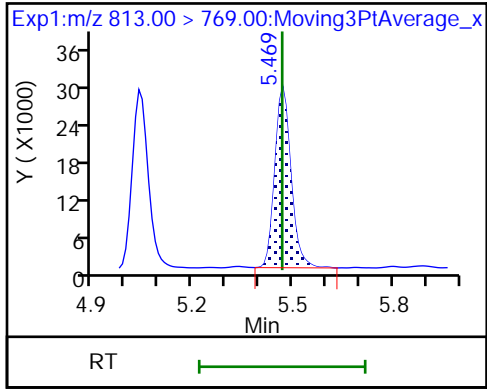
D 44 13C2 PFHxDA



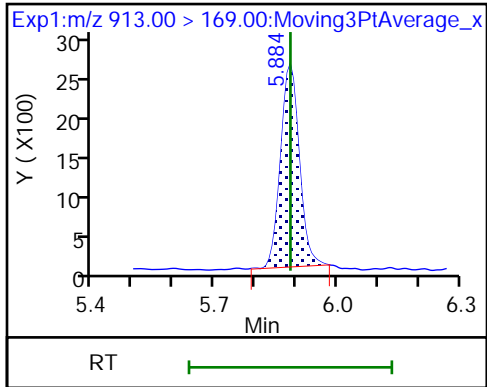
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_006.d
 Lims ID: IC L2 Full
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 08-Dec-2018 05:24:21 ALS Bottle#: 11 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 2
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37

Method: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 08-Dec-2018 10:19:47 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0329

First Level Reviewer: phomsophat Date: 08-Dec-2018 09:49:44

Ratio Calibration: None

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	1.755	1.753	0.002	0.552	7477257	2.48	99.1	6108	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.754	0.001	1.000	134242	0.0491	98.3	25.1	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.063	0.0	0.649	4796125	2.42	96.9	6943	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.063	0.0	1.000	112622	0.0536	107	8.6	
D 47 13C3 PFBS	301.90 > 80.00	2.094	2.093	0.001	0.659	6880944	2.24	96.5	331071	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.096	-0.002	1.000	129521	0.0443	Target=2.49	100	195
	298.90 > 99.00	2.094	2.096	-0.002	1.000	53854		2.41(1.25-3.74)	100	60.5
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.746	585142	2.32	99.5	1647	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.372	0.0	1.133	26686	0.0476	102	381	
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.412	0.0	0.758	5162925	2.50	99.8	7765	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.412	0.0	1.000	106123	0.0508	Target=10.07	102	39.8
	313.00 > 119.00	2.412	2.412	0.0	1.000	7644		13.88(5.03-15.10)	102	27.8
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.422	2.429	-0.007	1.156	118586	0.0464	Target=2.71	98.8	463
	349.00 > 99.00	2.422	2.429	-0.007	1.156	48815		2.43(1.36-4.07)	98.8	174
D 64 13C3 HFPO-DA	332.10 > 287.00	2.521	2.527	-0.006	0.793	374591	2.51	100	1840	

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	2.521	2.528	-0.007	1.000	26440	0.0526	105	16.2	
D 9 13C4 PFHpA	367.00	> 322.00	2.792	2.792	0.0	0.878	5124572	2.58	103	8706	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.792	2.793	-0.001	1.000	145665	0.0630	Target=2.27	126	49.7
	363.00	> 169.00	2.792	2.793	-0.001	1.000	55722		2.61(1.13-3.40)	126	98.2
D 11 18O2 PFHxS	403.00	> 84.00	2.792	2.797	-0.005	0.878	5629433	2.35		99.5	7010
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.802	2.799	0.003	1.003	122851	0.0486	Target=3.00	107	716
	399.00	> 99.00	2.792	2.799	-0.007	1.000	48713		2.52(1.50-4.49)	107	151
77 DONA	377.00	> 251.00	2.839	2.839	0.0	0.798	288877	0.0463	Target=1.69	98.4	558
	377.00	> 85.00	2.839	2.839	0.0	0.798	174668		1.65(0.85-2.54)	98.4	697
D 12 M2-6:2 FTS	429.00	> 81.00	3.165	3.167	-0.002	0.995	883771	2.46		104	4039
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.165	3.167	-0.002	1.000	25382	0.0438		92.5	13.4
D 73 13C8 PFOA	421.00	> 376.00	3.181	3.180	0.001	1.000	7273970	2.41		98.3	9084
D 14 13C4 PFOA	417.00	> 372.00	3.181	3.185	-0.004	1.000	4923339	2.49		99.6	8529
* 62 13C2 PFOA	415.00	> 370.00	3.181	3.185	-0.004		5015179	2.50			7835
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.181	3.185	-0.004	0.894	95994	0.0468	Target=3.88	98.4	534
	449.00	> 99.00	3.181	3.185	-0.004	0.894	24904		3.85(1.94-5.82)	98.4	127
15 Perfluorooctanoic acid	413.00	> 369.00	3.181	3.185	-0.004	1.000	113649	0.0514	Target=1.68	103	13.9
	413.00	> 169.00	3.181	3.185	-0.004	1.000	70139		1.62(0.84-2.52)	103	68.8
D 72 13C8 PFOS	507.00	> 99.00	3.556	3.559	-0.003	1.118	1975089	2.33		97.5	8224
D 18 13C4 PFOS	503.00	> 80.00	3.556	3.562	-0.006	1.118	3809435	2.42		101	8794
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.556	3.562	-0.006	1.000	79827	0.0447	Target=4.62	96.3	205
	499.00	> 99.00	3.556	3.562	-0.006	1.000	20015		3.99(2.31-6.93)	96.3	55.2
D 19 13C5 PFNA	468.00	> 423.00	3.571	3.573	-0.002	1.123	4062511	2.47		98.8	8462
20 Perfluorononanoic acid	463.00	> 419.00	3.571	3.573	-0.002	1.000	82133	0.0480	Target=3.79	96.0	42.5
	463.00	> 169.00	3.571	3.573	-0.002	1.000	19246		4.27(1.90-5.69)	96.0	102
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.761	3.766	-0.005	1.058	138338	0.0458		98.2	765

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	3.908	3.910	-0.002	1.099	58754	0.0471	Target=2.65	98.2	632	
549.00 > 99.00	3.908	3.910	-0.002	1.099	21640		2.72(1.33-3.97)	98.2	196	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.923	3.928	-0.005	1.233	924043	2.37		98.8	4142	
D 23 13C2 PFDA										
515.00 > 470.00	3.923	3.929	-0.006	1.233	3681074	2.49		99.7	9190	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.923	3.929	-0.006	1.000	76021	0.0533	Target=4.73	107	85.7	
513.00 > 169.00	3.923	3.929	-0.006	1.000	13551		5.61(2.36-7.09)	107	66.8	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.923	3.930	-0.007	1.000	24039	0.0476		99.5	203	
D 21 13C8 FOSA										
506.00 > 78.00	3.938	3.943	-0.005	1.238	5803663	2.47		98.9	6190	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.938	3.944	-0.006	1.000	103838	0.0477		95.4	32.8	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.088	4.092	-0.004	1.285	1887162	2.41		96.5	5592	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.097	4.096	0.001	1.002	35967	0.0515		103	21.2	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.221	4.228	-0.007	1.187	44878	0.0440	Target=2.77	91.4	237	
599.00 > 99.00	4.221	4.228	-0.007	1.187	14985		2.99(1.39-4.16)	91.4	154	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.244	4.250	-0.006	1.000	53452	0.0500	Target=4.24	100	76.1	
563.00 > 169.00	4.244	4.250	-0.006	1.000	13047		4.10(2.12-6.36)	100	137	
D 30 13C2 PFUnA										
565.00 > 520.00	4.244	4.251	-0.007	1.335	2924195	2.50		100.0	7290	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.252	4.253	-0.001	1.337	2007117	2.44		97.8	3244	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.260	4.260	0.0	1.002	36571	0.0533		107	136	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.390	4.393	-0.003	1.235	223386	0.0494		105	1294	
35 MeFOSA										
512.00 > 169.00	4.453	4.450	0.003		33417	NC			184	
D 36 13C2 PFDoA										
615.00 > 570.00	4.529	4.536	-0.007	1.424	2921731	2.42		96.9	8213	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.537	4.537	0.0	1.002	65846	0.0529	Target=4.27	106	72.1	
613.00 > 169.00	4.537	4.537	0.0	1.002	15902		4.14(2.13-6.40)	106	201	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.545	4.552	-0.007	1.159	17020	0.0496		103	203	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.627	4.628	-0.001		33960	NC			157	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.760	4.766	-0.006	1.339	20115	0.0448	Target=0.00	92.5	152	
699.00 > 99.00	4.760	4.766	-0.006	1.339	31480		0.64(0.00-0.00)	92.5	237	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.798	4.798	0.0	1.059	57051	0.0482	Target=2.51	96.5	58.5	
663.00 > 169.00	4.798	4.798	0.0	1.059	20346		2.80(1.25-3.76)	96.5	252	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.034	5.036	-0.002	1.583	3462400	2.47		98.9	9555	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.034	5.036	-0.002	1.000	16635	0.0475	Target=1.42	94.9	217	
713.00 > 219.00	5.034	5.036	-0.002	1.000	12623		1.32(0.71-2.13)	94.9	142	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.459	5.465	-0.006	1.716	6102314	2.48		99.2	8231	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.459	5.467	-0.008	1.000	154012	0.0485	Target=5.72	97.0	21.3	
813.00 > 169.00	5.459	5.467	-0.008	1.000	29641		5.20(2.86-8.58)	97.0	322	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.876	5.885	-0.009	1.076	140583	0.0495	Target=7.65	99.1	19.1	
913.00 > 169.00	5.876	5.885	-0.009	1.076	18303		7.68(3.83-11.48)	99.1	272	

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\A8_N\20181207-68828.b\2018.12.07ICAL_006.d

Injection Date: 08-Dec-2018 05:24:21

Instrument ID: A8_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 11

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

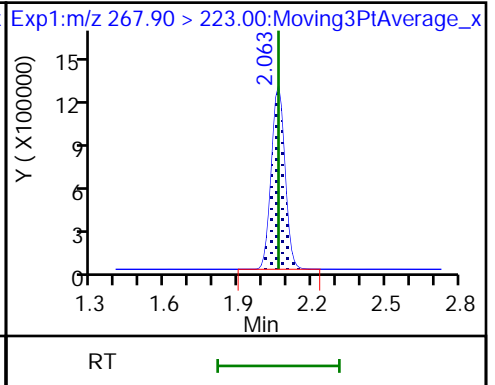
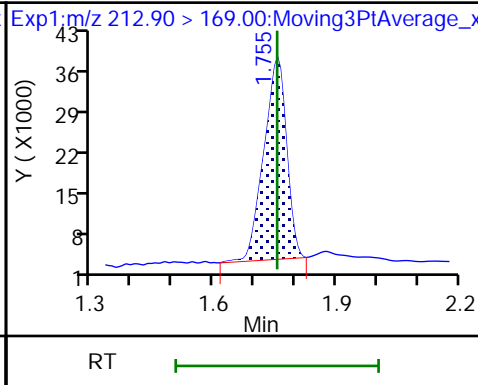
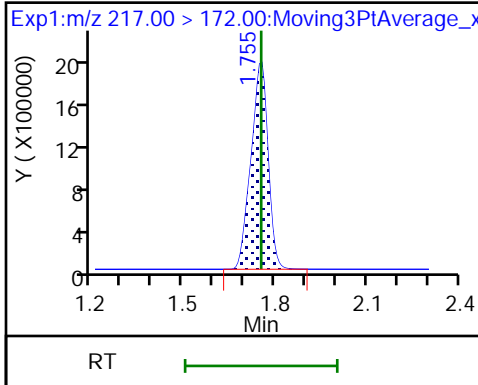
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

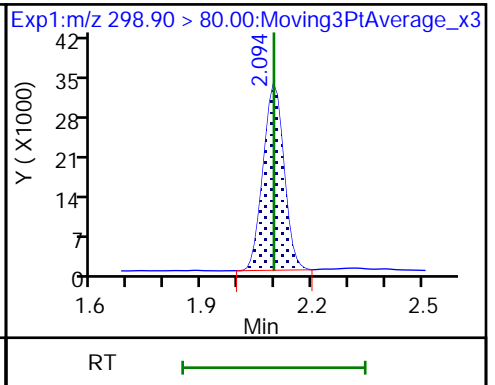
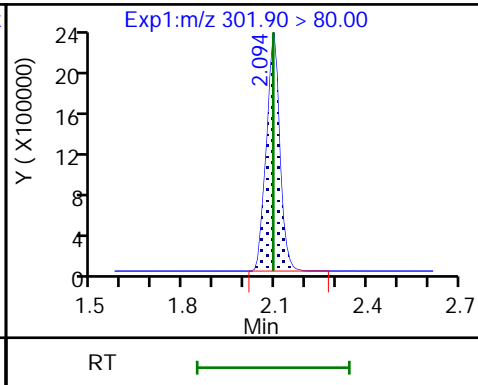
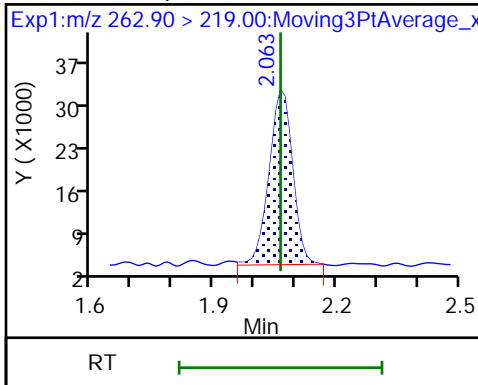
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

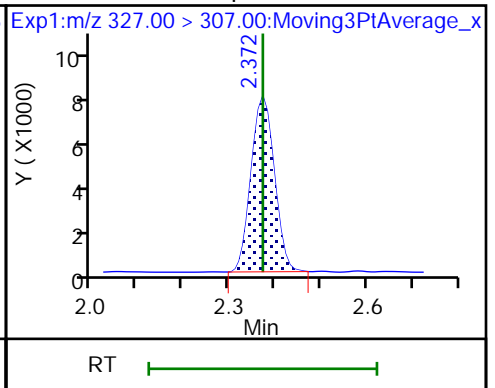
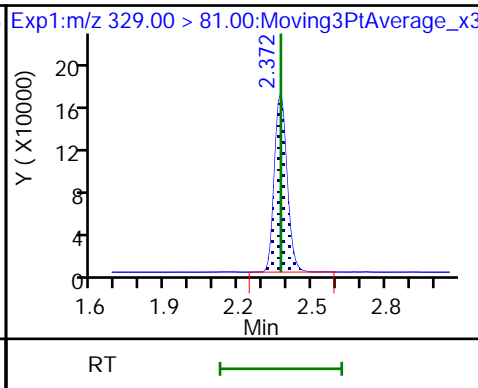
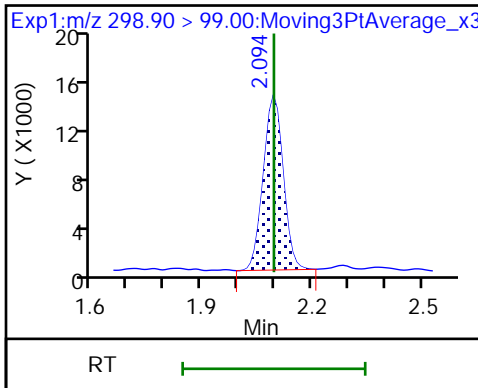
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

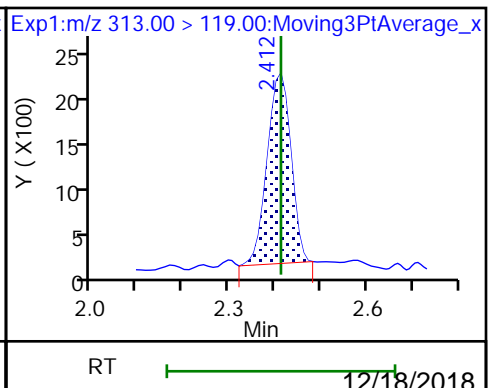
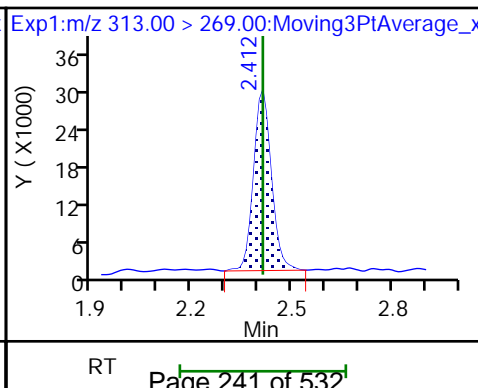
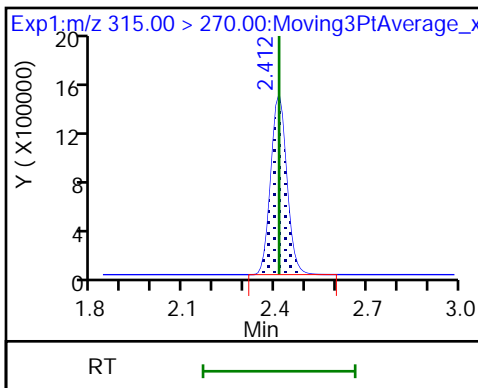
61 1H,1H,2H,2H-perfluorohexanesulfoni

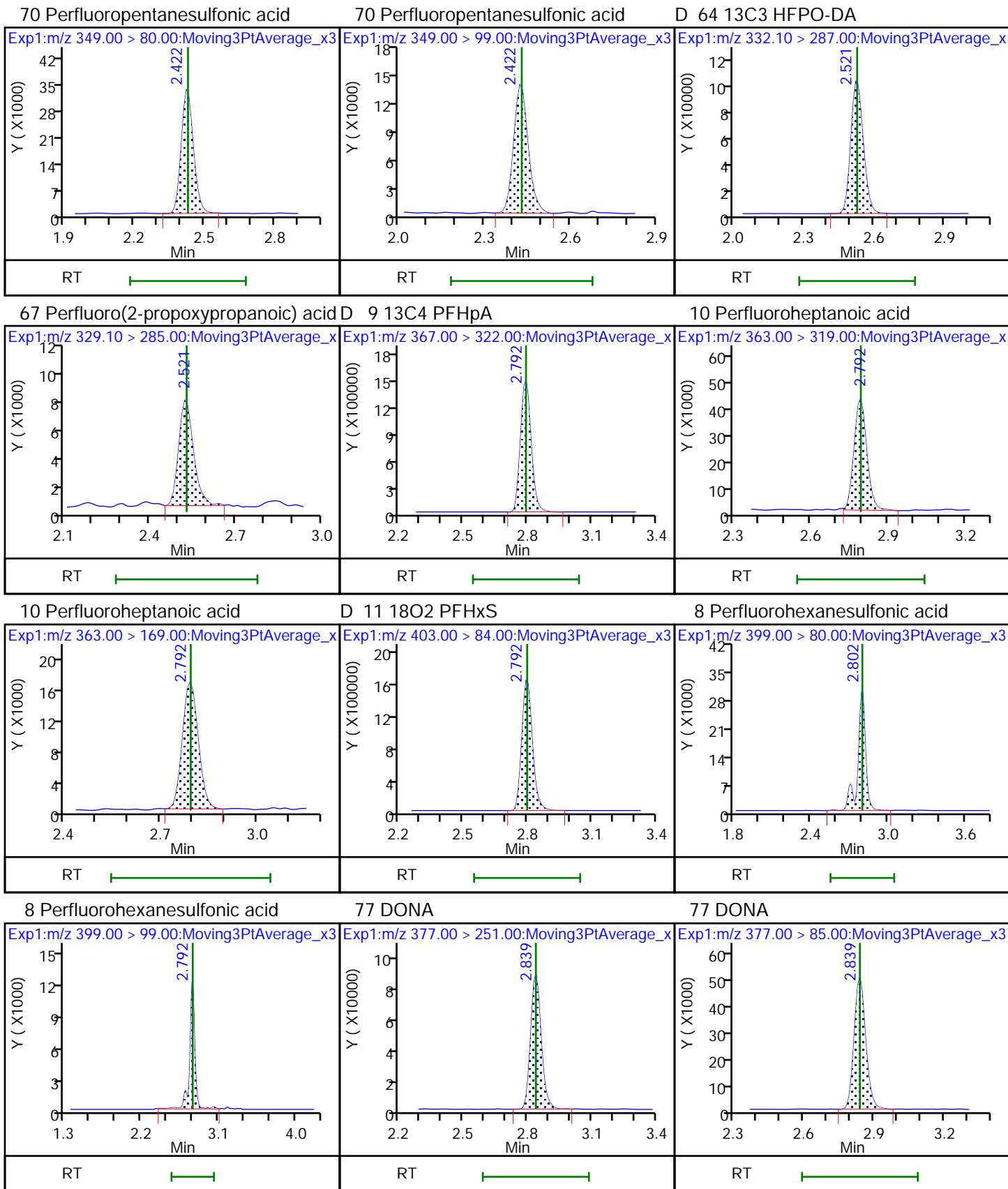


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

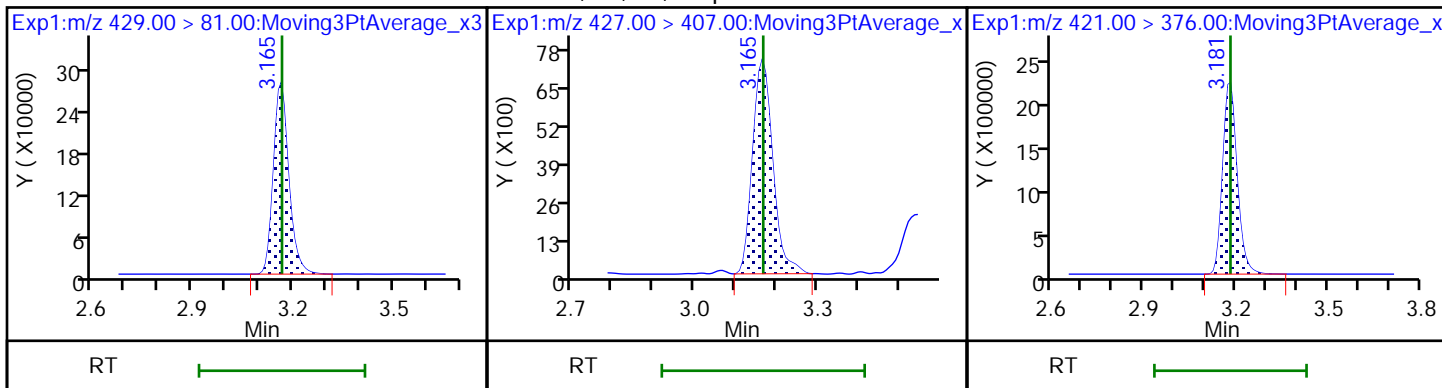
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

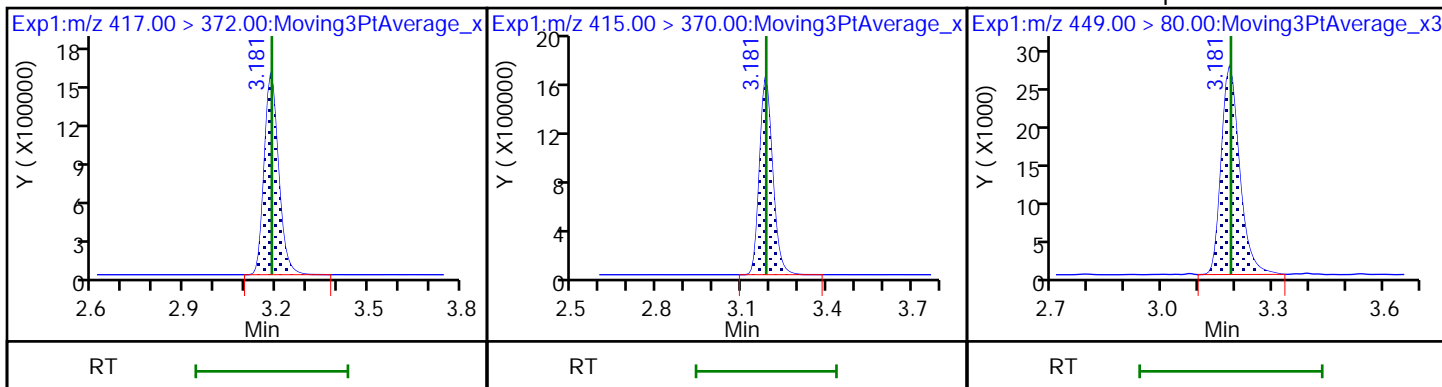
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

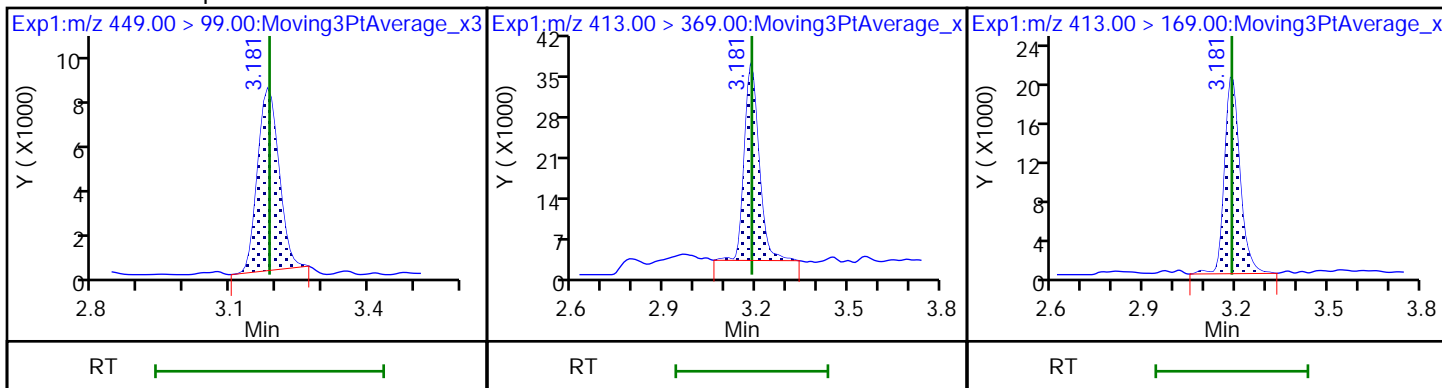
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

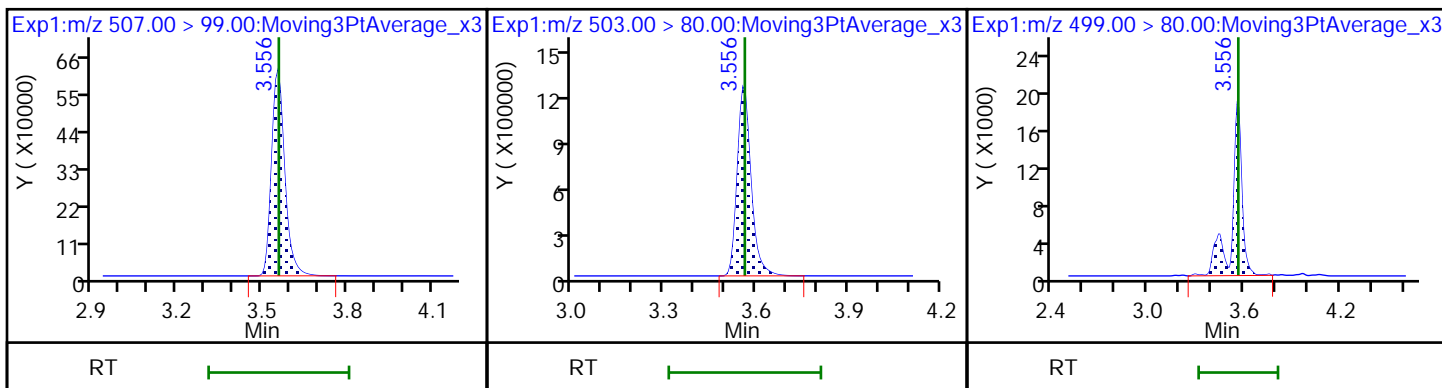
15 Perfluorooctanoic acid

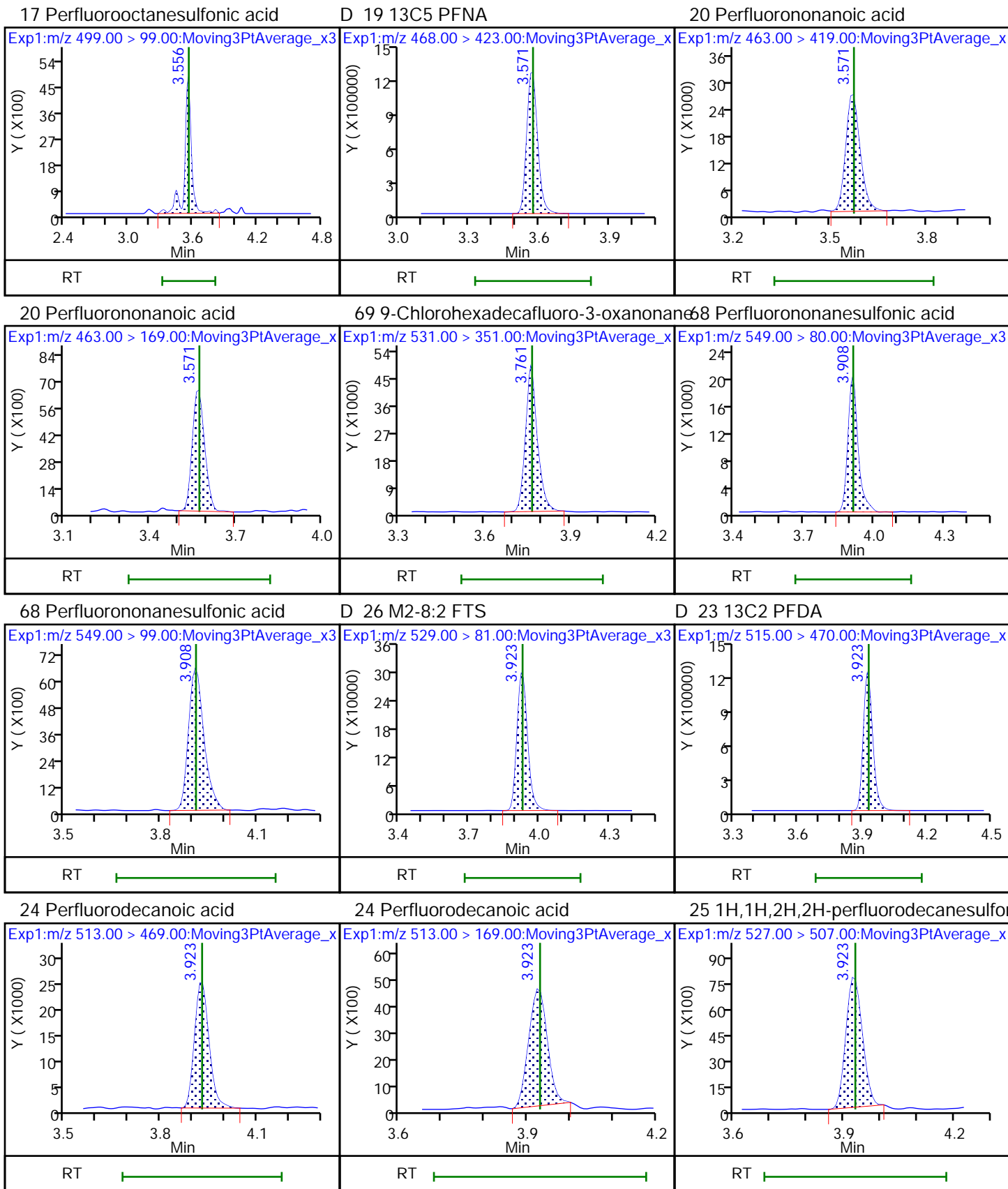


D 72 13C8 PFOS

D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid

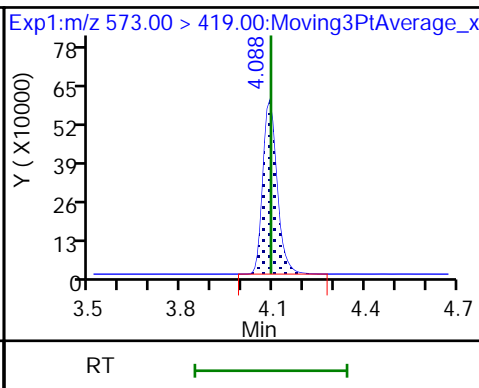
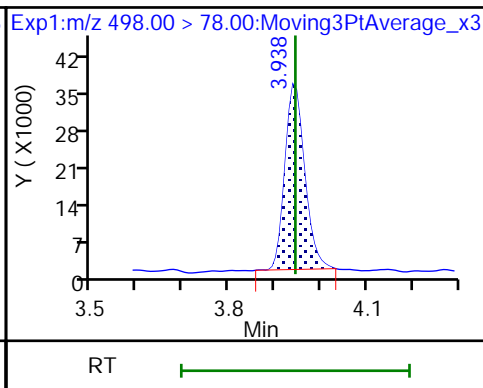
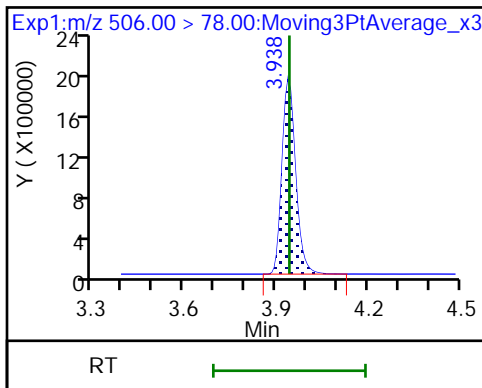




D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

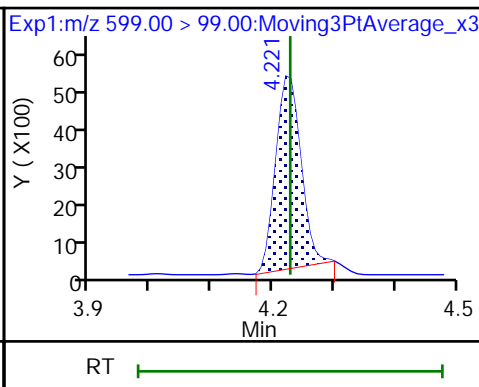
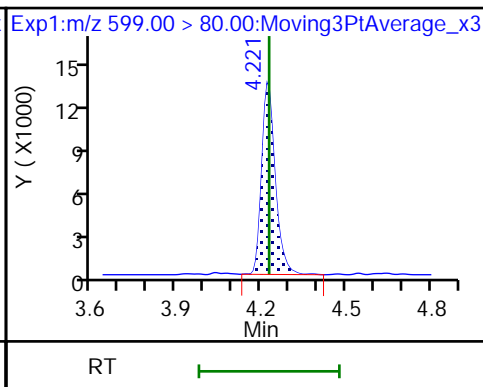
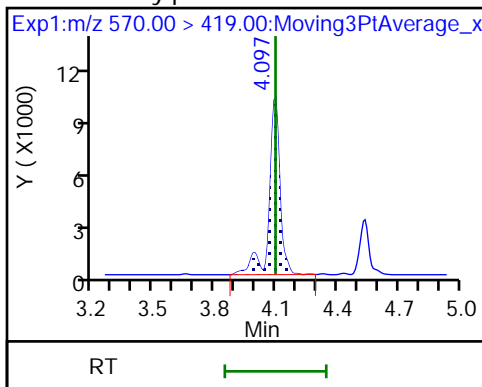
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

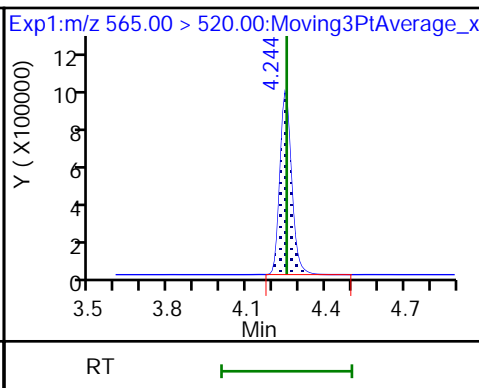
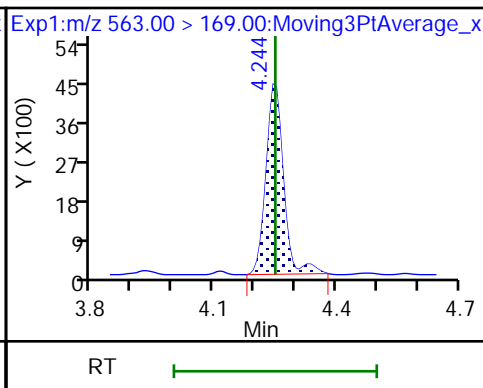
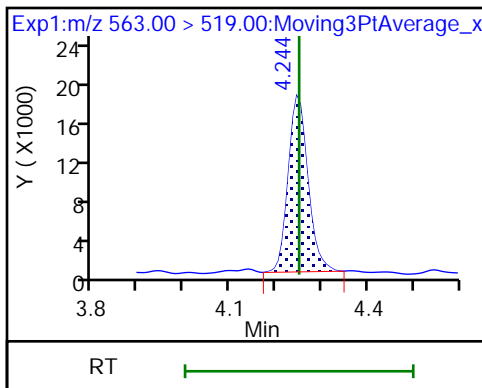
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

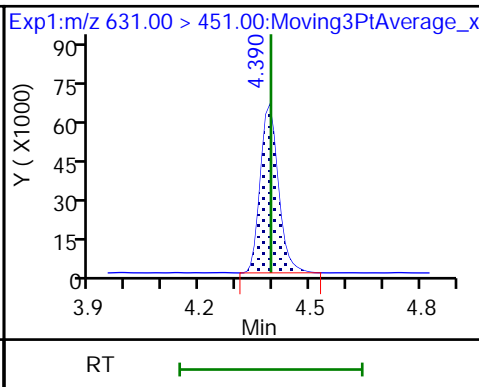
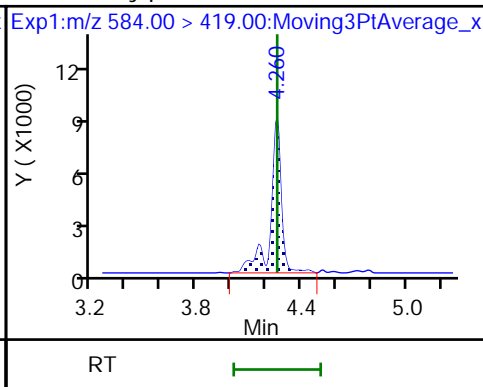
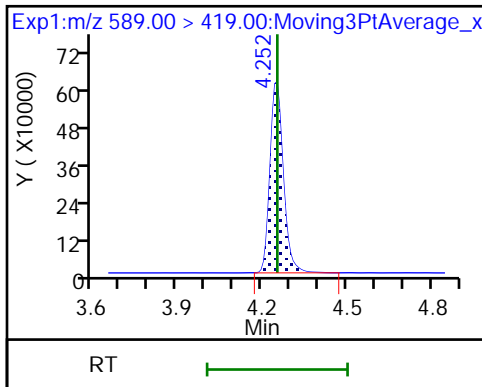
D 30 13C2 PFUnA



D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

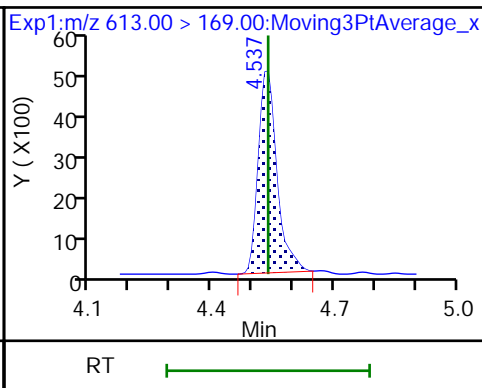
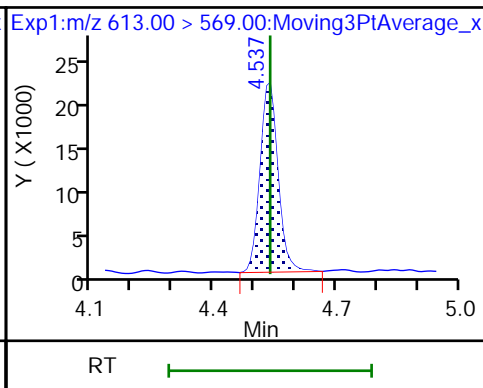
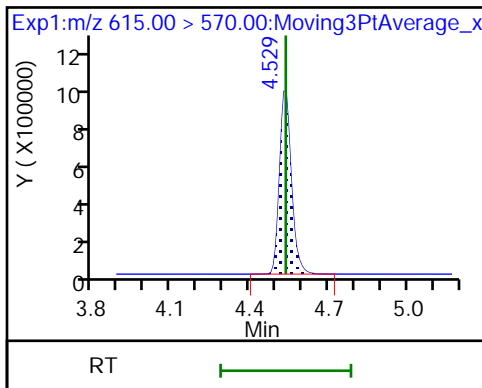
66 11-Chloroeicosafuoro-3-oxaundecan



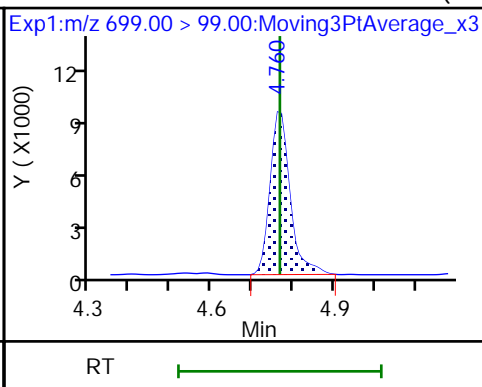
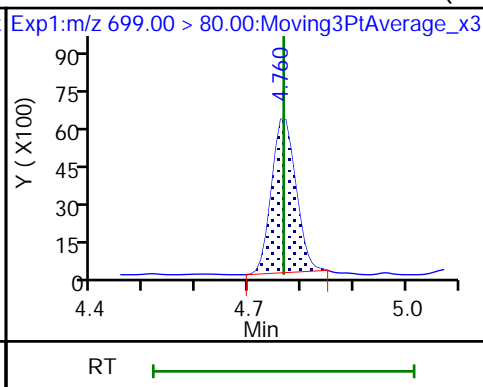
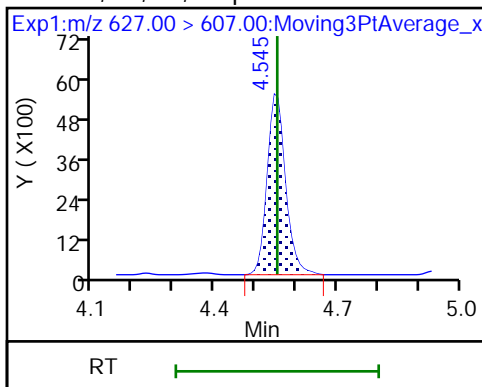
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



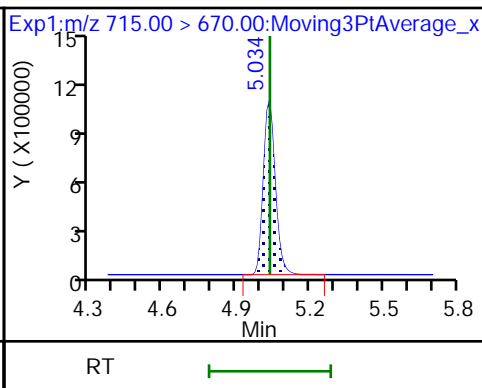
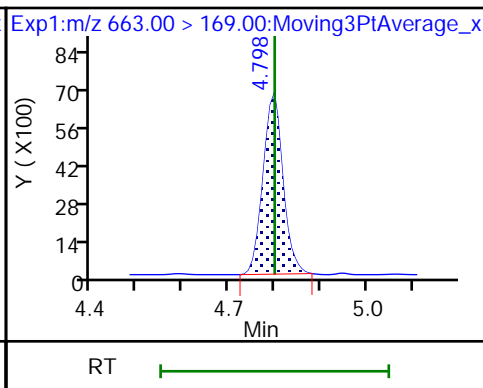
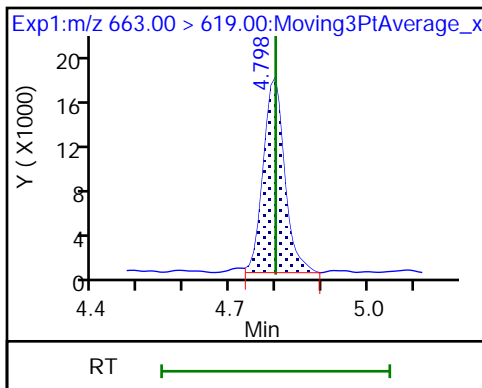
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

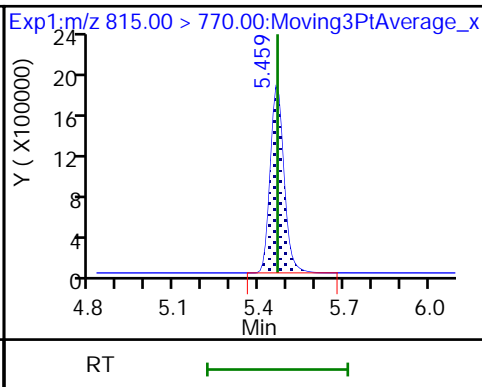
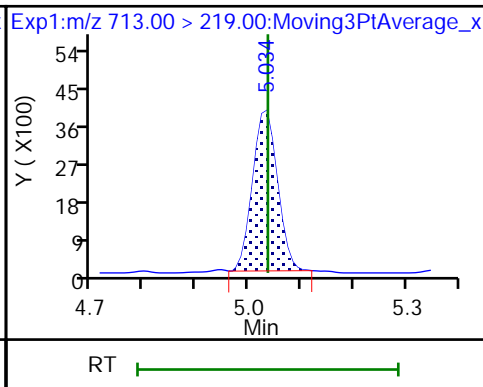
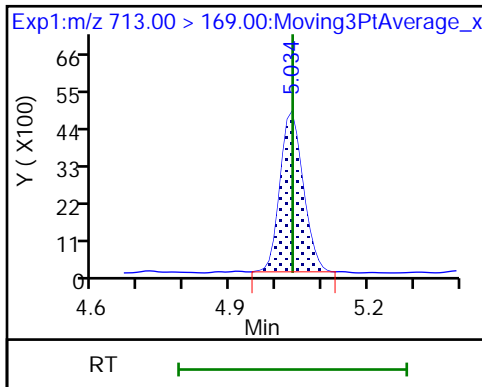
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

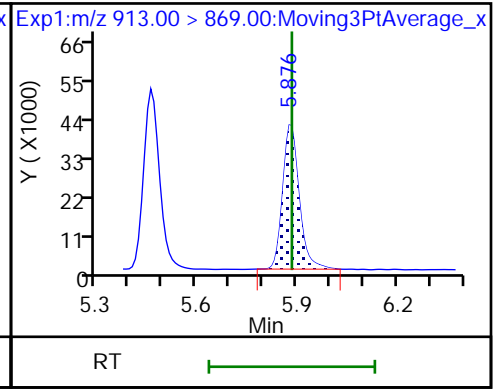
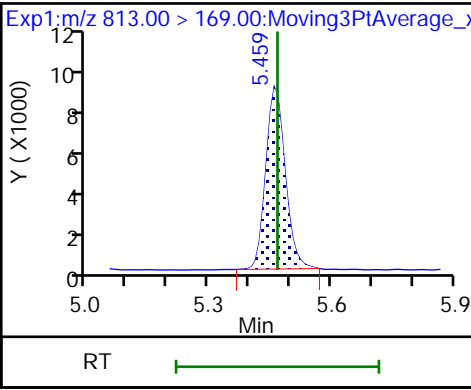
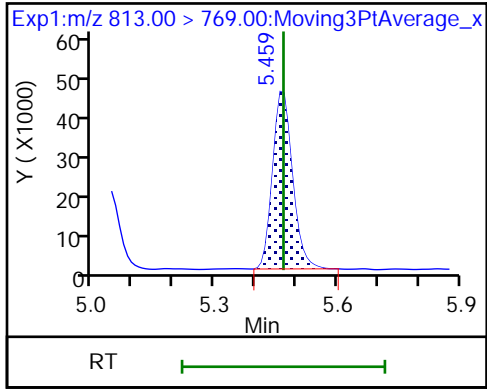
D 44 13C2 PFHxDA



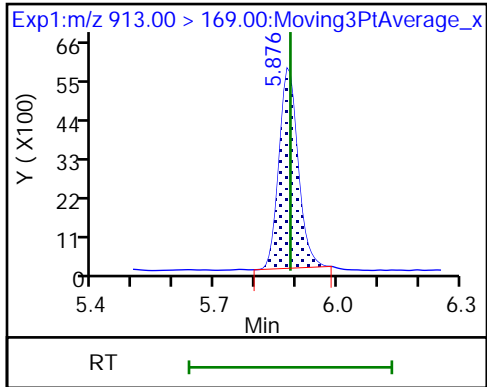
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_007.d

Lims ID: IC L3 Full

Client ID:

Sample Type: IC Calib Level: 3

Inject. Date: 08-Dec-2018 05:31:51 ALS Bottle#: 12 Worklist Smp#: 4

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Sample Info: IC STD 3

Misc. Info.: Plate: 1 Rack: 1

Operator ID: SACINSTLCMS01 Instrument ID: A8_N

Sublist: chrom-A8_N*sub37

Method: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\A8_N.m

Limit Group: LC PFC ICAL

Last Update: 08-Dec-2018 10:19:52 Calib Date: 08-Dec-2018 06:01:52

Integrator: Picker

Quant Method: Isotopic Dilution Quant By: Initial Calibration

Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1

Process Host: CTX0329

First Level Reviewer: phomsophat Date: 08-Dec-2018 09:50:20

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA
217.00 > 172.00 1.755 1.753 0.002 0.552 7182487 2.46 98.4 5932

2 Perfluorobutanoic acid
212.90 > 169.00 1.755 1.754 0.001 1.000 664779 0.2534 101 111

D 3 13C5 PFPeA
267.90 > 223.00 2.063 2.063 0.0 0.649 4874212 2.55 102 7756

4 Perfluoropentanoic acid
262.90 > 219.00 2.063 2.063 0.0 1.000 498455 0.2334 93.4 38.9

D 47 13C3 PFBS
301.90 > 80.00 2.094 2.093 0.001 0.658 6841707 2.31 99.2 407724

5 Perfluorobutanesulfonic acid
298.90 > 80.00 2.094 2.096 -0.002 1.000 630804 0.2171 Target=2.49 98.2 814
298.90 > 99.00 2.094 2.096 -0.002 1.000 266843 2.36(1.25-3.74) 98.2 288

D 60 M2-4:2 FTS
329.00 > 81.00 2.372 2.372 0.0 0.746 541506 2.22 95.3 1388

61 1H,1H,2H,2H-perfluorohexanesulfoni
327.00 > 307.00 2.372 2.372 0.0 1.133 135338 0.2430 104 1732

D 7 13C2 PFHxA
315.00 > 270.00 2.412 2.412 0.0 0.758 5017316 2.51 100 6462

6 Perfluorohexanoic acid
313.00 > 269.00 2.412 2.412 0.0 1.000 490978 0.2417 Target=10.07 96.7 197
313.00 > 119.00 2.412 2.412 0.0 1.000 41895 11.72(5.03-15.10) 96.7 159

70 Perfluoropentanesulfonic acid
349.00 > 80.00 2.432 2.429 0.003 1.161 609830 0.2398 Target=2.71 102 2555
349.00 > 99.00 2.422 2.429 -0.007 1.156 224161 2.72(1.36-4.07) 102 831

D 64 13C3 HFPO-DA
332.10 > 287.00 2.521 2.527 -0.006 0.793 352271 2.44 97.6 1739
Page 248 of 532 12/18/2018

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	2.531	2.528	0.003	1.004	112551	0.2380	95.2	75.1	
D 9 13C4 PFHpA	367.00	> 322.00	2.792	2.792	0.0	0.878	4872311	2.54	102	9135	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.792	2.793	-0.001	1.000	527327	0.2398	Target=2.27	95.9	181
	363.00	> 169.00	2.792	2.793	-0.001	1.000	199904		2.64(1.13-3.40)	95.9	330
D 11 18O2 PFHxS	403.00	> 84.00	2.792	2.797	-0.005	0.878	5637965	2.44	103	9248	
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.792	2.799	-0.007	1.000	539488	0.2131	Target=3.00	93.7	1825
	399.00	> 99.00	2.792	2.799	-0.007	1.000	198347		2.72(1.50-4.49)	93.7	508
77 DONA	377.00	> 251.00	2.839	2.839	0.0	0.798	1487004	0.2525	Target=1.69	107	3117
	377.00	> 85.00	2.839	2.839	0.0	0.798	858729		1.73(0.85-2.54)	107	3212
D 12 M2-6:2 FTS	429.00	> 81.00	3.165	3.167	-0.002	0.995	791407	2.28	96.0	2961	
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.165	3.167	-0.002	1.000	128485	0.2479	105	61.2	
D 73 13C8 PFOA	421.00	> 376.00	3.181	3.180	0.001	1.000	7296100	2.50	102	8886	
D 14 13C4 PFOA	417.00	> 372.00	3.181	3.185	-0.004	1.000	4711848	2.47	98.6	8397	
* 62 13C2 PFOA	415.00	> 370.00	3.181	3.185	-0.004		4848821	2.50		8423	
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.181	3.185	-0.004	0.894	454534	0.2348	Target=3.88	98.6	2749
	449.00	> 99.00	3.181	3.185	-0.004	0.894	121312		3.75(1.94-5.82)	98.6	529
15 Perfluorooctanoic acid	413.00	> 369.00	3.181	3.185	-0.004	1.000	534239	0.2523	Target=1.68	101	68.2
	413.00	> 169.00	3.181	3.185	-0.004	1.000	282201		1.89(0.84-2.52)	101	361
D 72 13C8 PFOS	507.00	> 99.00	3.556	3.559	-0.003	1.118	2002884	2.44	102	7579	
D 18 13C4 PFOS	503.00	> 80.00	3.556	3.562	-0.006	1.118	3598667	2.36	98.8	7280	
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.556	3.562	-0.006	1.000	397681	0.2357	Target=4.62	102	968
	499.00	> 99.00	3.556	3.562	-0.006	1.000	91254		4.36(2.31-6.93)	102	486
D 19 13C5 PFNA	468.00	> 423.00	3.572	3.573	-0.001	1.123	4031300	2.54	101	14055	
20 Perfluorononanoic acid	463.00	> 419.00	3.572	3.573	-0.001	1.000	405985	0.2392	Target=3.79	95.7	231
	463.00	> 169.00	3.572	3.573	-0.001	1.000	101857		3.99(1.90-5.69)	95.7	659
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.761	3.766	-0.005	1.058	671236	0.2350	101	3290	

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	3.908	3.910	-0.002	1.099	293038	0.2489	Target=2.65	104	1757	
549.00 > 99.00	3.908	3.910	-0.002	1.099	108068		2.71(1.33-3.97)	104	708	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.923	3.928	-0.005	1.233	868680	2.30		96.1	3857	
D 23 13C2 PFDA										
515.00 > 470.00	3.923	3.929	-0.006	1.233	3500314	2.45		98.0	7464	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.923	3.929	-0.006	1.000	352629	0.2600	Target=4.73	104	373	
513.00 > 169.00	3.931	3.929	0.002	1.002	72305		4.88(2.36-7.09)	104	378	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.931	3.930	0.001	1.002	116067	0.2447		102	1148	
D 21 13C8 FOSA										
506.00 > 78.00	3.939	3.943	-0.004	1.238	5725680	2.52		101	5984	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.939	3.944	-0.005	1.000	544592	0.2536		101	162	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.089	4.092	-0.003	1.286	1762047	2.33		93.2	3967	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.089	4.096	-0.007	1.000	168100	0.2579		103	112	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.229	4.228	0.001	1.189	227222	0.2361	Target=2.77	97.9	1981	
599.00 > 99.00	4.229	4.228	0.001	1.189	74300		3.06(1.39-4.16)	97.9	521	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.245	4.250	-0.005	1.000	258113	0.2428	Target=4.24	97.1	345	
563.00 > 169.00	4.245	4.250	-0.005	1.000	57654		4.48(2.12-6.36)	97.1	762	
D 30 13C2 PFUnA										
565.00 > 520.00	4.245	4.251	-0.006	1.335	2908878	2.57		103	7012	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.253	4.253	0.0	1.337	2033921	2.56		102	3554	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.253	4.260	-0.007	1.000	165534	0.2382		95.3	578	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.392	4.393	-0.001	1.235	1029909	0.2412		102	3790	
35 MeFOSA										
512.00 > 169.00	4.444	4.450	-0.006		159506	NC			514	
D 36 13C2 PFDaA										
615.00 > 570.00	4.531	4.536	-0.005	1.425	3009330	2.58		103	6581	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.531	4.537	-0.006	1.000	317033	0.2473	Target=4.27	98.9	374	
613.00 > 169.00	4.531	4.537	-0.006	1.000	78461		4.04(2.13-6.40)	98.9	998	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.547	4.552	-0.005	1.159	79079	0.2450		102	1160	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.621	4.628	-0.007		172541	NC			335	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.764	4.766	-0.002	1.340	110321	0.2598	Target=0.00	107	2028	
699.00 > 99.00	4.764	4.766	-0.002	1.340	164079		0.67(0.00-0.00)	107	1462	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.792	4.798	-0.006	1.057	308014	0.2528	Target=2.51	101	329	
663.00 > 169.00	4.792	4.798	-0.006	1.057	94279		3.27(1.25-3.76)	101	896	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.035	5.036	-0.001	1.583	3467600	2.56		102	7751	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.035	5.036	-0.001	1.000	86101	0.2453	Target=1.42	98.1	1300	
713.00 > 219.00	5.025	5.036	-0.011	0.998	60409		1.43(0.71-2.13)	98.1	596	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.460	5.465	-0.005	1.717	6089785	2.56		102	8930	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.470	5.467	0.003	1.002	598388	0.2570	Target=5.72	103	78.9	
813.00 > 169.00	5.460	5.467	-0.007	1.000	106681		5.61(2.86-8.58)	103	1234	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.885	5.885	0.0	1.078	687692	0.2429	Target=7.65	97.1	86.8	
913.00 > 169.00	5.877	5.885	-0.008	1.076	89677		7.67(3.83-11.48)	97.1	954	

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\A8_N\20181207-68828.b\2018.12.07ICAL_007.d

Injection Date: 08-Dec-2018 05:31:51

Instrument ID: A8_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 12

Worklist Smp#: 4

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

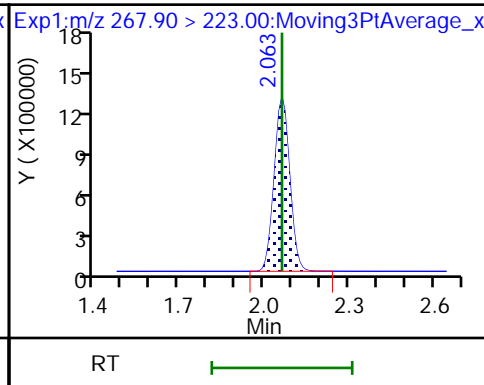
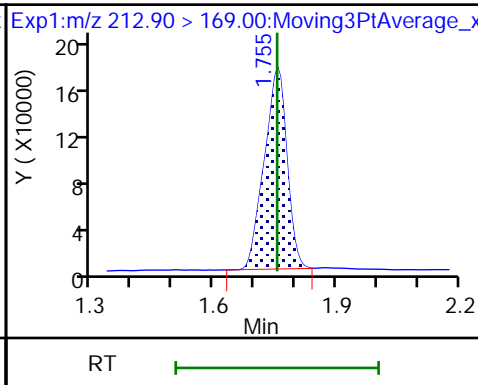
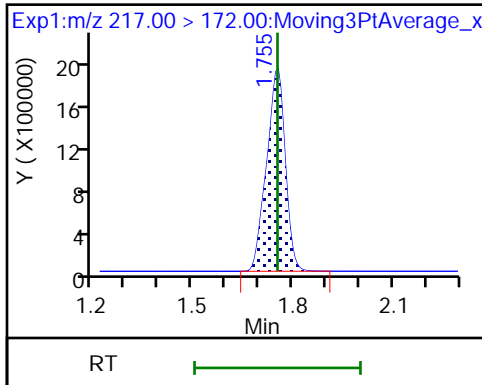
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

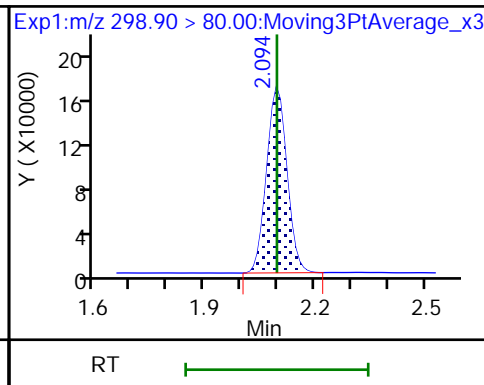
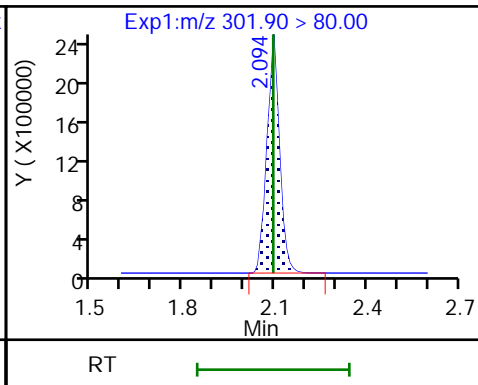
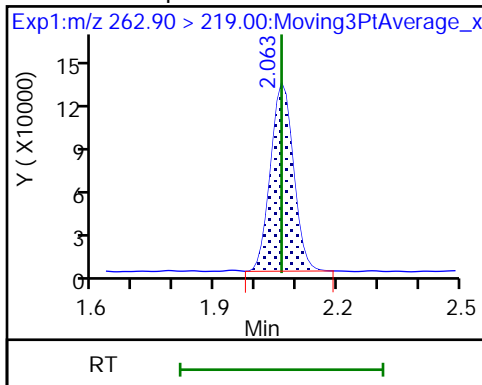
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

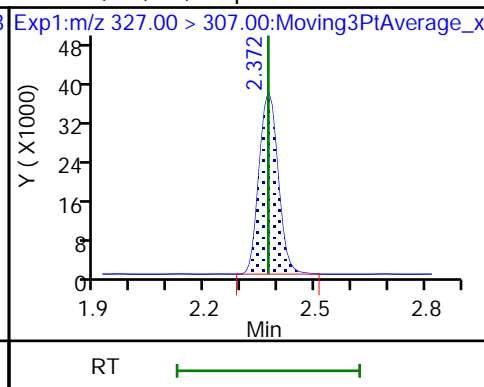
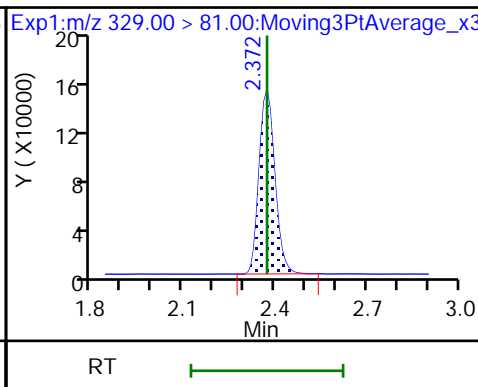
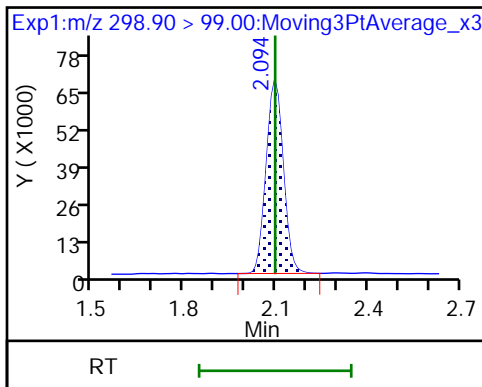
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

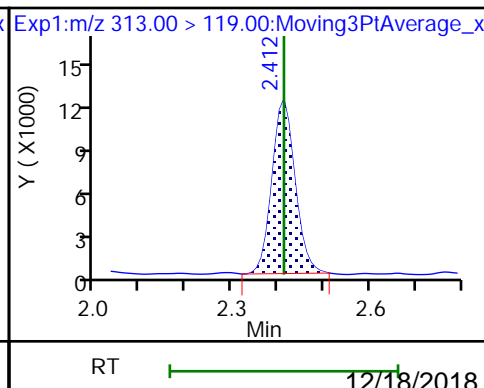
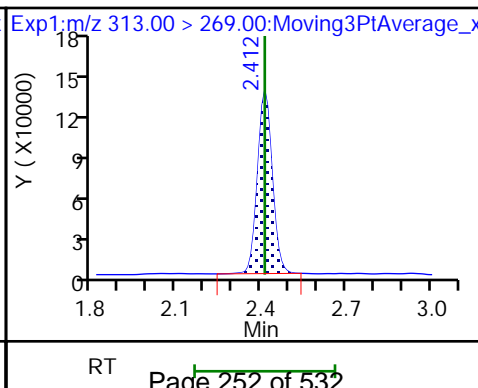
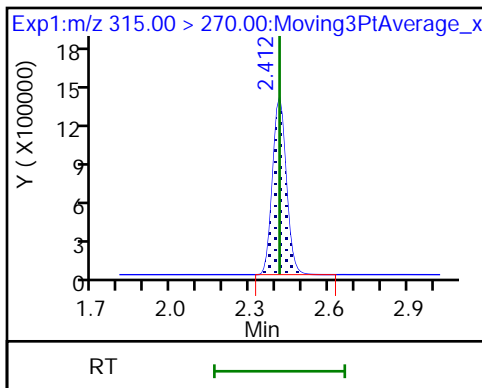
61 1H,1H,2H,2H-perfluorohexanesulfoni

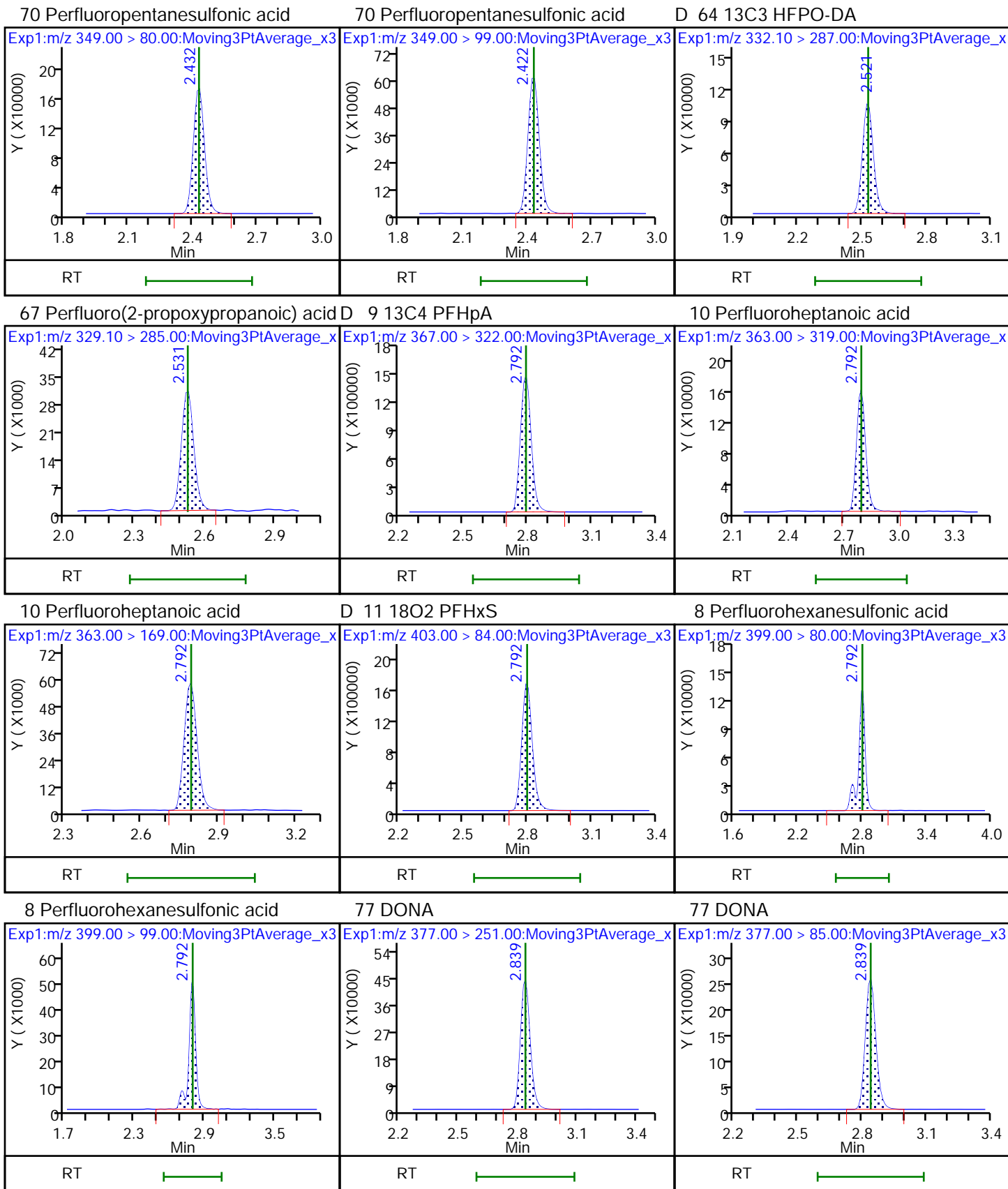


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

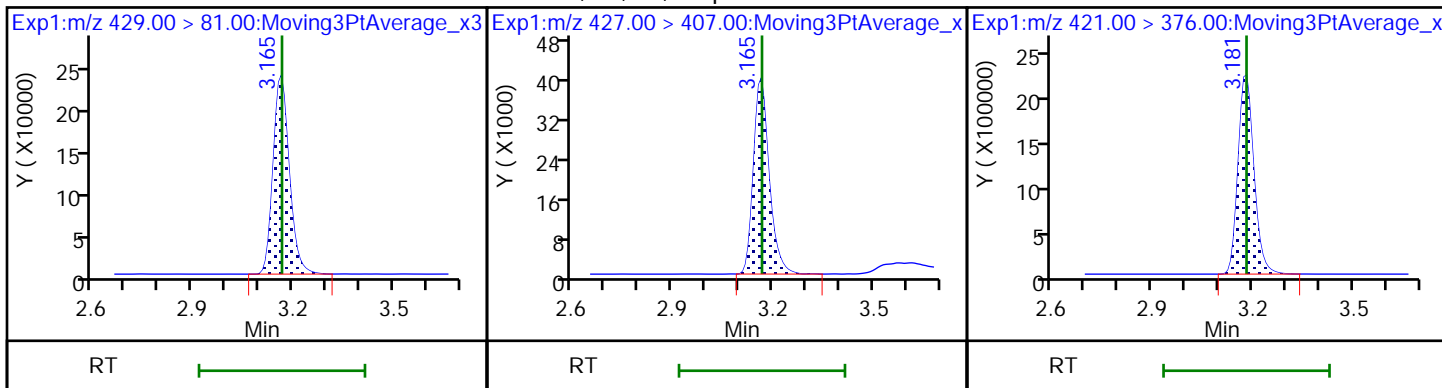
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

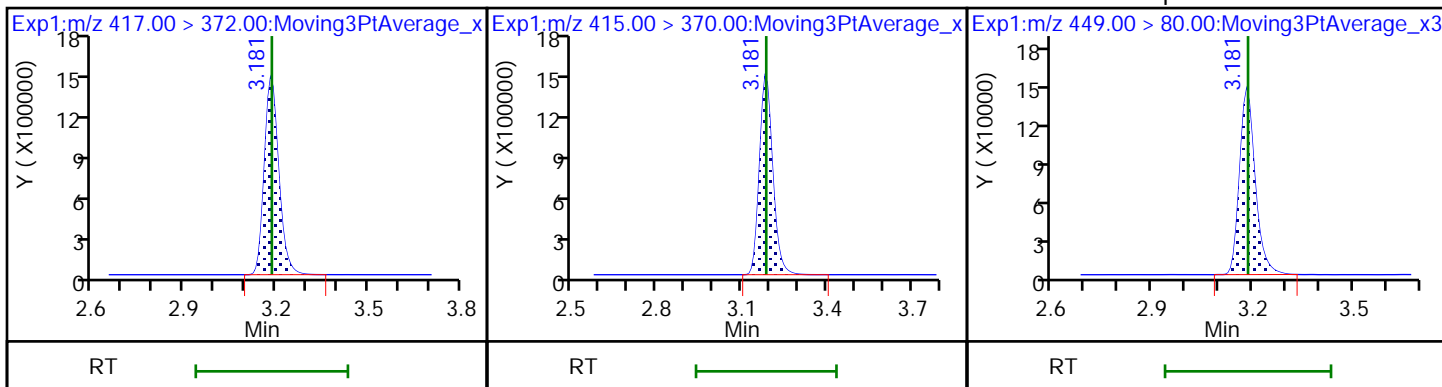
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

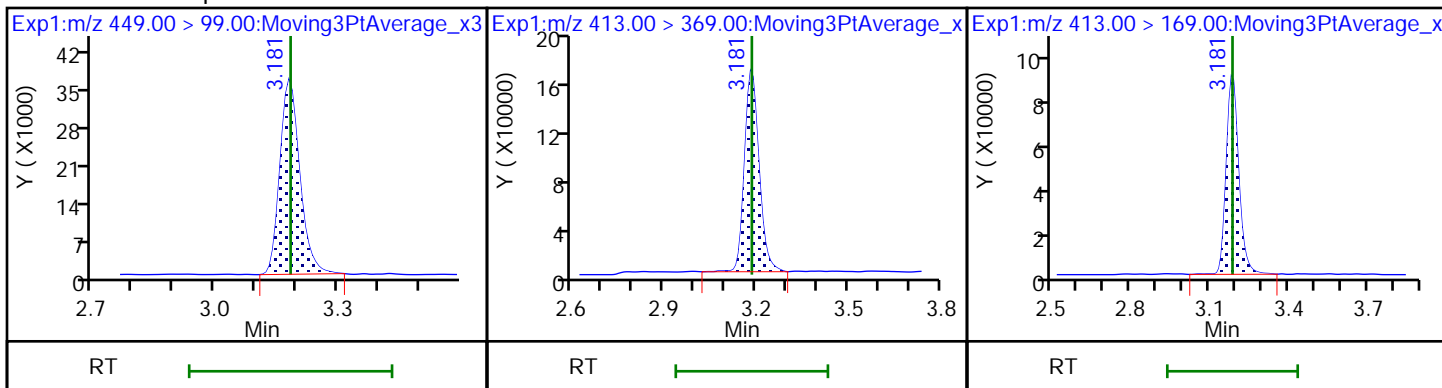
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

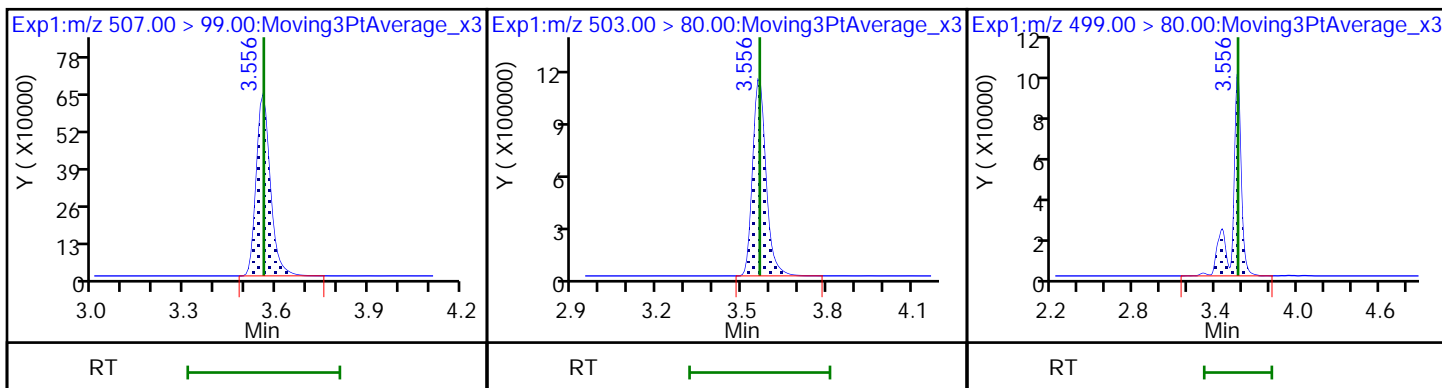
15 Perfluorooctanoic acid

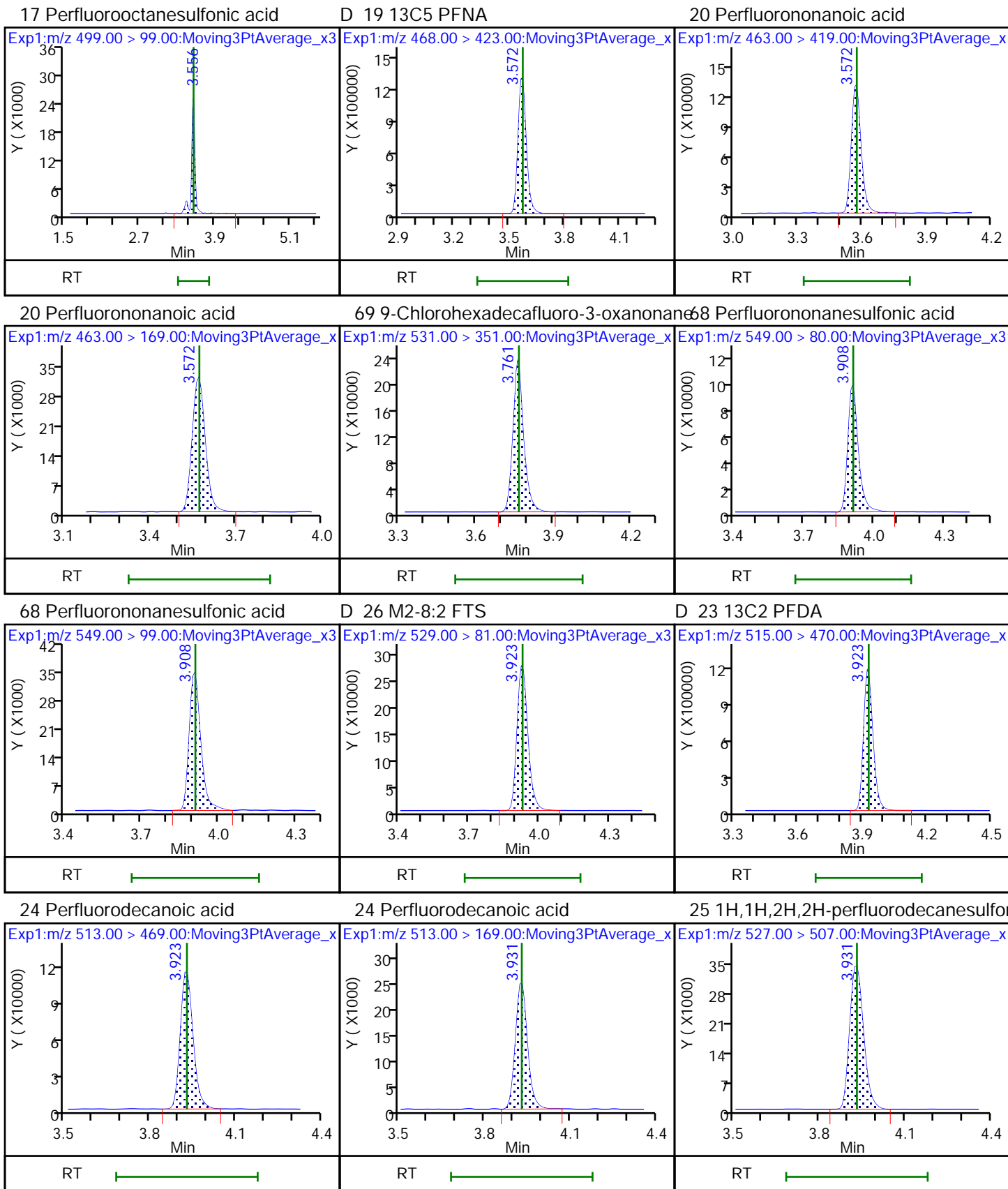


D 72 13C8 PFOS

D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid

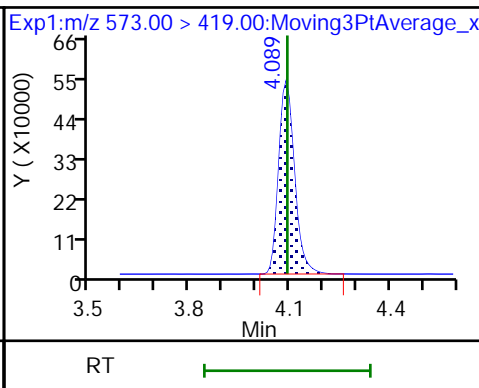
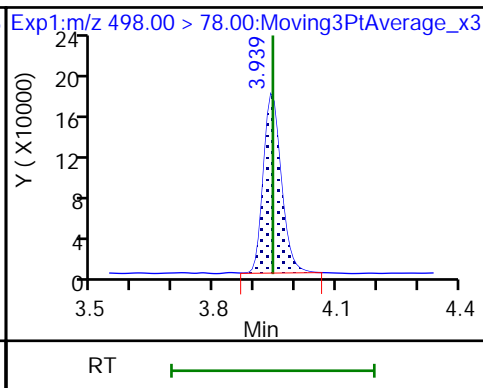
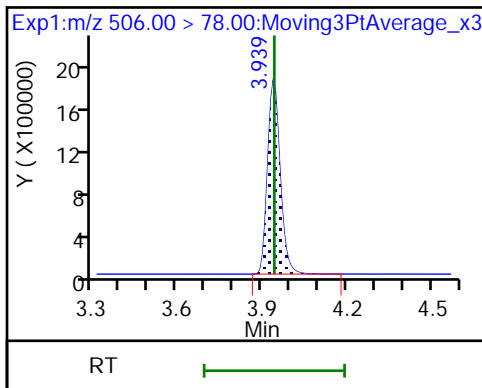




D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

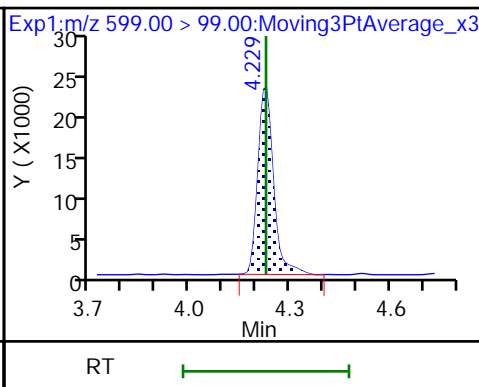
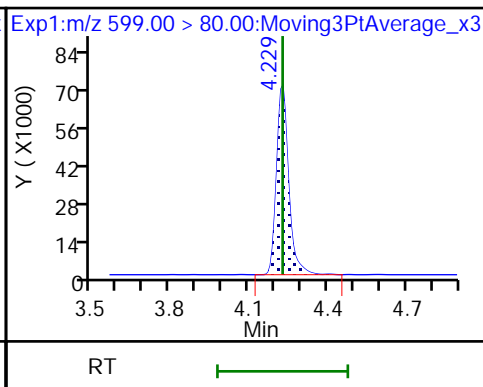
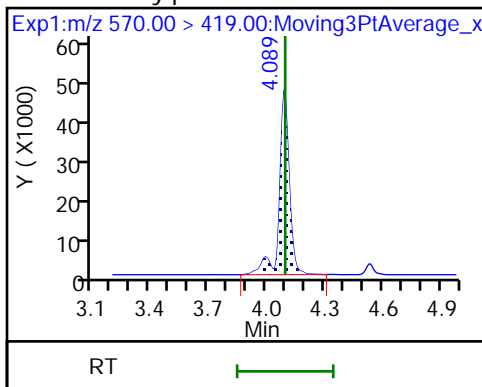
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

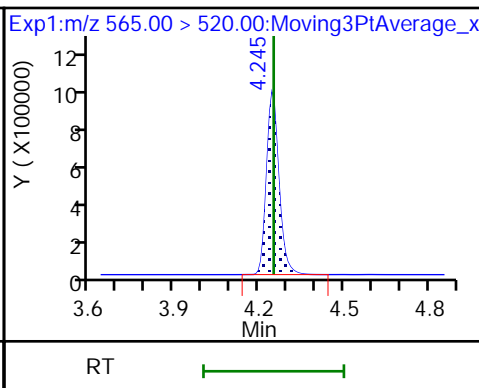
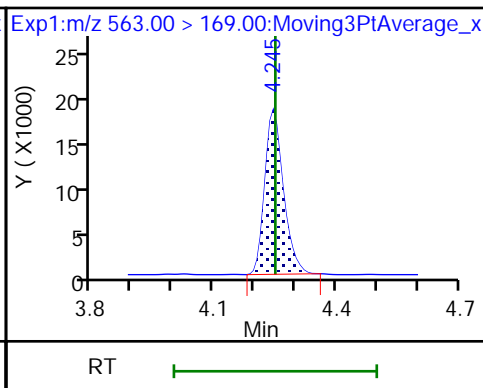
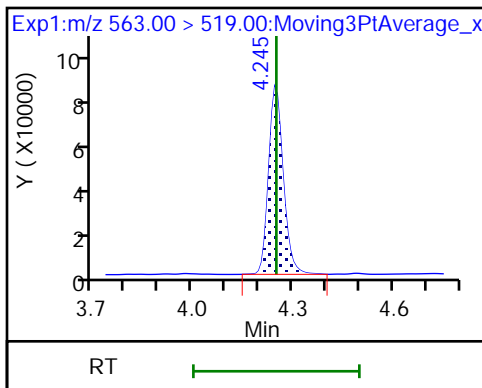
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

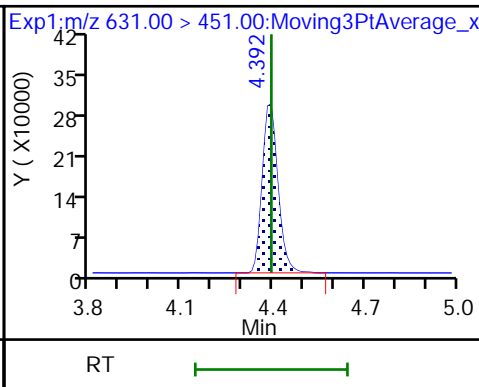
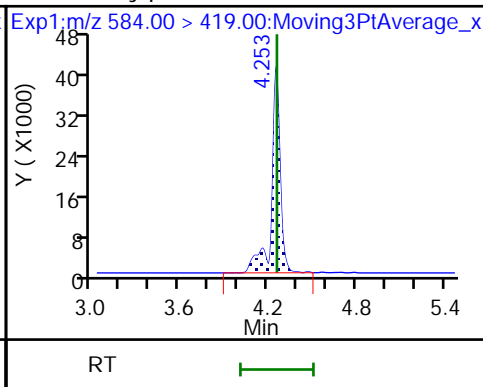
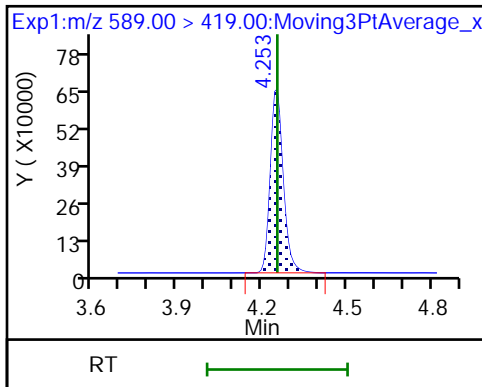
D 30 13C2 PFUnA



D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamido

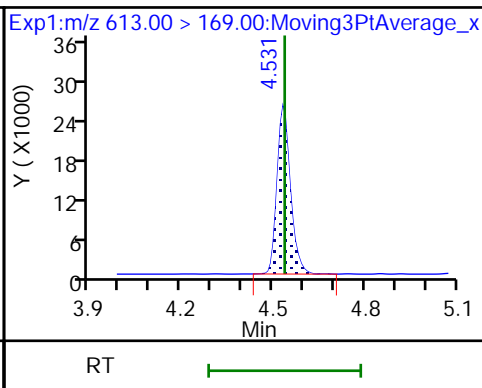
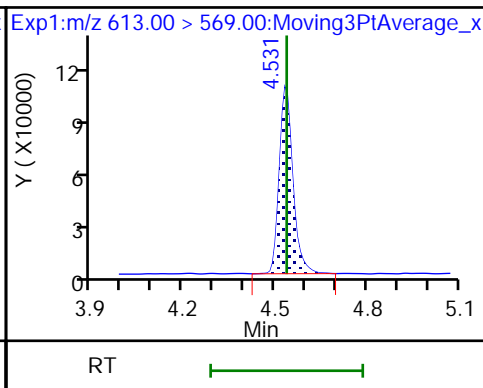
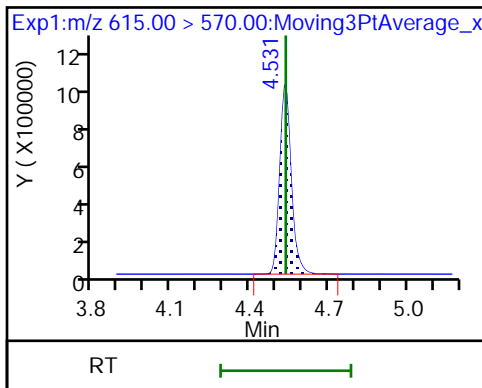
66 11-Chloroeicosafuoro-3-oxaundecan



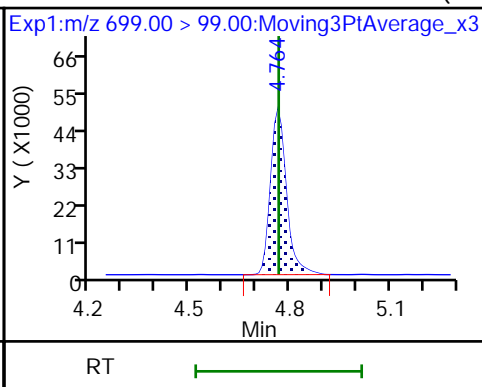
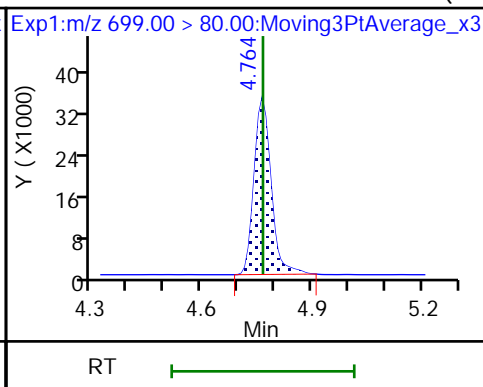
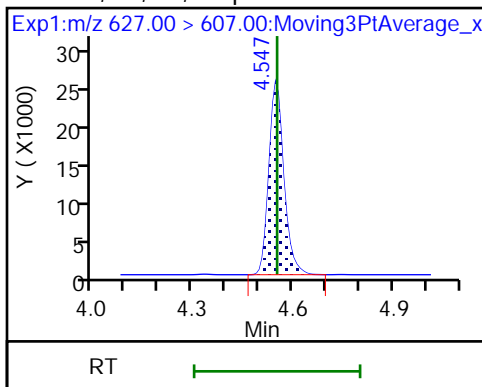
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



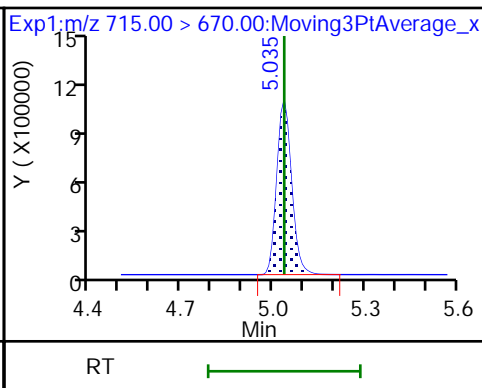
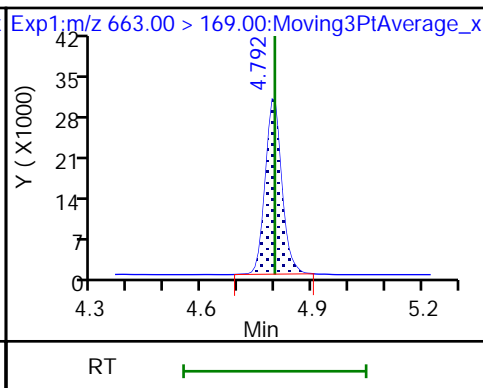
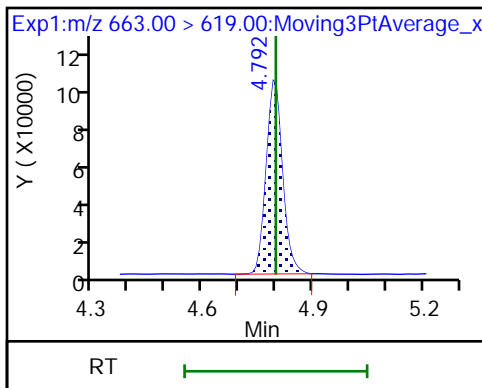
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

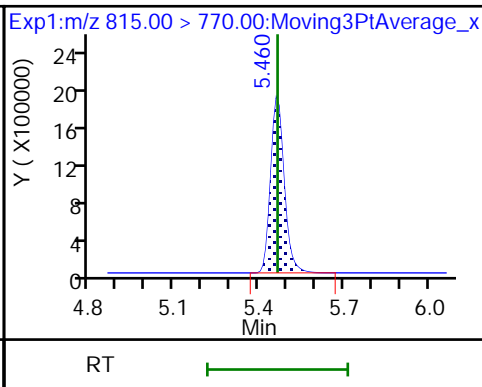
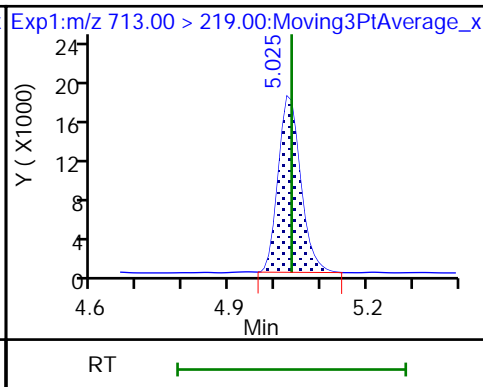
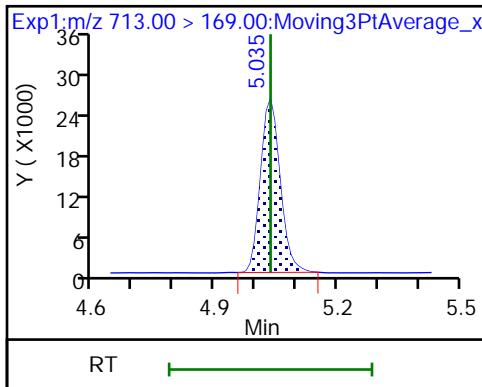
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

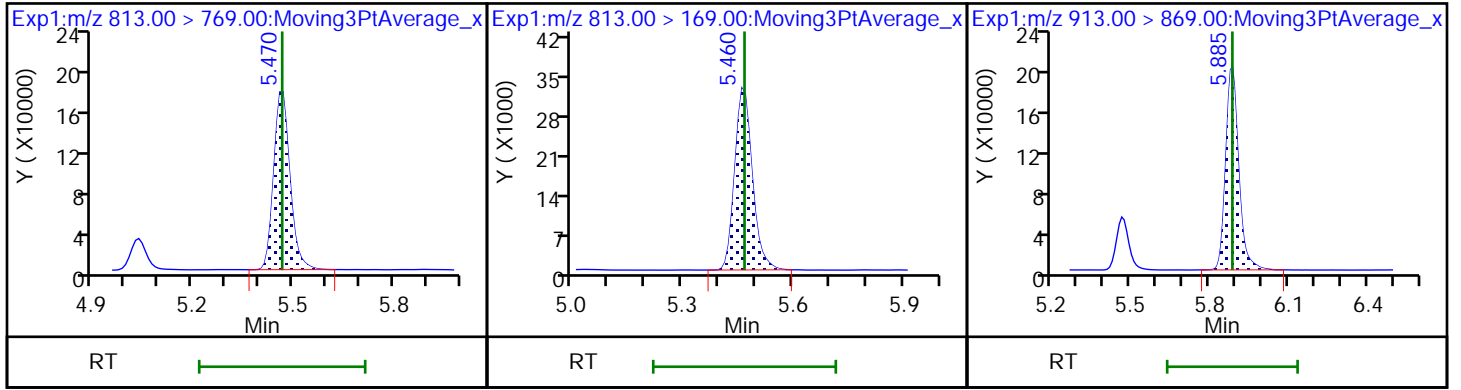
D 44 13C2 PFHxDA



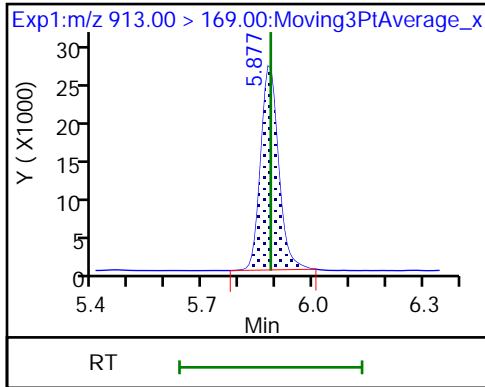
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_008.d
 Lims ID: IC L4 Full
 Client ID:
 Sample Type: ICIS Calib Level: 4
 Inject. Date: 08-Dec-2018 05:39:20 ALS Bottle#: 13 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37

Method: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 08-Dec-2018 10:21:32 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0329

First Level Reviewer: phomsophat Date: 08-Dec-2018 10:21:32

Ratio Calibration: None

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	1.755	1.753	0.002	0.550	7598815	2.57	103	6341	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.754	0.001	1.000	2836773	1.02	102	433	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.063	0.0	1.000	2118586	0.9859	98.6	167	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.063	0.0	0.647	4904349	2.52	101	6164	
D 47 13C3 PFBS	301.90 > 80.00	2.094	2.093	0.001	0.657	7299426	2.43	104	513291	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.105	2.096	0.009	1.005	2776349	0.8956	Target=2.49	101	3816
	298.90 > 99.00	2.094	2.096	-0.002	1.000	1156956		2.40(1.25-3.74)	101	1178
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.372	0.0	1.133	534200	0.8991	96.3	4887	
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.744	558501	2.26	96.8	1213	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.412	0.0	1.000	2087126	0.9475	Target=10.07	94.8	921
	313.00 > 119.00	2.412	2.412	0.0	1.000	202172		10.32(5.03-15.10)	94.8	730
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.412	0.0	0.756	5440869	2.68	107	6976	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.432	2.429	0.003	1.161	2632513	0.9701	Target=2.71	103	8120
	349.00 > 99.00	2.432	2.429	0.003	1.161	983720		2.68(1.36-4.07)	103	2933
D 64 13C3 HFPO-DA	332.10 > 287.00	2.531	2.527	0.004	0.794	358115	2.45	97.8	1880	

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	2.531	2.528	0.003	1.000	490391	1.02	102	285	
D 9 13C4 PFHpA	367.00	> 322.00	2.792	2.792	0.0	0.876	4979356	2.56	102	9349	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.792	2.793	-0.001	1.000	2211469	0.9839	Target=2.27	98.4	706
	363.00	> 169.00	2.792	2.793	-0.001	1.000	844360		2.62(1.13-3.40)	98.4	1284
D 11 18O2 PFHxS	403.00	> 84.00	2.802	2.797	0.005	0.879	5780156	2.46	104	9011	
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.802	2.799	0.003	1.000	2234673	0.8608	Target=3.00	94.6	3296
	399.00	> 99.00	2.802	2.799	0.003	1.000	760912		2.94(1.50-4.49)	94.6	2231
77 DONA	377.00	> 251.00	2.839	2.839	0.0	0.797	6377168	1.05	Target=1.69	112	7928
	377.00	> 85.00	2.839	2.839	0.0	0.797	3631262		1.76(0.85-2.54)	112	11408
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.173	3.167	0.006	1.000	522288	0.9051		95.5	310
D 12 M2-6:2 FTS	429.00	> 81.00	3.173	3.167	0.006	0.995	881057	2.50		105	5110
D 73 13C8 PFOA	421.00	> 376.00	3.181	3.180	0.001	0.998	7363386	2.48		101	14422
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.189	3.185	0.004	0.895	1980624	1.00	Target=3.88	105	3788
	449.00	> 99.00	3.189	3.185	0.004	0.895	534707		3.70(1.94-5.82)	105	2624
15 Perfluorooctanoic acid	413.00	> 369.00	3.189	3.185	0.004	1.000	2118930	0.9693	Target=1.68	96.8	280
	413.00	> 169.00	3.189	3.185	0.004	1.000	1127986		1.88(0.84-2.52)	96.8	1174
D 14 13C4 PFOA	417.00	> 372.00	3.189	3.185	0.004	1.000	4865135	2.51		100	8139
* 62 13C2 PFOA	415.00	> 370.00	3.189	3.185	0.004		4919904	2.50			7853
D 72 13C8 PFOS	507.00	> 99.00	3.563	3.559	0.004	1.117	2044015	2.46		103	7059
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.563	3.562	0.001	1.000	1619534	0.9343	Target=4.62	101	2679
	499.00	> 99.00	3.563	3.562	0.001	1.000	355418		4.56(2.31-6.93)	101	1573
D 18 13C4 PFOS	503.00	> 80.00	3.563	3.562	0.001	1.117	3697359	2.39		100	6986
20 Perfluorononanoic acid	463.00	> 419.00	3.571	3.573	-0.002	1.000	1713219	1.00	Target=3.79	99.7	1061
	463.00	> 169.00	3.571	3.573	-0.002	1.000	428549		4.00(1.90-5.69)	99.7	2247
D 19 13C5 PFNA	468.00	> 423.00	3.571	3.573	-0.002	1.120	4081734	2.53		101	9254
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.768	3.766	0.002	1.058	2810482	0.9577		103	8292

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	3.910	3.910	0.0	1.097	1205356	1.00	Target=2.65	104	5199	
549.00 > 99.00	3.910	3.910	0.0	1.097	437772		2.75(1.33-3.97)	104	2275	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.924	3.928	-0.004	1.231	934799	2.44		102	4652	
D 23 13C2 PFDA										
515.00 > 470.00	3.932	3.929	0.003	1.233	3800614	2.62		105	16312	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.932	3.929	0.003	1.000	1425656	0.9682	Target=4.73	96.8	1321	
513.00 > 169.00	3.932	3.929	0.003	1.000	271106		5.26(2.36-7.09)	96.8	404	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.932	3.930	0.002	1.002	454602	0.8907		93.0	2524	
D 21 13C8 FOSA										
506.00 > 78.00	3.940	3.943	-0.003	1.236	5883149	2.55		102	9085	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.940	3.944	-0.004	1.000	2273469	1.03		103	586	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.090	4.092	-0.002	1.283	2055768	2.68		107	5789	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.099	4.096	0.003	1.002	721364	0.9487		94.9	366	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.223	4.228	-0.005	1.185	992860	1.00	Target=2.77	104	4373	
599.00 > 99.00	4.223	4.228	-0.005	1.185	316419		3.14(1.39-4.16)	104	2087	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.248	4.250	-0.002	1.000	1008854	0.9501	Target=4.24	95.0	1047	
563.00 > 169.00	4.248	4.250	-0.002	1.000	229247		4.40(2.12-6.36)	95.0	915	
D 30 13C2 PFUnA										
565.00 > 520.00	4.248	4.251	-0.003	1.332	2905371	2.53		101	8742	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.248	4.253	-0.005	1.332	2061954	2.56		102	2824	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.256	4.260	-0.004	1.002	687377	0.9755		97.5	3324	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.386	4.393	-0.007	1.231	4540281	1.04		110	10996	
35 MeFOSA										
512.00 > 169.00	4.449	4.450	-0.001		641433	NC			448	
D 36 13C2 PFDoA										
615.00 > 570.00	4.536	4.536	0.0	1.423	2986227	2.53		101	7333	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.536	4.537	-0.001	1.000	1185940	0.9322	Target=4.27	93.2	1241	
613.00 > 169.00	4.536	4.537	-0.001	1.000	307523		3.86(2.13-6.40)	93.2	1859	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.552	4.552	0.0	1.160	344395	0.99		103	3145	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.626	4.628	-0.002		715258	NC			518	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.768	4.766	0.002	1.338	451678	1.04	Target=0.00	107	4224	
699.00 > 99.00	4.768	4.766	0.002	1.338	651841		0.69(0.00-0.00)	107	5627	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.796	4.798	-0.002	1.057	1248800	1.03	Target=2.51	103	1348	
663.00 > 169.00	4.796	4.798	-0.002	1.057	405172		3.08(1.25-3.76)	103	3010	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.036	5.036	0.0	1.000	341601	0.9848	Target=1.42	98.5	2807	
713.00 > 219.00	5.026	5.036	-0.010	0.998	248806		1.37(0.71-2.13)	98.5	1309	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.036	5.036	0.0	1.579	3427528	2.49		99.8	8738	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.461	5.465	-0.004	1.713	6245988	2.59		104	7760	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.470	5.467	0.003	1.002	2246706	1.00	Target=5.72	100	282	
813.00 > 169.00	5.461	5.467	-0.006	1.000	431605		5.21(2.86-8.58)	100	3658	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.886	5.885	0.001	1.078	2832133	0.9752	Target=7.65	97.5	326	
913.00 > 169.00	5.886	5.885	0.001	1.078	376751		7.52(3.83-11.48)	97.5	2944	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_008.d

Injection Date: 08-Dec-2018 05:39:20

Instrument ID: A8_N

Lims ID: IC L4 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

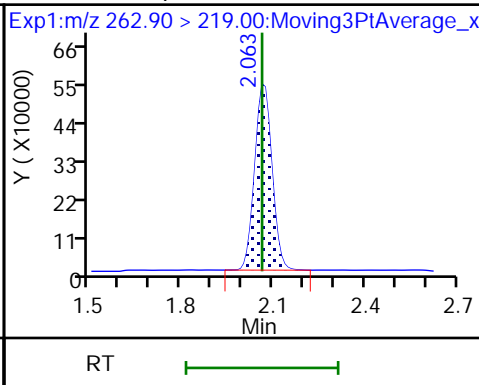
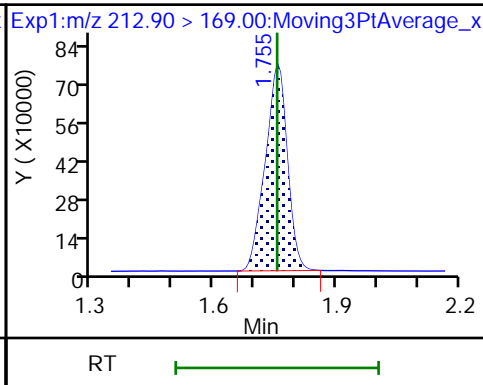
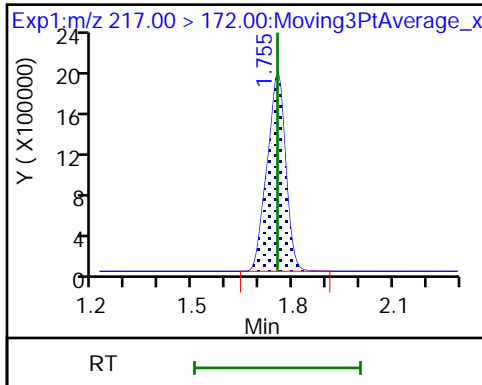
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

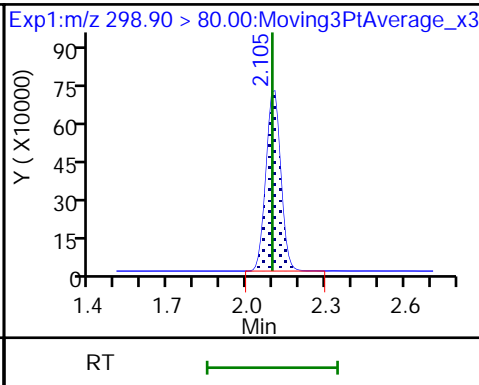
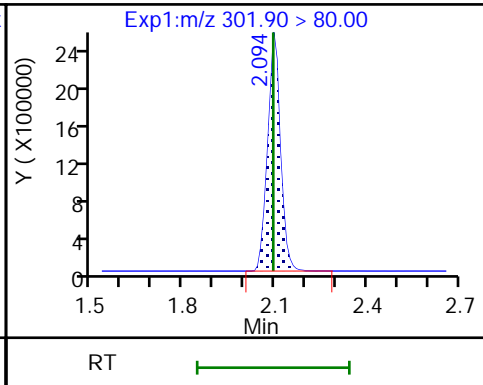
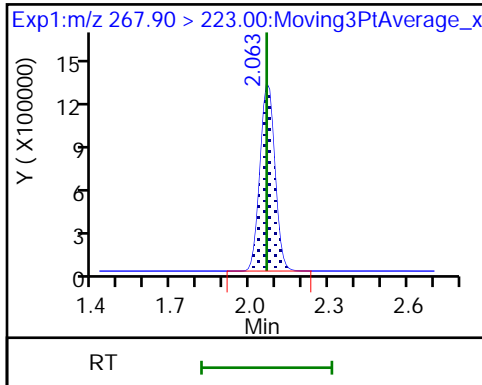
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

D 47 13C3 PFBS

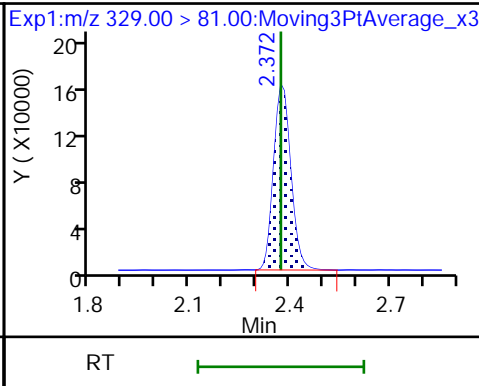
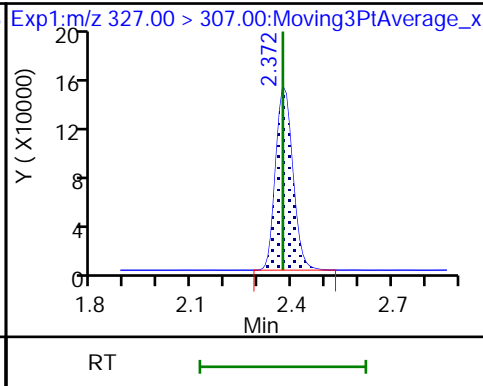
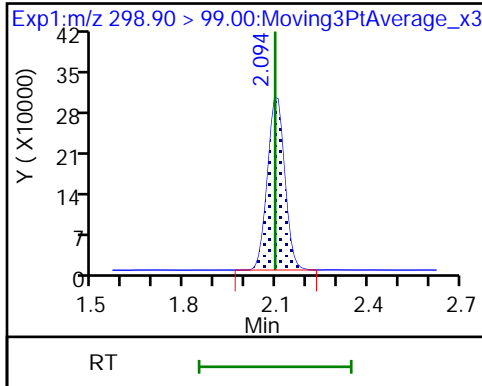
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

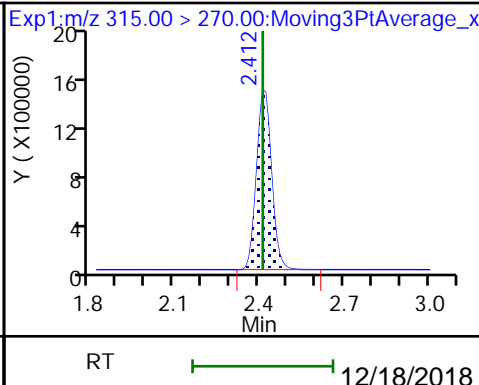
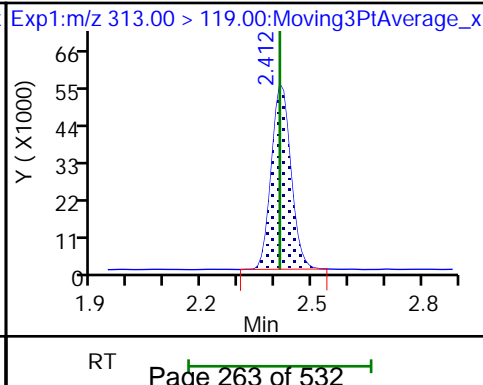
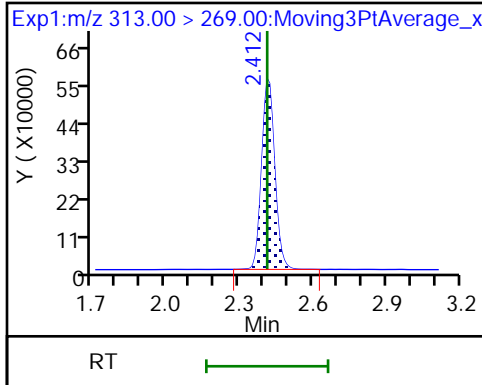
D 60 M2-4:2 FTS

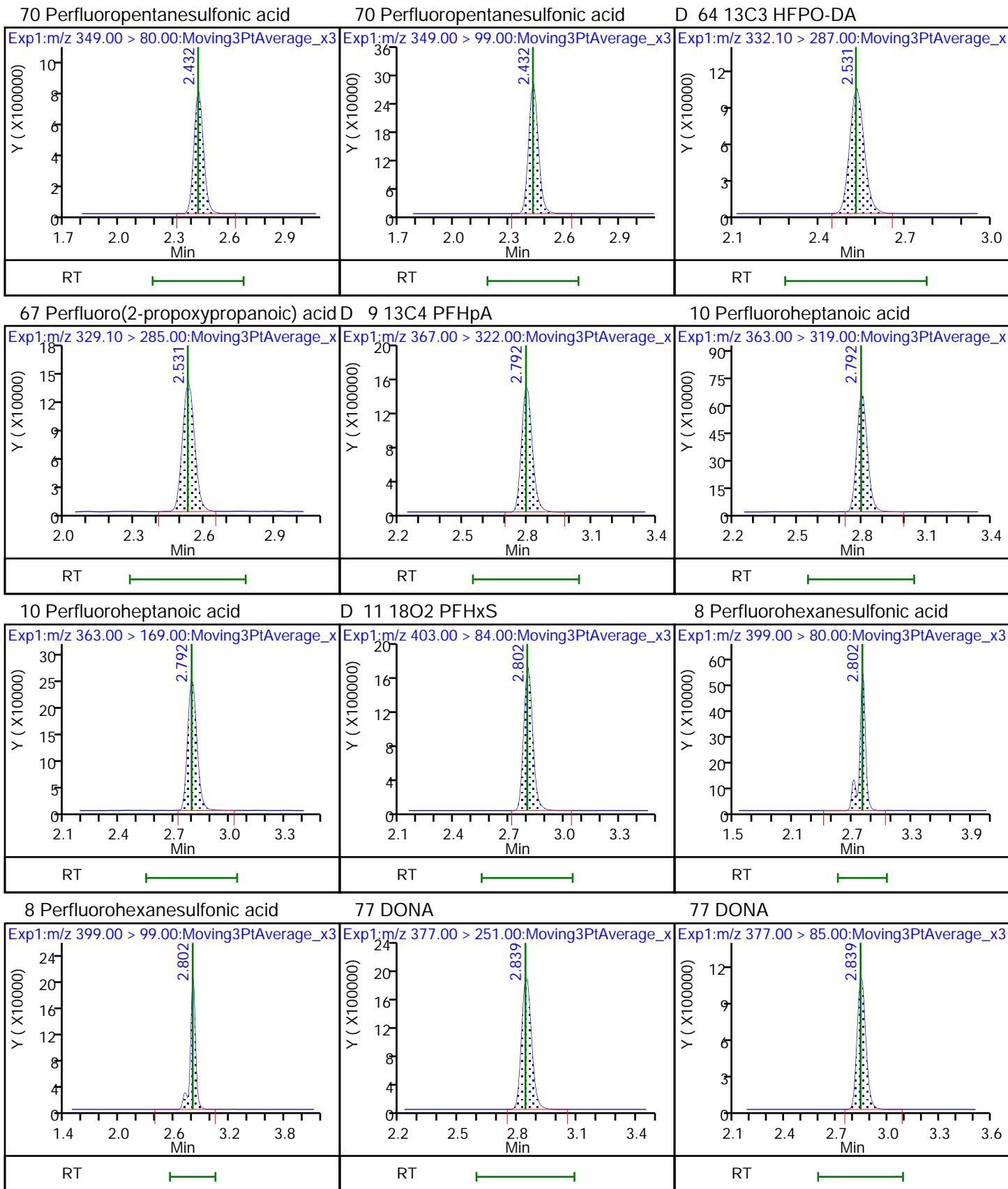


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

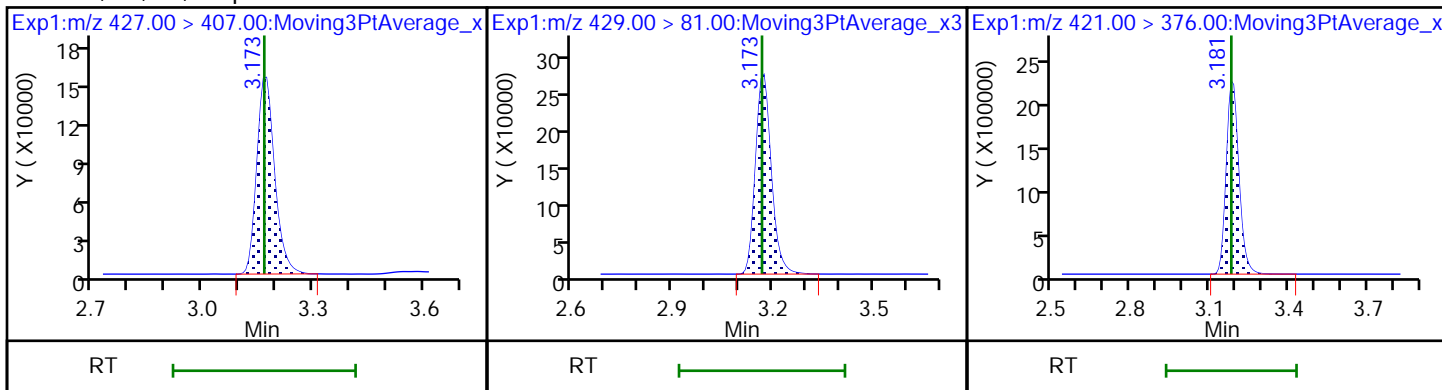
D 7 13C2 PFHxA





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

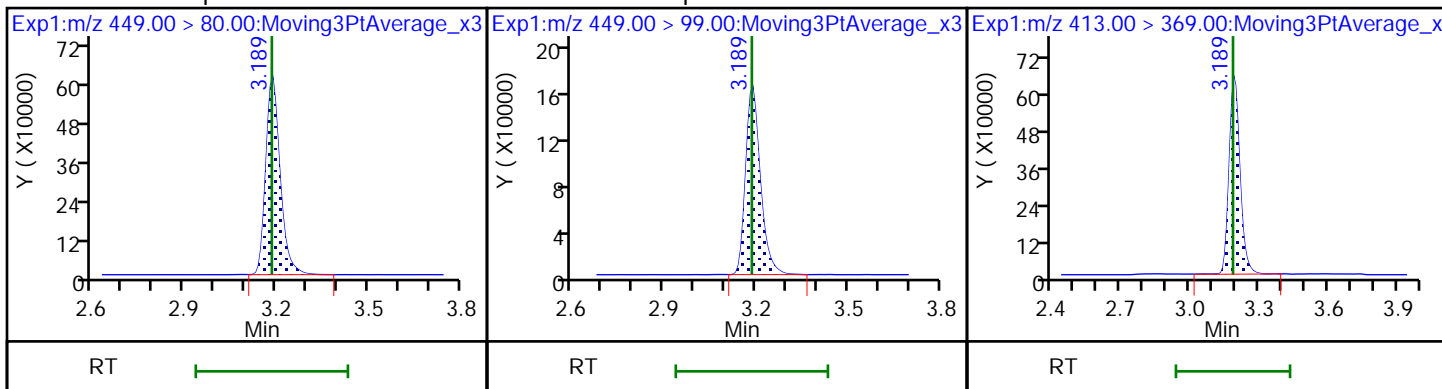
D 73 13C8 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

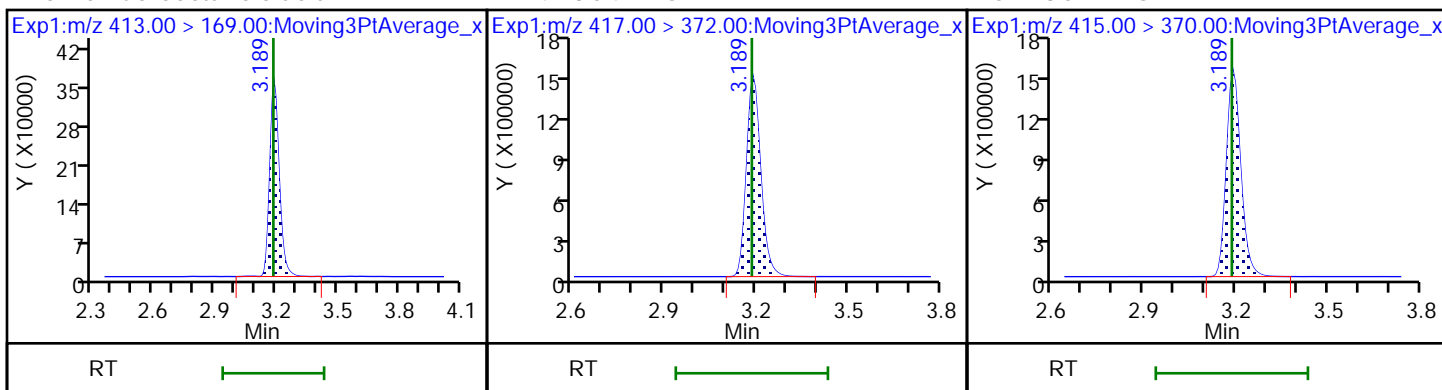
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

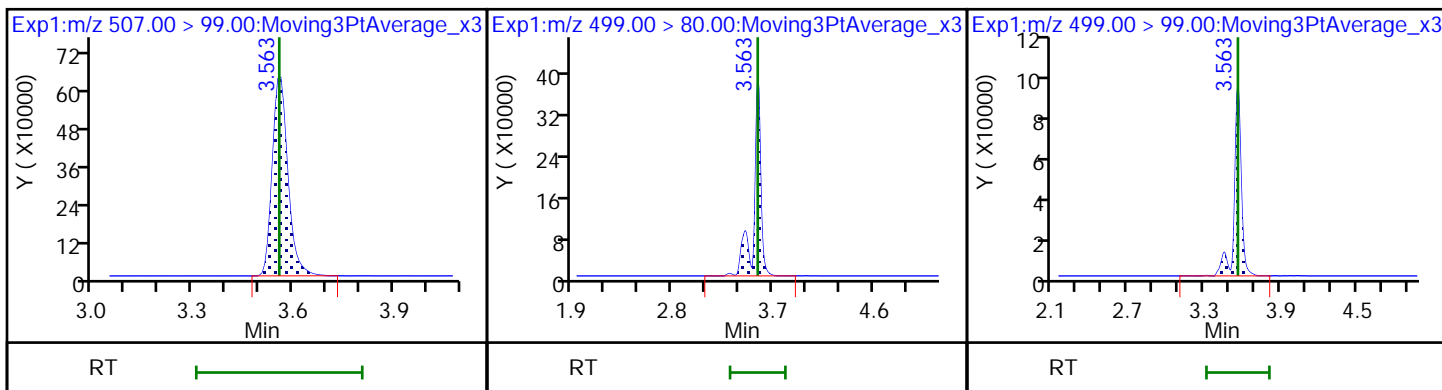
* 62 13C2 PFOA



D 72 13C8 PFOS

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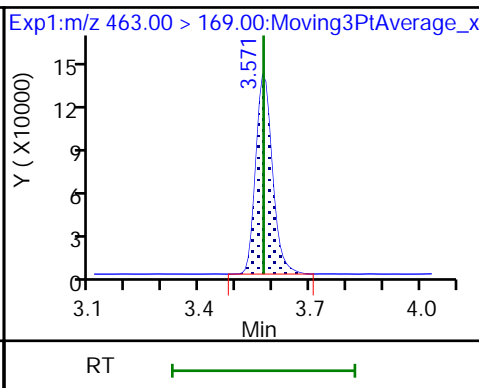
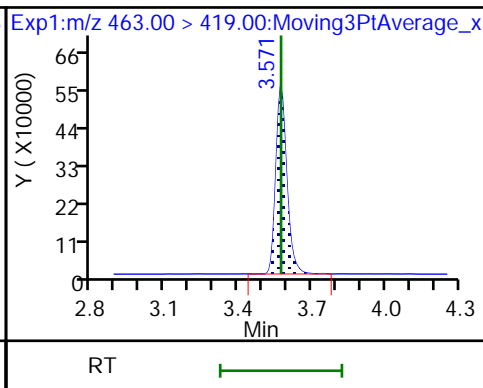
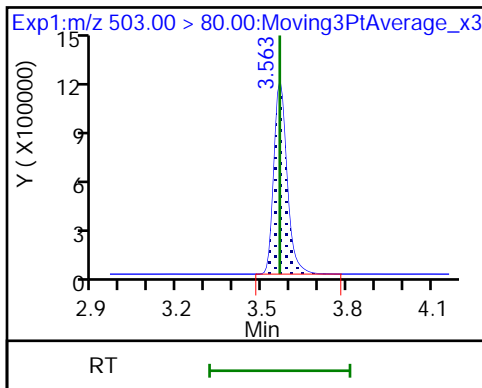
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

20 Perfluorononanoic acid

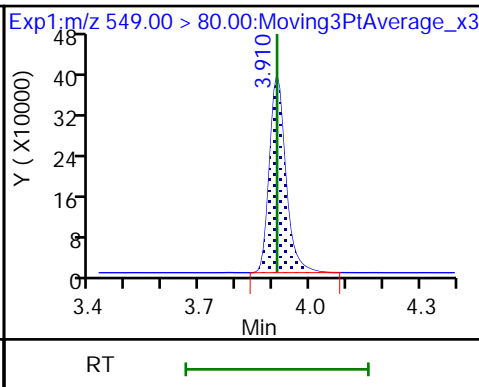
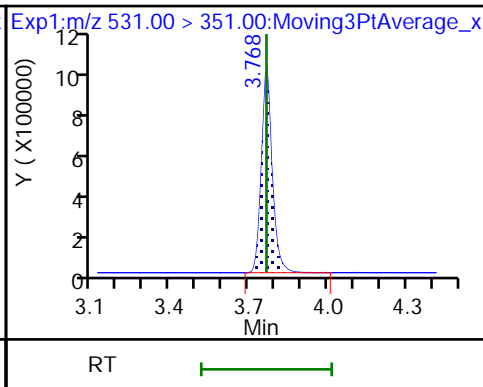
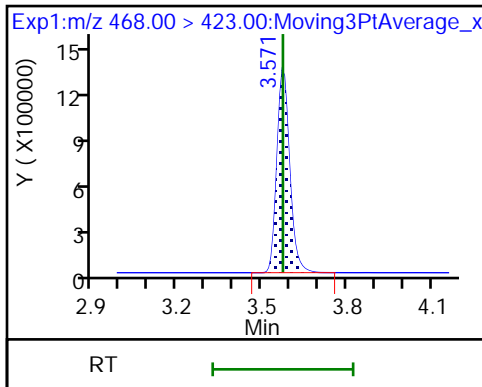
20 Perfluorononanoic acid



D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

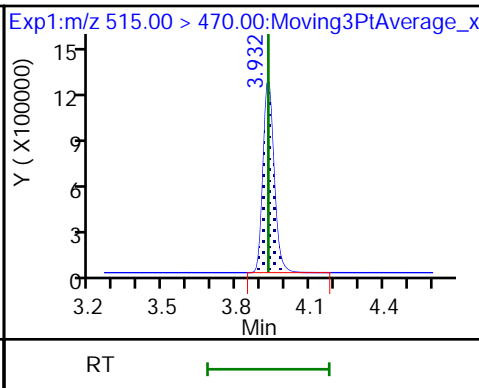
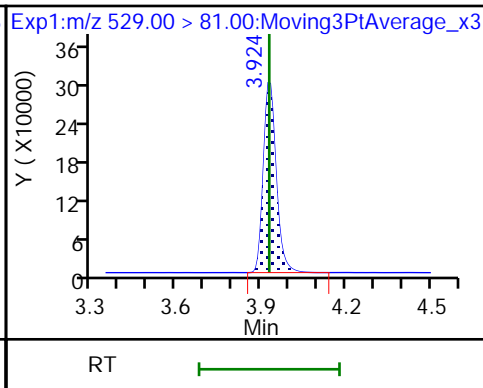
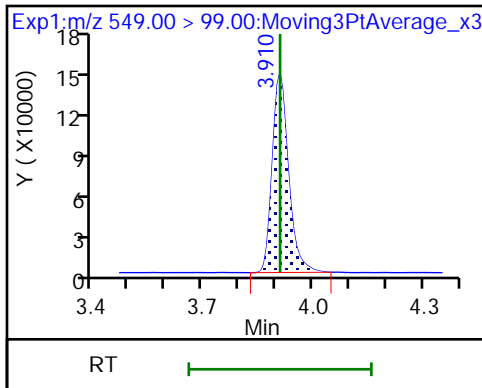
68 Perfluorononanesulfonic acid



68 Perfluorononanesulfonic acid

D 26 M2-8:2 FTS

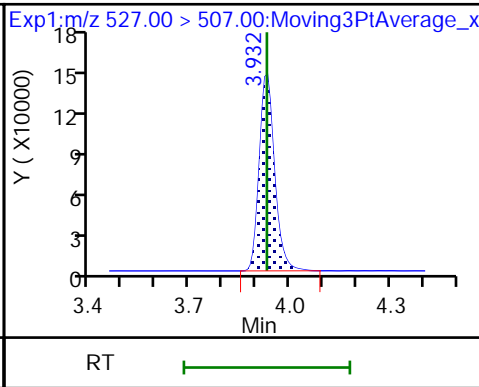
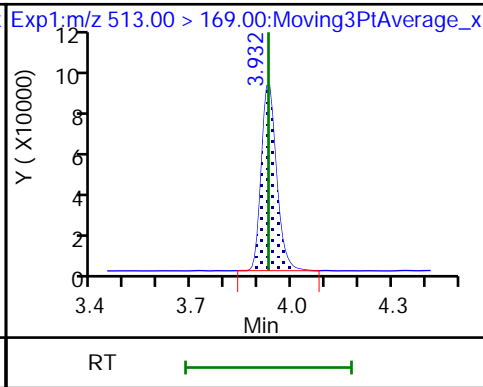
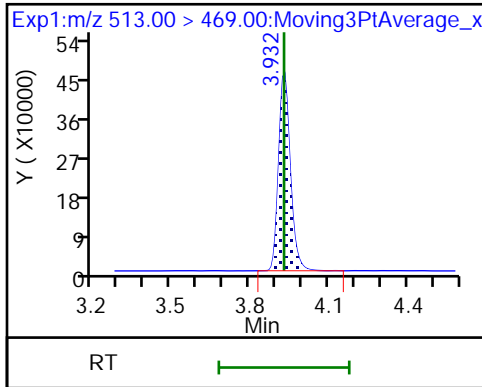
D 23 13C2 PFDA



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

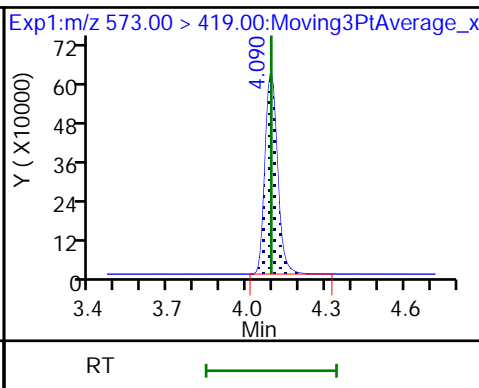
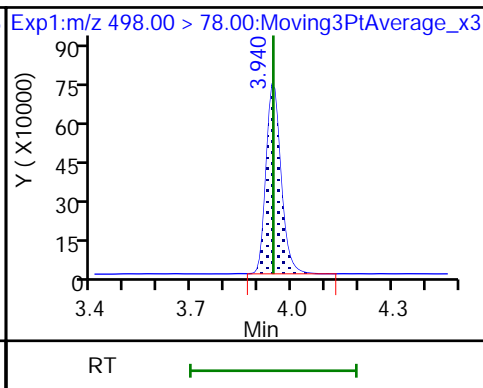
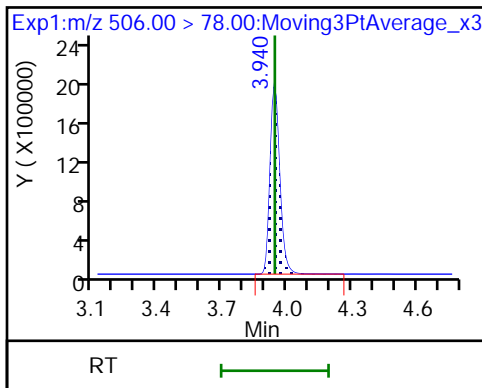
25 1H,1H,2H,2H-perfluorodecanesulfoni



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

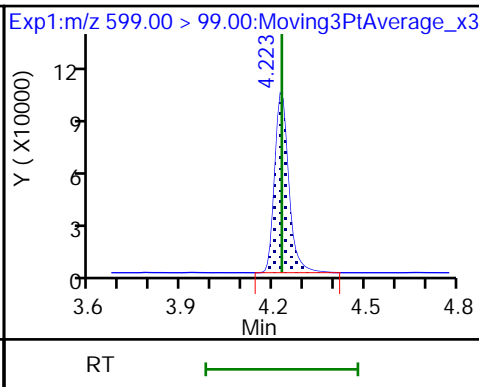
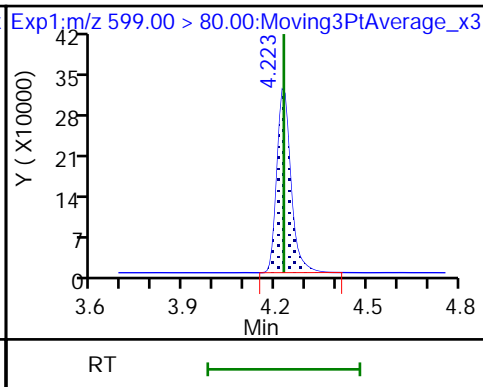
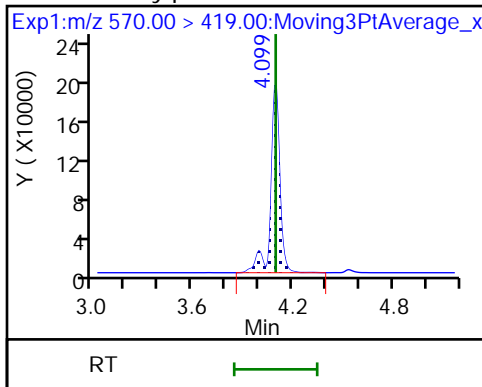
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

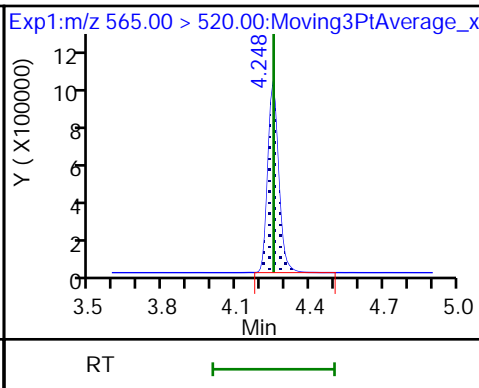
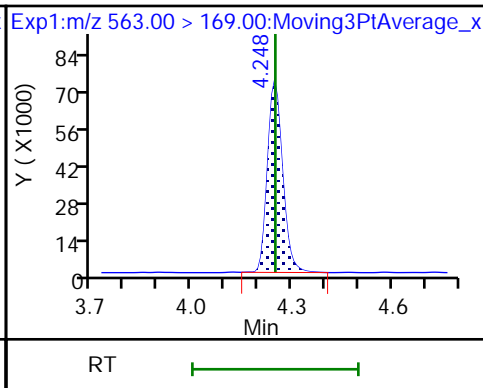
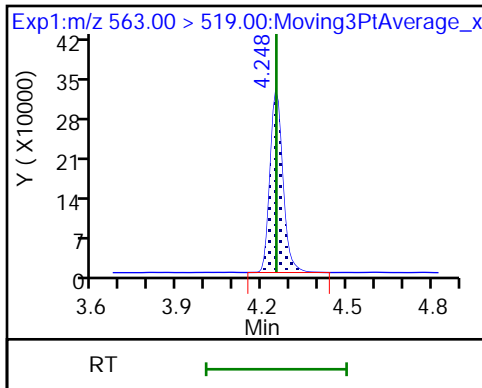
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

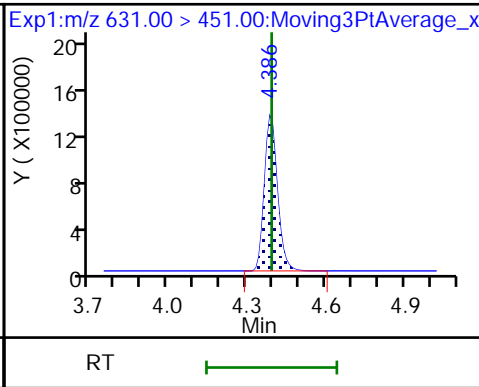
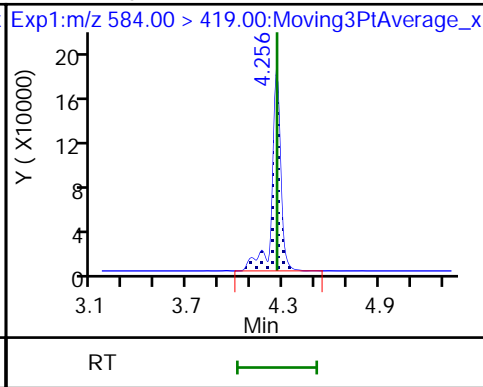
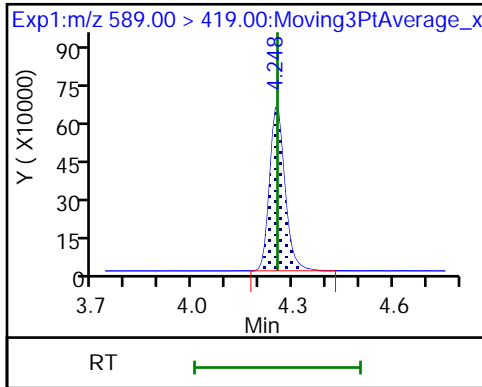
D 30 13C2 PFUnA



D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

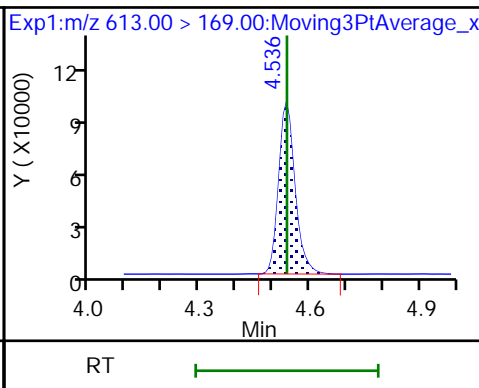
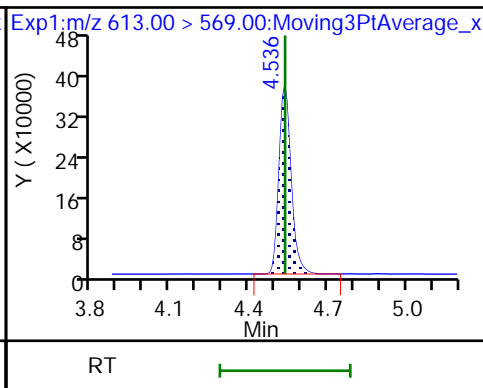
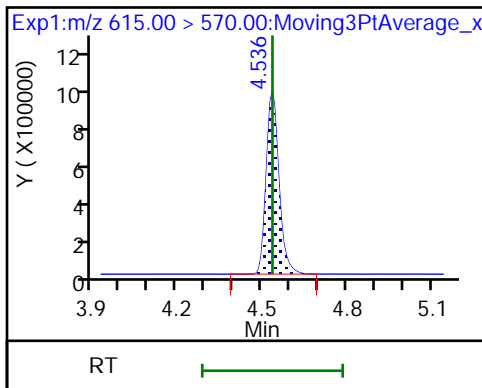
66 11-Chloroeicosafuoro-3-oxaundecan



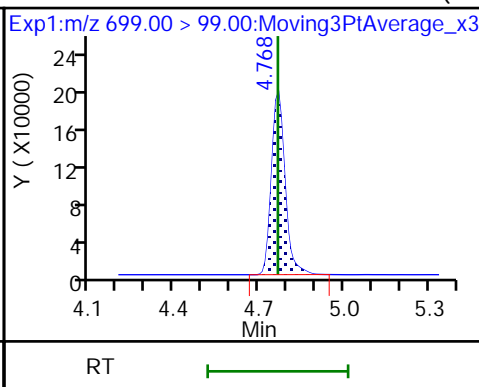
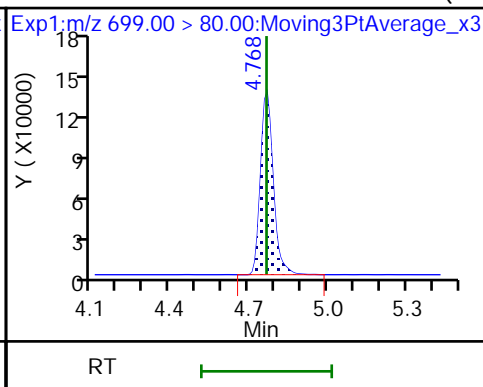
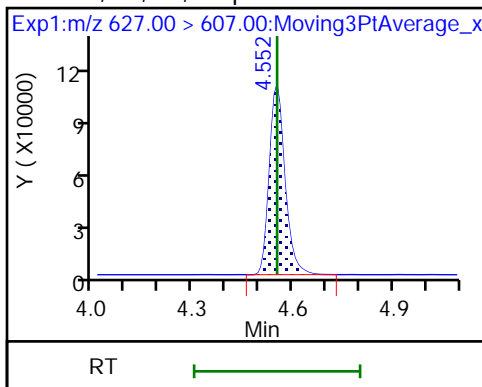
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



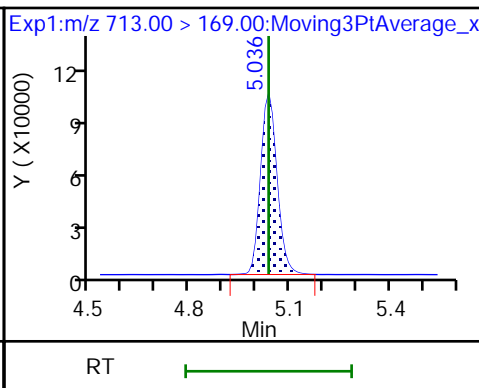
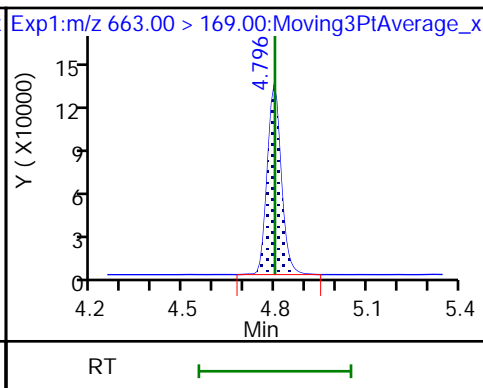
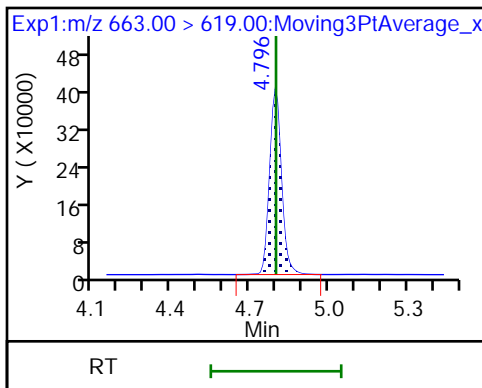
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

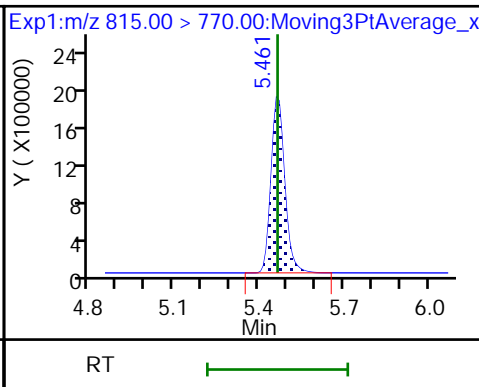
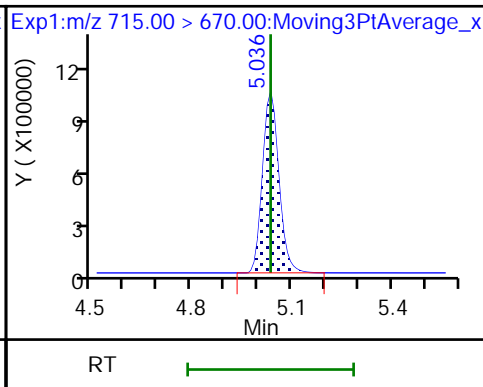
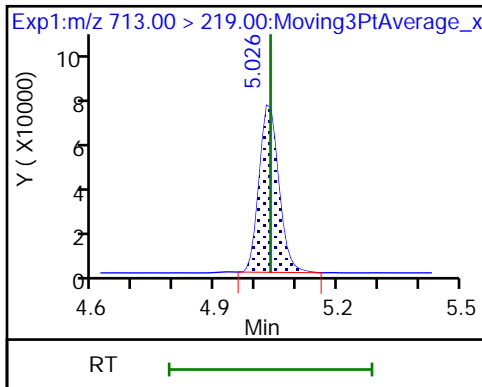
42 Perfluorotetradecanoic acid



42 Perfluorotetradecanoic acid

D 43 13C2 PFTeDA

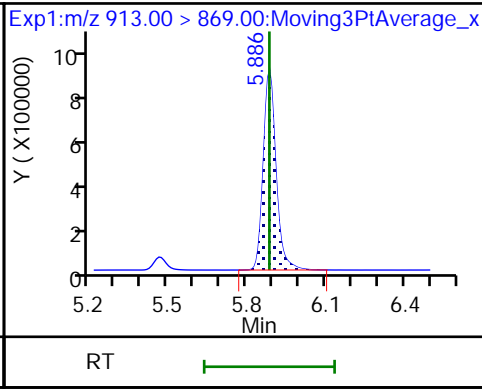
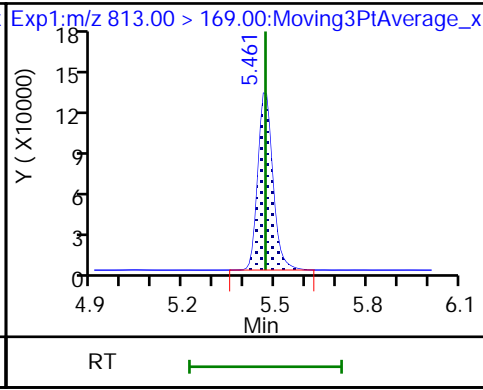
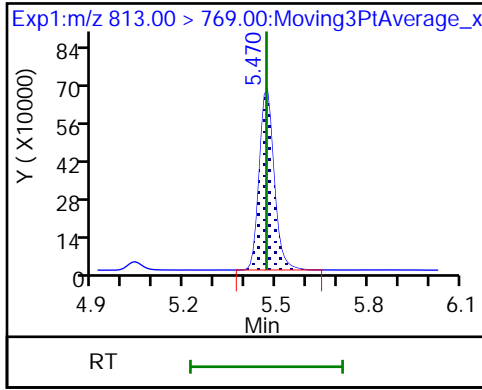
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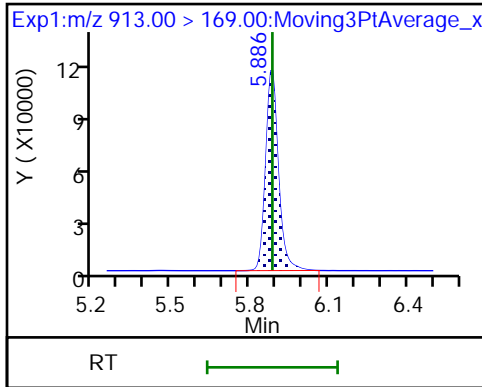
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

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 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 08-Dec-2018 05:46:51 ALS Bottle#: 14 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 08-Dec-2018 10:19:56 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0329

First Level Reviewer: phomsophat Date: 08-Dec-2018 09:51:23

Ratio Calibration: None

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	1.755	1.753	0.002	0.550	7388621	2.45	97.9	6348	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.754	0.001	1.000	6931695	2.57	103	1105	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.063	0.0	0.647	4723411	2.38	95.3	6278	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.063	0.0	1.000	5134540	2.48	99.2	376	
D 47 13C3 PFBS	301.90 > 80.00	2.094	2.093	0.001	0.657	6716967	2.19	94.1	388427	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.096	-0.002	1.000	6718429	2.36	Target=2.49	107	7283
	298.90 > 99.00	2.094	2.096	-0.002	1.000	2736583		2.46(1.25-3.74)	107	2461
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.744	586220	2.33	99.7	1400	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.372	0.0	1.133	1313185	2.40	103	7019	
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.412	0.0	0.756	5097441	2.46	98.5	6610	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.412	0.0	1.000	5293796	2.57	Target=10.07	103	1816
	313.00 > 119.00	2.412	2.412	0.0	1.000	471663		11.22(5.03-15.10)	103	1154
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.432	2.429	0.003	1.161	6300001	2.52	Target=2.71	108	8403
	349.00 > 99.00	2.432	2.429	0.003	1.161	2413536		2.61(1.36-4.07)	108	5132
D 64 13C3 HFPO-DA	332.10 > 287.00	2.531	2.527	0.004	0.794	370698	2.48	99.3	1678	

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	2.531	2.528	0.003	1.000	1217829	2.45	97.9	804	
D 9 13C4 PFHpA	367.00	> 322.00	2.793	2.792	0.001	0.876	4910967	2.47	98.9	7841	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.793	2.793	0.0	1.000	5098162	2.30	Target=2.27	92.0	1461
	363.00	> 169.00	2.793	2.793	0.0	1.000	2031340		2.51(1.13-3.40)	92.0	2671
D 11 18O2 PFHxS	403.00	> 84.00	2.802	2.797	0.005	0.879	5408539	2.26		95.6	9717
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.802	2.799	0.003	1.000	5404770	2.22	Target=3.00	97.8	6540
	399.00	> 99.00	2.802	2.799	0.003	1.000	1814704		2.98(1.50-4.49)	97.8	3856
77 DONA	377.00	> 251.00	2.839	2.839	0.0	0.796	14900766	2.47	Target=1.69	105	14513
	377.00	> 85.00	2.839	2.839	0.0	0.796	8671889		1.72(0.85-2.54)	105	10685
D 12 M2-6:2 FTS	429.00	> 81.00	3.173	3.167	0.006	0.995	841523	2.34		98.7	4491
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.173	3.167	0.006	1.000	1362440	2.47		104	652
D 73 13C8 PFOA	421.00	> 376.00	3.181	3.180	0.001	0.998	7312402	2.42		98.8	9939
D 14 13C4 PFOA	417.00	> 372.00	3.189	3.185	0.004	1.000	4950786	2.50		100	9245
* 62 13C2 PFOA	415.00	> 370.00	3.189	3.185	0.004		5018329	2.50			7441
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.189	3.185	0.004	0.894	4877217	2.46	Target=3.88	103	4830
	449.00	> 99.00	3.189	3.185	0.004	0.894	1344025		3.63(1.94-5.82)	103	3978
15 Perfluorooctanoic acid	413.00	> 369.00	3.189	3.185	0.004	1.000	5419118	2.44	Target=1.68	97.3	655
	413.00	> 169.00	3.189	3.185	0.004	1.000	2880157		1.88(0.84-2.52)	97.3	2544
D 72 13C8 PFOS	507.00	> 99.00	3.566	3.559	0.007	1.118	2042306	2.41		101	7143
D 18 13C4 PFOS	503.00	> 80.00	3.566	3.562	0.004	1.118	3685010	2.34		97.7	7346
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.566	3.562	0.004	1.000	3981079	2.30	Target=4.62	99.3	3670
	499.00	> 99.00	3.566	3.562	0.004	1.000	862658		4.61(2.31-6.93)	99.3	5000
D 19 13C5 PFNA	468.00	> 423.00	3.581	3.573	0.008	1.123	4012443	2.44		97.5	8714
20 Perfluorononanoic acid	463.00	> 419.00	3.581	3.573	0.008	1.000	4121000	2.44	Target=3.79	97.6	2233
	463.00	> 169.00	3.581	3.573	0.008	1.000	997857		4.13(1.90-5.69)	97.6	6038
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.768	3.766	0.002	1.057	7247501	2.48		106	17387

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	3.917	3.910	0.007	1.099	2961609	2.46	Target=2.65	102	6542	
549.00 > 99.00	3.917	3.910	0.007	1.099	1033624		2.87(1.33-3.97)	102	6189	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.933	3.928	0.005	1.233	884111	2.26		94.5	4811	
D 23 13C2 PFDA										
515.00 > 470.00	3.933	3.929	0.004	1.233	3554606	2.40		96.2	10345	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.940	3.929	0.011	1.002	3475850	2.52	Target=4.73	101	3446	
513.00 > 169.00	3.933	3.929	0.004	1.000	679112		5.12(2.36-7.09)	101	450	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.933	3.930	0.003	1.000	1178186	2.44		102	5256	
D 21 13C8 FOSA										
506.00 > 78.00	3.948	3.943	0.005	1.238	5697512	2.43		97.0	6729	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.948	3.944	0.004	1.000	5727143	2.68		107	1292	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.099	4.092	0.007	1.285	1920937	2.46		98.2	3957	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.099	4.096	0.003	1.000	1739614	2.45		97.9	996	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.232	4.228	0.004	1.187	2485603	2.52	Target=2.77	105	9818	
599.00 > 99.00	4.232	4.228	0.004	1.187	813705		3.05(1.39-4.16)	105	5650	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.256	4.250	0.006	1.000	2500097	2.43	Target=4.24	97.2	2273	
563.00 > 169.00	4.256	4.250	0.006	1.000	576079		4.34(2.12-6.36)	97.2	2189	
D 30 13C2 PFUnA										
565.00 > 520.00	4.256	4.251	0.005	1.335	2815537	2.40		96.2	7763	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.256	4.253	0.003	1.335	2045443	2.49		99.6	4555	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.265	4.260	0.005	1.002	1725506	2.47		98.7	4183	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.398	4.393	0.005	1.233	10621847	2.43		103	16796	
35 MeFOSA										
512.00 > 169.00	4.450	4.450	0.0		1695604	NC			619	
D 36 13C2 PFDaA										
615.00 > 570.00	4.544	4.536	0.008	1.425	2935236	2.43		97.3	6956	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.544	4.537	0.007	1.000	3112000	2.49	Target=4.27	99.5	2811	
613.00 > 169.00	4.544	4.537	0.007	1.000	810260		3.84(2.13-6.40)	99.5	4551	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.560	4.552	0.008	1.160	862148	2.62		109	5188	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.636	4.628	0.008		1693389	NC			480	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.768	4.766	0.002	1.337	1088723	2.50	Target=0.00	103	6163	
699.00 > 99.00	4.768	4.766	0.002	1.337	1570074		0.69(0.00-0.00)	103	7978	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.804	4.798	0.006	1.057	3044284	2.56	Target=2.51	102	2784	
663.00 > 169.00	4.804	4.798	0.006	1.057	1025800		2.97(1.25-3.76)	102	5261	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.036	5.036	0.0	1.579	3463798	2.47		98.9	6430	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.036	5.036	0.0	1.000	860320	2.45	Target=1.42	98.2	4859	
713.00 > 219.00	5.036	5.036	0.0	1.000	653965		1.32(0.71-2.13)	98.2	2068	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.470	5.465	0.005	1.715	5954497	2.42		96.8	9833	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.470	5.467	0.003	1.000	5388602	2.56	Target=5.72	102	625	
813.00 > 169.00	5.470	5.467	0.003	1.000	1020751		5.28(2.86-8.58)	102	6339	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.893	5.885	0.007	1.077	7364838	2.66	Target=7.65	106	752	
913.00 > 169.00	5.885	5.885	0.0	1.076	959938		7.67(3.83-11.48)	106	4423	

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\A8_N\20181207-68828.b\2018.12.07ICAL_009.d

Injection Date: 08-Dec-2018 05:46:51

Instrument ID: A8_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 6

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

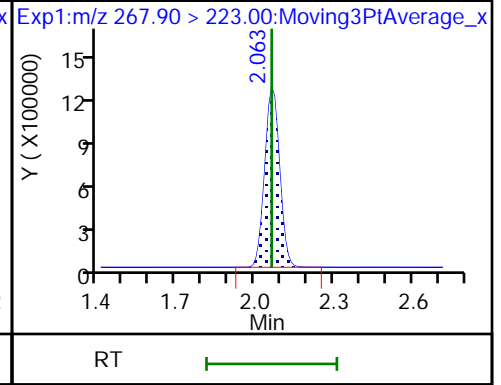
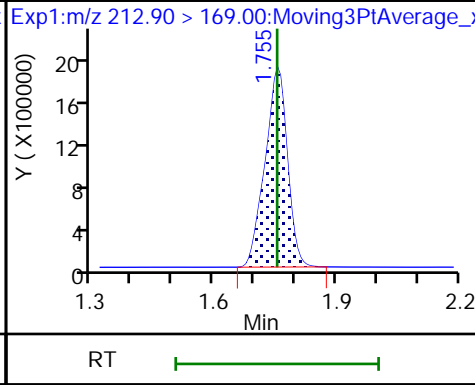
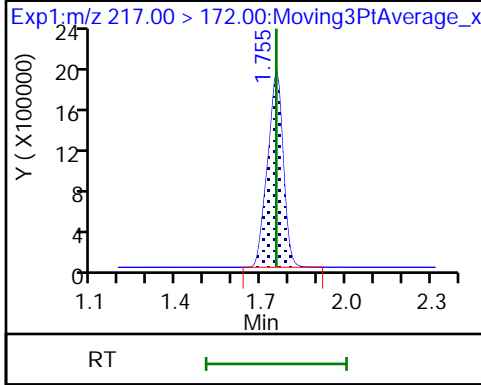
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

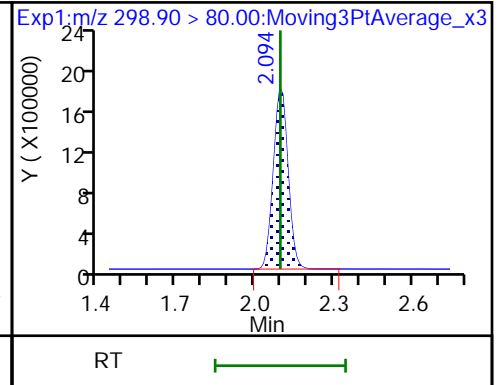
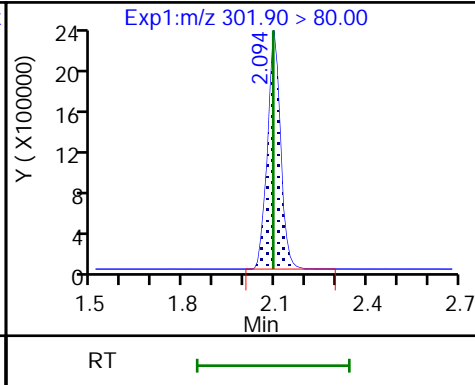
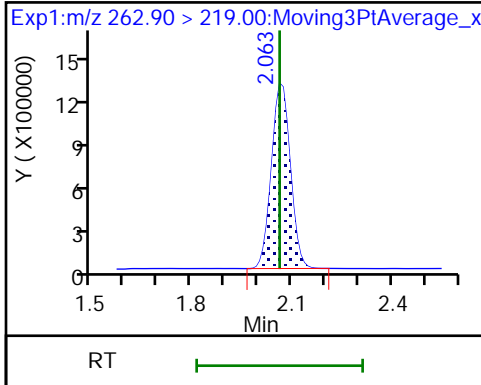
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

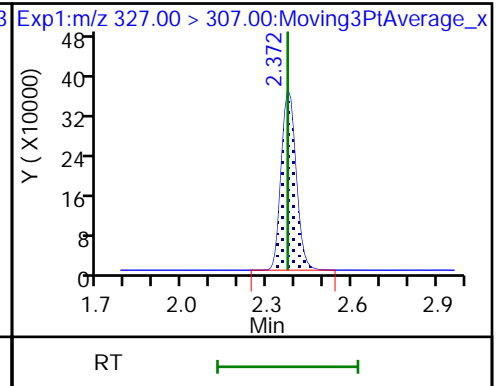
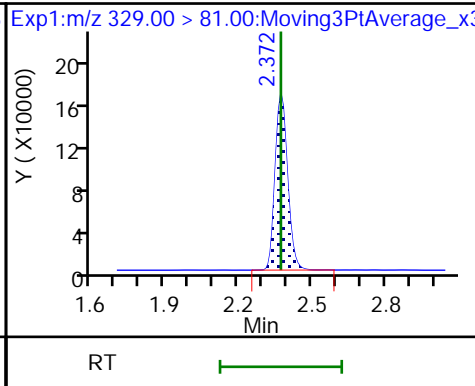
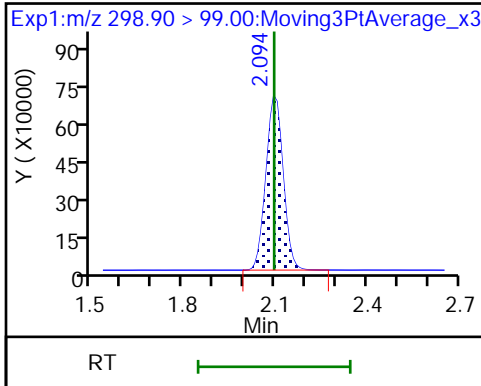
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

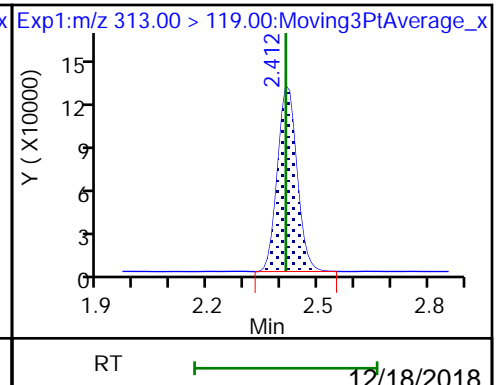
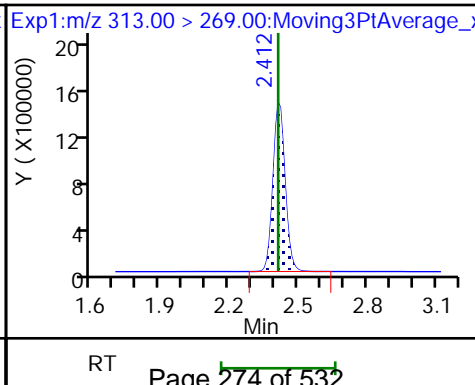
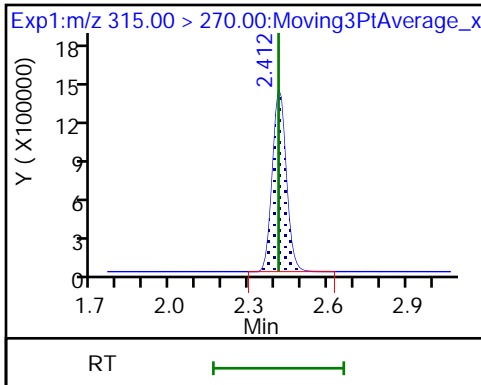
61 1H,1H,2H,2H-perfluorohexanesulfoni

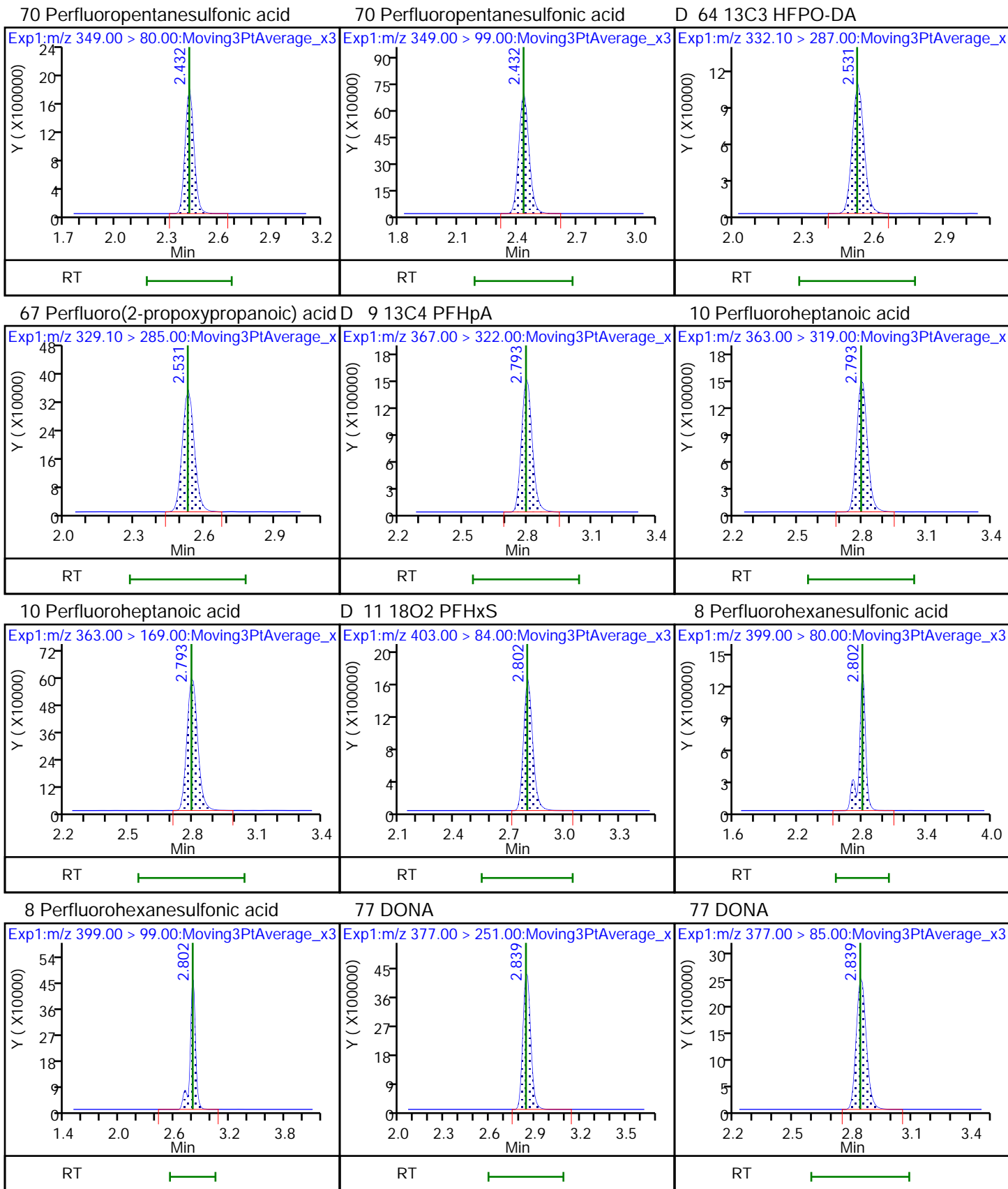


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

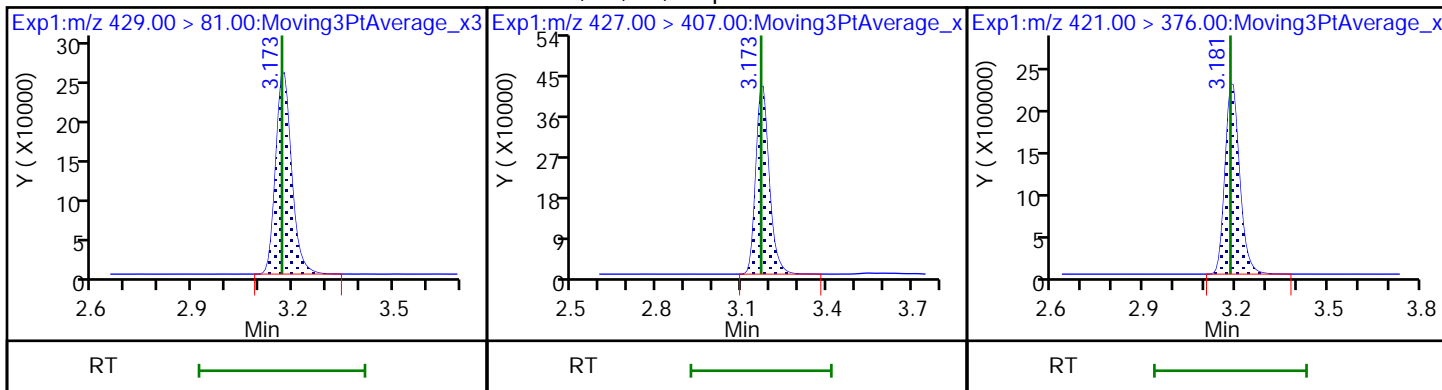
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

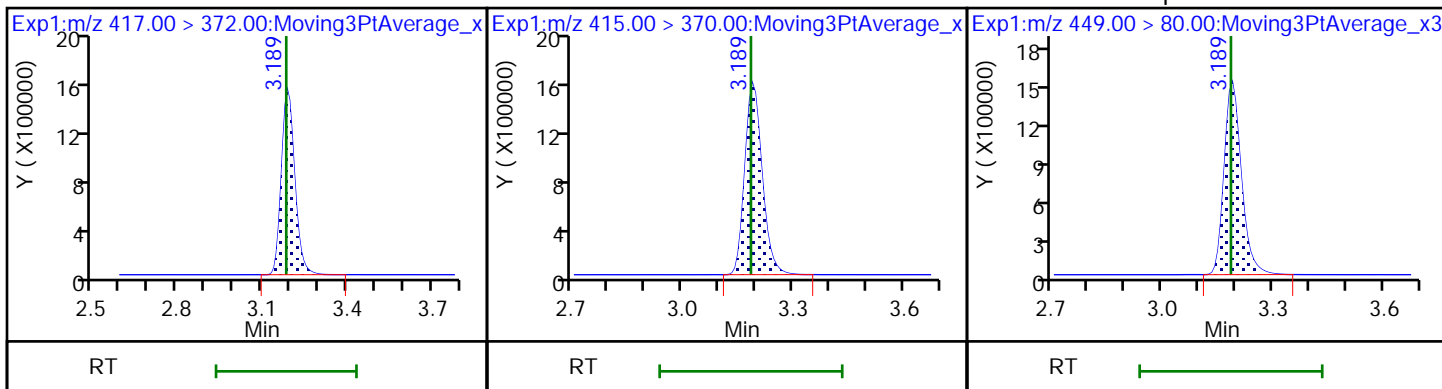
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

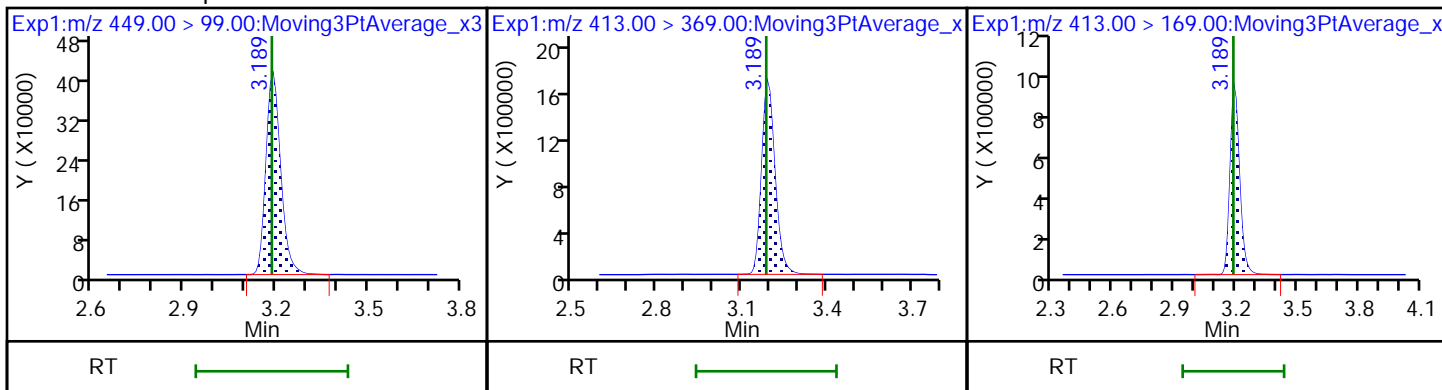
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

