The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

AECOM, INC.

N6274223F0104 RH Fire Suppression System

60697810

SGS Job Number: FC11689

Sampling Date: 12/04/23

Report to:

AECOM, Inc
7595 Technology Way
Denver, CO 80237
katie.abbott@aecom.com; mark.kromis@aecom.com;
watson.tanji@aecom.com; kristin.rutherford@aecom.com;
ATTN: Katie Abbott

Total number of pages in report: 594

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable unless noted in the narrative, comments or footnotes.

Norm Farmer
Technical Director

Client Service contact: Terri McNulty-Patterson 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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SGS North America Inc.

Sample Summary

AECOM, INC.

Job No: FC11689

N6274223F0104 RH Fire Suppression System
Project No: 60697810

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
FC11689-1	12/04/23	09:00	VVS	12/05/23	AQ	Ground Water	AF-RHMW16-WGN01LF-2312

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: AECOM, INC. **Job No:** FC11689

Site: N6274223F0104 RH Fire Suppression System **Report Date:** 12/11/2023 4:56:36

On 12/05/2023, 1 Sample(s), 0 Trip Blank(s), 0 Equip. Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FC11689 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA DRAFT 1633

Matrix: AQ **Batch ID:** OP495

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FC11715-2MS, FC11715-3DUP were used as the QC samples indicated.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FC11689
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 12/04/23

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FC11689-1	**AF-RHMW16-WGN01LF-2312**					

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2312		
Lab Sample ID:	FC11689-1	**Date Sampled:**	12/04/23
Matrix:	AQ - Ground Water	**Date Received:**	12/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q54886.D	1	12/08/23 20:05	AL	12/07/23 08:00	OP495	S4Q804
Run #2							

	Initial Volume	Final Volume
Run #1	550 ml	5.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	3.6 U	15	3.6	1.7	ng/l	
2706-90-3	Perfluoropentanoic acid	1.8 U	7.3	1.8	0.85	ng/l	
307-24-4	Perfluorohexanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
375-85-9	Perfluoroheptanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
335-67-1	Perfluorooctanoic acid	0.91 U	3.6	0.91	0.45	ng/l	
375-95-1	Perfluorononanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
335-76-2	Perfluorodecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
2058-94-8	Perfluoroundecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
307-55-1	Perfluorododecanoic acid	1.8 U	3.6	1.8	0.55	ng/l	
72629-94-8	Perfluorotridecanoic acid	1.8 U	3.6	1.8	0.76	ng/l	
376-06-7	Perfluorotetradecanoic acid	1.8 U	3.6	1.8	0.45	ng/l	
PERFLUOROALKYL SULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
2706-91-4	Perfluoropentanesulfonic acid	3.6 U	4.5	3.6	1.0	ng/l	
355-46-4	Perfluorohexanesulfonic acid	1.8 U	3.6	1.8	0.64	ng/l	
375-92-8	Perfluoroheptanesulfonic acid	1.8 U	3.6	1.8	0.45	ng/l	
1763-23-1	Perfluorooctanesulfonic acid	1.8 U	3.6	1.8	0.49	ng/l	
68259-12-1	Perfluorononanesulfonic acid	1.8 U	3.6	1.8	0.52	ng/l	
335-77-3	Perfluorodecanesulfonic acid	1.8 U	3.6	1.8	0.58	ng/l	
79780-39-5	Perfluorododecanesulfonic aci	3.6 U	4.5	3.6	1.0	ng/l	
FLUOROTELOMER SULFONIC ACIDS							
757124-72-4	4:2 Fluorotelomer sulfonate	7.3 U	18	7.3	2.9	ng/l	
27619-97-2	6:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.2	ng/l	
39108-34-4	8:2 Fluorotelomer sulfonate	7.3 U	18	7.3	3.7	ng/l	
PERFLUOROOCTANE SULFONAMIDES							
754-91-6	PFOSA	1.8 U	3.6	1.8	0.61	ng/l	
31506-32-8	MeFOSA	3.6 U	7.3	3.6	0.91	ng/l	
4151-50-2	EtFOSA	3.6 U	7.3	3.6	0.91	ng/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2312		
Lab Sample ID:	FC11689-1	**Date Sampled:**	12/04/23
Matrix:	AQ - Ground Water	**Date Received:**	12/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROOCTANE SULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	3.6 U	4.5	3.6	0.91	ng/l	
2991-50-6	EtFOSAA	3.6 U	4.5	3.6	1.2	ng/l	
PERFLUOROOCTANE SULFONAMIDO ETHANOLS							
24448-09-7	MeFOSE	18 U	36	18	4.0	ng/l	
1691-99-2	EtFOSE	18 U	36	18	6.7	ng/l	
PER and POLYFLUOROETHER CARBOXYLIC ACIDS							
13252-13-6	HFPO-DA (GenX)	1.8 U	3.6	1.8	0.91	ng/l	
919005-14-4	ADONA	3.6 U	7.3	3.6	1.7	ng/l	
377-73-1	PFMPA	1.8 U	7.3	1.8	0.91	ng/l	
863090-89-5	PFMBA	3.6 U	7.3	3.6	1.0	ng/l	
151772-58-6	NFDHA	3.6 U	7.3	3.6	1.1	ng/l	
PER and POLYFLUOROETHER SULFONIC ACIDS							
756426-58-1	9Cl-PF3ONS (F-53B Major)	3.6 U	7.3	3.6	1.3	ng/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	3.6 U	7.3	3.6	1.6	ng/l	
113507-82-7	PFEESA	1.8 U	7.3	1.8	0.71	ng/l	
FLUOROTELOMER CARBOXYLIC ACIDS							
356-02-5	3:3 Fluorotelomer carboxylate	9.1 U	18	9.1	4.1	ng/l	
914637-49-3	5:3 Fluorotelomer carboxylate	18 U	91	18	7.9	ng/l	
812-70-4	7:3 Fluorotelomer carboxylate	18 U	91	18	7.1	ng/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	111%		20-150%
	13C5-PFPeA	110%		20-150%
	13C5-PFHxA	110%		20-150%
	13C4-PFHpA	110%		20-150%
	13C8-PFOA	109%		20-150%
	13C9-PFNA	101%		20-150%
	13C6-PFDA	102%		20-150%
	13C7-PFUnDA	102%		20-150%
	13C2-PFDoDA	87%		20-150%
	13C2-PFTeDA	80%		20-150%
	13C3-PFBS	104%		20-150%
	13C3-PFHxS	105%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	AF-RHMW16-WGN01LF-2312		
Lab Sample ID:	FC11689-1	**Date Sampled:**	12/04/23
Matrix:	AQ - Ground Water	**Date Received:**	12/05/23
Method:	EPA DRAFT 1633 EPA 1633 DRAFT	**Percent Solids:**	n/a
Project:	N6274223F0104 RH Fire Suppression System		

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C8-PFOS	93%		20-150%
	13C8-FOSA	82%		20-150%
	d3-MeFOSA	76%		20-150%
	d5-EtFOSA	82%		20-150%
	d3-MeFOSAA	102%		20-150%
	d5-EtFOSAA	92%		20-150%
	d7-MeFOSE	57%		20-150%
	d9-EtFOSE	75%		20-150%
	13C2-4:2FTS	93%		20-180%
	13C2-6:2FTS	98%		20-180%
	13C2-8:2FTS	99%		20-180%
	13C3-HFPO-DA	105%		20-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

COC #: 2312AFSG06
PAGE 1 OF 1
SGS - ORLANDO JOB # : FC11689
SGS - ORLANDO Quote #
SKIFF #

Client / Reporting Information

Company Name: AECOM
Address: 1001 Bishop St. ste 1600
City: Honolulu State: HI Zip: 96813
Project Contact: Katie Abbott Email: katie.abbott@aecom.com
Project Manager: Watson Tanji Email: watson.tanji@aecom.com
Phone #: 303-796-4624 / 808-954-4512
Sampler(s) Name(s) (Printed)
Sampler 1: J V C , J V , L S Sampler 2:

Project Information

Project Name: N6274223F0104 RH Fire Suppression System
Street
City Honolulu State Hawaii
Project # 23F0104 - 60697810
Fax #
Client Purchase Order # 151253

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	PFAS EPA Draft 1633	LAB USE ONLY
1	AF-RHMW16-WGN01LF-2312	12.04.23	0900	J V C, L S	GW	3		X								X	

LS 12.04.23

INITIAL ASSESSMENT 10

LS (2.04.23

LABS VERIFICATION 10

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

[ ] COMMERCIAL "A" (RESULTS ONLY)
[ ] COMMERCIAL "B" (RESULTS PLUS QC)
[ ] REDT1 (EPA LEVEL 3)
[x] FULLT1 (EPA LEVEL 4)
[x] EDD'S

Comments / Remarks

EDMS upload database: JBPHE
EDMS Coverage: AFFF Assessment Sampling GW
United AWB: 0116-97503372

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	Laine Sakai	12.04.23 1235	2 Brittany Tommer / AECOM	3 Brittany Tommer / AECOM	12/04/23 1300	4 1700 12/5/23
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only: Cooler Temperature (s) Celsius (corrected): 4.0 IR1

http://www.sgs.com/en/terms-and-conditions

PFAS_COCs_ALL_12042023.xls Rev 031318

FC11689: Chain of Custody
Page 1 of 2

SGS - Orlando Sample Receipt Summary

Job Number: fc11689 **Client:** AECOM **Project:** N6274223F0104 RH FIRE SUPPRESEEIO

Date / Time Received: 12/5/2023 5:00:00 PM **Delivery Method:** UNITED **Airbill #'s:** UNITED AWB: 016-97503372

Cooler Temps (Raw Measured) °C: Cooler 1: (4.0);

Cooler Temps (Corrected) °C: Cooler 1: (4.4);

Cooler Information	Y	or	N
1. Custody Seals Present:	☑		☐
2. Custody Seals Intact:	☑		☐
3. Temp criteria achieved:	☑		☐
4. Cooler temp verification:	IR Gun		
5. Cooler media:	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler:	☐		☐	☑
2. Trip Blank listed on COC:	☐		☐	☑

	W	or	S	N/A
3. Type of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles:	☑		☐	
2. Samples presented properly	☑		☐	
3. Suffiient volume/containers recv'd for analysis	☑		☐	
4. Condition of sample:	Intact			
5. Sample recv'd within HT	☑		☐	
6. Dates/Times/IDs on COC match sample label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar Received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc Information

Number of Encores: 25 Gram 5 Gram

Number of Lab Filtered Metals:

Test Strip Lot #s: pH 0-3: 226422 pH 10-12: Other: (Specify) pH 1.0 - 12.0 222221

Residual Chlorine Test Strip Lot #

Comments

Sample Receipt Summary 112723 EK Technician: SHAYLAP Date: 12/5/2023 7:07:37 PM Reviewer: Date:

QC Evaluation: DOD QSM5.x Limits

Job Number: FC11689
Account: AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System
Collected: 12/04/23

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits

No DOD QSM5.x Limits found for methods in this job.

* Sample used for QC is not from job FC11689

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Injection Standard Area Summaries
- TDCA Retention Time Checks
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q804-IBLK	4Q54860.D	1	12/08/23	AL	n/a	n/a	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	0.0022	0.0080	0.0010	ug/l	J
4151-50-2	EtFOSA	0.0028	0.0080	0.0010	ug/l	J
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	0.0075	0.040	0.0074	ug/l	J
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Instrument Blank

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q804-IBLK	4Q54860.D	1	12/08/23	AL	n/a	n/a	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	100%	20-150%
	13C5-PFPeA	101%	20-150%
	13C5-PFHxA	96%	20-150%
	13C4-PFHpA	102%	20-150%
	13C8-PFOA	98%	20-150%
	13C9-PFNA	100%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	108%	20-150%
	13C2-PFDoDA	102%	20-150%
	13C2-PFTeDA	101%	20-150%
	13C3-PFBS	99%	20-150%
	13C3-PFHxS	100%	20-150%
	13C8-PFOS	92%	20-150%
	13C8-FOSA	97%	20-150%
	d3-MeFOSAA	100%	20-150%
	d5-EtFOSAA	100%	20-150%
	13C2-4:2FTS	102%	20-180%
	13C2-6:2FTS	105%	20-180%
	13C2-8:2FTS	102%	20-180%

Continuing Calibration Blank

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q804-ICCB	4Q54882.D	1	12/08/23	AL	n/a	n/a	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Continuing Calibration Blank

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q804-ICCB	4Q54882.D	1	12/08/23	AL	n/a	n/a	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	20-150%
	13C5-PFPeA	102%	20-150%
	13C5-PFHxA	102%	20-150%
	13C4-PFHpA	106%	20-150%
	13C8-PFOA	100%	20-150%
	13C9-PFNA	101%	20-150%
	13C6-PFDA	102%	20-150%
	13C7-PFUnDA	105%	20-150%
	13C2-PFDoDA	96%	20-150%
	13C2-PFTeDA	97%	20-150%
	13C3-PFBS	100%	20-150%
	13C3-PFHxS	102%	20-150%
	13C8-PFOS	95%	20-150%
	13C8-FOSA	102%	20-150%
	d3-MeFOSAA	97%	20-150%
	d5-EtFOSAA	98%	20-150%
	13C2-4:2FTS	108%	20-180%
	13C2-6:2FTS	102%	20-180%
	13C2-8:2FTS	98%	20-180%

Method Blank Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-MB	4Q54885.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0019	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.00094	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.00050	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.00050	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.00050	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.00061	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.00050	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.00060	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.00060	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.00084	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.00050	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.00050	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0050	0.0011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.00070	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.00050	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.00054	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.00057	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.00064	ug/l	
79780-39-5	Perfluorododecanesulfonic aci	ND	0.0050	0.0011	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.020	0.0032	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.020	0.0035	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.020	0.0041	ug/l	
754-91-6	PFOSA	ND	0.0040	0.00067	ug/l	
31506-32-8	MeFOSA	ND	0.0080	0.0010	ug/l	
4151-50-2	EtFOSA	ND	0.0080	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0050	0.0010	ug/l	
2991-50-6	EtFOSAA	ND	0.0050	0.0013	ug/l	
24448-09-7	MeFOSE	ND	0.040	0.0044	ug/l	
1691-99-2	EtFOSE	ND	0.040	0.0074	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0010	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0019	ug/l	
377-73-1	PFMPA	ND	0.0080	0.0010	ug/l	
863090-89-5	PFMBA	ND	0.0080	0.0011	ug/l	
151772-58-6	NFDHA	ND	0.0080	0.0012	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0014	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0018	ug/l	

Method Blank Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-MB	4Q54885.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Result	RL	MDL	Units	Q
113507-82-7	PFEESA	ND	0.0080	0.00078	ug/l	
356-02-5	3:3 Fluorotelomer carboxylate	ND	0.020	0.0045	ug/l	
914637-49-3	5:3 Fluorotelomer carboxylate	ND	0.10	0.0087	ug/l	
812-70-4	7:3 Fluorotelomer carboxylate	ND	0.10	0.0079	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	119%	20-150%
	13C5-PFPeA	122%	20-150%
	13C5-PFHxA	120%	20-150%
	13C4-PFHpA	126%	20-150%
	13C8-PFOA	112%	20-150%
	13C9-PFNA	112%	20-150%
	13C6-PFDA	118%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	103%	20-150%
	13C2-PFTeDA	94%	20-150%
	13C3-PFBS	106%	20-150%
	13C3-PFHxS	110%	20-150%
	13C8-PFOS	115%	20-150%
	13C8-FOSA	73%	20-150%
	d3-MeFOSA	79%	20-150%
	d5-EtFOSA	88%	20-150%
	d3-MeFOSAA	114%	20-150%
	d5-EtFOSAA	109%	20-150%
	d7-MeFOSE	57%	20-150%
	d9-EtFOSE	76%	20-150%
	13C2-4:2FTS	112%	20-180%
	13C2-6:2FTS	106%	20-180%
	13C2-8:2FTS	105%	20-180%
	13C3-HFPO-DA	117%	20-150%

Blank Spike Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-LLBS	4Q54884.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.03	0.0304	101	40-150
2706-90-3	Perfluoropentanoic acid	0.015	0.0148	99	40-150
307-24-4	Perfluorohexanoic acid	0.0075	0.0073	97	40-150
375-85-9	Perfluoroheptanoic acid	0.0075	0.0076	101	40-150
335-67-1	Perfluorooctanoic acid	0.0075	0.0073	97	40-150
375-95-1	Perfluorononanoic acid	0.0075	0.0073	97	40-150
335-76-2	Perfluorodecanoic acid	0.0075	0.0078	104	40-150
2058-94-8	Perfluoroundecanoic acid	0.0075	0.0081	108	40-150
307-55-1	Perfluorododecanoic acid	0.0075	0.0081	108	40-150
72629-94-8	Perfluorotridecanoic acid	0.0075	0.0081	108	40-150
376-06-7	Perfluorotetradecanoic acid	0.0075	0.0074	99	40-150
375-73-5	Perfluorobutanesulfonic acid	0.00665	0.0068	102	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.00706	0.0068	96	40-150
355-46-4	Perfluorohexanesulfonic acid	0.00686	0.0073	106	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.00715	0.0080	112	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.00696	0.0076	109	40-150
68259-12-1	Perfluorononanesulfonic acid	0.00722	0.0083	115	40-150
335-77-3	Perfluorodecanesulfonic acid	0.00724	0.0075	104	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.00728	0.0067	92	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0281	0.0295	105	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.0285	0.0294	103	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.0288	0.0328	114	40-150
754-91-6	PFOSA	0.0075	0.0075	100	40-150
31506-32-8	MeFOSA	0.015	0.0135	90	40-150
4151-50-2	EtFOSA	0.015	0.0152	101	40-150
2355-31-9	MeFOSAA	0.0075	0.0085	113	40-150
2991-50-6	EtFOSAA	0.0075	0.0076	101	40-150
24448-09-7	MeFOSE	0.0375	0.0373	99	40-150
1691-99-2	EtFOSE	0.0375	0.0391	104	40-150
13252-13-6	HFPO-DA (GenX)	0.015	0.0157	105	40-150
919005-14-4	ADONA	0.0142	0.0157	111	40-150
377-73-1	PFMPA	0.015	0.0162	108	40-150
863090-89-5	PFMBA	0.015	0.0156	104	40-150
151772-58-6	NFDHA	0.015	0.0155	103	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.014	0.0150	107	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0142	0.0152	107	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-LLBS	4Q54884.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0134	0.0140	105	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.0375	0.0323	86	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.188	0.190	101	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.188	0.205	109	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	111%	20-150%
	13C5-PFPeA	111%	20-150%
	13C5-PFHxA	108%	20-150%
	13C4-PFHpA	113%	20-150%
	13C8-PFOA	107%	20-150%
	13C9-PFNA	105%	20-150%
	13C6-PFDA	106%	20-150%
	13C7-PFUnDA	111%	20-150%
	13C2-PFDoDA	96%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	111%	20-150%
	13C3-PFHxS	118%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	80%	20-150%
	d3-MeFOSA	76%	20-150%
	d5-EtFOSA	78%	20-150%
	d3-MeFOSAA	103%	20-150%
	d5-EtFOSAA	101%	20-150%
	d7-MeFOSE	56%	20-150%
	d9-EtFOSE	69%	20-150%
	13C2-4:2FTS	103%	20-180%
	13C2-6:2FTS	107%	20-180%
	13C2-8:2FTS	114%	20-180%
	13C3-HFPO-DA	108%	20-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-BS	4Q54883.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.1	0.101	101	40-150
2706-90-3	Perfluoropentanoic acid	0.05	0.0492	98	40-150
307-24-4	Perfluorohexanoic acid	0.025	0.0243	97	40-150
375-85-9	Perfluoroheptanoic acid	0.025	0.0242	97	40-150
335-67-1	Perfluorooctanoic acid	0.025	0.0245	98	40-150
375-95-1	Perfluorononanoic acid	0.025	0.0248	99	40-150
335-76-2	Perfluorodecanoic acid	0.025	0.0233	93	40-150
2058-94-8	Perfluoroundecanoic acid	0.025	0.0247	99	40-150
307-55-1	Perfluorododecanoic acid	0.025	0.0262	105	40-150
72629-94-8	Perfluorotridecanoic acid	0.025	0.0260	104	40-150
376-06-7	Perfluorotetradecanoic acid	0.025	0.0242	97	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0222	0.0214	97	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0238	101	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.0231	101	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0238	0.0238	100	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0232	0.0231	100	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0241	0.0282	117	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0241	0.0248	103	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0243	0.0226	93	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.0938	0.104	111	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.095	0.0974	103	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.096	0.0948	99	40-150
754-91-6	PFOSA	0.025	0.0247	99	40-150
31506-32-8	MeFOSA	0.05	0.0463	93	40-150
4151-50-2	EtFOSA	0.05	0.0523	105	40-150
2355-31-9	MeFOSAA	0.025	0.0282	113	40-150
2991-50-6	EtFOSAA	0.025	0.0229	92	40-150
24448-09-7	MeFOSE	0.125	0.117	94	40-150
1691-99-2	EtFOSE	0.125	0.117	94	40-150
13252-13-6	HFPO-DA (GenX)	0.05	0.0515	103	40-150
919005-14-4	ADONA	0.0473	0.0531	112	40-150
377-73-1	PFMPA	0.05	0.0501	100	40-150
863090-89-5	PFMBA	0.05	0.0510	102	40-150
151772-58-6	NFDHA	0.05	0.0492	98	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0468	0.0512	110	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0473	0.0505	107	40-150

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-BS	4Q54883.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
113507-82-7	PFEESA	0.0445	0.0459	103	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.125	0.123	98	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.625	0.634	101	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.625	0.641	103	40-150

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	76%	20-150%
	13C5-PFPeA	113%	20-150%
	13C5-PFHxA	110%	20-150%
	13C4-PFHpA	116%	20-150%
	13C8-PFOA	111%	20-150%
	13C9-PFNA	108%	20-150%
	13C6-PFDA	105%	20-150%
	13C7-PFUnDA	109%	20-150%
	13C2-PFDoDA	96%	20-150%
	13C2-PFTeDA	90%	20-150%
	13C3-PFBS	112%	20-150%
	13C3-PFHxS	117%	20-150%
	13C8-PFOS	98%	20-150%
	13C8-FOSA	75%	20-150%
	d3-MeFOSA	80%	20-150%
	d5-EtFOSA	78%	20-150%
	d3-MeFOSAA	96%	20-150%
	d5-EtFOSAA	99%	20-150%
	d7-MeFOSE	54%	20-150%
	d9-EtFOSE	69%	20-150%
	13C2-4:2FTS	91%	20-180%
	13C2-6:2FTS	108%	20-180%
	13C2-8:2FTS	119%	20-180%
	13C3-HFPO-DA	107%	20-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-MS	4Q54889.D	1	12/08/23	AL	12/07/23	OP495	S4Q804
FC11715-2	4Q54888.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	FC11715-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015	U	0.0909	0.0908	100	40-150
2706-90-3	Perfluoropentanoic acid	0.0077	U	0.0455	0.0437	96	40-150
307-24-4	Perfluorohexanoic acid	0.0038	U	0.0227	0.0220	97	40-150
375-85-9	Perfluoroheptanoic acid	0.0038	U	0.0227	0.0223	98	40-150
335-67-1	Perfluorooctanoic acid	0.0038	U	0.0227	0.0214	94	40-150
375-95-1	Perfluorononanoic acid	0.0038	U	0.0227	0.0226	99	40-150
335-76-2	Perfluorodecanoic acid	0.0038	U	0.0227	0.0222	98	40-150
2058-94-8	Perfluoroundecanoic acid	0.0038	U	0.0227	0.0237	104	40-150
307-55-1	Perfluorododecanoic acid	0.0038	U	0.0227	0.0234	103	40-150
72629-94-8	Perfluorotridecanoic acid	0.0038	U	0.0227	0.0243	107	40-150
376-06-7	Perfluorotetradecanoic acid	0.0038	U	0.0227	0.0224	99	40-150
375-73-5	Perfluorobutanesulfonic acid	0.0038	U	0.0202	0.0207	103	40-150
2706-91-4	Perfluoropentanesulfonic acid	0.0048	U	0.0214	0.0214	100	40-150
355-46-4	Perfluorohexanesulfonic acid	0.0038	U	0.0208	0.0206	99	40-150
375-92-8	Perfluoroheptanesulfonic acid	0.0038	U	0.0217	0.0239	110	40-150
1763-23-1	Perfluorooctanesulfonic acid	0.0038	U	0.0211	0.0214	101	40-150
68259-12-1	Perfluorononanesulfonic acid	0.0038	U	0.0219	0.0257	118	40-150
335-77-3	Perfluorodecanesulfonic acid	0.0038	U	0.0219	0.0212	97	40-150
79780-39-5	Perfluorododecanesulfonic aci	0.0048	U	0.022	0.0217	98	40-150
757124-72-4	4:2 Fluorotelomer sulfonate	0.019	U	0.0852	0.0906	106	40-150
27619-97-2	6:2 Fluorotelomer sulfonate	0.019	U	0.0864	0.0876	101	40-150
39108-34-4	8:2 Fluorotelomer sulfonate	0.019	U	0.0873	0.0951	109	40-150
754-91-6	PFOSA	0.0038	U	0.0227	0.0227	100	40-150
31506-32-8	MeFOSA	0.0077	U	0.0455	0.0403	89	40-150
4151-50-2	EtFOSA	0.0077	U	0.0455	0.0461	101	40-150
2355-31-9	MeFOSAA	0.0048	U	0.0227	0.0235	103	40-150
2991-50-6	EtFOSAA	0.0048	U	0.0227	0.0207	91	40-150
24448-09-7	MeFOSE	0.038	U	0.114	0.0906	80	40-150
1691-99-2	EtFOSE	0.038	U	0.114	0.106	93	40-150
13252-13-6	HFPO-DA (GenX)	0.0038	U	0.0455	0.0456	100	40-150
919005-14-4	ADONA	0.0077	U	0.043	0.0481	112	40-150
377-73-1	PFMPA	0.0077	U	0.0455	0.0472	104	40-150
863090-89-5	PFMBA	0.0077	U	0.0455	0.0463	102	40-150
151772-58-6	NFDHA	0.0077	U	0.0455	0.0453	100	40-150
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0077	U	0.0425	0.0436	103	40-150
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0077	U	0.043	0.0404	94	40-150

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-MS	4Q54889.D	1	12/08/23	AL	12/07/23	OP495	S4Q804
FC11715-2	4Q54888.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	FC11715-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
113507-82-7	PFEESA	0.0077	U	0.0405	0.0430	106	40-150
356-02-5	3:3 Fluorotelomer carboxylate	0.019	U	0.114	0.0975	86	40-150
914637-49-3	5:3 Fluorotelomer carboxylate	0.096	U	0.568	0.578	102	40-150
812-70-4	7:3 Fluorotelomer carboxylate	0.096	U	0.568	0.582	102	40-150

CAS No.	ID Standard Recoveries	MS	FC11715-2	Limits
	13C4-PFBA	106%	105%	20-150%
	13C5-PFPeA	107%	104%	20-150%
	13C5-PFHxA	103%	103%	20-150%
	13C4-PFHpA	105%	106%	20-150%
	13C8-PFOA	108%	101%	20-150%
	13C9-PFNA	101%	96%	20-150%
	13C6-PFDA	102%	106%	20-150%
	13C7-PFUnDA	101%	98%	20-150%
	13C2-PFDoDA	90%	91%	20-150%
	13C2-PFTeDA	89%	86%	20-150%
	13C3-PFBS	105%	99%	20-150%
	13C3-PFHxS	104%	101%	20-150%
	13C8-PFOS	94%	92%	20-150%
	13C8-FOSA	86%	76%	20-150%
	d3-MeFOSA	93%	76%	20-150%
	d5-EtFOSA	91%	89%	20-150%
	d3-MeFOSAA	103%	100%	20-150%
	d5-EtFOSAA	104%	96%	20-150%
	d7-MeFOSE	73%	63%	20-150%
	d9-EtFOSE	92%	84%	20-150%
	13C2-4:2FTS	97%	95%	20-180%
	13C2-6:2FTS	108%	101%	20-180%
	13C2-8:2FTS	103%	102%	20-180%
	13C3-HFPO-DA	102%	96%	20-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-DUP	4Q54891.D	1	12/08/23	AL	12/07/23	OP495	S4Q804
FC11715-3	4Q54890.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	FC11715-3 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.016 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0078 U		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0039 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0039 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0039 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0039 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0039 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0039 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0039 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0039 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0039 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0039 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0049 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0039 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0039 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0039 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0039 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0039 U		ND		nc	30
79780-39-5	Perfluorododecanesulfonic aci	0.0049 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.020 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.020 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.020 U		ND		nc	30
754-91-6	PFOSA	0.0039 U		ND		nc	30
31506-32-8	MeFOSA	0.0078 U		ND		nc	30
4151-50-2	EtFOSA	0.0078 U		ND		nc	30
2355-31-9	MeFOSAA	0.0049 U		ND		nc	30
2991-50-6	EtFOSAA	0.0049 U		ND		nc	30
24448-09-7	MeFOSE	0.039 U		ND		nc	30
1691-99-2	EtFOSE	0.039 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0039 U		ND		nc	30
919005-14-4	ADONA	0.0078 U		ND		nc	30
377-73-1	PFMPA	0.0078 U		ND		nc	30
863090-89-5	PFMBA	0.0078 U		ND		nc	30
151772-58-6	NFDHA	0.0078 U		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0078 U		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0078 U		ND		nc	30

* = Outside of Control Limits.

Duplicate Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP495-DUP	4Q54891.D	1	12/08/23	AL	12/07/23	OP495	S4Q804
FC11715-3	4Q54890.D	1	12/08/23	AL	12/07/23	OP495	S4Q804

The QC reported here applies to the following samples: **Method:** EPA DRAFT 1633

FC11689-1

CAS No.	Compound	FC11715-3 ug/l	Q	DUP ug/l	Q	RPD	Limits
113507-82-7	PFEESA	0.0078	U	ND		nc	30
356-02-5	3:3 Fluorotelomer carboxylate	0.020	U	ND		nc	30
914637-49-3	5:3 Fluorotelomer carboxylate	0.098	U	ND		nc	30
812-70-4	7:3 Fluorotelomer carboxylate	0.098	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FC11715-3	Limits
	13C4-PFBA	110%	111%	20-150%
	13C5-PFPeA	106%	109%	20-150%
	13C5-PFHxA	108%	107%	20-150%
	13C4-PFHpA	107%	110%	20-150%
	13C8-PFOA	106%	106%	20-150%
	13C9-PFNA	102%	103%	20-150%
	13C6-PFDA	97%	99%	20-150%
	13C7-PFUnDA	99%	100%	20-150%
	13C2-PFDoDA	84%	86%	20-150%
	13C2-PFTeDA	83%	85%	20-150%
	13C3-PFBS	107%	104%	20-150%
	13C3-PFHxS	114%	107%	20-150%
	13C8-PFOS	108%	94%	20-150%
	13C8-FOSA	75%	79%	20-150%
	d3-MeFOSA	83%	82%	20-150%
	d5-EtFOSA	91%	90%	20-150%
	d3-MeFOSAA	100%	95%	20-150%
	d5-EtFOSAA	97%	90%	20-150%
	d7-MeFOSE	62%	65%	20-150%
	d9-EtFOSE	83%	85%	20-150%
	13C2-4:2FTS	100%	86%	20-180%
	13C2-6:2FTS	111%	111%	20-180%
	13C2-8:2FTS	106%	109%	20-180%
	13C3-HFPO-DA	101%	106%	20-150%

* = Outside of Control Limits.

Injection Standard Area Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q804-CC804	**Injection Date:**	12/08/23
Lab File ID:	4Q54881.D	**Injection Time:**	18:52
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT
Initial Cal [b]	47098	2.68	36865	5.33	56101	6.98	20343	7.51	15577	8.00
Check Std [c]	51927	2.70	38647	5.36	62892	6.99	22009	7.53	16901	8.02
Upper Limit [d]	94196	3.10	73730	5.76	112202	7.39	40686	7.93	31154	8.42
Lower Limit [e]	18839	2.30	14746	4.96	22440	6.59	8137	7.13	6231	7.62

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT	IS 4 AREA	RT	IS 5 AREA	RT	DF [a]
S4Q804-ICCB	49202	2.69	36175	5.36	58077	7.00	21237	7.53	16085	8.02	1
S4Q804-ICCB	49202	2.69	36175	5.36	58077	7.00	21237	7.53	16085	8.02	1
OP495-BS	42736	2.75	30135	5.37	47916	7.00	17467	7.53	13871	8.02	1
OP495-LLBS	42899	2.75	30138	5.37	48276	6.99	17289	7.53	13411	8.02	1
OP495-MB	40730	2.75	28002	5.37	46712	7.00	16250	7.53	12477	8.02	1
FC11689-1	41742	2.75	29916	5.37	47066	7.00	17321	7.53	13489	8.02	1
ZZZZZZ	39842	2.75	28597	5.37	44215	7.00	16307	7.53	12502	8.03	1
FC11715-2	41030	2.75	29693	5.37	47106	7.00	17744	7.53	12789	8.03	1
OP495-MS	42293	2.75	30989	5.37	47845	7.00	17500	7.53	13011	8.03	1
FC11715-3	39669	2.75	29172	5.37	46614	7.00	16700	7.53	12493	8.03	1
OP495-DUP	41483	2.77	30685	5.37	48975	7.00	17583	7.55	13061	8.03	1
ZZZZZZ	40043	2.75	28910	5.37	45350	7.00	15958	7.53	12168	8.03	1

IS 1 = 13C3-PFBA
IS 2 = 13C2-PFHxA
IS 3 = 13C4-PFOA
IS 4 = 13C5-PFNA
IS 5 = 13C2-PFDA

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q804-ICC804 4Q54855.D 12/08/23 12:22. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -60 to +100% of initial cal area.
(d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
(e) Lower Limit = -60% of initial standard area; Retention time -0.4 minutes of check standard.