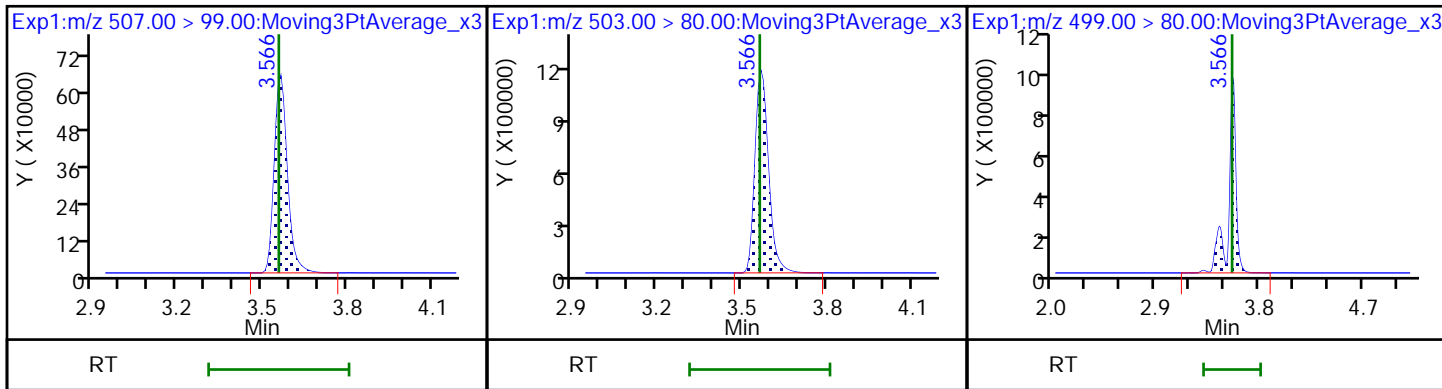
15 Perfluorooctanoic acid

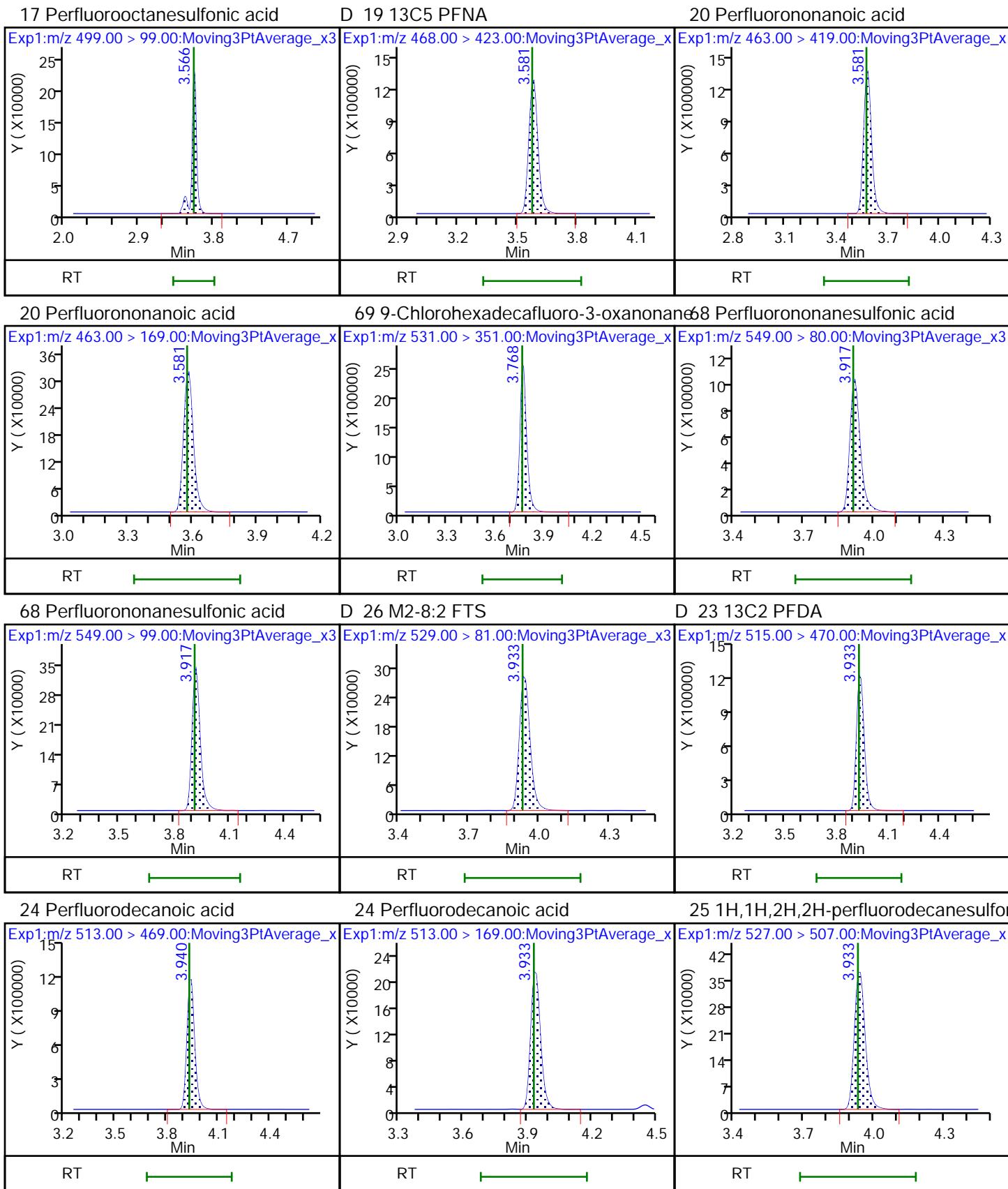


D 72 13C8 PFOS

D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid

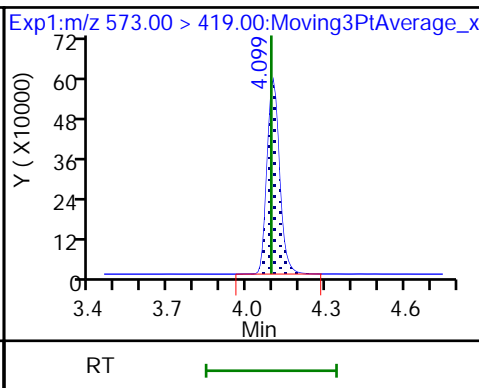
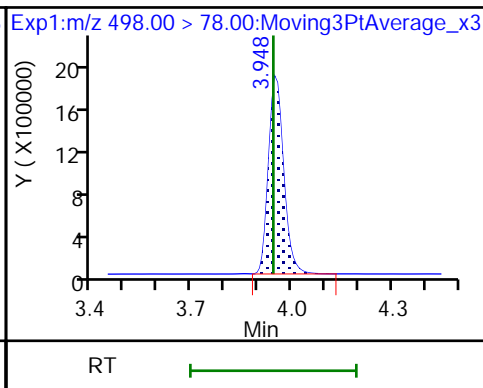
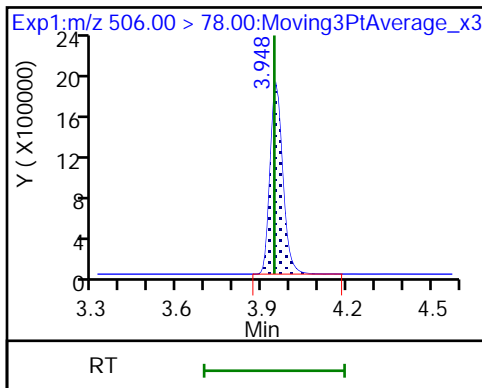




D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

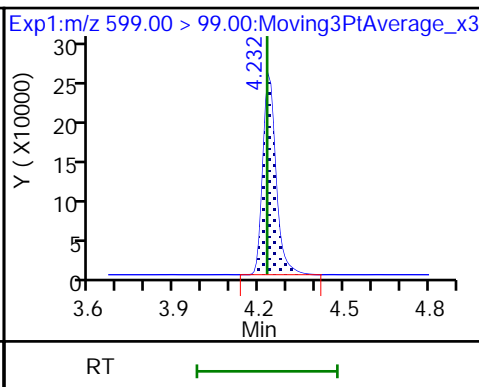
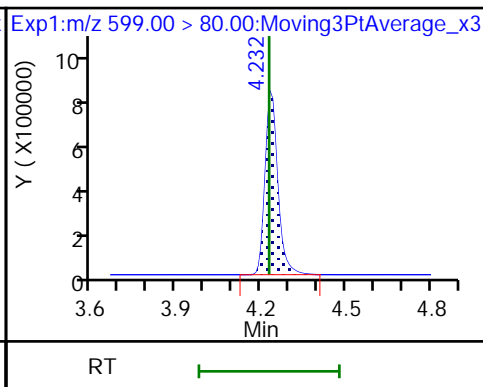
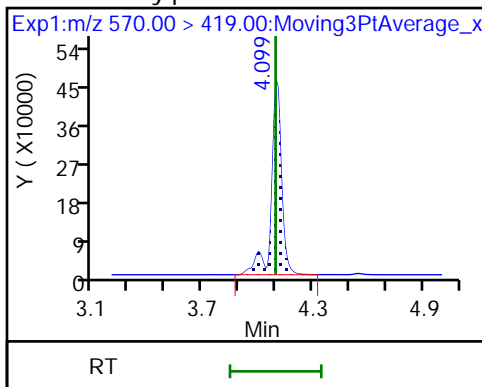
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

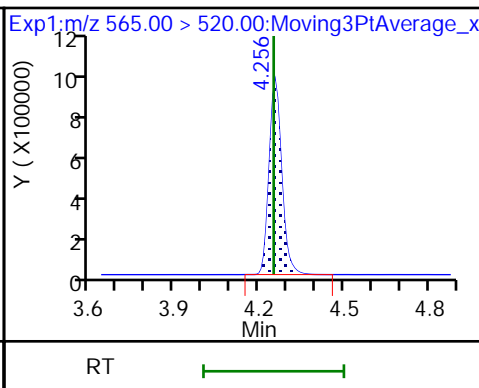
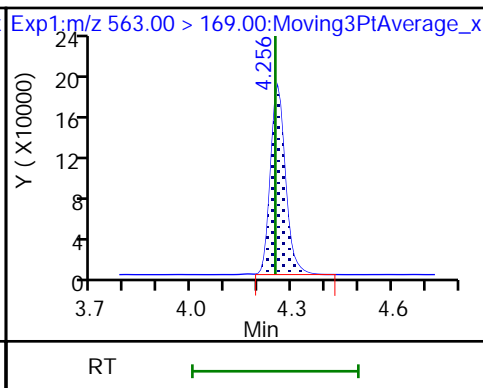
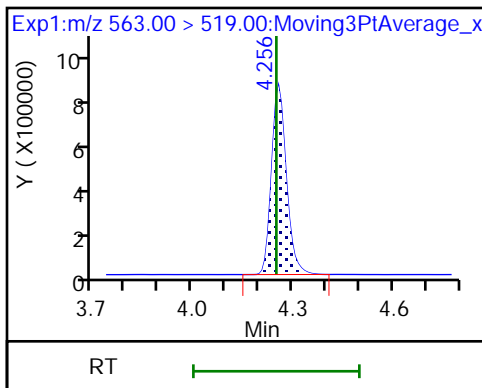
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

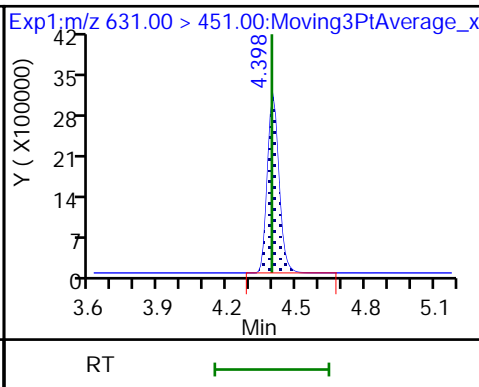
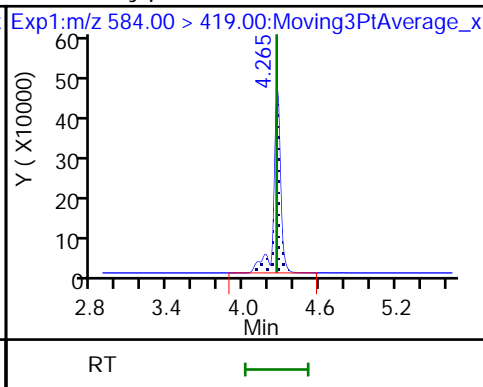
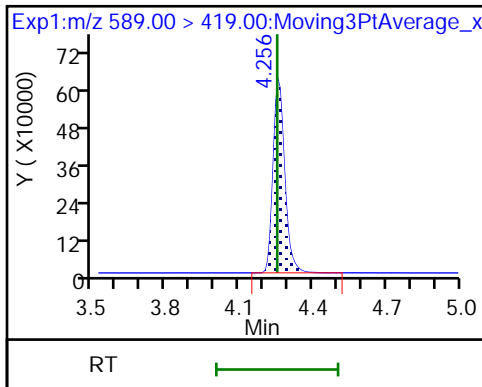
D 30 13C2 PFUnA



D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

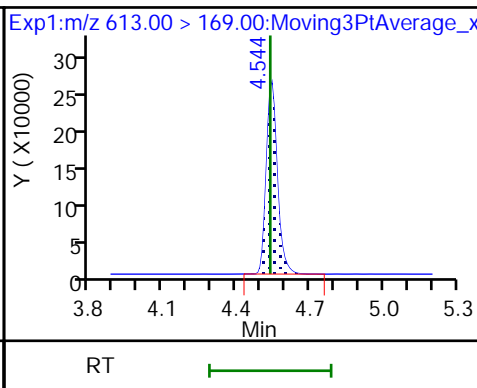
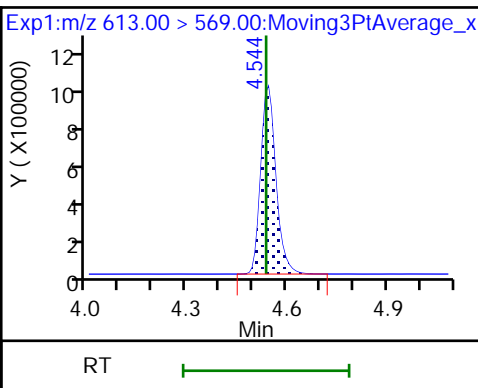
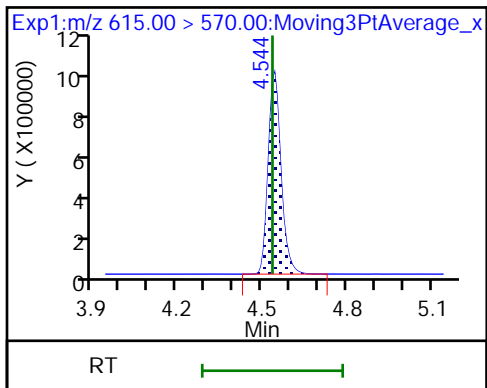
66 11-Chloroeicosafuoro-3-oxaundecan



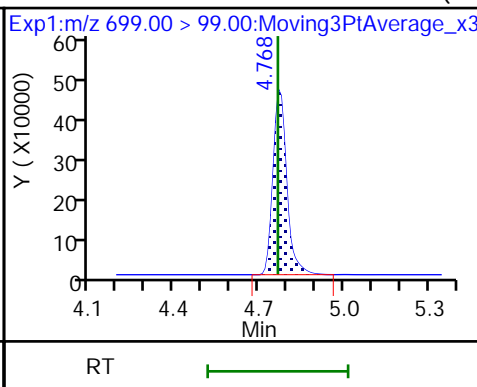
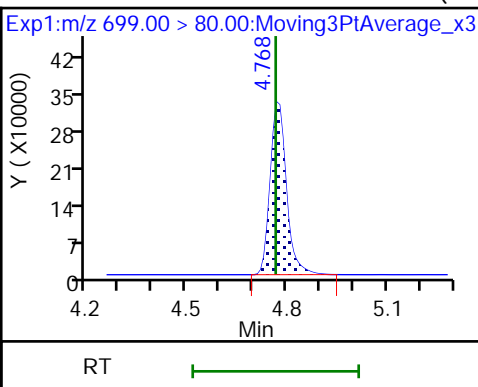
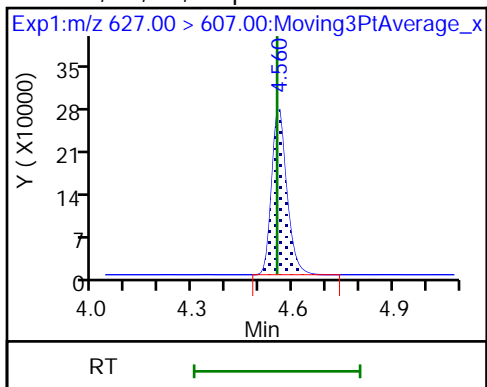
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



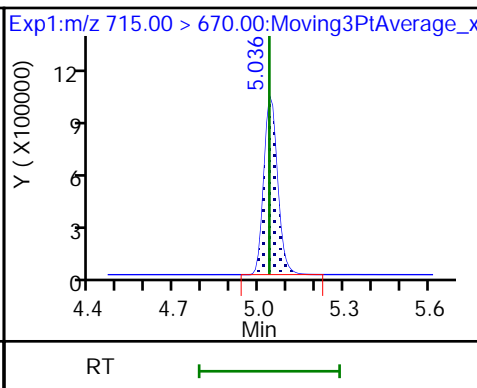
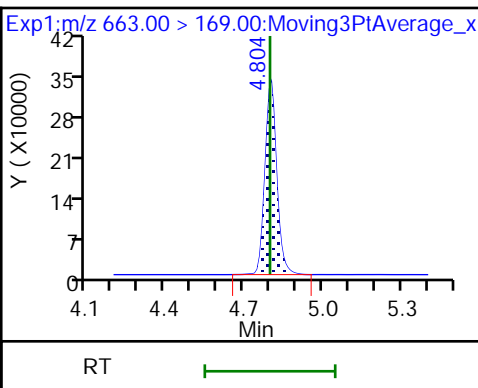
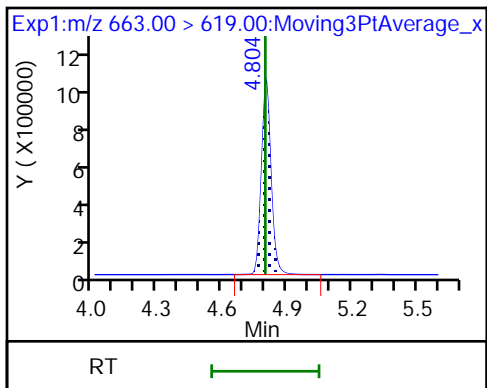
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

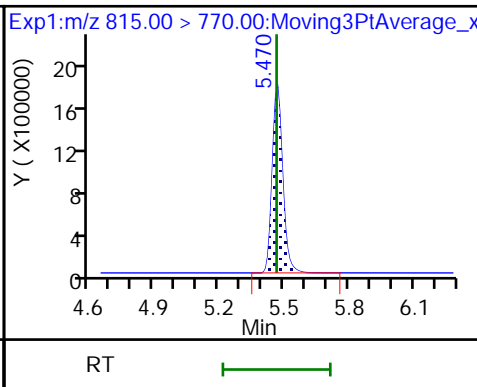
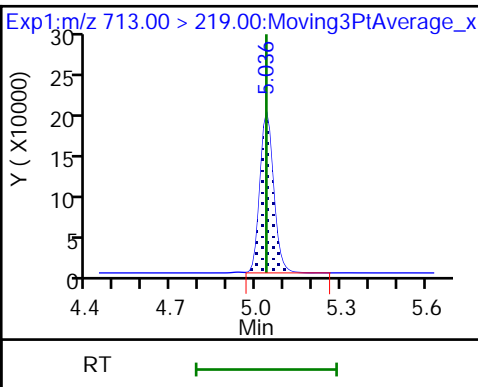
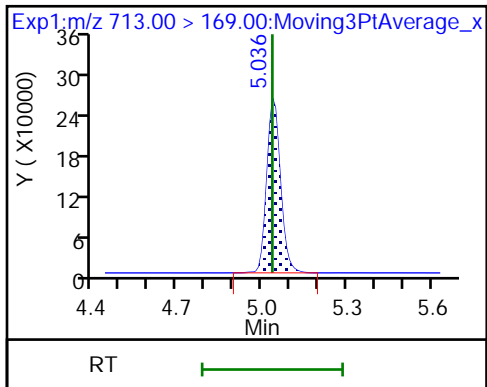
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

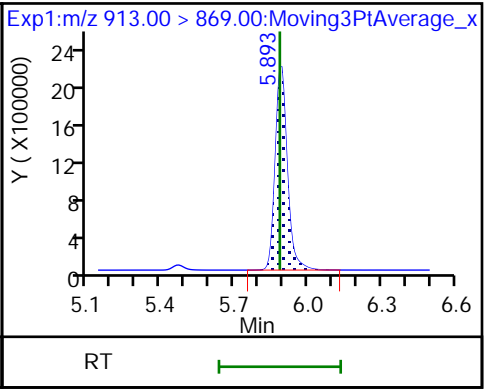
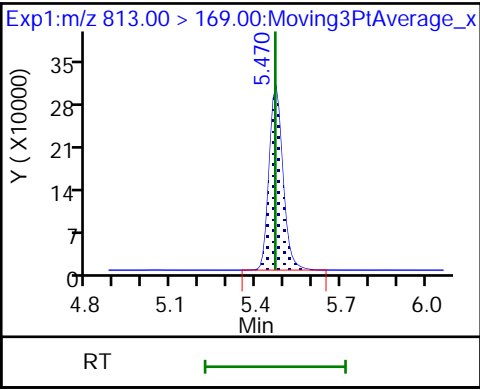
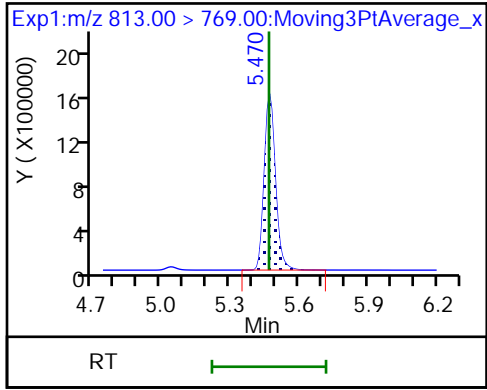
D 44 13C2 PFHxDA



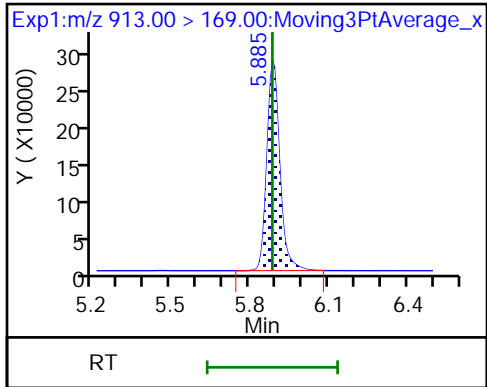
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_010.d
 Lims ID: IC L6 Full
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 08-Dec-2018 05:54:22 ALS Bottle#: 15 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 6
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 08-Dec-2018 10:20:01 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1

Process Host: CTX0329

First Level Reviewer: phomsophat Date: 08-Dec-2018 09:51:57

Ratio Calibration: None

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	1.748	1.753	-0.005	0.550	7487416	2.52	101	5970	
2 Perfluorobutanoic acid	212.90 > 169.00	1.748	1.754	-0.006	1.000	14118065	5.16	103	2126	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.063	0.0	0.648	5006239	2.57	103	6391	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.063	0.0	1.000	10634903	4.85	97.0	781	
D 47 13C3 PFBS	301.90 > 80.00	2.084	2.093	-0.009	0.655	7092378	2.35	101	318907	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.095	2.096	-0.001	1.005	13186942	4.38	Target=2.49	99.1	12994
	298.90 > 99.00	2.095	2.096	-0.001	1.005	5835373		2.26(1.25-3.74)	99.1	5215
D 60 M2-4:2 FTS	329.00 > 81.00	2.373	2.372	0.001	0.746	584338	2.36	101	1493	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.373	2.372	0.001	1.138	2847272	4.93	106	12202	
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.412	0.0	0.758	5058915	2.49	99.5	5562	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.412	0.0	1.000	10214491	4.99	Target=10.07	99.7	3407
	313.00 > 119.00	2.412	2.412	0.0	1.000	943969		10.82(5.03-15.10)	99.7	2516
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.422	2.429	-0.007	1.162	12277369	4.66	Target=2.71	99.3	12162
	349.00 > 99.00	2.422	2.429	-0.007	1.162	4814057		2.55(1.36-4.07)	99.3	7398
D 64 13C3 HFPO-DA	332.10 > 287.00	2.521	2.527	-0.006	0.792	421354	2.87	115	1940	

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	2.521	2.528	-0.007	1.000	2573983	4.55	91.0	1556	
D 9 13C4 PFHpA	367.00	> 322.00	2.793	2.792	0.001	0.878	4860579	2.49	99.6	9252	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.793	2.793	0.0	1.000	10539567	4.80	Target=2.27	96.1	2734
	363.00	> 169.00	2.793	2.793	0.0	1.000	4067218		2.59(1.13-3.40)	96.1	4217
D 11 18O2 PFHxS	403.00	> 84.00	2.793	2.797	-0.004	0.878	5468316	2.33	98.3	6109	
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.793	2.799	-0.006	1.000	11103494	4.52	Target=3.00	99.4	9122
	399.00	> 99.00	2.793	2.799	-0.006	1.000	3837216		2.89(1.50-4.49)	99.4	4340
77 DONA	377.00	> 251.00	2.840	2.839	0.001	0.798	27031089	4.48	Target=1.69	95.0	17631
	377.00	> 85.00	2.840	2.839	0.001	0.798	16583620		1.63(0.85-2.54)	95.0	14441
D 12 M2-6:2 FTS	429.00	> 81.00	3.157	3.167	-0.010	0.992	811783	2.30	96.9	4138	
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.157	3.167	-0.010	1.000	2591676	4.87	103	1579	
D 73 13C8 PFOA	421.00	> 376.00	3.173	3.180	-0.007	0.998	7271529	2.45	99.9	9438	
D 14 13C4 PFOA	417.00	> 372.00	3.181	3.185	-0.004	1.000	4821820	2.48	99.3	8387	
* 62 13C2 PFOA	415.00	> 370.00	3.181	3.185	-0.004		4930957	2.50		6951	
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.181	3.185	-0.004	0.894	9565336	4.82	Target=3.88	101	5387
	449.00	> 99.00	3.181	3.185	-0.004	0.894	2604917		3.67(1.94-5.82)	101	5419
15 Perfluorooctanoic acid	413.00	> 369.00	3.181	3.185	-0.004	1.000	10158282	4.69	Target=1.68	93.7	1179
	413.00	> 169.00	3.181	3.185	-0.004	1.000	5729172		1.77(0.84-2.52)	93.7	4209
D 72 13C8 PFOS	507.00	> 99.00	3.550	3.559	-0.009	1.116	1923884	2.31	96.6	10133	
D 18 13C4 PFOS	503.00	> 80.00	3.558	3.562	-0.004	1.118	3690547	2.38	99.6	6405	
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.558	3.562	-0.004	1.000	8132457	4.70	Target=4.62	101	5237
	499.00	> 99.00	3.558	3.562	-0.004	1.000	1795334		4.53(2.31-6.93)	101	4132
D 19 13C5 PFNA	468.00	> 423.00	3.565	3.573	-0.008	1.121	4012004	2.48	99.2	13133	
20 Perfluorononanoic acid	463.00	> 419.00	3.565	3.573	-0.008	1.000	8508441	5.04	Target=3.79	101	3935
	463.00	> 169.00	3.565	3.573	-0.008	1.000	2048097		4.15(1.90-5.69)	101	7354
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.763	3.766	-0.003	1.058	13604481	4.64	99.7	20093	

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	3.903	3.910	-0.007	1.097	5808111	4.81	Target=2.65	100	10975	
549.00 > 99.00	3.903	3.910	-0.007	1.097	2037927		2.85(1.33-3.97)	100	5770	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.925	3.928	-0.004	1.234	943788	2.46		103	4069	
D 23 13C2 PFDA										
515.00 > 470.00	3.925	3.929	-0.005	1.234	3790048	2.61		104	12597	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.925	3.929	-0.005	1.000	7260982	4.94	Target=4.73	98.9	4912	
513.00 > 169.00	3.925	3.929	-0.005	1.000	1402889		5.18(2.36-7.09)	98.9	496	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.925	3.930	-0.006	1.000	2477992	4.81		100	9360	
D 21 13C8 FOSA										
506.00 > 78.00	3.940	3.943	-0.003	1.239	5878788	2.55		102	5250	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.940	3.944	-0.004	1.000	10850361	4.92		98.4	1768	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.082	4.092	-0.010	1.283	1990092	2.59		104	4413	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.090	4.096	-0.006	1.002	3639349	4.94		98.9	1287	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.223	4.228	-0.005	1.187	5078014	5.14	Target=2.77	107	11475	
599.00 > 99.00	4.223	4.228	-0.005	1.187	1636067		3.10(1.39-4.16)	107	3712	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.248	4.250	-0.002	1.000	5312027	5.13	Target=4.24	103	4201	
563.00 > 169.00	4.248	4.250	-0.002	1.000	1178719		4.51(2.12-6.36)	103	4919	
D 30 13C2 PFUnA										
565.00 > 520.00	4.248	4.251	-0.003	1.335	2830496	2.46		98.4	7157	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.248	4.253	-0.005	1.335	2018360	2.50		100	3536	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.256	4.260	-0.004	1.002	3445041	4.99		99.9	6992	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.387	4.393	-0.006	1.233	19934562	4.55		96.7	28382	
35 MeFOSA										
512.00 > 169.00	4.439	4.450	-0.011		3520762	NC			623	
D 36 13C2 PFDoA										
615.00 > 570.00	4.536	4.536	0.0	1.426	2902486	2.45		98.0	5718	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.536	4.537	-0.001	1.000	5893515	4.77	Target=4.27	95.3	5091	
613.00 > 169.00	4.536	4.537	-0.001	1.000	1515232		3.89(2.13-6.40)	95.3	4233	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.552	4.552	0.0	1.160	1697894	4.84		100	9452	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.626	4.628	-0.002		3576296	NC			544	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.759	4.766	-0.007	1.338	2193633	5.04	Target=0.00	104	4485	
699.00 > 99.00	4.759	4.766	-0.007	1.338	3264425		0.67(0.00-0.00)	104	11715	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.796	4.798	-0.002	1.057	6191846	5.27	Target=2.51	105	4670	
663.00 > 169.00	4.796	4.798	-0.002	1.057	1938991		3.19(1.25-3.76)	105	12230	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.030	5.036	-0.006	1.581	3505989	2.55		102	7402	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.030	5.036	-0.006	1.000	1804130	5.08	Target=1.42	102	6999	
713.00 > 219.00	5.030	5.036	-0.006	1.000	1271847		1.42(0.71-2.13)	102	1888	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.466	5.465	0.001	1.718	6105593	2.52		101	11108	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.466	5.467	-0.001	1.000	10943142	5.09	Target=5.72	102	1012	
813.00 > 169.00	5.466	5.467	-0.001	1.000	2019332		5.42(2.86-8.58)	102	6731	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.884	5.885	-0.001	1.076	14549840	5.13	Target=7.65	103	1288	
913.00 > 169.00	5.884	5.885	-0.001	1.076	1946016		7.48(3.83-11.48)	103	5544	

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\A8_N\20181207-68828.b\2018.12.07ICAL_010.d

Injection Date: 08-Dec-2018 05:54:22

Instrument ID: A8_N

Lims ID: IC L6 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 7

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

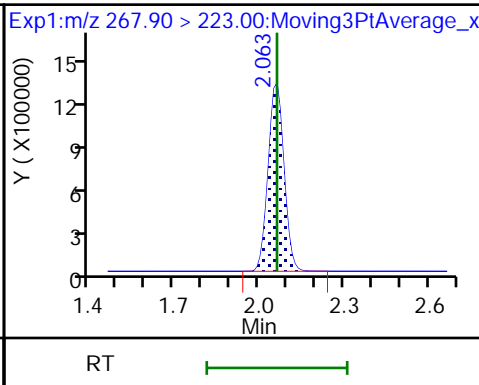
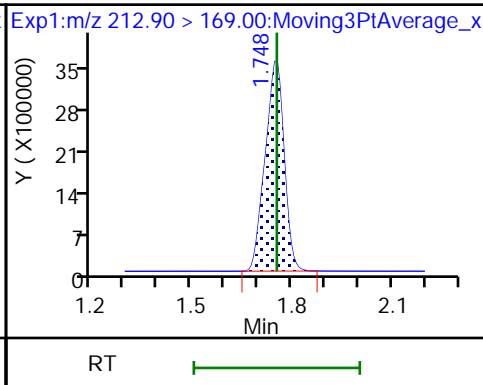
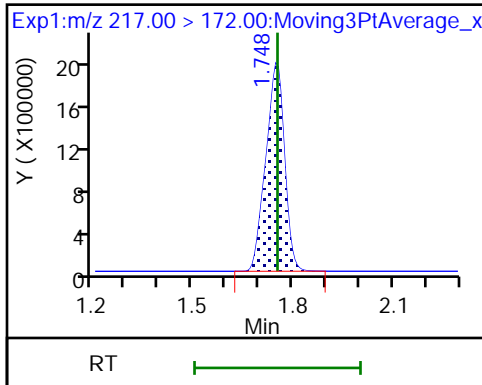
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

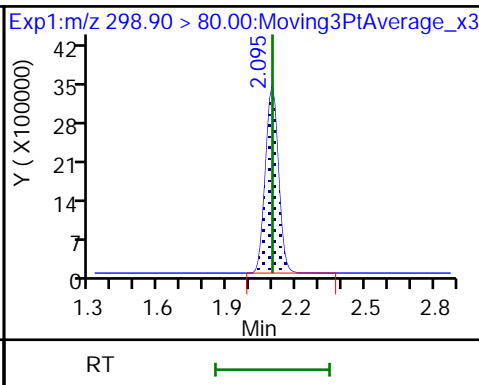
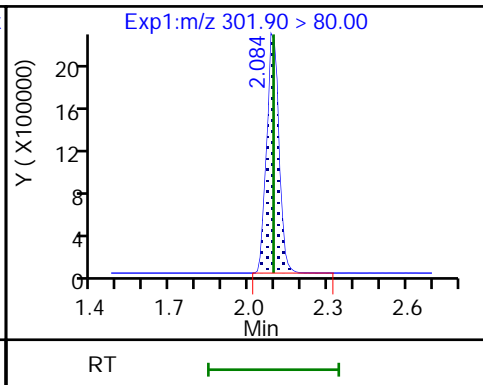
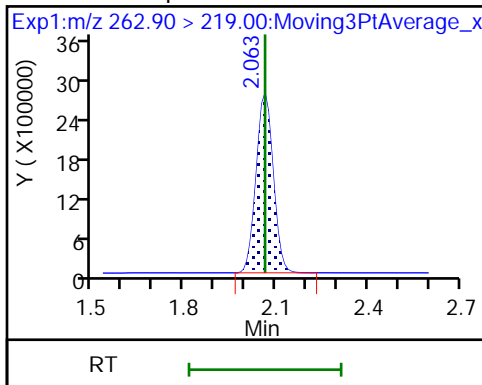
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

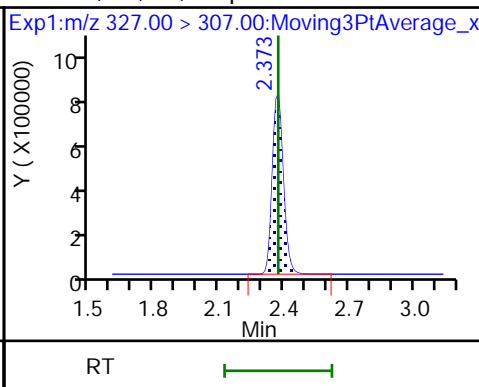
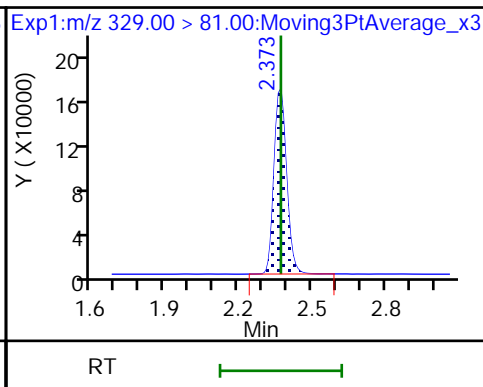
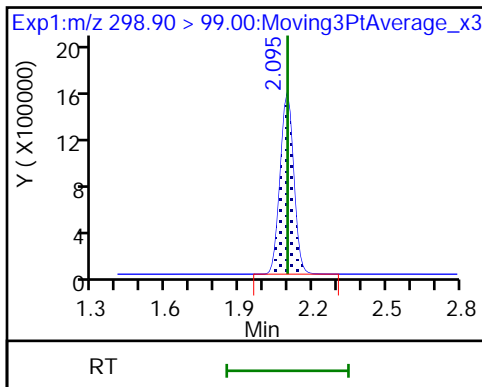
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

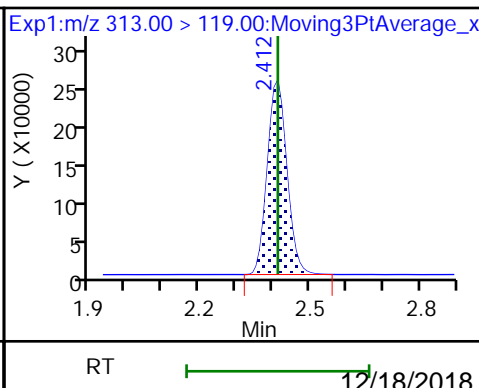
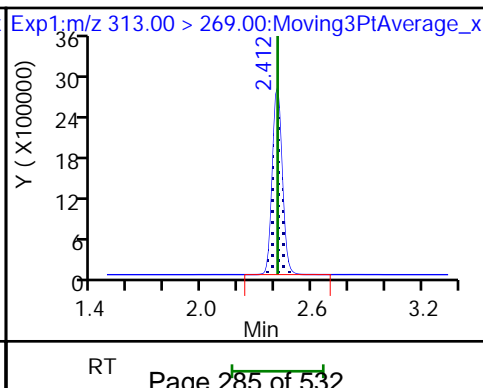
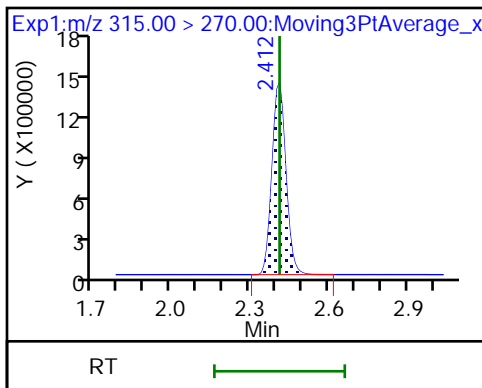
61 1H,1H,2H,2H-perfluorohexanesulfoni

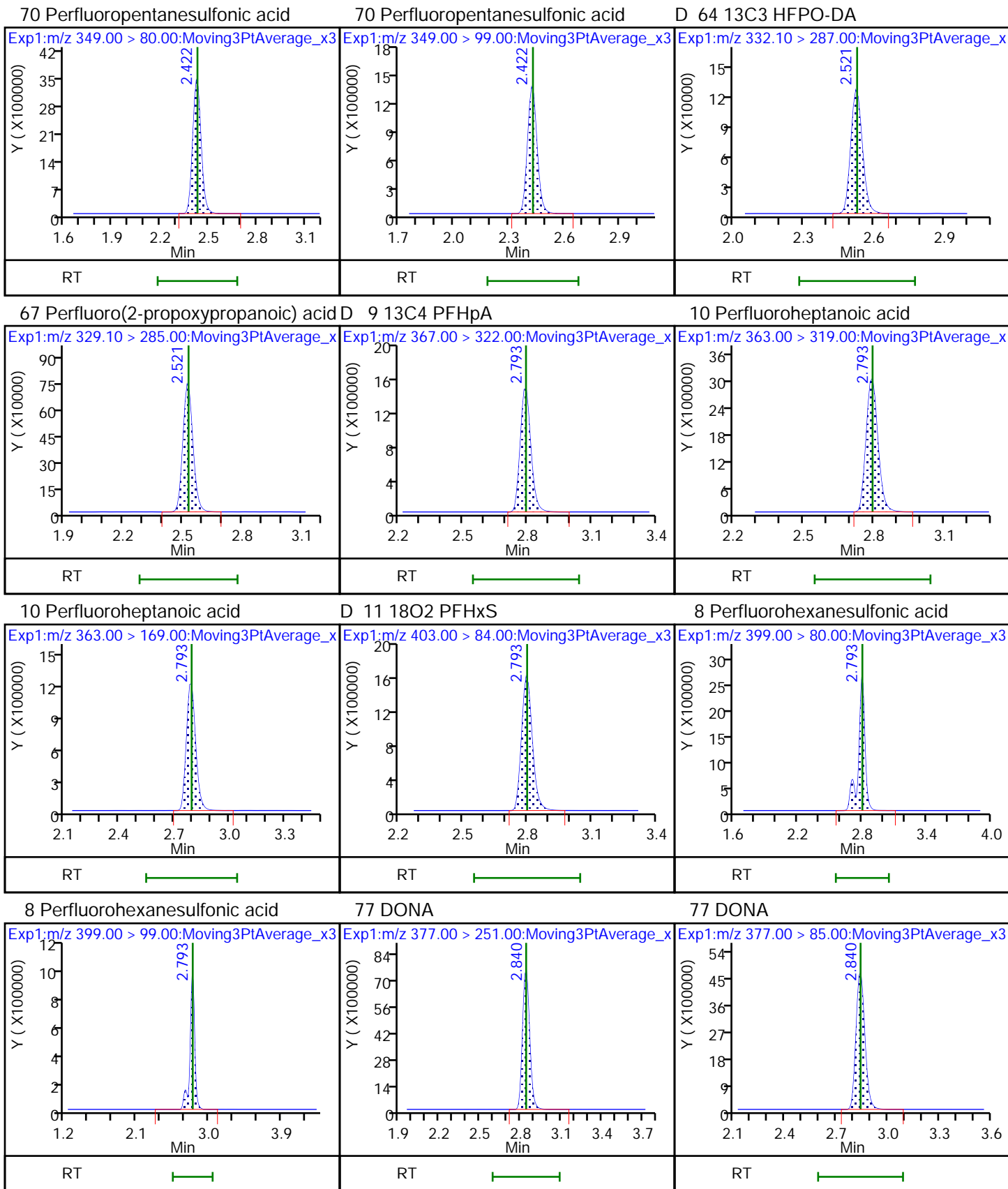


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

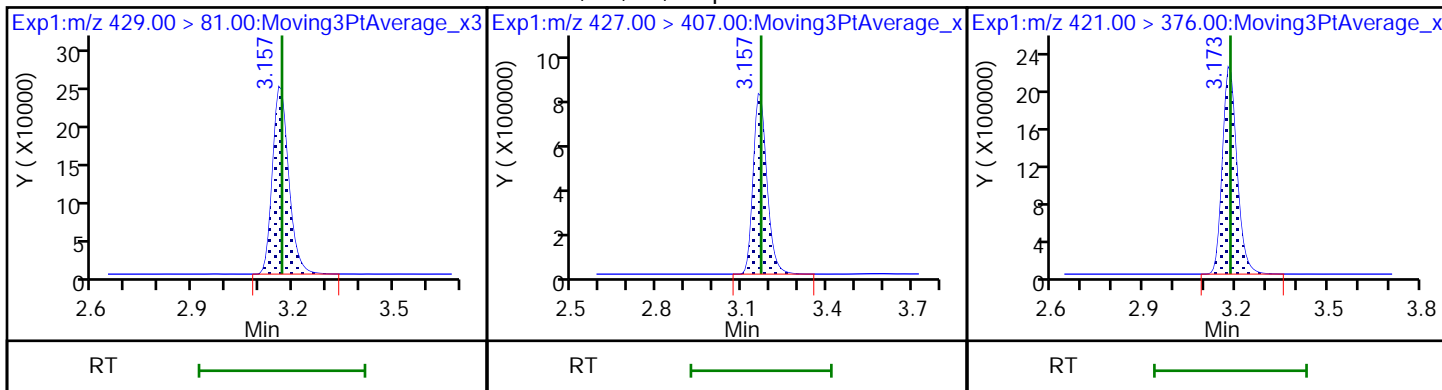
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

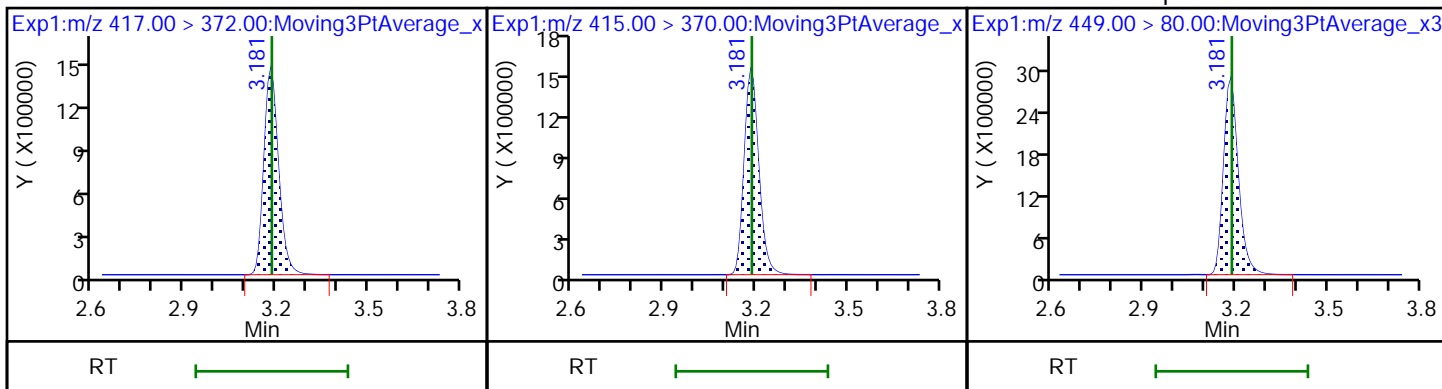
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

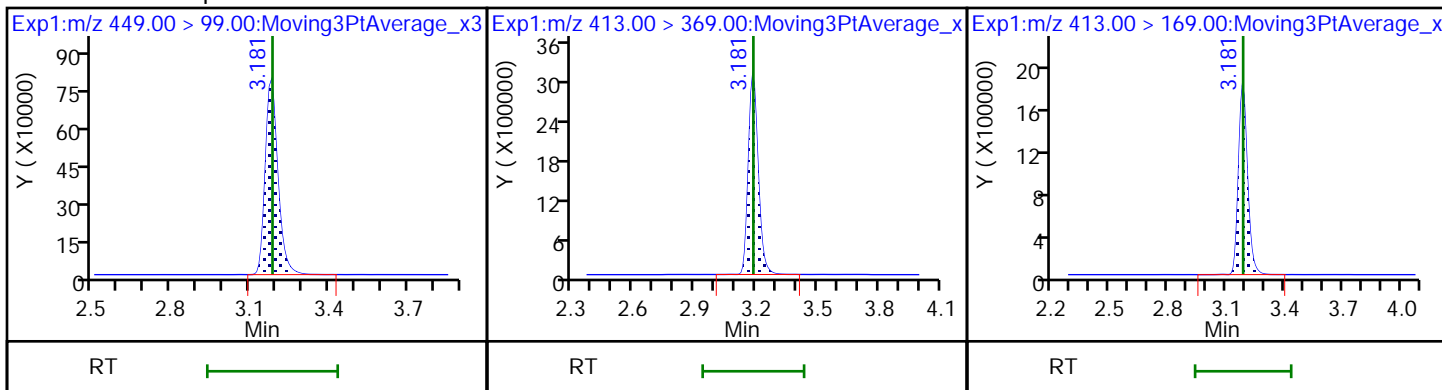
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

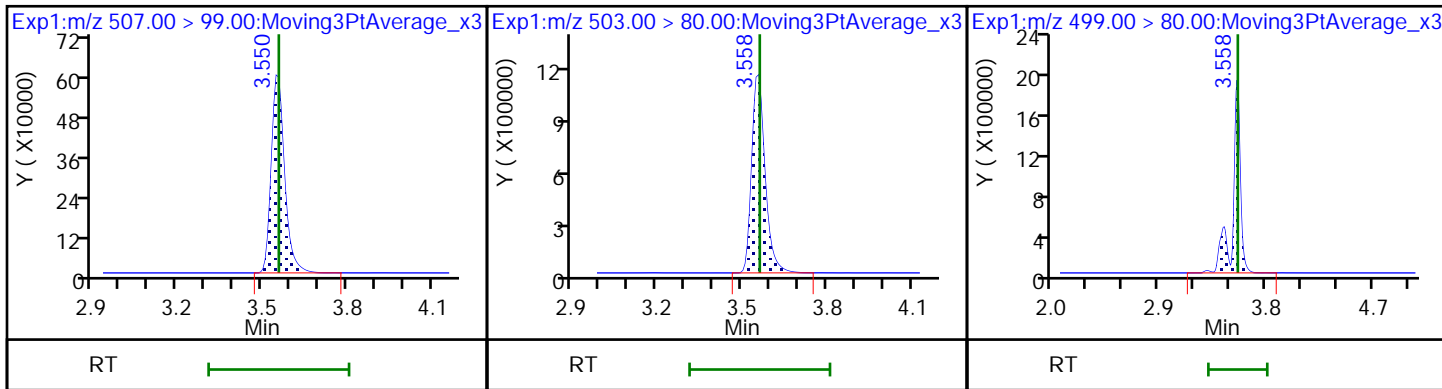
15 Perfluorooctanoic acid

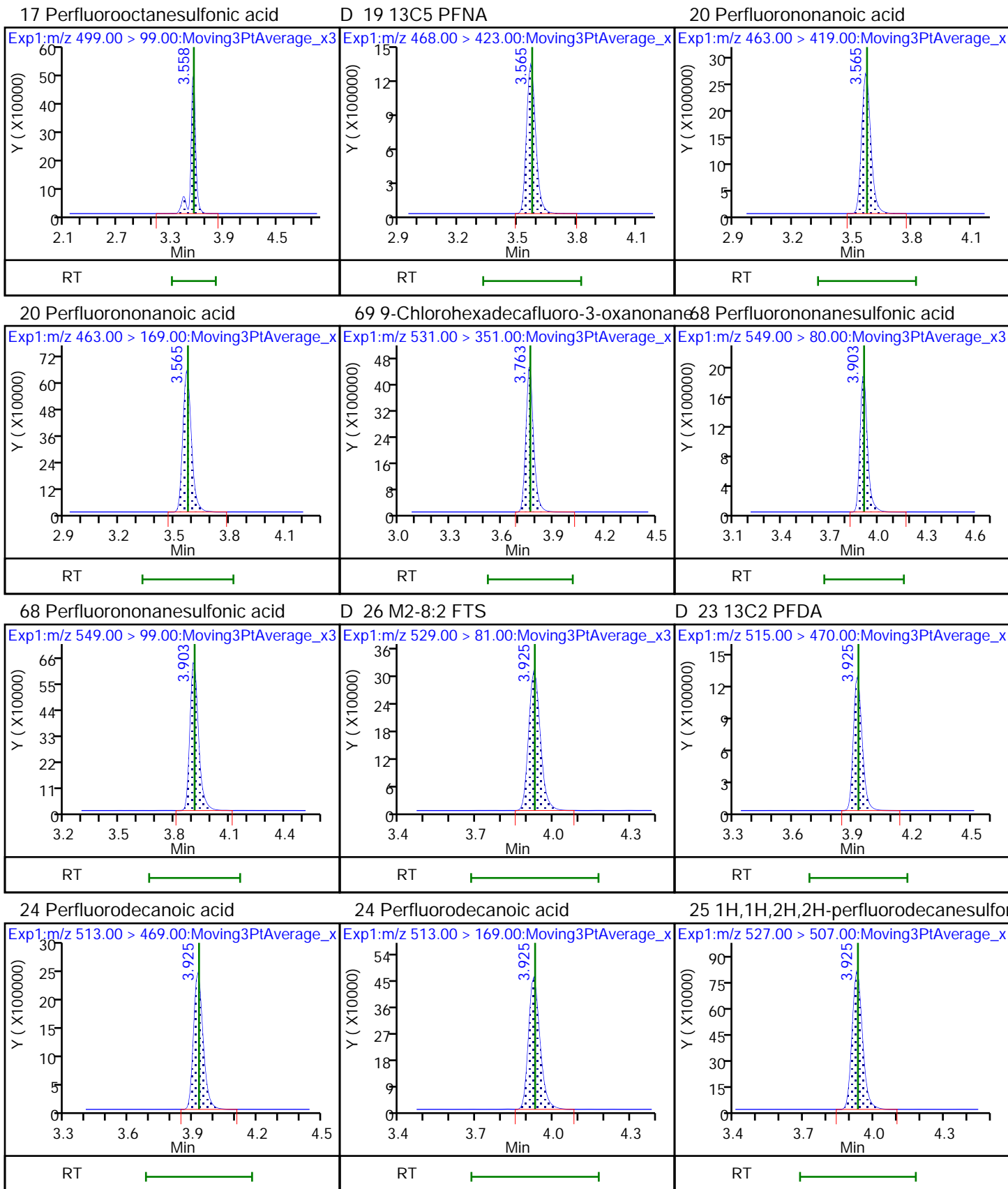


D 72 13C8 PFOS

D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid

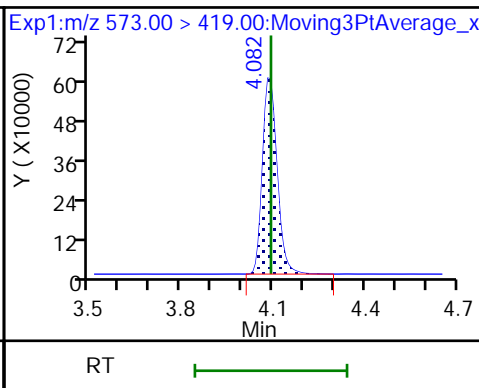
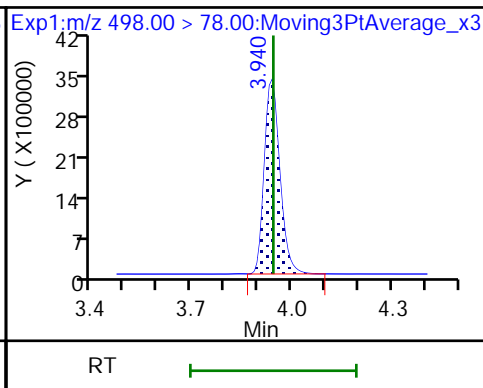
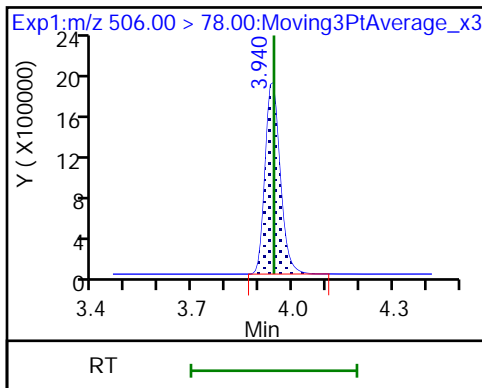




D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

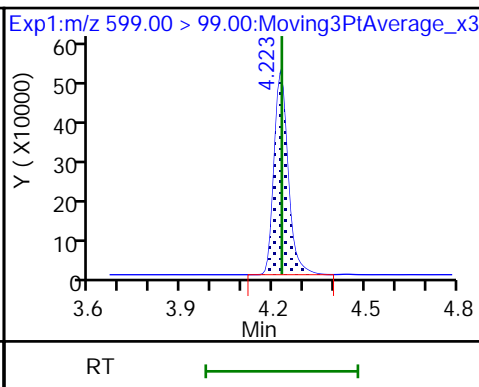
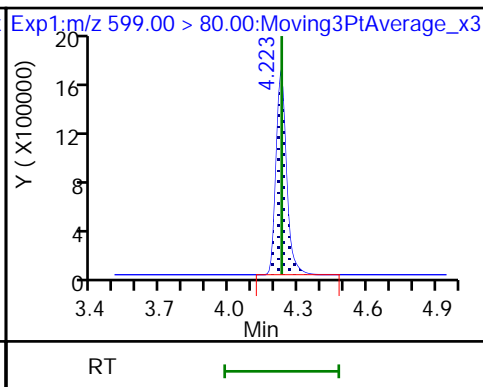
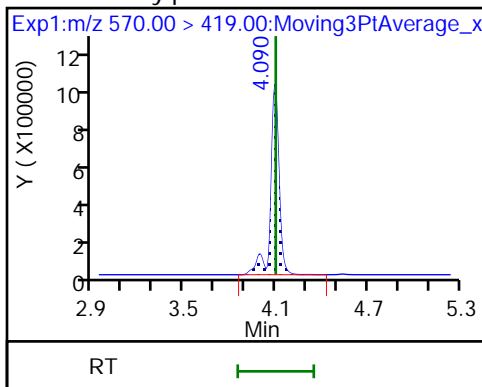
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

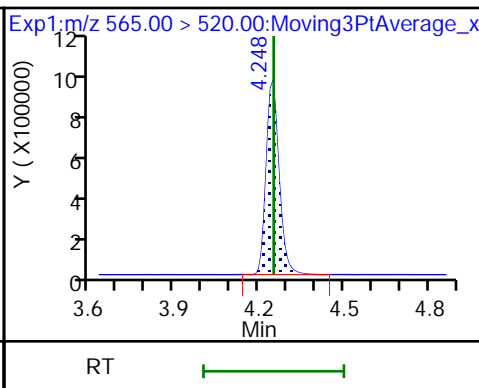
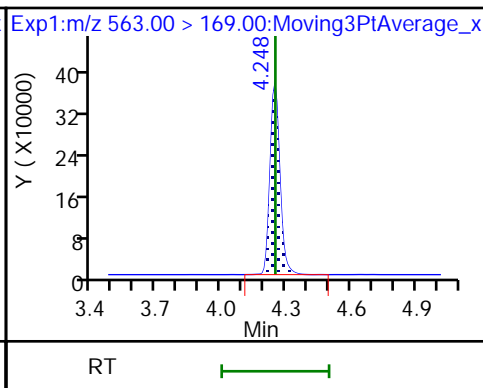
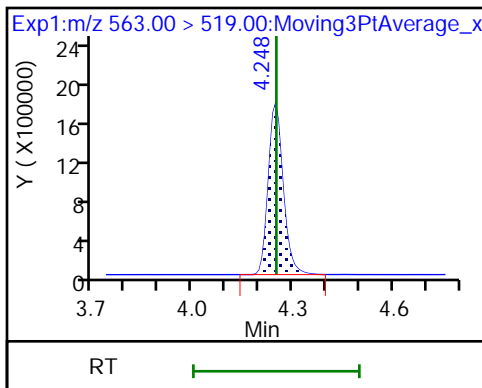
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

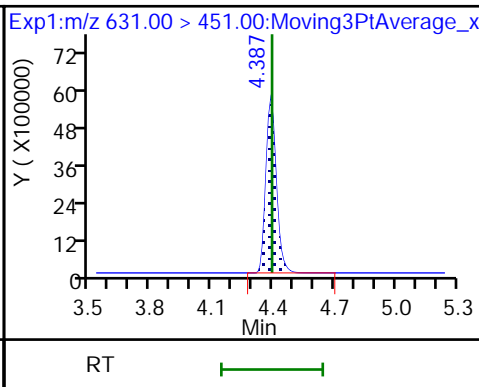
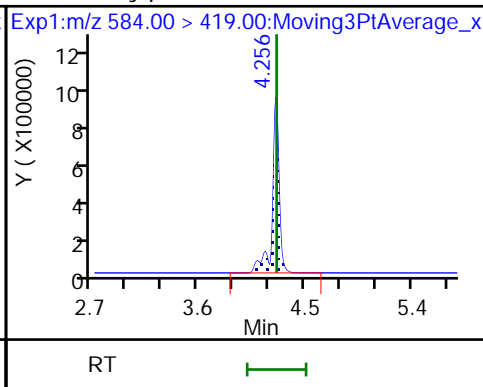
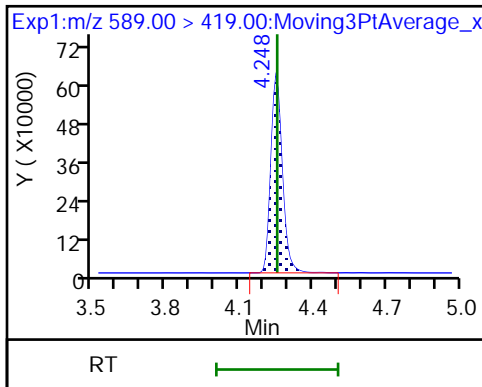
D 30 13C2 PFUnA



D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

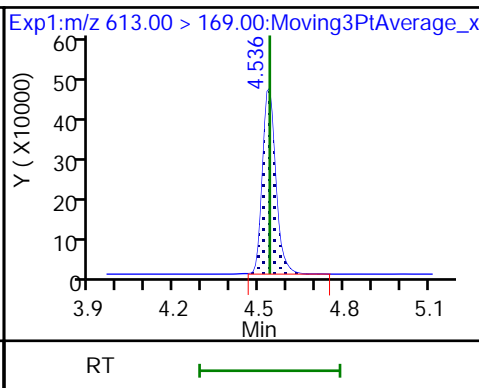
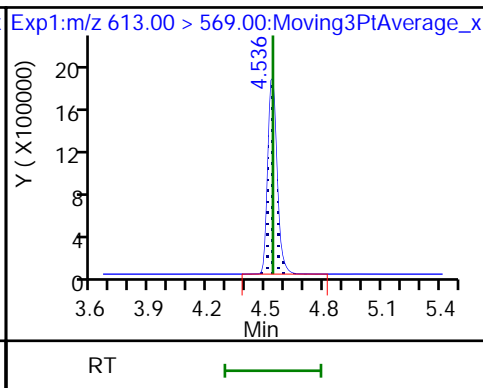
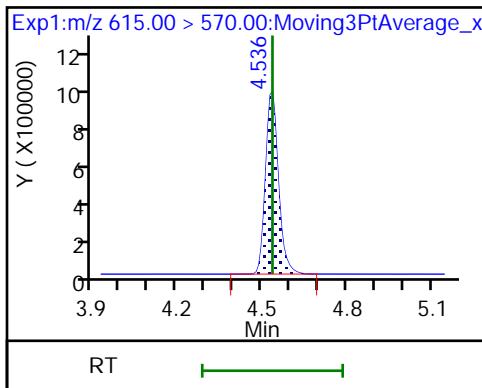
66 11-Chloroeicosafuoro-3-oxaundecan



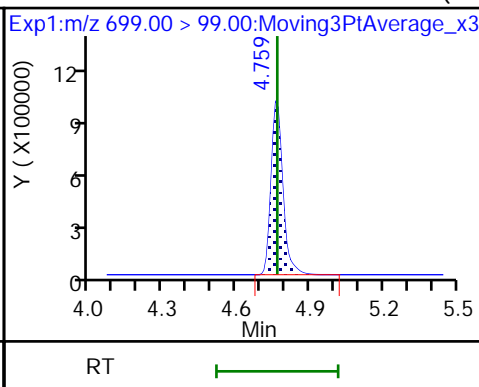
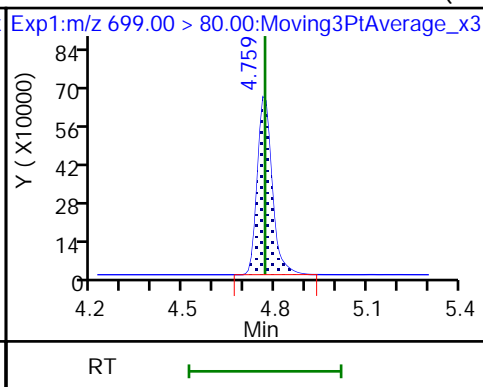
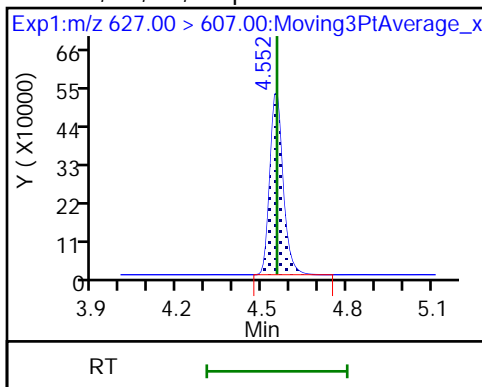
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



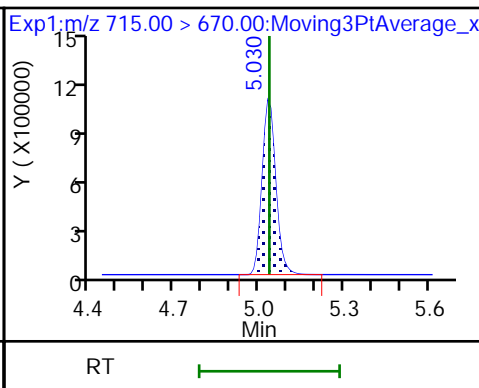
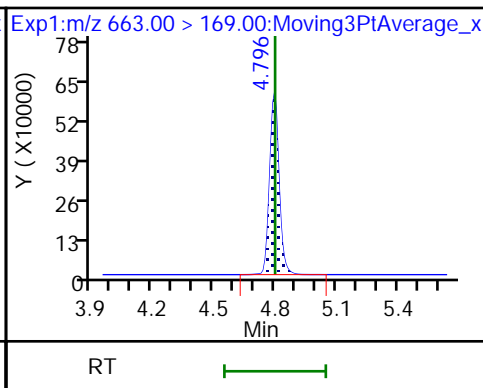
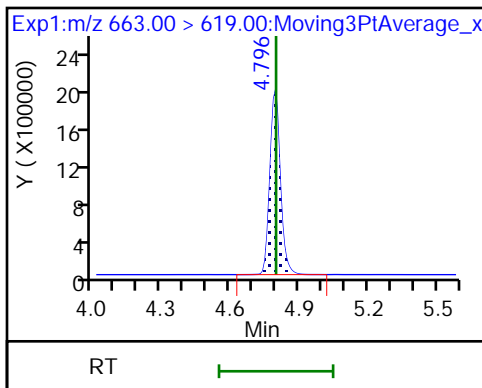
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

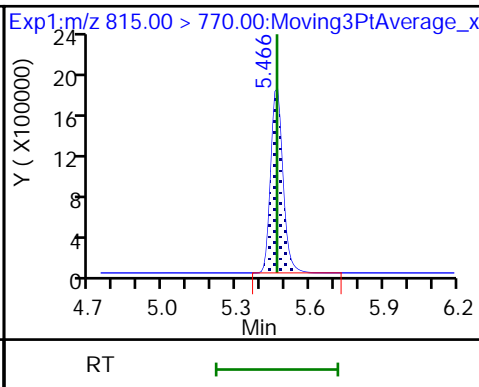
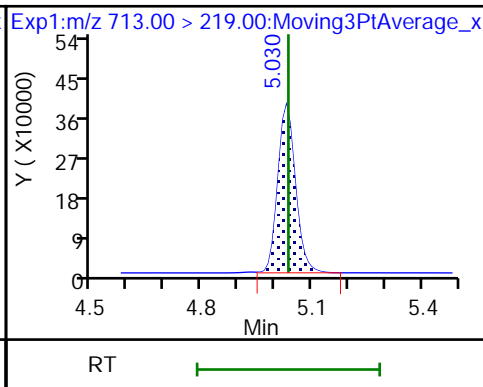
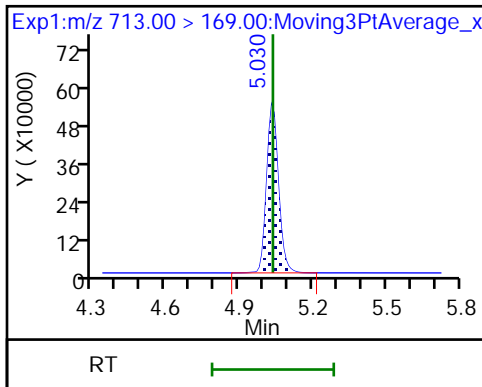
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

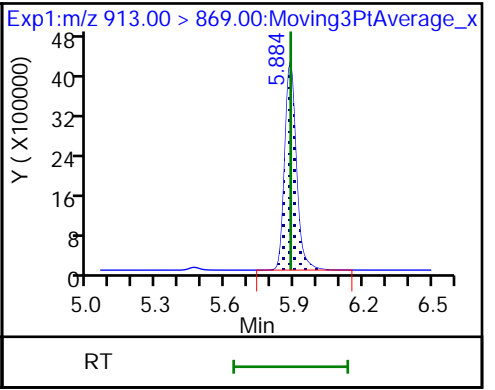
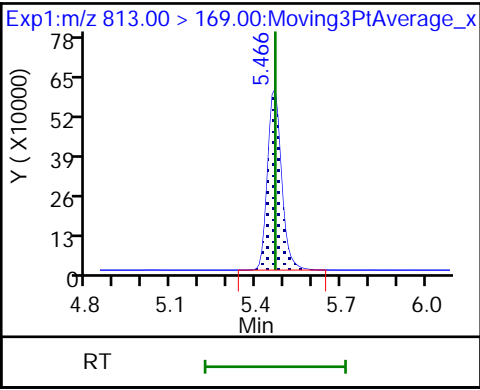
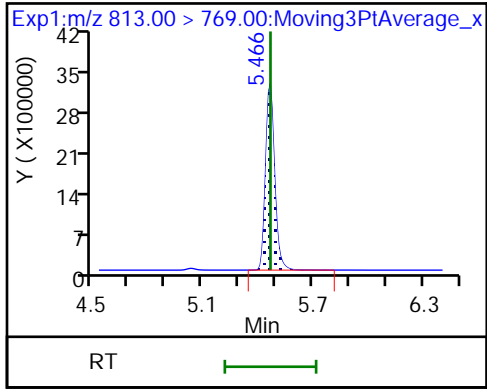
D 44 13C2 PFHxDA



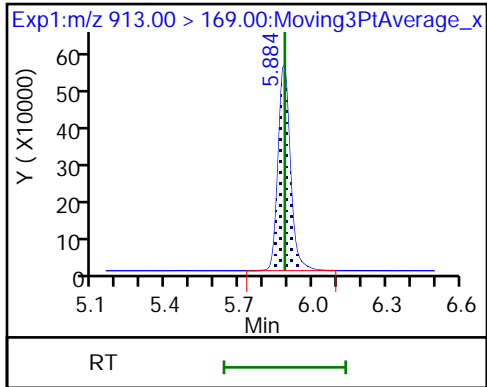
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d
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 Client ID:
 Sample Type: IC Calib Level: 7
 Inject. Date: 08-Dec-2018 06:01:52 ALS Bottle#: 16 Worklist Smp#: 8
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: IC STD 7
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 08-Dec-2018 10:20:05 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0329

First Level Reviewer: phomsophat Date: 08-Dec-2018 09:52:29

Ratio Calibration: None

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	1.748	1.753	-0.005	0.549	7185819	2.58	103	6081	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.754	0.001	1.004	25337129	9.65	96.5	3684	
D 3 13C5 PFPeA	267.90 > 223.00	2.062	2.063	-0.001	0.647	4609410	2.53	101	6169	
4 Perfluoropentanoic acid	262.90 > 219.00	2.062	2.063	-0.001	1.000	20010869	9.91	99.1	1418	
D 47 13C3 PFBS	301.90 > 80.00	2.094	2.093	0.001	0.657	6913885	2.45	105	484343	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.096	-0.002	1.000	23143967	7.88	Target=2.49	89.2	19611
	298.90 > 99.00	2.094	2.096	-0.002	1.000	10742738		2.15(1.25-3.74)	89.2	8269
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.745	580268	2.50	107	1636	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.372	0.0	1.133	5052888	8.98	96.1	12617	
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.412	0.0	0.757	4684854	2.46	98.3	6352	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.412	0.0	1.000	18543964	9.78	Target=10.07	97.8	4988
	313.00 > 119.00	2.412	2.412	0.0	1.000	1803450		10.28(5.03-15.10)	97.8	3734
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.432	2.429	0.003	1.161	21241019	8.26	Target=2.71	88.1	11207
	349.00 > 99.00	2.422	2.429	-0.007	1.156	9008884		2.36(1.36-4.07)	88.1	10009
D 64 13C3 HFPO-DA	332.10 > 287.00	2.531	2.527	0.004	0.794	352158	2.56	102	1556	

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	2.531	2.528	0.003	1.000	5141360	10.9	109	3122	
D 9 13C4 PFHpA	367.00	> 322.00	2.789	2.792	-0.003	0.876	4489560	2.45	98.2	7256	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.789	2.793	-0.004	1.000	18687199	9.22	Target=2.27	92.2	4558
	363.00	> 169.00	2.789	2.793	-0.004	1.000	8050160		2.32(1.13-3.40)	92.2	5921
D 11 18O2 PFHxS	403.00	> 84.00	2.799	2.797	0.002	0.879	5126377	2.33		98.4	5983
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.799	2.799	0.0	1.000	19445678	8.45	Target=3.00	92.8	5804
	399.00	> 99.00	2.799	2.799	0.0	1.000	7031534		2.77(1.50-4.49)	92.8	5147
77 DONA	377.00	> 251.00	2.836	2.839	-0.003	0.796	42422451	7.58	Target=1.69	80.4	11896
	377.00	> 85.00	2.836	2.839	-0.003	0.796	28573978		1.48(0.85-2.54)	80.4	13556
D 12 M2-6:2 FTS	429.00	> 81.00	3.162	3.167	-0.005	0.993	792328	2.40		101	3980
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.162	3.167	-0.005	1.000	4916435	9.47		99.9	2262
D 73 13C8 PFOA	421.00	> 376.00	3.178	3.180	-0.002	0.997	7131649	2.56		105	10667
D 14 13C4 PFOA	417.00	> 372.00	3.186	3.185	0.001	1.000	4645140	2.55		102	9393
* 62 13C2 PFOA	415.00	> 370.00	3.186	3.185	0.001		4621311	2.50			8888
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.186	3.185	0.001	0.894	17007871	9.24	Target=3.88	97.1	6041
	449.00	> 99.00	3.186	3.185	0.001	0.894	4994444		3.41(1.94-5.82)	97.1	5362
15 Perfluorooctanoic acid	413.00	> 369.00	3.186	3.185	0.001	1.000	19048878	9.13	Target=1.68	91.2	1858
	413.00	> 169.00	3.186	3.185	0.001	1.000	10780164		1.77(0.84-2.52)	91.2	7032
D 72 13C8 PFOS	507.00	> 99.00	3.556	3.559	-0.003	1.116	1884210	2.41		101	5175
D 18 13C4 PFOS	503.00	> 80.00	3.564	3.562	0.002	1.119	3420592	2.35		98.5	4541
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.564	3.562	0.002	1.000	15178857	9.46	Target=4.62	102	6618
	499.00	> 99.00	3.564	3.562	0.002	1.000	3323100		4.57(2.31-6.93)	102	3368
D 19 13C5 PFNA	468.00	> 423.00	3.572	3.573	-0.001	1.121	3959575	2.61		105	9340
20 Perfluorononanoic acid	463.00	> 419.00	3.572	3.573	-0.001	1.000	15826170	9.49	Target=3.79	94.9	7083
	463.00	> 169.00	3.572	3.573	-0.001	1.000	3952958		4.00(1.90-5.69)	94.9	8236
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.767	3.766	0.001	1.057	25093428	9.24		99.2	19440

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	3.908	3.910	-0.002	1.097	11370348	10.2	Target=2.65	106	10134	
549.00 > 99.00	3.908	3.910	-0.002	1.097	4130863		2.75(1.33-3.97)	106	10417	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.931	3.928	0.003	1.234	904430	2.51		105	5301	
D 23 13C2 PFDA										
515.00 > 470.00	3.931	3.929	0.002	1.234	3385143	2.49		99.5	9042	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.931	3.929	0.002	1.000	13575847	10.4	Target=4.73	104	8341	
513.00 > 169.00	3.931	3.929	0.002	1.000	2584972		5.25(2.36-7.09)	104	457	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.931	3.930	0.001	1.000	4603116	9.32		97.3	11510	
D 21 13C8 FOSA										
506.00 > 78.00	3.947	3.943	0.004	1.239	5366514	2.48		99.2	6240	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.947	3.944	0.003	1.000	19798058	9.84		98.4	2396	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.098	4.092	0.006	1.286	1832735	2.54		102	4882	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.098	4.096	0.002	1.000	7262923	10.7		107	2866	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.230	4.228	0.002	1.187	9293520	10.2	Target=2.77	105	17123	
599.00 > 99.00	4.230	4.228	0.002	1.187	3065118		3.03(1.39-4.16)	105	9879	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.255	4.250	0.005	1.000	9634066	9.46	Target=4.24	94.6	7945	
563.00 > 169.00	4.255	4.250	0.005	1.000	2263345		4.26(2.12-6.36)	94.6	3830	
D 30 13C2 PFUnA										
565.00 > 520.00	4.255	4.251	0.004	1.336	2787447	2.58		103	6720	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.255	4.253	0.002	1.336	1882597	2.49		99.5	2873	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.263	4.260	0.003	1.002	6537164	10.2		102	4042	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.397	4.393	0.004	1.234	34121646	8.41		89.3	23885	
35 MeFOSA										
512.00 > 169.00	4.449	4.450	-0.001		7119608	NC			670	
D 36 13C2 PFDoA										
615.00 > 570.00	4.536	4.536	0.0	1.424	2908000	2.62		105	6108	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.536	4.537	-0.001	1.000	11946248	9.64	Target=4.27	96.4	7779	
613.00 > 169.00	4.536	4.537	-0.001	1.000	3070615		3.89(2.13-6.40)	96.4	8480	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.552	4.552	0.0	1.158	3397238	10.1		105	9794	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.626	4.628	-0.002		6894357	NC			552	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.768	4.766	0.002	1.338	4105878	10.2	Target=0.00	105	18353	
699.00 > 99.00	4.768	4.766	0.002	1.338	6062149		0.68(0.00-0.00)	105	21491	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.804	4.798	0.006	1.059	11953632	10.2	Target=2.51	102	8099	
663.00 > 169.00	4.804	4.798	0.006	1.059	3897247		3.07(1.25-3.76)	102	14287	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.041	5.036	0.005	1.583	3275425	2.54		102	5850	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.041	5.036	0.005	1.000	3302713	9.96	Target=1.42	99.6	8608	
713.00 > 219.00	5.031	5.036	-0.005	0.998	2376708		1.39(0.71-2.13)	99.6	2228	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.468	5.465	0.003	1.716	5766093	2.54		102	8450	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.468	5.467	0.001	1.000	19113106	9.44	Target=5.72	94.4	1786	
813.00 > 169.00	5.468	5.467	0.001	1.000	3831543		4.99(2.86-8.58)	94.4	9752	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.885	5.885	0.0	1.076	26509405	9.89	Target=7.65	98.9	2087	
913.00 > 169.00	5.885	5.885	0.0	1.076	3837178		6.91(3.83-11.48)	98.9	6990	

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\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Injection Date: 08-Dec-2018 06:01:52

Instrument ID: A8_N

Lims ID: IC L7 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 8

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

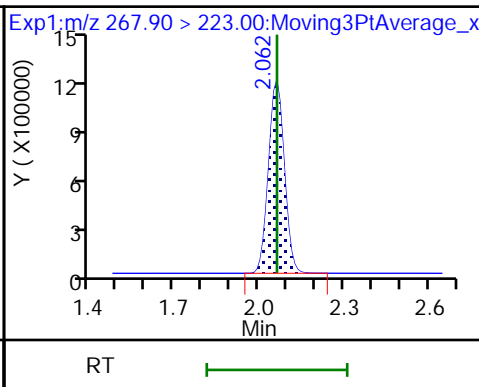
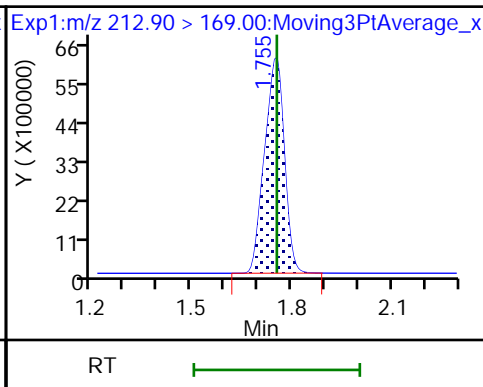
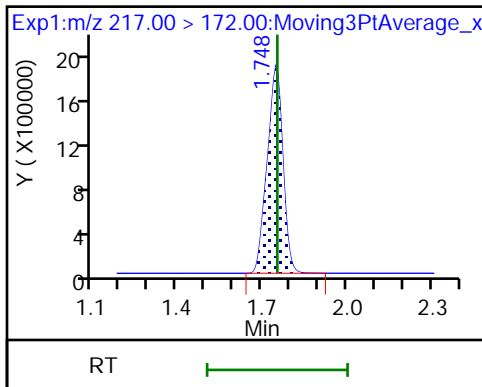
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

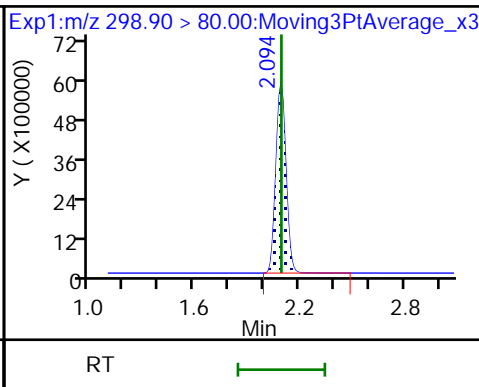
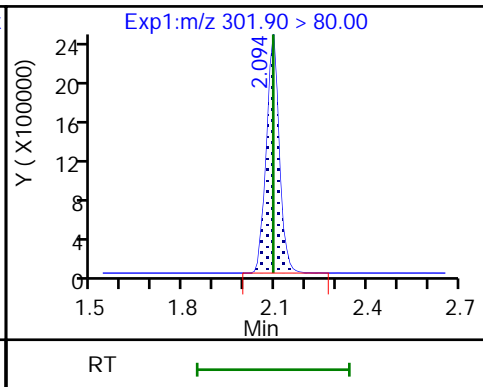
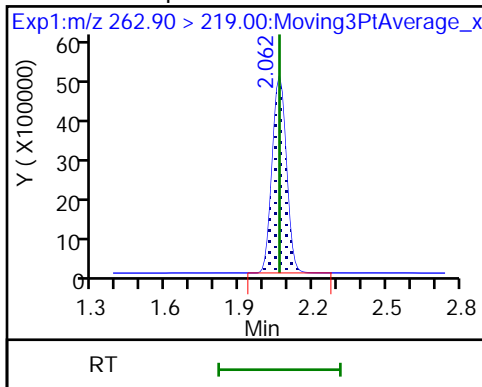
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

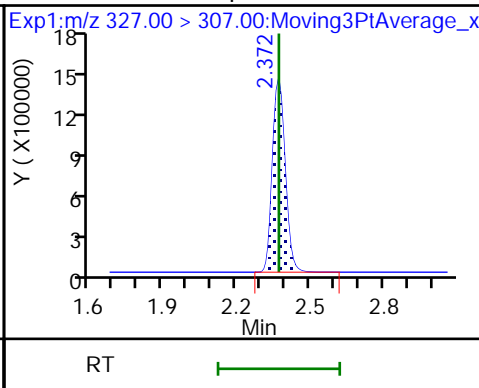
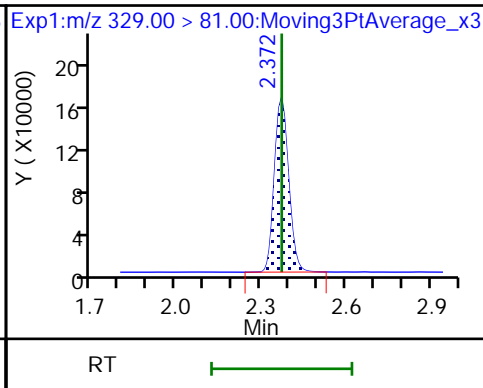
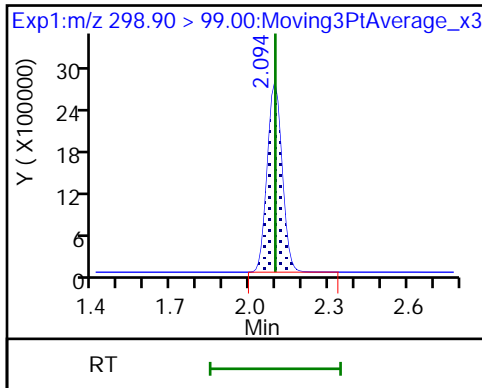
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

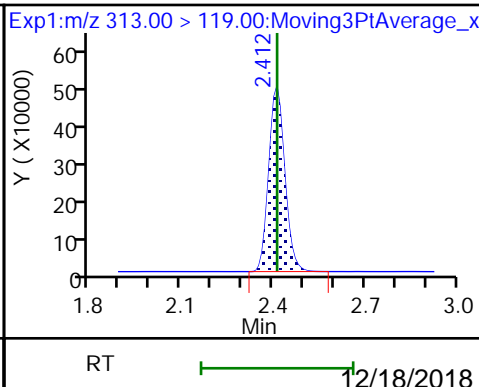
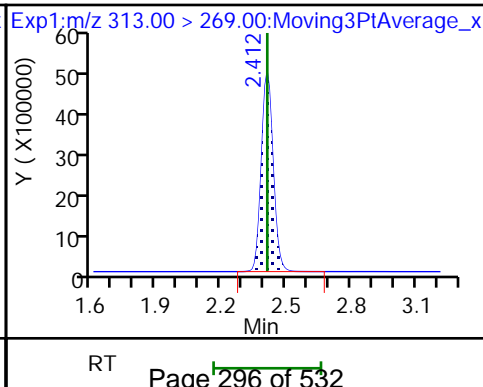
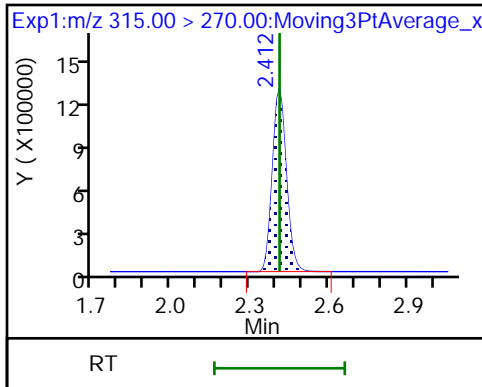
61 1H,1H,2H,2H-perfluorohexanesulfoni

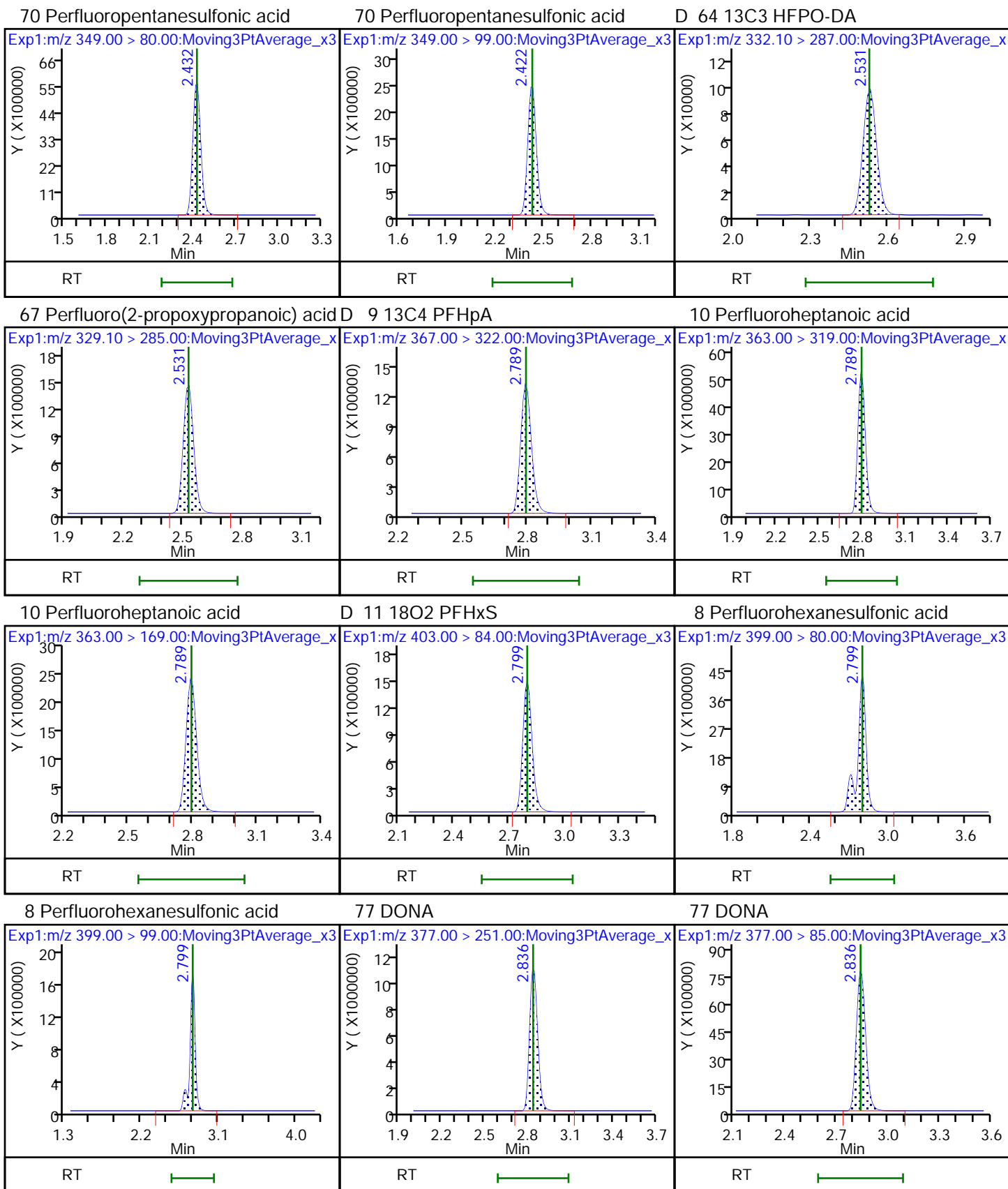


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

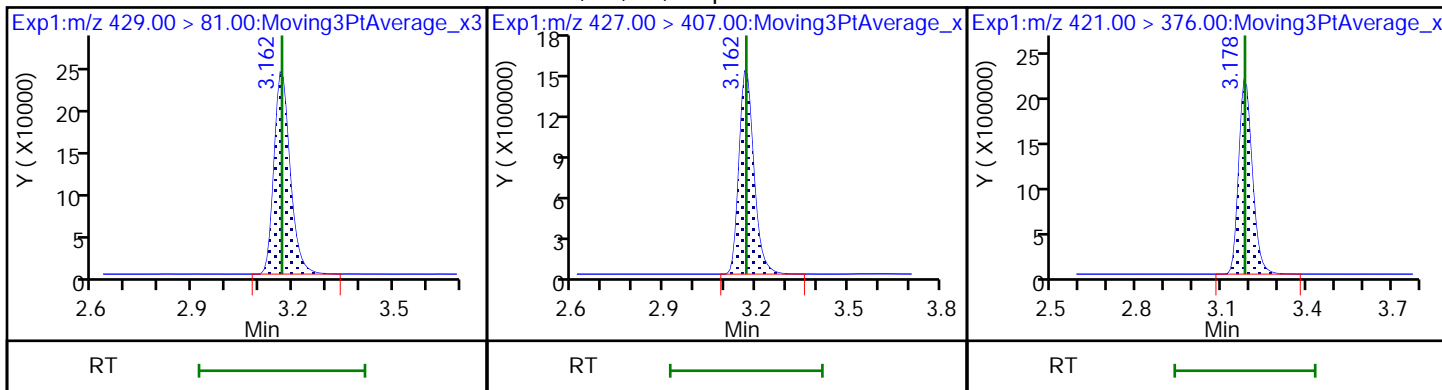
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

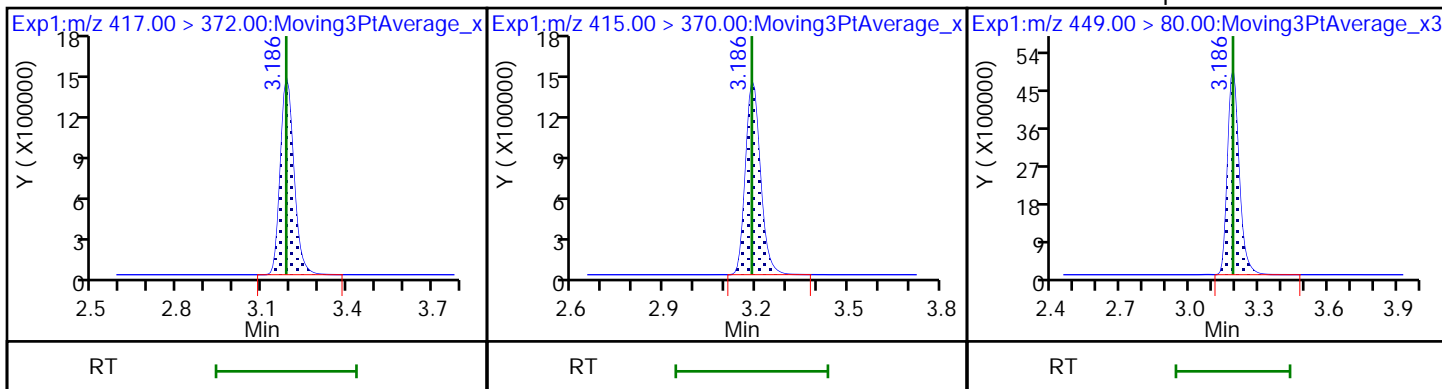
13 1H,1H,2H,2H-perfluorooctanesulfoD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

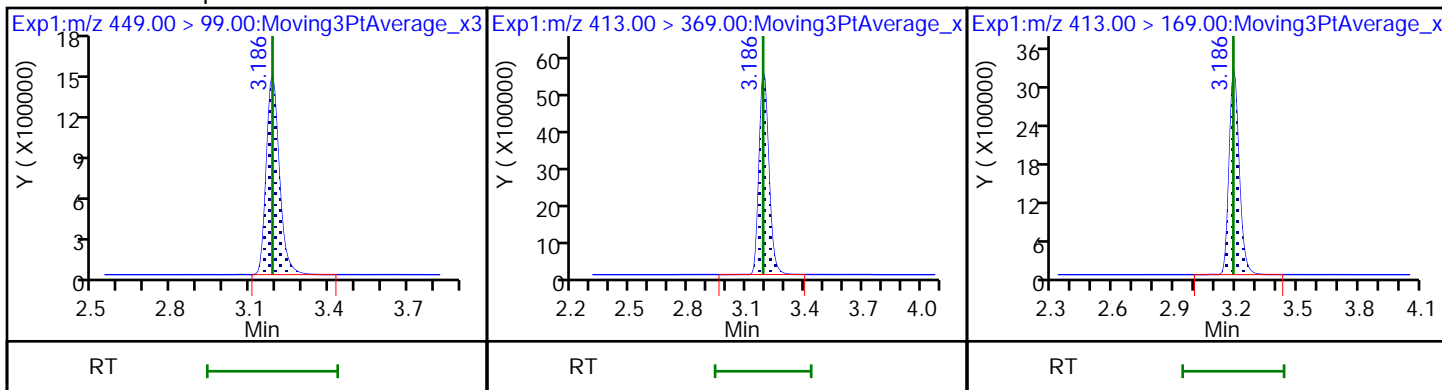
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

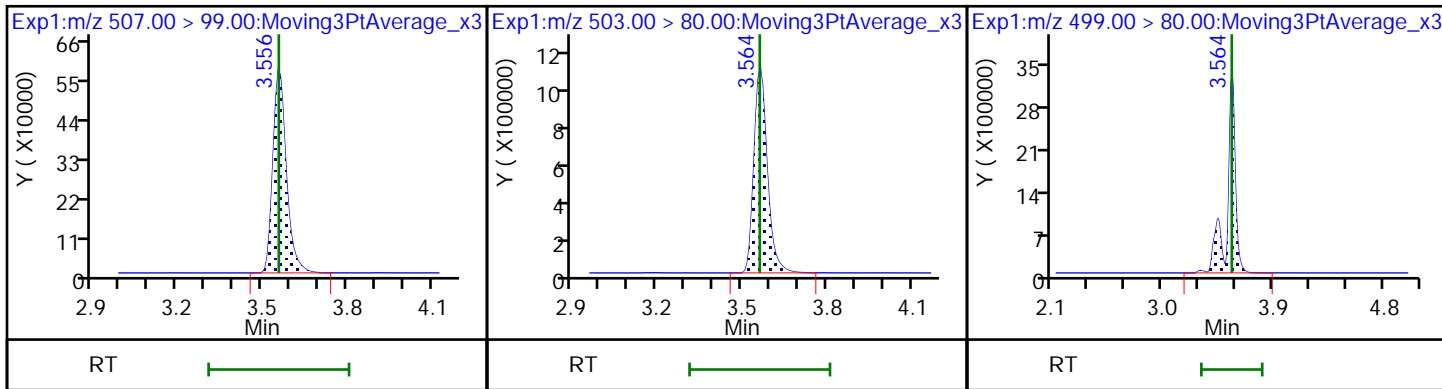
15 Perfluorooctanoic acid

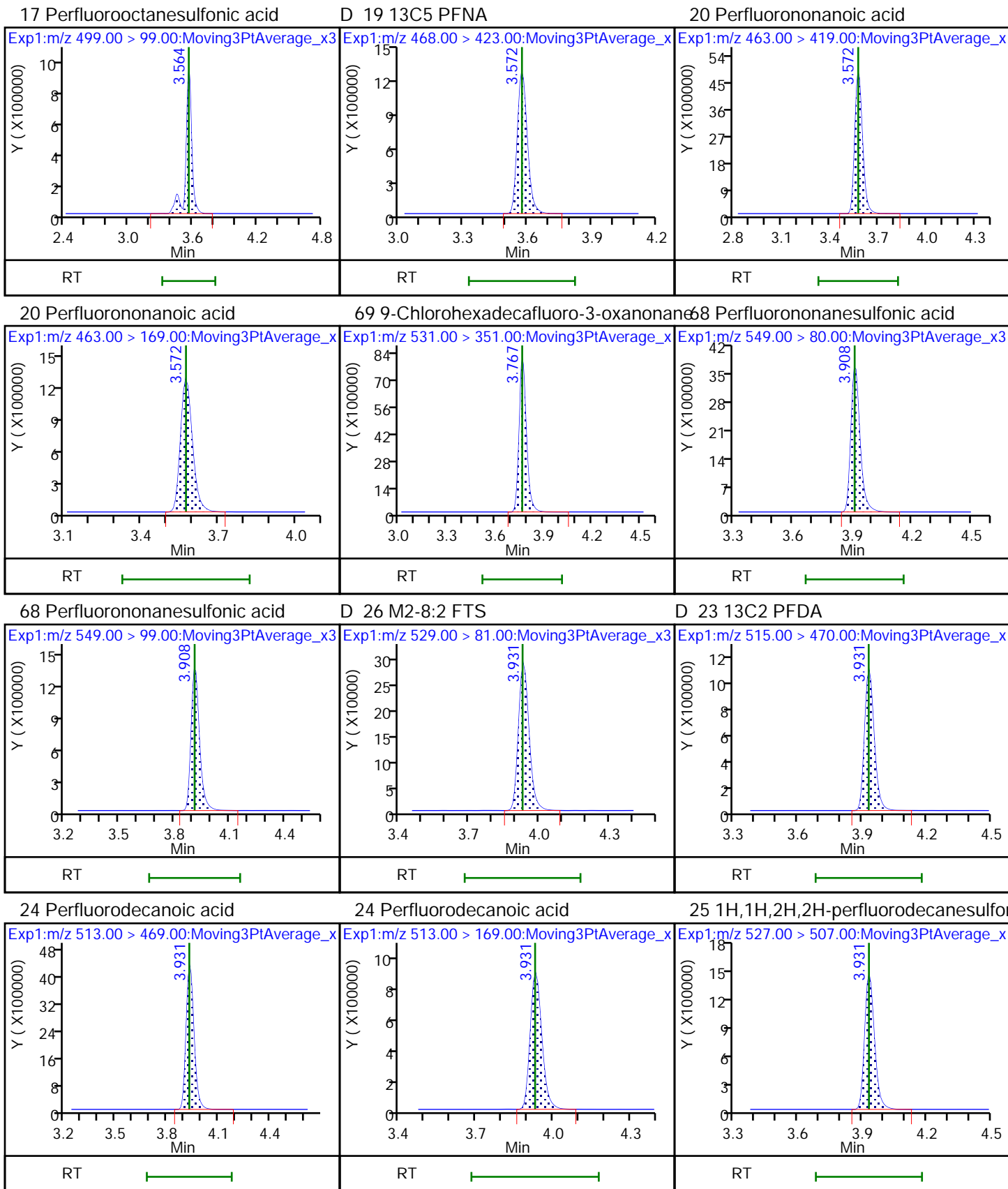


D 72 13C8 PFOS

D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid

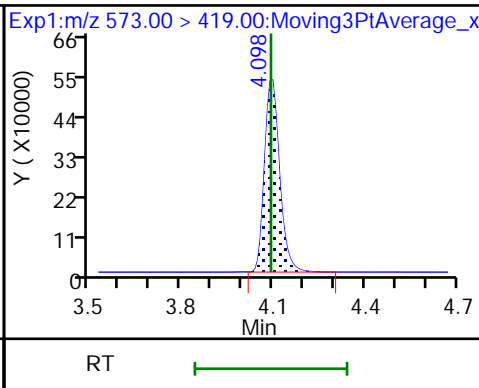
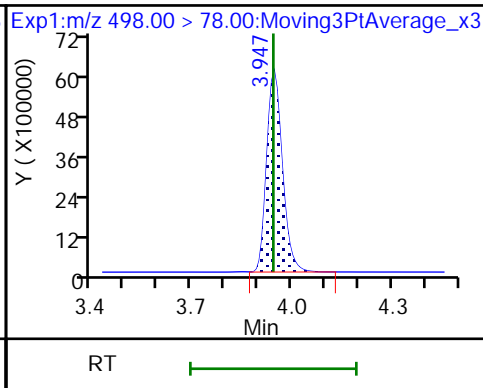
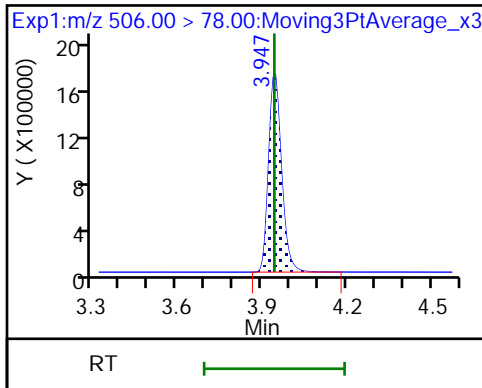




D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

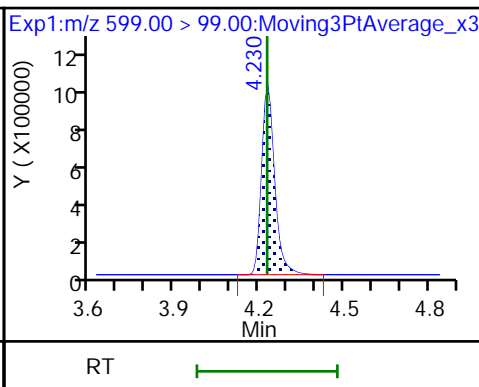
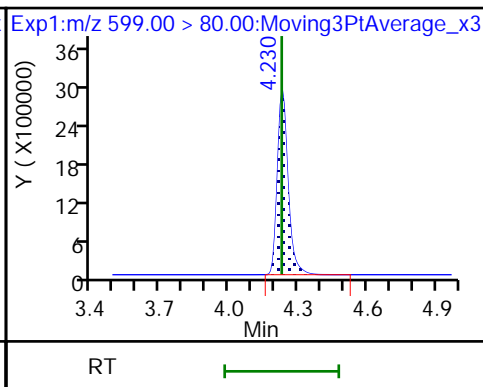
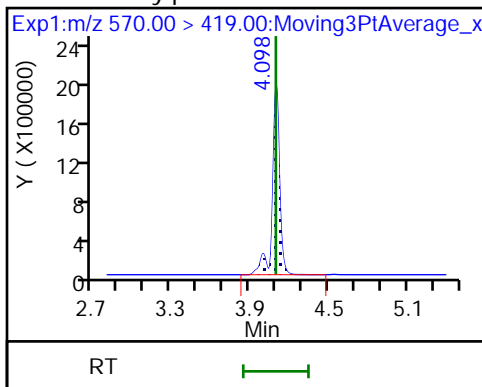
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

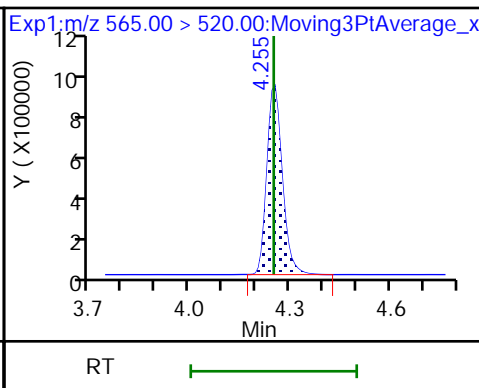
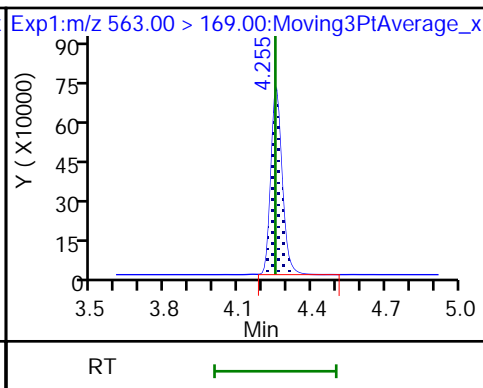
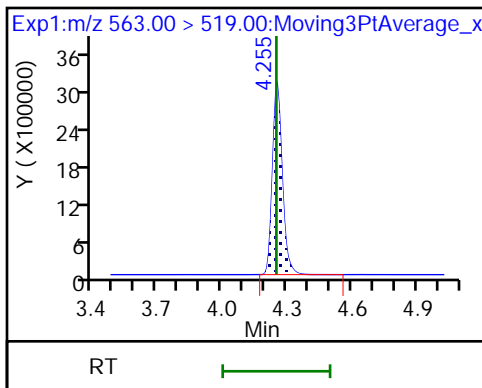
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

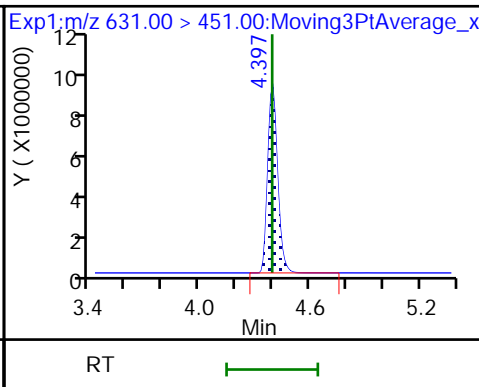
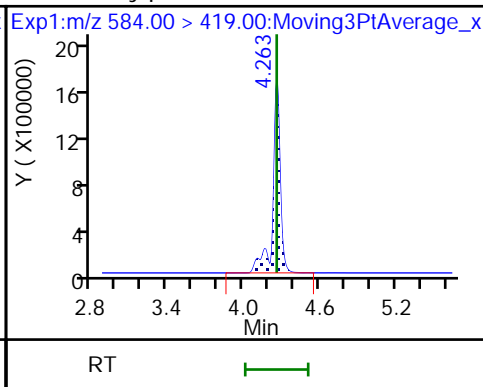
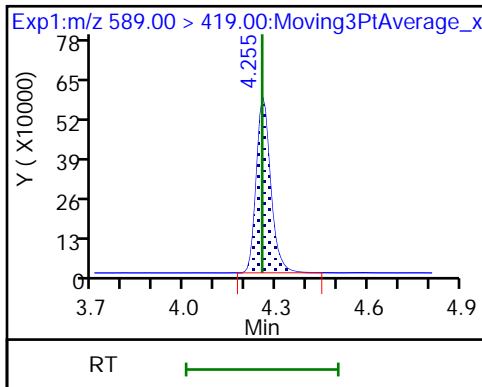
D 30 13C2 PFUnA



D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

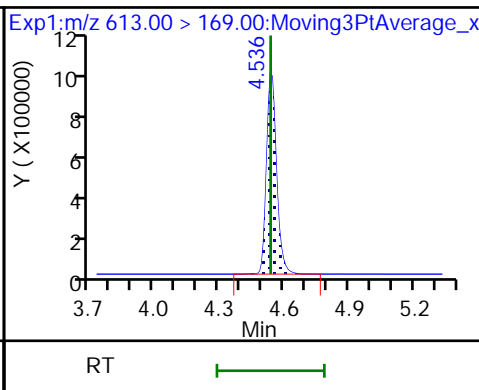
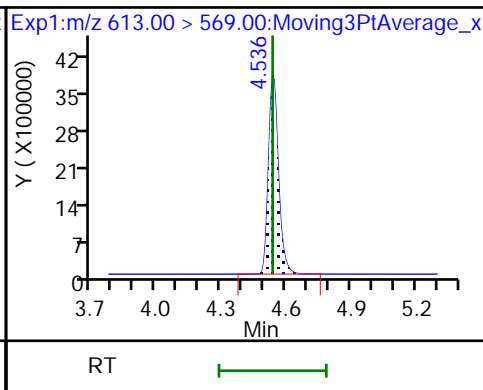
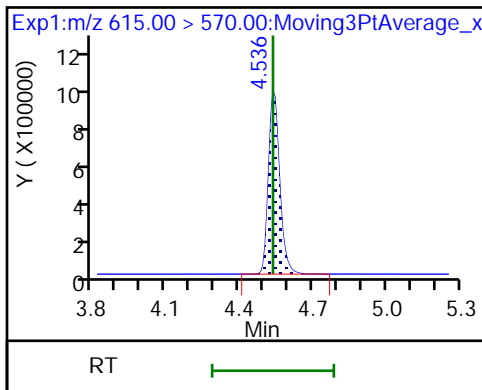
66 11-Chloroeicosafuoro-3-oxaundecan



D 36 13C2 PFDoA

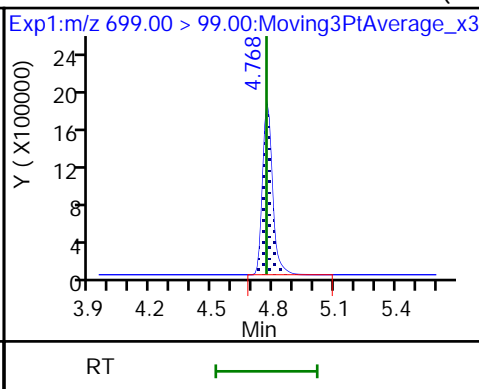
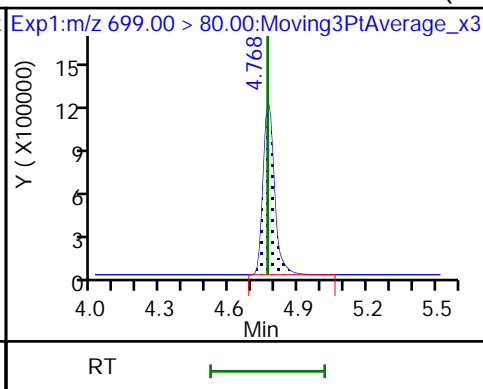
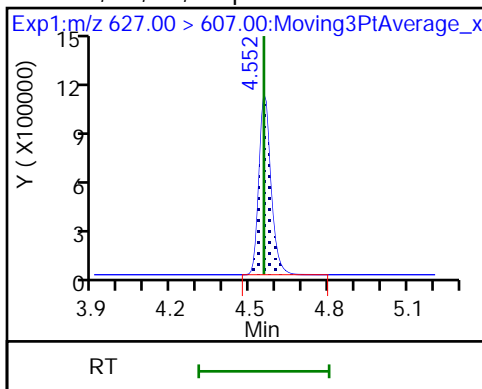
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate

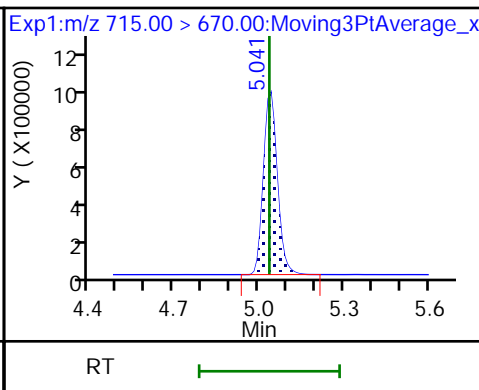
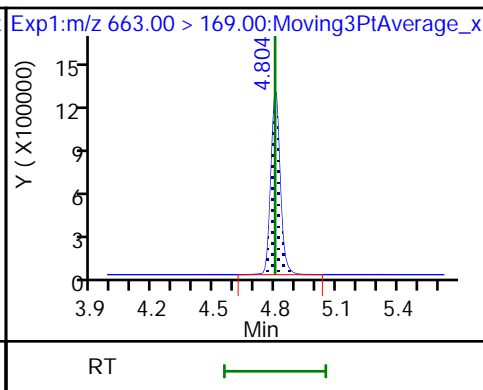
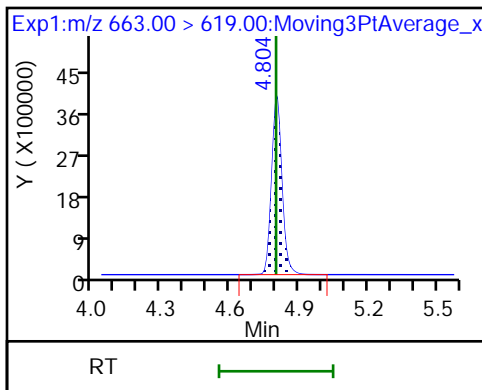
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

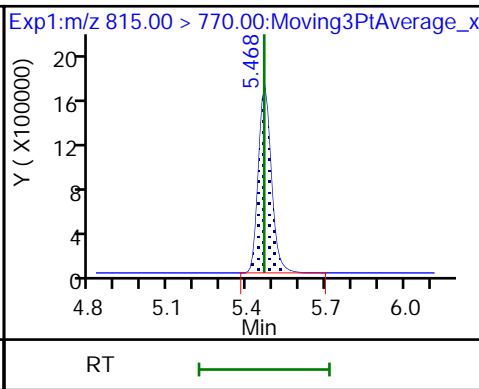
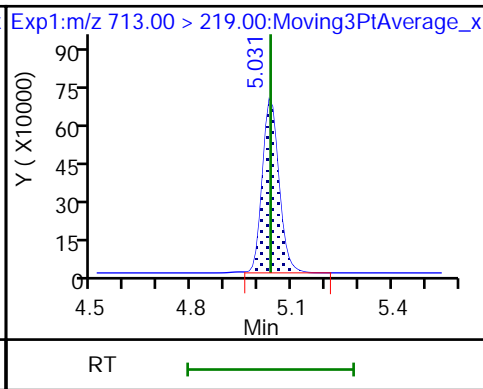
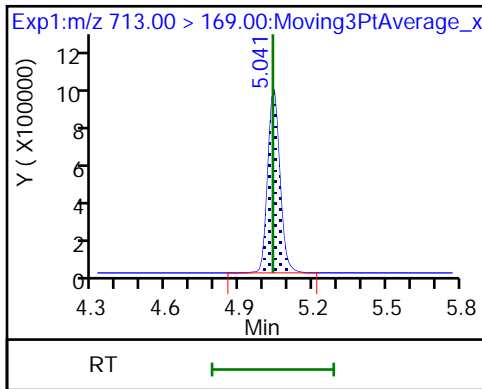
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

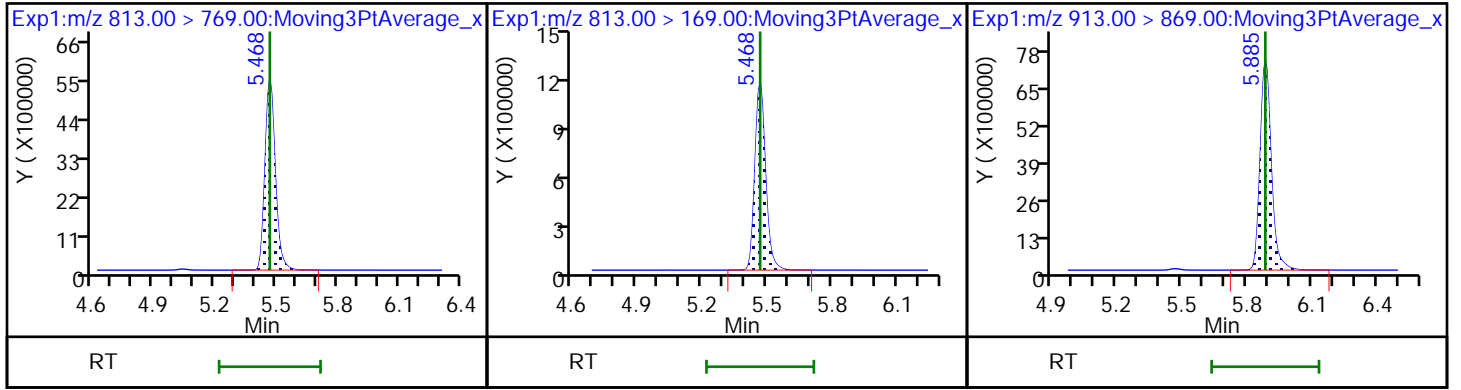
D 44 13C2 PFHxDA



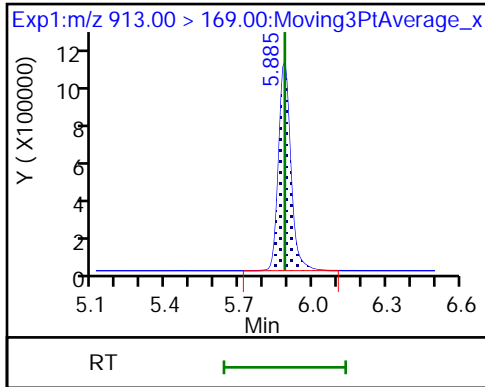
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: ICV 320-261834/10 Calibration Date: 11/29/2018 07:46
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.11.29PFCICAL_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	0.9101	0.9420		2.59	2.50	3.5	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.090	1.139		2.61	2.50	4.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9705	1.029		2.35	2.21	6.0	50.0
4:2 FTS	AveID	0.1927	0.1947		2.36	2.34	1.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.003	1.018		2.54	2.50	1.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8590	0.9440		2.58	2.35	9.9	50.0
HFPO-DA (GenX)	AveID	3.409	3.140		2.30	2.50	-7.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.055		2.48	2.50	-0.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.086	1.043		2.19	2.28	-4.0	40.0
DONA	AveID	3.963	4.234		2.52	2.36	6.8	50.0
6:2 FTS	AveID	1.556	1.592		2.43	2.38	2.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.310	1.316		2.39	2.38	0.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.134	1.114		2.46	2.50	-1.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.115	1.107		2.30	2.31	-0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	1.032	1.036		2.51	2.50	0.4	40.0
F-53B Major	AveID	2.005	2.101		2.44	2.33	4.8	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7778	0.7987		2.46	2.40	2.7	50.0
8:2 FTS	AveID	1.310	1.238		2.27	2.40	-5.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9866	0.996		2.53	2.50	1.0	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.001	1.024		2.56	2.50	2.4	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9409	1.061		2.82	2.50	12.7	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6478	0.6383		2.38	2.41	-1.5	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8947	0.8512		2.38	2.50	-4.9	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8594	1.000		2.91	2.50	16.3	40.0
F-53B Minor	AveID	2.949	3.288		2.63	2.36	11.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.087	1.031		2.37	2.50	-5.2	40.0
10:2 FTS	AveID	0.9483	0.8986		2.28	2.41	-5.2	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2952	0.2955		2.42	2.42	0.1	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.057	1.069		2.53	2.50	1.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2587	0.2530		2.44	2.50	-2.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9414		2.69	2.50	7.8	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: ICV 320-261834/10 Calibration Date: 11/29/2018 07:46
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.11.29PFCICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.160	1.180		2.54	2.50	1.7	50.0
13C4 PFBA	Ave	1.526	1.524		2.50	2.50	-0.1	50.0
13C5 PFPeA	Ave	0.9597	0.9411		2.45	2.50	-1.9	50.0
13C3 PFBS	Ave	1.463	1.429		2.27	2.33	-2.3	50.0
M2-4:2 FTS	Ave	0.1173	0.1301		2.59	2.34	10.9	50.0
13C2 PFHxA	Ave	1.015	0.998		2.46	2.50	-1.7	50.0
13C3 HFPO-DA	Ave	0.0703	0.0784		2.79	2.50	11.5	50.0
13C4 PFHpA	Ave	0.997	1.014		2.55	2.50	1.8	50.0
18O2 PFHxS	Ave	1.137	1.125		2.34	2.37	-1.1	50.0
M2-6:2 FTS	Ave	0.1752	0.1774		2.41	2.38	1.3	40.0
13C4 PFOA	Ave	0.9734	0.9546		2.45	2.50	-1.9	50.0
13C8 PFOA	Ave	1.435	1.504		2.56	2.45	4.8	50.0
13C4 PFOS	Ave	0.7427	0.7513		2.42	2.39	1.2	50.0
13C8 PFOS	Ave	0.3918	0.4039		2.46	2.39	3.1	50.0
13C5 PFNA	Ave	0.8157	0.7975		2.44	2.50	-2.2	50.0
13C2 PFDA	Ave	0.7121	0.7088		2.49	2.50	-0.5	50.0
M2-8:2 FTS	Ave	0.1889	0.1904		2.41	2.40	0.8	40.0
13C8 FOSA	Ave	1.097	1.115		2.54	2.50	1.6	50.0
d3-NMeFOSAA	Ave	0.3479	0.3444		2.48	2.50	-1.0	50.0
13C2 PFUnA	Ave	0.5733	0.5855		2.55	2.50	2.1	50.0
d5-NEtFOSAA	Ave	0.3676	0.3621		2.46	2.50	-1.5	50.0
13C2 PFDoA	Ave	0.6099	0.6132		2.51	2.50	0.5	50.0
13C2 PFTeDA	Ave	0.7261	0.7204		2.48	2.50	-0.8	50.0
13C2 PFHxDA	Ave	1.341	1.369		2.55	2.50	2.1	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_013.d
 Lims ID: ICV FULL
 Client ID:
 Sample Type: ICV
 Inject. Date: 29-Nov-2018 07:46:38 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: SACINSTLCMS01 Instrument ID: A8_N
 Sublist:

Method: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 29-Nov-2018 10:29:09 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0326

First Level Reviewer: phomsophat Date: 29-Nov-2018 09:45:16

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA
 217.00 > 172.00 1.747 1.749 -0.002 0.547 7035502 2.50 99.9 5562

2 Perfluorobutanoic acid
 212.90 > 169.00 1.754 1.753 0.001 1.004 6627530 2.59 1292

D 3 13C5 PFPeA
 267.90 > 223.00 2.062 2.061 0.001 0.645 4343026 2.45 98.1 6729

4 Perfluoropentanoic acid
 262.90 > 219.00 2.062 2.062 0.0 1.000 4947283 2.61 782

D 47 13C3 PFBS
 301.90 > 80.00 2.094 2.091 0.003 0.655 6133658 2.27 97.7 423505

5 Perfluorobutanesulfonic acid
 298.90 > 80.00 2.094 2.094 0.0 1.000 6003521 2.34 Target=2.49 5328
 298.90 > 99.00 2.094 2.094 0.0 1.000 2535366 2.37(1.25-3.74) 1446

D 60 M2-4:2 FTS
 329.00 > 81.00 2.371 2.372 -0.001 0.742 560915 2.59 111 947

61 1H,1H,2H,2H-perfluorohexanesulfoni
 327.00 > 307.00 2.371 2.374 -0.003 1.133 1200873 2.36 7366

6 Perfluorohexanoic acid
 313.00 > 269.00 2.411 2.413 -0.002 1.000 4685960 2.54 Target=10.07 1684
 313.00 > 119.00 2.411 2.413 -0.002 1.000 408579 11.47(5.03-15.10) 1073

D 7 13C2 PFHxA
 315.00 > 270.00 2.411 2.413 -0.002 0.754 4604149 2.46 98.3 7350

70 Perfluoropentanesulfonic acid
 349.00 > 80.00 2.431 2.432 -0.001 1.161 5852196 2.58 Target=2.71 11983
 349.00 > 99.00 2.431 2.432 -0.001 1.161 2128468 2.75(1.36-4.07) 8100

67 Perfluoro(2-propoxypropanoic) acid
 329.10 > 285.00 2.530 2.531 -0.001 1.000 1136153 2.30 1039

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	2.530	2.532	-0.002	0.791	361807	2.79		111	1467	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.802	2.800	0.002	1.000	4936848	2.48	Target=2.27		1461	
363.00 > 169.00	2.802	2.800	0.002	1.000	1892952		2.61(1.13-3.40)		1917	
D 9 13C4 PFHpA										
367.00 > 322.00	2.802	2.802	0.0	0.877	4681186	2.54		102	9918	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.812	2.807	0.005	1.000	4935825	2.19	Target=3.00		7914	
399.00 > 99.00	2.812	2.807	0.005	1.000	1638433		3.01(1.50-4.49)		3696	
D 11 18O2 PFHxS										
403.00 > 84.00	2.812	2.807	0.005	0.879	4909943	2.34		98.9	7217	
77 DONA										
377.00 > 251.00	2.849	2.851	-0.002	0.795	13828201	2.52	Target=1.69		7370	
377.00 > 85.00	2.849	2.851	-0.002	0.795	8106698		1.71(0.85-2.54)		10251	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.181	3.178	0.003	0.995	777814	2.40		101	5714	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.181	3.181	0.0	1.000	1238505	2.43			490	
D 73 13C8 PFOA										
421.00 > 376.00	3.197	3.195	0.002	1.000	6793156	2.56		105	10524	
D 14 13C4 PFOA										
417.00 > 372.00	3.197	3.200	-0.003	1.000	4405577	2.45		98.1	9186	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.197	3.200	-0.003	0.893	4335771	2.39	Target=3.88		5655	
449.00 > 99.00	3.197	3.200	-0.003	0.893	1169373		3.71(1.94-5.82)		3346	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.206	3.201	0.005	1.003	4907771	2.46	Target=1.68		507	
413.00 > 169.00	3.197	3.201	-0.004	1.000	2615103		1.88(0.84-2.52)		1265	
* 62 13C2 PFOA										
415.00 > 370.00	3.197	3.201	-0.004		4615006	2.50			11103	
D 72 13C8 PFOS										
507.00 > 99.00	3.581	3.576	0.005	1.120	1781962	2.46		103	6211	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.581	3.581	0.0	1.000	3551404	2.30	Target=4.62		2707	
499.00 > 99.00	3.581	3.581	0.0	1.000	736921		4.82(2.31-6.93)		3250	
D 18 13C4 PFOS										
503.00 > 80.00	3.581	3.581	0.0	1.120	3314700	2.42		101	7616	
D 19 13C5 PFNA										
468.00 > 423.00	3.589	3.590	-0.001	1.123	3680357	2.44		97.8	7847	
20 Perfluorononanoic acid										
463.00 > 419.00	3.589	3.590	-0.001	1.000	3811401	2.51	Target=3.79		1784	
463.00 > 169.00	3.589	3.590	-0.001	1.000	912124		4.18(1.90-5.69)		6412	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.786	3.783	0.003	1.057	6790253	2.44			12118	

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	3.933	3.931	0.002	1.098	2658465	2.46	Target=2.65		8135	
549.00 > 99.00	3.933	3.931	0.002	1.098	949668		2.80(1.33-3.97)		5126	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.948	3.948	0.0	1.000	1044512	2.27			5275	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.948	3.948	0.0	1.000	3259740	2.53	Target=4.73		2919	
513.00 > 169.00	3.948	3.948	0.0	1.000	595721		5.47(2.36-7.09)		2743	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.948	3.948	0.0	1.235	841651	2.41		101	5956	
D 23 13C2 PFDA										
515.00 > 470.00	3.948	3.948	0.0	1.235	3271208	2.49		99.5	7123	
D 21 13C8 FOSA										
506.00 > 78.00	3.964	3.962	0.002	1.240	5147464	2.54		102	9466	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.964	3.962	0.002	1.000	5273501	2.56			376	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.109	4.111	-0.002	1.285	1589460	2.48		99.0	4033	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.117	4.114	0.003	1.002	1685751	2.82			1283	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.249	4.247	0.002	1.186	2135558	2.38	Target=2.77		7998	
599.00 > 99.00	4.249	4.247	0.002	1.186	685822		3.11(1.39-4.16)		4557	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.274	4.270	0.004	1.000	2300018	2.38	Target=4.24		2014	
563.00 > 169.00	4.274	4.270	0.004	1.000	545869		4.21(2.12-6.36)		4399	
D 30 13C2 PFUnA										
565.00 > 520.00	4.274	4.270	0.004	1.337	2702262	2.55		102	6814	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.274	4.271	0.003	1.337	1670993	2.46		98.5	3018	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.282	4.279	0.003	1.002	1670583	2.91			5362	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.410	4.412	-0.002	1.231	10739393	2.63			17997	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.561	4.556	0.005	1.000	2917705	2.37	Target=4.27		2458	
613.00 > 169.00	4.561	4.556	0.005	1.000	758428		3.85(2.13-6.40)		5112	
D 36 13C2 PFDaA										
615.00 > 570.00	4.561	4.556	0.005	1.426	2829945	2.51		101	9749	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.569	4.569	0.0	1.157	761019	2.28			3853	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.788	4.785	0.003	1.337	991756	2.42	Target=0.00		5029	
699.00 > 99.00	4.788	4.785	0.003	1.337	1552848		0.64(0.00-0.00)		6250	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.820	4.815	0.005	1.057	3025737	2.53	Target=2.51		2895	
663.00 > 169.00	4.812	4.815	-0.003	1.055	960654		3.15(1.25-3.76)		7279	

Ratio Calibration: None

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	5.060	5.053	0.007	1.002	840946	2.44	Target=1.42		7341	
713.00 > 219.00	5.050	5.053	-0.003	1.000	612420		1.37(0.71-2.13)		5002	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.050	5.054	-0.004	1.580	3324454	2.48		99.2	8904	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.485	5.481	0.004	1.715	6319236	2.55		102	9961	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.485	5.484	0.001	1.000	5949069	2.69	Target=5.72		673	
813.00 > 169.00	5.485	5.484	0.001	1.000	1056684		5.63(2.86-8.58)		4797	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.905	5.904	0.001	1.077	7457186	2.54	Target=7.65		728	
913.00 > 169.00	5.905	5.904	0.001	1.077	950420		7.85(3.83-11.48)		4644	

Reagents:

LCPFCICAL_FULL_00016

Amount Added: 1.00

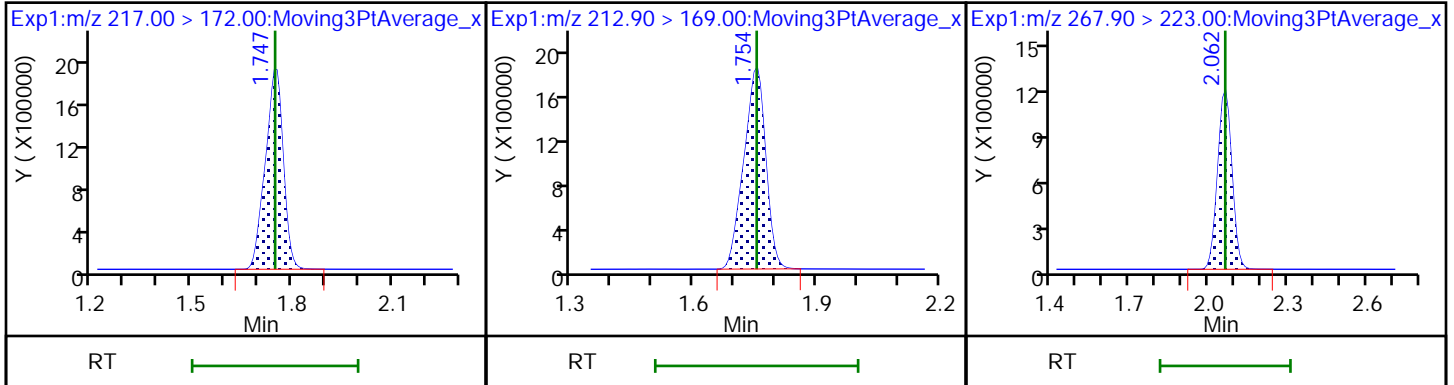
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Injection Date: 29-Nov-2018 07:46:38 Instrument ID: A8_N
Lims ID: ICV FULL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

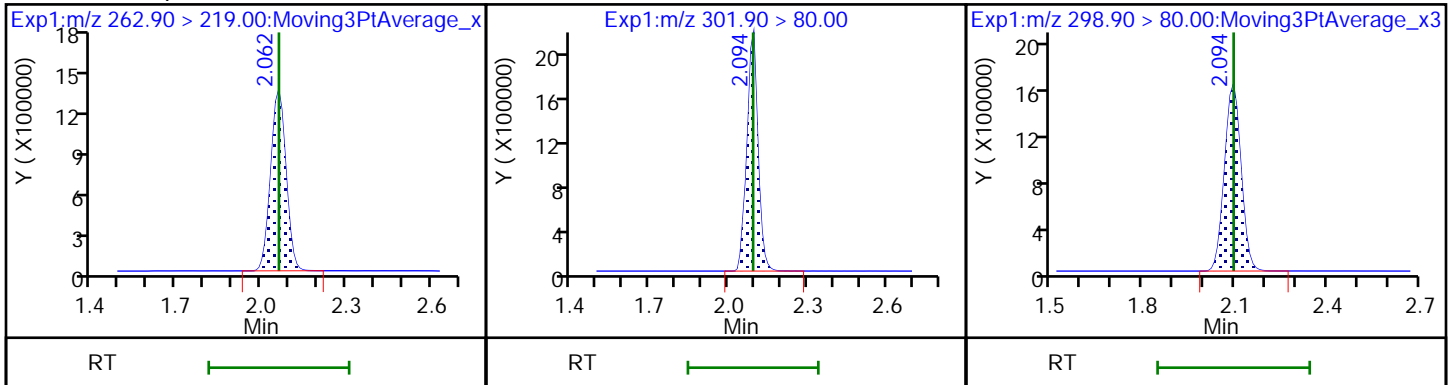
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

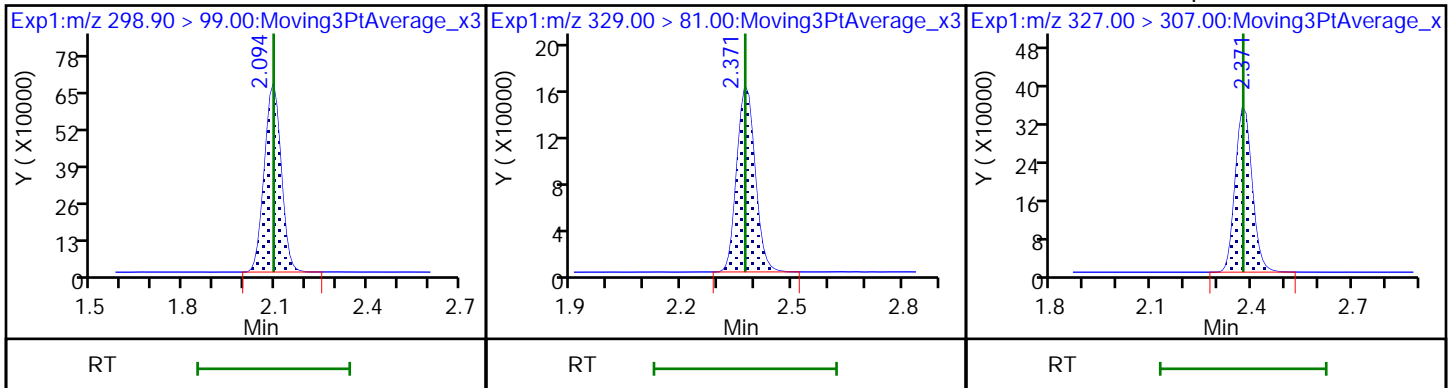
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

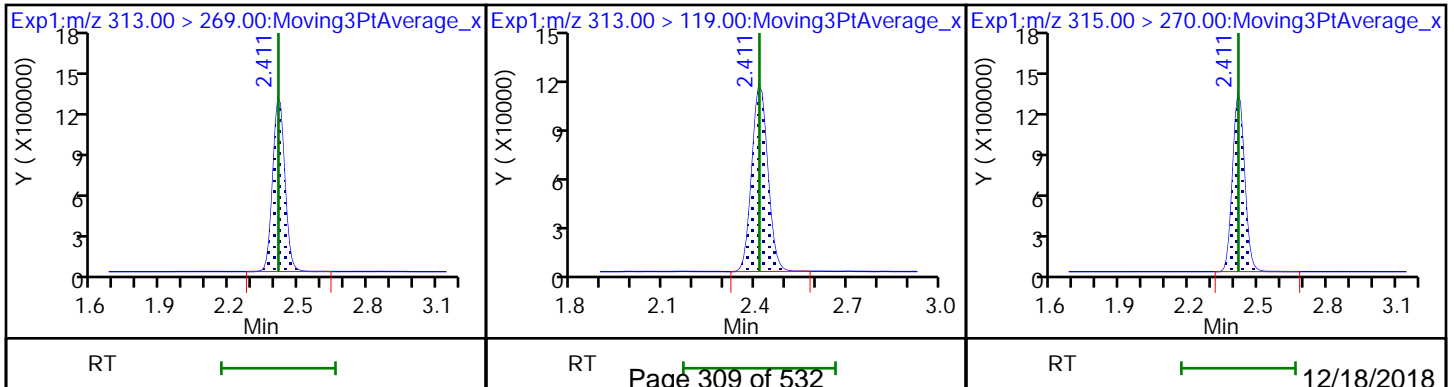
61 1H,1H,2H,2H-perfluorohexanesulfoni

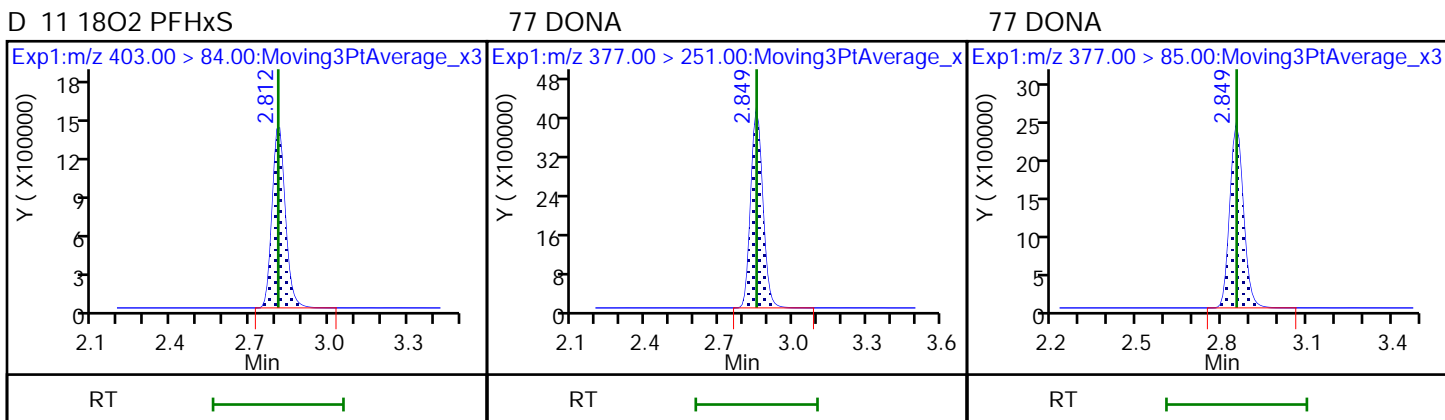
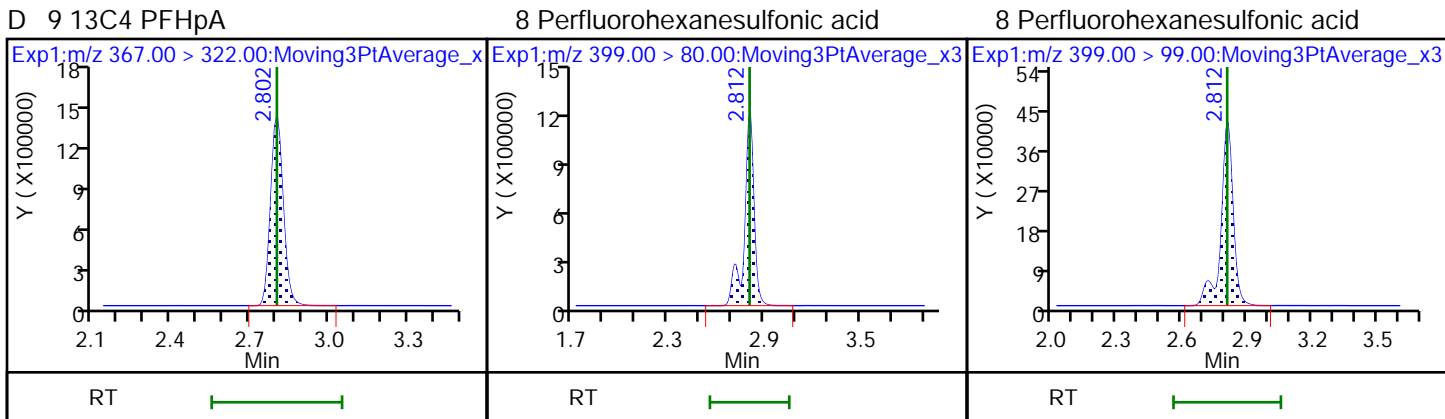
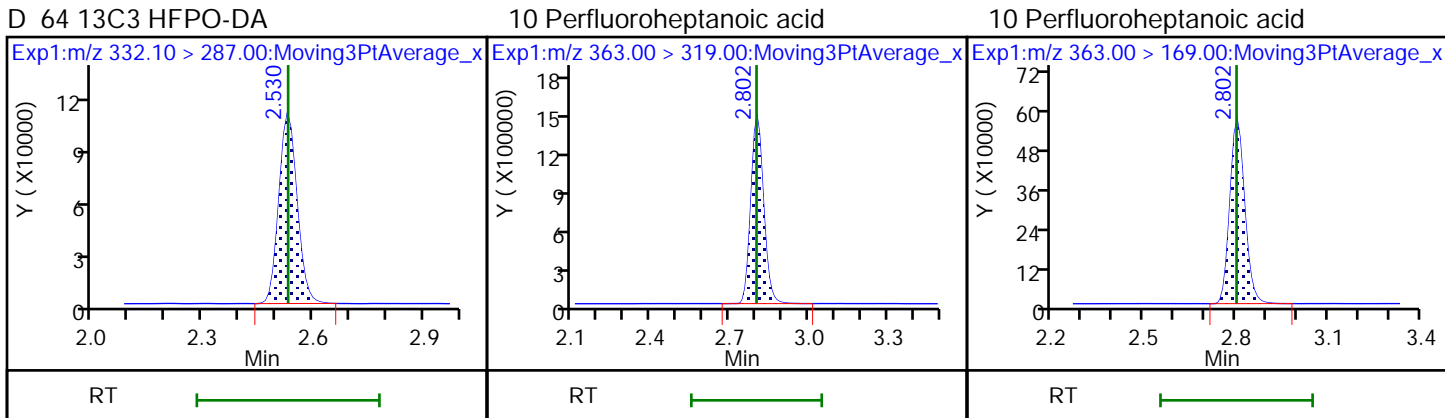
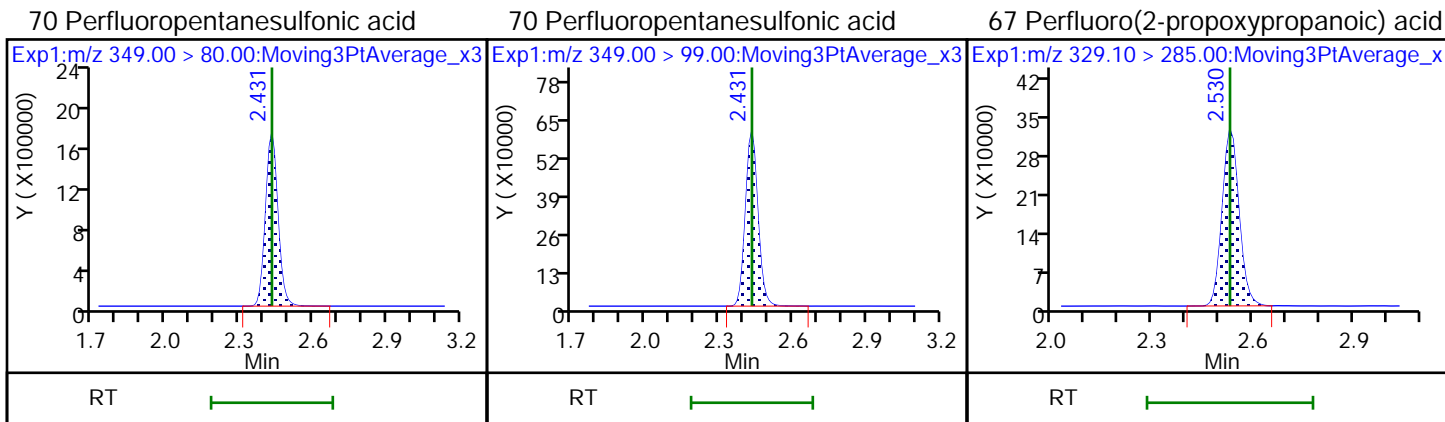


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

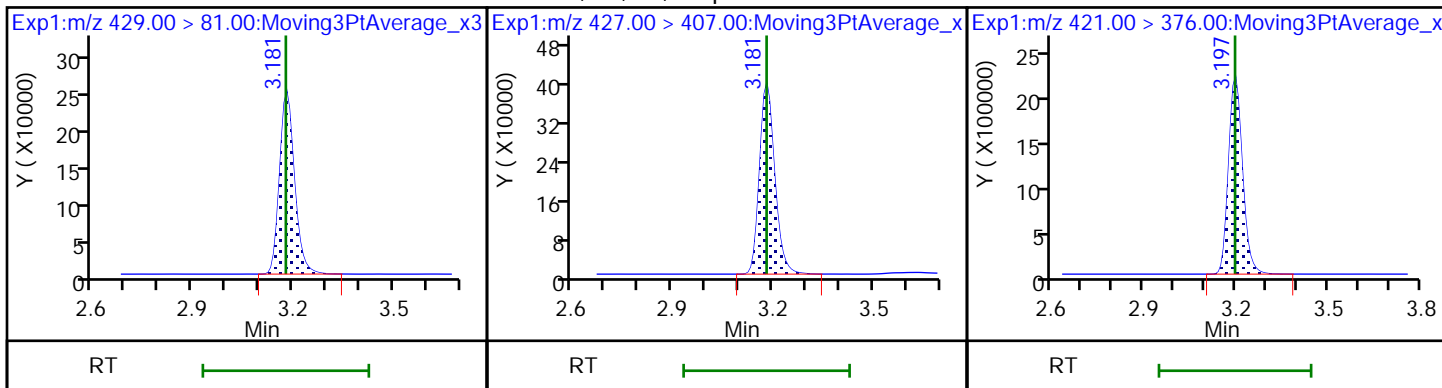
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

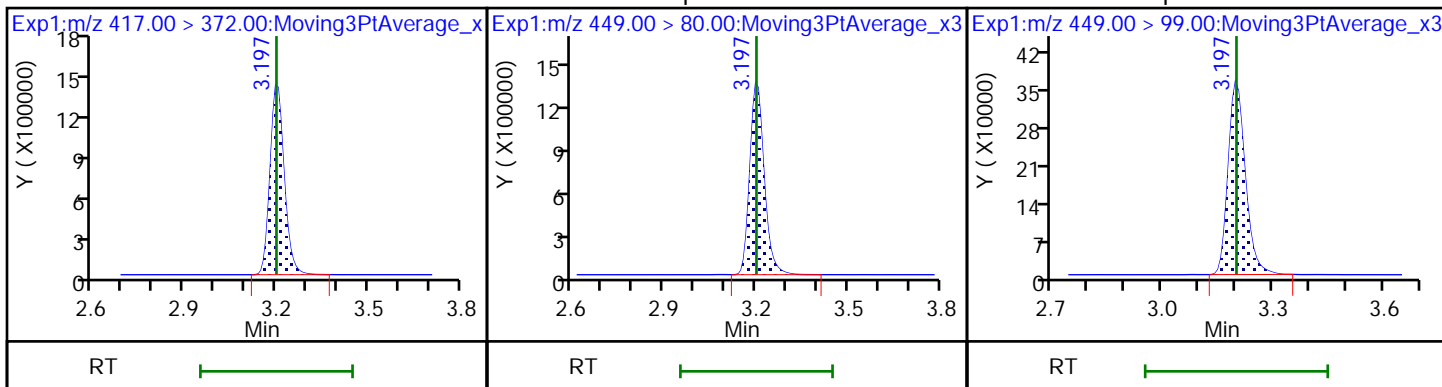
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic acid

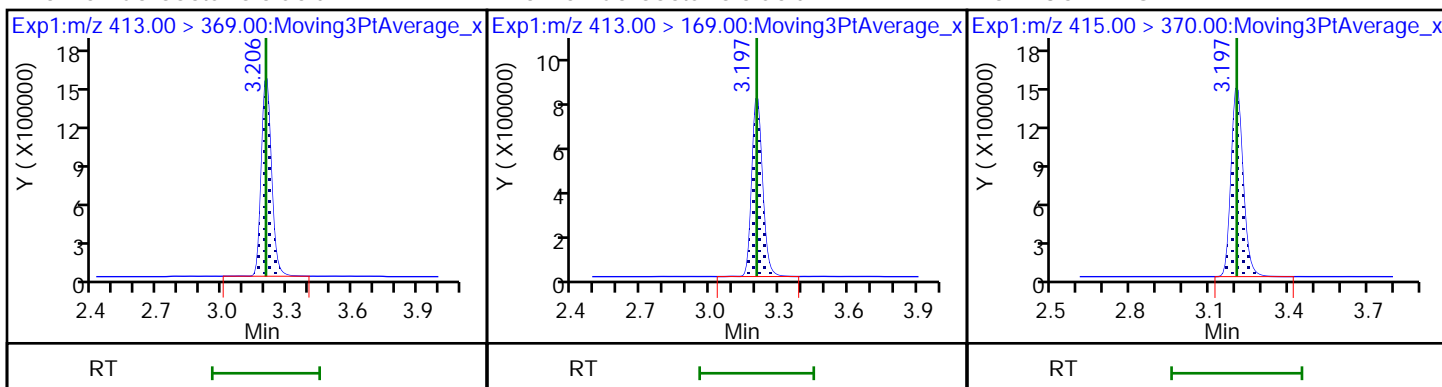
16 Perfluoroheptanesulfonic acid



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

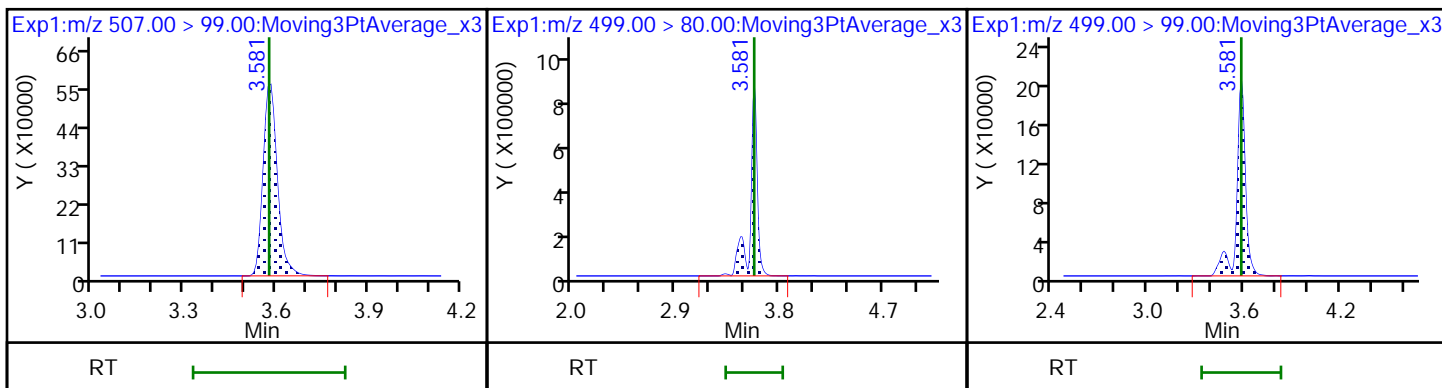
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

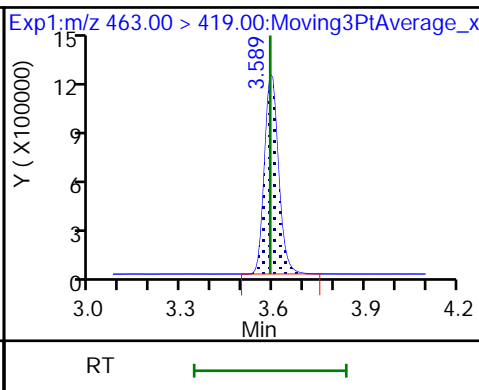
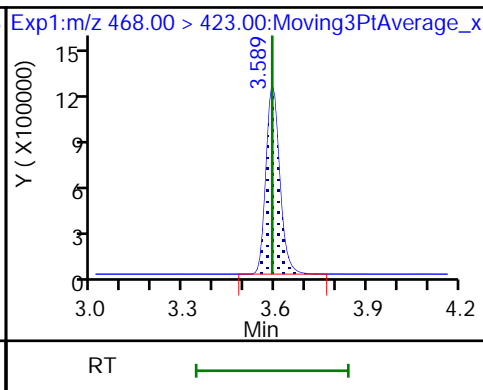
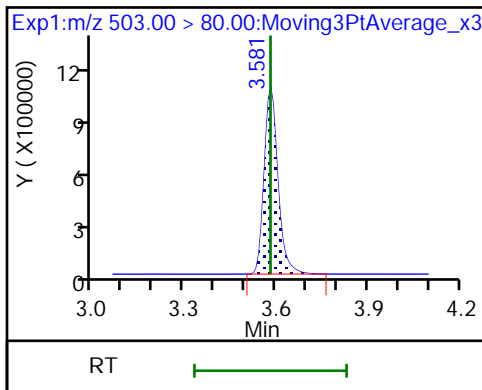
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

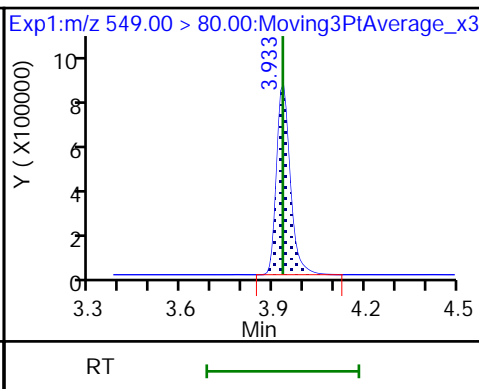
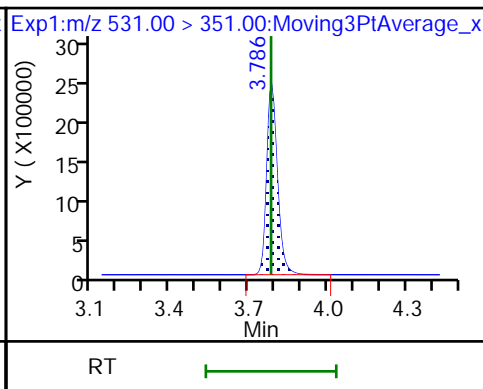
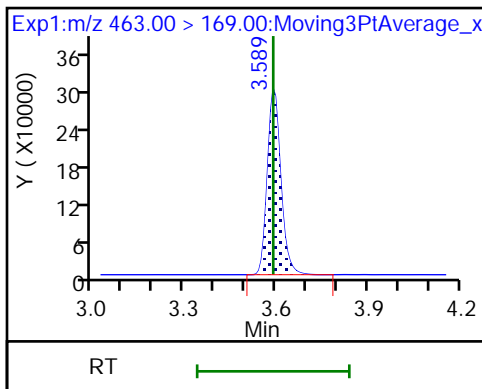
D 19 13C5 PFNA

20 Perfluorononanoic acid



20 Perfluorononanoic acid

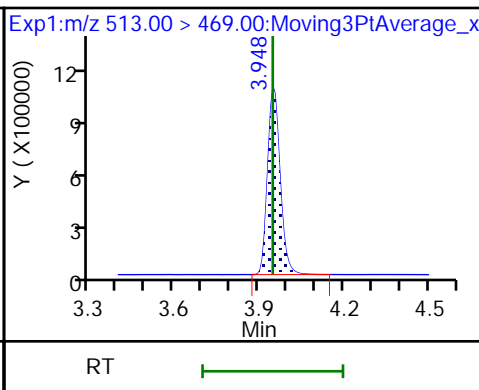
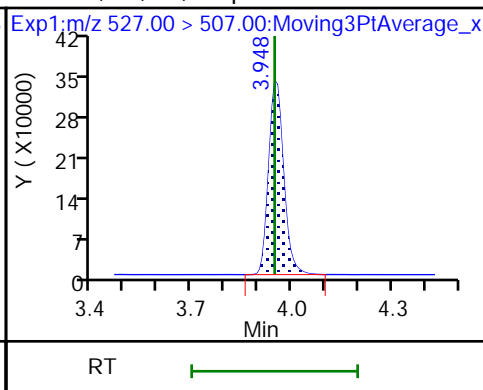
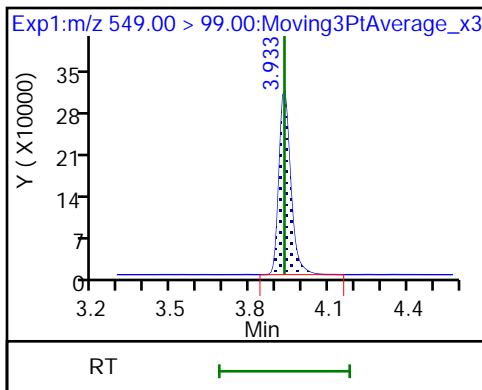
69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid



68 Perfluoronanesulfonic acid

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

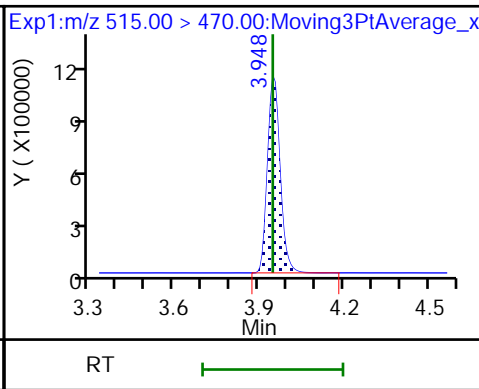
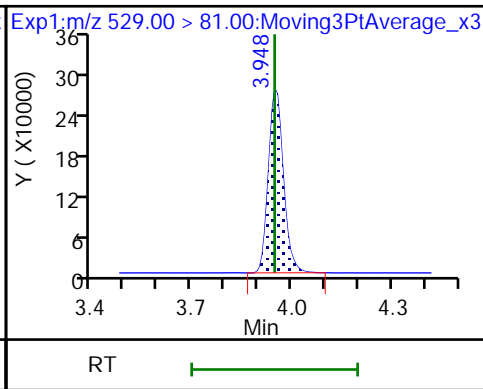
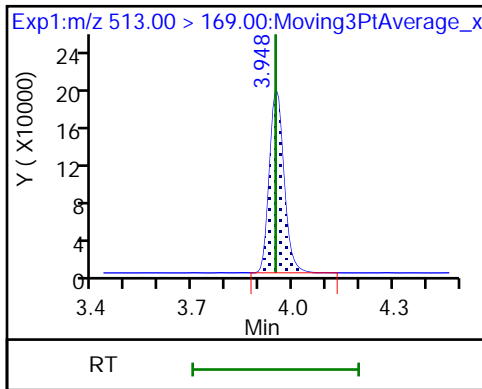
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

D 26 M2-8:2 FTS

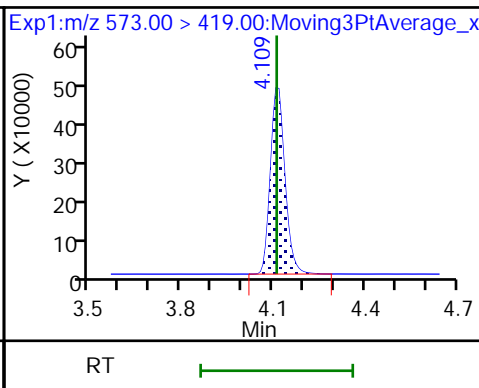
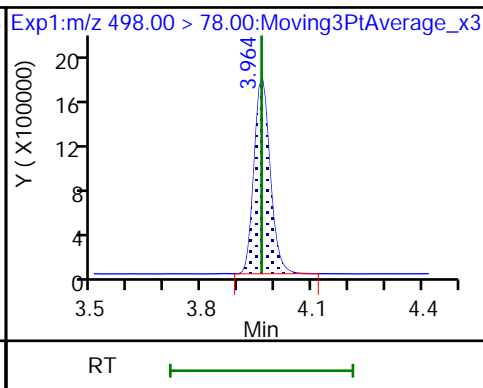
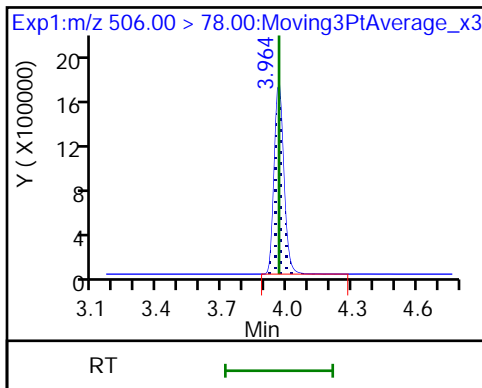
D 23 13C2 PFDA



D 21 13C8 FOSA

22 Perfluorooctanesulfonamide

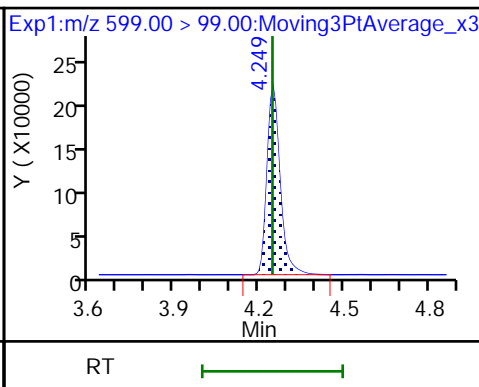
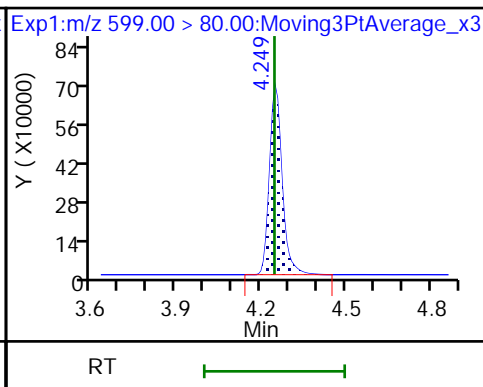
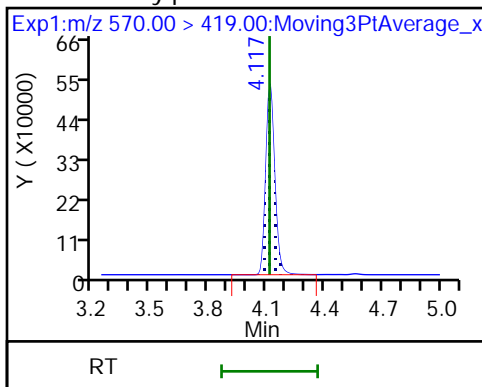
D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

29 Perfluorodecanesulfonic acid

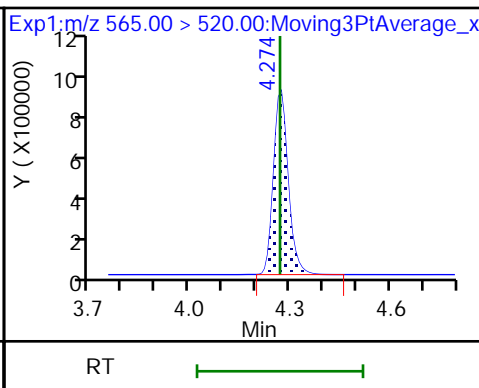
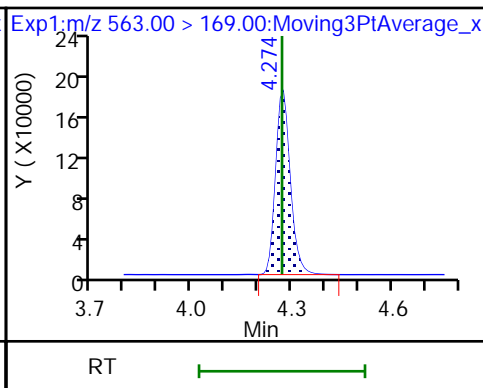
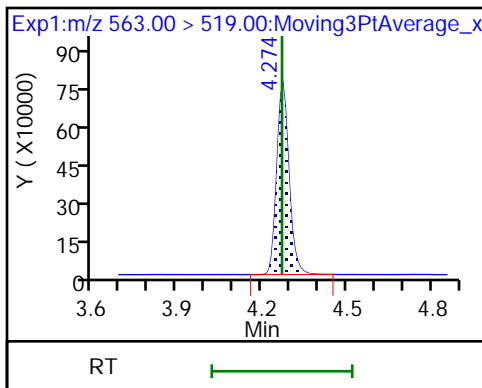
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

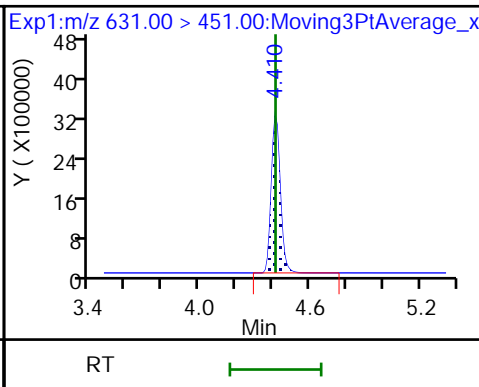
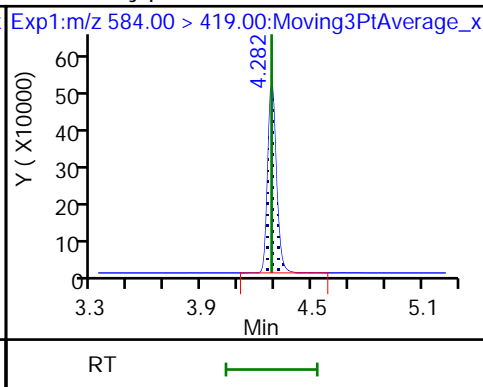
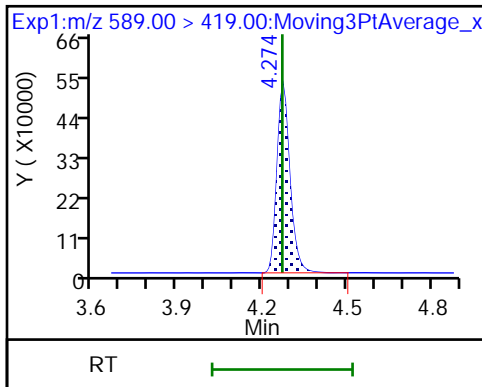
D 30 13C2 PFUnA

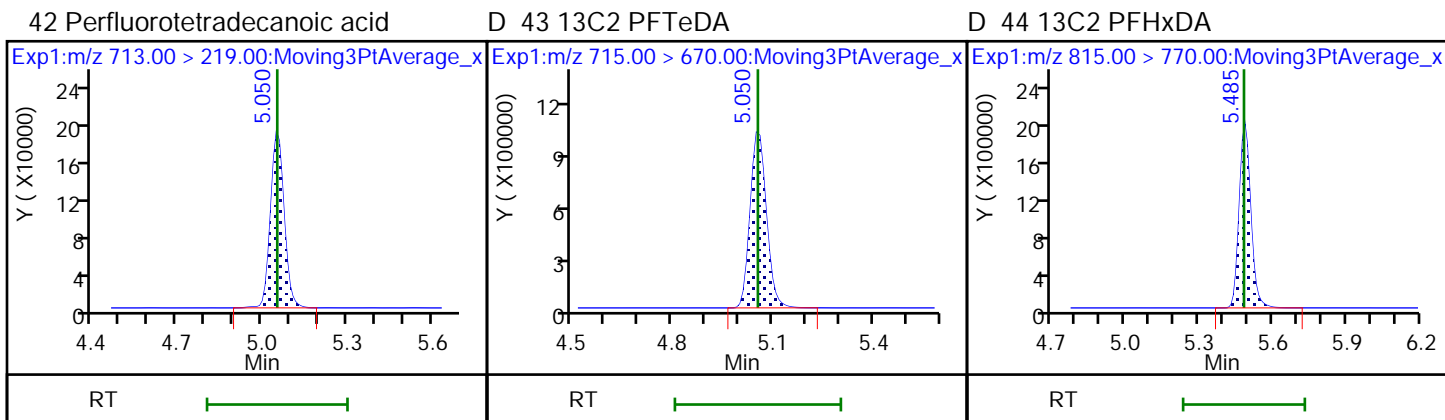
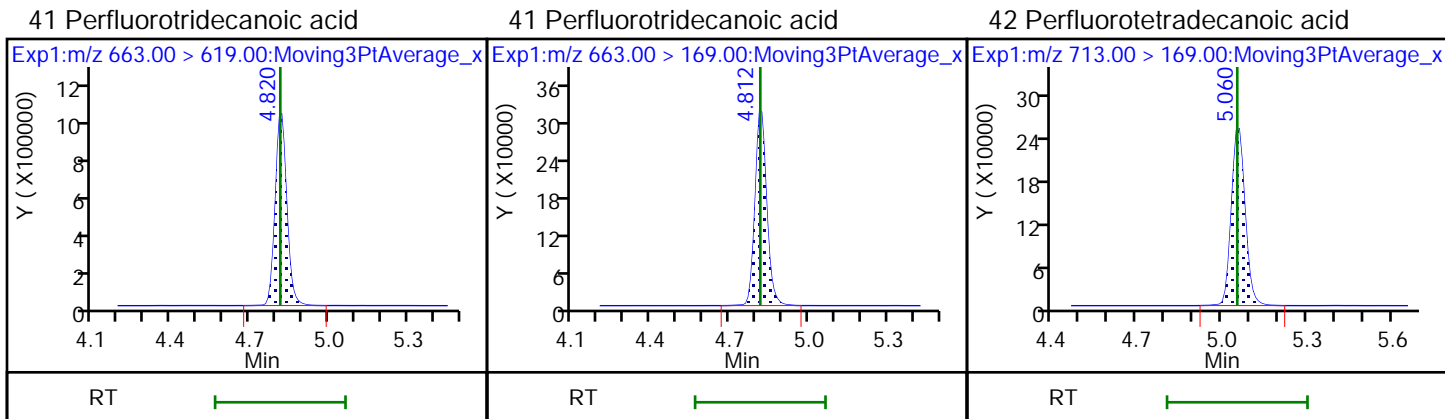
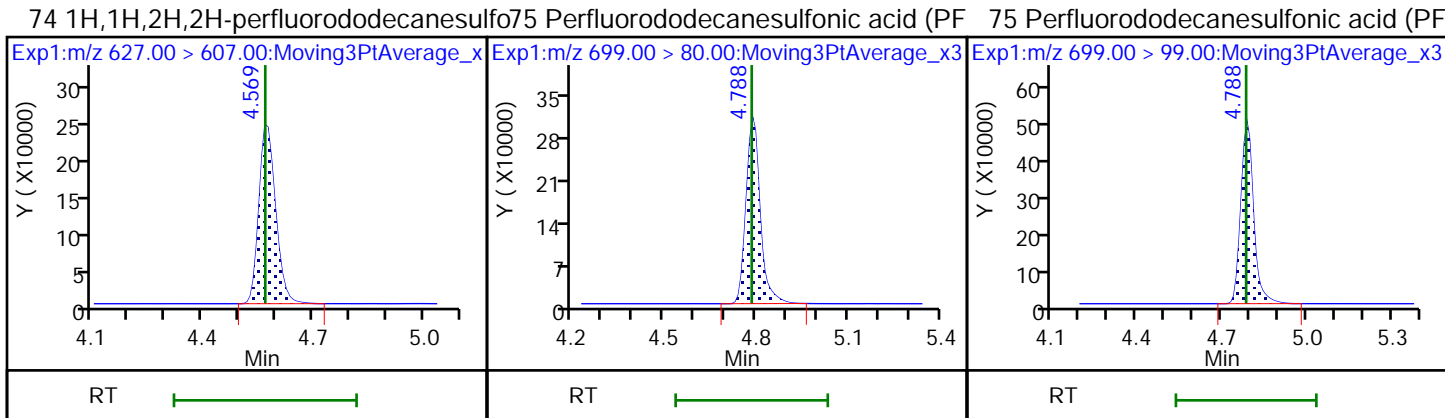
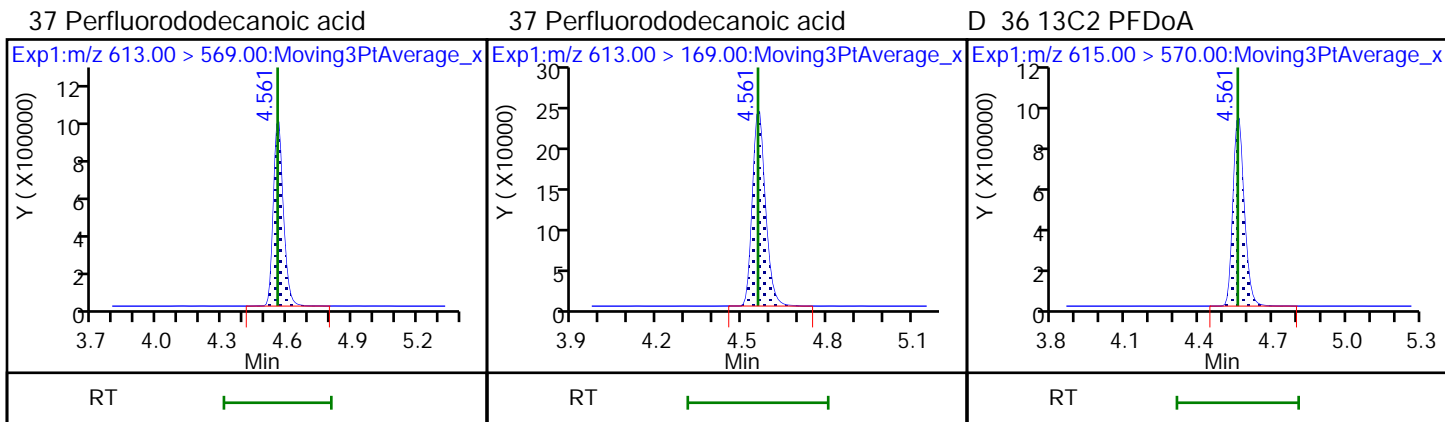


D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamidoa

66 11-Chloroeicosafuoro-3-oxaundecan

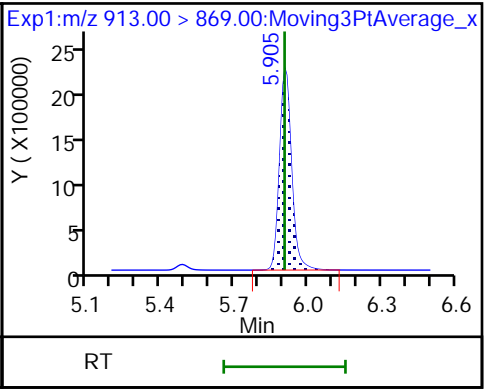
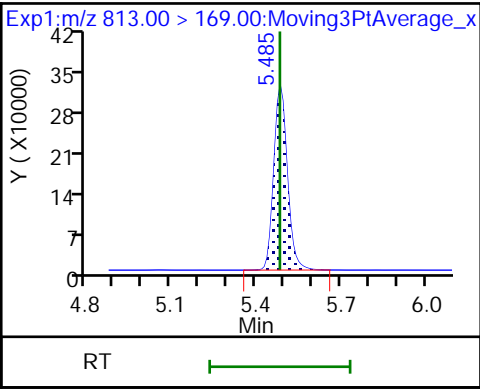
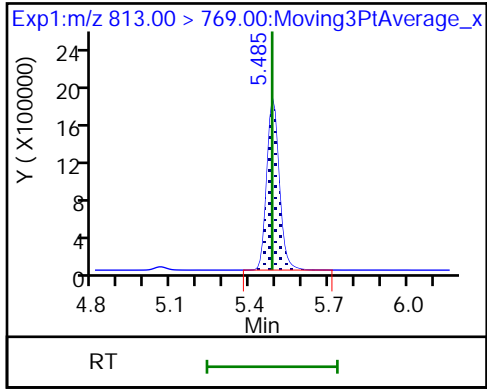




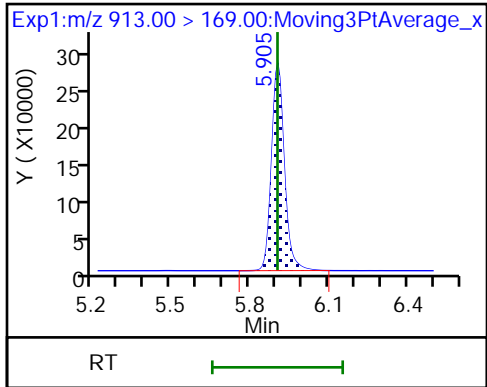
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-263400/2 Calibration Date: 12/06/2018 06:20
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.12.05LLB_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	0.9101	0.8254		0.0453	0.0500	-9.3	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.090	1.121		0.0514	0.0500	2.9	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9705	0.9200		0.0419	0.0442	-5.2	50.0
4:2 FTS	AveID	0.1927	0.2343		0.568	0.467	21.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.003	0.9462		0.0472	0.0500	-5.6	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8590	0.8296		0.0453	0.0469	-3.4	50.0
HFPO-DA (GenX)	AveID	3.409	2.948		0.0432	0.0500	-13.5	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	0.8797		0.0414	0.0500	-17.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.086	1.105		0.0463	0.0455	1.8	50.0
DONA	AveID	3.963	3.736		0.0444	0.0471	-5.7	50.0
6:2 FTS	AveID	1.556	1.579		0.481	0.474	1.5	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.310	1.156		0.0420	0.0476	-11.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.134	1.330		0.0587	0.0501	17.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.115	1.090		0.0454	0.0464	-2.2	50.0
Perfluorononanoic acid (PFNA)	AveID	1.032	0.9476		0.0459	0.0500	-8.1	50.0
F-53B Major	AveID	2.005	1.690		0.0393	0.0466	-15.7	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7778	0.7477		0.0461	0.0480	-3.9	50.0
8:2 FTS	AveID	1.310	1.254		0.458	0.479	-4.3	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9866	0.9578		0.0485	0.0500	-2.9	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.001	0.9766		0.0488	0.0500	-2.4	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9409	0.8917		0.474	0.500	-5.2	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6478	0.6191		0.0461	0.0482	-4.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8947	0.9187		0.0513	0.0500	2.7	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8594	0.8039		0.468	0.500	-6.5	50.0
F-53B Minor	AveID	2.949	2.731		0.0436	0.0471	-7.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.087	0.9931		0.0457	0.0500	-8.7	50.0
10:2 FTS	AveID	0.9483	0.8469		0.0430	0.0482	-10.7	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2952	0.2757		0.0452	0.0484	-6.6	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.057	1.023		0.0484	0.0500	-3.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2587	0.2280		0.0441	0.0500	-11.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.284		0.0493	0.0500	-1.3	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-263400/2 Calibration Date: 12/06/2018 06:20
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.12.05LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.160	1.138		0.0490	0.0500	-1.9	50.0
13C4 PFBA	Ave	1.526	1.393		2.28	2.50	-8.7	50.0
13C5 PFPeA	Ave	0.9597	0.8923		2.32	2.50	-7.0	50.0
13C3 PFBS	Ave	1.463	1.389		2.21	2.33	-5.0	50.0
M2-4:2 FTS	Ave	0.1173	0.1322		2.63	2.34	12.7	50.0
13C2 PFHxA	Ave	1.015	0.9632		2.37	2.50	-5.1	50.0
13C3 HFPO-DA	Ave	0.0703	0.0717		2.55	2.50	1.9	50.0
13C4 PFHpA	Ave	0.997	0.9594		2.41	2.50	-3.7	50.0
18O2 PFHxS	Ave	1.137	1.094		2.28	2.37	-3.8	50.0
M2-6:2 FTS	Ave	0.1752	0.1933		2.62	2.38	10.3	50.0
13C8 PFOA	Ave	1.435	1.401		2.39	2.45	-2.4	50.0
13C4 PFOA	Ave	0.9734	0.9429		2.42	2.50	-3.1	50.0
13C8 PFOS	Ave	0.3918	0.3993		2.44	2.39	1.9	50.0
13C4 PFOS	Ave	0.7427	0.7328		2.36	2.39	-1.3	50.0
13C5 PFNA	Ave	0.8157	0.7680		2.35	2.50	-5.8	50.0
13C2 PFDA	Ave	0.7121	0.6798		2.39	2.50	-4.5	50.0
M2-8:2 FTS	Ave	0.1889	0.2062		2.61	2.40	9.2	50.0
13C8 FOSA	Ave	1.097	1.052		2.40	2.50	-4.1	50.0
d3-NMeFOSAA	Ave	0.3479	0.3874		2.78	2.50	11.4	50.0
13C2 PFUnA	Ave	0.5733	0.5862		2.56	2.50	2.3	50.0
d5-NEtFOSAA	Ave	0.3676	0.4231		2.88	2.50	15.1	50.0
13C2 PFDoA	Ave	0.6099	0.6121		2.51	2.50	0.4	50.0
13C2 PFTeDA	Ave	0.7261	0.7068		2.43	2.50	-2.7	50.0
13C2 PFHxDA	Ave	1.341	1.220		2.27	2.50	-9.0	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68708.b\2018.12.05LLB_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 06-Dec-2018 06:20:14 ALS Bottle#: 34 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCVL
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub38
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68708.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 12-Dec-2018 16:43:20 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0328

First Level Reviewer: yuj Date: 06-Dec-2018 10:12:42

Ratio Calibration: None

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	1.756	1.762	-0.006	0.546	7407365	2.28	91.3	7395	
2 Perfluorobutanoic acid	212.90 > 169.00	1.763	1.770	-0.007	1.004	122275	0.0453	90.7	23.9	
D 3 13C5 PFPeA	267.90 > 223.00	2.074	2.084	-0.010	0.645	4744568	2.32	93.0	7332	
4 Perfluoropentanoic acid	262.90 > 219.00	2.074	2.085	-0.011	1.000	106405	0.0514	103	7.1	
D 47 13C3 PFBS	301.90 > 80.00	2.106	2.115	-0.009	0.655	6867518	2.21	95.0	414225	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.106	2.116	-0.010	1.000	120105	0.0419	Target=2.49	94.8	140
	298.90 > 99.00	2.106	2.116	-0.010	1.000	51881		2.32(1.25-3.74)		51.4
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.383	2.393	-0.010	1.132	323173	0.5679	122	4068	
D 60 M2-4:2 FTS	329.00 > 81.00	2.383	2.402	-0.019	0.742	656582	2.63	113	1583	
6 Perfluorohexanoic acid	313.00 > 269.00	2.423	2.433	-0.010	1.000	96926	0.0472	Target=10.07	94.4	40.7
	313.00 > 119.00	2.423	2.433	-0.010	1.000	7455		13.00(5.03-15.10)		28.7
D 7 13C2 PFHxA	315.00 > 270.00	2.423	2.442	-0.019	0.754	5121920	2.37	94.9	8084	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.442	2.452	-0.010	1.160	114929	0.0453	Target=2.71	96.6	541
	349.00 > 99.00	2.442	2.452	-0.010	1.160	42825		2.68(1.36-4.07)		137
D 64 13C3 HFPO-DA	332.10 > 287.00	2.542	2.551	-0.009	0.791	381128	2.55	102	1187	a

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	2.542	2.551	-0.009	1.000	22474	0.0432		86.5	12.5	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.812	2.821	-0.009	1.000	89761	0.0414	Target=2.27	82.7	29.8	
363.00 > 169.00	2.812	2.821	-0.009	1.000	45447		1.98(1.13-3.40)		77.6	
D 9 13C4 PFHpA										
367.00 > 322.00	2.812	2.830	-0.018	0.875	5101686	2.41		96.3	8513	
D 11 18O2 PFHxS										
403.00 > 84.00	2.821	2.830	-0.009	0.878	5501497	2.27		96.2	5960	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.821	2.831	-0.010	1.000	116996	0.0463	Target=3.00	102	395	
399.00 > 99.00	2.821	2.831	-0.010	1.000	42527		2.75(1.50-4.49)		87.6	
77 DONA										
377.00 > 251.00	2.858	2.868	-0.010	0.797	274280	0.0444	Target=1.69	94.3	433	
377.00 > 85.00	2.858	2.868	-0.010	0.797	162808		1.68(0.85-2.54)		737	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.189	3.198	-0.009	1.000	307651	0.4809		101	99.1	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.189	3.205	-0.016	0.992	976258	2.62		110	6266	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.205	3.214	-0.009	0.893	85733	0.0420	Target=3.88	88.2	407	
449.00 > 99.00	3.205	3.214	-0.009	0.893	25938		3.31(1.94-5.82)		133	
* 62 13C2 PFOA										
415.00 > 370.00	3.214	3.214	0.0		5317499	2.50			9845	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.214	3.214	0.0	1.000	133523	0.0587	Target=1.68	117	11.7	
413.00 > 169.00	3.214	3.214	0.0	1.000	63384		2.11(0.84-2.52)		70.8	
D 14 13C4 PFOA										
417.00 > 372.00	3.214	3.222	-0.008	1.000	5014015	2.42		96.9	9848	
D 73 13C8 PFOA										
421.00 > 376.00	3.205	3.222	-0.017	0.997	7293331	2.39		97.6	11460	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.588	3.591	-0.003	1.000	78854	0.0454	Target=4.62	97.8	207	
499.00 > 99.00	3.588	3.591	-0.003	1.000	18417		4.28(2.31-6.93)		99.0	
D 72 13C8 PFOS										
507.00 > 99.00	3.580	3.599	-0.019	1.114	2029605	2.44		102	6461	
D 18 13C4 PFOS										
503.00 > 80.00	3.588	3.599	-0.011	1.116	3725209	2.36		98.7	8983	
20 Perfluorononanoic acid										
463.00 > 419.00	3.595	3.607	-0.012	1.000	77396	0.0459	Target=3.79	91.9	31.2	
463.00 > 169.00	3.595	3.607	-0.012	1.000	20346		3.80(1.90-5.69)		133	
D 19 13C5 PFNA										
468.00 > 423.00	3.595	3.615	-0.020	1.119	4083604	2.35		94.2	11668	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.784	3.796	-0.012	1.055	122746	0.0393		84.3	657	

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	3.939	3.944	-0.005	1.098	55941	0.0461	Target=2.65	96.1	398	
549.00 > 99.00	3.939	3.944	-0.005	1.098	20992		2.66(1.33-3.97)		133	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.954	3.959	-0.005	1.000	263410	0.4584		95.7	1520	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.954	3.959	-0.005	1.000	69247	0.0485	Target=4.73	97.1	79.0	
513.00 > 169.00	3.954	3.959	-0.005	1.000	12891		5.37(2.36-7.09)		59.7	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.962	3.967	-0.005	1.000	109290	0.0488		97.6	23.5	
D 23 13C2 PFDA										
515.00 > 470.00	3.954	3.968	-0.014	1.231	3614864	2.39		95.5	8487	
D 21 13C8 FOSA										
506.00 > 78.00	3.962	3.968	-0.006	1.233	5595507	2.40		95.9	8985	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.954	3.968	-0.014	1.231	1050631	2.61		109	7135	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.122	4.126	-0.004	1.002	367329	0.4738		94.8	235	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.115	4.136	-0.021	1.280	2059812	2.78		111	5912	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.253	4.258	-0.005	1.185	46509	0.0461	Target=2.77	95.6	250	
599.00 > 99.00	4.245	4.258	-0.013	1.183	13725		3.39(1.39-4.16)		142	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.277	4.283	-0.006	1.000	57276	0.0513	Target=4.24	103	59.3	
563.00 > 169.00	4.269	4.283	-0.014	0.998	12752		4.49(2.12-6.36)		90.0	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.285	4.292	-0.007	1.002	361689	0.4677		93.5	951	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.277	4.293	-0.016	1.331	2249612	2.88		115	4046	
D 30 13C2 PFUnA										
565.00 > 520.00	4.277	4.293	-0.016	1.331	3117346	2.56		102	7686	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.413	4.421	-0.008	1.230	200478	0.0436		92.6	859	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.564	4.569	-0.005	1.000	64652	0.0457	Target=4.27	91.3	57.1	
613.00 > 169.00	4.564	4.569	-0.005	1.000	17910		3.61(2.13-6.40)		152	
D 36 13C2 PFDaA										
615.00 > 570.00	4.564	4.584	-0.020	1.420	3255073	2.51		100	5223	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.582	4.587	-0.005	1.159	17906	0.0430		89.3	179	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.792	4.797	-0.005	1.336	20796	0.0452	Target=0.00	93.4	262	
699.00 > 99.00	4.792	4.797	-0.005	1.336	26439		0.79(0.00-0.00)		224	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.822	4.828	-0.006	1.057	66594	0.0484	Target=2.51	96.8	60.3	
663.00 > 169.00	4.822	4.828	-0.006	1.057	20388		3.27(1.25-3.76)		184	

Ratio Calibration: None

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	5.065	5.071	-0.006	1.000	17136	0.0441	Target=1.42	88.1	263	
713.00 > 219.00	5.055	5.071	-0.016	0.998	12931		1.33(0.71-2.13)		182	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.065	5.085	-0.020	1.576	3758347	2.43		97.3	6099	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.498	5.503	-0.005	1.000	166640	0.0493	Target=5.72	98.7	21.8	
813.00 > 169.00	5.498	5.503	-0.005	1.000	28328		5.88(2.86-8.58)		236	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.498	5.526	-0.028	1.711	6488128	2.27		91.0	8257	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.937	5.942	-0.005	1.080	147631	0.0490	Target=7.65	98.1	17.3	
913.00 > 169.00	5.929	5.942	-0.013	1.079	18569		7.95(3.83-11.48)		164	

QC Flag Legend

Review Flags

a - User Assigned ID

Reagents:

LCPFC_LLCCVL_00001

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68708.b\2018.12.05LLB_005.d

Injection Date: 06-Dec-2018 06:20:14

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 34

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

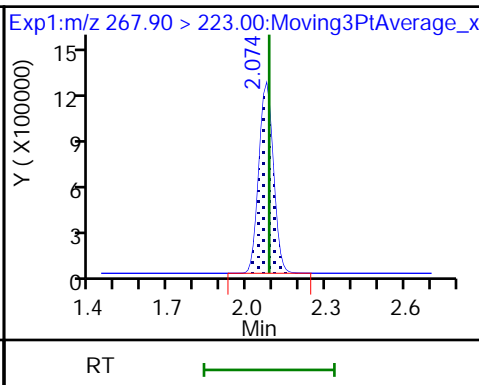
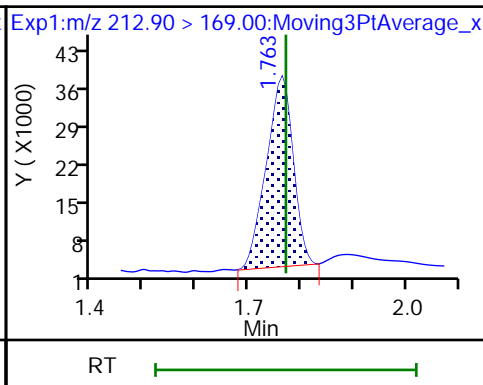
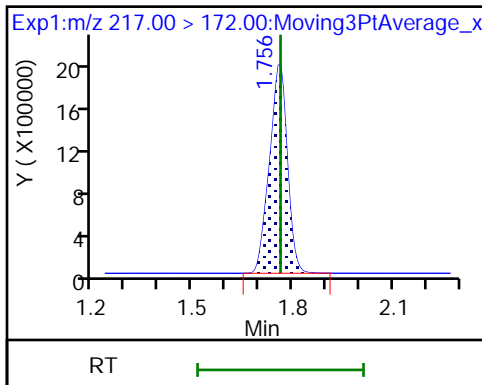
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

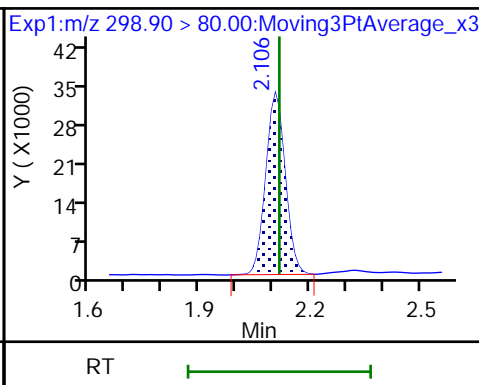
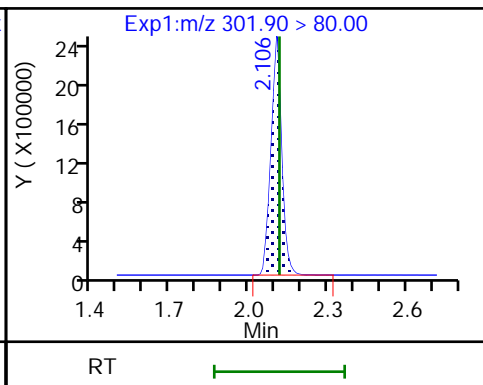
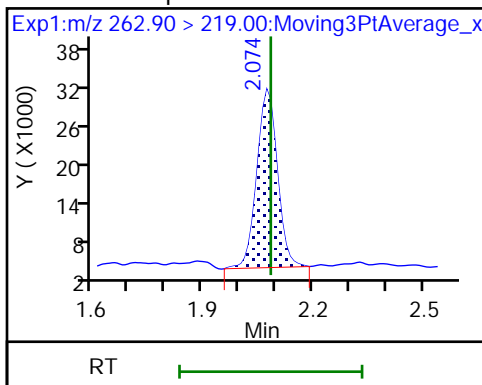
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

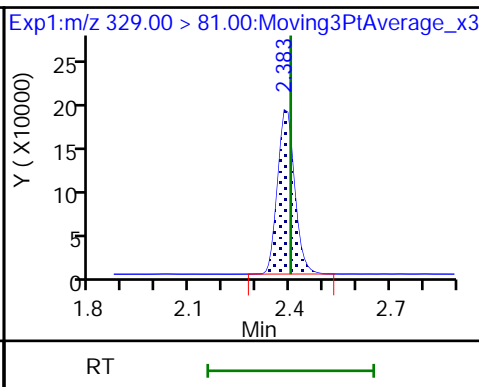
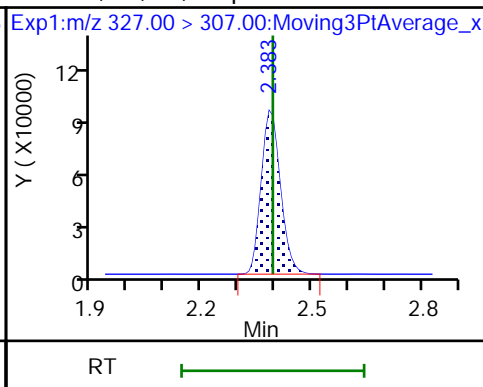
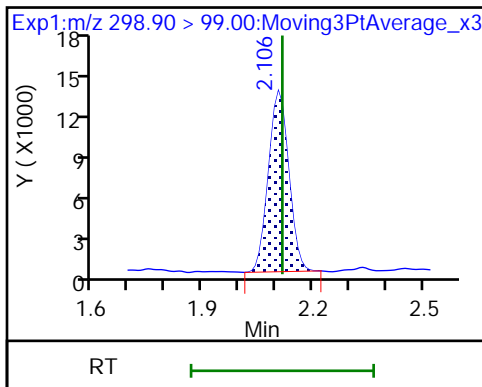
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

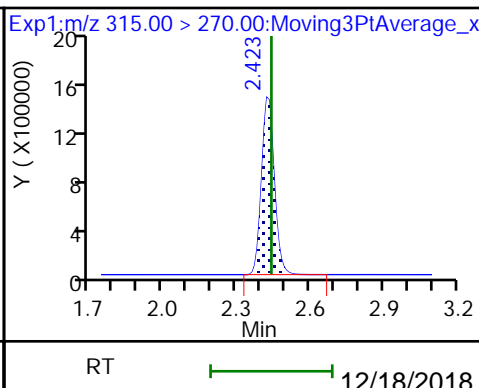
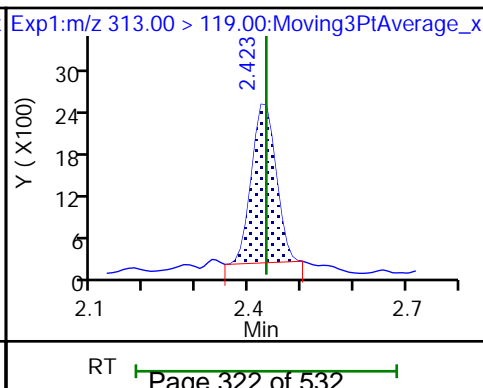
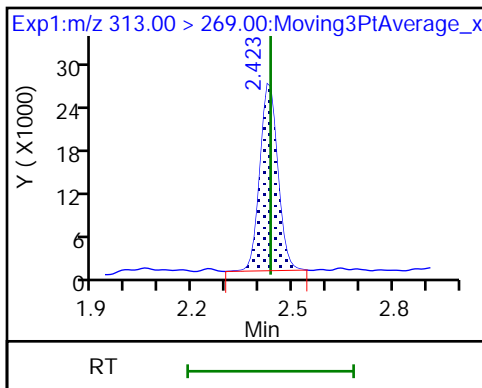
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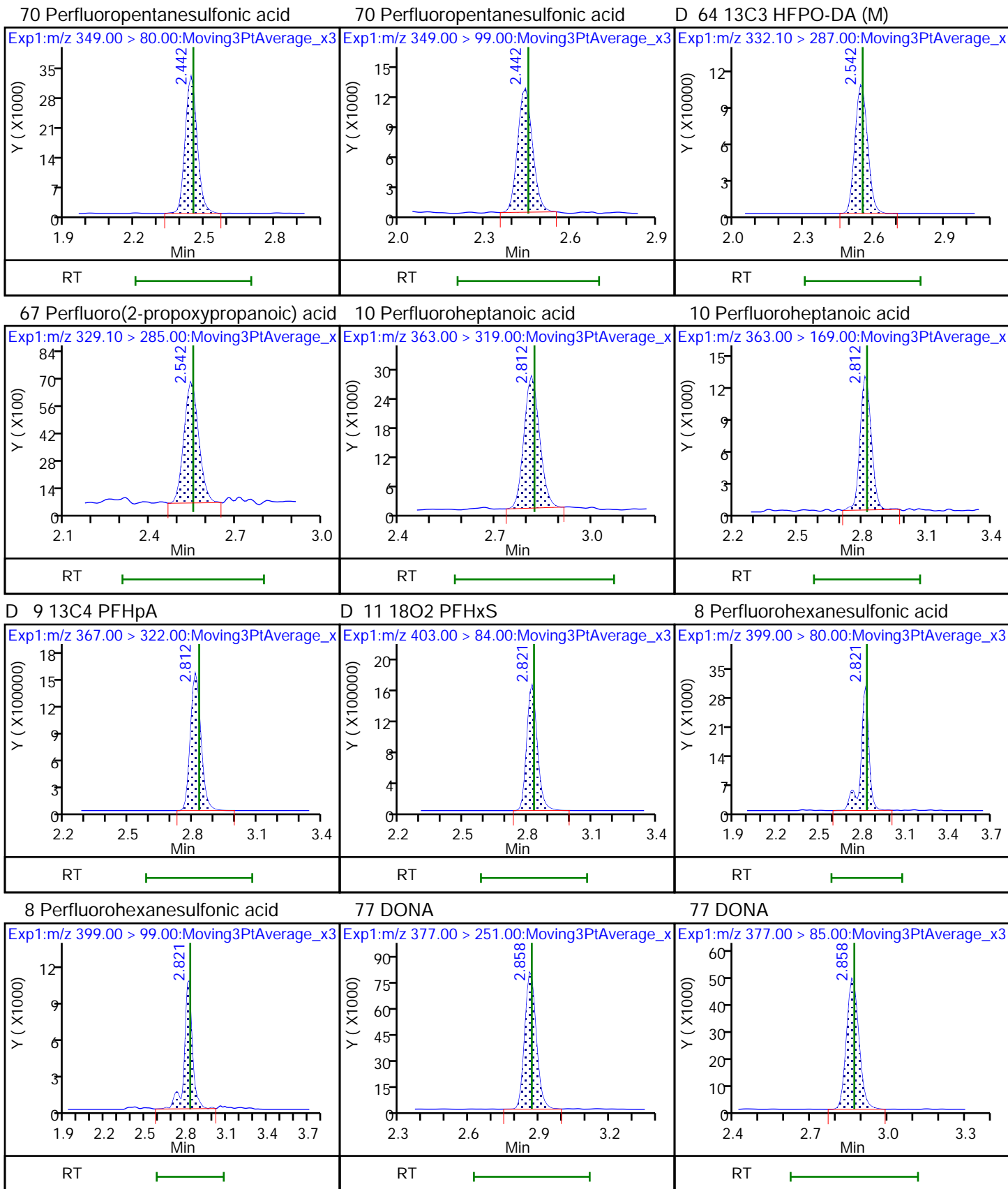


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

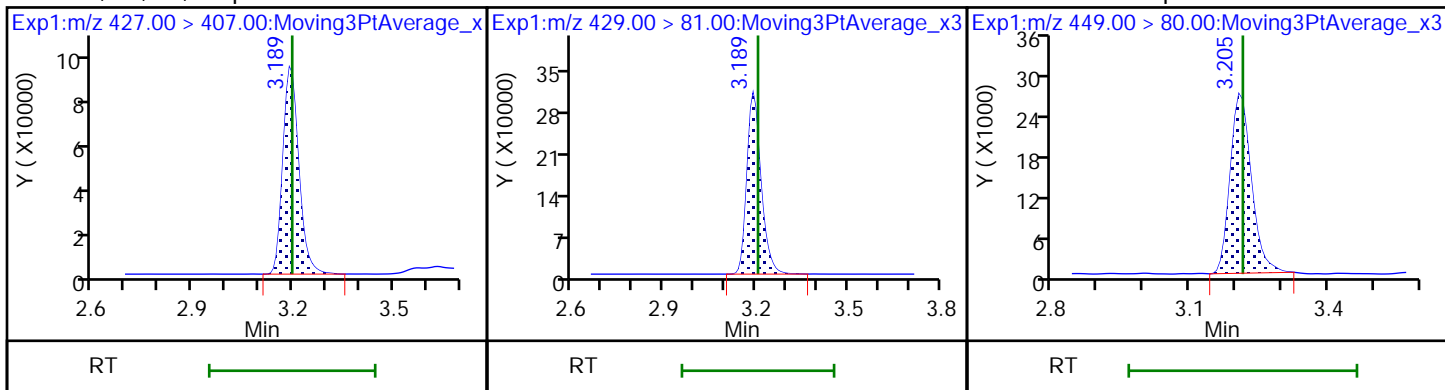
D 7 13C2 PFHxA





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

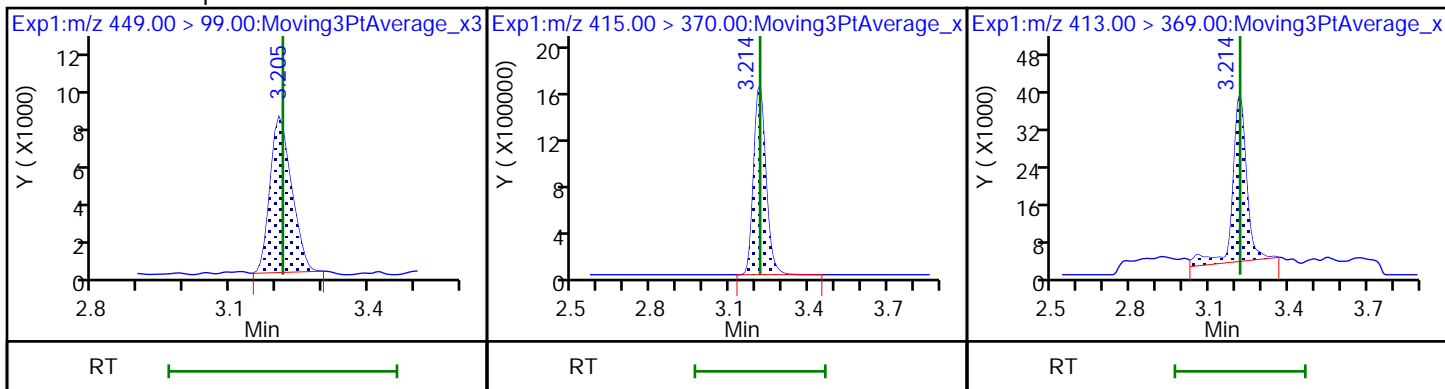
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

* 62 13C2 PFOA

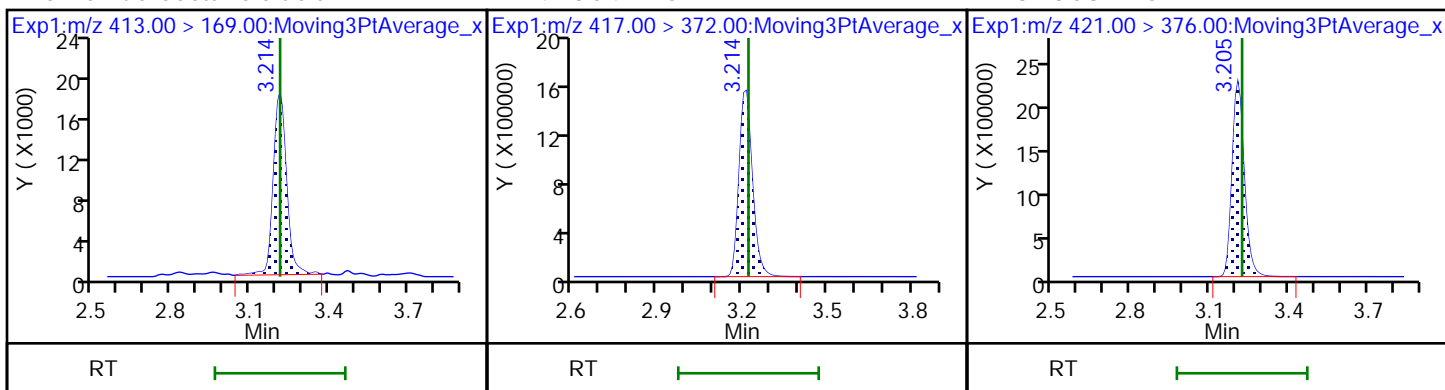
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

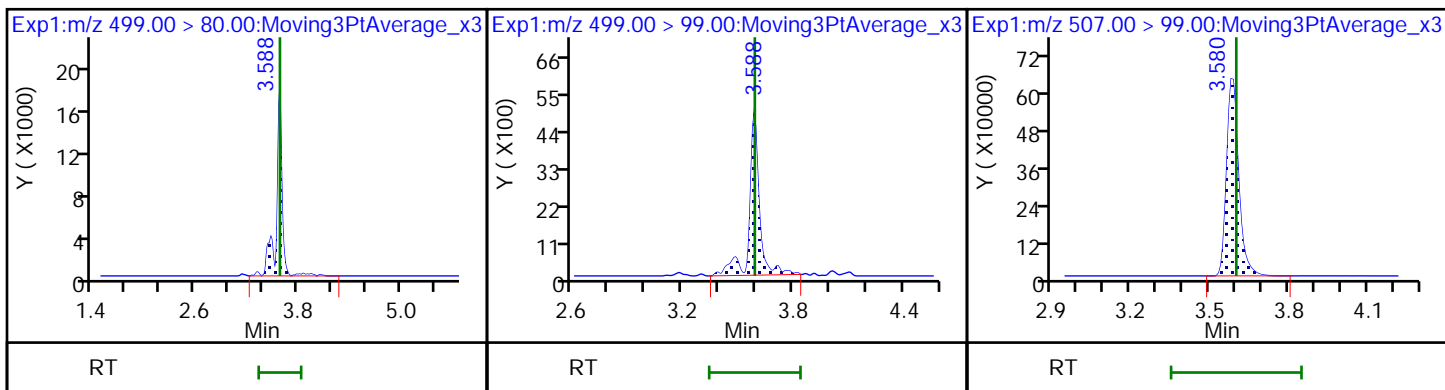
D 73 13C8 PFOA



17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

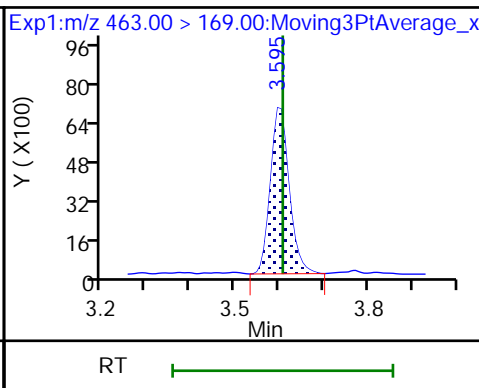
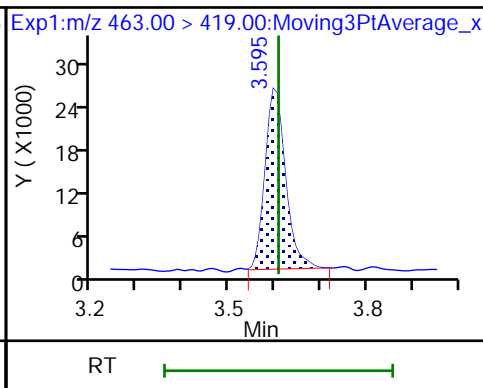
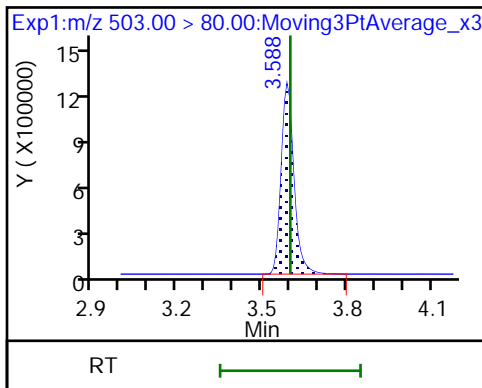
D 72 13C8 PFOS



D 18 13C4 PFOS

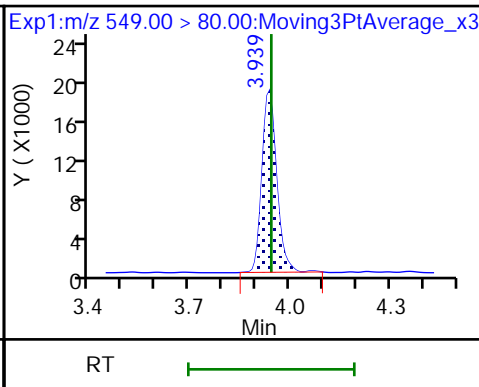
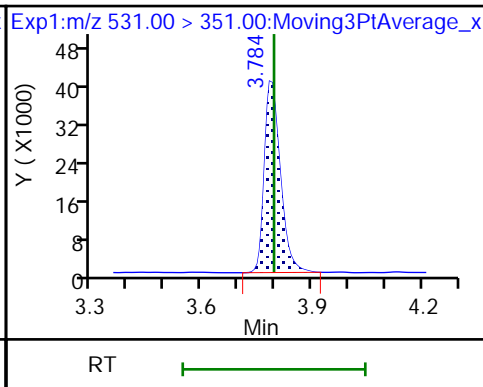
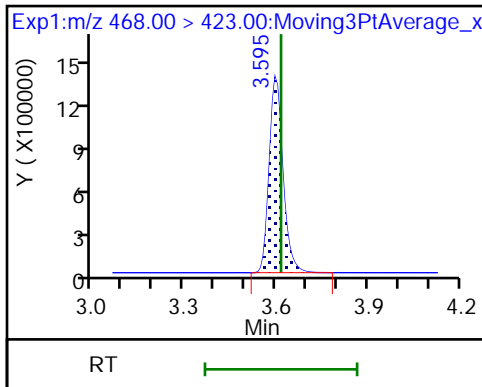
20 Perfluorononanoic acid

20 Perfluorononanoic acid



D 19 13C5 PFNA

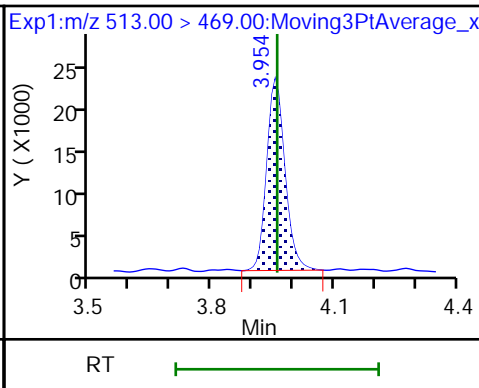
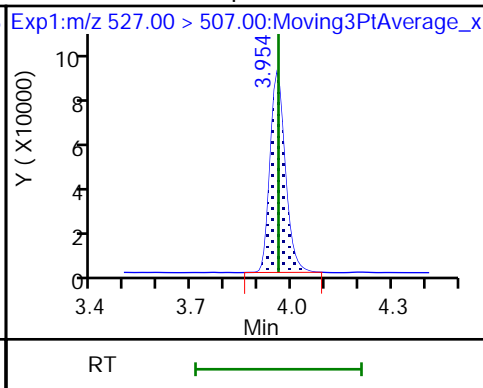
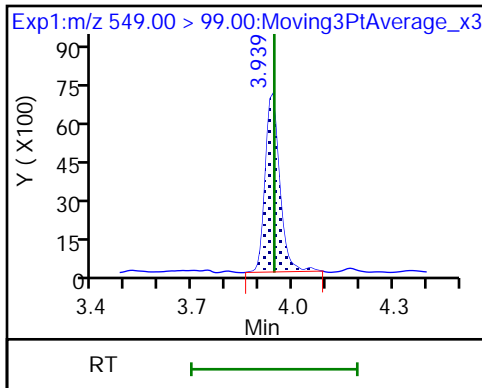
69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid



68 Perfluorononanesulfonic acid

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

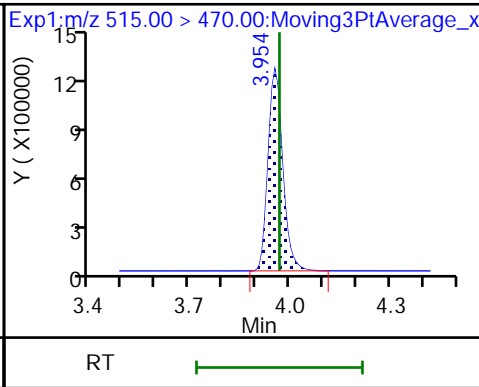
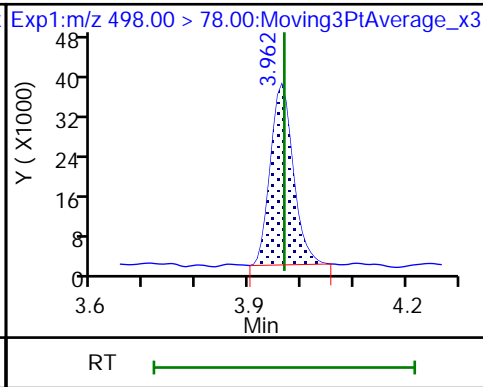
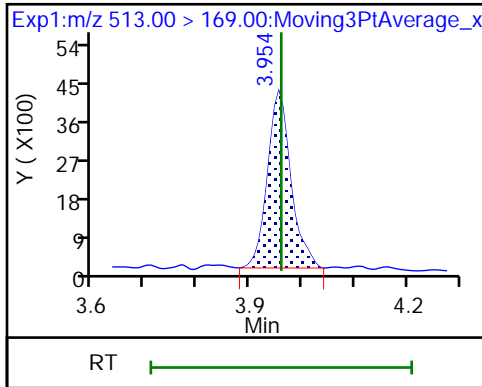
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

22 Perfluorooctanesulfonamide

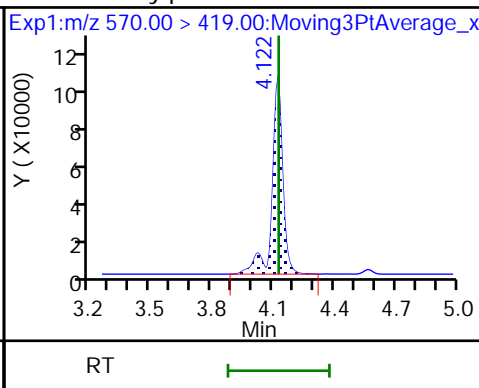
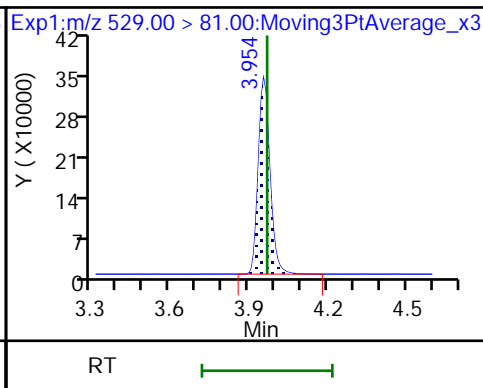
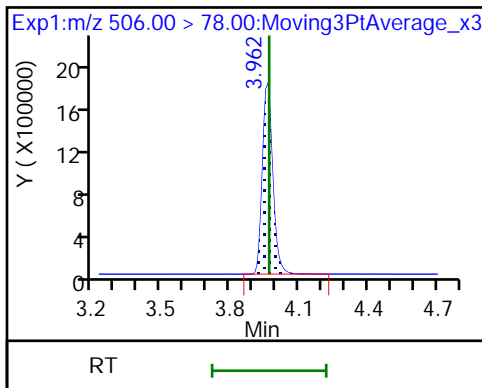
D 23 13C2 PFDA



D 21 13C8 FOSA

D 26 M2-8:2 FTS

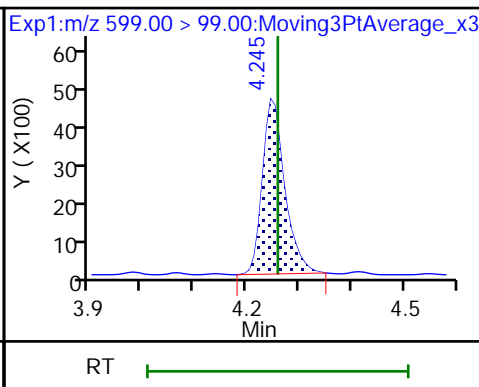
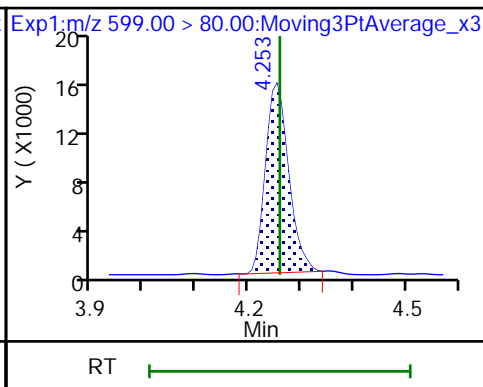
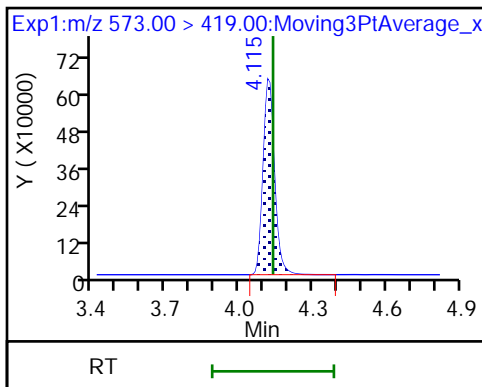
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

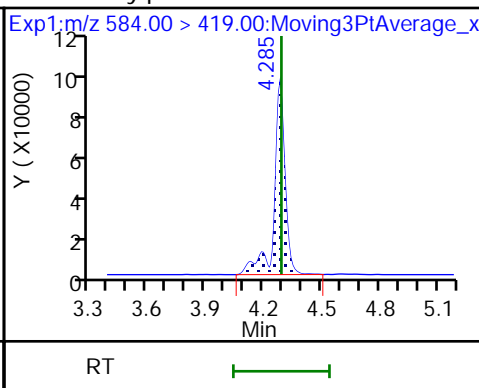
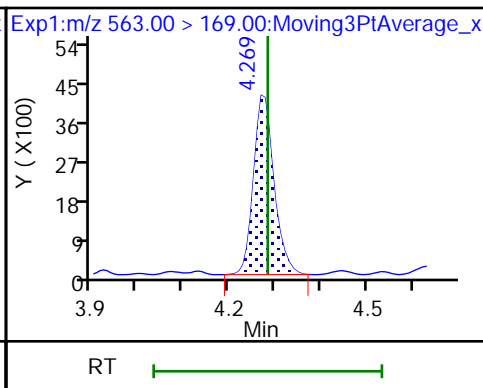
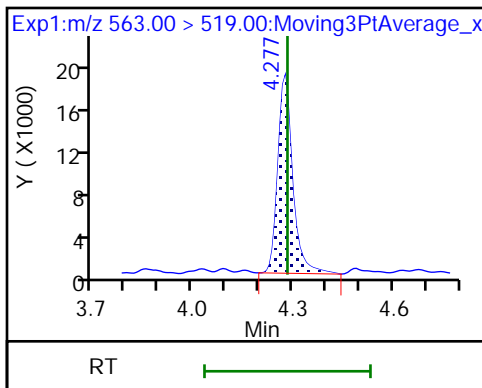
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

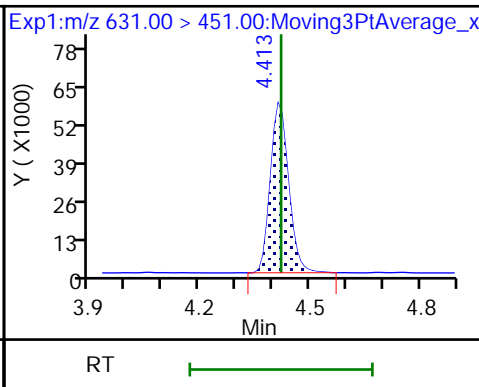
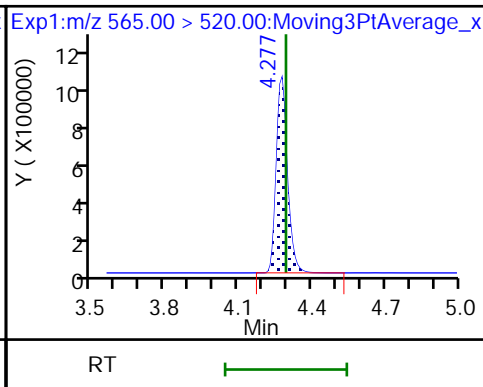
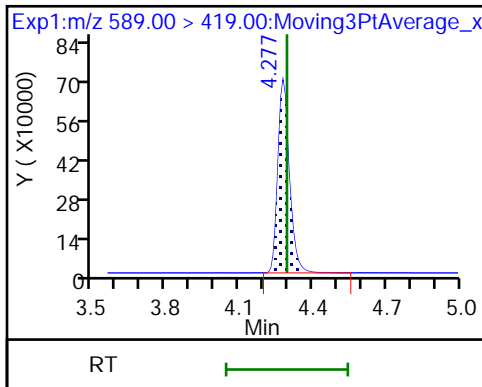
33 N-ethylperfluorooctanesulfonamido

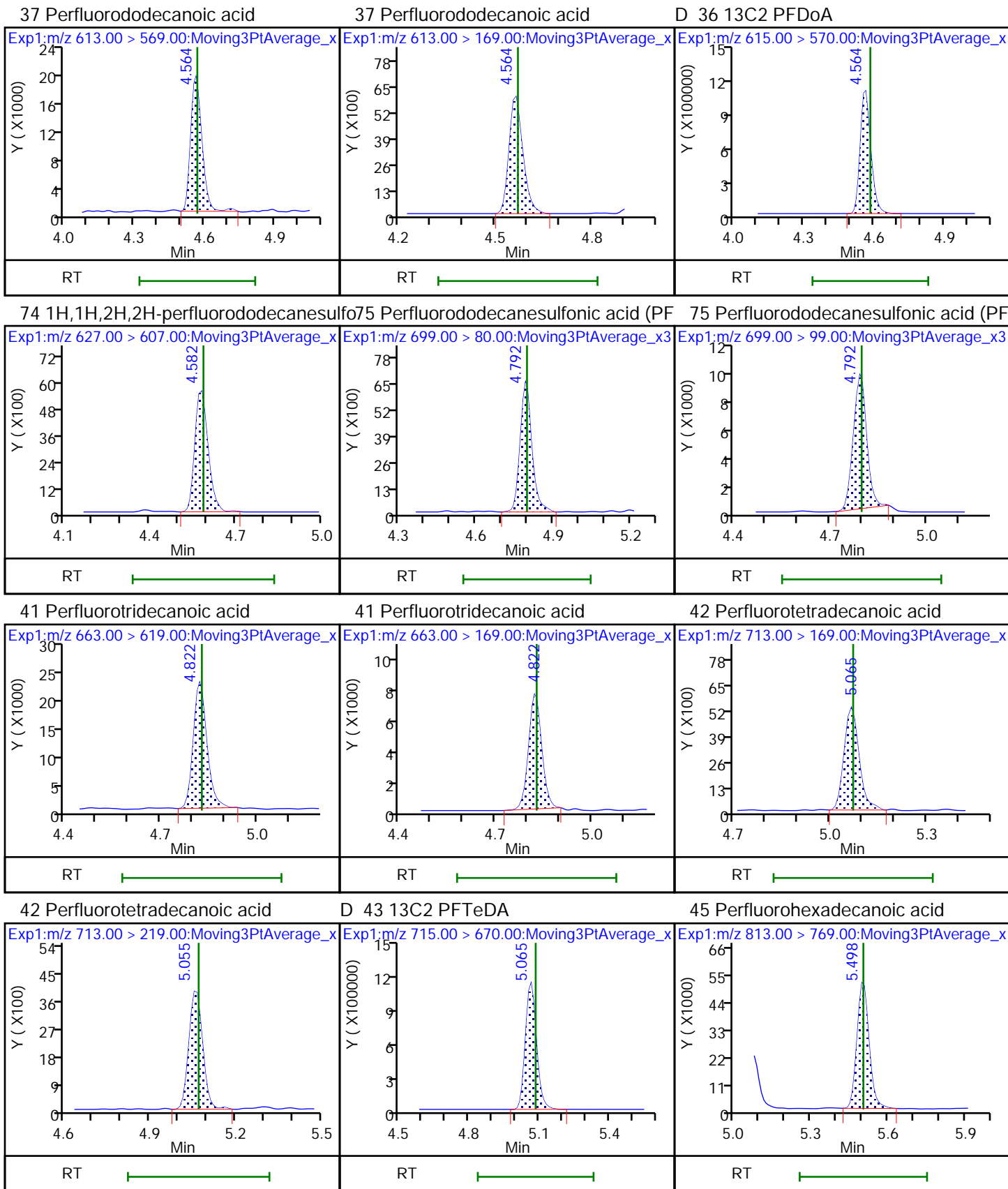


D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

66 11-Chloroeicosafuoro-3-oxaundecan

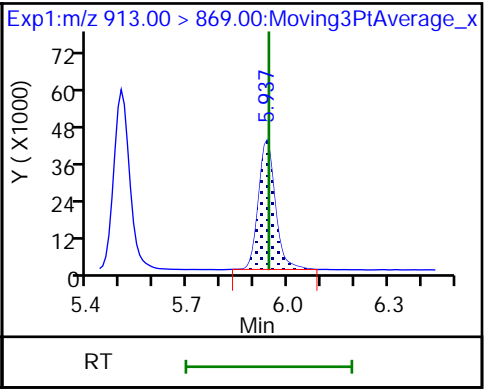
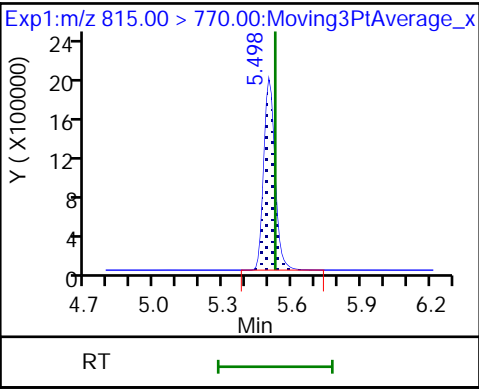
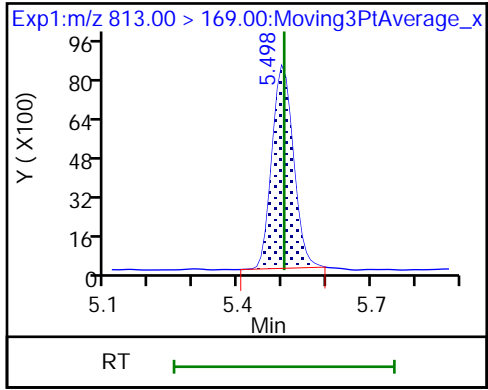




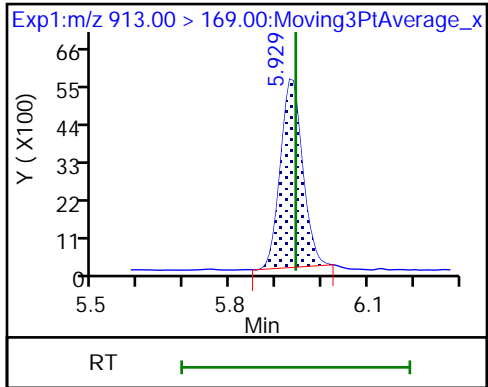
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



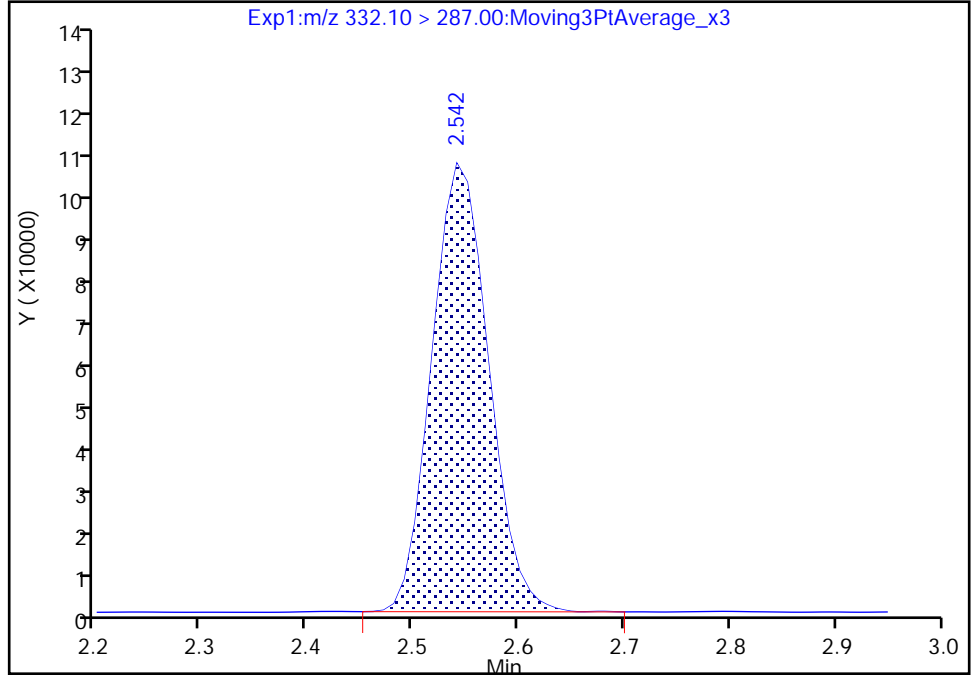
TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68708.b\2018.12.05LLB_005.d
Injection Date: 06-Dec-2018 06:20:14 Instrument ID: A8_N
Lims ID: CCVL
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 34 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

D 64 13C3 HFPO-DA, CAS: STL02255
Signal: 1

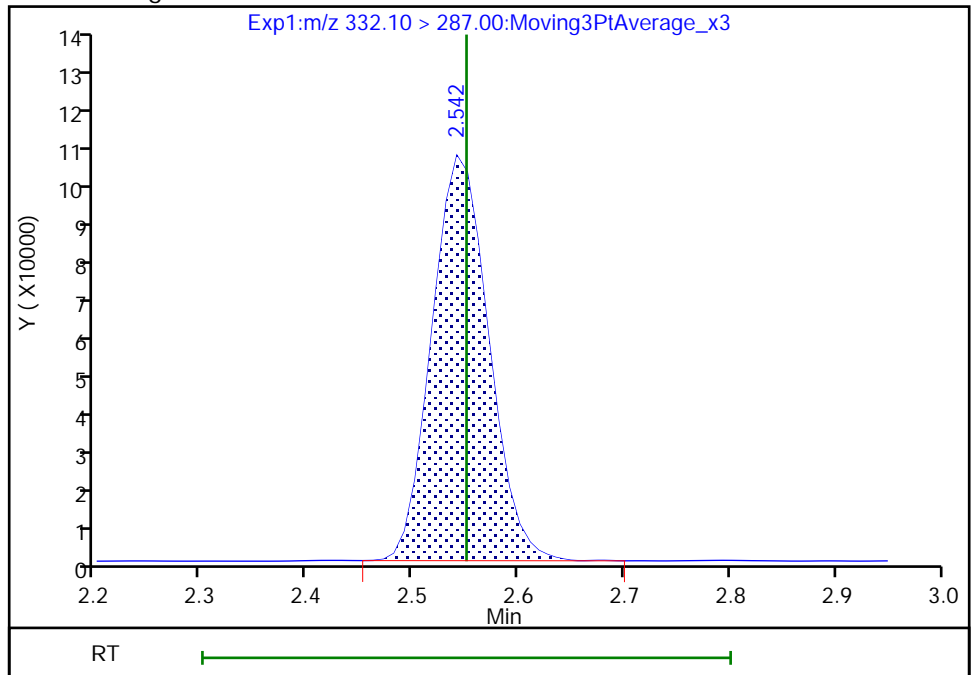
RT: 2.54
Area: 381128
Amount: 0
Amount Units: ng/ml

Processing Integration Results



RT: 2.54
Area: 381128
Amount: 2.547713
Amount Units: ng/ml

Manual Integration Results



Reviewer: yuj, 06-Dec-2018 10:15:08
Audit Action: Assigned Compound ID

Audit Reason: Peak assignment corrected

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-263400/3 Calibration Date: 12/06/2018 06:27
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.12.05LLB_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	0.9101	0.9449		1.04	1.00	3.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.090	1.092		1.00	1.00	0.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9705	1.015		0.925	0.884	4.6	50.0
4:2 FTS	AveID	0.1927	0.2136		1.04	0.934	10.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.003	0.9694		0.967	1.00	-3.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8590	0.9522		1.04	0.938	10.8	50.0
HFPO-DA (GenX)	AveID	3.409	3.021		0.886	1.00	-11.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.107		1.04	1.00	4.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.086	1.013		0.849	0.910	-6.7	40.0
DONA	AveID	3.963	4.174		0.992	0.942	5.3	50.0
6:2 FTS	AveID	1.556	1.512		0.921	0.948	-2.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.310	1.311		0.953	0.952	0.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.134	1.107		0.977	1.00	-2.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.115	1.141		0.950	0.928	2.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.032	1.082		1.05	1.00	4.8	40.0
F-53B Major	AveID	2.005	1.934		0.899	0.932	-3.6	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7778	0.7950		0.981	0.960	2.2	50.0
8:2 FTS	AveID	1.310	1.320		0.965	0.958	0.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9866	0.999		1.01	1.00	1.3	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.001	0.9555		0.955	1.00	-4.5	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9409	0.9417		1.00	1.00	0.0	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6478	0.6605		0.983	0.964	2.0	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8947	0.8389		0.938	1.00	-6.2	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8594	0.8502		0.989	1.00	-1.1	40.0
F-53B Minor	AveID	2.949	2.992		0.956	0.942	1.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.087	1.066		0.981	1.00	-1.9	40.0
10:2 FTS	AveID	0.9483	0.8715		0.886	0.964	-8.1	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2952	0.2992		0.981	0.968	1.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.057	0.9920		0.939	1.00	-6.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2587	0.2463		0.952	1.00	-4.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9040		1.02	1.00	2.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-263400/3 Calibration Date: 12/06/2018 06:27
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.12.05LLB_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.160	1.178		1.02	1.00	1.6	50.0
13C4 PFBA	Ave	1.526	1.468		2.41	2.50	-3.8	50.0
13C5 PFPeA	Ave	0.9597	0.9189		2.39	2.50	-4.3	50.0
13C3 PFBS	Ave	1.463	1.464		2.33	2.33	0.0	50.0
M2-4:2 FTS	Ave	0.1173	0.1352		2.69	2.34	15.2	50.0
13C2 PFHxA	Ave	1.015	1.015		2.50	2.50	-0.0	50.0
13C3 HFPO-DA	Ave	0.0703	0.0824		2.93	2.50	17.2	50.0
13C4 PFHpA	Ave	0.997	0.9443		2.37	2.50	-5.2	50.0
18O2 PFHxS	Ave	1.137	1.168		2.43	2.37	2.7	50.0
M2-6:2 FTS	Ave	0.1752	0.2048		2.78	2.38	16.9	40.0
13C4 PFOA	Ave	0.9734	0.9645		2.48	2.50	-0.9	50.0
13C8 PFOA	Ave	1.435	1.472		2.51	2.45	2.6	50.0
13C4 PFOS	Ave	0.7427	0.7645		2.46	2.39	2.9	50.0
13C8 PFOS	Ave	0.3918	0.4324		2.64	2.39	10.3	50.0
13C5 PFNA	Ave	0.8157	0.7960		2.44	2.50	-2.4	50.0
13C2 PFDA	Ave	0.7121	0.7223		2.54	2.50	1.4	50.0
M2-8:2 FTS	Ave	0.1889	0.2279		2.89	2.40	20.6	40.0
13C8 FOSA	Ave	1.097	1.173		2.67	2.50	6.9	50.0
d3-NMeFOSAA	Ave	0.3479	0.4079		2.93	2.50	17.3	50.0
13C2 PFUnA	Ave	0.5733	0.6088		2.66	2.50	6.2	50.0
d5-NEtFOSAA	Ave	0.3676	0.4329		2.94	2.50	17.8	50.0
13C2 PFDoA	Ave	0.6099	0.6633		2.72	2.50	8.7	50.0
13C2 PFTeDA	Ave	0.7261	0.7390		2.54	2.50	1.8	50.0
13C2 PFHxDA	Ave	1.341	1.329		2.48	2.50	-0.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68708.b\2018.12.05LLB_006.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 06-Dec-2018 06:27:45 ALS Bottle#: 35 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68708.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 12-Dec-2018 16:43:26 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0328

First Level Reviewer: yuj Date: 06-Dec-2018 10:21:41

Ratio Calibration: None

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	1.763	1.762	0.001	0.549	7387567	2.41	96.2	7350	
2 Perfluorobutanoic acid	212.90 > 169.00	1.770	1.770	0.0	1.004	2792325	1.04	104	568	
D 3 13C5 PFPeA	267.90 > 223.00	2.074	2.084	-0.010	0.645	4623276	2.39	95.7	7383	
4 Perfluoropentanoic acid	262.90 > 219.00	2.085	2.085	0.0	1.005	2018998	1.00	100	136	
D 47 13C3 PFBS	301.90 > 80.00	2.106	2.115	-0.009	0.655	6848306	2.33	100	464279	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.116	2.116	0.0	1.005	2643532	0.9247	Target=2.49	105	2347
	298.90 > 99.00	2.106	2.116	-0.010	1.000	1096251		2.41(1.25-3.74)		1003
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.393	2.393	0.0	1.136	587712	1.04	111	4696	
D 60 M2-4:2 FTS	329.00 > 81.00	2.393	2.402	-0.009	0.744	635373	2.69	115	1414	
6 Perfluorohexanoic acid	313.00 > 269.00	2.433	2.433	0.0	1.000	1979246	0.9667	Target=10.07	96.7	895
	313.00 > 119.00	2.433	2.433	0.0	1.000	182822		10.83(5.03-15.10)		689
D 7 13C2 PFHxA	315.00 > 270.00	2.433	2.442	-0.009	0.757	5104414	2.50	99.9	7446	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.452	2.452	0.0	1.165	2630713	1.04	Target=2.71	111	8060
	349.00 > 99.00	2.452	2.452	0.0	1.165	972558		2.70(1.36-4.07)		2928
D 64 13C3 HFPO-DA	332.10 > 287.00	2.551	2.551	0.0	0.794	414663	2.93	117	1636	

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	2.551	2.551	0.0	1.000	501083	0.8862	88.6	280	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.821	2.821	0.0	1.000	2103063	1.04	Target=2.27	104	653
	363.00	> 169.00	2.821	2.821	0.0	1.000	819280		2.57(1.13-3.40)		1296
D 9 13C4 PFHpA	367.00	> 322.00	2.821	2.830	-0.009	0.878	4751190	2.37		94.8	9692
D 11 18O2 PFHxS	403.00	> 84.00	2.821	2.830	-0.009	0.878	5558030	2.43		103	10005
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.831	2.831	0.0	1.003	2166945	0.8493	Target=3.00	93.3	3535
	399.00	> 99.00	2.821	2.831	-0.010	1.000	749987		2.89(1.50-4.49)		1806
77 DONA	377.00	> 251.00	2.868	2.868	0.0	0.799	6049631	0.99	Target=1.69	105	6879
	377.00	> 85.00	2.868	2.868	0.0	0.799	3569961		1.69(0.85-2.54)		8355
13 1H,1H,2H,2H-perfluorooctanesulfonyl fluoride	427.00	> 407.00	3.198	3.198	0.0	1.000	590964	0.9212		97.2	262
D 12 M2-6:2 FTS	429.00	> 81.00	3.198	3.205	-0.007	0.995	978929	2.78		117	5418
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.214	3.214	0.0	0.895	1920558	0.9531	Target=3.88	100	4843
	449.00	> 99.00	3.214	3.214	0.0	0.895	507688		3.78(1.94-5.82)		1724
* 62 13C2 PFOA	415.00	> 370.00	3.214	3.214	0.0		5031352	2.50			7355
15 Perfluorooctanoic acid	413.00	> 369.00	3.214	3.214	0.0	1.000	2151743	0.9773	Target=1.68	97.6	199
	413.00	> 169.00	3.214	3.214	0.0	1.000	1156730		1.86(0.84-2.52)		1105
D 14 13C4 PFOA	417.00	> 372.00	3.214	3.222	-0.008	1.000	4852884	2.48		99.1	7495
D 73 13C8 PFOA	421.00	> 376.00	3.214	3.222	-0.008	1.000	7252971	2.51		103	15008
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.591	3.591	0.0	1.000	1628731	0.9495	Target=4.62	102	535
	499.00	> 99.00	3.591	3.591	0.0	1.000	352241		4.62(2.31-6.93)		1103
D 72 13C8 PFOS	507.00	> 99.00	3.591	3.599	-0.008	1.117	2079662	2.64		110	6358
D 18 13C4 PFOS	503.00	> 80.00	3.591	3.599	-0.008	1.117	3677143	2.46		103	8291
20 Perfluorononanoic acid	463.00	> 419.00	3.607	3.607	0.0	1.000	1732775	1.05	Target=3.79	105	701
	463.00	> 169.00	3.607	3.607	0.0	1.000	428915		4.04(1.90-5.69)		1802
D 19 13C5 PFNA	468.00	> 423.00	3.607	3.615	-0.008	1.122	4004992	2.44		97.6	9404
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.796	3.796	0.0	1.057	2772699	0.8987		96.4	6565

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	3.944	3.944	0.0	1.098	1174207	0.9812	Target=2.65	102	4760	
549.00 > 99.00	3.944	3.944	0.0	1.098	414256		2.83(1.33-3.97)		2863	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.959	3.959	0.0	1.000	580086	0.9654		101	3388	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.959	3.959	0.0	1.000	1452218	1.01	Target=4.73	101	1385	
513.00 > 169.00	3.967	3.959	0.008	1.002	285901		5.08(2.36-7.09)		618	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.967	3.967	0.0	1.000	2255562	0.9547		95.5	459	
D 23 13C2 PFDA										
515.00 > 470.00	3.959	3.968	-0.009	1.232	3634053	2.54		101	7313	
D 21 13C8 FOSA										
506.00 > 78.00	3.967	3.968	-0.001	1.234	5901731	2.67		107	6219	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.959	3.968	-0.009	1.232	1098630	2.89		121	6694	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.126	4.126	0.0	1.000	773123	1.00		100	372	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.126	4.136	-0.010	1.284	2052384	2.93		117	4225	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.258	4.258	0.0	1.186	979562	0.9828	Target=2.77	102	4505	
599.00 > 99.00	4.258	4.258	0.0	1.186	321017		3.05(1.39-4.16)		2409	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.283	4.283	0.0	1.000	1027939	0.9376	Target=4.24	93.8	1092	
563.00 > 169.00	4.283	4.283	0.0	1.000	223252		4.60(2.12-6.36)		1282	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.292	4.292	0.0	1.002	740634	0.9892		98.9	1795	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.283	4.293	-0.010	1.333	2177902	2.94		118	4857	
D 30 13C2 PFUnA										
565.00 > 520.00	4.283	4.293	-0.010	1.333	3063241	2.66		106	6056	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.421	4.421	0.0	1.231	4335937	0.9557		101	10346	
35 MeFOSA										
512.00 > 169.00	4.472	4.472	0.0		650341	NC			556	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.569	4.569	0.0	1.000	1423336	0.9806	Target=4.27	98.1	1395	
613.00 > 169.00	4.569	4.569	0.0	1.000	351095		4.05(2.13-6.40)		1910	
D 36 13C2 PFDaA										
615.00 > 570.00	4.569	4.584	-0.015	1.422	3337030	2.72		109	7745	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.587	4.587	0.0	1.159	385393	0.8859		91.9	3833	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.647	4.647	0.0		701728	NC			439	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.797	4.797	0.0	1.336	445662	0.9812	Target=0.00	101	2538	
699.00 > 99.00	4.805	4.797	0.008	1.338	659261		0.68(0.00-0.00)		5455	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.828	4.828	0.0	1.057	1324089	0.9386	Target=2.51	93.9	1048	
663.00 > 169.00	4.828	4.828	0.0	1.057	437743		3.02(1.25-3.76)		3891	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.071	5.071	0.0	1.000	366271	0.9518	Target=1.42	95.2	2658	
713.00 > 219.00	5.071	5.071	0.0	1.000	266719		1.37(0.71-2.13)		2333	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.071	5.085	-0.014	1.578	3718229	2.54		102	11117	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.503	5.503	0.0	1.000	2417491	1.02	Target=5.72	102	262	
813.00 > 169.00	5.503	5.503	0.0	1.000	446742		5.41(2.86-8.58)		2866	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.503	5.526	-0.023	1.712	6685290	2.48		99.1	8501	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.942	5.942	0.0	1.080	3150518	1.02	Target=7.65	102	302	
913.00 > 169.00	5.942	5.942	0.0	1.080	404390		7.79(3.83-11.48)		2354	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68708.b\2018.12.05LLB_006.d

Injection Date: 06-Dec-2018 06:27:45

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 35

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

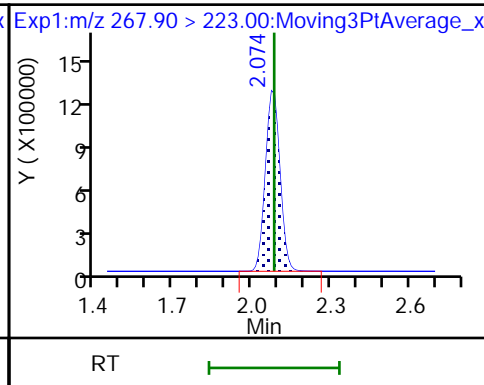
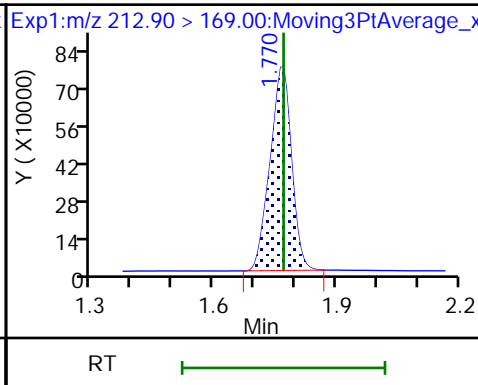
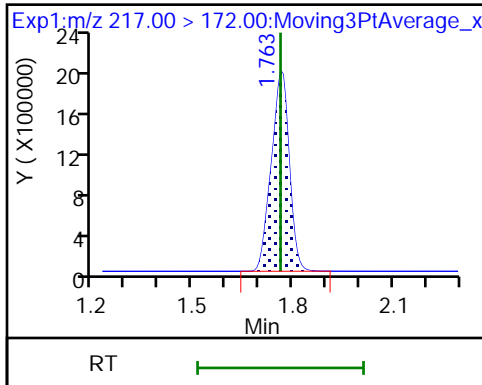
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

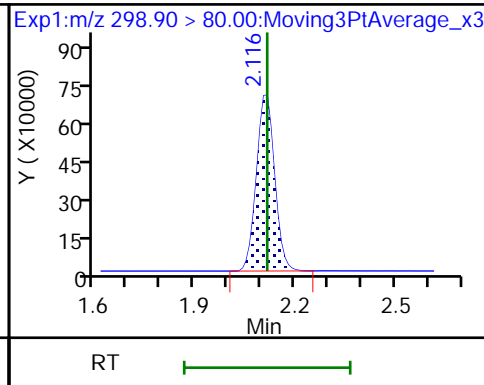
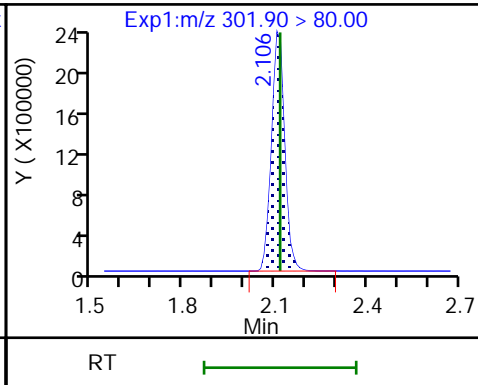
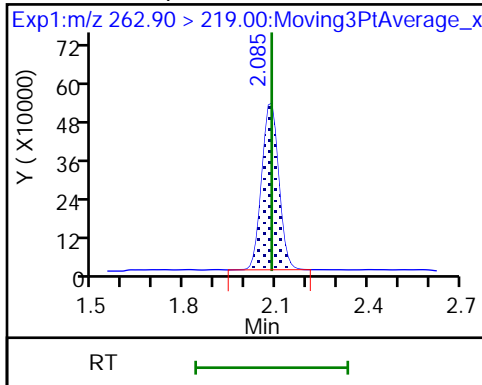
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

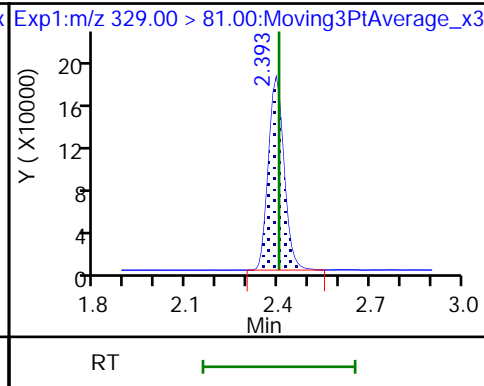
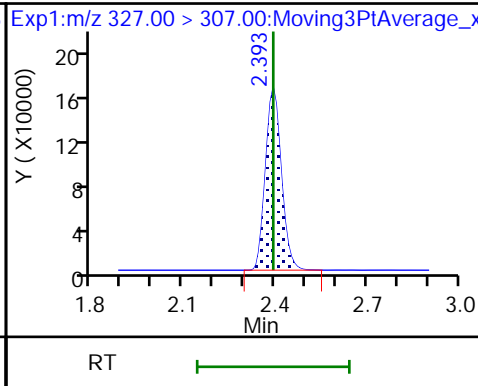
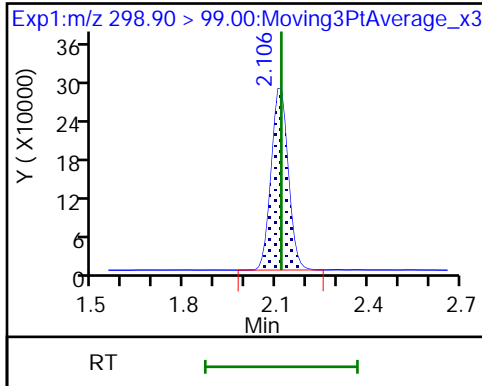
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

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

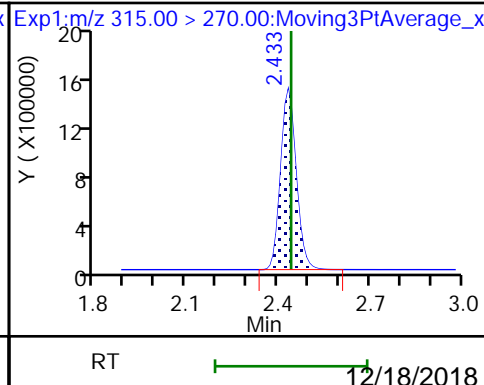
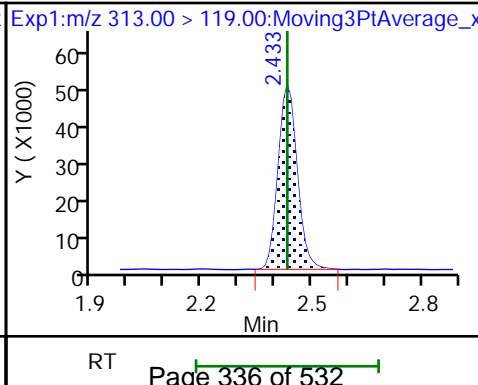
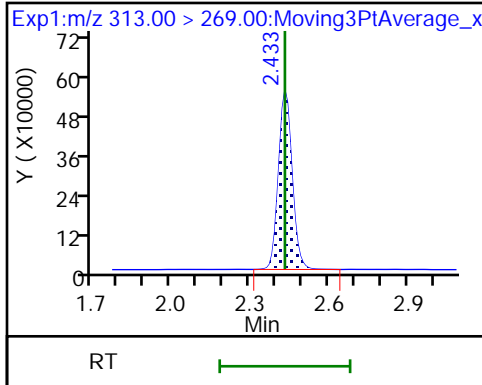
D 60 M2-4:2 FTS

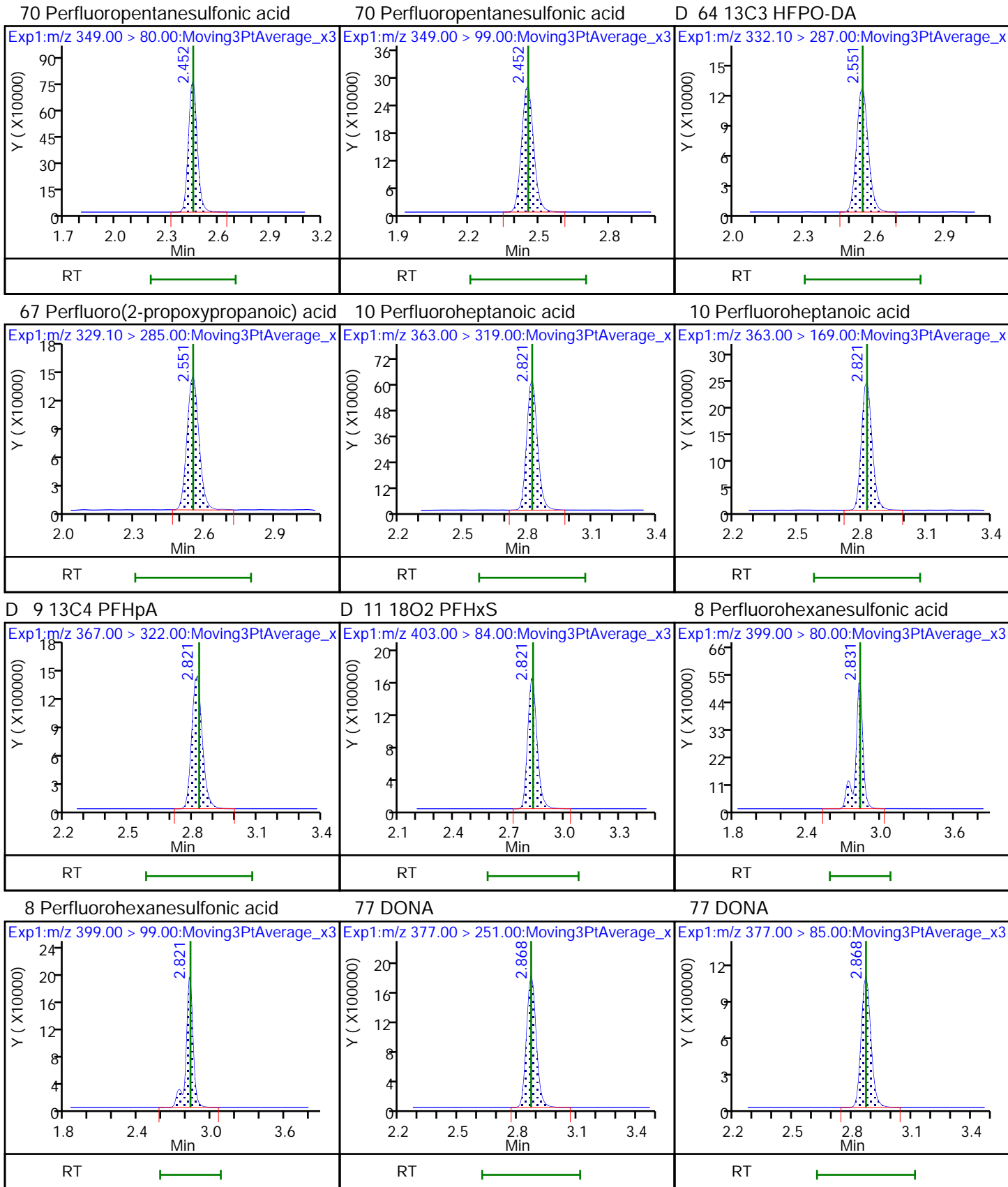


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

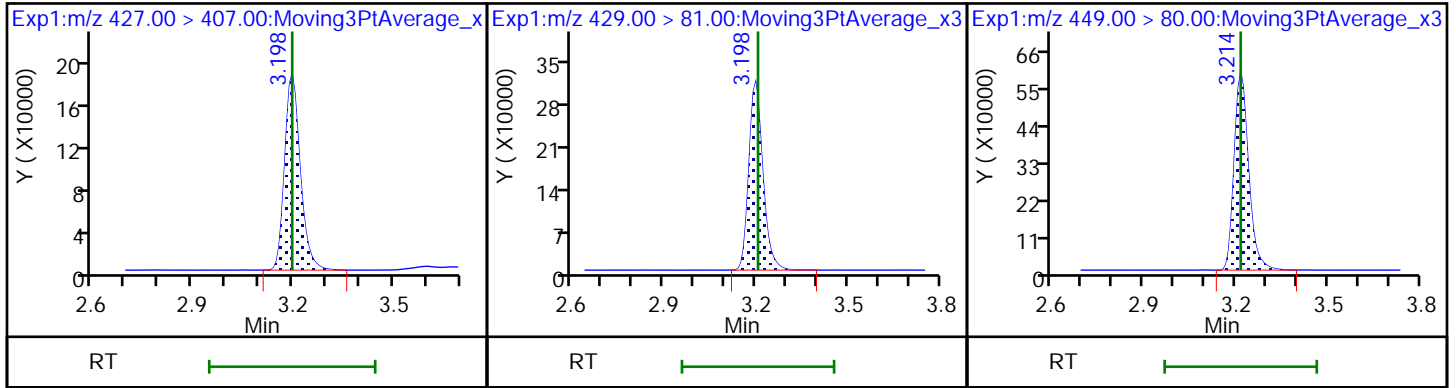
D 7 13C2 PFHxA





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

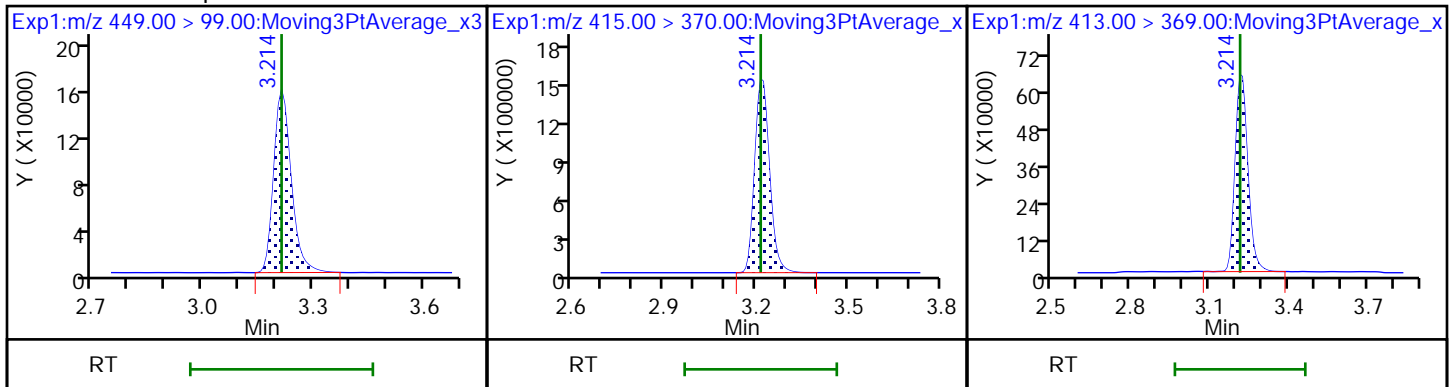
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

* 62 13C2 PFOA

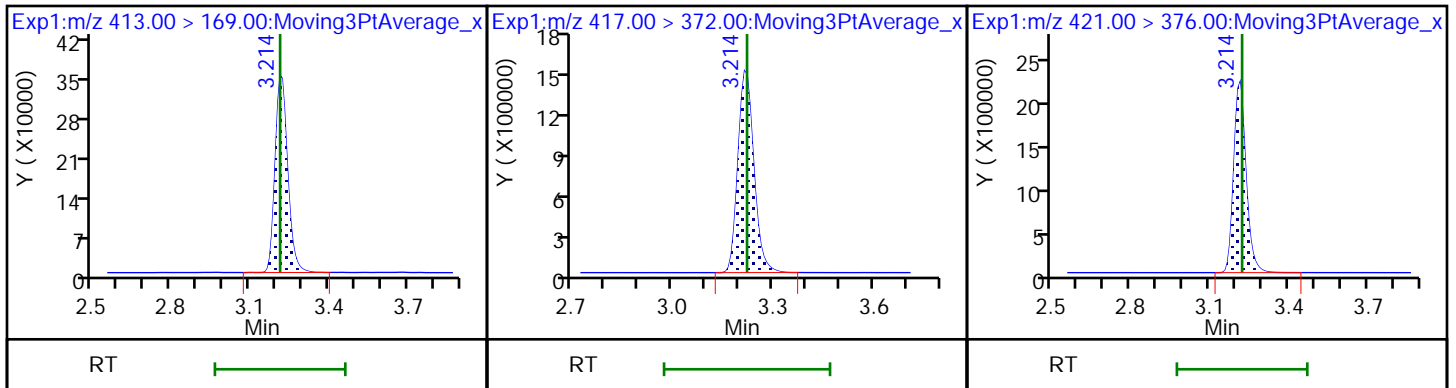
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

D 14 13C4 PFOA

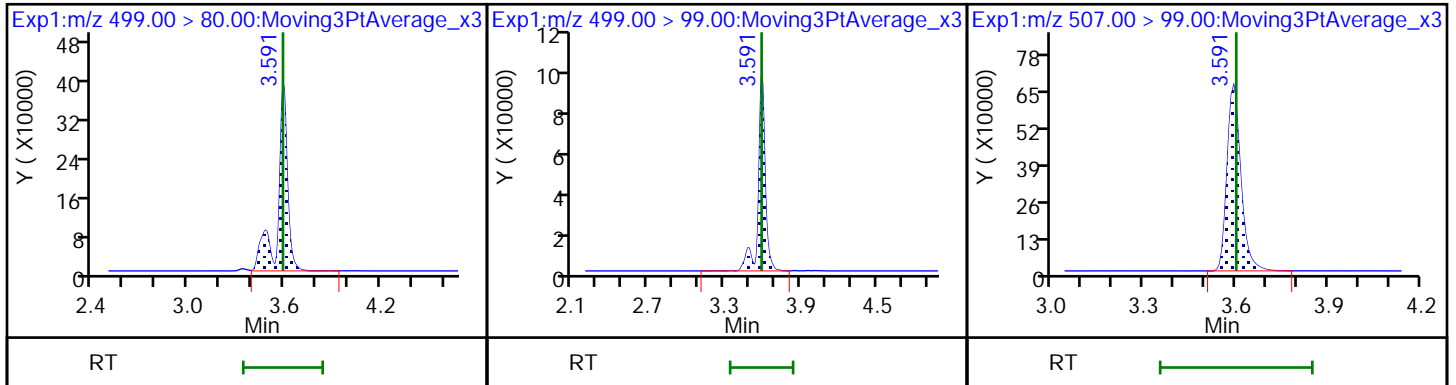
D 73 13C8 PFOA



17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

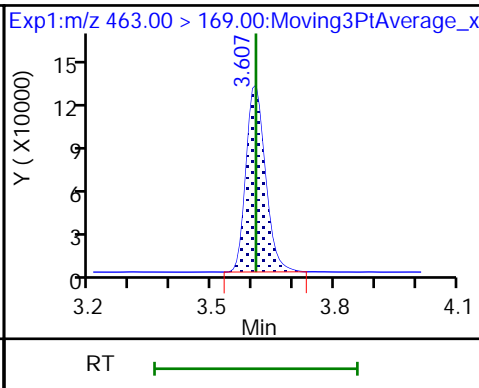
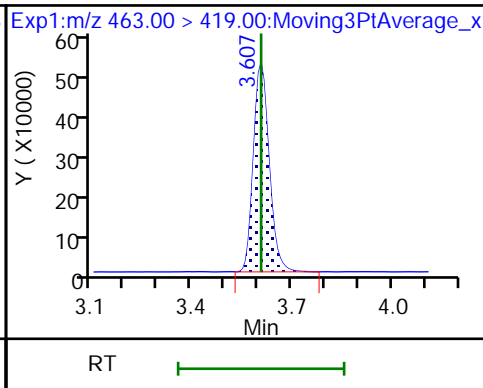
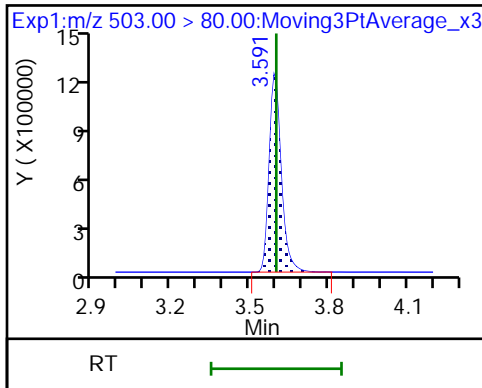
D 72 13C8 PFOS



D 18 13C4 PFOS

20 Perfluorononanoic acid

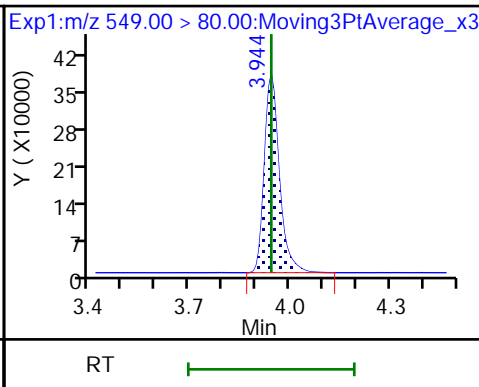
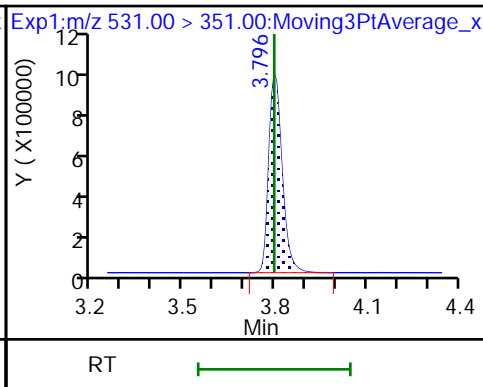
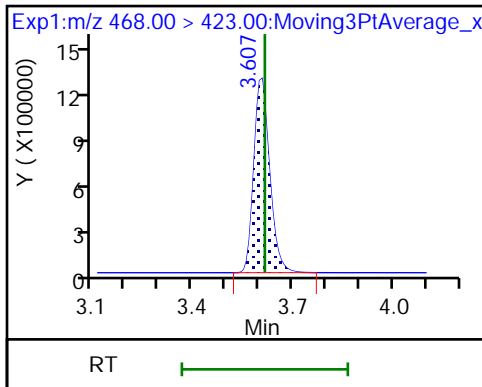
20 Perfluorononanoic acid



D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

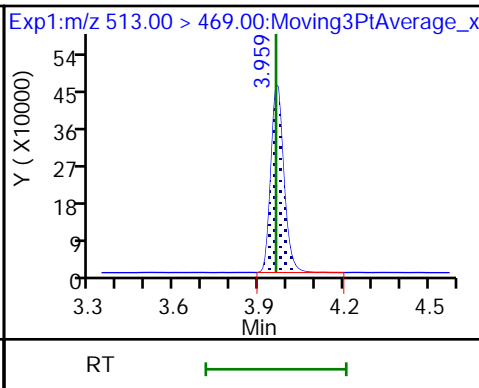
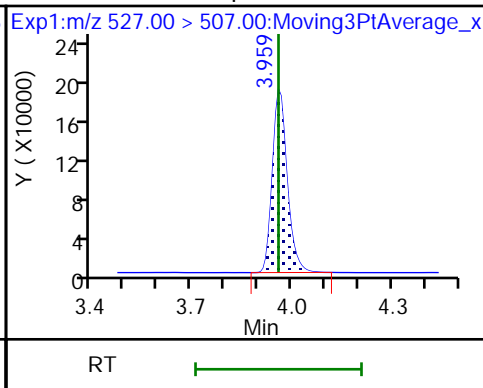
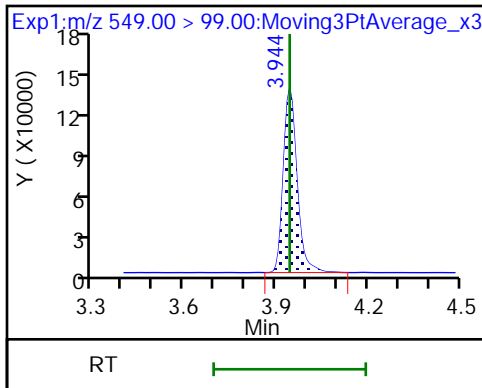
68 Perfluorononanesulfonic acid



68 Perfluorononanesulfonic acid

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

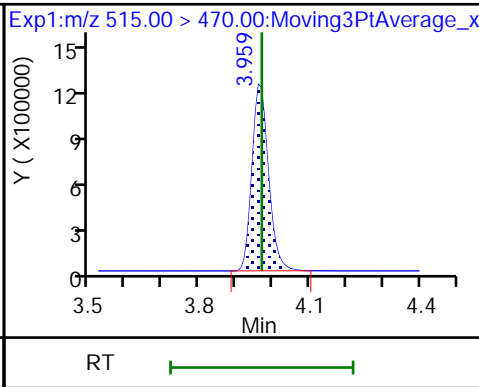
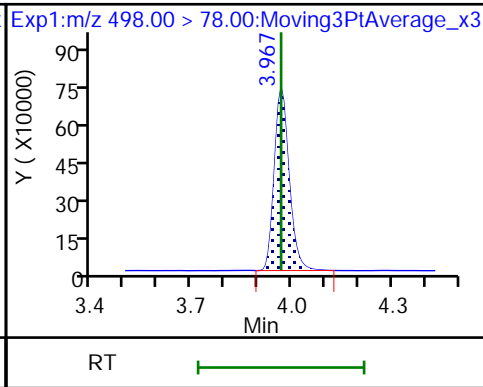
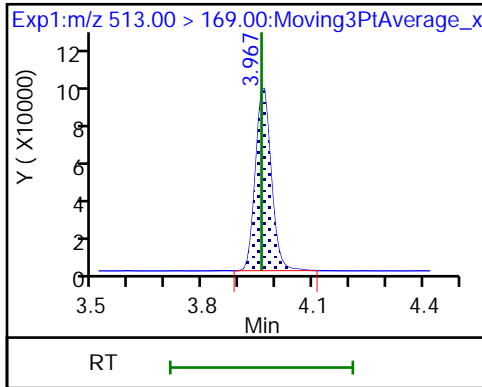
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

22 Perfluorooctanesulfonamide

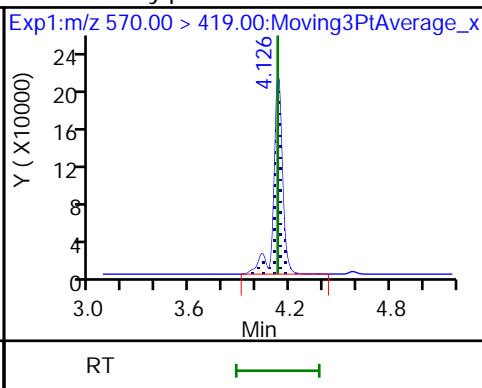
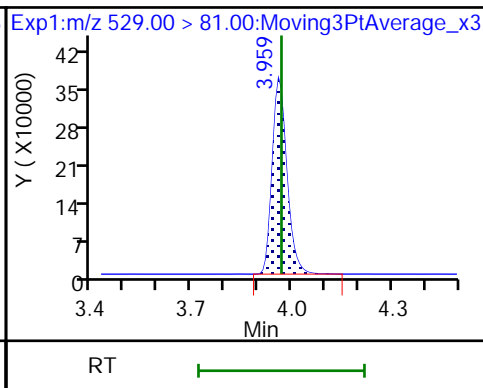
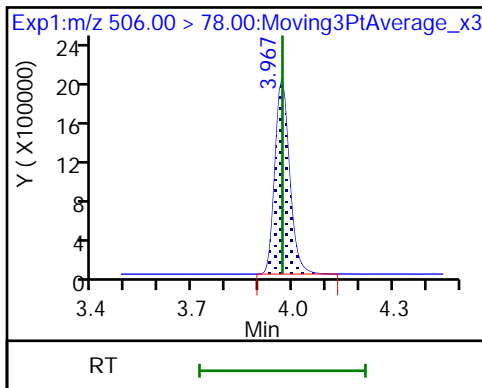
D 23 13C2 PFDA



D 21 13C8 FOSA

D 26 M2-8:2 FTS

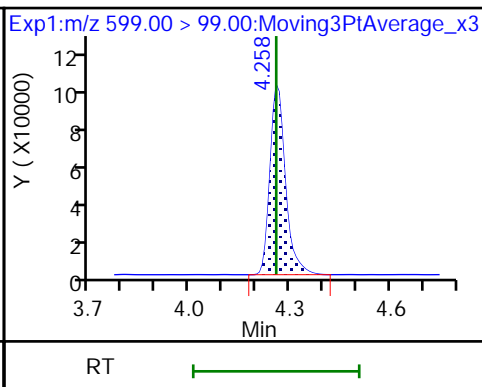
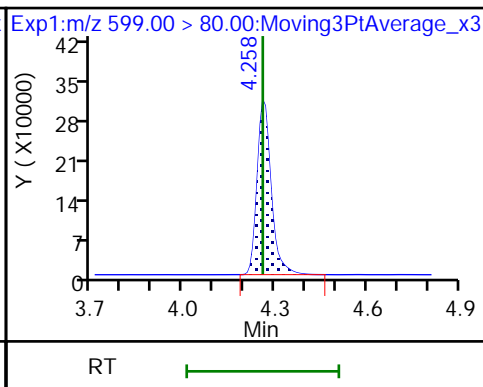
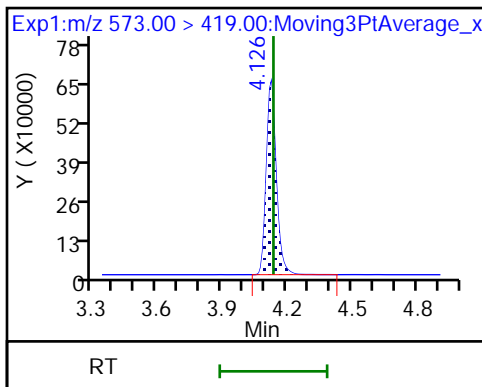
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

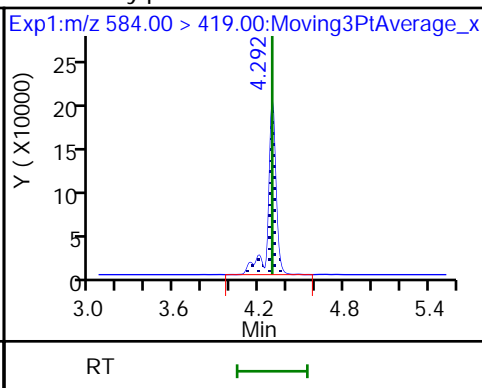
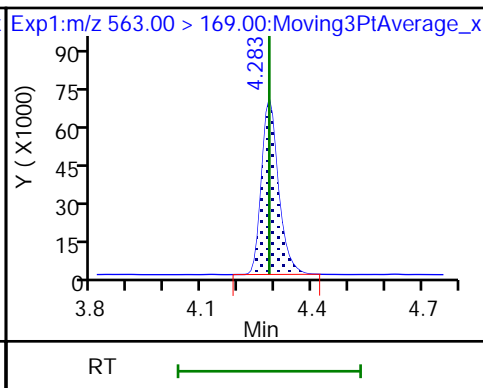
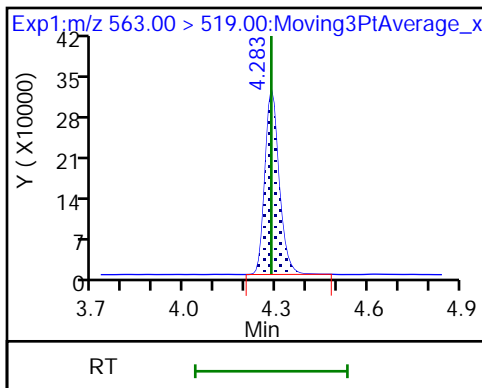
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

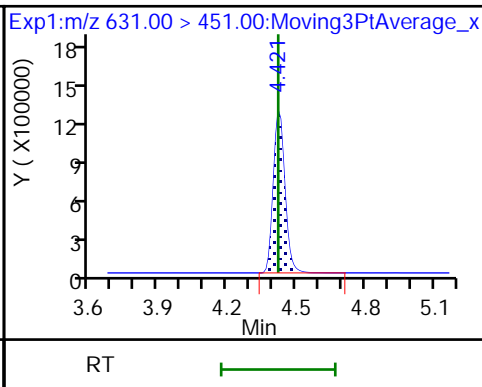
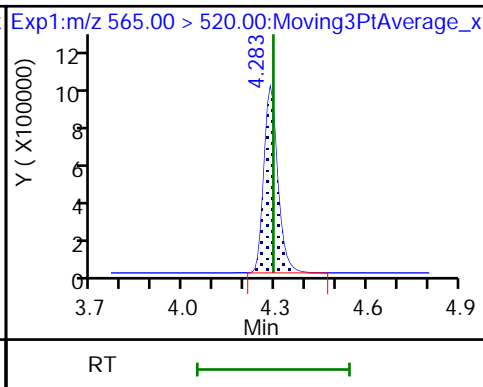
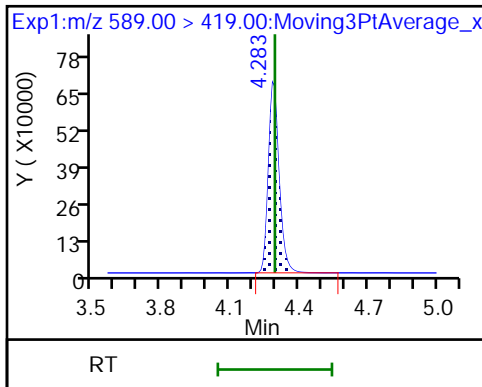
33 N-ethylperfluorooctanesulfonamido

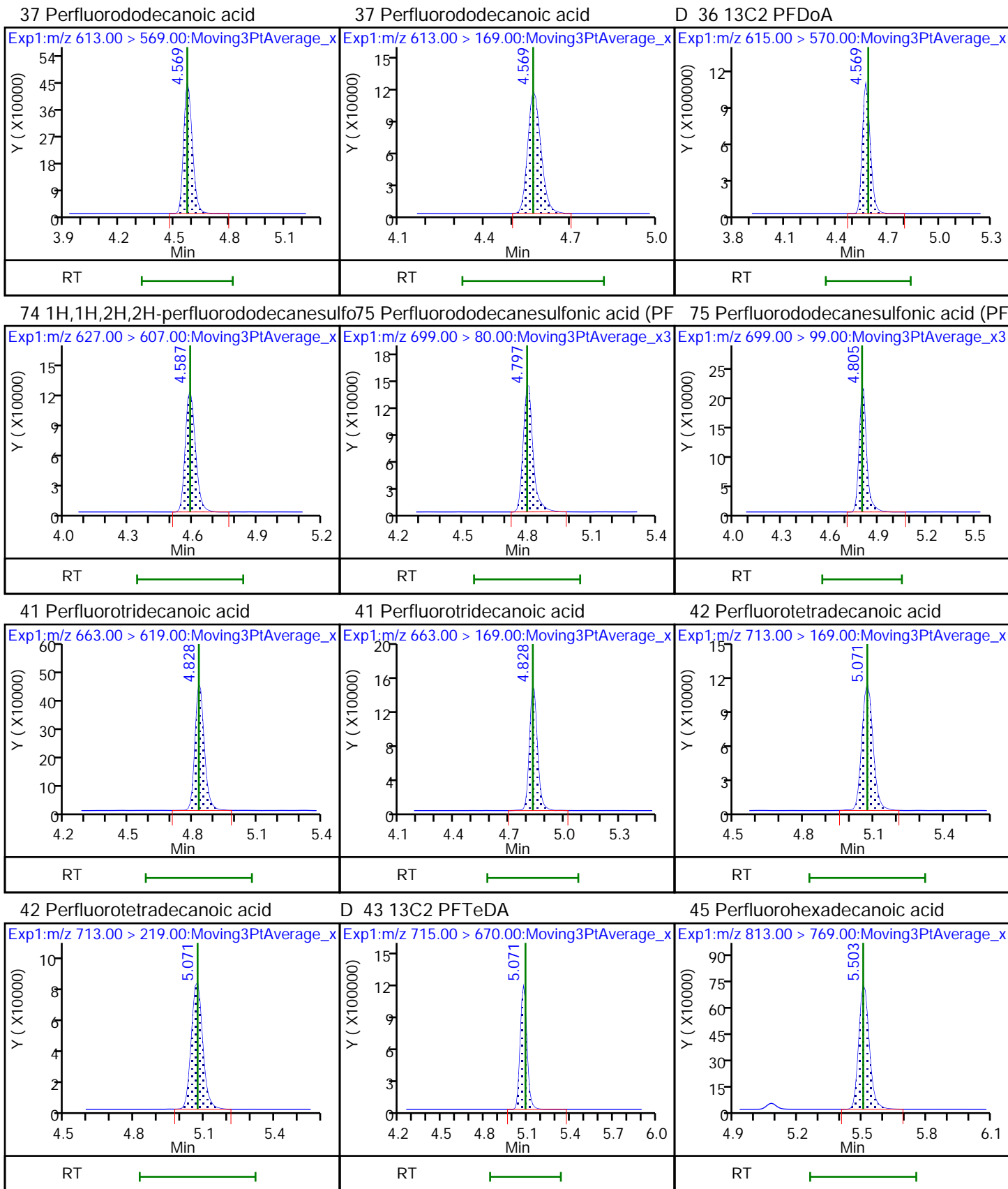


D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

66 11-Chloroeicosafluoro-3-oxaundecan

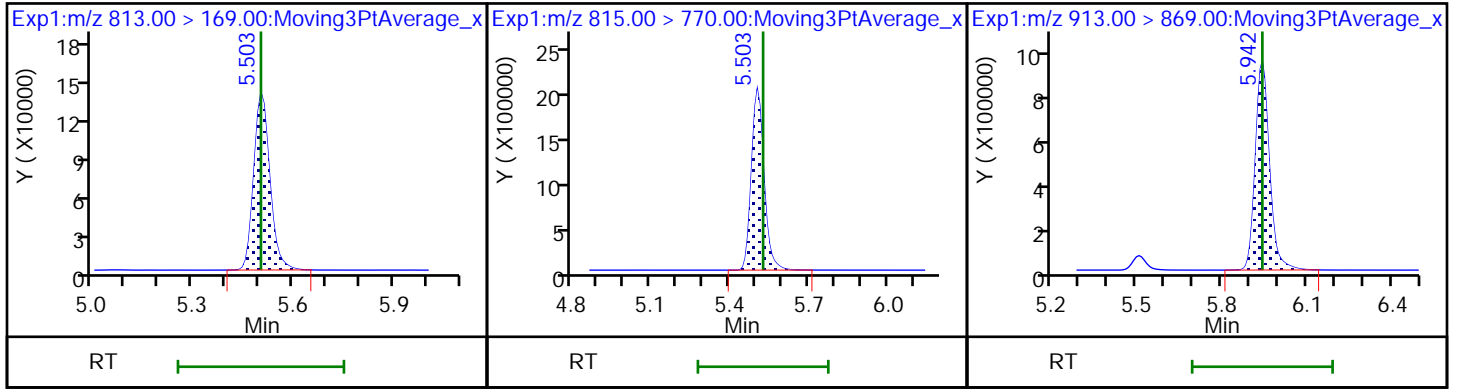




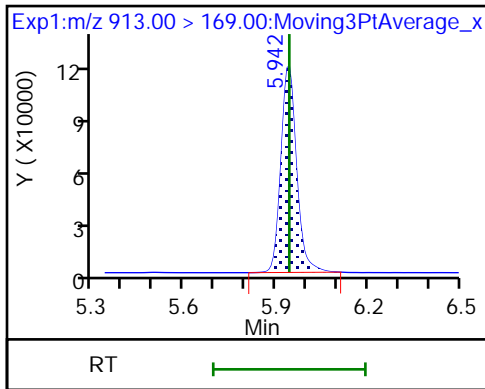
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-263404/1 Calibration Date: 12/06/2018 08:50
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.12.05LLB_025.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9101	0.9365		1.03	1.00	2.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.090	1.131		1.04	1.00	3.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9705	0.9917		0.903	0.884	2.2	50.0
4:2 FTS	AveID	0.1927	0.2070		1.00	0.934	7.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.003	0.9694		0.967	1.00	-3.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8590	0.8929		0.975	0.938	3.9	50.0
HFPO-DA (GenX)	AveID	3.409	3.275		0.961	1.00	-3.9	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.083		1.02	1.00	1.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.086	1.025		0.859	0.910	-5.6	40.0
DONA	AveID	3.963	4.226		1.01	0.942	6.6	50.0
6:2 FTS	AveID	1.556	1.701		1.04	0.948	9.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.310	1.296		0.942	0.952	-1.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.134	1.144		1.01	1.00	0.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.115	1.162		0.968	0.928	4.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.032	1.058		1.03	1.00	2.5	40.0
F-53B Major	AveID	2.005	2.027		0.942	0.932	1.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7778	0.8178		1.01	0.960	5.1	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.001	0.9660		0.965	1.00	-3.5	40.0
8:2 FTS	AveID	1.310	1.404		1.03	0.958	7.1	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9866	0.9649		0.978	1.00	-2.2	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9409	0.9229		0.981	1.00	-1.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6478	0.6580		0.979	0.964	1.6	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8594	0.8350		0.972	1.00	-2.8	40.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8947	0.8436		0.943	1.00	-5.7	40.0
F-53B Minor	AveID	2.949	2.861		0.914	0.942	-3.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.087	1.093		1.01	1.00	0.5	40.0
10:2 FTS	AveID	0.9483	1.029		1.05	0.964	8.5	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2952	0.3023		0.991	0.968	2.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.057	1.056		0.999	1.00	-0.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2587	0.2486		0.961	1.00	-3.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9137		1.03	1.00	3.1	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-263404/1 Calibration Date: 12/06/2018 08:50
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.12.05LLB_025.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.160	1.163		1.00	1.00	0.3	50.0
13C4 PFBA	Ave	1.526	1.447		2.37	2.50	-5.2	50.0
13C5 PFPeA	Ave	0.9597	0.9176		2.39	2.50	-4.4	50.0
13C3 PFBS	Ave	1.463	1.466		2.33	2.33	0.2	50.0
M2-4:2 FTS	Ave	0.1173	0.1311		2.61	2.34	11.7	50.0
13C2 PFHxA	Ave	1.015	1.017		2.51	2.50	0.2	50.0
13C3 HFPO-DA	Ave	0.0703	0.0745		2.65	2.50	5.9	50.0
13C4 PFHpA	Ave	0.997	0.9345		2.34	2.50	-6.2	50.0
18O2 PFHxS	Ave	1.137	1.136		2.36	2.37	-0.1	50.0
M2-6:2 FTS	Ave	0.1752	0.1930		2.62	2.38	10.2	40.0
13C8 PFOA	Ave	1.435	1.413		2.41	2.45	-1.5	50.0
13C4 PFOA	Ave	0.9734	0.9379		2.41	2.50	-3.6	50.0
13C8 PFOS	Ave	0.3918	0.4014		2.45	2.39	2.4	50.0
13C4 PFOS	Ave	0.7427	0.7487		2.41	2.39	0.8	50.0
13C5 PFNA	Ave	0.8157	0.8037		2.46	2.50	-1.5	50.0
13C8 FOSA	Ave	1.097	1.126		2.57	2.50	2.6	50.0
13C2 PFDA	Ave	0.7121	0.7225		2.54	2.50	1.5	50.0
M2-8:2 FTS	Ave	0.1889	0.1951		2.47	2.40	3.3	40.0
d3-NMeFOSAA	Ave	0.3479	0.4133		2.97	2.50	18.8	50.0
13C2 PFUnA	Ave	0.5733	0.6310		2.75	2.50	10.1	50.0
d5-NEtFOSAA	Ave	0.3676	0.4323		2.94	2.50	17.6	50.0
13C2 PFDoA	Ave	0.6099	0.6207		2.54	2.50	1.8	50.0
13C2 PFTeDA	Ave	0.7261	0.7440		2.56	2.50	2.5	50.0
13C2 PFHxDA	Ave	1.341	1.308		2.44	2.50	-2.5	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_025.d
 Lims ID: CCV L4
 Client ID:
 Sample Type: CCV
 Inject. Date: 06-Dec-2018 08:50:04 ALS Bottle#: 35 Worklist Smp#: 1
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 14-Dec-2018 14:25:17 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0321

First Level Reviewer: mongkols Date: 14-Dec-2018 14:25:16

Ratio Calibration: None

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	1.763	1.756	0.007	0.547	7335438	2.37	94.8	5926	
2 Perfluorobutanoic acid	212.90 > 169.00	1.763	1.763	0.0	1.000	2747776	1.03	103	536	
4 Perfluoropentanoic acid	262.90 > 219.00	2.074	2.074	0.0	1.000	2104015	1.04	104	142	
D 3 13C5 PFPeA	267.90 > 223.00	2.074	2.074	0.0	0.644	4650044	2.39	95.6	7121	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.105	2.105	0.0	1.000	2605396	0.9033	Target=2.49	102	2365
	298.90 > 99.00	2.105	2.105	0.0	1.000	1138890		2.29(1.25-3.74)		1226
D 47 13C3 PFBS	301.90 > 80.00	2.105	2.105	0.0	0.653	6909899	2.33	100	635653	
D 60 M2-4:2 FTS	329.00 > 81.00	2.393	2.383	0.010	0.743	620447	2.61	112	1452	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.393	2.393	0.0	1.136	574528	1.00	107	3937	
6 Perfluorohexanoic acid	313.00 > 269.00	2.432	2.432	0.0	1.000	1999132	0.9668	Target=10.07	96.7	871
	313.00 > 119.00	2.432	2.432	0.0	1.000	180927		11.05(5.03-15.10)		462
D 7 13C2 PFHxA	315.00 > 270.00	2.432	2.432	0.0	0.755	5155499	2.51	100	7365	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.442	2.442	0.0	1.160	2489154	0.9750	Target=2.71	104	6134
	349.00 > 99.00	2.452	2.442	0.010	1.165	902360		2.76(1.36-4.07)		2564
D 64 13C3 HFPO-DA	332.10 > 287.00	2.551	2.541	0.010	0.792	377566	2.65	106	1408	

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	2.551	2.551	0.0	1.000	494601	0.9607		96.1	253	
D 11 18O2 PFHxS										
403.00 > 84.00	2.830	2.821	0.009	0.878	5444972	2.36		99.9	9265	
D 9 13C4 PFHpA										
367.00 > 322.00	2.821	2.821	0.0	0.876	4735844	2.34		93.8	9143	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.821	2.821	0.0	1.000	2051201	1.02	Target=2.27	102	644	
363.00 > 169.00	2.821	2.821	0.0	1.000	827522		2.48(1.13-3.40)		1202	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.830	2.830	0.0	1.000	2147739	0.8592	Target=3.00	94.4	4400	
399.00 > 99.00	2.830	2.830	0.0	1.000	728473		2.95(1.50-4.49)		1863	
77 DONA										
377.00 > 251.00	2.868	2.868	0.0	0.797	6042318	1.00	Target=1.69	107	6334	
377.00 > 85.00	2.868	2.868	0.0	0.797	3540957		1.71(0.85-2.54)		6990	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.197	3.197	0.0	0.992	929261	2.62		110	4493	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.197	3.197	0.0	1.000	631095	1.04		109	263	
D 73 13C8 PFOA										
421.00 > 376.00	3.214	3.213	0.001	0.997	7011838	2.41		98.5	11958	
D 14 13C4 PFOA										
417.00 > 372.00	3.222	3.213	0.009	1.000	4752972	2.41		96.4	11229	
* 62 13C2 PFOA										
415.00 > 370.00	3.222	3.222	0.0		5067752	2.50			9867	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.222	3.222	0.0	0.895	1871955	0.9417	Target=3.88	98.9	3203	
449.00 > 99.00	3.222	3.222	0.0	0.895	510757		3.67(1.94-5.82)		1921	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.222	3.222	0.0	1.000	2176713	1.01	Target=1.68	101	215	
413.00 > 169.00	3.222	3.222	0.0	1.000	1170196		1.86(0.84-2.52)		1118	
D 18 13C4 PFOS										
503.00 > 80.00	3.599	3.590	0.009	1.117	3627489	2.41		101	8502	
D 72 13C8 PFOS										
507.00 > 99.00	3.591	3.590	0.001	1.114	1944668	2.45		102	10784	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.599	3.599	0.0	1.000	1637167	0.9675	Target=4.62	104	2498	M
499.00 > 99.00	3.599	3.599	0.0	1.000	353234		4.63(2.31-6.93)		1746	M
D 19 13C5 PFNA										
468.00 > 423.00	3.607	3.606	0.001	1.119	4072873	2.46		98.5	13530	
20 Perfluorononanoic acid										
463.00 > 419.00	3.607	3.607	0.0	1.000	1723493	1.03	Target=3.79	103	670	
463.00 > 169.00	3.607	3.607	0.0	1.000	428061		4.03(1.90-5.69)		2312	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.803	3.803	0.0	1.057	2866684	0.9419		101	9268	

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	3.944	3.944	0.0	1.096	1191649	1.01	Target=2.65	105	5430	
549.00 > 99.00	3.944	3.944	0.0	1.096	417067		2.86(1.33-3.97)		3644	
D 21 13C8 FOSA										
506.00 > 78.00	3.959	3.957	0.002	1.229	5707856	2.57		103	9122	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.959	3.959	0.0	1.000	2205580	0.9653		96.5	463	
D 23 13C2 PFDA										
515.00 > 470.00	3.967	3.965	0.002	1.231	3661672	2.54		101	9652	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.967	3.965	0.002	1.231	947181	2.47		103	4191	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.967	3.967	0.0	1.000	1413242	0.9780	Target=4.73	97.8	1542	
513.00 > 169.00	3.967	3.967	0.0	1.000	261248		5.41(2.36-7.09)		392	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.967	3.967	0.0	1.000	531751	1.03		107	3736	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.126	4.125	0.001	1.281	2094634	2.97		119	4935	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.135	4.135	0.0	1.002	773237	0.9809		98.1	472	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.267	4.267	0.0	1.186	962761	0.9792	Target=2.77	102	5495	
599.00 > 99.00	4.267	4.267	0.0	1.186	321806		2.99(1.39-4.16)		2268	
D 30 13C2 PFUnA										
565.00 > 520.00	4.284	4.282	0.002	1.329	3197915	2.75		110	4850	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.292	4.282	0.010	1.332	2190796	2.94		118	3620	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.292	4.292	0.0	1.002	1079132	0.9429	Target=4.24	94.3	1037	
563.00 > 169.00	4.284	4.292	-0.008	1.000	261547		4.13(2.12-6.36)		1419	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.292	4.292	0.0	1.000	731756	0.9716		97.2	2114	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.432	4.432	0.0	1.231	4090225	0.9138		97.0	9619	
35 MeFOSA										
512.00 > 169.00	4.463	4.463	0.0		666575	NC			493	
D 36 13C2 PFDaA										
615.00 > 570.00	4.570	4.569	0.001	1.418	3145409	2.54		102	7116	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.578	4.578	0.0	1.002	1375103	1.01	Target=4.27	101	1241	
613.00 > 169.00	4.578	4.578	0.0	1.002	351982		3.91(2.13-6.40)		2372	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.588	4.588	0.0	1.157	392383	1.05		109	3010	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.638	4.638	0.0		694220	NC			548	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.806	4.806	0.0	1.335	444100	0.99	Target=0.00	102	3102	
699.00 > 99.00	4.806	4.806	0.0	1.335	701364		0.63(0.00-0.00)		5776	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.837	4.837	0.0	1.058	1328585	1.00	Target=2.51	99.9	1107	
663.00 > 169.00	4.837	4.837	0.0	1.058	449639		2.95(1.25-3.76)		3788	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.081	5.070	0.011	1.577	3770595	2.56		102	8778	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.081	5.081	0.0	1.000	374996	0.9610	Target=1.42	96.1	3044	
713.00 > 219.00	5.072	5.081	-0.009	0.998	262274		1.43(0.71-2.13)		2759	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.523	5.512	0.011	1.714	6629693	2.44		97.5	9527	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.523	5.523	0.0	1.000	2423080	1.03	Target=5.72	103	254	
813.00 > 169.00	5.523	5.523	0.0	1.000	440645		5.50(2.86-8.58)		2638	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.966	5.966	0.0	1.080	3084120	1.00	Target=7.65	100	285	
913.00 > 169.00	5.966	5.966	0.0	1.080	398377		7.74(3.83-11.48)		2200	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_025.d

Injection Date: 06-Dec-2018 08:50:04

Instrument ID: A8_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 35

Worklist Smp#: 1

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

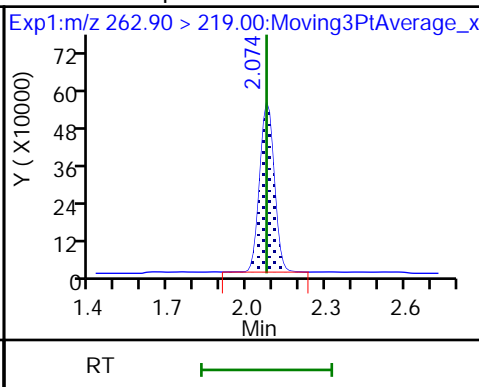
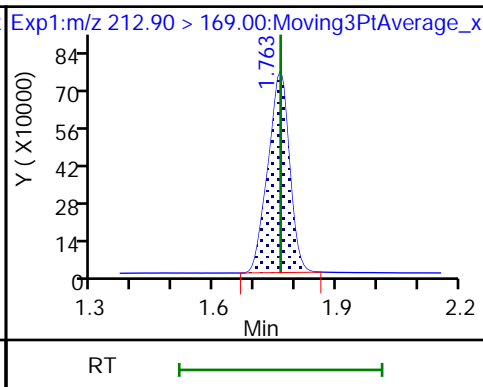
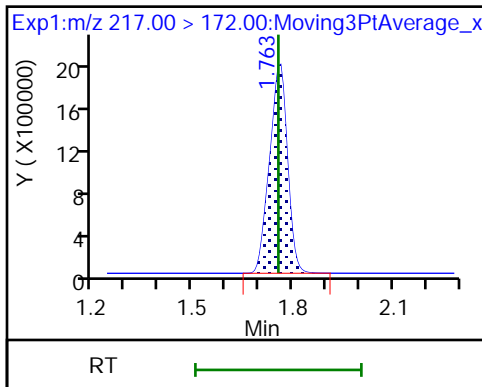
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

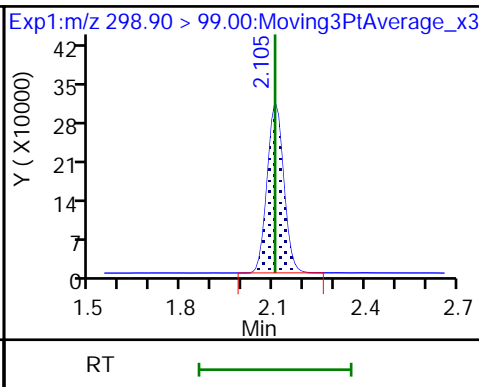
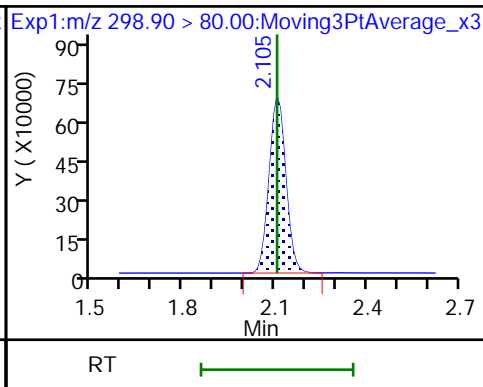
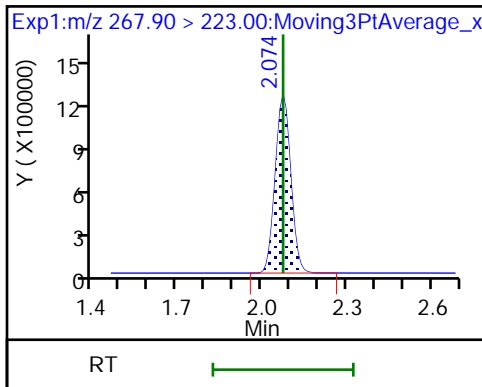
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

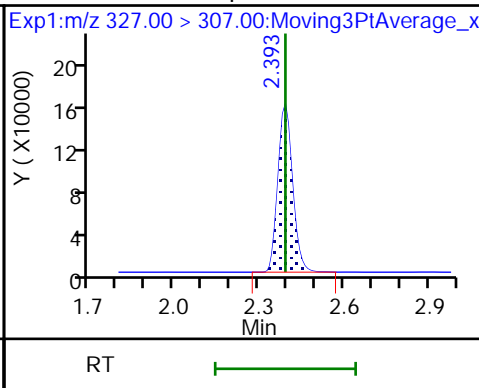
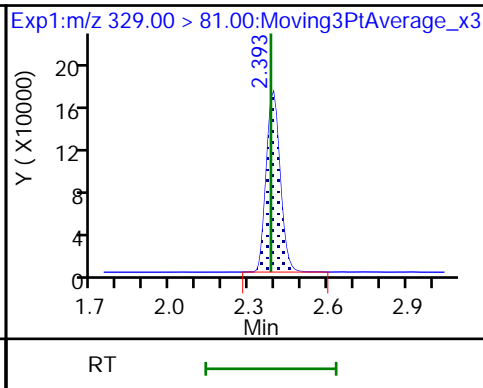
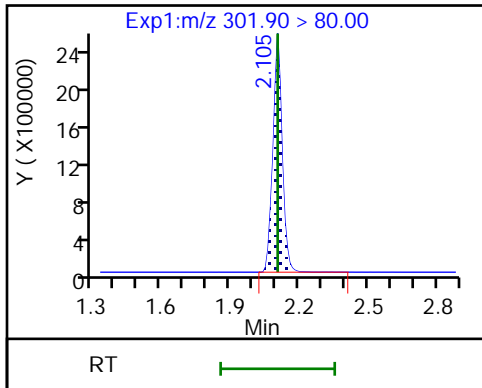
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

D 60 M2-4:2 FTS

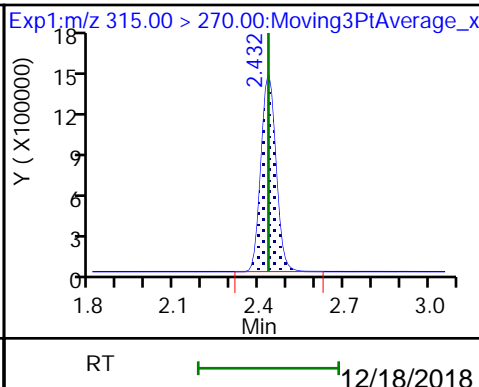
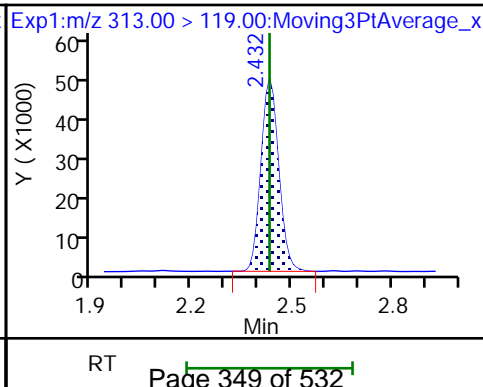
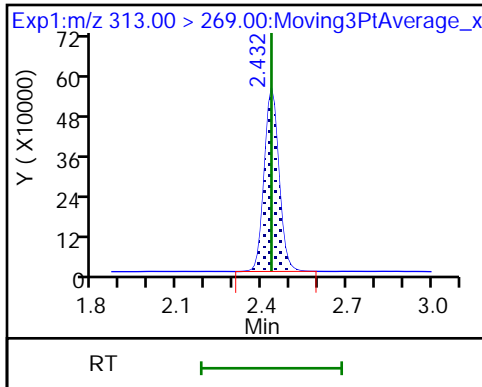
61 1H,1H,2H,2H-perfluorohexanesulfoni

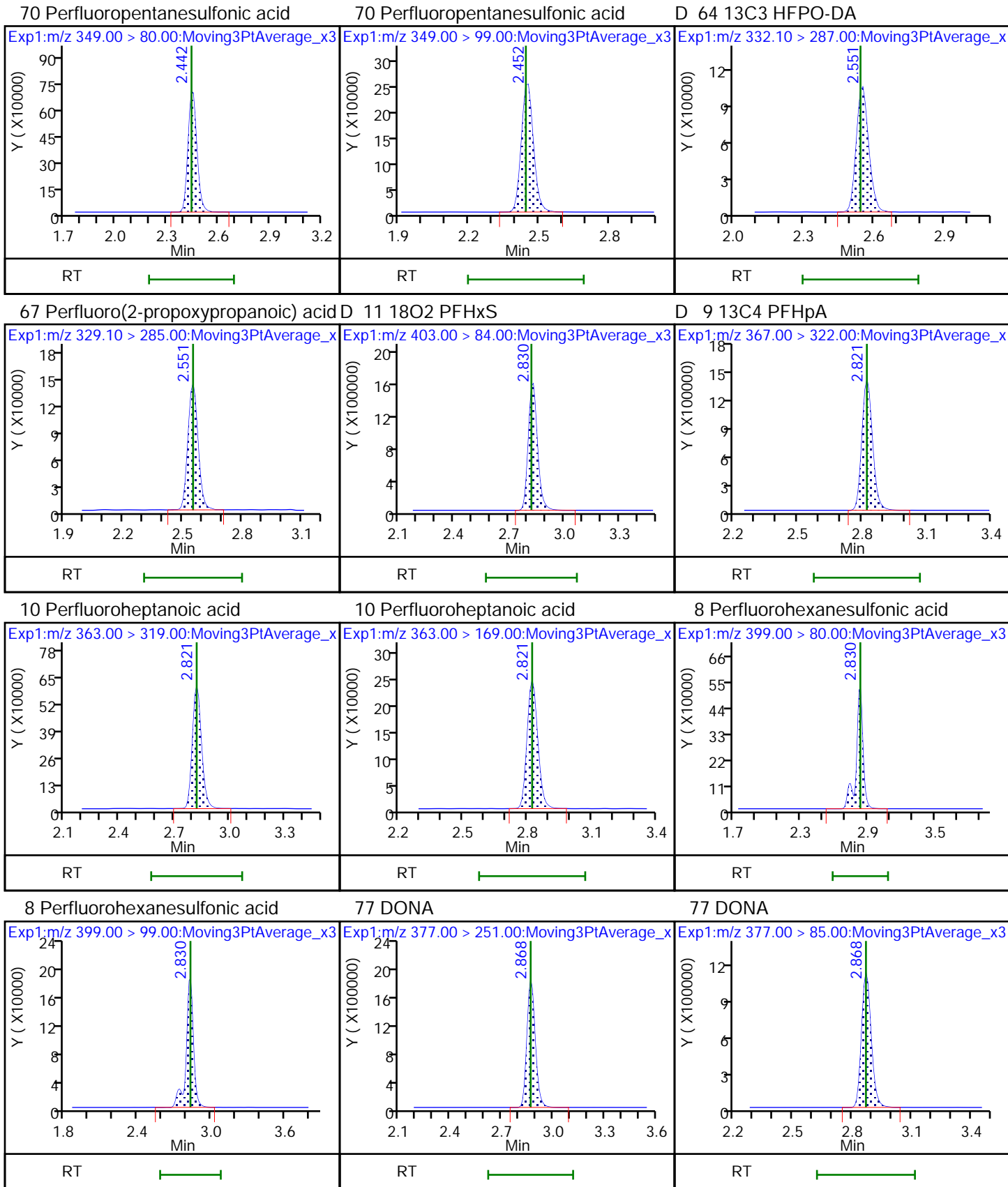


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

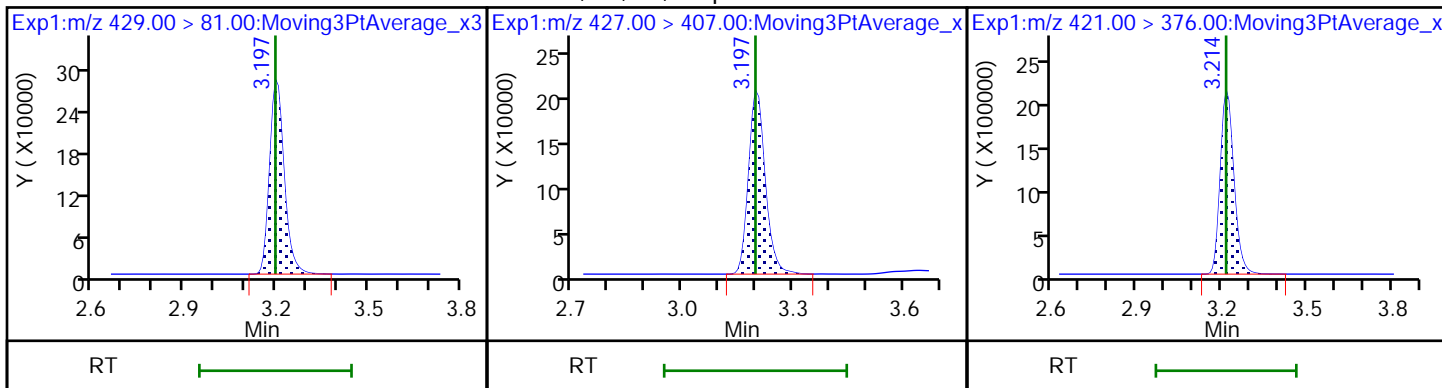
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

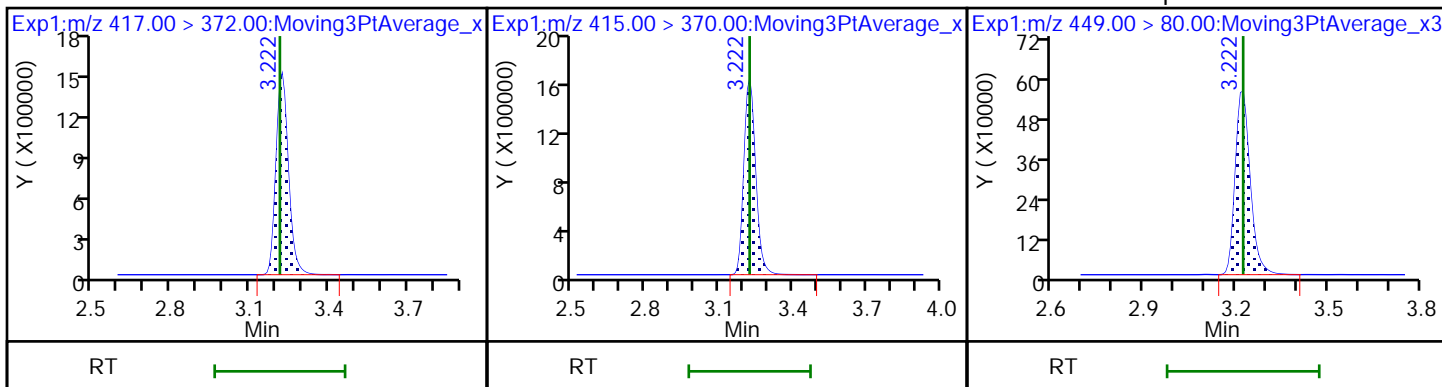
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

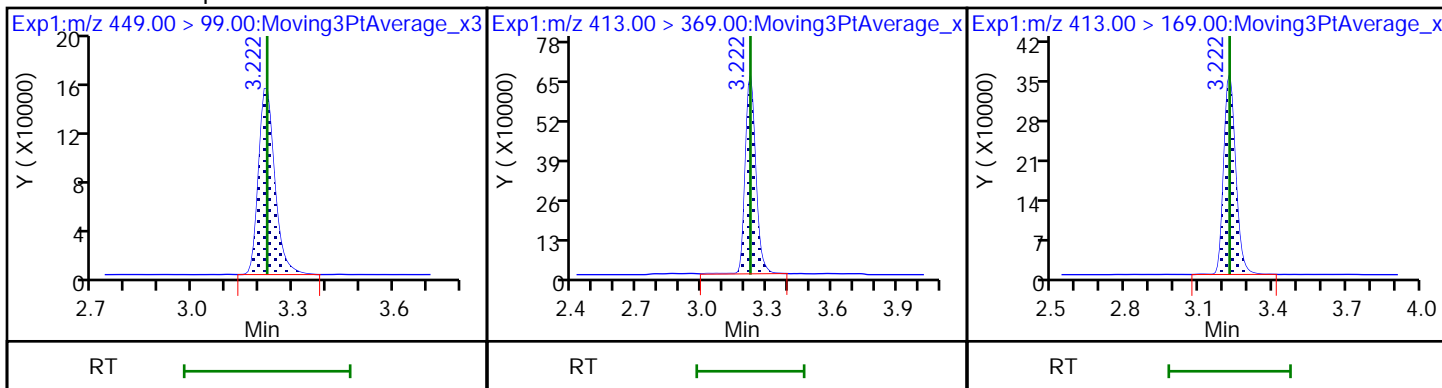
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

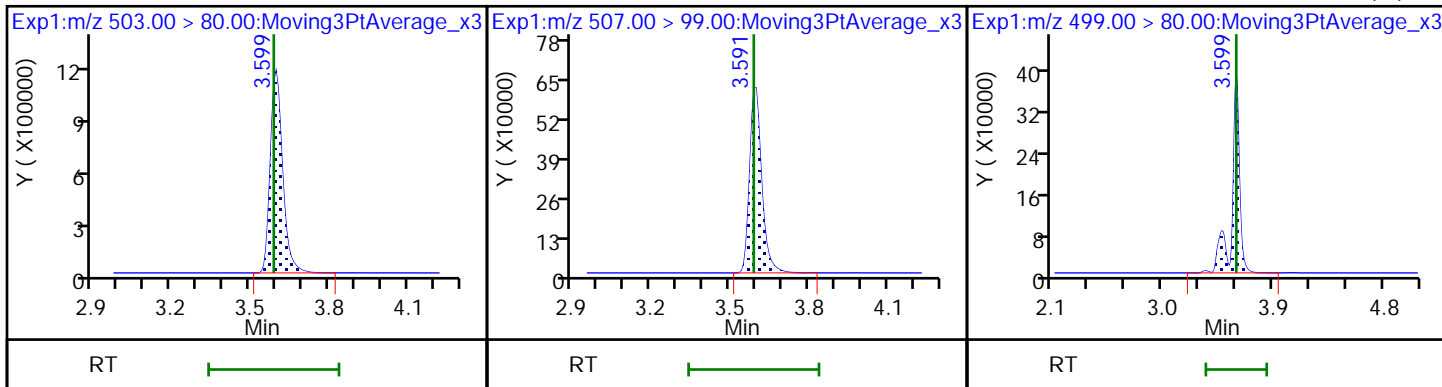
15 Perfluorooctanoic acid

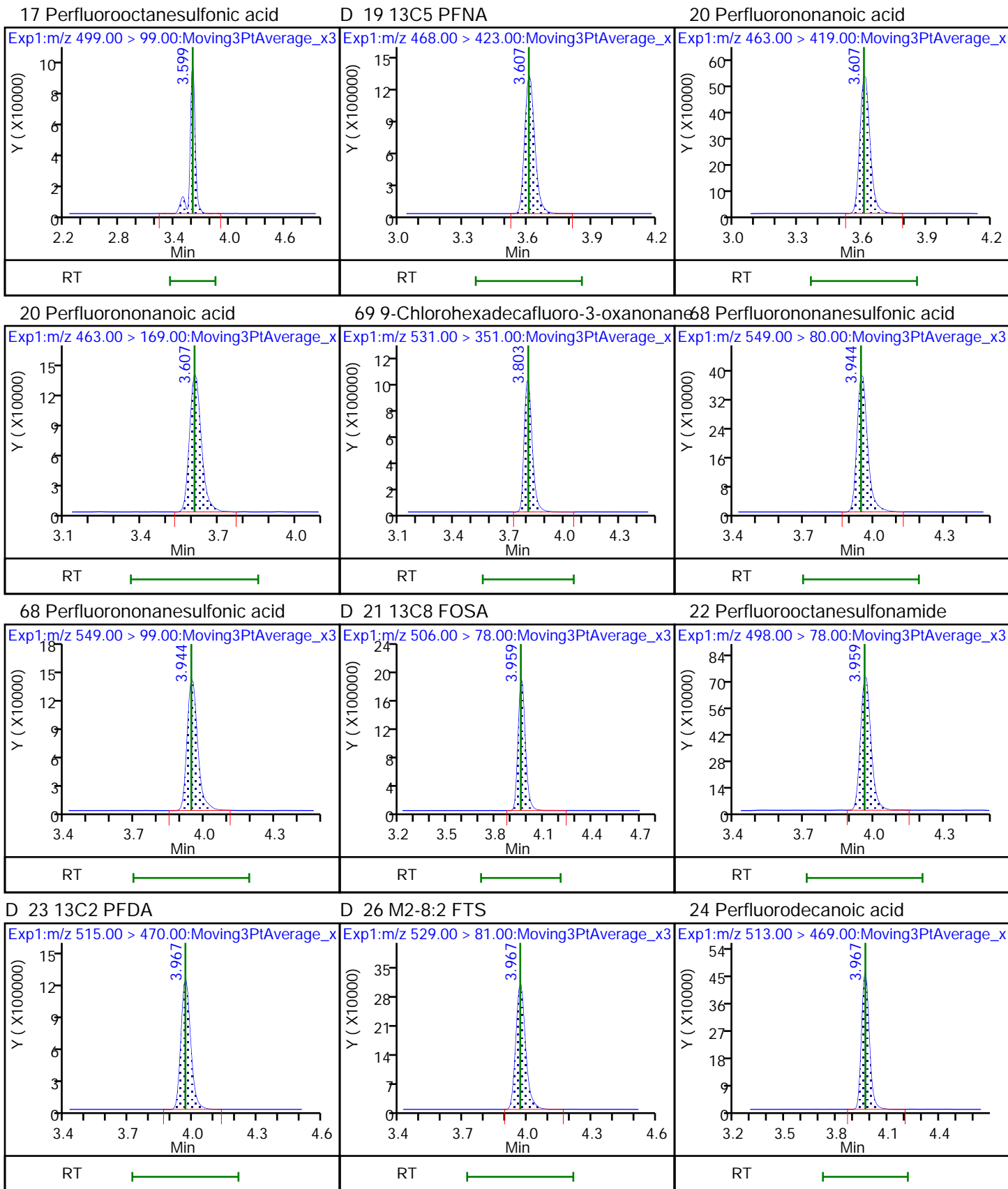


D 18 13C4 PFOS

D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid (M)

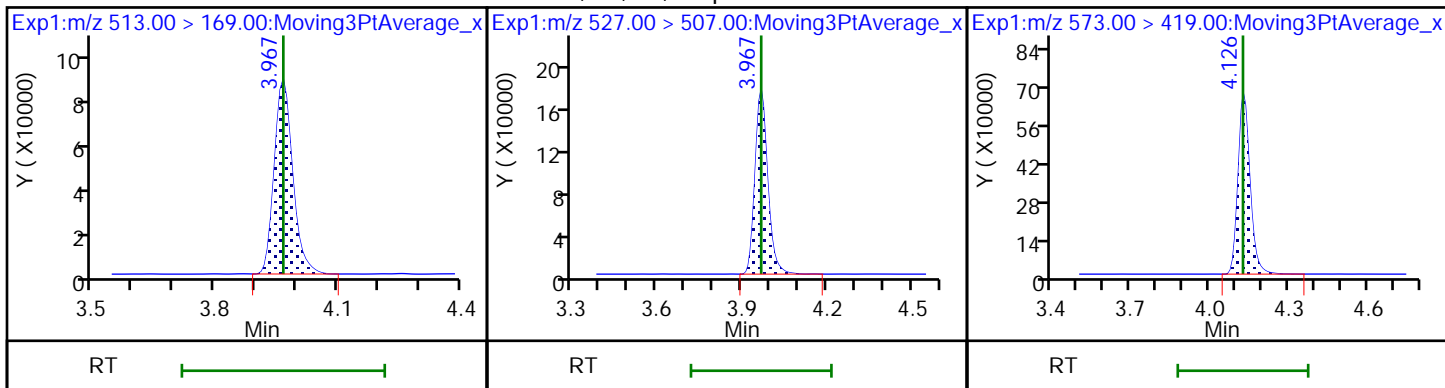




24 Perfluorodecanoic acid

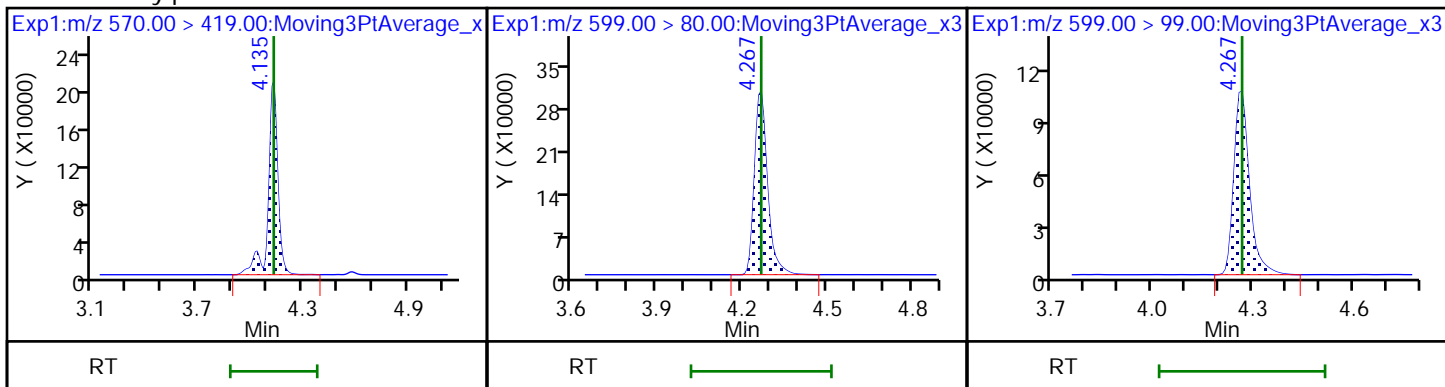
25 1H,1H,2H,2H-perfluorodecanesulfonamide

27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamide

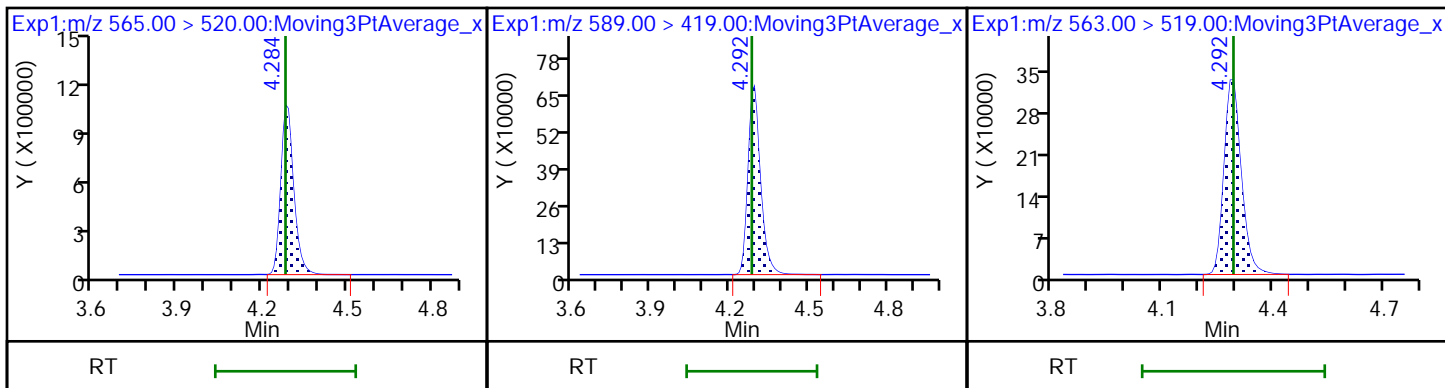
29 Perfluorodecanesulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

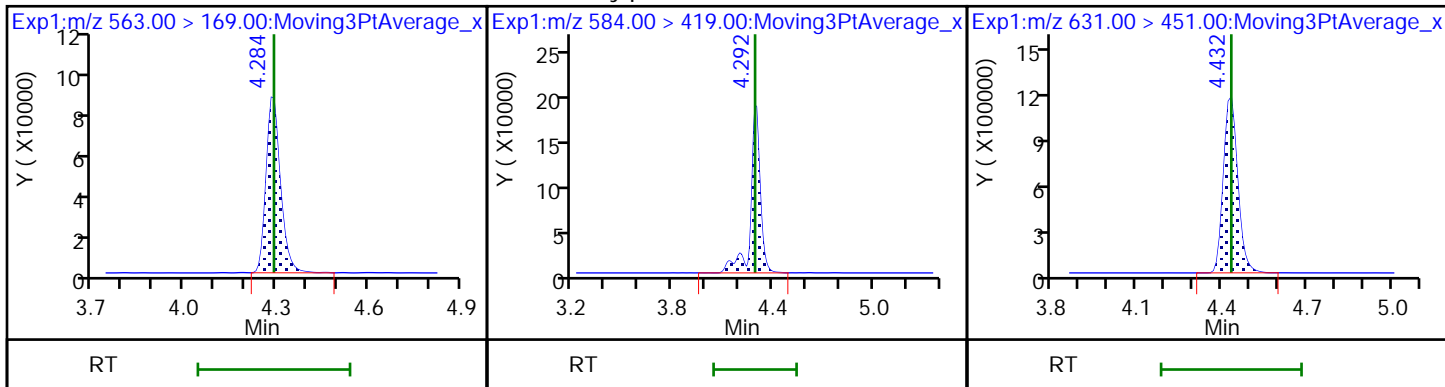
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

33 N-ethylperfluorooctanesulfonamide

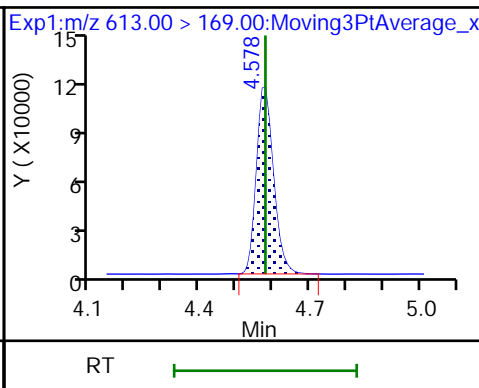
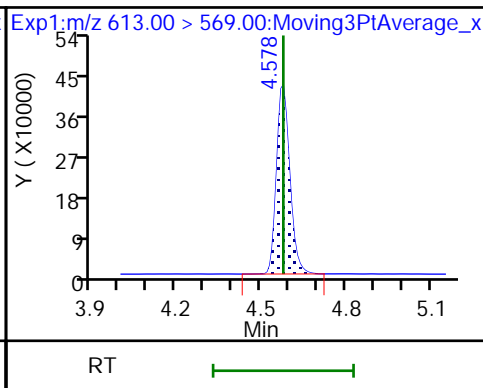
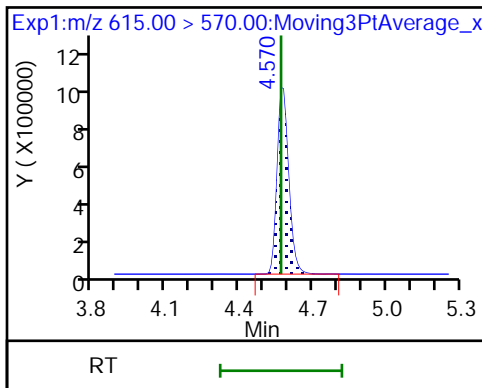
66 11-Chloroeicosafluoro-3-oxaundecanoic acid



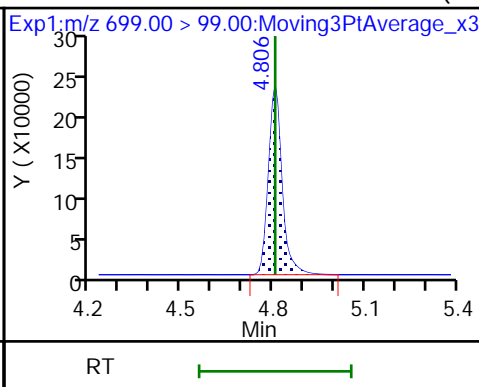
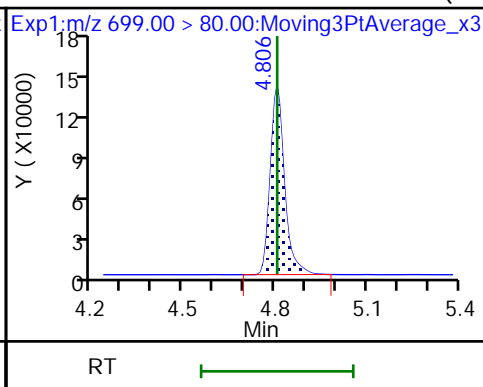
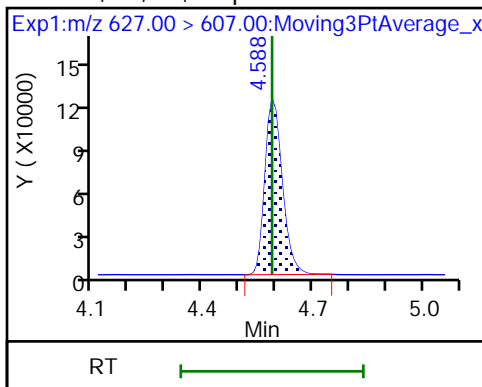
D 36 13C2 PFDoA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



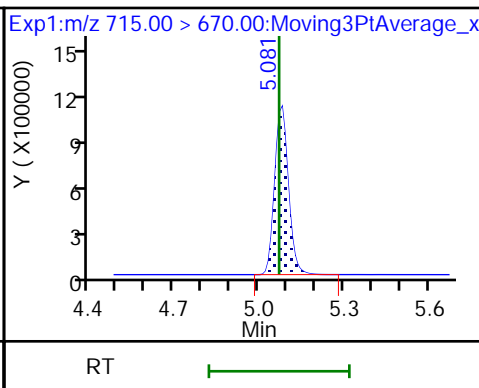
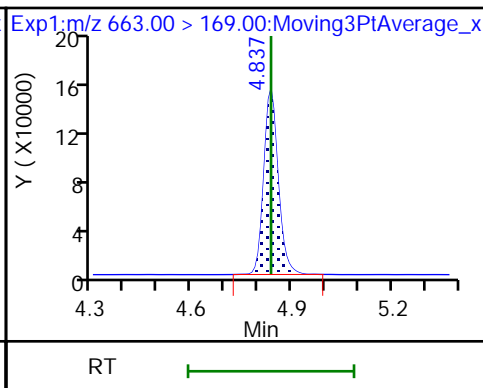
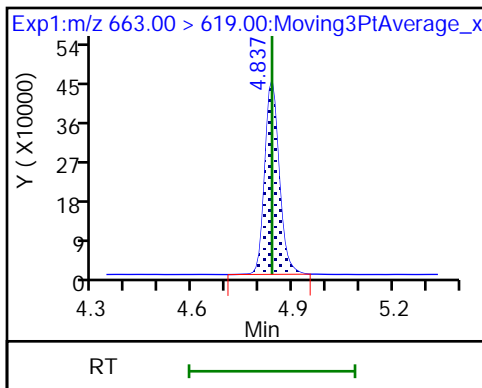
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

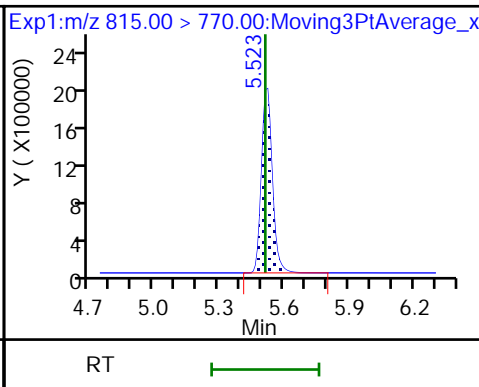
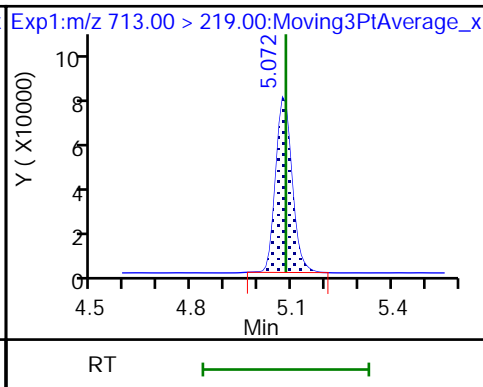
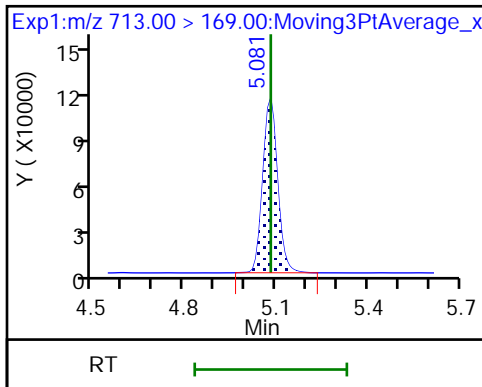
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

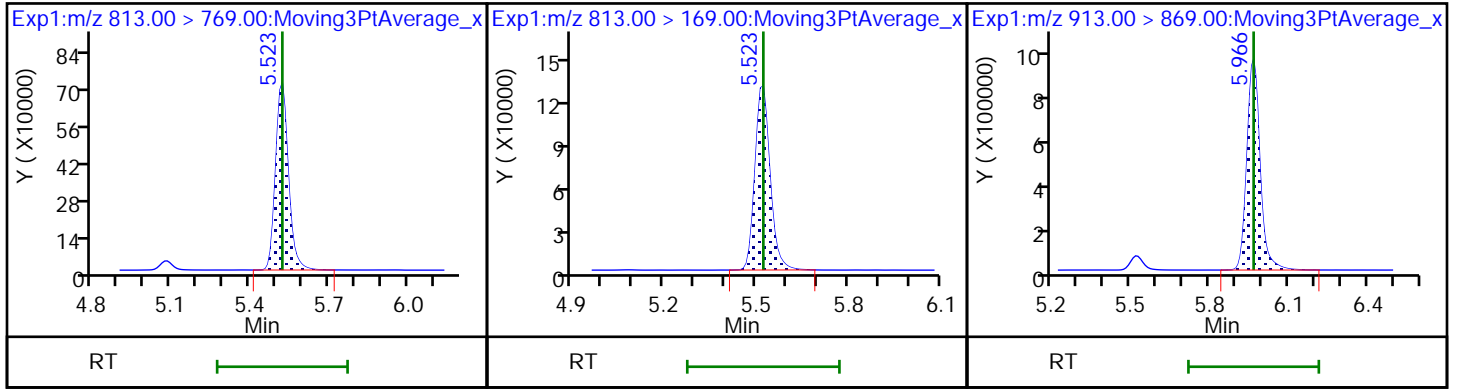
D 44 13C2 PFHxDA



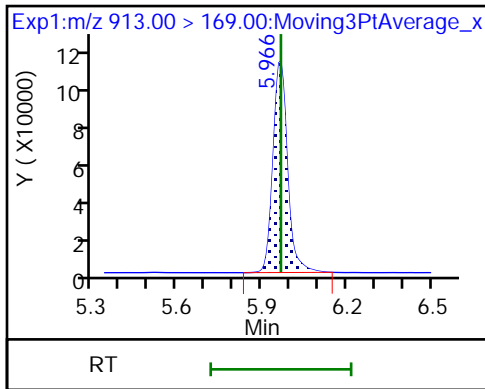
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

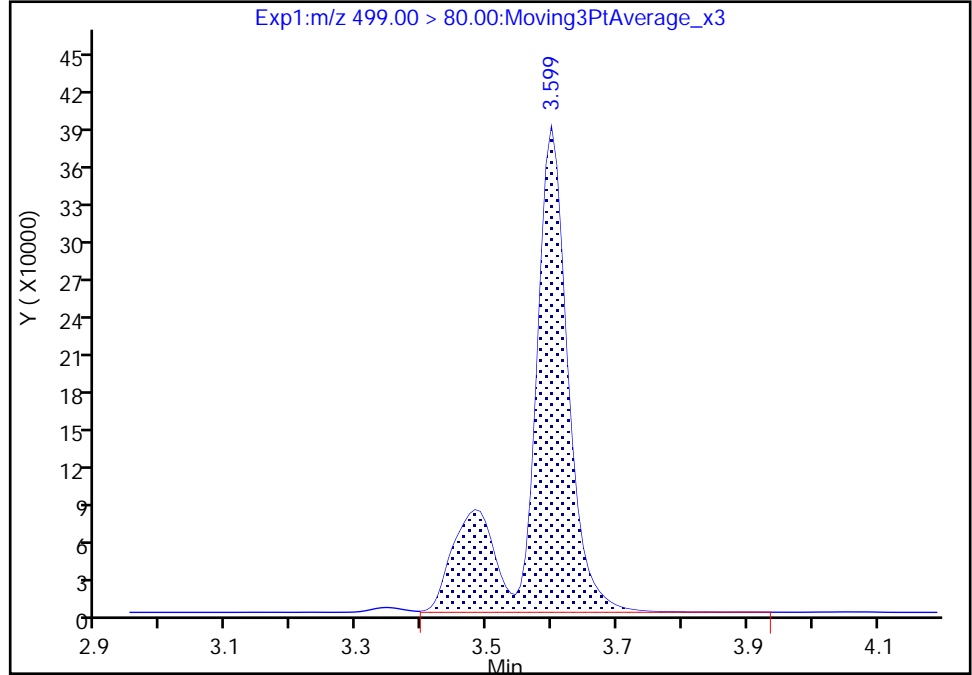
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_025.d
Injection Date: 06-Dec-2018 08:50:04 Instrument ID: A8_N
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 35 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

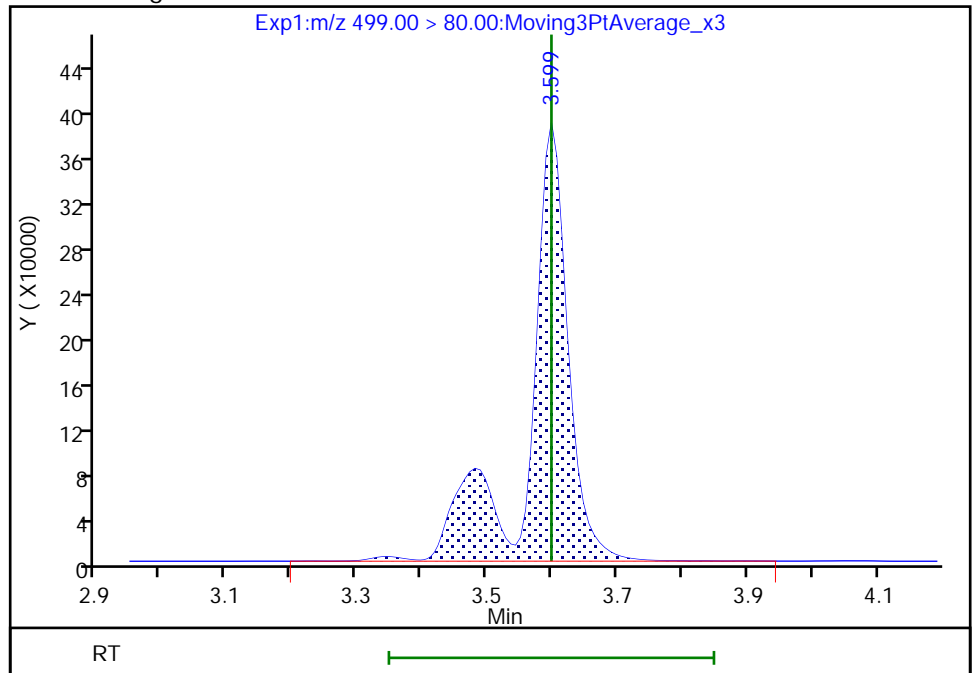
RT: 3.60
Area: 1623544
Amount: 0.959470
Amount Units: ng/ml

Processing Integration Results



RT: 3.60
Area: 1637167
Amount: 0.967521
Amount Units: ng/ml

Manual Integration Results



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-263404/11 Calibration Date: 12/06/2018 10:05
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.12.05LLB_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9101	0.9273		2.55	2.50	1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.090	1.100		2.52	2.50	0.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9705	1.098		2.50	2.21	13.2	50.0
4:2 FTS	AveID	0.1927	0.2003		2.43	2.34	4.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.003	0.9899		2.47	2.50	-1.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8590	0.9225		2.52	2.35	7.4	50.0
HFPO-DA (GenX)	AveID	3.409	3.537		2.59	2.50	3.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.063	1.027		2.41	2.50	-3.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.086	1.070		2.24	2.28	-1.4	40.0
DONA	AveID	3.963	3.891		2.31	2.36	-1.8	50.0
6:2 FTS	AveID	1.556	1.544		2.35	2.37	-0.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.310	1.305		2.37	2.38	-0.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.134	1.079		2.38	2.50	-4.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.115	1.118		2.33	2.32	0.2	40.0
Perfluorononanoic acid (PFNA)	AveID	1.032	1.046		2.53	2.50	1.4	40.0
F-53B Major	AveID	2.005	1.974		2.29	2.33	-1.6	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7778	0.7923		2.45	2.40	1.9	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	1.001	1.015		2.53	2.50	1.4	40.0
8:2 FTS	AveID	1.310	1.289		2.36	2.40	-1.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9866	1.026		2.60	2.50	4.0	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9409	0.9481		2.52	2.50	0.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6478	0.6777		2.52	2.41	4.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.8947	0.8920		2.49	2.50	-0.3	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8594	0.8270		2.41	2.50	-3.8	40.0
F-53B Minor	AveID	2.949	3.045		2.43	2.36	3.3	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.087	1.012		2.33	2.50	-7.0	40.0
10:2 FTS	AveID	0.9483	0.9487		2.41	2.41	0.0	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2952	0.3085		2.53	2.42	4.5	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.057	1.005		2.38	2.50	-4.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2587	0.2525		2.44	2.50	-2.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9373		2.68	2.50	7.3	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-263404/11 Calibration Date: 12/06/2018 10:05
 Instrument ID: A8_N Calib Start Date: 11/29/2018 06:46
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 11/29/2018 07:31
 Lab File ID: 2018.12.05LLB_035.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.160	1.101		2.37	2.50	-5.1	50.0
13C4 PFBA	Ave	1.526	1.493		2.45	2.50	-2.2	50.0
13C5 PFPeA	Ave	0.9597	0.9572		2.49	2.50	-0.3	50.0
13C3 PFBS	Ave	1.463	1.435		2.28	2.33	-1.9	50.0
M2-4:2 FTS	Ave	0.1173	0.1302		2.59	2.34	11.0	50.0
13C2 PFHxA	Ave	1.015	1.013		2.50	2.50	-0.2	50.0
13C3 HFPO-DA	Ave	0.0703	0.0639		2.27	2.50	-9.1	50.0
13C4 PFHpA	Ave	0.997	0.999		2.51	2.50	0.3	50.0
18O2 PFHxS	Ave	1.137	1.137		2.37	2.37	0.0	50.0
M2-6:2 FTS	Ave	0.1752	0.1856		2.52	2.38	5.9	40.0
13C8 PFOA	Ave	1.435	1.507		2.57	2.45	5.0	50.0
13C4 PFOA	Ave	0.9734	0.9601		2.47	2.50	-1.4	50.0
13C4 PFOS	Ave	0.7427	0.7700		2.48	2.39	3.7	50.0
13C8 PFOS	Ave	0.3918	0.4055		2.47	2.39	3.5	50.0
13C5 PFNA	Ave	0.8157	0.8145		2.50	2.50	-0.1	50.0
13C8 FOSA	Ave	1.097	1.102		2.51	2.50	0.4	50.0
13C2 PFDA	Ave	0.7121	0.7146		2.51	2.50	0.4	50.0
M2-8:2 FTS	Ave	0.1889	0.2258		2.86	2.40	19.5	40.0
d3-NMeFOSAA	Ave	0.3479	0.3987		2.87	2.50	14.6	50.0
13C2 PFUnA	Ave	0.5733	0.5956		2.60	2.50	3.9	50.0
d5-NEtFOSAA	Ave	0.3676	0.4350		2.96	2.50	18.3	50.0
13C2 PFDoA	Ave	0.6099	0.6658		2.73	2.50	9.2	50.0
13C2 PFTeDA	Ave	0.7261	0.8106		2.79	2.50	11.6	50.0
13C2 PFHxDA	Ave	1.341	1.408		2.62	2.50	4.9	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_035.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 06-Dec-2018 10:05:02 ALS Bottle#: 36 Worklist Smp#: 11
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L5
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub37
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 14-Dec-2018 14:48:32 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0321