Injection Standard Area Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Check Std:	S4Q804-CC804	**Injection Date:**	12/08/23
Lab File ID:	4Q54881.D	**Injection Time:**	18:52
Instrument ID:	GCMS4Q	**Method:**	EPA DRAFT 1633

	IS 6 AREA	RT	IS 7 AREA	RT
Initial Cal [b]	4896	7.04	6822	8.12
Check Std [c]	5018	7.05	7540	8.14
Upper Limit [d]	9792	7.45	13644	8.54
Lower Limit [e]	1958	6.65	2729	7.74

Lab Sample ID	IS 6 AREA	RT	IS 7 AREA	RT	DF [a]
S4Q804-ICCB	5080	7.05	7232	8.14	1
S4Q804-ICCB	5080	7.05	7232	8.14	1
OP495-BS	3949	7.05	6267	8.14	1
OP495-LLBS	3935	7.05	6020	8.14	1
OP495-MB	4137	7.05	5453	8.14	1
FC11689-1	4145	7.07	5986	8.14	1
ZZZZZZ	3650	7.07	5674	8.14	1
FC11715-2	4082	7.05	5826	8.14	1
OP495-MS	4074	7.05	5794	8.14	1
FC11715-3	3986	7.07	5600	8.14	1
OP495-DUP	3983	7.05	5731	8.14	1
ZZZZZZ	3715	7.07	5705	8.14	1

IS 6 = 18O2-PFHXS
IS 7 = 13C4-PFOS

(a) Sample areas corrected for dilution where applicable.
(b) Initial Cal is: S4Q804-ICC804 4Q54855.D 12/08/23 12:22. Area is AVERAGE of initial cal points.
(c) Check Std Limit = -60 to +100% of initial cal area.
(d) Upper Limit = +100% of initial standard area; Retention time +0.4 minutes of check standard.
(e) Lower Limit = -60% of initial standard area; Retention time -0.4 minutes of check standard.

TDCA Retention Time Check

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-RT
Lab File ID: 4Q54849.D
Instrument ID: GCMS4Q
Injection Date: 12/08/23
Injection Time: 10:54

Compound	RT (min)	RT Difference	Low Limit
PFOS	8.106	--	--
TDCA	6.759	1.347	1.000
TCDCA	6.610	1.496	1.000
TUDCA	5.766	2.340	1.000

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
S4Q804-IC804	4Q54851.D	12/08/23	11:23	00:29	Mass Calibration Verification
S4Q804-IC804	4Q54852.D	12/08/23	11:38	00:44	Initial cal 1
S4Q804-IC804	4Q54853.D	12/08/23	11:53	00:59	Initial cal 2
S4Q804-IC804	4Q54854.D	12/08/23	12:07	01:13	Initial cal 3
S4Q804-ICC804	4Q54855.D	12/08/23	12:22	01:28	Initial cal 4
S4Q804-IC804	4Q54856.D	12/08/23	12:37	01:43	Initial cal 5
S4Q804-IC804	4Q54857.D	12/08/23	12:52	01:58	Initial cal 6
S4Q804-IC804	4Q54858.D	12/08/23	13:06	02:12	Initial cal 7
S4Q804-IC804	4Q54859.D	12/08/23	13:21	02:27	Initial cal 8
S4Q804-IBLK	4Q54860.D	12/08/23	13:36	02:42	Instrument Blank
S4Q804-IBLK	4Q54860.D	12/08/23	13:36	02:42	Instrument Blank
S4Q804-ICV804	4Q54861.D	12/08/23	13:51	02:57	Initial cal verification 4
S4Q804-ICV804	4Q54862.D	12/08/23	14:05	03:11	Initial cal verification 20
S4Q804-CC804	4Q54863.D	12/08/23	14:20	03:26	Continuing cal 4
S4Q804-CC804	4Q54864.D	12/08/23	14:40	03:46	Continuing cal 1.0LL
OP471-BS	4Q54865.D	12/08/23	14:55	04:01	Blank Spike
OP471-LLBS	4Q54866.D	12/08/23	15:10	04:16	Blank Spike
OP471-MB	4Q54867.D	12/08/23	15:24	04:30	Method Blank
ZZZZZZ	4Q54868.D	12/08/23	15:39	04:45	(unrelated sample)
ZZZZZZ	4Q54869.D	12/08/23	15:54	05:00	(unrelated sample)
ZZZZZZ	4Q54870.D	12/08/23	16:09	05:15	(unrelated sample)
ZZZZZZ	4Q54871.D	12/08/23	16:24	05:30	(unrelated sample)
S4Q804-CC804	4Q54872.D	12/08/23	16:39	05:45	Continuing cal 4
S4Q804-ICCB	4Q54873.D	12/08/23	16:53	05:59	Continuing Calibration Blank
S4Q804-ICCB	4Q54873.D	12/08/23	16:53	05:59	Continuing Calibration Blank
S4Q804-CC804	4Q54881.D	12/08/23	18:52	07:58	Continuing cal 4
S4Q804-ICCB	4Q54882.D	12/08/23	19:06	08:12	Continuing Calibration Blank
S4Q804-ICCB	4Q54882.D	12/08/23	19:06	08:12	Continuing Calibration Blank
OP495-BS	4Q54883.D	12/08/23	19:21	08:27	Blank Spike
OP495-LLBS	4Q54884.D	12/08/23	19:36	08:42	Blank Spike
OP495-MB	4Q54885.D	12/08/23	19:51	08:57	Method Blank
FC11689-1	4Q54886.D	12/08/23	20:05	09:11	AF-RHMW16-WGN01LF-2312
ZZZZZZ	4Q54887.D	12/08/23	20:20	09:26	(unrelated sample)
FC11715-2	4Q54888.D	12/08/23	20:35	09:41	(used for QC only; not part of job FC11689)

TDCA Retention Time Check

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q804-RT	**Injection Date:**	12/08/23
Lab File ID:	4Q54849.D	**Injection Time:**	10:54
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
OP495-MS	4Q54889.D	12/08/23	20:50	09:56	Matrix Spike
FC11715-3	4Q54890.D	12/08/23	21:04	10:10	(used for QC only; not part of job FC11689)
OP495-DUP	4Q54891.D	12/08/23	21:19	10:25	Duplicate
ZZZZZZ	4Q54892.D	12/08/23	21:34	10:40	(unrelated sample)
S4Q804-CC804	4Q54893.D	12/08/23	21:49	10:55	Continuing cal 4
S4Q804-ICCB	4Q54894.D	12/08/23	22:03	11:09	Continuing Calibration Blank
OP496-BS	4Q54895.D	12/08/23	22:18	11:24	Blank Spike
OP496-LLBS	4Q54896.D	12/08/23	22:33	11:39	Blank Spike
OP496-MB	4Q54897.D	12/08/23	22:48	11:54	Method Blank
ZZZZZZ	4Q54898.D	12/08/23	23:02	12:08	(unrelated sample)
ZZZZZZ	4Q54899.D	12/08/23	23:17	12:23	(unrelated sample)
ZZZZZZ	4Q54900.D	12/08/23	23:32	12:38	(unrelated sample)
ZZZZZZ	4Q54901.D	12/08/23	23:47	12:53	(unrelated sample)
ZZZZZZ	4Q54902.D	12/09/23	00:01	13:07	(unrelated sample)
FC11673-1	4Q54903.D	12/09/23	00:16	13:22	(used for QC only; not part of job FC11689)
OP496-MS	4Q54904.D	12/09/23	00:31	13:37	Matrix Spike
S4Q804-CC804	4Q54905.D	12/09/23	00:46	13:52	Continuing cal 4
S4Q804-ICCB	4Q54906.D	12/09/23	01:00	14:06	Continuing Calibration Blank
FC11673-2	4Q54907.D	12/09/23	01:15	14:21	(used for QC only; not part of job FC11689)
OP496-DUP	4Q54908.D	12/09/23	01:30	14:36	Duplicate
ZZZZZZ	4Q54909.D	12/09/23	01:45	14:51	(unrelated sample)
ZZZZZZ	4Q54910.D	12/09/23	01:59	15:05	(unrelated sample)
ZZZZZZ	4Q54911.D	12/09/23	02:14	15:20	(unrelated sample)
OP519-BS	4Q54912.D	12/09/23	02:29	15:35	Blank Spike
OP519-LLBS	4Q54913.D	12/09/23	02:44	15:50	Blank Spike
OP519-MB	4Q54914.D	12/09/23	02:59	16:05	Method Blank
ZZZZZZ	4Q54915.D	12/09/23	03:13	16:19	(unrelated sample)
ZZZZZZ	4Q54916.D	12/09/23	03:28	16:34	(unrelated sample)
S4Q804-CC804	4Q54917.D	12/09/23	03:43	16:49	Continuing cal 4
S4Q804-ICCB	4Q54918.D	12/09/23	03:58	17:04	Continuing Calibration Blank
ZZZZZZ	4Q54919.D	12/09/23	04:12	17:18	(unrelated sample)
ZZZZZZ	4Q54920.D	12/09/23	04:27	17:33	(unrelated sample)
ZZZZZZ	4Q54921.D	12/09/23	04:42	17:48	(unrelated sample)
ZZZZZZ	4Q54922.D	12/09/23	04:57	18:03	(unrelated sample)
ZZZZZZ	4Q54923.D	12/09/23	05:11	18:17	(unrelated sample)
ZZZZZZ	4Q54924.D	12/09/23	05:26	18:32	(unrelated sample)
ZZZZZZ	4Q54925.D	12/09/23	05:41	18:47	(unrelated sample)
ZZZZZZ	4Q54926.D	12/09/23	05:56	19:02	(unrelated sample)
ZZZZZZ	4Q54927.D	12/09/23	06:10	19:16	(unrelated sample)
FC11645-12	4Q54928.D	12/09/23	06:25	19:31	(used for QC only; not part of job FC11689)
S4Q804-CC804	4Q54929.D	12/09/23	06:40	19:46	Continuing cal 4
S4Q804-ICCB	4Q54930.D	12/09/23	06:55	20:01	Continuing Calibration Blank
OP519-MS	4Q54931.D	12/09/23	07:10	20:16	Matrix Spike
ZZZZZZ	4Q54932.D	12/09/23	07:24	20:30	(unrelated sample)

TDCA Retention Time Check

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample:	S4Q804-RT	**Injection Date:**	12/08/23
Lab File ID:	4Q54849.D	**Injection Time:**	10:54
Instrument ID:	GCMS4Q		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
FC11645-14	4Q54933.D	12/09/23	07:39	20:45	(used for QC only; not part of job FC11689)
OP519-DUP	4Q54934.D	12/09/23	07:54	21:00	Duplicate
ZZZZZZ	4Q54935.D	12/09/23	08:09	21:15	(unrelated sample)
ZZZZZZ	4Q54936.D	12/09/23	08:23	21:29	(unrelated sample)
ZZZZZZ	4Q54937.D	12/09/23	08:38	21:44	(unrelated sample)
ZZZZZZ	4Q54938.D	12/09/23	08:53	21:59	(unrelated sample)
S4Q804-ECC804	4Q54940.D	12/09/23	09:22	22:28	Ending cal 4
S4Q804-ICCB	4Q54941.D	12/09/23	09:37	22:43	Continuing Calibration Blank

Isotope Dilution Standard Recovery Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FC11689-1	4Q54886.D	111	110	110	110	109	101	102	102
OP495-BS	4Q54883.D	76	113	110	116	111	108	105	109
OP495-DUP	4Q54891.D	110	106	108	107	106	102	97	99
OP495-LLBS	4Q54884.D	111	111	108	113	107	105	106	111
OP495-MB	4Q54885.D	119	122	120	126	112	112	118	109
OP495-MS	4Q54889.D	106	107	103	105	108	101	102	101
S4Q804-IBLK	4Q54860.D	100	101	96	102	98	100	105	108
S4Q804-ICCB	4Q54882.D	101	102	102	106	100	101	102	105

Isotope Dilution Standards	Recovery Limits
S1 = 13C4-PFBA	20-150%
S2 = 13C5-PFPeA	20-150%
S3 = 13C5-PFHxA	20-150%
S4 = 13C4-PFHpA	20-150%
S5 = 13C8-PFOA	20-150%
S6 = 13C9-PFNA	20-150%
S7 = 13C6-PFDA	20-150%
S8 = 13C7-PFUnDA	20-150%

Isotope Dilution Standard Recovery Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FC11689-1	4Q54886.D	87	80	104	105	93	82	76	82
OP495-BS	4Q54883.D	96	90	112	117	98	75	80	78
OP495-DUP	4Q54891.D	84	83	107	114	108	75	83	91
OP495-LLBS	4Q54884.D	96	90	111	118	98	80	76	78
OP495-MB	4Q54885.D	103	94	106	110	115	73	79	88
OP495-MS	4Q54889.D	90	89	105	104	94	86	93	91
S4Q804-IBLK	4Q54860.D	102	101	99	100	92	97		
S4Q804-ICCB	4Q54882.D	96	97	100	102	95	102		

Isotope Dilution Standards	Recovery Limits
S9 = 13C2-PFDoDA	20-150%
S10 = 13C2-PFTeDA	20-150%
S11 = 13C3-PFBS	20-150%
S12 = 13C3-PFHxS	20-150%
S13 = 13C8-PFOS	20-150%
S14 = 13C8-FOSA	20-150%
S15 = d3-MeFOSA	20-150%
S16 = d5-EtFOSA	20-150%

Isotope Dilution Standard Recovery Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Method: EPA DRAFT 1633 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20	S21	S22	S23	S24
FC11689-1	4Q54886.D	102	92	57	75	93	98	99	105
OP495-BS	4Q54883.D	96	99	54	69	91	108	119	107
OP495-DUP	4Q54891.D	100	97	62	83	100	111	106	101
OP495-LLBS	4Q54884.D	103	101	56	69	103	107	114	108
OP495-MB	4Q54885.D	114	109	57	76	112	106	105	117
OP495-MS	4Q54889.D	103	104	73	92	97	108	103	102
S4Q804-IBLK	4Q54860.D	100	100			102	105	102	
S4Q804-ICCB	4Q54882.D	97	98			108	102	98	

Isotope Dilution Standards	Recovery Limits
S17 = d3-MeFOSAA	20-150%
S18 = d5-EtFOSAA	20-150%
S19 = d7-MeFOSE	20-150%
S20 = d9-EtFOSE	20-150%
S21 = 13C2-4:2FTS	20-180%
S22 = 13C2-6:2FTS	20-180%
S23 = 13C2-8:2FTS	20-180%
S24 = 13C3-HFPO-DA	20-150%

Initial Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-ICC804
Lab FileID: 4Q54855.D

Initial Calibration Report

Method Path	D:\MassHunter\methods
Method File	1633_120823_S4Q804.quantmethod.xml
Batch Name	D:\MassHunter\Data\120823_1633_S4Q804\QuantResults\s4q804.batch.bin
Last Calib Update	12/10/2023 9:56:17 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\120823_1633_S4Q804\4Q54852.d	12/8/2023 11:38:18 AM	12/10/2023 9:56:17 AM
2	D:\MassHunter\Data\120823_1633_S4Q804\4Q54853.d	12/8/2023 11:53:03 AM	12/10/2023 9:56:17 AM
3	D:\MassHunter\Data\120823_1633_S4Q804\4Q54854.d	12/8/2023 12:07:50 PM	12/10/2023 9:56:17 AM
4	D:\MassHunter\Data\120823_1633_S4Q804\4Q54855.d	12/8/2023 12:22:33 PM	12/10/2023 9:56:17 AM
5	D:\MassHunter\Data\120823_1633_S4Q804\4Q54856.d	12/8/2023 12:37:18 PM	12/10/2023 9:56:17 AM
6	D:\MassHunter\Data\120823_1633_S4Q804\4Q54857.d	12/8/2023 12:52:03 PM	12/10/2023 9:56:17 AM
7	D:\MassHunter\Data\120823_1633_S4Q804\4Q54858.d	12/8/2023 1:06:48 PM	12/10/2023 9:56:17 AM
8	D:\MassHunter\Data\120823_1633_S4Q804\4Q54859.d	12/8/2023 1:21:34 PM	12/10/2023 9:56:17 AM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFBA				---------- ISTD ----------							
T PFBA	Avg RF	0.3061	0.2657	0.3201	0.2935	0.3249	0.3318	0.3440	0.3760	0.3203	10.364
T 3:3FTCA	Avg RF	0.0445	0.0423	0.0485	0.0465	0.0500	0.0525	0.0556	0.0674	0.0509	15.552
I M5-PFPeA				---------- ISTD ----------							
T PFMPA	Avg RF	0.5830	0.5132	0.5784	0.5423	0.6013	0.6074	0.6372	0.6992	0.5952	9.571
T PFPeA	Avg RF	0.9568	0.8405	0.9679	0.9101	0.9942	1.0205	1.0548	1.1253	0.9838	8.884
T PFMBA	Avg RF	0.5313	0.4603	0.5378	0.5046	0.5452	0.5528	0.5753	0.6262	0.5417	8.968
I M5-PFHxA				---------- ISTD ----------							
T NFDHA	Avg RF	0.0555	0.0605	0.0537	0.0521	0.0537	0.0554	0.0552	0.0531	0.0549	4.640
T PFHxA	Avg RF	0.7897	0.7008	0.7728	0.7422	0.7921	0.8182	0.8363	0.9300	0.7978	8.555
T PFEESA	Avg RF	0.5503	0.5132	0.5932	0.5474	0.6113	0.6260	0.6221	0.6535	0.5896	8.137
T 5:3FTCA	Avg RF	0.1290	0.1242	0.1428	0.1312	0.1459	0.1493	0.1496	0.1662	0.1423	9.626
T 7:3FTCA	Avg RF	0.0710	0.0646	0.0759	0.0700	0.0773	0.0773	0.0771	0.0837	0.0746	7.829
I M4-PFHpA				---------- ISTD ----------							
T PFHpA	Avg RF	1.3675	1.1148	1.3865	1.3069	1.4395	1.4941	1.5356	1.6152	1.4075	10.938
I M8-PFOA				---------- ISTD ----------							
T PFOA	Avg RF	0.9501	0.9560	1.0203	0.8991	1.0464	1.0744	1.0973	1.1811	1.0281	8.904
I M9-PFNA				---------- ISTD ----------							
T PFNA	Avg RF	0.6669	0.6340	0.7517	0.6691	0.7093	0.7636	0.8064	0.8739	0.7344	10.956
I M6-PFDA				---------- ISTD ----------							
T PFDA	Avg RF	1.0828	0.7542	0.9499	0.8074	0.9278	0.9351	0.9172	0.9715	0.9182	10.930
I M7-PFUnDA				---------- ISTD ----------							
T PFUnDA	Avg RF	0.7452	0.7725	0.8289	0.8403	0.9687	0.9663	1.0092	1.1428	0.9092	14.882
I M2-PFDoDA				---------- ISTD ----------							

Generated at 9:56 AM on 12/10/2023

Initial Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-ICC804
Lab FileID: 4Q54855.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T PFDoDA	Avg RF	0.7822	0.8066	0.8860	0.8526	0.9452	0.9770	0.9580	0.9944	0.9002	8.936
T PFTrDA	Avg RF	0.8840	0.8423	1.0192	0.9424	1.0483	1.0843	1.0239	0.9813	0.9782	8.517
I M2-PFTeDA						ISTD					
T PFTeDA	Avg RF	0.8889	0.7933	0.8442	0.8228	0.8868	0.8790	0.9284	0.9166	0.8700	5.334
I M8-FOSA						ISTD					
T FOSA	Avg RF	1.0846	1.0594	1.1081	1.0362	1.1089	1.1291	1.1850	1.2786	1.1237	6.857
I M3-PFBS						ISTD					
T PFBS	Avg RF	0.8212	0.7025	0.7440	0.6879	0.7491	0.8097	0.8264	0.8638	0.7756	8.201
I M3-PFHxS						ISTD					
T PFPeS	Avg RF	0.6462	0.6394	0.7694	0.7032	0.7896	0.8087	0.8031	0.9159	0.7594	12.214
T PFHxS	Avg RF	0.8207	0.7405	0.7614	0.7747	0.8256	0.8360	0.8057	0.8860	0.8063	5.773
I M8-PFOS						ISTD					
T PFHpS	Avg RF	0.9965	0.7918	0.9927	0.8838	1.0560	0.9737	1.0728	1.1687	0.9920	11.681
T PFOS	Avg RF	1.3344	0.9831	1.0162	0.8171	1.0254	0.9794	1.0542	1.1143	1.0405	14.058
T PFNS	Avg RF	0.4194	0.4062	0.5205	0.4491	0.5055	0.4707	0.4888	0.4856	0.4682	8.637
T PFDS	Avg RF	0.6881	0.5153	0.6644	0.6076	0.6981	0.6636	0.7002	0.7851	0.6653	11.782
T PFDoDS	Avg RF	0.4797	0.4338	0.5055	0.4542	0.5308	0.5160	0.5509	0.5886	0.5074	10.031
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	8.2861	6.9217	9.3603	7.8661	9.1663	8.9966	9.1446	9.1491	8.6113	9.919
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	5.2673	4.2599	5.3220	4.6911	5.3419	5.7144	6.1540	5.2940	5.2556	11.004
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	2.5839	2.6253	2.8865	2.6058	2.9980	2.7664	2.8184	2.6911	2.7469	5.371
I M3-MeFOSAA						ISTD					
T MeFOSAA	Avg RF	0.7128	0.6906	0.7952	0.6882	0.8090	0.8118	0.8635	0.8864	0.7822	9.818
I M3-HFPO-DA						ISTD					
T HFPO-DA	Avg RF	0.8843	0.7931	0.9794	0.9086	0.9802	1.0122	1.0122	1.0847	0.9569	9.506
T ADONA	Avg RF	6.8601	6.3259	7.4904	7.0857	7.6908	7.9395	7.7679	8.2399	7.4250	8.462
T 9Cl-PF3ONS	Avg RF	2.6270	2.5577	2.9241	2.8189	2.9961	2.9736	2.7780	2.5892	2.7831	6.306
T 11Cl-PF3OUdS	Avg RF	2.5355	2.2934	2.8066	2.6559	2.8863	3.0222	2.8897	2.9378	2.7534	8.832
I M5-EtFOSAA						ISTD					
T EtFOSAA	Avg RF	0.8896	0.7816	0.9373	0.8988	0.8813	0.9150	0.9808	1.0130	0.9122	7.665
I M7-MeFOSE						ISTD					
T MeFOSE	Avg RF	1.0315	0.8251	0.9563	0.9324	0.9635	1.0239	1.0619	1.1410	0.9919	9.577
I M9-EtFOSE						ISTD					
T EtFOSE	Avg RF	0.8987	0.7512	0.8839	0.8453	0.8649	0.9067	0.9353	0.9920	0.8848	7.937

Generated at 9:56 AM on 12/10/2023

Initial Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-ICC804
Lab FileID: 4Q54855.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M5-EtFOSA						ISTD					
T EtFOSA	Avg RF	1.0696	0.9403	1.0893	1.0088	1.0409	1.0911	1.0498	1.2250	1.0644	7.650
I M3-MeFOSA						ISTD					
T MeFOSA	Avg RF	0.8408	0.8206	0.9137	0.8425	0.9604	0.9087	0.8867	0.9478	0.8901	5.810
I 13C4-PFOS						ISTD					
S d3-MeFOSAA	Avg RF	1.4126	1.5182	1.4011	1.4483	1.2800	1.3483	1.3725	1.3217	1.3878	5.394
S 13C8-PFOS	Avg RF	1.2266	1.3166	1.2468	1.3234	1.1286	1.2828	1.2913	1.3115	1.2660	5.139
S d5-EtFOSAA	Avg RF	1.1442	1.2596	1.1560	1.2088	1.1009	1.1868	1.1561	1.1793	1.1740	4.022
S 13C8-FOSA	Avg RF	1.6548	1.6307	1.6536	1.6624	1.5098	1.6077	1.6165	1.6269	1.6203	3.007
S d7-MeFOSE	Avg RF	0.7730	0.8675	0.8184	0.7736	0.7786	0.8043	0.8033	0.7757	0.7993	4.066
S d3-MeFOSA	Avg RF	0.9230	0.9524	0.9249	0.9356	0.8531	0.9361	1.0715	1.1355	0.9665	9.430
S d9-EtFOSE	Avg RF	0.8960	0.9460	0.8963	0.8898	0.8744	0.8708	0.8887	0.8991	0.8951	2.567
S d5-EtFOSA	Avg RF	1.0250	1.0731	1.0236	1.0255	1.0008	1.0465	1.1537	1.1295	1.0597	5.197
I 13C3-PFBA						ISTD					
S 13C4-PFBA	Avg RF	1.0465	1.0639	1.0577	1.0371	1.0609	1.0528	1.0432	1.0369	1.0499	1.003
I 18O2-PFHxS						ISTD					
S 13C2-4:2FTS	Avg RF	0.1276	0.1370	0.1220	0.1303	0.1164	0.1122	0.1057	0.0982	0.1187	11.020
S 13C3-PFBS	Avg RF	1.8131	1.9229	1.8594	1.9060	1.9700	1.9128	1.9485	1.9976	1.9163	3.093
S 13C2-6:2FTS	Avg RF	0.2640	0.2873	0.2764	0.2858	0.2730	0.2411	0.2118	0.2198	0.2574	11.470
S 13C3-PFHxS	Avg RF	1.5385	1.5100	1.5928	1.5711	1.5716	1.5475	1.6229	1.5864	1.5676	2.241
S 13C2-8:2FTS	Avg RF	0.3451	0.3547	0.3570	0.3726	0.3446	0.3414	0.3232	0.3185	0.3447	5.134
I 13C4-PFOA						ISTD					
S 13C8-PFOA	Avg RF	0.9331	0.9424	0.9246	0.9343	0.9235	0.9144	0.9018	0.9170	0.9239	1.395
I 13C2-PFDA						ISTD					
S 13C6-PFDA	Avg RF	0.8353	0.9384	0.9084	0.9152	0.8933	0.9202	0.9111	0.9541	0.9095	3.888
S 13C7-PFUnDA	Avg RF	1.1268	1.1553	1.1989	1.1360	1.0618	1.0859	0.9602	0.8538	1.0723	10.606
S 13C2-PFDoDA	Avg RF	1.1845	1.2539	1.2555	1.2116	1.2065	1.2397	1.2386	1.4039	1.2493	5.381
S 13C2-PFTeDA	Avg RF	1.1634	1.1705	1.2155	1.1490	1.2378	1.3194	1.2237	1.4483	1.2410	8.030
I 13C5-PFNA						ISTD					
S 13C9-PFNA	Avg RF	1.0237	0.9403	0.9946	1.0295	1.0403	1.0512	0.9467	0.9858	1.0015	4.182
I 13C2-PFHxA						ISTD					
S 13C5-PFPeA	Avg RF	0.5828	0.5642	0.5835	0.5670	0.5890	0.5815	0.5754	0.5470	0.5738	2.399
S 13C5-PFHxA	Avg RF	0.9450	0.9031	0.9111	0.9074	0.9401	0.9282	0.9508	0.8835	0.9211	2.561
S 13C3-HFPO-DA	Avg RF	0.2393	0.2286	0.2283	0.2228	0.2338	0.2258	0.2364	0.2264	0.2302	2.488
S 13C4-PFHpA	Avg RF	0.9002	0.8934	0.8862	0.8817	0.9044	0.8674	0.8765	0.8390	0.8811	2.375

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 9:56 AM on 12/10/2023

Initial Calibration Verification

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-ICV804
Lab FileID: 4Q54861.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\120823_1633_S4Q804\s4q804.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\120823_1633_S4Q804\4Q54852.d
2:D:\MassHunter\Data\120823_1633_S4Q804\4Q54853.d
3:D:\MassHunter\Data\120823_1633_S4Q804\4Q54854.d
4:D:\MassHunter\Data\120823_1633_S4Q804\4Q54855.d
5:D:\MassHunter\Data\120823_1633_S4Q804\4Q54856.d
6:D:\MassHunter\Data\120823_1633_S4Q804\4Q54857.d
7:D:\MassHunter\Data\120823_1633_S4Q804\4Q54858.d
8:D:\MassHunter\Data\120823_1633_S4Q804\4Q54859.d

Data File: 4Q54861
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.926	-1.5	98.5
13C2-6:2FTS	5.000	5.039	0.8	100.8
13C2-8:2FTS	5.000	4.888	-2.2	97.8
13C2-PFDoDA	1.250	1.185	-5.2	94.8
13C2-PFTeDA	1.250	1.200	-4.0	96.0
13C3-PFBS	2.500	2.479	-0.8	99.2
13C3-PFHxS	2.500	2.549	2.0	102.0
13C4-PFBA	10.000	10.031	0.3	100.3
13C4-PFHpA	2.500	2.518	0.7	100.7
13C5-PFHxA	2.500	2.411	-3.5	96.5
13C5-PFPeA	5.000	5.052	1.0	101.0
13C6-PFDA	1.250	1.210	-3.2	96.8
13C7-PFUnDA	1.250	1.282	2.5	102.5
13C8-FOSA	2.500	2.500	0.0	100.0
13C8-PFOA	2.500	2.449	-2.0	98.0
13C8-PFOS	2.500	2.320	-7.2	92.8
13C9-PFNA	1.250	1.225	-2.0	98.0
4:2FTS	9.375	8.909	-5.0	95.0
6:2FTS	9.500	9.182	-3.3	96.7
8:2FTS	9.600	9.853	2.6	102.6
d3-MeFOSAA	5.000	4.736	-5.3	94.7
EtFOSAA	2.500	2.371	-5.2	94.8
FOSA	2.500	2.384	-4.6	95.4
MeFOSAA	2.500	2.832	13.3	113.3
PFBA	10.000	9.519	-4.8	95.2
PFBS	2.218	2.065	-6.9	93.1
PFDA	2.500	2.335	-6.6	93.4
PFDoDA	2.500	2.476	-1.0	99.0
PFDS	2.413	2.404	-0.4	99.6
PFHpA	2.500	2.366	-5.4	94.6
PFHpS	2.383	2.256	-5.3	94.7
PFHxA	2.500	2.374	-5.1	94.9
PFHxS	2.285	1.932	-15.5	84.5
PFNA	2.500	2.296	-8.2	91.8
PFNS	2.405	2.551	6.1	106.1
PFOA	2.500	2.321	-7.2	92.8
PFOS	2.320	2.237	-3.6	96.4

Initial Calibration Verification

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-ICV804
Lab FileID: 4Q54861.D

PFPeA	5.000	4.576	-8.5	91.5
PFPeS	2.353	2.204	-6.3	93.7
PFTeDA	2.500	2.431	-2.7	97.3
PFTrDA	2.500	2.611	4.4	104.4
PFUnDA	2.500	2.446	-2.2	97.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	4.836	2.3	102.3
13C3-HFPO-DA	10.000	9.732	-2.7	97.3
9Cl-PF3ONS	4.675	4.723	1.0	101.0
ADONA	4.725	5.112	8.2	108.2
HFPO-DA	5.000	4.814	-3.7	96.3
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.548	-7.5	92.5
5:3FTCA	62.400	61.374	-1.6	98.4
7:3FTCA	62.400	61.084	-2.1	97.9
d3-MeFOSA	2.500	2.473	-1.1	98.9
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.673	-6.5	93.5
EtFOSE	12.500	11.744	-6.0	94.0
MeFOSA	5.000	4.533	-9.3	90.7
MeFOSE	12.500	11.867	-5.1	94.9
PFDoDS	2.425	2.474	2.0	102.0
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.787	-4.3	95.7
d7-MeFOSE	25.000	23.968	-4.1	95.9
d9-EtFOSE	25.000	24.996	0.0	100.0
d5-EtFOSA	2.500	2.419	-3.2	96.8
NFDHA	5.000	5.047	0.9	100.9
PFMBA	5.000	4.745	-5.1	94.9
PFMPA	5.000	4.674	-6.5	93.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.463	0.3	100.3

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-ICV804
Lab FileID: 4Q54862.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\120823_1633_S4Q804\s4q804.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\120823_1633_S4Q804\4Q54852.d
2:D:\MassHunter\Data\120823_1633_S4Q804\4Q54853.d
3:D:\MassHunter\Data\120823_1633_S4Q804\4Q54854.d
4:D:\MassHunter\Data\120823_1633_S4Q804\4Q54855.d
5:D:\MassHunter\Data\120823_1633_S4Q804\4Q54856.d
6:D:\MassHunter\Data\120823_1633_S4Q804\4Q54857.d
7:D:\MassHunter\Data\120823_1633_S4Q804\4Q54858.d
8:D:\MassHunter\Data\120823_1633_S4Q804\4Q54859.d

Data File: 4Q54862
Type : QC
Level : 20

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.870	-2.6	97.4
13C2-6:2FTS	5.000	5.005	0.1	100.1
13C2-8:2FTS	5.000	4.978	-0.4	99.6
13C2-PFDoDA	1.250	1.231	-1.5	98.5
13C2-PFTeDA	1.250	1.235	-1.2	98.8
13C3-PFBS	2.500	2.507	0.3	100.3
13C3-PFHxS	2.500	2.576	3.0	103.0
13C4-PFBA	10.000	10.025	0.3	100.3
13C4-PFHpA	2.500	2.423	-3.1	96.9
13C5-PFHxA	2.500	2.387	-4.5	95.5
13C5-PFPeA	5.000	4.972	-0.6	99.4
13C6-PFDA	1.250	1.286	2.9	102.9
13C7-PFUnDA	1.250	1.195	-4.4	95.6
13C8-FOSA	2.500	2.351	-6.0	94.0
13C8-PFOA	2.500	2.471	-1.2	98.8
13C8-PFOS	2.500	2.598	3.9	103.9
13C9-PFNA	1.250	1.280	2.4	102.4
4:2FTS	20.000	19.764	-1.2	98.8
6:2FTS	20.000	20.220	1.1	101.1
8:2FTS	20.000	18.837	-5.8	94.2
d3-MeFOSAA	5.000	4.940	-1.2	98.8
EtFOSAA	20.000	18.868	-5.7	94.3
FOSA	20.000	18.537	-7.3	92.7
MeFOSAA	20.000	20.454	2.3	102.3
PFBA	20.000	18.106	-9.5	90.5
PFBS	20.000	18.997	-5.0	95.0
PFDA	20.000	18.331	-8.3	91.7
PFDoDA	20.000	17.537	-12.3	87.7
PFDS	20.000	18.270	-8.6	91.4
PFHpA	20.000	19.264	-3.7	96.3
PFHpS	20.000	17.835	-10.8	89.2
PFHxA	20.000	20.784	3.9	103.9
PFHxS	20.000	19.687	-1.6	98.4
PFNA	20.000	19.869	-0.7	99.3
PFNS	20.000	19.096	-4.5	95.5
PFOA	20.000	19.084	-4.6	95.4
PFOS	20.000	15.948	-20.3	79.7

Initial Calibration Verification

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-ICV804
Lab FileID: 4Q54862.D