First Level Reviewer: mongkols Date: 14-Dec-2018 14:48:32

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA	217.00 > 172.00	1.756	1.756	0.0	0.544	7623284	2.45	97.8	6012	
2 Perfluorobutanoic acid	212.90 > 169.00	1.763	1.763	0.0	1.004	7068868	2.55	102	1166	
4 Perfluoropentanoic acid	262.90 > 219.00	2.074	2.074	0.0	1.000	5374095	2.52	101	372	
D 3 13C5 PFPeA	267.90 > 223.00	2.074	2.074	0.0	0.643	4886706	2.49	99.7	6484	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.105	2.105	0.0	1.000	7112882	2.50	Target=2.49	113	5746
	298.90 > 99.00	2.105	2.105	0.0	1.000	2920750		2.44(1.25-3.74)		2488
D 47 13C3 PFBS	301.90 > 80.00	2.105	2.105	0.0	0.653	6813737	2.28	98.1	392379	
D 60 M2-4:2 FTS	329.00 > 81.00	2.392	2.383	0.009	0.742	620890	2.59	111	1364	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.392	2.393	-0.001	1.136	1370513	2.43	104	6715	
6 Perfluorohexanoic acid	313.00 > 269.00	2.432	2.432	0.0	1.000	5120009	2.47	Target=10.07	98.7	2196
	313.00 > 119.00	2.432	2.432	0.0	1.000	451720		11.33(5.03-15.10)		1567
D 7 13C2 PFHxA	315.00 > 270.00	2.432	2.432	0.0	0.754	5172253	2.50	99.8	6989	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.452	2.442	0.010	1.165	6339487	2.52	Target=2.71	107	12220
	349.00 > 99.00	2.452	2.442	0.010	1.165	2373474		2.67(1.36-4.07)		3936

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	2.551	2.551	0.0	1.000	1154528	2.59	104	671	
D 11 18O2 PFHxS	403.00	> 84.00	2.835	2.821	0.014	0.879	5492239	2.37	100	10141	
D 9 13C4 PFHpA	367.00	> 322.00	2.826	2.821	0.005	0.876	5102524	2.51	100	9601	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.826	2.821	0.005	1.000	5238630	2.41	Target=2.27	96.5	1692
	363.00	> 169.00	2.826	2.821	0.005	1.000	2144393		2.44(1.13-3.40)		3097
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.835	2.830	0.005	1.000	5654031	2.24	Target=3.00	98.6	6631
	399.00	> 99.00	2.835	2.830	0.005	1.000	1879087		3.01(1.50-4.49)		3571
77 DONA	377.00	> 251.00	2.872	2.868	0.004	0.798	14409485	2.31	Target=1.69	98.2	13825
	377.00	> 85.00	2.872	2.868	0.004	0.798	8695662		1.66(0.85-2.54)		12126
D 12 M2-6:2 FTS	429.00	> 81.00	3.201	3.197	0.004	0.992	899983	2.52		106	3785
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.201	3.197	0.004	1.000	1386690	2.35		99.2	528
D 73 13C8 PFOA	421.00	> 376.00	3.217	3.213	0.004	0.997	7529672	2.57		105	15164
D 14 13C4 PFOA	417.00	> 372.00	3.226	3.213	0.013	1.000	4901359	2.47		98.6	11697
* 62 13C2 PFOA	415.00	> 370.00	3.226	3.222	0.004		5105225	2.50			7961
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.226	3.222	0.004	0.896	4884515	2.37	Target=3.88	99.7	5258
	449.00	> 99.00	3.226	3.222	0.004	0.896	1230299		3.97(1.94-5.82)		3893
15 Perfluorooctanoic acid	413.00	> 369.00	3.226	3.222	0.004	1.000	5295195	2.38	Target=1.68	95.2	655
	413.00	> 169.00	3.226	3.222	0.004	1.000	2984003		1.77(0.84-2.52)		2575
D 18 13C4 PFOS	503.00	> 80.00	3.599	3.590	0.009	1.116	3757978	2.48		104	6580
D 72 13C8 PFOS	507.00	> 99.00	3.599	3.590	0.009	1.116	1979146	2.47		103	7187
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.599	3.599	0.0	1.000	4076588	2.33	Target=4.62	100	2774
	499.00	> 99.00	3.607	3.599	0.008	1.002	875615		4.66(2.31-6.93)		1977
D 19 13C5 PFNA	468.00	> 423.00	3.615	3.606	0.009	1.121	4158105	2.50		99.9	9174
20 Perfluorononanoic acid	463.00	> 419.00	3.615	3.607	0.008	1.000	4348772	2.53	Target=3.79	101	1752
	463.00	> 169.00	3.615	3.607	0.008	1.000	1068973		4.07(1.90-5.69)		4350
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.804	3.803	0.001	1.057	7230266	2.29		98.4	14826

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	3.952	3.944	0.008	1.098	2990007	2.44	Target=2.65	102	6320	
549.00 > 99.00	3.952	3.944	0.008	1.098	1045572		2.86(1.33-3.97)		5621	
D 21 13C8 FOSA										
506.00 > 78.00	3.968	3.957	0.011	1.230	5625179	2.51		100	5867	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.968	3.959	0.009	1.000	5707132	2.53		101	970	
D 23 13C2 PFDA										
515.00 > 470.00	3.976	3.965	0.011	1.232	3648389	2.51		100	12581	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.976	3.965	0.011	1.232	1104231	2.86		120	3831	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.976	3.967	0.009	1.000	3743573	2.60	Target=4.73	104	3309	
513.00 > 169.00	3.968	3.967	0.001	0.998	687748		5.44(2.36-7.09)		428	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.976	3.967	0.009	1.000	1423455	2.36		98.4	9049	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.137	4.125	0.012	1.282	2035323	2.87		115	4599	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.137	4.135	0.002	1.000	1929750	2.52		101	964	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.269	4.267	0.002	1.186	2568176	2.52	Target=2.77	105	7232	
599.00 > 99.00	4.269	4.267	0.002	1.186	827993		3.10(1.39-4.16)		7007	
D 30 13C2 PFUnA										
565.00 > 520.00	4.294	4.282	0.012	1.331	3040717	2.60		104	7164	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.294	4.282	0.012	1.331	2220608	2.96		118	4334	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.294	4.292	0.002	1.000	2712405	2.49	Target=4.24	99.7	2540	
563.00 > 169.00	4.294	4.292	0.002	1.000	645151		4.20(2.12-6.36)		2737	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.302	4.292	0.010	1.002	1836411	2.41		96.2	2362	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.437	4.432	0.005	1.233	11276704	2.43		103	17826	
35 MeFOSA										
512.00 > 169.00	4.458	4.463	-0.005		1706576	NC			521	
D 36 13C2 PFDaA										
615.00 > 570.00	4.576	4.569	0.007	1.419	3398951	2.73		109	5555	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.576	4.578	-0.002	1.000	3439129	2.33	Target=4.27	93.0	2847	
613.00 > 169.00	4.576	4.578	-0.002	1.000	916410		3.75(2.13-6.40)		5726	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.596	4.588	0.008	1.156	1054193	2.41		100	6987	
39 N-ethylperfluoro-1-octanesulfonami										
526.00 > 169.00	4.636	4.638	-0.002		1729366	NC			470	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.811	4.806	0.005	1.337	1173947	2.53	Target=0.00	105	6993	
699.00 > 99.00	4.811	4.806	0.005	1.337	1777185		0.66(0.00-0.00)		6763	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.842	4.837	0.005	1.058	3415414	2.38	Target=2.51	95.1	2782	
663.00 > 169.00	4.842	4.837	0.005	1.058	1136127		3.01(1.25-3.76)		5806	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.080	5.070	0.010	1.575	4138388	2.79		112	8472	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.080	5.081	-0.001	1.000	1044779	2.44	Target=1.42	97.6	6247	
713.00 > 219.00	5.080	5.081	-0.001	1.000	715242		1.46(0.71-2.13)		5785	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.522	5.512	0.010	1.712	7185971	2.62		105	9759	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.522	5.523	-0.001	1.000	6735723	2.68	Target=5.72	107	642	
813.00 > 169.00	5.522	5.523	-0.001	1.000	1220791		5.52(2.86-8.58)		5567	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.974	5.966	0.008	1.082	7911802	2.37	Target=7.65	94.9	719	
913.00 > 169.00	5.974	5.966	0.008	1.082	1009905		7.83(3.83-11.48)		3627	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00009

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_035.d

Injection Date: 06-Dec-2018 10:05:02

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 36

Worklist Smp#: 11

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

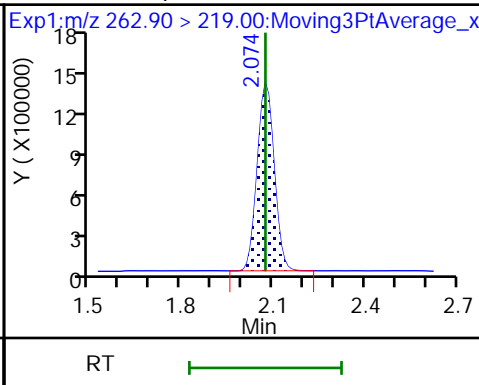
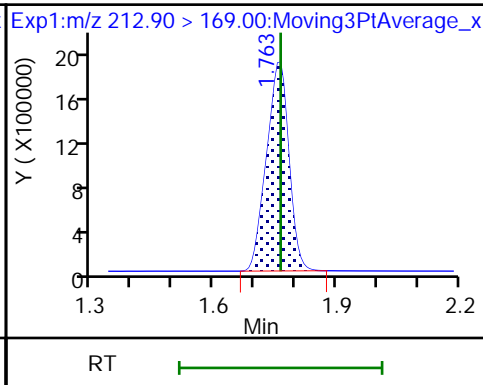
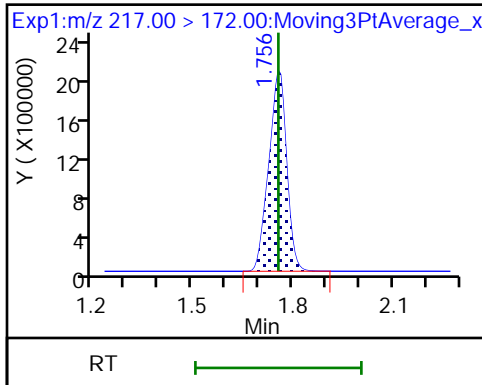
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

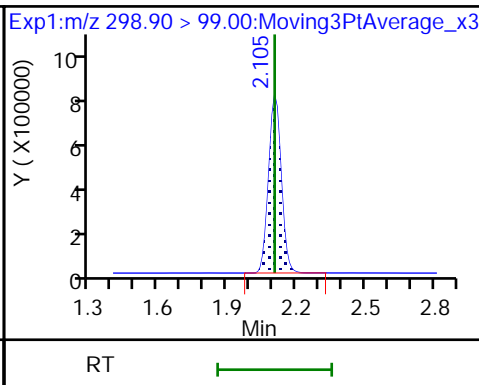
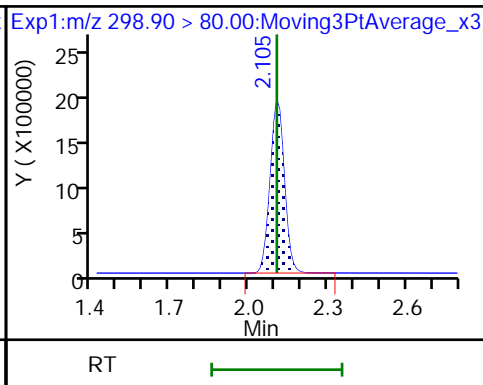
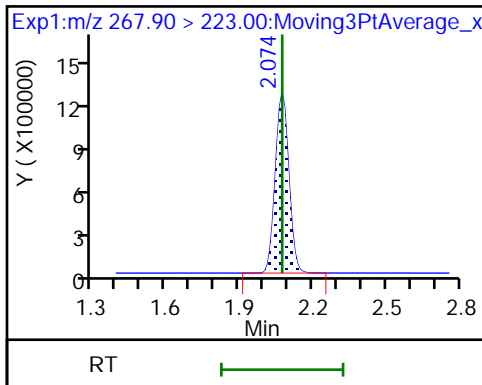
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

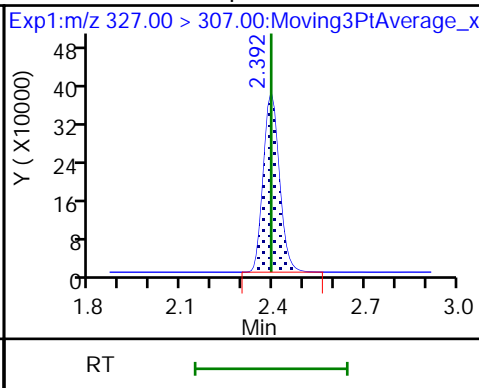
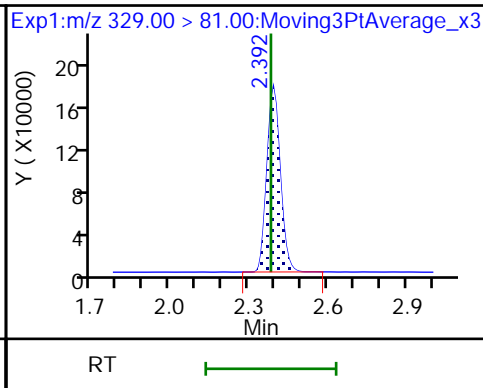
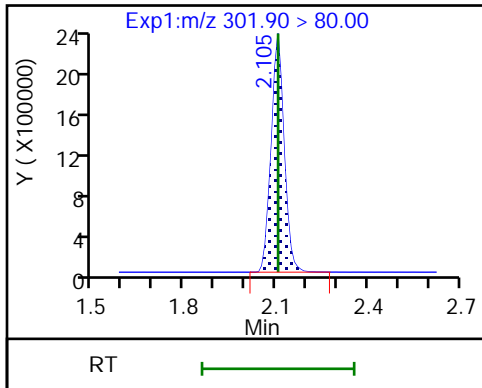
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

D 60 M2-4:2 FTS

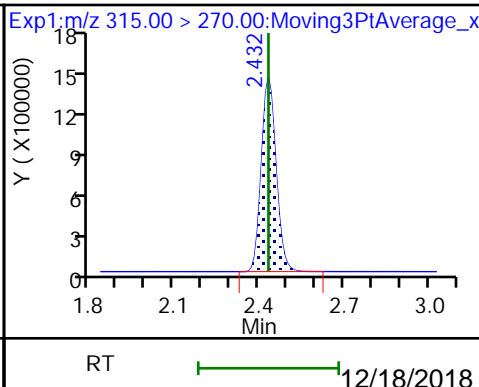
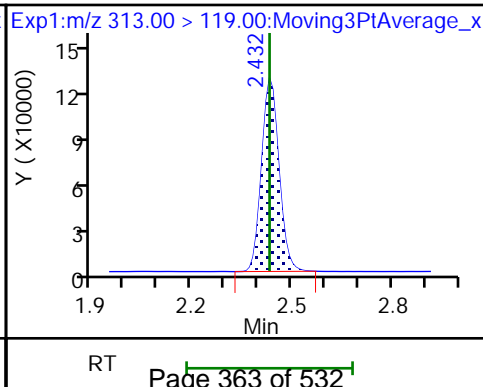
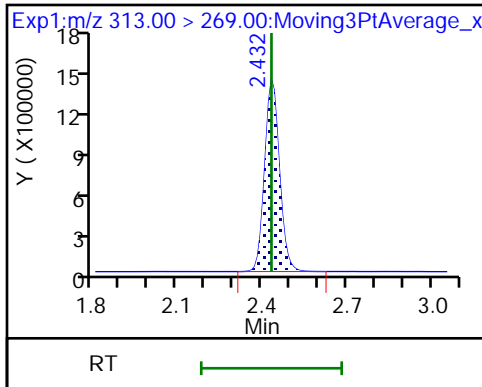
61 1H,1H,2H,2H-perfluorohexanesulfoni

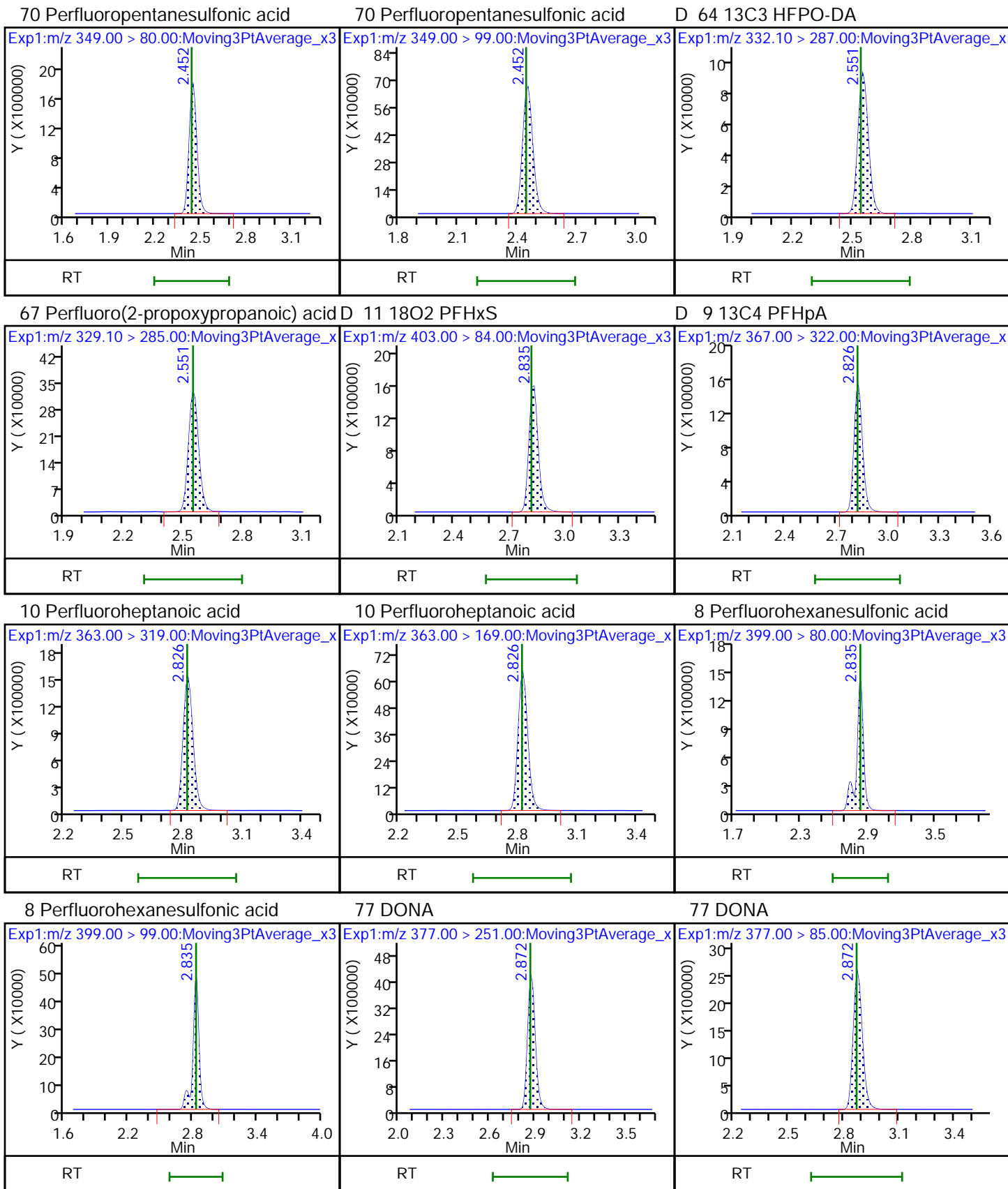


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

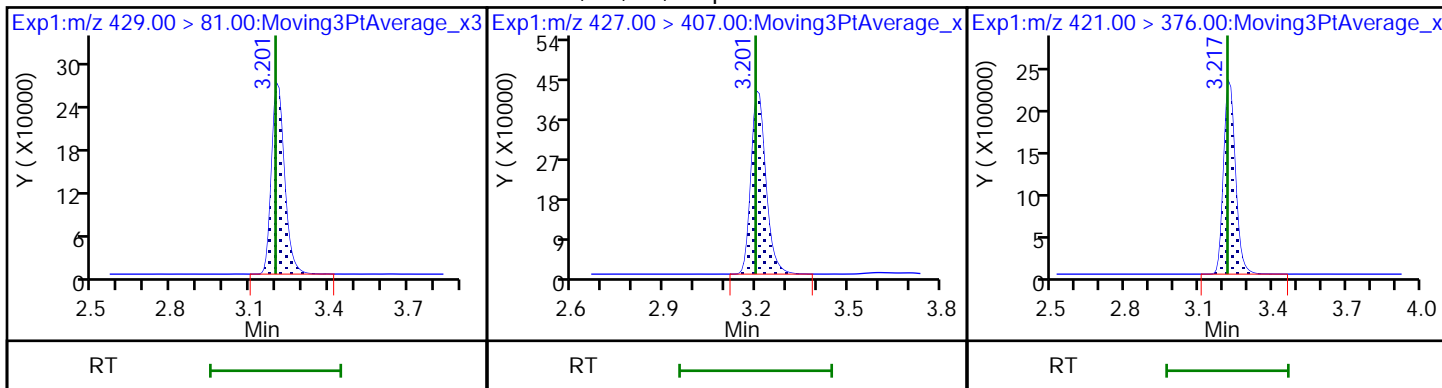
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

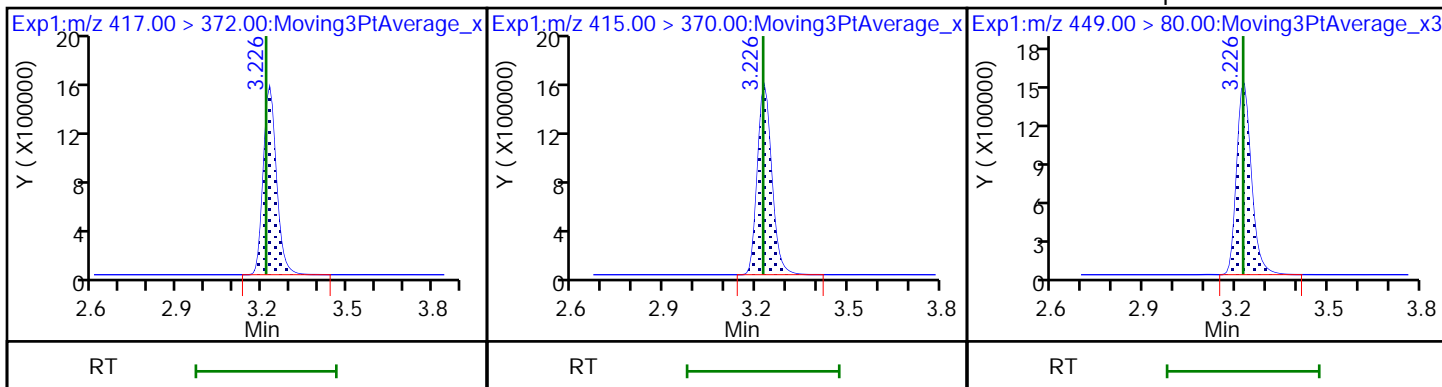
13 1H,1H,2H,2H-perfluorooctanesulfoD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

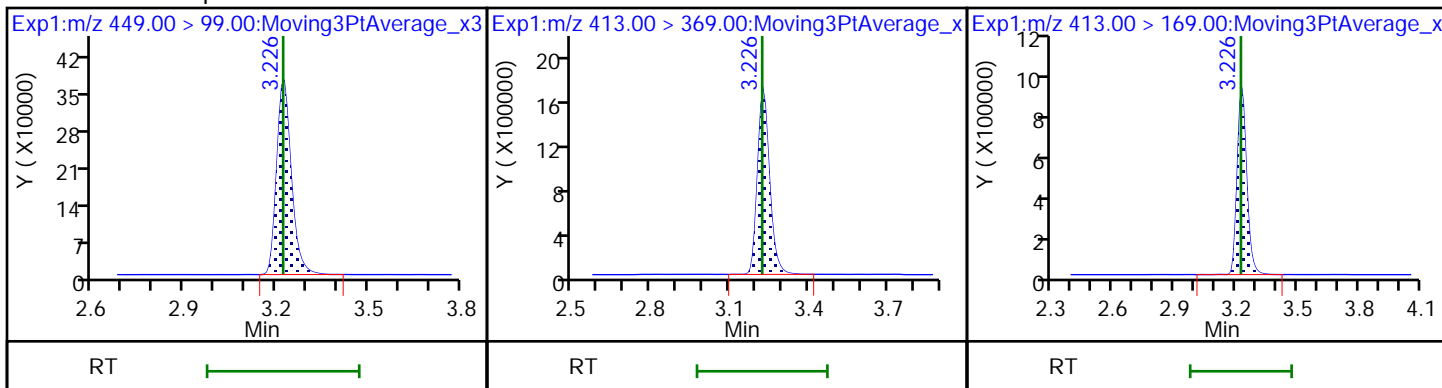
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

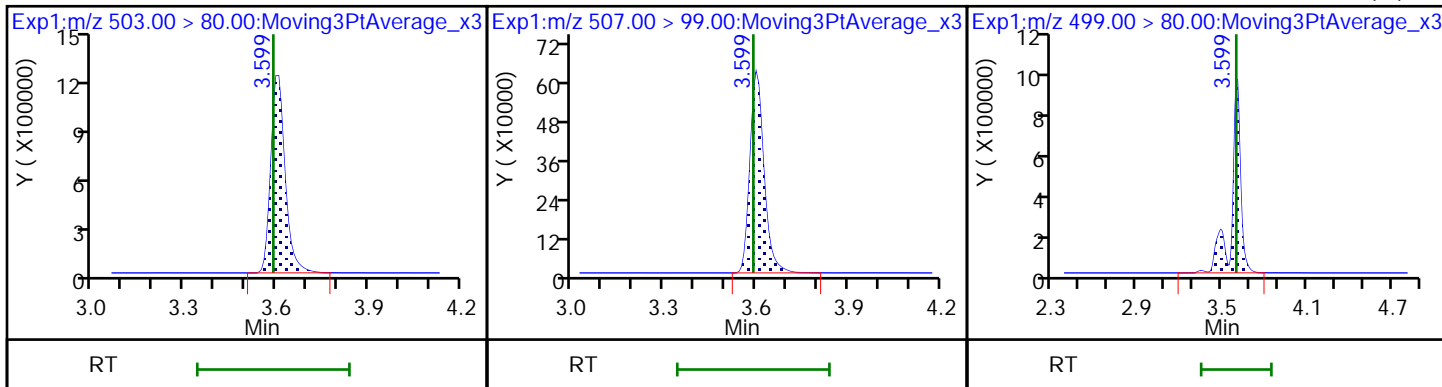
15 Perfluorooctanoic acid

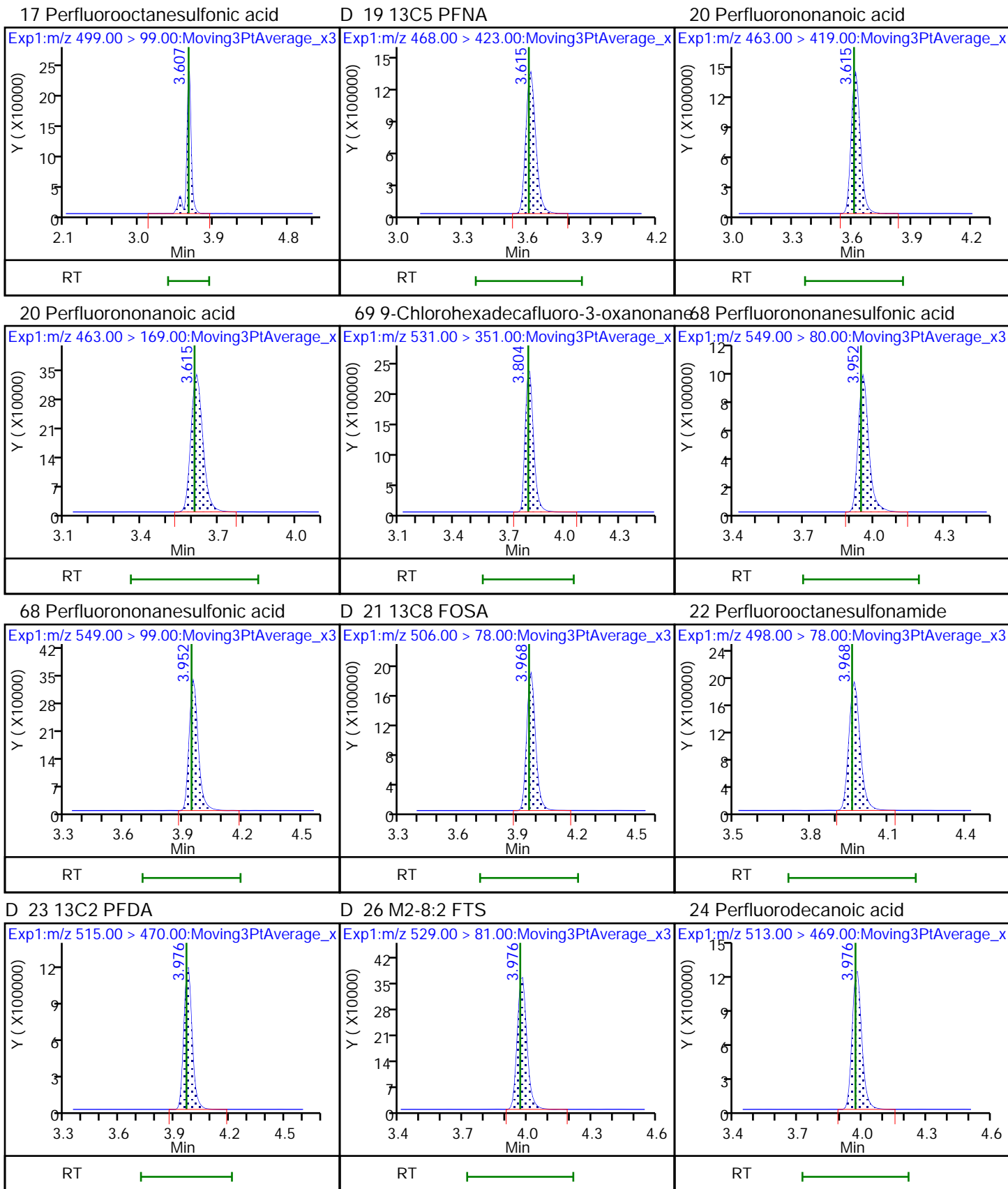


D 18 13C4 PFOS

D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid (M)

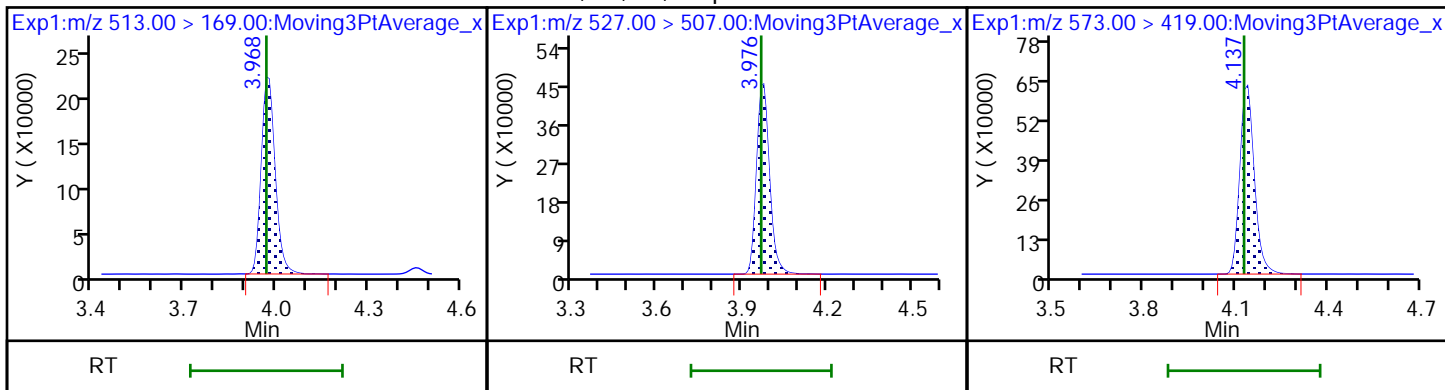




24 Perfluorodecanoic acid

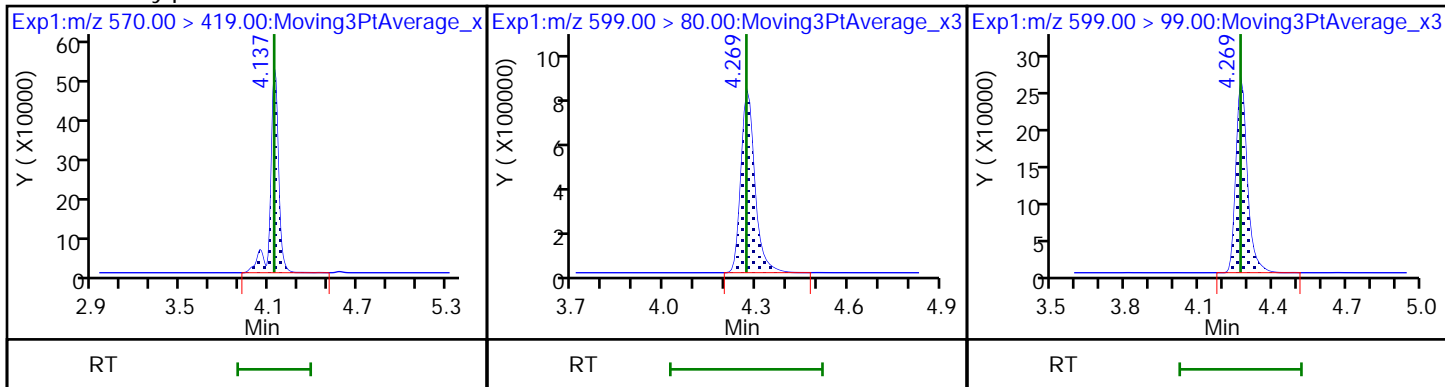
25 1H,1H,2H,2H-perfluorodecanesulfonamide

27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamide

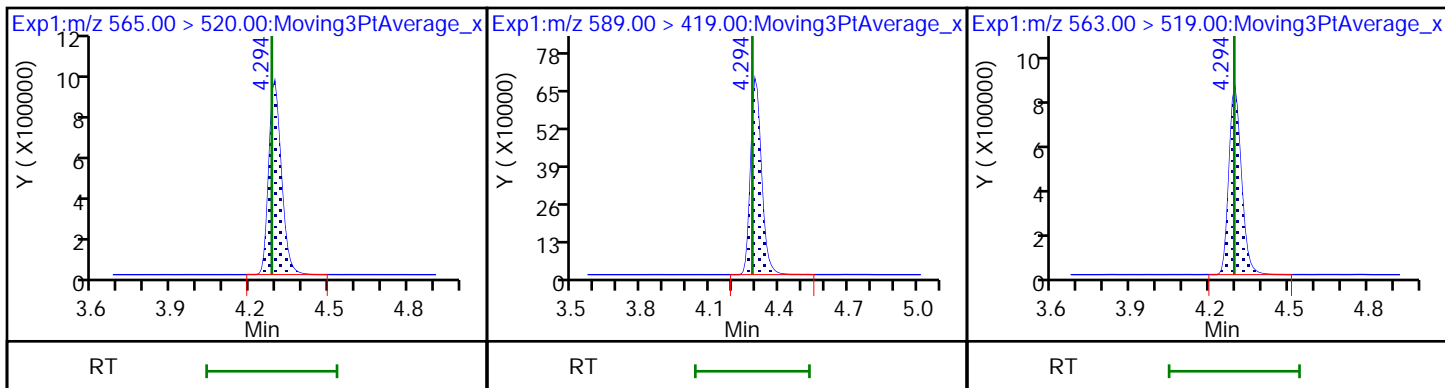
29 Perfluorodecanesulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

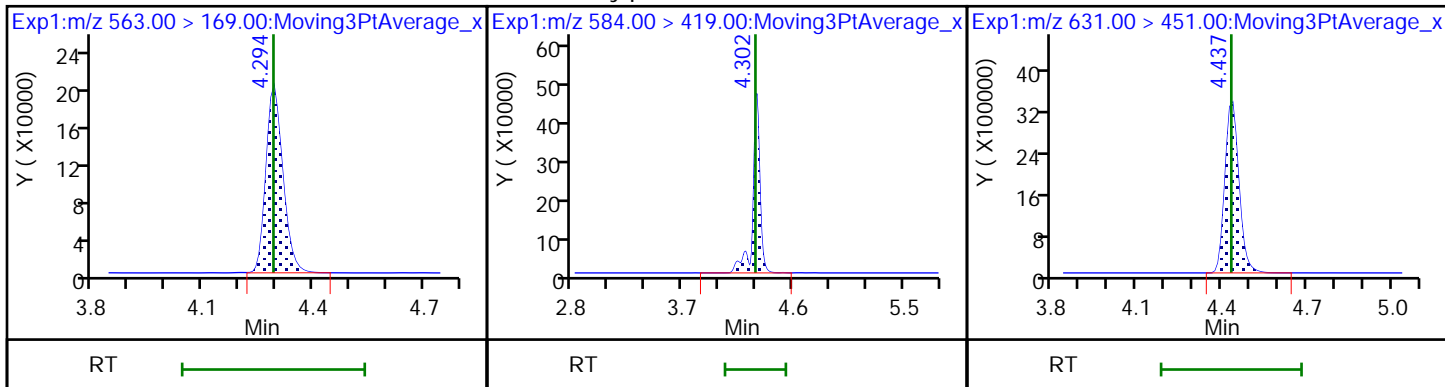
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

33 N-ethylperfluorooctanesulfonamide

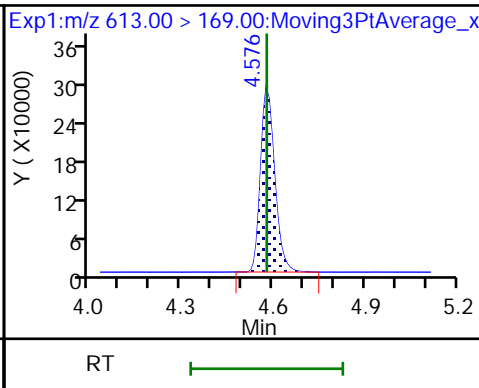
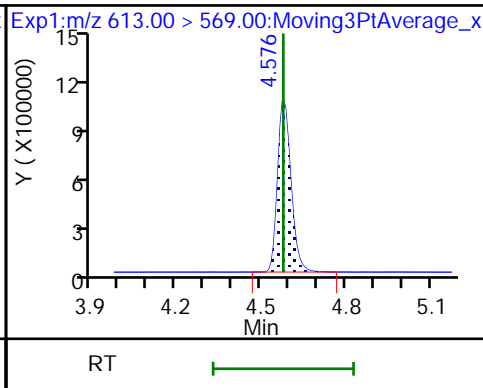
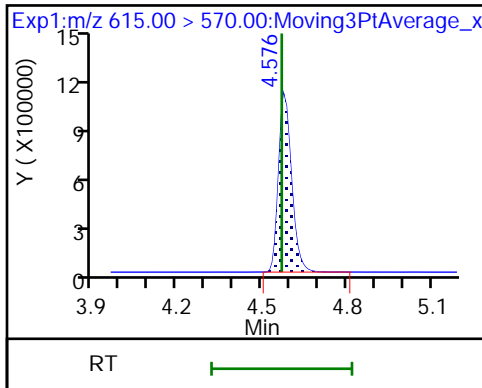
66 11-Chloroeicosafuoro-3-oxaundecanoic acid



D 36 13C2 PFDa

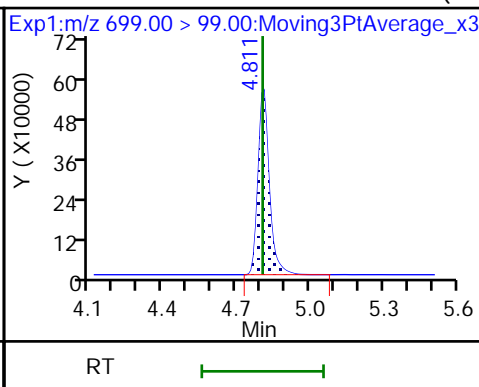
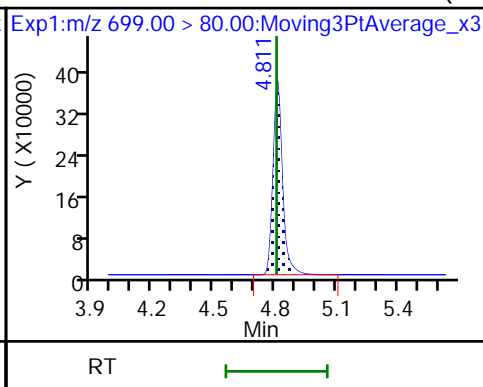
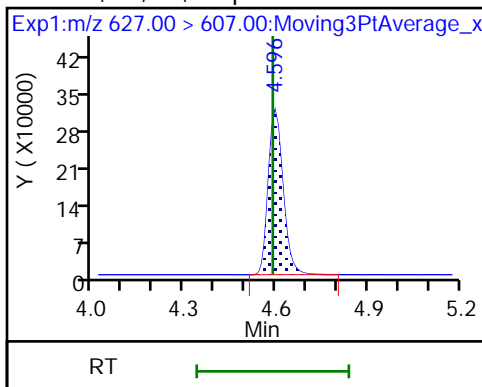
37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



74 1H,1H,2H,2H-perfluorododecanesulfonate

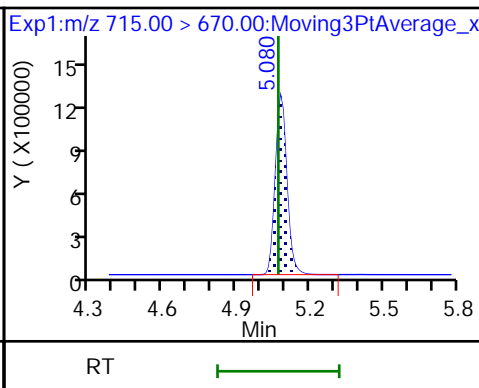
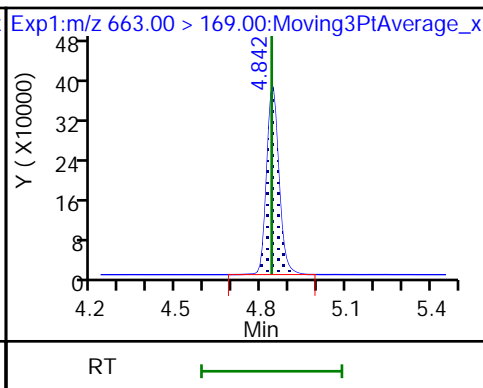
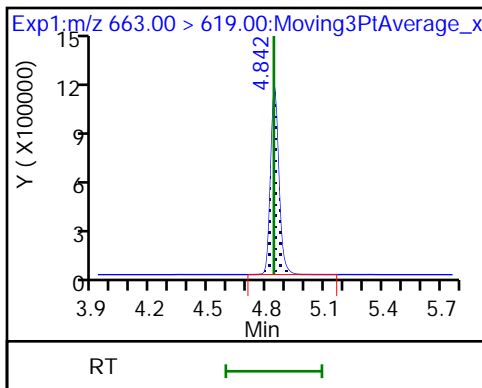
75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

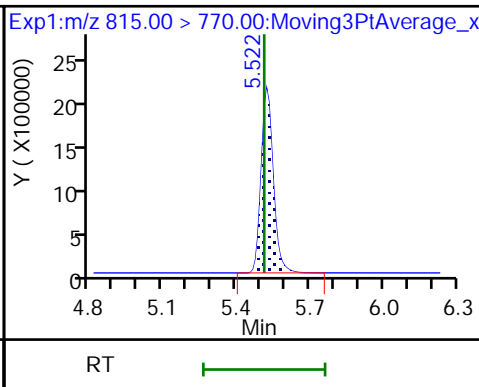
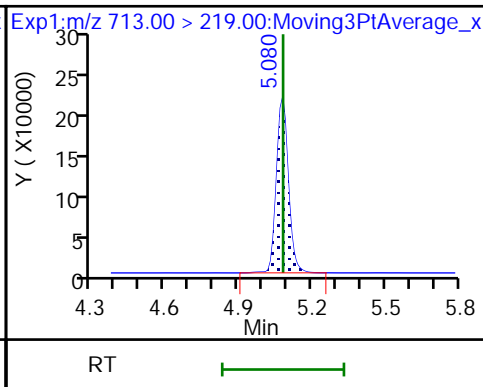
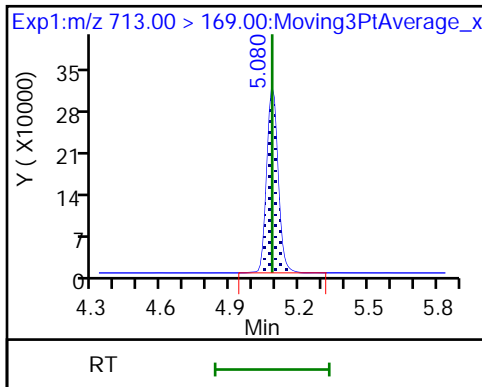
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

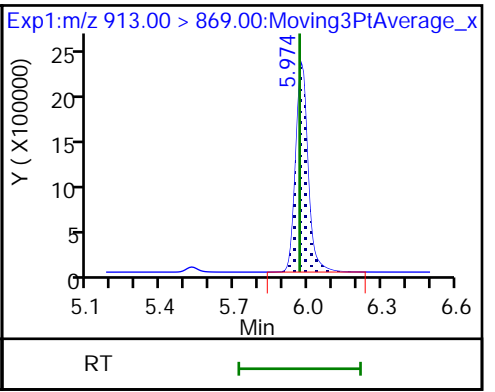
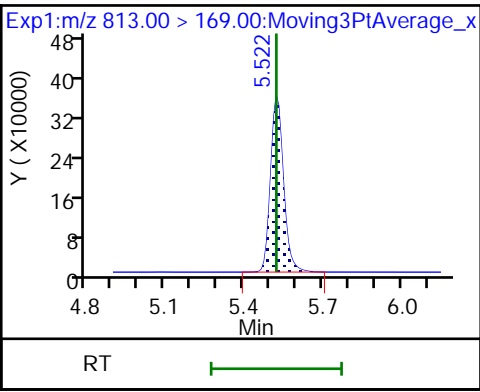
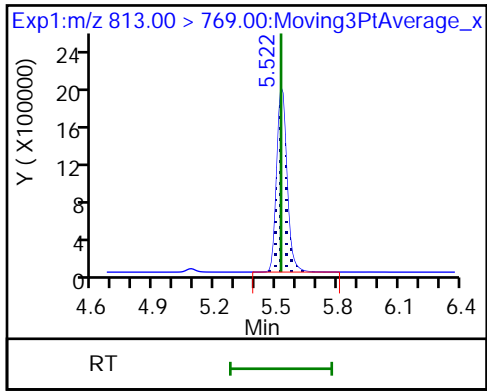
D 44 13C2 PFHxDA



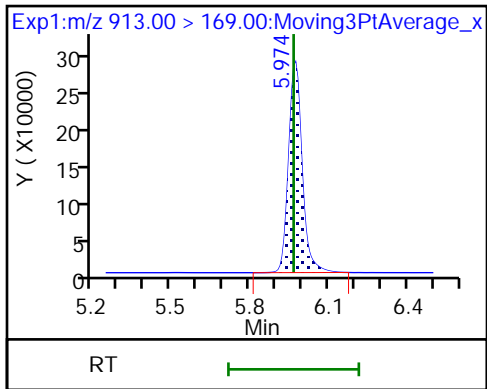
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

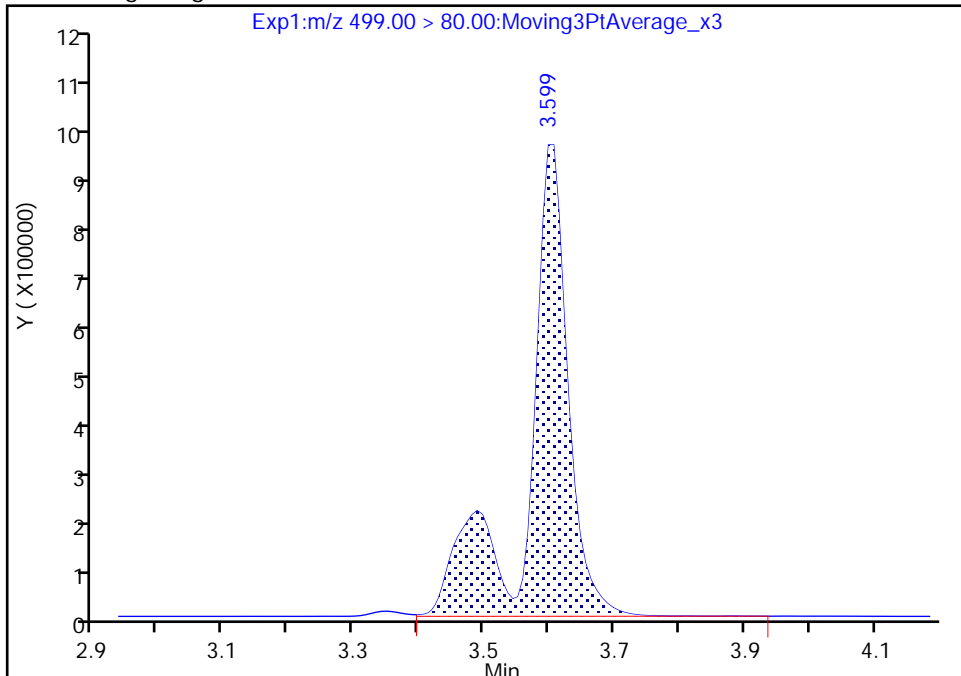
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_035.d
Injection Date: 06-Dec-2018 10:05:02 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 36 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

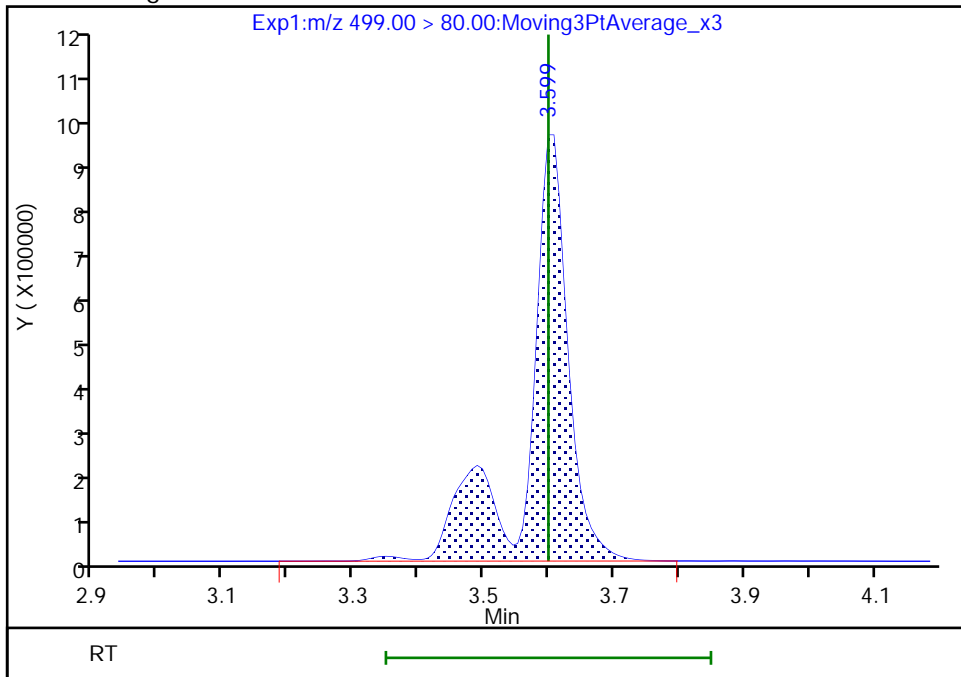
RT: 3.60
Area: 4048704
Amount: 2.309591
Amount Units: ng/ml

Processing Integration Results



RT: 3.60
Area: 4076588
Amount: 2.325498
Amount Units: ng/ml

Manual Integration Results



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: ICV 320-263887/10 Calibration Date: 12/08/2018 06:16
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.07ICAL_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	0.9132	0.9513		2.60	2.50	4.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.095	1.096		2.50	2.50	0.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9874	0.9814		2.20	2.21	-0.6	50.0
4:2 FTS	AveID	0.1892	0.1963		2.42	2.34	3.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.012	0.9574		2.37	2.50	-5.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8643	0.8939		2.43	2.35	3.4	50.0
HFPO-DA (GenX)	AveID	3.356	3.778		2.81	2.50	12.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.129	1.078		2.39	2.50	-4.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.062	1.052		2.26	2.28	-1.0	40.0
DONA	AveID	3.912	3.998		2.41	2.36	2.2	50.0
6:2 FTS	AveID	1.556	1.583		2.42	2.38	1.7	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.286	1.346		2.49	2.38	4.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.123	1.149		2.56	2.50	2.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.121	1.083		2.24	2.31	-3.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.053	1.042		2.47	2.50	-1.0	40.0
F-53B Major	AveID	1.897	2.031		2.50	2.33	7.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7820	0.8148		2.50	2.40	4.2	50.0
8:2 FTS	AveID	1.308	1.316		2.42	2.40	0.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9686	0.9669		2.50	2.50	-0.2	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9375	0.9815		2.62	2.50	4.7	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9247	1.043		2.82	2.50	12.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6393	0.6504		2.46	2.41	1.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9137	0.8805		2.41	2.50	-3.6	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8543	0.9298		2.72	2.50	8.8	40.0
F-53B Minor	AveID	2.835	2.937		2.44	2.36	3.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.065	1.116		2.62	2.50	4.8	40.0
10:2 FTS	AveID	0.8899	0.9376		2.54	2.41	5.4	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2820	0.2921		2.51	2.42	3.6	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.012	1.122		2.77	2.50	10.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2530	0.2545		2.52	2.50	0.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9150		2.59	2.50	3.5	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: ICV 320-263887/10 Calibration Date: 12/08/2018 06:16
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.07ICAL_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.162	1.203		2.59	2.50	3.5	50.0
13C4 PFBA	Ave	1.505	1.461		2.43	2.50	-2.9	50.0
13C5 PFPeA	Ave	0.9872	0.9649		2.44	2.50	-2.3	50.0
13C3 PFBS	Ave	1.529	1.489		2.27	2.33	-2.6	50.0
M2-4:2 FTS	Ave	0.1255	0.1260		2.34	2.34	0.4	50.0
13C2 PFHxA	Ave	1.031	1.031		2.50	2.50	-0.0	50.0
13C3 HFPO-DA	Ave	0.0744	0.0688		2.31	2.50	-7.5	50.0
13C4 PFHpA	Ave	0.9896	1.014		2.56	2.50	2.5	50.0
18O2 PFHxS	Ave	1.192	1.145		2.27	2.37	-3.9	50.0
M2-6:2 FTS	Ave	0.1789	0.1816		2.41	2.38	1.5	40.0
13C8 PFOA	Ave	1.507	1.512		2.46	2.45	0.3	50.0
13C4 PFOA	Ave	0.9852	0.9569		2.43	2.50	-2.9	50.0
13C4 PFOS	Ave	0.7858	0.7801		2.37	2.39	-0.7	50.0
13C8 PFOS	Ave	0.4226	0.4211		2.38	2.39	-0.4	50.0
13C5 PFNA	Ave	0.8198	0.7986		2.44	2.50	-2.6	50.0
13C2 PFDA	Ave	0.7365	0.7324		2.49	2.50	-0.6	50.0
M2-8:2 FTS	Ave	0.1946	0.1977		2.43	2.40	1.6	40.0
13C8 FOSA	Ave	1.170	1.130		2.41	2.50	-3.5	50.0
d3-NMeFOSAA	Ave	0.3898	0.3920		2.51	2.50	0.6	50.0
13C2 PFUnA	Ave	0.5834	0.5699		2.44	2.50	-2.3	50.0
d5-NEtFOSAA	Ave	0.4094	0.4076		2.49	2.50	-0.4	50.0
13C2 PFDoA	Ave	0.6009	0.5760		2.40	2.50	-4.2	50.0
13C2 PFTeDA	Ave	0.6981	0.6755		2.42	2.50	-3.2	50.0
13C2 PFHxDA	Ave	1.226	1.222		2.49	2.50	-0.3	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_013.d
 Lims ID: ICV FULL
 Client ID:
 Sample Type: ICV
 Inject. Date: 08-Dec-2018 06:16:54 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: SACINSTLCMS01 Instrument ID: A8_N
 Sublist:

Method: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 08-Dec-2018 10:23:20 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0329

First Level Reviewer: phomsophat Date: 08-Dec-2018 09:53:45

Ratio Calibration: None

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	1.755	1.753	0.002	0.550	7413997	2.43	97.1	6180	
2 Perfluorobutanoic acid	212.90 > 169.00	1.755	1.754	0.001	1.000	7053250	2.60		1215	
D 3 13C5 PFPeA	267.90 > 223.00	2.063	2.063	0.0	0.647	4897160	2.44	97.7	6633	
4 Perfluoropentanoic acid	262.90 > 219.00	2.063	2.063	0.0	1.000	5369276	2.50		400	
D 47 13C3 PFBS	301.90 > 80.00	2.094	2.093	0.001	0.657	7029246	2.26	97.4	359784	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.094	2.096	-0.002	1.000	6564427	2.20	Target=2.49	8282	
	298.90 > 99.00	2.094	2.096	-0.002	1.000	2854862		2.30(1.25-3.74)	2731	
D 60 M2-4:2 FTS	329.00 > 81.00	2.372	2.372	0.0	0.744	597130	2.34	100	1358	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.372	2.372	0.0	1.133	1386973	2.42		7400	
D 7 13C2 PFHxA	315.00 > 270.00	2.412	2.412	0.0	0.756	5232002	2.50	100.0	7449	
6 Perfluorohexanoic acid	313.00 > 269.00	2.412	2.412	0.0	1.000	5009354	2.36	Target=10.07	1717	
	313.00 > 119.00	2.412	2.412	0.0	1.000	466970		10.73(5.03-15.10)	1525	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.432	2.429	0.003	1.161	6351223	2.43	Target=2.71	8764	
	349.00 > 99.00	2.432	2.429	0.003	1.161	2421264		2.62(1.36-4.07)	5334	
D 64 13C3 HFPO-DA	332.10 > 287.00	2.531	2.527	0.004	0.794	349180	2.31	92.5	1723	

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	2.531	2.528	0.003	1.000	1319179	2.81		790	
D 9 13C4 PFHpA	367.00	> 322.00	2.793	2.792	0.001	0.876	5148642	2.56		103	6518
10 Perfluoroheptanoic acid	363.00	> 319.00	2.793	2.793	0.0	1.000	5550426	2.39	Target=2.27		1654
	363.00	> 169.00	2.793	2.793	0.0	1.000	2166453		2.56(1.13-3.40)		2867
D 11 18O2 PFHxS	403.00	> 84.00	2.802	2.797	0.005	0.879	5498679	2.27		96.1	8054
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.802	2.799	0.003	1.000	5574686	2.26	Target=3.00		7717
	399.00	> 99.00	2.802	2.799	0.003	1.000	1936335		2.88(1.50-4.49)		2951
77 DONA	377.00	> 251.00	2.839	2.839	0.0	0.796	14912093	2.41	Target=1.69		13765
	377.00	> 85.00	2.839	2.839	0.0	0.796	9052661		1.65(0.85-2.54)		9634
D 12 M2-6:2 FTS	429.00	> 81.00	3.173	3.167	0.006	0.995	875780	2.41		102	4704
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.173	3.167	0.006	1.000	1386018	2.42			906
D 73 13C8 PFOA	421.00	> 376.00	3.181	3.180	0.001	0.998	7510987	2.45		100	9065
D 14 13C4 PFOA	417.00	> 372.00	3.189	3.185	0.004	1.000	4856522	2.43		97.1	8731
* 62 13C2 PFOA	415.00	> 370.00	3.189	3.185	0.004		5075507	2.50			8487
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.189	3.185	0.004	0.894	5062373	2.49	Target=3.88		5305
	449.00	> 99.00	3.189	3.185	0.004	0.894	1317562		3.84(1.94-5.82)		3703
15 Perfluorooctanoic acid	413.00	> 369.00	3.189	3.185	0.004	1.000	5581495	2.56	Target=1.68		654
	413.00	> 169.00	3.189	3.185	0.004	1.000	2944566		1.90(0.84-2.52)		2897
D 72 13C8 PFOS	507.00	> 99.00	3.565	3.559	0.006	1.118	2043422	2.38		99.6	7887
D 18 13C4 PFOS	503.00	> 80.00	3.565	3.562	0.003	1.118	3785107	2.37		99.3	7499
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.565	3.562	0.003	1.000	3967356	2.24	Target=4.62		2895
	499.00	> 99.00	3.565	3.562	0.003	1.000	870790		4.56(2.31-6.93)		2132
D 19 13C5 PFNA	468.00	> 423.00	3.573	3.573	0.0	1.121	4053153	2.44		97.4	7487
20 Perfluorononanoic acid	463.00	> 419.00	3.581	3.573	0.008	1.002	4222492	2.47	Target=3.79		2138
	463.00	> 169.00	3.581	3.573	0.008	1.002	978115		4.32(1.90-5.69)		4028
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.768	3.766	0.002	1.057	7494066	2.49			13451

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	3.917	3.910	0.007	1.099	3097038	2.50	Target=2.65		8527	
549.00 > 99.00	3.917	3.910	0.007	1.099	1064601		2.91(1.33-3.97)		5457	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.932	3.928	0.004	1.233	961252	2.43		102	4325	
D 23 13C2 PFDA										
515.00 > 470.00	3.932	3.929	0.003	1.233	3717254	2.49		99.4	11016	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.932	3.929	0.003	1.000	3594128	2.50	Target=4.73		2769	
513.00 > 169.00	3.932	3.929	0.003	1.000	669858		5.37(2.36-7.09)		2340	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.932	3.930	0.002	1.000	1267473	2.42			7140	
D 21 13C8 FOSA										
506.00 > 78.00	3.948	3.943	0.005	1.238	5734646	2.41		96.5	6422	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.948	3.944	0.004	1.000	5628473	2.62			1212	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.099	4.092	0.007	1.285	1989756	2.51		101	6344	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.099	4.096	0.003	1.000	2076078	2.82			10948	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.231	4.228	0.003	1.187	2485118	2.45	Target=2.77		7558	
599.00 > 99.00	4.231	4.228	0.003	1.187	863314		2.88(1.39-4.16)		5322	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.256	4.250	0.006	1.000	2546923	2.41	Target=4.24		3026	
563.00 > 169.00	4.256	4.250	0.006	1.000	582365		4.37(2.12-6.36)		2884	
D 30 13C2 PFUnA										
565.00 > 520.00	4.256	4.251	0.005	1.335	2892597	2.44		97.7	4829	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.256	4.253	0.003	1.335	2068642	2.49		99.6	3307	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.264	4.260	0.004	1.002	1923357	2.72			5322	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.397	4.393	0.004	1.233	10955291	2.44			12189	
D 36 13C2 PFDaA										
615.00 > 570.00	4.544	4.536	0.008	1.425	2923272	2.40		95.8	9333	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.544	4.537	0.007	1.000	3262159	2.62	Target=4.27		2759	
613.00 > 169.00	4.544	4.537	0.007	1.000	788685		4.14(2.13-6.40)		5841	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.560	4.552	0.008	1.160	906940	2.54			5454	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.769	4.766	0.002	1.337	1119633	2.51	Target=0.00		7249	
699.00 > 99.00	4.769	4.766	0.002	1.337	1668586		0.67(0.00-0.00)		8945	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.804	4.798	0.006	1.057	3279636	2.77	Target=2.51		3040	
663.00 > 169.00	4.804	4.798	0.006	1.057	1020890		3.21(1.25-3.76)		5270	

Ratio Calibration: None

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	5.047	5.036	0.011	1.583	3428612	2.42		96.8	6599	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.047	5.036	0.011	1.000	872674	2.51	Target=1.42		4903	
713.00 > 219.00	5.037	5.036	0.001	0.998	616087		1.42(0.71-2.13)		4225	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.470	5.465	0.005	1.715	6203004	2.49		99.7	8278	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.470	5.467	0.003	1.000	5675419	2.59	Target=5.72		614	
813.00 > 169.00	5.470	5.467	0.003	1.000	1042378		5.44(2.86-8.58)		4587	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.892	5.885	0.007	1.077	7459639	2.59	Target=7.65		727	
913.00 > 169.00	5.892	5.885	0.007	1.077	979853		7.61(3.83-11.48)		4347	

Reagents:

LCPFCIC_FULL_00016

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_013.d

Injection Date: 08-Dec-2018 06:16:54

Instrument ID: A8_N

Lims ID: ICV FULL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 10

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

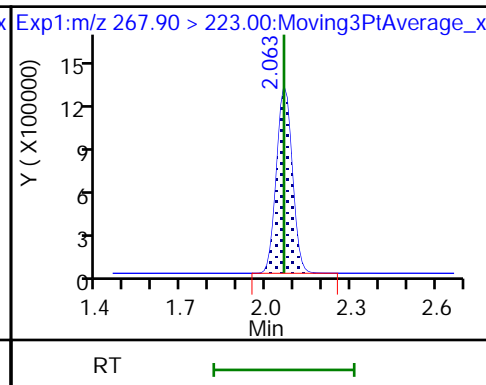
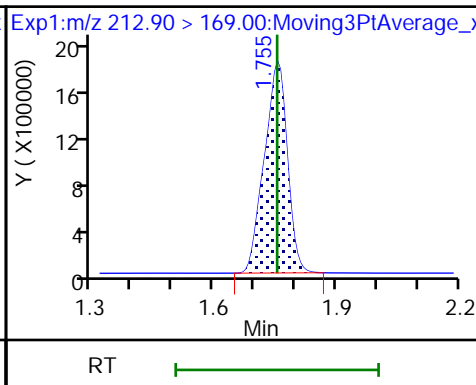
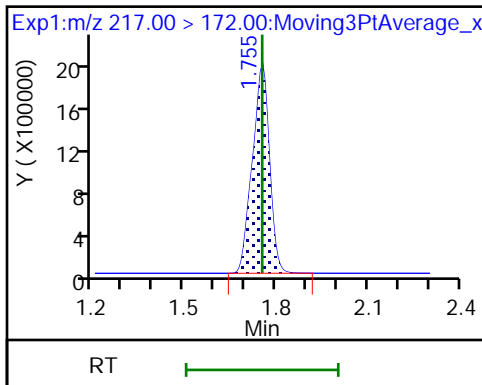
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

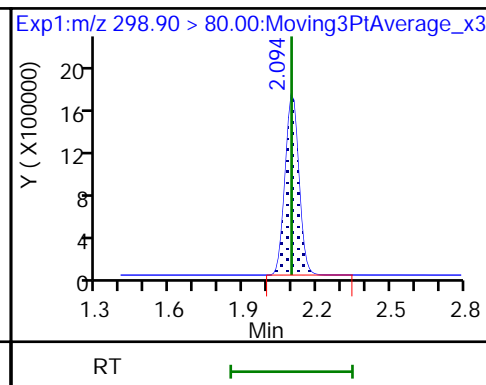
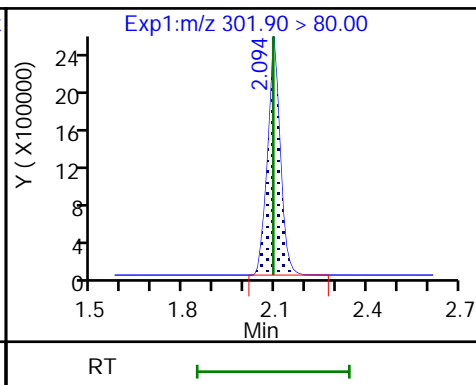
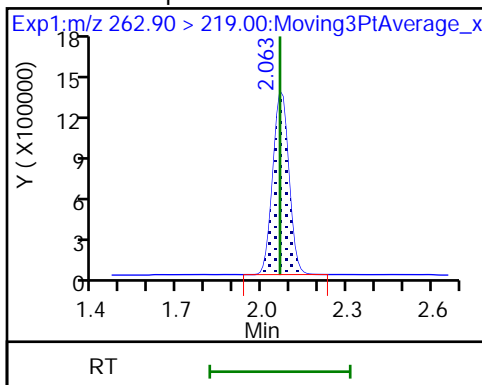
D 3 13C5 PFPeA



4 Perfluoropentanoic acid

D 47 13C3 PFBS

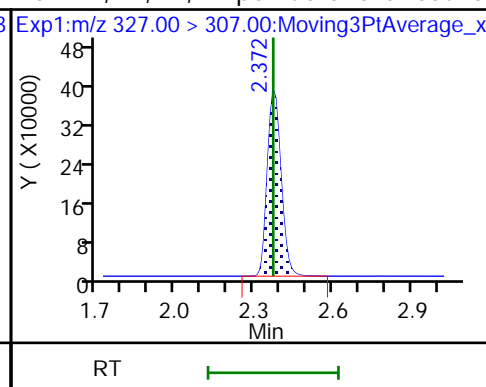
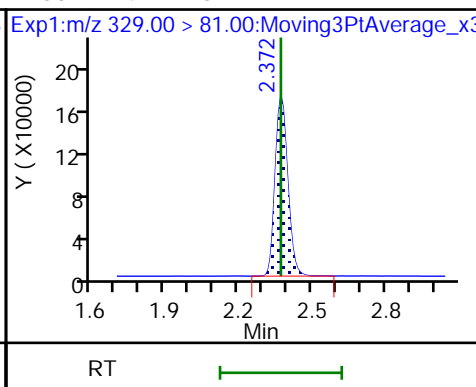
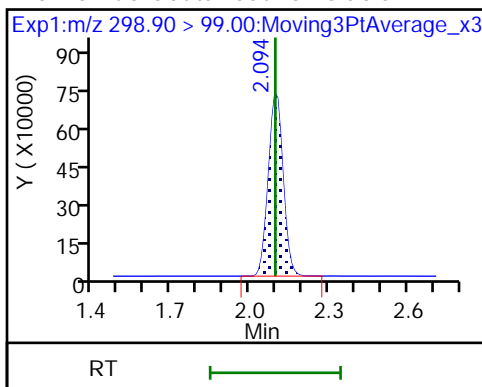
5 Perfluorobutanesulfonic acid



5 Perfluorobutanesulfonic acid

D 60 M2-4:2 FTS

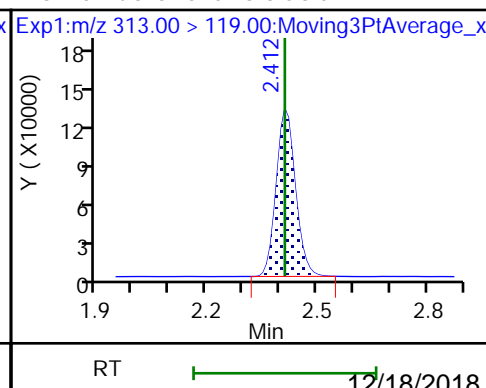
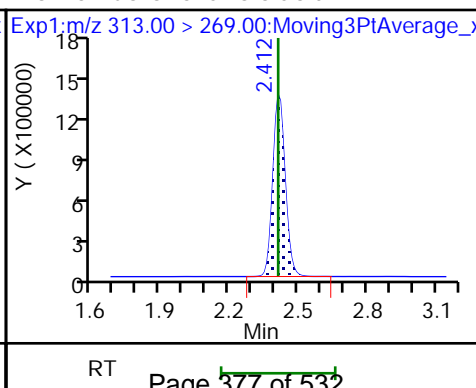
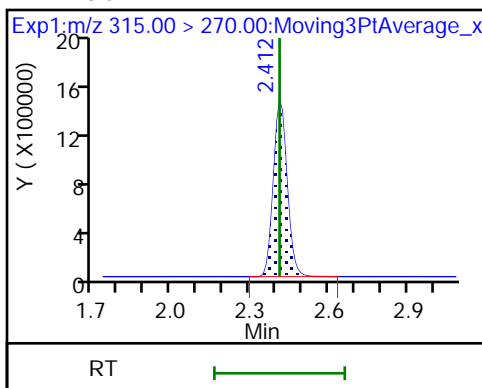
61 1H,1H,2H,2H-perfluorohexanesulfoni

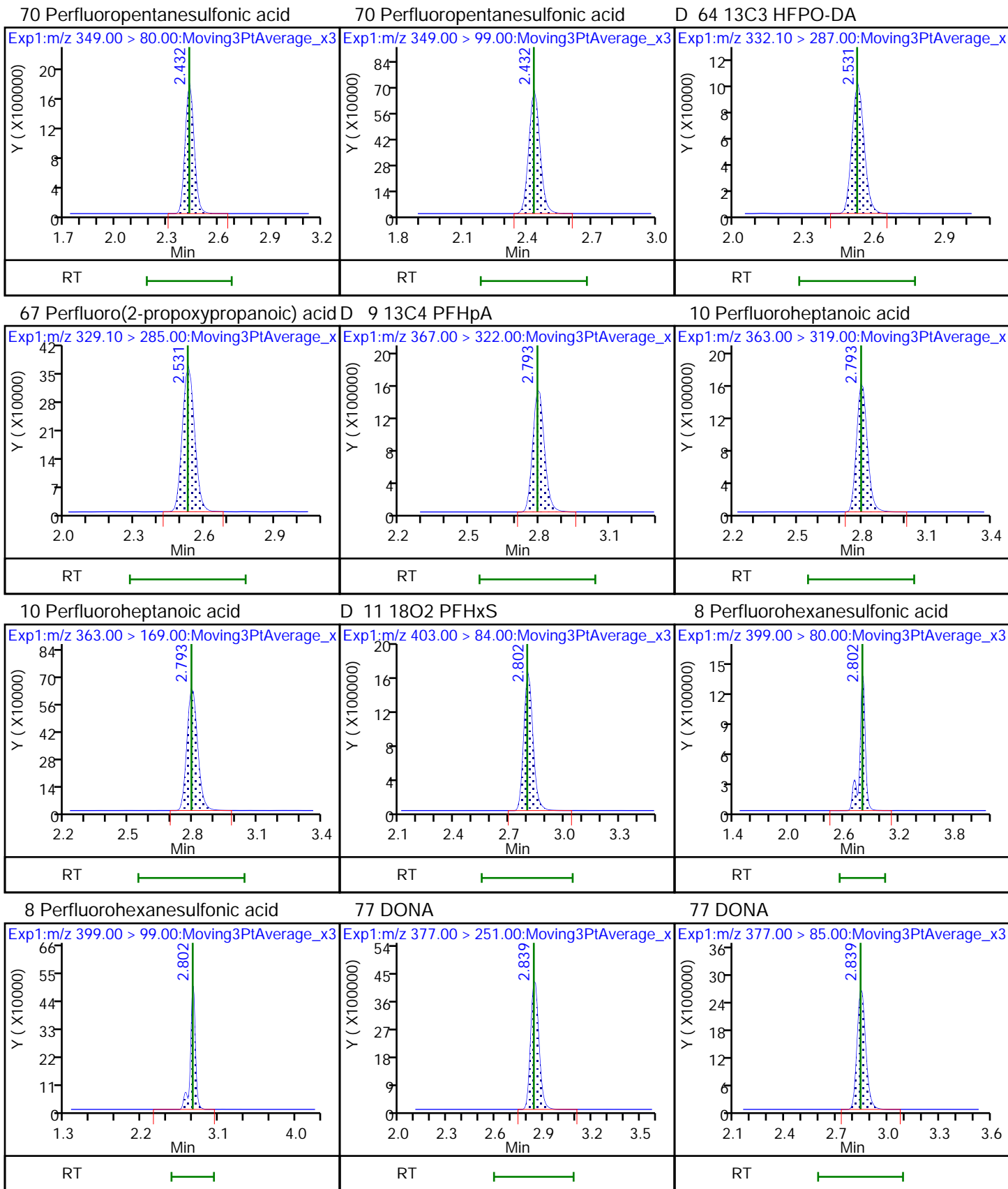


D 7 13C2 PFHxA

6 Perfluorohexanoic acid

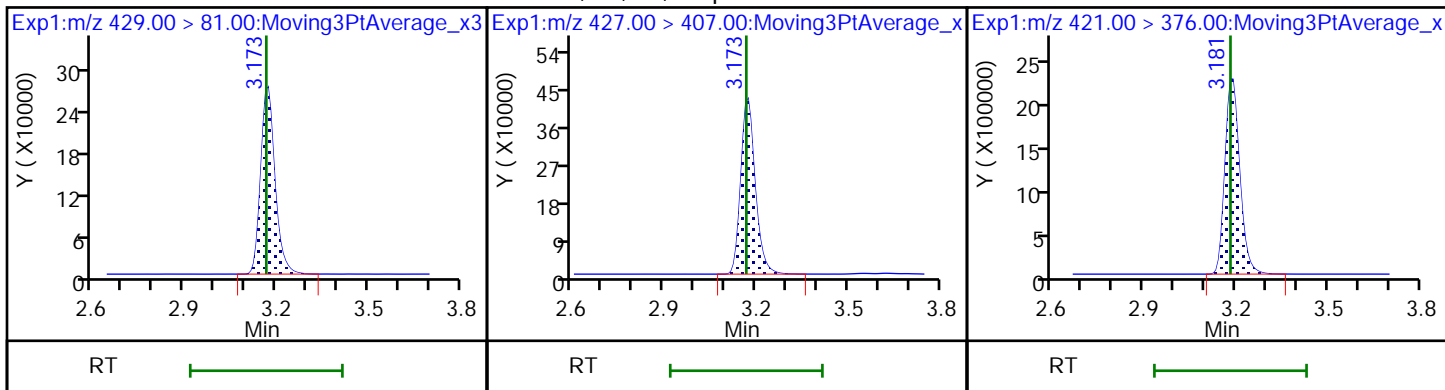
6 Perfluorohexanoic acid





D 12 M2-6:2 FTS

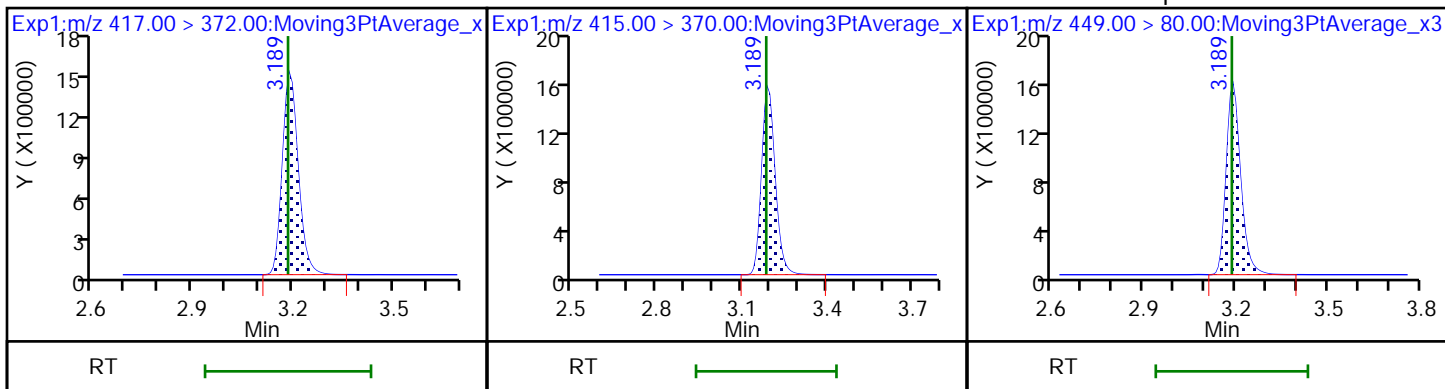
13 1H,1H,2H,2H-perfluorooctanesulfoD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

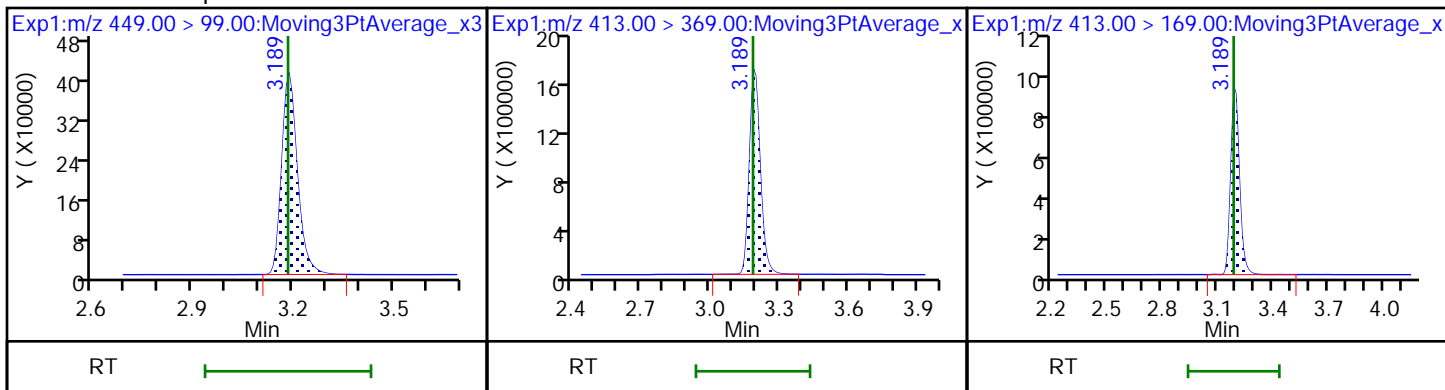
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

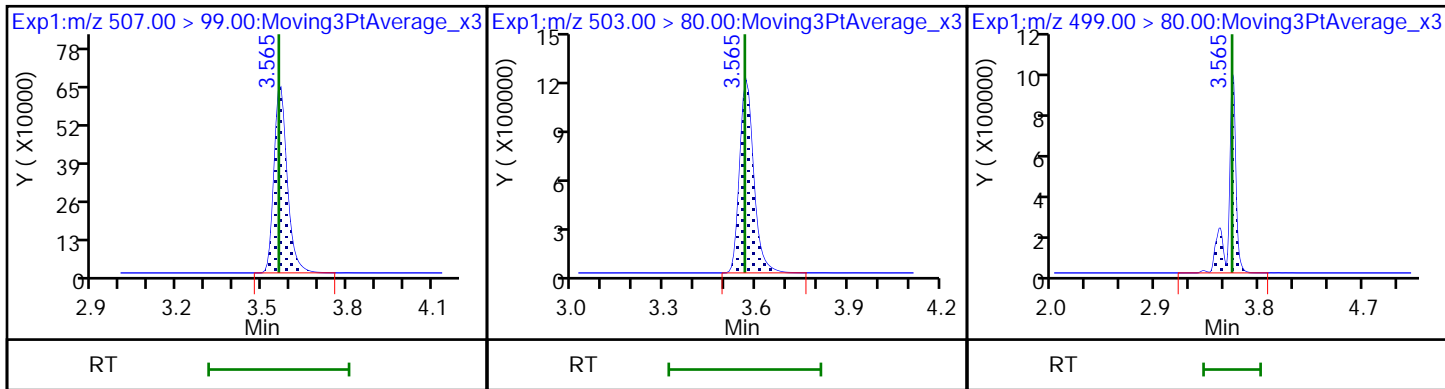
15 Perfluorooctanoic acid

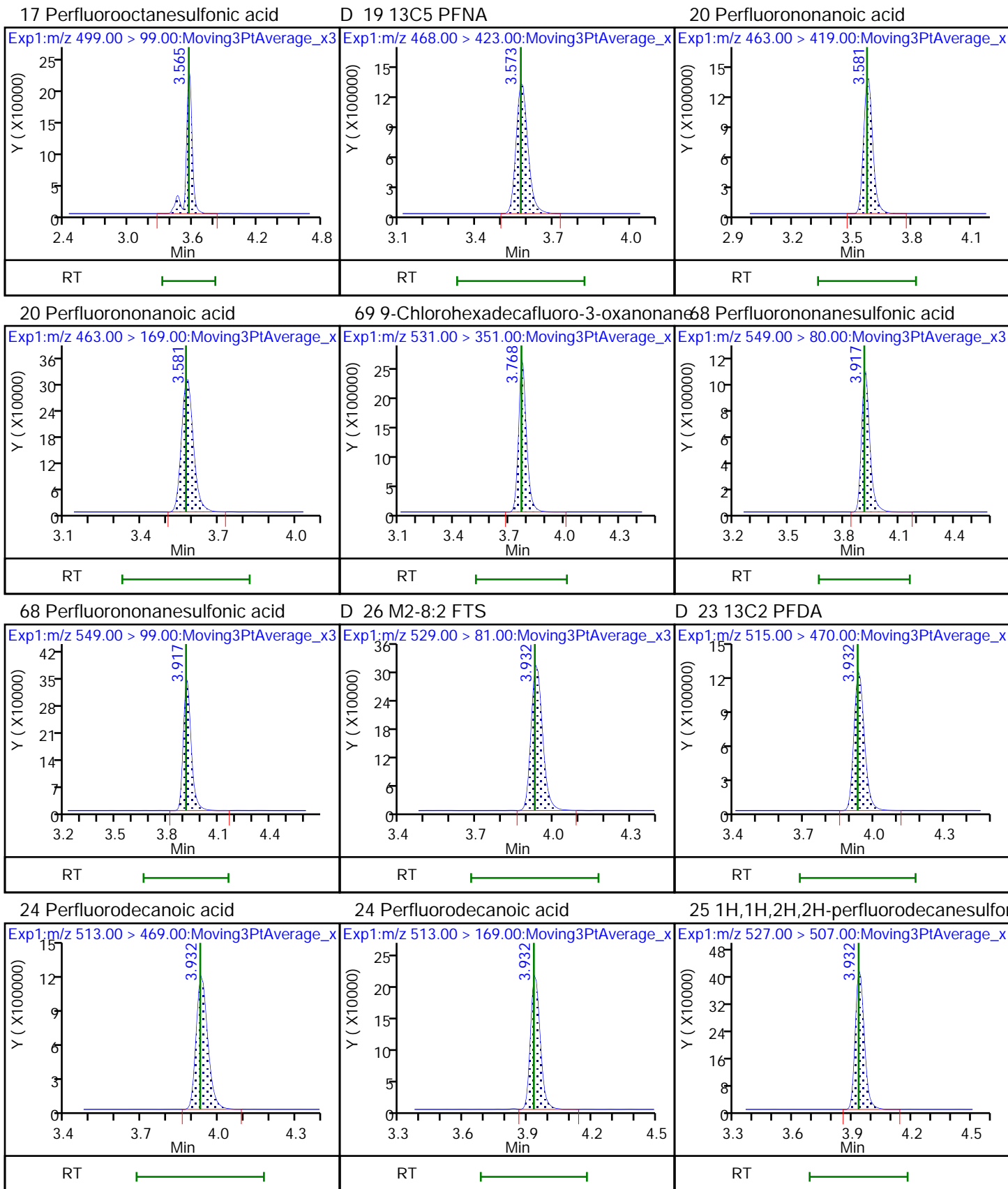


D 72 13C8 PFOS

D 18 13C4 PFOS

17 Perfluorooctanesulfonic acid

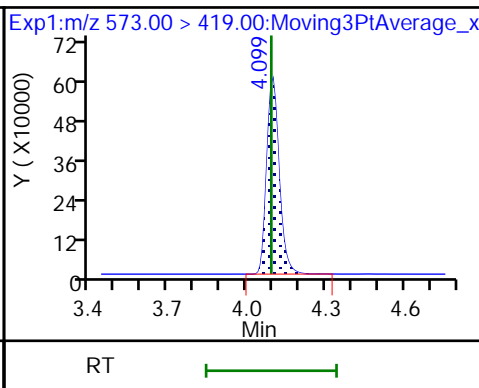
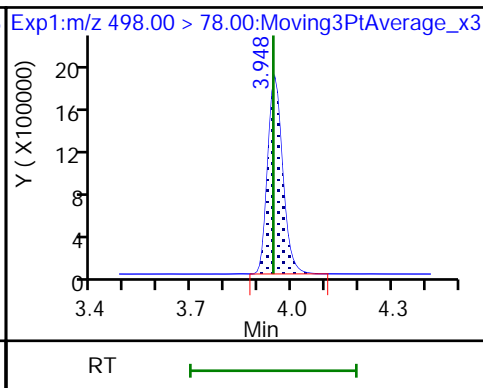
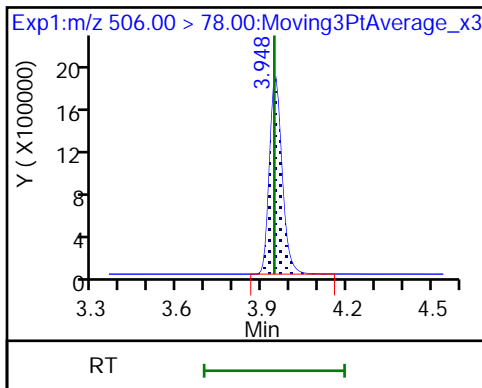




D 21 13C8 FOSA

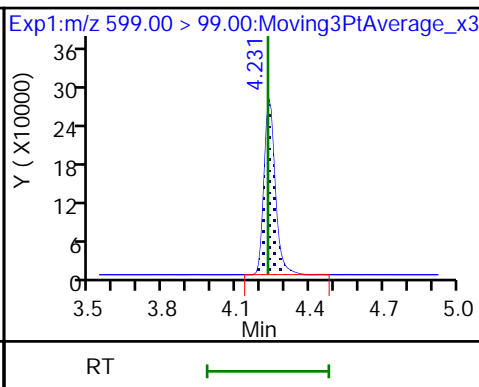
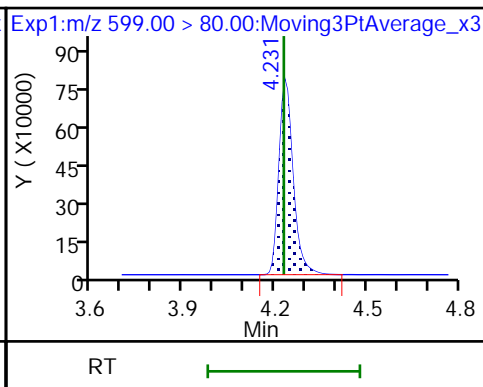
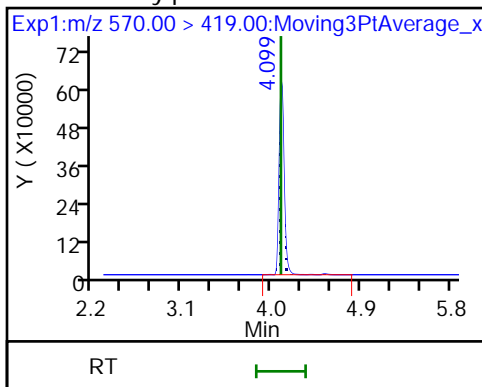
22 Perfluorooctanesulfonamide

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

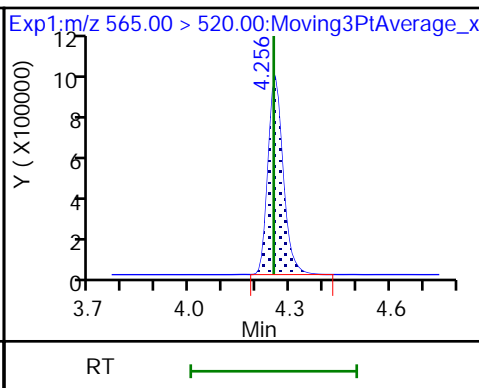
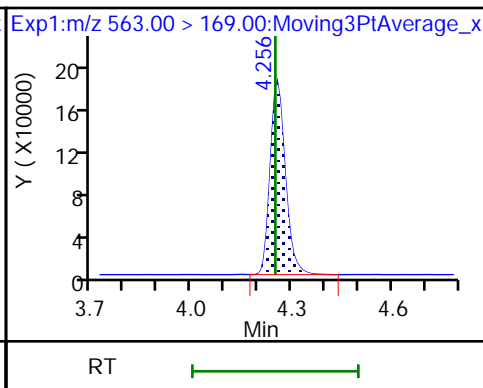
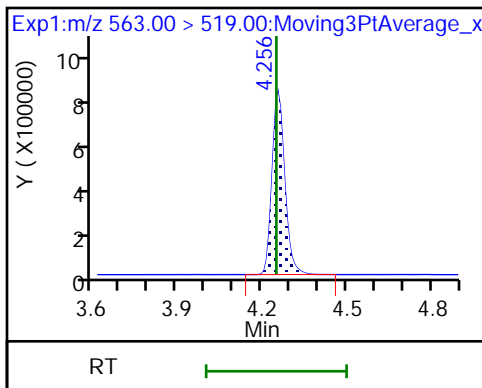
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

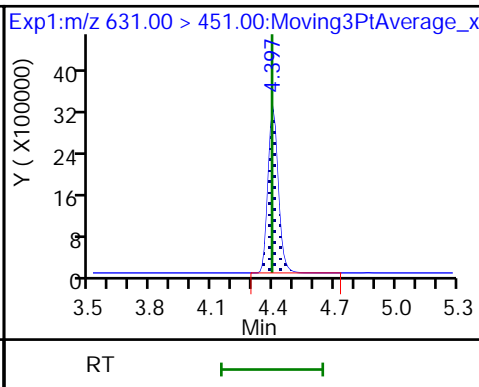
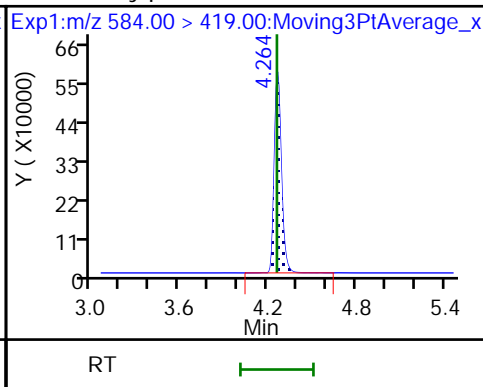
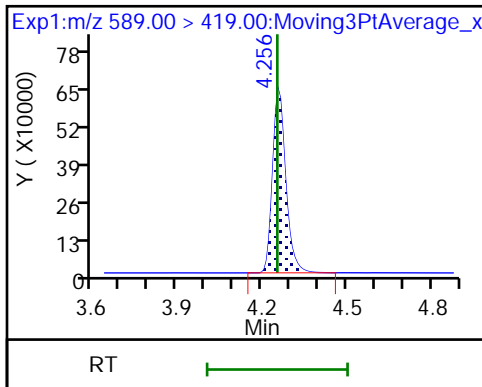
D 30 13C2 PFUnA



D 32 d5-NEtFOSAA

33 N-ethylperfluorooctanesulfonamido

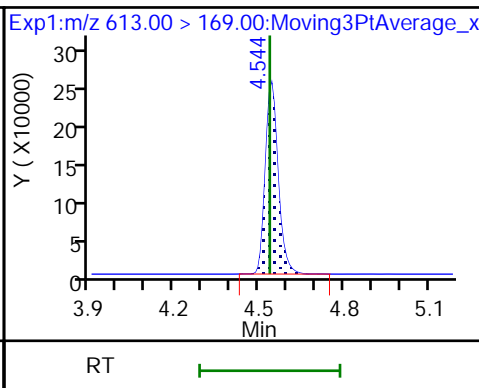
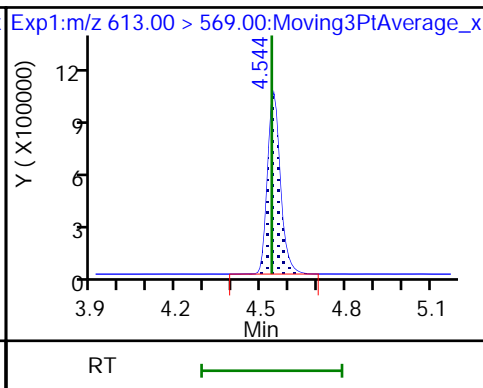
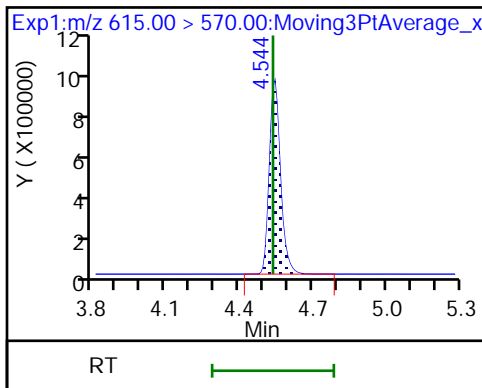
66 11-Chloroeicosafuoro-3-oxaundecan



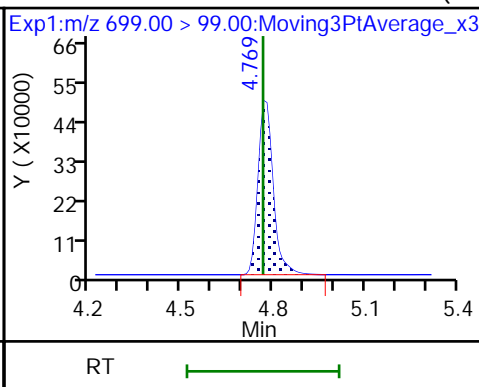
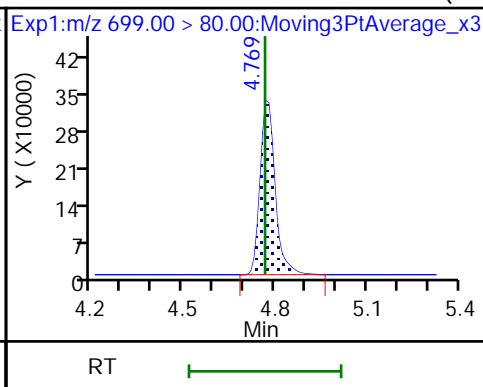
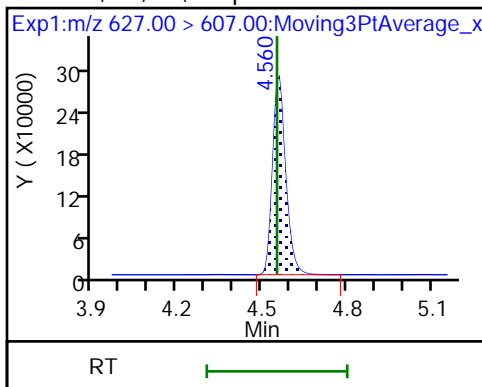
D 36 13C2 PFDoA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



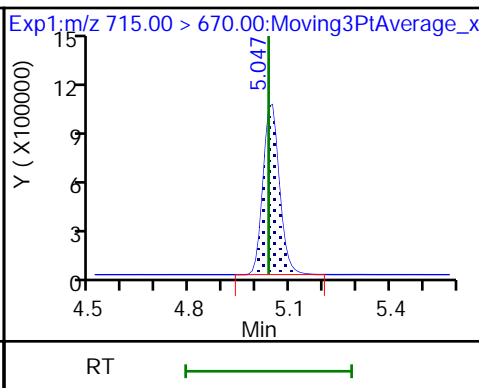
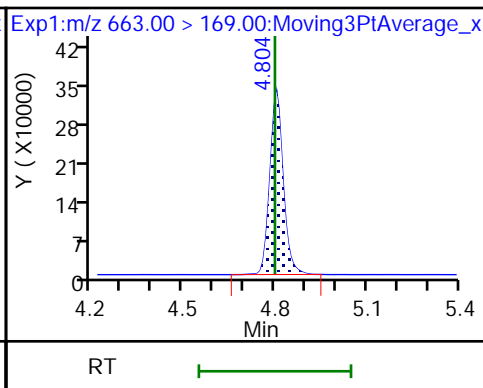
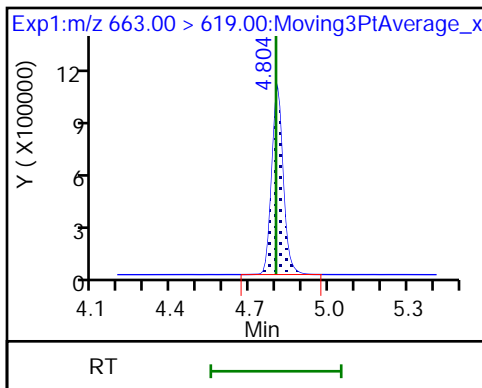
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

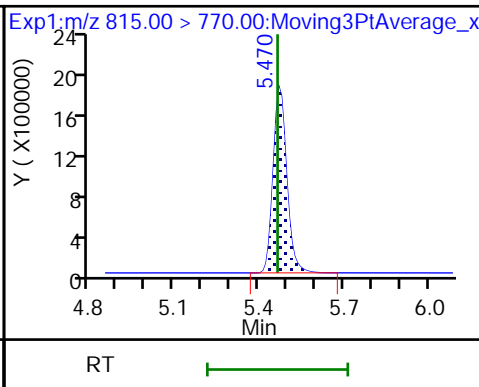
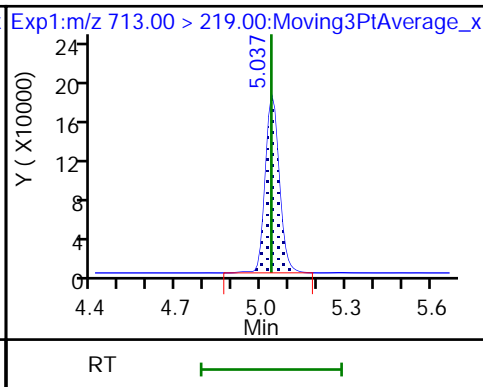
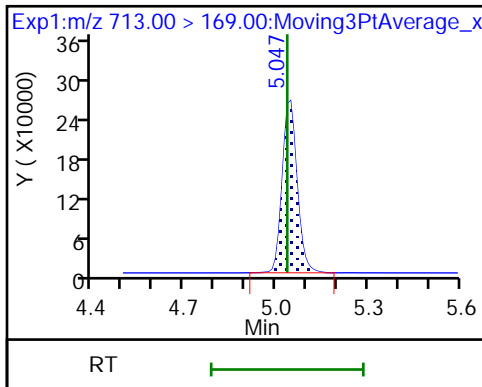
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

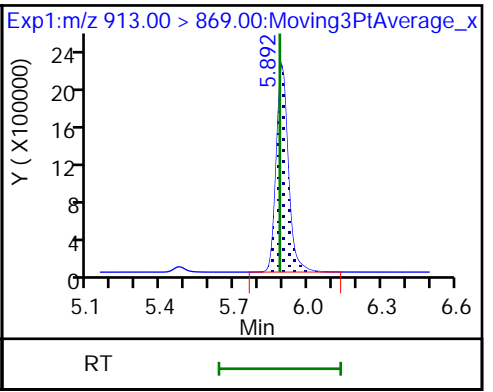
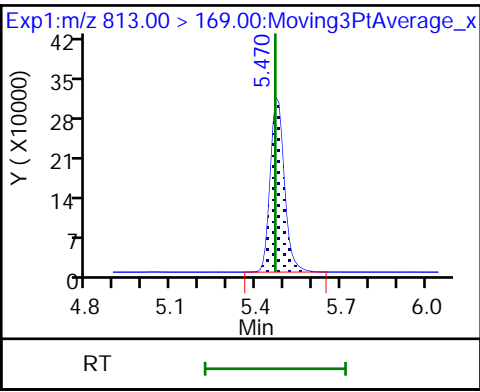
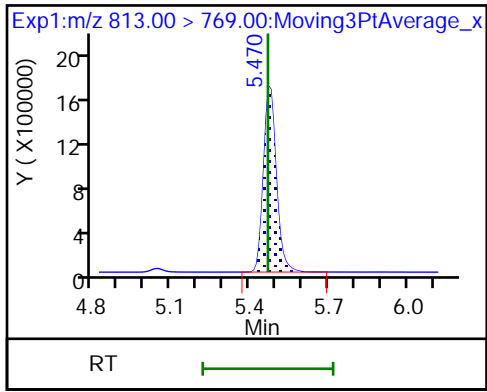
D 44 13C2 PFHxDA



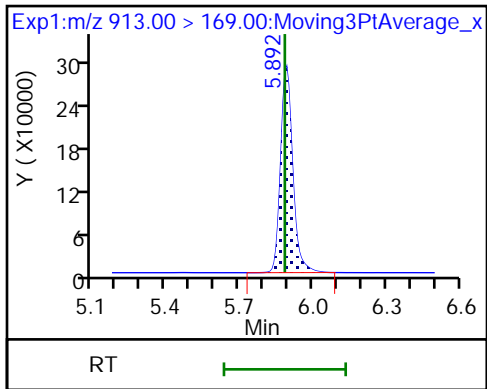
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-265415/2 Calibration Date: 12/14/2018 21:02
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.14LLB_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	0.9132	0.8234		0.0451	0.0500	-9.8	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.095	1.072		0.0489	0.0500	-2.1	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9874	0.9028		0.0404	0.0442	-8.6	50.0
4:2 FTS	AveID	0.1892	0.2086		0.515	0.467	10.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.012	1.027		0.0507	0.0500	1.4	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8643	0.8705		0.0472	0.0469	0.7	50.0
HFPO-DA (GenX)	AveID	3.356	3.194		0.0476	0.0500	-4.8	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.129	1.036		0.0459	0.0500	-8.2	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.062	1.218		0.0522	0.0455	14.6	50.0
DONA	AveID	3.912	3.849		0.0463	0.0471	-1.6	50.0
6:2 FTS	AveID	1.556	1.625		0.495	0.474	4.4	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.286	1.297		0.0480	0.0476	0.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.123	1.166		0.0520	0.0501	3.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.121	1.053		0.0436	0.0464	-6.0	50.0
Perfluorononanoic acid (PFNA)	AveID	1.053	1.052		0.0500	0.0500	-0.0	50.0
F-53B Major	AveID	1.897	1.871		0.0460	0.0466	-1.4	50.0
Perfluoronananesulfonic acid (PFNS)	AveID	0.7820	0.7530		0.0462	0.0480	-3.7	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9375	0.9235		0.0493	0.0500	-1.5	50.0
8:2 FTS	AveID	1.308	1.322		0.484	0.479	1.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9686	0.9428		0.0487	0.0500	-2.7	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9247	0.9483		0.513	0.500	2.6	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6393	0.5897		0.0445	0.0482	-7.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9137	0.9509		0.0520	0.0500	4.1	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8543	0.8339		0.488	0.500	-2.4	50.0
F-53B Minor	AveID	2.835	2.884		0.0479	0.0471	1.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.065	1.099		0.0516	0.0500	3.2	50.0
10:2 FTS	AveID	0.8899	0.7930		0.0430	0.0482	-10.9	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2820	0.2524		0.0433	0.0484	-10.5	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.012	0.9519		0.0470	0.0500	-5.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2530	0.2778		0.0549	0.0500	9.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.274		0.0492	0.0500	-1.6	50.0

FORM VII
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Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCVL 320-265415/2 Calibration Date: 12/14/2018 21:02
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.14LLB_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.162	1.186		0.0510	0.0500	2.0	50.0
13C4 PFBA	Ave	1.505	1.529		2.54	2.50	1.6	50.0
13C5 PFPeA	Ave	0.9872	0.9857		2.50	2.50	-0.1	50.0
13C3 PFBS	Ave	1.529	1.503		2.29	2.33	-1.7	50.0
M2-4:2 FTS	Ave	0.1255	0.1274		2.37	2.34	1.5	50.0
13C2 PFHxA	Ave	1.031	1.064		2.58	2.50	3.2	50.0
13C3 HFPO-DA	Ave	0.0744	0.0728		2.45	2.50	-2.2	50.0
13C4 PFHpA	Ave	0.9896	1.037		2.62	2.50	4.8	50.0
18O2 PFHxS	Ave	1.192	1.194		2.37	2.37	0.1	50.0
M2-6:2 FTS	Ave	0.1789	0.1915		2.54	2.38	7.0	50.0
13C8 PFOA	Ave	1.507	1.512		2.46	2.45	0.3	50.0
13C4 PFOA	Ave	0.9852	1.020		2.59	2.50	3.5	50.0
13C8 PFOS	Ave	0.4226	0.4102		2.32	2.39	-2.9	50.0
13C4 PFOS	Ave	0.7858	0.7682		2.34	2.39	-2.2	50.0
13C5 PFNA	Ave	0.8198	0.8085		2.47	2.50	-1.4	50.0
13C8 FOSA	Ave	1.170	1.109		2.37	2.50	-5.2	50.0
13C2 PFDA	Ave	0.7365	0.7460		2.53	2.50	1.3	50.0
M2-8:2 FTS	Ave	0.1946	0.2084		2.57	2.40	7.1	50.0
d3-NMeFOSAA	Ave	0.3898	0.3911		2.51	2.50	0.3	50.0
13C2 PFUnA	Ave	0.5834	0.6308		2.70	2.50	8.1	50.0
d5-NEtFOSAA	Ave	0.4094	0.3984		2.43	2.50	-2.7	50.0
13C2 PFDoA	Ave	0.6009	0.6444		2.68	2.50	7.2	50.0
13C2 PFTeDA	Ave	0.6981	0.7585		2.72	2.50	8.7	50.0
13C2 PFHxDA	Ave	1.226	1.353		2.76	2.50	10.4	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69223.b\2018.12.14LLB_005.d
 Lims ID: CCVL
 Client ID:
 Sample Type: CCVL
 Inject. Date: 14-Dec-2018 21:02:02 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: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub38

Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69223.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 15-Dec-2018 12:17:24 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0301

First Level Reviewer: roycea Date: 15-Dec-2018 12:17:24

Ratio Calibration: None

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	1.762	1.762	0.0	1.000	131642	0.0451		90.2	19.2	
D 1 13C4 PFBA										
217.00 > 172.00	1.762	1.770	-0.008	0.548	7993664	2.54		102	3044	
4 Perfluoropentanoic acid										
262.90 > 219.00	2.073	2.073	0.0	1.000	110550	0.0489		97.9	8.8	
D 3 13C5 PFPeA										
267.90 > 223.00	2.073	2.084	-0.011	0.644	5154633	2.50		99.9	3613	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.105	2.105	0.001	1.000	125494	0.0404	Target=2.49	91.4	189	
298.90 > 99.00	2.105	2.105	0.001	1.000	52607		2.39(1.25-3.74)		67.7	
D 47 13C3 PFBS										
301.90 > 80.00	2.105	2.116	-0.011	0.654	7311587	2.29		98.3	528657	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.392	2.392	0.0	1.136	306416	0.5149		110	3632	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.392	2.403	-0.011	0.743	622016	2.37		101	1534	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.432	2.431	0.001	1.000	114224	0.0507	Target=10.07	101	29.5	
313.00 > 119.00	2.432	2.431	0.001	1.000	9471		12.06(5.03-15.10)		22.9	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.452	2.441	0.011	1.165	128392	0.0472	Target=2.71	101	428	
349.00 > 99.00	2.452	2.441	0.011	1.165	48416		2.65(1.36-4.07)		203	
D 7 13C2 PFHxA										
315.00 > 270.00	2.432	2.442	-0.010	0.756	5563275	2.58		103	4622	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.551	2.550	0.001	1.000	24310	0.0476		95.2	26.4	

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	2.551	2.561	-0.010	0.792	380522	2.44		97.8	1593	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.820	2.813	0.007	1.000	112346	0.0459	Target=2.27	91.8	29.1	
363.00 > 169.00	2.820	2.813	0.007	1.000	48199		2.33(1.13-3.40)		49.0	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.829	2.822	0.007	1.000	138343	0.0522	Target=3.00	115	847	
399.00 > 99.00	2.829	2.822	0.007	1.000	43842		3.16(1.50-4.49)		130	
D 9 13C4 PFHpA										
367.00 > 322.00	2.820	2.834	-0.014	0.876	5421326	2.62		105	6350	
D 11 18O2 PFHxS										
403.00 > 84.00	2.829	2.834	-0.005	0.879	5905117	2.37		100	9466	
77 DONA										
377.00 > 251.00	2.867	2.869	-0.002	0.796	291300	0.0463	Target=1.69	98.4	527	
377.00 > 85.00	2.867	2.869	-0.002	0.796	174875		1.67(0.85-2.54)		524	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.202	3.190	0.012	1.000	308421	0.4950		104	536	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.202	3.208	-0.006	0.995	951257	2.54		107	3121	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.219	3.215	0.004	1.000	124550	0.0520	Target=1.68	104	14.1	
413.00 > 169.00	3.219	3.215	0.004	1.000	67992		1.83(0.84-2.52)		30.5	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.219	3.215	0.004	0.894	99226	0.0480	Target=3.88	101	537	
449.00 > 99.00	3.219	3.215	0.004	0.894	26365		3.76(1.94-5.82)		190	
* 62 13C2 PFOA										
415.00 > 370.00	3.219	3.215	0.004		5229326	2.50			5236	
D 73 13C8 PFOA										
421.00 > 376.00	3.211	3.225	-0.014	0.997	7740868	2.46		100	6645	
D 14 13C4 PFOA										
417.00 > 372.00	3.219	3.233	-0.014	1.000	5333437	2.59		104	5405	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.601	3.591	0.010	1.000	78536	0.0436	Target=4.62	94.0	277	
499.00 > 99.00	3.601	3.591	0.010	1.000	18138		4.33(2.31-6.93)		80.2	
D 72 13C8 PFOS										
507.00 > 99.00	3.593	3.603	-0.010	1.116	2050598	2.32		97.1	6987	
20 Perfluorononanoic acid										
463.00 > 419.00	3.609	3.606	0.003	1.000	88958	0.0500	Target=3.79	99.9	64.5	
463.00 > 169.00	3.609	3.606	0.003	1.000	19291		4.61(1.90-5.69)		100	
D 18 13C4 PFOS										
503.00 > 80.00	3.601	3.611	-0.010	1.119	3840349	2.34		97.8	10921	
D 19 13C5 PFNA										
468.00 > 423.00	3.609	3.618	-0.009	1.121	4228027	2.47		98.6	5864	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.806	3.796	0.010	1.057	140075	0.0460		98.6	811	

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	3.947	3.935	0.012	1.096	58076	0.0462	Target=2.65	96.3	516	
549.00 > 99.00	3.947	3.935	0.012	1.096	21258		2.73(1.33-3.97)		204	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.962	3.951	0.011	1.000	107141	0.0493		98.5	44.5	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.970	3.959	0.011	1.000	73556	0.0487	Target=4.73	97.3	92.3	
513.00 > 169.00	3.970	3.959	0.011	1.000	10813		6.80(2.36-7.09)		72.3	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.970	3.959	0.011	1.000	276034	0.4844		101	2241	
D 21 13C8 FOSA										
506.00 > 78.00	3.962	3.969	-0.007	1.231	5800988	2.37		94.8	7908	
D 23 13C2 PFDA										
515.00 > 470.00	3.970	3.977	-0.007	1.233	3900923	2.53		101	7217	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.970	3.977	-0.007	1.233	1043806	2.56		107	2731	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.131	4.126	0.005	1.000	387896	0.5128		103	239	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.131	4.139	-0.008	1.283	2045138	2.51		100	3685	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.269	4.258	0.011	1.186	45670	0.0445	Target=2.77	92.2	330	
599.00 > 99.00	4.269	4.258	0.011	1.186	13506		3.38(1.39-4.16)		222	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.285	4.283	0.002	1.000	62730	0.0520	Target=4.24	104	80.2	
563.00 > 169.00	4.293	4.283	0.010	1.002	13961		4.49(2.12-6.36)		104	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.293	4.291	0.002	1.000	347504	0.4880		97.6	1963	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.293	4.296	-0.003	1.334	2083558	2.43		97.3	2274	
D 30 13C2 PFUnA										
565.00 > 520.00	4.285	4.296	-0.011	1.331	3298531	2.70		108	6659	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.434	4.420	0.014	1.231	218304	0.0479		102	985	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.572	4.569	0.003	1.000	74071	0.0516	Target=4.27	103	85.1	
613.00 > 169.00	4.572	4.569	0.003	1.000	16170		4.58(2.13-6.40)		122	
D 36 13C2 PFDaA										
615.00 > 570.00	4.572	4.587	-0.015	1.420	3369856	2.68		107	6175	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.592	4.587	0.005	1.157	16659	0.0430		89.1	202	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.807	4.797	0.010	1.335	19632	0.0433	Target=0.00	89.5	127	
699.00 > 99.00	4.807	4.797	0.010	1.335	36222		0.54(0.00-0.00)		388	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.837	4.828	0.009	1.058	64153	0.0470	Target=2.51	94.1	89.7	
663.00 > 169.00	4.837	4.828	0.009	1.058	22293		2.88(1.25-3.76)		243	

Ratio Calibration: None

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	5.086	5.070	0.016	1.002	22037	0.0549	Target=1.42	110	250	
713.00 > 219.00	5.076	5.070	0.006	1.000	13300		1.66(0.71-2.13)		198	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.076	5.090	-0.014	1.577	3966514	2.72		109	8475	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.516	5.512	0.004	1.000	180270	0.0492	Target=5.72	98.4	23.1	
813.00 > 169.00	5.525	5.512	0.013	1.002	33384		5.40(2.86-8.58)		354	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.516	5.522	-0.006	1.714	7076572	2.76		110	8636	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.967	5.964	0.003	1.082	167871	0.0510	Target=7.65	102	20.8	
913.00 > 169.00	5.967	5.964	0.003	1.082	19898		8.44(3.83-11.48)		224	

Reagents:

LCPFC_LL2_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69223.b\2018.12.14LLB_005.d

Injection Date: 14-Dec-2018 21:02:02

Instrument ID: A8_N

Lims ID: CCVL

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 21

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

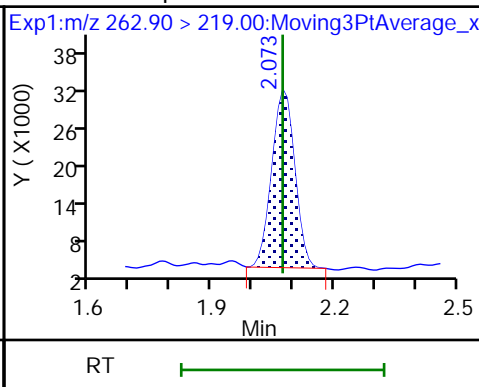
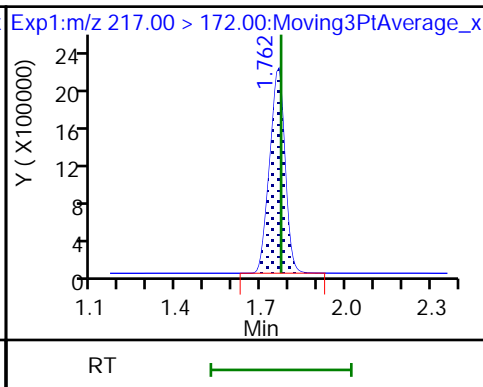
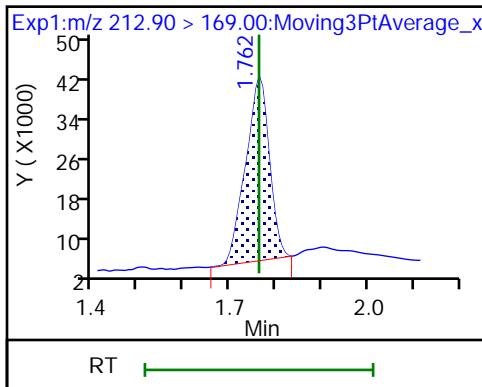
Method: A8_N

Limit Group: LC PFC ICAL

2 Perfluorobutanoic acid

D 1 13C4 PFBA

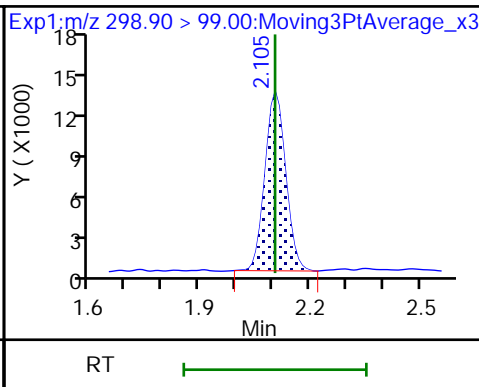
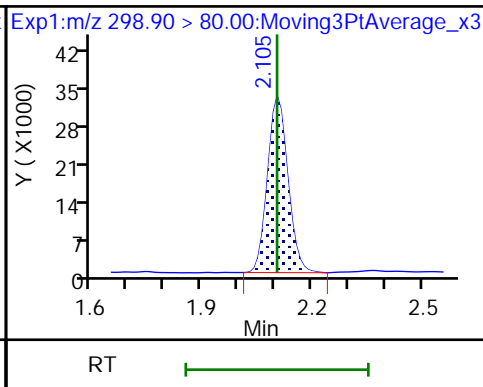
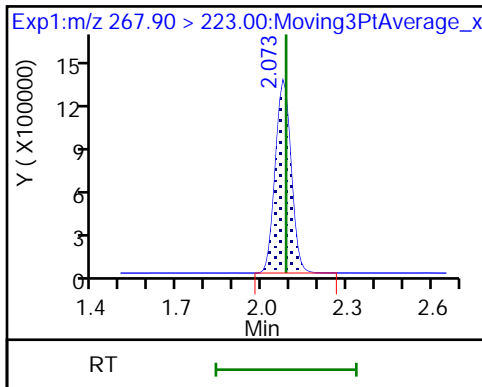
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

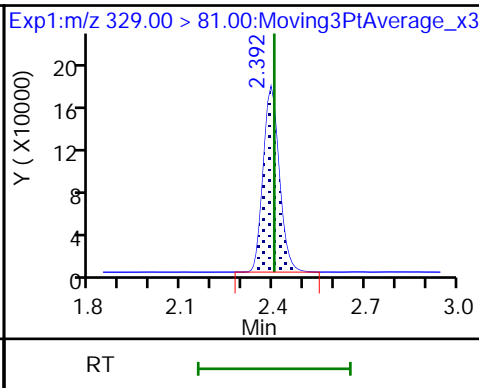
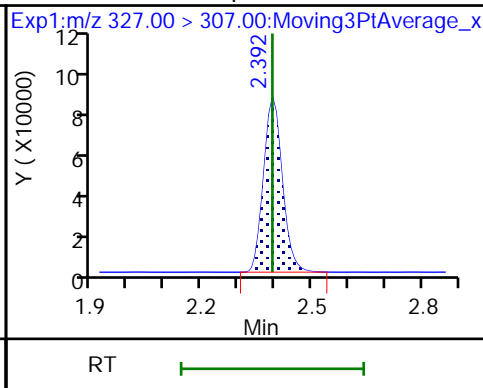
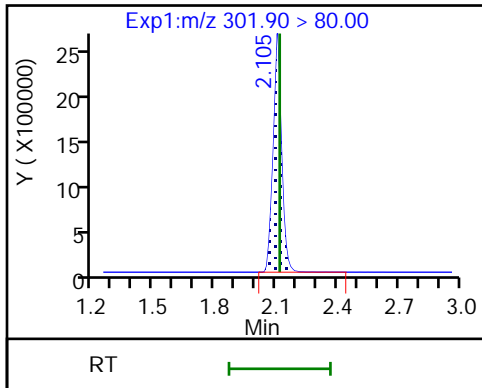
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

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

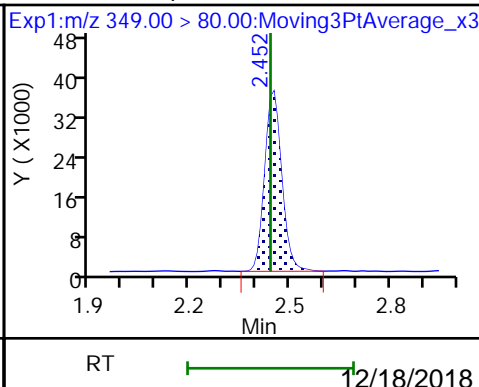
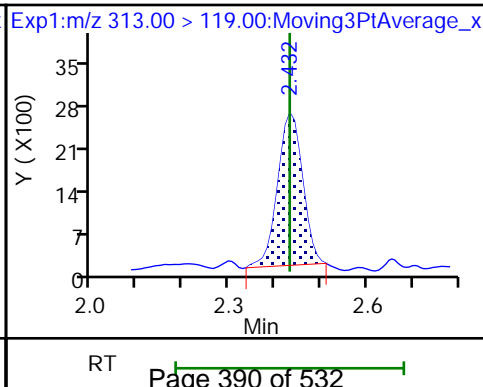
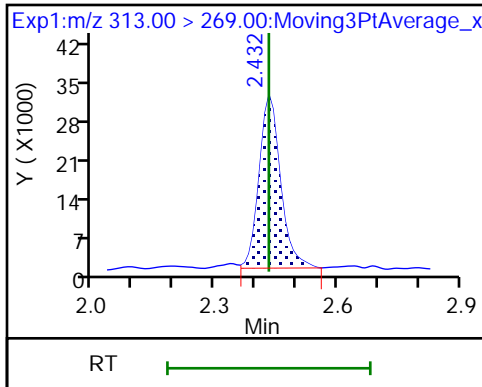
D 60 M2-4:2 FTS

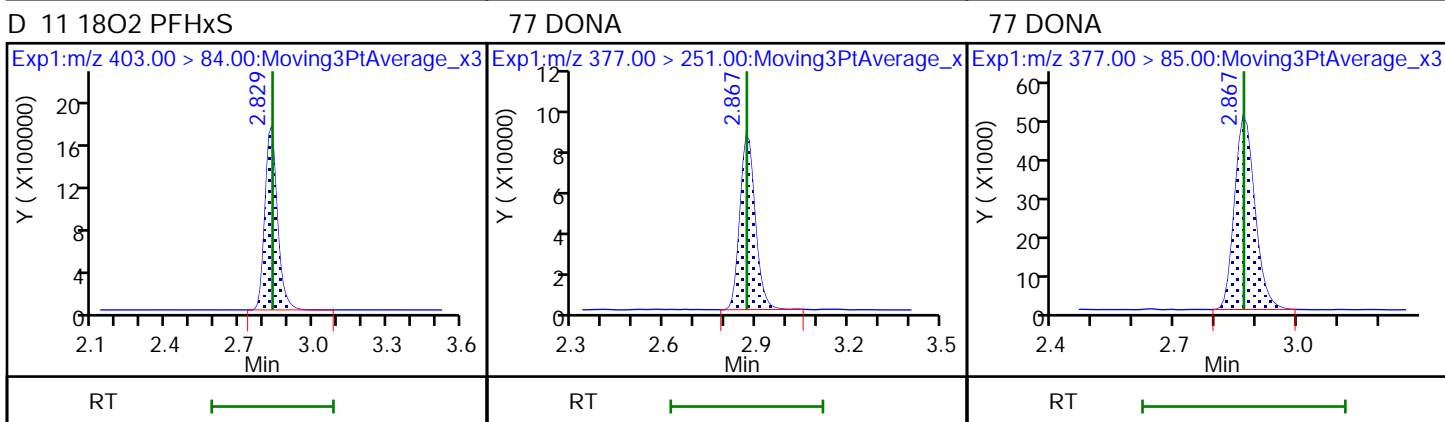
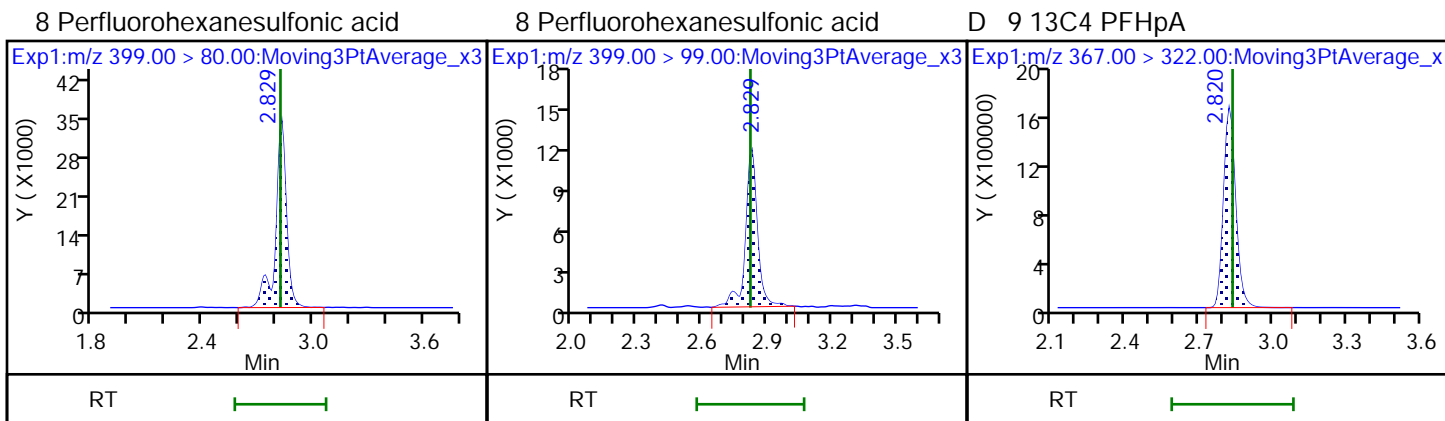
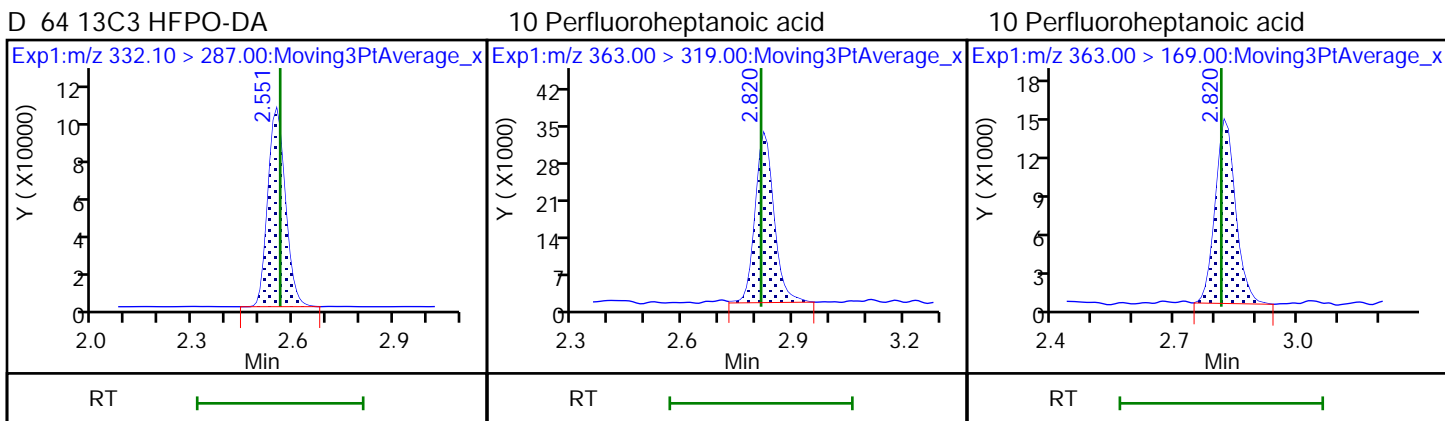
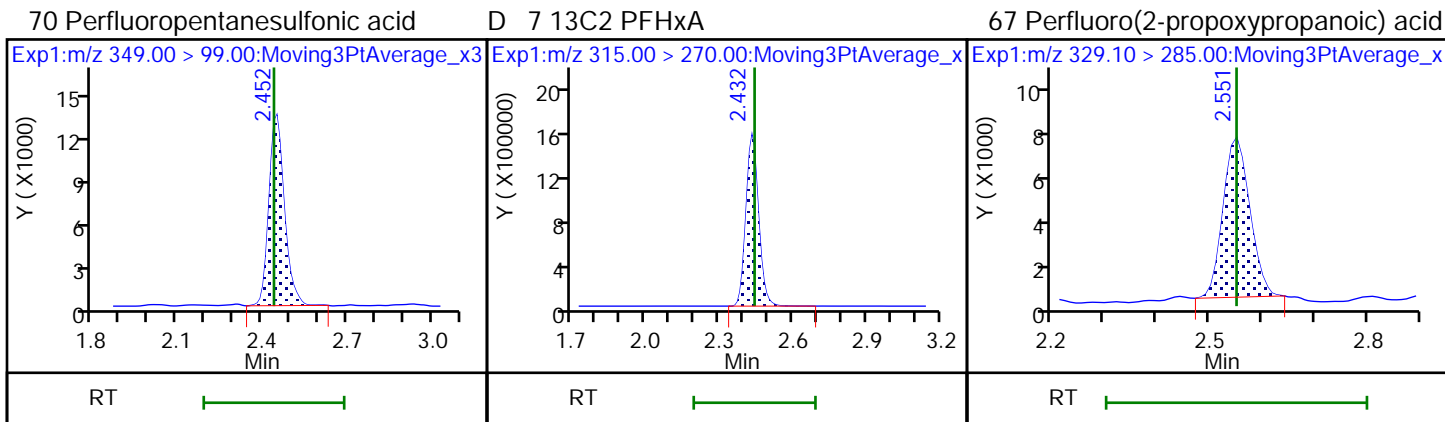


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

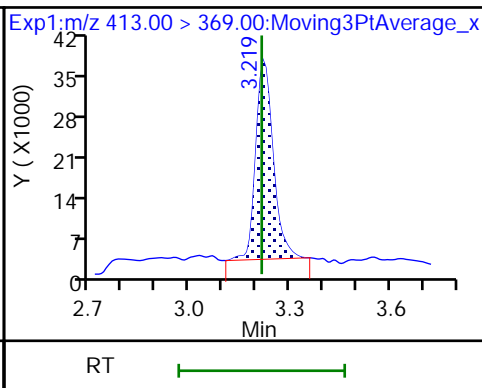
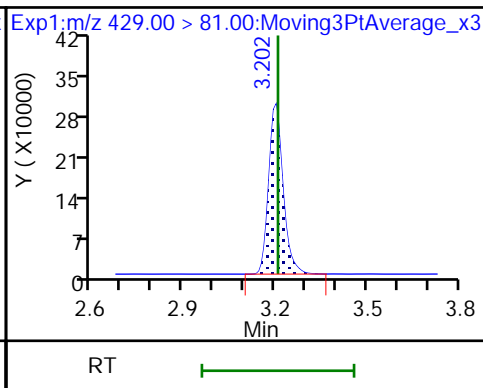
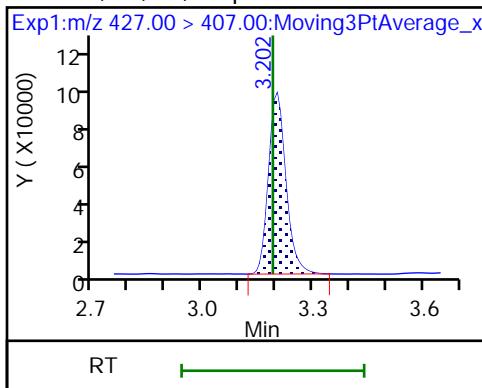
70 Perfluoropentanesulfonic acid





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

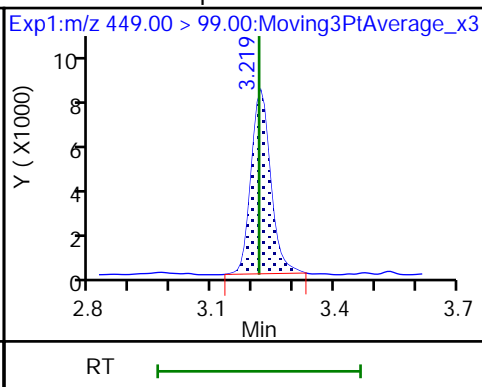
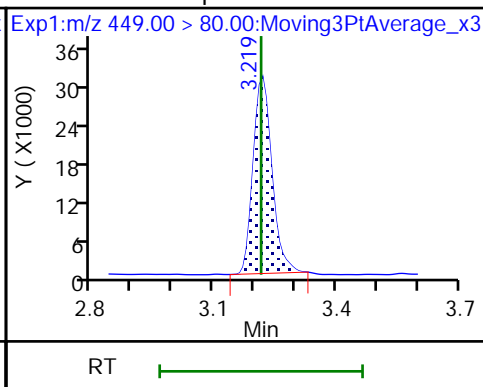
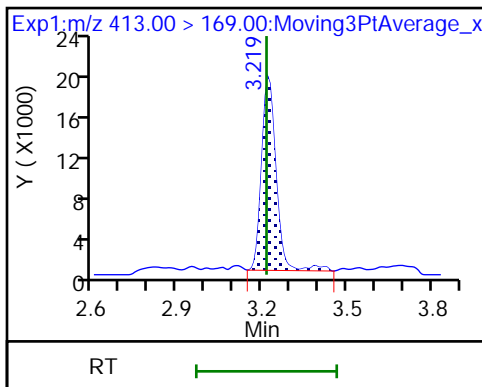
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

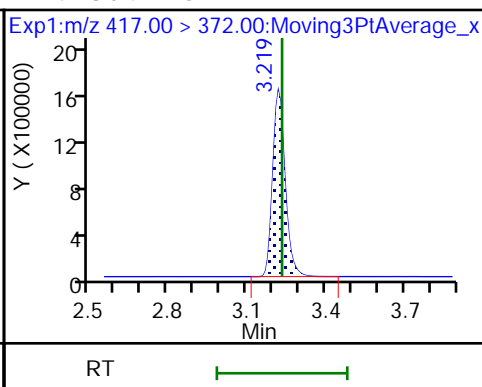
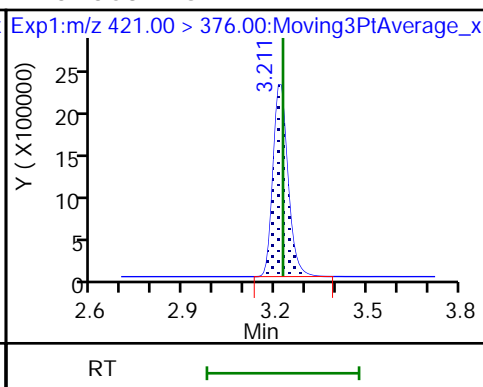
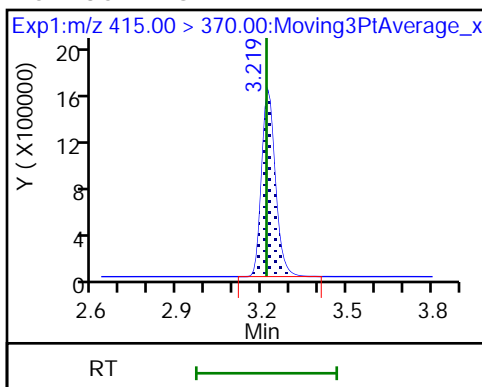
16 Perfluoroheptanesulfonic acid



* 62 13C2 PFOA

D 73 13C8 PFOA

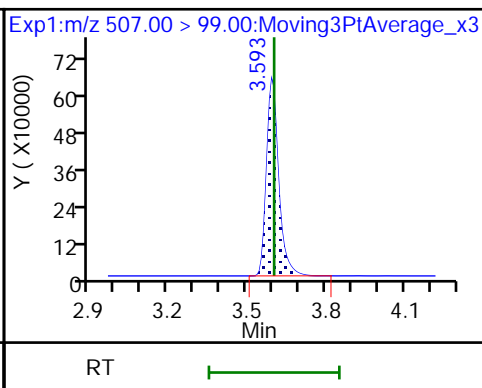
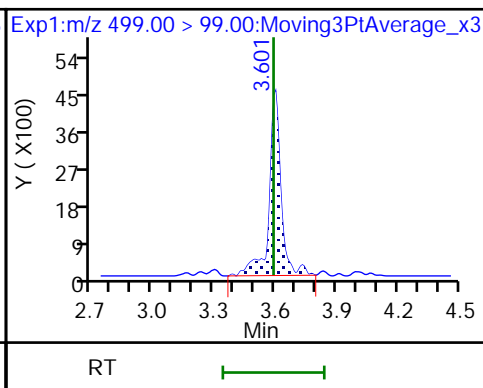
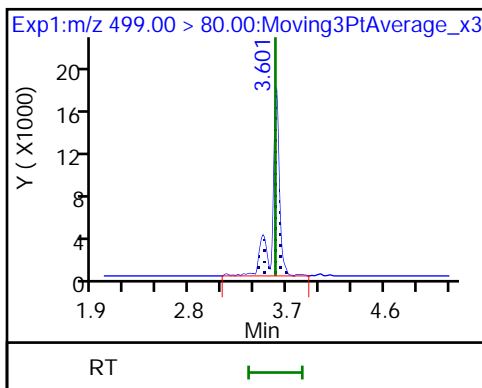
D 14 13C4 PFOA

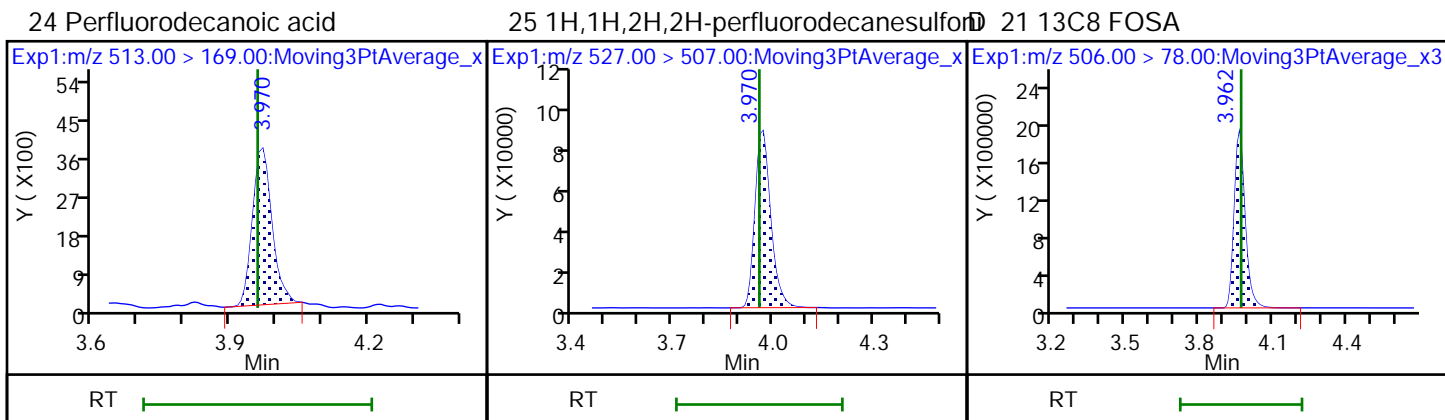
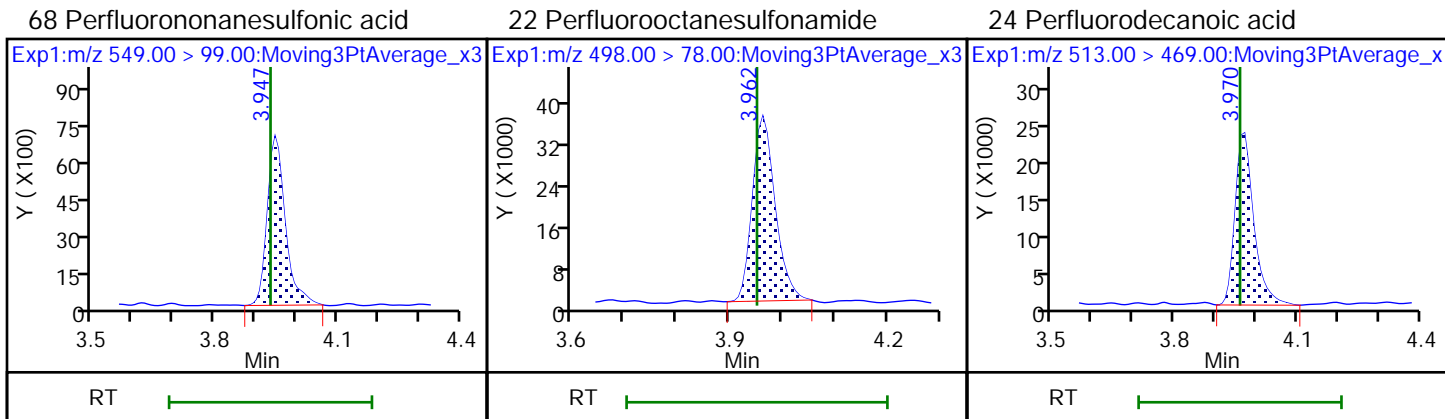
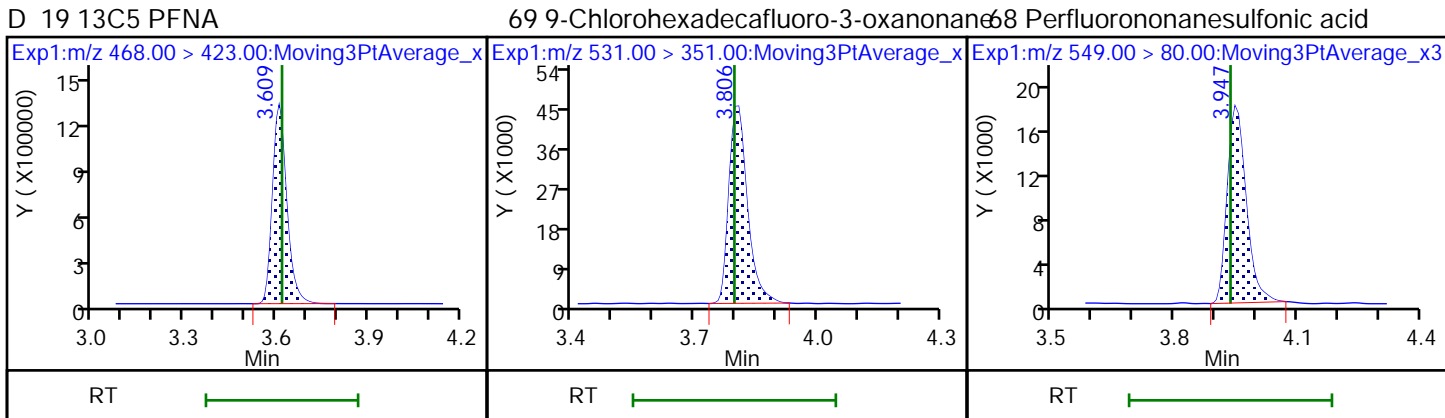
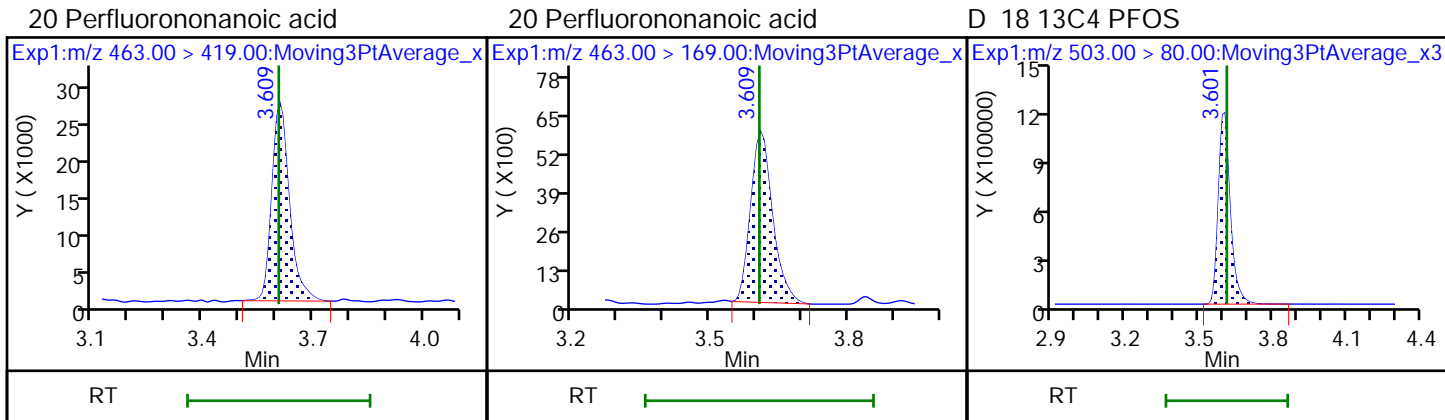


17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

D 72 13C8 PFOS

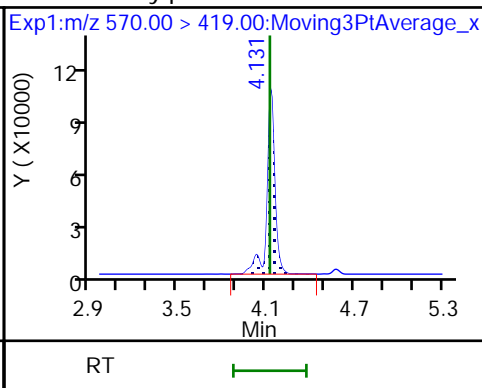
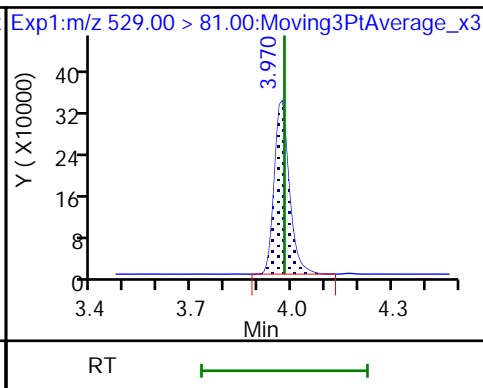
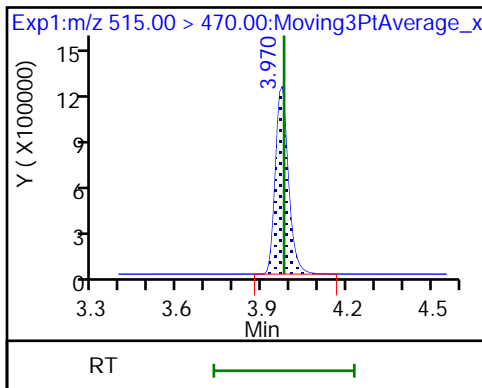




D 23 13C2 PFDA

D 26 M2-8:2 FTS

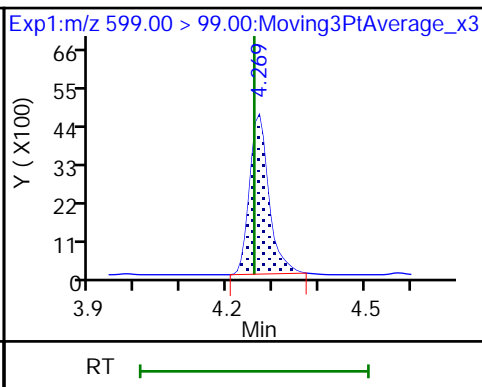
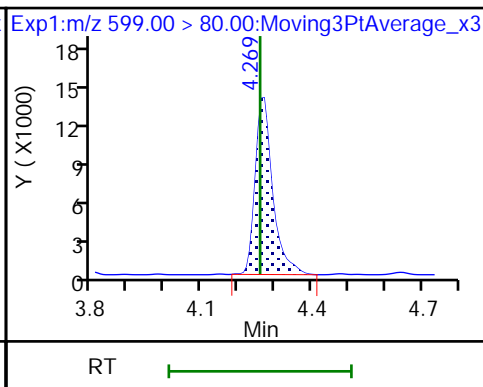
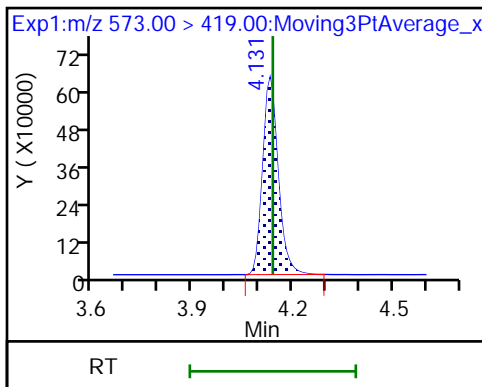
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

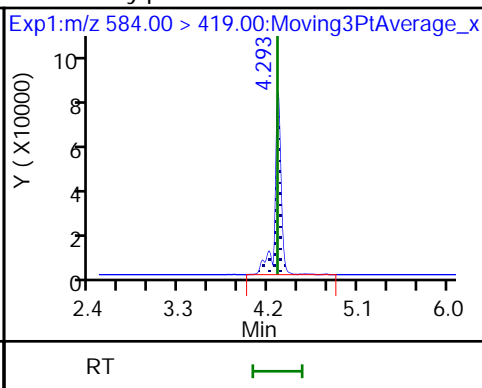
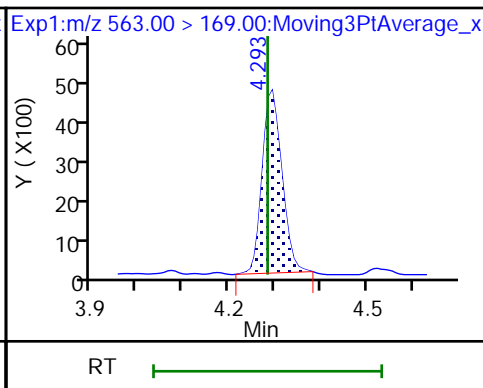
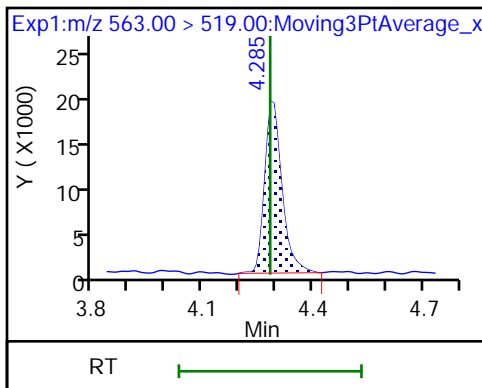
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

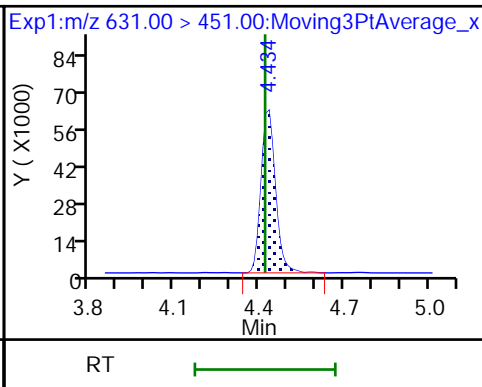
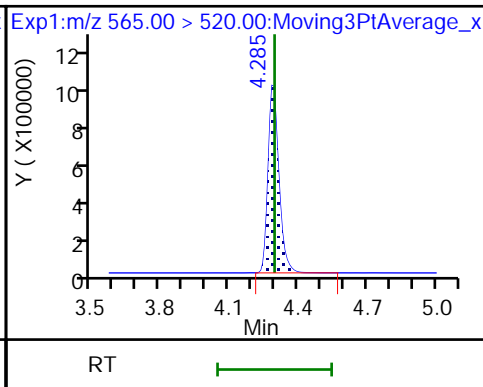
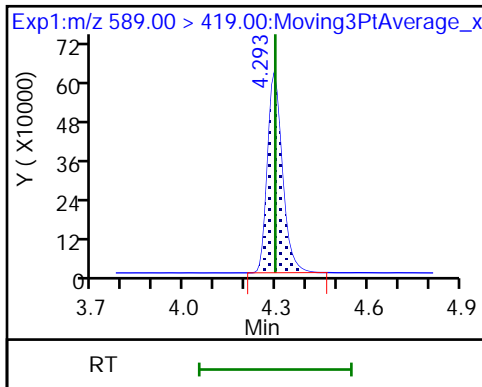
33 N-ethylperfluorooctanesulfonamido

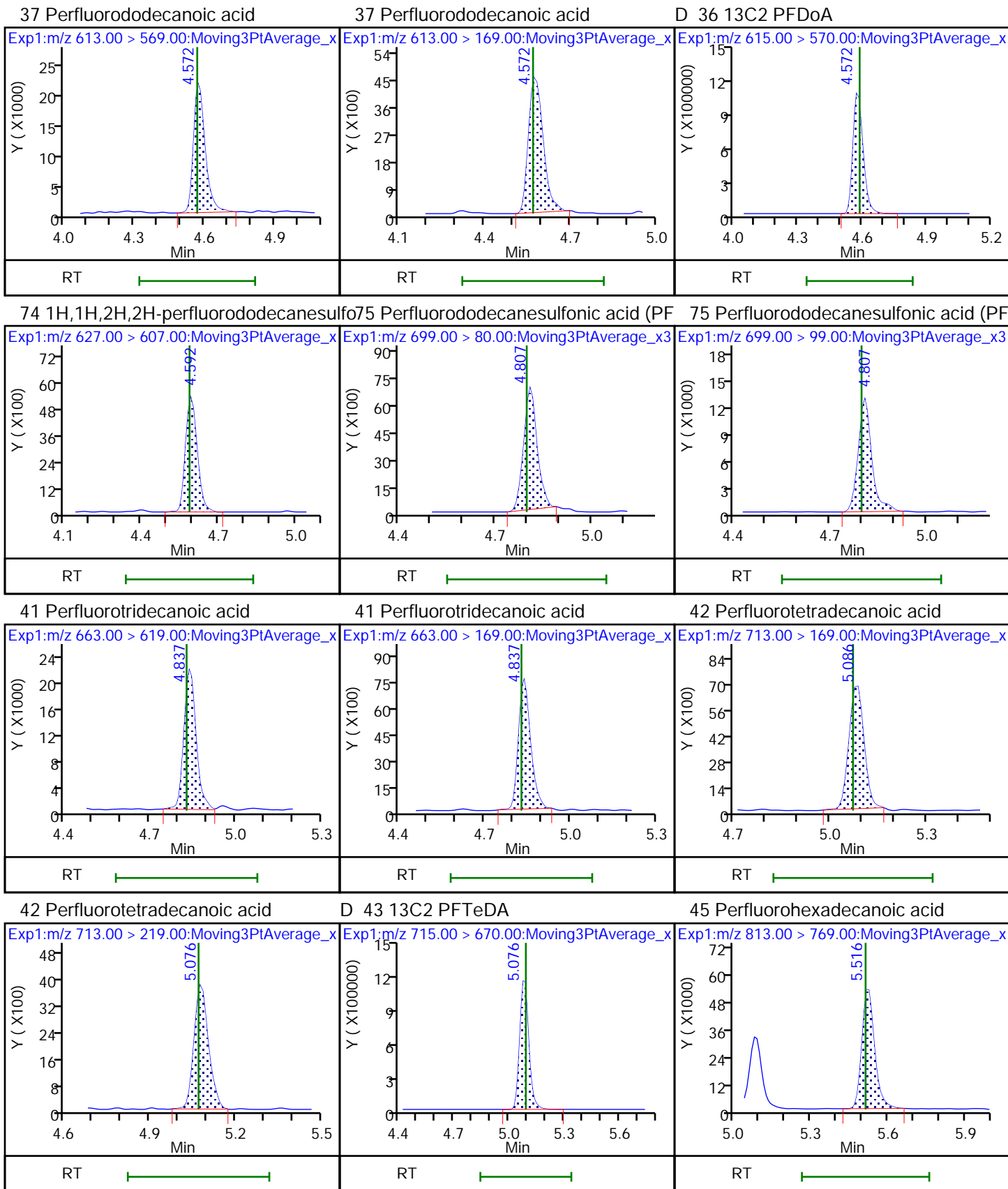


D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

66 11-Chloroeicosafuoro-3-oxaundecan

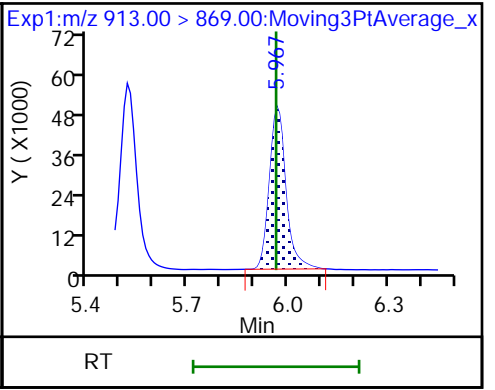
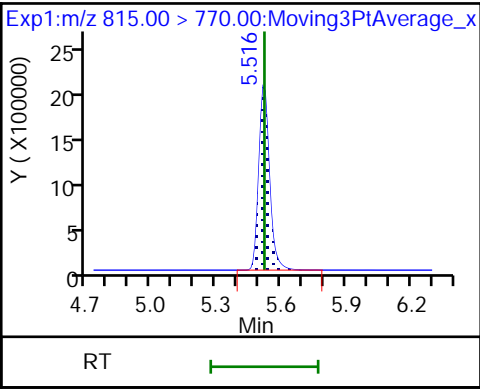
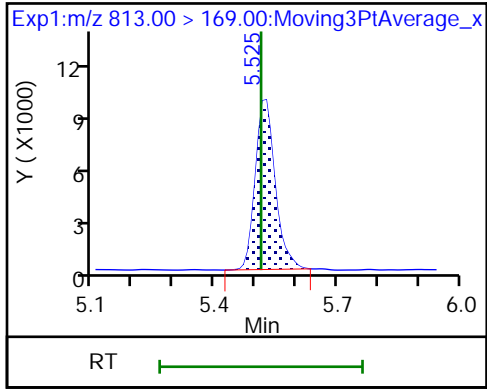




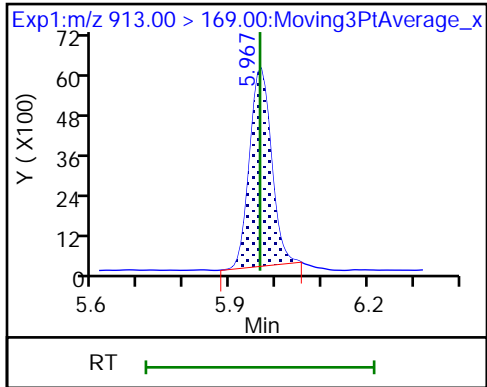
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-265415/3 Calibration Date: 12/14/2018 21:09
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.14LLB_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	0.9132	0.8605		0.942	1.00	-5.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.095	0.999		0.912	1.00	-8.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9874	0.9746		0.873	0.884	-1.3	50.0
4:2 FTS	AveID	0.1892	0.1896		0.936	0.934	0.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.012	0.8596		0.849	1.00	-15.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8643	0.8522		0.925	0.938	-1.4	50.0
HFPO-DA (GenX)	AveID	3.356	2.995		0.892	1.00	-10.8	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.129	0.9578		0.849	1.00	-15.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.062	0.9825		0.842	0.910	-7.5	40.0
DONA	AveID	3.912	4.002		0.964	0.942	2.3	50.0
6:2 FTS	AveID	1.556	1.497		0.912	0.948	-3.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.286	1.244		0.921	0.952	-3.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.123	0.9733		0.866	1.00	-13.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.121	1.027		0.850	0.928	-8.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.053	0.9939		0.944	1.00	-5.6	40.0
F-53B Major	AveID	1.897	1.892		0.930	0.932	-0.3	50.0
Perfluoronananesulfonic acid (PFNS)	AveID	0.7820	0.7772		0.954	0.960	-0.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9375	0.9587		1.02	1.00	2.3	40.0
8:2 FTS	AveID	1.308	1.183		0.867	0.958	-9.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9686	0.9164		0.946	1.00	-5.4	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9247	0.8931		0.966	1.00	-3.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6393	0.6155		0.928	0.964	-3.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9137	0.7555		0.827	1.00	-17.3	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8543	0.8366		0.979	1.00	-2.1	40.0
F-53B Minor	AveID	2.835	2.751		0.914	0.942	-3.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.065	0.9687		0.910	1.00	-9.0	40.0
10:2 FTS	AveID	0.8899	0.8537		0.925	0.964	-4.1	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2820	0.2818		0.967	0.968	-0.0	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.012	0.9943		0.982	1.00	-1.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2530	0.2254		0.891	1.00	-10.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9073		1.01	1.00	1.3	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-265415/3 Calibration Date: 12/14/2018 21:09
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.14LLB_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.162	1.248		1.07	1.00	7.4	50.0
13C4 PFBA	Ave	1.505	1.503		2.50	2.50	-0.1	50.0
13C5 PFPeA	Ave	0.9872	0.9335		2.36	2.50	-5.4	50.0
13C3 PFBS	Ave	1.529	1.386		2.11	2.33	-9.4	50.0
M2-4:2 FTS	Ave	0.1255	0.1114		2.07	2.34	-11.2	50.0
13C2 PFHxA	Ave	1.031	1.039		2.52	2.50	0.8	50.0
13C3 HFPO-DA	Ave	0.0744	0.0654		2.20	2.50	-12.2	50.0
13C4 PFHpA	Ave	0.9896	1.006		2.54	2.50	1.6	50.0
18O2 PFHxS	Ave	1.192	1.165		2.31	2.37	-2.3	50.0
M2-6:2 FTS	Ave	0.1789	0.1884		2.50	2.38	5.3	40.0
13C8 PFOA	Ave	1.507	1.440		2.34	2.45	-4.5	50.0
13C4 PFOA	Ave	0.9852	0.9933		2.52	2.50	0.8	50.0
13C8 PFOS	Ave	0.4226	0.3986		2.25	2.39	-5.7	50.0
13C4 PFOS	Ave	0.7858	0.7466		2.27	2.39	-5.0	50.0
13C5 PFNA	Ave	0.8198	0.8103		2.47	2.50	-1.2	50.0
13C8 FOSA	Ave	1.170	1.055		2.25	2.50	-9.9	50.0
13C2 PFDA	Ave	0.7365	0.7095		2.41	2.50	-3.7	50.0
M2-8:2 FTS	Ave	0.1946	0.1887		2.32	2.40	-3.0	40.0
d3-NMeFOSAA	Ave	0.3898	0.3672		2.36	2.50	-5.8	50.0
13C2 PFUnA	Ave	0.5834	0.6028		2.58	2.50	3.3	50.0
d5-NEtFOSAA	Ave	0.4094	0.3745		2.29	2.50	-8.5	50.0
13C2 PFDoA	Ave	0.6009	0.6076		2.53	2.50	1.1	50.0
13C2 PFTeDA	Ave	0.6981	0.7398		2.65	2.50	6.0	50.0
13C2 PFHxDA	Ave	1.226	1.310		2.67	2.50	6.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69223.b\2018.12.14LLB_006.d
 Lims ID: CCV 4
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 14-Dec-2018 21:09:32 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: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub39

Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69223.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 15-Dec-2018 12:17:55 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0301

First Level Reviewer: roycea Date: 15-Dec-2018 12:17:55

Ratio Calibration: None

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	1.762	1.762	0.0	1.000	2727099	0.9423		94.2	354	
D 1 13C4 PFBA										
217.00 > 172.00	1.762	1.770	-0.008	0.548	7922751	2.50		99.9	3003	
4 Perfluoropentanoic acid										
262.90 > 219.00	2.073	2.073	0.0	1.000	1966838	0.9123		91.2	153	
D 3 13C5 PFPeA										
267.90 > 223.00	2.073	2.084	-0.011	0.645	4920446	2.36		94.6	3172	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.105	2.105	0.0	1.000	2516693	0.8725	Target=2.49	98.7	3261	
298.90 > 99.00	2.105	2.105	0.0	1.000	1064763		2.36(1.25-3.74)		1459	
D 47 13C3 PFBS										
301.90 > 80.00	2.105	2.116	-0.012	0.655	6791918	2.11		90.6	448527	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.392	2.392	0.0	1.136	517259	0.9357		100	5557	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.392	2.403	-0.011	0.744	548473	2.07		88.8	1100	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.431	2.431	0.0	1.000	1883144	0.8493	Target=10.07	84.9	452	
313.00 > 119.00	2.431	2.431	0.0	1.000	181487		10.38(5.03-15.10)		411	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.441	2.441	0.0	1.160	2335008	0.9248	Target=2.71	98.6	5473	
349.00 > 99.00	2.441	2.441	0.0	1.160	932781		2.50(1.36-4.07)		3166	
D 7 13C2 PFHxA										
315.00 > 270.00	2.431	2.442	-0.011	0.756	5476821	2.52		101	5139	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.550	2.550	0.0	1.000	412675	0.8923		89.2	406	

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	2.550	2.561	-0.011	0.793	344504	2.20		87.8	2000	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.813	2.813	0.0	1.000	2031127	0.8487	Target=2.27	84.9	501	
363.00 > 169.00	2.813	2.813	0.0	1.000	822302		2.47(1.13-3.40)		808	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.822	2.822	0.0	1.000	2195843	0.8418	Target=3.00	92.5	6584	
399.00 > 99.00	2.822	2.822	0.0	1.000	708518		3.10(1.50-4.49)		1698	
D 9 13C4 PFHpA										
367.00 > 322.00	2.813	2.834	-0.021	0.875	5301673	2.54		102	5063	
D 11 18O2 PFHxS										
403.00 > 84.00	2.822	2.834	-0.012	0.878	5808302	2.31		97.7	5423	
77 DONA										
377.00 > 251.00	2.869	2.869	0.0	0.799	5933932	0.9637	Target=1.69	102	7328	
377.00 > 85.00	2.859	2.869	-0.010	0.796	3583585		1.66(0.85-2.54)		5652	
13 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.190	3.190	0.0	1.000	563645	0.9121		96.2	1005	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.190	3.208	-0.018	0.992	943460	2.50		105	3198	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.215	3.215	0.0	1.000	2038311	0.8664	Target=1.68	86.6	231	
413.00 > 169.00	3.215	3.215	0.0	1.000	1153301		1.77(0.84-2.52)		596	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.215	3.215	0.0	0.895	1863975	0.9209	Target=3.88	96.7	3806	
449.00 > 99.00	3.215	3.215	0.0	0.895	494049		3.77(1.94-5.82)		2298	
* 62 13C2 PFOA										
415.00 > 370.00	3.215	3.215	0.0		5270864	2.50			6187	
D 73 13C8 PFOA										
421.00 > 376.00	3.206	3.225	-0.019	0.997	7430467	2.34		95.5	6264	
D 14 13C4 PFOA										
417.00 > 372.00	3.215	3.233	-0.018	1.000	5235732	2.52		101	6635	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.591	3.591	0.0	1.000	1499899	0.8503	Target=4.62	91.6	3300	
499.00 > 99.00	3.591	3.591	0.0	1.000	328176		4.57(2.31-6.93)			
D 72 13C8 PFOS										
507.00 > 99.00	3.583	3.603	-0.020	1.115	2008678	2.25		94.3	4991	
20 Perfluorononanoic acid										
463.00 > 419.00	3.606	3.606	0.0	1.002	1698052	0.9442	Target=3.79	94.4	1067	
463.00 > 169.00	3.599	3.606	-0.007	1.000	410116		4.14(1.90-5.69)		1798	
D 18 13C4 PFOS										
503.00 > 80.00	3.591	3.611	-0.020	1.117	3762300	2.27		95.0	6762	
D 19 13C5 PFNA										
468.00 > 423.00	3.599	3.618	-0.019	1.119	4271091	2.47		98.8	8250	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.796	3.796	0.0	1.057	2776012	0.9296		99.7	8101	

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	3.935	3.935	0.0	1.096	1174570	0.9542	Target=2.65	99.4	6060	
549.00 > 99.00	3.935	3.935	0.0	1.096	413331		2.84(1.33-3.97)		4073	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.951	3.951	0.0	1.000	2131411	1.02		102	674	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.959	3.959	0.0	1.000	1370739	0.9461	Target=4.73	94.6	1321	
513.00 > 169.00	3.959	3.959	0.0	1.000	255808		5.36(2.36-7.09)		1083	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.959	3.959	0.0	1.000	451063	0.8669		90.5	4406	
D 21 13C8 FOSA										
506.00 > 78.00	3.951	3.969	-0.018	1.229	5558371	2.25		90.1	5928	
D 23 13C2 PFDA										
515.00 > 470.00	3.959	3.977	-0.018	1.231	3739548	2.41		96.3	7147	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.959	3.977	-0.018	1.231	953012	2.32		97.0	3677	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.126	4.126	0.0	1.002	691334	0.9658		96.6	711	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.118	4.139	-0.021	1.281	1935300	2.35		94.2	3371	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.258	4.258	0.0	1.186	934060	0.9282	Target=2.77	96.3	3952	
599.00 > 99.00	4.258	4.258	0.0	1.186	296803		3.15(1.39-4.16)		1743	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.283	4.283	0.0	1.000	960230	0.8269	Target=4.24	82.7	1192	
563.00 > 169.00	4.283	4.283	0.0	1.000	244782		3.92(2.12-6.36)		1245	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.291	4.291	0.0	1.002	660469	0.9792		97.9	2453	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.283	4.296	-0.013	1.332	1973697	2.29		91.5	2066	
D 30 13C2 PFUnA										
565.00 > 520.00	4.283	4.296	-0.013	1.332	3177297	2.58		103	6446	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.420	4.420	0.0	1.231	4080100	0.9142		97.0	16340	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.569	4.569	0.0	1.000	1240857	0.9095	Target=4.27	91.0	1452	
613.00 > 169.00	4.569	4.569	0.0	1.000	313471		3.96(2.13-6.40)		1232	
D 36 13C2 PFDaA										
615.00 > 570.00	4.569	4.587	-0.018	1.421	3202311	2.53		101	7014	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.587	4.587	0.0	1.159	327457	0.9247		95.9	3395	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.797	4.797	0.0	1.336	429445	0.9674	Target=0.00	99.9	3693	
699.00 > 99.00	4.797	4.797	0.0	1.336	671631		0.64(0.00-0.00)		5225	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.828	4.828	0.0	1.057	1273569	0.9824	Target=2.51	98.2	1320	
663.00 > 169.00	4.828	4.828	0.0	1.057	411999		3.09(1.25-3.76)		1661	

Ratio Calibration: None

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	5.070	5.070	0.0	1.000	351506	0.8906	Target=1.42	89.1	2999	
713.00 > 219.00	5.070	5.070	0.0	1.000	255894		1.37(0.71-2.13)		2058	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.070	5.090	-0.020	1.577	3899601	2.65		106	7598	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.512	5.512	0.0	1.000	2505999	1.01	Target=5.72	101	287	
813.00 > 169.00	5.512	5.512	0.0	1.000	451791		5.55(2.86-8.58)		2753	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.512	5.522	-0.010	1.715	6905187	2.67		107	8050	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.964	5.964	0.0	1.082	3448109	1.07	Target=7.65	107	348	
913.00 > 169.00	5.957	5.964	-0.007	1.081	438700		7.86(3.83-11.48)		3090	

Reagents:

LCPFC_LL4_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69223.b\2018.12.14LLB_006.d

Injection Date: 14-Dec-2018 21:09:32

Instrument ID: A8_N

Lims ID: CCV 4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

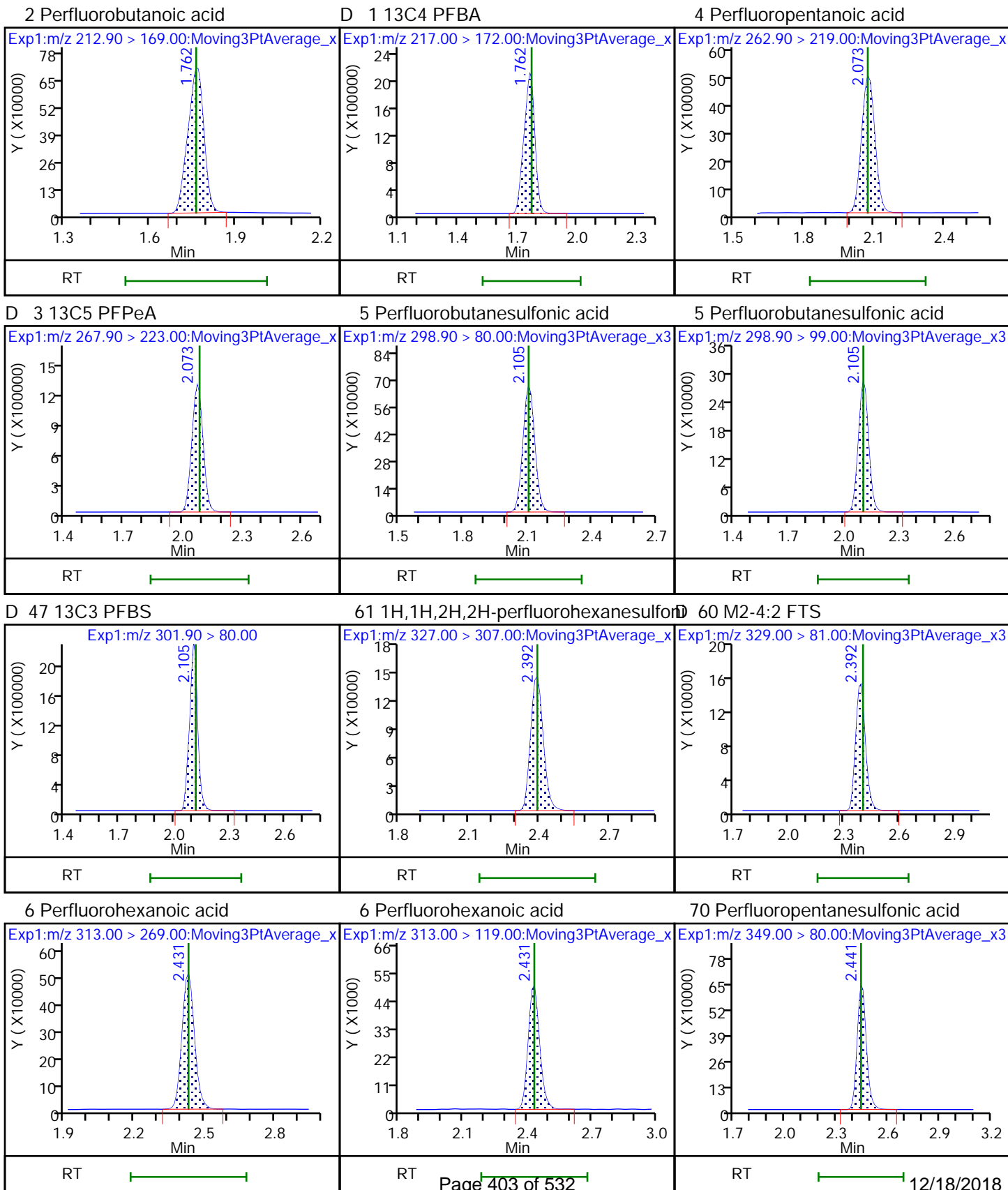
Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

Method: A8_N

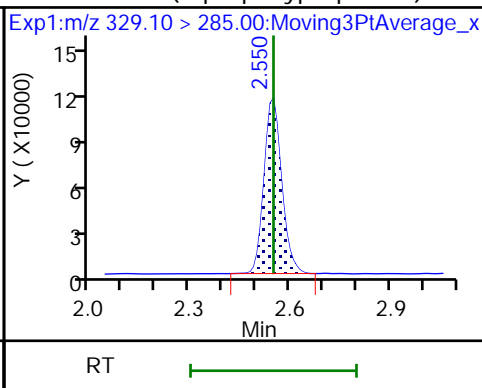
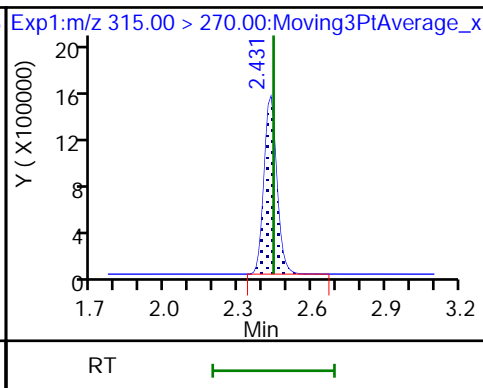
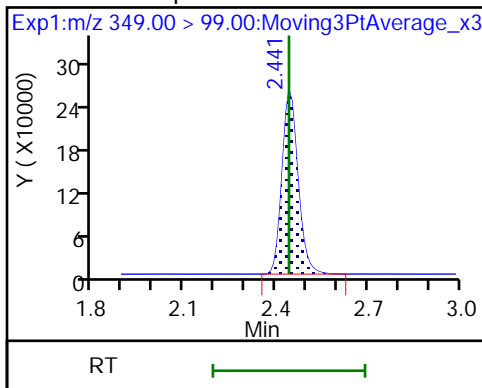
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70 Perfluoropentanesulfonic acid

D 7 13C2 PFHxA

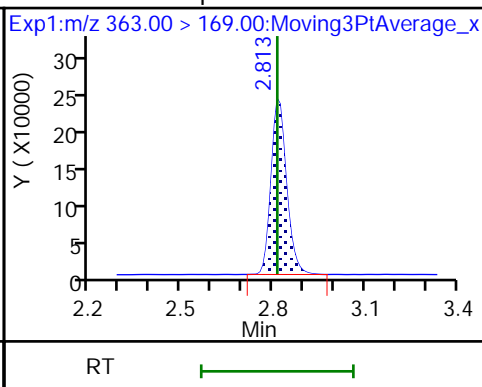
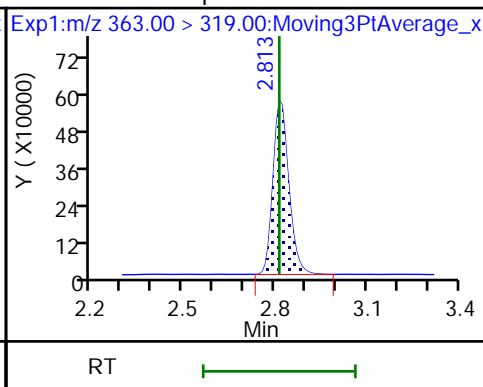
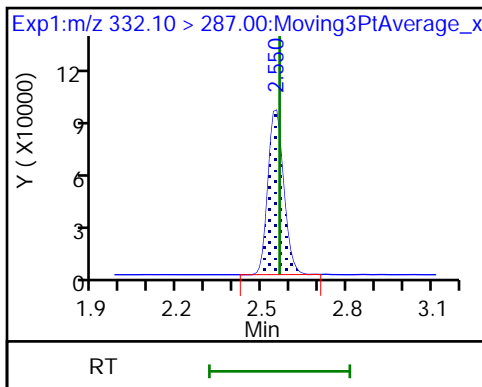
67 Perfluoro(2-propoxypropanoic) acid



D 64 13C3 HFPO-DA

10 Perfluoroheptanoic acid

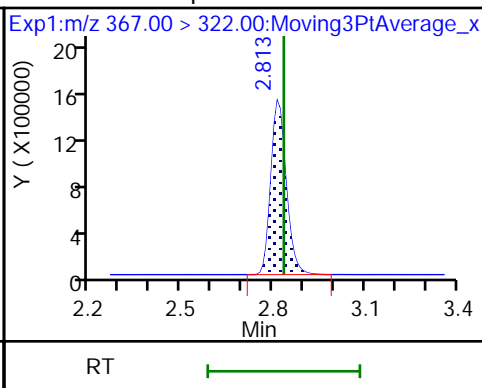
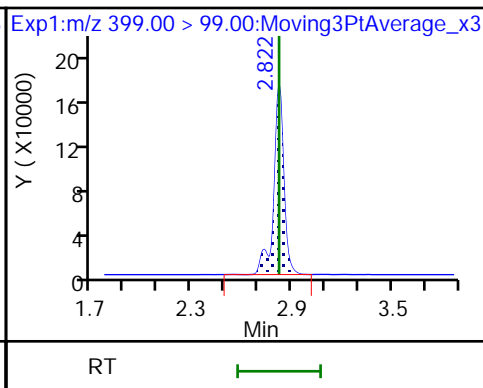
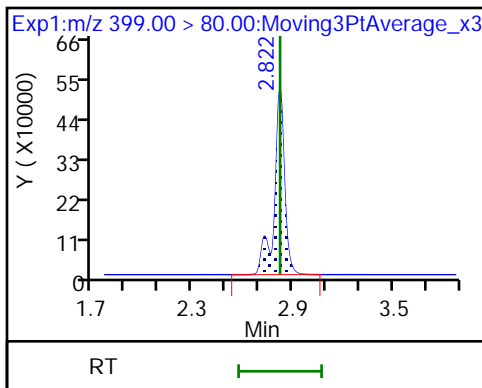
10 Perfluoroheptanoic acid



8 Perfluorohexanesulfonic acid

8 Perfluorohexanesulfonic acid

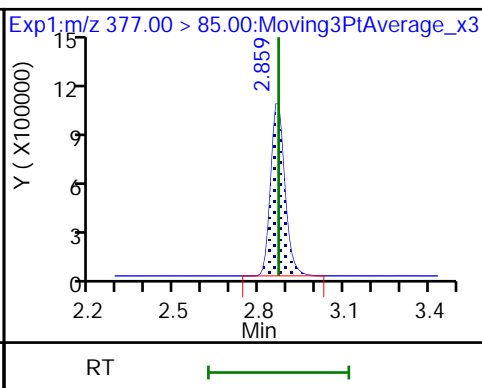
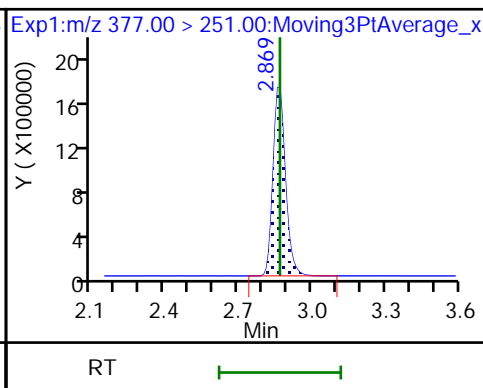
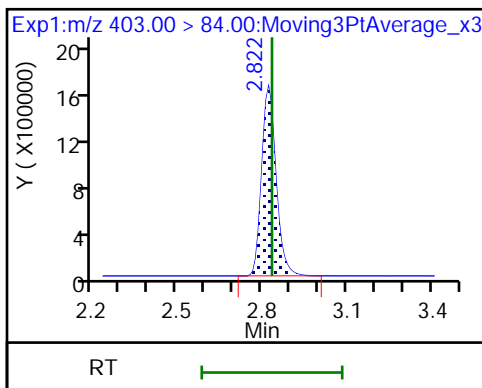
D 9 13C4 PFHpA



D 11 18O2 PFHxS

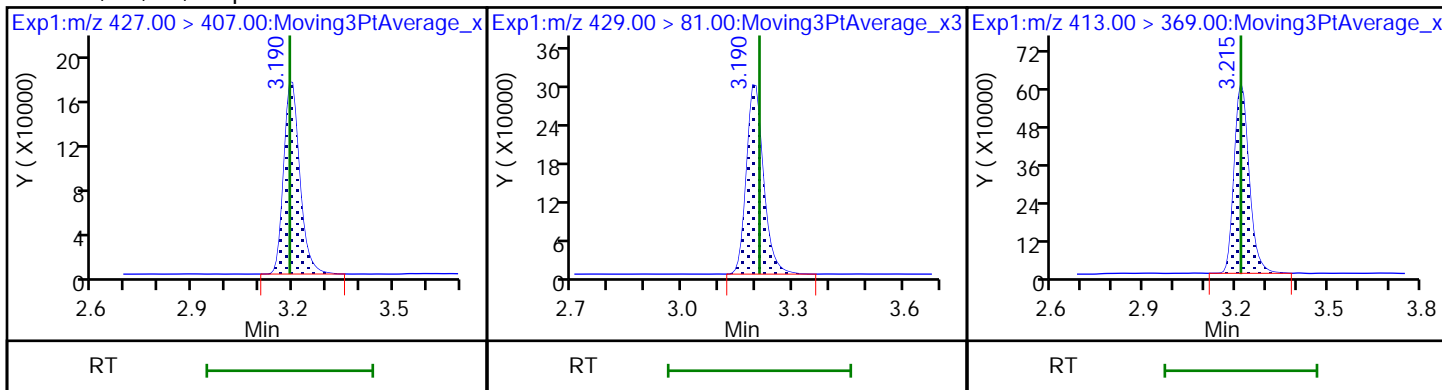
77 DONA

77 DONA



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

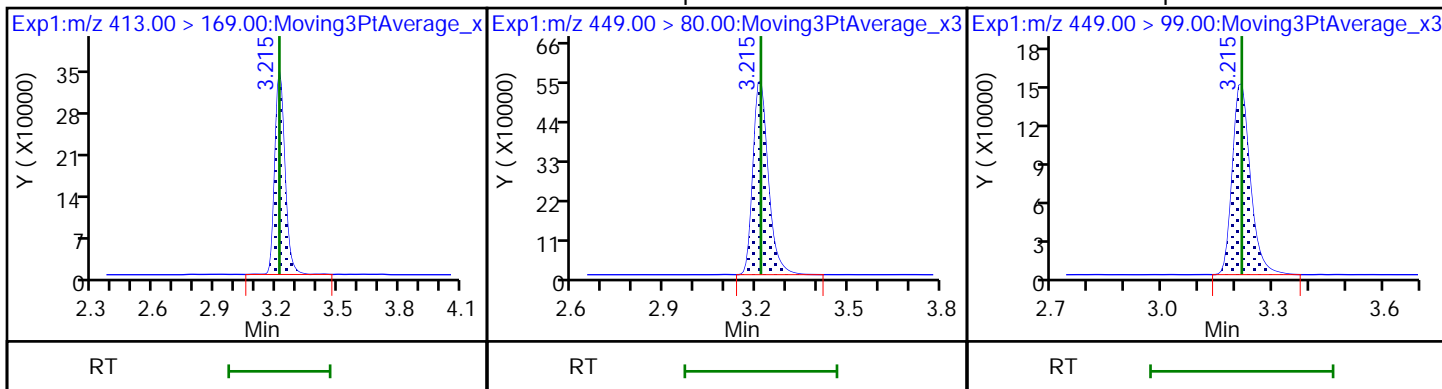
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic acid

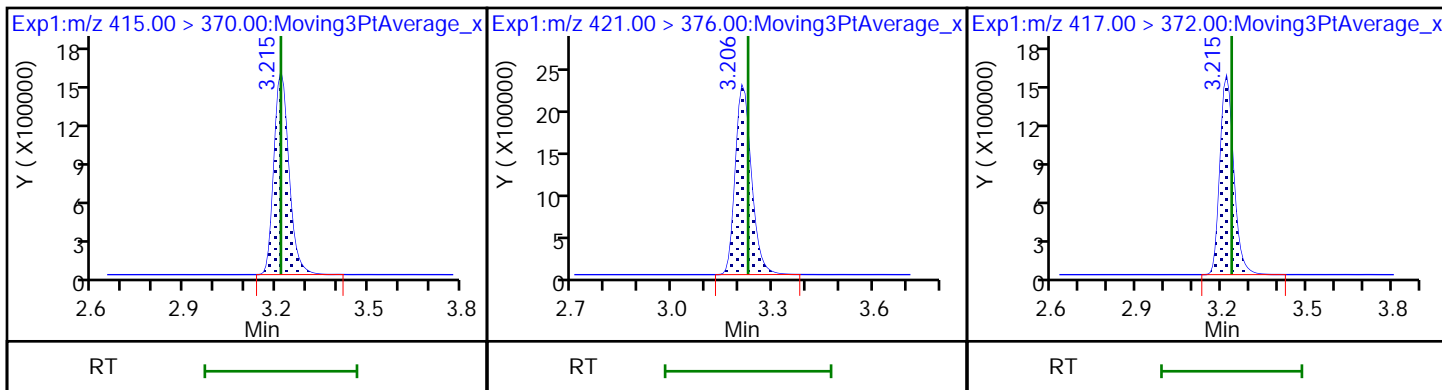
16 Perfluoroheptanesulfonic acid



* 62 13C2 PFOA

D 73 13C8 PFOA

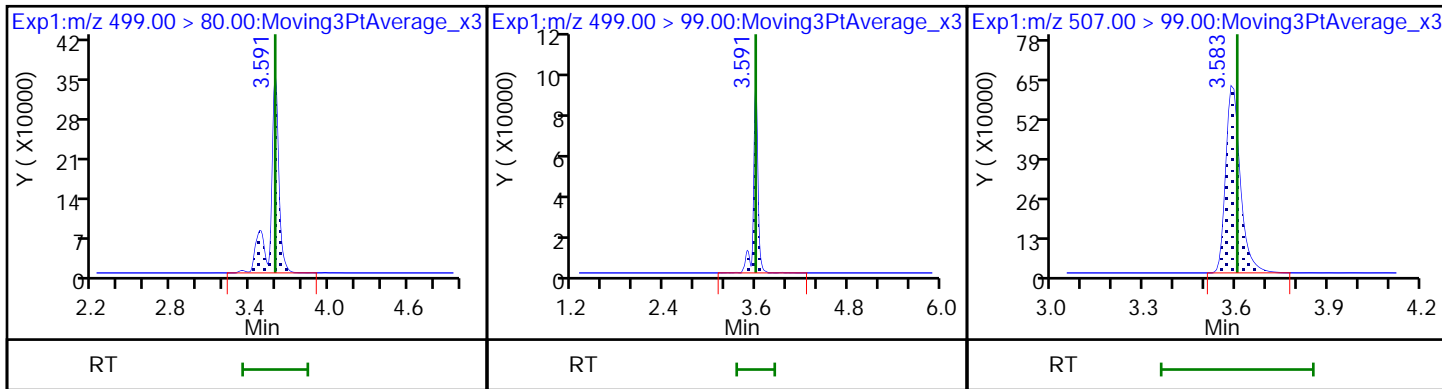
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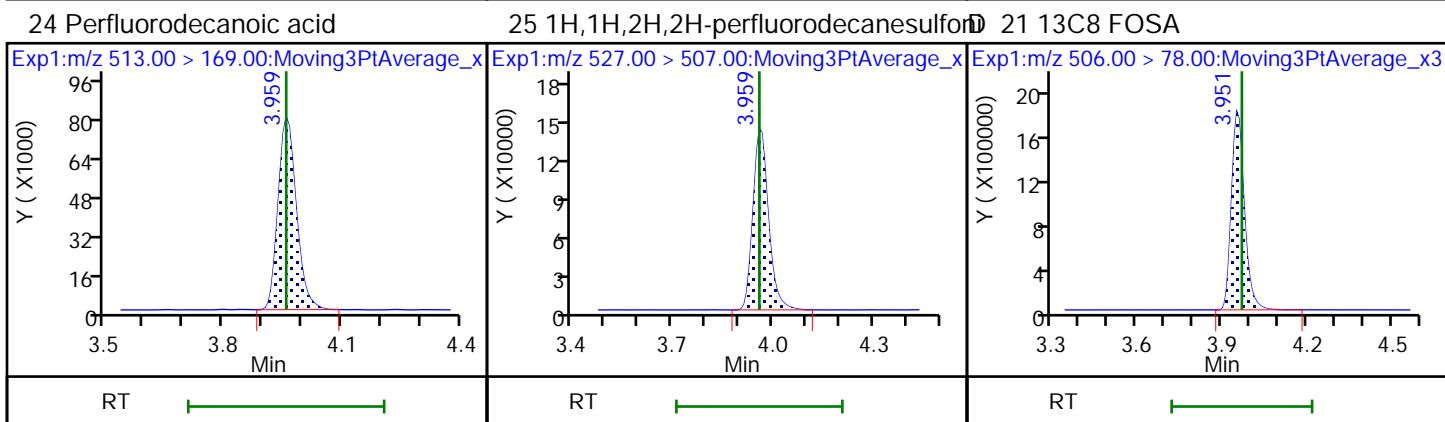
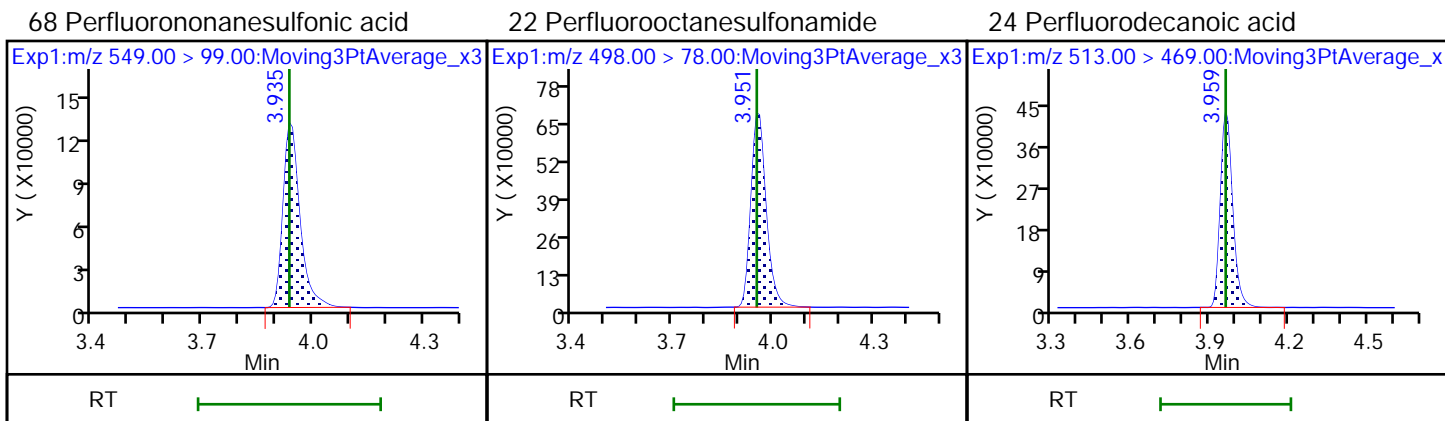
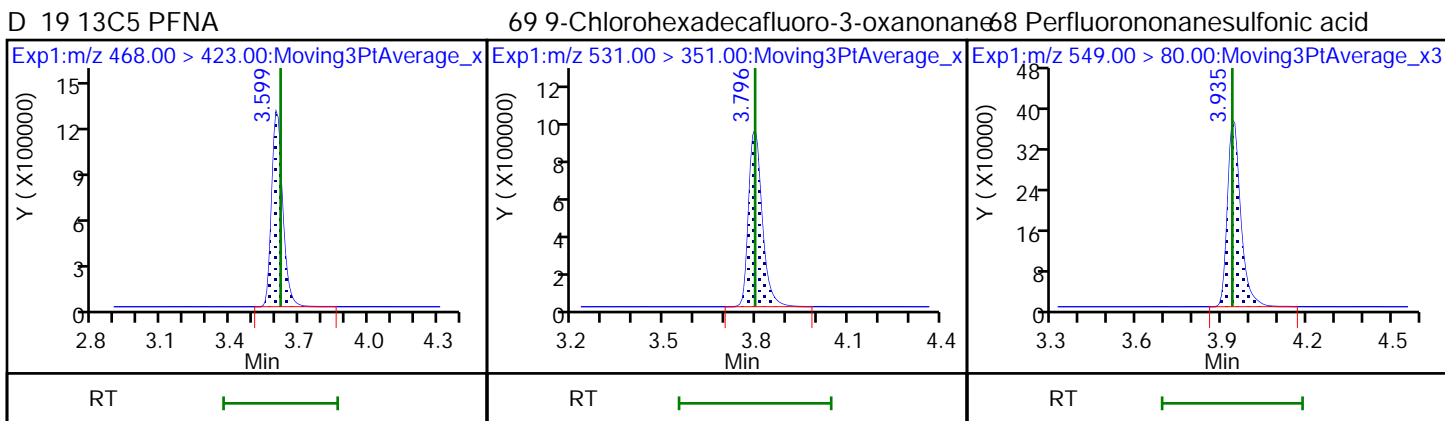
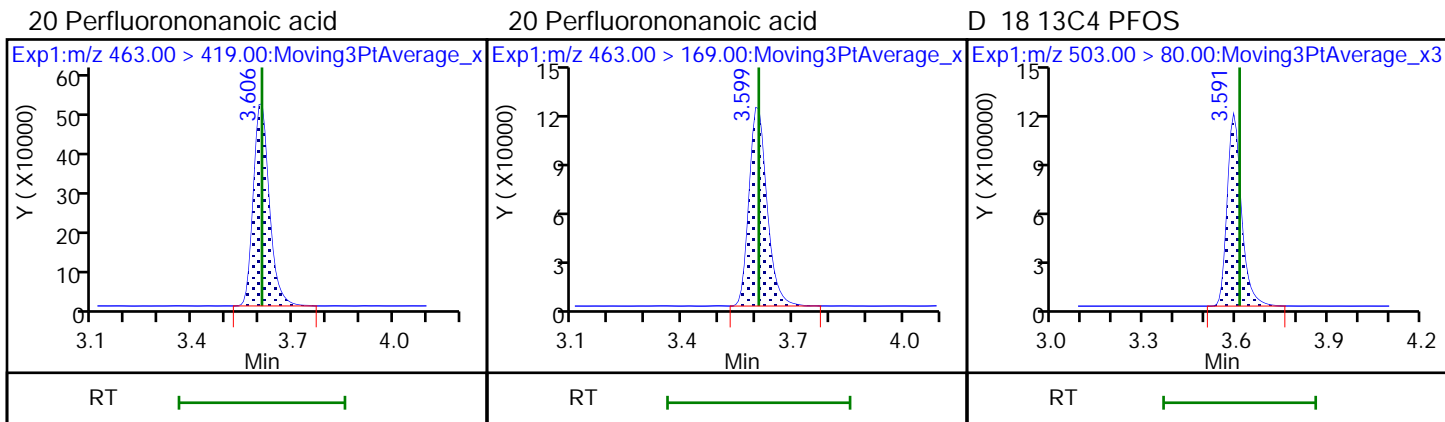


17 Perfluorooctanesulfonic acid

17 Perfluorooctanesulfonic acid

D 72 13C8 PFOS

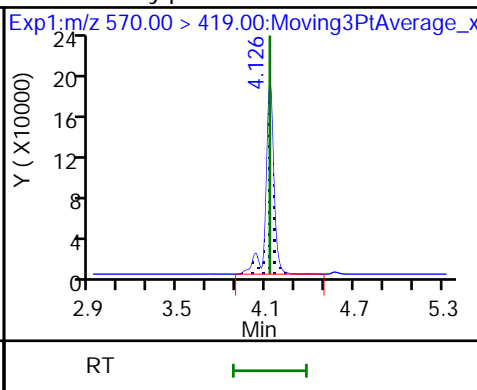
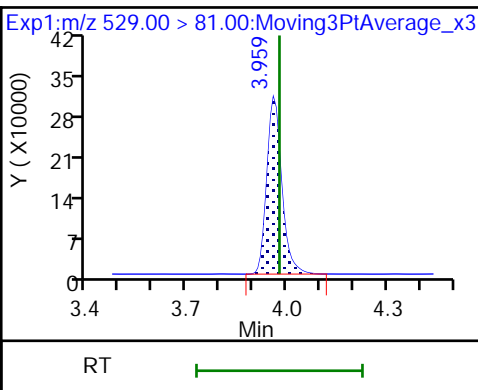
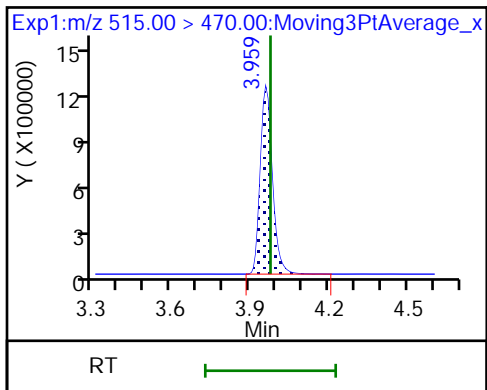




D 23 13C2 PFDA

D 26 M2-8:2 FTS

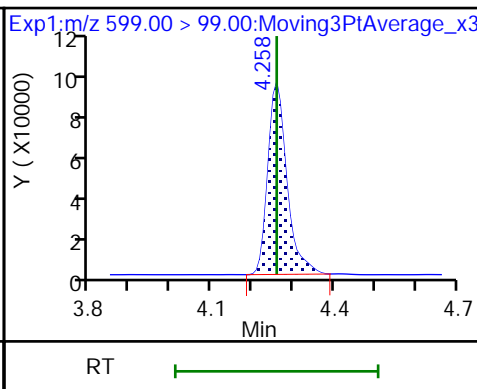
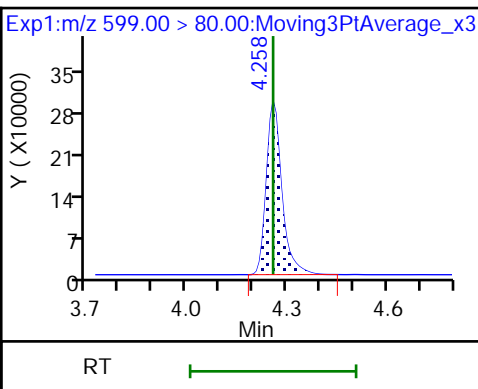
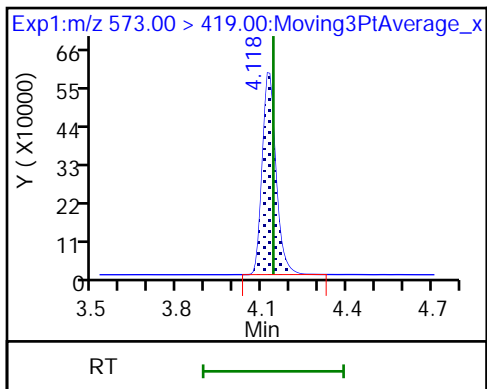
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

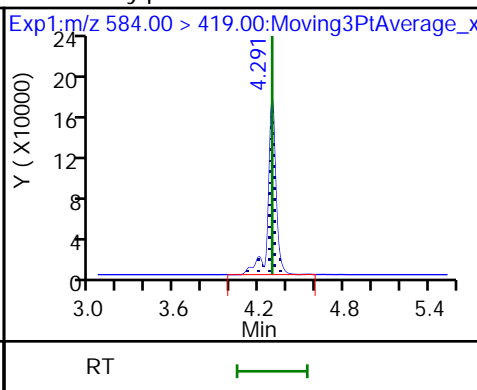
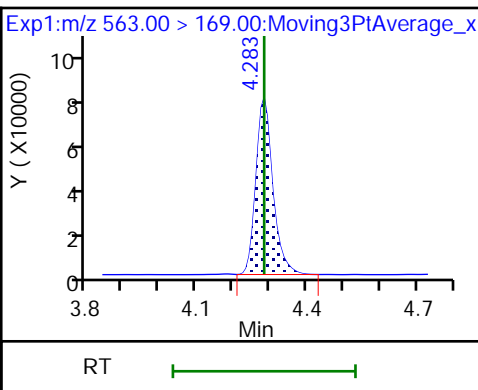
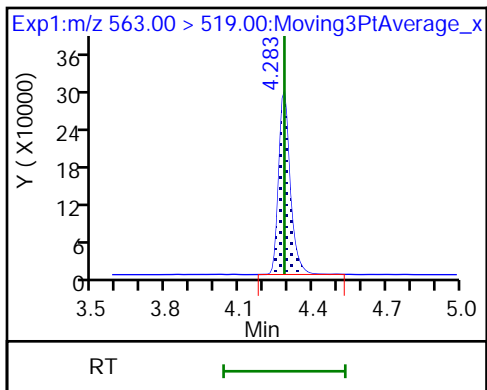
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

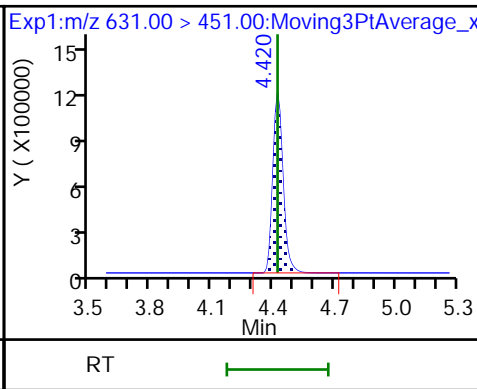
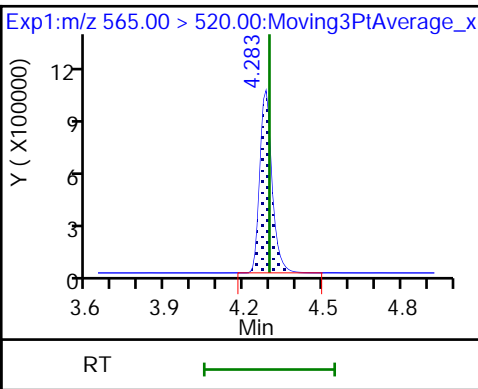
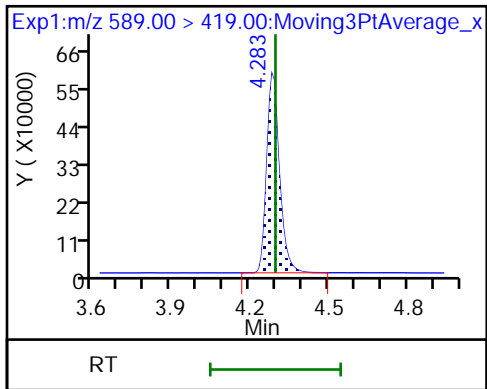
33 N-ethylperfluorooctanesulfonamido

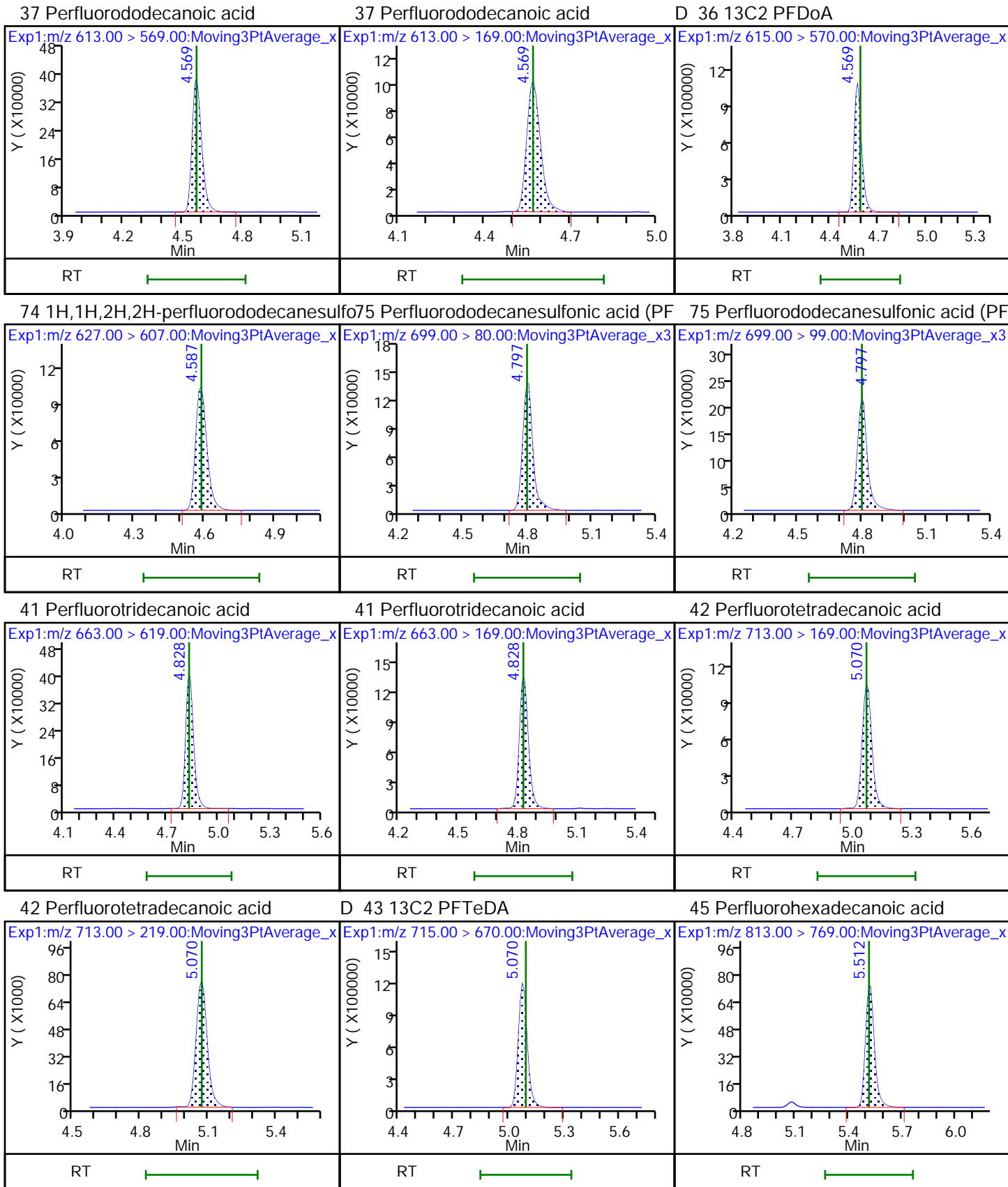


D 32 d5-NEtFOSAA

D 30 13C2 PFUnA

66 11-Chloroeicosafuoro-3-oxaundecan

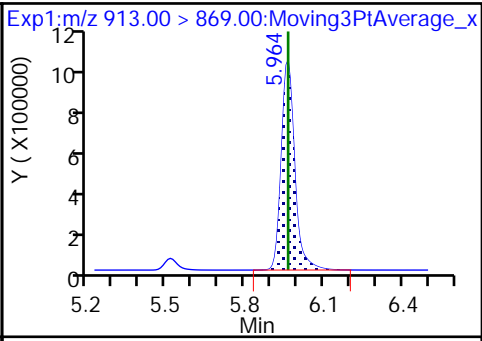
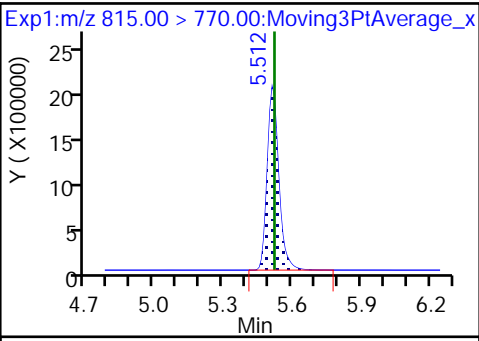
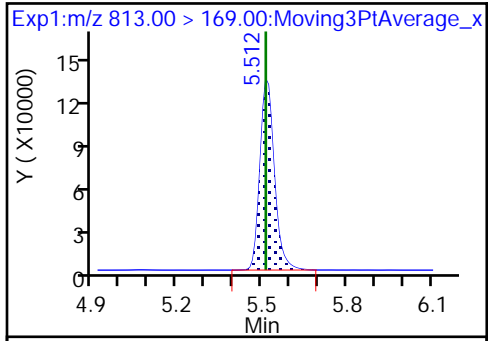




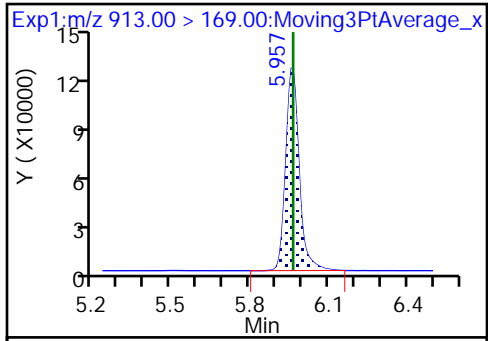
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-265427/1 Calibration Date: 12/14/2018 23:09
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.14LLB_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9132	0.8931		2.45	2.50	-2.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.095	1.000		2.28	2.50	-8.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9874	0.9457		2.12	2.21	-4.2	50.0
4:2 FTS	AveID	0.1892	0.1980		2.44	2.34	4.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.012	0.9290		2.30	2.50	-8.2	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8643	0.8959		2.43	2.35	3.7	50.0
HFPO-DA (GenX)	AveID	3.356	2.765		2.06	2.50	-17.6	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.129	1.000		2.22	2.50	-11.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.062	1.001		2.14	2.28	-5.8	40.0
DONA	AveID	3.912	3.854		2.32	2.36	-1.5	50.0
6:2 FTS	AveID	1.556	1.496		2.28	2.37	-3.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.286	1.267		2.35	2.38	-1.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.123	1.042		2.32	2.50	-7.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.121	1.013		2.10	2.32	-9.6	40.0
Perfluorononanoic acid (PFNA)	AveID	1.053	1.017		2.42	2.50	-3.4	40.0
F-53B Major	AveID	1.897	1.799		2.21	2.33	-5.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7820	0.7763		2.38	2.40	-0.7	50.0
8:2 FTS	AveID	1.308	1.203		2.20	2.40	-8.0	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9686	0.9027		2.33	2.50	-6.8	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9375	0.9426		2.51	2.50	0.5	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9247	0.8331		2.25	2.50	-9.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6393	0.6445		2.43	2.41	0.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9137	0.8219		2.25	2.50	-10.0	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8543	0.7889		2.31	2.50	-7.7	40.0
F-53B Minor	AveID	2.835	2.787		2.32	2.36	-1.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.065	0.9545		2.24	2.50	-10.4	40.0
10:2 FTS	AveID	0.8899	0.8439		2.29	2.41	-5.2	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2820	0.2884		2.48	2.42	2.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.012	0.9929		2.45	2.50	-1.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2530	0.2388		2.36	2.50	-5.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9016		2.55	2.50	2.0	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-265427/1 Calibration Date: 12/14/2018 23:09
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.14LLB_022.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.162	1.212		2.61	2.50	4.2	50.0
13C4 PFBA	Ave	1.505	1.485		2.47	2.50	-1.3	50.0
13C5 PFPeA	Ave	0.9872	0.9319		2.36	2.50	-5.6	50.0
13C3 PFBS	Ave	1.529	1.387		2.11	2.33	-9.3	50.0
M2-4:2 FTS	Ave	0.1255	0.1149		2.14	2.34	-8.5	50.0
13C2 PFHxA	Ave	1.031	0.9870		2.39	2.50	-4.3	50.0
13C3 HFPO-DA	Ave	0.0744	0.0710		2.38	2.50	-4.6	50.0
13C4 PFHpA	Ave	0.9896	0.9716		2.45	2.50	-1.8	50.0
18O2 PFHxS	Ave	1.192	1.123		2.23	2.37	-5.8	50.0
M2-6:2 FTS	Ave	0.1789	0.1769		2.35	2.38	-1.1	40.0
13C4 PFOA	Ave	0.9852	0.9732		2.47	2.50	-1.2	50.0
13C8 PFOA	Ave	1.507	1.458		2.37	2.45	-3.3	50.0
13C4 PFOS	Ave	0.7858	0.7546		2.30	2.39	-4.0	50.0
13C8 PFOS	Ave	0.4226	0.3998		2.26	2.39	-5.4	50.0
13C5 PFNA	Ave	0.8198	0.7757		2.37	2.50	-5.4	50.0
13C2 PFDA	Ave	0.7365	0.7326		2.49	2.50	-0.5	50.0
13C8 FOSA	Ave	1.170	1.087		2.32	2.50	-7.1	50.0
M2-8:2 FTS	Ave	0.1946	0.1973		2.43	2.40	1.4	40.0
d3-NMeFOSAA	Ave	0.3898	0.3724		2.39	2.50	-4.5	50.0
13C2 PFUnA	Ave	0.5834	0.5793		2.48	2.50	-0.7	50.0
d5-NEtFOSAA	Ave	0.4094	0.3898		2.38	2.50	-4.8	50.0
13C2 PFDoA	Ave	0.6009	0.6022		2.51	2.50	0.2	50.0
13C2 PFTeDA	Ave	0.6981	0.7198		2.58	2.50	3.1	50.0
13C2 PFHxDA	Ave	1.226	1.320		2.69	2.50	7.7	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_022.d
 Lims ID: CCV L5
 Client ID:
 Sample Type: CCV
 Inject. Date: 14-Dec-2018 23:09:29 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: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub39
 Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Dec-2018 13:54:17 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0324

First Level Reviewer: mongkols Date: 17-Dec-2018 13:54:17

Ratio Calibration: None

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	1.762	1.763	-0.001	0.547	7877539	2.47	98.7	3560	
2 Perfluorobutanoic acid	212.90 > 169.00	1.769	1.769	0.0	1.004	7035771	2.44	97.8	1146	
4 Perfluoropentanoic acid	262.90 > 219.00	2.072	2.072	0.0	1.000	4943511	2.28	91.3	460	
D 3 13C5 PFPeA	267.90 > 223.00	2.072	2.074	-0.002	0.644	4944065	2.36	94.4	4079	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.104	2.104	0.0	1.000	6150137	2.12	Target=2.49	95.8	6806
	298.90 > 99.00	2.104	2.104	0.0	1.000	2649752		2.32(1.25-3.74)		3268
D 47 13C3 PFBS	301.90 > 80.00	2.104	2.105	-0.001	0.654	6841361	2.11	90.7	245745	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.391	2.391	0.0	1.137	1360171	2.44	105	8601	
D 60 M2-4:2 FTS	329.00 > 81.00	2.391	2.393	-0.002	0.743	569191	2.14	91.5	1305	
6 Perfluorohexanoic acid	313.00 > 269.00	2.431	2.431	0.0	1.000	4865059	2.29	Target=10.07	91.8	1338
	313.00 > 119.00	2.431	2.431	0.0	1.000	452394		10.75(5.03-15.10)		1237
D 7 13C2 PFHxA	315.00 > 270.00	2.431	2.432	-0.001	0.756	5236632	2.39	95.7	4989	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.451	2.451	0.0	1.165	6181685	2.43	Target=2.71	104	8740
	349.00 > 99.00	2.451	2.451	0.0	1.165	2275028		2.72(1.36-4.07)		5532
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.550	2.550	0.0	1.000	1040873	2.06	82.4	1107	

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	2.550	2.551	-0.001	0.792	376454	2.38	95.4	1503	
D 9 13C4 PFHpA	367.00	> 322.00	2.817	2.816	0.001	0.875	5154632	2.45	98.2	5701	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.817	2.817	0.0	1.000	5154512	2.22	Target=2.27	88.6	1330
	363.00	> 169.00	2.817	2.817	0.0	1.000	2019704		2.55(1.13-3.40)		1952
D 11 18O2 PFHxS	403.00	> 84.00	2.826	2.826	0.0	0.878	5635900	2.23	94.2	9029	
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.826	2.826	0.0	1.000	5426507	2.14	Target=3.00	94.2	6291
	399.00	> 99.00	2.826	2.826	0.0	1.000	1818499		2.98(1.50-4.49)		3883
77 DONA	377.00	> 251.00	2.863	2.863	0.0	0.798	14533647	2.32	Target=1.69	98.5	10281
	377.00	> 85.00	2.863	2.863	0.0	0.798	8642560		1.68(0.85-2.54)		8776
D 12 M2-6:2 FTS	429.00	> 81.00	3.193	3.193	0.0	0.992	891564	2.35	98.9	4009	
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.193	3.193	0.0	1.000	1331406	2.28	96.2	2104	
D 73 13C8 PFOA	421.00	> 376.00	3.209	3.209	0.0	0.997	7573037	2.37	96.7	8975	
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.209	3.209	0.0	0.894	4828890	2.35	Target=3.88	98.5	7310
	449.00	> 99.00	3.209	3.209	0.0	0.894	1260370		3.83(1.94-5.82)		4020
D 14 13C4 PFOA	417.00	> 372.00	3.209	3.218	-0.009	0.997	5163445	2.47	98.8	7244	
15 Perfluorooctanoic acid	413.00	> 369.00	3.218	3.218	0.0	1.003	5380352	2.32	Target=1.68	92.8	588
	413.00	> 169.00	3.218	3.218	0.0	1.003	2831075		1.90(0.84-2.52)		1444
* 62 13C2 PFOA	415.00	> 370.00	3.218	3.218	0.0		5305497	2.50			6307
D 72 13C8 PFOS	507.00	> 99.00	3.590	3.590	0.0	1.116	2027564	2.26	94.6	6858	
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.590	3.590	0.0	1.000	3764605	2.10	Target=4.62	90.4	3851
	499.00	> 99.00	3.590	3.590	0.0	1.000	815353		4.62(2.31-6.93)		2569
D 18 13C4 PFOS	503.00	> 80.00	3.590	3.598	-0.008	1.116	3827349	2.29	96.0	7679	
20 Perfluorononanoic acid	463.00	> 419.00	3.598	3.598	0.0	0.998	4186653	2.42	Target=3.79	96.6	2320
	463.00	> 169.00	3.598	3.598	0.0	0.998	985091		4.25(1.90-5.69)		2993
D 19 13C5 PFNA	468.00	> 423.00	3.606	3.605	0.001	1.121	4115262	2.37	94.6	6565	
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.794	3.794	0.0	1.057	6714204	2.21	94.9	14558	

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	3.942	3.942	0.0	1.098	2983722	2.38	Target=2.65	99.3	6331	
549.00 > 99.00	3.942	3.942	0.0	1.098	1044052		2.86(1.33-3.97)		7561	
D 21 13C8 FOSA										
506.00 > 78.00	3.957	3.957	0.0	1.230	5764874	2.32		92.9	7575	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.957	3.957	0.0	1.000	5434154	2.51		101	1357	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.957	3.957	0.0	1.000	3508662	2.33	Target=4.73	93.2	3458	
513.00 > 169.00	3.957	3.957	0.0	1.000	650974		5.39(2.36-7.09)		2942	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.957	3.957	0.0	1.000	1206064	2.20		92.0	6734	
D 23 13C2 PFDA										
515.00 > 470.00	3.957	3.965	-0.008	1.230	3886725	2.49		99.5	7473	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.957	3.965	-0.008	1.230	1002908	2.43		101	6519	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.125	4.125	0.0	1.000	1645701	2.25		90.1	1191	M
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.125	4.125	0.0	1.282	1975509	2.39		95.5	2896	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.257	4.257	0.0	1.186	2487363	2.43	Target=2.77	101	8385	
599.00 > 99.00	4.257	4.257	0.0	1.186	804853		3.09(1.39-4.16)		4324	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.282	4.282	0.0	1.000	2526167	2.25	Target=4.24	90.0	2607	
563.00 > 169.00	4.282	4.282	0.0	1.000	576780		4.38(2.12-6.36)		2174	
D 30 13C2 PFUnA										
565.00 > 520.00	4.282	4.282	0.0	1.331	3073460	2.48		99.3	5588	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.291	4.291	0.0	1.002	1631549	2.31		92.3	2550	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.282	4.291	-0.009	1.331	2068184	2.38		95.2	2255	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.420	4.420	0.0	1.231	10511313	2.32		98.3	12694	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.569	4.569	0.0	1.000	3049799	2.24	Target=4.27	89.6	2200	
613.00 > 169.00	4.569	4.569	0.0	1.000	770483		3.96(2.13-6.40)		4583	
D 36 13C2 PFDaA										
615.00 > 570.00	4.569	4.577	-0.008	1.420	3195133	2.51		100	6468	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.587	4.587	0.0	1.159	851625	2.29		94.8	2622	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.805	4.805	0.0	1.338	1117611	2.47	Target=0.00	102	9875	
699.00 > 99.00	4.805	4.805	0.0	1.338	1702230		0.66(0.00-0.00)		8026	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.836	4.836	0.0	1.058	3172424	2.45	Target=2.51	98.1	2828	
663.00 > 169.00	4.836	4.836	0.0	1.058	1047870		3.03(1.25-3.76)		5271	

Ratio Calibration: None

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	5.081	5.081	0.0	1.000	911992	2.36	Target=1.42	94.4	5667	
713.00 > 219.00	5.071	5.081	-0.010	0.998	609257		1.50(0.71-2.13)		2108	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.081	5.081	0.0	1.579	3818693	2.58		103	7655	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.513	5.513	0.0	1.000	6314639	2.55	Target=5.72	102	686	
813.00 > 169.00	5.513	5.513	0.0	1.000	1119720		5.64(2.86-8.58)		4418	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.513	5.513	0.0	1.713	7004153	2.69		108	9525	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.966	5.966	0.0	1.082	8486371	2.61	Target=7.65	104	778	
913.00 > 169.00	5.959	5.966	-0.007	1.081	1071820		7.92(3.83-11.48)		3916	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_022.d

Injection Date: 14-Dec-2018 23:09:29

Instrument ID: A8_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 1

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

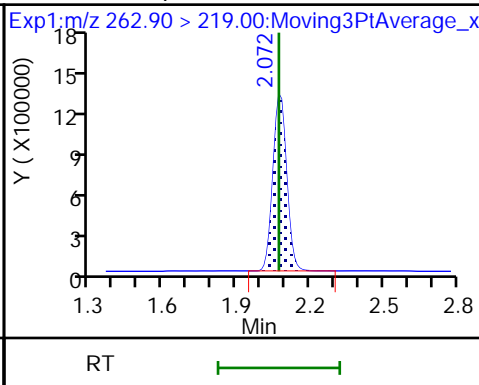
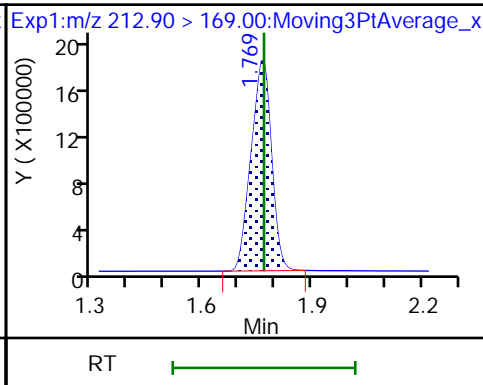
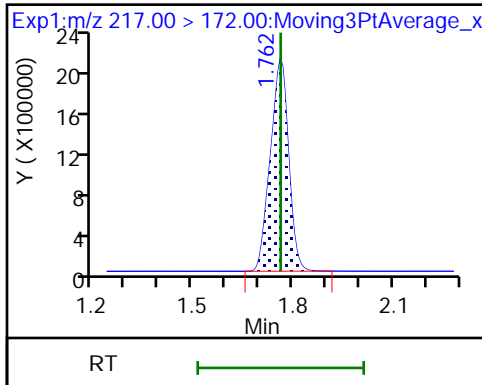
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

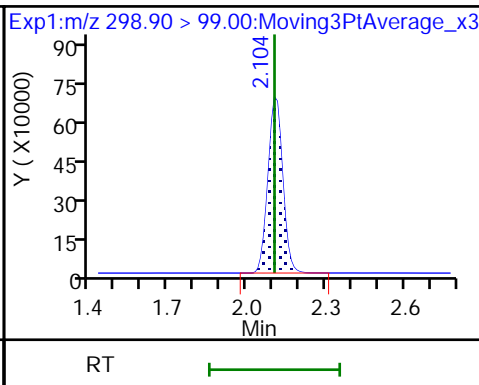
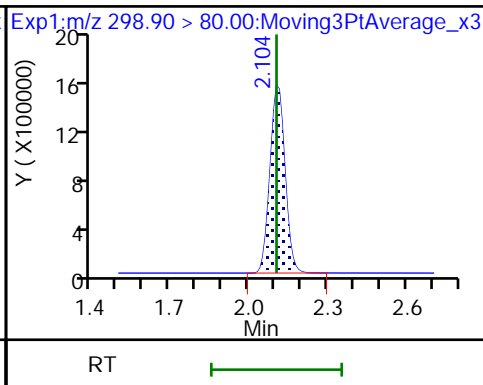
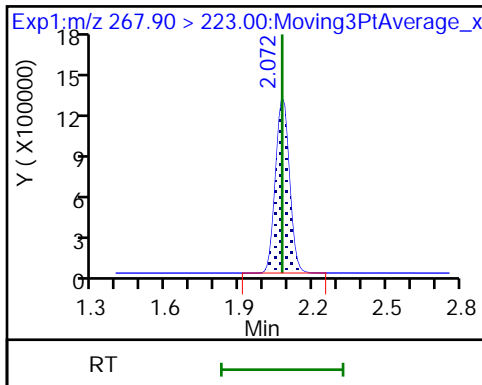
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

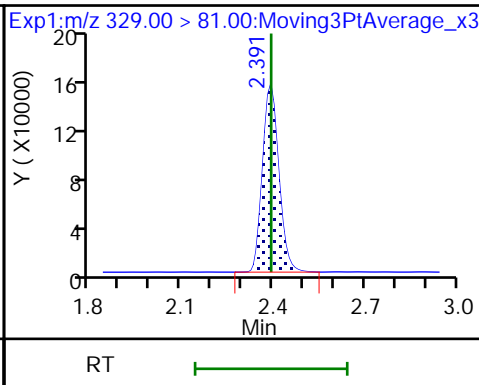
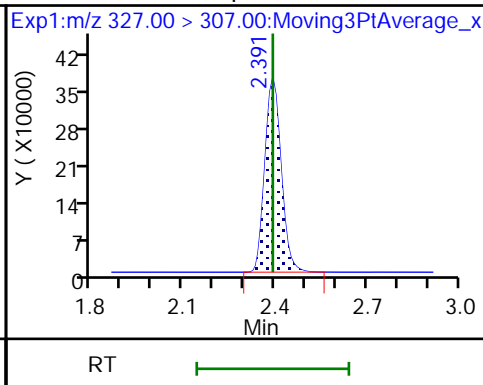
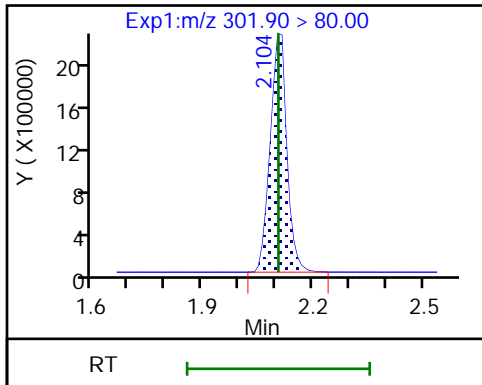
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

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

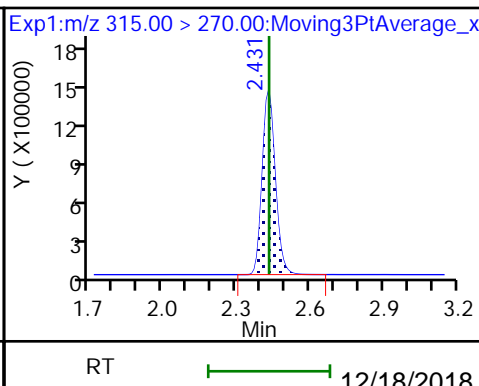
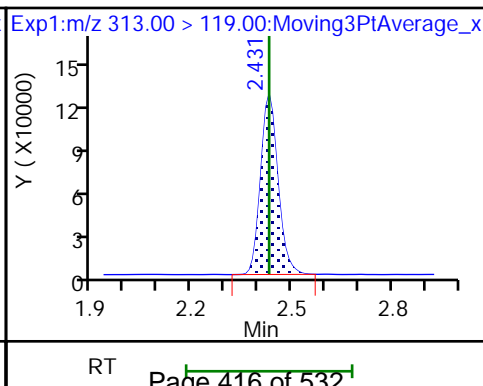
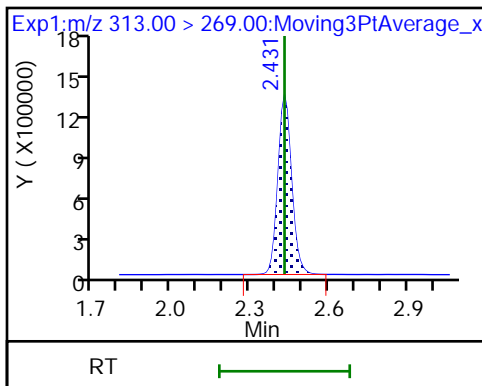
D 60 M2-4:2 FTS

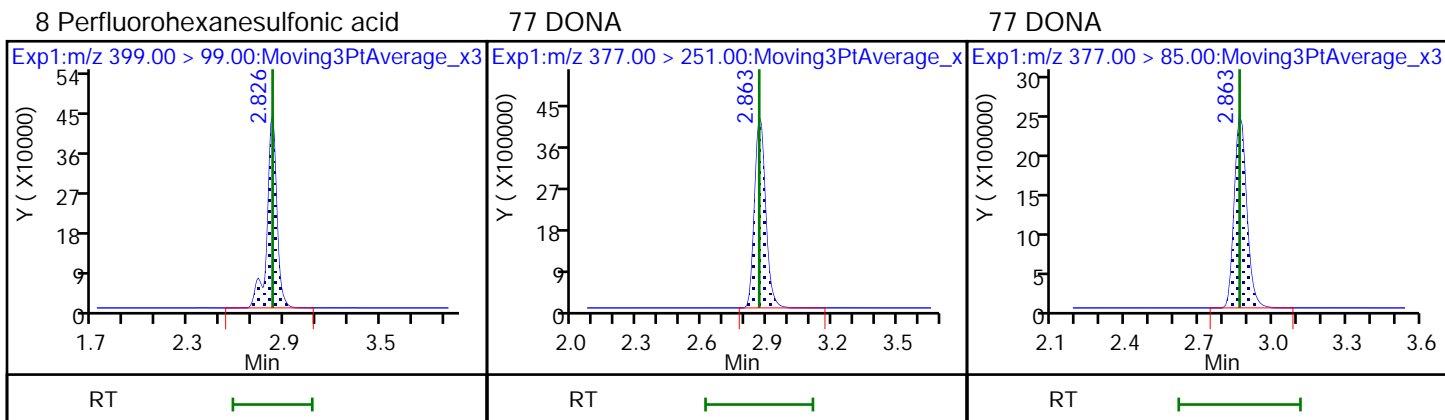
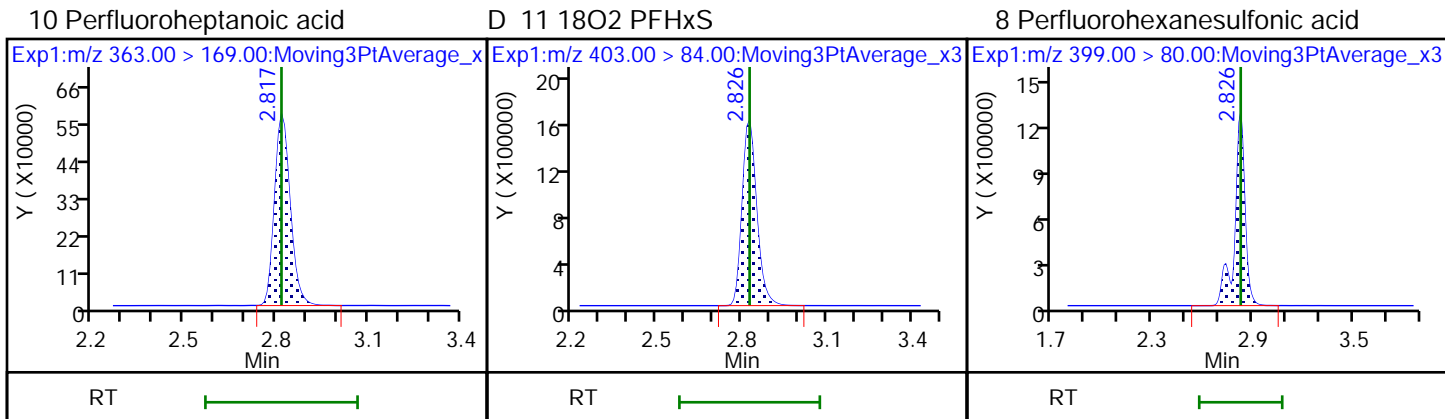
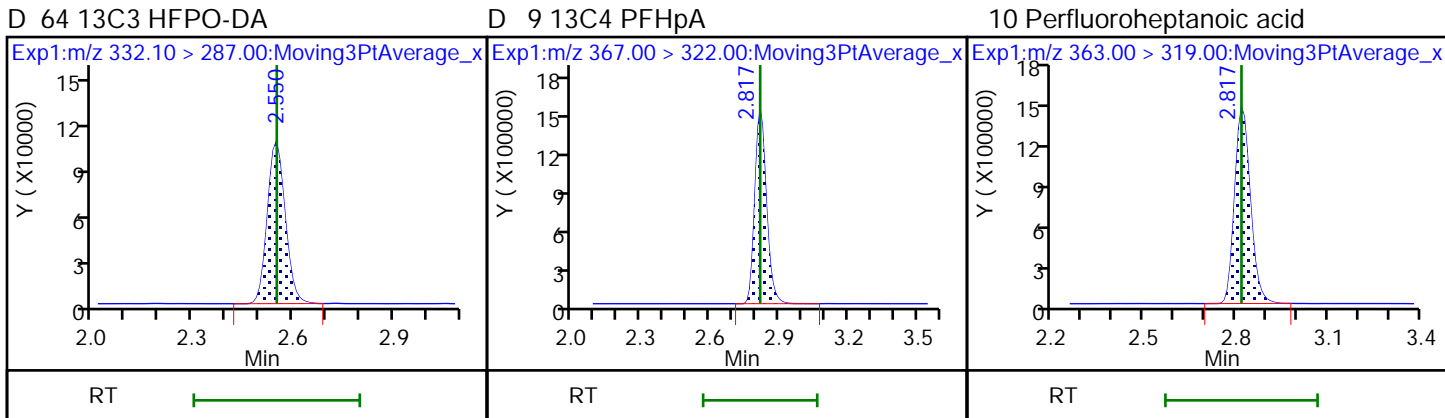
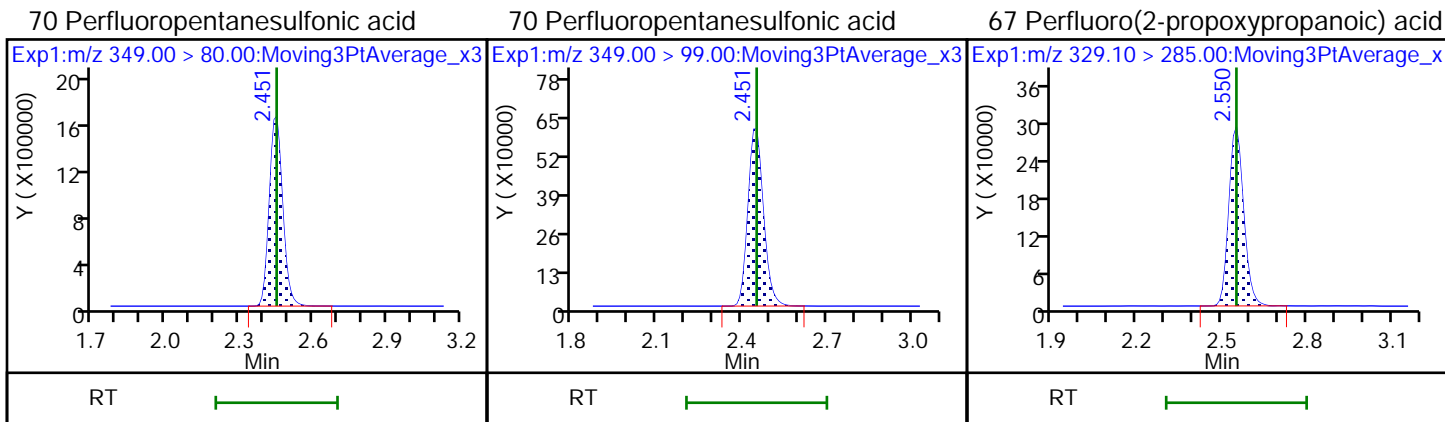


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

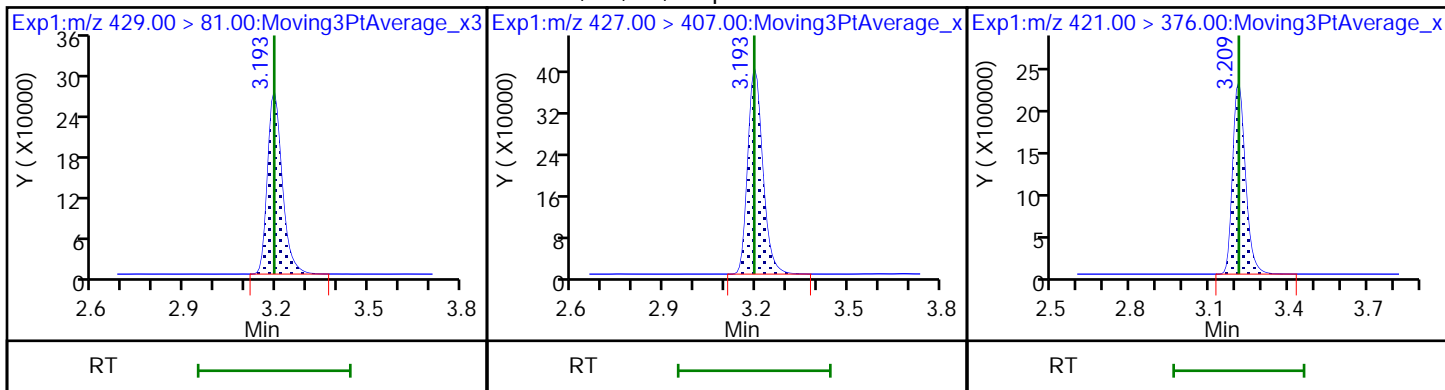
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

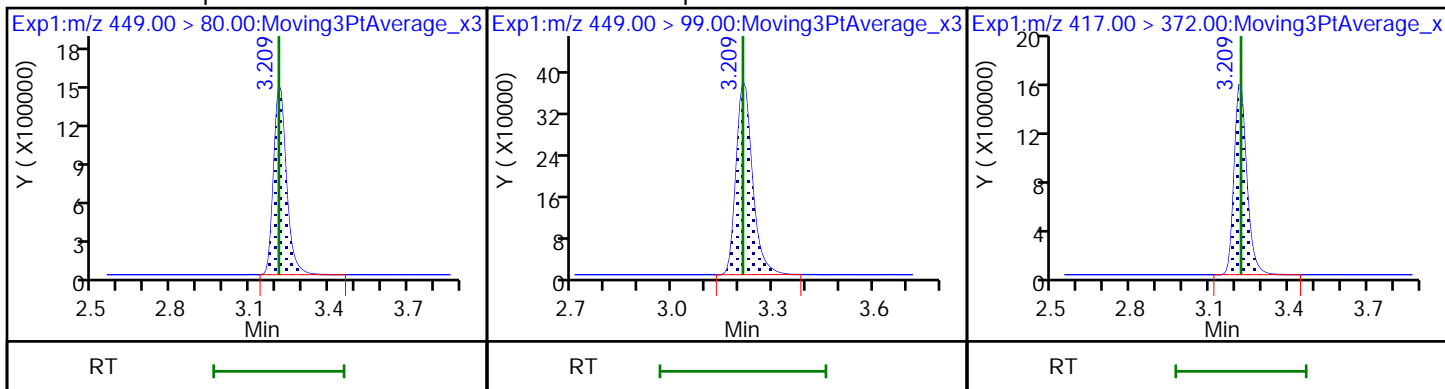
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

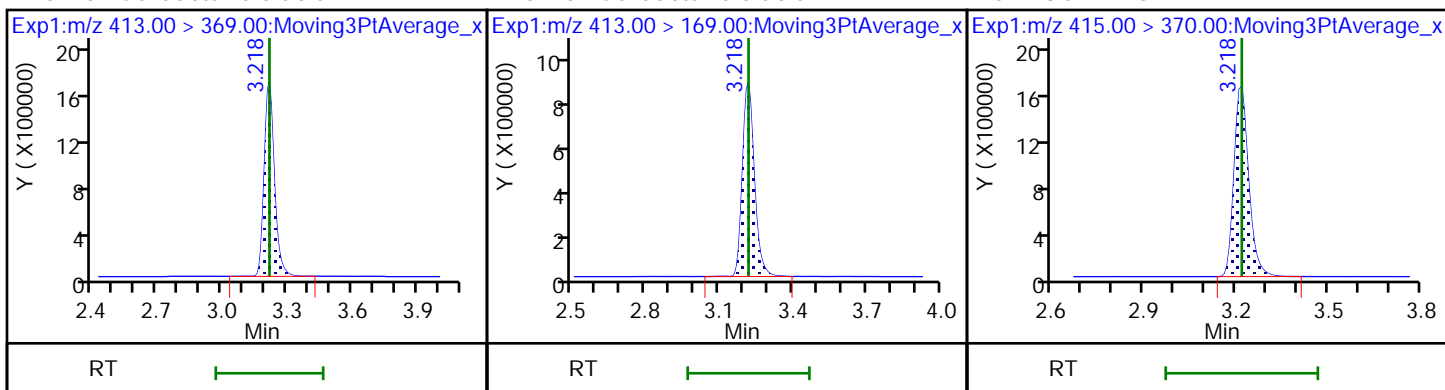
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

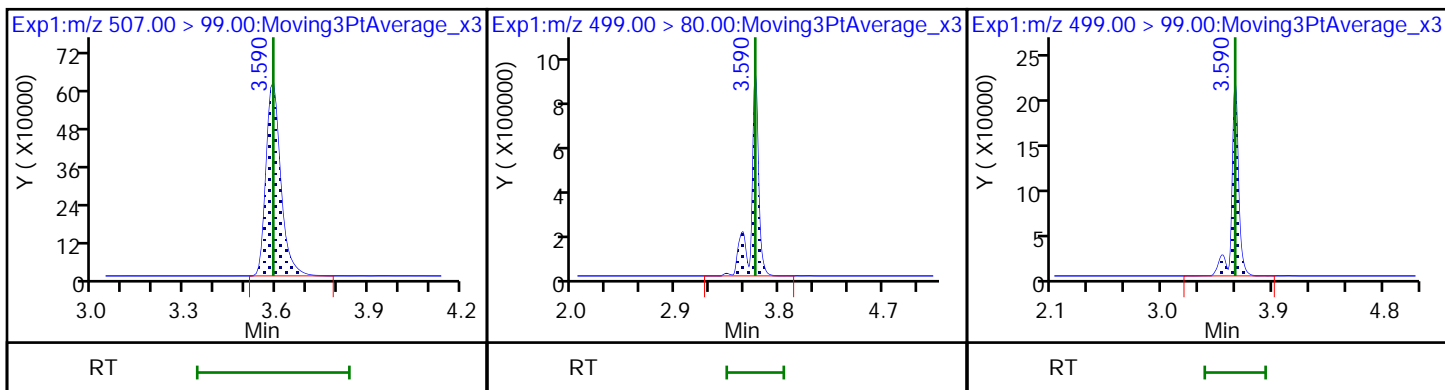
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid

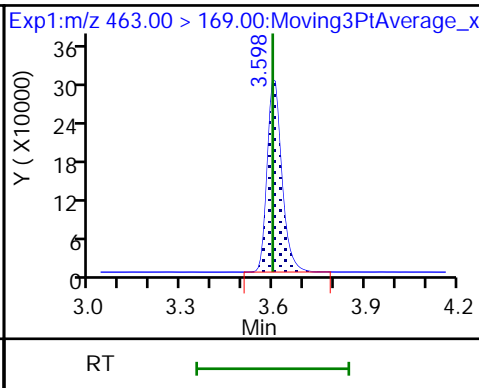
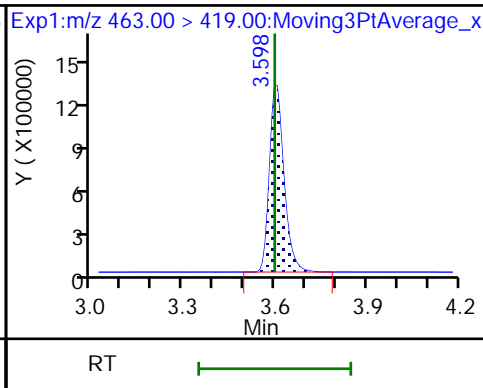
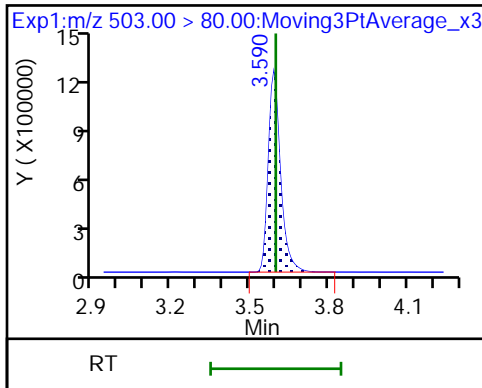
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

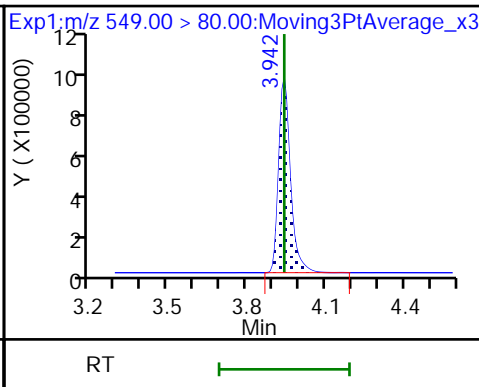
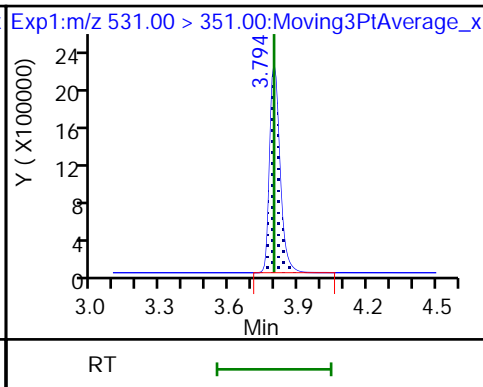
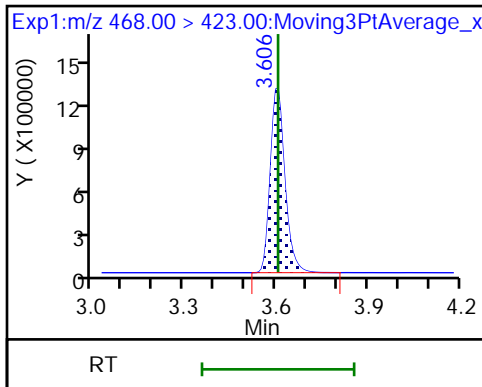
20 Perfluorononanoic acid

20 Perfluorononanoic acid



D 19 13C5 PFNA

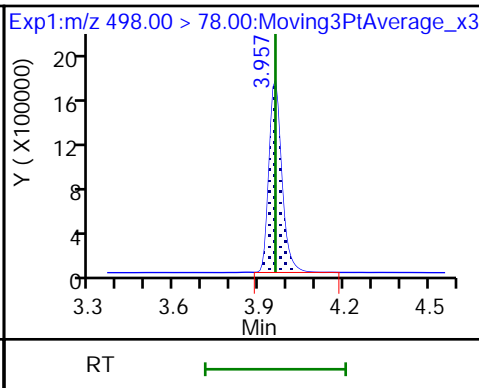
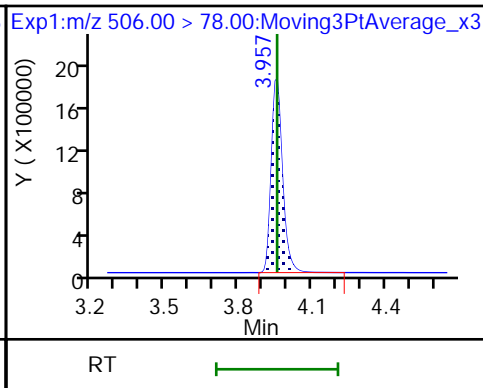
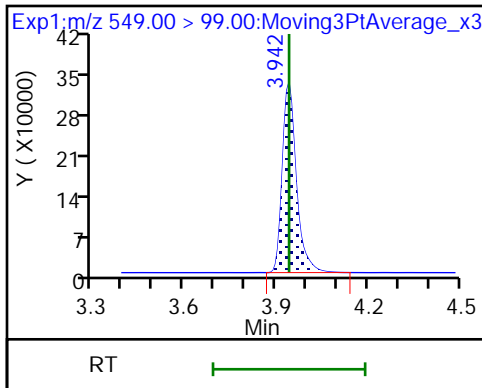
69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid



68 Perfluoronanesulfonic acid

D 21 13C8 FOSA

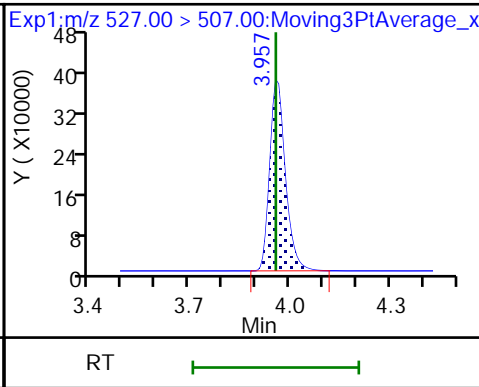
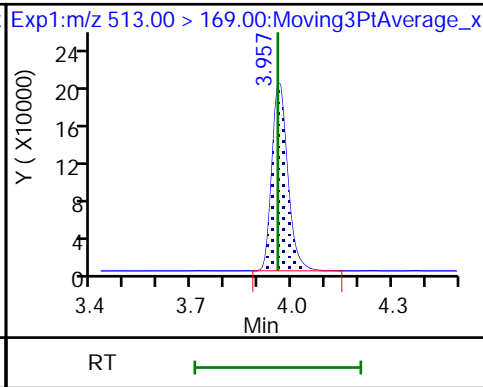
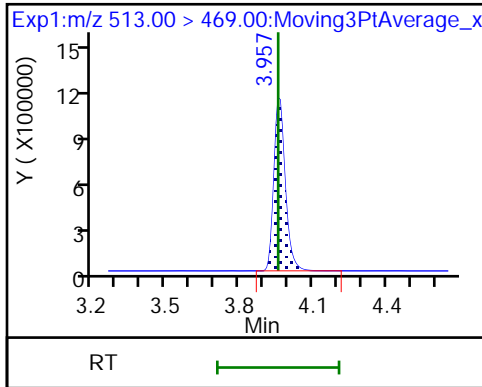
22 Perfluorooctanesulfonamide



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

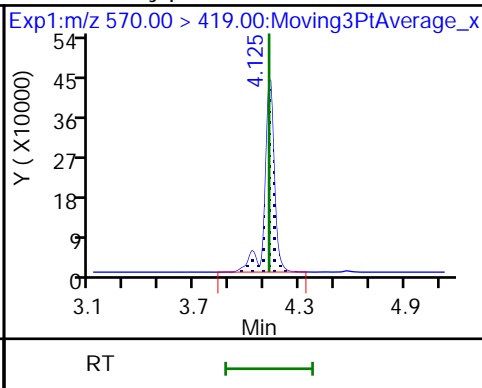
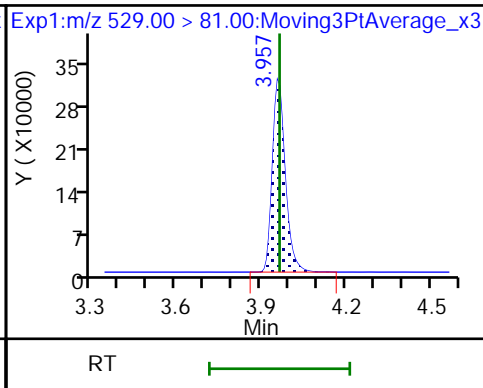
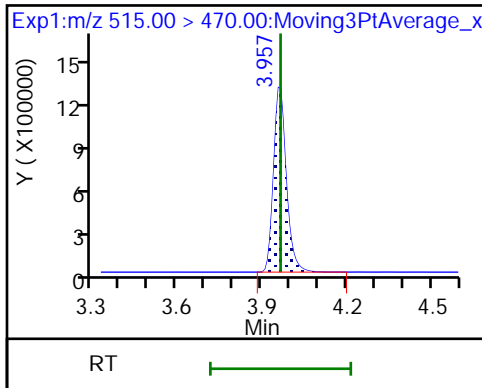
25 1H,1H,2H,2H-perfluorodecanesulfoni



D 23 13C2 PFDA

D 26 M2-8:2 FTS

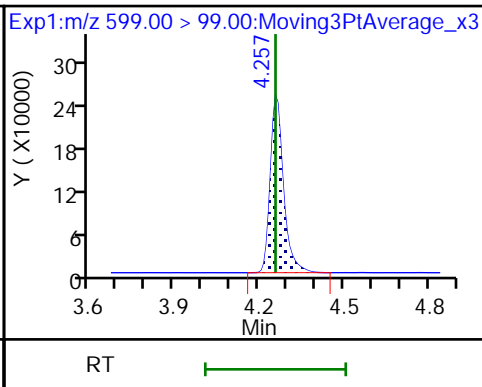
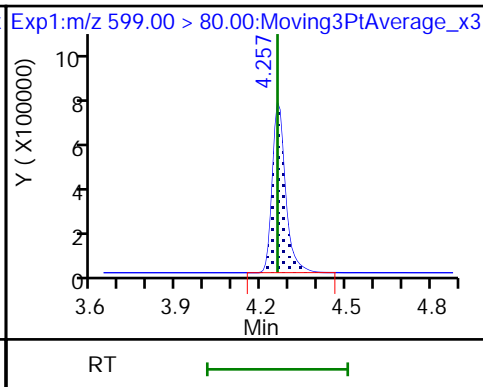
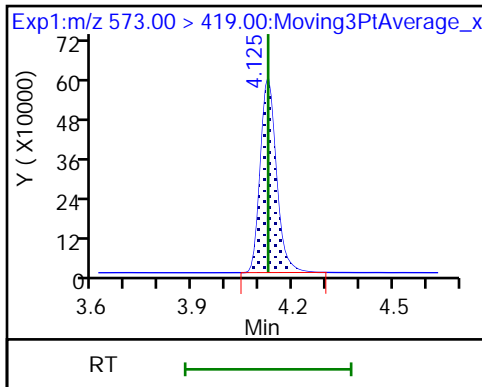
28 N-methylperfluorooctanesulfonamido (M)



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

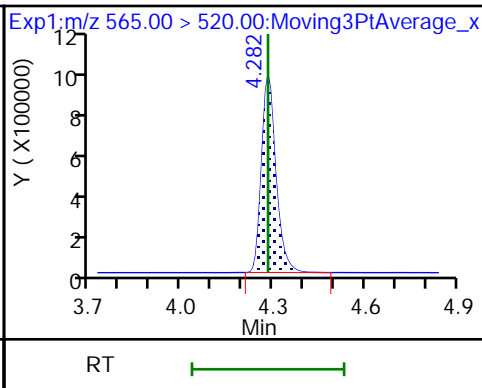
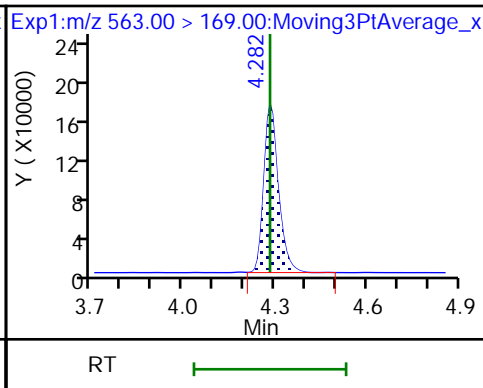
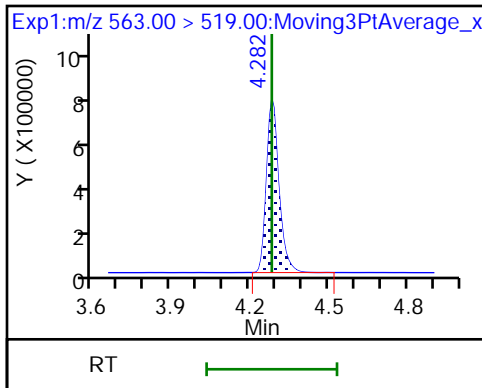
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

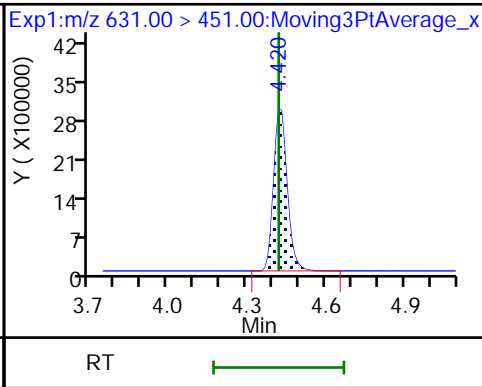
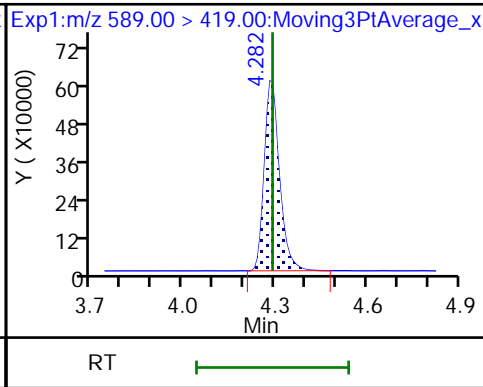
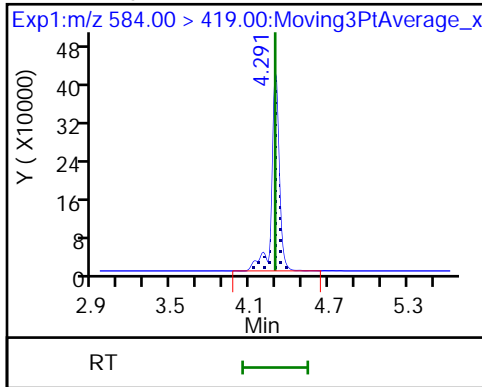
D 30 13C2 PFUnA

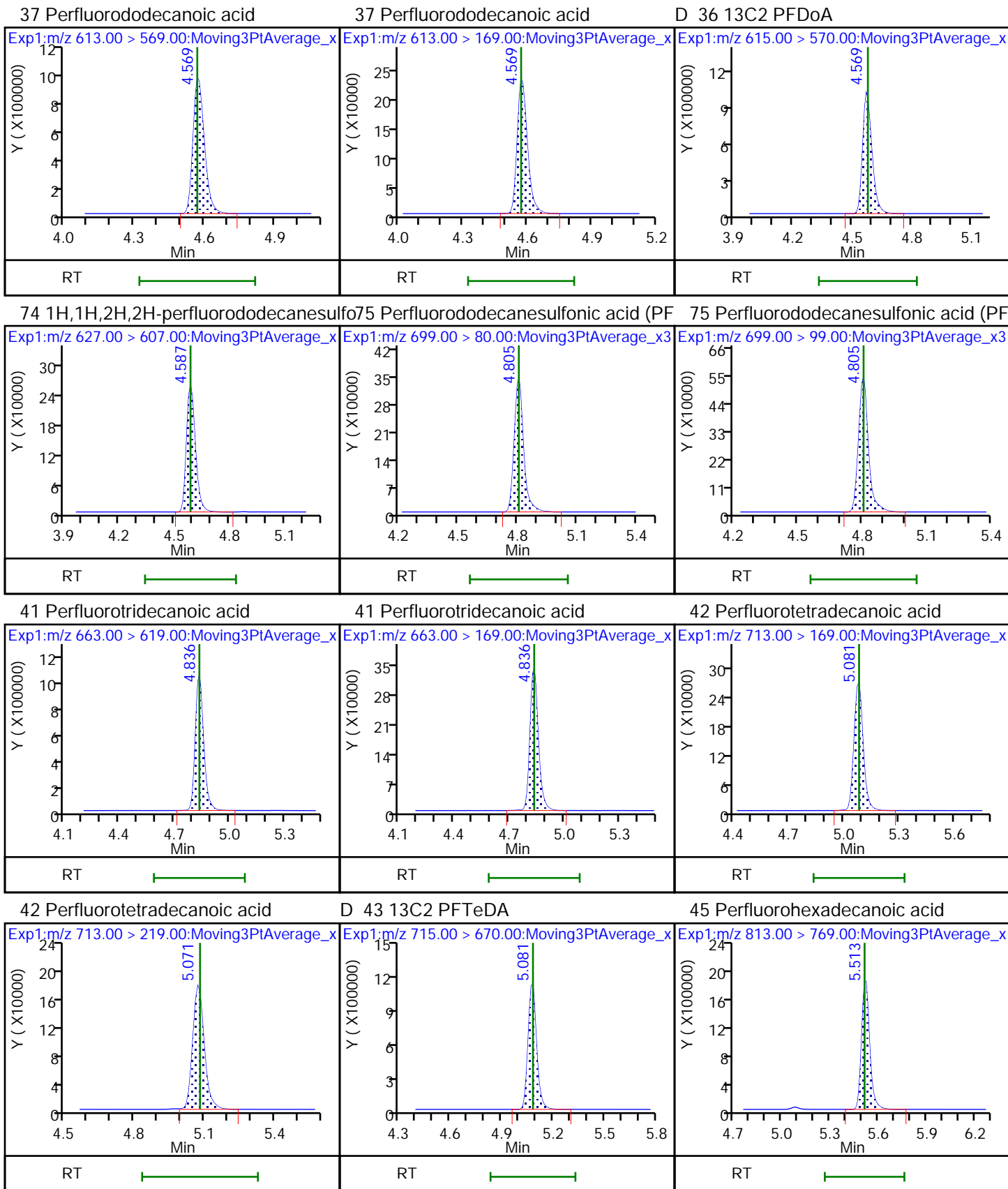


33 N-ethylperfluorooctanesulfonamido

D 32 d5-NEtFOSAA

66 11-Chloroeicosafuoro-3-oxaundecan

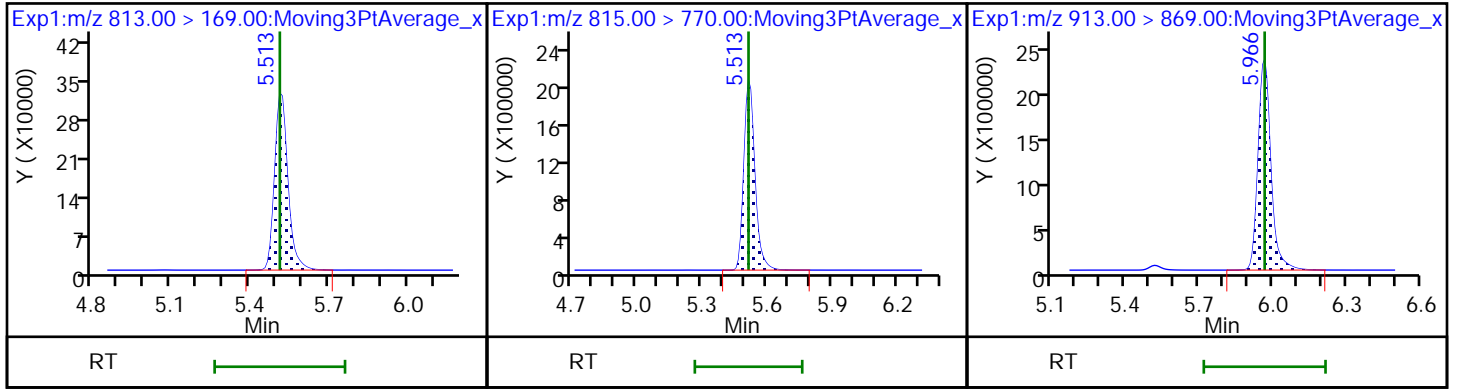




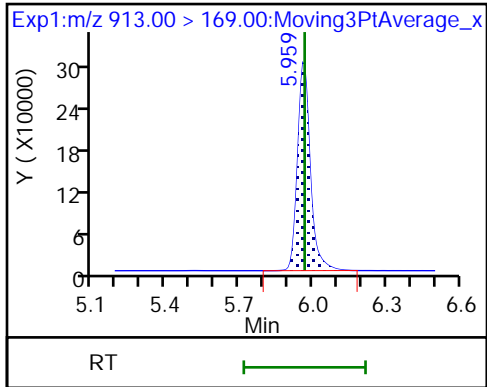
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

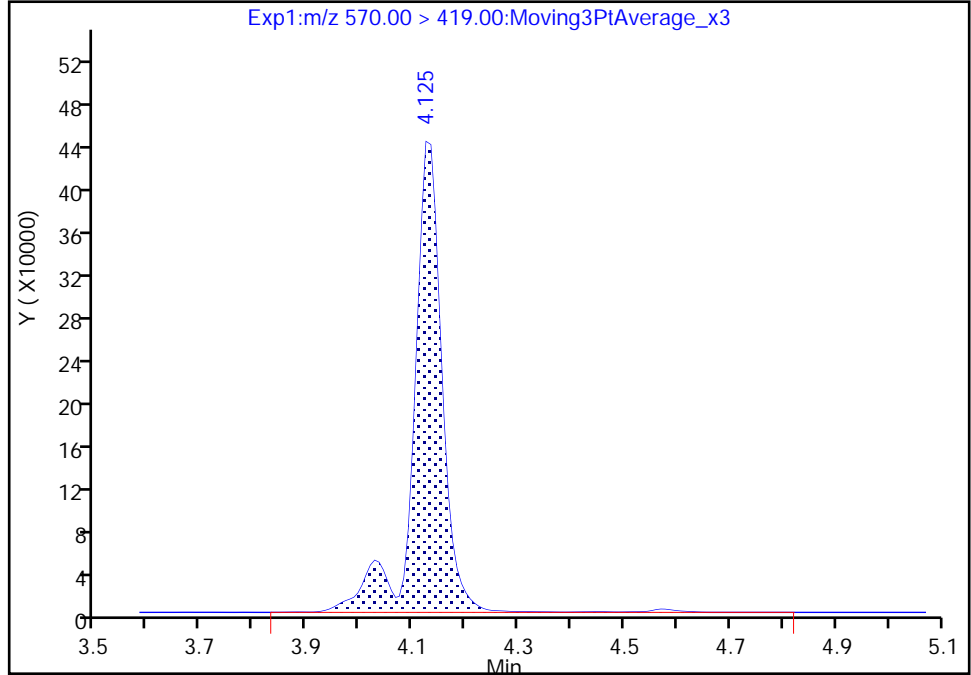
Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_022.d
Injection Date: 14-Dec-2018 23:09:29 Instrument ID: A8_N
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

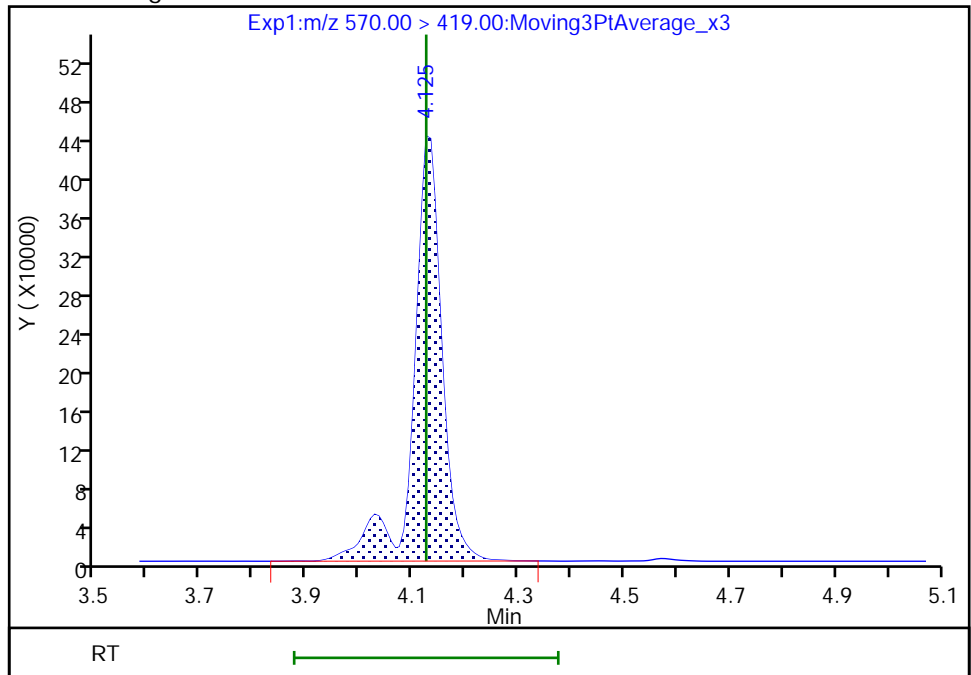
RT: 4.13
Area: 1662080
Amount: 2.274597
Amount Units: ng/ml

Processing Integration Results



RT: 4.13
Area: 1645701
Amount: 2.252182
Amount Units: ng/ml

Manual Integration Results



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-265427/9 Calibration Date: 12/15/2018 00:09
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.14LLB_030.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9132	0.8669		0.949	1.00	-5.1	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.095	1.000		0.913	1.00	-8.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9874	0.9238		0.827	0.884	-6.4	50.0
4:2 FTS	AveID	0.1892	0.1774		0.875	0.934	-6.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.012	0.9002		0.889	1.00	-11.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.8643	0.8488		0.921	0.938	-1.8	50.0
HFPO-DA (GenX)	AveID	3.356	2.875		0.857	1.00	-14.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.129	1.003		0.888	1.00	-11.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.062	0.9277		0.795	0.910	-12.7	40.0
DONA	AveID	3.912	3.888		0.936	0.942	-0.6	50.0
6:2 FTS	AveID	1.556	1.541		0.939	0.948	-1.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.286	1.257		0.931	0.952	-2.2	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.123	1.006		0.896	1.00	-10.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.121	0.997		0.826	0.928	-11.0	40.0
Perfluorononanoic acid (PFNA)	AveID	1.053	1.019		0.968	1.00	-3.2	40.0
F-53B Major	AveID	1.897	1.781		0.875	0.932	-6.1	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7820	0.7601		0.933	0.960	-2.8	50.0
8:2 FTS	AveID	1.308	1.167		0.855	0.958	-10.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9686	0.9349		0.965	1.00	-3.5	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9375	0.9175		0.979	1.00	-2.1	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.9247	0.8845		0.956	1.00	-4.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6393	0.6419		0.968	0.964	0.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.9137	0.8429		0.922	1.00	-7.8	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.8543	0.7385		0.864	1.00	-13.6	40.0
F-53B Minor	AveID	2.835	2.750		0.914	0.942	-3.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.065	0.9573		0.899	1.00	-10.1	40.0
10:2 FTS	AveID	0.8899	0.8641		0.936	0.964	-2.9	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2820	0.2833		0.972	0.968	0.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	1.012	0.9501		0.939	1.00	-6.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.2530	0.2342		0.926	1.00	-7.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8663		0.966	1.00	-3.4	50.0

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Lab Sample ID: CCV 320-265427/9 Calibration Date: 12/15/2018 00:09
 Instrument ID: A8_N Calib Start Date: 12/08/2018 05:16
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 12/08/2018 06:01
 Lab File ID: 2018.12.14LLB_030.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.162	1.219		1.05	1.00	4.9	50.0
13C4 PFBA	Ave	1.505	1.486		2.47	2.50	-1.2	50.0
13C5 PFPeA	Ave	0.9872	0.9147		2.32	2.50	-7.3	50.0
13C3 PFBS	Ave	1.529	1.421		2.16	2.33	-7.0	50.0
M2-4:2 FTS	Ave	0.1255	0.1195		2.22	2.34	-4.8	50.0
13C2 PFHxA	Ave	1.031	0.997		2.42	2.50	-3.3	50.0
13C3 HFPO-DA	Ave	0.0744	0.0731		2.46	2.50	-1.8	50.0
13C4 PFHpA	Ave	0.9896	0.9738		2.46	2.50	-1.6	50.0
18O2 PFHxS	Ave	1.192	1.154		2.29	2.37	-3.2	50.0
M2-6:2 FTS	Ave	0.1789	0.1792		2.38	2.38	0.2	40.0
13C8 PFOA	Ave	1.507	1.432		2.33	2.45	-5.0	50.0
13C4 PFOA	Ave	0.9852	0.9713		2.47	2.50	-1.4	50.0
13C8 PFOS	Ave	0.4226	0.3862		2.18	2.39	-8.6	50.0
13C4 PFOS	Ave	0.7858	0.7400		2.25	2.39	-5.8	50.0
13C5 PFNA	Ave	0.8198	0.7817		2.38	2.50	-4.7	50.0
13C8 FOSA	Ave	1.170	1.064		2.27	2.50	-9.1	50.0
13C2 PFDA	Ave	0.7365	0.7016		2.38	2.50	-4.7	50.0
M2-8:2 FTS	Ave	0.1946	0.1861		2.29	2.40	-4.4	40.0
d3-NMeFOSAA	Ave	0.3898	0.3594		2.31	2.50	-7.8	50.0
13C2 PFUnA	Ave	0.5834	0.5610		2.40	2.50	-3.8	50.0
d5-NEtFOSAA	Ave	0.4094	0.4099		2.50	2.50	0.1	50.0
13C2 PFDoA	Ave	0.6009	0.6107		2.54	2.50	1.6	50.0
13C2 PFTeDA	Ave	0.6981	0.7365		2.64	2.50	5.5	50.0
13C2 PFHxDA	Ave	1.226	1.335		2.72	2.50	8.8	50.0

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_030.d
 Lims ID: CCV 4
 Client ID:
 Sample Type: CCV
 Inject. Date: 15-Dec-2018 00:09:24 ALS Bottle#: 13 Worklist Smp#: 9
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: CCV L4
 Misc. Info.: Plate: 1 Rack: 1
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Sublist: chrom-A8_N*sub39
 Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Dec-2018 14:13:40 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d

Column 1 : Det: EXP1
 Process Host: CTX0324

First Level Reviewer: mongkols Date: 17-Dec-2018 14:13:40

Ratio Calibration: None

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	1.769	1.763	0.006	0.549	8055165	2.47	98.8	4050	
2 Perfluorobutanoic acid	212.90 > 169.00	1.769	1.769	0.0	1.000	2793346	0.9493	94.9	461	
4 Perfluoropentanoic acid	262.90 > 219.00	2.083	2.083	0.0	1.000	1983743	0.9132	91.3	193	
D 3 13C5 PFPeA	267.90 > 223.00	2.083	2.074	0.009	0.646	4958100	2.32	92.7	4089	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.115	2.115	0.0	1.000	2516381	0.8271	Target=2.49	93.6	3642
	298.90 > 99.00	2.115	2.115	0.0	1.000	1048722		2.40(1.25-3.74)		1299
D 47 13C3 PFBS	301.90 > 80.00	2.115	2.105	0.010	0.656	7164297	2.16	93.0	462618	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.402	2.402	0.0	1.135	510503	0.8755	93.7	5186	
D 60 M2-4:2 FTS	329.00 > 81.00	2.402	2.393	0.009	0.745	605132	2.22	95.2	1876	
6 Perfluorohexanoic acid	313.00 > 269.00	2.441	2.441	0.0	1.000	1947015	0.8894	Target=10.07	88.9	579
	313.00 > 119.00	2.441	2.441	0.0	1.000	175674		11.08(5.03-15.10)		484
D 7 13C2 PFHxA	315.00 > 270.00	2.441	2.432	0.009	0.757	5407085	2.42	96.7	4788	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.451	2.451	0.0	1.159	2453401	0.9212	Target=2.71	98.2	6246
	349.00 > 99.00	2.451	2.451	0.0	1.159	961093		2.55(1.36-4.07)		3075
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.560	2.560	0.0	1.000	455674	0.8568	85.7	502	

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	2.560	2.551	0.009	0.794	396173	2.46	98.2	2069		
D 9 13C4 PFHpA	367.00	> 322.00	2.825	2.816	0.009	0.876	5278598	2.46	98.4	5542		
10 Perfluoroheptanoic acid	363.00	> 319.00	2.825	2.825	0.0	1.000	2116800	0.8884	Target=2.27	88.8	634	
	363.00	> 169.00	2.825	2.825	0.0	1.000	797144		2.66(1.13-3.40)		822	
D 11 18O2 PFHxS	403.00	> 84.00	2.834	2.826	0.008	0.879	5919988	2.29	96.8	6877		
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.834	2.834	0.0	1.000	2113275	0.7948	Target=3.00	87.3	4826	
	399.00	> 99.00	2.834	2.834	0.0	1.000	712558		2.97(1.50-4.49)		1900	
77 DONA	377.00	> 251.00	2.871	2.871	0.0	0.797	5876117	0.9363	Target=1.69	99.4	6252	
	377.00	> 85.00	2.871	2.871	0.0	0.797	3442169		1.71(0.85-2.54)		5641	
D 12 M2-6:2 FTS	429.00	> 81.00	3.200	3.193	0.007	0.992	922982	2.38	100	4713		
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.200	3.200	0.0	1.000	567550	0.9388		99.0	941	
D 73 13C8 PFOA	421.00	> 376.00	3.217	3.209	0.008	0.997	7597048	2.32	95.0	9099		
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.225	3.225	0.0	0.895	1920217	0.9307	Target=3.88	97.8	4108	
	449.00	> 99.00	3.225	3.225	0.0	0.895	505500		3.80(1.94-5.82)		3307	
D 14 13C4 PFOA	417.00	> 372.00	3.225	3.218	0.007	1.000	5265092	2.46	98.6	6936		
15 Perfluorooctanoic acid	413.00	> 369.00	3.225	3.225	0.0	1.000	2118907	0.8957	Target=1.68	89.6	234	M
	413.00	> 169.00	3.225	3.225	0.0	1.000	1132769		1.87(0.84-2.52)		584	M
* 62 13C2 PFOA	415.00	> 370.00	3.225	3.225	0.0		5420677	2.50		6171		
D 72 13C8 PFOS	507.00	> 99.00	3.595	3.590	0.005	1.115	2001558	2.18	91.4	6067		
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.602	3.602	0.0	1.000	1484968	0.8260	Target=4.62	89.0	2661	M
	499.00	> 99.00	3.602	3.602	0.0	1.000	331625		4.48(2.31-6.93)		1325	M
D 18 13C4 PFOS	503.00	> 80.00	3.602	3.598	0.004	1.117	3834665	2.25	94.2	9622		
20 Perfluorononanoic acid	463.00	> 419.00	3.618	3.618	0.0	1.002	1727063	0.9680	Target=3.79	96.8	1011	
	463.00	> 169.00	3.610	3.618	-0.008	1.000	409408		4.22(1.90-5.69)		1592	
D 19 13C5 PFNA	468.00	> 423.00	3.610	3.605	0.005	1.119	4237239	2.38	95.3	8604		
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.807	3.807	0.0	1.057	2662567	0.8748		93.9	11002	

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	3.956	3.956	0.0	1.098	1170774	0.9331	Target=2.65	97.2	5249	
549.00 > 99.00	3.956	3.956	0.0	1.098	418045		2.80(1.33-3.97)		3775	
D 21 13C8 FOSA										
506.00 > 78.00	3.964	3.957	0.007	1.229	5766621	2.27		90.9	13034	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.971	3.971	0.0	1.002	2116230	0.9786		97.9	694	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.971	3.971	0.0	1.000	1422163	0.9652	Target=4.73	96.5	1600	
513.00 > 169.00	3.971	3.971	0.0	1.000	266648		5.33(2.36-7.09)		2219	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.971	3.971	0.0	1.000	451133	0.8550		89.3	2453	
D 23 13C2 PFDA										
515.00 > 470.00	3.971	3.965	0.006	1.231	3803062	2.38		95.3	6524	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.971	3.965	0.006	1.231	966356	2.29		95.6	3471	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.141	4.141	0.0	1.000	689314	0.9565		95.6	487	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.141	4.125	0.016	1.284	1948400	2.31		92.2	4114	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.273	4.273	0.0	1.186	992817	0.9679	Target=2.77	100	6329	
599.00 > 99.00	4.273	4.273	0.0	1.186	344786		2.88(1.39-4.16)		2001	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.298	4.298	0.0	1.000	1025169	0.9224	Target=4.24	92.2	1174	
563.00 > 169.00	4.298	4.298	0.0	1.000	247269		4.15(2.12-6.36)		1495	
D 30 13C2 PFUnA										
565.00 > 520.00	4.298	4.282	0.016	1.333	3040753	2.40		96.2	5988	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.306	4.306	0.0	1.002	656424	0.8644		86.4	1722	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.298	4.291	0.007	1.333	2222131	2.50		100	3312	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.440	4.440	0.0	1.233	4156684	0.9137		97.0	8492	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.587	4.587	0.0	1.000	1267513	0.8988	Target=4.27	89.9	971	
613.00 > 169.00	4.587	4.587	0.0	1.000	301531		4.20(2.13-6.40)		3182	
D 36 13C2 PFDaA										
615.00 > 570.00	4.587	4.577	0.010	1.422	3310122	2.54		102	5970	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.597	4.597	0.0	1.158	336106	0.9360		97.1	1545	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.813	4.813	0.0	1.336	439921	0.9723	Target=0.00	100	3943	
699.00 > 99.00	4.813	4.813	0.0	1.336	660306		0.67(0.00-0.00)		5328	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.844	4.844	0.0	1.056	1257986	0.9388	Target=2.51	93.9	1298	
663.00 > 169.00	4.844	4.844	0.0	1.056	420925		2.99(1.25-3.76)		3586	

Ratio Calibration: None

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	5.090	5.090	0.0	1.000	374073	0.9258	Target=1.42	92.6	3253	
713.00 > 219.00	5.081	5.090	-0.009	0.998	260245		1.44(0.71-2.13)		1512	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.090	5.081	0.009	1.578	3992378	2.64		106	8603	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.532	5.532	0.0	1.000	2507062	0.9657	Target=5.72	96.6	254	
813.00 > 169.00	5.532	5.532	0.0	1.000	479604		5.23(2.86-8.58)		3403	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.532	5.513	0.019	1.715	7235003	2.72		109	8099	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.981	5.981	0.0	1.081	3528076	1.05	Target=7.65	105	337	
913.00 > 169.00	5.974	5.981	-0.007	1.080	439953		8.02(3.83-11.48)		2607	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00010

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_030.d

Injection Date: 15-Dec-2018 00:09:24

Instrument ID: A8_N

Lims ID: CCV 4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 9

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

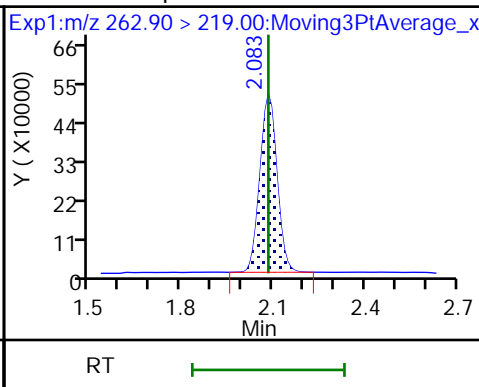
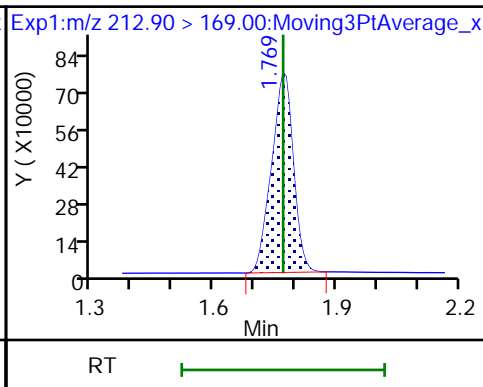
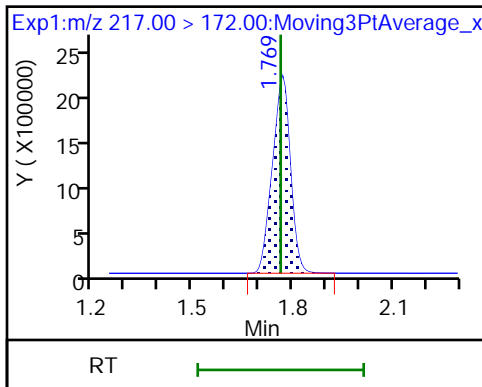
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

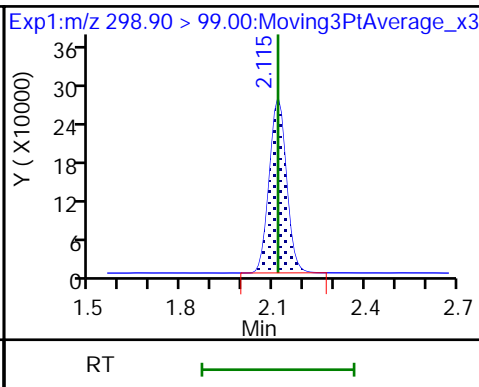
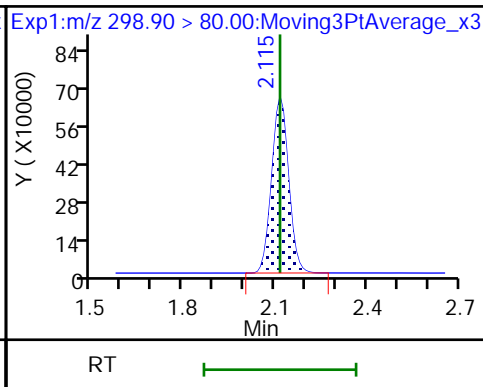
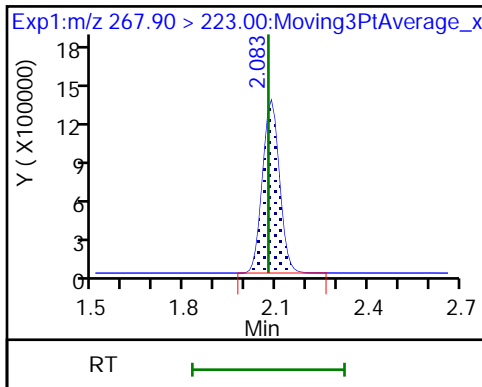
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

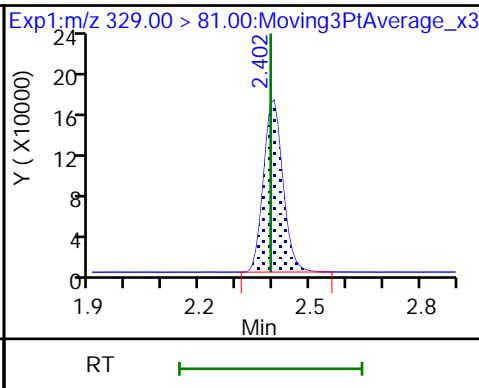
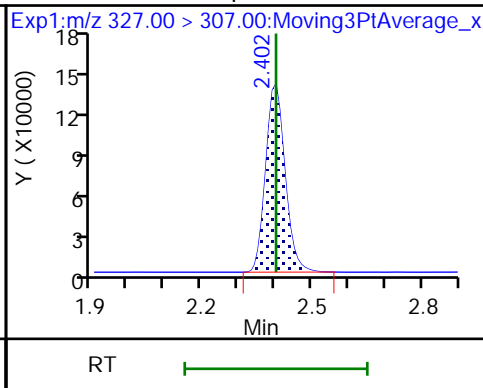
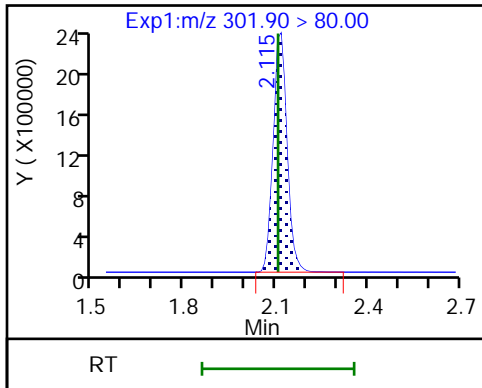
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

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

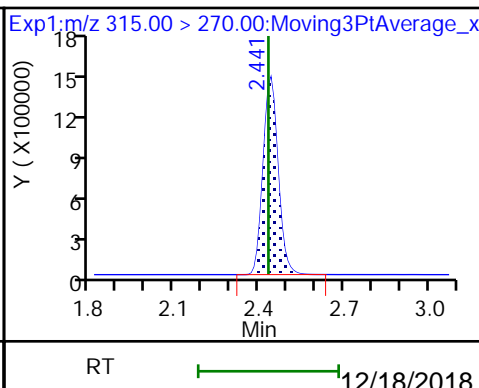
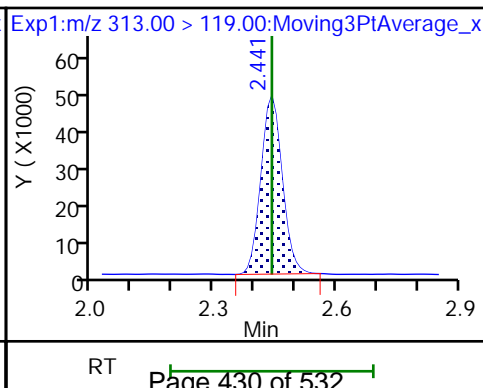
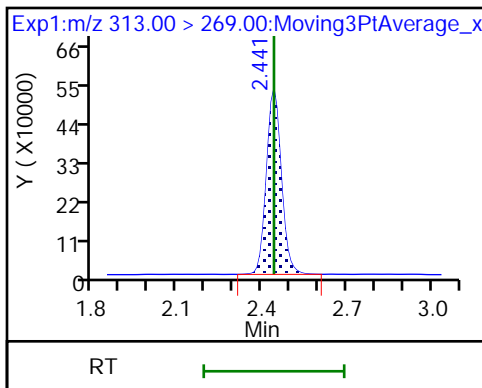
D 60 M2-4:2 FTS

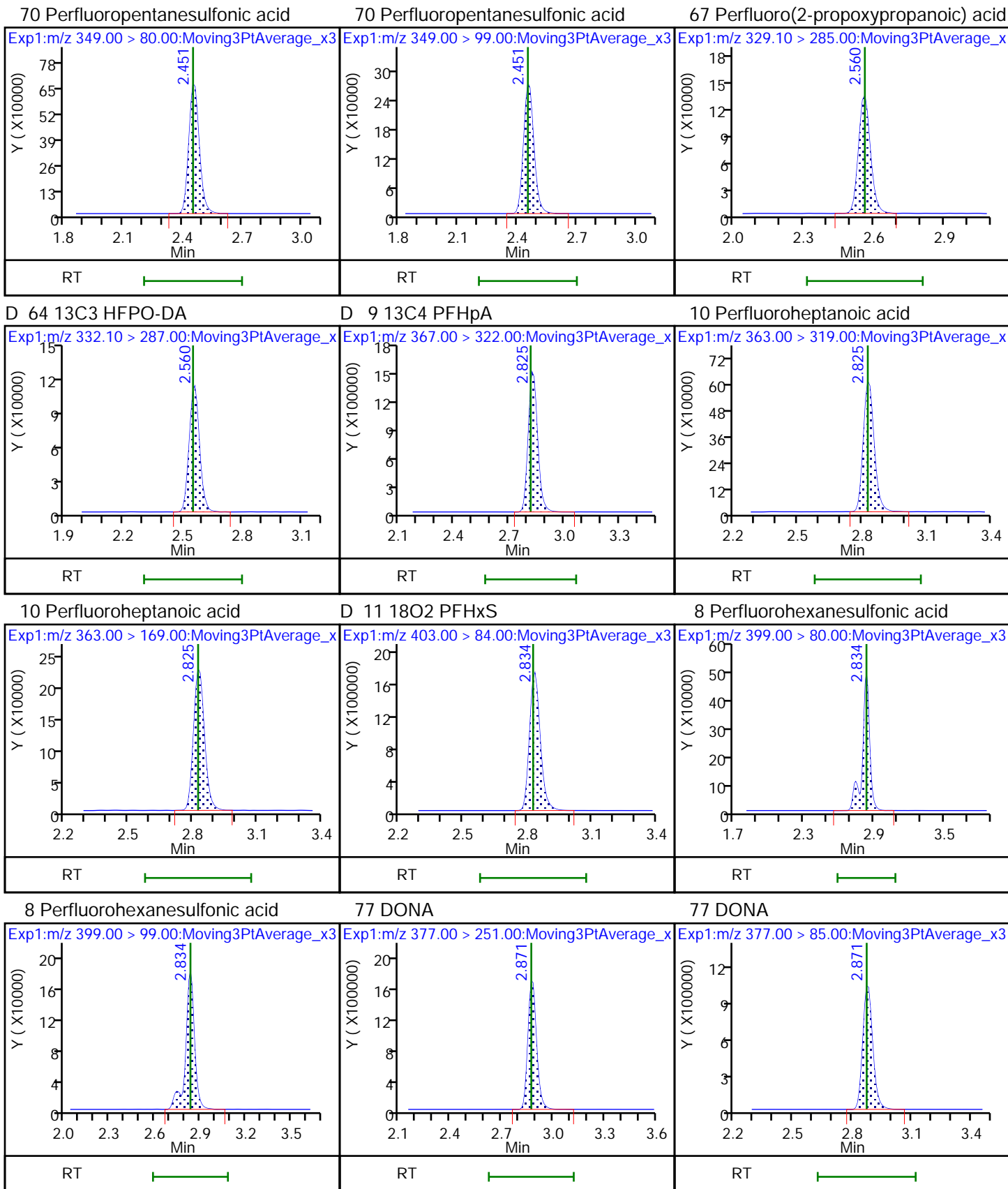


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

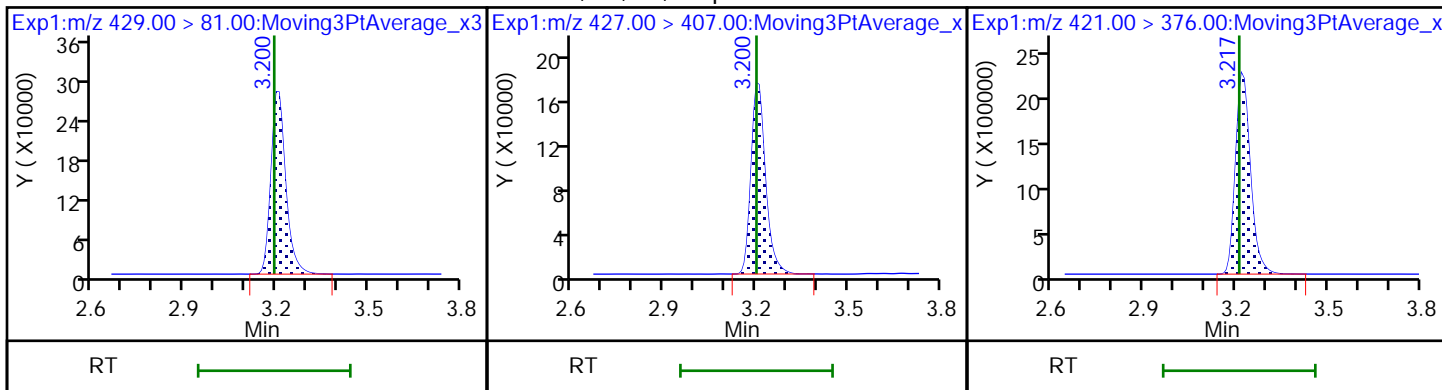
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

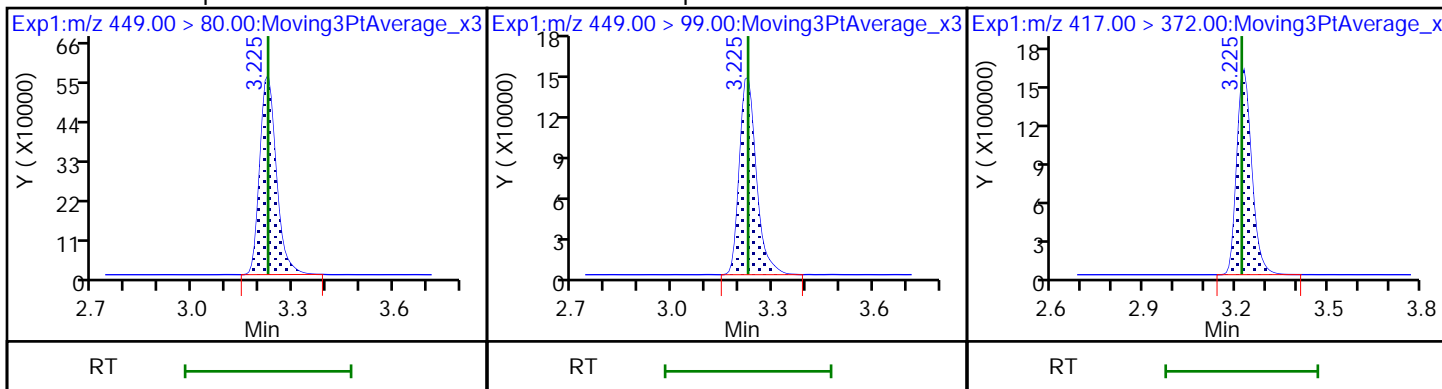
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

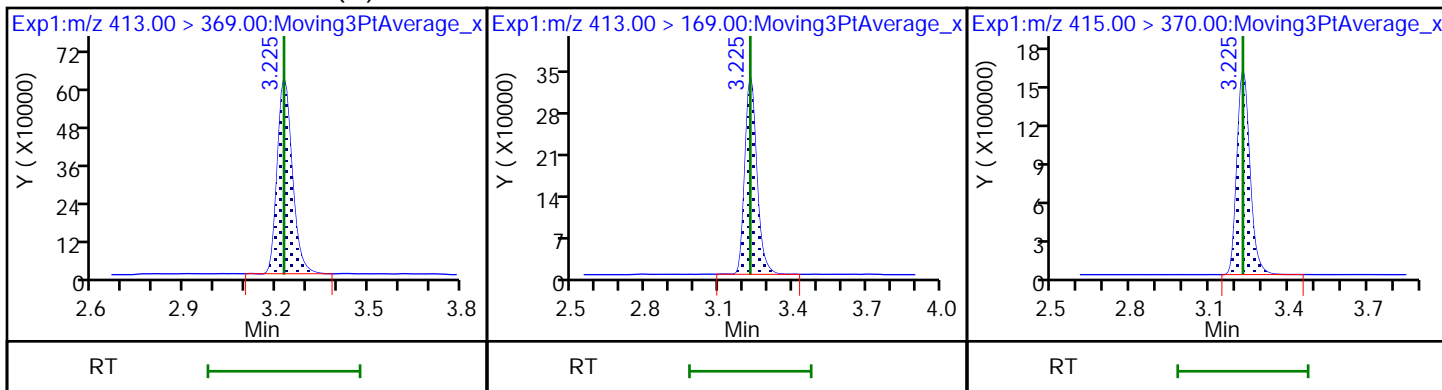
D 14 13C4 PFOA



15 Perfluorooctanoic acid (M)

15 Perfluorooctanoic acid

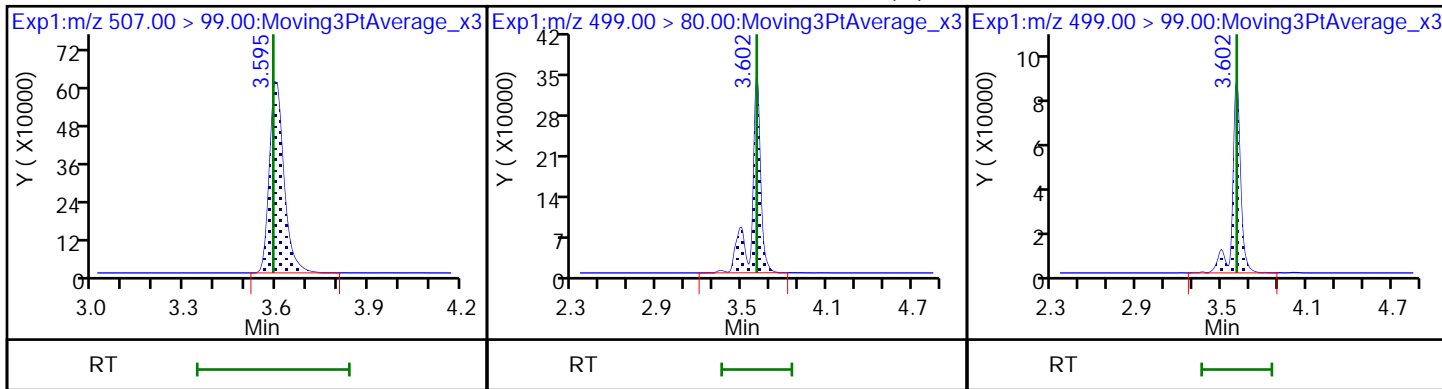
* 62 13C2 PFOA



D 72 13C8 PFOS

17 Perfluorooctanesulfonic acid (M)

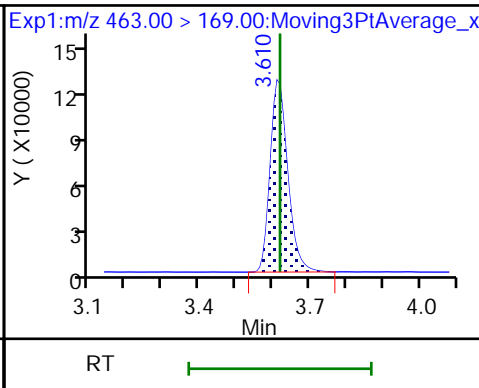
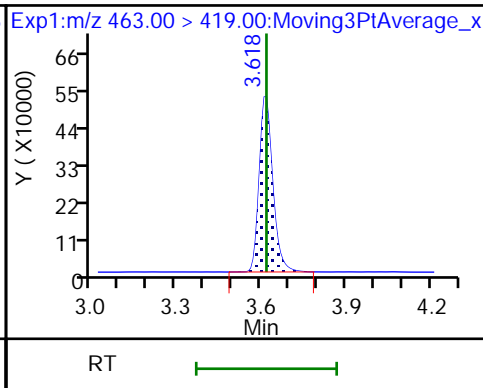
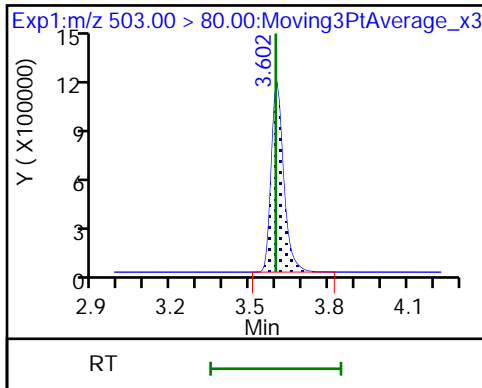
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

20 Perfluorononanoic acid

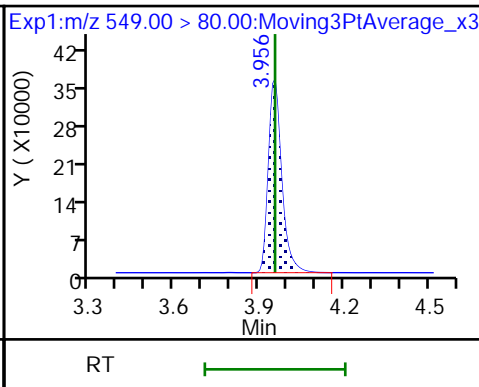
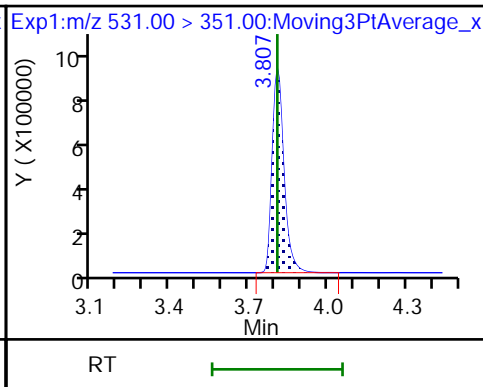
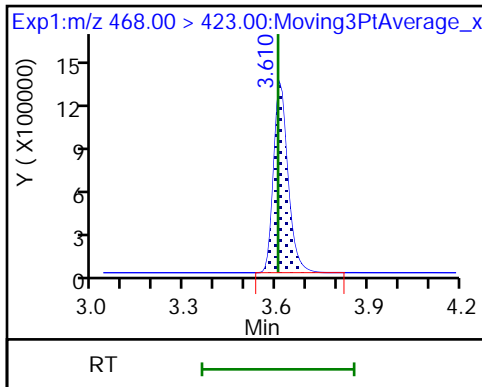
20 Perfluorononanoic acid



D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

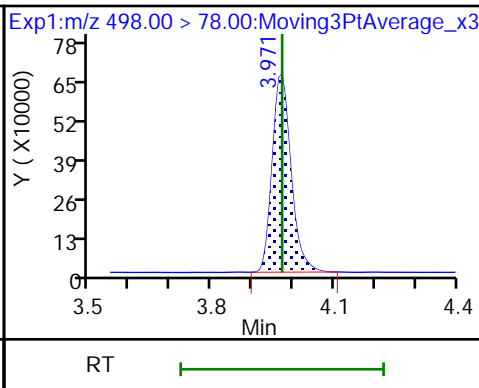
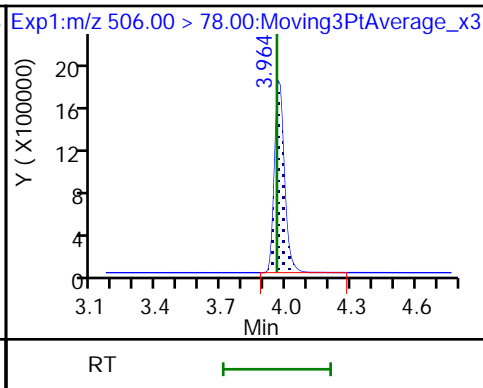
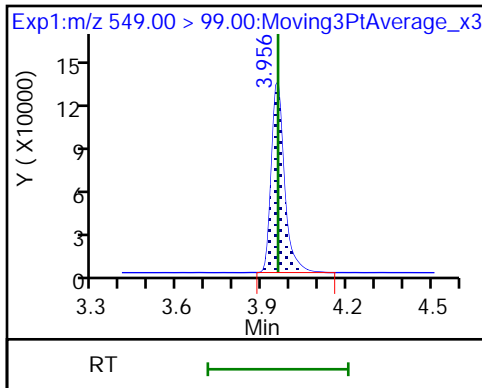
68 Perfluorononanesulfonic acid



68 Perfluorononanesulfonic acid

D 21 13C8 FOSA

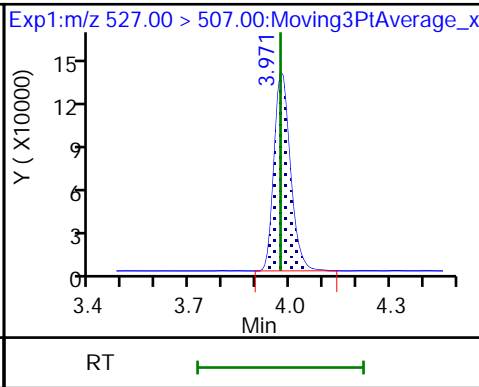
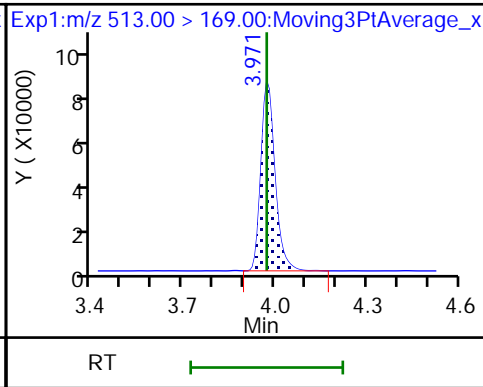
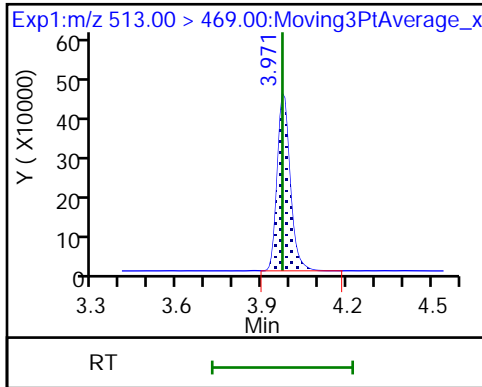
22 Perfluorooctanesulfonamide



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

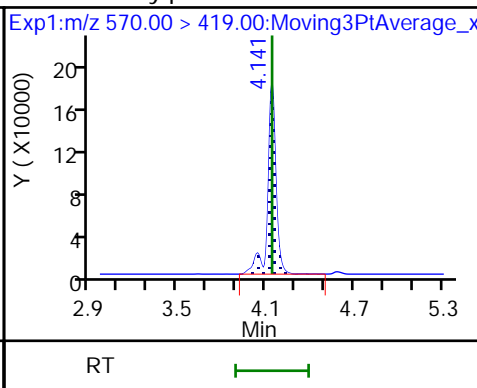
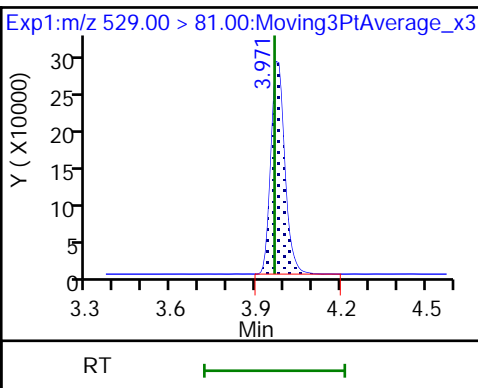
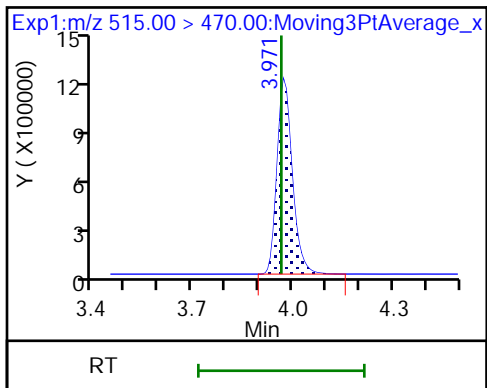
25 1H,1H,2H,2H-perfluorodecanesulfoni



D 23 13C2 PFDA

D 26 M2-8:2 FTS

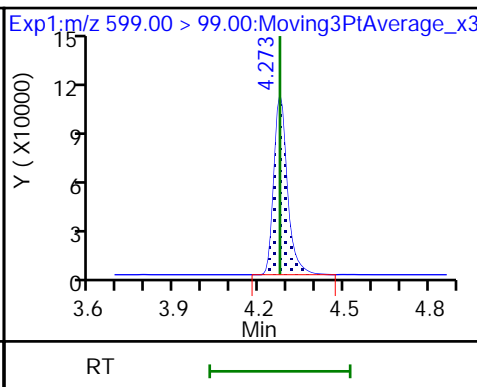
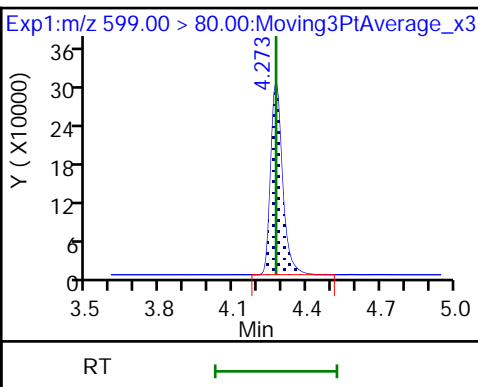
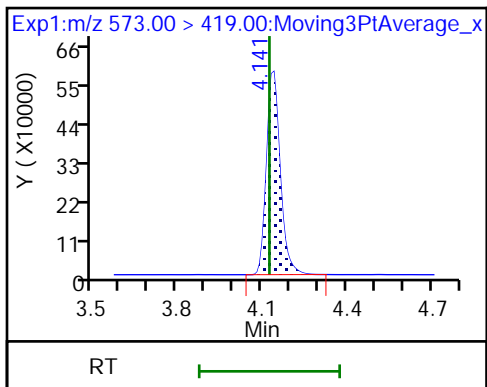
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

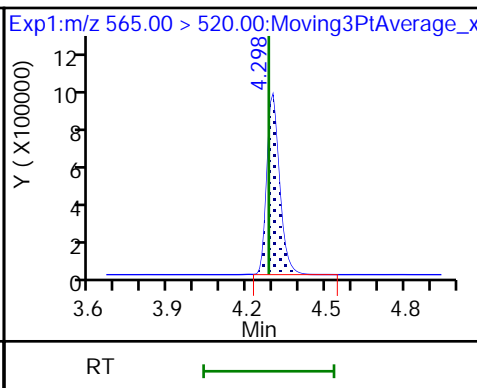
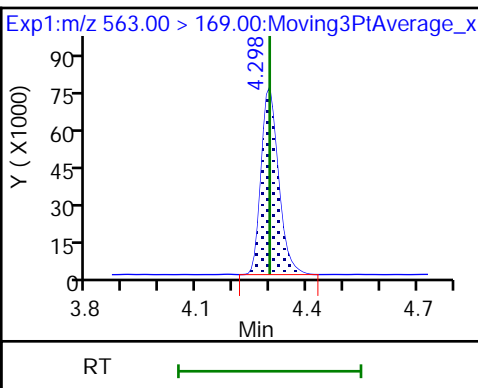
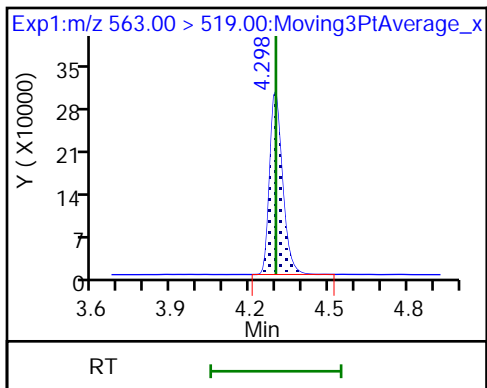
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

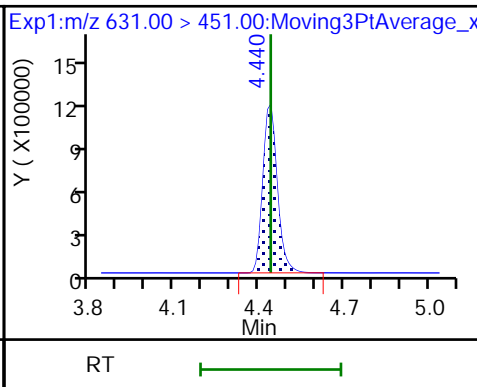
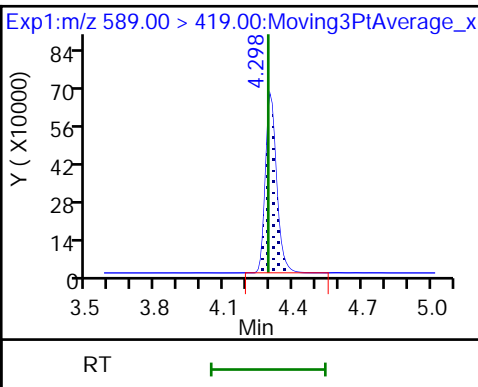
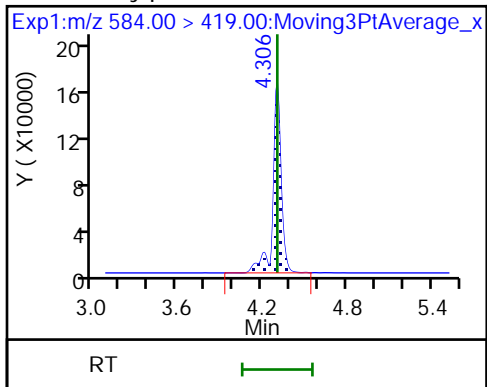
D 30 13C2 PFUnA

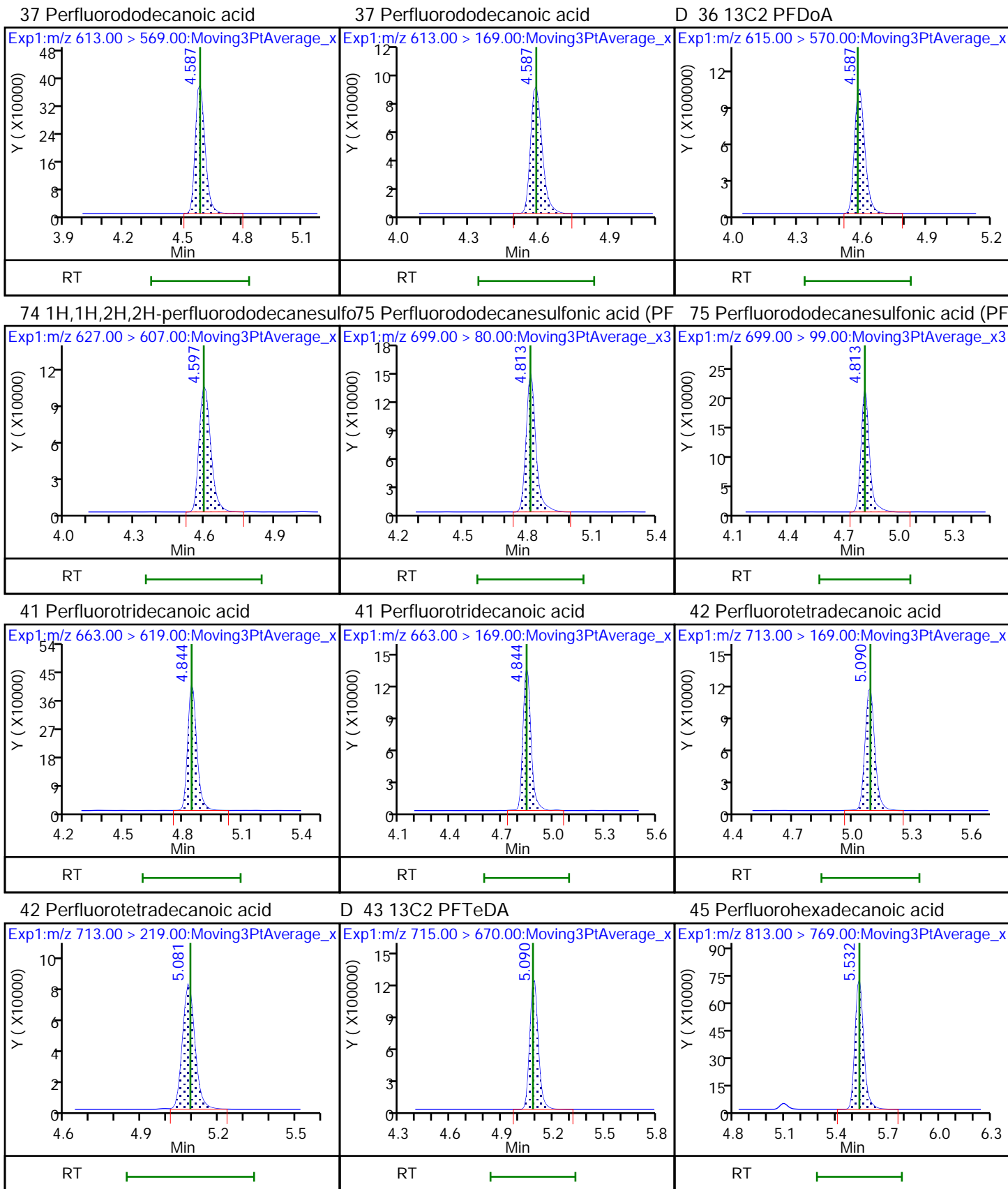


33 N-ethylperfluorooctanesulfonamido

D 32 d5-NEtFOSAA

66 11-Chloroeicosafluoro-3-oxaundecan

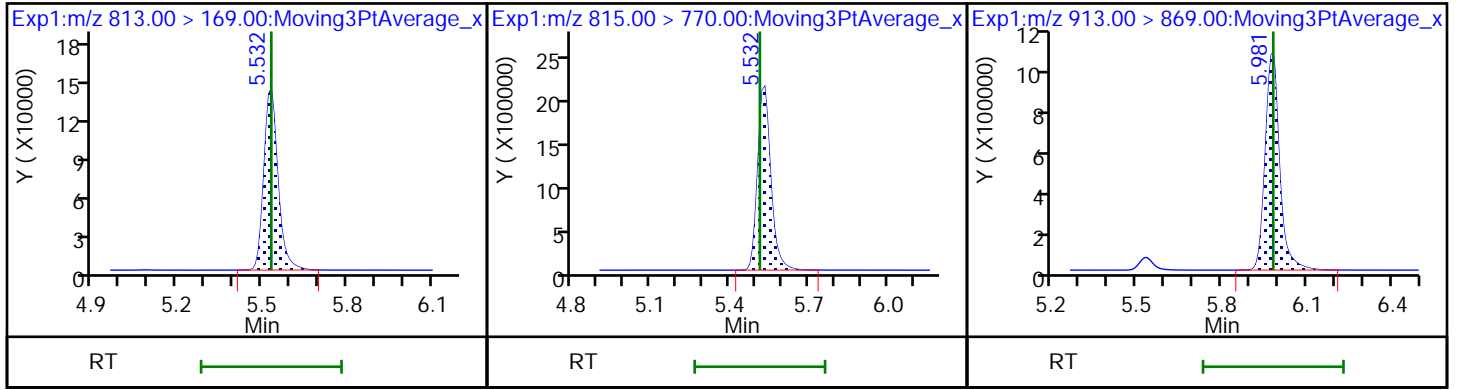




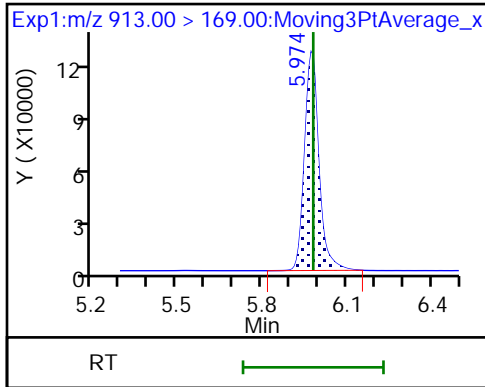
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

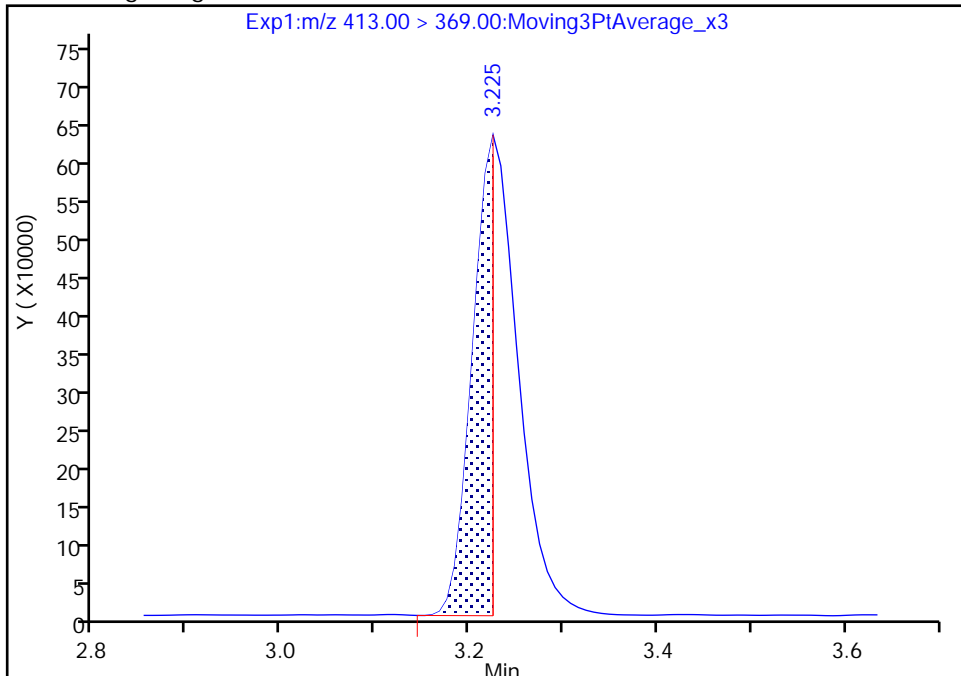
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Injection Date: 15-Dec-2018 00:09:24 Instrument ID: A8_N
Lims ID: CCV 4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

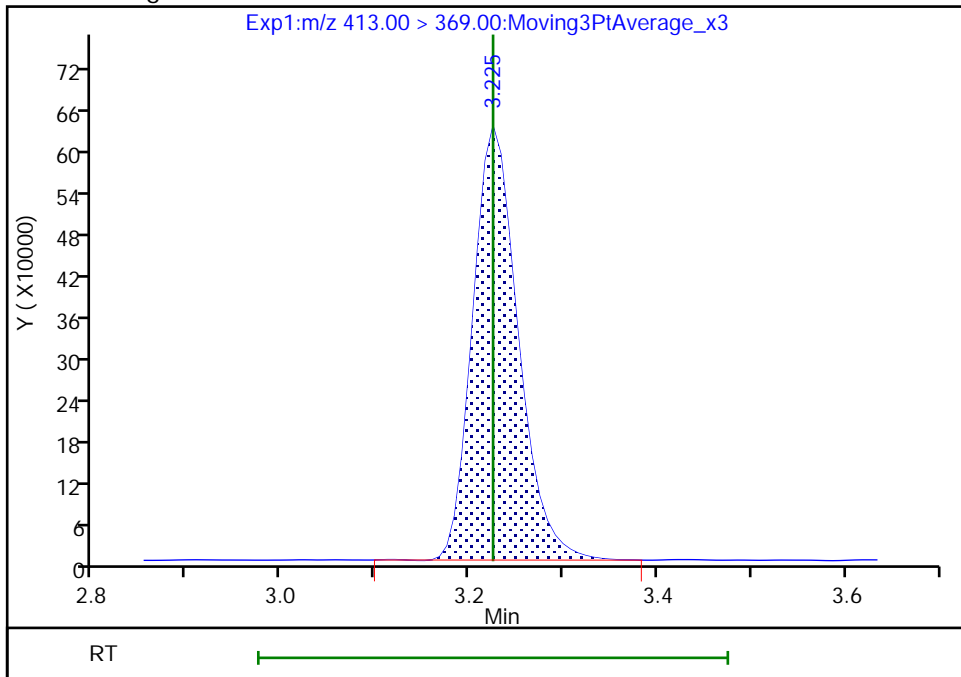
RT: 3.22
Area: 935705
Amount: 0.395525
Amount Units: ng/ml

Processing Integration Results



RT: 3.22
Area: 2118907
Amount: 0.895668
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 17-Dec-2018 14:13:18
Audit Action: Manually Integrated

Audit Reason: Incomplete Integration
Page 437 of 532

TestAmerica Sacramento

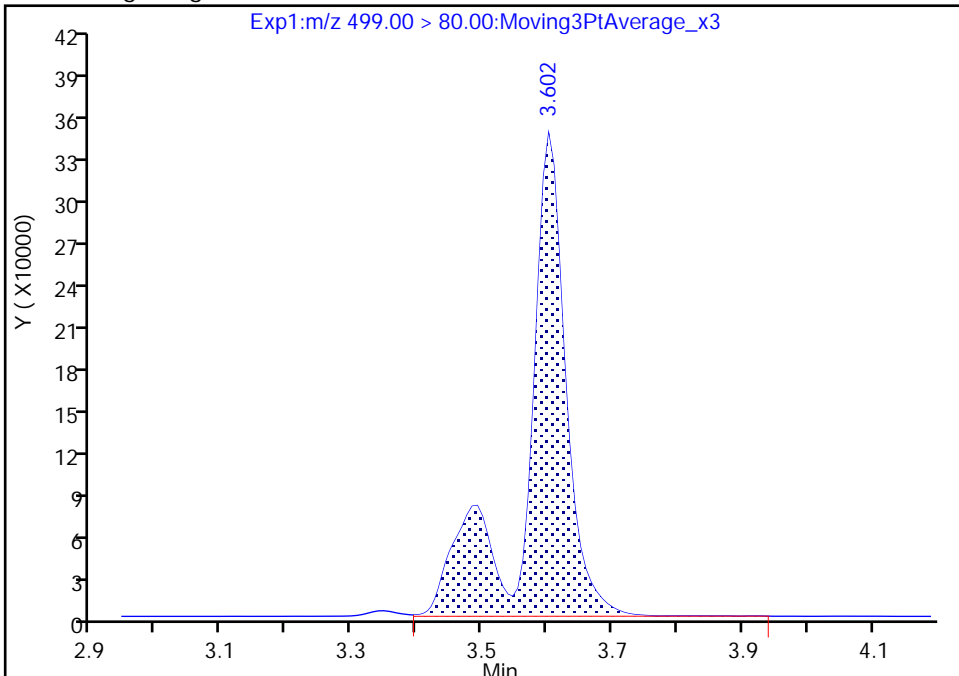
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Lims ID: CCV 4
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

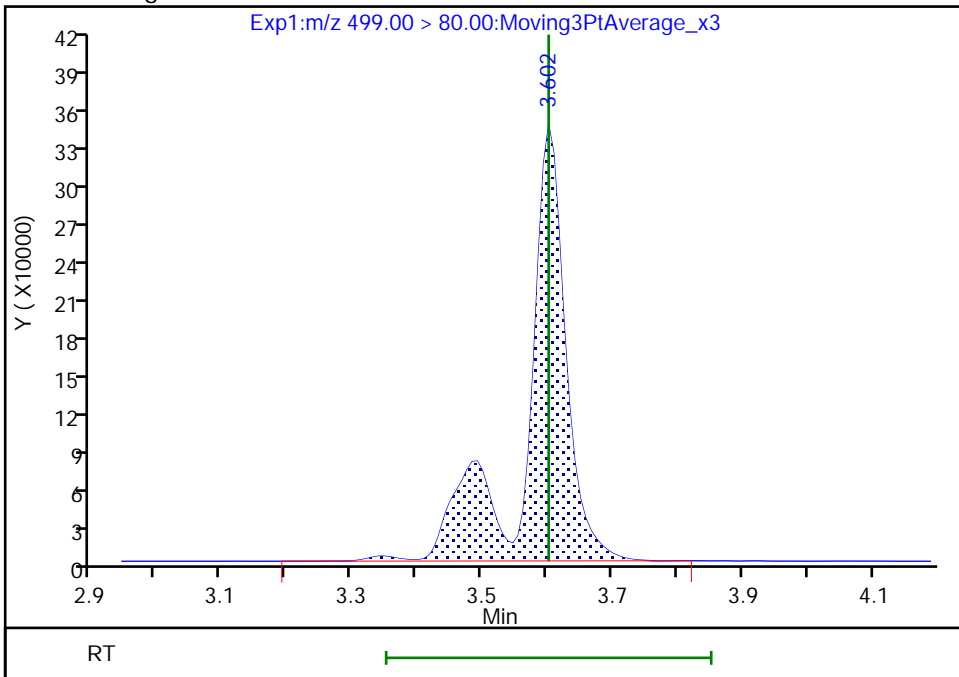
RT: 3.60
Area: 1477415
Amount: 0.821758
Amount Units: ng/ml

Processing Integration Results



RT: 3.60
Area: 1484968
Amount: 0.825960
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-260871/1-A
 Matrix: Water Lab File ID: 2018.12.05LLB_026.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 250.00 (mL) Date Analyzed: 12/06/2018 08:57
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	2.00		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	2.00		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	2.00		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	2.00		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	2.00		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	2.00		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.00		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	2.00		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	2.00		2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	2.00		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	2.00		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.00		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.313	J	2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.00		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.00		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	2.00		2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.00		2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	20.0		20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	20.0		20.0	1.90
27619-97-2	6:2 FTS	20.0		20.0	2.00
39108-34-4	8:2 FTS	20.0		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 320-260871/1-A
 Matrix: Water Lab File ID: 2018.12.05LLB_026.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 250.00 (mL) Date Analyzed: 12/06/2018 08:57
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	94		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	92		25-150
STL01892	13C4 PFHpA	94		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	98		25-150
STL00996	13C2 PFDA	97		25-150
STL00997	13C2 PFUnA	106		25-150
STL00998	13C2 PFDoA	102		25-150
STL02116	13C2 PFTeDA	109		25-150
STL02337	13C3 PFBS	90		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	103		25-150
STL01056	13C8 FOSA	96		25-150
STL02118	d3-NMeFOSAA	117		25-150
STL02117	d5-NEtFOSAA	117		25-150
STL02279	M2-6:2 FTS	114		25-150
STL02280	M2-8:2 FTS	113		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_026.d
 Lims ID: MB 320-260871/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 06-Dec-2018 08:57:34 ALS Bottle#: 17 Worklist Smp#: 2
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: mb 320-260871/1-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 14-Dec-2018 14:30:11 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0321

First Level Reviewer: mongkols Date: 14-Dec-2018 14:30:10
 Ratio Calibration: None

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	1.755	1.756	-0.001	0.545	8055013	2.35	94.2	7510	
D 3 13C5 PFPeA	267.90 > 223.00	2.073	2.074	-0.001	0.644	4901828	2.28	91.1	7777	
D 47 13C3 PFBS	301.90 > 80.00	2.105	2.105	0.0	0.653	6855920	2.09	90.0	558836	
D 7 13C2 PFHxA	315.00 > 270.00	2.432	2.432	0.0	0.755	5250906	2.31	92.3	9387	
D 64 13C3 HFPO-DA	332.10 > 287.00	2.551	2.541	0.010	0.792	387871	2.46	98.4	1525	
D 11 18O2 PFHxS	403.00 > 84.00	2.830	2.821	0.009	0.878	5647802	2.22	93.7	8690	
D 9 13C4 PFHpA	367.00 > 322.00	2.820	2.821	-0.001	0.876	5267705	2.36	94.3	11157	
8 Perfluorohexanesulfonic acid										M
	399.00 > 80.00	2.820	2.830	-0.010	0.997	20265	0.007816	Target=3.00	115	M
	399.00 > 99.00	2.820	2.830	-0.010	0.997	6640		3.05(1.50-4.49)	21.3	M
D 12 M2-6:2 FTS	429.00 > 81.00	3.196	3.197	-0.001	0.992	1063210	2.71	114	5721	
D 73 13C8 PFOA	421.00 > 376.00	3.213	3.213	0.0	0.997	29573	0.009194	0.0	250	
D 14 13C4 PFOA	417.00 > 372.00	3.221	3.213	0.008	1.000	5362470	2.46	98.3	13574	
* 62 13C2 PFOA	415.00 > 370.00	3.221	3.222	-0.001		5603735	2.50		9750	
D 18 13C4 PFOS	503.00 > 80.00	3.603	3.590	0.013	1.118	4103415	2.46	103	10555	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 19 13C5 PFNA	468.00 > 423.00	3.610	3.606	0.004	1.121	4461565	2.44	97.6	11366	
69 9-Chlorohexadecafluoro-3-oxanonane	531.00 > 351.00	3.808	3.803	0.005	1.057	1350	0.000392		6.9	
D 21 13C8 FOSA	506.00 > 78.00	3.964	3.957	0.007	1.231	5925371	2.41	96.4	7224	
D 23 13C2 PFDA	515.00 > 470.00	3.972	3.965	0.007	1.233	3889811	2.44	97.5	9168	
D 26 M2-8:2 FTS	529.00 > 81.00	3.972	3.965	0.007	1.233	1148897	2.71	113	5374	
D 27 d3-NMeFOSAA	573.00 > 419.00	4.132	4.125	0.007	1.283	2280699	2.93	117	8418	
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	4.141	4.135	0.006	1.002	2212	0.002577		2.2	M
D 30 13C2 PFUnA	565.00 > 520.00	4.295	4.282	0.013	1.333	3405742	2.65	106	7260	
D 32 d5-NEtFOSAA	589.00 > 419.00	4.295	4.282	0.013	1.333	2418705	2.94	117	3051	
31 Perfluoroundecanoic acid	563.00 > 519.00	4.295	4.292	0.003	1.000	6096	0.005001	Target=4.24	5.8	
66 11-Chloroeicosafuoro-3-oxaundecan	563.00 > 169.00	4.279	4.292	-0.013	0.996	2215		2.75(2.12-6.36)	14.6	
D 36 13C2 PFDaA	615.00 > 570.00	4.584	4.569	0.015	1.423	3485142	2.55	102	6667	
D 43 13C2 PFTeDA	715.00 > 670.00	5.090	5.070	0.020	1.580	4415002	2.71	109	12348	
42 Perfluorotetradecanoic acid	713.00 > 169.00	5.081	5.081	0.0	0.998	1859	0.004069	Target=1.42	29.7	
	713.00 > 219.00	5.090	5.081	0.009	1.000	1263		1.47(0.71-2.13)	18.3	
D 44 13C2 PFHxDA	815.00 > 770.00	5.523	5.512	0.011	1.715	7171204	2.39	95.4	8976	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.532	5.523	0.009	1.002	61001	-0.000282	Target=5.72	7.0	
	813.00 > 169.00	5.532	5.523	0.009	1.002	12075		5.05(2.86-8.58)	90.9	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_026.d

Injection Date: 06-Dec-2018 08:57:34

Instrument ID: A8_N

Lims ID: MB 320-260871/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 2

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

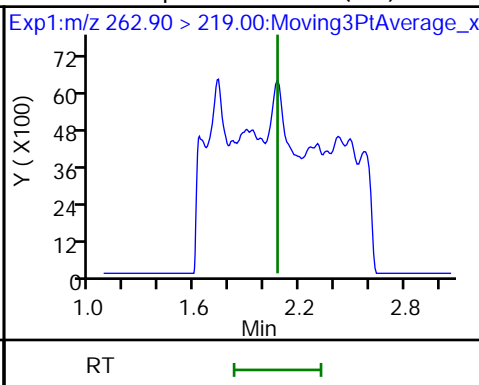
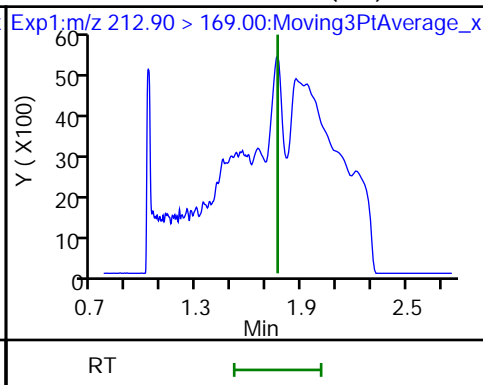
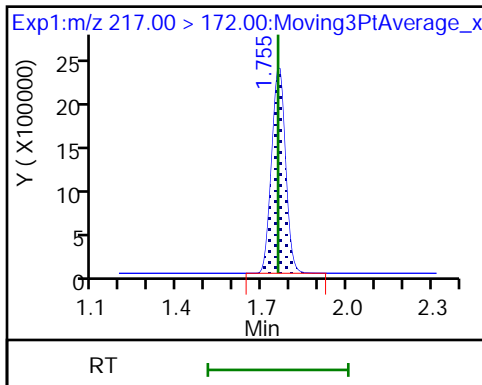
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (ND)

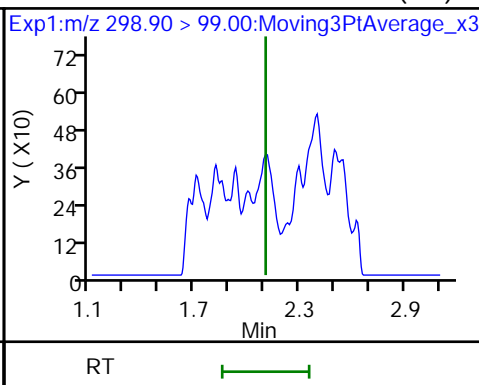
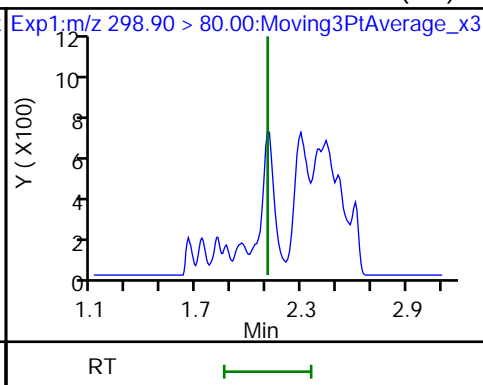
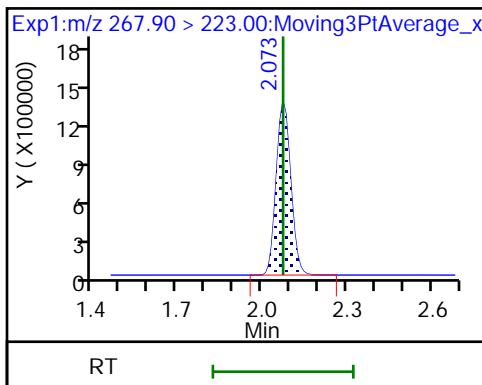
4 Perfluoropentanoic acid (ND)



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid (ND)

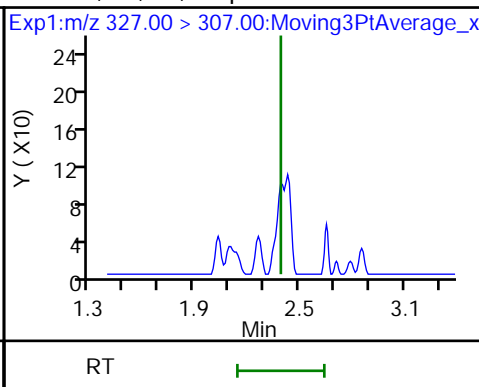
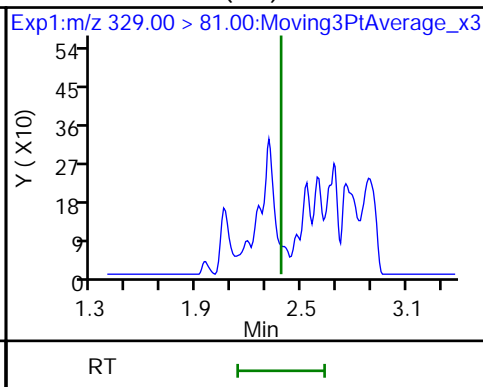
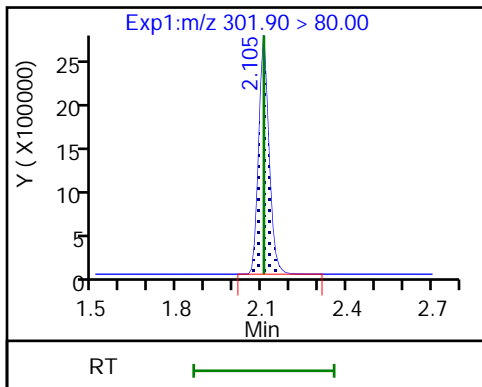
5 Perfluorobutanesulfonic acid (ND)