PFPeA	20.000	18.734	-6.3	93.7
PFPeS	20.000	20.118	0.6	100.6
PFTeDA	20.000	20.701	3.5	103.5
PFTrDA	20.000	18.556	-7.2	92.8
PFUnDA	20.000	19.442	-2.8	97.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.287	-3.6	96.4
13C3-HFPO-DA	10.000	10.008	0.1	100.1
9Cl-PF3ONS	20.000	18.678	-6.6	93.4
ADONA	20.000	21.036	5.2	105.2
HFPO-DA	20.000	18.433	-7.8	92.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	20.000	18.323	-8.4	91.6
5:3FTCA	20.000	20.793	4.0	104.0
7:3FTCA	20.000	19.323	-3.4	96.6
d3-MeFOSA	2.500	2.626	5.0	105.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	20.000	17.593	-12.0	88.0
EtFOSE	100.000	98.043	-2.0	98.0
MeFOSA	20.000	17.902	-10.5	89.5
MeFOSE	100.000	103.457	3.5	103.5
PFDoDS	20.000	17.621	-11.9	88.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.848	-3.0	97.0
d7-MeFOSE	25.000	24.738	-1.0	99.0
d9-EtFOSE	25.000	24.568	-1.7	98.3
d5-EtFOSA	2.500	2.447	-2.1	97.9
NFDHA	20.000	18.485	-7.6	92.4
PFMBA	20.000	19.037	-4.8	95.2
PFMPA	20.000	19.191	-4.0	96.0
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	20.000	17.680	-11.6	88.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-CC804
Lab FileID: 4Q54863.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\120823_1633_S4Q804\s4q804.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\120823_1633_S4Q804\4Q54852.d
2:D:\MassHunter\Data\120823_1633_S4Q804\4Q54853.d
3:D:\MassHunter\Data\120823_1633_S4Q804\4Q54854.d
4:D:\MassHunter\Data\120823_1633_S4Q804\4Q54855.d
5:D:\MassHunter\Data\120823_1633_S4Q804\4Q54856.d
6:D:\MassHunter\Data\120823_1633_S4Q804\4Q54857.d
7:D:\MassHunter\Data\120823_1633_S4Q804\4Q54858.d
8:D:\MassHunter\Data\120823_1633_S4Q804\4Q54859.d

Data File: 4Q54863
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.504	-9.9	90.1
13C2-6:2FTS	5.000	4.910	-1.8	98.2
13C2-8:2FTS	5.000	4.826	-3.5	96.5
13C2-PFDoDA	1.250	1.251	0.1	100.1
13C2-PFTeDA	1.250	1.273	1.9	101.9
13C3-PFBS	2.500	2.448	-2.1	97.9
13C3-PFHxS	2.500	2.513	0.5	100.5
13C4-PFBA	10.000	9.893	-1.1	98.9
13C4-PFHpA	2.500	2.473	-1.1	98.9
13C5-PFHxA	2.500	2.487	-0.5	99.5
13C5-PFPeA	5.000	4.936	-1.3	98.7
13C6-PFDA	1.250	1.268	1.5	101.5
13C7-PFUnDA	1.250	1.286	2.9	102.9
13C8-FOSA	2.500	2.524	1.0	101.0
13C8-PFOA	2.500	2.453	-1.9	98.1
13C8-PFOS	2.500	2.390	-4.4	95.6
13C9-PFNA	1.250	1.215	-2.8	97.2
4:2FTS	9.375	9.746	4.0	104.0
6:2FTS	9.500	9.107	-4.1	95.9
8:2FTS	9.600	9.614	0.1	100.1
d3-MeFOSAA	5.000	5.112	2.2	102.2
EtFOSAA	2.500	2.168	-13.3	86.7
FOSA	2.500	2.308	-7.7	92.3
MeFOSAA	2.500	2.460	-1.6	98.4
PFBA	10.000	9.376	-6.2	93.8
PFBS	2.218	2.091	-5.7	94.3
PFDA	2.500	2.275	-9.0	91.0
PFDoDA	2.500	2.451	-1.9	98.1
PFDS	2.413	2.361	-2.2	97.8
PFHpA	2.500	2.311	-7.6	92.4
PFHpS	2.383	2.437	2.2	102.2
PFHxA	2.500	2.182	-12.7	87.3
PFHxS	2.285	2.152	-5.8	94.2
PFNA	2.500	2.271	-9.2	90.8
PFNS	2.405	2.592	7.8	107.8
PFOA	2.500	2.314	-7.4	92.6
PFOS	2.320	2.171	-6.4	93.6

Continuing Calibration Summary

Job Number: FC11689 **Sample:** S4Q804-CC804
Account: AECOMCOD AECOM, INC. **Lab FileID:** 4Q54863.D
Project: N6274223F0104 RH Fire Suppression System

PFPeA	5.000	4.591	-8.2	91.8
PFPeS	2.353	2.229	-5.3	94.7
PFTeDA	2.500	2.237	-10.5	89.5
PFTrDA	2.500	2.450	-2.0	98.0
PFUnDA	2.500	2.402	-3.9	96.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	4.471	-5.4	94.6
13C3-HFPO-DA	10.000	9.625	-3.7	96.3
9Cl-PF3ONS	4.675	4.794	2.5	102.5
ADONA	4.725	4.830	2.2	102.2
HFPO-DA	5.000	4.720	-5.6	94.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.180	-10.4	89.6
5:3FTCA	62.400	57.493	-7.9	92.1
7:3FTCA	62.400	57.776	-7.4	92.6
d3-MeFOSA	2.500	2.399	-4.0	96.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.875	-2.5	97.5
EtFOSE	12.500	11.650	-6.8	93.2
MeFOSA	5.000	4.743	-5.1	94.9
MeFOSE	12.500	11.974	-4.2	95.8
PFDoDS	2.425	2.383	-1.7	98.3
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.004	0.1	100.1
d7-MeFOSE	25.000	23.740	-5.0	95.0
d9-EtFOSE	25.000	24.009	-4.0	96.0
d5-EtFOSA	2.500	2.316	-7.3	92.7
NFDHA	5.000	4.663	-6.7	93.3
PFMBA	5.000	4.667	-6.7	93.3
PFMPA	5.000	4.597	-8.1	91.9
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.144	-6.9	93.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-CC804
Lab FileID: 4Q54864.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\120823_1633_S4Q804\s4q804.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\120823_1633_S4Q804\4Q54852.d
2:D:\MassHunter\Data\120823_1633_S4Q804\4Q54853.d
3:D:\MassHunter\Data\120823_1633_S4Q804\4Q54854.d
4:D:\MassHunter\Data\120823_1633_S4Q804\4Q54855.d
5:D:\MassHunter\Data\120823_1633_S4Q804\4Q54856.d
6:D:\MassHunter\Data\120823_1633_S4Q804\4Q54857.d
7:D:\MassHunter\Data\120823_1633_S4Q804\4Q54858.d
8:D:\MassHunter\Data\120823_1633_S4Q804\4Q54859.d

Data File: 4Q54864
Type : QC
Level : 1

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.156	-16.9	83.1
13C2-6:2FTS	5.000	4.812	-3.8	96.2
13C2-8:2FTS	5.000	4.401	-12.0	88.0
13C2-PFDoDA	1.250	1.209	-3.3	96.7
13C2-PFTeDA	1.250	1.234	-1.3	98.7
13C3-PFBS	2.500	2.439	-2.4	97.6
13C3-PFHxS	2.500	2.393	-4.3	95.7
13C4-PFBA	10.000	10.199	2.0	102.0
13C4-PFHpA	2.500	2.453	-1.9	98.1
13C5-PFHxA	2.500	2.454	-1.8	98.2
13C5-PFPeA	5.000	5.096	1.9	101.9
13C6-PFDA	1.250	1.199	-4.1	95.9
13C7-PFUnDA	1.250	1.354	8.3	108.3
13C8-FOSA	2.500	2.837	13.5	113.5
13C8-PFOA	2.500	2.471	-1.2	98.8
13C8-PFOS	2.500	2.679	7.2	107.2
13C9-PFNA	1.250	1.182	-5.5	94.5
4:2FTS	0.750	0.758	1.0	101.0
6:2FTS	0.760	0.674	-11.4	88.6
8:2FTS	0.768	0.769	0.1	100.1
d3-MeFOSAA	5.000	5.145	2.9	102.9
EtFOSAA	0.200	0.151	-24.7	75.3
FOSA	0.200	0.194	-3.0	97.0
MeFOSAA	0.200	0.168	-15.8	84.2
PFBA	0.800	0.759	-5.1	94.9
PFBS	0.177	0.174	-1.6	98.4
PFDA	0.200	0.233	16.4	116.4
PFDoDA	0.200	0.190	-5.0	95.0
PFDS	0.193	0.186	-3.4	96.6
PFHpA	0.200	0.200	0.1	100.1
PFHpS	0.191	0.175	-8.1	91.9
PFHxA	0.200	0.187	-6.3	93.7
PFHxS	0.183	0.216	18.1	118.1
PFNA	0.200	0.193	-3.7	96.3
PFNS	0.192	0.201	4.8	104.8
PFOA	0.200	0.186	-6.8	93.2
PFOS	0.186	0.169	-9.2	90.8

Continuing Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-CC804
Lab FileID: 4Q54864.D

PFPeA	0.400	0.394	-1.4	98.6
PFPeS	0.188	0.158	-16.0	84.0
PFTeDA	0.200	0.173	-13.6	86.4
PFTrDA	0.200	0.193	-3.3	96.7
PFUnDA	0.200	0.173	-13.3	86.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	0.378	0.359	-5.0	95.0
13C3-HFPO-DA	10.000	9.747	-2.5	97.5
9Cl-PF3ONS	0.374	0.361	-3.4	96.6
ADONA	0.378	0.385	1.9	101.9
HFPO-DA	0.400	0.370	-7.6	92.4
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	0.998	0.958	-4.1	95.9
5:3FTCA	4.992	4.661	-6.6	93.4
7:3FTCA	4.992	4.917	-1.5	98.5
d3-MeFOSA	2.500	2.545	1.8	101.8
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	0.400	0.360	-10.1	89.9
EtFOSE	1.000	1.147	14.7	114.7
MeFOSA	0.400	0.375	-6.3	93.7
MeFOSE	1.000	1.035	3.5	103.5
PFDoDS	0.194	0.193	-0.4	99.6
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	5.124	2.5	102.5
d7-MeFOSE	25.000	26.418	5.7	105.7
d9-EtFOSE	25.000	26.062	4.2	104.2
d5-EtFOSA	2.500	2.502	0.1	100.1
NFDHA	0.400	0.364	-9.0	91.0
PFMBA	0.400	0.392	-1.9	98.1
PFMPA	0.400	0.390	-2.5	97.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	0.356	0.357	0.2	100.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-CC804
Lab FileID: 4Q54872.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\120823_1633_S4Q804\s4q804.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\120823_1633_S4Q804\4Q54852.d
2:D:\MassHunter\Data\120823_1633_S4Q804\4Q54853.d
3:D:\MassHunter\Data\120823_1633_S4Q804\4Q54854.d
4:D:\MassHunter\Data\120823_1633_S4Q804\4Q54855.d
5:D:\MassHunter\Data\120823_1633_S4Q804\4Q54856.d
6:D:\MassHunter\Data\120823_1633_S4Q804\4Q54857.d
7:D:\MassHunter\Data\120823_1633_S4Q804\4Q54858.d
8:D:\MassHunter\Data\120823_1633_S4Q804\4Q54859.d

Data File: 4Q54872
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.454	-10.9	89.1
13C2-6:2FTS	5.000	4.201	-16.0	84.0
13C2-8:2FTS	5.000	3.846	-23.1	76.9
13C2-PFDoDA	1.250	1.205	-3.6	96.4
13C2-PFTeDA	1.250	1.178	-5.8	94.2
13C3-PFBS	2.500	2.391	-4.3	95.7
13C3-PFHxS	2.500	2.524	1.0	101.0
13C4-PFBA	10.000	9.906	-0.9	99.1
13C4-PFHpA	2.500	2.462	-1.5	98.5
13C5-PFHxA	2.500	2.460	-1.6	98.4
13C5-PFPeA	5.000	4.917	-1.7	98.3
13C6-PFDA	1.250	1.291	3.2	103.2
13C7-PFUnDA	1.250	1.296	3.7	103.7
13C8-FOSA	2.500	2.220	-11.2	88.8
13C8-PFOA	2.500	2.519	0.8	100.8
13C8-PFOS	2.500	2.317	-7.3	92.7
13C9-PFNA	1.250	1.250	0.0	100.0
4:2FTS	9.375	9.087	-3.1	96.9
6:2FTS	9.500	9.927	4.5	104.5
8:2FTS	9.600	11.086	15.5	115.5
d3-MeFOSAA	5.000	4.738	-5.2	94.8
EtFOSAA	2.500	2.222	-11.1	88.9
FOSA	2.500	2.461	-1.6	98.4
MeFOSAA	2.500	2.477	-0.9	99.1
PFBA	10.000	9.438	-5.6	94.4
PFBS	2.218	2.035	-8.2	91.8
PFDA	2.500	2.285	-8.6	91.4
PFDoDA	2.500	2.390	-4.4	95.6
PFDS	2.413	2.334	-3.3	96.7
PFHpA	2.500	2.272	-9.1	90.9
PFHpS	2.383	2.067	-13.3	86.7
PFHxA	2.500	2.164	-13.4	86.6
PFHxS	2.285	2.052	-10.2	89.8
PFNA	2.500	2.321	-7.2	92.8
PFNS	2.405	2.648	10.1	110.1
PFOA	2.500	2.340	-6.4	93.6
PFOS	2.320	2.155	-7.1	92.9

Continuing Calibration Summary

Job Number: FC11689 **Sample:** S4Q804-CC804
Account: AECOMCOD AECOM, INC. **Lab FileID:** 4Q54872.D
Project: N6274223F0104 RH Fire Suppression System

PFPeA	5.000	4.558	-8.8	91.2
PFPeS	2.353	2.144	-8.9	91.1
PFTeDA	2.500	2.388	-4.5	95.5
PFTrDA	2.500	2.401	-4.0	96.0
PFUnDA	2.500	2.339	-6.4	93.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	4.605	-2.5	97.5
13C3-HFPO-DA	10.000	9.684	-3.2	96.8
9Cl-PF3ONS	4.675	4.486	-4.0	96.0
ADONA	4.725	4.946	4.7	104.7
HFPO-DA	5.000	4.711	-5.8	94.2
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	10.808	-13.4	86.6
5:3FTCA	62.400	57.948	-7.1	92.9
7:3FTCA	62.400	58.934	-5.6	94.4
d3-MeFOSA	2.500	2.287	-8.5	91.5
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.799	-4.0	96.0
EtFOSE	12.500	11.930	-4.6	95.4
MeFOSA	5.000	4.746	-5.1	94.9
MeFOSE	12.500	11.295	-9.6	90.4
PFDoDS	2.425	2.322	-4.3	95.7
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.531	-9.4	90.6
d7-MeFOSE	25.000	22.524	-9.9	90.1
d9-EtFOSE	25.000	22.752	-9.0	91.0
d5-EtFOSA	2.500	2.259	-9.6	90.4
NFDHA	5.000	4.372	-12.6	87.4
PFMBA	5.000	4.691	-6.2	93.8
PFMPA	5.000	4.663	-6.7	93.3
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.279	-3.8	96.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-CC804
Lab FileID: 4Q54881.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\120823_1633_S4Q804\s4q804.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\120823_1633_S4Q804\4Q54852.d
2:D:\MassHunter\Data\120823_1633_S4Q804\4Q54853.d
3:D:\MassHunter\Data\120823_1633_S4Q804\4Q54854.d
4:D:\MassHunter\Data\120823_1633_S4Q804\4Q54855.d
5:D:\MassHunter\Data\120823_1633_S4Q804\4Q54856.d
6:D:\MassHunter\Data\120823_1633_S4Q804\4Q54857.d
7:D:\MassHunter\Data\120823_1633_S4Q804\4Q54858.d
8:D:\MassHunter\Data\120823_1633_S4Q804\4Q54859.d

Data File: 4Q54881
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	4.516	-9.7	90.3
13C2-6:2FTS	5.000	4.579	-8.4	91.6
13C2-8:2FTS	5.000	5.028	0.6	100.6
13C2-PFDoDA	1.250	1.214	-2.9	97.1
13C2-PFTeDA	1.250	1.234	-1.3	98.7
13C3-PFBS	2.500	2.671	6.8	106.8
13C3-PFHxS	2.500	2.729	9.2	109.2
13C4-PFBA	10.000	9.965	-0.4	99.6
13C4-PFHpA	2.500	2.543	1.7	101.7
13C5-PFHxA	2.500	2.557	2.3	102.3
13C5-PFPeA	5.000	5.011	0.2	100.2
13C6-PFDA	1.250	1.249	-0.1	99.9
13C7-PFUnDA	1.250	1.334	6.7	106.7
13C8-FOSA	2.500	2.605	4.2	104.2
13C8-PFOA	2.500	2.369	-5.2	94.8
13C8-PFOS	2.500	2.299	-8.0	92.0
13C9-PFNA	1.250	1.217	-2.7	97.3
4:2FTS	9.375	9.754	4.0	104.0
6:2FTS	9.500	9.550	0.5	100.5
8:2FTS	9.600	9.547	-0.6	99.4
d3-MeFOSAA	5.000	4.711	-5.8	94.2
EtFOSAA	2.500	2.322	-7.1	92.9
FOSA	2.500	2.258	-9.7	90.3
MeFOSAA	2.500	2.578	3.1	103.1
PFBA	10.000	9.392	-6.1	93.9
PFBS	2.218	1.966	-11.4	88.6
PFDA	2.500	2.279	-8.8	91.2
PFDoDA	2.500	2.450	-2.0	98.0
PFDS	2.413	2.362	-2.1	97.9
PFHpA	2.500	2.286	-8.5	91.5
PFHpS	2.383	2.371	-0.5	99.5
PFHxA	2.500	2.222	-11.1	88.9
PFHxS	2.285	1.992	-12.8	87.2
PFNA	2.500	2.304	-7.9	92.1
PFNS	2.405	2.536	5.5	105.5
PFOA	2.500	2.377	-4.9	95.1
PFOS	2.320	2.303	-0.7	99.3

Continuing Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-CC804
Lab FileID: 4Q54881.D

PFPeA	5.000	4.685	-6.3	93.7
PFPeS	2.353	2.061	-12.4	87.6
PFTeDA	2.500	2.289	-8.4	91.6
PFTrDA	2.500	2.440	-2.4	97.6
PFUnDA	2.500	2.305	-7.8	92.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	4.554	-3.6	96.4
13C3-HFPO-DA	10.000	9.986	-0.1	99.9
9Cl-PF3ONS	4.675	4.570	-2.2	97.8
ADONA	4.725	4.896	3.6	103.6
HFPO-DA	5.000	4.541	-9.2	90.8
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.236	-10.0	90.0
5:3FTCA	62.400	57.637	-7.6	92.4
7:3FTCA	62.400	58.626	-6.0	94.0
d3-MeFOSA	2.500	2.276	-9.0	91.0
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.852	-3.0	97.0
EtFOSE	12.500	11.536	-7.7	92.3
MeFOSA	5.000	5.010	0.2	100.2
MeFOSE	12.500	11.740	-6.1	93.9
PFDoDS	2.425	2.306	-4.9	95.1
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.959	-0.8	99.2
d7-MeFOSE	25.000	24.505	-2.0	98.0
d9-EtFOSE	25.000	25.323	1.3	101.3
d5-EtFOSA	2.500	2.202	-11.9	88.1
NFDHA	5.000	4.420	-11.6	88.4
PFMBA	5.000	4.672	-6.6	93.4
PFMPA	5.000	4.621	-7.6	92.4
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.176	-6.2	93.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Sample: S4Q804-CC804
Lab FileID: 4Q54893.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\120823_1633_S4Q804\s4q804.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\120823_1633_S4Q804\4Q54852.d
2:D:\MassHunter\Data\120823_1633_S4Q804\4Q54853.d
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4:D:\MassHunter\Data\120823_1633_S4Q804\4Q54855.d
5:D:\MassHunter\Data\120823_1633_S4Q804\4Q54856.d
6:D:\MassHunter\Data\120823_1633_S4Q804\4Q54857.d
7:D:\MassHunter\Data\120823_1633_S4Q804\4Q54858.d
8:D:\MassHunter\Data\120823_1633_S4Q804\4Q54859.d

Data File: 4Q54893
Type : QC
Level : 4

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	5.000	5.211	4.2	104.2
13C2-6:2FTS	5.000	5.291	5.8	105.8
13C2-8:2FTS	5.000	5.311	6.2	106.2
13C2-PFDoDA	1.250	1.222	-2.2	97.8
13C2-PFTeDA	1.250	1.236	-1.1	98.9
13C3-PFBS	2.500	2.589	3.6	103.6
13C3-PFHxS	2.500	2.437	-2.5	97.5
13C4-PFBA	10.000	10.020	0.2	100.2
13C4-PFHpA	2.500	2.459	-1.6	98.4
13C5-PFHxA	2.500	2.524	1.0	101.0
13C5-PFPeA	5.000	5.013	0.3	100.3
13C6-PFDA	1.250	1.254	0.4	100.4
13C7-PFUnDA	1.250	1.318	5.5	105.5
13C8-FOSA	2.500	2.481	-0.8	99.2
13C8-PFOA	2.500	2.419	-3.3	96.7
13C8-PFOS	2.500	2.382	-4.7	95.3
13C9-PFNA	1.250	1.255	0.4	100.4
4:2FTS	9.375	8.951	-4.5	95.5
6:2FTS	9.500	9.110	-4.1	95.9
8:2FTS	9.600	9.610	0.1	100.1
d3-MeFOSAA	5.000	5.203	4.1	104.1
EtFOSAA	2.500	2.147	-14.1	85.9
FOSA	2.500	2.236	-10.6	89.4
MeFOSAA	2.500	2.485	-0.6	99.4
PFBA	10.000	9.227	-7.7	92.3
PFBS	2.218	1.926	-13.2	86.8
PFDA	2.500	2.179	-12.8	87.2
PFDoDA	2.500	2.500	0.0	100.0
PFDS	2.413	2.303	-4.5	95.5
PFHpA	2.500	2.370	-5.2	94.8
PFHpS	2.383	2.213	-7.1	92.9
PFHxA	2.500	2.234	-10.6	89.4
PFHxS	2.285	2.226	-2.6	97.4
PFNA	2.500	2.418	-3.3	96.7
PFNS	2.405	2.664	10.8	110.8
PFOA	2.500	2.335	-6.6	93.4
PFOS	2.320	2.106	-9.2	90.8

Continuing Calibration Summary

Job Number: FC11689 **Sample:** S4Q804-CC804
Account: AECOMCOD AECOM, INC. **Lab FileID:** 4Q54893.D
Project: N6274223F0104 RH Fire Suppression System

PFPeA	5.000	4.555	-8.9	91.1
PFPeS	2.353	2.375	0.9	100.9
PFTeDA	2.500	2.309	-7.6	92.4
PFTrDA	2.500	2.412	-3.5	96.5
PFUnDA	2.500	2.288	-8.5	91.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	4.725	4.826	2.1	102.1
13C3-HFPO-DA	10.000	9.334	-6.7	93.3
9Cl-PF3ONS	4.675	4.786	2.4	102.4
ADONA	4.725	5.146	8.9	108.9
HFPO-DA	5.000	4.686	-6.3	93.7
M3-HFPO-DA	---	--ISTD--		
3:3FTCA	12.480	11.523	-7.7	92.3
5:3FTCA	62.400	57.920	-7.2	92.8
7:3FTCA	62.400	57.630	-7.6	92.4
d3-MeFOSA	2.500	2.334	-6.6	93.4
M5-EtFOSAA	---	--ISTD--		
M7-MeFOSE	---	--ISTD--		
M9-EtFOSE	---	--ISTD--		
M5-EtFOSA	---	--ISTD--		
EtFOSA	5.000	4.602	-8.0	92.0
EtFOSE	12.500	11.795	-5.6	94.4
MeFOSA	5.000	4.672	-6.6	93.4
MeFOSE	12.500	11.317	-9.5	90.5
PFDoDS	2.425	2.253	-7.1	92.9
M3-MeFOSA	---	--ISTD--		
d5-EtFOSAA	5.000	4.891	-2.2	97.8
d7-MeFOSE	25.000	23.293	-6.8	93.2
d9-EtFOSE	25.000	23.726	-5.1	94.9
d5-EtFOSA	2.500	2.410	-3.6	96.4
NFDHA	5.000	4.824	-3.5	96.5
PFMBA	5.000	4.587	-8.3	91.7
PFMPA	5.000	4.623	-7.5	92.5
13C4-PFOS	---	--ISTD--		
13C3-PFBA	---	--ISTD--		
18O2-PFHxS	---	--ISTD--		
13C4-PFOA	---	--ISTD--		
13C2-PFDA	---	--ISTD--		
13C5-PFNA	---	--ISTD--		
13C2-PFHxA	---	--ISTD--		
PFEESA	4.450	4.110	-7.6	92.4

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q804 **Method:** EPA DRAFT 1633 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q804-RT	4Q54849.D	12/08/23 10:54	n/a	Retention Time Marker
S4Q804-RT	4Q54850.D	12/08/23 11:08	n/a	Retention Time Marker
S4Q804-IC804	4Q54851.D	12/08/23 11:23	n/a	Mass Calibration Verification
S4Q804-IC804	4Q54852.D	12/08/23 11:38	n/a	Initial cal 1
S4Q804-IC804	4Q54853.D	12/08/23 11:53	n/a	Initial cal 2
S4Q804-IC804	4Q54854.D	12/08/23 12:07	n/a	Initial cal 3
S4Q804-ICC804	4Q54855.D	12/08/23 12:22	n/a	Initial cal 4
S4Q804-IC804	4Q54856.D	12/08/23 12:37	n/a	Initial cal 5
S4Q804-IC804	4Q54857.D	12/08/23 12:52	n/a	Initial cal 6
S4Q804-IC804	4Q54858.D	12/08/23 13:06	n/a	Initial cal 7
S4Q804-IC804	4Q54859.D	12/08/23 13:21	n/a	Initial cal 8
S4Q804-IBLK	4Q54860.D	12/08/23 13:36	n/a	Instrument Blank
S4Q804-IBLK	4Q54860.D	12/08/23 13:36	n/a	Instrument Blank
S4Q804-ICV804	4Q54861.D	12/08/23 13:51	n/a	Initial cal verification 4
S4Q804-ICV804	4Q54862.D	12/08/23 14:05	n/a	Initial cal verification 20
S4Q804-CC804	4Q54863.D	12/08/23 14:20	n/a	Continuing cal 4
S4Q804-CC804	4Q54864.D	12/08/23 14:40	n/a	Continuing cal 1.0LL
OP471-BS	4Q54865.D	12/08/23 14:55	OP471	Blank Spike
OP471-LLBS	4Q54866.D	12/08/23 15:10	OP471	Blank Spike
OP471-MB	4Q54867.D	12/08/23 15:24	OP471	Method Blank
ZZZZZZ	4Q54868.D	12/08/23 15:39	OP471	(unrelated sample)
ZZZZZZ	4Q54869.D	12/08/23 15:54	OP471	(unrelated sample)
ZZZZZZ	4Q54870.D	12/08/23 16:09	OP471	(unrelated sample)
ZZZZZZ	4Q54871.D	12/08/23 16:24	OP471	(unrelated sample)
S4Q804-CC804	4Q54872.D	12/08/23 16:39	n/a	Continuing cal 4
S4Q804-ICCB	4Q54873.D	12/08/23 16:53	n/a	Continuing Calibration Blank
S4Q804-ICCB	4Q54873.D	12/08/23 16:53	n/a	Continuing Calibration Blank
S4Q804-CC804	4Q54881.D	12/08/23 18:52	n/a	Continuing cal 4
S4Q804-ICCB	4Q54882.D	12/08/23 19:06	n/a	Continuing Calibration Blank
S4Q804-ICCB	4Q54882.D	12/08/23 19:06	n/a	Continuing Calibration Blank
OP495-BS	4Q54883.D	12/08/23 19:21	OP495	Blank Spike
OP495-LLBS	4Q54884.D	12/08/23 19:36	OP495	Blank Spike
OP495-MB	4Q54885.D	12/08/23 19:51	OP495	Method Blank
FC11689-1	4Q54886.D	12/08/23 20:05	OP495	AF-RHMW16-WGN01LF-2312
ZZZZZZ	4Q54887.D	12/08/23 20:20	OP495	(unrelated sample)
FC11715-2	4Q54888.D	12/08/23 20:35	OP495	(used for QC only; not part of job FC11689)
OP495-MS	4Q54889.D	12/08/23 20:50	OP495	Matrix Spike
FC11715-3	4Q54890.D	12/08/23 21:04	OP495	(used for QC only; not part of job FC11689)
OP495-DUP	4Q54891.D	12/08/23 21:19	OP495	Duplicate
ZZZZZZ	4Q54892.D	12/08/23 21:34	OP495	(unrelated sample)
S4Q804-CC804	4Q54893.D	12/08/23 21:49	n/a	Continuing cal 4
S4Q804-ICCB	4Q54894.D	12/08/23 22:03	n/a	Continuing Calibration Blank
OP496-BS	4Q54895.D	12/08/23 22:18	OP496	Blank Spike
OP496-LLBS	4Q54896.D	12/08/23 22:33	OP496	Blank Spike
OP496-MB	4Q54897.D	12/08/23 22:48	OP496	Method Blank
ZZZZZZ	4Q54898.D	12/08/23 23:02	OP496	(unrelated sample)

Run Sequence Report

Job Number: FC11689
Account: AECOMCOD AECOM, INC.
Project: N6274223F0104 RH Fire Suppression System

Run ID: S4Q804	**Method:** EPA DRAFT 1633	**Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	4Q54899.D	12/08/23 23:17	OP496	(unrelated sample)
ZZZZZZ	4Q54900.D	12/08/23 23:32	OP496	(unrelated sample)
ZZZZZZ	4Q54901.D	12/08/23 23:47	OP496	(unrelated sample)
ZZZZZZ	4Q54902.D	12/09/23 00:01	OP496	(unrelated sample)
FC11673-1	4Q54903.D	12/09/23 00:16	OP496	(used for QC only; not part of job FC11689)
OP496-MS	4Q54904.D	12/09/23 00:31	OP496	Matrix Spike
S4Q804-CC804	4Q54905.D	12/09/23 00:46	n/a	Continuing cal 4
S4Q804-ICCB	4Q54906.D	12/09/23 01:00	n/a	Continuing Calibration Blank
FC11673-2	4Q54907.D	12/09/23 01:15	OP496	(used for QC only; not part of job FC11689)
OP496-DUP	4Q54908.D	12/09/23 01:30	OP496	Duplicate
ZZZZZZ	4Q54909.D	12/09/23 01:45	OP496	(unrelated sample)
ZZZZZZ	4Q54910.D	12/09/23 01:59	OP496	(unrelated sample)
ZZZZZZ	4Q54911.D	12/09/23 02:14	OP496	(unrelated sample)
OP519-BS	4Q54912.D	12/09/23 02:29	OP519	Blank Spike
OP519-LLBS	4Q54913.D	12/09/23 02:44	OP519	Blank Spike
OP519-MB	4Q54914.D	12/09/23 02:59	OP519	Method Blank
ZZZZZZ	4Q54915.D	12/09/23 03:13	OP519	(unrelated sample)
ZZZZZZ	4Q54916.D	12/09/23 03:28	OP519	(unrelated sample)
S4Q804-CC804	4Q54917.D	12/09/23 03:43	n/a	Continuing cal 4
S4Q804-ICCB	4Q54918.D	12/09/23 03:58	n/a	Continuing Calibration Blank
ZZZZZZ	4Q54919.D	12/09/23 04:12	OP519	(unrelated sample)
ZZZZZZ	4Q54920.D	12/09/23 04:27	OP519	(unrelated sample)
ZZZZZZ	4Q54921.D	12/09/23 04:42	OP519	(unrelated sample)
ZZZZZZ	4Q54922.D	12/09/23 04:57	OP519	(unrelated sample)
ZZZZZZ	4Q54923.D	12/09/23 05:11	OP519	(unrelated sample)
ZZZZZZ	4Q54924.D	12/09/23 05:26	OP519	(unrelated sample)
ZZZZZZ	4Q54925.D	12/09/23 05:41	OP519	(unrelated sample)
ZZZZZZ	4Q54926.D	12/09/23 05:56	OP519	(unrelated sample)
ZZZZZZ	4Q54927.D	12/09/23 06:10	OP519	(unrelated sample)
FC11645-12	4Q54928.D	12/09/23 06:25	OP519	(used for QC only; not part of job FC11689)
S4Q804-CC804	4Q54929.D	12/09/23 06:40	n/a	Continuing cal 4
S4Q804-ICCB	4Q54930.D	12/09/23 06:55	n/a	Continuing Calibration Blank
OP519-MS	4Q54931.D	12/09/23 07:10	OP519	Matrix Spike
ZZZZZZ	4Q54932.D	12/09/23 07:24	OP519	(unrelated sample)
FC11645-14	4Q54933.D	12/09/23 07:39	OP519	(used for QC only; not part of job FC11689)
OP519-DUP	4Q54934.D	12/09/23 07:54	OP519	Duplicate
ZZZZZZ	4Q54935.D	12/09/23 08:09	OP519	(unrelated sample)
ZZZZZZ	4Q54936.D	12/09/23 08:23	OP519	(unrelated sample)
ZZZZZZ	4Q54937.D	12/09/23 08:38	OP519	(unrelated sample)
ZZZZZZ	4Q54938.D	12/09/23 08:53	OP519	(unrelated sample)
S4Q804-ECC804	4Q54940.D	12/09/23 09:22	n/a	Ending cal 4
S4Q804-ICCB	4Q54941.D	12/09/23 09:37	n/a	Continuing Calibration Blank