D 47 13C3 PFBS

D 60 M2-4:2 FTS (ND)

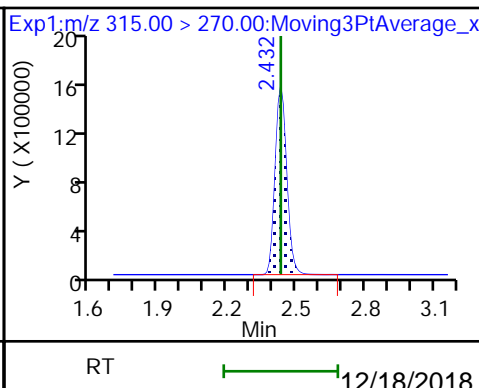
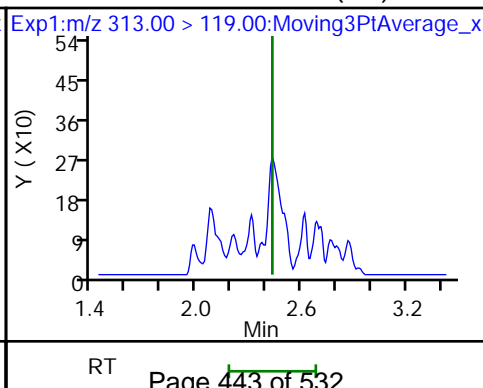
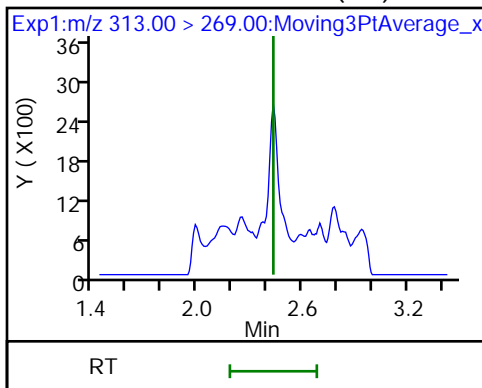
61 1H,1H,2H,2H-perfluorohexanesulfoni (ND)



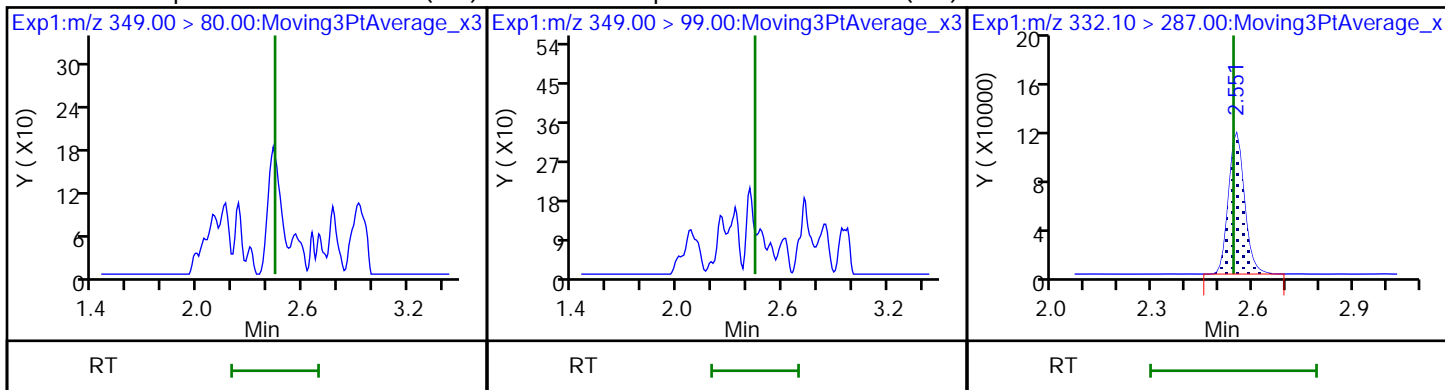
6 Perfluorohexanoic acid (ND)

6 Perfluorohexanoic acid (ND)

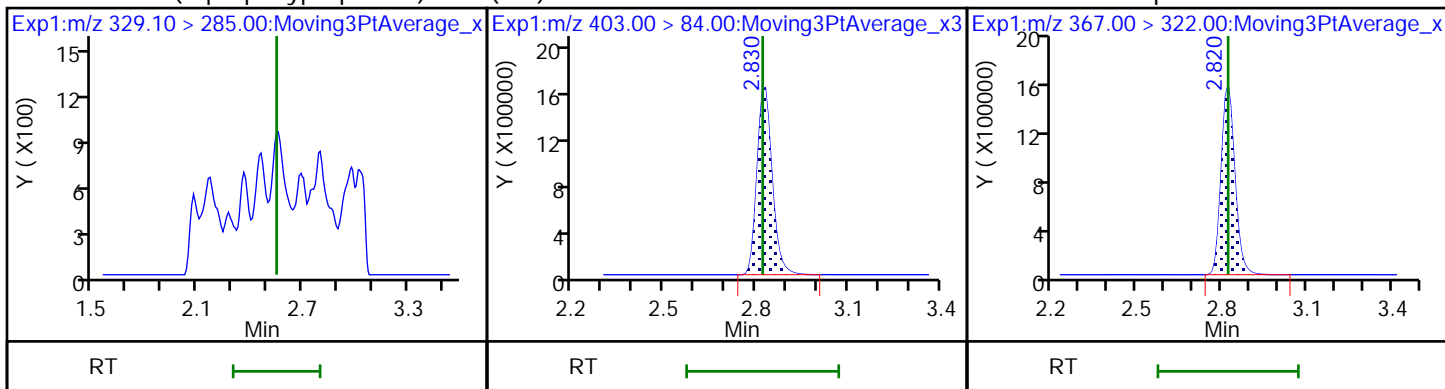
D 7 13C2 PFHxA



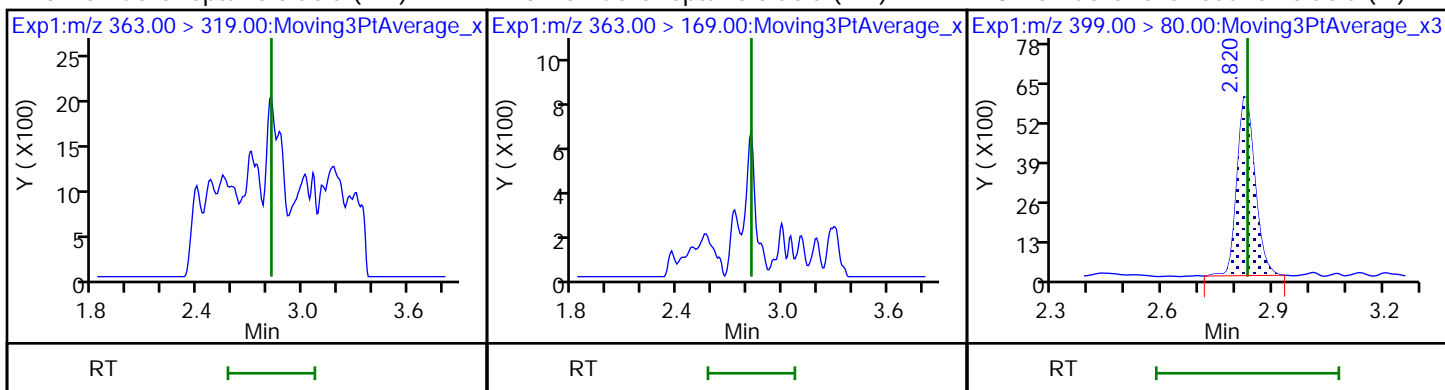
70 Perfluoropentanesulfonic acid (ND) 70 Perfluoropentanesulfonic acid (ND) D 64 13C3 HFPO-DA



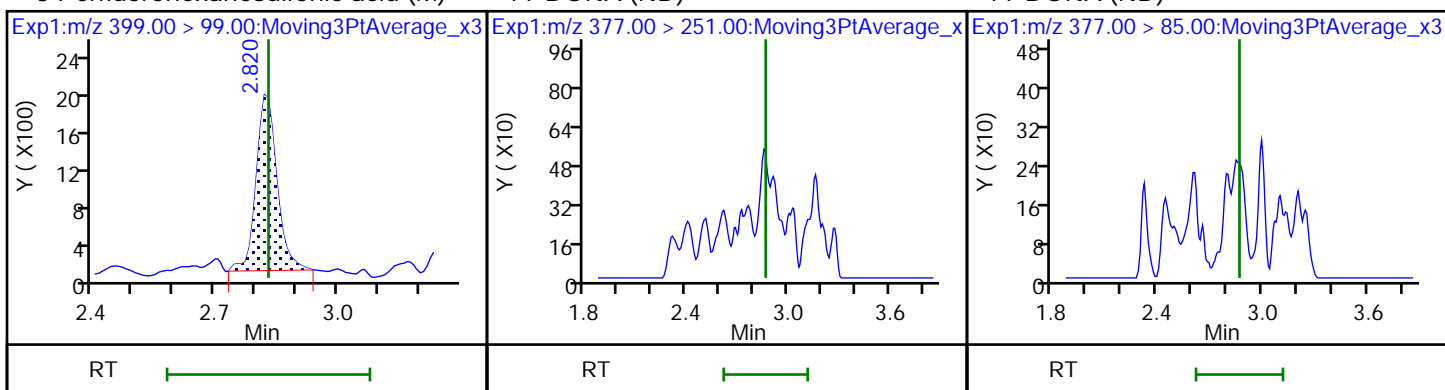
67 Perfluoro(2-propoxypropanoic) acid (ND) 18O2 PFHxS D 9 13C4 PFHpA



10 Perfluoroheptanoic acid (ND) 10 Perfluoroheptanoic acid (ND) 8 Perfluorohexanesulfonic acid (M)

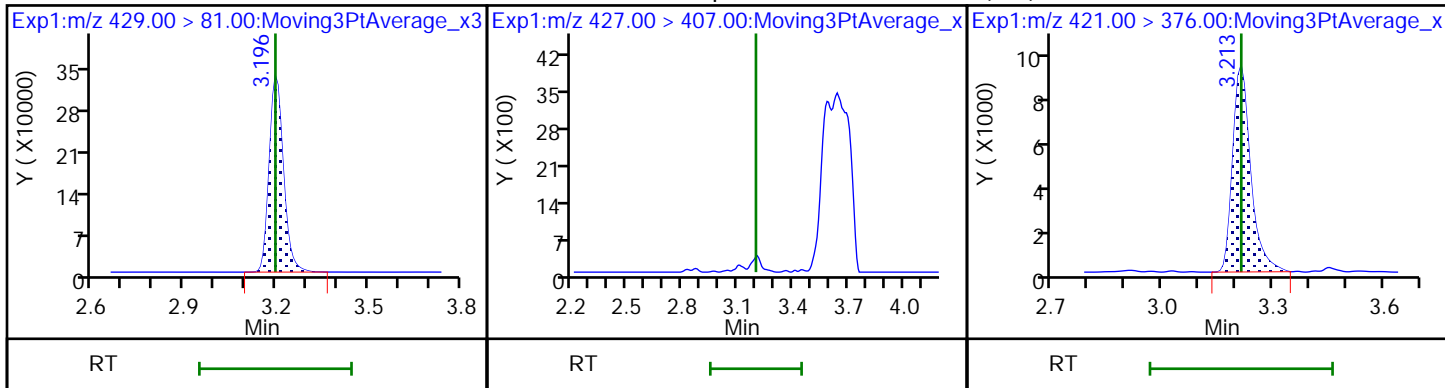


8 Perfluorohexanesulfonic acid (M) 77 DONA (ND) 77 DONA (ND)



D 12 M2-6:2 FTS

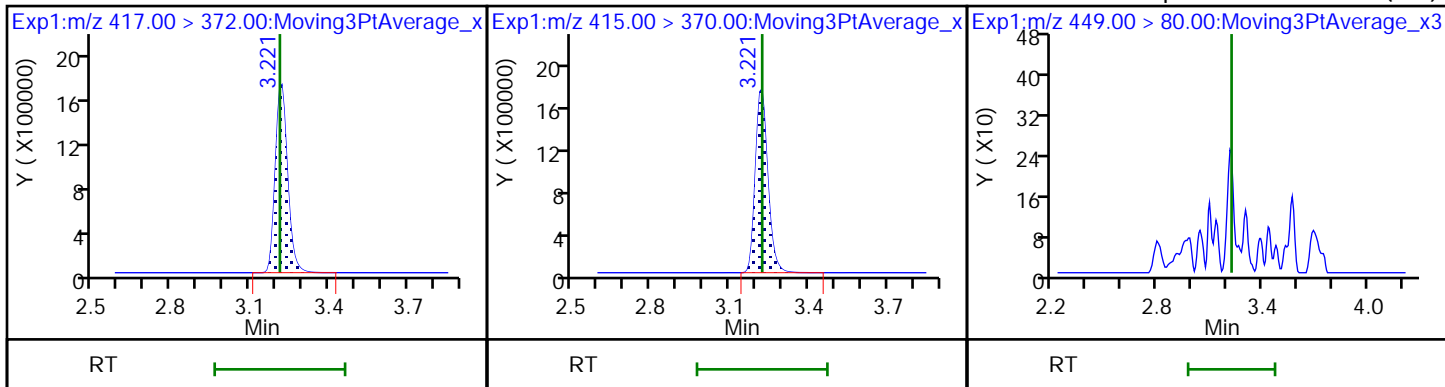
13 1H,1H,2H,2H-perfluorooctanesulfonate (ND) 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

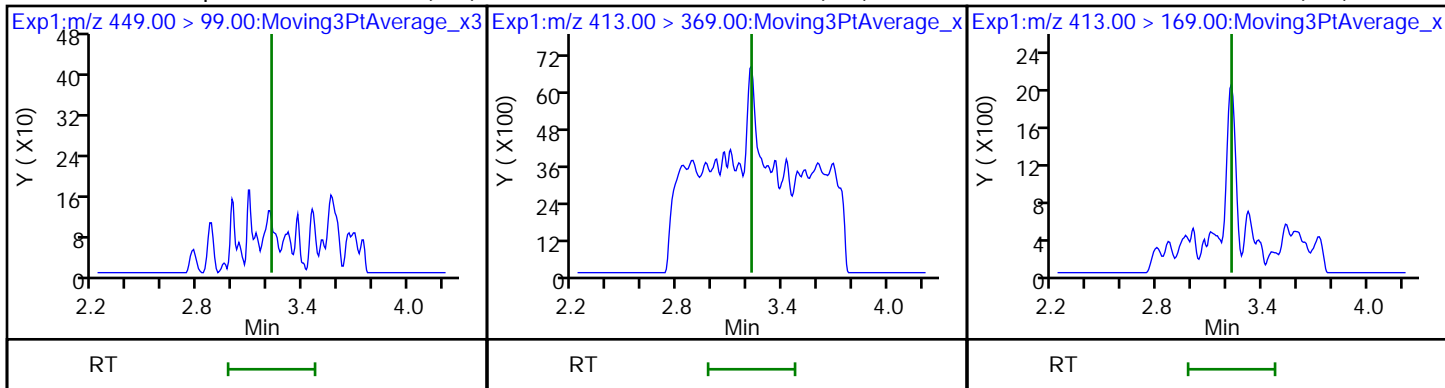
16 Perfluoroheptanesulfonic acid (ND)



16 Perfluoroheptanesulfonic acid (ND)

15 Perfluorooctanoic acid (ND)

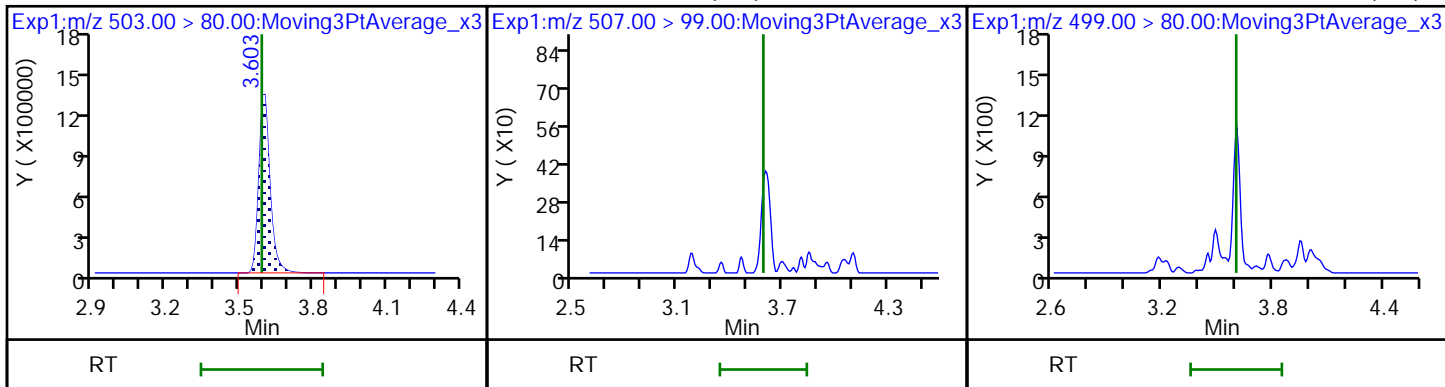
15 Perfluorooctanoic acid (ND)



D 18 13C4 PFOS

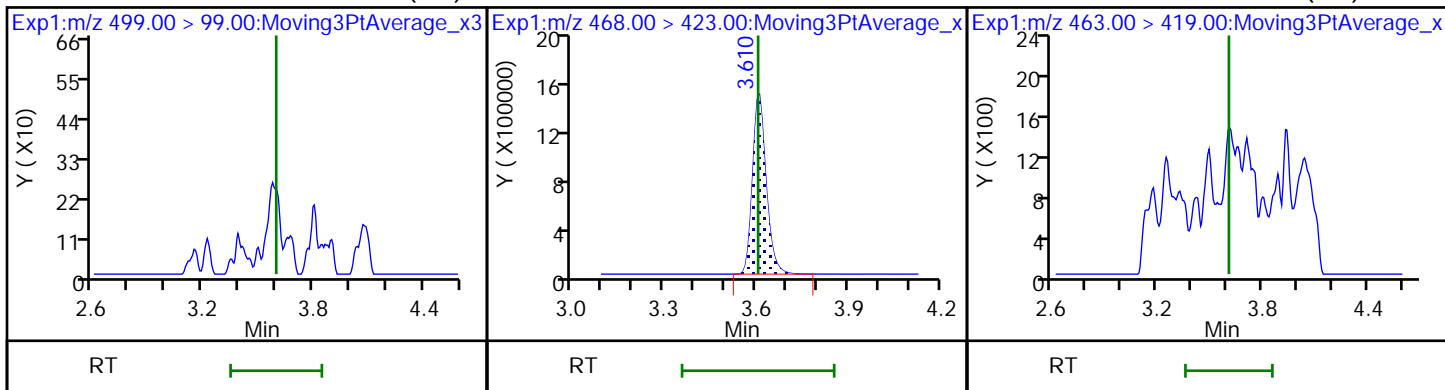
D 72 13C8 PFOS (ND)

17 Perfluorooctanesulfonic acid (ND)



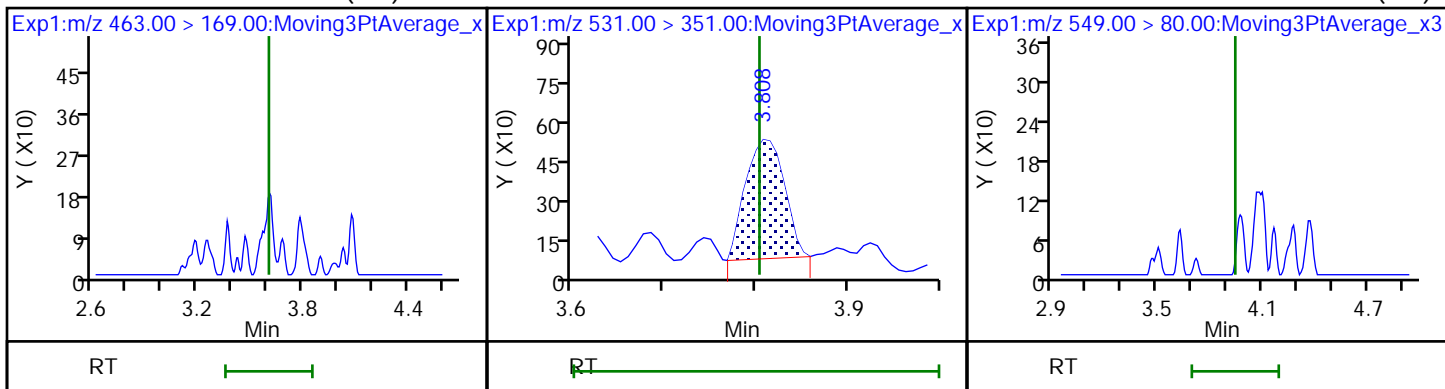
17 Perfluorooctanesulfonic acid (ND) D 19 13C5 PFNA

20 Perfluorononanoic acid (ND)



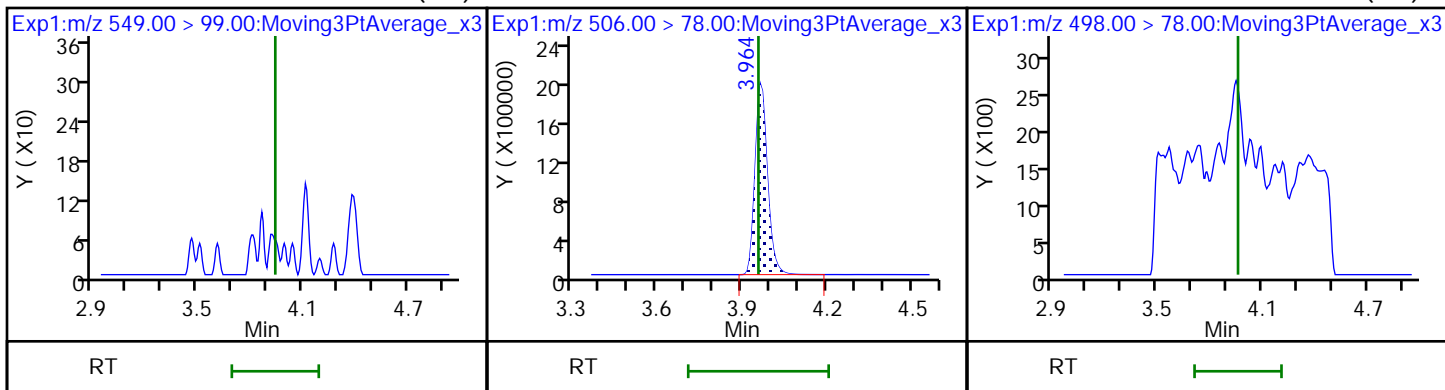
20 Perfluorononanoic acid (ND)

69 9-Chlorohexadecafluoro-3-oxanonan-68 Perfluoronanesulfonic acid (ND)



68 Perfluoronanesulfonic acid (ND) D 21 13C8 FOSA

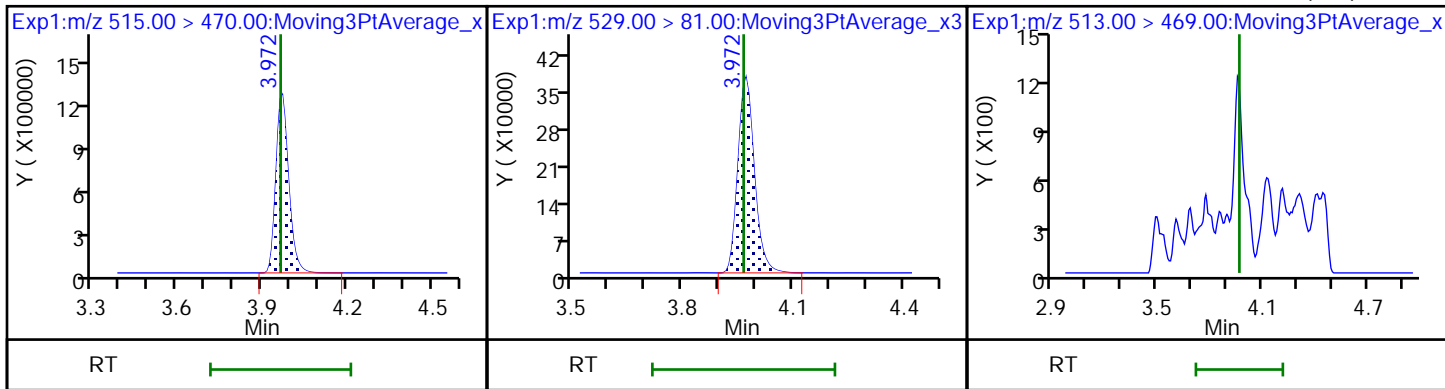
22 Perfluorooctanesulfonamide (ND)



D 23 13C2 PFDA

D 26 M2-8:2 FTS

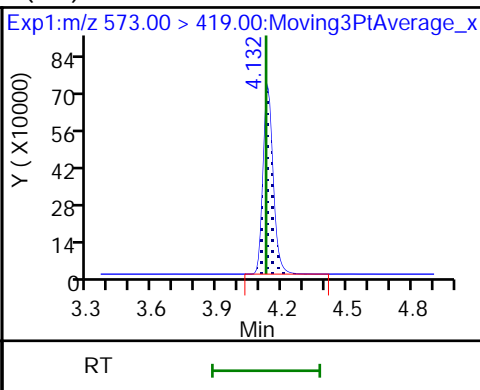
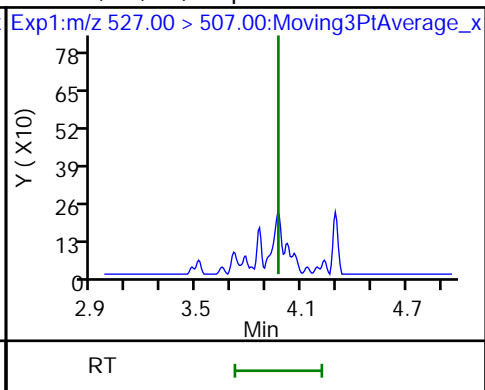
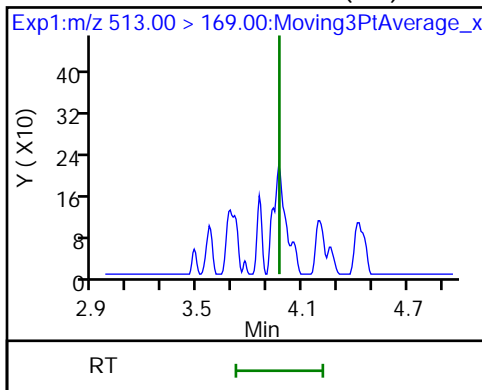
24 Perfluorodecanoic acid (ND)



24 Perfluorodecanoic acid (ND)

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

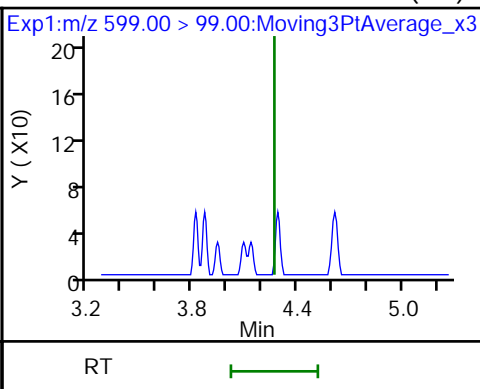
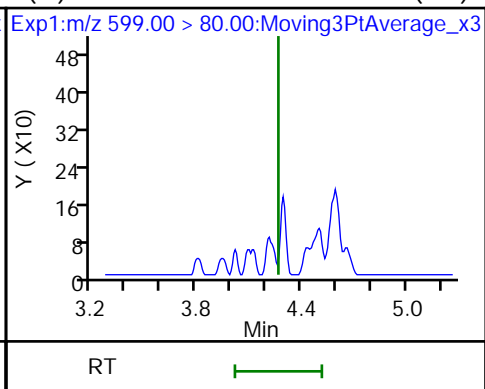
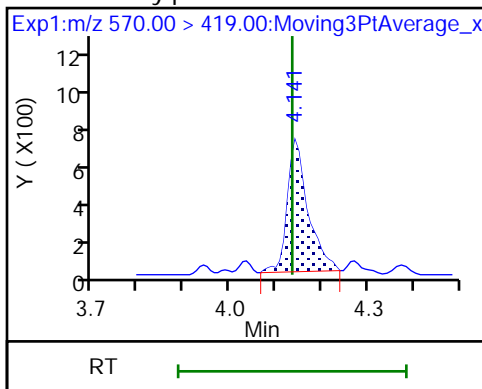
26 D13-NMeFOSAA



28 N-methylperfluorooctanesulfonamide (ND)

29 Perfluorodecanesulfonic acid (ND)

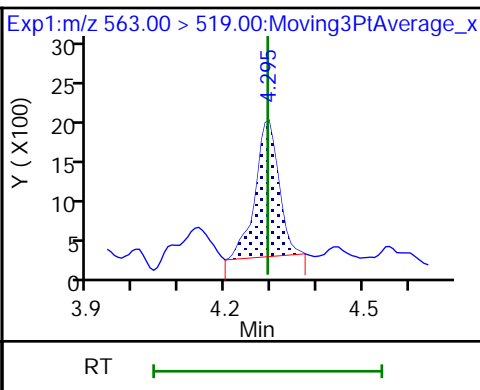
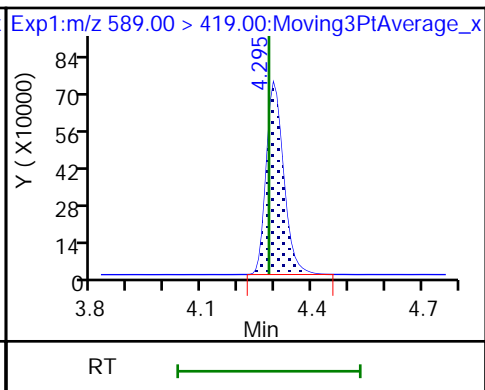
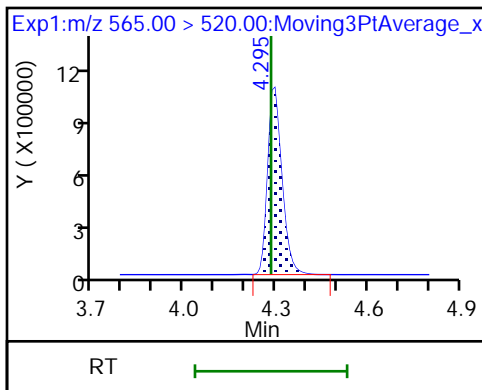
30 Perfluorodecanesulfonic acid (ND)



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

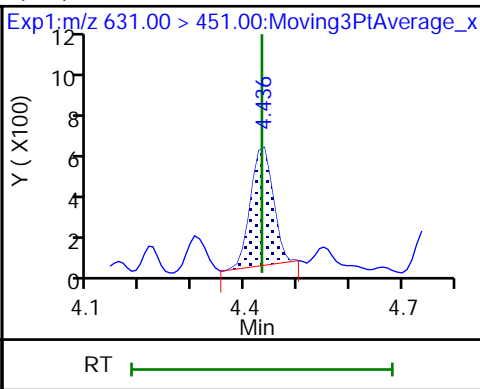
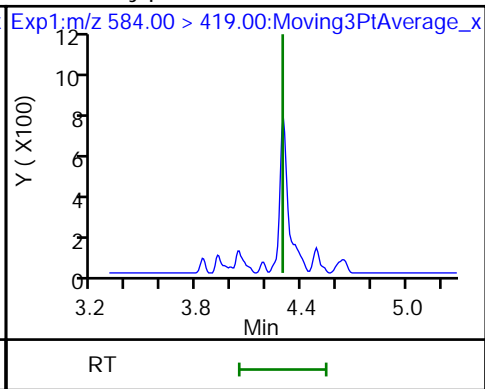
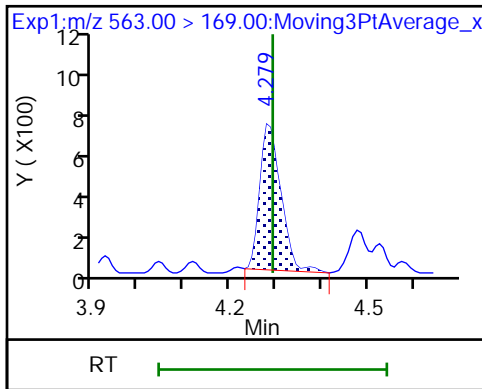
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

33 N-ethylperfluorooctanesulfonamide (ND)

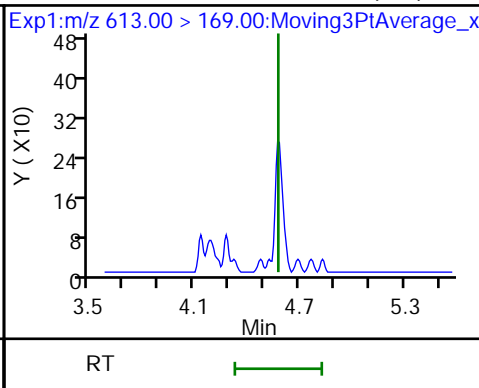
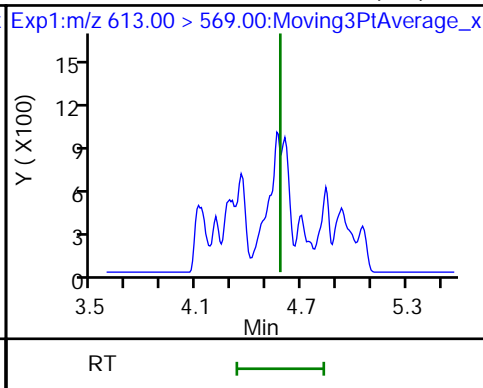
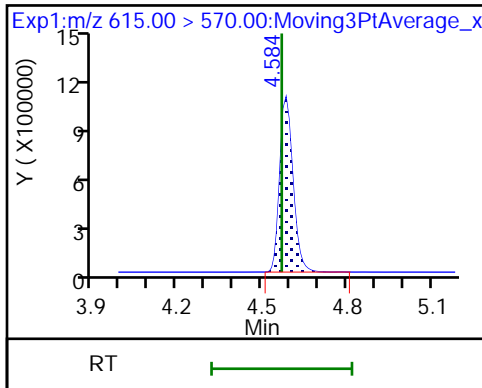
34 1-Chloroeicosafluoro-3-oxaundecan



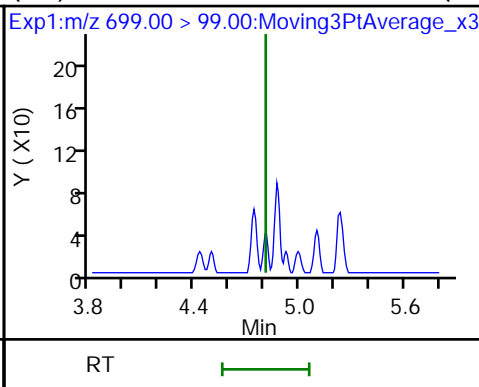
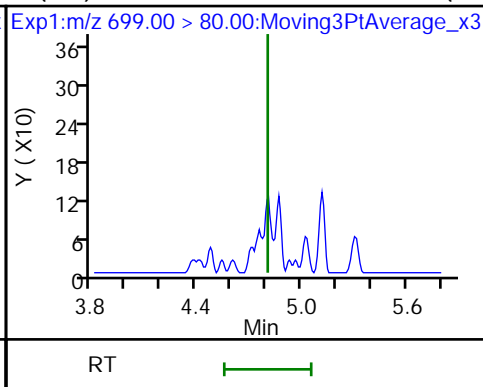
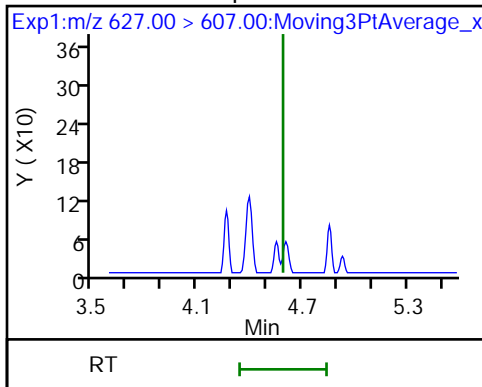
D 36 13C2 PFDaA

37 Perfluorododecanoic acid (ND)

37 Perfluorododecanoic acid (ND)



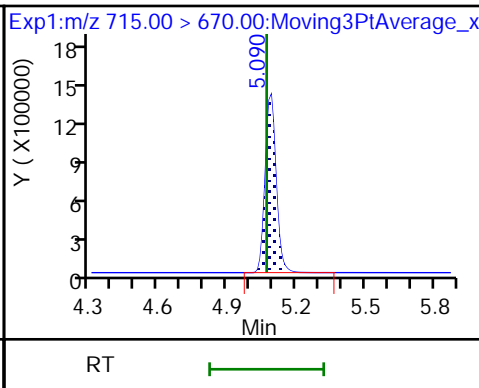
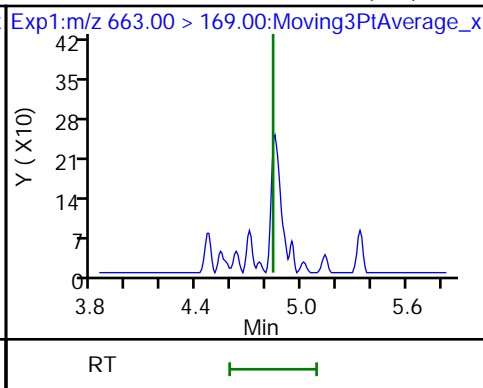
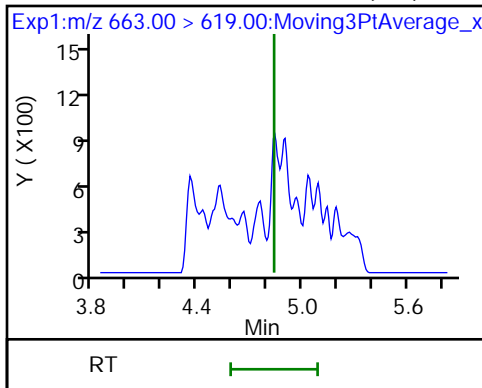
74 1H,1H,2H,2H-perfluorododecanesulfonic acid (PF (ND)) Perfluorododecanesulfonic acid (PF (ND)) Perfluorododecanesulfonic acid (PF (ND))



41 Perfluorotridecanoic acid (ND)

41 Perfluorotridecanoic acid (ND)

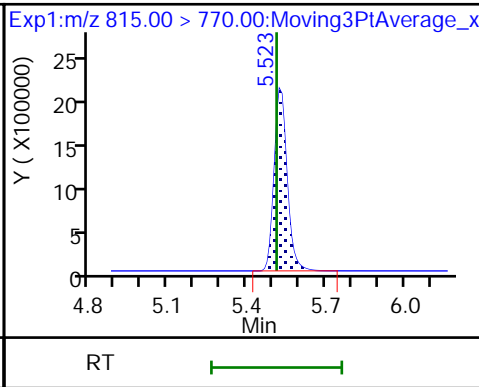
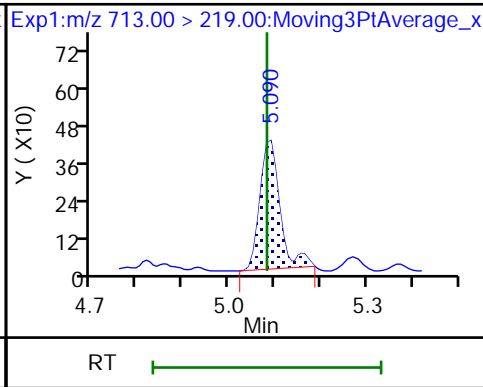
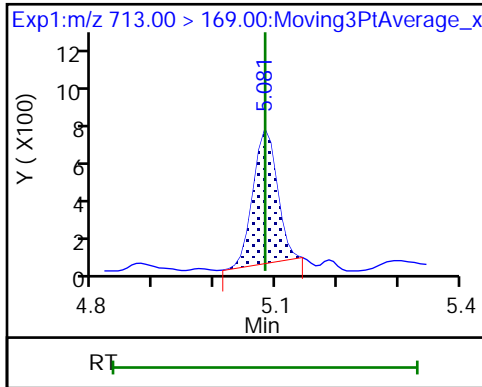
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

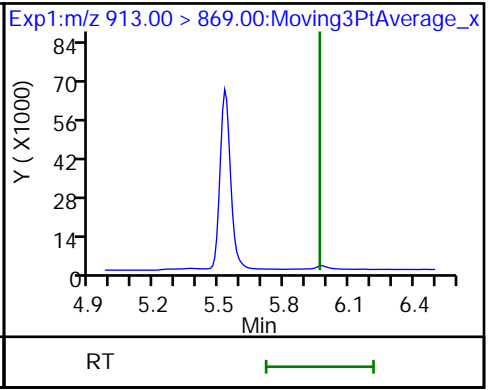
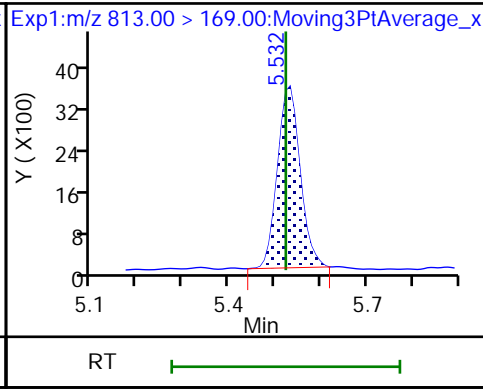
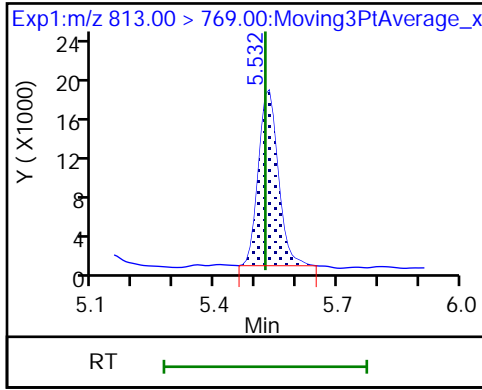
D 44 13C2 PFHxDA



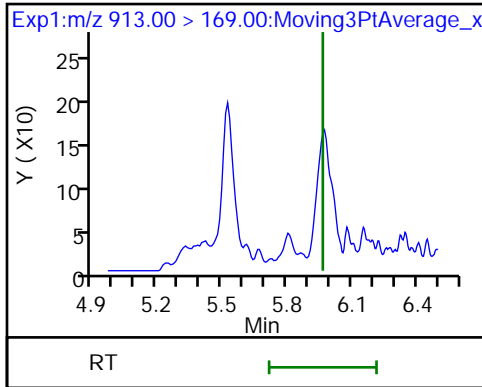
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid (ND)



46 Perfluorooctadecanoic acid (ND)



TestAmerica Sacramento

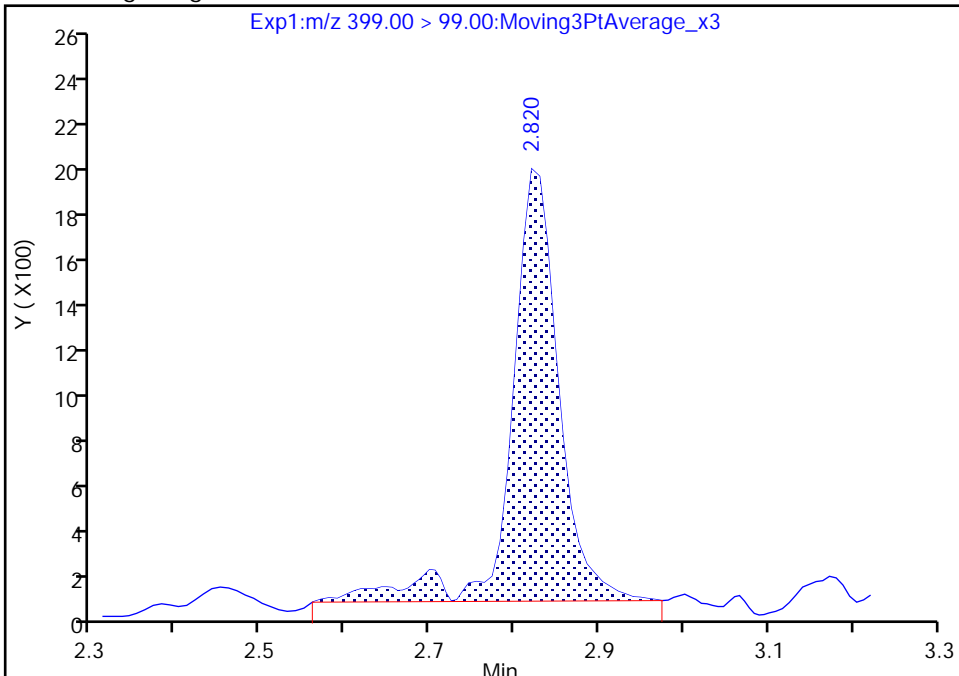
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_026.d
Injection Date: 06-Dec-2018 08:57:34 Instrument ID: A8_N
Lims ID: MB 320-260871/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

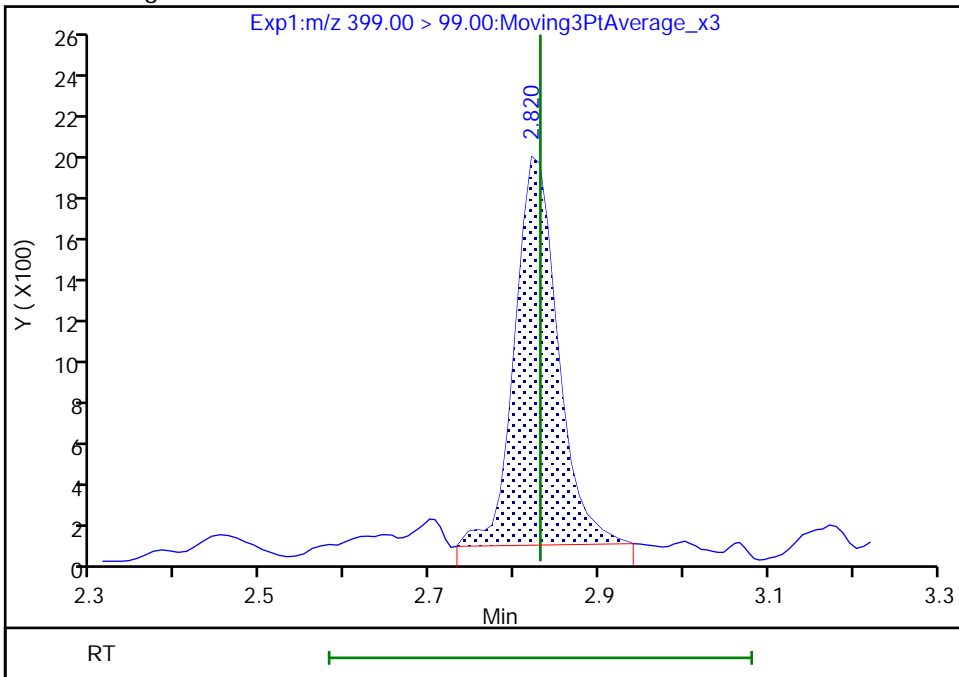
RT: 2.82
Area: 7369
Amount: 0.008108
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 6640
Amount: 0.007816
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

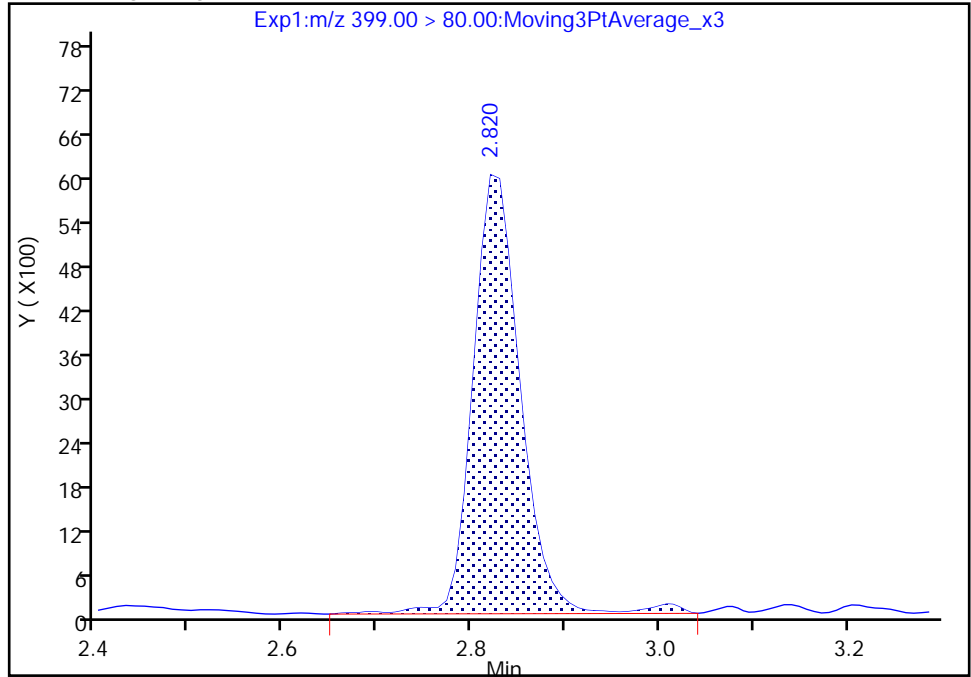
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Injection Date: 06-Dec-2018 08:57:34 Instrument ID: A8_N
Lims ID: MB 320-260871/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

8 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

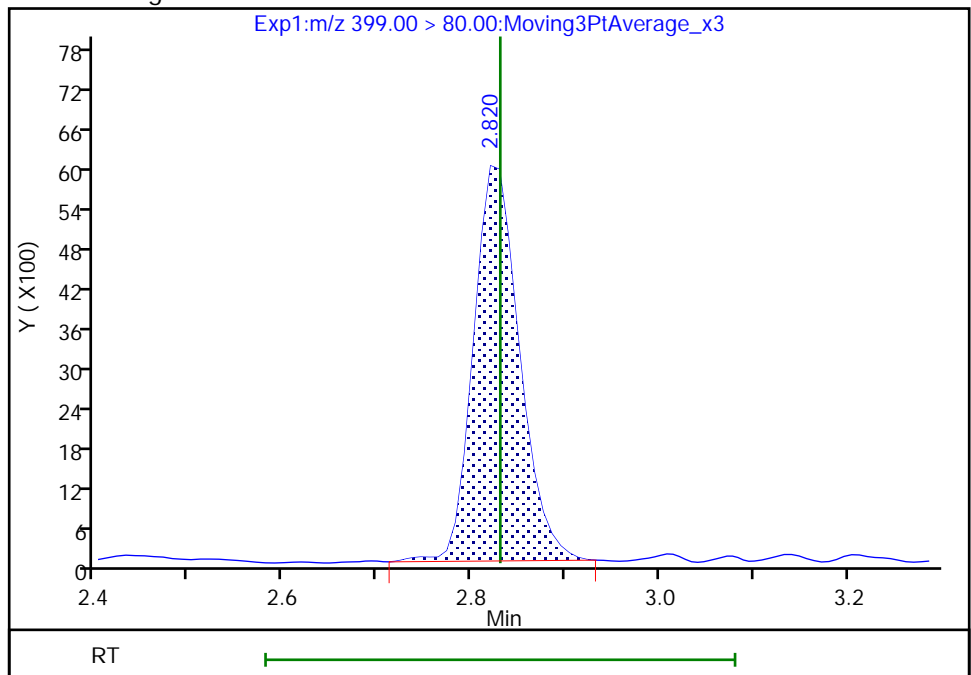
RT: 2.82
Area: 21022
Amount: 0.008108
Amount Units: ng/ml

Processing Integration Results



RT: 2.82
Area: 20265
Amount: 0.007816
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 14-Dec-2018 14:29:53

Audit Action: Manually Integrated

TestAmerica Sacramento

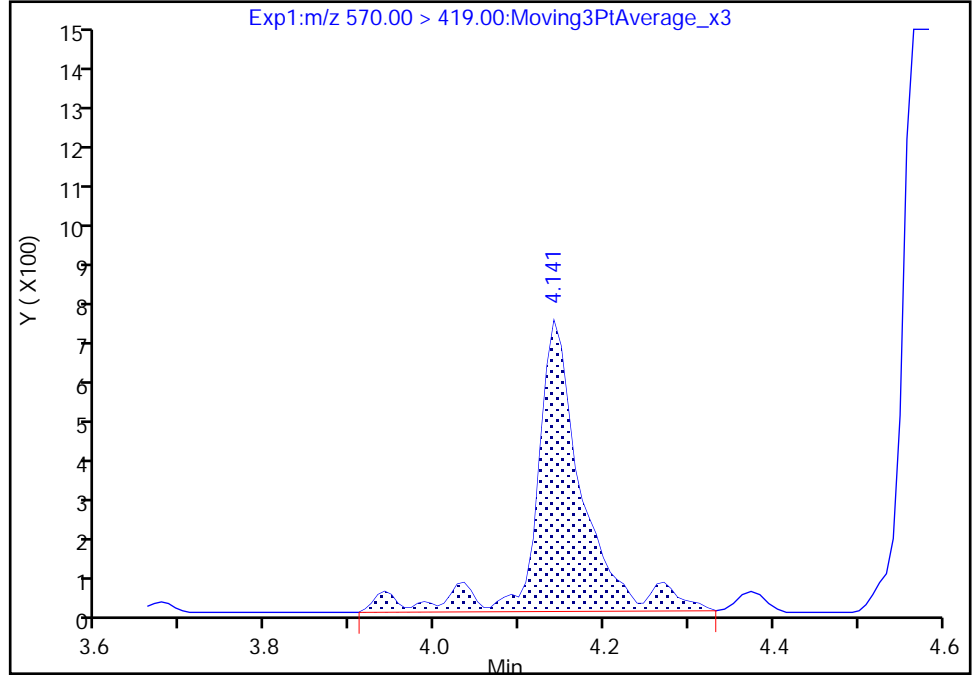
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Injection Date: 06-Dec-2018 08:57:34 Instrument ID: A8_N
Lims ID: MB 320-260871/1-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

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

Signal: 1

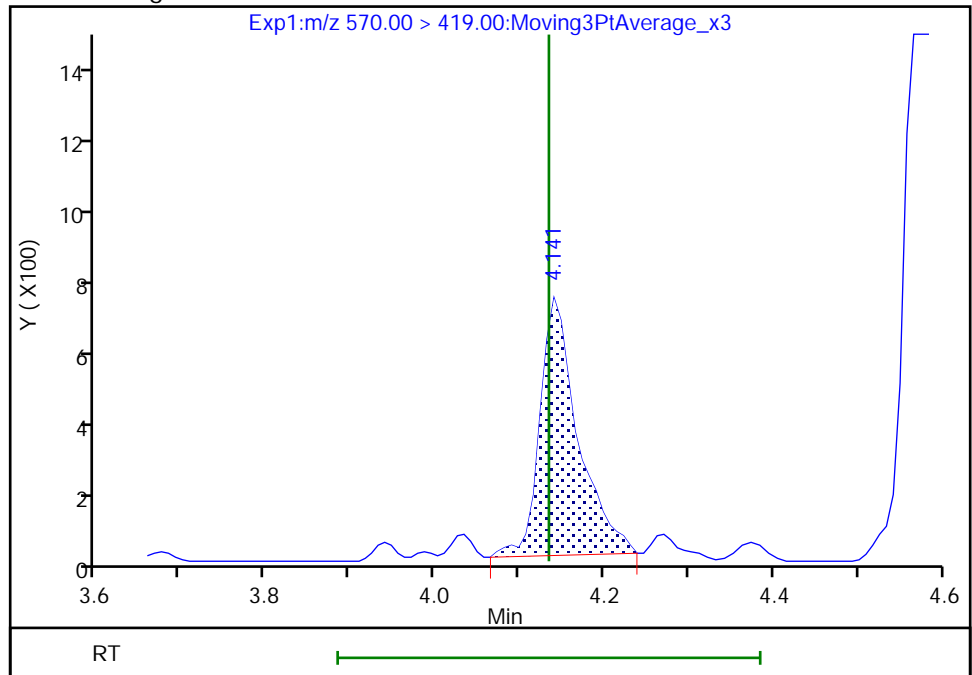
RT: 4.14
Area: 2817
Amount: 0.003282
Amount Units: ng/ml

Processing Integration Results



RT: 4.14
Area: 2212
Amount: 0.002577
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 14-Dec-2018 14:30:03
Audit Action: Manually Integrated

Audit Reason: Baseline
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 320-260871/2-A
 Matrix: Water Lab File ID: 2018.12.05LLB_027.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 250.00 (mL) Date Analyzed: 12/06/2018 09:05
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	41.93		2.00	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	40.20		2.00	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	40.33		2.00	0.58
375-85-9	Perfluoroheptanoic acid (PFHpA)	37.26		2.00	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	39.77		2.00	0.85
375-95-1	Perfluorononanoic acid (PFNA)	38.22		2.00	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	38.70		2.00	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	37.86		2.00	1.10
307-55-1	Perfluorododecanoic acid (PFDoA)	34.68		2.00	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	38.95		2.00	1.30
376-06-7	Perfluorotetradecanoic acid (PFTeA)	37.90		2.00	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35.70		2.00	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	35.10		2.00	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	38.89		2.00	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	36.60		2.00	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	39.99		2.00	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	37.96		2.00	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	37.72		20.0	3.10
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	36.31		20.0	1.90
27619-97-2	6:2 FTS	39.61		20.0	2.00
39108-34-4	8:2 FTS	37.46		20.0	2.00

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 320-260871/2-A
 Matrix: Water Lab File ID: 2018.12.05LLB_027.d
 Analysis Method: 537 (modified) Date Collected: _____
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 250.00 (mL) Date Analyzed: 12/06/2018 09:05
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	87		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	92		25-150
STL01892	13C4 PFHpA	93		25-150
STL00990	13C4 PFOA	90		25-150
STL00995	13C5 PFNA	93		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	94		25-150
STL00998	13C2 PFDoA	99		25-150
STL02116	13C2 PFTeDA	99		25-150
STL02337	13C3 PFBS	89		25-150
STL00994	18O2 PFHxS	89		25-150
STL00991	13C4 PFOS	94		25-150
STL01056	13C8 FOSA	91		25-150
STL02118	d3-NMeFOSAA	111		25-150
STL02117	d5-NEtFOSAA	115		25-150
STL02279	M2-6:2 FTS	114		25-150
STL02280	M2-8:2 FTS	104		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_027.d
 Lims ID: LCS 320-260871/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 06-Dec-2018 09:05:05 ALS Bottle#: 18 Worklist Smp#: 3
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: lcs 320-260871/2-a
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 14-Dec-2018 14:30:45 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0321
 First Level Reviewer: mongkols Date: 14-Dec-2018 14:30:45
 Ratio Calibration: None

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	1.763	1.756	0.007	0.547	7548636	2.18	87.2	6292	
2 Perfluorobutanoic acid	212.90 > 169.00	1.763	1.763	0.0	1.000	2880640	1.05	105	568	
4 Perfluoropentanoic acid	262.90 > 219.00	2.084	2.074	0.010	1.005	2163740	1.00	100	143	
D 3 13C5 PFPeA	267.90 > 223.00	2.074	2.074	0.0	0.644	4939175	2.27	90.8	7516	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	2.116	2.105	0.011	1.005	2547340	0.8925	Target=2.49	101	2266
	298.90 > 99.00	2.105	2.105	0.0	1.000	1074097		2.37(1.25-3.74)		1060
D 47 13C3 PFBS	301.90 > 80.00	2.105	2.105	0.0	0.653	6837139	2.06	88.7	699600	
61 1H,1H,2H,2H-perfluorohexanesulfoni	327.00 > 307.00	2.393	2.393	0.0	1.136	652309	1.15	123	5842	
6 Perfluorohexanoic acid	313.00 > 269.00	2.432	2.432	0.0	1.000	2134974	1.01	Target=10.07	101	967
	313.00 > 119.00	2.432	2.432	0.0	1.000	194520		10.98(5.03-15.10)		751
D 7 13C2 PFHxA	315.00 > 270.00	2.432	2.432	0.0	0.755	5279263	2.29	91.7	8209	
70 Perfluoropentanesulfonic acid	349.00 > 80.00	2.452	2.442	0.010	1.165	2489909	0.9857	Target=2.71	105	8774
	349.00 > 99.00	2.452	2.442	0.010	1.165	938774		2.65(1.36-4.07)		3573
D 64 13C3 HFPO-DA	332.10 > 287.00	2.551	2.541	0.010	0.792	338071	2.12	84.8	1636	
67 Perfluoro(2-propoxypropanoic) acid	329.10 > 285.00	2.551	2.551	0.0	1.000	452213	0.9810	98.1	238	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS	403.00 > 84.00	2.830	2.821	0.009	0.878	5443061	2.11	89.2	9867	
D 9 13C4 PFHpA	367.00 > 322.00	2.821	2.821	0.0	0.876	5280895	2.34	93.5	11111	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.821	2.821	0.0	1.000	2092606	0.9315	Target=2.27	93.2	618
	363.00 > 169.00	2.821	2.821	0.0	1.000	843311		2.48(1.13-3.40)		1377
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.830	2.830	0.0	1.000	2192501	0.8775	Target=3.00	96.4	8249
	399.00 > 99.00	2.830	2.830	0.0	1.000	742456		2.95(1.50-4.49)		1430
77 DONA	377.00 > 251.00	2.868	2.868	0.0	0.797	6053860	0.9652	Target=1.69	102	6389
	377.00 > 85.00	2.868	2.868	0.0	0.797	3600188		1.68(0.85-2.54)		8014
D 12 M2-6:2 FTS	429.00 > 81.00	3.206	3.197	0.009	0.995	1073942	2.70		114	5204
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00 > 407.00	3.197	3.197	0.0	0.997	696914	0.99		104	262
D 14 13C4 PFOA	417.00 > 372.00	3.222	3.213	0.009	1.000	4978956	2.26		90.2	10645
* 62 13C2 PFOA	415.00 > 370.00	3.222	3.222	0.0		5670321	2.50			10599
16 Perfluoroheptanesulfonic acid	449.00 > 80.00	3.222	3.222	0.0	0.895	2015328	0.9723	Target=3.88	102	5945
	449.00 > 99.00	3.222	3.222	0.0	0.895	533786		3.78(1.94-5.82)		2741
15 Perfluorooctanoic acid	413.00 > 369.00	3.222	3.222	0.0	1.000	2246004	0.99	Target=1.68	99.4	229
	413.00 > 169.00	3.222	3.222	0.0	1.000	1170622		1.92(0.84-2.52)		1127
D 18 13C4 PFOS	503.00 > 80.00	3.599	3.590	0.009	1.117	3782375	2.25		93.9	9726
17 Perfluorooctanesulfonic acid	499.00 > 80.00	3.599	3.599	0.0	1.000	1614336	0.9150	Target=4.62	98.6	3596
	499.00 > 99.00	3.599	3.599	0.0	1.000	338858		4.76(2.31-6.93)		1704
D 19 13C5 PFNA	468.00 > 423.00	3.615	3.606	0.009	1.122	4323609	2.34		93.5	11237
20 Perfluorononanoic acid	463.00 > 419.00	3.615	3.607	0.008	1.000	1704568	0.9554	Target=3.79	95.5	723
	463.00 > 169.00	3.615	3.607	0.008	1.000	429304		3.97(1.90-5.69)		2169
69 9-Chlorohexadecafluoro-3-oxanonane	531.00 > 351.00	3.803	3.803	0.0	1.057	2666225	0.8401		90.1	7648
68 Perfluorononanesulfonic acid	549.00 > 80.00	3.951	3.944	0.007	1.098	1155055	0.9383	Target=2.65	97.7	6638
	549.00 > 99.00	3.951	3.944	0.007	1.098	423038		2.73(1.33-3.97)		1930
D 21 13C8 FOSA	506.00 > 78.00	3.967	3.957	0.010	1.231	5634336	2.26		90.6	7902
22 Perfluorooctanesulfonamide	498.00 > 78.00	3.967	3.959	0.008	1.000	2140674	0.9491		94.9	404
D 23 13C2 PFDA	515.00 > 470.00	3.975	3.965	0.010	1.234	3779452	2.34		93.6	8002

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 26 M2-8:2 FTS										
529.00 > 81.00	3.967	3.965	0.002	1.231	1069689	2.50		104	4210	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.975	3.967	0.008	1.000	1442796	0.9674	Target=4.73	96.7	1241	
513.00 > 169.00	3.975	3.967	0.008	1.000	261882		5.51(2.36-7.09)		1106	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.967	3.967	0.0	1.000	547917	0.9366		97.8	4033	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.135	4.125	0.010	1.283	2181242	2.76		111	6524	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.135	4.135	0.0	1.000	774097	0.9430		94.3	461	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.267	4.267	0.0	1.186	1024848	1.00	Target=2.77	104	4032	
599.00 > 99.00	4.267	4.267	0.0	1.186	341337		3.00(1.39-4.16)		3400	
D 30 13C2 PFUnA										
565.00 > 520.00	4.292	4.282	0.010	1.332	3047451	2.34		93.7	5677	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.292	4.282	0.010	1.332	2396958	2.88		115	4348	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.292	4.292	0.0	1.000	1032265	0.9465	Target=4.24	94.6	887	
563.00 > 169.00	4.292	4.292	0.0	1.000	233867		4.41(2.12-6.36)		1949	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.301	4.292	0.009	1.002	747991	0.9078		90.8	1855	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.433	4.432	0.001	1.232	4296061	0.9205		97.7	9961	
D 36 13C2 PFDaA										
615.00 > 570.00	4.581	4.569	0.012	1.422	3425728	2.48		99.1	6585	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.581	4.578	0.003	1.000	1292019	0.8671	Target=4.27	86.7	989	
613.00 > 169.00	4.581	4.578	0.003	1.000	328025		3.94(2.13-6.40)		1965	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.601	4.588	0.013	1.160	473493	1.12		116	3764	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.807	4.806	0.001	1.336	457735	0.9798	Target=0.00	101	2629	
699.00 > 99.00	4.807	4.806	0.001	1.336	720174		0.64(0.00-0.00)		6094	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.838	4.837	0.001	1.056	1410187	0.9737	Target=2.51	97.4	1193	
663.00 > 169.00	4.838	4.837	0.001	1.056	461774		3.05(1.25-3.76)		3208	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.082	5.070	0.012	1.577	4090738	2.48		99.4	8857	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.082	5.081	0.001	1.000	401126	0.9475	Target=1.42	94.7	2456	
713.00 > 219.00	5.082	5.081	0.001	1.000	291244		1.38(0.71-2.13)		2521	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.524	5.512	0.012	1.714	6716420	2.21		88.3	10152	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.524	5.523	0.001	1.000	2562029	1.08	Target=5.72	108	246	
813.00 > 169.00	5.524	5.523	0.001	1.000	464899		5.51(2.86-8.58)		2605	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.967	5.966	0.001	1.080	3206846	1.03	Target=7.65	103	283	
913.00 > 169.00	5.967	5.966	0.001	1.080	417356		7.68(3.83-11.48)		2350	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_027.d

Injection Date: 06-Dec-2018 09:05:05

Instrument ID: A8_N

Lims ID: LCS 320-260871/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 18

Worklist Smp#: 3

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

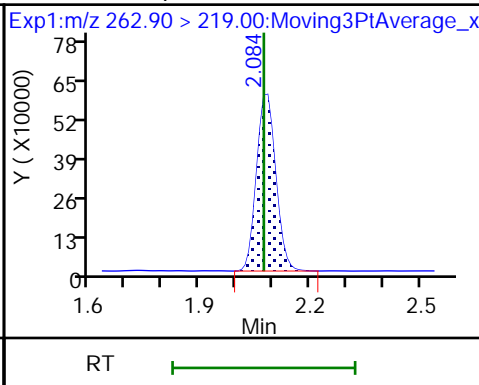
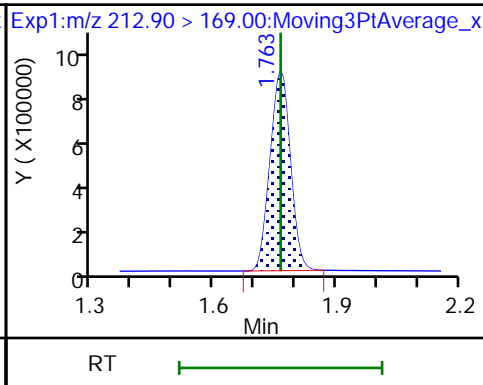
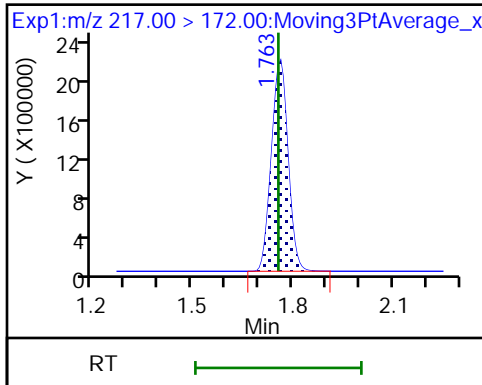
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid

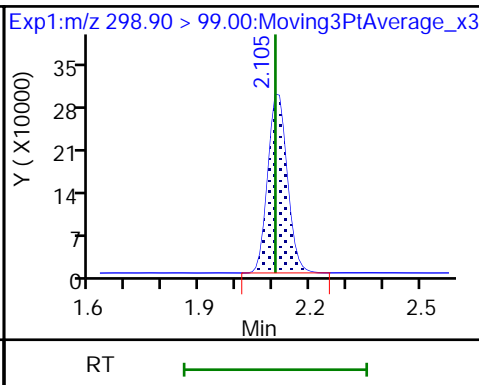
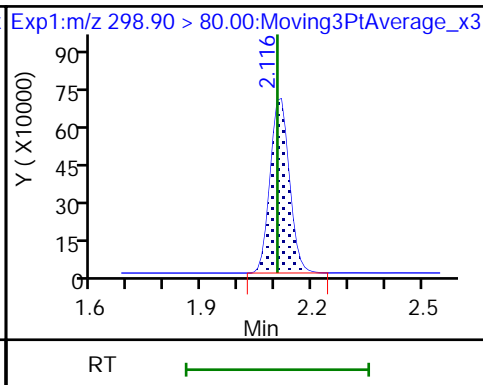
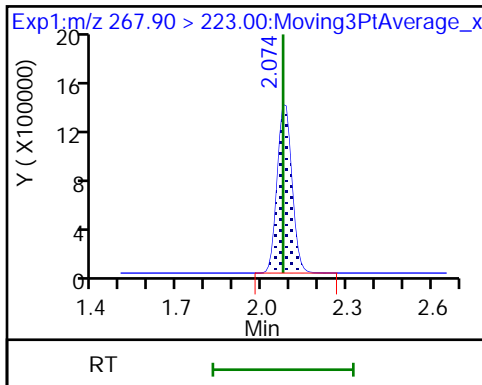
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

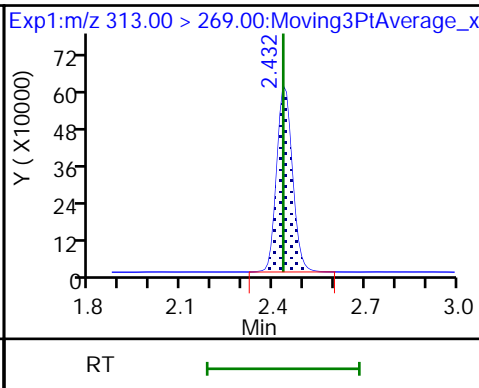
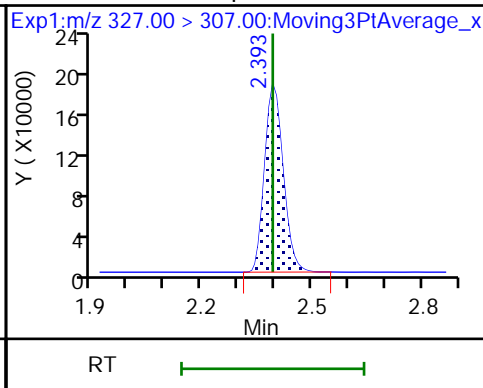
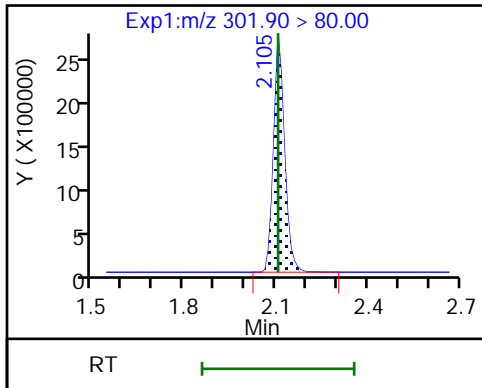
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

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

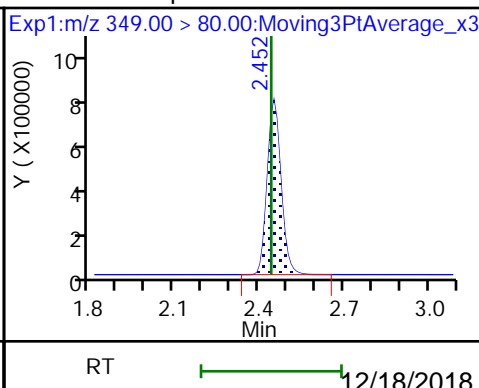
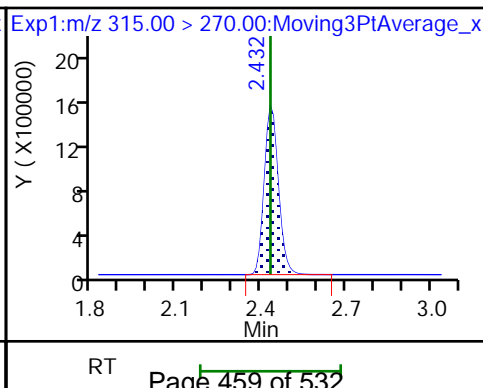
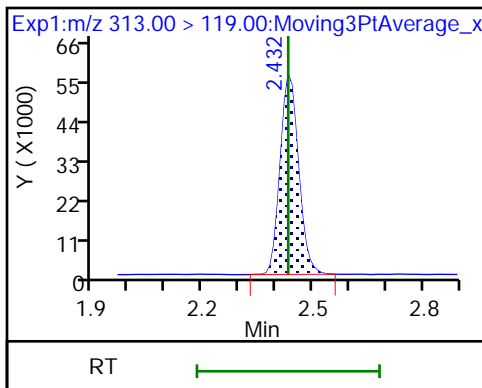
6 Perfluorohexanoic acid

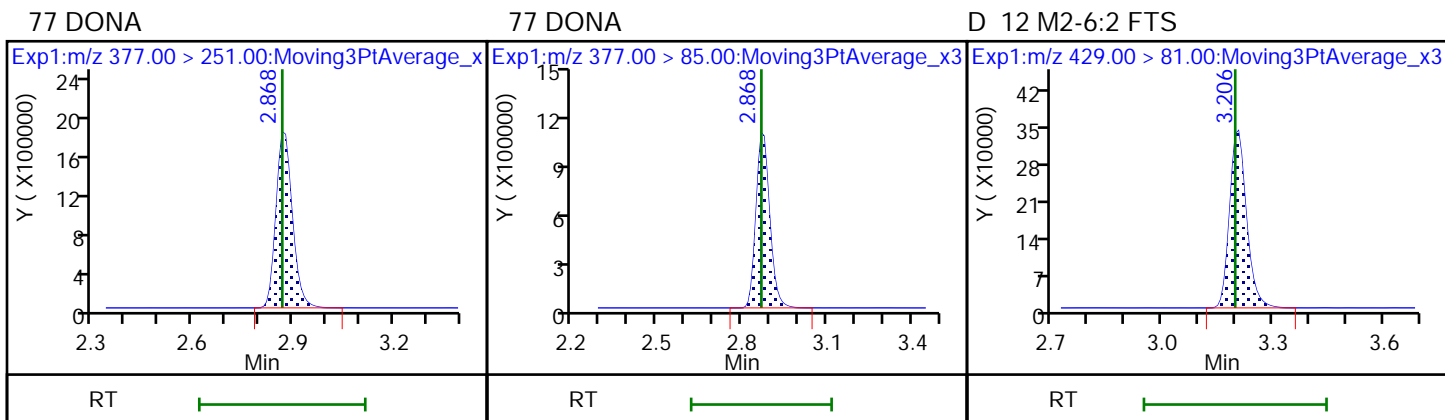
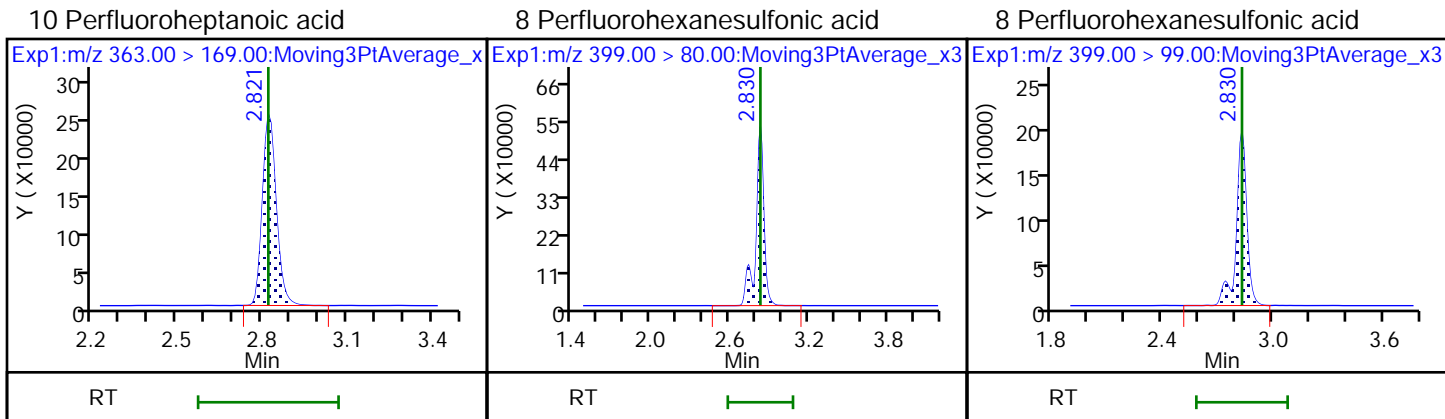
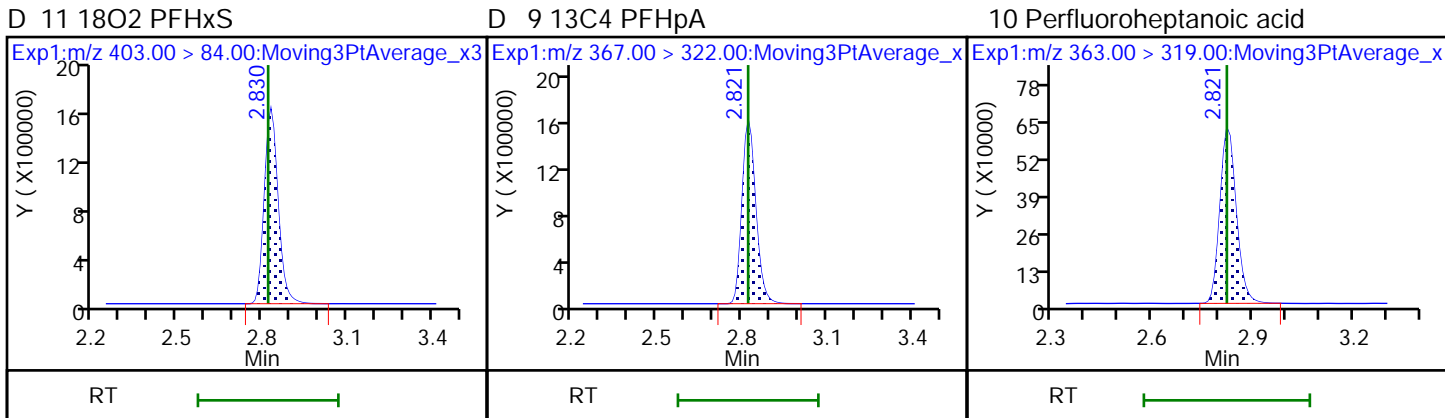
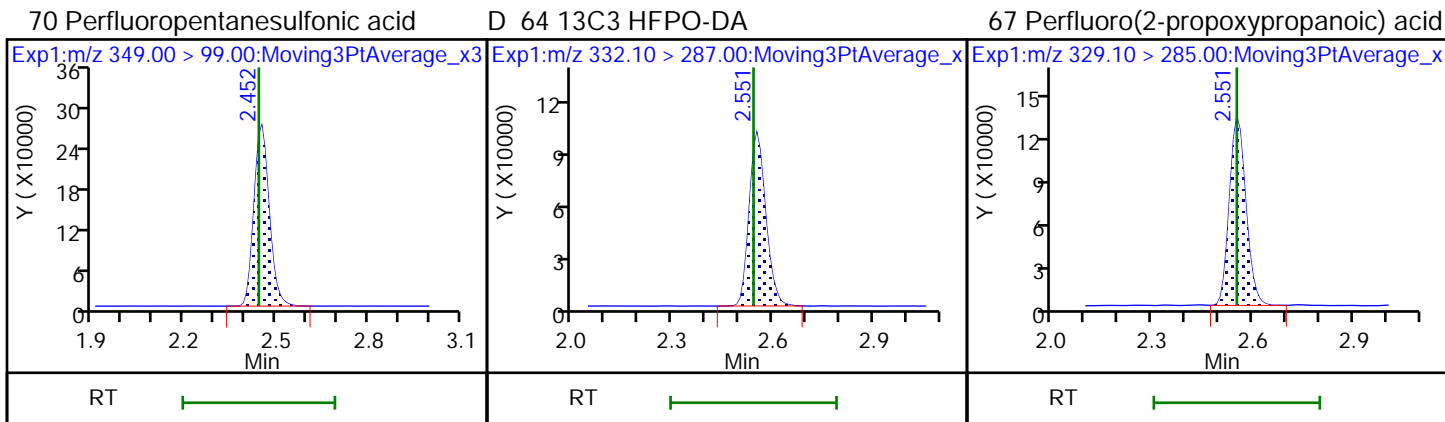


6 Perfluorohexanoic acid

D 7 13C2 PFHxA

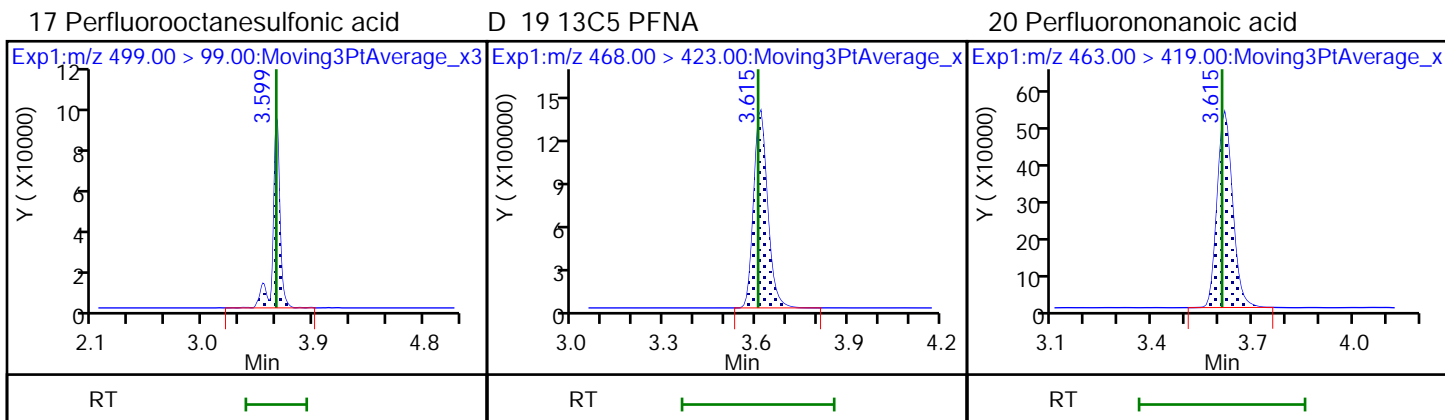
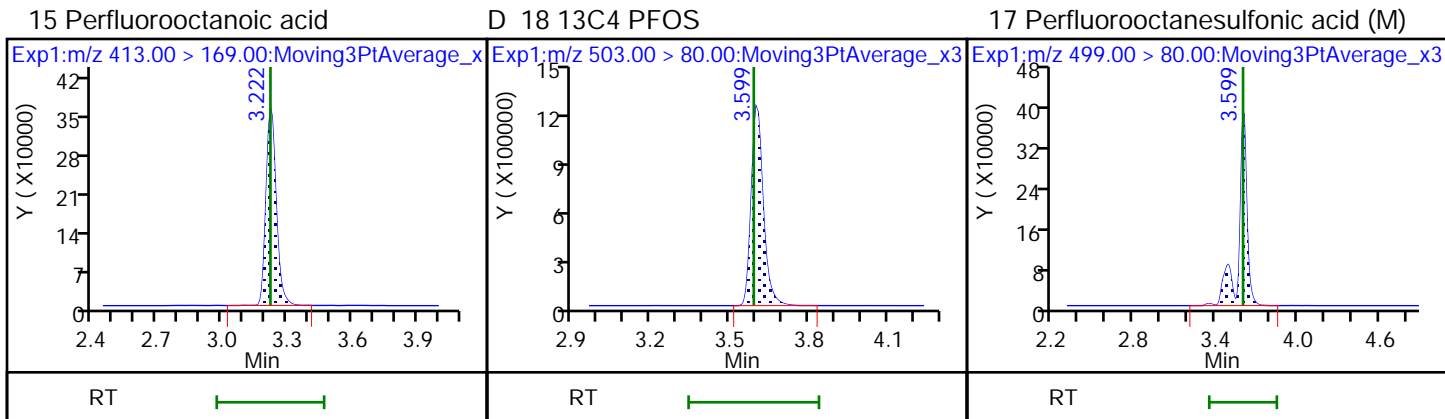
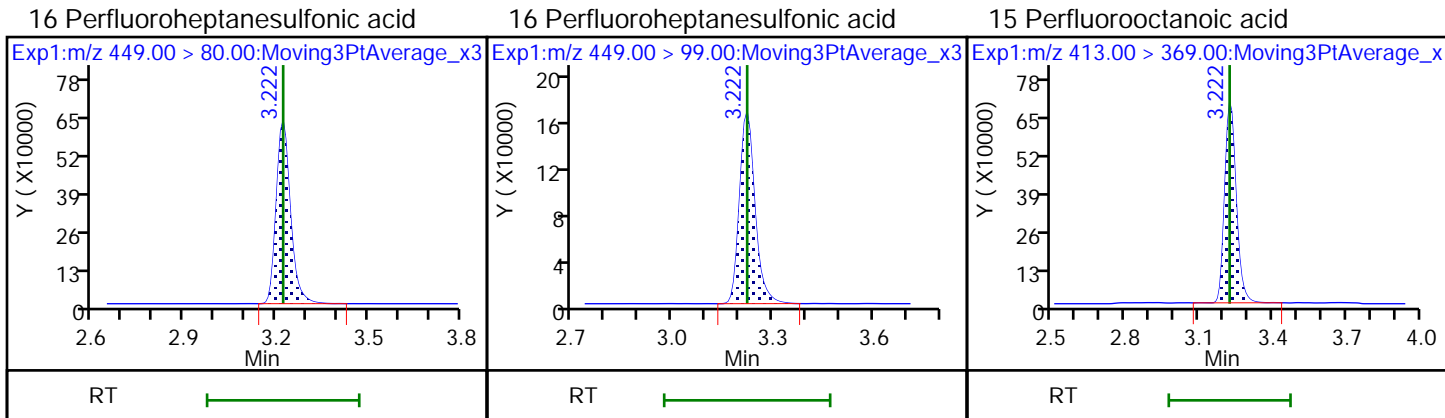
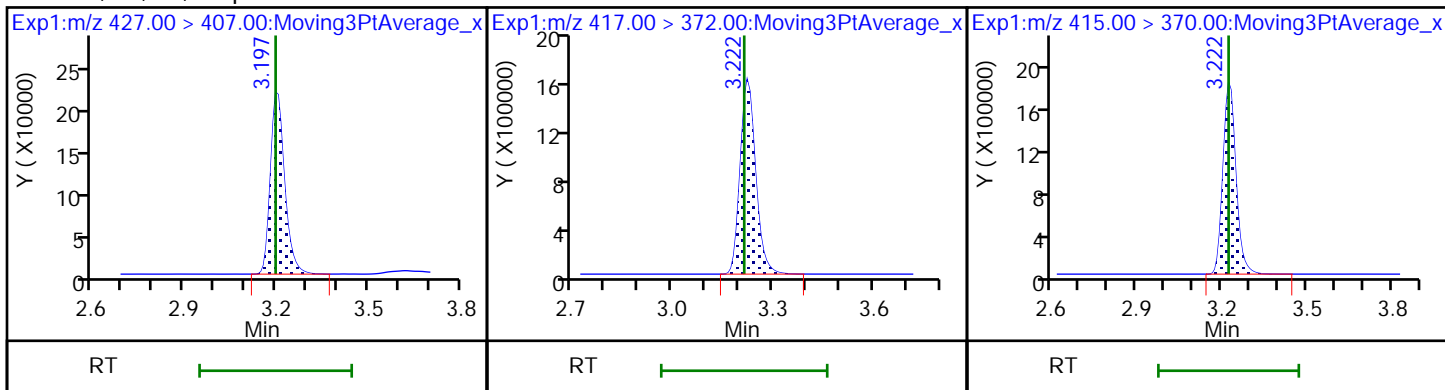
70 Perfluoropentanesulfonic acid





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

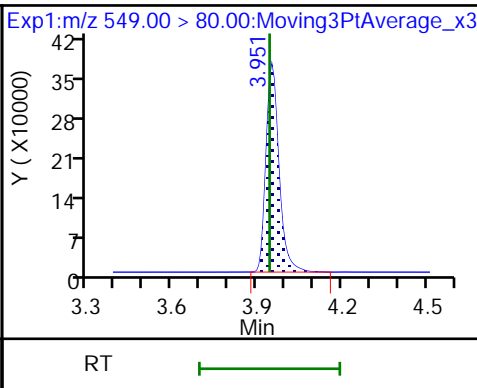
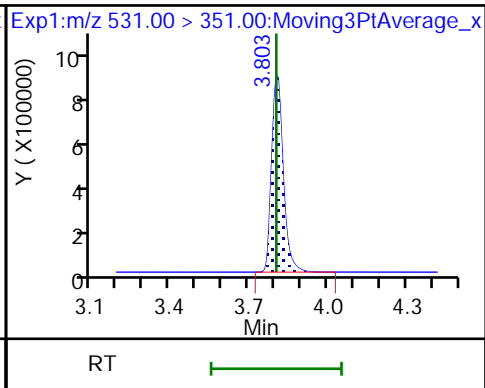
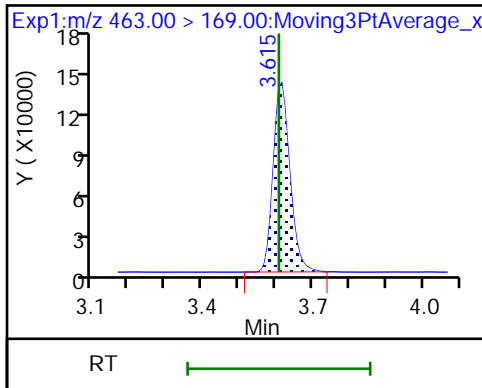
* 62 13C2 PFOA



20 Perfluorononanoic acid

69 9-Chlorohexadecafluoro-3-oxanonan

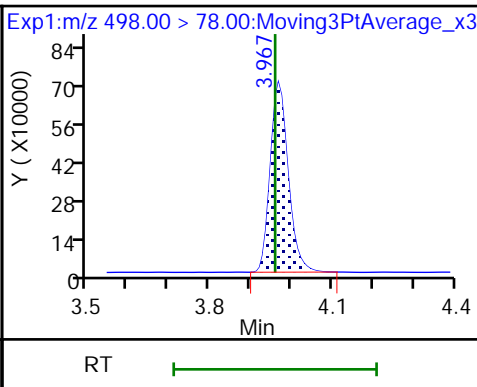
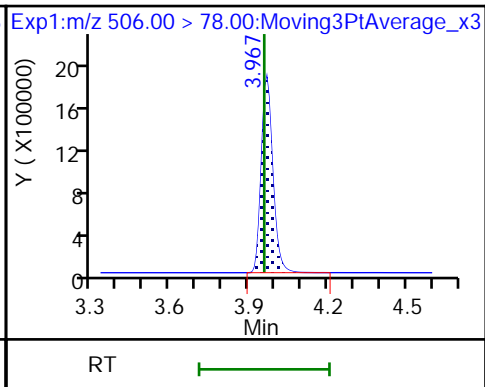
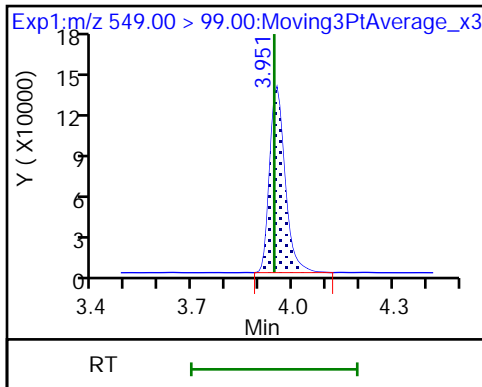
68 Perfluoronanesulfonic acid



68 Perfluoronanesulfonic acid

D 21 13C8 FOSA

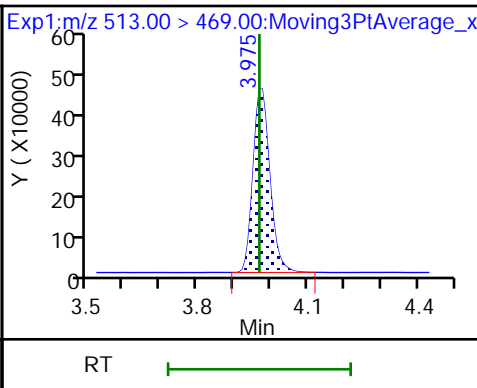
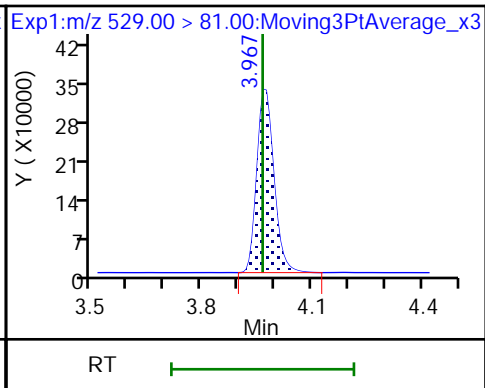
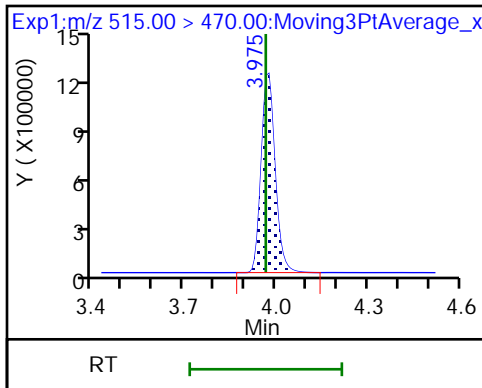
22 Perfluorooctanesulfonamide



D 23 13C2 PFDA

D 26 M2-8:2 FTS

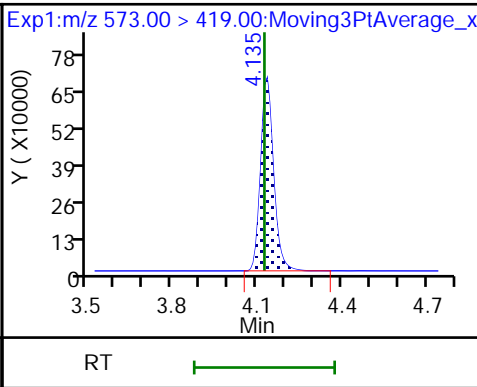
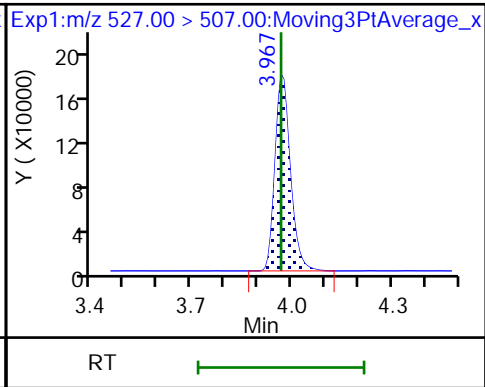
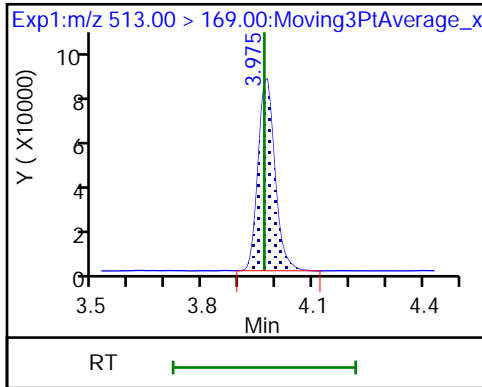
24 Perfluorodecanoic acid



24 Perfluorodecanoic acid

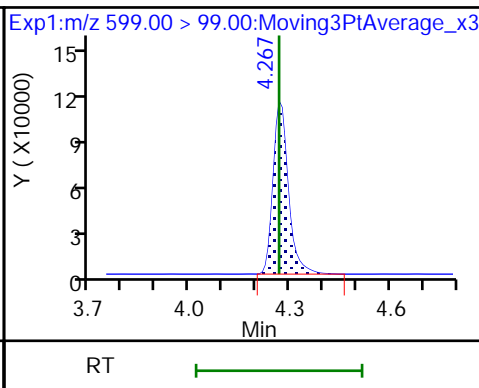
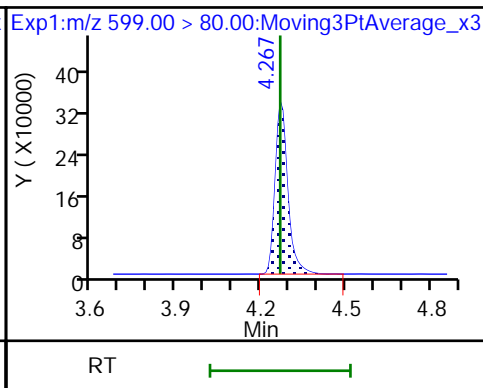
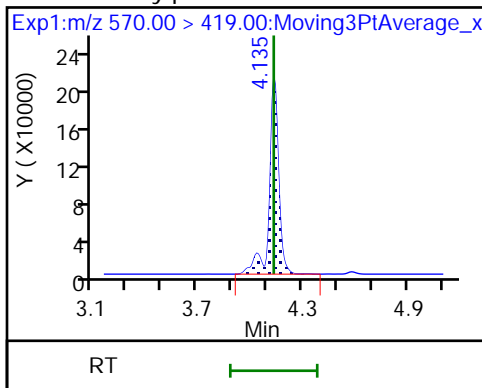
25 1H,1H,2H,2H-perfluorodecanesulfon

D 27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamido

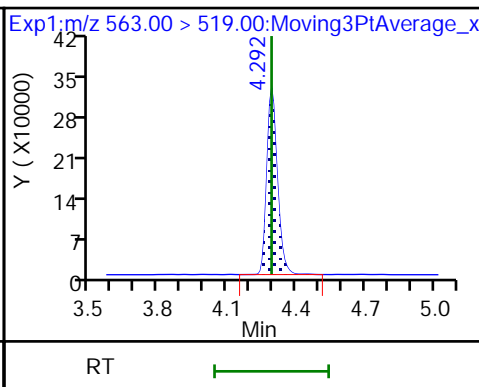
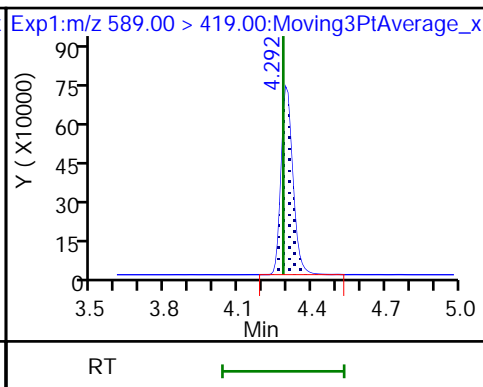
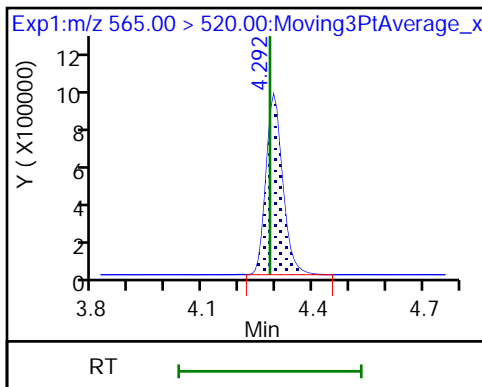
29 Perfluorodecanesulfonic acid



D 30 13C2 PFUa

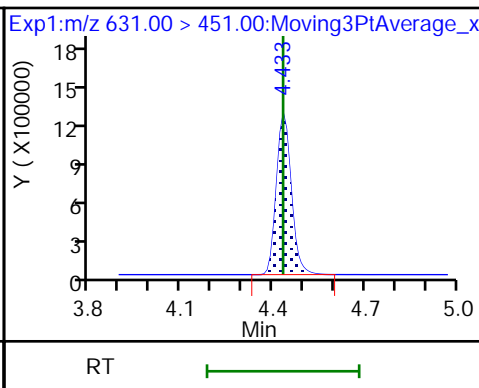
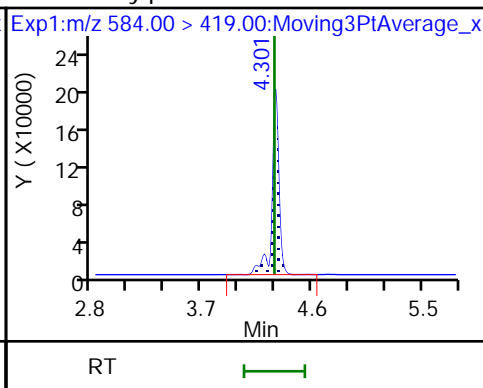
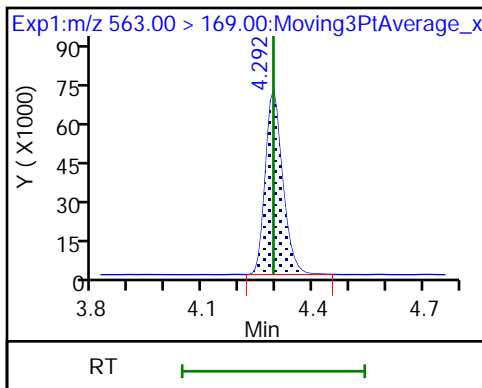
D 32 d5-NEtFOSAA

31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

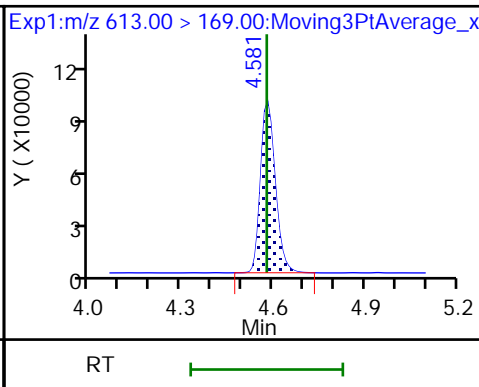
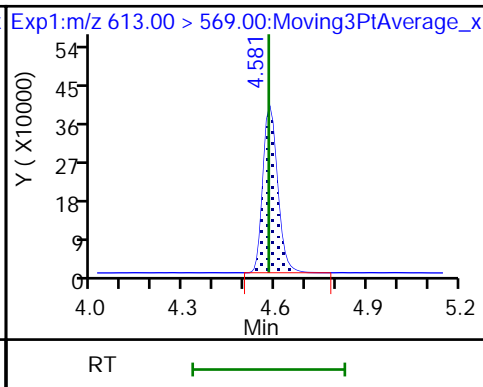
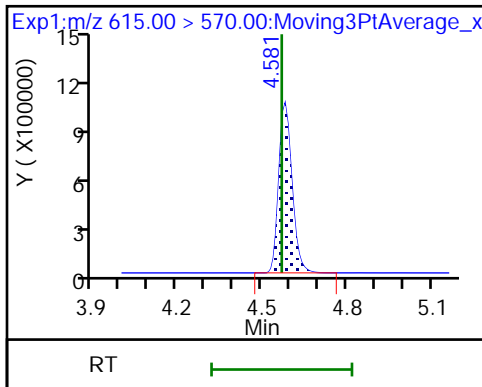
33 N-ethylperfluorooctanesulfonamidoa 66 11-Chloroeicosafuoro-3-oxaundecan



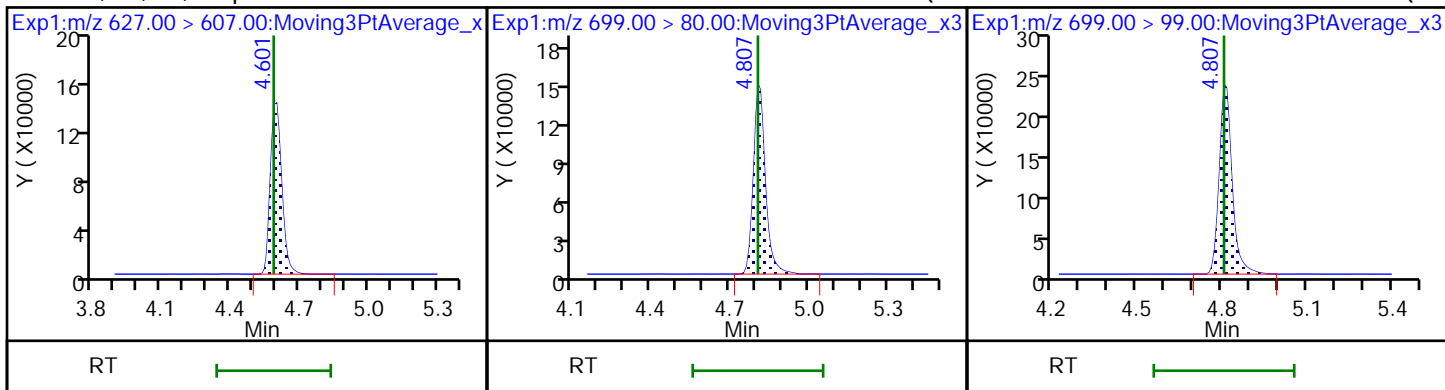
D 36 13C2 PFDa

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



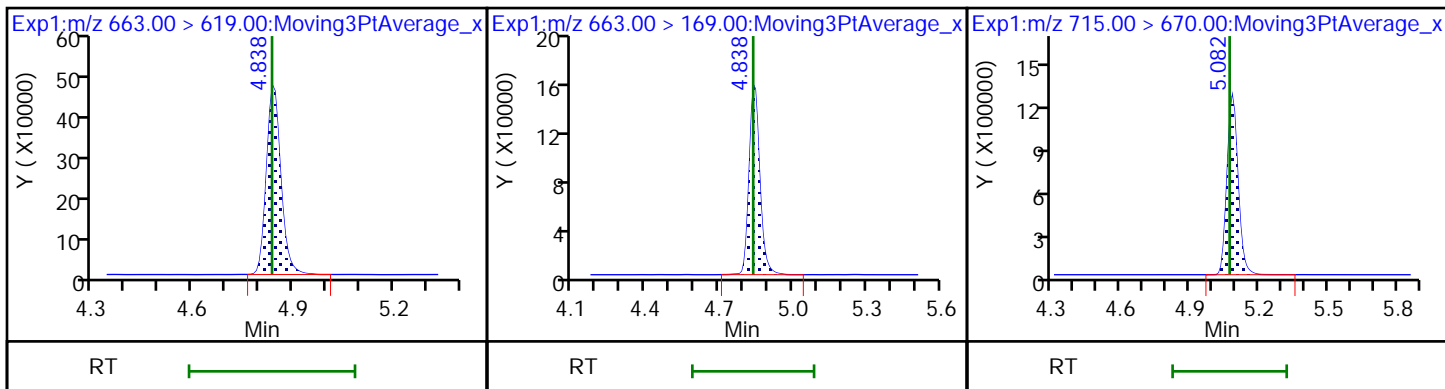
74 1H,1H,2H,2H-perfluorododecanesulfo75 Perfluorododecanesulfonic acid (PF 75 Perfluorododecanesulfonic acid (PF



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

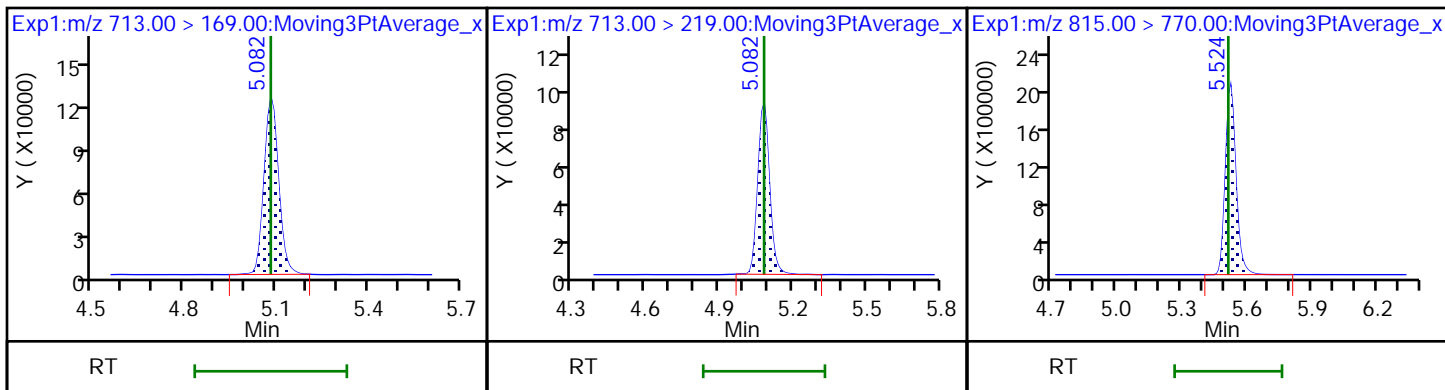
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

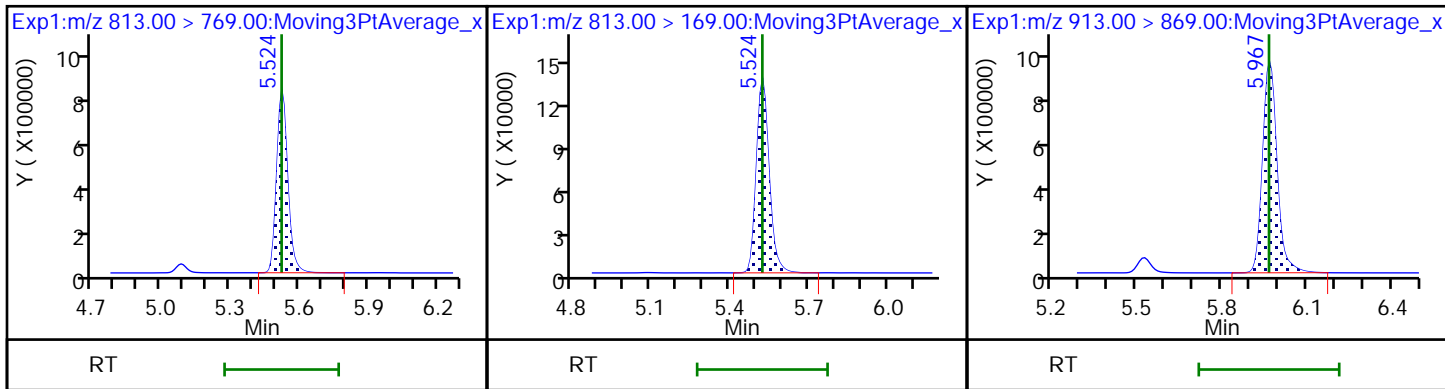
D 44 13C2 PFHxDA



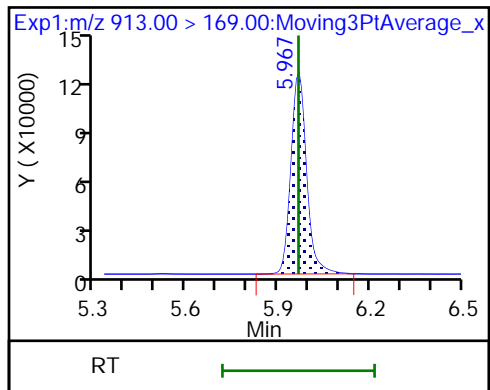
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

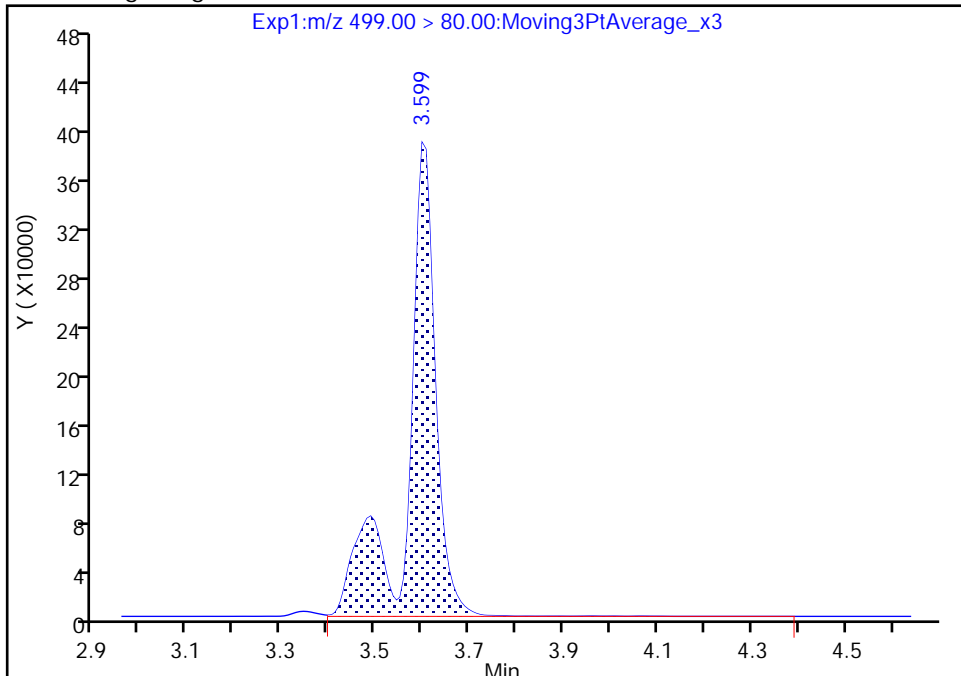
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_027.d
Injection Date: 06-Dec-2018 09:05:05 Instrument ID: A8_N
Lims ID: LCS 320-260871/2-A
Client ID:
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

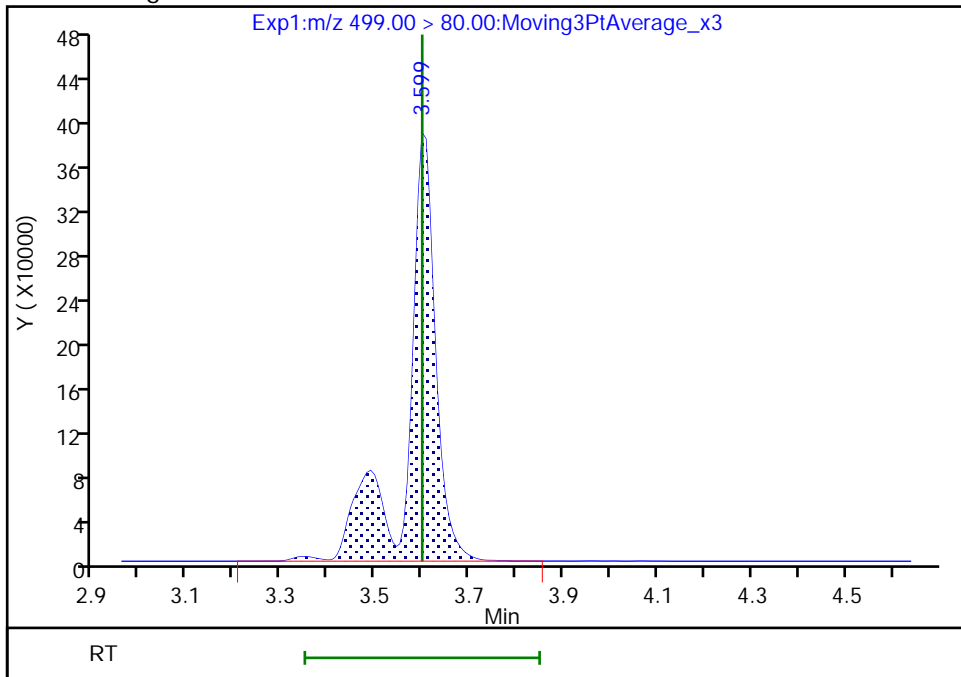
RT: 3.60
Area: 1605044
Amount: 0.909695
Amount Units: ng/ml

Processing Integration Results



RT: 3.60
Area: 1614336
Amount: 0.914961
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA MS Lab Sample ID: 480-145071-1 MS
 Matrix: Water Lab File ID: 2018.12.05LLB_029.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 268.6(mL) Date Analyzed: 12/06/2018 09:20
 Con. Extract Vol.: 10.00(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	39.15		1.86	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	37.67		1.86	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	34.44		1.86	0.54
375-85-9	Perfluoroheptanoic acid (PFHpA)	36.76		1.86	0.23
335-67-1	Perfluorooctanoic acid (PFOA)	35.57		1.86	0.79
375-95-1	Perfluorononanoic acid (PFNA)	36.08		1.86	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	35.51		1.86	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	36.05		1.86	1.02
307-55-1	Perfluorododecanoic acid (PFDoA)	33.94		1.86	0.51
72629-94-8	Perfluorotridecanoic acid (PFTriA)	34.38		1.86	1.21
376-06-7	Perfluorotetradecanoic acid (PFTeA)	33.60		1.86	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	33.17		1.86	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	32.08		1.86	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	36.51		1.86	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	33.35		1.86	0.50
335-77-3	Perfluorodecanesulfonic acid (PFDS)	32.88		1.86	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	35.01		1.86	0.33
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	33.94		18.6	1.77

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA MS Lab Sample ID: 480-145071-1 MS
 Matrix: Water Lab File ID: 2018.12.05LLB_029.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 268.6(mL) Date Analyzed: 12/06/2018 09:20
 Con. Extract Vol.: 10.00(mL) Dilution Factor: 1
 Injection Volume: 20(uL) GC Column: GeminiC18 3x100 ID: 3(mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	70		25-150
STL01893	13C5 PFPeA	89		25-150
STL00993	13C2 PFHxA	93		25-150
STL01892	13C4 PFHpA	95		25-150
STL00990	13C4 PFOA	92		25-150
STL00995	13C5 PFNA	96		25-150
STL00996	13C2 PFDA	97		25-150
STL00997	13C2 PFUnA	99		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2 PFTeDA	96		25-150
STL02337	13C3 PFBS	90		25-150
STL00994	18O2 PFHxS	88		25-150
STL00991	13C4 PFOS	90		25-150
STL01056	13C8 FOSA	89		25-150
STL02117	d5-NEtFOSAA	129		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_029.d
 Lims ID: 480-145071-A-1-A MS
 Client ID: MW-01-2018-PFA
 Sample Type: MS
 Inject. Date: 06-Dec-2018 09:20:05 ALS Bottle#: 20 Worklist Smp#: 5
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-145071-a-1-a ms
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 14-Dec-2018 14:35:11 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICAL File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0321

First Level Reviewer: mongkols Date: 14-Dec-2018 14:35:11
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA	217.00 > 172.00	1.763	1.756	0.007	0.547	6086650	1.76	70.4	5546	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.763	1.763	0.0	1.000	2330231	1.05		105	101	M
4 Perfluoropentanoic acid										
262.90 > 219.00	2.084	2.074	0.010	1.000	2140109	1.01		101	35.1	
D 3 13C5 PFPeA	267.90 > 223.00	2.084	2.074	0.010	0.647	4852544	2.23	89.2	4832	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.116	2.105	0.011	1.005	2593959	0.8910	Target=2.49	101	672	
298.90 > 99.00	2.116	2.105	0.011	1.005	1141614		2.27(1.25-3.74)		312	
D 47 13C3 PFBS	301.90 > 80.00	2.105	2.105	0.0	0.653	6974132	2.10	90.5	283007	
D 60 M2-4:2 FTS	329.00 > 81.00	2.344	2.383	-0.039	0.727	3507	0.0132	0.0	1.7	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.392	2.393	-0.001	1.136	1382047	2.39		256	3988	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.442	2.432	0.010	1.004	1976999	0.9250	Target=10.07	92.5	408	
313.00 > 119.00	2.442	2.432	0.010	1.004	185986		10.63(5.03-15.10)		370	
D 7 13C2 PFHxA	315.00 > 270.00	2.432	2.432	0.0	0.755	5328521	2.32	92.6	8190	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.452	2.442	0.010	1.165	2387151	0.9265	Target=2.71	98.8	1931	
349.00 > 99.00	2.452	2.442	0.010	1.165	892276		2.68(1.36-4.07)		995	
D 64 13C3 HFPO-DA	332.10 > 287.00	2.561	2.541	0.020	0.795	309304	1.94	77.6	2388	

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	2.561	2.551	0.010	1.000	444824	1.05		105	287	
D 11 18O2 PFHxS										
403.00 > 84.00	2.830	2.821	0.009	0.878	5336983	2.07		87.5	11474	
D 9 13C4 PFHpA										
367.00 > 322.00	2.821	2.821	0.0	0.876	5361052	2.37		94.9	11576	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.830	2.821	0.009	1.003	2252062	0.9875	Target=2.27	98.7	743	
363.00 > 169.00	2.830	2.821	0.009	1.003	874194		2.58(1.13-3.40)		1013	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.830	2.830	0.0	1.000	2111132	0.8617	Target=3.00	94.7	2002	
399.00 > 99.00	2.830	2.830	0.0	1.000	716196		2.95(1.50-4.49)		949	
77 DONA										
377.00 > 251.00	2.877	2.868	0.009	0.799	6140324	1.02	Target=1.69	109	10172	
377.00 > 85.00	2.877	2.868	0.009	0.799	3687444		1.67(0.85-2.54)		5283	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.205	3.197	0.008	0.995	2150953	5.41		228	4472	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.205	3.197	0.008	1.000	1297230	0.9203		97.1	258	
D 73 13C8 PFOA										
421.00 > 376.00	3.222	3.213	0.009	1.000	25020	0.007691		0.0	348	
D 14 13C4 PFOA										
417.00 > 372.00	3.222	3.213	0.009	1.000	5055159	2.29		91.6	11128	
* 62 13C2 PFOA										
415.00 > 370.00	3.222	3.222	0.0		5667728	2.50			10364	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.222	3.222	0.0	0.895	1944690	0.9806	Target=3.88	103	1458	
449.00 > 99.00	3.222	3.222	0.0	0.895	509996		3.81(1.94-5.82)		1482	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.230	3.222	0.008	1.003	2190887	0.9553	Target=1.68	95.5	427	
413.00 > 169.00	3.230	3.222	0.008	1.003	1183431		1.85(0.84-2.52)		1034	
D 18 13C4 PFOS										
503.00 > 80.00	3.599	3.590	0.009	1.117	3619029	2.15		89.9	3912	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.599	3.599	0.0	1.000	1512266	0.8958	Target=4.62	96.5	571	
499.00 > 99.00	3.599	3.599	0.0	1.000	323650		4.67(2.31-6.93)		713	
D 19 13C5 PFNA										
468.00 > 423.00	3.615	3.606	0.009	1.122	4453328	2.41		96.3	17173	
20 Perfluorononanoic acid										
463.00 > 419.00	3.615	3.607	0.008	1.000	1780816	0.9690	Target=3.79	96.9	926	
463.00 > 169.00	3.615	3.607	0.008	1.000	443493		4.02(1.90-5.69)		2269	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.803	3.803	0.0	1.057	2541688	0.8370		89.8	7144	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.951	3.944	0.007	1.098	1088307	0.9240	Target=2.65	96.3	1981	
549.00 > 99.00	3.951	3.944	0.007	1.098	377672		2.88(1.33-3.97)		1649	
D 21 13C8 FOSA										
506.00 > 78.00	3.967	3.957	0.010	1.231	5517450	2.22		88.7	6302	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide	498.00 > 78.00	3.967	3.959	0.008	1.000	2077173	0.9404	94.0	392	
D 23 13C2 PFDA	515.00 > 470.00	3.975	3.965	0.010	1.234	3919924	2.43	97.1	13178	
D 26 M2-8:2 FTS	529.00 > 81.00	3.975	3.965	0.010	1.234	1442973	3.37	141	2599	
24 Perfluorodecanoic acid	513.00 > 469.00	3.967	3.967	0.0	0.998	1475333	0.9537	Target=4.73	95.4	1758
	513.00 > 169.00	3.967	3.967	0.0	0.998	279777		5.27(2.36-7.09)		1078
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.975	3.967	0.008	1.000	716521	0.9079		94.8	4085
D 27 d3-NMeFOSAA	573.00 > 419.00	4.135	4.125	0.010	1.283	2599658	3.30		132	5860
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	4.135	4.135	0.0	1.000	935267	0.9559		95.6	481
29 Perfluorodecanesulfonic acid	599.00 > 80.00	4.267	4.267	0.0	1.186	866196	0.8830	Target=2.77	91.6	2343
	599.00 > 99.00	4.267	4.267	0.0	1.186	294270		2.94(1.39-4.16)		1695
D 30 13C2 PFUnA	565.00 > 520.00	4.292	4.282	0.010	1.332	3209805	2.47		98.8	6684
D 32 d5-NEtFOSAA	589.00 > 419.00	4.292	4.282	0.010	1.332	2684487	3.22		129	4412
31 Perfluoroundecanoic acid	563.00 > 519.00	4.292	4.292	0.0	1.000	1112409	0.9684	Target=4.24	96.8	1199
	563.00 > 169.00	4.292	4.292	0.0	1.000	257265		4.32(2.12-6.36)		1393
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	4.300	4.292	0.008	1.002	841324	0.9117		91.2	1906
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	4.432	4.432	0.0	1.232	3749281	0.8396		89.1	11209
D 36 13C2 PFDaA	615.00 > 570.00	4.581	4.569	0.012	1.422	3395714	2.46		98.2	9298
37 Perfluorododecanoic acid	613.00 > 569.00	4.581	4.578	0.003	1.000	1346449	0.9116	Target=4.27	91.2	988
	613.00 > 169.00	4.581	4.578	0.003	1.000	343707		3.92(2.13-6.40)		2408
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.601	4.588	0.013	1.158	814328	1.43		148	4548
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.807	4.806	0.001	1.336	349527	0.7819	Target=0.00	80.8	889
	699.00 > 99.00	4.807	4.806	0.001	1.336	538720		0.65(0.00-0.00)		4212
41 Perfluorotridecanoic acid	663.00 > 619.00	4.838	4.837	0.001	1.056	1325649	0.9235	Target=2.51	92.3	1115
	663.00 > 169.00	4.838	4.837	0.001	1.056	432240		3.07(1.25-3.76)		1945
D 43 13C2 PFTeDA	715.00 > 670.00	5.082	5.070	0.012	1.577	3961663	2.41		96.3	9232
42 Perfluorotetradecanoic acid	713.00 > 169.00	5.082	5.081	0.001	1.000	370077	0.9026	Target=1.42	90.3	2224
	713.00 > 219.00	5.082	5.081	0.001	1.000	261416		1.42(0.71-2.13)		1033

Ratio Calibration: None

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	5.524	5.512	0.012	1.714	5369491	1.77		70.6	10841	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.524	5.523	0.001	1.000	1975996	1.04	Target=5.72	104	227	
813.00 > 169.00	5.524	5.523	0.001	1.000	368864		5.36(2.86-8.58)		2471	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.967	5.966	0.001	1.080	1906774	0.7655	Target=7.65	76.5	293	
913.00 > 169.00	5.967	5.966	0.001	1.080	251851		7.57(3.83-11.48)		1542	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_029.d

Injection Date: 06-Dec-2018 09:20:05

Instrument ID: A8_N

Lims ID: 480-145071-A-1-A MS

Client ID: MW-01-2018-PFA

Operator ID: SACINSTLCMS01

ALS Bottle#: 20

Worklist Smp#: 5

Injection Vol: 20.0 ul

Dil. Factor: 1.0000

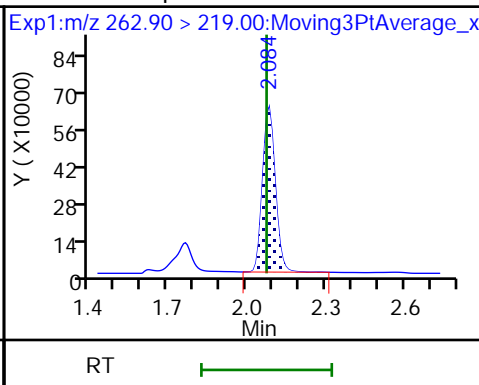
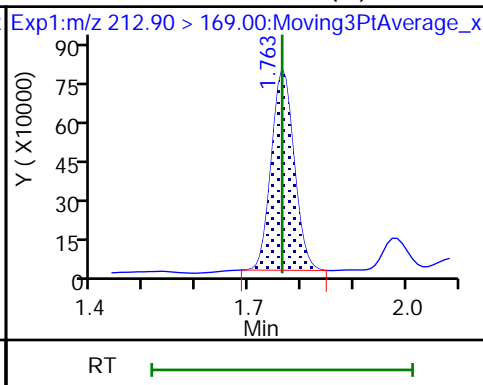
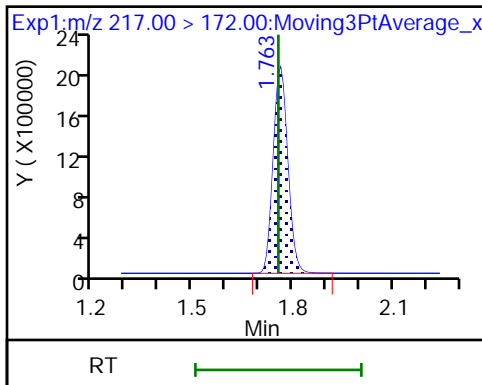
Method: A8_N

Limit Group: LC PFC ICAL

D 1 13C4 PFBA

2 Perfluorobutanoic acid (M)

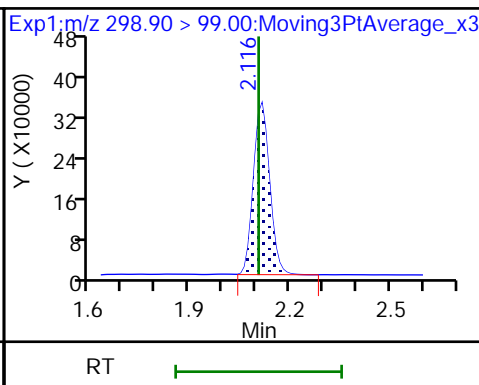
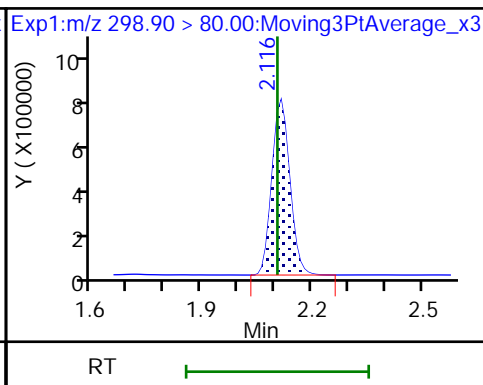
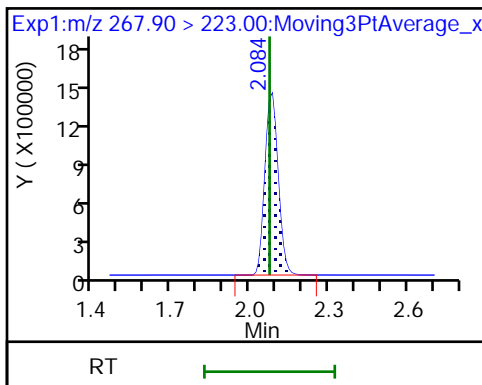
4 Perfluoropentanoic acid



D 3 13C5 PFPeA

5 Perfluorobutanesulfonic acid

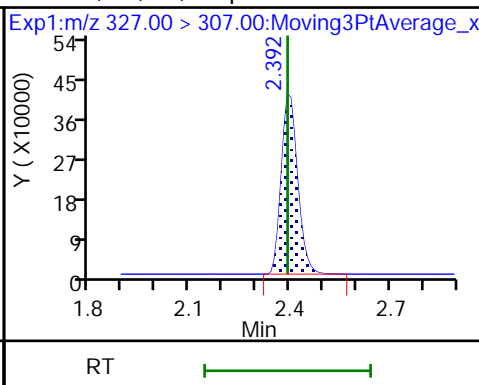
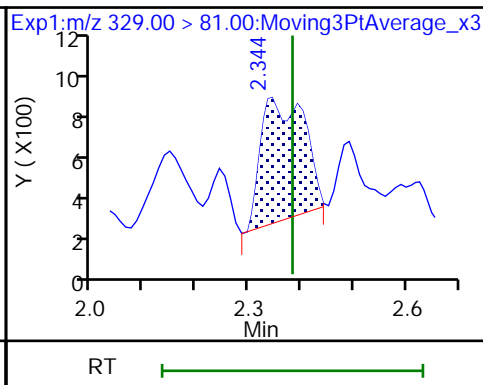
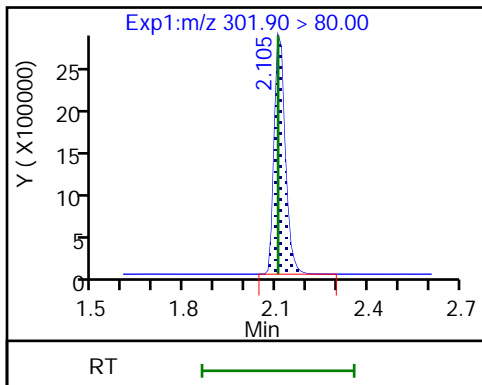
5 Perfluorobutanesulfonic acid



D 47 13C3 PFBS

D 60 M2-4:2 FTS

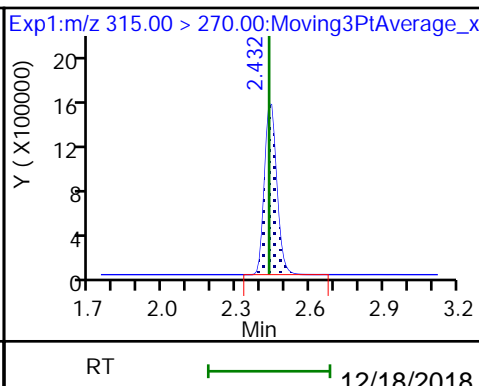
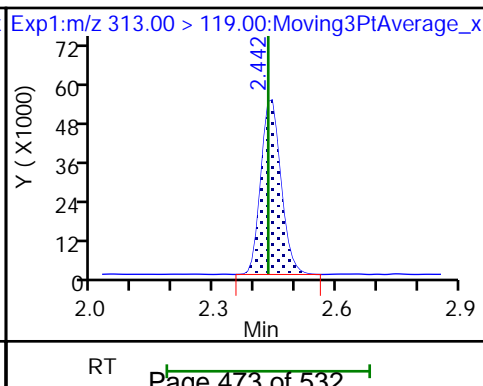
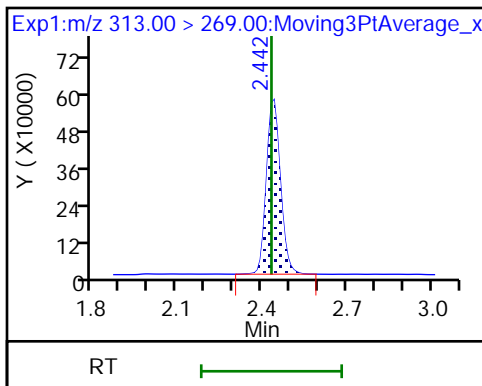
61 1H,1H,2H,2H-perfluorohexanesulfoni

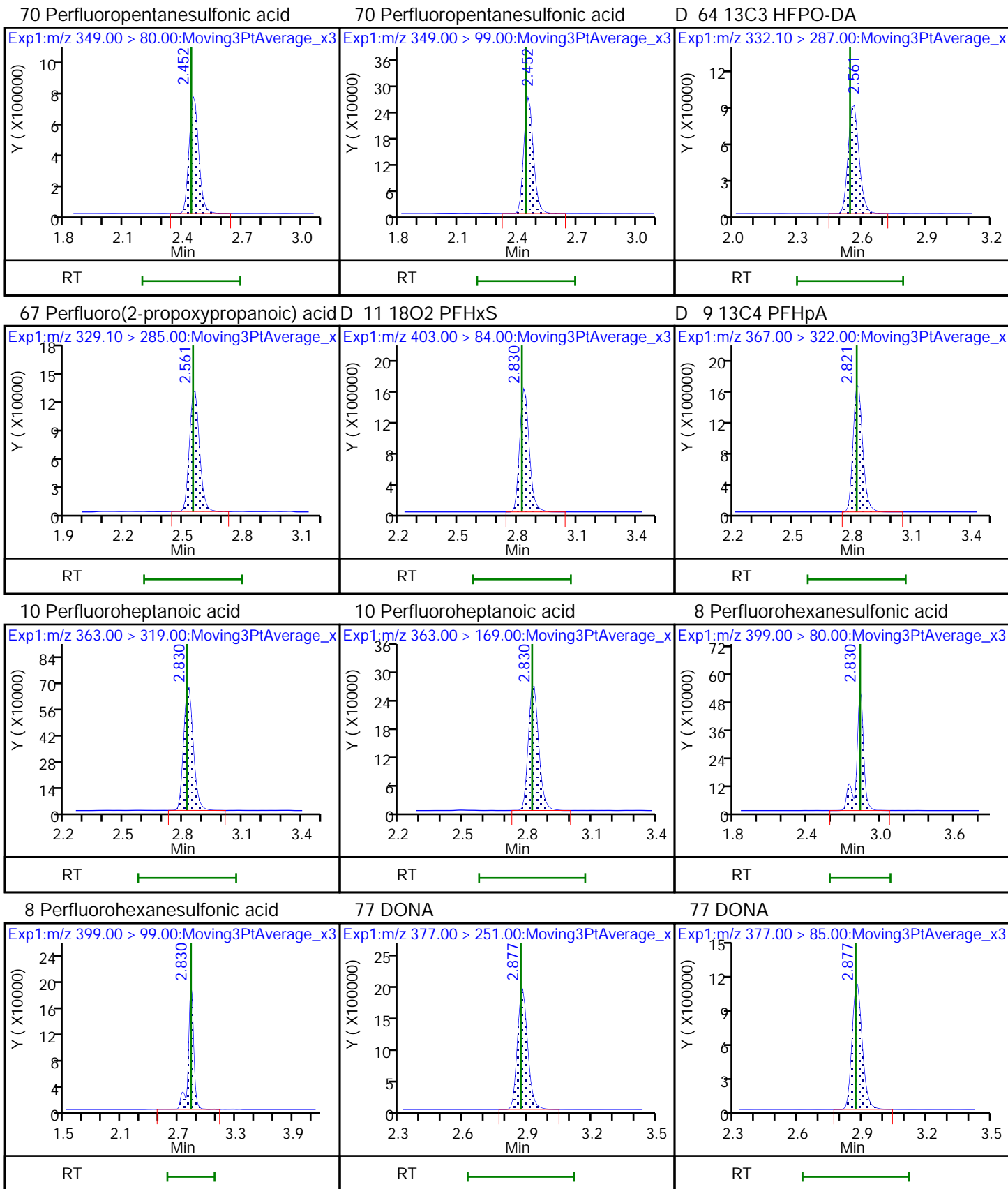


6 Perfluorohexanoic acid

6 Perfluorohexanoic acid

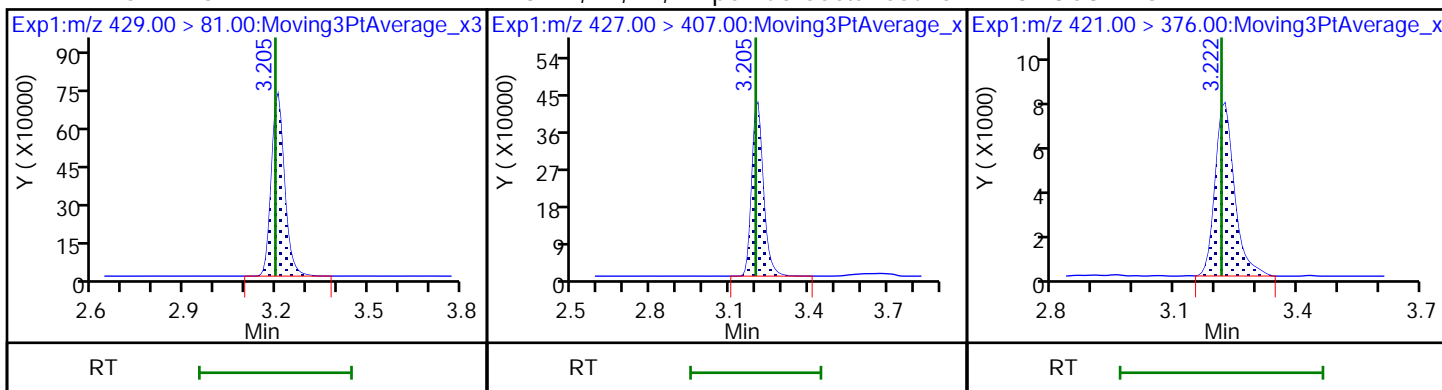
D 7 13C2 PFHxA





D 12 M2-6:2 FTS

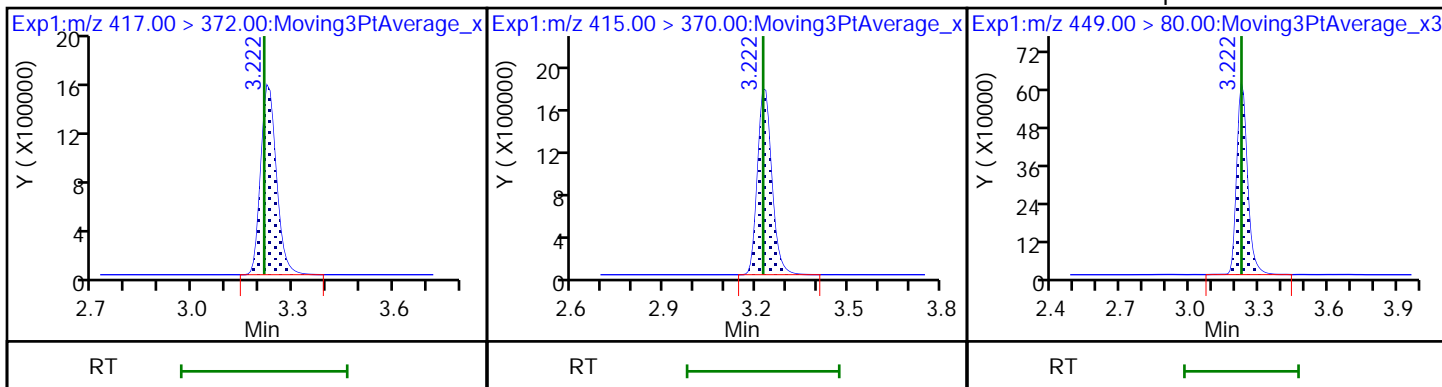
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

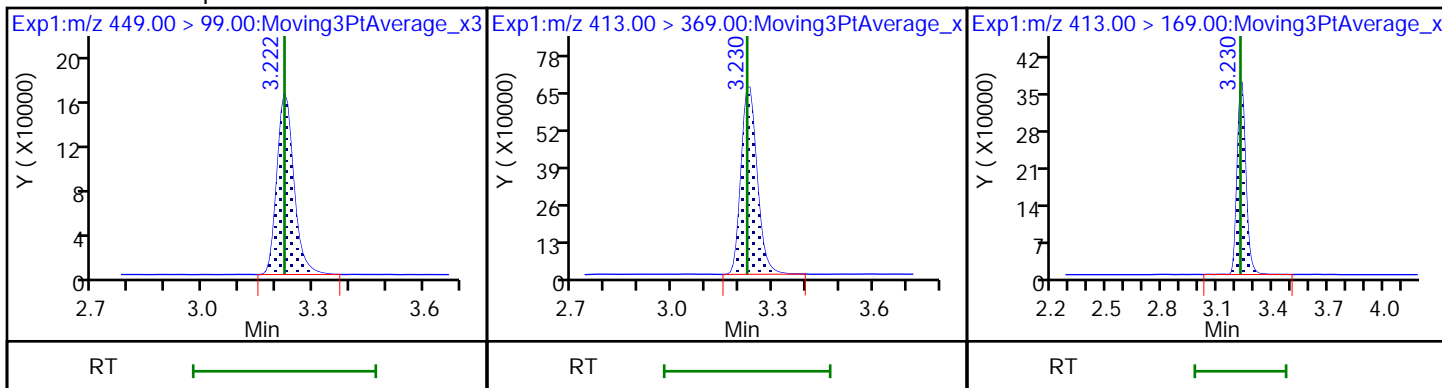
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

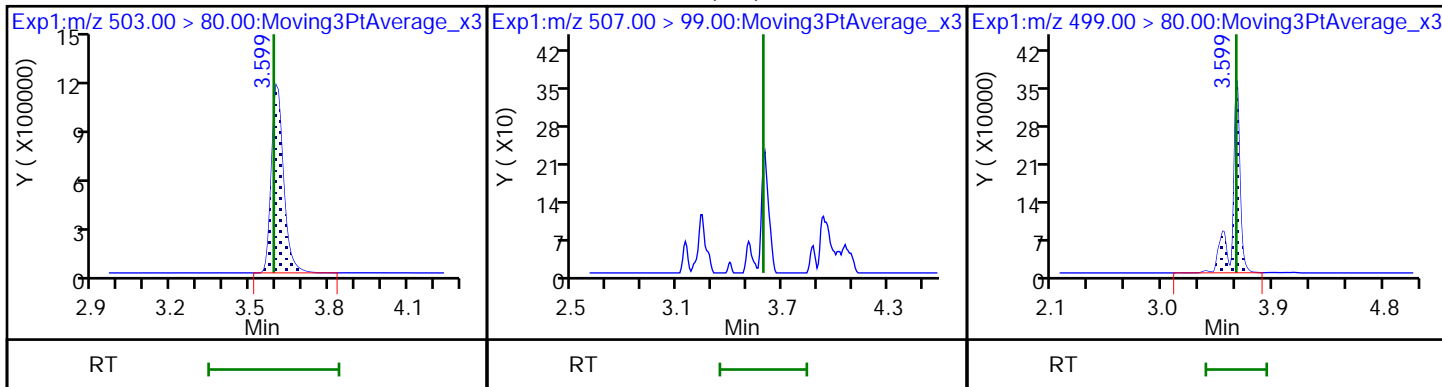
15 Perfluorooctanoic acid

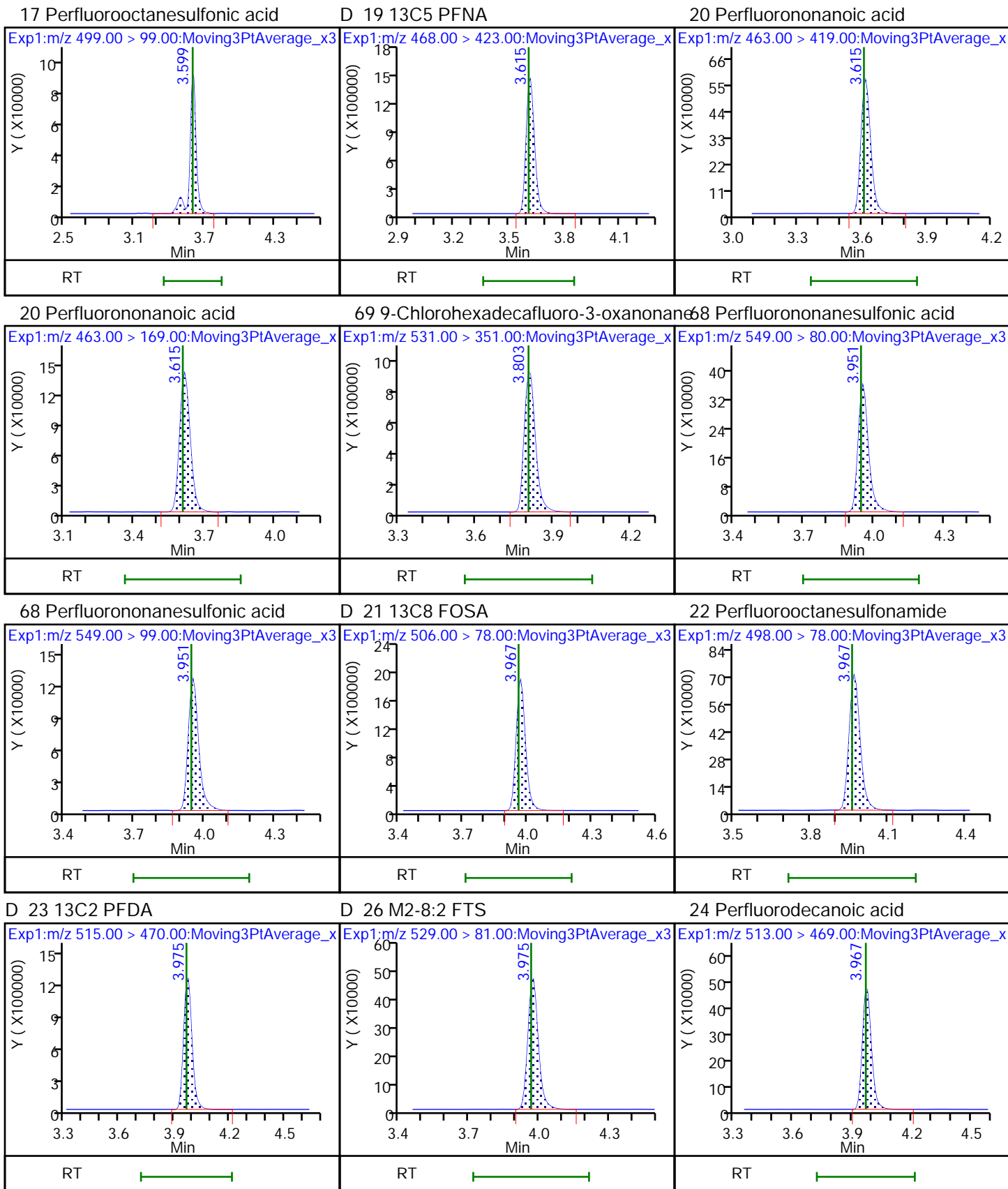


D 18 13C4 PFOS

D 72 13C8 PFOS (ND)

17 Perfluorooctanesulfonic acid

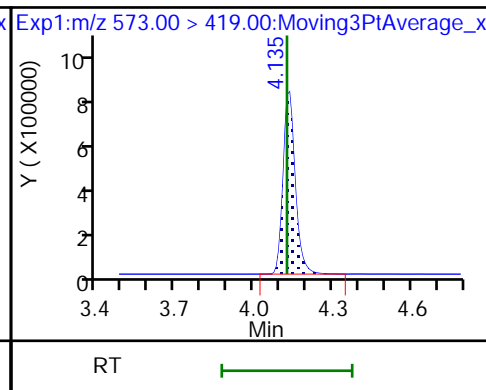
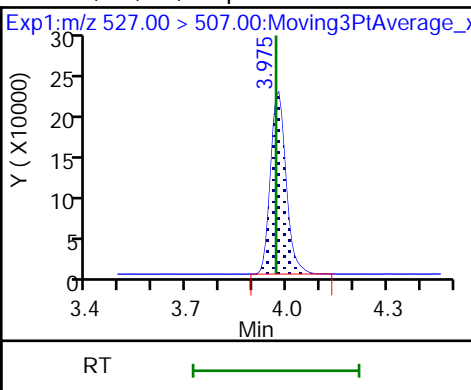
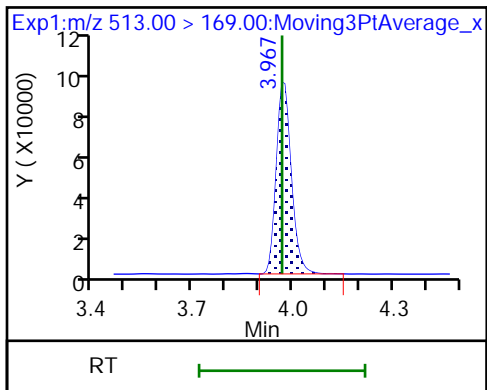




24 Perfluorodecanoic acid

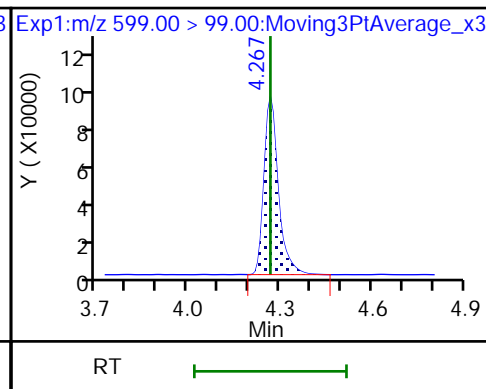
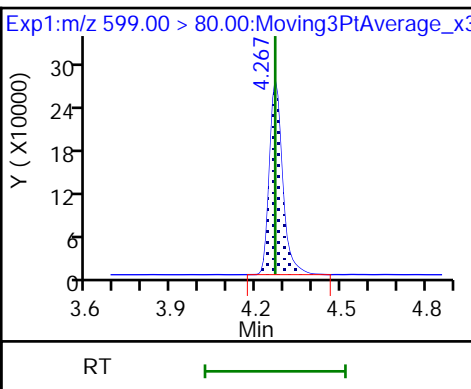
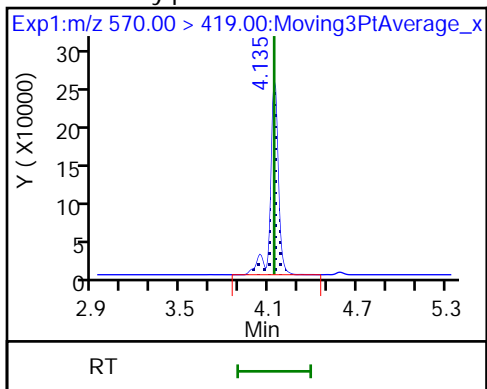
25 1H,1H,2H,2H-perfluorodecanesulfonamide

27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamide

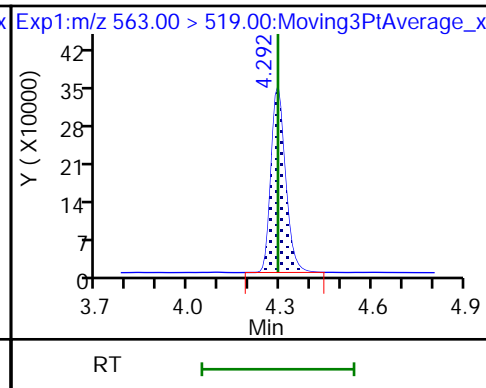
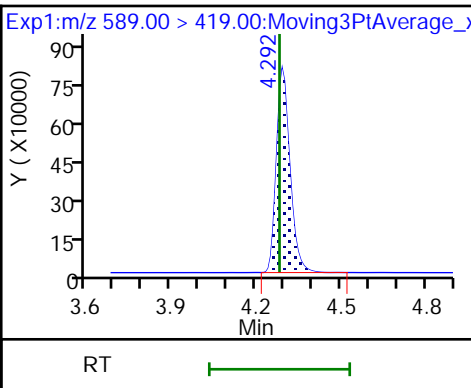
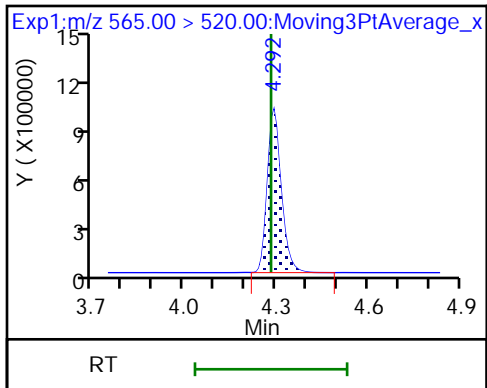
29 Perfluorodecanesulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

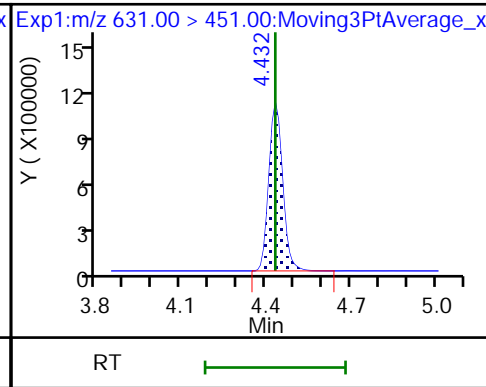
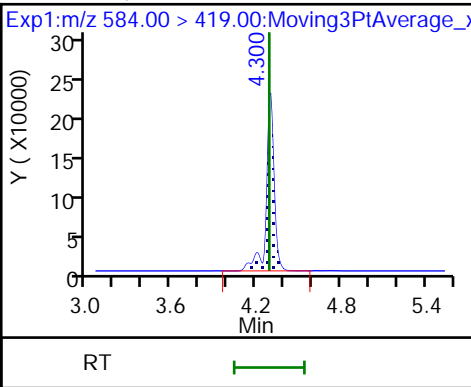
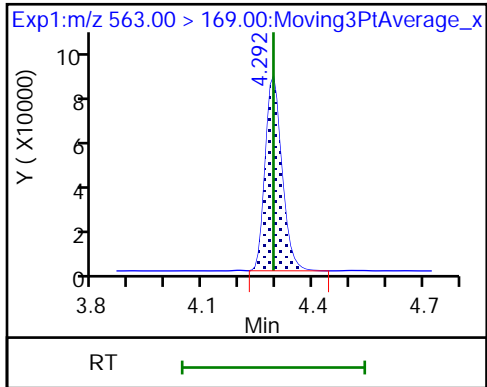
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

33 N-ethylperfluorooctanesulfonamide

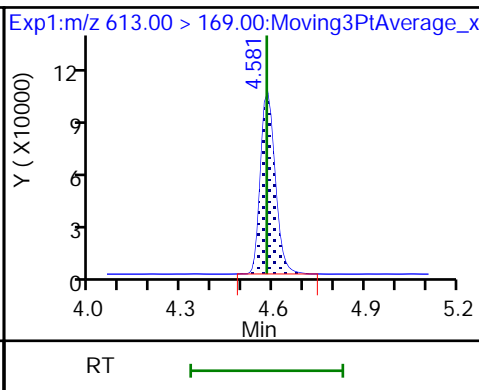
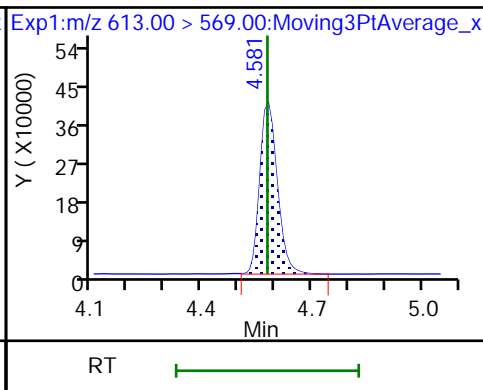
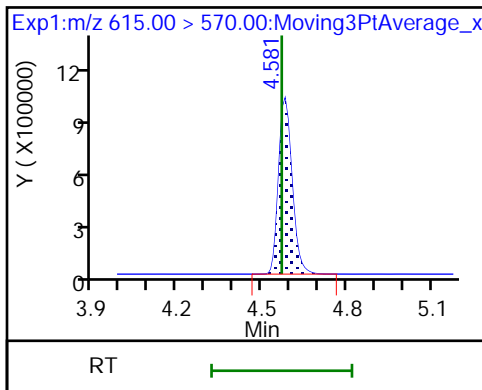
66 11-Chloroeicosafluoro-3-oxaundecanoic acid



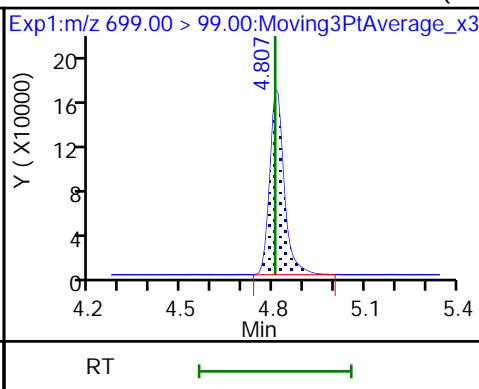
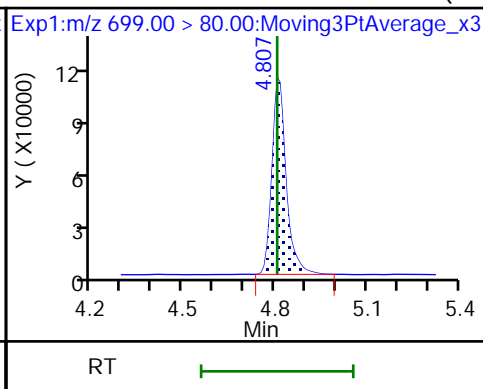
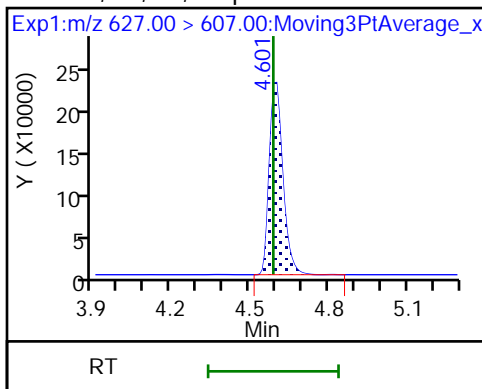
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



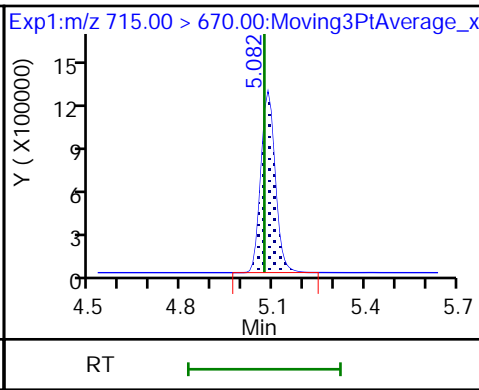
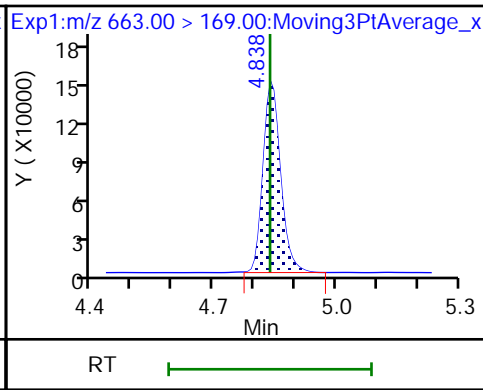
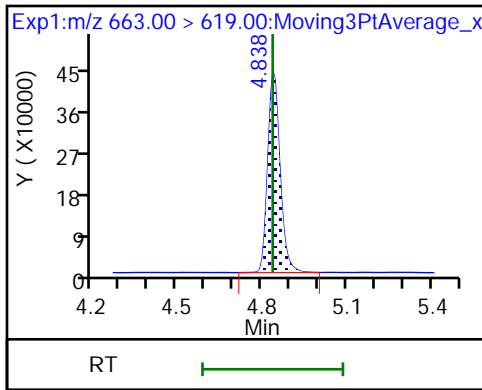
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

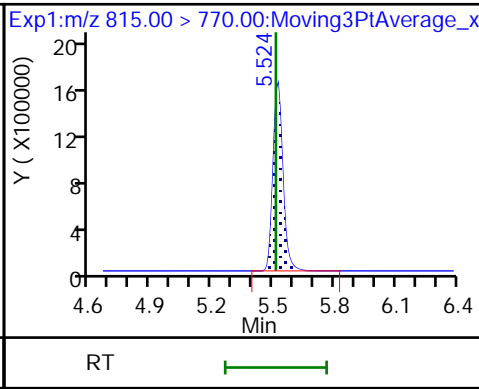
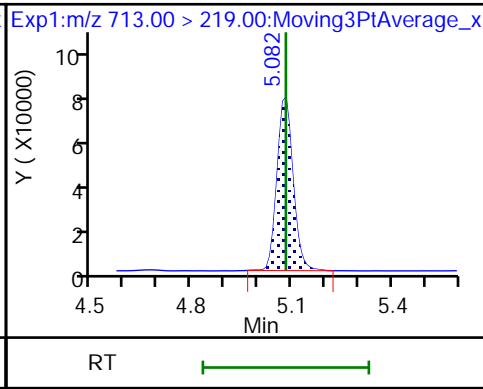
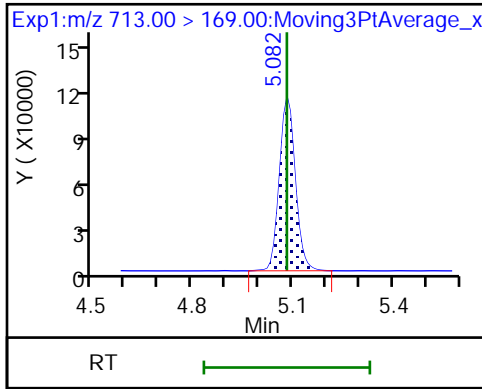
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

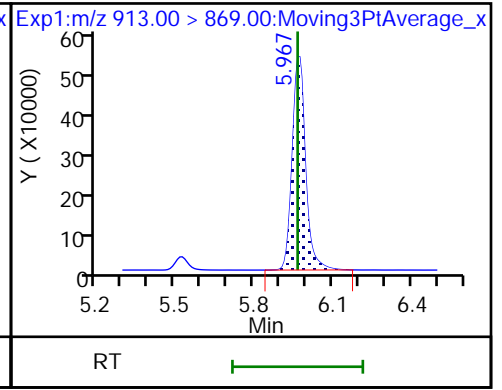
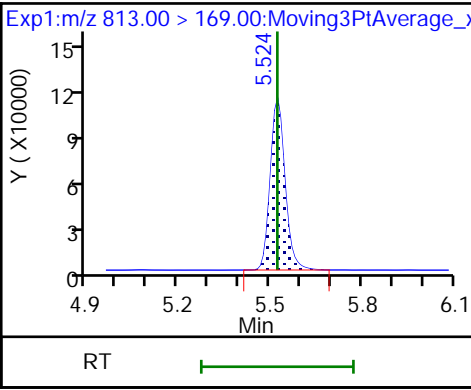
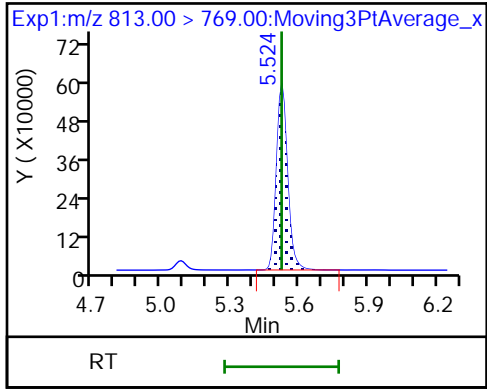
D 44 13C2 PFHxDA



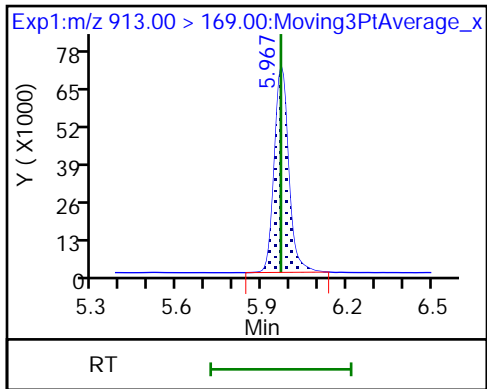
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

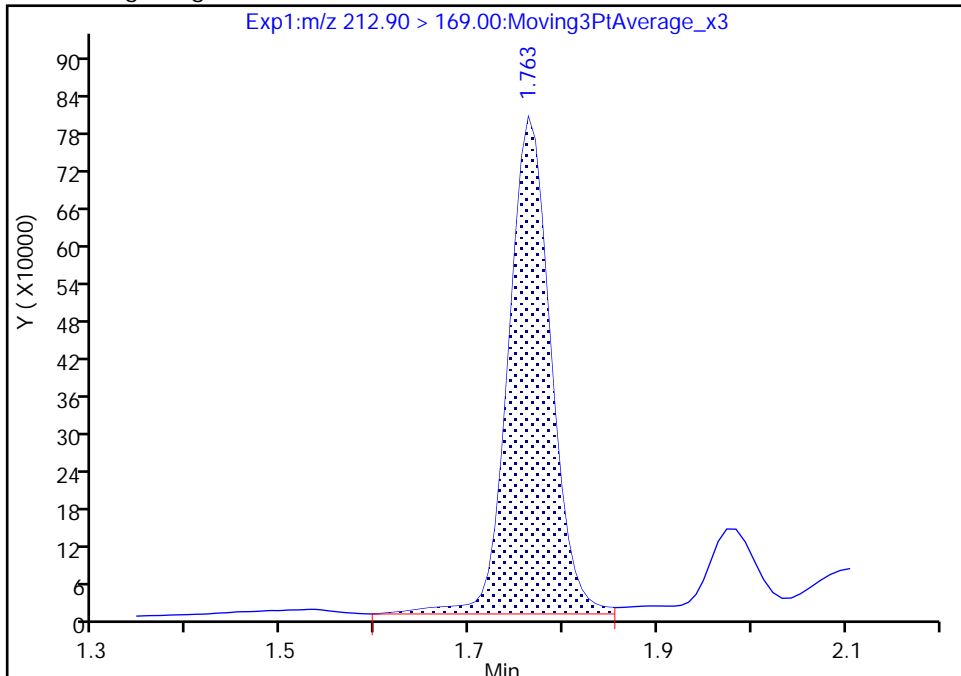
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Injection Date: 06-Dec-2018 09:20:05 Instrument ID: A8_N
Lims ID: 480-145071-A-1-A MS
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

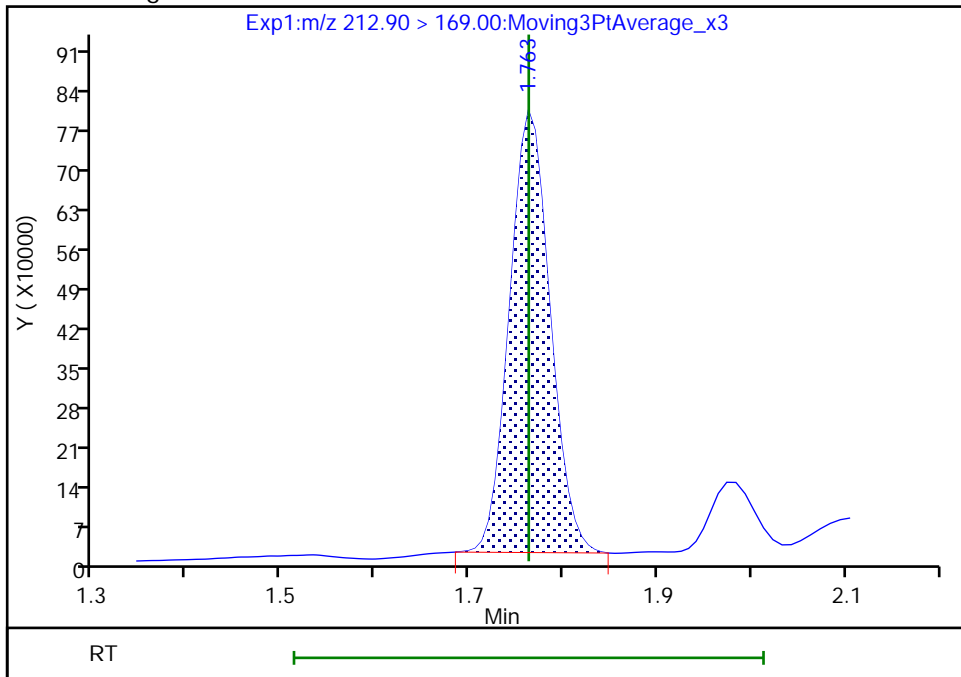
RT: 1.76
Area: 2478982
Amount: 1.118828
Amount Units: ng/ml

Processing Integration Results



RT: 1.76
Area: 2330231
Amount: 1.051693
Amount Units: ng/ml

Manual Integration Results



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA MS DL Lab Sample ID: 480-145071-1 MS DL
 Matrix: Water Lab File ID: 2018.12.14LLB_027.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 268.6 (mL) Date Analyzed: 12/14/2018 23:46
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 10
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 265427 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	34.23	J	186	28.9
27619-97-2	6:2 FTS	39.20	J	186	18.6
39108-34-4	8:2 FTS	36.69	J	186	18.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02118	d3-NMeFOSAA	91		25-150
STL02279	M2-6:2 FTS	130		25-150
STL02280	M2-8:2 FTS	93		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_027.d
 Lims ID: 480-145071-A-1-A MS
 Client ID: MW-01-2018-PFA
 Sample Type: MS
 Inject. Date: 14-Dec-2018 23:46:55 ALS Bottle#: 15 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 480-145071-a-1-a ms 10X
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Dec-2018 14:09:10 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0324

First Level Reviewer: mongkols Date: 17-Dec-2018 14:09:10
 Ratio Calibration: None

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	1.762	1.763	-0.001	0.548	1002289	0.2310	92.4	686	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.762	1.769	-0.007	1.000	376545	0.1028		103	45.8	M
4 Perfluoropentanoic acid										
262.90 > 219.00	2.073	2.072	0.001	1.000	281570	0.1018		102	16.3	
D 3 13C5 PFPeA										
267.90 > 223.00	2.073	2.074	-0.001	0.645	631521	0.2218		88.7	747	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.105	2.104	0.001	1.000	332365	0.0916	Target=2.49	104	365	
298.90 > 99.00	2.105	2.104	0.001	1.000	150459		2.21(1.25-3.74)		140	
D 47 13C3 PFBS										
301.90 > 80.00	2.105	2.105	0.0	0.655	854828	0.1939		83.4	81206	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.392	2.391	0.001	1.136	128851	0.1852		198	1311	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.431	2.431	0.0	1.000	296282	0.1039	Target=10.07	104	97.5	
313.00 > 119.00	2.431	2.431	0.0	1.000	25920		11.43(5.03-15.10)		77.6	
D 7 13C2 PFHxA										
315.00 > 270.00	2.431	2.432	-0.001	0.756	704627	0.2370		94.8	1006	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.451	2.451	0.0	1.165	314735	0.0990	Target=2.71	106	880	
349.00 > 99.00	2.451	2.451	0.0	1.165	116436		2.70(1.36-4.07)		469	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.550	2.550	0.0	1.000	59146	0.0995		99.5	67.1	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.550	2.551	-0.001	0.793	44296	0.2064		82.6	248	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4 PFHpA										
367.00 > 322.00	2.821	2.816	0.005	0.878	683632	0.2396		95.8	1381	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.821	2.817	0.004	1.000	295574	0.0958	Target=2.27	95.8	106	
363.00 > 169.00	2.821	2.817	0.004	1.000	118591		2.49(1.13-3.40)		146	
D 11 18O2 PFHxS										
403.00 > 84.00	2.821	2.826	-0.005	0.878	683034	0.1987		84.0	4997	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.821	2.826	-0.005	1.000	271647	0.0886	Target=3.00	97.3	1018	
399.00 > 99.00	2.831	2.826	0.005	1.003	94145		2.89(1.50-4.49)		335	
77 DONA										
377.00 > 251.00	2.868	2.863	0.005	0.798	801011	0.1087	Target=1.69	115	1354	
377.00 > 85.00	2.868	2.863	0.005	0.798	455335		1.76(0.85-2.54)		1161	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.198	3.193	0.005	0.995	159778	0.3098		130	928	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.198	3.193	0.005	1.000	110186	0.1053		111	164	
D 73 13C8 PFOA										
421.00 > 376.00	3.206	3.209	-0.003	0.997	4096	0.000942		0.0	22.6	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.214	3.209	0.005	0.894	251317	0.1037	Target=3.88	109	1098	
449.00 > 99.00	3.214	3.209	0.005	0.894	69748		3.60(1.94-5.82)		365	
D 14 13C4 PFOA										
417.00 > 372.00	3.214	3.218	-0.004	1.000	654831	0.2305		92.2	2086	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.214	3.218	-0.004	1.000	291870	0.0992	Target=1.68	99.2	36.6	
413.00 > 169.00	3.214	3.218	-0.004	1.000	158987		1.84(0.84-2.52)		101	
* 62 13C2 PFOA										
415.00 > 370.00	3.214	3.218	-0.004		720923	0.2500			1530	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.595	3.590	0.005	1.000	184126	0.0872	Target=4.62	94.0	274	
499.00 > 99.00	3.587	3.590	-0.003	0.998	42496		4.33(2.31-6.93)		183	
D 18 13C4 PFOS										
503.00 > 80.00	3.595	3.598	-0.003	1.119	450252	0.1987		83.1	1899	
20 Perfluorononanoic acid										
463.00 > 419.00	3.603	3.598	0.005	1.000	230633	0.1007	Target=3.79	101	152	
463.00 > 169.00	3.603	3.598	0.005	1.000	52197		4.42(1.90-5.69)		322	
D 19 13C5 PFNA										
468.00 > 423.00	3.603	3.605	-0.002	1.121	543990	0.2301		92.0	1854	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.798	3.794	0.004	1.057	324997	0.0909		97.6	2031	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.938	3.942	-0.004	1.095	137622	0.0934	Target=2.65	97.3	953	
549.00 > 99.00	3.938	3.942	-0.004	1.095	57651		2.39(1.33-3.97)		440	
D 21 13C8 FOSA										
506.00 > 78.00	3.954	3.957	-0.003	1.230	672403	0.1993		79.7	2171	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.954	3.957	-0.003	1.000	284183	0.1127		113	106	

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	3.962	3.957	0.005	1.000	188213	0.0970	Target=4.73	97.0	243	
513.00 > 169.00	3.962	3.957	0.005	1.000	34460		5.46(2.36-7.09)		245	
25 1H,1H,2H,2H-perfluorodecanesulfoni										
527.00 > 507.00	3.962	3.957	0.005	1.002	67334	0.0985		103	514	
D 23 13C2 PFDA										
515.00 > 470.00	3.962	3.965	-0.003	1.233	500915	0.2358		94.3	2437	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.954	3.965	-0.011	1.230	125153	0.2231		93.1	849	
28 N-methylperfluorooctanesulfonamido										
570.00 > 419.00	4.130	4.125	0.005	1.002	87378	0.0919		91.9	373	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.122	4.125	-0.003	1.282	256963	0.2286		91.4	1213	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.261	4.257	0.004	1.185	111495	0.0926	Target=2.77	96.0	604	
599.00 > 99.00	4.261	4.257	0.004	1.185	37339		2.99(1.39-4.16)		268	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.285	4.282	0.003	1.000	134848	0.0941	Target=4.24	94.1	195	
563.00 > 169.00	4.285	4.282	0.003	1.000	29963		4.50(2.12-6.36)		197	
D 30 13C2 PFUnA										
565.00 > 520.00	4.285	4.282	0.003	1.333	391956	0.2330		93.2	1414	
33 N-ethylperfluorooctanesulfonamidoa										
584.00 > 419.00	4.293	4.291	0.002	1.002	93178	0.0930		93.0	383	M
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.285	4.291	-0.006	1.333	293326	0.2485		99.4	541	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.421	4.420	0.001	1.230	479217	0.0897		95.2	3106	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.570	4.569	0.001	1.000	177089	0.1018	Target=4.27	102	226	
613.00 > 169.00	4.570	4.569	0.001	1.000	42816		4.14(2.13-6.40)		430	
D 36 13C2 PFDaA										
615.00 > 570.00	4.570	4.577	-0.007	1.422	408490	0.2357		94.3	2074	
74 1H,1H,2H,2H-perfluorododecanesulfo										
627.00 > 607.00	4.588	4.587	0.001	1.160	57858	0.1244		129	618	
75 Perfluorododecanesulfonic acid (PF										
699.00 > 80.00	4.805	4.805	0.0	1.337	47140	0.0887	Target=0.00	91.7	221	
699.00 > 99.00	4.805	4.805	0.0	1.337	71194		0.66(0.00-0.00)		503	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.835	4.836	-0.001	1.058	160964	0.0973	Target=2.51	97.3	177	
663.00 > 169.00	4.835	4.836	-0.001	1.058	54563		2.95(1.25-3.76)		377	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.073	5.081	-0.008	1.000	40832	0.0911	Target=1.42	91.1	433	
713.00 > 219.00	5.073	5.081	-0.008	1.000	31186		1.31(0.71-2.13)		290	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.073	5.081	-0.008	1.578	442941	0.2200		88.0	2009	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.515	5.513	0.002	1.000	251496	0.0801	Target=5.72	80.1	129	
813.00 > 169.00	5.515	5.513	0.002	1.000	44264		5.68(2.86-8.58)		673	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.515	5.513	0.002	1.716	692645	0.1959		78.3	2425	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.967	5.966	0.001	1.082	248640	0.0772	Target=7.65	77.2	155	
913.00 > 169.00	5.960	5.966	-0.006	1.081	31157		7.98(3.83-11.48)		362	

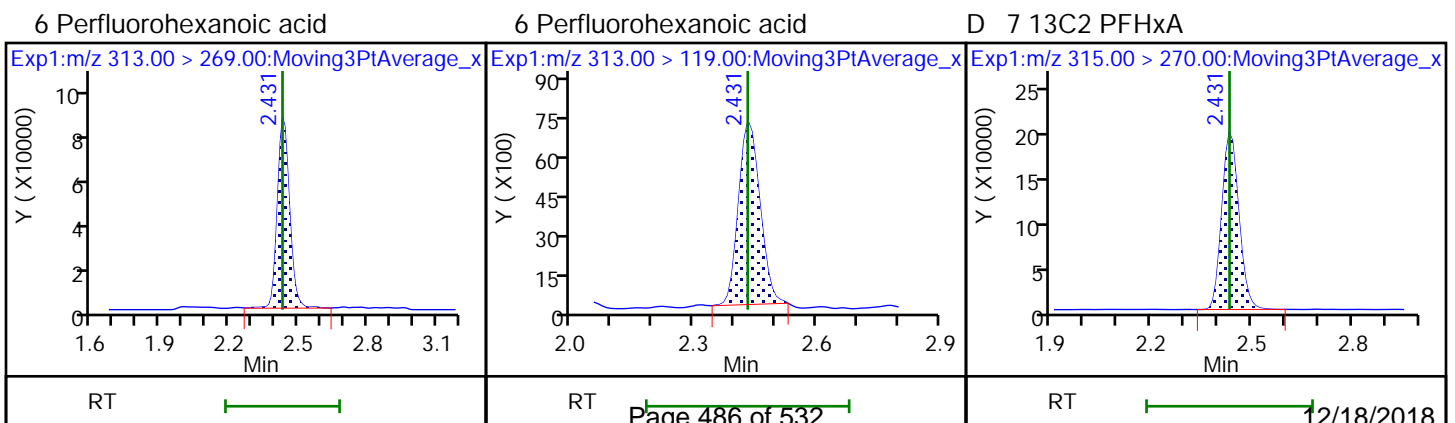
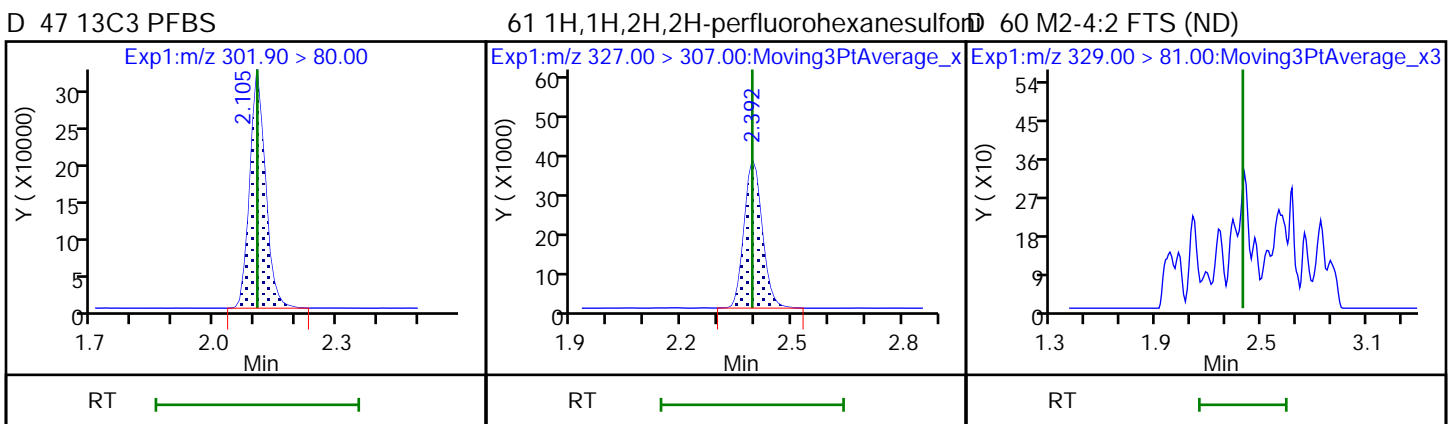
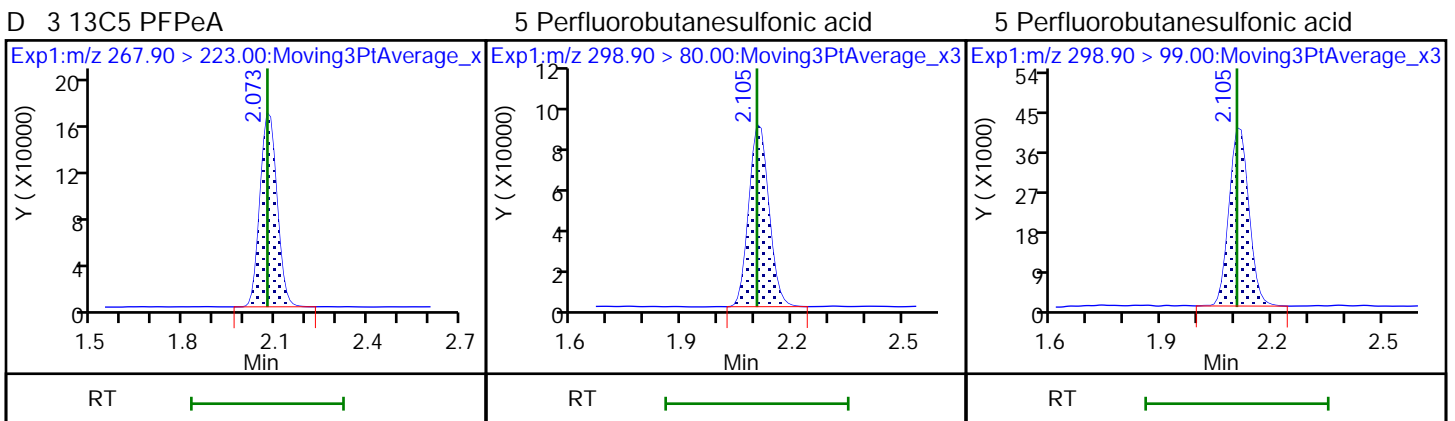
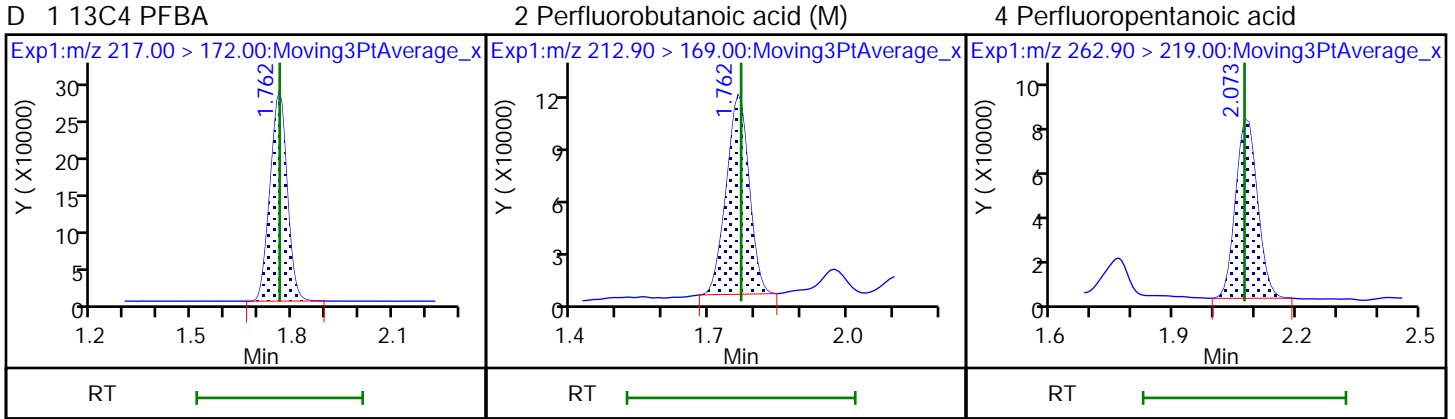
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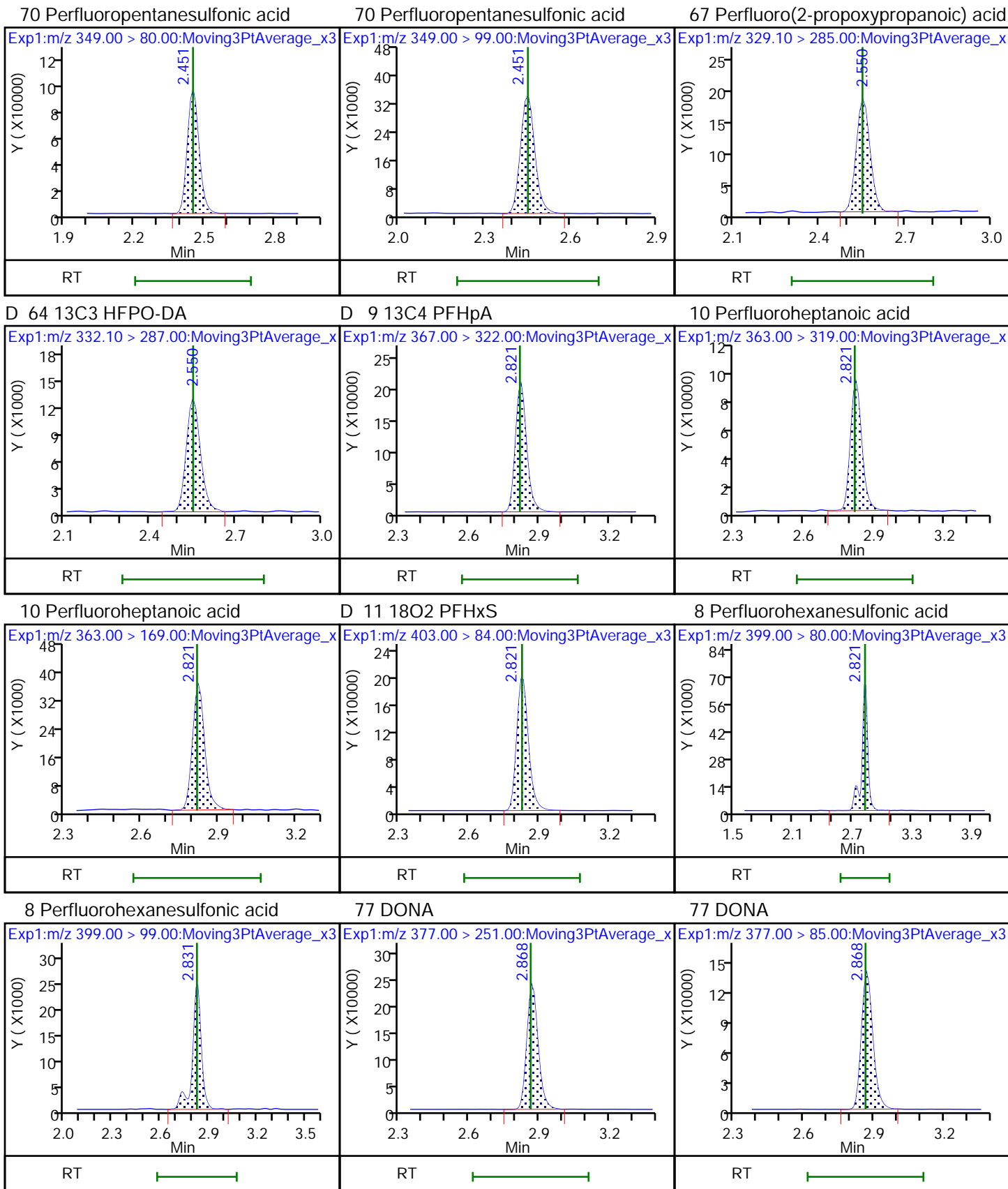
Review Flags

M - Manually Integrated

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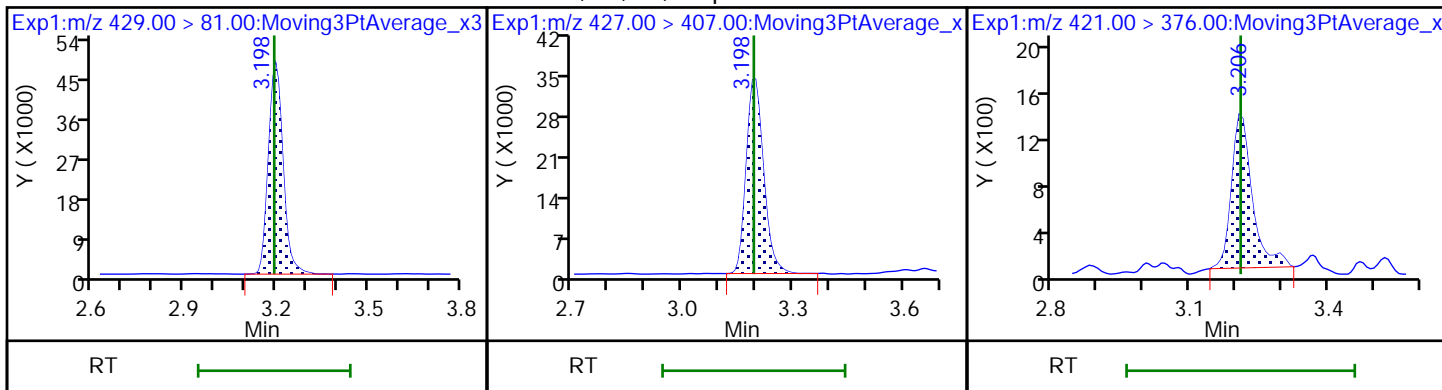
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 Injection Date: 14-Dec-2018 23:46:55 Instrument ID: A8_N
 Lims ID: 480-145071-A-1-A MS
 Client ID: MW-01-2018-PFA
 Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Method: A8_N Limit Group: LC PFC ICAL





D 12 M2-6:2 FTS

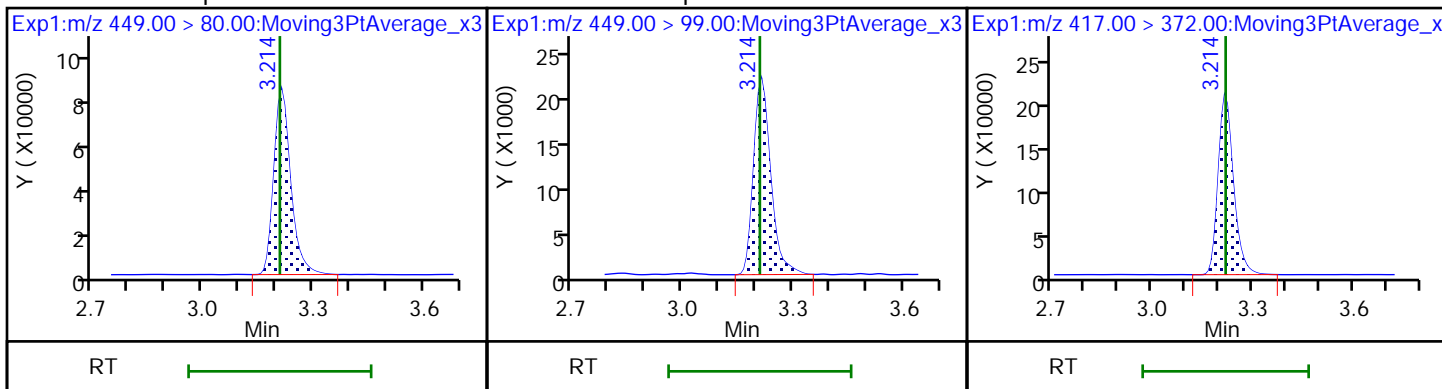
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

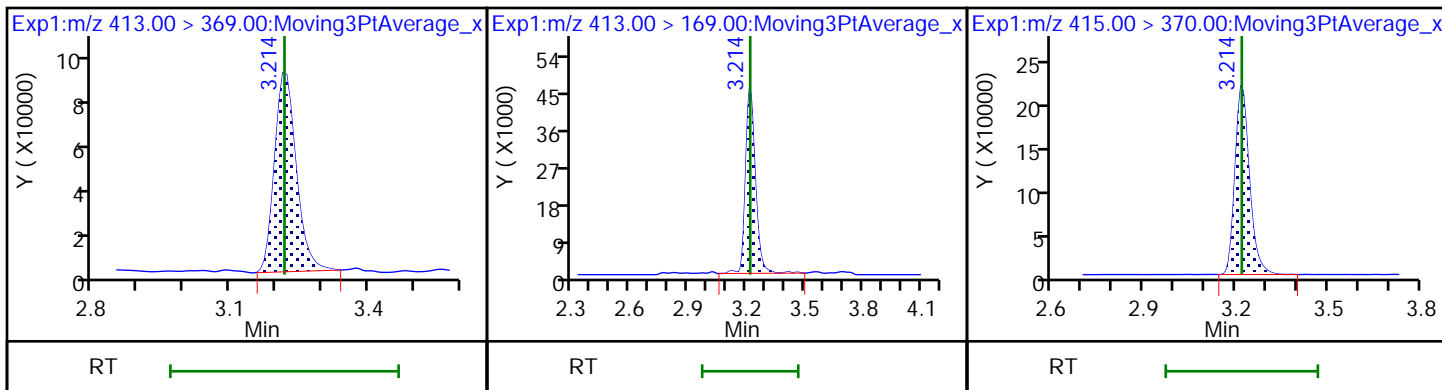
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

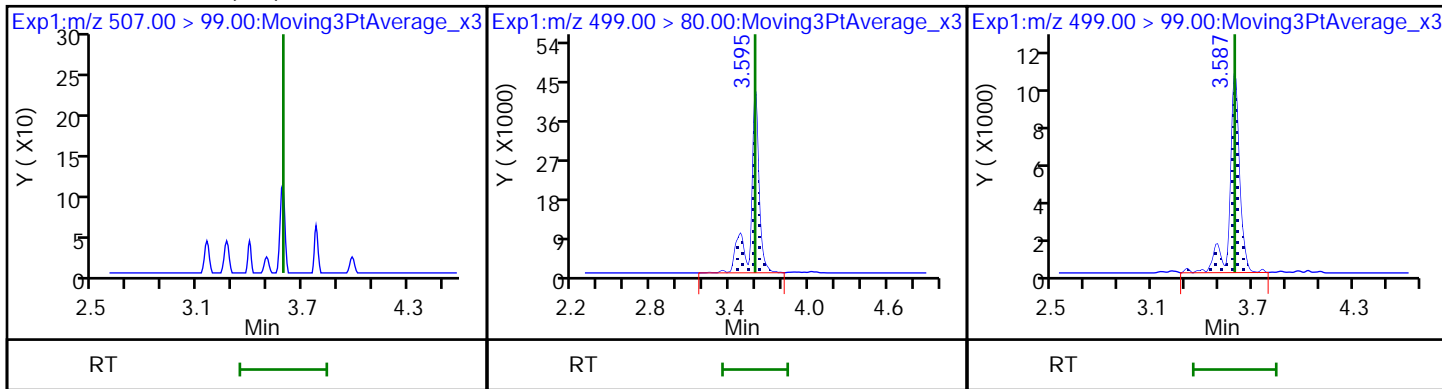
* 62 13C2 PFOA



D 72 13C8 PFOS (ND)

17 Perfluorooctanesulfonic acid

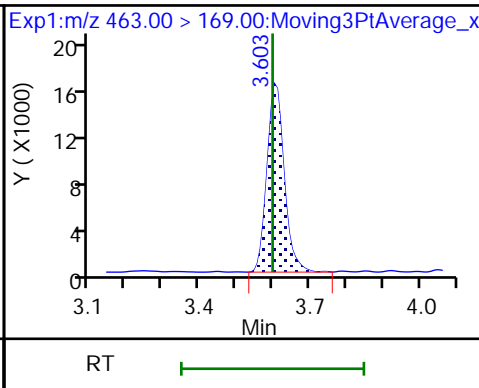
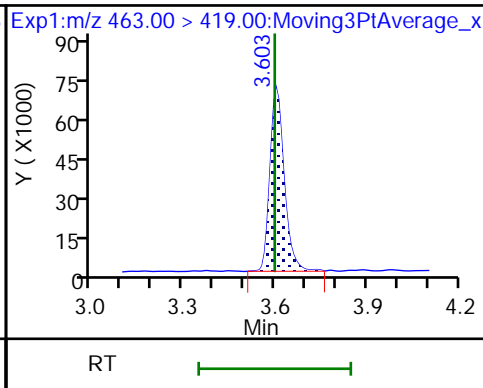
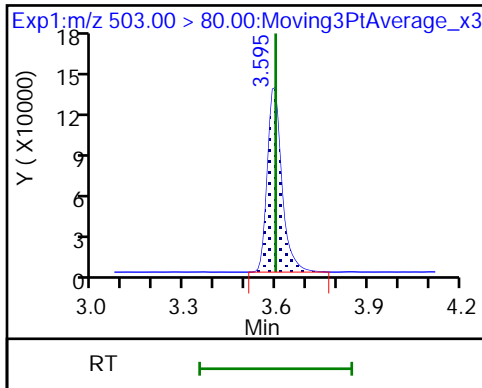
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

20 Perfluorononanoic acid

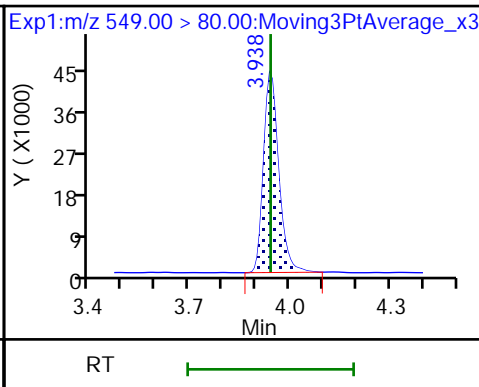
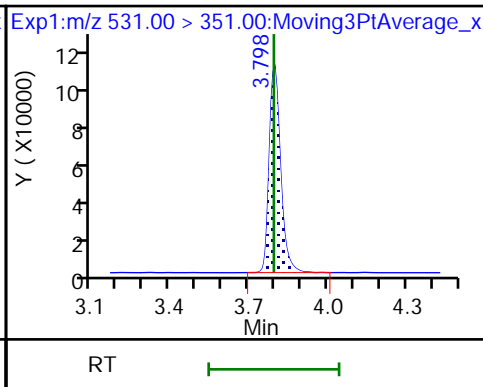
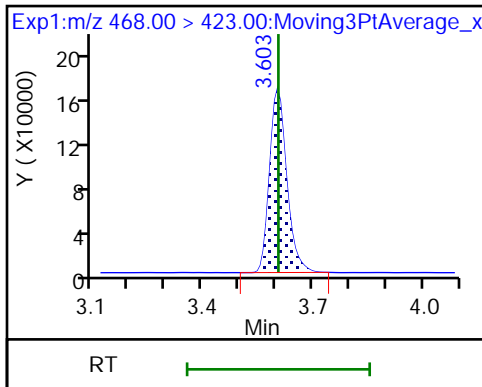
20 Perfluorononanoic acid



D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

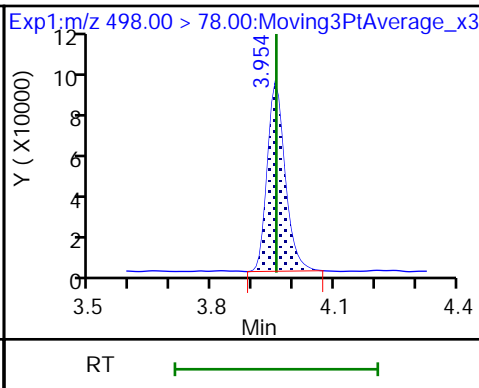
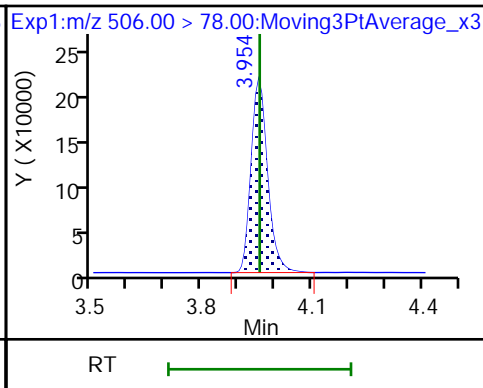
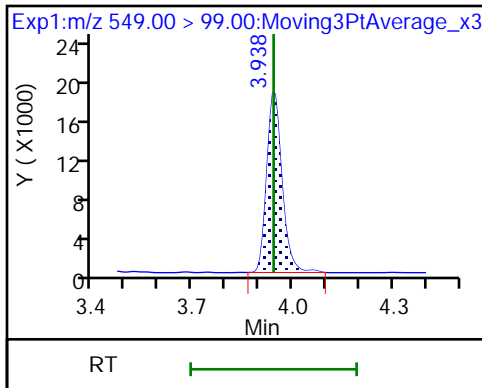
68 Perfluorononanesulfonic acid



68 Perfluorononanesulfonic acid

D 21 13C8 FOSA

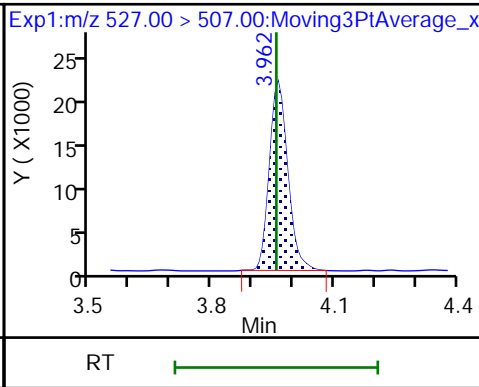
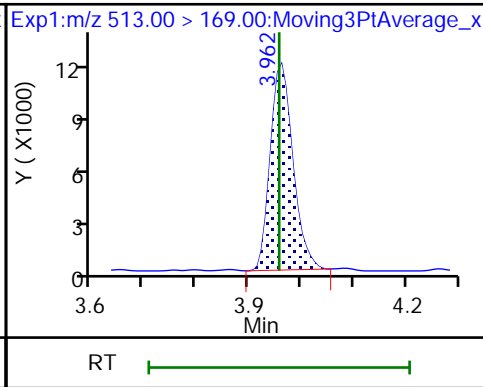
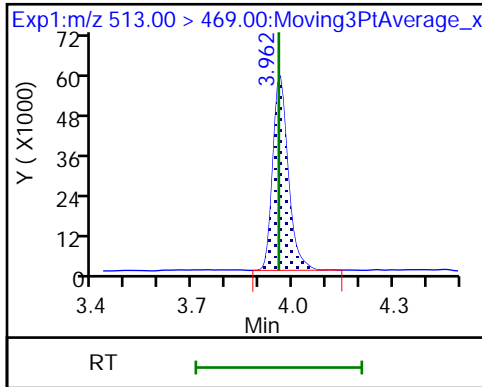
22 Perfluorooctanesulfonamide



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

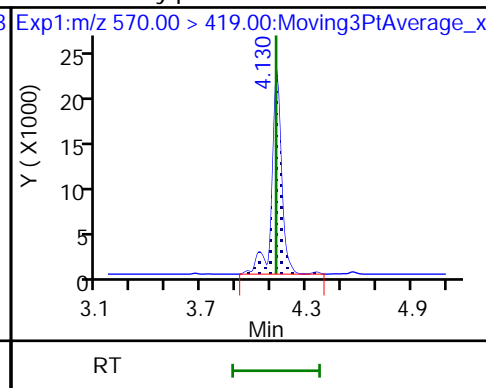
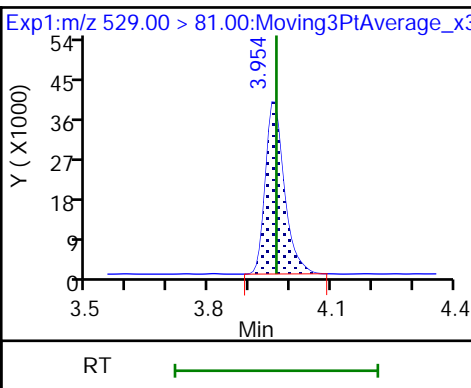
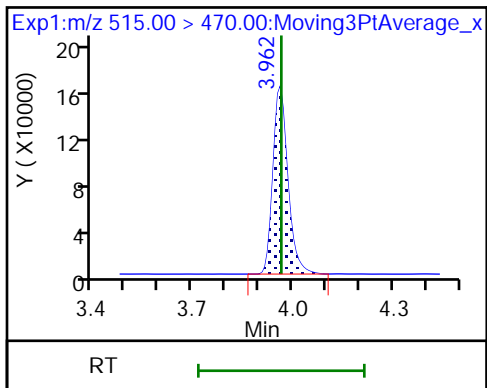
25 1H,1H,2H,2H-perfluorodecanesulfoni



D 23 13C2 PFDA

D 26 M2-8:2 FTS

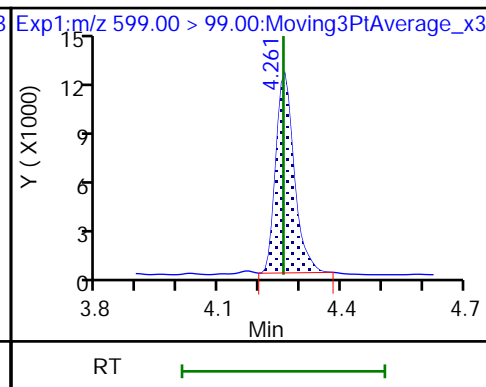
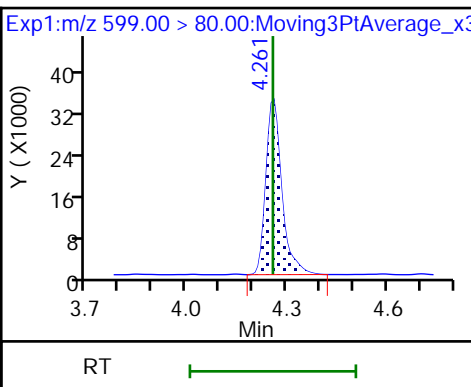
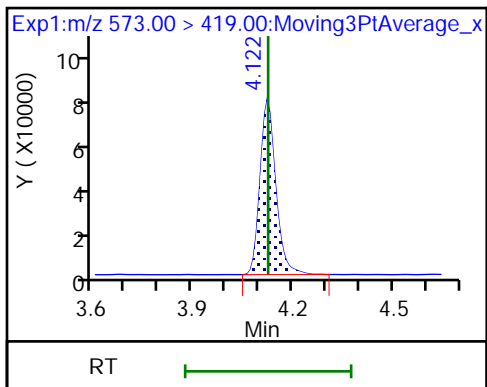
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

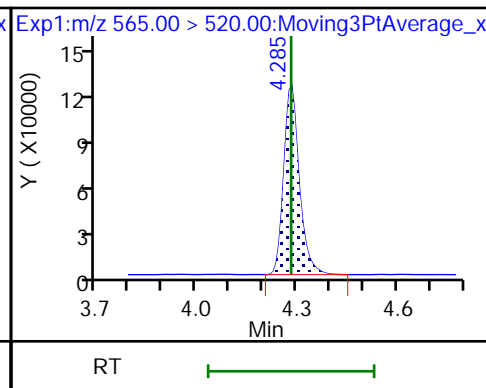
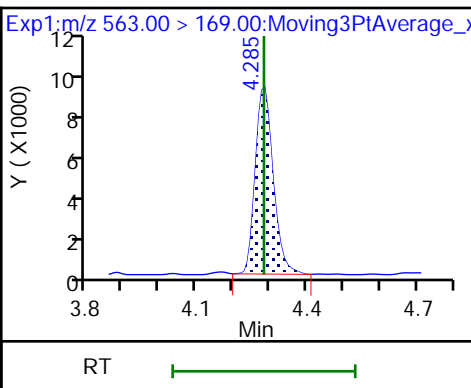
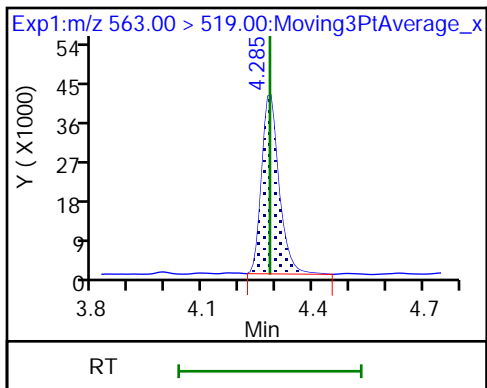
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

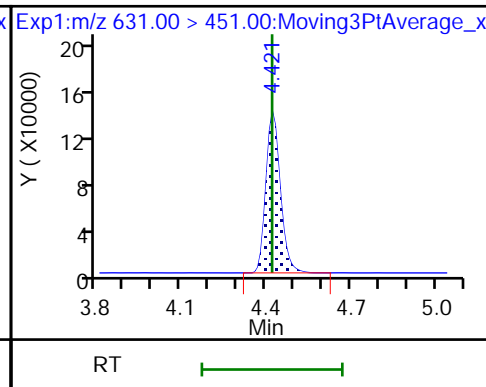
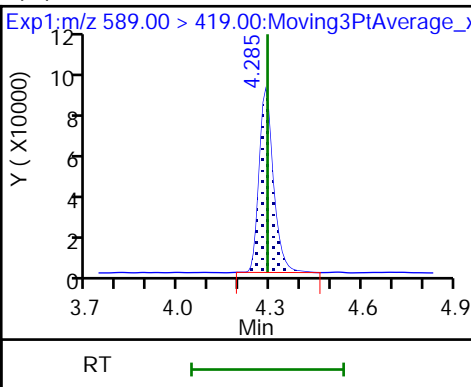
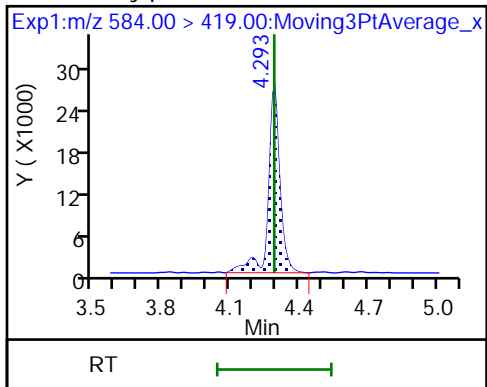
D 30 13C2 PFUnA

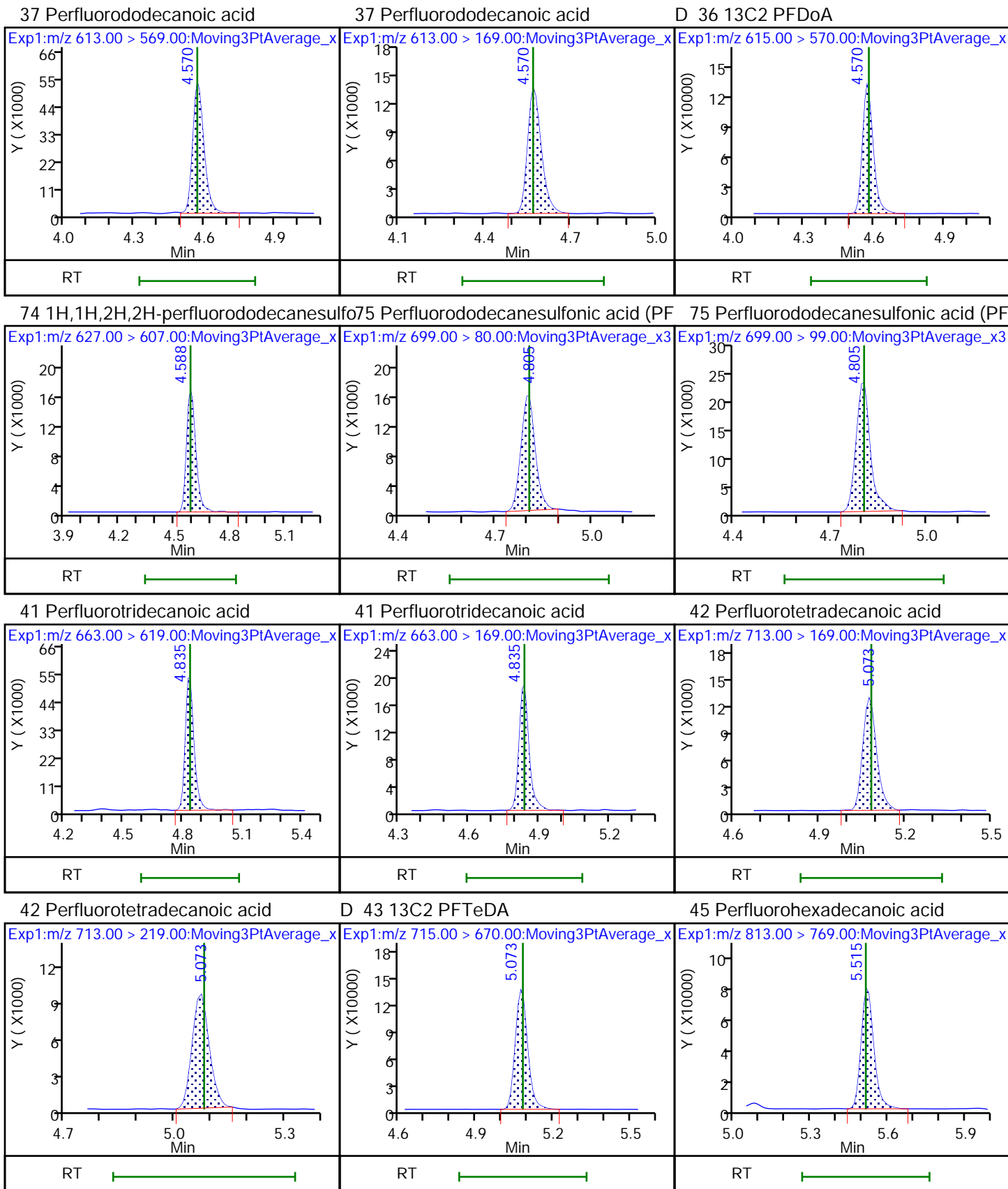


33 N-ethylperfluorooctanesulfonamido

D 32 d5-NEtFOSAA

66 11-Chloroeicosafluoro-3-oxaundecan

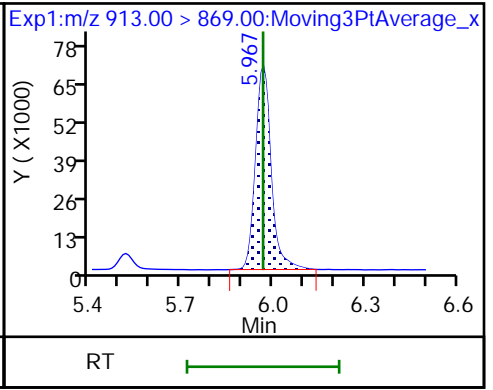
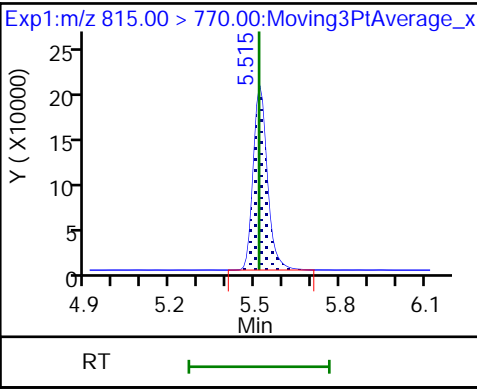
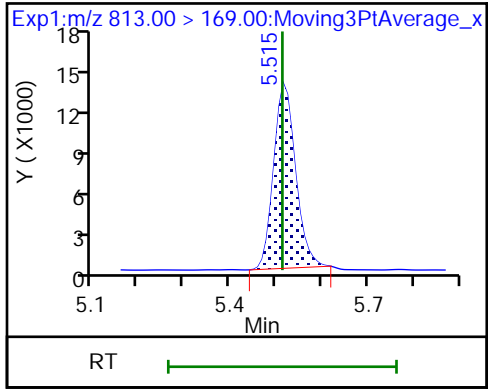




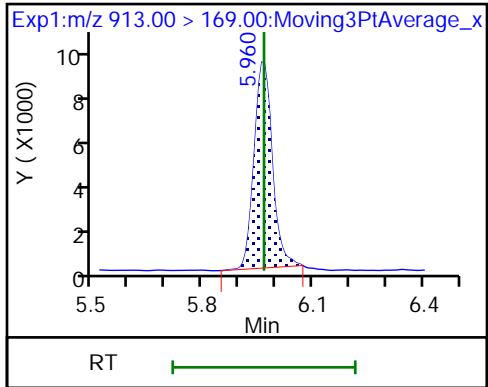
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA MSD Lab Sample ID: 480-145071-1 MSD
 Matrix: Water Lab File ID: 2018.12.05LLB_030.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 265.4 (mL) Date Analyzed: 12/06/2018 09:27
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid (PFBA)	39.84		1.88	0.33
2706-90-3	Perfluoropentanoic acid (PFPeA)	37.65		1.88	0.46
307-24-4	Perfluorohexanoic acid (PFHxA)	36.18		1.88	0.55
375-85-9	Perfluoroheptanoic acid (PFHpA)	36.27		1.88	0.24
335-67-1	Perfluorooctanoic acid (PFOA)	36.29		1.88	0.80
375-95-1	Perfluorononanoic acid (PFNA)	35.62		1.88	0.25
335-76-2	Perfluorodecanoic acid (PFDA)	34.56		1.88	0.29
2058-94-8	Perfluoroundecanoic acid (PFUnA)	37.59		1.88	1.04
307-55-1	Perfluorododecanoic acid (PFDoA)	30.19		1.88	0.52
72629-94-8	Perfluorotridecanoic acid (PFTriA)	25.49		1.88	1.22
376-06-7	Perfluorotetradecanoic acid (PFTeA)	35.33		1.88	0.27
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35.40		1.88	0.19
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.85		1.88	0.16
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	32.45		1.88	0.18
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	32.83		1.88	0.51
335-77-3	Perfluorodecanesulfonic acid (PFDS)	25.57		1.88	0.30
754-91-6	Perfluorooctanesulfonamide (FOSA)	35.01		1.88	0.33
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	37.97		18.8	1.79

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA MSD Lab Sample ID: 480-145071-1 MSD
 Matrix: Water Lab File ID: 2018.12.05LLB_030.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 265.4 (mL) Date Analyzed: 12/06/2018 09:27
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 1
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 263404 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	66		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	83		25-150
STL01892	13C4 PFHpA	94		25-150
STL00990	13C4 PFOA	86		25-150
STL00995	13C5 PFNA	105		25-150
STL00996	13C2 PFDA	117		25-150
STL00997	13C2 PFUnA	89		25-150
STL00998	13C2 PFDoA	105		25-150
STL02116	13C2 PFTeDA	88		25-150
STL02337	13C3 PFBS	89		25-150
STL00994	18O2 PFHxS	93		25-150
STL00991	13C4 PFOS	105		25-150
STL01056	13C8 FOSA	94		25-150
STL02117	d5-NEtFOSAA	128		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_030.d
 Lims ID: 480-145071-B-1-B MSD
 Client ID: MW-01-2018-PFA
 Sample Type: MSD
 Inject. Date: 06-Dec-2018 09:27:35 ALS Bottle#: 21 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Sample Info: 480-145071-b-1-b msd
 Misc. Info.: Plate: 1 Rack: 5
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 14-Dec-2018 14:37:10 Calib Date: 29-Nov-2018 07:31:36
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromdocs2018\q3\Sacramento\ChromData\A8_N\20181128-68346.b\2018.11.29PFCICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0321

First Level Reviewer: mongkols Date: 14-Dec-2018 14:37:10
 Ratio Calibration: None

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	1.761	1.756	0.005	0.547	5094806	1.66		66.5	4231	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.761	1.763	-0.002	1.000	1960847	1.06		106	26.8	M
4 Perfluoropentanoic acid										
262.90 > 219.00	2.072	2.074	-0.002	1.000	1926244	1.00		99.9	32.8	
D 3 13C5 PFPeA										
267.90 > 223.00	2.072	2.074	-0.002	0.643	4422646	2.29		91.8	4036	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.104	2.105	-0.001	1.000	2381318	0.9395	Target=2.49	106	350	
298.90 > 99.00	2.104	2.105	-0.001	1.000	1020298		2.33(1.25-3.74)		176	
D 47 13C3 PFBS										
301.90 > 80.00	2.104	2.105	-0.001	0.653	6072227	2.07		88.9	162984	
D 60 M2-4:2 FTS										
329.00 > 81.00	2.351	2.383	-0.032	0.730	845	0.003585		0.0	0.4	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.391	2.393	-0.002	1.137	1335601	2.65		284	988	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.431	2.432	-0.001	1.000	1625400	0.9602	Target=10.07	96.0	223	
313.00 > 119.00	2.431	2.432	-0.001	1.000	145633		11.16(5.03-15.10)		306	
D 7 13C2 PFHxA										
315.00 > 270.00	2.431	2.432	-0.001	0.754	4220402	2.07		82.8	6254	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.450	2.442	0.008	1.165	2195669	0.9787	Target=2.71	104	589	
349.00 > 99.00	2.450	2.442	0.008	1.165	812482		2.70(1.36-4.07)		682	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.549	2.541	0.008	0.791	287120	2.03		81.3	2670	

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	2.549	2.551	-0.002	1.000	426721	1.09	109	243	
D 11 18O2 PFHxS	403.00	> 84.00	2.821	2.821	0.0	0.876	5032018	2.20	93.2	11863	
D 9 13C4 PFHpA	367.00	> 322.00	2.821	2.821	0.0	0.876	4728784	2.36	94.5	9975	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.821	2.821	0.0	1.000	1936434	0.9626	Target=2.27	96.3	537
	363.00	> 169.00	2.821	2.821	0.0	1.000	761421		2.54(1.13-3.40)		741
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.831	2.830	0.001	1.003	2075080	0.8983	Target=3.00	98.7	506
	399.00	> 99.00	2.821	2.830	-0.009	1.000	706260		2.94(1.50-4.49)		682
77 DONA	377.00	> 251.00	2.868	2.868	0.0	0.797	5776648	0.9333	Target=1.69	99.1	11419
	377.00	> 85.00	2.868	2.868	0.0	0.797	3383856		1.71(0.85-2.54)		3854
D 12 M2-6:2 FTS	429.00	> 81.00	3.197	3.197	0.0	0.992	1951884	5.55		234	886
13 1H,1H,2H,2H-perfluorooctanesulfoni	427.00	> 407.00	3.197	3.197	0.0	1.000	1257862	0.9834		104	168
D 73 13C8 PFOA	421.00	> 376.00	3.214	3.213	0.001	0.997	19413	0.006735		0.0	135
D 14 13C4 PFOA	417.00	> 372.00	3.222	3.213	0.009	1.000	4217631	2.16		86.3	9725
* 62 13C2 PFOA	415.00	> 370.00	3.222	3.222	0.0		5021579	2.50			9734
16 Perfluoroheptanesulfonic acid	449.00	> 80.00	3.222	3.222	0.0	0.895	1761495	0.8612	Target=3.88	90.5	241
	449.00	> 99.00	3.222	3.222	0.0	0.895	445373		3.96(1.94-5.82)		560
15 Perfluorooctanoic acid	413.00	> 369.00	3.222	3.222	0.0	1.000	1842770	0.9631	Target=1.68	96.3	493
	413.00	> 169.00	3.222	3.222	0.0	1.000	1002862		1.84(0.84-2.52)		847
D 18 13C4 PFOS	503.00	> 80.00	3.599	3.590	0.009	1.117	3732516	2.50		105	969
17 Perfluorooctanesulfonic acid	499.00	> 80.00	3.599	3.599	0.0	1.000	1516839	0.8712	Target=4.62	93.9	315
	499.00	> 99.00	3.599	3.599	0.0	1.000	326644		4.64(2.31-6.93)		450
D 19 13C5 PFNA	468.00	> 423.00	3.607	3.606	0.001	1.119	4314401	2.63		105	12453
20 Perfluorononanoic acid	463.00	> 419.00	3.607	3.607	0.0	1.000	1683222	0.9454	Target=3.79	94.5	1119
	463.00	> 169.00	3.607	3.607	0.0	1.000	434009		3.88(1.90-5.69)		2609
69 9-Chlorohexadecafluoro-3-oxanonane	531.00	> 351.00	3.803	3.803	0.0	1.057	2408656	0.7691		82.5	6245
68 Perfluorononanesulfonic acid	549.00	> 80.00	3.944	3.944	0.0	1.096	1080177	0.8892	Target=2.65	92.6	707
	549.00	> 99.00	3.944	3.944	0.0	1.096	392370		2.75(1.33-3.97)		1127
D 21 13C8 FOSA	506.00	> 78.00	3.960	3.957	0.003	1.229	5154097	2.34		93.5	8272

M
M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
22 Perfluorooctanesulfonamide	498.00 > 78.00	3.960	3.959	0.001	1.000	1916828	0.9290	92.9	357	
D 23 13C2 PFDA	515.00 > 470.00	3.968	3.965	0.003	1.231	4192362	2.93	117	12732	
D 26 M2-8:2 FTS	529.00 > 81.00	3.968	3.965	0.003	1.231	2338114	6.16	257	1465	
24 Perfluorodecanoic acid	513.00 > 469.00	3.968	3.967	0.001	1.000	1517610	0.9173	Target=4.73	91.7	1761
	513.00 > 169.00	3.968	3.967	0.001	1.000	287718		5.27(2.36-7.09)		1092
25 1H,1H,2H,2H-perfluorodecanesulfoni	527.00 > 507.00	3.968	3.967	0.001	1.000	1227954	0.9603		100	13360
D 27 d3-NMeFOSAA	573.00 > 419.00	4.127	4.125	0.002	1.281	2858016	4.09		164	7387
28 N-methylperfluorooctanesulfonamido	570.00 > 419.00	4.135	4.135	0.0	1.002	995989	0.9260		92.6	605
29 Perfluorodecanesulfonic acid	599.00 > 80.00	4.265	4.267	-0.002	1.185	686574	0.6786	Target=2.77	70.4	911
	599.00 > 99.00	4.265	4.267	-0.002	1.185	222596		3.08(1.39-4.16)		1146
D 30 13C2 PFUnA	565.00 > 520.00	4.289	4.282	0.007	1.331	2571194	2.23		89.3	6373
D 32 d5-NEtFOSAA	589.00 > 419.00	4.289	4.282	0.007	1.331	2365770	3.20		128	3560
31 Perfluoroundecanoic acid	563.00 > 519.00	4.289	4.292	-0.003	1.000	917945	1.00	Target=4.24	99.8	966
	563.00 > 169.00	4.289	4.292	-0.003	1.000	201114		4.56(2.12-6.36)		1108
33 N-ethylperfluorooctanesulfonamidoa	584.00 > 419.00	4.297	4.292	0.005	1.002	819499	1.01		101	2977
66 11-Chloroeicosafuoro-3-oxaundecan	631.00 > 451.00	4.428	4.432	-0.004	1.230	3318866	0.7206		76.5	14126
D 36 13C2 PFDaA	615.00 > 570.00	4.576	4.569	0.007	1.420	3223319	2.63		105	9694
37 Perfluorododecanoic acid	613.00 > 569.00	4.576	4.578	-0.002	1.000	1123566	0.8014	Target=4.27	80.1	1009
	613.00 > 169.00	4.576	4.578	-0.002	1.000	307846		3.65(2.13-6.40)		1858
74 1H,1H,2H,2H-perfluorododecanesulfo	627.00 > 607.00	4.586	4.588	-0.002	1.156	1031190	1.11		116	7772
75 Perfluorododecanesulfonic acid (PF	699.00 > 80.00	4.812	4.806	0.006	1.337	265791	0.5765	Target=0.00	59.6	370
	699.00 > 99.00	4.804	4.806	-0.002	1.335	381100		0.70(0.00-0.00)		1600
41 Perfluorotridecanoic acid	663.00 > 619.00	4.835	4.837	-0.002	1.057	921966	0.6766	Target=2.51	67.7	785
	663.00 > 169.00	4.835	4.837	-0.002	1.057	301039		3.06(1.25-3.76)		1695
D 43 13C2 PFTeDA	715.00 > 670.00	5.080	5.070	0.010	1.576	3202440	2.20		87.8	14721
42 Perfluorotetradecanoic acid	713.00 > 169.00	5.080	5.081	-0.001	1.000	310753	0.9376	Target=1.42	93.8	1702
	713.00 > 219.00	5.070	5.081	-0.011	0.998	227627		1.37(0.71-2.13)		691

Ratio Calibration: None

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	5.512	5.512	0.0	1.711	5473481	2.03		81.3	9182	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.522	5.523	-0.001	1.002	1918275	0.9874	Target=5.72	98.7	318	
813.00 > 169.00	5.522	5.523	-0.001	1.002	354925		5.40(2.86-8.58)		2386	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.965	5.966	-0.001	1.082	2288914	0.9014	Target=7.65	90.1	360	
913.00 > 169.00	5.957	5.966	-0.009	1.081	301364		7.60(3.83-11.48)		1687	

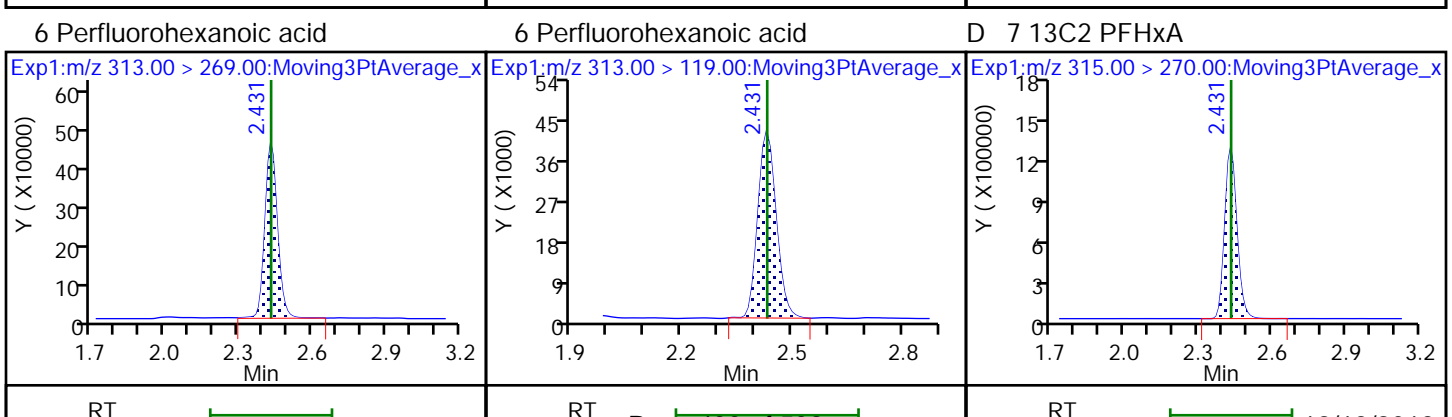
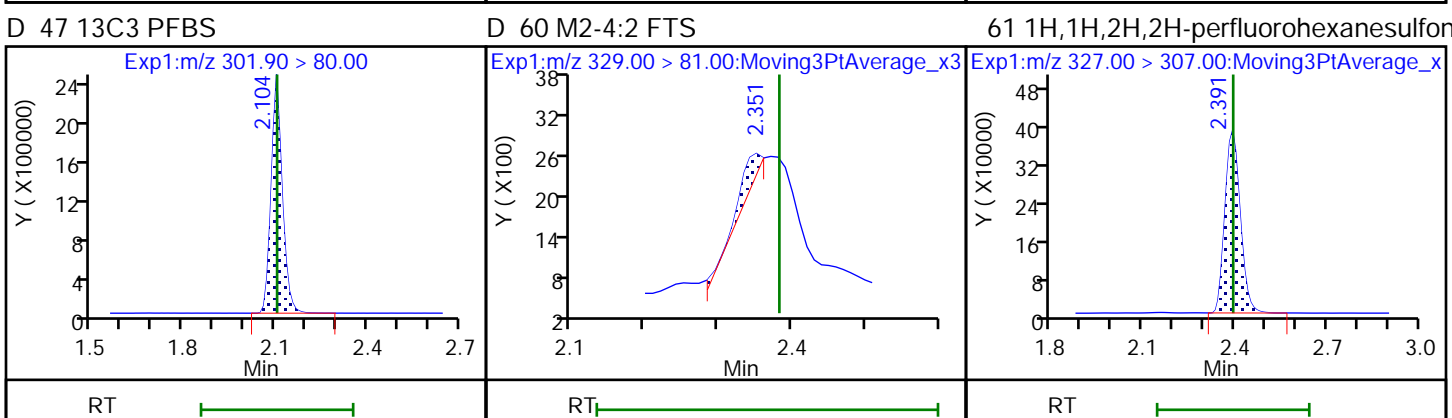
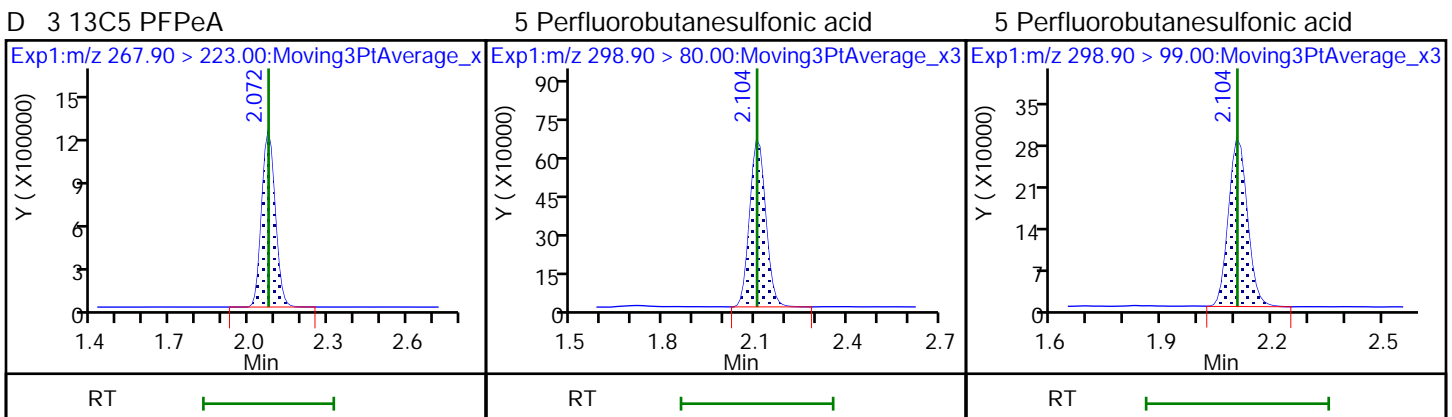
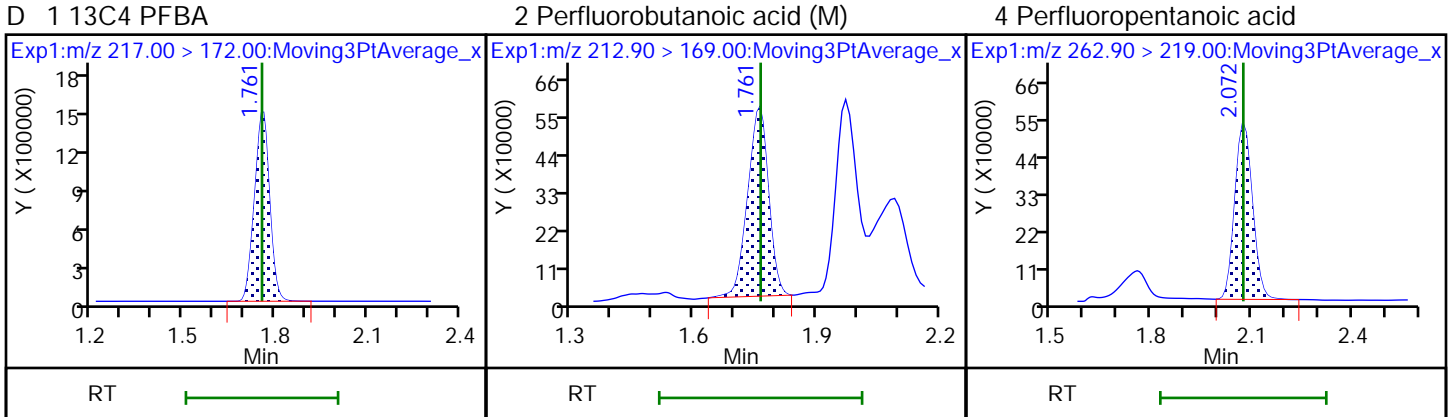
QC Flag Legend

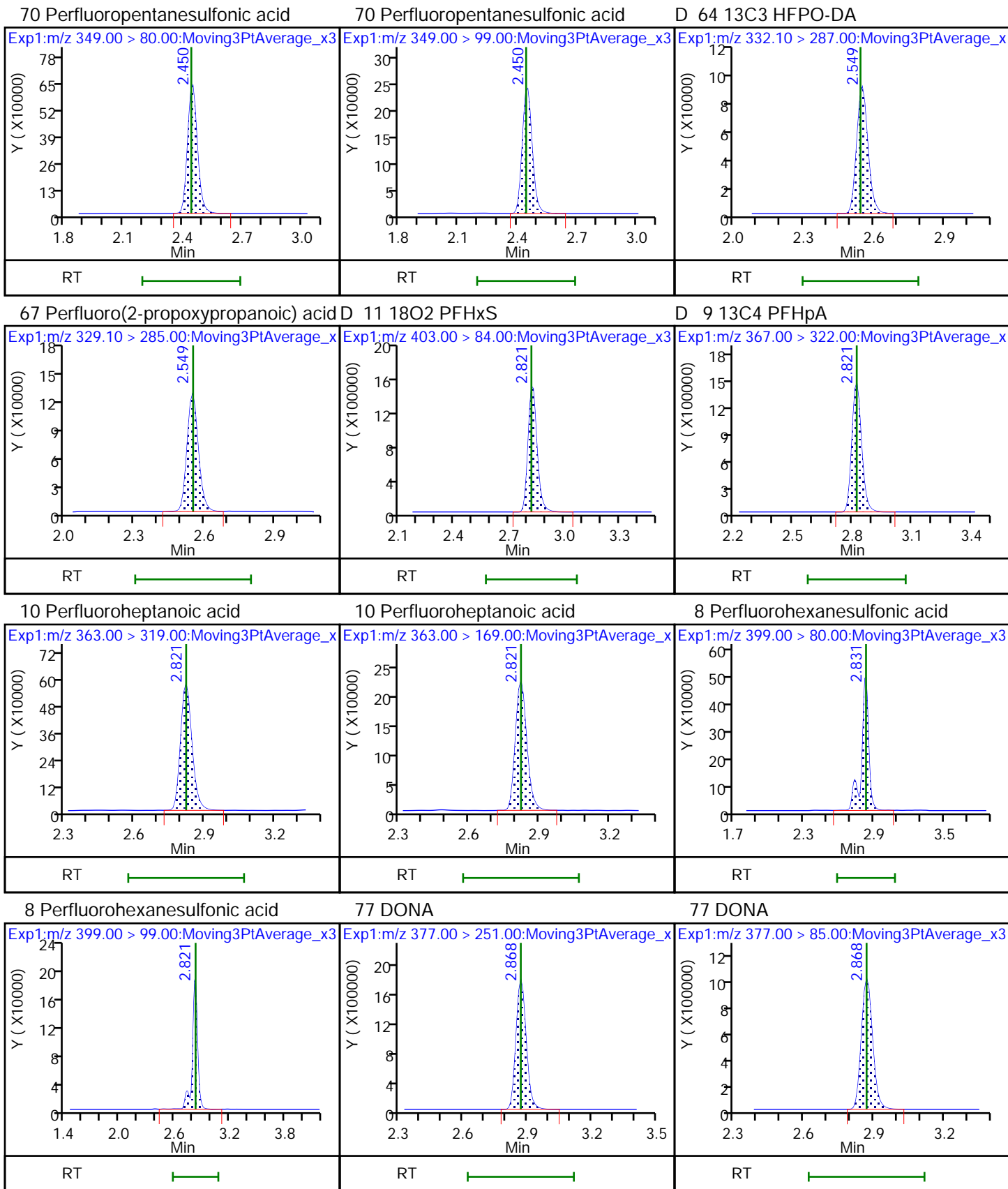
Review Flags

M - Manually Integrated

TestAmerica Sacramento

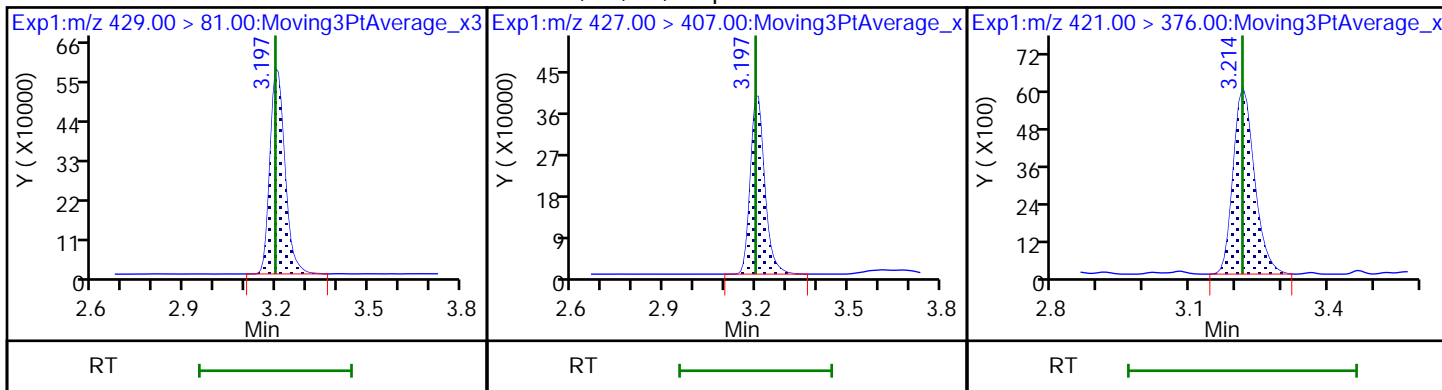
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 Injection Date: 06-Dec-2018 09:27:35 Instrument ID: A8_N
 Lims ID: 480-145071-B-1-B MSD
 Client ID: MW-01-2018-PFA
 Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 6
 Injection Vol: 20.0 ul Dil. Factor: 1.0000
 Method: A8_N Limit Group: LC PFC ICAL





D 12 M2-6:2 FTS

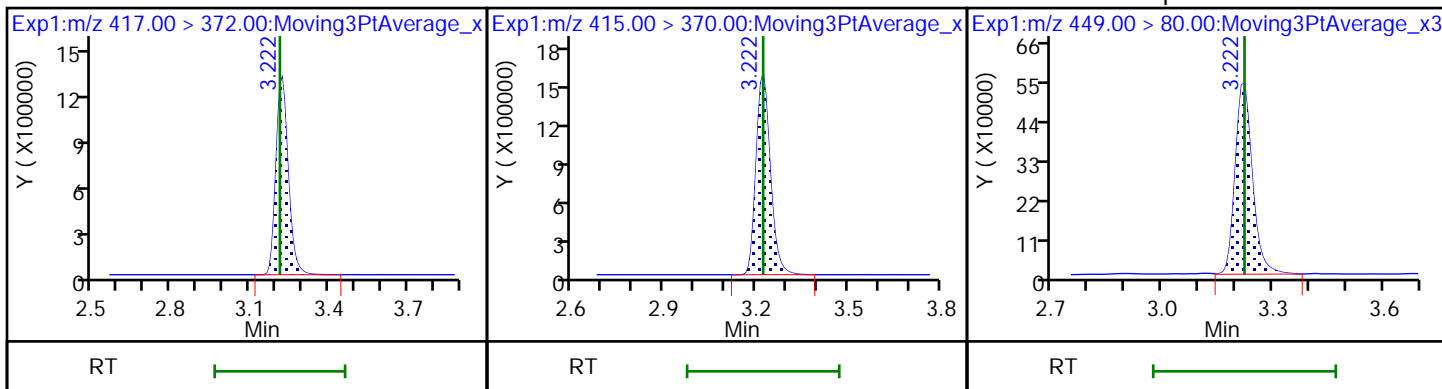
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



D 14 13C4 PFOA

* 62 13C2 PFOA

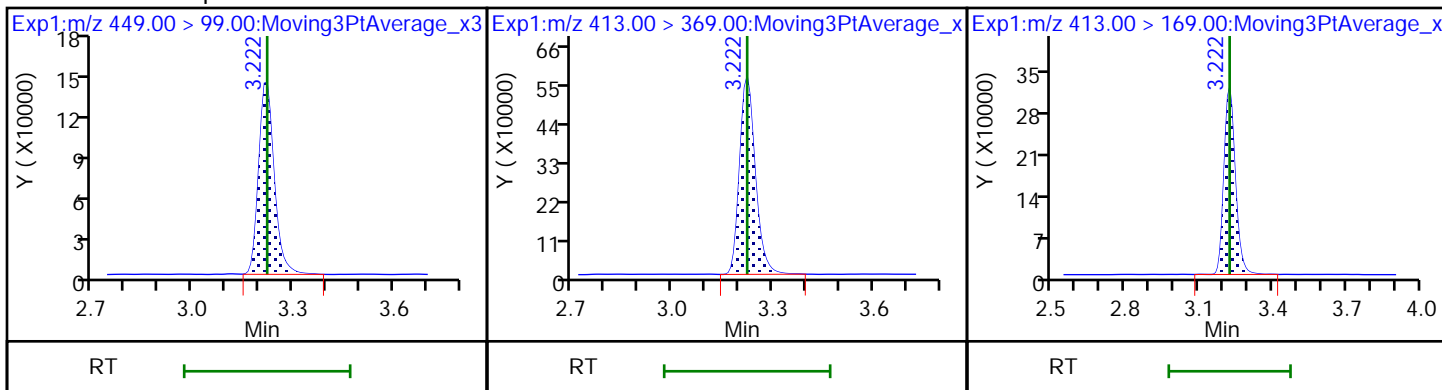
16 Perfluoroheptanesulfonic acid



16 Perfluoroheptanesulfonic acid

15 Perfluorooctanoic acid

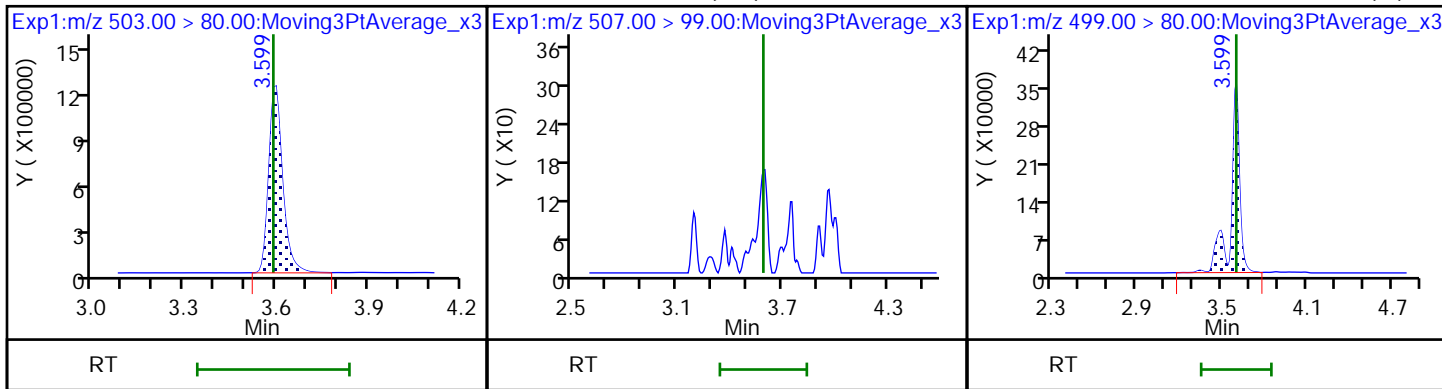
15 Perfluorooctanoic acid

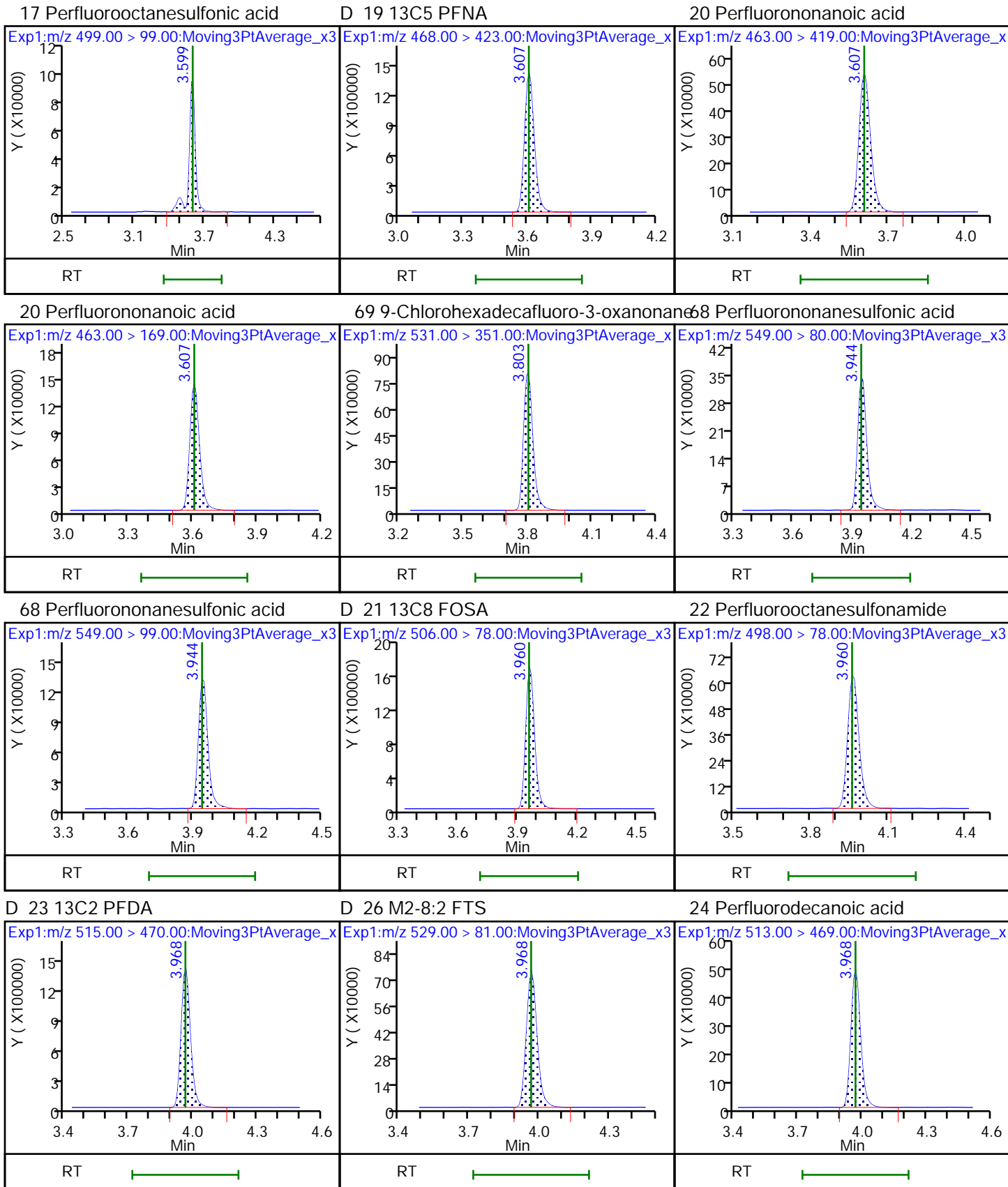


D 18 13C4 PFOS

D 72 13C8 PFOS (ND)

17 Perfluorooctanesulfonic acid (M)

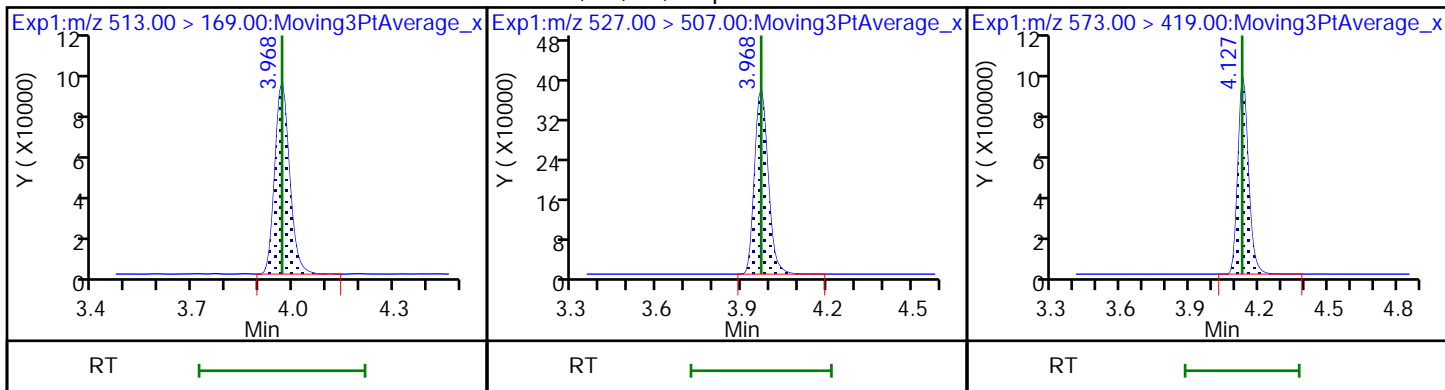




24 Perfluorodecanoic acid

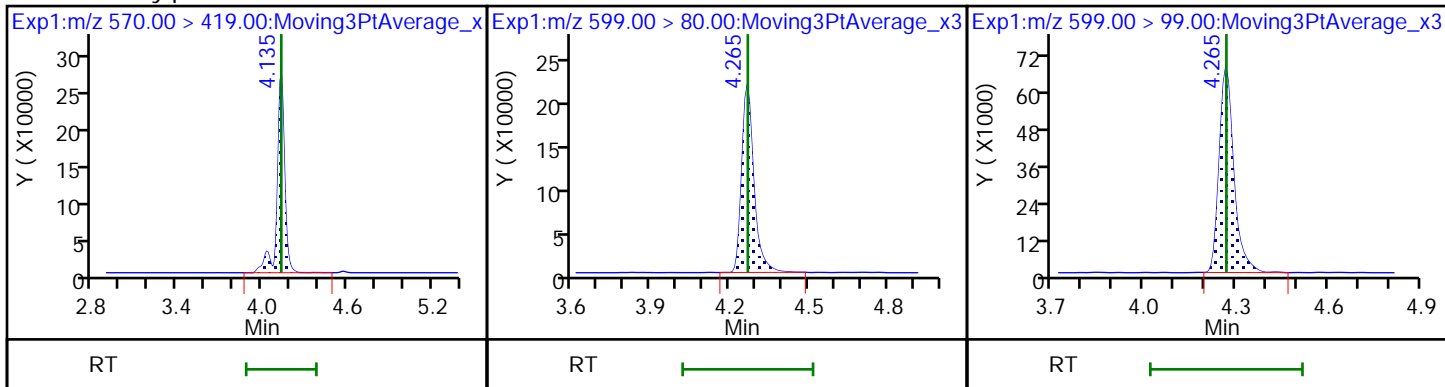
25 1H,1H,2H,2H-perfluorodecanesulfonamide

27 d3-NMeFOSAA



28 N-methylperfluorooctanesulfonamide

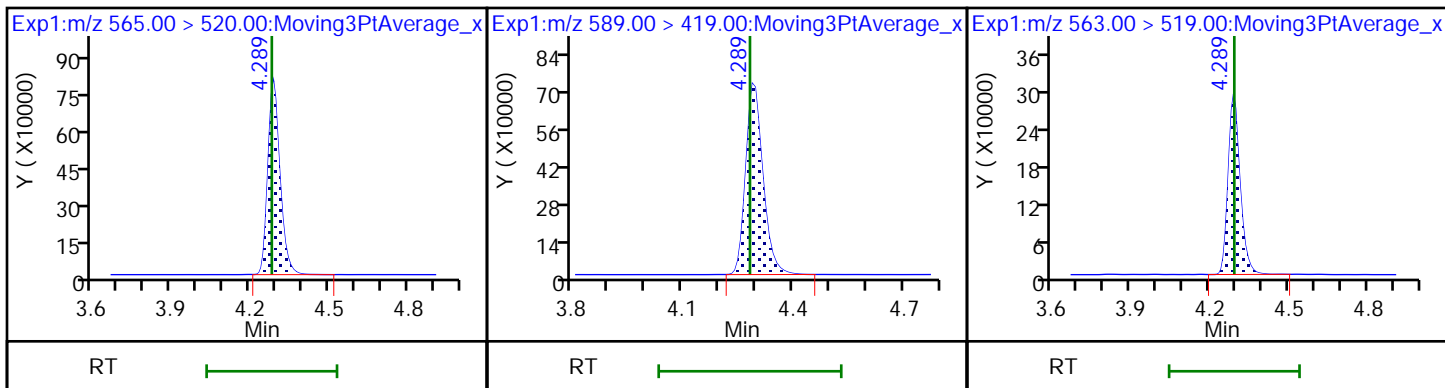
29 Perfluorodecanesulfonic acid



D 30 13C2 PFUnA

D 32 d5-NEtFOSAA

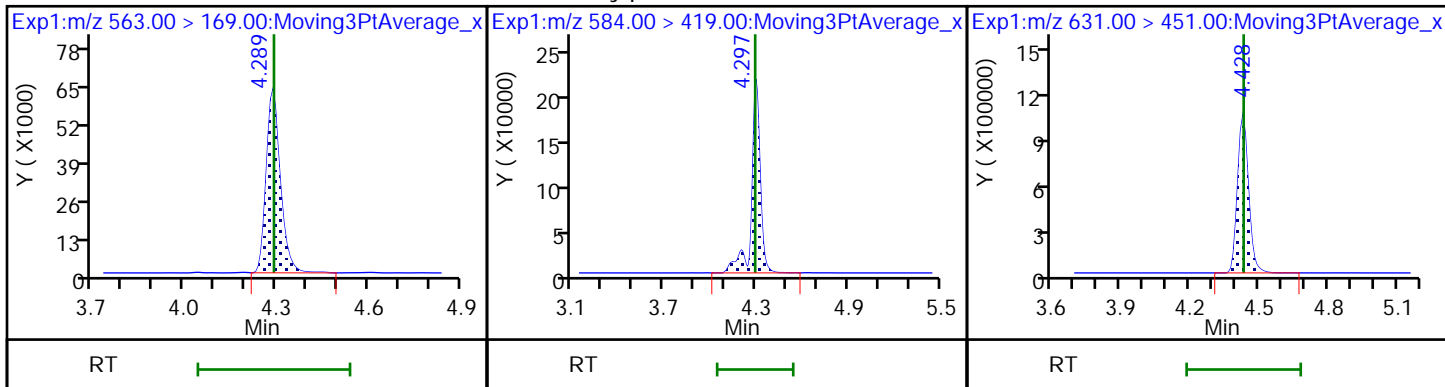
31 Perfluoroundecanoic acid



31 Perfluoroundecanoic acid

33 N-ethylperfluorooctanesulfonamide

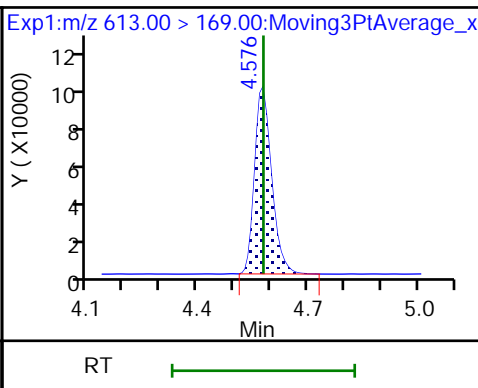
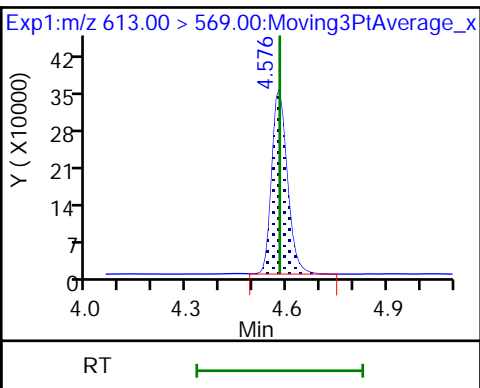
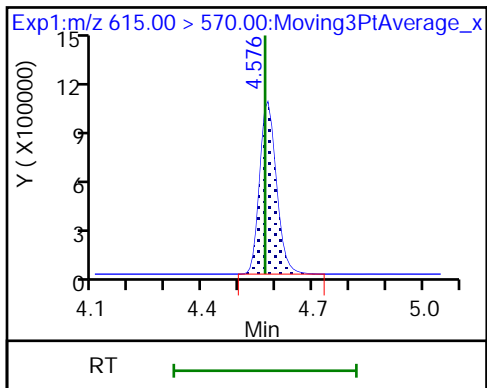
66 11-Chloroeicosafluoro-3-oxaundecanoic acid



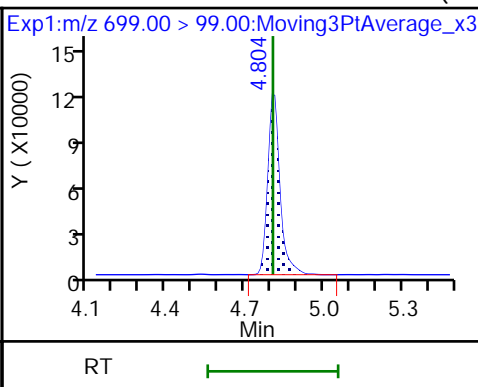
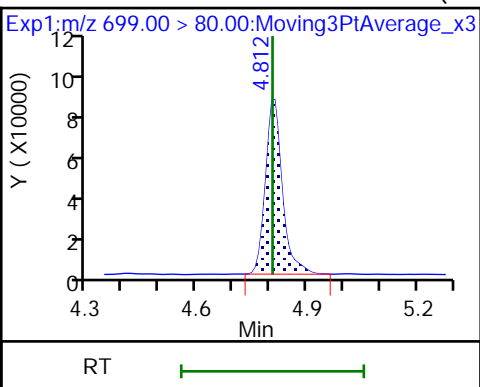
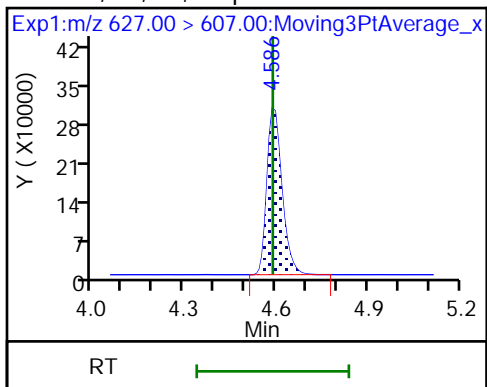
D 36 13C2 PFDaA

37 Perfluorododecanoic acid

37 Perfluorododecanoic acid



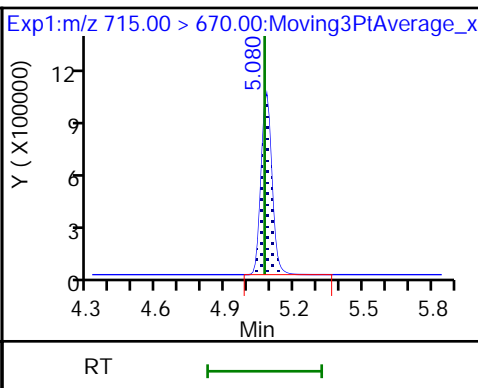
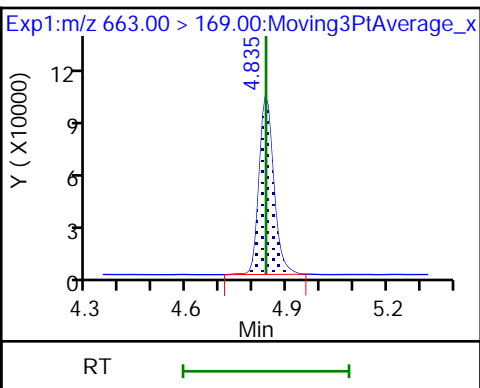
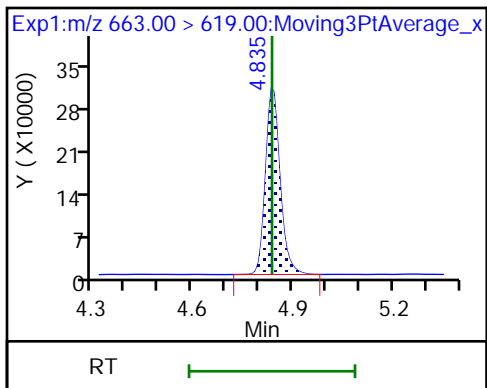
74 1H,1H,2H,2H-perfluorododecanesulfonate 75 Perfluorododecanesulfonic acid (PF) 75 Perfluorododecanesulfonic acid (PF)



41 Perfluorotridecanoic acid

41 Perfluorotridecanoic acid

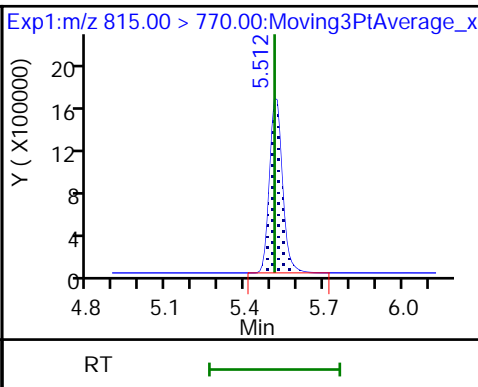
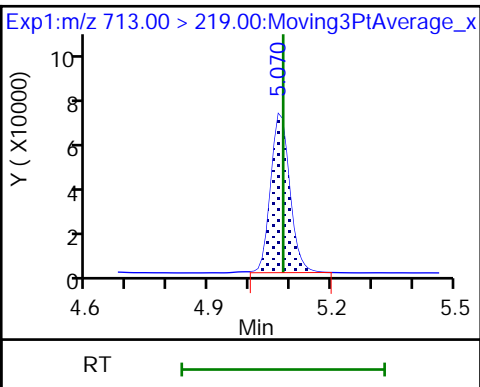
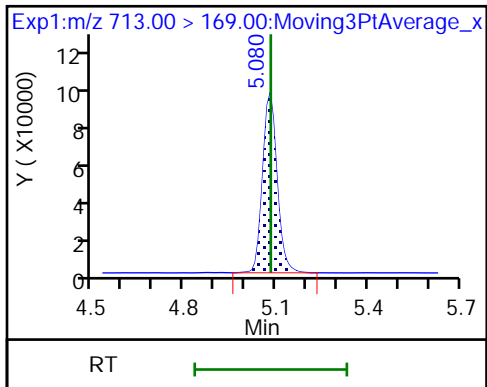
D 43 13C2 PFTeDA



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

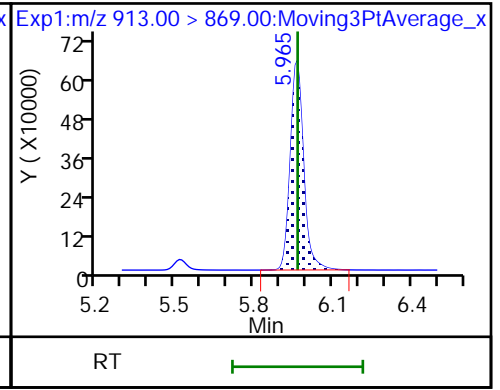
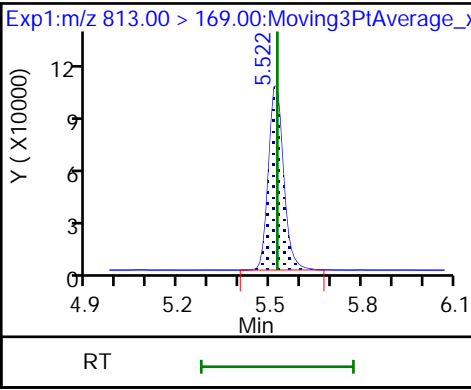
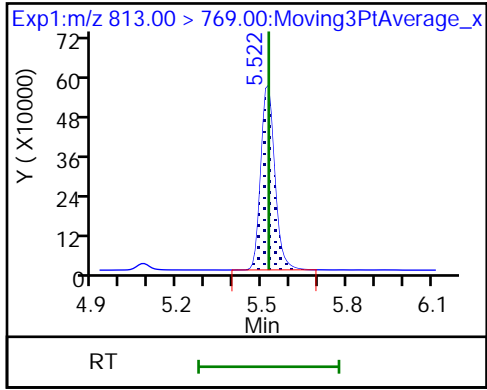
D 44 13C2 PFHxDA



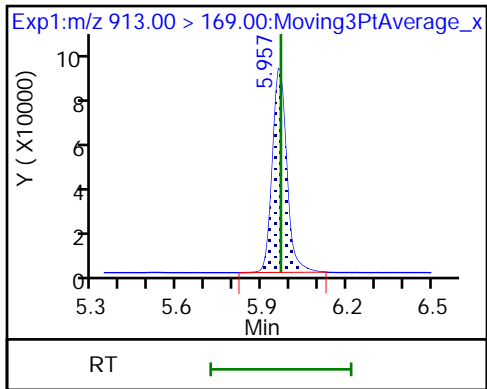
45 Perfluorohexadecanoic acid

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid



TestAmerica Sacramento

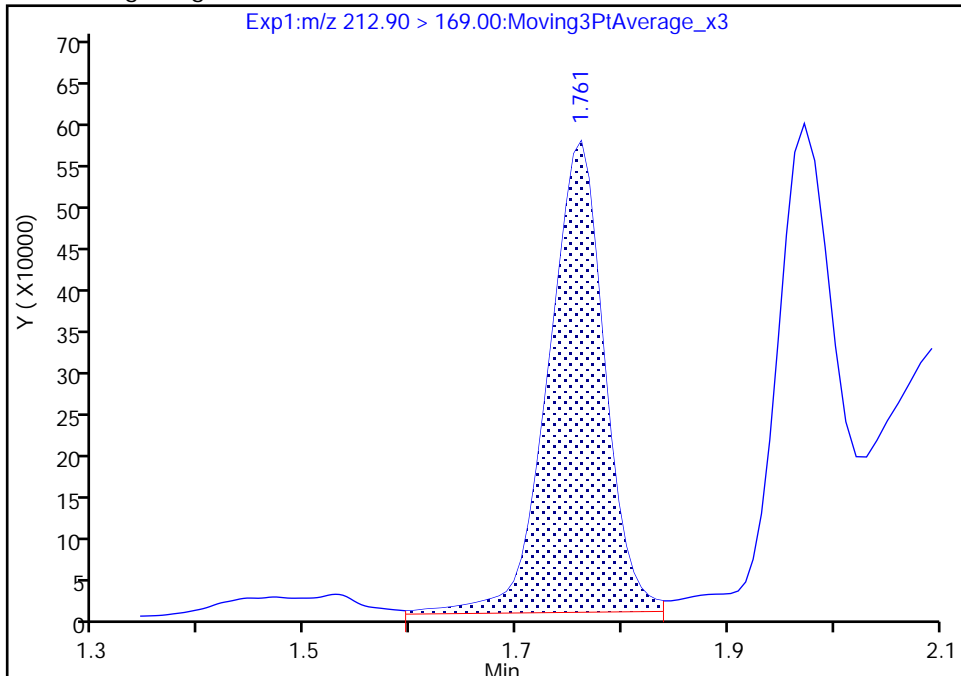
Data File: \\chromna\Sacramento\ChromData\A8_N\20181205-68709.b\2018.12.05LLB_030.d
Injection Date: 06-Dec-2018 09:27:35 Instrument ID: A8_N
Lims ID: 480-145071-B-1-B MSD
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

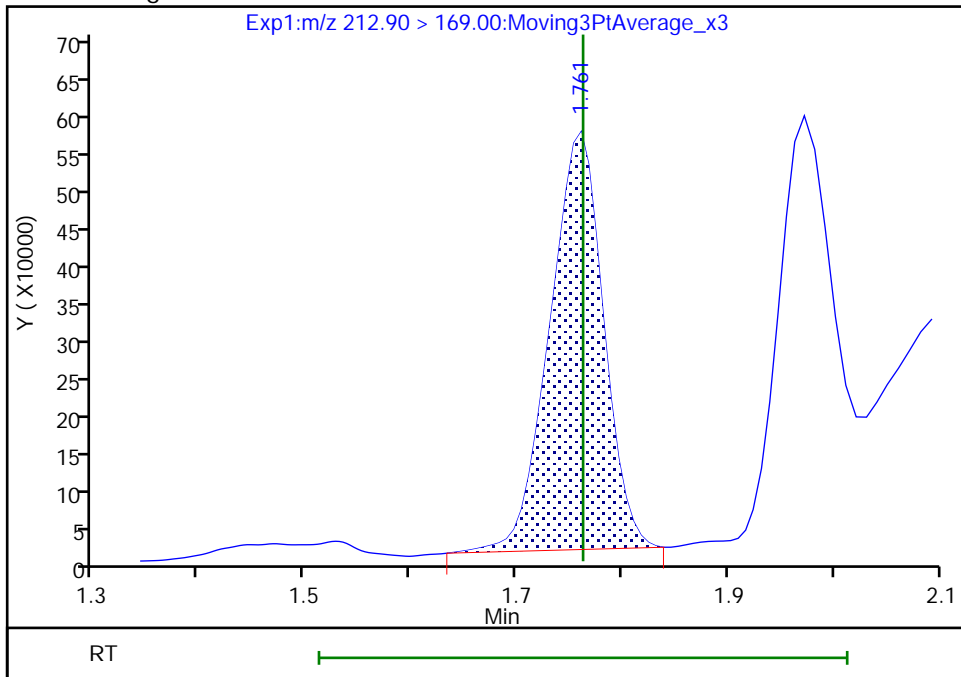
RT: 1.76
Area: 2097821
Amount: 1.131121
Amount Units: ng/ml

Processing Integration Results



RT: 1.76
Area: 1960847
Amount: 1.057267
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 14-Dec-2018 14:36:51
Audit Action: Manually Integrated

Audit Reason: Baseline
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TestAmerica Sacramento

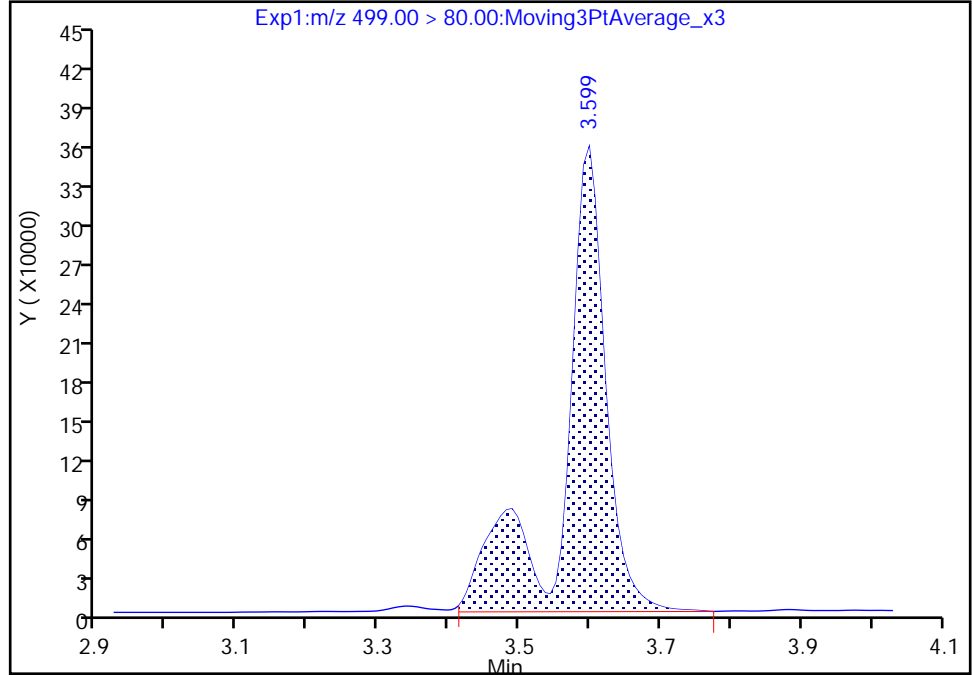
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Injection Date: 06-Dec-2018 09:27:35 Instrument ID: A8_N
Lims ID: 480-145071-B-1-B MSD
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: A8_N Limit Group: LC PFC ICAL
Column: Detector EXP1

17 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

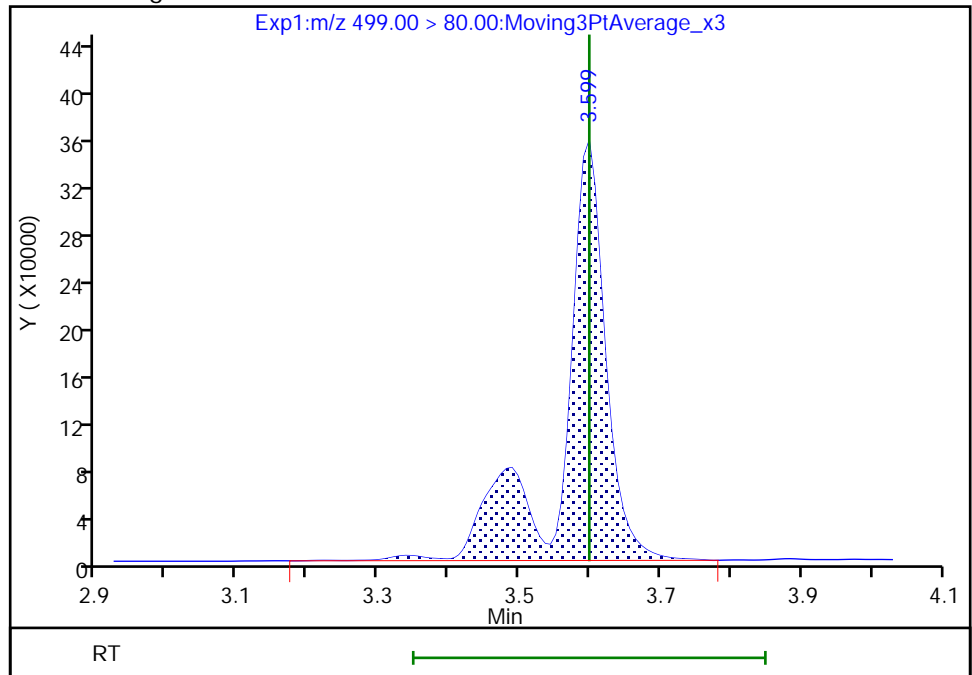
RT: 3.60
Area: 1499623
Amount: 0.861299
Amount Units: ng/ml

Processing Integration Results



RT: 3.60
Area: 1516839
Amount: 0.871187
Amount Units: ng/ml

Manual Integration Results



Reviewer: mongkols, 14-Dec-2018 14:37:02
Audit Action: Manually Integrated

Audit Reason: Baseline
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FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-PFA MSD DL Lab Sample ID: 480-145071-1 MSD DL
 Matrix: Water Lab File ID: 2018.12.14LLB_028.d
 Analysis Method: 537 (modified) Date Collected: 11/09/2018 10:50
 Extraction Method: 3535 Date Extracted: 11/23/2018 04:59
 Sample wt/vol: 265.4 (mL) Date Analyzed: 12/14/2018 23:54
 Con. Extract Vol.: 10.00 (mL) Dilution Factor: 10
 Injection Volume: 20 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 265427 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	39.71	J	188	29.2
27619-97-2	6:2 FTS	36.28	J	188	18.8
39108-34-4	8:2 FTS	37.90	J	188	18.8

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL02118	d3-NMeFOSAA	80		25-150
STL02279	M2-6:2 FTS	174	*	25-150
STL02280	M2-8:2 FTS	95		25-150

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_028.d
 Lims ID: 480-145071-B-1-B MSD
 Client ID: MW-01-2018-PFA
 Sample Type: MSD
 Inject. Date: 14-Dec-2018 23:54:26 ALS Bottle#: 16 Worklist Smp#: 7
 Injection Vol: 20.0 ul Dil. Factor: 10.0000
 Sample Info: 480-145071-b-1-b msd 10X
 Misc. Info.: Plate: 1 Rack: 3
 Operator ID: SACINSTLCMS01 Instrument ID: A8_N
 Method: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\A8_N.m
 Limit Group: LC PFC ICAL
 Last Update: 17-Dec-2018 14:10:29 Calib Date: 08-Dec-2018 06:01:52
 Integrator: Picker
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\chromna\Sacramento\ChromData\A8_N\20181207-68828.b\2018.12.07ICAL_011.d
 Column 1 : Det: EXP1
 Process Host: CTX0324

First Level Reviewer: mongkols Date: 17-Dec-2018 14:10:29
 Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 1 13C4 PFBA	217.00 > 172.00	1.763	1.763	0.0	0.549	821067	0.2033	81.3	561	
2 Perfluorobutanoic acid										M
212.90 > 169.00	1.763	1.769	-0.006	1.000	328305	0.1095		109	19.7	M
4 Perfluoropentanoic acid										
262.90 > 219.00	2.074	2.072	0.002	1.000	240168	0.1042		104	13.8	
D 3 13C5 PFPeA										
267.90 > 223.00	2.074	2.074	0.0	0.645	526005	0.1986		79.4	688	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.106	2.104	0.002	1.000	288979	0.0916	Target=2.49	104	284	
298.90 > 99.00	2.106	2.104	0.002	1.000	126939		2.28(1.25-3.74)		97.0	
D 47 13C3 PFBS										
301.90 > 80.00	2.106	2.105	0.001	0.655	743059	0.1811		77.9	53498	
61 1H,1H,2H,2H-perfluorohexanesulfoni										
327.00 > 307.00	2.393	2.391	0.002	1.136	118077	0.1952		209	494	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.432	2.431	0.001	1.000	239966	0.1002	Target=10.07	100	63.4	
313.00 > 119.00	2.432	2.431	0.001	1.000	20328		11.80(5.03-15.10)		76.8	
D 7 13C2 PFHxA										
315.00 > 270.00	2.432	2.432	0.0	0.757	591446	0.2137		85.5	992	
70 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.442	2.451	-0.009	1.160	276122	0.1000	Target=2.71	107	704	
349.00 > 99.00	2.442	2.451	-0.009	1.160	97853		2.82(1.36-4.07)		293	
67 Perfluoro(2-propoxypropanoic) acid										
329.10 > 285.00	2.551	2.550	0.001	1.000	46298	0.1033		103	57.3	
D 64 13C3 HFPO-DA										
332.10 > 287.00	2.551	2.551	0.0	0.794	33374	0.1671		66.9	225	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 9 13C4 PFHpA										
367.00 > 322.00	2.821	2.816	0.005	0.878	580761	0.2187		87.5	1917	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.821	2.817	0.004	1.000	240006	0.0916	Target=2.27	91.6	80.2	
363.00 > 169.00	2.821	2.817	0.004	1.000	93734		2.56(1.13-3.40)		89.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.821	2.826	-0.005	0.878	623937	0.1950		82.5	5843	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.821	2.826	-0.005	1.000	246428	0.0879	Target=3.00	96.6	429	
399.00 > 99.00	2.821	2.826	-0.005	1.000	86367		2.85(1.50-4.49)		232	
77 DONA										
377.00 > 251.00	2.867	2.863	0.004	0.798	648313	0.0945	Target=1.69	100	1419	
377.00 > 85.00	2.867	2.863	0.004	0.798	373870		1.73(0.85-2.54)		1110	
D 12 M2-6:2 FTS										
429.00 > 81.00	3.189	3.193	-0.004	0.992	198689	0.4139		174	663	
13 1H,1H,2H,2H-perfluorooctanesulfoni										
427.00 > 407.00	3.189	3.193	-0.004	1.000	125299	0.0963		102	198	
D 73 13C8 PFOA										
421.00 > 376.00	3.205	3.209	-0.004	0.997	4595	0.001136		0.0	25.2	
16 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.213	3.209	0.004	0.894	212608	0.0942	Target=3.88	99.0	368	
449.00 > 99.00	3.213	3.209	0.004	0.894	55230		3.85(1.94-5.82)		292	
D 14 13C4 PFOA										
417.00 > 372.00	3.213	3.218	-0.005	1.000	553501	0.2094		83.7	1399	
15 Perfluorooctanoic acid										
413.00 > 369.00	3.213	3.218	-0.005	1.000	250453	0.1007	Target=1.68	101	35.4	
413.00 > 169.00	3.213	3.218	-0.005	1.000	139412		1.80(0.84-2.52)		79.1	
* 62 13C2 PFOA										
415.00 > 370.00	3.213	3.218	-0.005		670910	0.2500			1361	
17 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.595	3.590	0.005	1.000	177137	0.0901	Target=4.62	97.1	290	
499.00 > 99.00	3.587	3.590	-0.003	0.998	39882		4.44(2.31-6.93)		162	
D 18 13C4 PFOS										
503.00 > 80.00	3.595	3.598	-0.003	1.119	419333	0.1988		83.2	1252	
20 Perfluorononanoic acid										
463.00 > 419.00	3.603	3.598	0.005	1.000	198121	0.1012	Target=3.79	101	157	
463.00 > 169.00	3.603	3.598	0.005	1.000	51313		3.86(1.90-5.69)		252	
D 19 13C5 PFNA										
468.00 > 423.00	3.603	3.605	-0.002	1.121	464857	0.2113		84.5	1874	
69 9-Chlorohexadecafluoro-3-oxanonane										
531.00 > 351.00	3.798	3.794	0.004	1.057	288346	0.0866		93.0	1391	
68 Perfluorononanesulfonic acid										
549.00 > 80.00	3.946	3.942	0.004	1.098	122063	0.0890	Target=2.65	92.7	484	
549.00 > 99.00	3.946	3.942	0.004	1.098	42139		2.90(1.33-3.97)		312	
D 21 13C8 FOSA										
506.00 > 78.00	3.954	3.957	-0.003	1.231	566901	0.1805		72.2	2352	
22 Perfluorooctanesulfonamide										
498.00 > 78.00	3.954	3.957	-0.003	1.000	214530	0.1008		101	8012	

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	3.962	3.957	0.005	1.000	177343	0.1068	Target=4.73	107	254	
513.00 > 169.00	3.962	3.957	0.005	1.000	30650		5.79(2.36-7.09)		223	
25 1H,1H,2H,2H-perfluorodecanesulfonyl										
527.00 > 507.00	3.962	3.957	0.005	1.000	65227	0.1006		105	557	
D 23 13C2 PFDA										
515.00 > 470.00	3.962	3.965	-0.003	1.233	428673	0.2169		86.8	1640	
D 26 M2-8:2 FTS										
529.00 > 81.00	3.962	3.965	-0.003	1.233	118772	0.2275		95.0	541	
28 N-methylperfluorooctanesulfonamide										
570.00 > 419.00	4.130	4.125	0.005	1.002	81984	0.1054		105	405	
D 27 d3-NMeFOSAA										
573.00 > 419.00	4.122	4.125	-0.003	1.283	210285	0.2010		80.4	736	
29 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.261	4.257	0.004	1.185	99891	0.0891	Target=2.77	92.4	552	
599.00 > 99.00	4.261	4.257	0.004	1.185	32172		3.10(1.39-4.16)		290	
31 Perfluoroundecanoic acid										
563.00 > 519.00	4.284	4.282	0.002	1.000	118637	0.0953	Target=4.24	95.3	141	
563.00 > 169.00	4.284	4.282	0.002	1.000	26720		4.44(2.12-6.36)		187	
D 30 13C2 PFUnA										
565.00 > 520.00	4.284	4.282	0.002	1.333	340436	0.2175		87.0	1733	
33 N-ethylperfluorooctanesulfonamide										
584.00 > 419.00	4.292	4.291	0.001	1.002	84578	0.0987		98.7	419	
D 32 d5-NEtFOSAA										
589.00 > 419.00	4.284	4.291	-0.007	1.333	250843	0.2283		91.3	635	
66 11-Chloroeicosafuoro-3-oxaundecan										
631.00 > 451.00	4.421	4.420	0.001	1.230	374347	0.0753		79.9	1735	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.569	4.569	0.0	1.000	126896	0.0881	Target=4.27	88.1	208	
613.00 > 169.00	4.569	4.569	0.0	1.000	31438		4.04(2.13-6.40)		241	
D 36 13C2 PFDoA										
615.00 > 570.00	4.569	4.577	-0.008	1.422	338269	0.2098		83.9	1509	
74 1H,1H,2H,2H-perfluorododecanesulfonyl										
627.00 > 607.00	4.588	4.587	0.001	1.158	47922	0.1086		113	394	
75 Perfluorododecanesulfonic acid (PF)										
699.00 > 80.00	4.805	4.805	0.0	1.337	33628	0.0680	Target=0.00	70.2	439	
699.00 > 99.00	4.805	4.805	0.0	1.337	57350		0.59(0.00-0.00)		700	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.835	4.836	-0.001	1.058	124936	0.0912	Target=2.51	91.2	161	
663.00 > 169.00	4.835	4.836	-0.001	1.058	38340		3.26(1.25-3.76)		476	
42 Perfluorotetradecanoic acid										
713.00 > 169.00	5.083	5.081	0.002	1.000	34059	0.0962	Target=1.42	96.2	438	
713.00 > 219.00	5.073	5.081	-0.008	0.998	22188		1.54(0.71-2.13)		216	
D 43 13C2 PFTeDA										
715.00 > 670.00	5.083	5.081	0.002	1.582	349663	0.1866		74.7	1463	

Ratio Calibration: None

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid										
813.00 > 769.00	5.524	5.513	0.011	1.002	224049	0.0839	Target=5.72	83.9	123	
813.00 > 169.00	5.515	5.513	0.002	1.000	40802		5.49(2.86-8.58)		567	
D 44 13C2 PFHxDA										
815.00 > 770.00	5.515	5.513	0.002	1.716	595523	0.1810		72.4	2124	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.973	5.966	0.006	1.083	281160	0.1015	Target=7.65	102	186	M
913.00 > 169.00	5.965	5.966	-0.001	1.082	36053		7.80(3.83-11.48)		439	M

QC Flag Legend

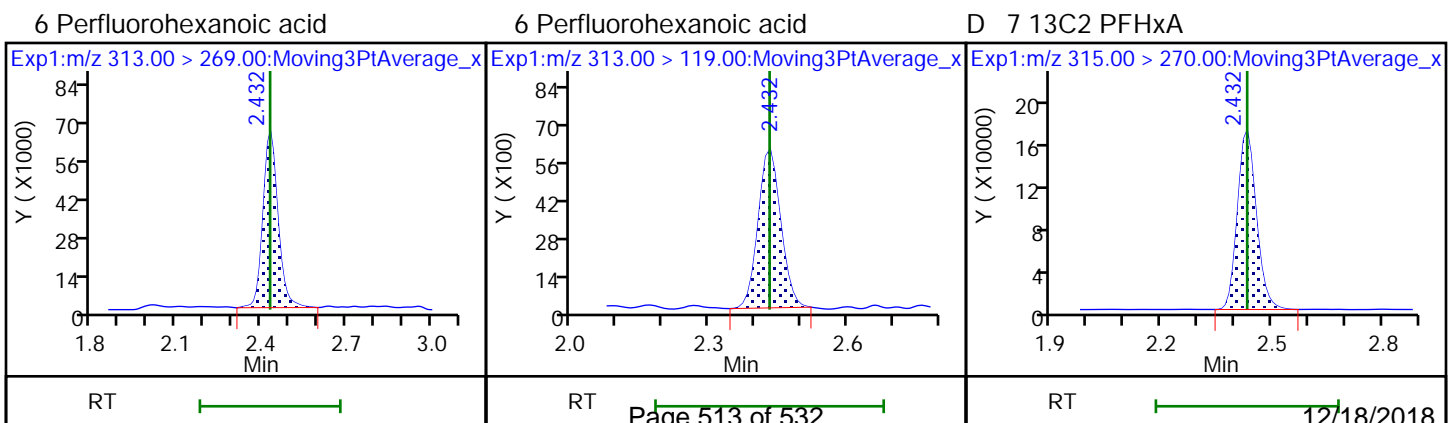
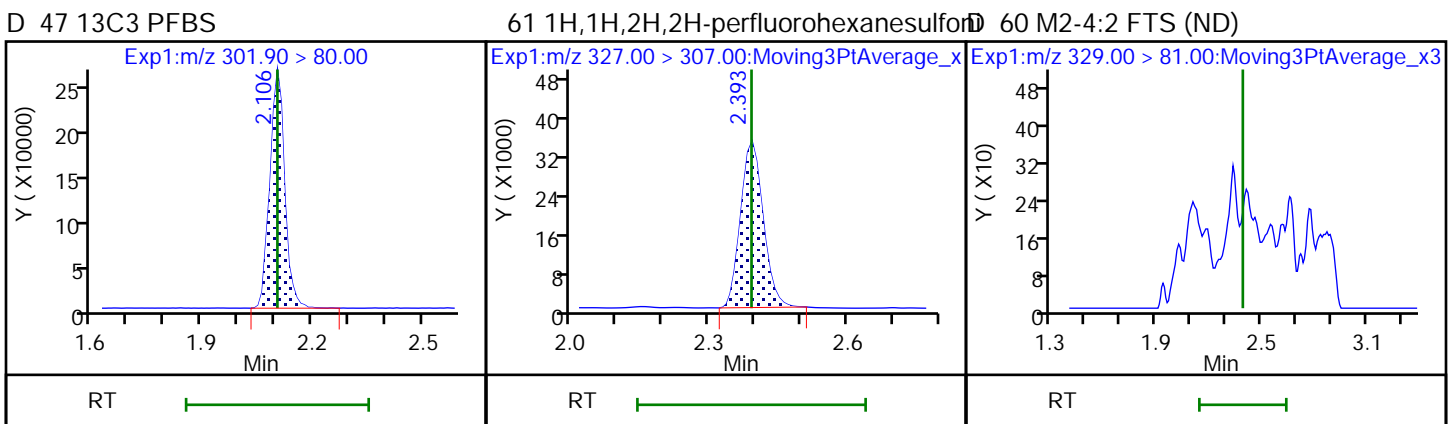
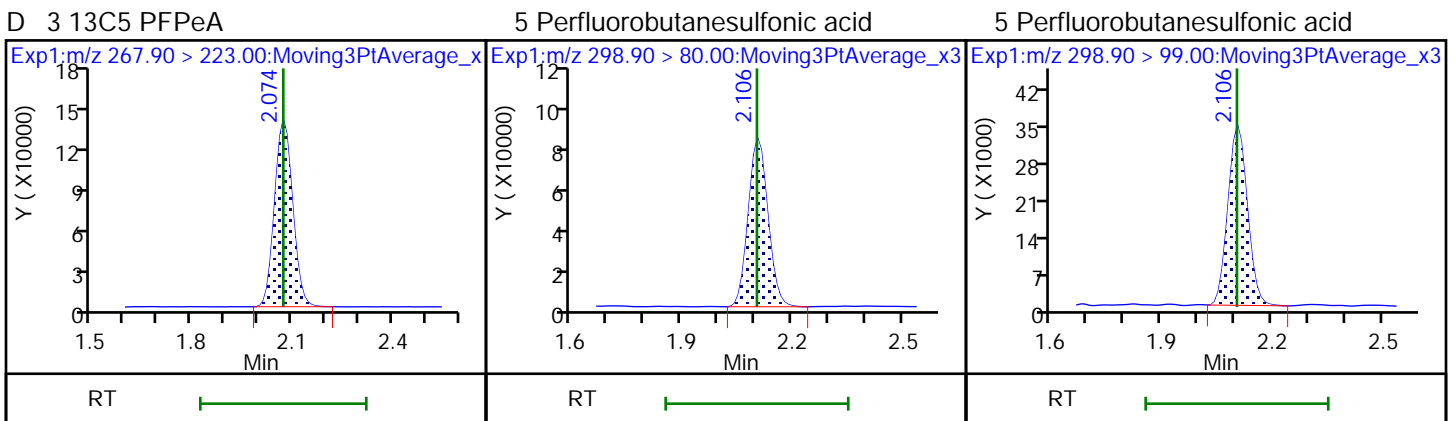
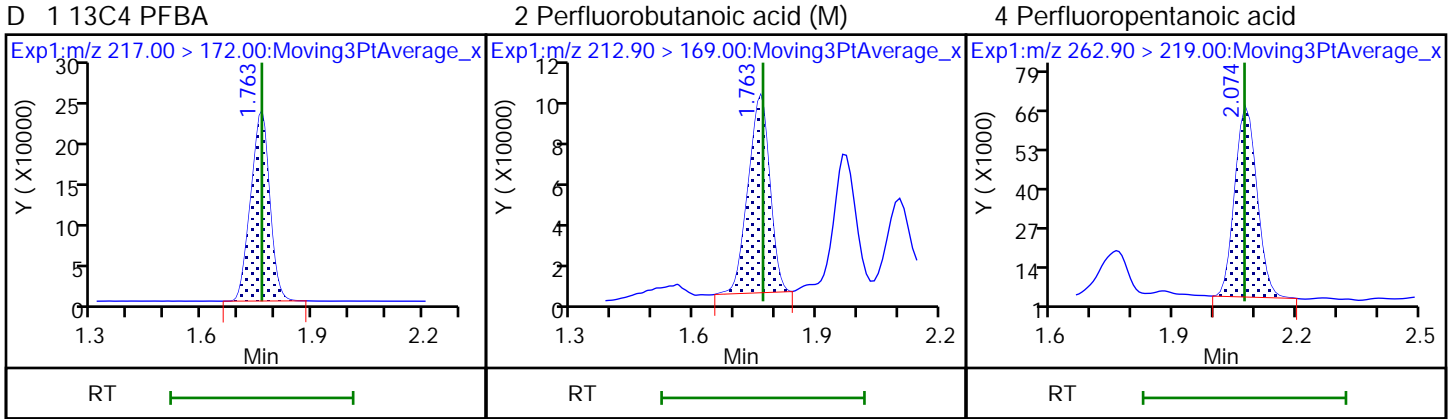
Review Flags

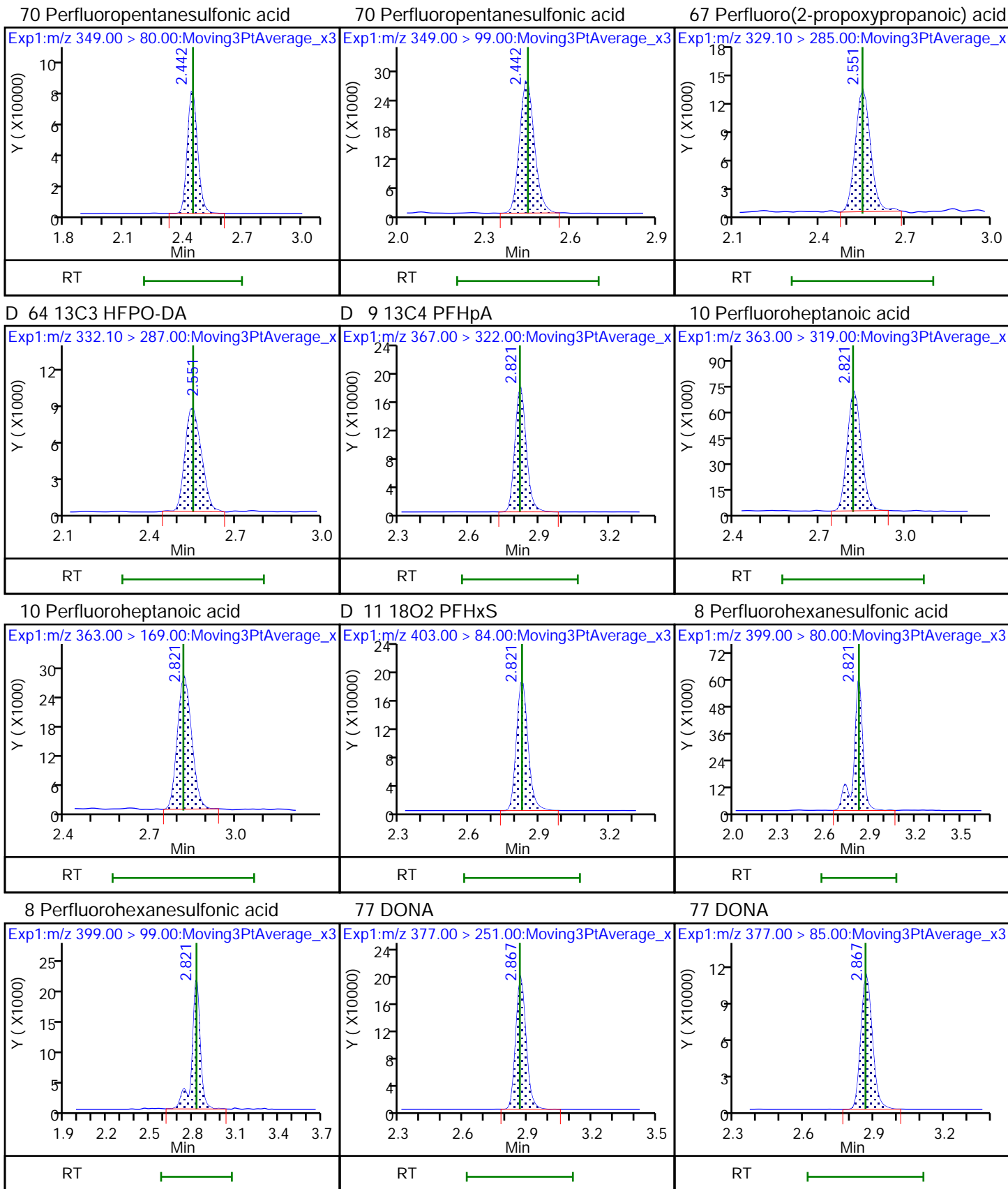
M - Manually Integrated

TestAmerica Sacramento

Data File: \\chromna\Sacramento\ChromData\A8_N\20181214-69226.b\2018.12.14LLB_028.d
Injection Date: 14-Dec-2018 23:54:26 Instrument ID: A8_N
Lims ID: 480-145071-B-1-B MSD
Client ID: MW-01-2018-PFA
Operator ID: SACINSTLCMS01
Injection Vol: 20.0 ul
Method: A8_N

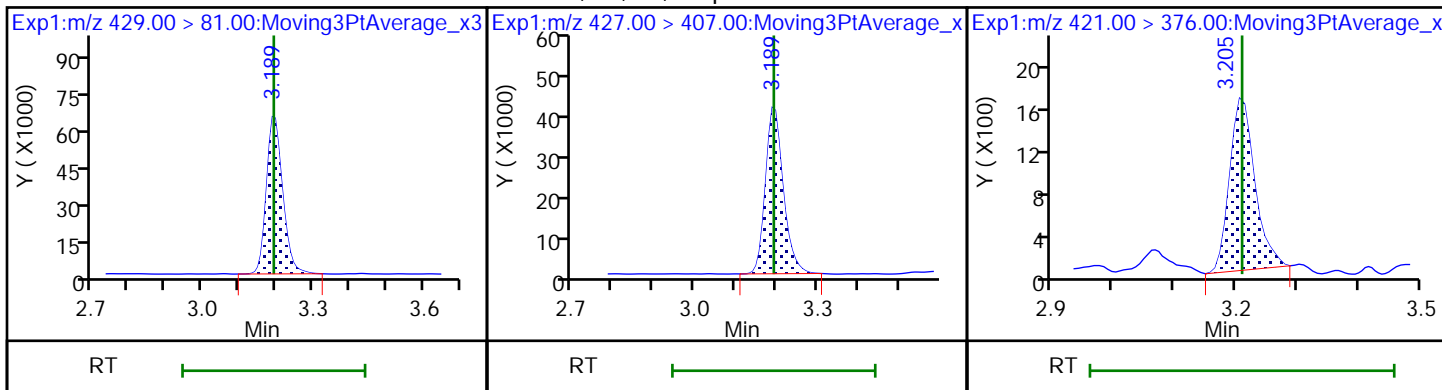
ALS Bottle#: 16 Worklist Smp#: 7
Dil. Factor: 10.0000
Limit Group: LC PFC ICAL





D 12 M2-6:2 FTS

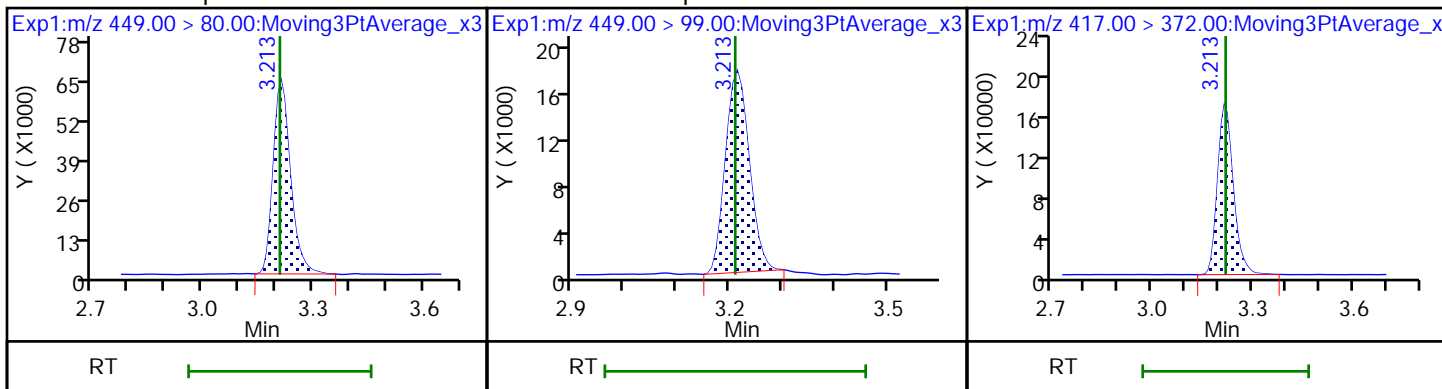
13 1H,1H,2H,2H-perfluorooctanesulfonD 73 13C8 PFOA



16 Perfluoroheptanesulfonic acid

16 Perfluoroheptanesulfonic acid

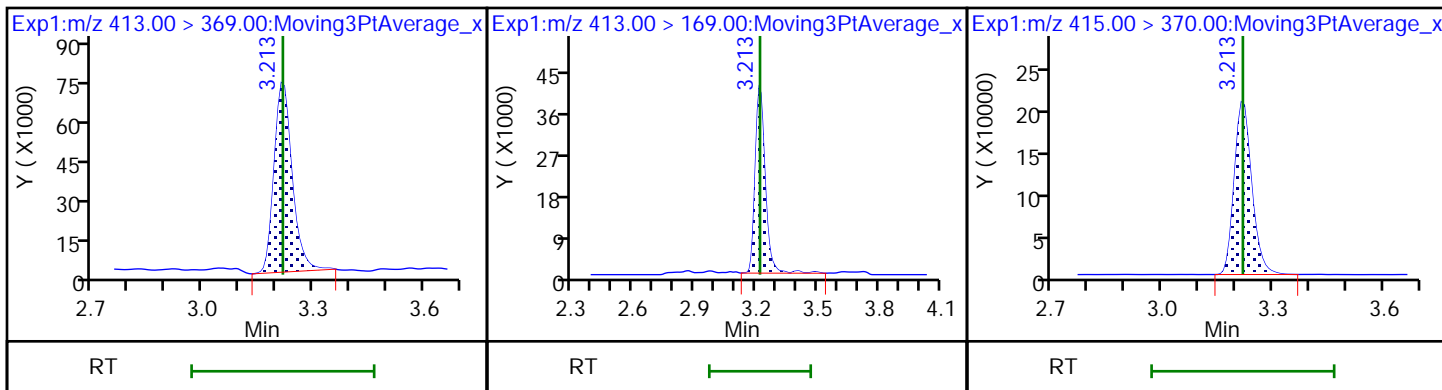
D 14 13C4 PFOA



15 Perfluorooctanoic acid

15 Perfluorooctanoic acid

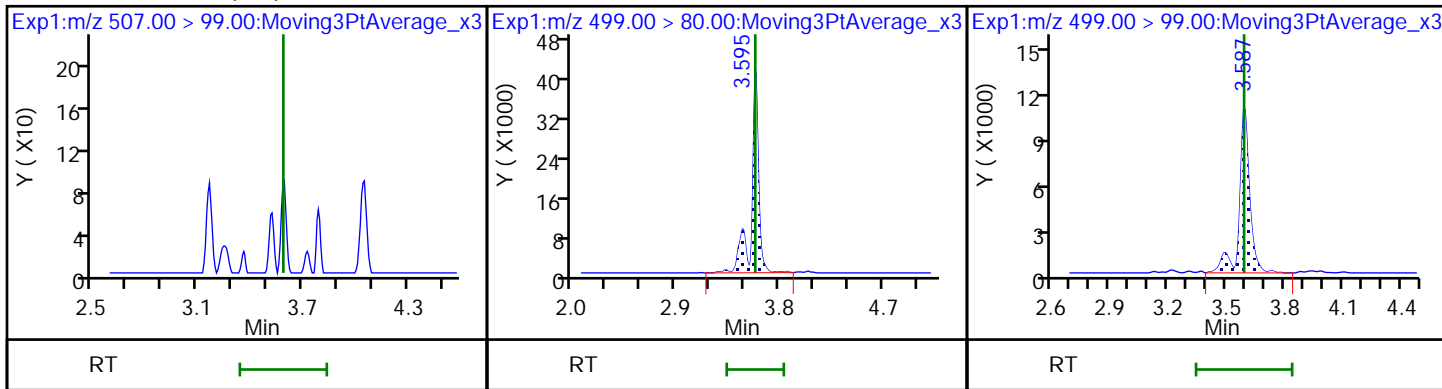
* 62 13C2 PFOA



D 72 13C8 PFOS (ND)

17 Perfluorooctanesulfonic acid

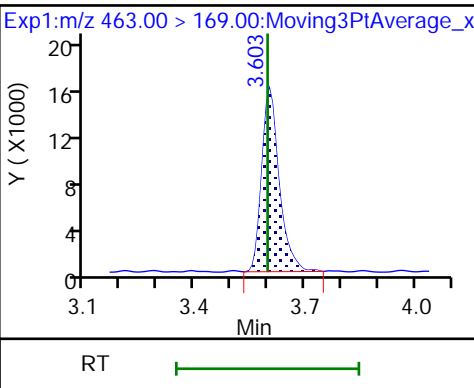
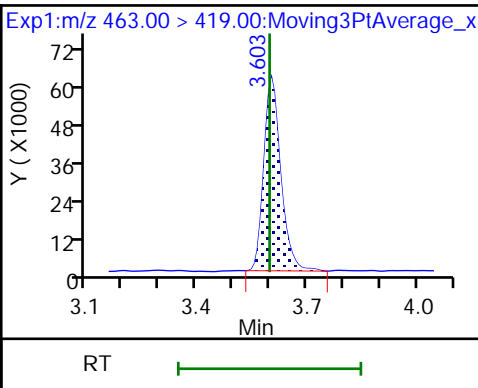
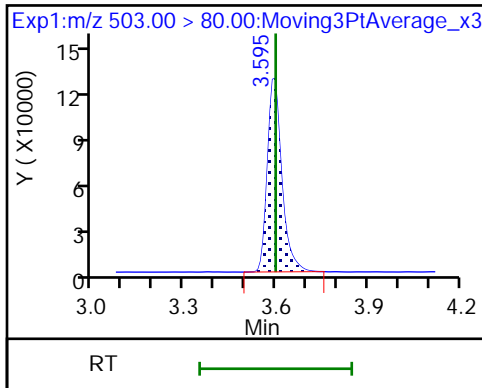
17 Perfluorooctanesulfonic acid



D 18 13C4 PFOS

20 Perfluorononanoic acid

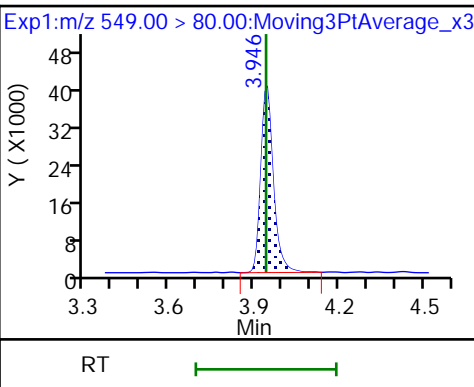
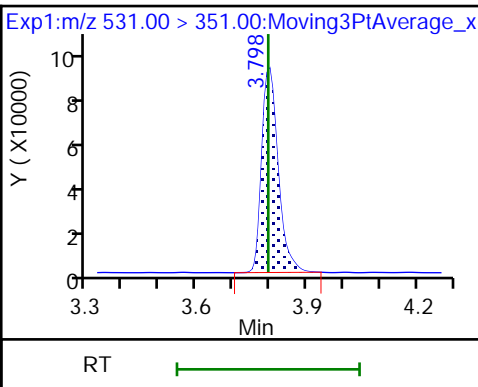
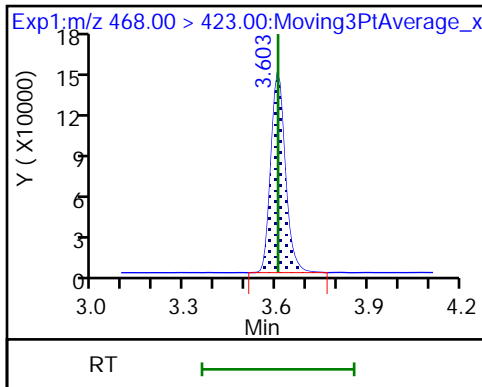
20 Perfluorononanoic acid



D 19 13C5 PFNA

69 9-Chlorohexadecafluoro-3-oxanonanoic acid

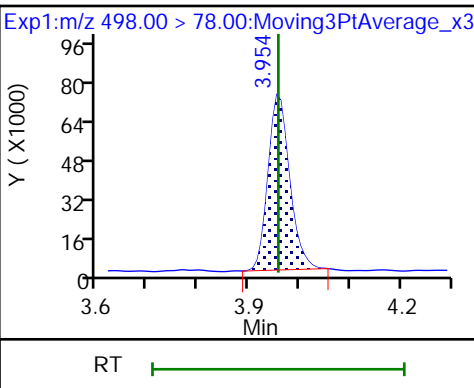
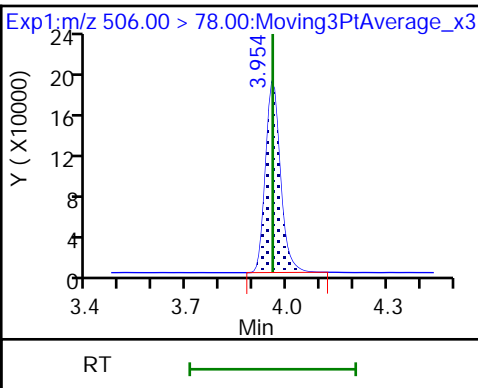
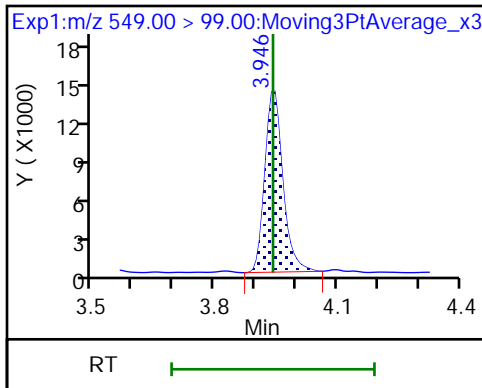
68 Perfluorononanesulfonic acid



68 Perfluorononanesulfonic acid

D 21 13C8 FOSA

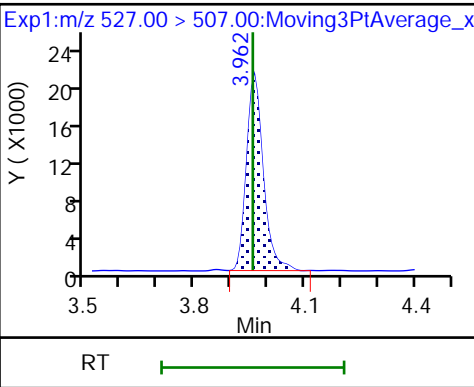
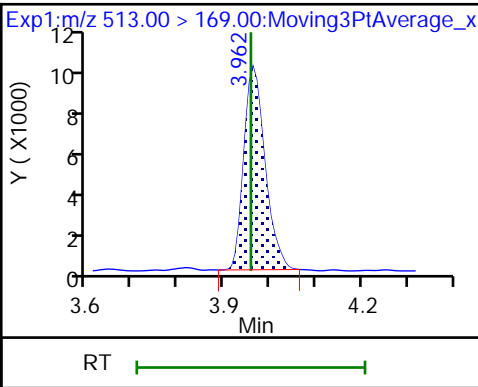
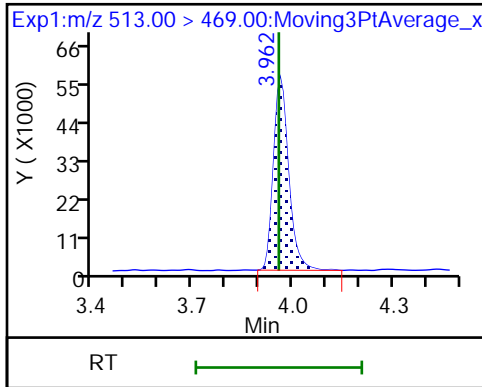
22 Perfluorooctanesulfonamide



24 Perfluorodecanoic acid

24 Perfluorodecanoic acid

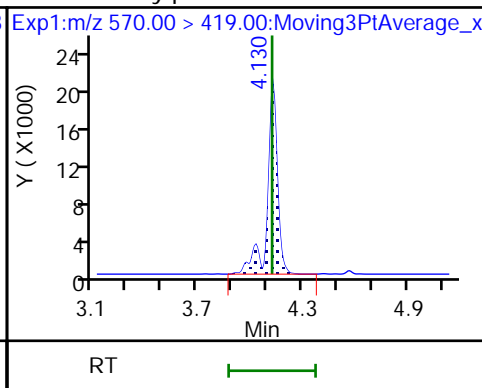
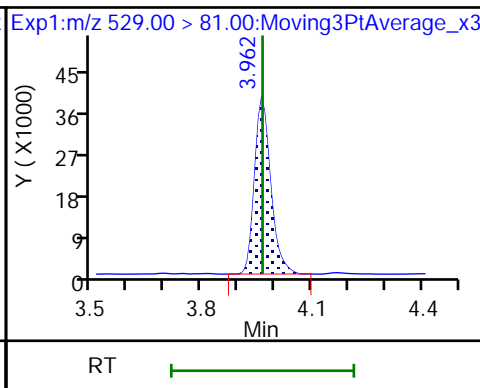
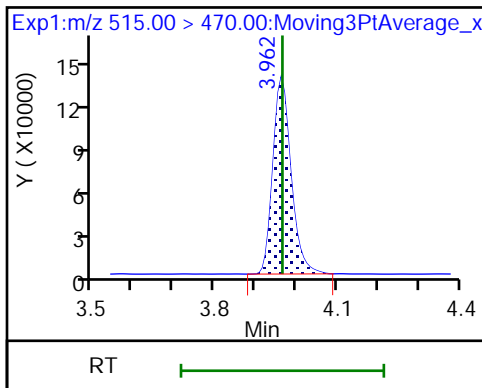
25 1H,1H,2H,2H-perfluorodecanesulfoni



D 23 13C2 PFDA

D 26 M2-8:2 FTS

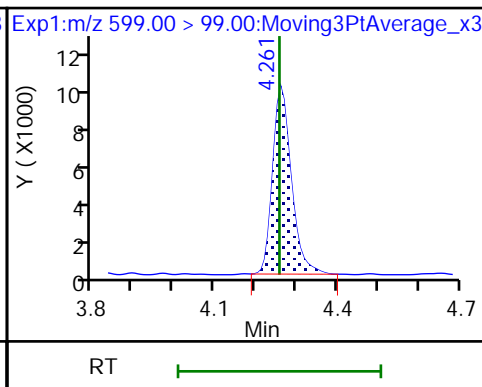
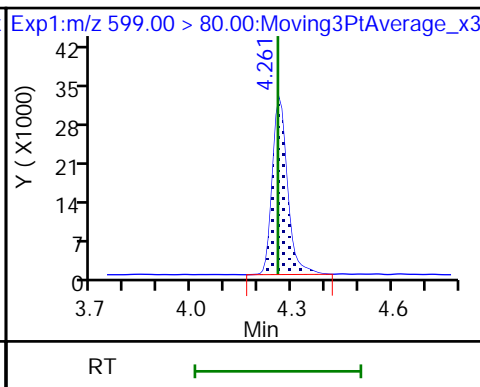
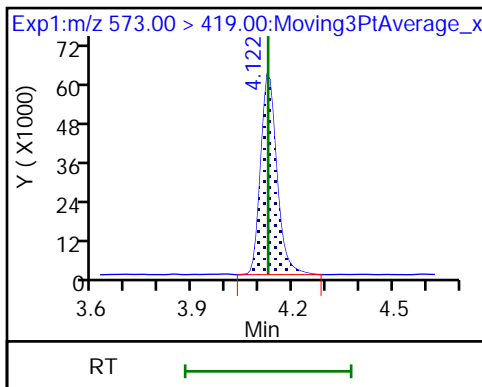
28 N-methylperfluorooctanesulfonamido



D 27 d3-NMeFOSAA

29 Perfluorodecanesulfonic acid

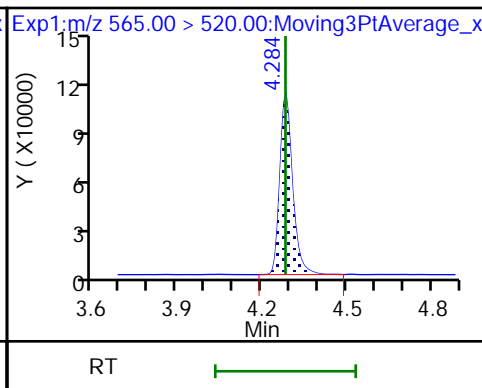
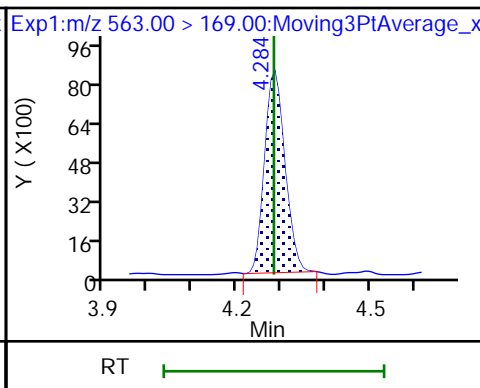
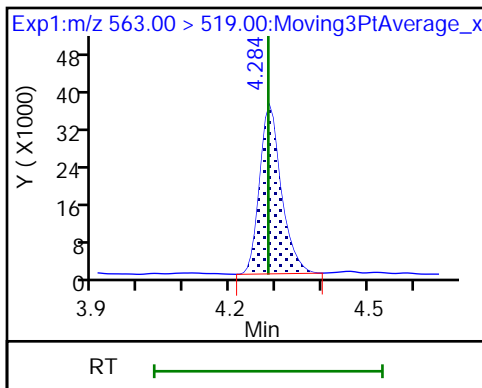
29 Perfluorodecanesulfonic acid



31 Perfluoroundecanoic acid

31 Perfluoroundecanoic acid

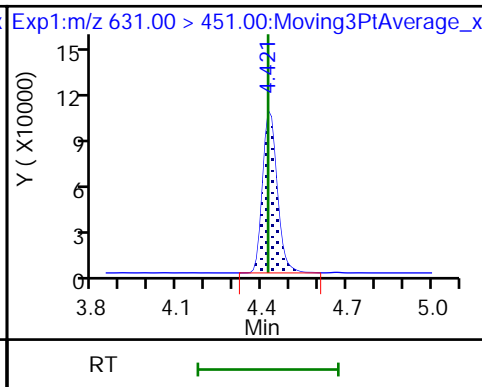
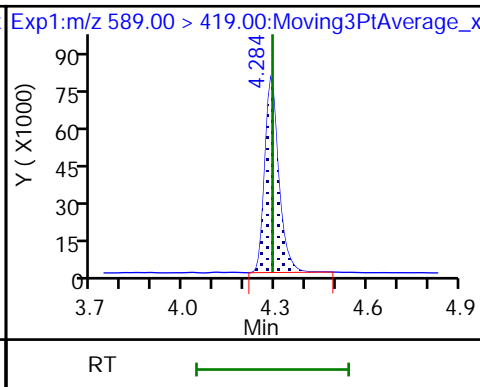
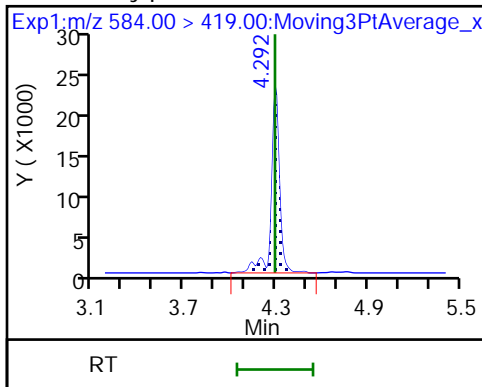
D 30 13C2 PFUnA

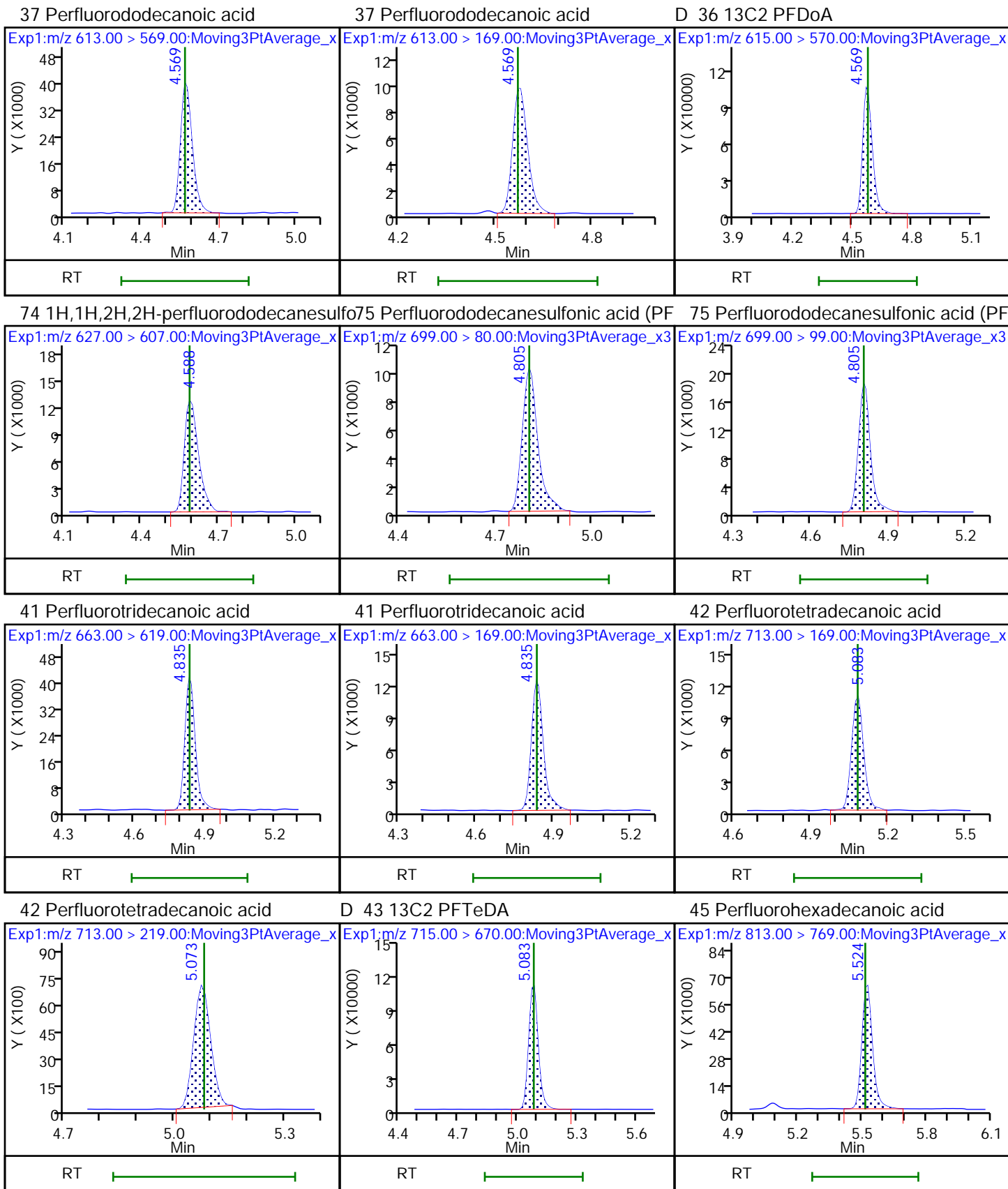


33 N-ethylperfluorooctanesulfonamido

D 32 d5-NEtFOSAA

66 11-Chloroeicosafluoro-3-oxaundecan

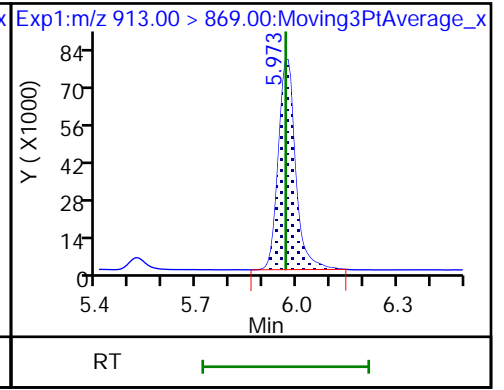
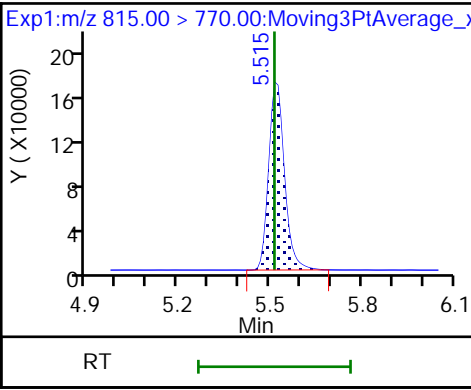
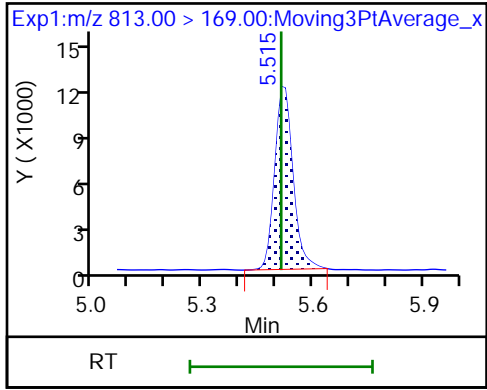




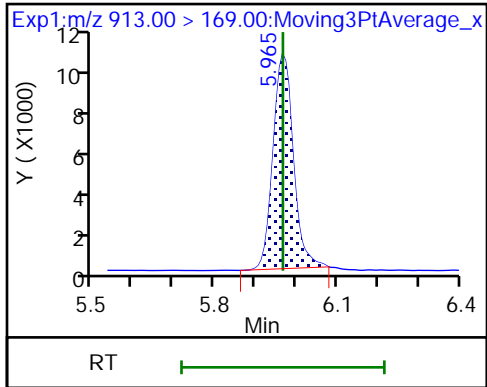
45 Perfluorohexadecanoic acid

D 44 13C2 PFHxDA

46 Perfluorooctadecanoic acid



46 Perfluorooctadecanoic acid (M)



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Instrument ID: A8_N Start Date: 11/29/2018 06:46

Analysis Batch Number: 261834 End Date: 11/29/2018 07:54

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-261834/2		11/29/2018 06:46	1	2018.11.29PFCIC AL 005.d	GeminiC18 3x100 3(mm)
IC 320-261834/3		11/29/2018 06:54	1	2018.11.29PFCIC AL 006.d	GeminiC18 3x100 3(mm)
IC 320-261834/4		11/29/2018 07:01	1	2018.11.29PFCIC AL 007.d	GeminiC18 3x100 3(mm)
IC 320-261834/5 ICIS		11/29/2018 07:09	1	2018.11.29PFCIC AL 008.d	GeminiC18 3x100 3(mm)
IC 320-261834/6		11/29/2018 07:16	1	2018.11.29PFCIC AL 009.d	GeminiC18 3x100 3(mm)
IC 320-261834/7		11/29/2018 07:24	1	2018.11.29PFCIC AL 010.d	GeminiC18 3x100 3(mm)
IC 320-261834/8		11/29/2018 07:31	1	2018.11.29PFCIC AL 011.d	GeminiC18 3x100 3(mm)
ICB 320-261834/9		11/29/2018 07:39	1	2018.11.29PFCIC AL 012.d	GeminiC18 3x100 3(mm)
ICV 320-261834/10		11/29/2018 07:46	1	2018.11.29PFCIC AL 013.d	GeminiC18 3x100 3(mm)
ZZZZZ		11/29/2018 07:54	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Instrument ID: A8_N Start Date: 12/06/2018 06:12

Analysis Batch Number: 263400 End Date: 12/06/2018 08:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-263400/1		12/06/2018 06:12	1	2018.12.05LLB_004.d	GeminiC18 3x100 3(mm)
CCVL 320-263400/2		12/06/2018 06:20	1	2018.12.05LLB_005.d	GeminiC18 3x100 3(mm)
CCV 320-263400/3 CCVIS		12/06/2018 06:27	1	2018.12.05LLB_006.d	GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 06:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 06:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 06:50	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 06:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 07:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 07:12	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 07:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 07:27	1		GeminiC18 3x100 3(mm)
CCV 320-263400/12		12/06/2018 07:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 07:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 07:50	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 07:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 08:05	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 08:12	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 08:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 08:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 08:35	1		GeminiC18 3x100 3(mm)
CCV 320-263400/21		12/06/2018 08:42	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Instrument ID: A8_N Start Date: 12/06/2018 08:50

Analysis Batch Number: 263404 End Date: 12/06/2018 10:05

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-263404/1		12/06/2018 08:50	1	2018.12.05LLB_0 25.d	GeminiC18 3x100 3(mm)
MB 320-260871/1-A		12/06/2018 08:57	1	2018.12.05LLB_0 26.d	GeminiC18 3x100 3(mm)
LCS 320-260871/2-A		12/06/2018 09:05	1	2018.12.05LLB_0 27.d	GeminiC18 3x100 3(mm)
480-145071-1		12/06/2018 09:12	1	2018.12.05LLB_0 28.d	GeminiC18 3x100 3(mm)
480-145071-1 MS		12/06/2018 09:20	1	2018.12.05LLB_0 29.d	GeminiC18 3x100 3(mm)
480-145071-1 MSD		12/06/2018 09:27	1	2018.12.05LLB_0 30.d	GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 09:35	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 09:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 09:50	1		GeminiC18 3x100 3(mm)
ZZZZZ		12/06/2018 09:57	1		GeminiC18 3x100 3(mm)
CCV 320-263404/11		12/06/2018 10:05	1	2018.12.05LLB_0 35.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Instrument ID: A8_N Start Date: 12/08/2018 05:16

Analysis Batch Number: 263887 End Date: 12/08/2018 06:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-263887/2		12/08/2018 05:16	1	2018.12.07ICAL_005.d	GeminiC18 3x100 3(mm)
IC 320-263887/3		12/08/2018 05:24	1	2018.12.07ICAL_006.d	GeminiC18 3x100 3(mm)
IC 320-263887/4		12/08/2018 05:31	1	2018.12.07ICAL_007.d	GeminiC18 3x100 3(mm)
IC 320-263887/5 ICIS		12/08/2018 05:39	1	2018.12.07ICAL_008.d	GeminiC18 3x100 3(mm)
IC 320-263887/6		12/08/2018 05:46	1	2018.12.07ICAL_009.d	GeminiC18 3x100 3(mm)
IC 320-263887/7		12/08/2018 05:54	1	2018.12.07ICAL_010.d	GeminiC18 3x100 3(mm)
IC 320-263887/8		12/08/2018 06:01	1	2018.12.07ICAL_011.d	GeminiC18 3x100 3(mm)
ICB 320-263887/9		12/08/2018 06:09	1	2018.12.07ICAL_012.d	GeminiC18 3x100 3(mm)
ICV 320-263887/10		12/08/2018 06:16	1	2018.12.07ICAL_013.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Instrument ID: A8_N Start Date: 12/14/2018 20:54

Analysis Batch Number: 265415 End Date: 12/14/2018 21:24

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-265415/1		12/14/2018 20:54	1	2018.12.14LLB_04.d	GeminiC18 3x100 3(mm)
CCVL 320-265415/2		12/14/2018 21:02	1	2018.12.14LLB_05.d	GeminiC18 3x100 3(mm)
CCV 320-265415/3 CCVIS		12/14/2018 21:09	1	2018.12.14LLB_06.d	GeminiC18 3x100 3(mm)
CCV 320-265415/5		12/14/2018 21:24	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Instrument ID: A8_N Start Date: 12/14/2018 23:09

Analysis Batch Number: 265427 End Date: 12/15/2018 00:09

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-265427/1		12/14/2018 23:09	1	2018.12.14LLB_0 22.d	GeminiC18 3x100 3(mm)
480-145071-2		12/14/2018 23:16	1	2018.12.14LLB_0 23.d	GeminiC18 3x100 3(mm)
480-145071-3		12/14/2018 23:24	1	2018.12.14LLB_0 24.d	GeminiC18 3x100 3(mm)
480-145071-4		12/14/2018 23:31	1	2018.12.14LLB_0 25.d	GeminiC18 3x100 3(mm)
480-145071-1 DL		12/14/2018 23:39	10	2018.12.14LLB_0 26.d	GeminiC18 3x100 3(mm)
480-145071-1 MS DL		12/14/2018 23:46	10	2018.12.14LLB_0 27.d	GeminiC18 3x100 3(mm)
480-145071-1 MSD DL		12/14/2018 23:54	10	2018.12.14LLB_0 28.d	GeminiC18 3x100 3(mm)
ZZZZZ		12/15/2018 00:01	10		GeminiC18 3x100 3(mm)
CCV 320-265427/9		12/15/2018 00:09	1	2018.12.14LLB_0 30.d	GeminiC18 3x100 3(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Batch Number: 260871 Batch Start Date: 11/23/18 04:59 Batch Analyst: Vang, Mai Yee

Batch Method: 3535 Batch End Date: 11/23/18 09:55

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_ALL_SU 00137	LCPFC-IS 00116
MB 320-260871/1		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
LCS 320-260871/2		3535, 537 (modified)				250.00 mL	10.00 mL	500 uL	500 uL
480-145071-B-1	MW-01-2018-PFA	3535, 537 (modified)	T	293.41 g	30.33 g	263.1 mL	10.00 mL	500 uL	500 uL
480-145071-A-1 MS	MW-01-2018-PFA	3535, 537 (modified)	T	297.74 g	29.13 g	268.6 mL	10.00 mL	500 uL	500 uL
480-145071-B-1 MSD	MW-01-2018-PFA	3535, 537 (modified)	T	294.58 g	29.22 g	265.4 mL	10.00 mL	500 uL	500 uL
480-145071-B-2	MW-03-2018-PFA	3535, 537 (modified)	T	285.76 g	29.27 g	256.5 mL	10.00 mL	500 uL	500 uL
480-145071-A-3	MW-04-2018-PFA	3535, 537 (modified)	T	289.08 g	29.08 g	260 mL	10.00 mL	500 uL	500 uL
480-145071-B-4	DUPE-2018-PFA	3535, 537 (modified)	T	291.48 g	29.72 g	261.8 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00198	AnalysisComment				
MB 320-260871/1		3535, 537 (modified)							
LCS 320-260871/2		3535, 537 (modified)		500 uL					
480-145071-B-1	MW-01-2018-PFA	3535, 537 (modified)	T		18.07 g of sample remaining				
480-145071-A-1 MS	MW-01-2018-PFA	3535, 537 (modified)	T	500 uL					
480-145071-B-1 MSD	MW-01-2018-PFA	3535, 537 (modified)	T	500 uL	17.97 g of sample remaining				
480-145071-B-2	MW-03-2018-PFA	3535, 537 (modified)	T		36.16 g of sample remaining				
480-145071-A-3	MW-04-2018-PFA	3535, 537 (modified)	T						
480-145071-B-4	DUPE-2018-PFA	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.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 480-145071-1

SDG No.: _____

Batch Number: 260871 Batch Start Date: 11/23/18 04:59 Batch Analyst: Vang, Mai Yee

Batch Method: 3535 Batch End Date: 11/23/18 09:55

Batch Notes	
Balance ID	QA-078
Batch Comment	Client ID macthes TA ID: MYV 11/23/18.
First End time	11/23/2018 09:55
H2O ID	11/21/18
Hexane ID	1435675
Manifold ID	Y
Methanol ID	1443405
Sodium Hydroxide ID	1442472
Pipette/Syringe/Dispenser ID	I46162G
Analyst ID - Reagent Drop	MYV
Analyst ID - IS Reagent Drop	MYV : 1435165
Analyst ID - IS Reagent Drop Witness	MNV
Solvent Lot #	1438738
Solvent Name	0.3% NH4OHMe
SPE Cartridge Lot ID	004238285A
SPE Cartridge Type	500mg
First Start time	11/23/2018 04:59

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 Record

Client Information Client Contact: Allan Engelbert Company: LaBella Associates DPC Address: 105 N. Tioga Suite 200 City: Ithaca State, Zip: NY, 14850 Phone: aengelbert@labellapc.com Project Name: Townley Hill Rd Dump Site#808006 Site:		Lab PM: Johnson, Orlette S E-Mail: orlette.johnson@testamericainc.com Carrier Tracking No(s): COC No: 480-121557-27902 Page: Page 1 of 1 Job #:	
Due Date Requested: <i>Standard</i> TAT Requested (days): <i>Standard</i> PO#: CallOut ID: 136381 WO#: Project #: 48019193 SOW#:		Analysis Requested Preservation Codes: M - HCL N - NaOH O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDA Other:	
Sample Identification Sample Date: 11/9/18 Sample Time: 1050 Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, O=soil, BT=tissue, A=air): Water		Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> X Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> X PFC, IDA - PFA, Standard List (21 Analytes) (PFA method) <i>587</i> B270D - SIM, MS, ID - 1,4-Dioxane	
MW-01-2018 - PFA MW-3-2018 - PFA MW-4-2018 - PFA DUPE - 2018 - PFA		Total Number of containers: MS /MSD Special Instructions/Note:	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) NYSDEC CAT B + EQIS EDD Data package			
Empty Kit Relinquished by: <i>Adit</i> Relinquished by: Alexander da Silva Date/Time: 11/19/18 1915 Company: LaBella		Return To Client <input type="checkbox"/> <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/OC Requirements: Method of Shipment:	
Relinquished by:		Received by: <i>John Kowal</i> Date/Time: 11/19/18 0930 Company:	
Relinquished by:		Received by:	
Relinquished by:		Received by:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks: 24#	



Chain of Custody Record

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact:		Johnson, Oriette S	Johnson, Oriette S		480-46442.1
Shipping/Receiving:		Phone:	E-Mail:	State of Origin:	Page:
Company:			oriatte.johnson@testamericainc.com	New York	Page 1 of 1
TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #:	480-145071-1
Address:		NELAP - New York		Preservation Codes:	
880 Riverside Parkway,				A - HCL	M - Hexane
City:				B - NaOH	N - None
West Sacramento				C - Zn Acetate	O - AsNaO2
State, Zip:				D - Nitric Acid	P - Na2O4S
CA, 95605				E - NaHSO4	Q - Na2SO3
Phone:				F - MeOH	R - Na2S2O3
916-373-5600(Tel) 916-372-1059(Fax)				G - Amchlor	S - H2SO4
Email:				H - Ascorbic Acid	T - TSP Dodecahydrate
Project Name:				I - Ice	U - Acetone
Townley Hill Rd Dump Site#808006				J - DI Water	V - MCAA
Site:				K - EDTA	W - pH 4.5
				L - EDA	Z - other (specify)
				Other:	

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Other/Matrix)	Preservation Code	Analysis Requested		Special Instructions/Note:
						Field Filtered Sample (Yes or No)	Total Number of Containers	
MW-01-2018-PFA (480-145071-1)	11/9/18	10:50 Eastern	Water	Water	X	X		
MW-01-2018-PFA (480-145071-1MS)	11/9/18	10:50 Eastern	MS	Water	X	X		
MW-01-2018-PFA (480-145071-1MSD)	11/9/18	10:50 Eastern	MSD	Water	X	X		
MW-03-2018-PFA (480-145071-2)	11/9/18	12:25 Eastern	Water	Water	X	X		
MW-04-2018-PFA (480-145071-3)	11/9/18	13:15 Eastern	Water	Water	X	X		
DUPE-2018-PFA (480-145071-4)	11/9/18	11:15 Eastern	Water	Water	X	X		

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
 Unconfirmed
 Deliverable Requested I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2
 Empty Kit Relinquished by: _____ Date: _____
 Relinquished by: *[Signature]* Date/Time: 11/21/18 16:30
 Relinquished by: *[Signature]* Date/Time: 11-13-18 9:39
 Relinquished by: _____ Date/Time: _____
 Custody Seal No.: *7246460* Custody Seal No.: _____
 Custody Seals Intact: Yes No Δ No Δ No
 Cooler Temperature(s) °C and Other Remarks: *0.7*

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-145071-1

Login Number: 145071
List Number: 1
Creator: Harper, Marcus D

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	LABELLA
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: 480-145071-1

Login Number: 145071

List Number: 2

Creator: Rosas, Jaime

List Source: TestAmerica Sacramento

List Creation: 11/13/18 03:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

ANALYTICAL REPORT

Job Number: 480-145090-1

Job Description: Townley Hill Rd Dump Site#808006

Contract Number: C100700

For:

New York State D.E.C.
615 Erie Blvd., West
Syracuse, NY 13204

Attention: Jenelle Gaylord



Approved for release.
Joe V Giacomazza
Project Management Assistant II
11/30/2018 11:35 AM

Designee for
Orlette S Johnson, Senior Project Manager
10 Hazelwood Drive, Amherst, NY, 14228-2298
(484)685-0864
orlette.johnson@testamericainc.com
11/30/2018

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

TestAmerica Laboratories, Inc.