MS Semi-volatiles

Raw Data

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54886.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 8:05:55 PM
Sample Name : fc11689-1
Vial : P2-C8
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP495,S4Q804,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.752	216.8 -> 171.9	97010	10.00	µg/L	0.078
M5-PFPeA	4.187	268.3 -> 223.0	37856	5.00	µg/L	0.025
M5-PFHxA	5.372	318.0 -> 273.0	30292	2.50	µg/L	0.037
M4-PFHpA	6.317	367.1 -> 322.0	29057	2.50	µg/L	0.025
M8-PFOA	7.001	421.1 -> 376.0	47269	2.50	µg/L	0.025
M9-PFNA	7.534	472.1 -> 427.0	17592	1.25	µg/L	0.012
M6-PFDA	8.029	519.1 -> 474.1	12531	1.25	µg/L	0.025
M7-PFUnDA	8.473	570.0 -> 525.1	14786	1.25	µg/L	0.025
M2-PFDoDA	8.905	615.1 -> 570.0	14680	1.25	µg/L	0.025
M2-PFTeDA	9.662	715.2 -> 670.0	13332	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	7930	2.50	µg/L	0.025
M3-PFBS	5.227	302.1 -> 79.9	8270	2.50	µg/L	0.038
M3-PFHxS	7.054	402.1 -> 79.9	6830	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	7021	2.50	µg/L	0.026
M2-4:2FTS	5.071	329.1 -> 80.9	914	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2096	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	2837	5.00	µg/L	0.025
M3-MeFOSAA	8.099	573.2 -> 419.0	17006	5.00	µg/L	0.012
M3-HFPO-DA	5.727	286.9 -> 168.9	28807	10.00	µg/L	0.037
M5-EtFOSAA	8.309	589.2 -> 419.0	12898	5.00	µg/L	0.026
M7-MeFOSE	11.047	623.2 -> 58.9	27246	25.00	µg/L	0.025
M9-EtFOSE	11.331	639.2 -> 58.9	40080	25.00	µg/L	0.012
M5-EtFOSA	11.422	531.1 -> 219.0	5184	2.50	µg/L	0.025
M3-MeFOSA	11.152	515.0 -> 219.0	4405	2.50	µg/L	0.026
13C4-PFOS	8.144	502.8 -> 79.9	5986	2.50	µg/L	0.026
13C3-PFBA	2.755	216.0 -> 172.0	41742	5.00	µg/L	0.077
18O2-PFHxS	7.066	403.0 -> 83.9	4145	2.50	µg/L	0.025
13C4-PFOA	7.002	417.1 -> 372.0	47066	2.50	µg/L	0.025
13C2-PFDA	8.017	515.1 -> 470.1	13489	1.25	µg/L	0.013
13C5-PFNA	7.534	468.0 -> 423.0	17321	1.25	µg/L	0.025
13C2-PFHxA	5.373	315.1 -> 270.0	29916	2.50	µg/L	0.037
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	914	4.65	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2096	4.91	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C2-8:2FTS	7.828	529.1 -> 80.9	2837	4.96	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C2-PFDoDA	8.905	615.1 -> 570.0	14680	1.09	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 87.1%		
13C2-PFTeDA	9.662	715.2 -> 670.0	13332	1.00	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 79.6%		
13C3-PFBS	5.227	302.1 -> 79.9	8270	2.60	µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C3-PFHxS	7.054	402.1 -> 79.9	6830	2.63	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C4-PFBA	2.752	216.8 -> 171.9	97010	11.07 µg/L	0.078
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C4-PFHpA	6.317	367.1 -> 322.0	29057	2.76 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C5-PFHxA	5.372	318.0 -> 273.0	30292	2.75 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C5-PFPeA	4.187	268.3 -> 223.0	37856	5.51 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C6-PFDA	8.029	519.1 -> 474.1	12531	1.28 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C7-PFUnDA	8.473	570.0 -> 525.1	14786	1.28 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C8-FOSA	9.818	506.1 -> 77.8	7930	2.04 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.8%	
13C8-PFOA	7.001	421.1 -> 376.0	47269	2.72 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C8-PFOS	8.143	507.1 -> 79.9	7021	2.32 µg/L	0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C9-PFNA	7.534	472.1 -> 427.0	17592	1.27 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.4%	
d3-MeFOSAA	8.099	573.2 -> 419.0	17006	5.12 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C3-HFPO-DA	5.727	286.9 -> 168.9	28807	10.46 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
d3-MeFOSA	11.152	515.0 -> 219.0	4405	1.90 µg/L	0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 76.1%	
d5-EtFOSAA	8.309	589.2 -> 419.0	12898	4.59 µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
d7-MeFOSE	11.047	623.2 -> 58.9	27246	14.24 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 56.9%	
d9-EtFOSE	11.331	639.2 -> 58.9	40080	18.70 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 74.8%	
d5-EtFOSA	11.422	531.1 -> 219.0	5184	2.04 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 81.7%	

Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	-	427.1 -> 407.0 427.1 -> 80.9	-	N.D.	
8:2FTS	-	527.1 -> 507.0 527.1 -> 80.8	-	N.D.	
EtFOSAA	-	584.2 -> 419.1 584.2 -> 526.0	-	N.D.	
FOSA	-	498.1 -> 77.9 498.1 -> 478.0	-	N.D.	
MeFOSAA	-	570.1 -> 419.0 570.1 -> 483.0	-	N.D.	
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDoDA	-	613.1 -> 569.0 613.1 -> 319.0	-	N.D.	
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

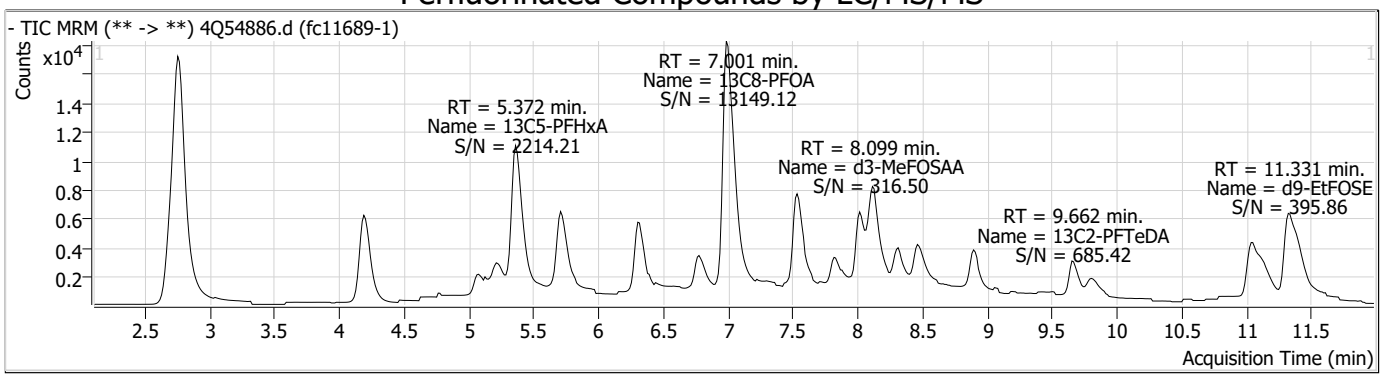
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	-	413.0 -> 369.0	-	N.D.		
		413.0 -> 169.0				
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

 # = Qualifier out of range, m = manually integrated, + = Area summed

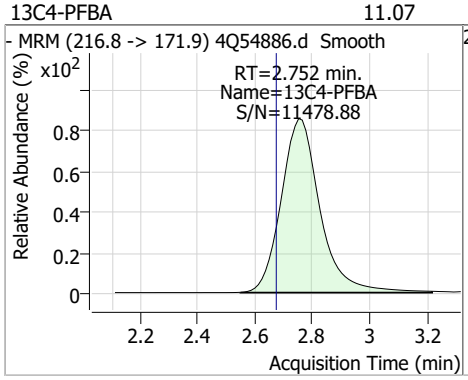
Perfluorinated Compounds by LC/MS/MS

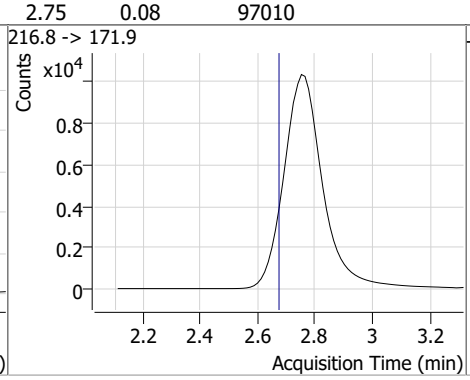
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

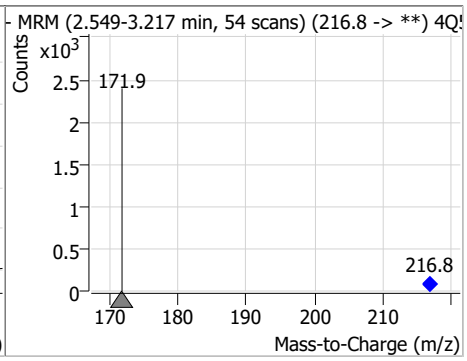
Perfluorinated Compounds by LC/MS/MS



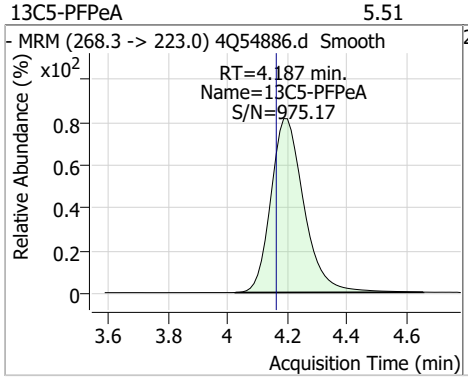
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.07	2.75	0.08	97010				

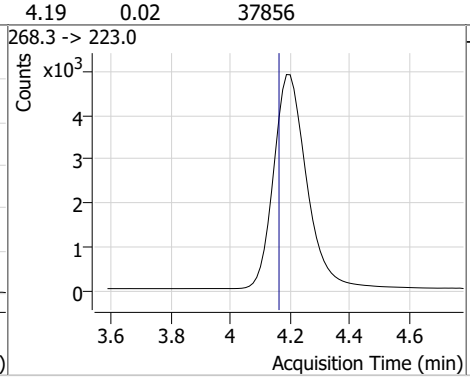


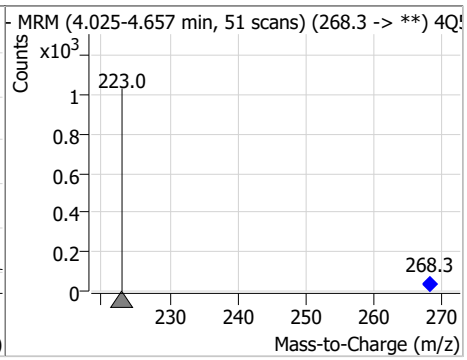




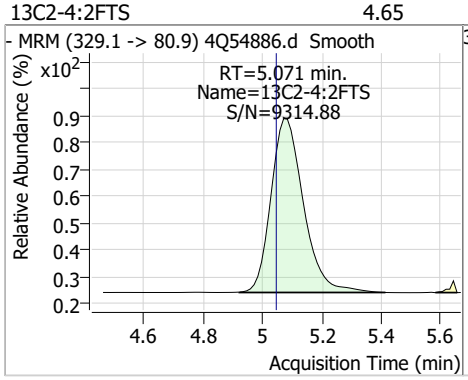
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.51	4.19	0.02	37856				

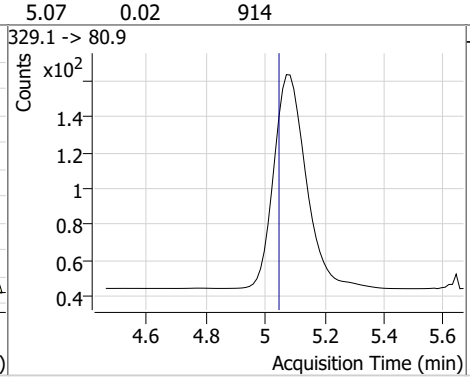


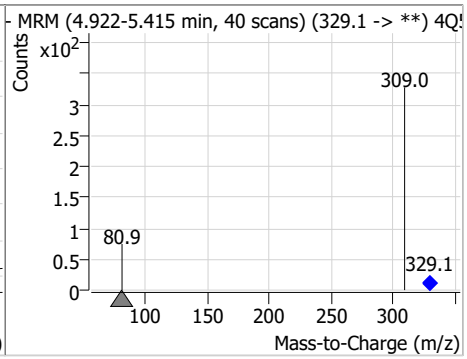




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.65	5.07	0.02	914				

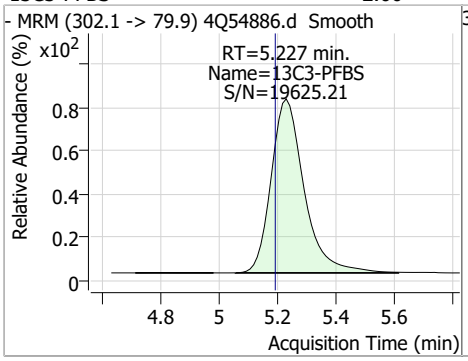


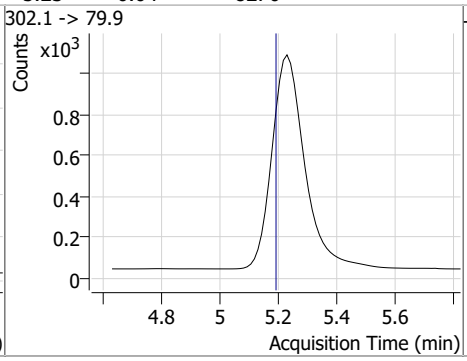


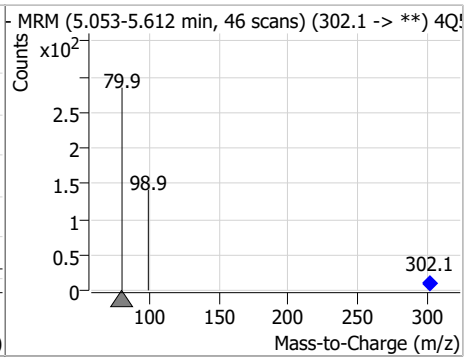


Perfluorinated Compounds by LC/MS/MS

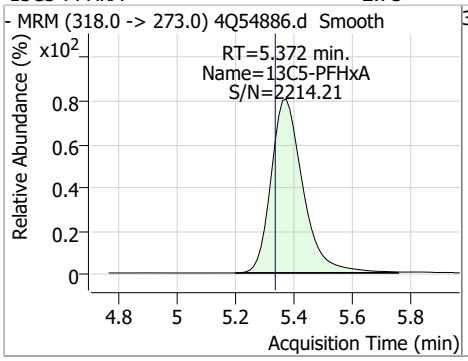
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.60	5.23	0.04	8270				

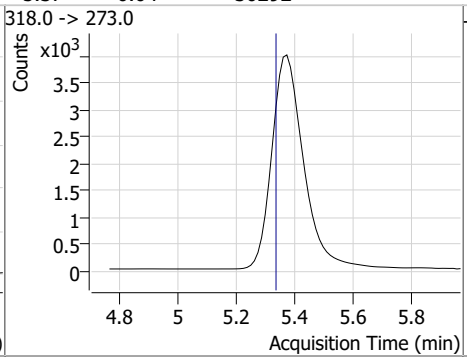


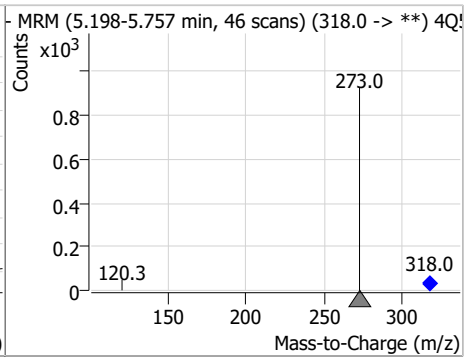




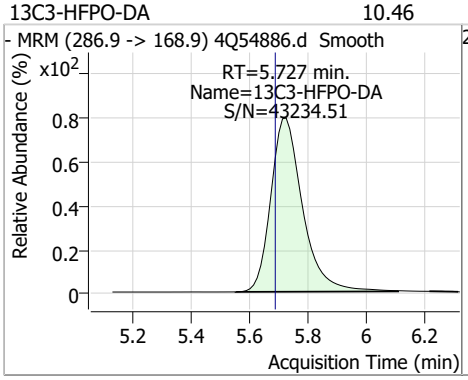
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.75	5.37	0.04	30292				

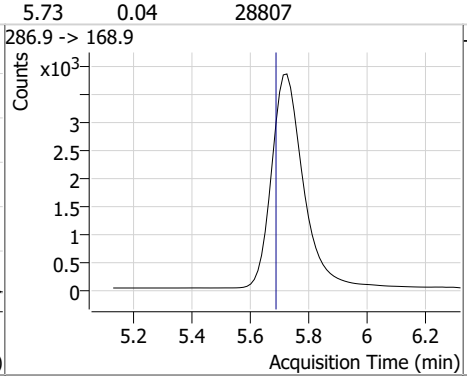


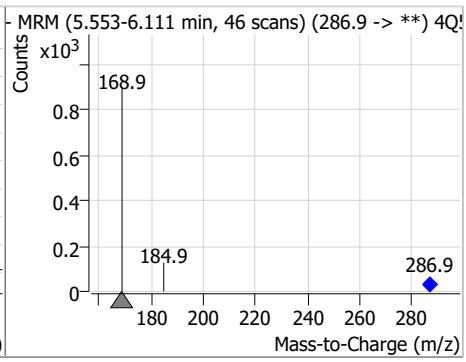




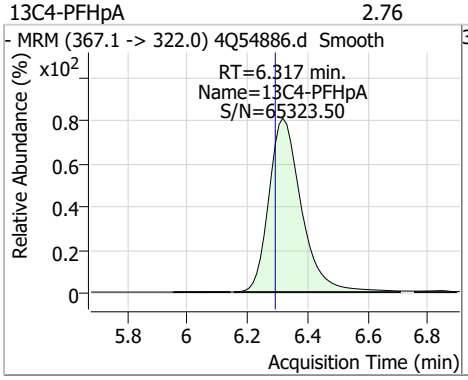
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.46	5.73	0.04	28807				

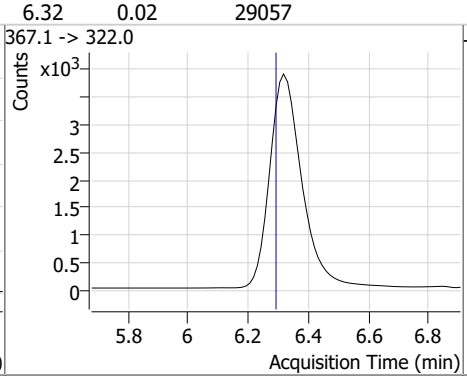


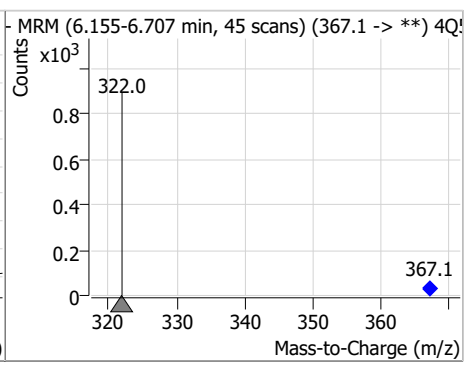




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.76	6.32	0.02	29057				

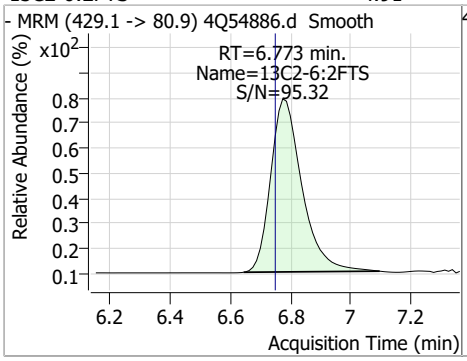


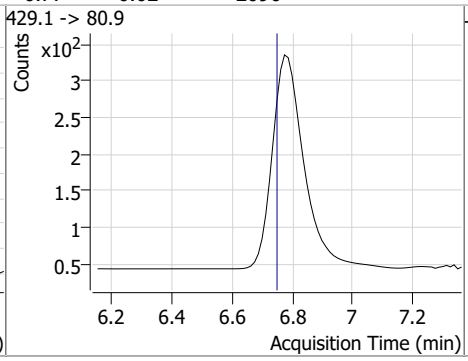


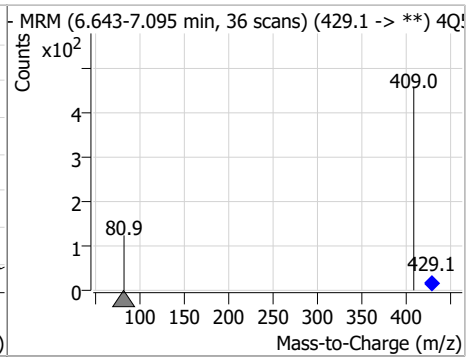


Perfluorinated Compounds by LC/MS/MS

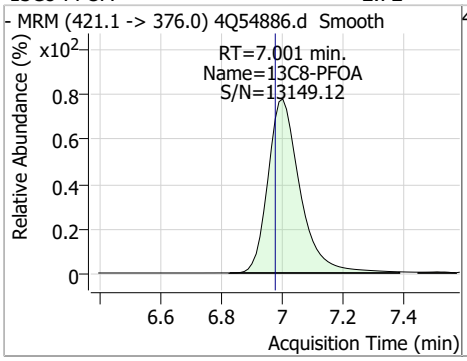
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.91	6.77	0.02	2096				

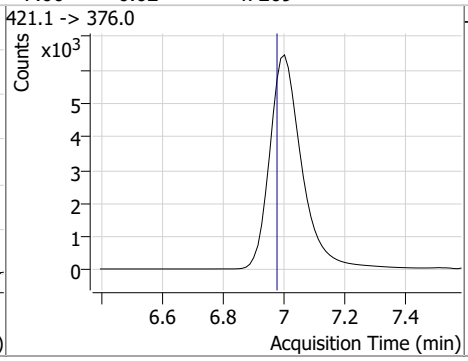


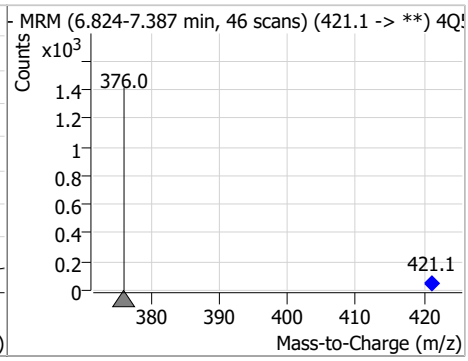




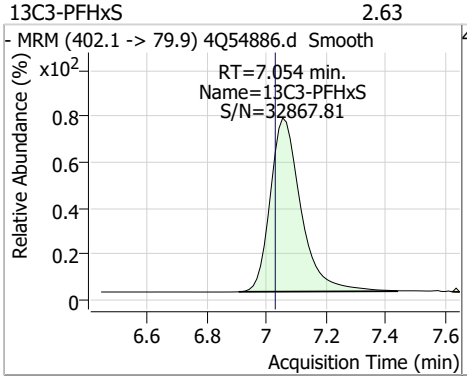
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.72	7.00	0.02	47269				

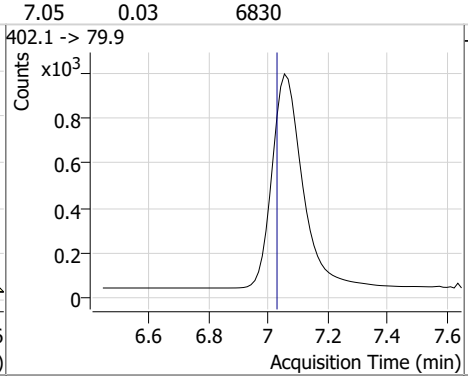


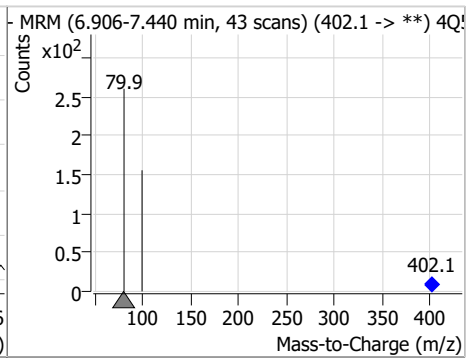




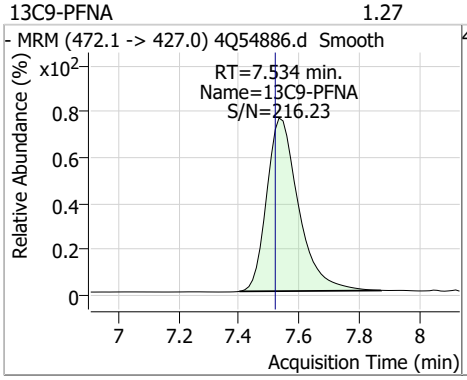
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.63	7.05	0.03	6830				

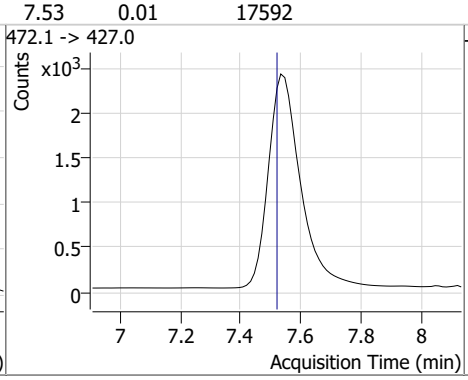


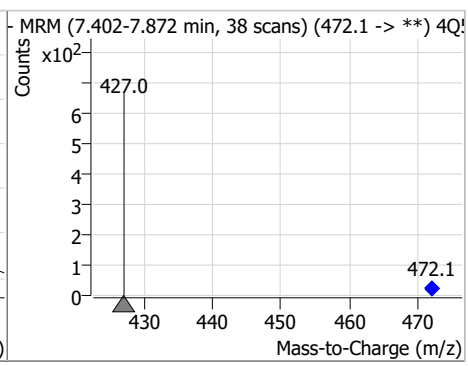




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.53	0.01	17592				

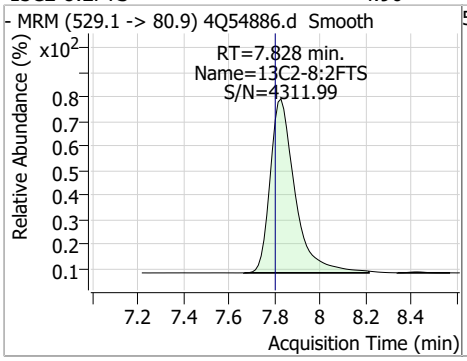


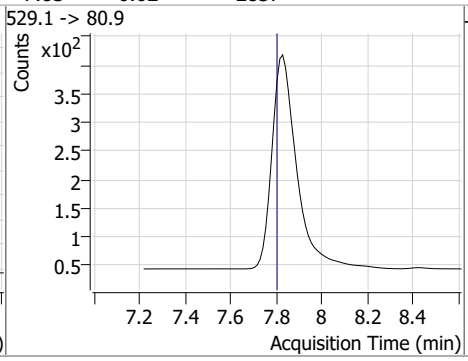


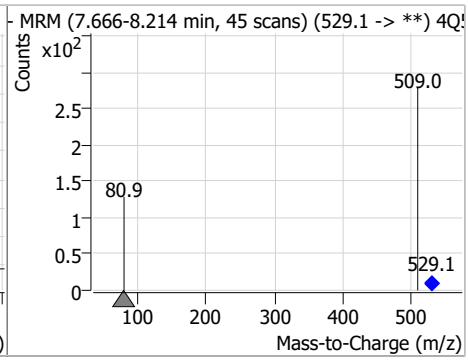


Perfluorinated Compounds by LC/MS/MS

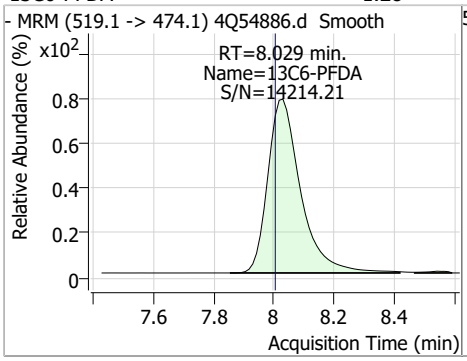
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.96	7.83	0.02	2837				

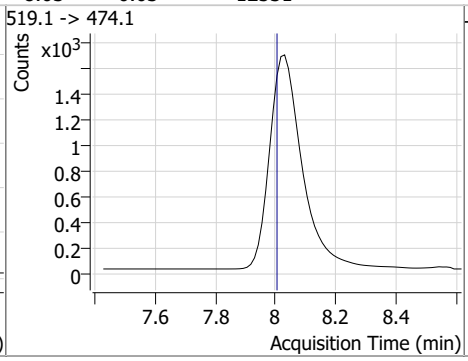


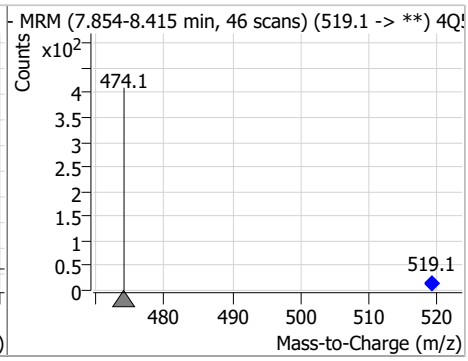




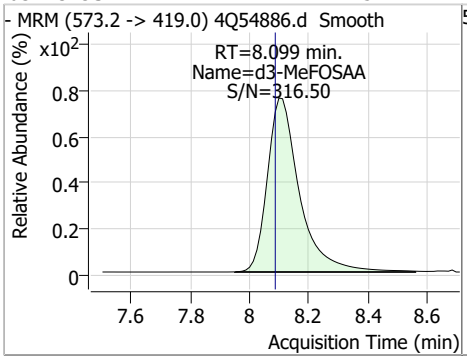
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.28	8.03	0.03	12531				

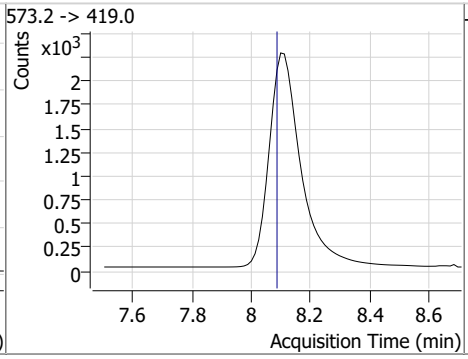


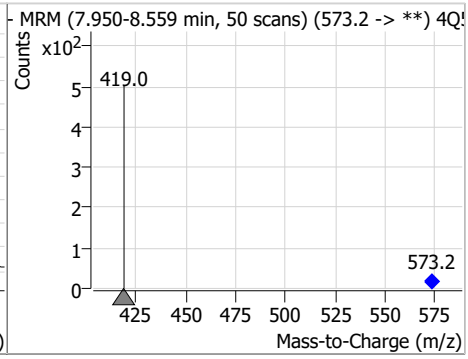




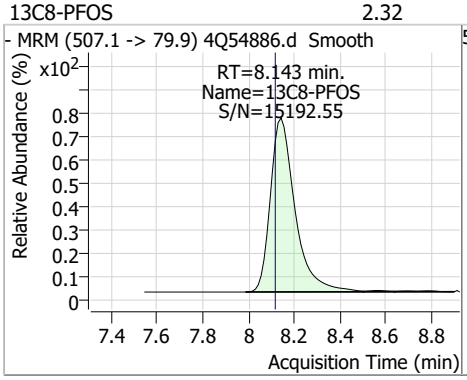
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.12	8.10	0.01	17006				

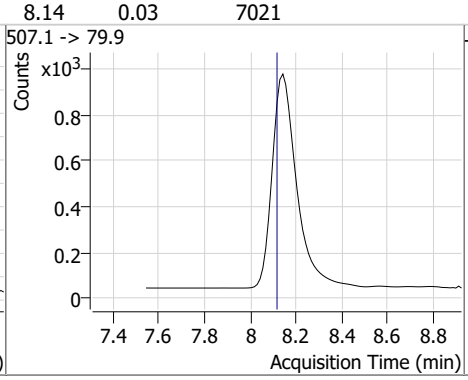


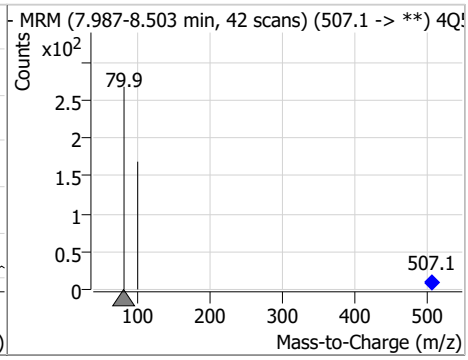




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.32	8.14	0.03	7021				

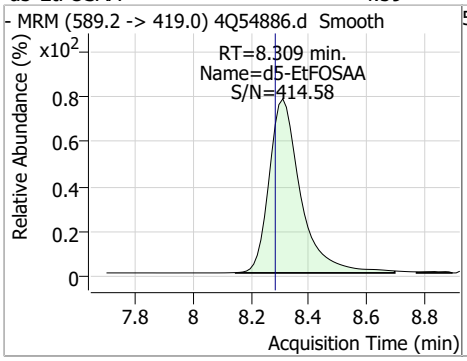


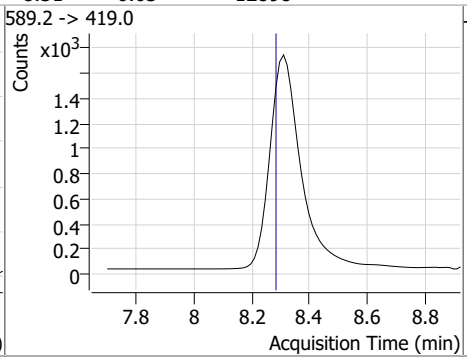


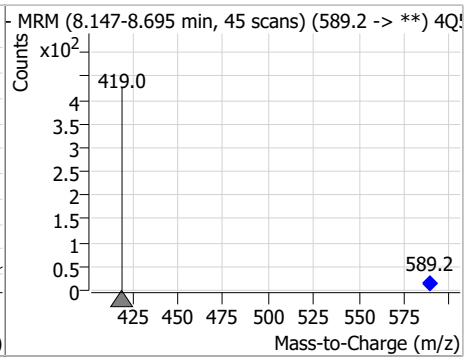


Perfluorinated Compounds by LC/MS/MS

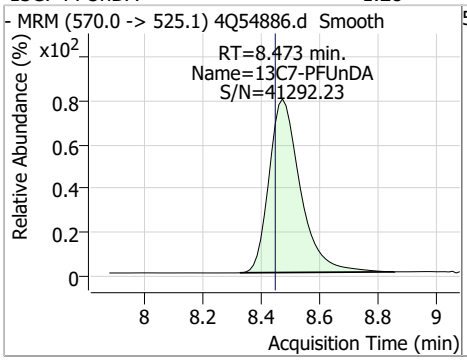
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.59	8.31	0.03	12898				

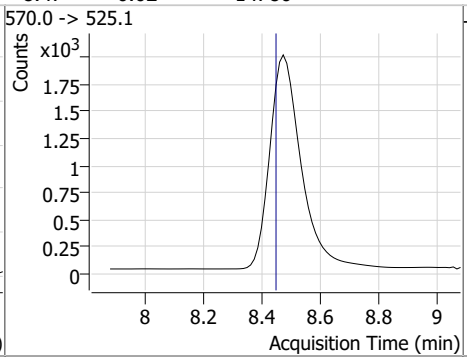


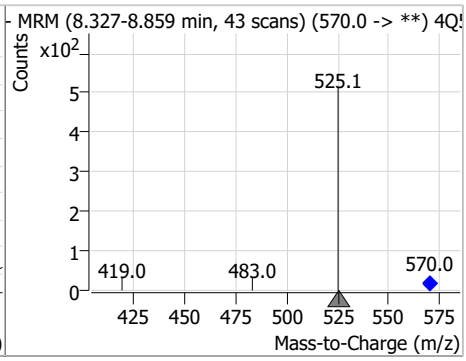




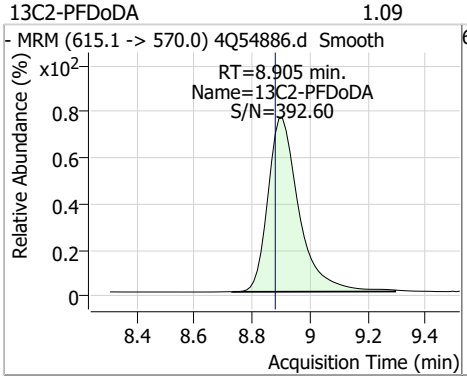
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.47	0.02	14786				

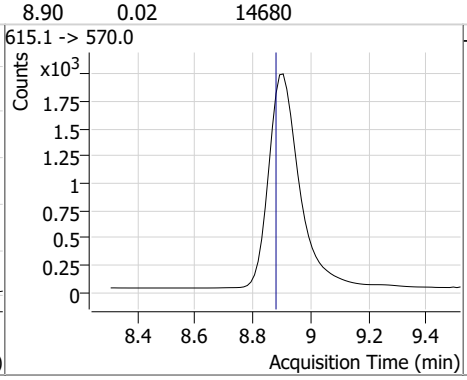


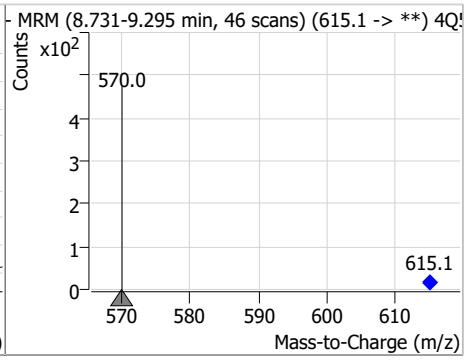




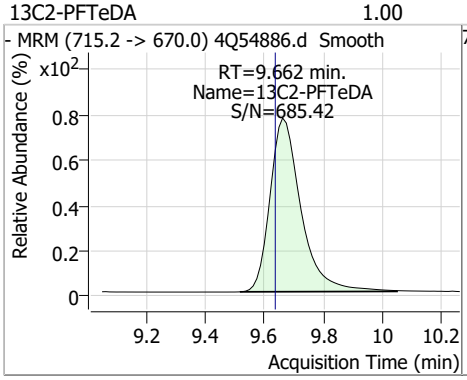
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.09	8.90	0.02	14680				

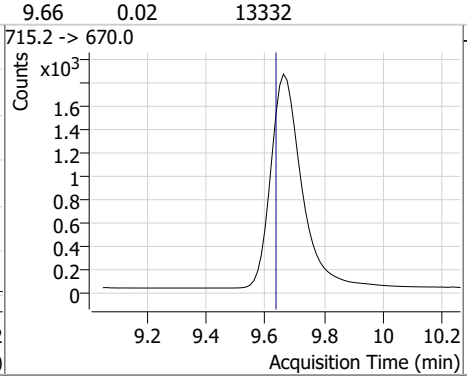


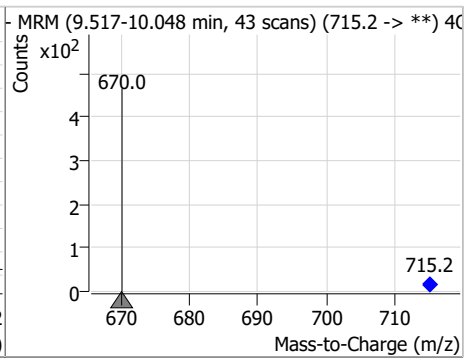




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.00	9.66	0.02	13332				

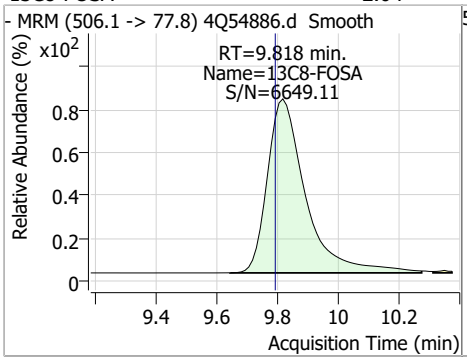


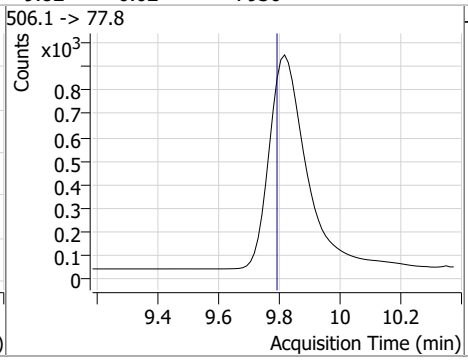


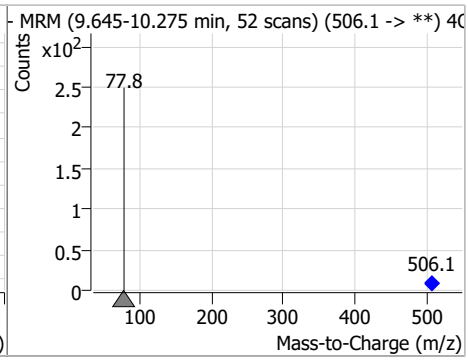


Perfluorinated Compounds by LC/MS/MS

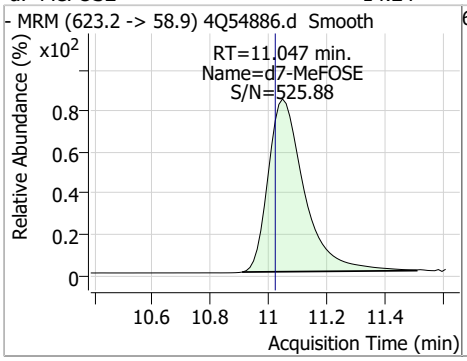
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.04	9.82	0.02	7930				

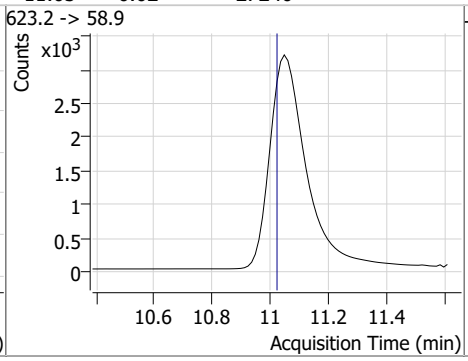


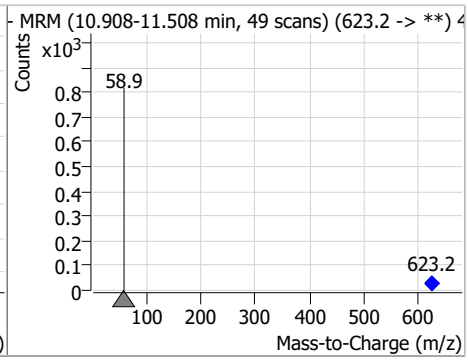




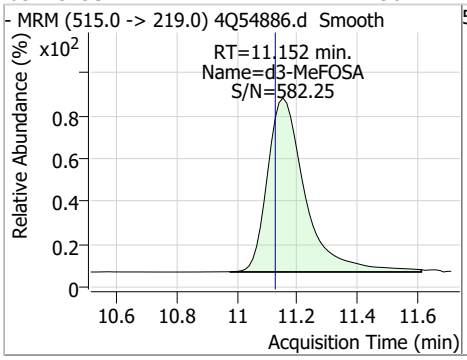
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	14.24	11.05	0.02	27246				

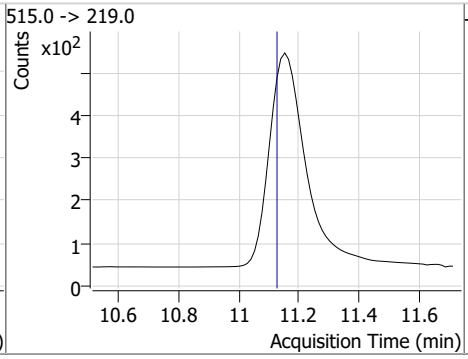


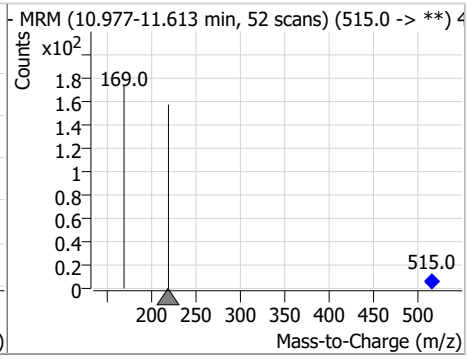




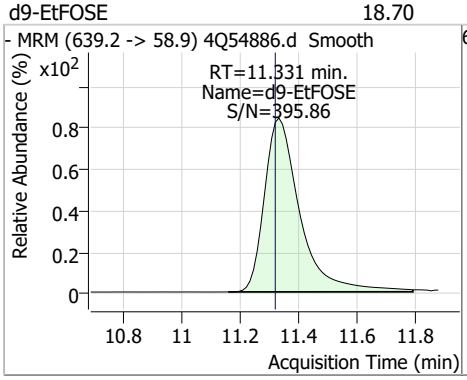
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.90	11.15	0.03	4405				

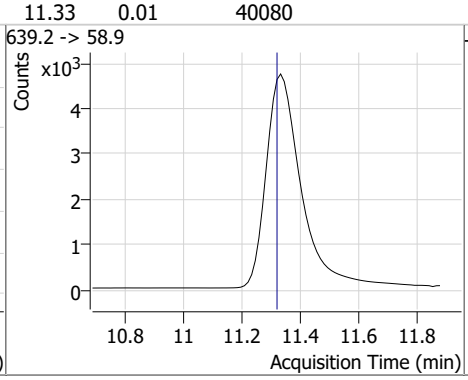


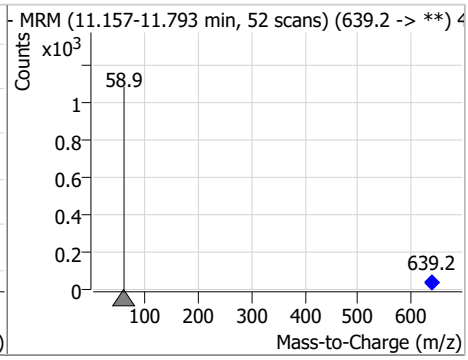




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	18.70	11.33	0.01	40080				

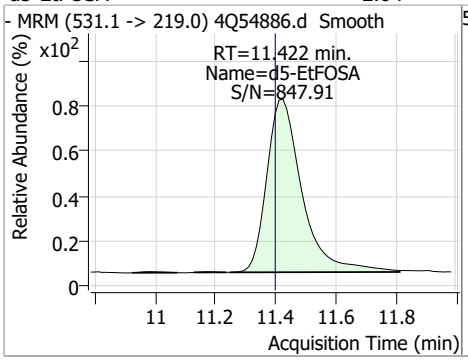


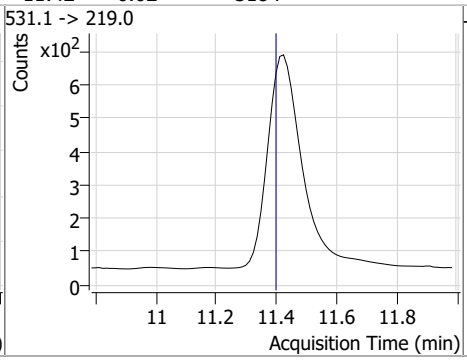


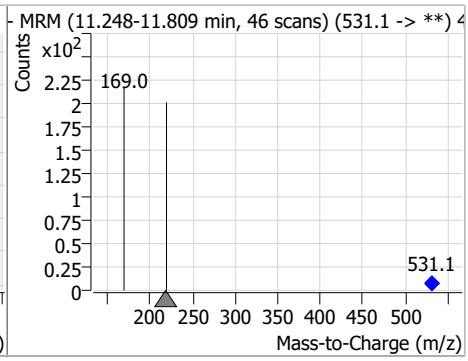


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.04	11.42	0.02	5184				







Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54885.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 7:51:10 PM
Sample Name : op495-mb
Vial : P2-C7
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP495,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.752	216.8 -> 171.9	101557	10.00	µg/L	0.078
M5-PFPeA	4.200	268.3 -> 223.0	39196	5.00	µg/L	0.037
M5-PFHxA	5.372	318.0 -> 273.0	30987	2.50	µg/L	0.037
M4-PFHpA	6.317	367.1 -> 322.0	31053	2.50	µg/L	0.025
M8-PFOA	7.001	421.1 -> 376.0	48156	2.50	µg/L	0.025
M9-PFNA	7.534	472.1 -> 427.0	18158	1.25	µg/L	0.012
M6-PFDA	8.017	519.1 -> 474.1	13357	1.25	µg/L	0.013
M7-PFUnDA	8.473	570.0 -> 525.1	14628	1.25	µg/L	0.025
M2-PFDoDA	8.892	615.1 -> 570.0	16008	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	14493	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	6468	2.50	µg/L	0.025
M3-PFBS	5.227	302.1 -> 79.9	8436	2.50	µg/L	0.038
M3-PFHxS	7.054	402.1 -> 79.9	7112	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	7917	2.50	µg/L	0.026
M2-4:2FTS	5.071	329.1 -> 80.9	1104	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2259	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	2988	5.00	µg/L	0.025
M3-MeFOSAA	8.099	573.2 -> 419.0	17206	5.00	µg/L	0.012
M3-HFPO-DA	5.714	286.9 -> 168.9	30284	10.00	µg/L	0.025
M5-EtFOSAA	8.309	589.2 -> 419.0	13957	5.00	µg/L	0.026
M7-MeFOSE	11.047	623.2 -> 58.9	24922	25.00	µg/L	0.025
M9-EtFOSE	11.331	639.2 -> 58.9	36914	25.00	µg/L	0.012
M5-EtFOSA	11.422	531.1 -> 219.0	5061	2.50	µg/L	0.025
M3-MeFOSA	11.139	515.0 -> 219.0	4140	2.50	µg/L	0.012
13C4-PFOS	8.144	502.8 -> 79.9	5453	2.50	µg/L	0.026
13C3-PFBA	2.755	216.0 -> 172.0	40730	5.00	µg/L	0.077
18O2-PFHxS	7.054	403.0 -> 83.9	4137	2.50	µg/L	0.013
13C4-PFOA	7.002	417.1 -> 372.0	46712	2.50	µg/L	0.025
13C2-PFDA	8.017	515.1 -> 470.1	12477	1.25	µg/L	0.013
13C5-PFNA	7.534	468.0 -> 423.0	16250	1.25	µg/L	0.025
13C2-PFHxA	5.373	315.1 -> 270.0	28002	2.50	µg/L	0.037
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	1104	5.62	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 112.4%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2259	5.30	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-8:2FTS	7.828	529.1 -> 80.9	2988	5.24	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C2-PFDoDA	8.892	615.1 -> 570.0	16008	1.28	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C2-PFTeDA	9.662	715.2 -> 670.0	14493	1.17	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C3-PFBS	5.227	302.1 -> 79.9	8436	2.66	µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C3-PFHxS	7.054	402.1 -> 79.9	7112	2.74	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C4-PFBA	2.752	216.8 -> 171.9	101557	11.87 µg/L	0.078
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 118.7%	
13C4-PFHpA	6.317	367.1 -> 322.0	31053	3.15 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 125.9%	
13C5-PFHxA	5.372	318.0 -> 273.0	30987	3.00 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 120.1%	
13C5-PFPeA	4.200	268.3 -> 223.0	39196	6.10 µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 122.0%	
13C6-PFDA	8.017	519.1 -> 474.1	13357	1.47 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 117.7%	
13C7-PFUnDA	8.473	570.0 -> 525.1	14628	1.37 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C8-FOSA	9.818	506.1 -> 77.8	6468	1.83 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 73.2%	
13C8-PFOA	7.001	421.1 -> 376.0	48156	2.79 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C8-PFOS	8.143	507.1 -> 79.9	7917	2.87 µg/L	0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.7%	
13C9-PFNA	7.534	472.1 -> 427.0	18158	1.39 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.6%	
d3-MeFOSAA	8.099	573.2 -> 419.0	17206	5.68 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C3-HFPO-DA	5.714	286.9 -> 168.9	30284	11.75 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 117.5%	
d3-MeFOSA	11.139	515.0 -> 219.0	4140	1.96 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 78.5%	
d5-EtFOSAA	8.309	589.2 -> 419.0	13957	5.45 µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.0%	
d7-MeFOSE	11.047	623.2 -> 58.9	24922	14.30 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 57.2%	
d9-EtFOSE	11.331	639.2 -> 58.9	36914	18.91 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 75.6%	
d5-EtFOSA	11.422	531.1 -> 219.0	5061	2.19 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 87.6%	

Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	-	427.1 -> 407.0 427.1 -> 80.9	-	N.D.	
8:2FTS	-	527.1 -> 507.0 527.1 -> 80.8	-	N.D.	
EtFOSAA	-	584.2 -> 419.1 584.2 -> 526.0	-	N.D.	
FOSA	-	498.1 -> 77.9 498.1 -> 478.0	-	N.D.	
MeFOSAA	-	570.1 -> 419.0 570.1 -> 483.0	-	N.D.	
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDoDA	-	613.1 -> 569.0 613.1 -> 319.0	-	N.D.	
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

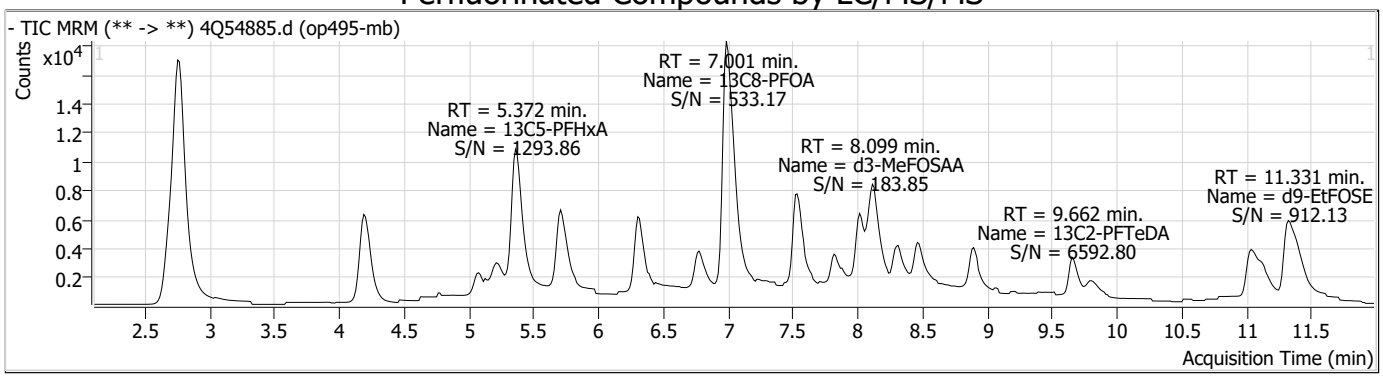
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	-	413.0 -> 369.0	-	N.D.		
		413.0 -> 169.0				
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

 # = Qualifier out of range, m = manually integrated, + = Area summed

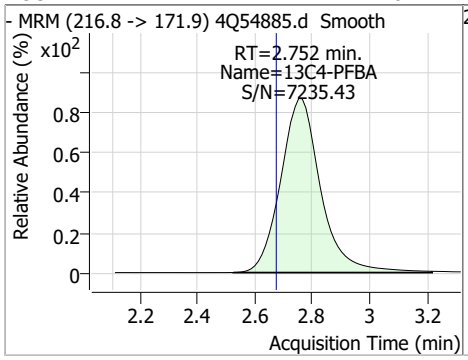
Perfluorinated Compounds by LC/MS/MS

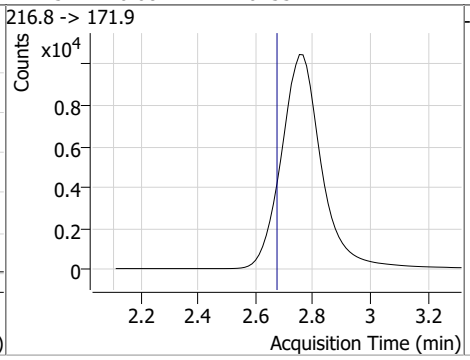
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

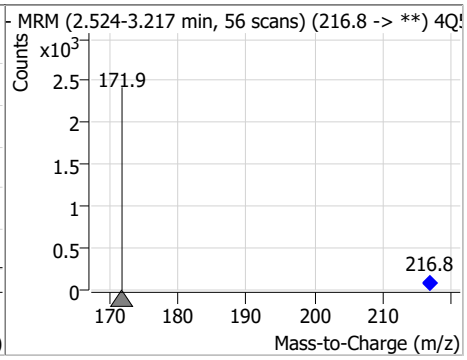
Perfluorinated Compounds by LC/MS/MS



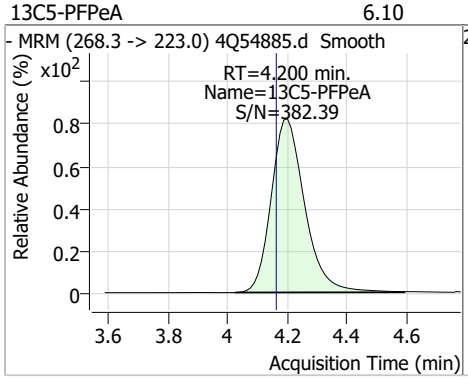
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.87	2.75	0.08	101557				

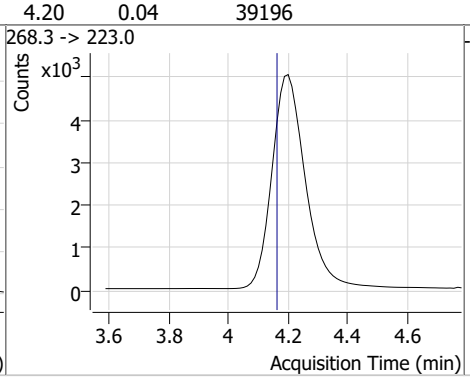


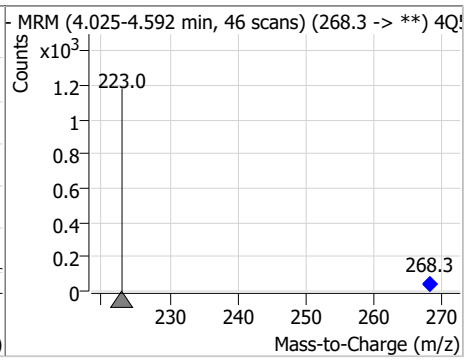




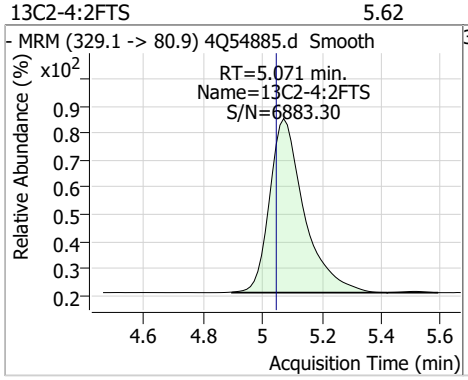
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	6.10	4.20	0.04	39196				

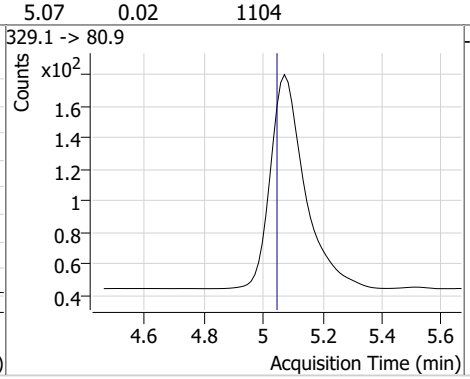


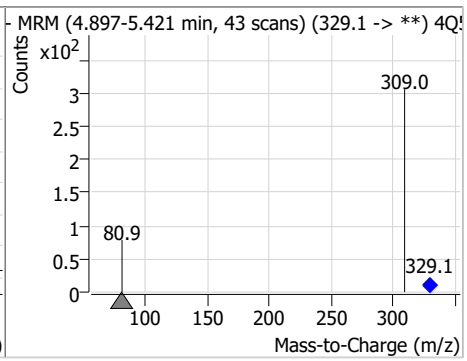




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.62	5.07	0.02	1104				

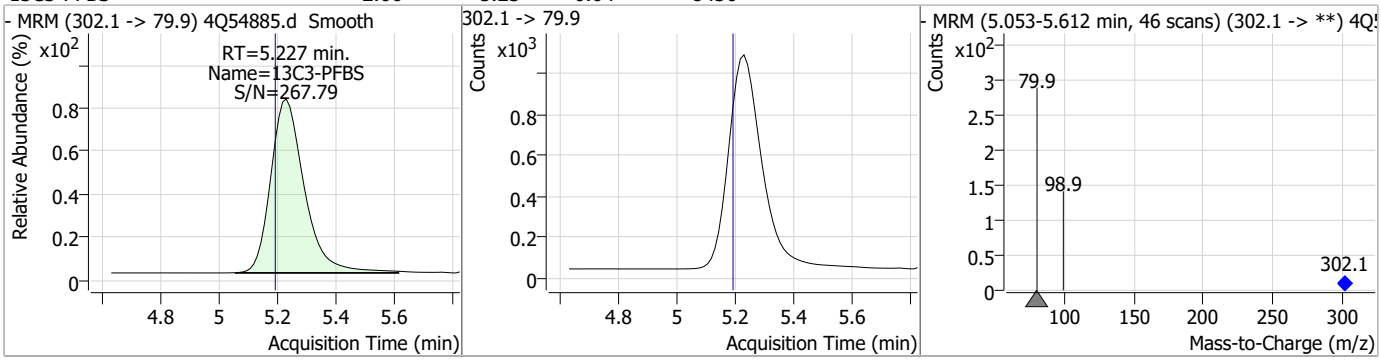




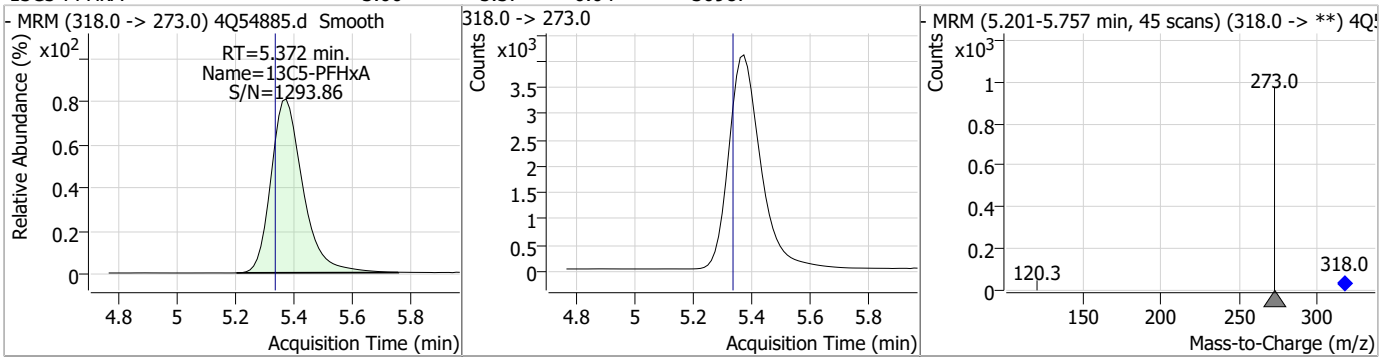


Perfluorinated Compounds by LC/MS/MS

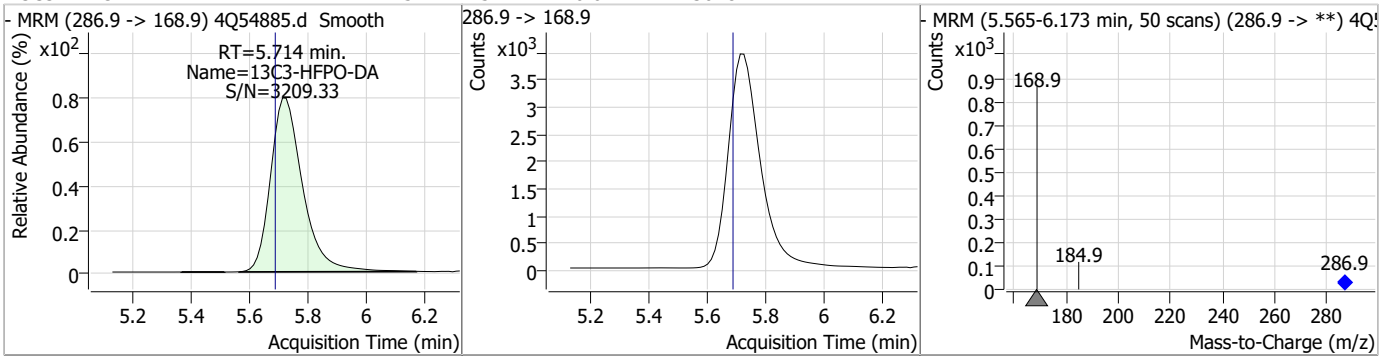
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.66	5.23	0.04	8436				



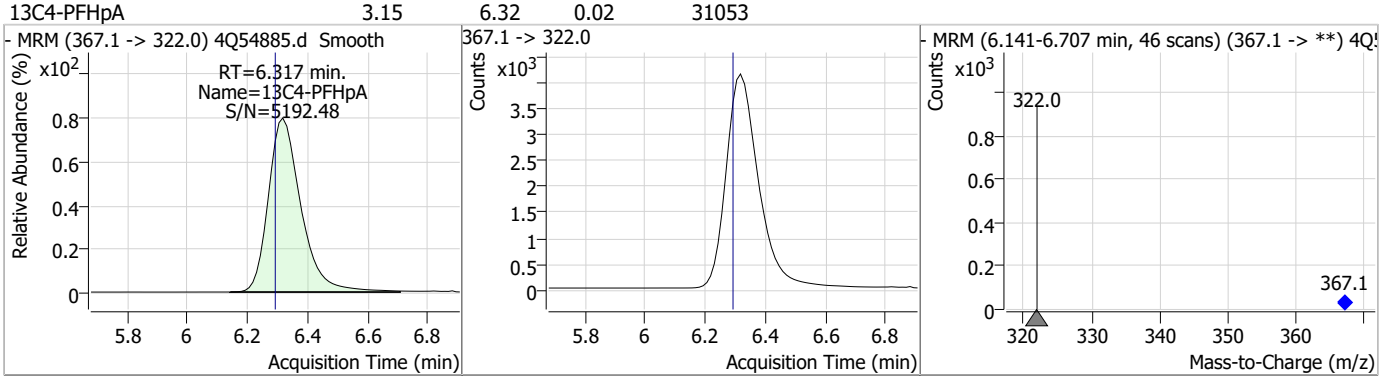
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.00	5.37	0.04	30987				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.75	5.71	0.02	30284				

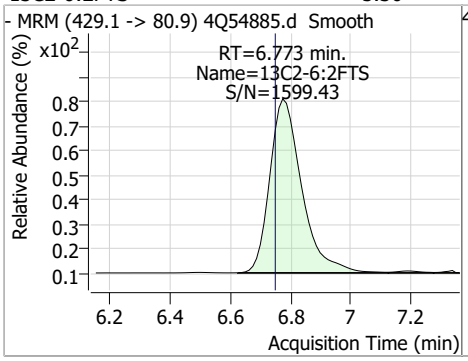


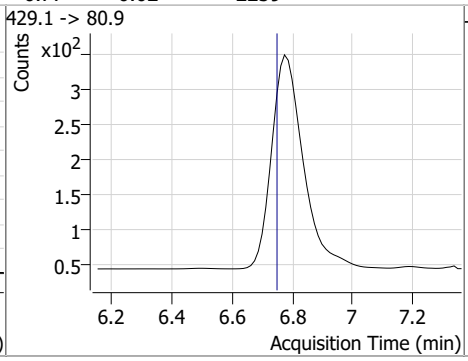
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.15	6.32	0.02	31053				

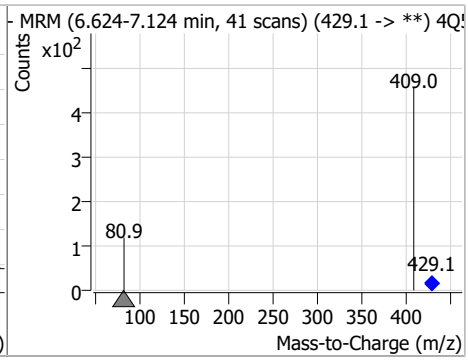


Perfluorinated Compounds by LC/MS/MS

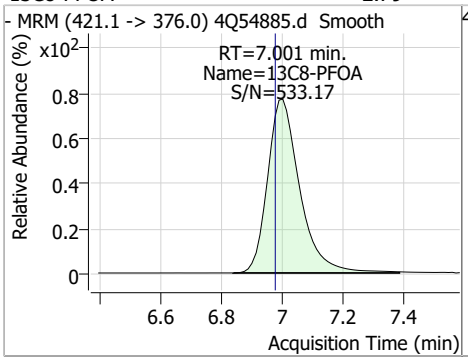
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.30	6.77	0.02	2259				

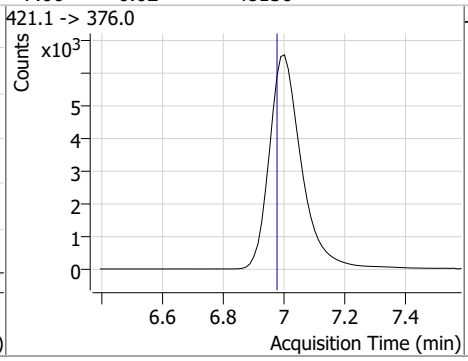


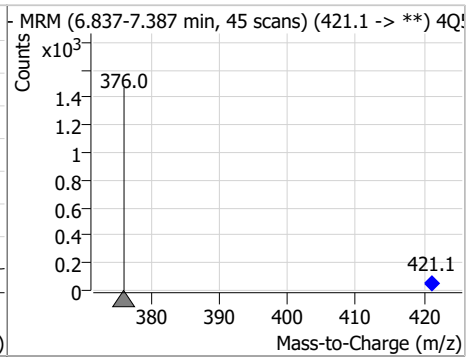




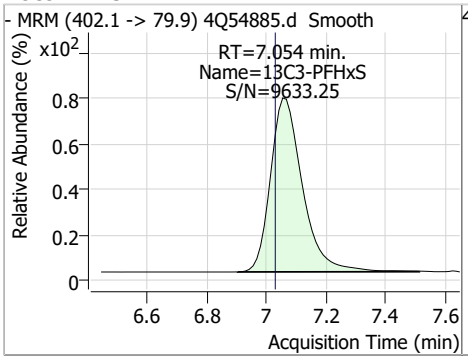
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.79	7.00	0.02	48156				