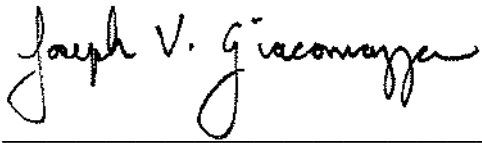
TestAmerica Buffalo 10 Hazelwood Drive, Amherst, NY 14228-2298
Tel (716) 691-2600 Fax (716) 691-7991 www.testamericainc.com



Job Number: 480-145090-1

Job Description: Townley Hill Rd Dump Site#808006

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
11/30/2018 11:35 AM

Designee for
Orlette S Johnson

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Job Narrative
480-145090-1

Comments

No additional comments.

Receipt

The samples were received on 11/10/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.6° C and 2.4° C.

GC/MS Semi VOA

Method(s) 8270D SIM ID: The 1,4-Dioxane result reported for samples MW-01-2018-DIO (480-145090-3[MS]) and MW-01-2018-DIO (480-145090-3[MSD]) have an E flag qualifier indicating the results are over the calibration range on the raw data. The actual amounts are within the calibration range; however, the E flag is generated based upon the bias corrected concentration. The LIMS system calculates a bias correction based on the recovery of the 1,4-Dioxane-d8 isotope.

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

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: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.

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: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-145090-1	MW-3-2018-DIO	Water	11/09/18 12:20	11/10/18 09:30
480-145090-2	MW-4-2018-DIO	Water	11/09/18 13:10	11/10/18 09:30
480-145090-3	MW-01-2018-DIO	Water	11/09/18 10:45	11/10/18 09:30
480-145090-4	DUPE-2018-DIO	Water	11/09/18 11:10	11/10/18 09:30

Detection Summary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

Client Sample ID: MW-3-2018-DIO

Lab Sample ID: 480-145090-1

No Detections.

Client Sample ID: MW-4-2018-DIO

Lab Sample ID: 480-145090-2

No Detections.

Client Sample ID: MW-01-2018-DIO

Lab Sample ID: 480-145090-3

No Detections.

Client Sample ID: DUPE-2018-DIO

Lab Sample ID: 480-145090-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

Client Sample ID: MW-3-2018-DIO

Date Collected: 11/09/18 12:20

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145090-1

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		11/12/18 14:16	11/20/18 16:32	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	21		15 - 110				11/12/18 14:16	11/20/18 16:32	1

Client Sample ID: MW-4-2018-DIO

Date Collected: 11/09/18 13:10

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145090-2

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		11/12/18 14:16	11/20/18 16:57	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	23		15 - 110				11/12/18 14:16	11/20/18 16:57	1

Client Sample ID: MW-01-2018-DIO

Date Collected: 11/09/18 10:45

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145090-3

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		11/12/18 14:16	11/20/18 16:08	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	24		15 - 110				11/12/18 14:16	11/20/18 16:08	1

Client Sample ID: DUPE-2018-DIO

Date Collected: 11/09/18 11:10

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145090-4

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		11/12/18 14:16	11/20/18 17:21	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,4-Dioxane-d8	20		15 - 110				11/12/18 14:16	11/20/18 17:21	1

Isotope Dilution Summary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

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)
480-145090-1	MW-3-2018-DIO	21
480-145090-2	MW-4-2018-DIO	23
480-145090-3	MW-01-2018-DIO	24
480-145090-3 MS	MW-01-2018-DIO	25
480-145090-3 MSD	MW-01-2018-DIO	25
480-145090-4	DUPE-2018-DIO	20
LCS 480-445049/2-A	Lab Control Sample	33
MB 480-445049/1-A	Method Blank	29

Surrogate Legend

DXE = 1,4-Dioxane-d8

QC Sample Results

Client: New York State D.E.C.
 Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

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

Lab Sample ID: MB 480-445049/1-A
Matrix: Water
Analysis Batch: 446525

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 445049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.20	0.10	ug/L		11/12/18 14:16	11/20/18 14:28	1
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane-d8	29		15 - 110				11/12/18 14:16	11/20/18 14:28	1

Lab Sample ID: LCS 480-445049/2-A
Matrix: Water
Analysis Batch: 446525

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 445049

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	1.00	1.09		ug/L		109	40 - 140
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
1,4-Dioxane-d8	33		15 - 110				

Lab Sample ID: 480-145090-3 MS
Matrix: Water
Analysis Batch: 446525

Client Sample ID: MW-01-2018-DIO
Prep Type: Total/NA
Prep Batch: 445049

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	ND		1.00	1.23	E	ug/L		123	40 - 140
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>						
1,4-Dioxane-d8	25		15 - 110						

Lab Sample ID: 480-145090-3 MSD
Matrix: Water
Analysis Batch: 446525

Client Sample ID: MW-01-2018-DIO
Prep Type: Total/NA
Prep Batch: 445049

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	ND		1.00	1.21	E	ug/L		121	40 - 140	1	20
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>								
1,4-Dioxane-d8	25		15 - 110								

QC Association Summary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

GC/MS Semi VOA

Prep Batch: 445049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145090-1	MW-3-2018-DIO	Total/NA	Water	3510C	
480-145090-2	MW-4-2018-DIO	Total/NA	Water	3510C	
480-145090-3	MW-01-2018-DIO	Total/NA	Water	3510C	
480-145090-4	DUPE-2018-DIO	Total/NA	Water	3510C	
MB 480-445049/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-445049/2-A	Lab Control Sample	Total/NA	Water	3510C	
480-145090-3 MS	MW-01-2018-DIO	Total/NA	Water	3510C	
480-145090-3 MSD	MW-01-2018-DIO	Total/NA	Water	3510C	

Analysis Batch: 446525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-145090-1	MW-3-2018-DIO	Total/NA	Water	8270D SIM ID	445049
480-145090-2	MW-4-2018-DIO	Total/NA	Water	8270D SIM ID	445049
480-145090-3	MW-01-2018-DIO	Total/NA	Water	8270D SIM ID	445049
480-145090-4	DUPE-2018-DIO	Total/NA	Water	8270D SIM ID	445049
MB 480-445049/1-A	Method Blank	Total/NA	Water	8270D SIM ID	445049
LCS 480-445049/2-A	Lab Control Sample	Total/NA	Water	8270D SIM ID	445049
480-145090-3 MS	MW-01-2018-DIO	Total/NA	Water	8270D SIM ID	445049
480-145090-3 MSD	MW-01-2018-DIO	Total/NA	Water	8270D SIM ID	445049

Lab Chronicle

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

Client Sample ID: MW-3-2018-DIO

Date Collected: 11/09/18 12:20

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145090-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			445049	11/12/18 14:16	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	446525	11/20/18 16:32	DMR	TAL BUF

Client Sample ID: MW-4-2018-DIO

Date Collected: 11/09/18 13:10

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145090-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			445049	11/12/18 14:16	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	446525	11/20/18 16:57	DMR	TAL BUF

Client Sample ID: MW-01-2018-DIO

Date Collected: 11/09/18 10:45

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145090-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			445049	11/12/18 14:16	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	446525	11/20/18 16:08	DMR	TAL BUF

Client Sample ID: DUPE-2018-DIO

Date Collected: 11/09/18 11:10

Date Received: 11/10/18 09:30

Lab Sample ID: 480-145090-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			445049	11/12/18 14:16	ATG	TAL BUF
Total/NA	Analysis	8270D SIM ID		1	446525	11/20/18 17:21	DMR	TAL BUF

Laboratory References:

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

Method Summary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

Method	Method Description	Protocol	Laboratory
8270D SIM ID	Semivolatile Organic Compounds (GC/MS SIM / Isotope Dilution)	SW846	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF

Protocol References:

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

Accreditation/Certification Summary

Client: New York State D.E.C.
Project/Site: Townley Hill Rd Dump Site#808006

TestAmerica Job ID: 480-145090-1

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

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.: 480-145090-1

SDG No.: _____

Matrix: Water

Level: Low

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

Client Sample ID	Lab Sample ID	DXE #
MW-3-2018-DIO	480-145090-1	21
MW-4-2018-DIO	480-145090-2	23
MW-01-2018-DIO	480-145090-3	24
DUPE-2018-DIO	480-145090-4	20
	MB 480-445049/1-A	29
	LCS 480-445049/2-A	33
MW-01-2018-DIO MS	480-145090-3 MS	25
MW-01-2018-DIO MSD	480-145090-3 MSD	25

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.: 480-145090-1

SDG No.: _____

Matrix: Water Level: Low Lab File ID: U3313515.D

Lab ID: LCS 480-445049/2-A Client ID: _____

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	1.09	109	40-140	
1,4-Dioxane-d8	10.0	3.33	33	15-110	

Column to be used to flag recovery and RPD values

FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: U3313516.D
 Lab ID: 480-145090-3 MS Client ID: MW-01-2018-DIO MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,4-Dioxane	1.00	ND	1.23	123	40-140	E
1,4-Dioxane-d8	10.0	2.4	2.53	25	15-110	

Column to be used to flag recovery and RPD values
 FORM III 8270D SIM ID

FORM III
GC/MS SEMI VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Matrix: Water Level: Low Lab File ID: U3313517.D
 Lab ID: 480-145090-3 MSD Client ID: MW-01-2018-DIO MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
1,4-Dioxane	1.00	1.21	121	1	20	40-140	E
1,4-Dioxane-d8	10.0	2.48	25			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.: 480-145090-1
 SDG No.: _____
 Lab File ID: U3313514.D Lab Sample ID: MB 480-445049/1-A
 Matrix: Water Date Extracted: 11/12/2018 14:16
 Instrument ID: HP5973U Date Analyzed: 11/20/2018 14:28
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 480-445049/2-A	U3313515.D	11/20/2018 14:53
MW-01-2018-DIO MS	480-145090-3 MS	U3313516.D	11/20/2018 15:18
MW-01-2018-DIO MSD	480-145090-3 MSD	U3313517.D	11/20/2018 15:43
MW-01-2018-DIO	480-145090-3	U3313518.D	11/20/2018 16:08
MW-3-2018-DIO	480-145090-1	U3313519.D	11/20/2018 16:32
MW-4-2018-DIO	480-145090-2	U3313520.D	11/20/2018 16:57
DUPE-2018-DIO	480-145090-4	U3313521.D	11/20/2018 17:21

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

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Lab File ID: U3313457.D DFTPP Injection Date: 11/19/2018
 Instrument ID: HP5973U DFTPP Injection Time: 15:11
 Analysis Batch No.: 446475

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	54.4
68	Less than 2% of mass 69	0.0 (0.0) 1
69	Mass 69 Relative abundance	54.0
70	Less than 2% of mass 69	0.2 (0.3) 1
127	10-80% of Base Peak	57.8
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	6.8
275	10-60% of Base Peak	22.6
365	Greater than 1% of mass 198	2.8
441	present but less than 24% of mass 442	9.7 (15.9) 2
442	Greater than 50% of mass 198	61.1
443	15-24% of mass 442	12.4 (20.2) 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 480-446475/3	U3313462.D	11/19/2018	17:08
	IC 480-446475/4	U3313463.D	11/19/2018	17:33
	ICIS 480-446475/5	U3313464.D	11/19/2018	17:58
	IC 480-446475/6	U3313465.D	11/19/2018	18:22
	IC 480-446475/7	U3313466.D	11/19/2018	18:47
	IC 480-446475/8	U3313467.D	11/19/2018	19:11

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

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Lab File ID: U3313498.D DFTPP Injection Date: 11/20/2018
 Instrument ID: HP5973U DFTPP Injection Time: 07:50
 Analysis Batch No.: 446525

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10-80% of Base Peak	49.2
68	Less than 2% of mass 69	0.5 (0.9) 1
69	Mass 69 Relative abundance	50.0
70	Less than 2% of mass 69	0.3 (0.5) 1
127	10-80% of Base Peak	54.9
197	Less than 2% of mass 198	0.0
198	Base peak	100.0
199	5-9% of mass 198	6.9
275	10-60% of Base Peak	25.1
365	Greater than 1% of mass 198	3.4
441	present but less than 24% of mass 442	11.8 (15.1) 2
442	Greater than 50% of mass 198	77.7
443	15-24% of mass 442	14.8 (19.1) 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
	CCVIS 480-446525/3	U3313499.D	11/20/2018	08:19
	MB 480-445049/1-A	U3313514.D	11/20/2018	14:28
	LCS 480-445049/2-A	U3313515.D	11/20/2018	14:53
MW-01-2018-DIO MS	480-145090-3 MS	U3313516.D	11/20/2018	15:18
MW-01-2018-DIO MSD	480-145090-3 MSD	U3313517.D	11/20/2018	15:43
MW-01-2018-DIO	480-145090-3	U3313518.D	11/20/2018	16:08
MW-3-2018-DIO	480-145090-1	U3313519.D	11/20/2018	16:32
MW-4-2018-DIO	480-145090-2	U3313520.D	11/20/2018	16:57
DUPE-2018-DIO	480-145090-4	U3313521.D	11/20/2018	17:21

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

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Sample No.: ICIS 480-446475/5 Date Analyzed: 11/19/2018 17:58
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25(mm)
 Lab File ID (Standard): U3313464.D Heated Purge: (Y/N) N
 Calibration ID: 35391

	DCBd4		AREA #	RT #	AREA #	RT #
	AREA #	RT #				
INITIAL CALIBRATION MID-POINT	752581	5.48				
UPPER LIMIT	1505162	5.98				
LOWER LIMIT	376291	4.98				
LAB SAMPLE ID	CLIENT SAMPLE ID					
CCVIS 480-446525/3		724660	5.48			

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8270D SIM ID

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

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Sample No.: CCVIS 480-446525/3 Date Analyzed: 11/20/2018 08:19
 Instrument ID: HP5973U GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm)
 Lab File ID (Standard): U3313499.D Heated Purge: (Y/N) N
 Calibration ID: 35391

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		724660	5.48				
UPPER LIMIT		1449320	5.98				
LOWER LIMIT		362330	4.98				
LAB SAMPLE ID	CLIENT SAMPLE ID						
MB 480-445049/1-A		893761	5.49				
LCS 480-445049/2-A		846684	5.49				
480-145090-3 MS	MW-01-2018-DIO MS	862474	5.49				
480-145090-3 MSD	MW-01-2018-DIO MSD	944117	5.49				
480-145090-3	MW-01-2018-DIO	1015061	5.49				
480-145090-1	MW-3-2018-DIO	1046797	5.49				
480-145090-2	MW-4-2018-DIO	1129218	5.48				
480-145090-4	DUPE-2018-DIO	995436	5.49				

DCBd4 = 1,4-Dichlorobenzene-d4
 DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
 RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Client Sample ID: MW-3-2018-DIO Lab Sample ID: 480-145090-1
 Matrix: Water Lab File ID: U3313519.D
 Analysis Method: 8270D SIM ID Date Collected: 11/09/2018 12:20
 Extract. Method: 3510C Date Extracted: 11/12/2018 14:16
 Sample wt/vol: 1000 (mL) Date Analyzed: 11/20/2018 16:32
 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.: 446525 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	21		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313519.D
 Lims ID: 480-145090-B-1-A
 Client ID: MW-3-2018-DIO
 Sample Type: Client
 Inject. Date: 20-Nov-2018 16:32:30 ALS Bottle#: 51 Worklist Smp#: 23
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-023
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 20-Nov-2018 17:31:53

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	2.111	2.046	0.065	92	273609	2.08	20.8	
3 1,4-Dioxane	88		2.079				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.485	5.481	0.004	96	1046797	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313519.D

Injection Date: 20-Nov-2018 16:32:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-145090-B-1-A

Lab Sample ID: 480-145090-1

Worklist Smp#: 23

Client ID: MW-3-2018-DIO

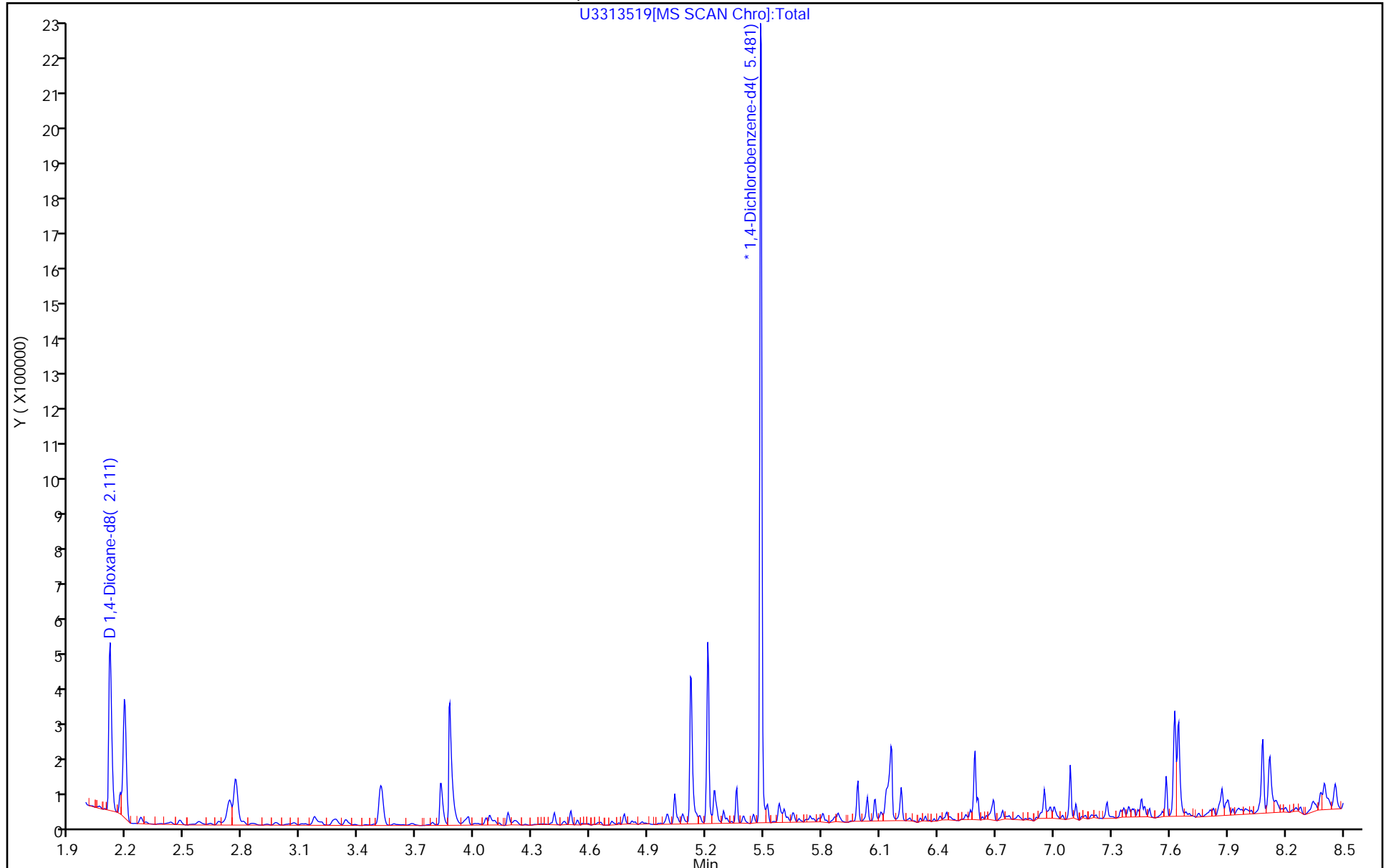
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 51

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313519.D

Injection Date: 20-Nov-2018 16:32:30

Instrument ID: HP5973U

Lims ID: 480-145090-B-1-A

Lab Sample ID: 480-145090-1

Client ID: MW-3-2018-DIO

Operator ID: DR

ALS Bottle#: 51

Worklist Smp#: 23

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

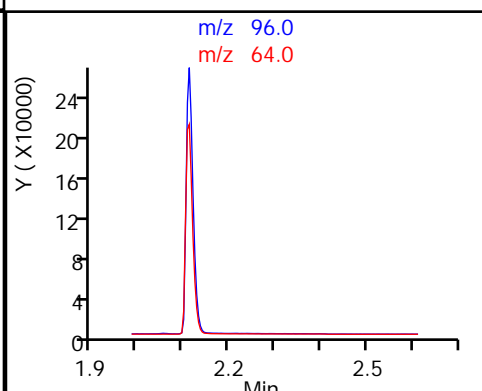
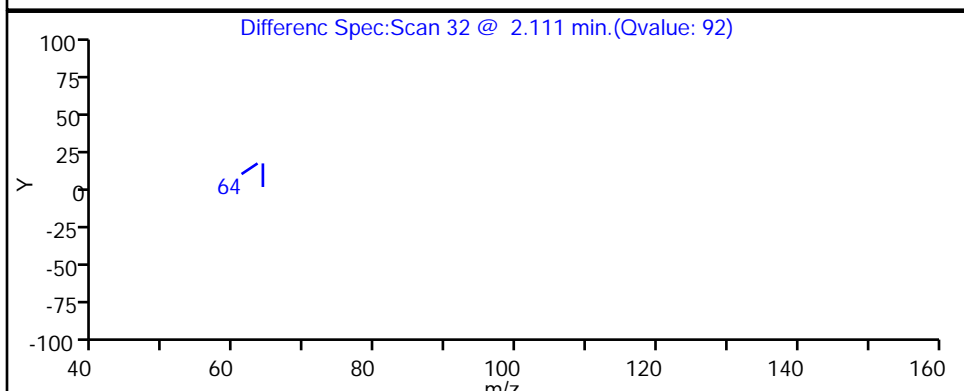
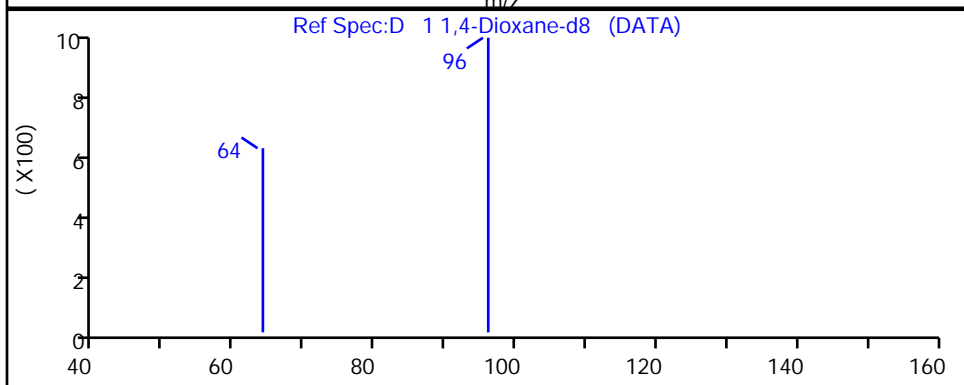
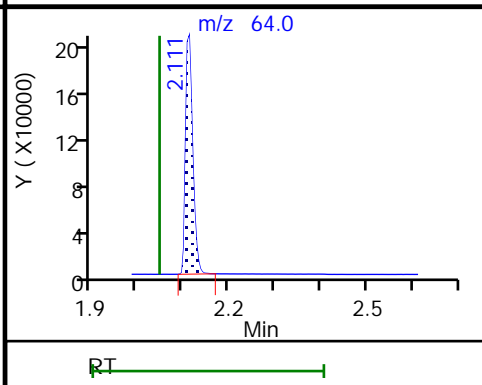
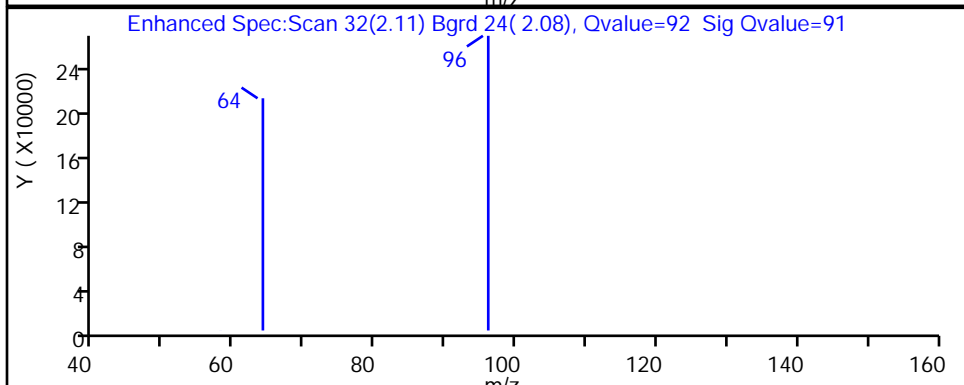
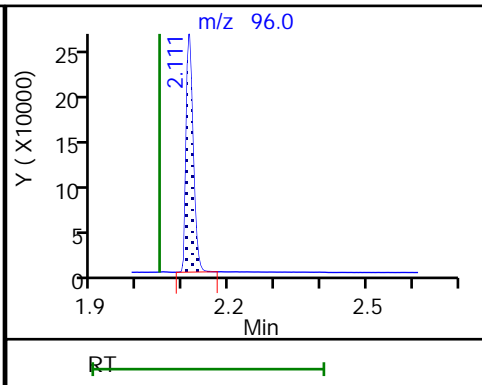
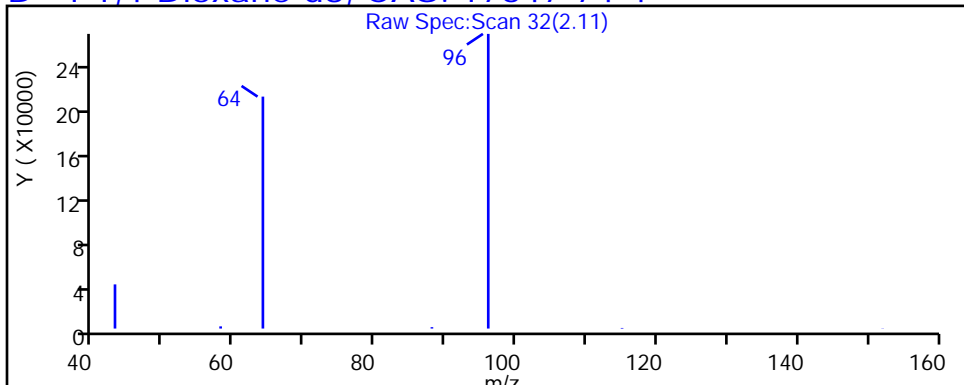
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector: MS SCAN

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

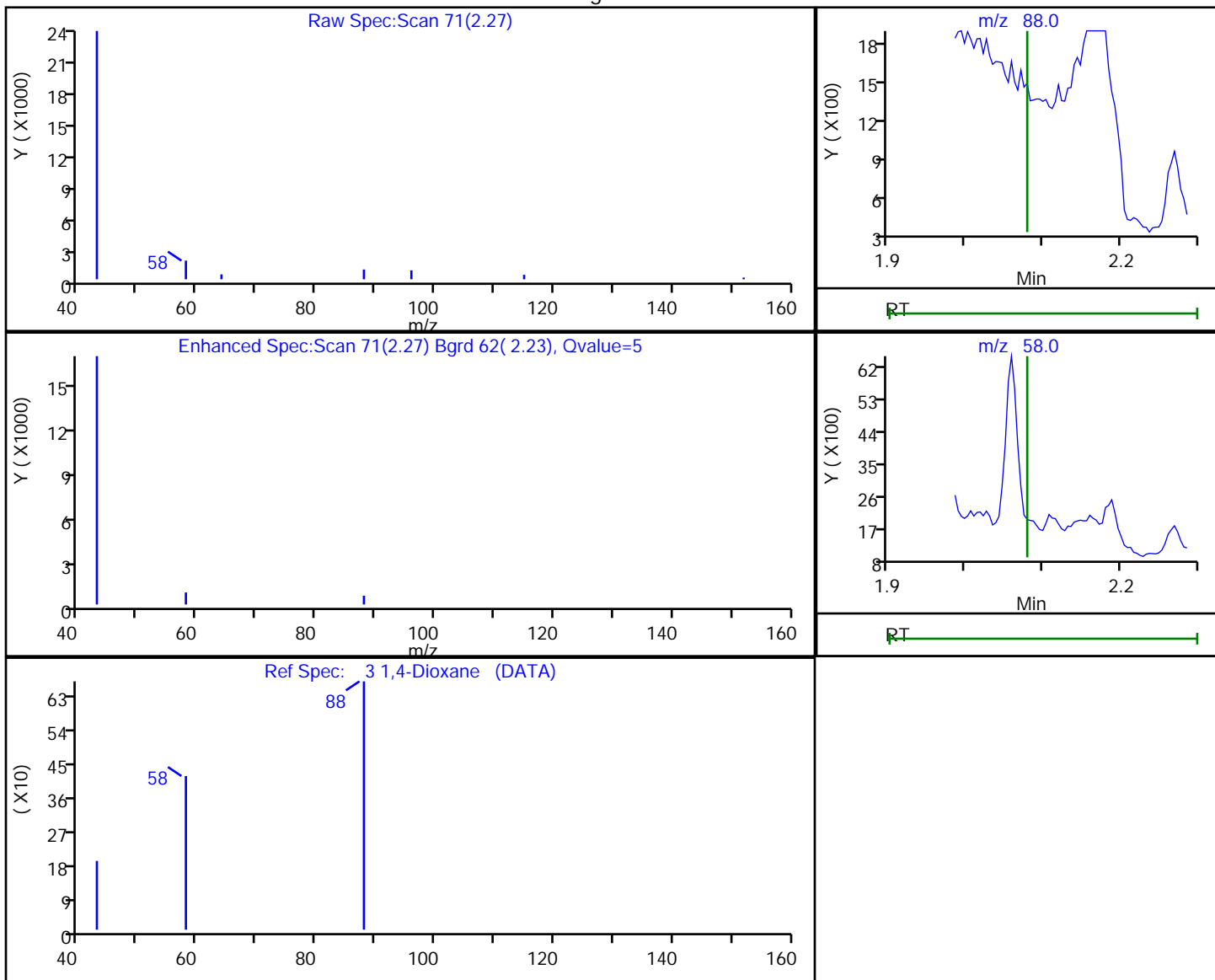


TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313519.D
 Injection Date: 20-Nov-2018 16:32:30 Instrument ID: HP5973U
 Lims ID: 480-145090-B-1-A Lab Sample ID: 480-145090-1
 Client ID: MW-3-2018-DIO
 Operator ID: DR ALS Bottle#: 51 Worklist Smp#: 23
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
 Column: Detector MS SCAN

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

Processing Results



RT	Mass	Response	Amount
2.27	88.00	758	0.026084
2.27	58.00	1336	

Reviewer: richardsd, 20-Nov-2018 17:31:52

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Client Sample ID: MW-4-2018-DIO Lab Sample ID: 480-145090-2
 Matrix: Water Lab File ID: U3313520.D
 Analysis Method: 8270D SIM ID Date Collected: 11/09/2018 13:10
 Extract. Method: 3510C Date Extracted: 11/12/2018 14:16
 Sample wt/vol: 1000 (mL) Date Analyzed: 11/20/2018 16:57
 Con. Extract Vol.: 1 (mL) Dilution Factor: 1
 Injection Volume: 1 (uL) Level: (low/med) Low
 % Moisture: _____ GPC Cleanup: (Y/N) N
 Analysis Batch No.: 446525 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	23		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313520.D
 Lims ID: 480-145090-B-2-A
 Client ID: MW-4-2018-DIO
 Sample Type: Client
 Inject. Date: 20-Nov-2018 16:57:30 ALS Bottle#: 52 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-024
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 20-Nov-2018 17:31:48

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	2.120	2.046	0.074	92	319909	2.26	22.6	
3 1,4-Dioxane	88		2.079				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.481	5.481	0.000	93	1129218	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313520.D

Injection Date: 20-Nov-2018 16:57:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-145090-B-2-A

Lab Sample ID: 480-145090-2

Worklist Smp#: 24

Client ID: MW-4-2018-DIO

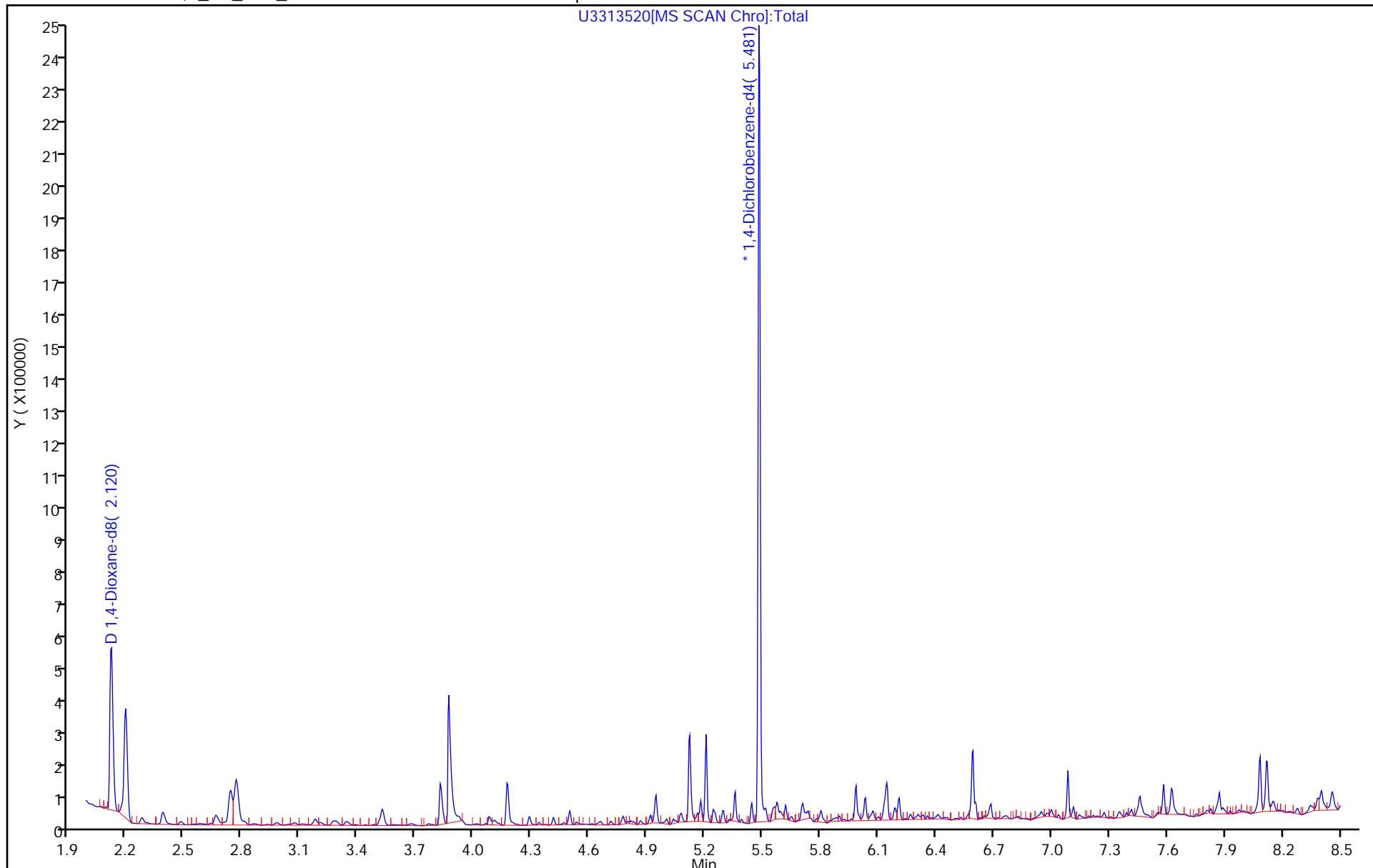
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 52

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313520.D

Injection Date: 20-Nov-2018 16:57:30

Instrument ID: HP5973U

Lims ID: 480-145090-B-2-A

Lab Sample ID: 480-145090-2

Client ID: MW-4-2018-DIO

Operator ID: DR

ALS Bottle#: 52

Worklist Smp#: 24

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

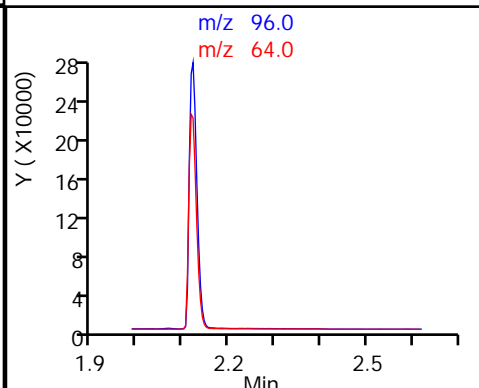
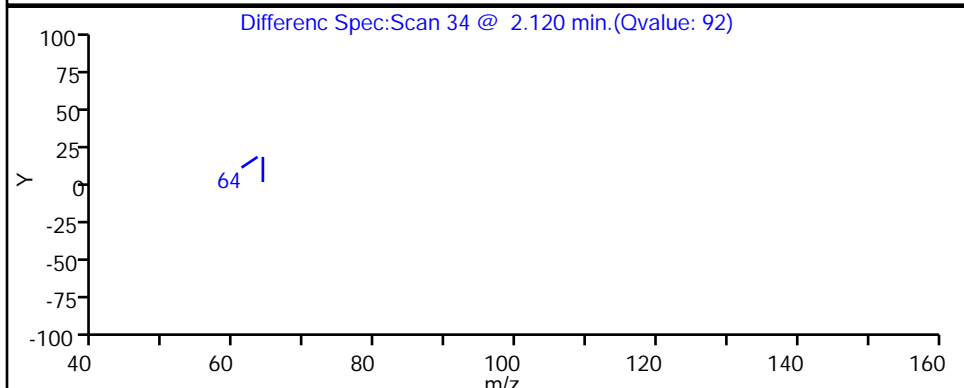
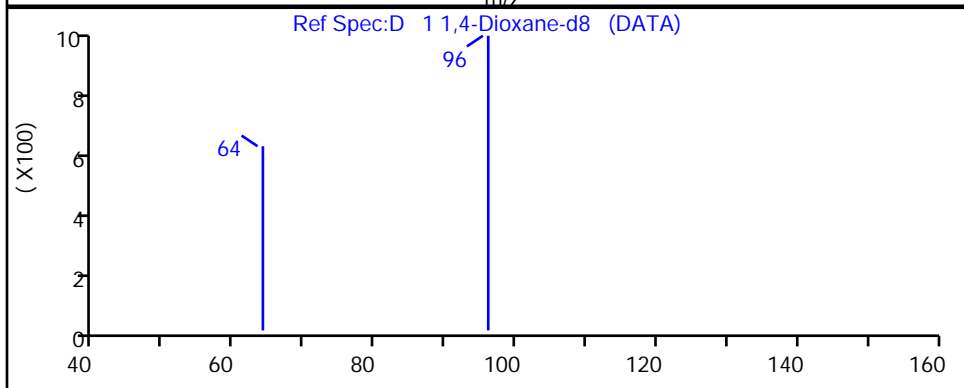
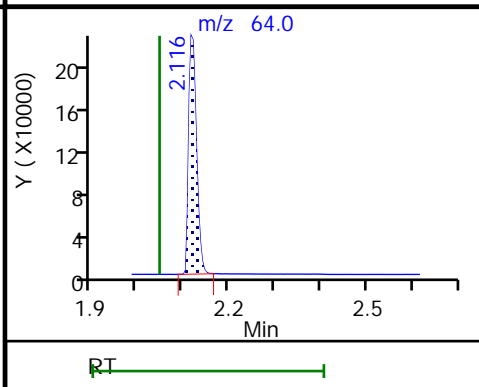
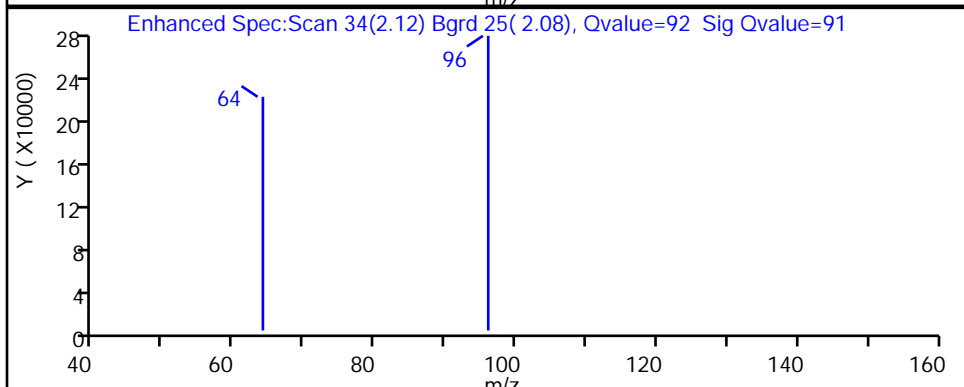
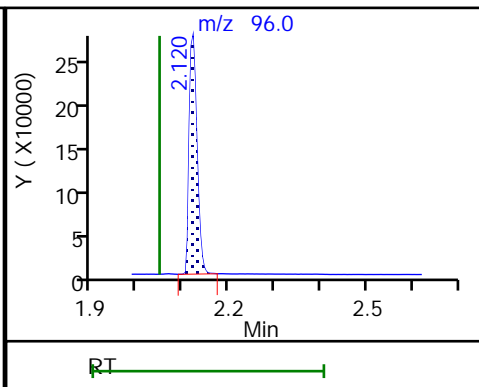
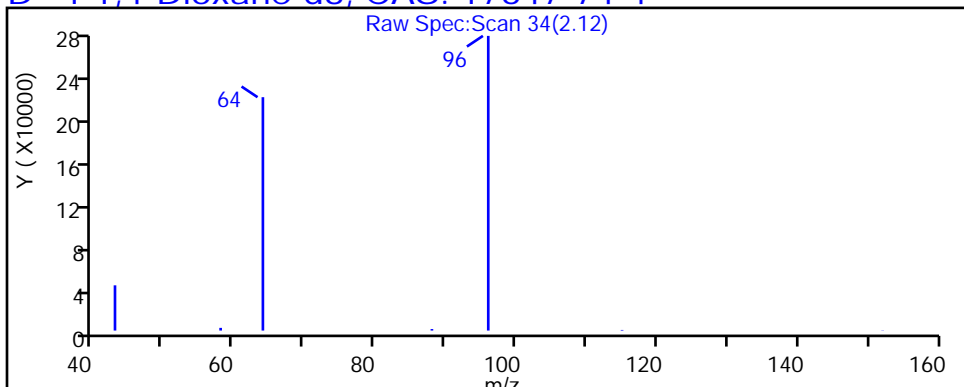
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector: MS SCAN

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

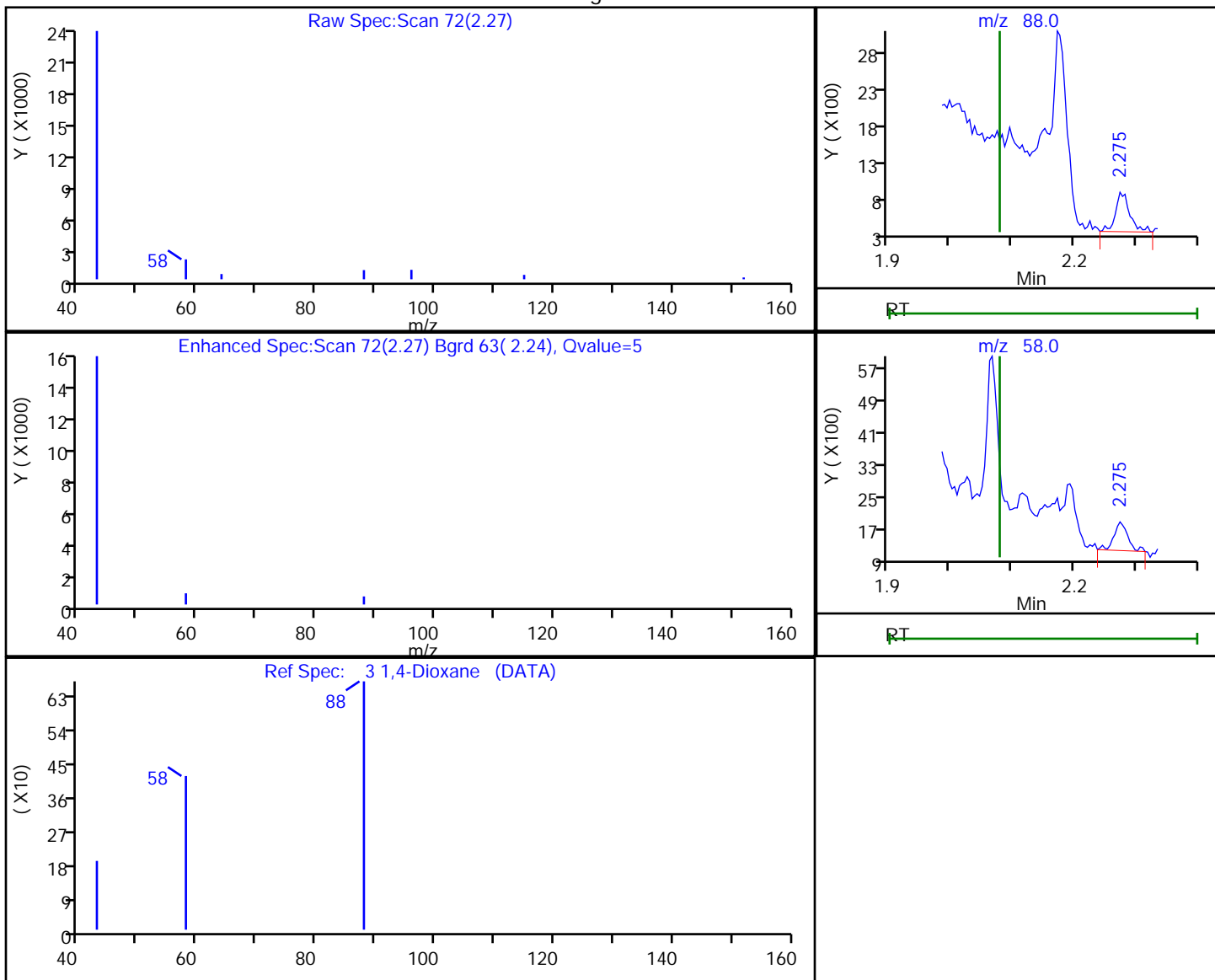


TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313520.D
 Injection Date: 20-Nov-2018 16:57:30 Instrument ID: HP5973U
 Lims ID: 480-145090-B-2-A Lab Sample ID: 480-145090-2
 Client ID: MW-4-2018-DIO
 Operator ID: DR ALS Bottle#: 52 Worklist Smp#: 24
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
 Column: Detector MS SCAN

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

Processing Results



RT	Mass	Response	Amount
2.27	88.00	861	0.025341
2.27	58.00	1092	

Reviewer: richardsd, 20-Nov-2018 17:31:45

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-DIO Lab Sample ID: 480-145090-3
 Matrix: Water Lab File ID: U3313518.D
 Analysis Method: 8270D SIM ID Date Collected: 11/09/2018 10:45
 Extract. Method: 3510C Date Extracted: 11/12/2018 14:16
 Sample wt/vol: 1000 (mL) Date Analyzed: 11/20/2018 16:08
 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.: 446525 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	24		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313518.D
 Lims ID: 480-145090-B-3-C
 Client ID: MW-01-2018-DIO
 Sample Type: Client
 Inject. Date: 20-Nov-2018 16:08:30 ALS Bottle#: 50 Worklist Smp#: 22
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-022
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 23-Nov-2018 12:28:32

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
D 1 1,4-Dioxane-d8	96	2.120	2.046	0.074	92	307365	2.41	24.1	
3 1,4-Dioxane	88		2.079				ND		U
* 2 1,4-Dichlorobenzene-d4	152	5.485	5.481	0.004	94	1015061	4.00		

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313518.D

Injection Date: 20-Nov-2018 16:08:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-145090-B-3-C

Lab Sample ID: 480-145090-3

Worklist Smp#: 22

Client ID: MW-01-2018-DIO

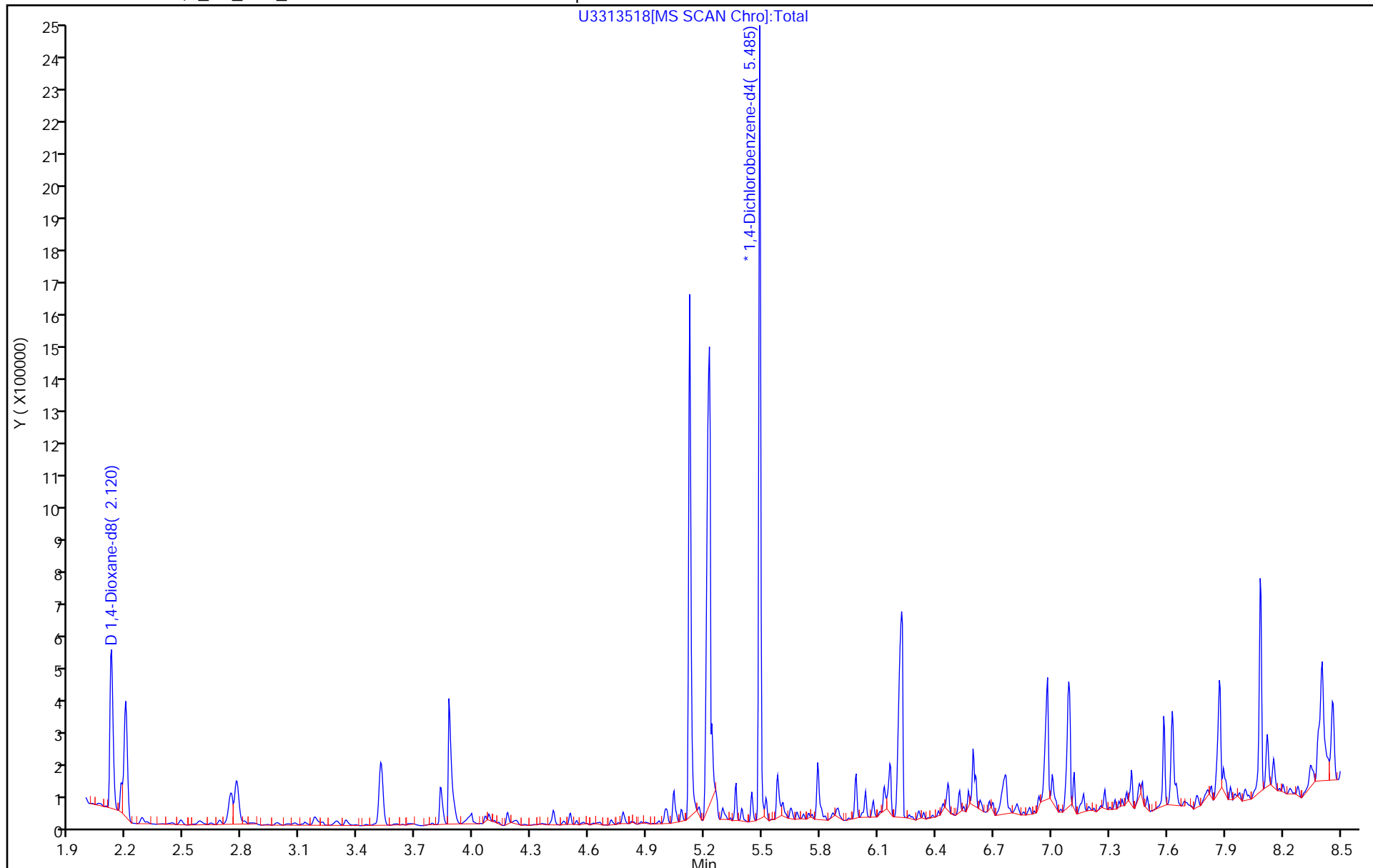
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 50

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313518.D

Injection Date: 20-Nov-2018 16:08:30

Instrument ID: HP5973U

Lims ID: 480-145090-B-3-C

Lab Sample ID: 480-145090-3

Client ID: MW-01-2018-DIO

Operator ID: DR

ALS Bottle#: 50

Worklist Smp#: 22

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

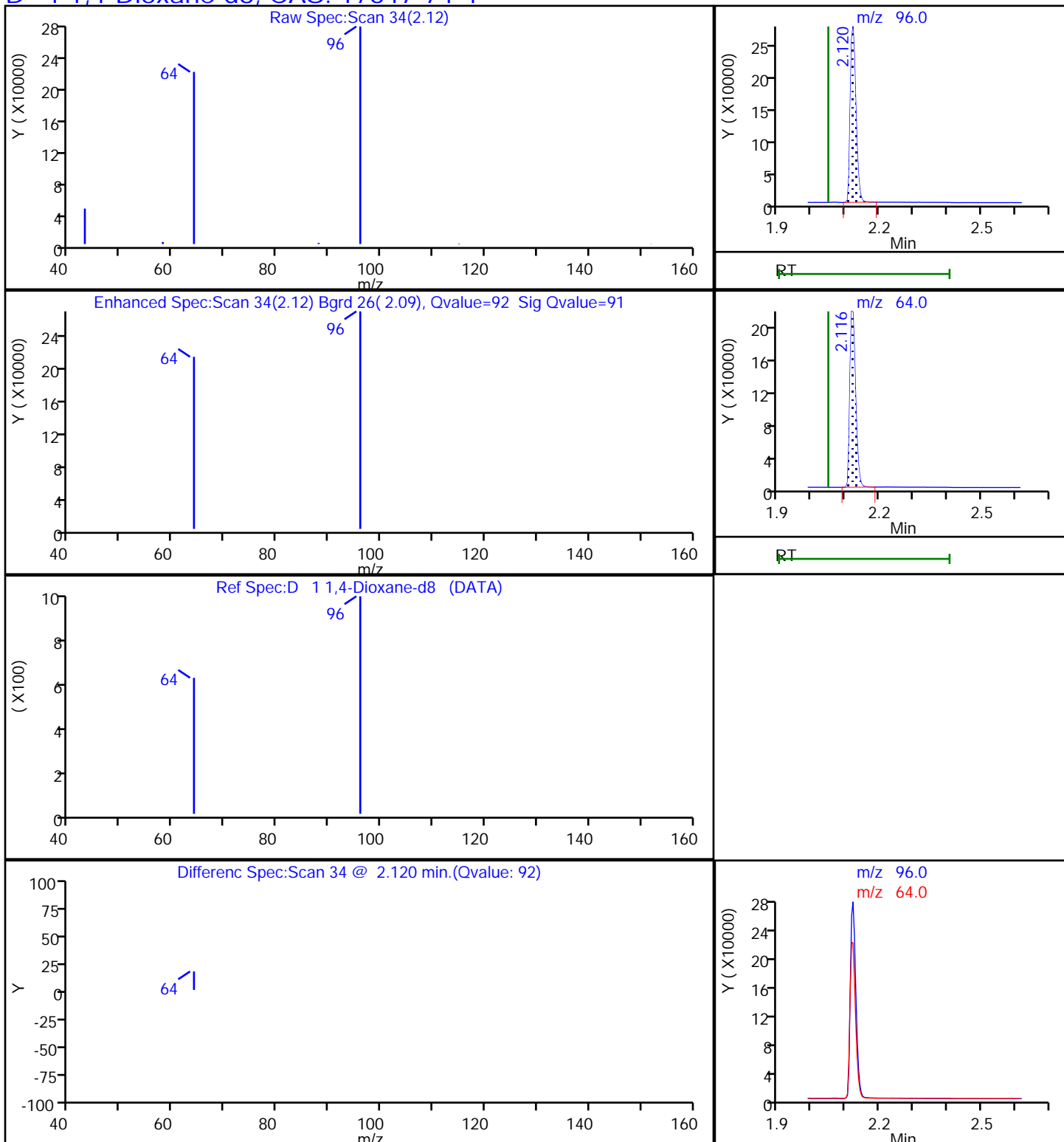
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector: MS SCAN

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

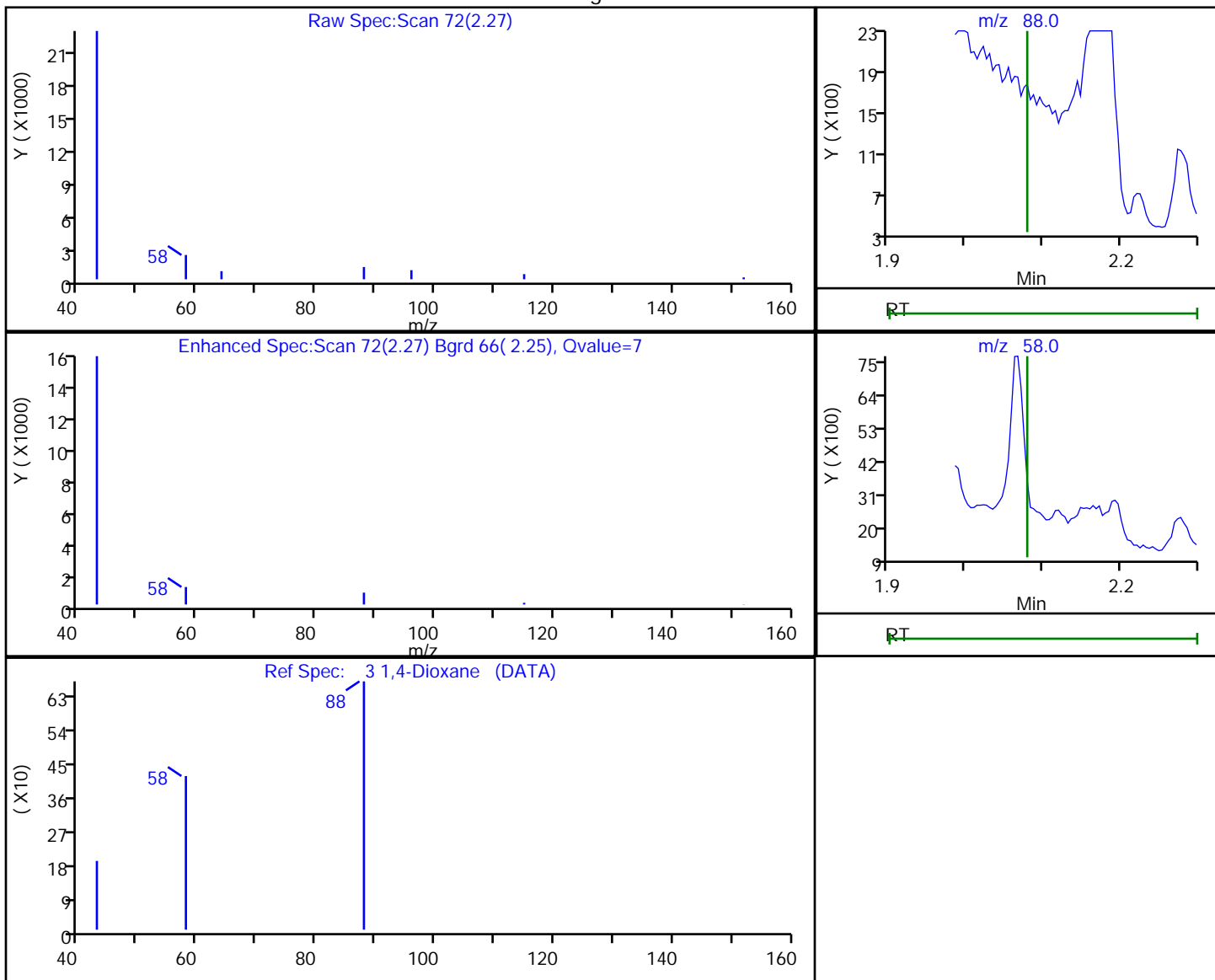


TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313518.D
 Injection Date: 20-Nov-2018 16:08:30 Instrument ID: HP5973U
 Lims ID: 480-145090-B-3-C Lab Sample ID: 480-145090-3
 Client ID: MW-01-2018-DIO
 Operator ID: DR ALS Bottle#: 50 Worklist Smp#: 22
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
 Column: Detector MS SCAN

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

Processing Results



RT	Mass	Response	Amount
2.27	88.00	1139	0.034891
2.28	58.00	2190	

Reviewer: richardsd, 23-Nov-2018 12:28:31

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Client Sample ID: DUPE-2018-DIO Lab Sample ID: 480-145090-4
 Matrix: Water Lab File ID: U3313521.D
 Analysis Method: 8270D SIM ID Date Collected: 11/09/2018 11:10
 Extract. Method: 3510C Date Extracted: 11/12/2018 14:16
 Sample wt/vol: 1000 (mL) Date Analyzed: 11/20/2018 17:21
 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.: 446525 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	20		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313521.D
 Lims ID: 480-145090-B-4-A
 Client ID: DUPE-2018-DIO
 Sample Type: Client
 Inject. Date: 20-Nov-2018 17:21:30 ALS Bottle#: 53 Worklist Smp#: 25
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-025
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 23-Nov-2018 12:28:40

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ng/ul	%Rec	Flags
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D 1 1,4-Dioxane-d8	96	2.103	2.046	0.057	90	254418	2.04	20.4	
3 1,4-Dioxane	88		2.079				ND		
* 2 1,4-Dichlorobenzene-d4	152	5.485	5.481	0.004	96	995436	4.00		

Reagents:

MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313521.D

Injection Date: 20-Nov-2018 17:21:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-145090-B-4-A

Lab Sample ID: 480-145090-4

Worklist Smp#: 25

Client ID: DUPE-2018-DIO

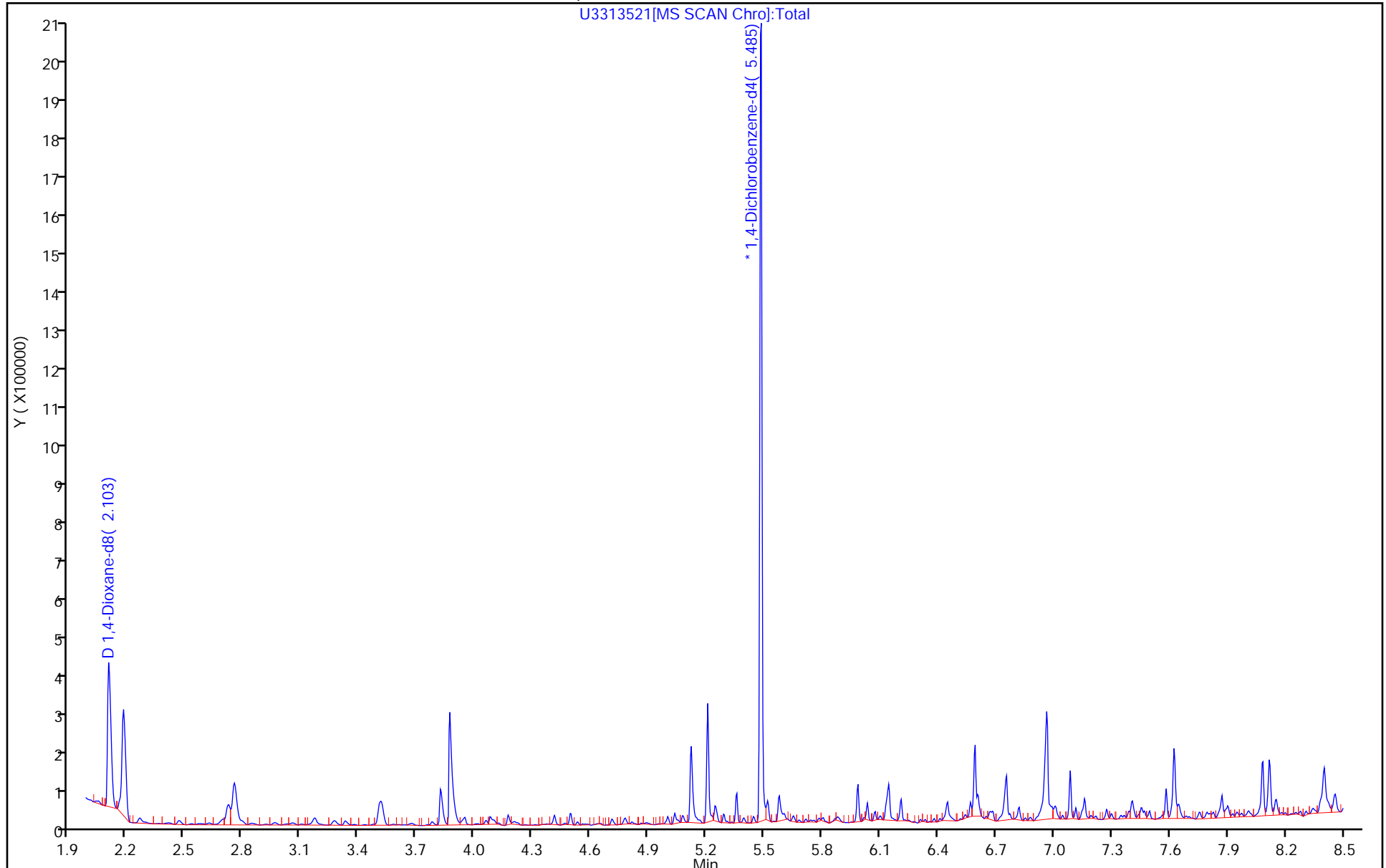
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 53

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313521.D

Injection Date: 20-Nov-2018 17:21:30

Instrument ID: HP5973U

Lims ID: 480-145090-B-4-A

Lab Sample ID: 480-145090-4

Client ID: DUPE-2018-DIO

Operator ID: DR

ALS Bottle#: 53

Worklist Smp#: 25

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

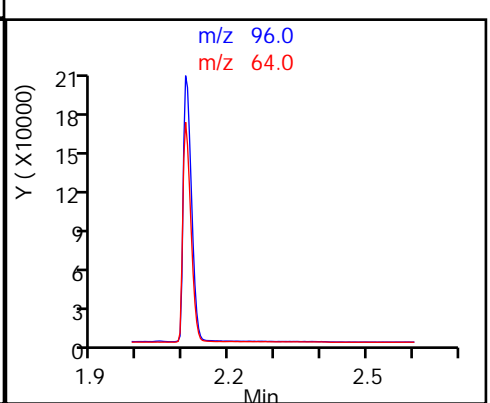
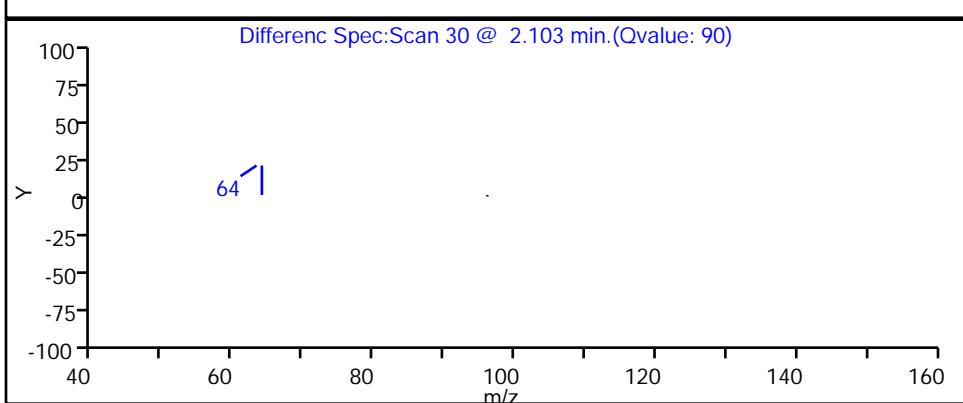
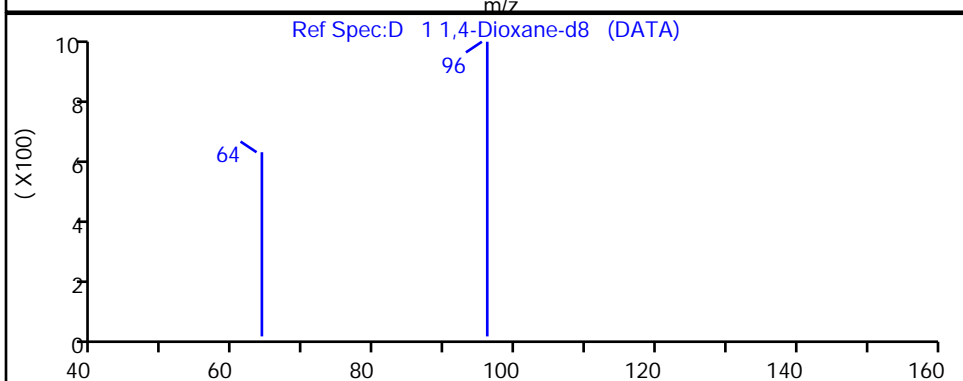
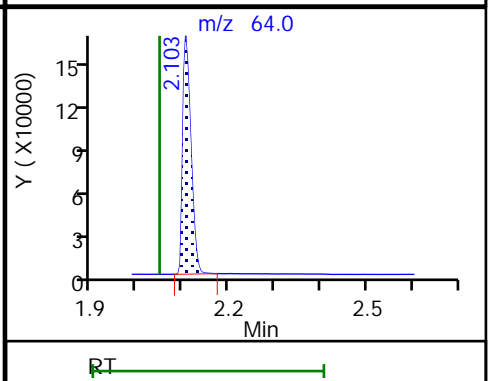
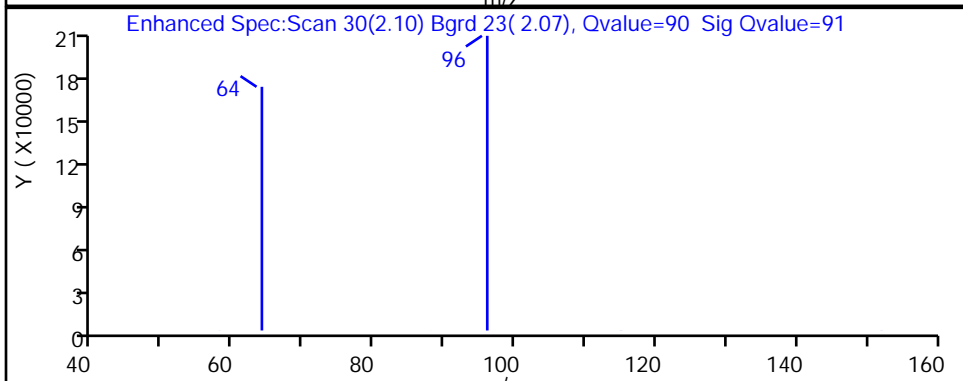
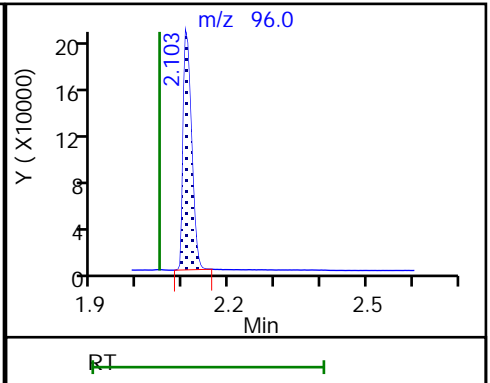
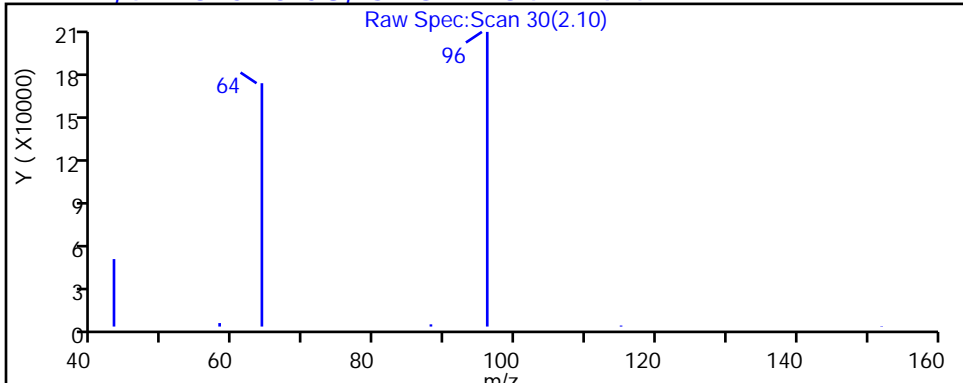
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector: MS SCAN

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



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

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1 Analy Batch No.: 446475

SDG No.: _____

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

Calibration Start Date: 11/19/2018 17:08 Calibration End Date: 11/19/2018 19:11 Calibration ID: 35391

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-446475/3	U3313462.D
Level 2	ICIS 480-446475/5	U3313464.D
Level 3	IC 480-446475/6	U3313465.D
Level 4	IC 480-446475/7	U3313466.D
Level 5	IC 480-446475/8	U3313467.D
Level 6	IC 480-446475/4	U3313463.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	1.0344 1.0852	1.0746	1.0558	1.0756	1.0469	AveID		1.0621			0.0100	1.8		20.0			
1,4-Dioxane-d8	0.4831 0.4889	0.5024	0.5091	0.5107	0.5182	Ave		0.5021			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.: 480-145090-1 Analy Batch No.: 446475

SDG No.: _____

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

Calibration Start Date: 11/19/2018 17:08 Calibration End Date: 11/19/2018 19:11 Calibration ID: 35391

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 480-446475/3	U3313462.D
Level 2	ICIS 480-446475/5	U3313464.D
Level 3	IC 480-446475/6	U3313465.D
Level 4	IC 480-446475/7	U3313466.D
Level 5	IC 480-446475/8	U3313467.D
Level 6	IC 480-446475/4	U3313463.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	17428 39383	60941	79014	98469	116835	0.200 0.400	0.600	0.800	1.00	1.20
1,4-Dioxane-d8	DCBd 4	Ave	168477 362925	567105	748352	915462	1116054	2.00 4.00	6.00	8.00	10.0	12.0

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313462.D
 Lims ID: IC - SIM 0.2
 Client ID:
 Sample Type: IC Calib Level: 1
 Inject. Date: 19-Nov-2018 17:08:30 ALS Bottle#: 3 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - SIM0.2
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 19-Nov-2018 19:54:47 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0303

First Level Reviewer: richardsd Date: 19-Nov-2018 17:42:33

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	2.050	2.050	0.000	91	168477	2.00	1.92	
3 1,4-Dioxane	88	2.083	2.083	0.000	82	17428	0.2000	0.1948	
* 2 1,4-Dichlorobenzene-d4	152	5.481	5.481	0.000	95	697453	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00060 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313462.D

Injection Date: 19-Nov-2018 17:08:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.2

Worklist Smp#: 3

Client ID:

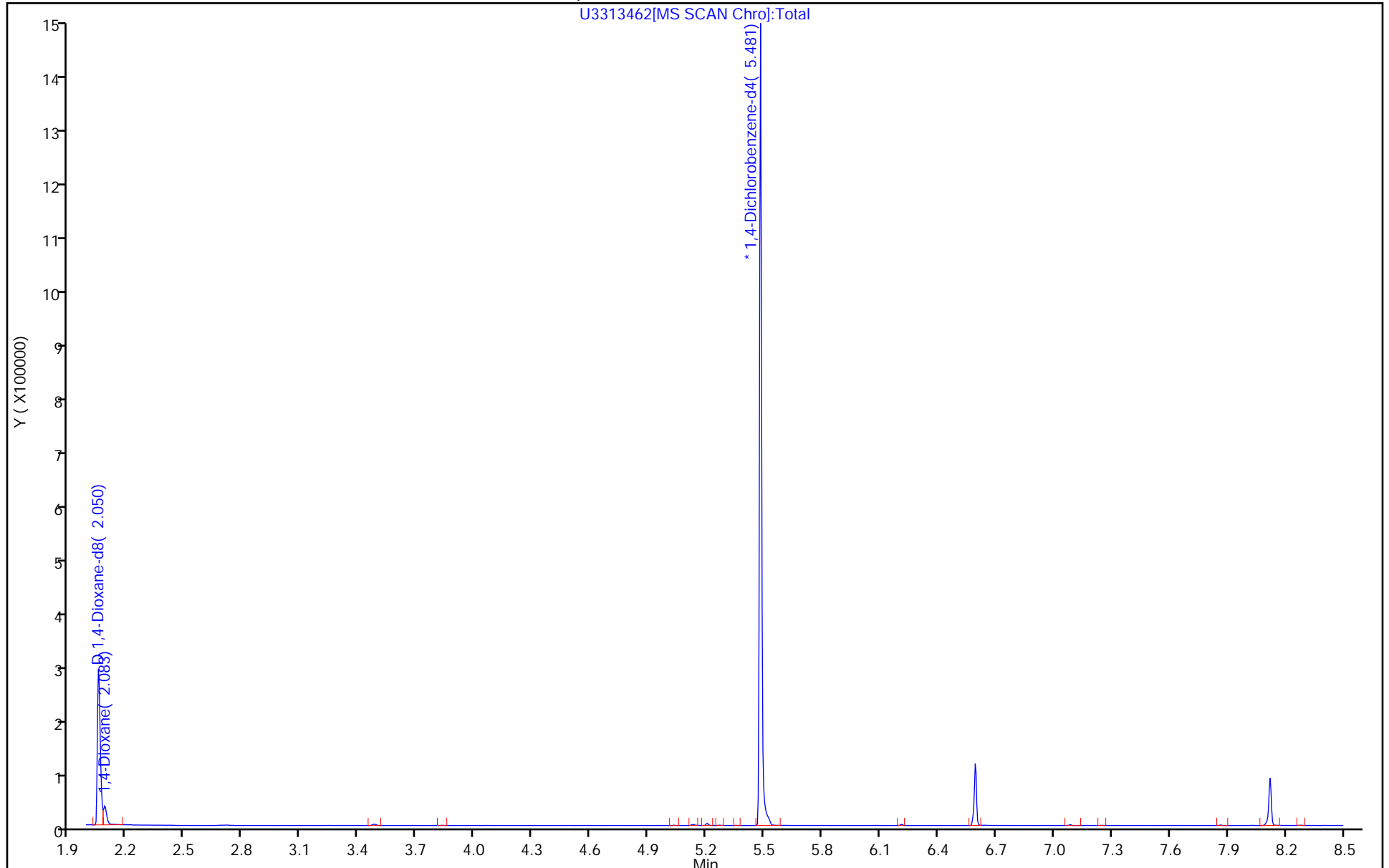
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 3

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313463.D
 Lims ID: IC - SIM 0.4
 Client ID:
 Sample Type: IC Calib Level: 2
 Inject. Date: 19-Nov-2018 17:33:30 ALS Bottle#: 4 Worklist Smp#: 4
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - SIM 0.4
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 19-Nov-2018 19:54:48 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0303

First Level Reviewer: richardsd Date: 19-Nov-2018 19:02:32

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	2.050	2.050	0.000	90	362925	4.00	3.90	
3 1,4-Dioxane	88	2.083	2.083	0.000	82	39383	0.4000	0.4087	
* 2 1,4-Dichlorobenzene-d4	152	5.481	5.481	0.000	96	742284	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00061 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313463.D

Injection Date: 19-Nov-2018 17:33:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.4

Worklist Smp#: 4

Client ID:

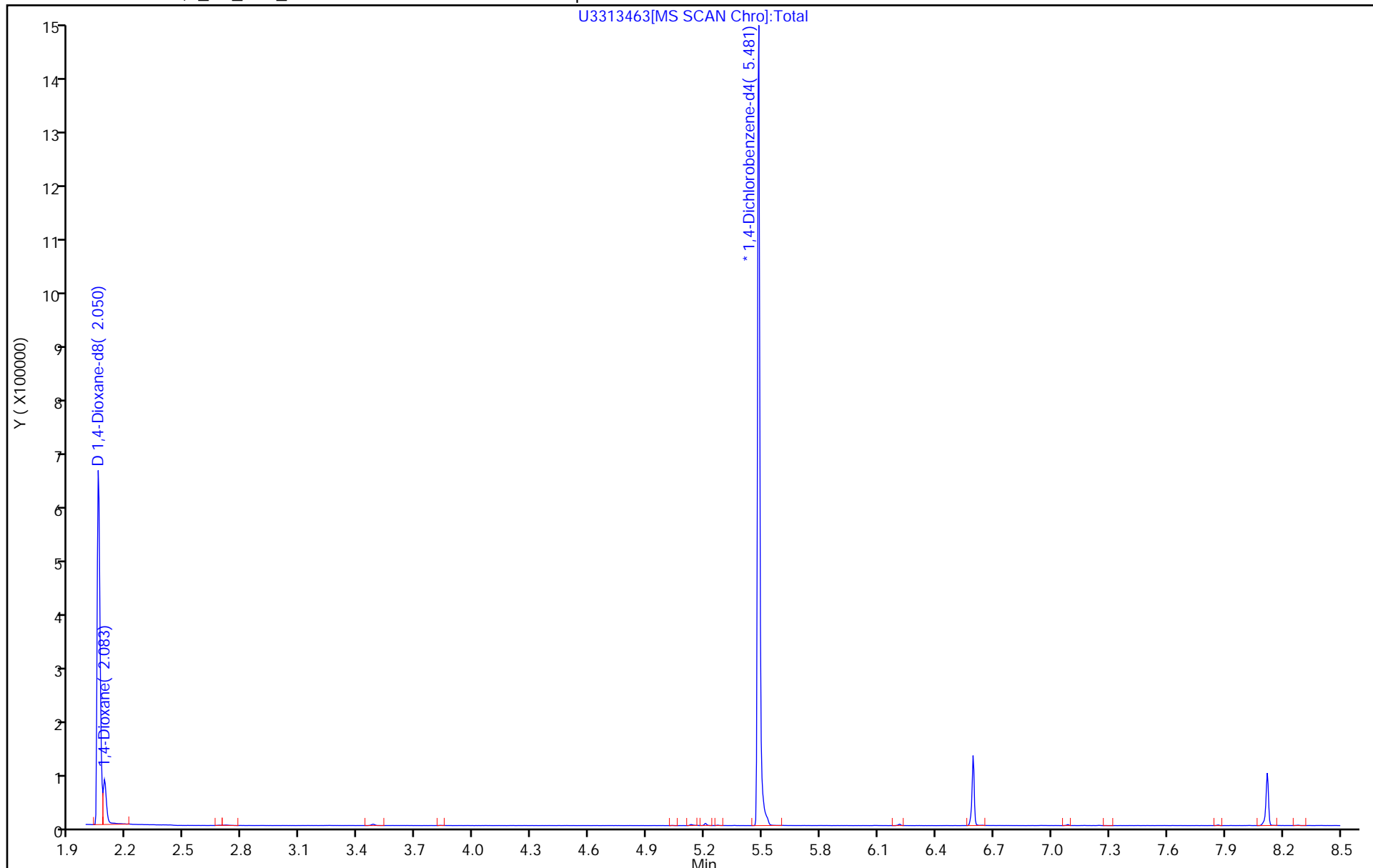
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 4

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313464.D
 Lims ID: ICIS - SIM 0.6
 Client ID:
 Sample Type: ICIS Calib Level: 3
 Inject. Date: 19-Nov-2018 17:58:30 ALS Bottle#: 5 Worklist Smp#: 5
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: ICIS - SIM 0.6
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 19-Nov-2018 19:54:49 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0303

First Level Reviewer: richardsd Date: 19-Nov-2018 19:02:38

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	2.050	2.050	0.000	93	567105	6.00	6.00	
3 1,4-Dioxane	88	2.083	2.083	0.000	87	60941	0.6000	0.6071	
* 2 1,4-Dichlorobenzene-d4	152	5.481	5.481	0.000	96	752581	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00062 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313464.D

Injection Date: 19-Nov-2018 17:58:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: ICIS - SIM 0.6

Worklist Smp#: 5

Client ID:

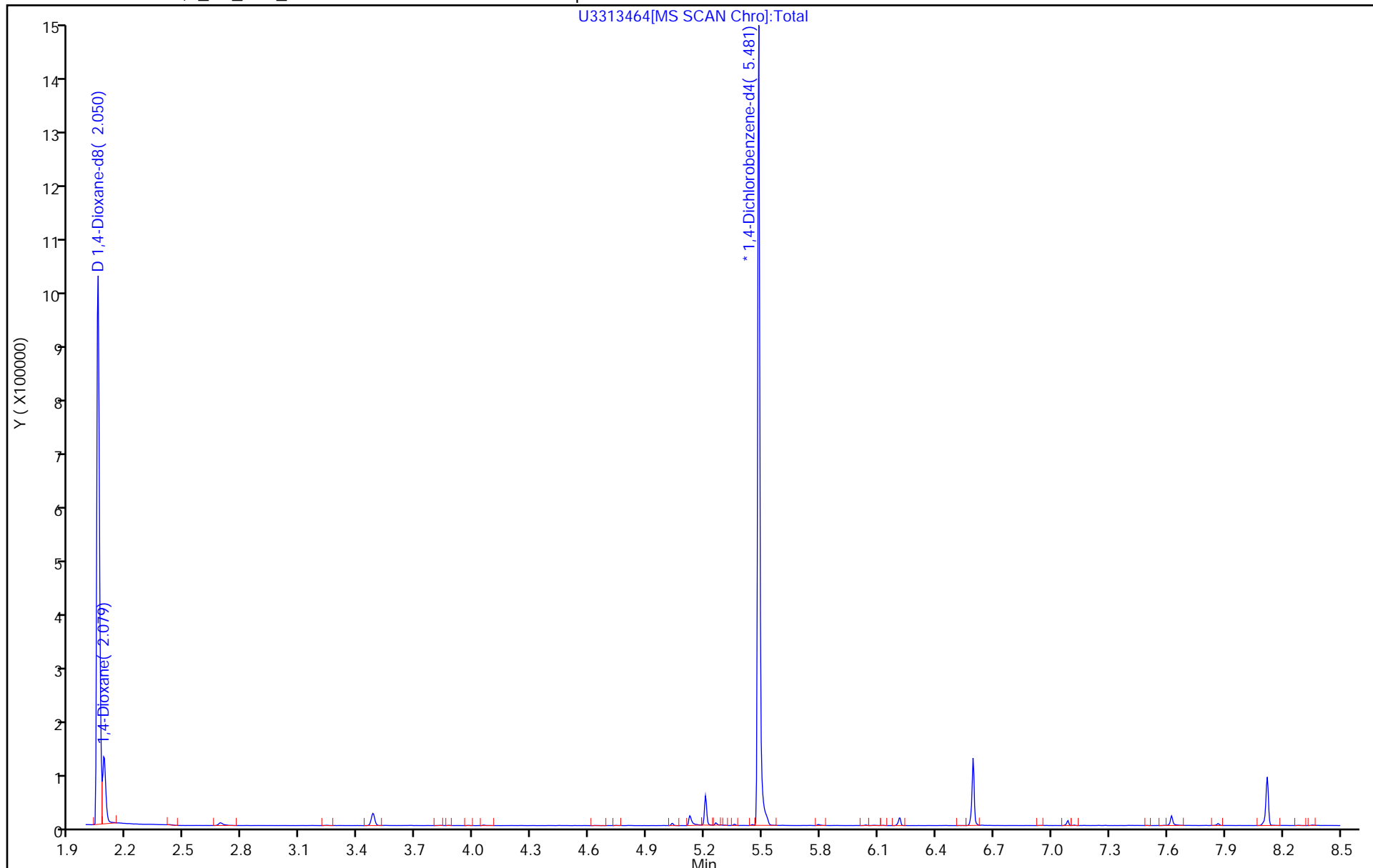
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 5

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313465.D
 Lims ID: IC - SIM 0.8
 Client ID:
 Sample Type: IC Calib Level: 4
 Inject. Date: 19-Nov-2018 18:22:30 ALS Bottle#: 6 Worklist Smp#: 6
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - SIM 0.8
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 19-Nov-2018 19:54:49 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0303

First Level Reviewer: richardsd Date: 19-Nov-2018 19:06:32

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	2.046	2.050	-0.004	92	748352	8.00	8.11	
3 1,4-Dioxane	88	2.079	2.083	-0.004	86	79014	0.8000	0.7953	
* 2 1,4-Dichlorobenzene-d4	152	5.477	5.481	-0.004	94	734948	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00063 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313465.D

Injection Date: 19-Nov-2018 18:22:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 0.8

Worklist Smp#: 6

Client ID:

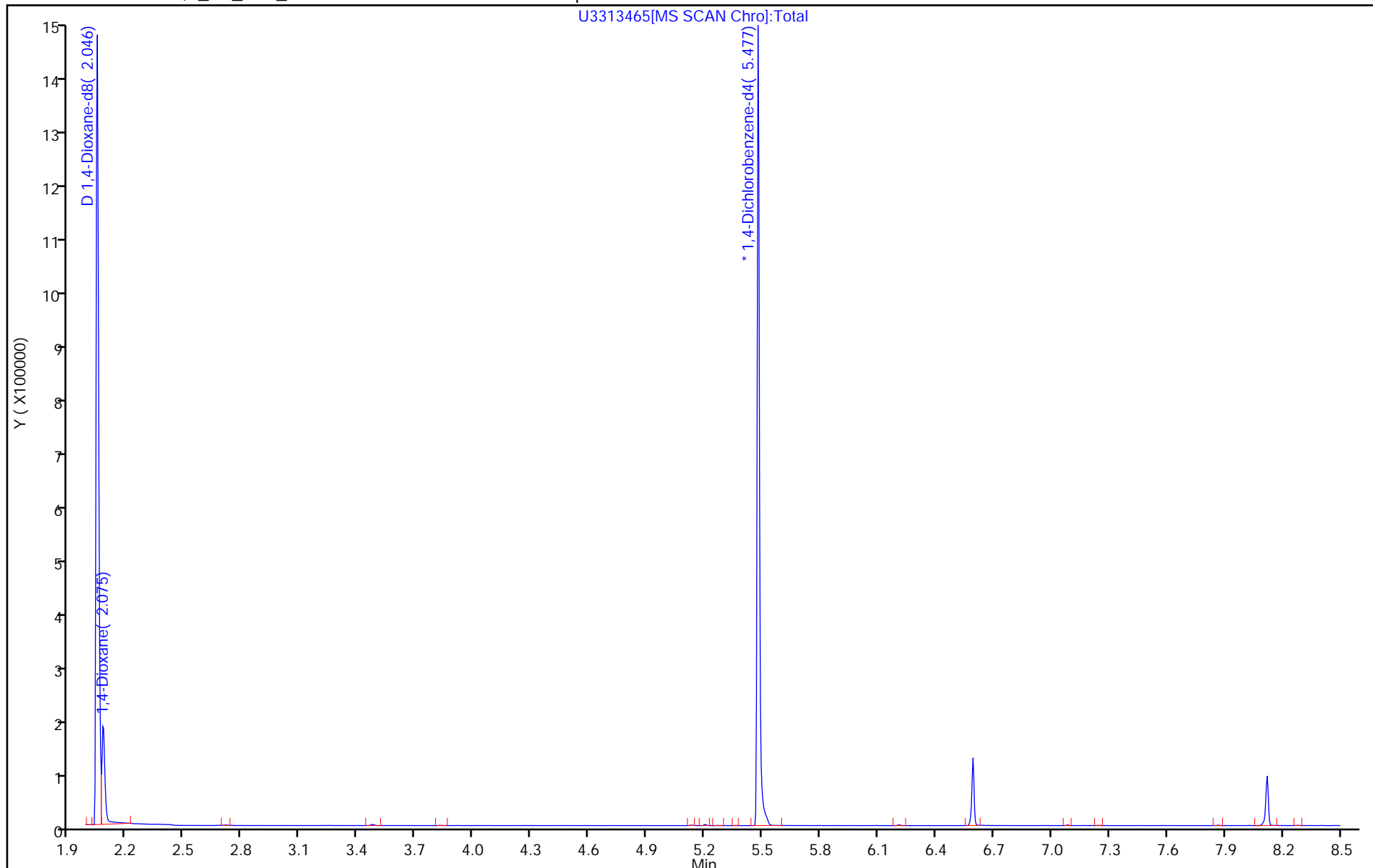
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 6

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313466.D
 Lims ID: IC - SIM 1.0
 Client ID:
 Sample Type: IC Calib Level: 5
 Inject. Date: 19-Nov-2018 18:47:30 ALS Bottle#: 7 Worklist Smp#: 7
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - SIM 1.0
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 19-Nov-2018 19:54:50 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0303

First Level Reviewer: richardsd Date: 19-Nov-2018 19:16:30

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	2.050	2.050	0.000	91	915462	10.0	10.2	
3 1,4-Dioxane	88	2.083	2.083	0.000	83	98469	1.00	1.01	
* 2 1,4-Dichlorobenzene-d4	152	5.481	5.481	0.000	96	716972	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00064 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313466.D

Injection Date: 19-Nov-2018 18:47:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 1.0

Worklist Smp#: 7

Client ID:

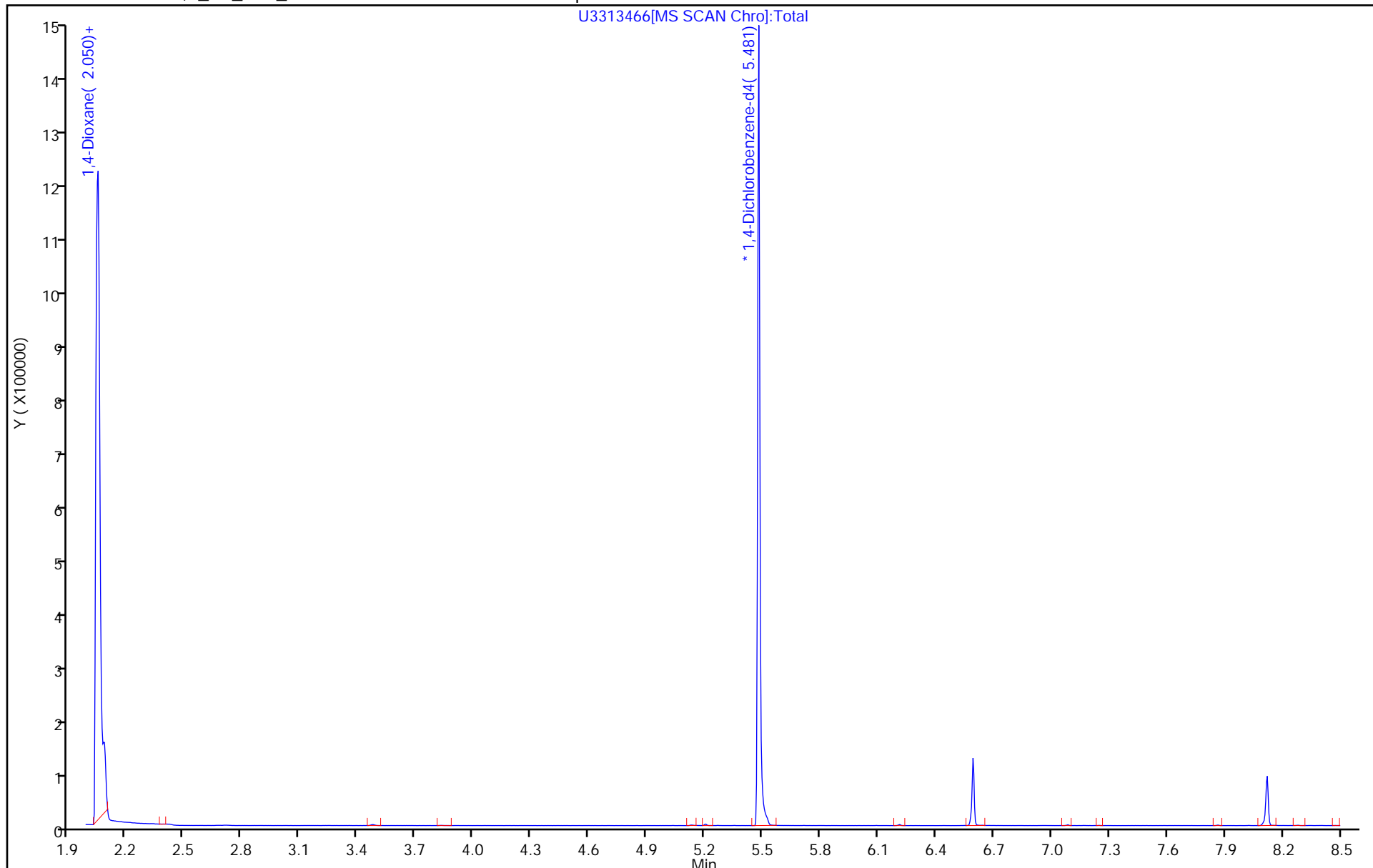
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 7

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Lims ID: IC - SIM 1.2
 Client ID:
 Sample Type: IC Calib Level: 6
 Inject. Date: 19-Nov-2018 19:11:30 ALS Bottle#: 8 Worklist Smp#: 8
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: IC - SIM 1.2
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 19-Nov-2018 19:54:50 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0303

First Level Reviewer: richardsd Date: 19-Nov-2018 19:54:23

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	2.046	2.050	-0.004	92	1116054	12.0	12.4	
3 1,4-Dioxane	88	2.079	2.083	-0.004	87	116835	1.20	1.18	
* 2 1,4-Dichlorobenzene-d4	152	5.481	5.481	0.000	97	717917	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00065 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D

Injection Date: 19-Nov-2018 19:11:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: IC - SIM 1.2

Worklist Smp#: 8

Client ID:

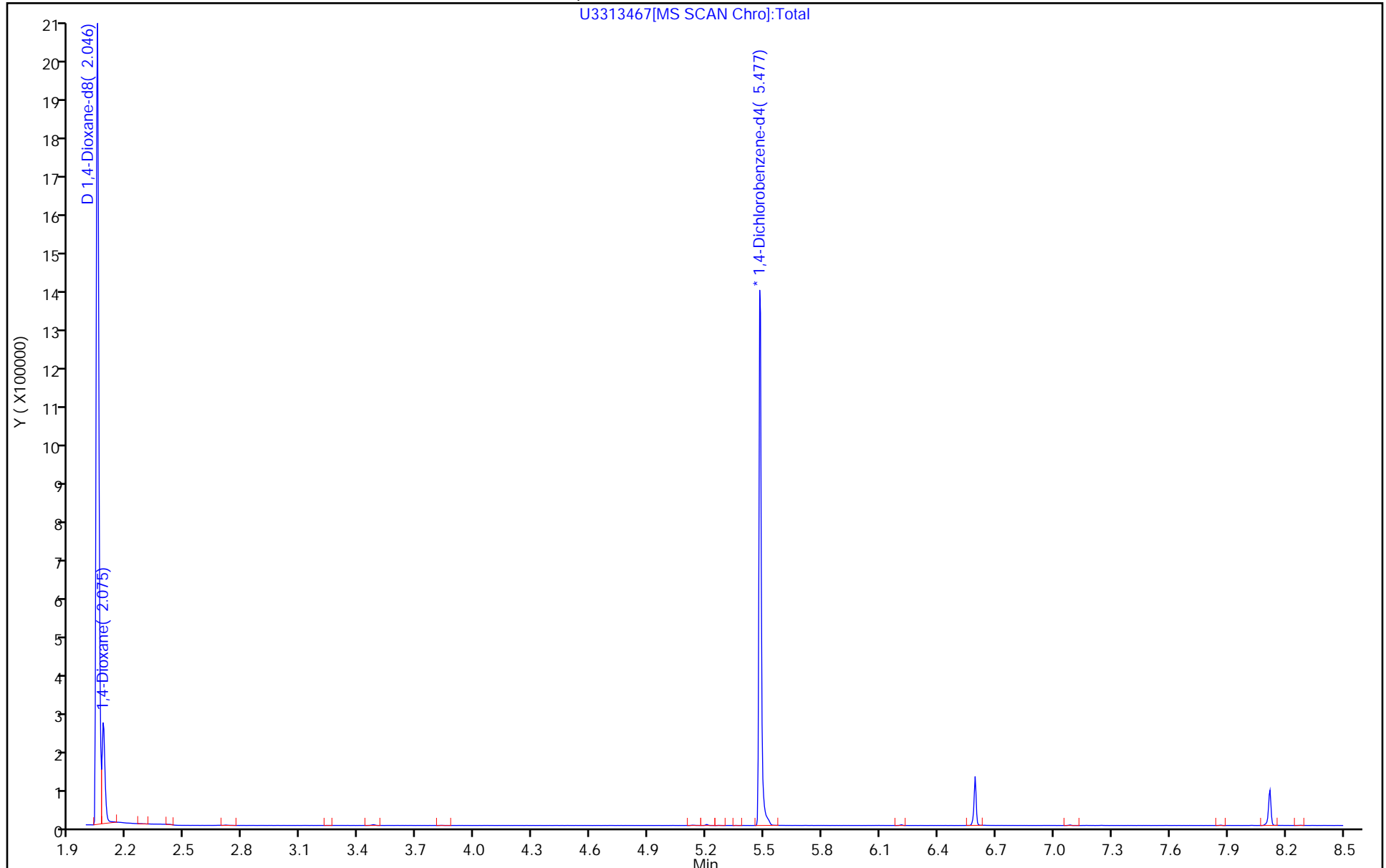
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 8

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM VII
GC/MS SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Lab Sample ID: CCVIS 480-446525/3 Calibration Date: 11/20/2018 08:19
 Instrument ID: HP5973U Calib Start Date: 11/19/2018 17:08
 GC Column: RXI-5Sil MS(0.5 ID: 0.25 (mm) Calib End Date: 11/19/2018 19:11
 Lab File ID: U3313499.D Conc. Units: ug/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,4-Dioxane	AveID	1.062	1.074	0.0100	606	600	1.1	20.0
1,4-Dioxane-d8	Ave	0.5021	0.4764	0.0100	5690	6000	-5.1	20.0

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313499.D
 Lims ID: CCVIS
 Client ID:
 Sample Type: CCVIS
 Inject. Date: 20-Nov-2018 08:19:30 ALS Bottle#: 31 Worklist Smp#: 3
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-003
 Operator ID: DR Instrument ID: HP5973U
 Sublist: chrom-1,4_Dx_SIM_HP5973U*sub1

Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D

Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 20-Nov-2018 11:05:02

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	2.046	2.046	0.000	92	517838	6.00	5.69	
3 1,4-Dioxane	88	2.079	2.079	0.000	85	55593	0.6000	0.6065	
* 2 1,4-Dichlorobenzene-d4	152	5.481	5.481	0.000	96	724660	4.00	4.00	

Reagents:

MB_1,4SIM_WRK_00062 Amount Added: 1.00 Units: mL
 MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313499.D

Injection Date: 20-Nov-2018 08:19:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: CCVIS

Worklist Smp#: 3

Client ID:

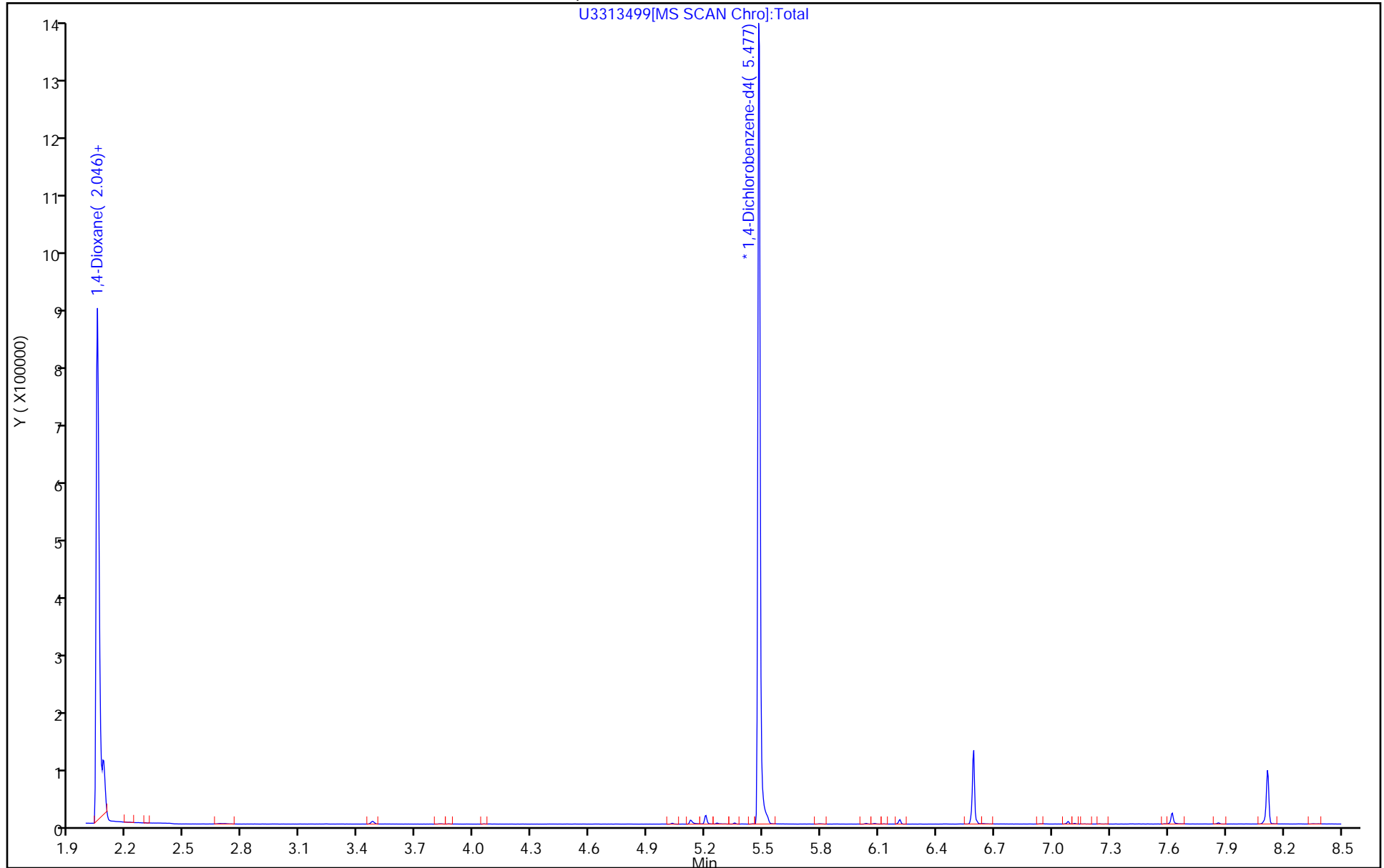
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 31

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\20181119-76583.b\U3313457.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 19-Nov-2018 15:11:30 ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: DFTPP
 Operator ID: DR Instrument ID: HP5973U
 Method: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 19-Nov-2018 19:56:43 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0303

First Level Reviewer: richardsd Date: 19-Nov-2018 19:56:43

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	10.564	10.564	0.000	0	1556			NR
5 4,4'-DDD	235	10.842	10.842	0.000	13	2534			NR
6 4,4'-DDT	235	11.093	11.093	0.000	93	836048	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

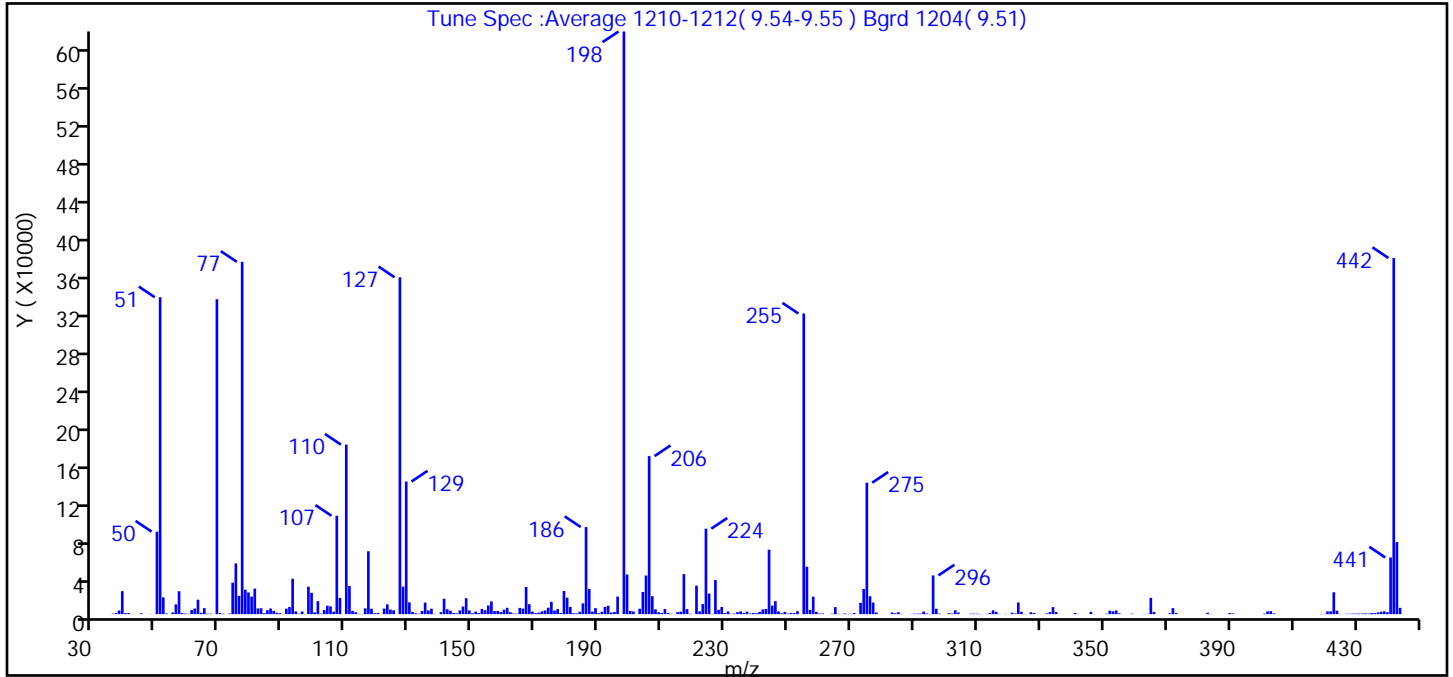
Reagents:

MB_DFTPP_WRK_00345 Amount Added: 1.00 Units: mL

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313457.D
 Injection Date: 19-Nov-2018 15:11:30 Instrument ID: HP5973U
 Lims ID: DFTPP
 Client ID:
 Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
 Tune Method: DFTPP Method 8270D, BP 198

4 DFTPP



m/z	Ion Abundance Criteria	% Relative Abundance
198	base peak, or >90% of 442	100.0 (163.6)
51	10-80% of the base peak	54.4
68	<2% of mass 69	0.0 (0.0)
69	Present	54.0
70	<2% of mass 69	0.2 (0.3)
127	10-80% of the base peak	57.8
197	<2% of mass 198	0.0
199	5-9% of mass 198	6.8
275	10-60% of the base peak	22.6
365	>1% of mass 198	2.8
441	present but <24% of mass 442	9.7 (15.9)
442	base peak, or >50% of 198	61.1
443	15-24% of mass 442	12.4 (20.2)

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313457.D\1,4_Dx_SIM_HP5973U.rsl\spec
 Injection Date: 19-Nov-2018 15:11:30
 Spectrum: Tune Spec :Average 1210-1212(9.54-9.55) Bgrd 1204(9.51)
 Base Peak: 198.00
 Minimum % Base Peak: 0
 Number of Points: 313

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	437	125.00	4169	208.00	5074	301.00	951
37.00	1153	127.00	358400	209.00	2048	302.00	669
38.00	3896	128.00	29272	210.00	1267	303.00	4092
39.00	24504	129.00	141120	211.00	5478	304.00	1663
40.00	1066	130.00	12526	212.00	1133	308.00	454
41.00	1137	131.00	2360	213.00	402	309.00	510
42.00	219	132.00	967	215.00	2208	310.00	491
45.00	892	133.00	371	216.00	2608	311.00	221
48.00	184	134.00	3317	217.00	42600	313.00	298
49.00	50	135.00	12253	218.00	5375	314.00	1146
50.00	87768	136.00	3987	219.00	462	315.00	4084
51.00	337152	137.00	5791	221.00	30336	316.00	2410
52.00	17848	138.00	249	222.00	3005	317.00	241
53.00	670	140.00	2085	223.00	10659	319.00	226
55.00	1807	141.00	16408	224.00	90936	321.00	1523
56.00	10420	142.00	5167	225.00	21872	322.00	725
57.00	24400	143.00	3665	226.00	275	323.00	12483
58.00	1118	144.00	1230	227.00	36264	324.00	2519
59.00	624	145.00	828	228.00	4561	325.00	188
60.00	335	146.00	3957	229.00	7606	327.00	2071
61.00	4374	147.00	8121	230.00	1189	328.00	1090
62.00	5960	148.00	16976	231.00	2913	332.00	771
63.00	15354	149.00	3949	232.00	291	333.00	2103
64.00	1454	150.00	1006	233.00	576	334.00	7498
65.00	6432	151.00	2681	234.00	2084	335.00	2184
66.00	495	152.00	1168	235.00	2872	341.00	1313
67.00	488	153.00	5557	236.00	1273	342.00	223
69.00	335040	154.00	4133	237.00	2719	346.00	2402
70.00	1083	155.00	9206	238.00	703	347.00	189
71.00	448	156.00	13525	239.00	1215	351.00	429
73.00	614	157.00	3232	240.00	1032	352.00	3728
74.00	33496	158.00	3405	241.00	2396	353.00	2979
75.00	54008	159.00	2367	242.00	4996	354.00	3970

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313457.D\1_4_Dx_SIM_HP5973U.rsl\spec

Injection Date: 19-Nov-2018 15:11:30

Spectrum: Tune Spec :Average 1210-1212(9.54-9.55) Bgrd 1204(9.51)

Base Peak: 198.00

Minimum % Base Peak: 0

Number of Points: 313

m/z	Y	m/z	Y	m/z	Y	m/z	Y
76.00	19512	160.00	4753	243.00	5528	355.00	880
77.00	374848	161.00	6753	244.00	68568	359.00	510
78.00	25976	162.00	2105	245.00	9097	363.00	221
79.00	23056	163.00	656	246.00	13784	364.00	298
80.00	18616	164.00	474	247.00	2898	365.00	17312
81.00	27160	165.00	6673	248.00	901	366.00	2332
82.00	6132	166.00	5916	249.00	2284	371.00	919
83.00	6241	167.00	28896	250.00	584	372.00	6366
84.00	1051	168.00	10535	251.00	1345	373.00	1236
85.00	4223	169.00	2635	252.00	1092	383.00	1478
86.00	5996	170.00	1148	253.00	3134	384.00	208
87.00	3535	171.00	1584	255.00	319808	390.00	1124
88.00	1481	172.00	2916	256.00	50456	391.00	735
89.00	1017	173.00	3966	257.00	4584	392.00	177
91.00	5825	174.00	6841	258.00	18592	401.00	553
92.00	7561	175.00	13121	259.00	2457	402.00	2845
93.00	37696	176.00	3735	260.00	615	403.00	3186
94.00	2911	177.00	5382	261.00	663	404.00	820
95.00	435	178.00	1189	264.00	511	419.00	230
96.00	2758	179.00	24664	265.00	7479	420.00	227
97.00	203	180.00	17488	266.00	357	421.00	2934
98.00	29200	181.00	7635	267.00	173	422.00	3044
99.00	22688	182.00	998	268.00	645	423.00	23296
100.00	1852	183.00	804	269.00	347	424.00	3732
101.00	13782	184.00	2556	270.00	355	425.00	245
102.00	519	185.00	11445	271.00	1141	427.00	402
103.00	4393	186.00	92656	273.00	12034	428.00	367
104.00	8992	187.00	26816	274.00	26736	429.00	558
105.00	8270	188.00	2671	275.00	139840	430.00	563
106.00	2670	189.00	6376	276.00	19008	431.00	610
107.00	104664	190.00	1016	277.00	12344	432.00	597
108.00	17296	191.00	2570	278.00	1801	433.00	786
110.00	180352	192.00	7747	283.00	1793	434.00	570
111.00	29872	193.00	8922	284.00	922	435.00	1205

Data File:

\\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313457.D\1,4_Dx_SIM_HP5973U.rsl\spc

Injection Date:

19-Nov-2018 15:11:30

Spectrum:

Tune Spec :Average 1210-1212(9.54-9.55) Bgrd 1204(9.51)

Base Peak:

198.00

Minimum % Base Peak: 0

Number of Points:

313

m/z	Y	m/z	Y	m/z	Y	m/z	Y
112.00	3554	194.00	1686	285.00	2043	436.00	1172
113.00	2088	195.00	2218	286.00	329	437.00	1773
114.00	334	196.00	18648	289.00	190	438.00	2542
115.00	215	198.00	619904	290.00	532	439.00	2994
116.00	6178	199.00	42176	291.00	455	440.00	2026
117.00	66920	200.00	3419	292.00	652	441.00	60304
118.00	5771	201.00	2851	293.00	2786	442.00	378880
119.00	916	203.00	5788	294.00	732	443.00	76656
120.00	1199	204.00	23560	295.00	176	444.00	6719
122.00	5923	205.00	41112	296.00	41224		
123.00	10426	206.00	168128	297.00	5707		
124.00	4904	207.00	19056	298.00	547		

TestAmerica Buffalo

Data File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313457.D
Injection Date: 19-Nov-2018 15:11:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 2 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL

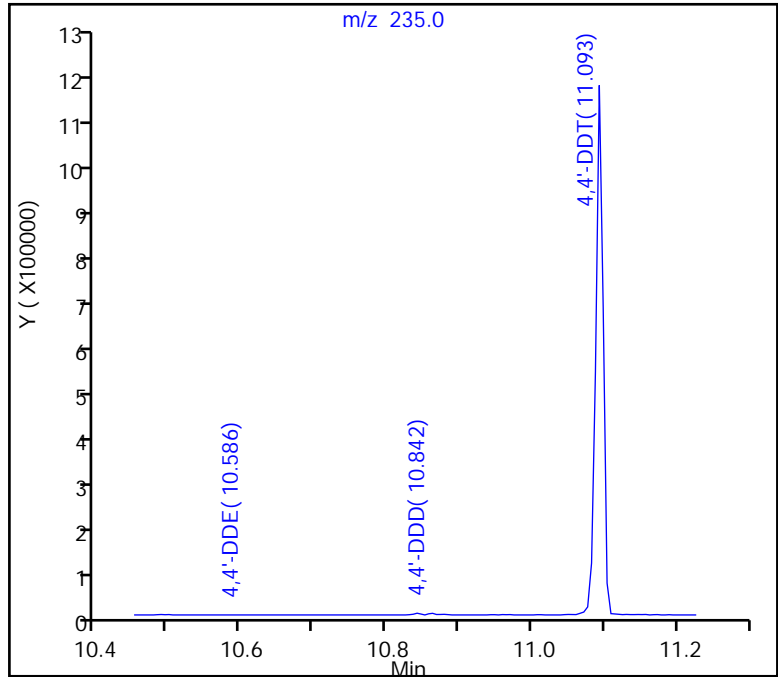
6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 836048
5 4,4'-DDD, Area = 2534
7 4,4'-DDE, Area = 1556

%Breakdown: 0.49%, Max Limit: 20.00%
Passed



TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313498.D
 Lims ID: DFTPP
 Client ID:
 Sample Type: DFTPP
 Inject. Date: 20-Nov-2018 07:50:30 ALS Bottle#: 30 Worklist Smp#: 2
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-002
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:43 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: Deconvolution ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 20-Nov-2018 11:04:15

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	10.564	10.564	0.000	0	4899			NR
5 4,4'-DDD	235	10.837	10.837	0.000	95	158757			NR
6 4,4'-DDT	235	11.088	11.088	0.000	97	799029	NR		NR

QC Flag Legend

Processing Flags

NR - Missing Quant Standard

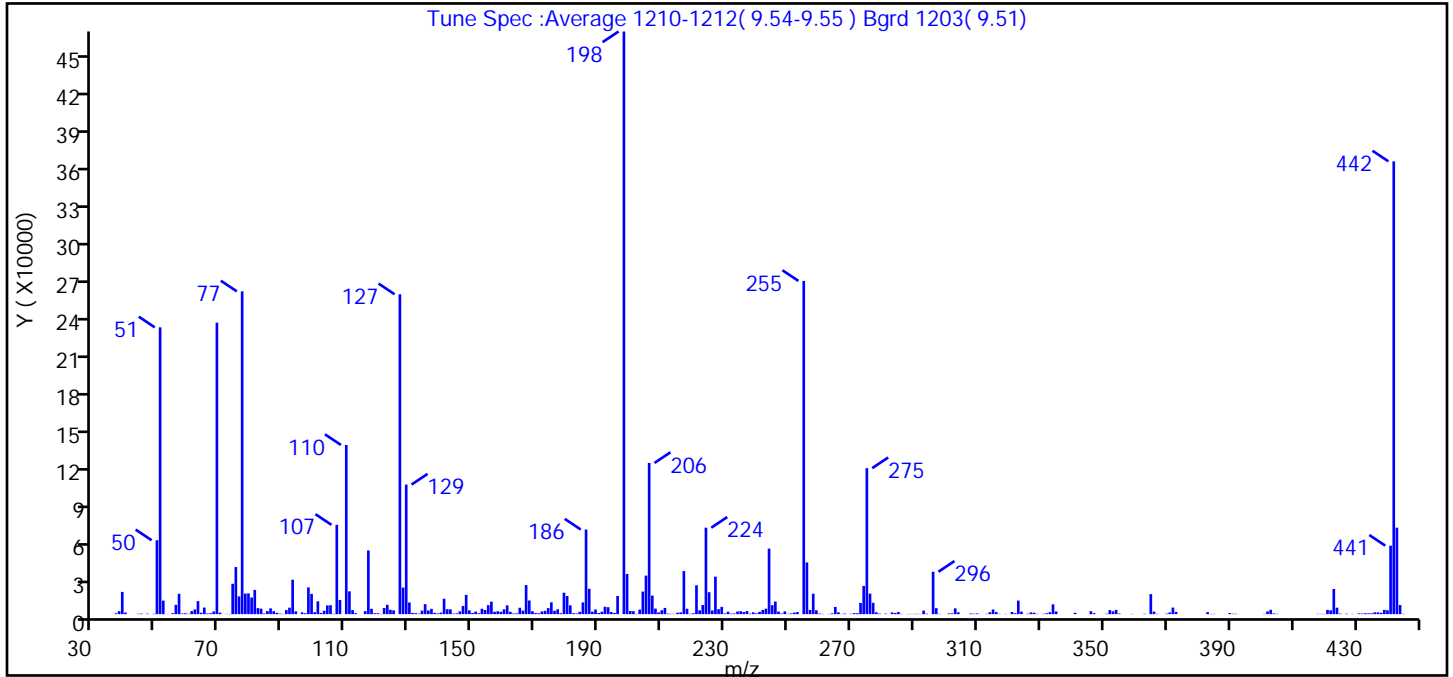
Reagents:

MB_DFTPP_WRK_00345 Amount Added: 1.00 Units: mL

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313498.D
 Injection Date: 20-Nov-2018 07:50:30 Instrument ID: HP5973U
 Lims ID: DFTPP
 Client ID:
 Operator ID: DR ALS Bottle#: 30 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 (128.7)
51	10-80% of the base peak	49.2
68	<2% of mass 69	0.5 (0.9)
69	Present	50.0
70	<2% of mass 69	0.3 (0.5)
127	10-80% of the base peak	54.9
197	<2% of mass 198	0.0
199	5-9% of mass 198	6.9
275	10-60% of the base peak	25.1
365	>1% of mass 198	3.4
441	present but <24% of mass 442	11.8 (15.1)
442	base peak, or >50% of 198	77.7
443	15-24% of mass 442	14.8 (19.1)

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313498.D\1,4_Dx_SIM_HP5973
Injection Date: 20-Nov-2018 07:50:30
Spectrum: Tune Spec :Average 1210-1212(9.54-9.55) Bgrd 1203(9.51)
Base Peak: 198.00
Minimum % Base Peak: 0
Number of Points: 321

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.00	696	130.00	9294	212.00	421	302.00	622
38.00	2330	131.00	937	213.00	220	303.00	4611
39.00	17720	132.00	812	214.00	210	304.00	1424
40.00	1281	133.00	384	215.00	1143	308.00	542
44.00	248	134.00	2789	216.00	1408	309.00	327
45.00	446	135.00	7969	217.00	34280	310.00	525
47.00	367	136.00	2950	218.00	4276	313.00	264
49.00	289	137.00	4228	219.00	328	314.00	1576
50.00	58872	138.00	1000	220.00	721	315.00	3721
51.00	228480	139.00	569	221.00	23016	316.00	1643
52.00	10789	140.00	1241	222.00	3072	317.00	226
53.00	107	141.00	12261	223.00	7286	319.00	173
55.00	754	142.00	3921	224.00	68872	321.00	1706
56.00	7412	143.00	3826	225.00	17488	322.00	733
57.00	16212	144.00	389	226.00	2940	323.00	10810
58.00	535	145.00	601	227.00	29856	324.00	2039
59.00	685	146.00	2198	228.00	3949	326.00	332
60.00	282	147.00	6558	229.00	5786	327.00	1375
61.00	2376	148.00	15368	230.00	563	328.00	1129
62.00	3742	149.00	2991	231.00	1926	329.00	198
63.00	10365	150.00	973	232.00	451	331.00	287
64.00	1132	151.00	2023	233.00	547	332.00	737
65.00	5228	152.00	690	234.00	2096	333.00	1551
66.00	519	153.00	4295	235.00	2326	334.00	7804
67.00	759	154.00	3311	236.00	1684	335.00	2130
68.00	2103	155.00	7145	237.00	2457	341.00	1091
69.00	232192	156.00	9957	238.00	448	346.00	2339
70.00	1189	157.00	1890	239.00	1409	347.00	800
72.00	186	158.00	2274	240.00	646	351.00	388
73.00	194	159.00	1847	241.00	1845	352.00	3205
74.00	24192	160.00	3826	242.00	3300	353.00	2247
75.00	37528	161.00	7010	243.00	4339	354.00	3398
76.00	14124	162.00	1820	244.00	52192	355.00	486

Data File:

\\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313498.D\1,4_Dx_SIM_HP5973

Injection Date:

20-Nov-2018 07:50:30

Spectrum:

Tune Spec :Average 1210-1212(9.54-9.55) Bgrd 1203(9.51)

Base Peak:

198.00

Minimum % Base Peak: 0

Number of Points:

321

m/z	Y	m/z	Y	m/z	Y	m/z	Y
77.00	257152	163.00	512	245.00	7159	359.00	176
78.00	16370	164.00	627	246.00	10063	363.00	272
79.00	16528	165.00	5091	247.00	2027	365.00	15935
80.00	13244	166.00	2833	248.00	481	366.00	2021
81.00	19288	167.00	23152	249.00	2231	367.00	275
82.00	4790	168.00	10878	250.00	252	370.00	383
83.00	4369	169.00	2291	251.00	584	371.00	1339
84.00	563	170.00	868	252.00	1214	372.00	5222
85.00	2467	171.00	713	253.00	1661	373.00	1773
86.00	4593	172.00	2101	255.00	265472	383.00	1608
87.00	2358	173.00	2660	256.00	41200	384.00	169
88.00	1088	174.00	4800	257.00	3310	385.00	239
89.00	404	175.00	9412	258.00	16283	390.00	847
90.00	182	176.00	2648	259.00	3038	391.00	314
91.00	3195	177.00	3853	260.00	456	392.00	289
92.00	5168	178.00	731	261.00	195	401.00	228
93.00	27440	179.00	17080	263.00	197	402.00	2191
94.00	2242	180.00	14498	264.00	646	403.00	3464
96.00	1406	181.00	6988	265.00	5745	404.00	556
97.00	741	182.00	748	266.00	1438	405.00	279
98.00	21312	183.00	538	267.00	173	418.00	264
99.00	16150	184.00	1845	268.00	479	419.00	194
100.00	1553	185.00	9344	270.00	296	420.00	201
101.00	10204	186.00	67424	271.00	800	421.00	3374
102.00	976	187.00	20200	272.00	763	422.00	3067
103.00	2726	188.00	1977	273.00	8928	423.00	20056
104.00	6935	189.00	3718	274.00	22472	424.00	5159
105.00	7115	190.00	896	275.00	116304	425.00	457
106.00	272	191.00	1901	276.00	16375	427.00	359
107.00	71136	192.00	5892	277.00	9032	429.00	172
108.00	11256	193.00	5519	278.00	1456	431.00	596
110.00	134784	194.00	1687	279.00	421	432.00	469
111.00	18152	195.00	902	281.00	409	433.00	698
112.00	3214	196.00	14457	283.00	1360	434.00	643

Data File:

\\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313498.D\1,4_Dx_SIM_HP5973

Injection Date:

20-Nov-2018 07:50:30

Spectrum:

Tune Spec :Average 1210-1212(9.54-9.55) Bgrd 1203(9.51)

Base Peak:

198.00

Minimum % Base Peak: 0

Number of Points:

321

m/z	Y	m/z	Y	m/z	Y	m/z	Y
113.00	810	198.00	464192	284.00	928	435.00	675
116.00	2378	199.00	32032	285.00	1693	436.00	1454
117.00	50728	200.00	2540	286.00	200	437.00	1405
118.00	4257	201.00	2348	288.00	184	438.00	1049
119.00	732	202.00	199	289.00	168	439.00	3398
120.00	763	203.00	3625	290.00	200	440.00	3078
121.00	202	204.00	17976	291.00	280	441.00	54560
122.00	4862	205.00	30704	292.00	167	442.00	360704
123.00	7429	206.00	120448	293.00	2833	443.00	68896
124.00	3476	207.00	14790	294.00	397	444.00	7268
125.00	3002	208.00	4443	296.00	33784	445.00	271
127.00	254848	209.00	1343	297.00	4768		
128.00	21128	210.00	3134	298.00	216		
129.00	103232	211.00	4962	301.00	570		

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313498.D
Injection Date: 20-Nov-2018 07:50:30 Instrument ID: HP5973U
Lims ID: DFTPP
Client ID:
Operator ID: DR ALS Bottle#: 30 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

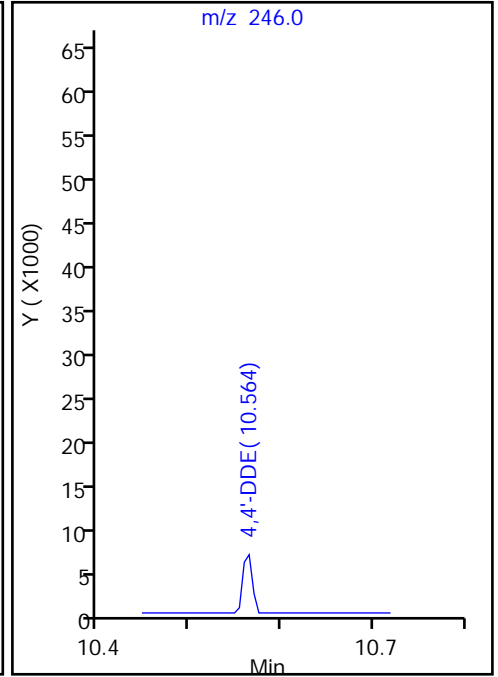
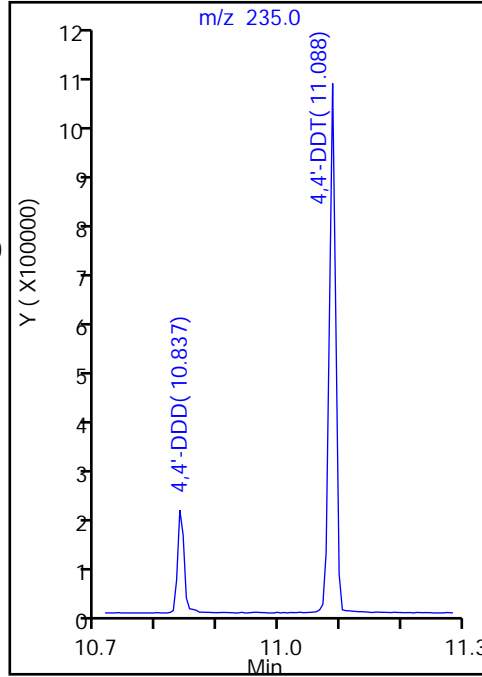
6 4,4'-DDT, Detector: MS SCAN

SW-846 Method

%Breakdown =
(Area Breakdown Cpnds/
Total Area Breakdown Cpnds) * 100

6 4,4'-DDT, Area = 799029
5 4,4'-DDD, Area = 158757
7 4,4'-DDE, Area = 4899

%Breakdown: 17.00%, <= 20.00%
Passed



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: MB 480-445049/1-A
 Matrix: Water Lab File ID: U3313514.D
 Analysis Method: 8270D SIM ID Date Collected: _____
 Extract. Method: 3510C Date Extracted: 11/12/2018 14:16
 Sample wt/vol: 1000 (mL) Date Analyzed: 11/20/2018 14:28
 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.: 446525 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	29		15-110

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313514.D
 Lims ID: MB 480-445049/1-A
 Client ID:
 Sample Type: MB
 Inject. Date: 20-Nov-2018 14:28:30 ALS Bottle#: 46 Worklist Smp#: 18
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-018
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 23-Nov-2018 12:28:16

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	2.132	2.046	0.086	92	324665	10.0	2.89	
3 1,4-Dioxane	88		2.079					ND	U
* 2 1,4-Dichlorobenzene-d4	152	5.485	5.481	0.004	95	893761	4.00	4.00	

QC Flag Legend

Review Flags

U - Marked Undetected

Reagents:

MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313514.D

Injection Date: 20-Nov-2018 14:28:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: MB 480-445049/1-A

Worklist Smp#: 18

Client ID:

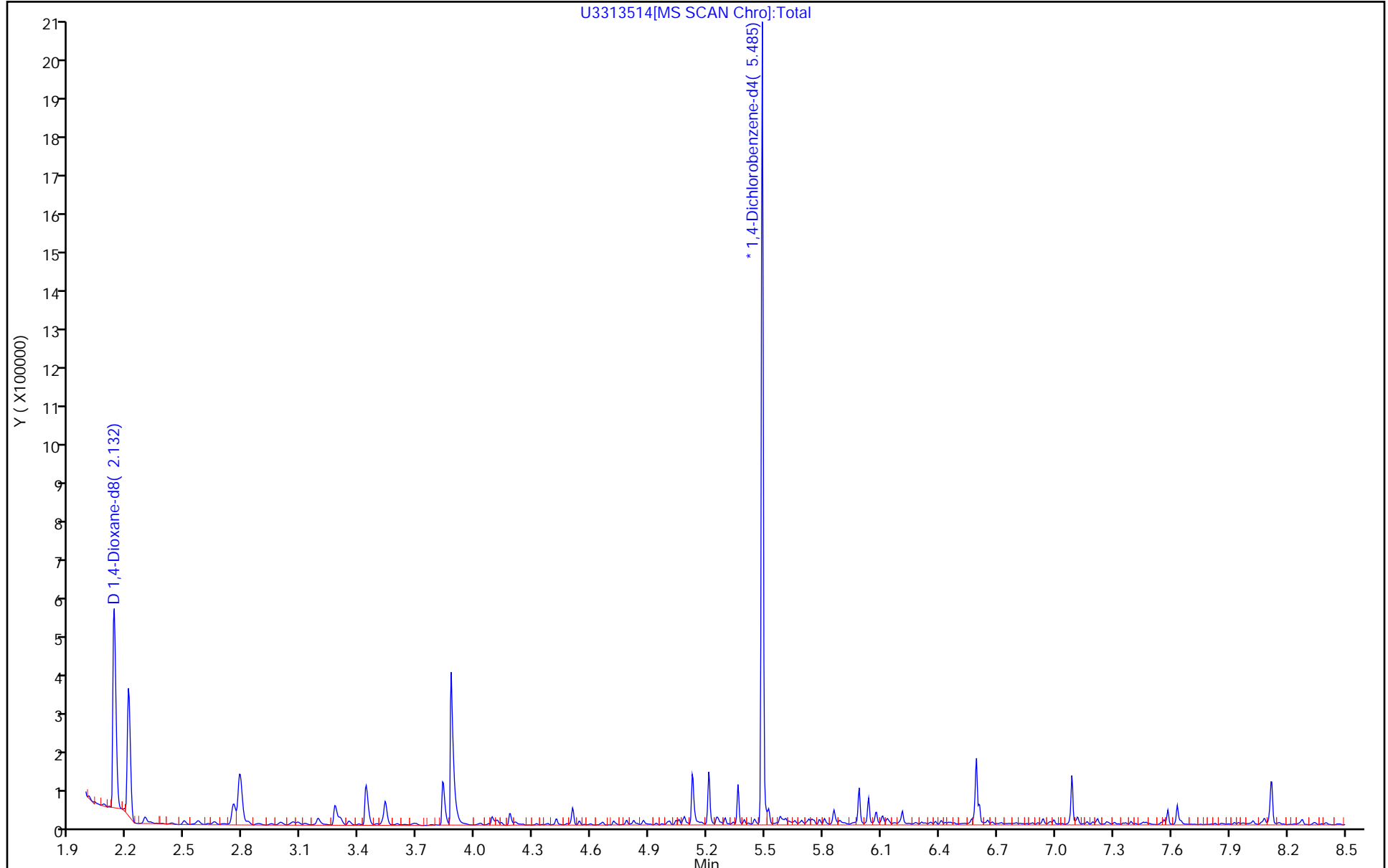
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 46

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313514.D

Injection Date: 20-Nov-2018 14:28:30

Instrument ID: HP5973U

Lims ID: MB 480-445049/1-A

Client ID:

Operator ID: DR

ALS Bottle#: 46

Worklist Smp#: 18

Injection Vol: 1.0 ul

Dil. Factor: 1.0000

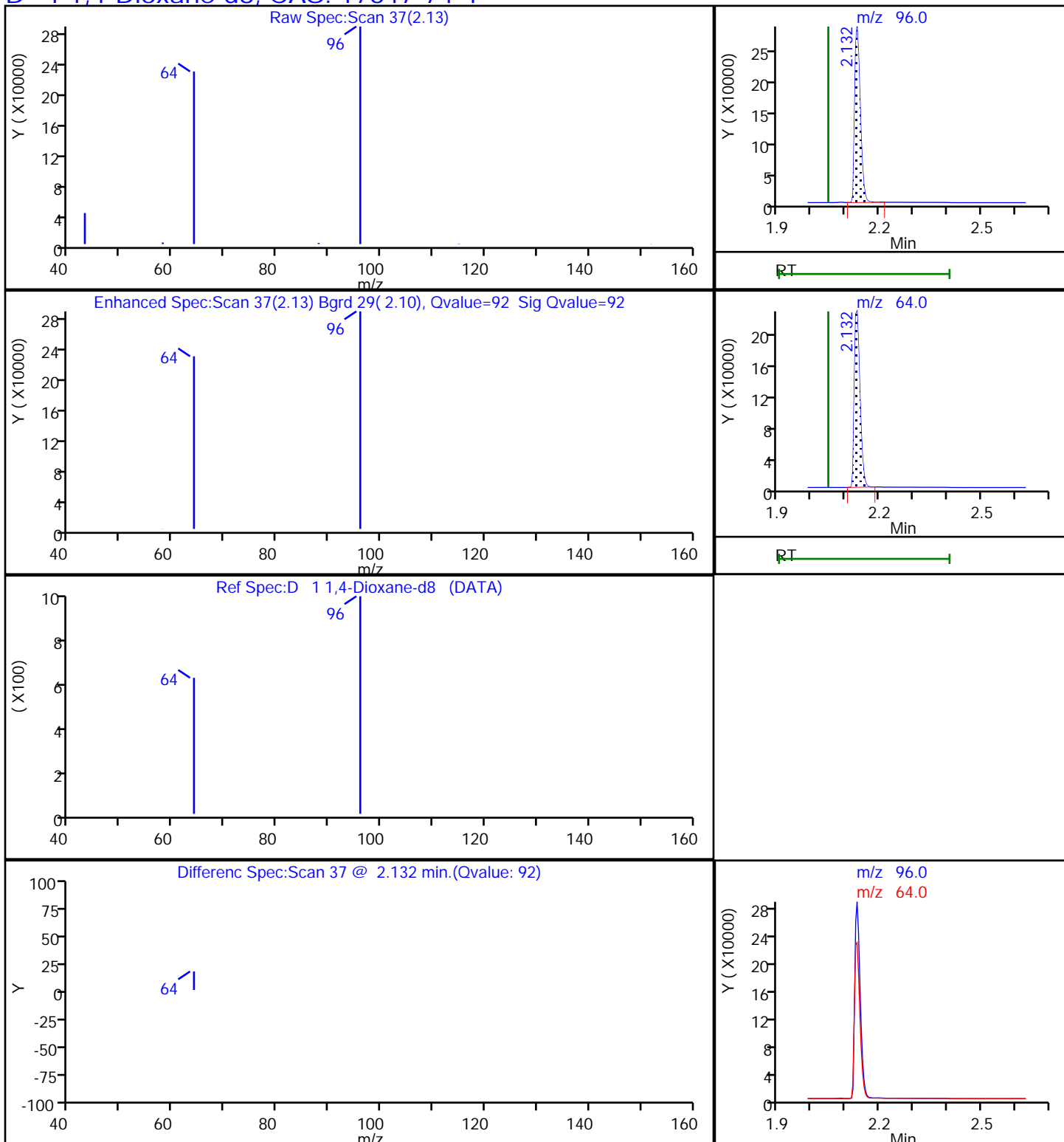
Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

Column:

Detector: MS SCAN

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

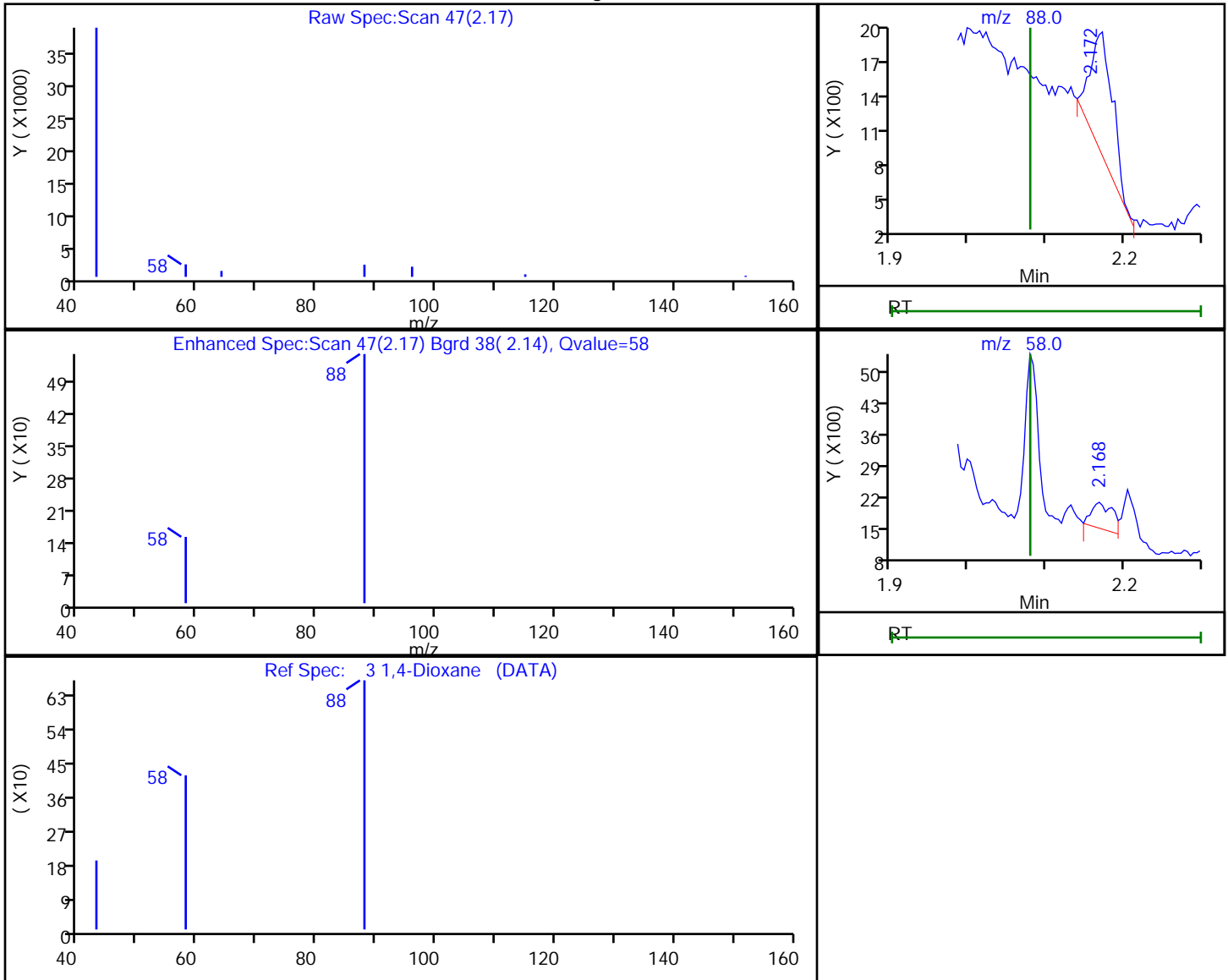


TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313514.D
Injection Date: 20-Nov-2018 14:28:30 Instrument ID: HP5973U
Lims ID: MB 480-445049/1-A
Client ID:
Operator ID: DR ALS Bottle#: 46 Worklist Smp#: 18
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Method: 1,4_Dx_SIM_HP5973U Limit Group: MB - 8270D SIM ID ICAL
Column: Detector MS SCAN

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

Processing Results



RT	Mass	Response	Amount
2.17	88.00	2008	0.058233
2.17	58.00	1117	

Reviewer: richardsd, 23-Nov-2018 12:28:15

Audit Action: Marked Compound Undetected

Audit Reason: Invalid Compound ID

FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Client Sample ID: _____ Lab Sample ID: LCS 480-445049/2-A
 Matrix: Water Lab File ID: U3313515.D
 Analysis Method: 8270D SIM ID Date Collected: _____
 Extract. Method: 3510C Date Extracted: 11/12/2018 14:16
 Sample wt/vol: 1000 (mL) Date Analyzed: 11/20/2018 14:53
 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.: 446525 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.09		0.20	0.10

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

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313515.D
 Lims ID: LCS 480-445049/2-A
 Client ID:
 Sample Type: LCS
 Inject. Date: 20-Nov-2018 14:53:30 ALS Bottle#: 47 Worklist Smp#: 19
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-019
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 23-Nov-2018 12:28:20

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	2.181	2.046	0.135	91	353666	10.0	3.33	
3 1,4-Dioxane	88	2.213	2.079	0.134	59	41025	1.00	1.09	
* 2 1,4-Dichlorobenzene-d4	152	5.489	5.481	0.008	94	846684	4.00	4.00	

Reagents:

MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313515.D

Injection Date: 20-Nov-2018 14:53:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: LCS 480-445049/2-A

Worklist Smp#: 19

Client ID:

Injection Vol: 1.0 ul

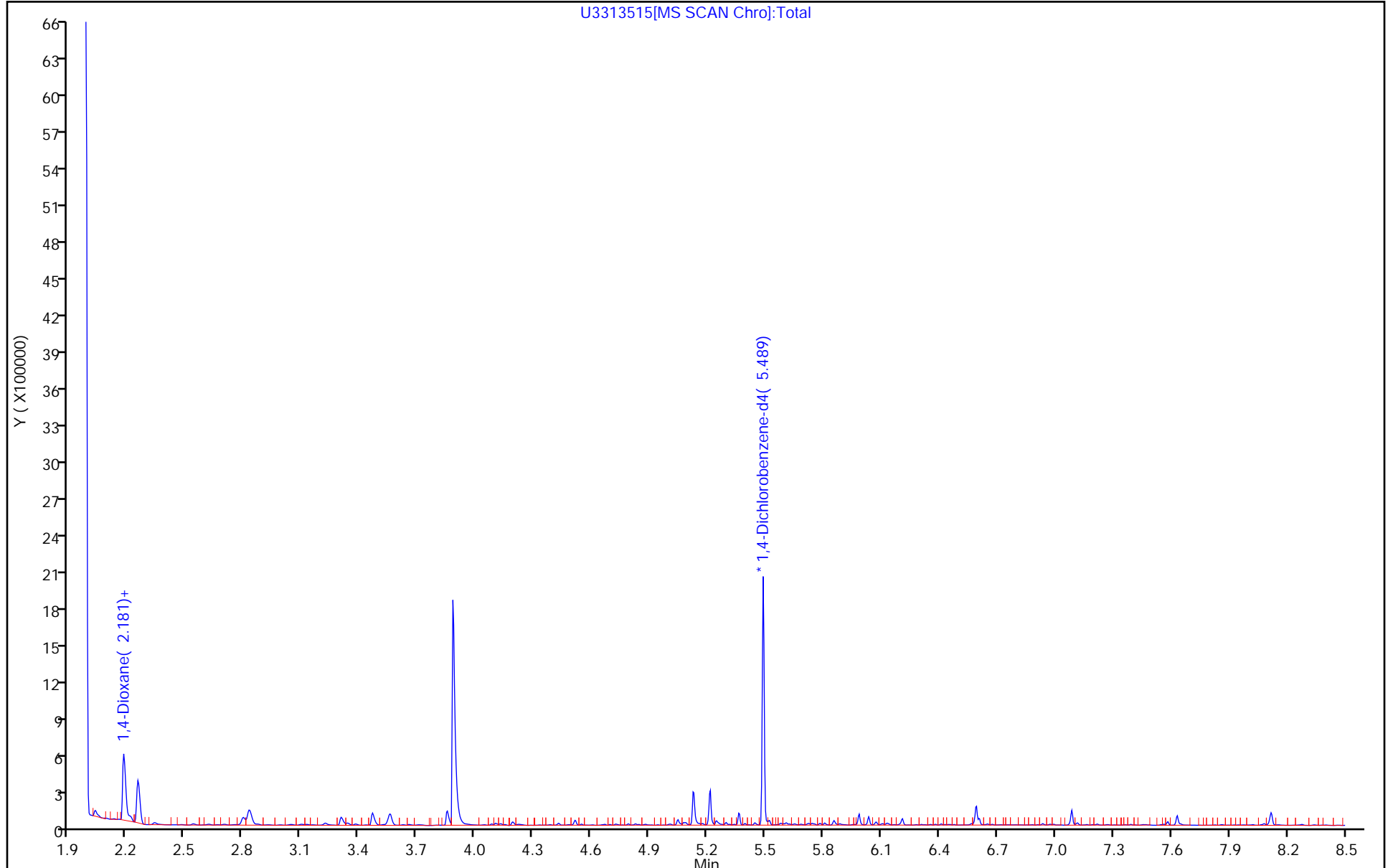
Dil. Factor: 1.0000

ALS Bottle#: 47

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL

U3313515[MS SCAN Chrom]:Total



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-DIO MS Lab Sample ID: 480-145090-3 MS
 Matrix: Water Lab File ID: U3313516.D
 Analysis Method: 8270D SIM ID Date Collected: 11/09/2018 10:45
 Extract. Method: 3510C Date Extracted: 11/12/2018 14:16
 Sample wt/vol: 1000 (mL) Date Analyzed: 11/20/2018 15:18
 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.: 446525 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.23		0.20	0.10

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

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313516.D
 Lims ID: 480-145090-B-3-A MS
 Client ID: MW-01-2018-DIO
 Sample Type: MS
 Inject. Date: 20-Nov-2018 15:18:30 ALS Bottle#: 48 Worklist Smp#: 20
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-020
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 23-Nov-2018 12:28:23

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	2.164	2.046	0.118	91	273368	10.0	2.53	
3 1,4-Dioxane	88	2.197	2.079	0.118	59	35663	1.00	1.23	E
* 2 1,4-Dichlorobenzene-d4	152	5.489	5.481	0.008	96	862474	4.00	4.00	
7 4,4'-DDE	246		10.564					ND	
5 4,4'-DDD	235		10.837					ND	
6 4,4'-DDT	235		11.088					ND	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Reagents:

MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313516.D

Injection Date: 20-Nov-2018 15:18:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-145090-B-3-A MS

Worklist Smp#: 20

Client ID: MW-01-2018-DIO

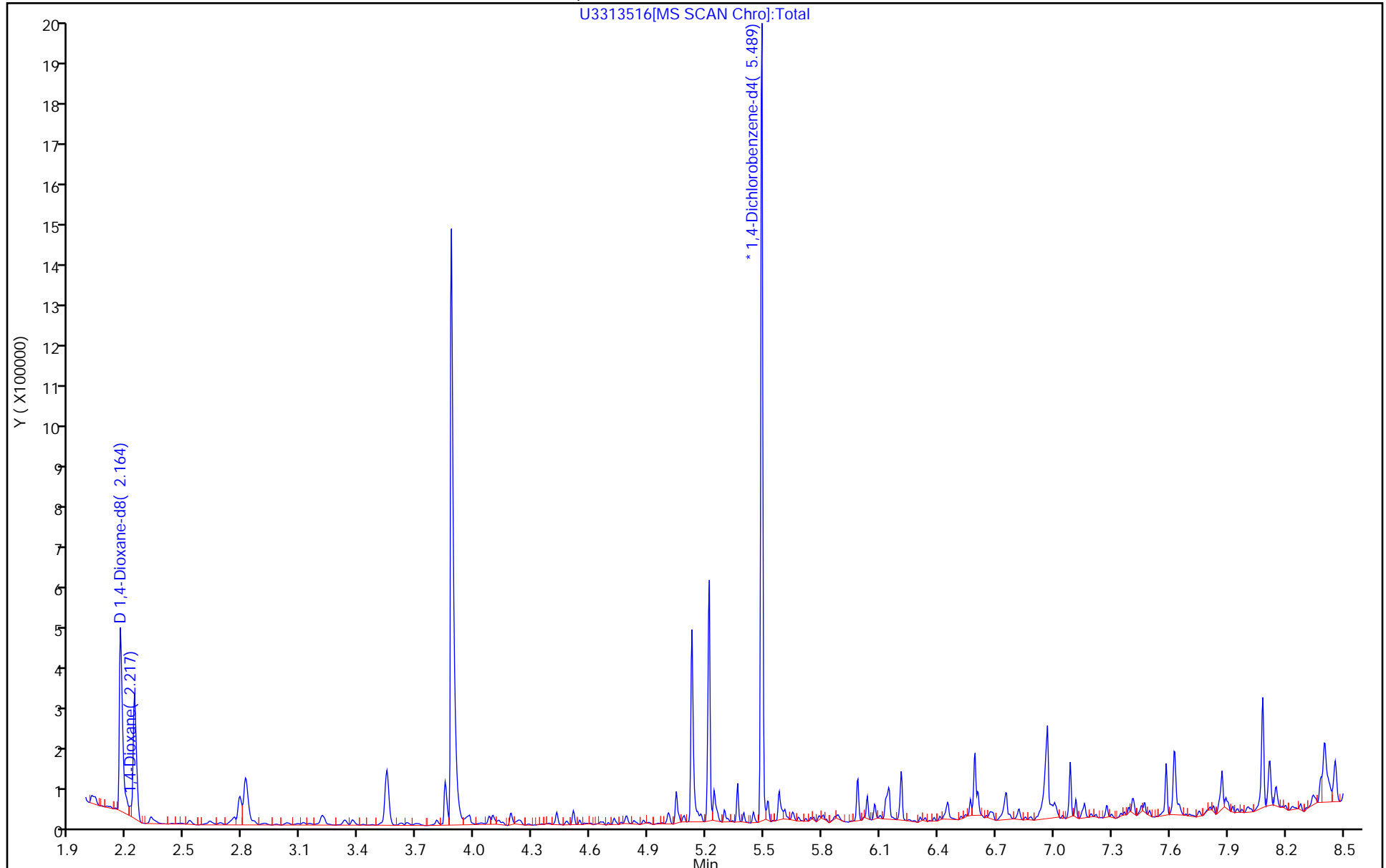
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 48

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



FORM I
GC/MS SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1
 SDG No.: _____
 Client Sample ID: MW-01-2018-DIO MSD Lab Sample ID: 480-145090-3 MSD
 Matrix: Water Lab File ID: U3313517.D
 Analysis Method: 8270D SIM ID Date Collected: 11/09/2018 10:45
 Extract. Method: 3510C Date Extracted: 11/12/2018 14:16
 Sample wt/vol: 1000 (mL) Date Analyzed: 11/20/2018 15:43
 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.: 446525 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
123-91-1	1,4-Dioxane	1.21		0.20	0.10

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

TestAmerica Buffalo
Target Compound Quantitation Report

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313517.D
 Lims ID: 480-145090-B-3-B MSD
 Client ID: MW-01-2018-DIO
 Sample Type: MSD
 Inject. Date: 20-Nov-2018 15:43:30 ALS Bottle#: 49 Worklist Smp#: 21
 Injection Vol: 1.0 ul Dil. Factor: 1.0000
 Sample Info: 480-0076590-021
 Operator ID: DR Instrument ID: HP5973U
 Method: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\1,4_Dx_SIM_HP5973U.m
 Limit Group: MB - 8270D SIM ID ICAL
 Last Update: 23-Nov-2018 12:29:44 Calib Date: 19-Nov-2018 19:11:30
 Integrator: Picker ID Type: RT Order ID
 Quant Method: Isotopic Dilution Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Buffalo\ChromData\HP5973U\20181119-76583.b\U3313467.D
 Column 1 : Det: MS SCAN
 Process Host: CTX0322

First Level Reviewer: richardsd Date: 23-Nov-2018 12:28:26

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	2.168	2.046	0.122	92	293974	10.0	2.48	
3 1,4-Dioxane	88	2.201	2.079	0.122	59	37836	1.00	1.21	E
* 2 1,4-Dichlorobenzene-d4	152	5.489	5.481	0.008	94	944117	4.00	4.00	
7 4,4'-DDE	246		10.564					ND	
5 4,4'-DDD	235		10.837					ND	
6 4,4'-DDT	235		11.088					ND	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Reagents:

MB_LLIS_WRK_00158 Amount Added: 20.00 Units: uL Run Reagent

TestAmerica Buffalo

Data File: \\chromdocs2018\q3\Buffalo\ChromData\HP5973U\20181119-76590.b\U3313517.D

Injection Date: 20-Nov-2018 15:43:30

Instrument ID: HP5973U

Operator ID: DR

Lims ID: 480-145090-B-3-B MSD

Worklist Smp#: 21

Client ID: MW-01-2018-DIO

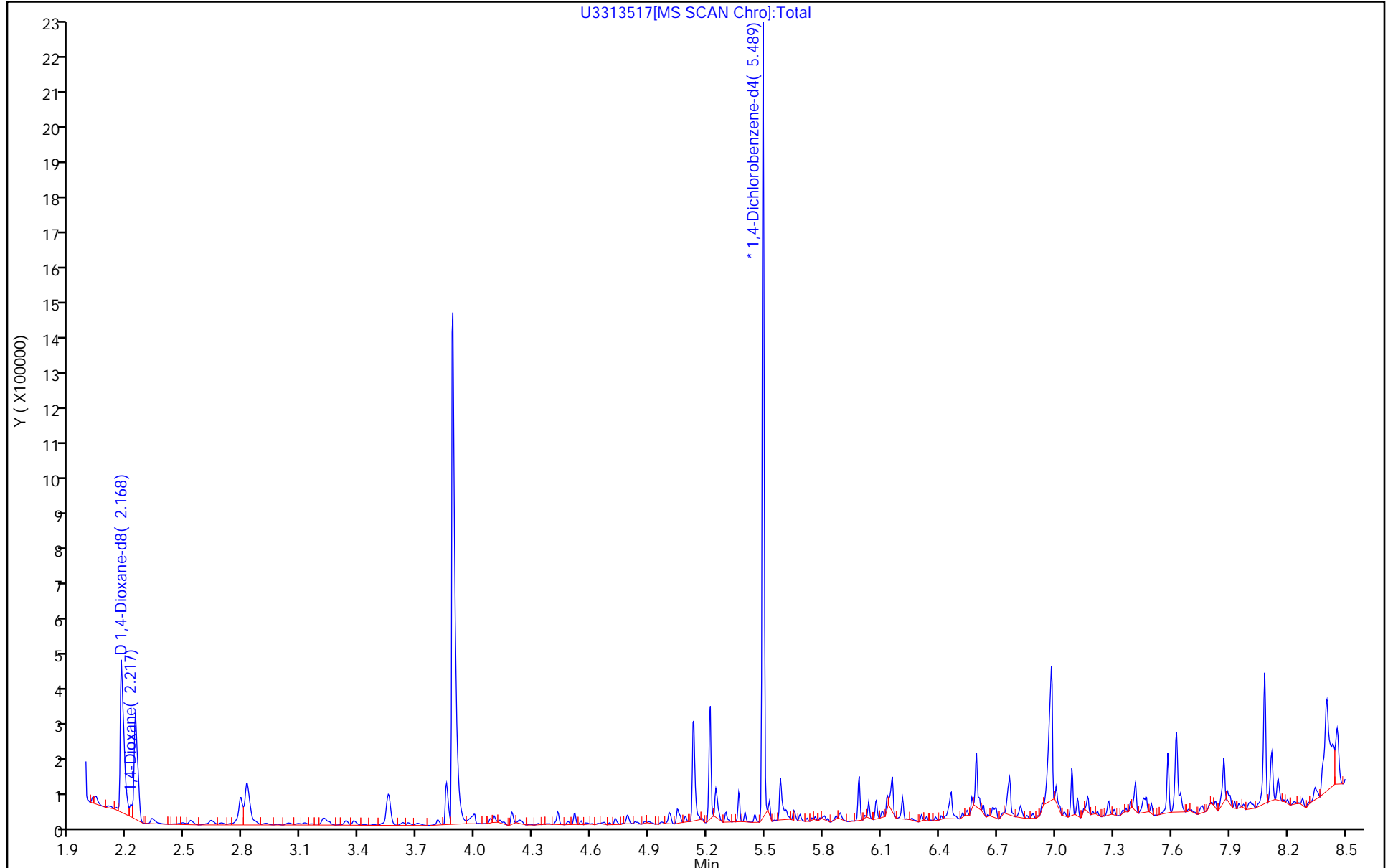
Injection Vol: 1.0 ul

Dil. Factor: 1.0000

ALS Bottle#: 49

Method: 1,4_Dx_SIM_HP5973U

Limit Group: MB - 8270D SIM ID ICAL



GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1

SDG No.: _____

Instrument ID: HP5973U Start Date: 11/19/2018 15:11

Analysis Batch Number: 446475 End Date: 11/19/2018 19:35

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-446475/2		11/19/2018 15:11	1	U3313457.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-446475/3		11/19/2018 17:08	1	U3313462.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-446475/4		11/19/2018 17:33	1	U3313463.D	RXI-5Sil MS(0.5 0.25 (mm))
ICIS 480-446475/5		11/19/2018 17:58	1	U3313464.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-446475/6		11/19/2018 18:22	1	U3313465.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-446475/7		11/19/2018 18:47	1	U3313466.D	RXI-5Sil MS(0.5 0.25 (mm))
IC 480-446475/8		11/19/2018 19:11	1	U3313467.D	RXI-5Sil MS(0.5 0.25 (mm))
ICV 480-446475/9		11/19/2018 19:35	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA ANALYSIS RUN LOG

Lab Name: TestAmerica BuffaloJob No.: 480-145090-1

SDG No.: _____

Instrument ID: HP5973UStart Date: 11/20/2018 07:50Analysis Batch Number: 446525End Date: 11/20/2018 19:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
DFTPP 480-446525/2		11/20/2018 07:50	1	U3313498.D	RXI-5Sil MS(0.5 0.25 (mm))
CCVIS 480-446525/3		11/20/2018 08:19	1	U3313499.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 08:44	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 09:08	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 09:32	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 09:57	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 10:21	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 10:45	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 11:10	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 11:34	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 11:58	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 12:24	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 12:49	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 13:13	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 13:38	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 14:03	1		RXI-5Sil MS(0.5 0.25 (mm))
MB 480-445049/1-A		11/20/2018 14:28	1	U3313514.D	RXI-5Sil MS(0.5 0.25 (mm))
LCS 480-445049/2-A		11/20/2018 14:53	1	U3313515.D	RXI-5Sil MS(0.5 0.25 (mm))
480-145090-3 MS		11/20/2018 15:18	1	U3313516.D	RXI-5Sil MS(0.5 0.25 (mm))
480-145090-3 MSD		11/20/2018 15:43	1	U3313517.D	RXI-5Sil MS(0.5 0.25 (mm))
480-145090-3		11/20/2018 16:08	1	U3313518.D	RXI-5Sil MS(0.5 0.25 (mm))
480-145090-1		11/20/2018 16:32	1	U3313519.D	RXI-5Sil MS(0.5 0.25 (mm))
480-145090-2		11/20/2018 16:57	1	U3313520.D	RXI-5Sil MS(0.5 0.25 (mm))
480-145090-4		11/20/2018 17:21	1	U3313521.D	RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 17:46	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 18:10	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 18:35	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 18:59	1		RXI-5Sil MS(0.5 0.25 (mm))
ZZZZZ		11/20/2018 19:23	1		RXI-5Sil MS(0.5 0.25 (mm))

GC/MS SEMI VOA BATCH WORKSHEET

Lab Name: TestAmerica Buffalo Job No.: 480-145090-1

SDG No.: _____

Batch Number: 445049 Batch Start Date: 11/12/18 14:15 Batch Analyst: Gruning, Anton T

Batch Method: 3510C Batch End Date: _____

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ReceivedpH	FirstAdjustpH	OP_SIM LCS 00005	OP_SimSurr 00011
MB 480-445049/1		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU		1 mL
LCS 480-445049/2		3510C, 8270D SIM ID		1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-145090-B-3 MS	MW-01-2018-DIO	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-145090-B-3 MSD	MW-01-2018-DIO	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU	1 mL	1 mL
480-145090-B-3	MW-01-2018-DIO	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-145090-B-1	MW-3-2018-DIO	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-145090-B-2	MW-4-2018-DIO	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL
480-145090-B-4	DUPE-2018-DIO	3510C, 8270D SIM ID	T	1000 mL	1 mL	7 SU	<2 SU		1 mL

Batch Notes	
Acid Used for pH Adjustment ID	4970423
Analyst ID - Concentration	SD
Analyst ID - Extraction	AG
Method/Fraction	3510C/8270D_SIM_MS_ID
Na2SO4 ID	4895626
Prep Solvent ID	4991873
Prep Solvent Volume Used	180 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.

Shipping and Receiving Documents

Chain of Custody Record

1 of 2
couldn't fit all bottles in one cooler



480-145090 COC

Client Information
 Client Contact: Allan Engelbert
 Company: LaBella Associates DPC
 Address: 105 N. Tioga Suite 200
 City: Ithaca
 State: NY
 Zip: 14850
 Phone: [blank]
 Email: aengelbert@labellapc.com
 Project Name: Townley Hill Rd Dump Site#808006
 Site: [blank]

Client Information
 Sampler: A. Das Iva
 Phone: 315-398-2803
 Lab PM: Johnson, Oriette S
 E-Mail: oriette.johnson@testamericainc.com

Carrier Tracking No(s): [blank]

Due Date Requested: Standard
 TAT Requested (days): Standard

PO #: [blank]
 Call/Out ID: 136381
 WO #: [blank]
 Project #: 48019193
 SSOW#: [blank]

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC, IDA - PFAS, Standard List (21 Analytes) (SPA Method)	8270D_SIM_MS_ID - 1,4-Dioxane	Total Number of Containers	Special Instructions/Note:
MW-3-2018-D10	11/9/18	1220	G	Water	N	N	X	N		
MW-4-2018-D10	11/9/18	1310	G	Water	N	N	X	N		
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						
				Water						

Possible Hazard Identification
 Non-Hazard
 Flammable
 Skin Irritant
 Poison B
 Unknown
 Radiological

Deliverable Requested: I, II, III, IV, Other (specify) NYSDEC CRT B + EQVIS EDD Data Package

Empty Kit Relinquished by: [blank] Date: [blank]

Relinquished by: Alexandra Das Iva
 Relinquished by: [blank]
 Relinquished by: [blank]

Relinquished by: [blank] Date/Time: 11/9/18 1915
 Relinquished by: [blank] Date/Time: [blank]
 Relinquished by: [blank] Date/Time: [blank]

Received by: Anthony Cicolo
 Received by: [blank]
 Received by: [blank]

Company: LaBella
 Company: [blank]
 Company: [blank]

Method of Shipment: [blank]
 Date/Time: 11/18/18 0930
 Date/Time: [blank]
 Date/Time: [blank]

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client
 Disposal By Lab
 Archive For [blank] Months

Special Instructions/OC Requirements: [blank]

Cooler Temperature(s) °C and Other Remarks: 2,4 1.0 #1 ICE

Chain of Custody Record

Client Information

Client Contact:
Allan Engelbert

Company:
Labella Associates DPC

Address:
105 N. Tioga Suite 200

City:
Ithaca

State, Zip:
NY, 14850

Phone:

Email:
aengelbert@labellapc.com

Project Name:
Townley Hill Rd Dump Site#608006

Site:

Sampler:
A. Gaspin

Phone:
315-398-2803

Lab P/M:
Johnson, Oriette S

E-Mail:
oriette.johnson@testamericainc.com

Due Date Requested:
Standard

TAT Requested (days):
Standard

PO #:
CallOut ID: 136381

WO #:

Project #:
48019193

SSOW#:

Analysis Requested

Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PF ₅ (PA Method)	8270D SIM MS ID - 1,4-Dioxane
X	NY	N	X
X	NN	N	X

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, B=solid, O=soil)	Preservation Code
MW-01-2018-DIO	11/9/18	1045	G	Water	
AAW DUPE-2018-DIO	11/9/18	1100	G	Water	
				Water	
				Water	
				Water	
				Water	
				Water	
				Water	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, B=solid, O=soil)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PF ₅ (PA Method)	8270D SIM MS ID - 1,4-Dioxane	Total Number of Containers	Special Instructions/Note:
MW-01-2018-DIO	11/9/18	1045	G	Water		X	NY	N	X		MS /MSD
AAW DUPE-2018-DIO	11/9/18	1100	G	Water		X	NN	N	X		
				Water							
				Water							
				Water							
				Water							
				Water							
				Water							

Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested: I, II, III, IV, Other (specify) NY SPEC CATB + EQVIS EOD Data Package

Empty Kit Relinquished by: Wendy Gaspin Date: 11/19/18 Time: 1915

Relinquished by: Wendy Gaspin Date/Time: 11/19/18 0930 Company: TA

Relinquished by: Date/Time: Company:

Relinquished by: Date/Time: Company:

Custody Seal No.: 21416 #1 ICE

Method of Shipment: Umbrow Cold Date/Time: 11/19/18 0930 Company: TA

Received by: Umbrow Cold Date/Time: Company:

Received by: Date/Time: Company:

Received by: Date/Time: Company:

Cooler Temperature(s) °C and Other Remarks: 21416 #1 ICE

Login Sample Receipt Checklist

Client: New York State D.E.C.

Job Number: 480-145090-1

Login Number: 145090
List Number: 1
Creator: Wallace, Cameron

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.	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	LABELLA
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	