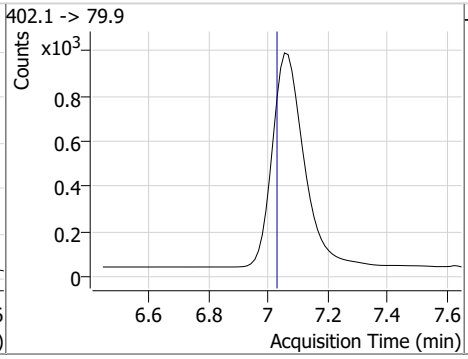


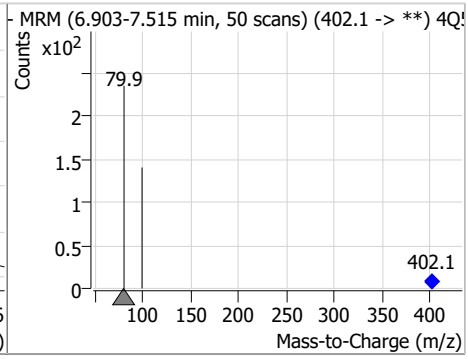




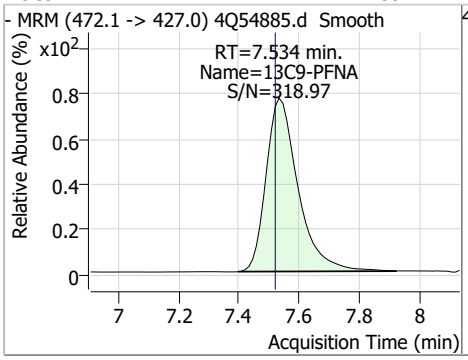
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.74	7.05	0.03	7112				

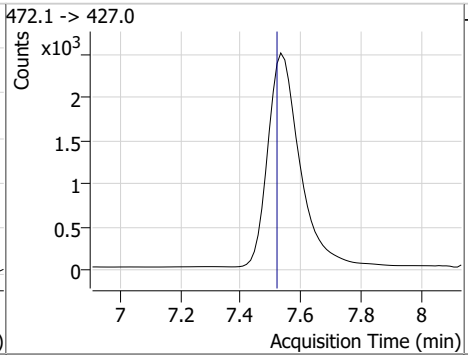


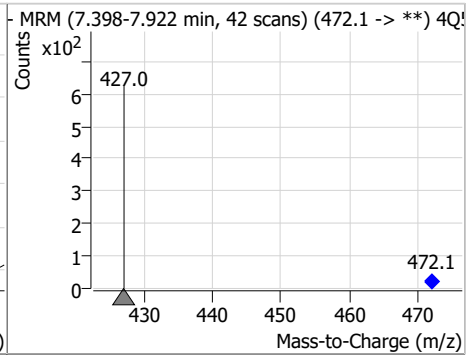




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.39	7.53	0.01	18158				

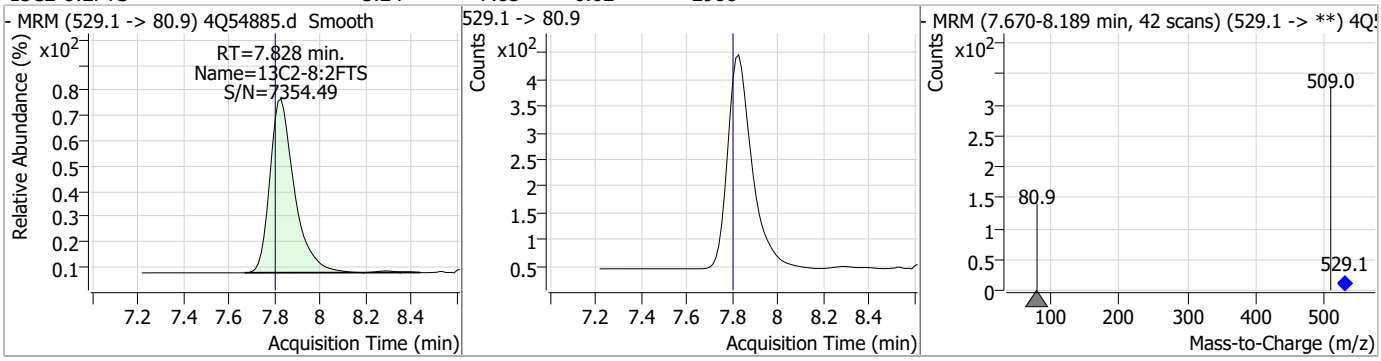




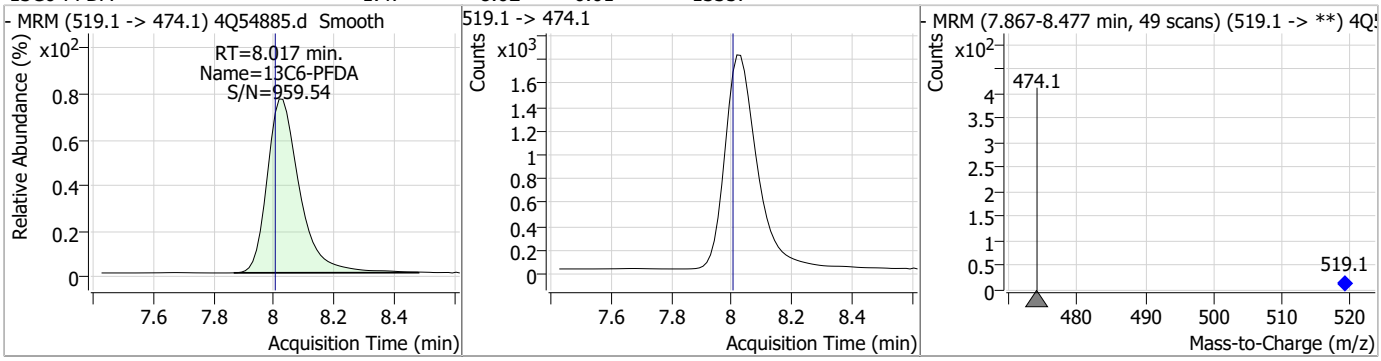


Perfluorinated Compounds by LC/MS/MS

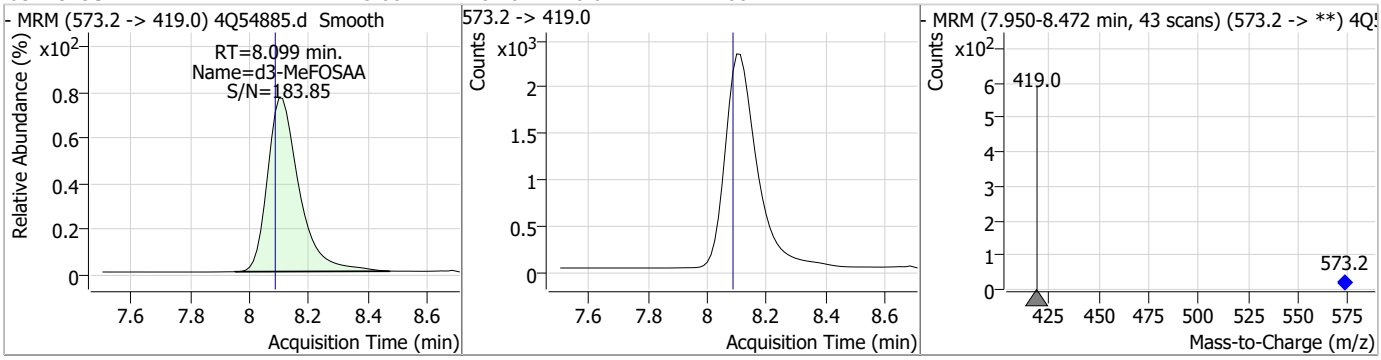
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.24	7.83	0.02	2988				



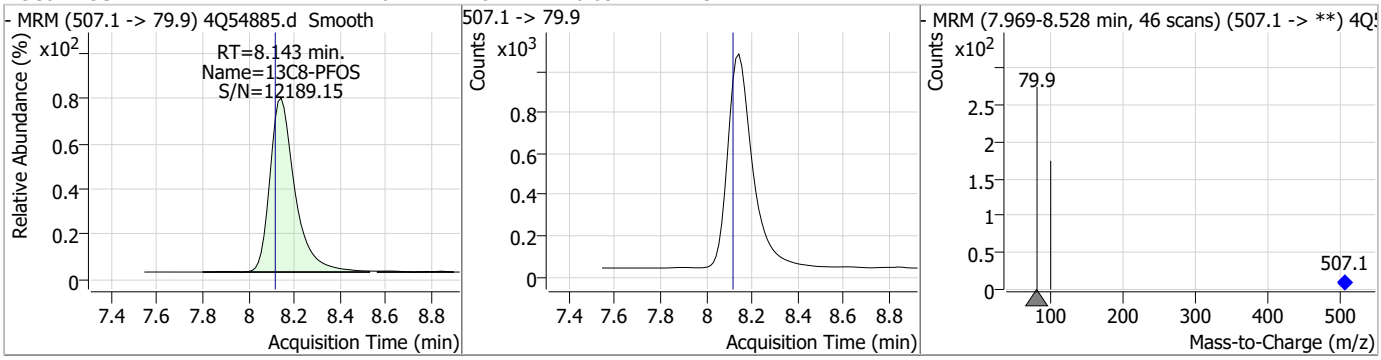
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.47	8.02	0.01	13357				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.68	8.10	0.01	17206				

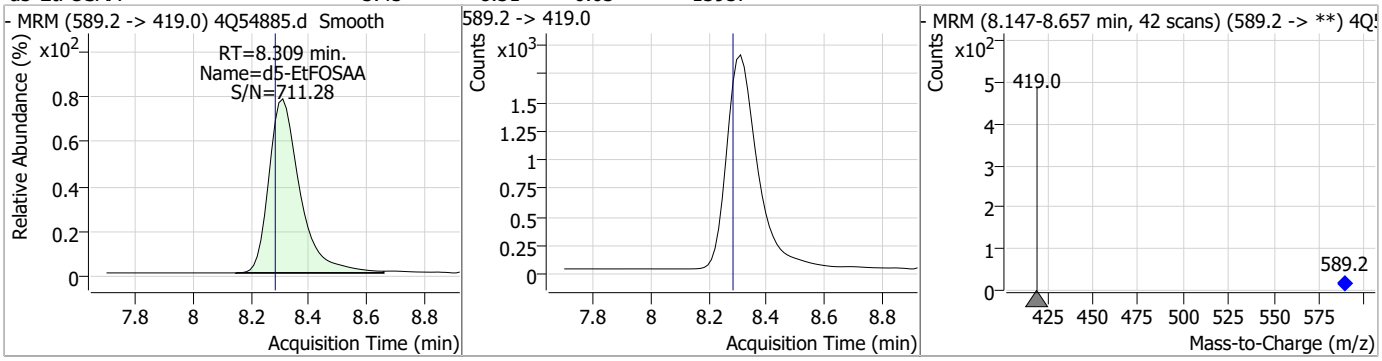


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.87	8.14	0.03	7917				

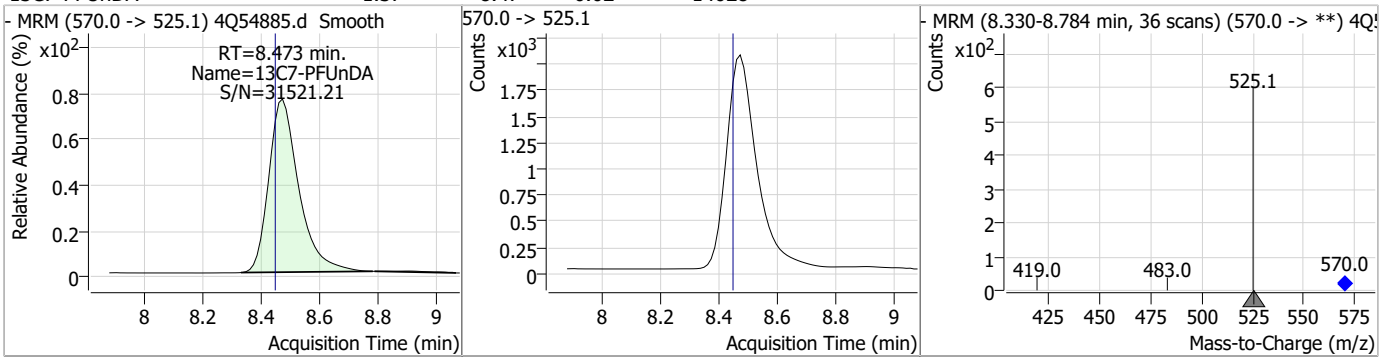


Perfluorinated Compounds by LC/MS/MS

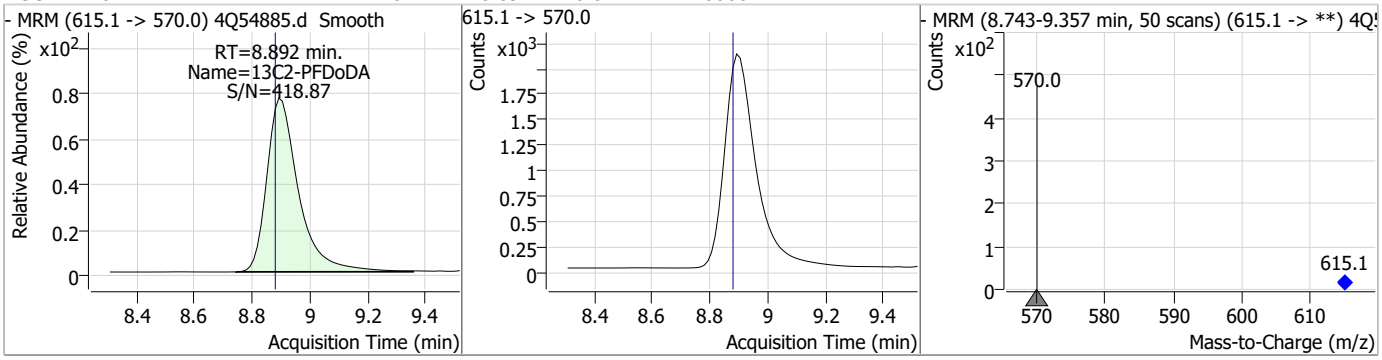
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.45	8.31	0.03	13957				



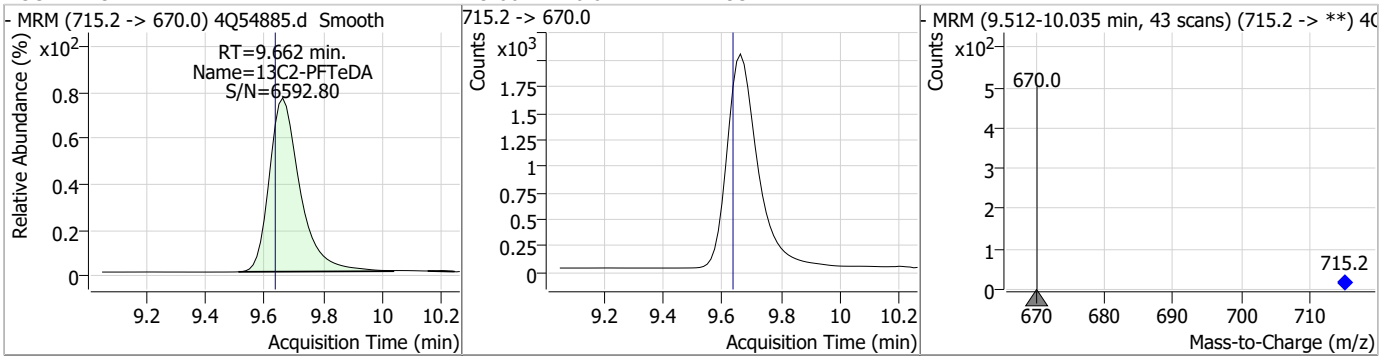
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.37	8.47	0.02	14628				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.28	8.89	0.01	16008				

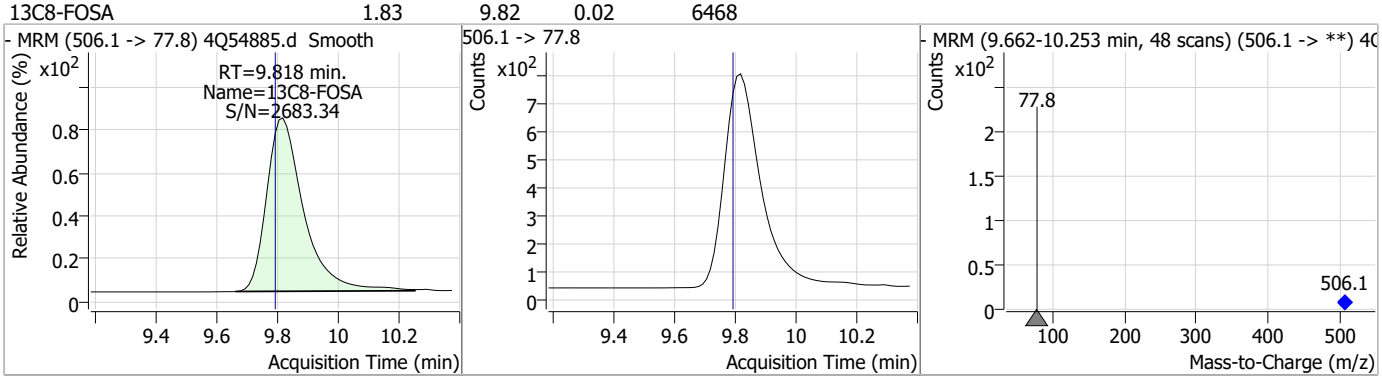


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.17	9.66	0.02	14493				

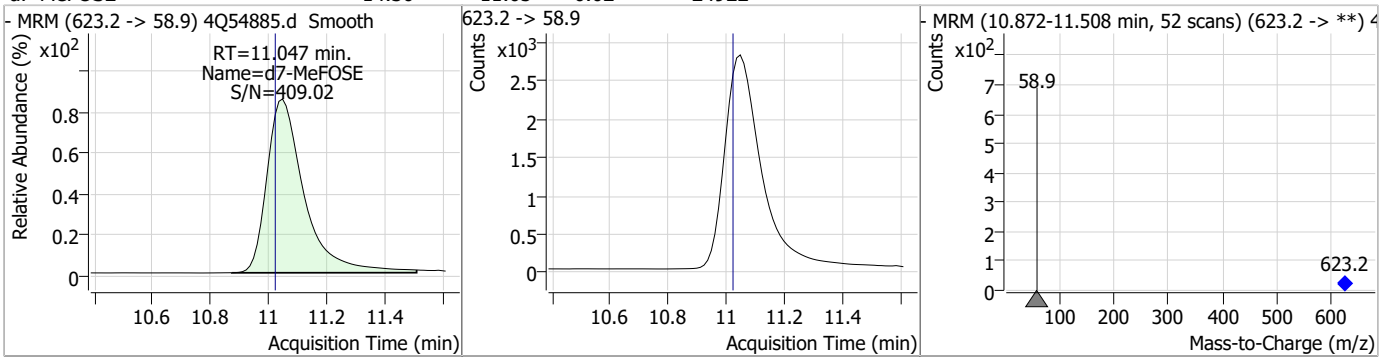


Perfluorinated Compounds by LC/MS/MS

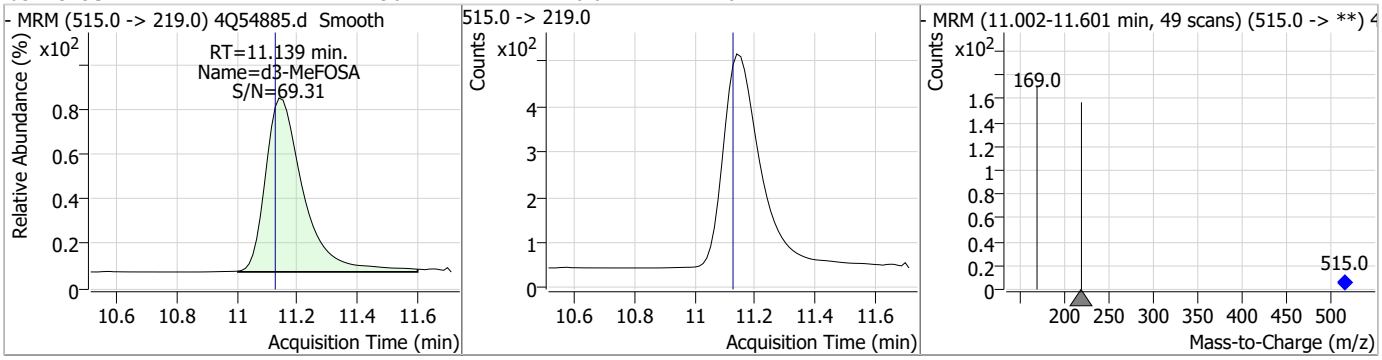
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.83	9.82	0.02	6468				



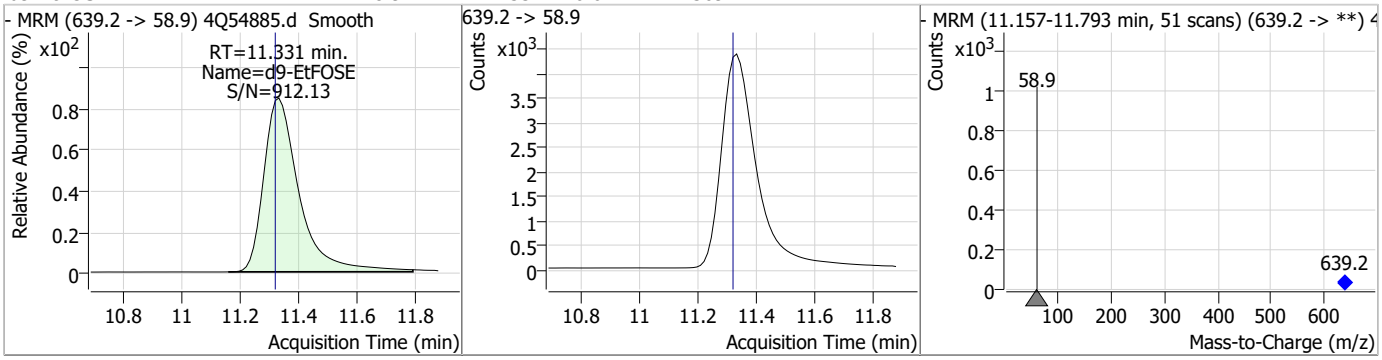
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	14.30	11.05	0.02	24922				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.96	11.14	0.01	4140				

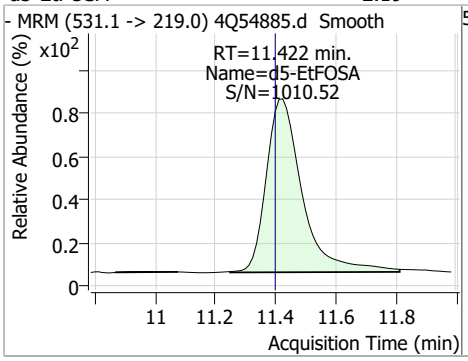


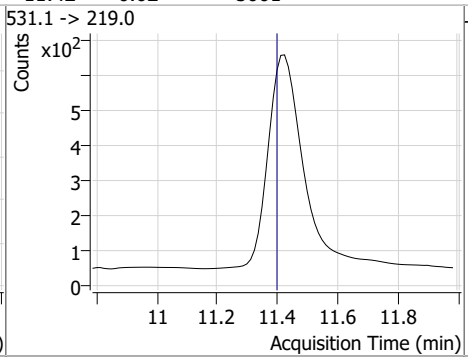
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	18.91	11.33	0.01	36914				

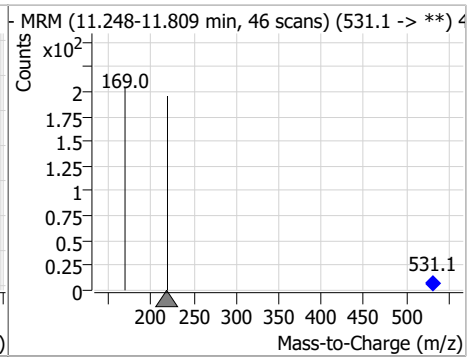


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.19	11.42	0.02	5061				







Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54860.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 1:36:18 PM
Sample Name : iblk
Vial : P1-A1
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	101604	10.00	µg/L	0.012
M5-PFPeA	4.175	268.3 -> 223.0	43272	5.00	µg/L	0.012
M5-PFHxA	5.359	318.0 -> 273.0	32914	2.50	µg/L	0.025
M4-PFHpA	6.304	367.1 -> 322.0	33488	2.50	µg/L	0.012
M8-PFOA	6.989	421.1 -> 376.0	52746	2.50	µg/L	0.012
M9-PFNA	7.521	472.1 -> 427.0	21272	1.25	µg/L	0.000
M6-PFDA	8.017	519.1 -> 474.1	14680	1.25	µg/L	0.013
M7-PFUnDA	8.461	570.0 -> 525.1	17730	1.25	µg/L	0.012
M2-PFDoDA	8.892	615.1 -> 570.0	19498	1.25	µg/L	0.012
M2-PFTeDA	9.649	715.2 -> 670.0	19267	1.25	µg/L	0.012
M8-FOSA	9.794	506.1 -> 77.8	11454	2.50	µg/L	0.000
M3-PFBS	5.215	302.1 -> 79.9	9289	2.50	µg/L	0.025
M3-PFHxS	7.054	402.1 -> 79.9	7633	2.50	µg/L	0.025
M8-PFOS	8.130	507.1 -> 79.9	8440	2.50	µg/L	0.012
M2-4:2FTS	5.071	329.1 -> 80.9	1177	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2642	5.00	µg/L	0.025
M2-8:2FTS	7.816	529.1 -> 80.9	3427	5.00	µg/L	0.012
M3-MeFOSAA	8.099	573.2 -> 419.0	20213	5.00	µg/L	0.012
M3-HFPO-DA	5.714	286.9 -> 168.9	33531	10.00	µg/L	0.025
M5-EtFOSAA	8.296	589.2 -> 419.0	17063	5.00	µg/L	0.012
M7-MeFOSE	11.034	623.2 -> 58.9	52115	25.00	µg/L	0.012
M9-EtFOSE	11.319	639.2 -> 58.9	58688	25.00	µg/L	0.000
M5-EtFOSA	11.398	531.1 -> 219.0	7049	2.50	µg/L	0.000
M3-MeFOSA	11.126	515.0 -> 219.0	6549	2.50	µg/L	0.000
13C4-PFOS	8.130	502.8 -> 79.9	7273	2.50	µg/L	0.012
13C3-PFBA	2.691	216.0 -> 172.0	48341	5.00	µg/L	0.013
18O2-PFHxS	7.054	403.0 -> 83.9	4874	2.50	µg/L	0.013
13C4-PFOA	6.989	417.1 -> 372.0	58334	2.50	µg/L	0.012
13C2-PFDA	8.017	515.1 -> 470.1	15317	1.25	µg/L	0.013
13C5-PFNA	7.522	468.0 -> 423.0	21243	1.25	µg/L	0.012
13C2-PFHxA	5.360	315.1 -> 270.0	37372	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	1177	5.09	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2642	5.27	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C2-8:2FTS	7.816	529.1 -> 80.9	3427	5.10	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C2-PFDoDA	8.892	615.1 -> 570.0	19498	1.27	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFTeDA	9.649	715.2 -> 670.0	19267	1.27	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C3-PFBS	5.215	302.1 -> 79.9	9289	2.49	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C3-PFHxS	7.054	402.1 -> 79.9	7633	2.50	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFBA	2.686	216.8 -> 171.9	101604	10.01 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	6.304	367.1 -> 322.0	33488	2.54 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFHxA	5.359	318.0 -> 273.0	32914	2.39 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C5-PFPeA	4.175	268.3 -> 223.0	43272	5.04 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C6-PFDA	8.017	519.1 -> 474.1	14680	1.32 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C7-PFUnDA	8.461	570.0 -> 525.1	17730	1.35 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C8-FOSA	9.794	506.1 -> 77.8	11454	2.43 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C8-PFOA	6.989	421.1 -> 376.0	52746	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C8-PFOS	8.130	507.1 -> 79.9	8440	2.29 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.7%	
13C9-PFNA	7.521	472.1 -> 427.0	21272	1.25 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%	
d3-MeFOSAA	8.099	573.2 -> 419.0	20213	5.01 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C3-HFPO-DA	5.714	286.9 -> 168.9	33531	9.75 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
d3-MeFOSA	11.126	515.0 -> 219.0	6549	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.2%	
d5-EtFOSAA	8.296	589.2 -> 419.0	17063	5.00 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d7-MeFOSE	11.034	623.2 -> 58.9	52115	22.41 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 89.6%	
d9-EtFOSE	11.319	639.2 -> 58.9	58688	22.54 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.1%	
d5-EtFOSA	11.398	531.1 -> 219.0	7049	2.29 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.5%	

Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	-	427.1 -> 407.0 427.1 -> 80.9	-	N.D.	
8:2FTS	-	527.1 -> 507.0 527.1 -> 80.8	-	N.D.	
EtFOSAA	-	584.2 -> 419.1 584.2 -> 526.0	-	N.D.	
FOSA	-	498.1 -> 77.9 498.1 -> 478.0	-	N.D.	
MeFOSAA	-	570.1 -> 419.0 570.1 -> 483.0	-	N.D.	
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDoDA	-	613.1 -> 569.0 613.1 -> 319.0	-	N.D.	
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

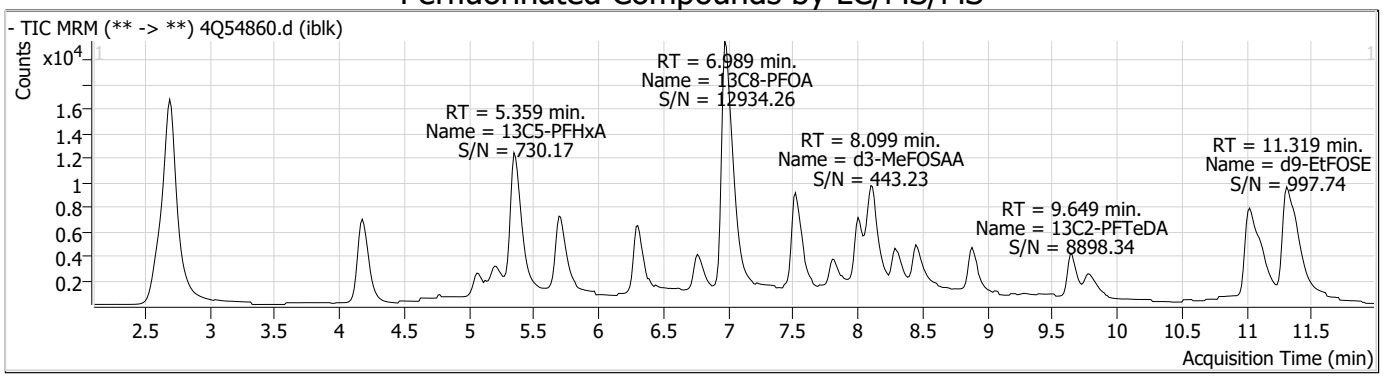
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	-	363.1 -> 319.0	-	N.D.			
		363.1 -> 169.0					
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 118.9					
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	-	498.9 -> 79.9	-	N.D.			
		498.9 -> 98.8					
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	-	713.1 -> 669.0	-	N.D.			
		713.1 -> 168.9					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 168.9					
PFUnDA	-	563.1 -> 519.0	-	N.D.			
		563.1 -> 269.1					
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.			
		632.9 -> 452.9					
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.			
		532.8 -> 353.0					
ADONA	-	376.9 -> 250.9	-	N.D.			
		376.9 -> 84.8					
HFPO-DA	-	284.9 -> 168.9	-	N.D.			
		284.9 -> 184.9					
3:3FTCA	-	241.0 -> 177.0	-	N.D.			
		241.0 -> 117.0					
5:3FTCA	-	341.0 -> 237.1	-	N.D.			
		341.0 -> 217.0					
7:3FTCA	-	441.0 -> 316.9	-	N.D.			
		441.0 -> 336.9					
EtFOSA	11.374	526.0 -> 219.0	842	0.28	µg/L	m	93
		526.0 -> 169.0	1094				
EtFOSE	11.332	630.0 -> 58.9	1560	0.75	µg/L	m	100
MeFOSA	11.140	511.9 -> 219.0	522	0.22	µg/L		44
		511.9 -> 169.0	406				
MeFOSE	11.047	616.1 -> 58.9	874	0.42	µg/L	m	100
PFDoDS	-	699.1 -> 79.9	-	N.D.			
		699.1 -> 98.8					
NFDHA	-	295.0 -> 201.0	-	N.D.			
		295.0 -> 84.9					
PFMBA	-	279.0 -> 85.1	-	N.D.			
PFMPA	-	229.0 -> 84.9	-	N.D.			
PFEESA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					

 # = Qualifier out of range, m = manually integrated, + = Area summed

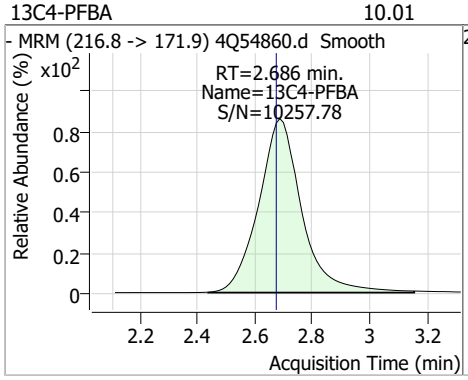
Perfluorinated Compounds by LC/MS/MS

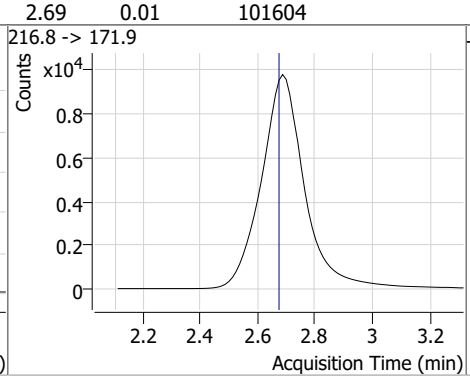
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

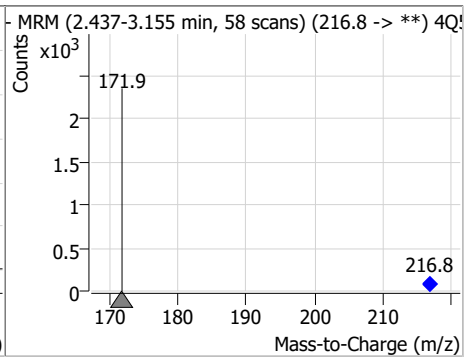
Perfluorinated Compounds by LC/MS/MS



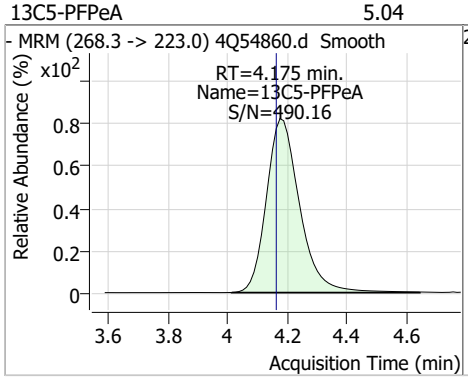
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.01	2.69	0.01	101604				

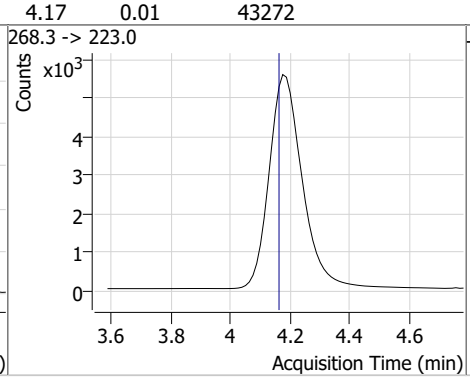


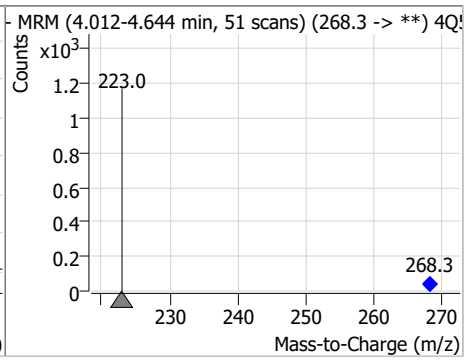




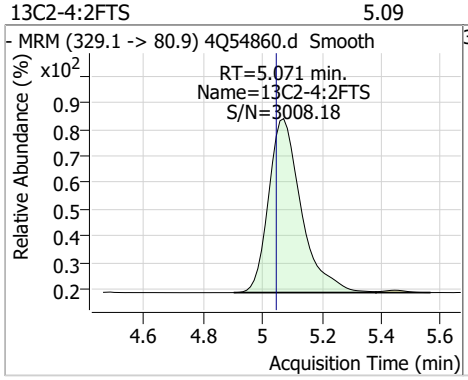
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.04	4.17	0.01	43272				

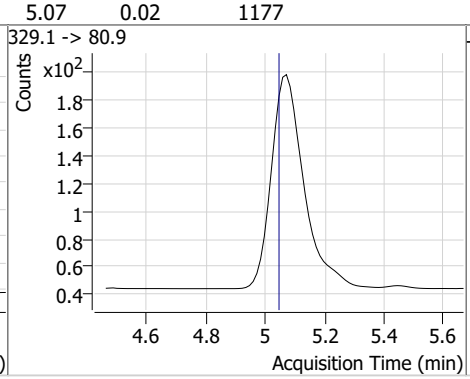


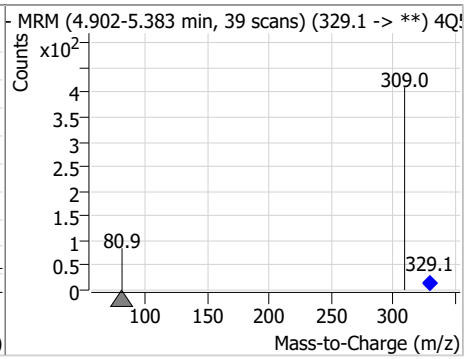




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.09	5.07	0.02	1177				

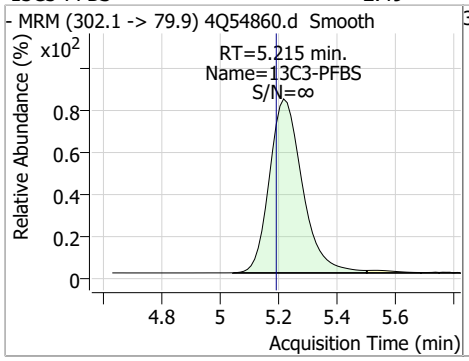


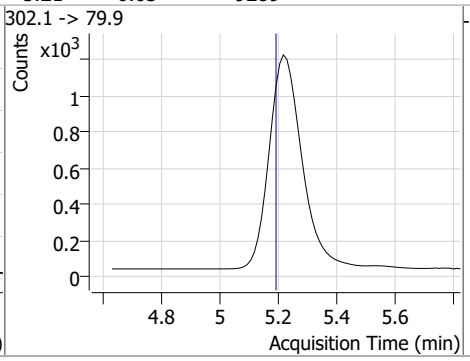


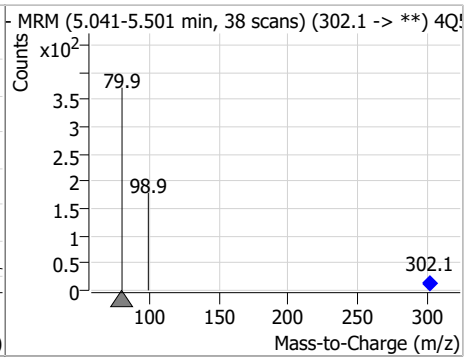


Perfluorinated Compounds by LC/MS/MS

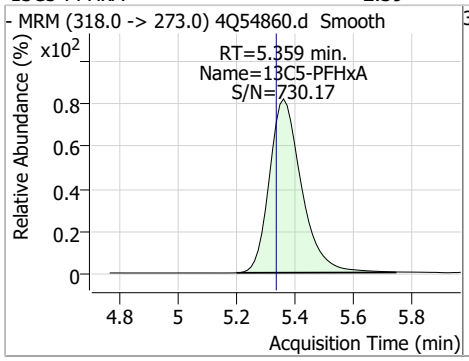
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.49	5.21	0.03	9289				

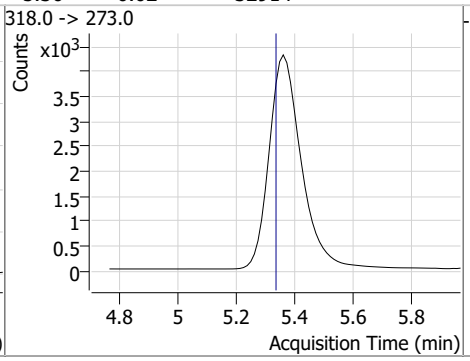


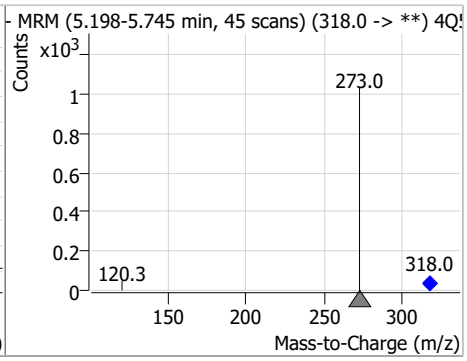




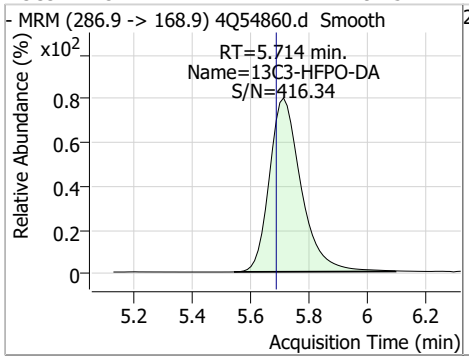
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.39	5.36	0.02	32914				

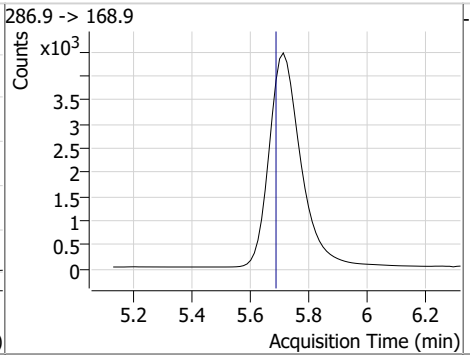


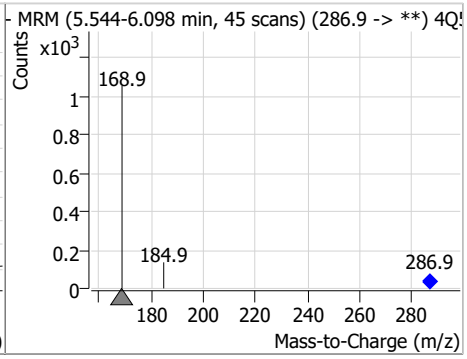




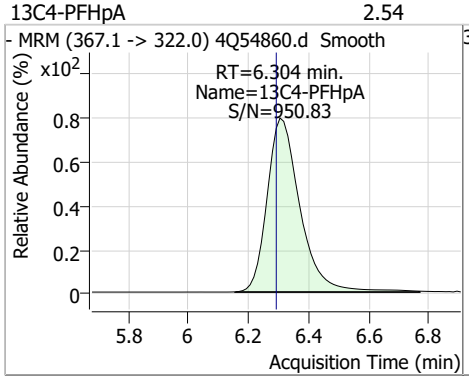
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.75	5.71	0.02	33531				

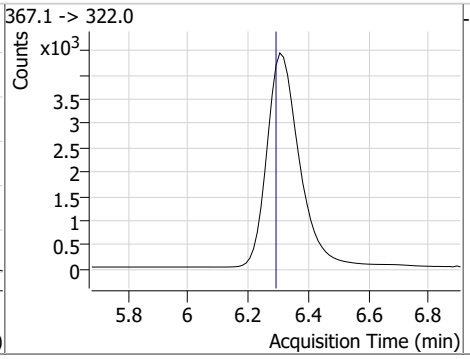


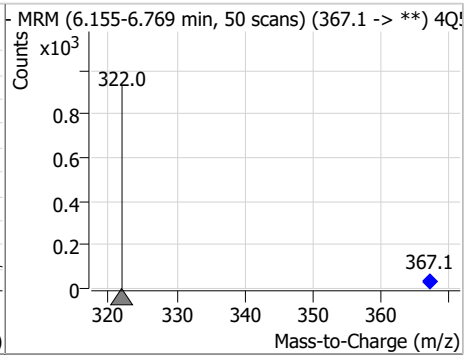




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	6.30	0.01	33488				

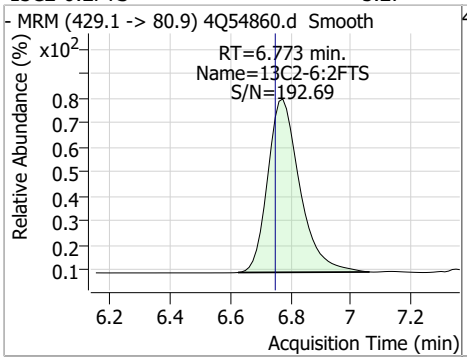


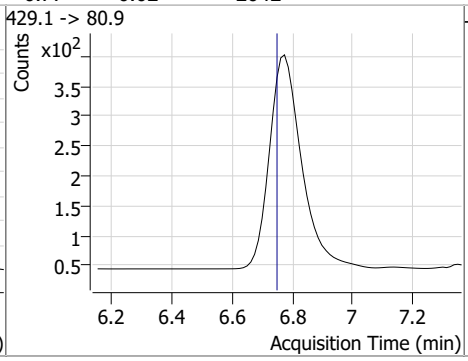


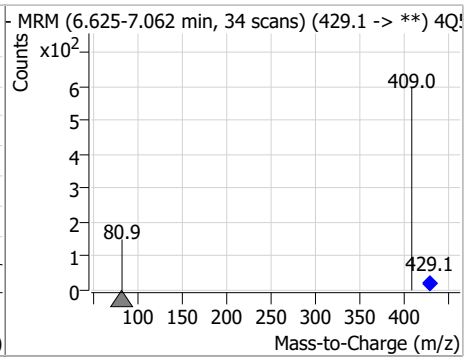


Perfluorinated Compounds by LC/MS/MS

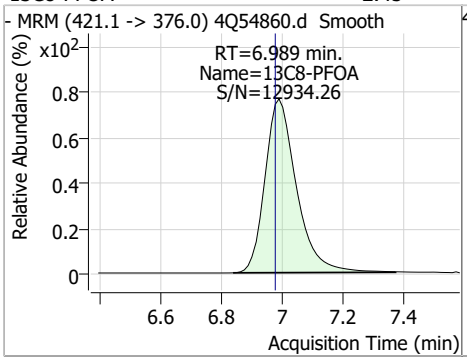
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.27	6.77	0.02	2642				

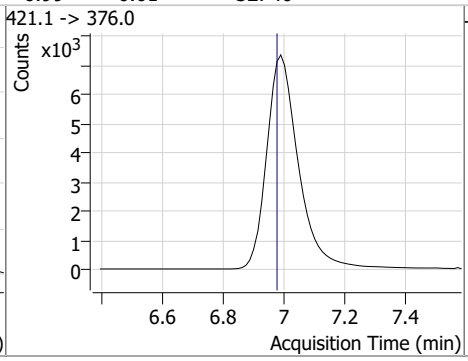


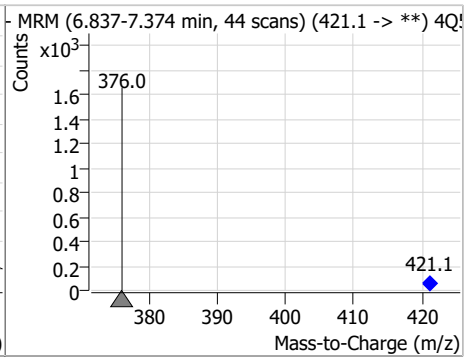




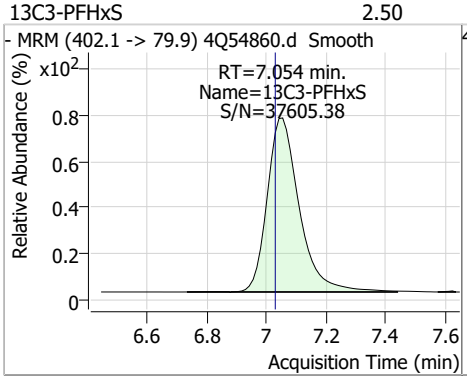
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.45	6.99	0.01	52746				

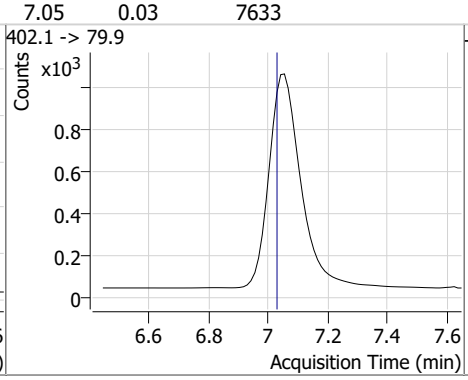


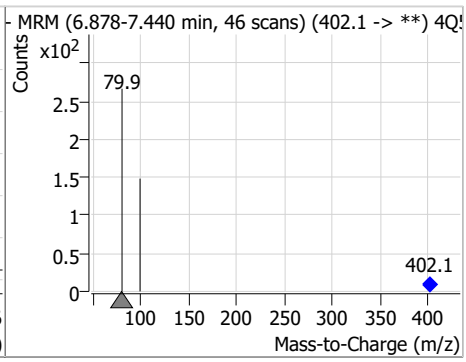




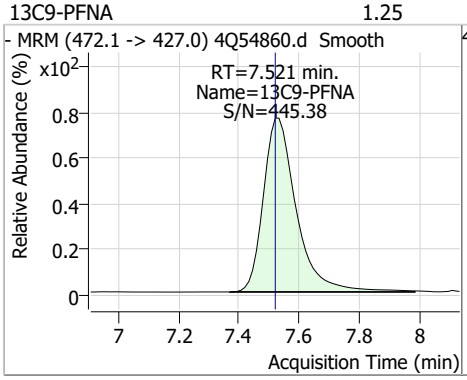
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.50	7.05	0.03	7633				

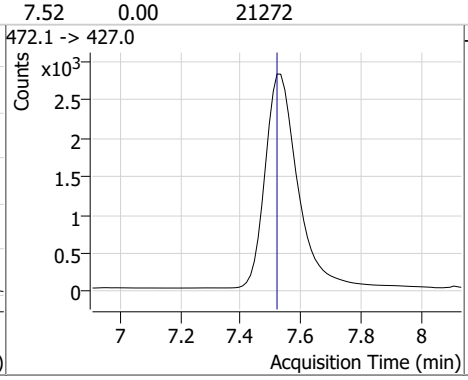


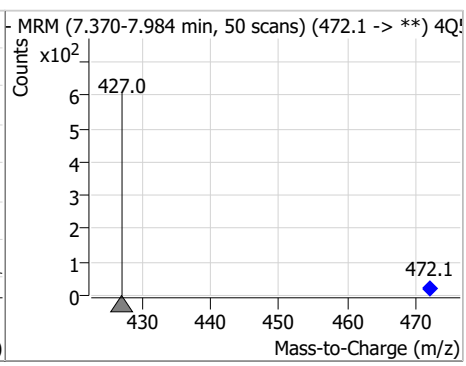




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.25	7.52	0.00	21272				

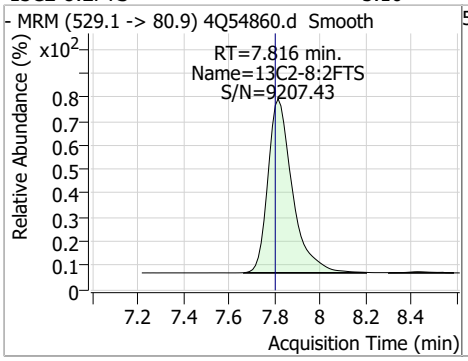


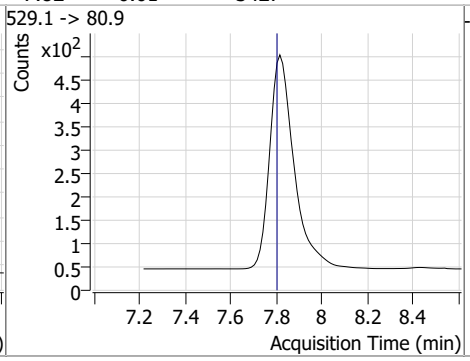


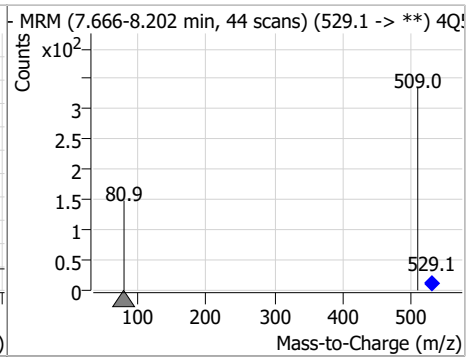


Perfluorinated Compounds by LC/MS/MS

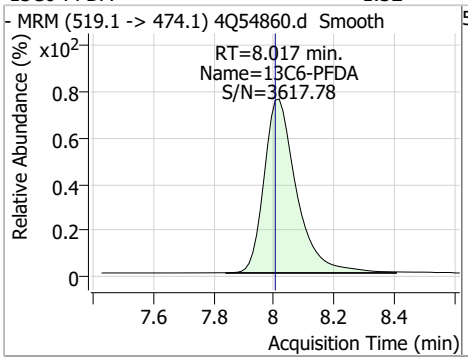
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.10	7.82	0.01	3427				

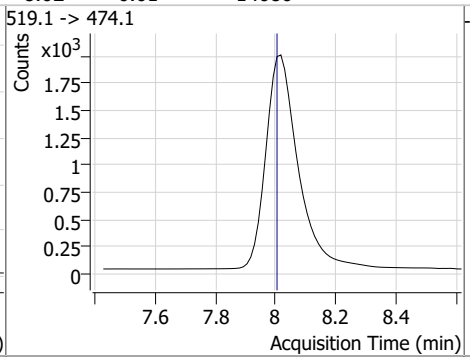


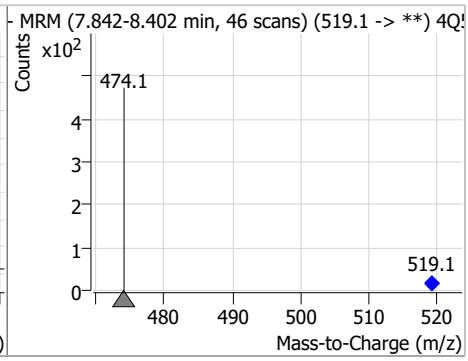




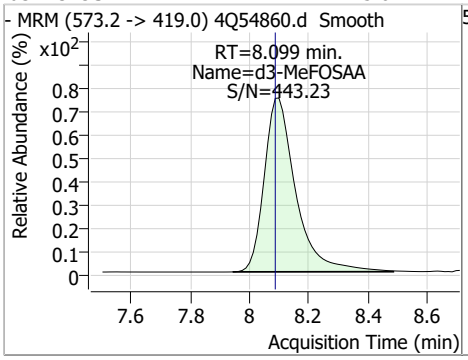
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.32	8.02	0.01	14680				

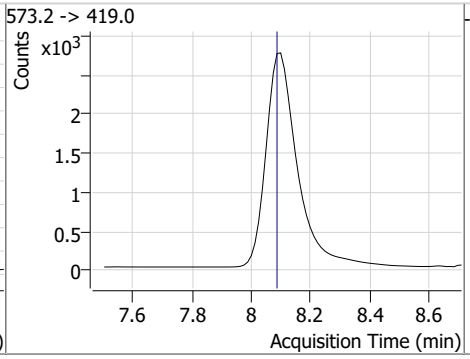


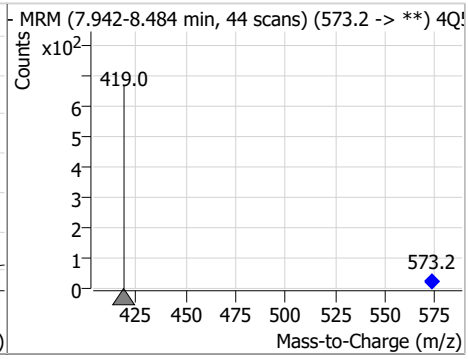




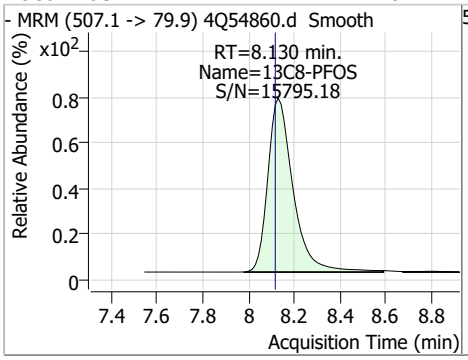
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.01	8.10	0.01	20213				

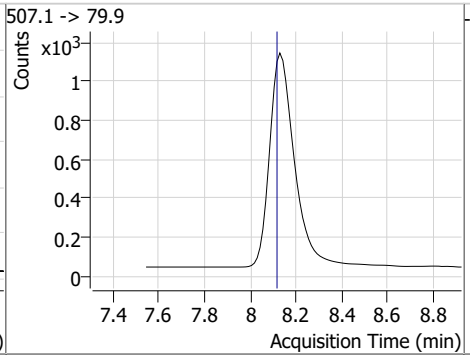


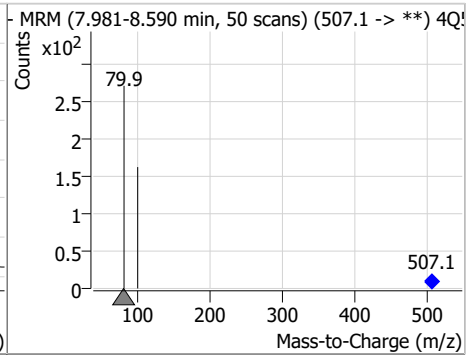




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.29	8.13	0.01	8440				

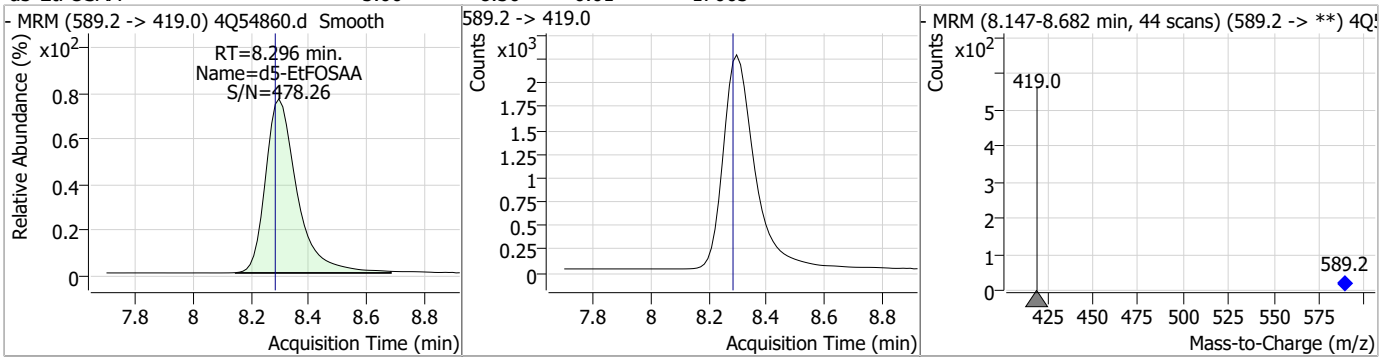




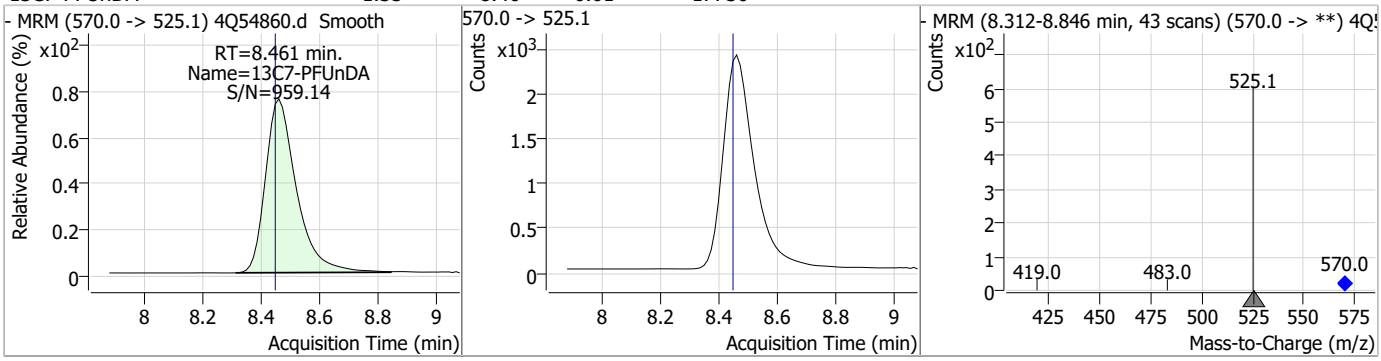


Perfluorinated Compounds by LC/MS/MS

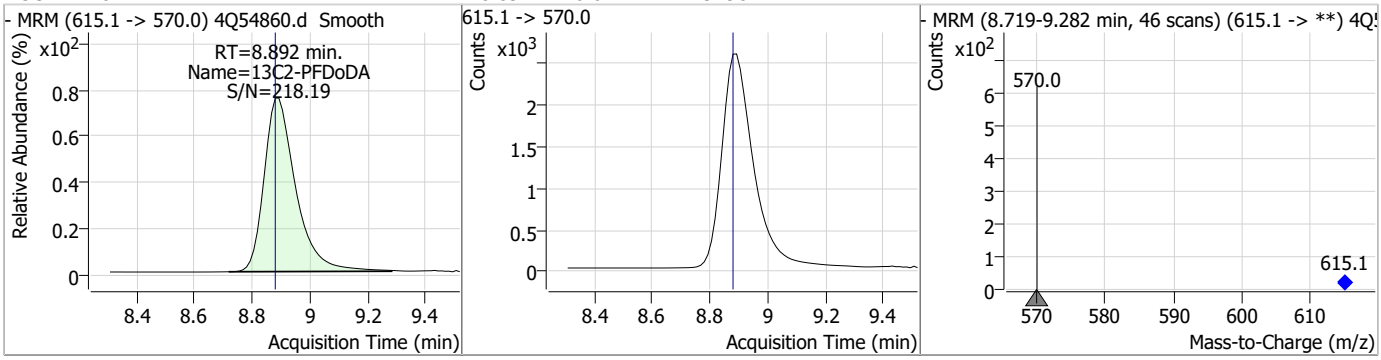
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.00	8.30	0.01	17063				



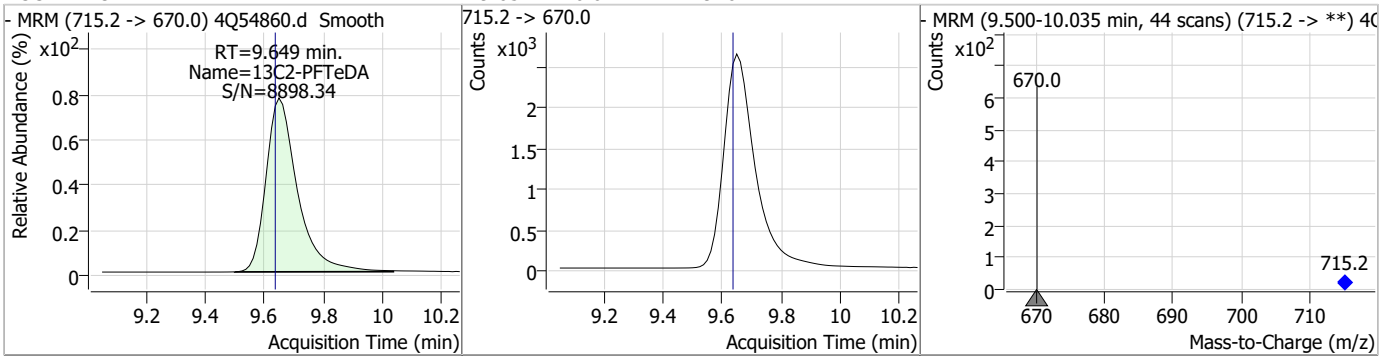
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.46	0.01	17730				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.27	8.89	0.01	19498				

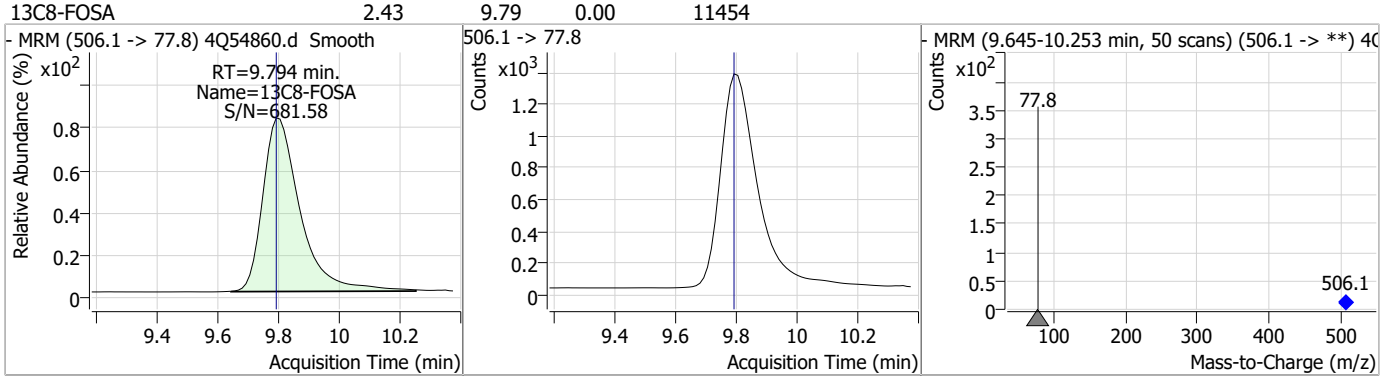


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.27	9.65	0.01	19267				

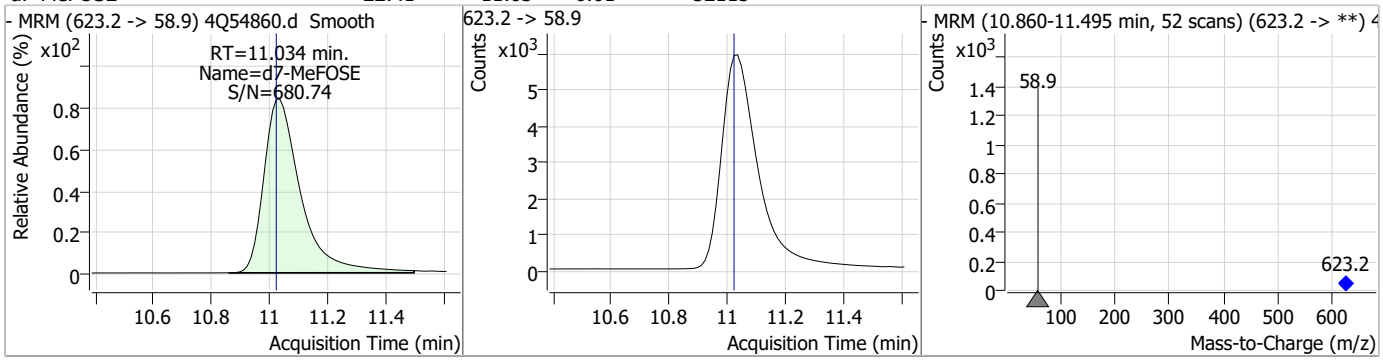


Perfluorinated Compounds by LC/MS/MS

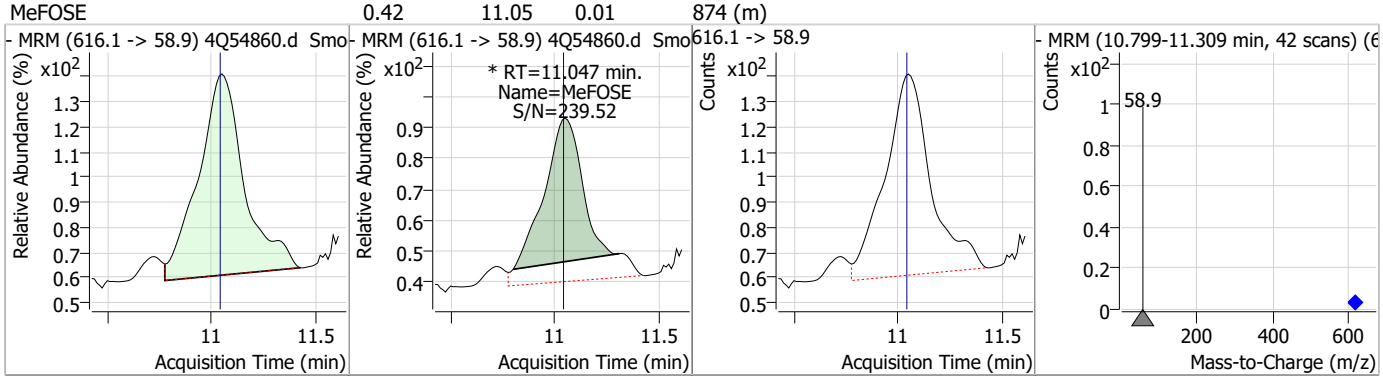
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.43	9.79	0.00	11454				



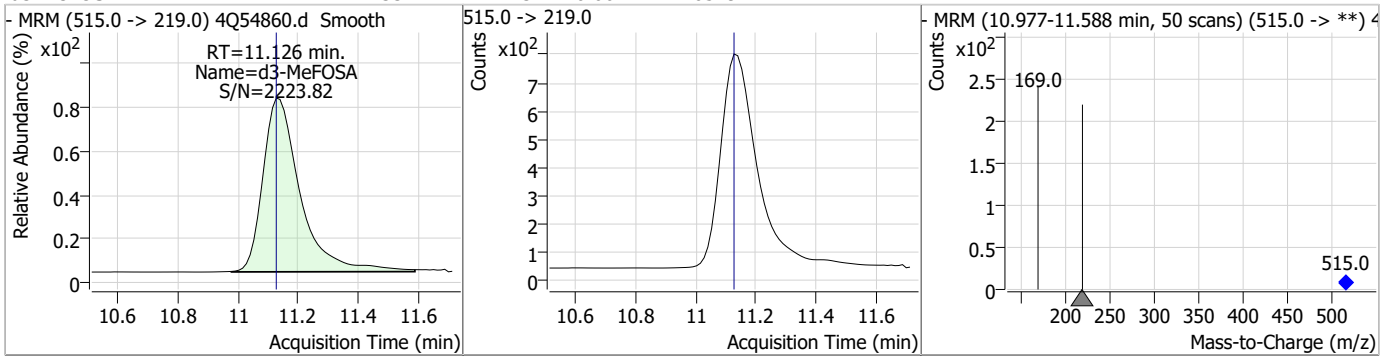
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.41	11.03	0.01	52115				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	0.42	11.05	0.01	874 (m)				

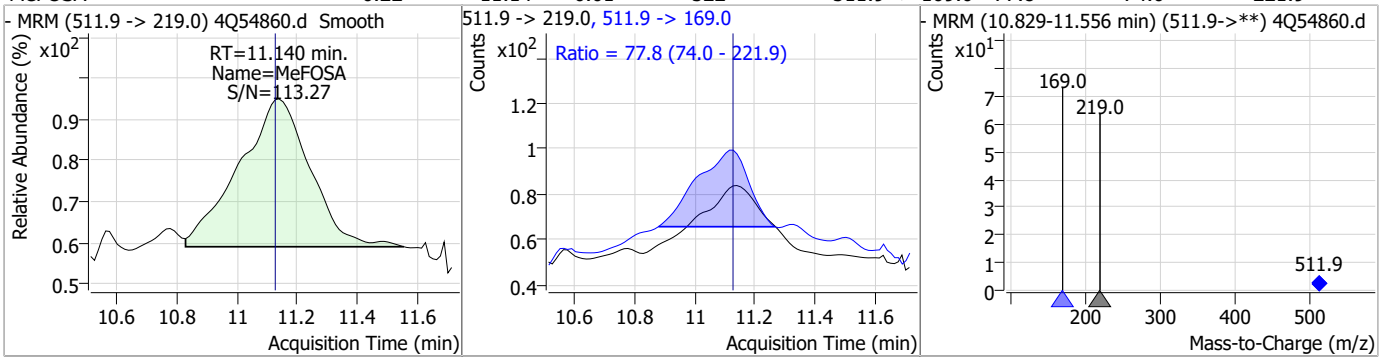


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.33	11.13	0.00	6549				

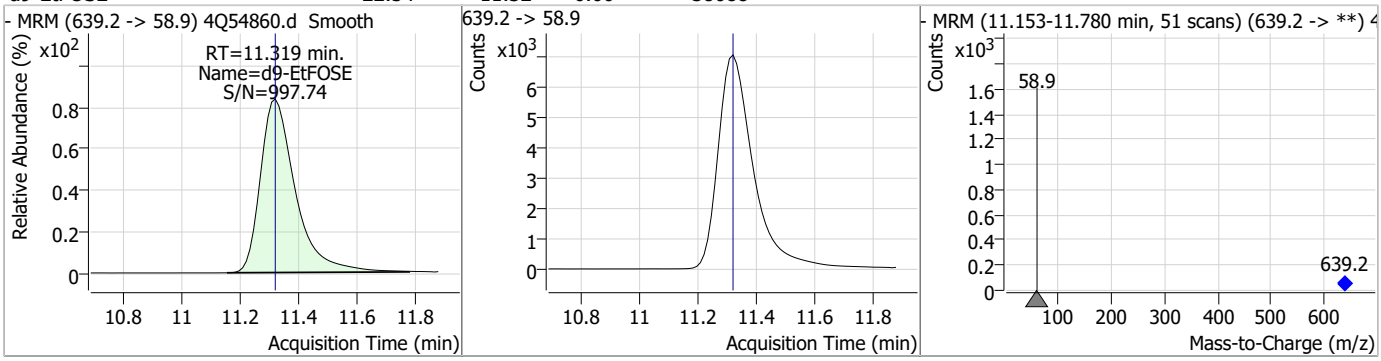


Perfluorinated Compounds by LC/MS/MS

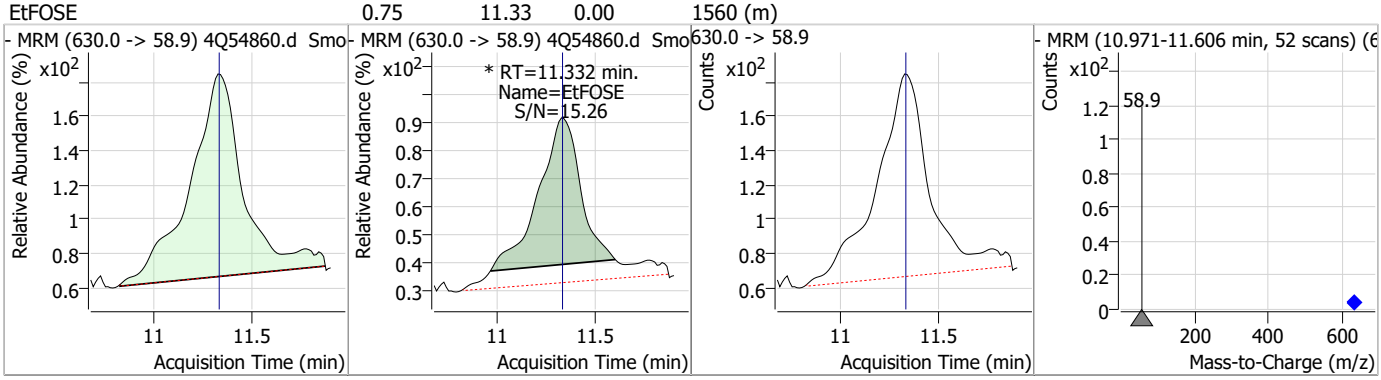
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.22	11.14	0.01	522	511.9 -> 169.0	77.8	74.0	221.9



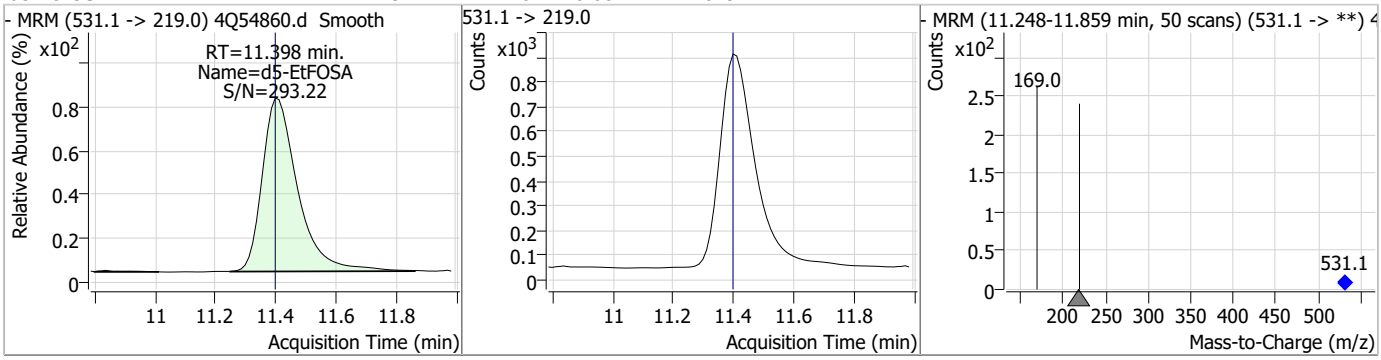
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.54	11.32	0.00	58688				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	0.75	11.33	0.00	1560 (m)				

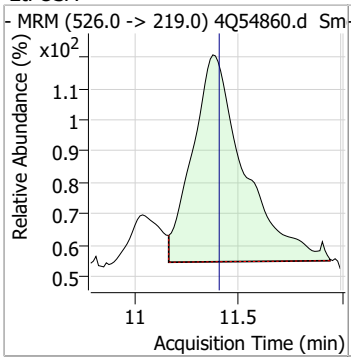


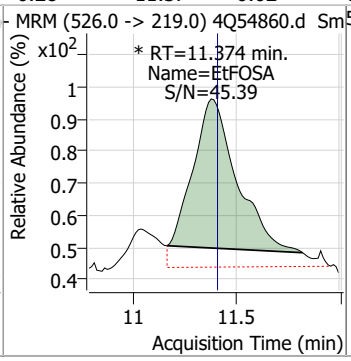
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.29	11.40	0.00	7049				

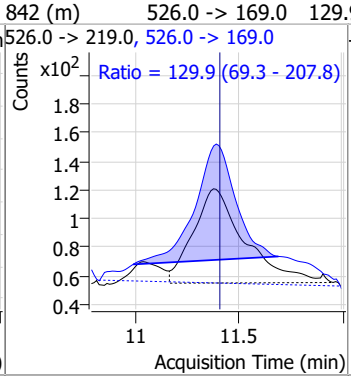


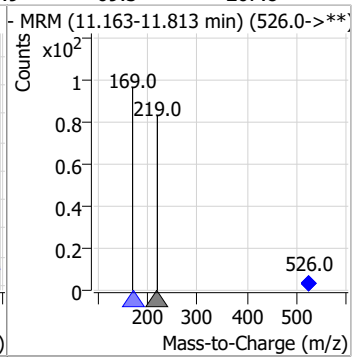
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.28	11.37	-0.02	842 (m)	526.0 -> 169.0	129.9	69.3	207.8









7.2.2

7

Manual Integration Approval Summary

Sample Number: S4Q804-IBLK
Lab FileID: 4Q54860.D
Injection Time: 12/08/23 13:36
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSE	24448-09-7		11.05	Poorly defined baseline
EtFOSE	1691-99-2		11.33	Poorly defined baseline
EtFOSA	4151-50-2		11.37	Poorly defined baseline

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54882.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 7:06:56 PM
Sample Name : iccb
Vial : P1-A1
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	104013	10.00	µg/L	0.012
M5-PFPeA	4.175	268.3 -> 223.0	42385	5.00	µg/L	0.013
M5-PFHxA	5.359	318.0 -> 273.0	33919	2.50	µg/L	0.025
M4-PFHpA	6.317	367.1 -> 322.0	33641	2.50	µg/L	0.025
M8-PFOA	7.001	421.1 -> 376.0	53529	2.50	µg/L	0.025
M9-PFNA	7.534	472.1 -> 427.0	21420	1.25	µg/L	0.012
M6-PFDA	8.017	519.1 -> 474.1	14889	1.25	µg/L	0.013
M7-PFUnDA	8.473	570.0 -> 525.1	18044	1.25	µg/L	0.025
M2-PFDoDA	8.892	615.1 -> 570.0	19321	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	19288	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	11912	2.50	µg/L	0.025
M3-PFBS	5.215	302.1 -> 79.9	9768	2.50	µg/L	0.025
M3-PFHxS	7.054	402.1 -> 79.9	8151	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	8666	2.50	µg/L	0.026
M2-4:2FTS	5.071	329.1 -> 80.9	1308	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2674	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	3420	5.00	µg/L	0.025
M3-MeFOSAA	8.099	573.2 -> 419.0	19404	5.00	µg/L	0.012
M3-HFPO-DA	5.714	286.9 -> 168.9	32702	10.00	µg/L	0.025
M5-EtFOSAA	8.309	589.2 -> 419.0	16593	5.00	µg/L	0.026
M7-MeFOSE	11.047	623.2 -> 58.9	50412	25.00	µg/L	0.025
M9-EtFOSE	11.331	639.2 -> 58.9	60891	25.00	µg/L	0.012
M5-EtFOSA	11.410	531.1 -> 219.0	7294	2.50	µg/L	0.012
M3-MeFOSA	11.152	515.0 -> 219.0	6468	2.50	µg/L	0.026
13C4-PFOS	8.144	502.8 -> 79.9	7232	2.50	µg/L	0.026
13C3-PFBA	2.691	216.0 -> 172.0	49202	5.00	µg/L	0.013
18O2-PFHxS	7.054	403.0 -> 83.9	5080	2.50	µg/L	0.013
13C4-PFOA	7.002	417.1 -> 372.0	58077	2.50	µg/L	0.025
13C2-PFDA	8.017	515.1 -> 470.1	16085	1.25	µg/L	0.013
13C5-PFNA	7.534	468.0 -> 423.0	21237	1.25	µg/L	0.025
13C2-PFHxA	5.360	315.1 -> 270.0	36175	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	1308	5.42	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2674	5.11	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C2-8:2FTS	7.828	529.1 -> 80.9	3420	4.88	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-PFDoDA	8.892	615.1 -> 570.0	19321	1.20	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-PFTeDA	9.662	715.2 -> 670.0	19288	1.21	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C3-PFBS	5.215	302.1 -> 79.9	9768	2.51	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C3-PFHxS	7.054	402.1 -> 79.9	8151	2.56	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C4-PFBA	2.686	216.8 -> 171.9	104013	10.07 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	6.317	367.1 -> 322.0	33641	2.64 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C5-PFHxA	5.359	318.0 -> 273.0	33919	2.54 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C5-PFPeA	4.175	268.3 -> 223.0	42385	5.10 µg/L	0.013
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C6-PFDA	8.017	519.1 -> 474.1	14889	1.27 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C7-PFUnDA	8.473	570.0 -> 525.1	18044	1.31 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C8-FOSA	9.818	506.1 -> 77.8	11912	2.54 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C8-PFOA	7.001	421.1 -> 376.0	53529	2.49 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C8-PFOS	8.143	507.1 -> 79.9	8666	2.37 µg/L	0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C9-PFNA	7.534	472.1 -> 427.0	21420	1.26 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.7%	
d3-MeFOSAA	8.099	573.2 -> 419.0	19404	4.83 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C3-HFPO-DA	5.714	286.9 -> 168.9	32702	9.82 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
d3-MeFOSA	11.152	515.0 -> 219.0	6468	2.31 µg/L	0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.5%	
d5-EtFOSAA	8.309	589.2 -> 419.0	16593	4.89 µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d7-MeFOSE	11.047	623.2 -> 58.9	50412	21.80 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.2%	
d9-EtFOSE	11.331	639.2 -> 58.9	60891	23.51 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.1%	
d5-EtFOSA	11.410	531.1 -> 219.0	7294	2.38 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%	

Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	-	427.1 -> 407.0 427.1 -> 80.9	-	N.D.	
8:2FTS	-	527.1 -> 507.0 527.1 -> 80.8	-	N.D.	
EtFOSAA	-	584.2 -> 419.1 584.2 -> 526.0	-	N.D.	
FOSA	-	498.1 -> 77.9 498.1 -> 478.0	-	N.D.	
MeFOSAA	-	570.1 -> 419.0 570.1 -> 483.0	-	N.D.	
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDoDA	-	613.1 -> 569.0 613.1 -> 319.0	-	N.D.	
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

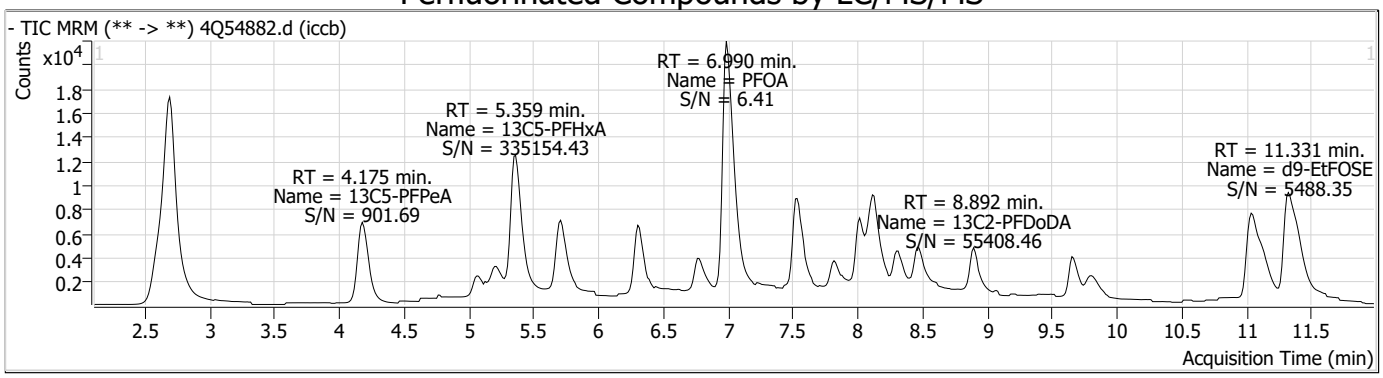
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8					
PFHpA	-	363.1 -> 319.0	-	N.D.			
		363.1 -> 169.0					
PFHpS	-	449.0 -> 79.9	-	N.D.			
		449.0 -> 98.9					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 118.9					
PFHxS	-	398.7 -> 79.9	-	N.D.			
		398.7 -> 98.9					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	548.8 -> 79.9	-	N.D.			
		548.8 -> 98.9					
PFOA	6.990	413.0 -> 369.0	493	0.02	µg/L	m	85
		413.0 -> 169.0	147				
PFOS	-	498.9 -> 79.9	-	N.D.			
		498.9 -> 98.8					
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.1 -> 79.9	-	N.D.			
		349.1 -> 98.9					
PFTeDA	-	713.1 -> 669.0	-	N.D.			
		713.1 -> 168.9					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 168.9					
PFUnDA	-	563.1 -> 519.0	-	N.D.			
		563.1 -> 269.1					
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.			
		632.9 -> 452.9					
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.			
		532.8 -> 353.0					
ADONA	-	376.9 -> 250.9	-	N.D.			
		376.9 -> 84.8					
HFPO-DA	-	284.9 -> 168.9	-	N.D.			
		284.9 -> 184.9					
3:3FTCA	-	241.0 -> 177.0	-	N.D.			
		241.0 -> 117.0					
5:3FTCA	-	341.0 -> 237.1	-	N.D.			
		341.0 -> 217.0					
7:3FTCA	-	441.0 -> 316.9	-	N.D.			
		441.0 -> 336.9					
EtFOSA	-	526.0 -> 219.0	-	N.D.			
		526.0 -> 169.0					
EtFOSE	-	630.0 -> 58.9	-	N.D.			
MeFOSA	-	511.9 -> 219.0	-	N.D.			
		511.9 -> 169.0					
MeFOSE	-	616.1 -> 58.9	-	N.D.			
PFDoDS	-	699.1 -> 79.9	-	N.D.			
		699.1 -> 98.8					
NFDHA	-	295.0 -> 201.0	-	N.D.			
		295.0 -> 84.9					
PFMBA	-	279.0 -> 85.1	-	N.D.			
PFMPA	-	229.0 -> 84.9	-	N.D.			
PFEESA	-	314.8 -> 134.9	-	N.D.			
		314.8 -> 82.9					

 # = Qualifier out of range, m = manually integrated, + = Area summed

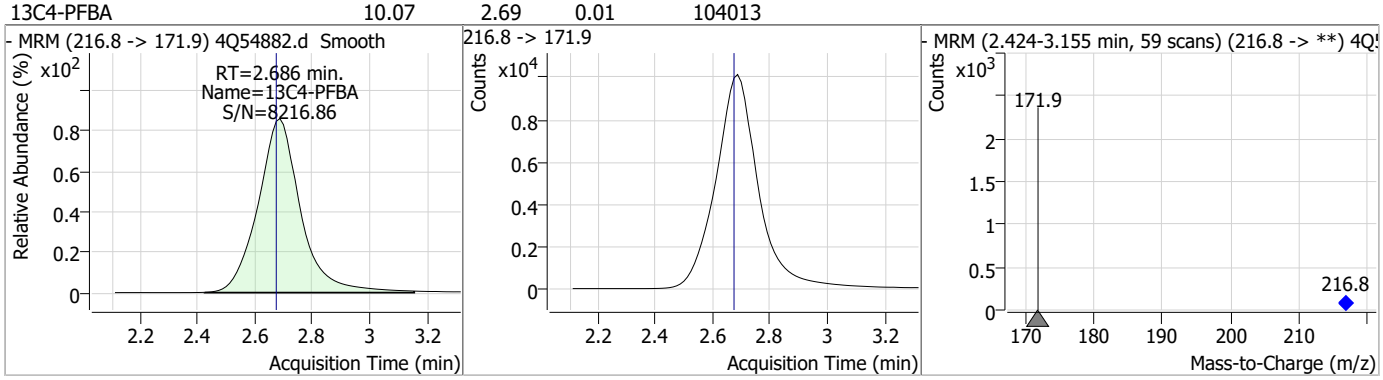
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

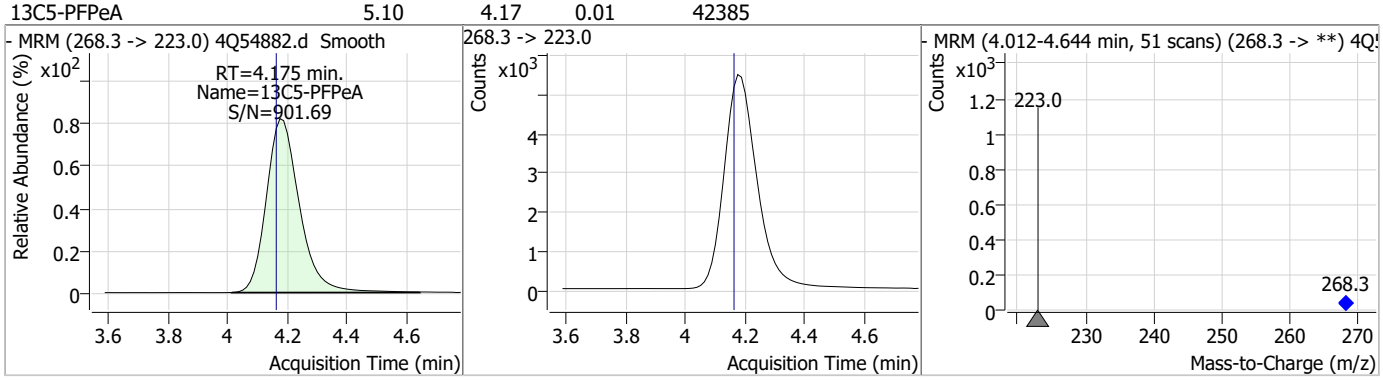
Perfluorinated Compounds by LC/MS/MS



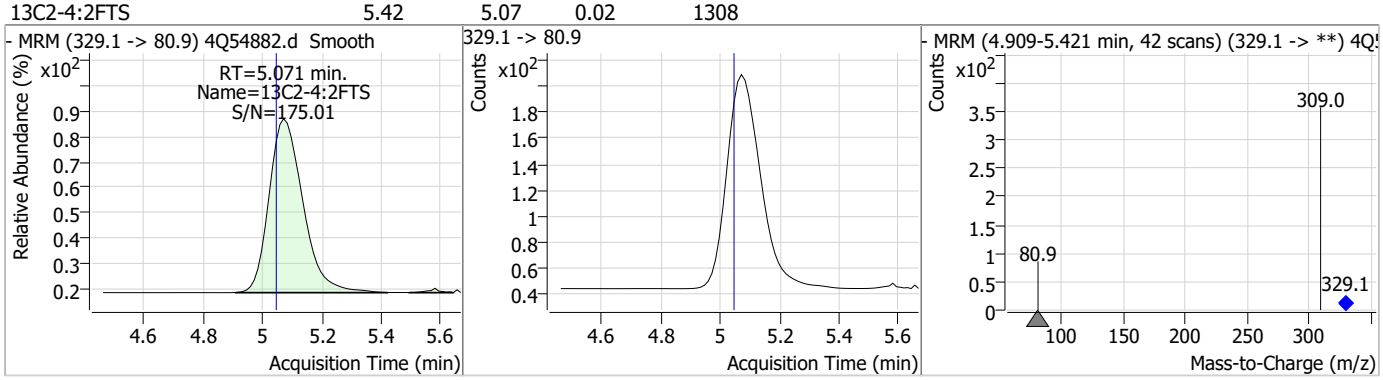
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.07	2.69	0.01	104013				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.10	4.17	0.01	42385				

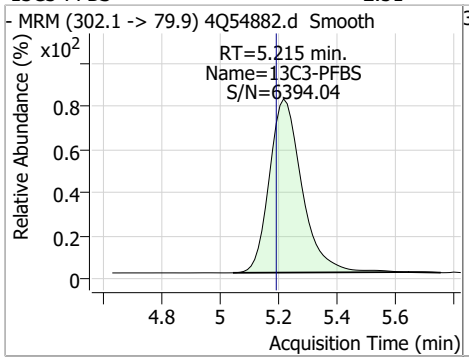


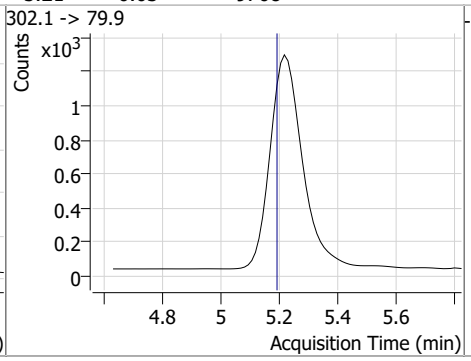
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.42	5.07	0.02	1308				

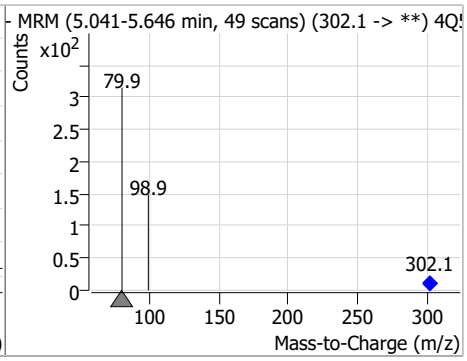


Perfluorinated Compounds by LC/MS/MS

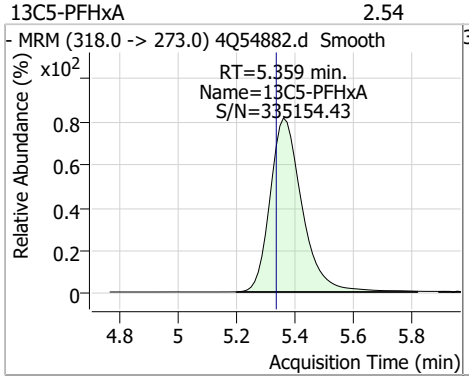
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.51	5.21	0.03	9768				

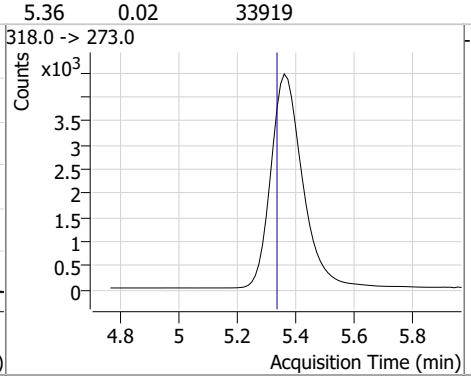


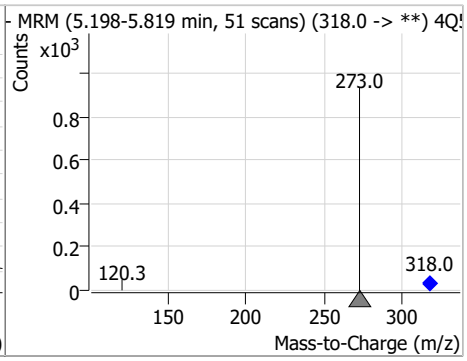




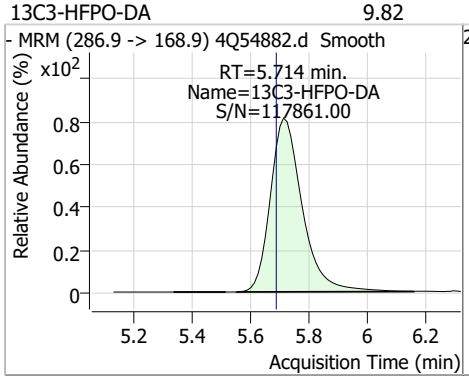
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.54	5.36	0.02	33919				

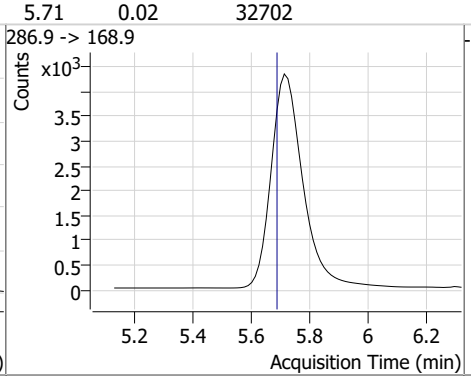


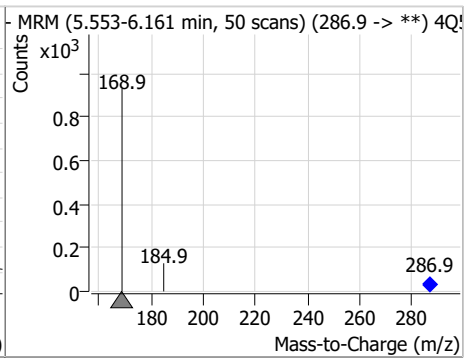




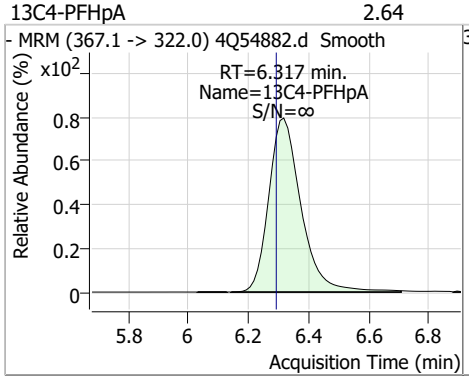
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.82	5.71	0.02	32702				

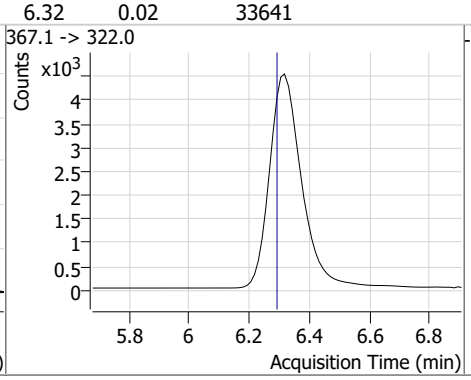


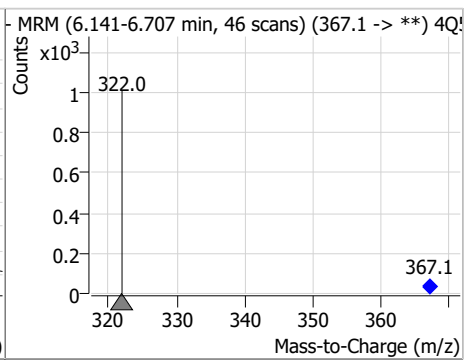




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.64	6.32	0.02	33641				

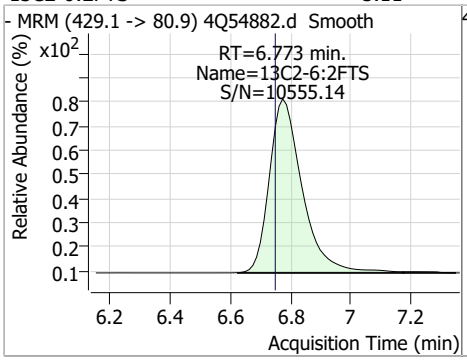


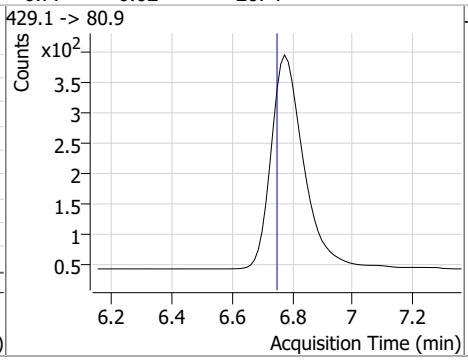


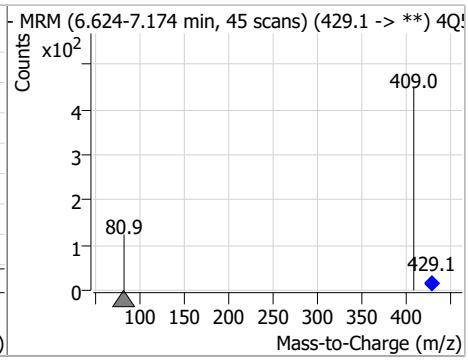


Perfluorinated Compounds by LC/MS/MS

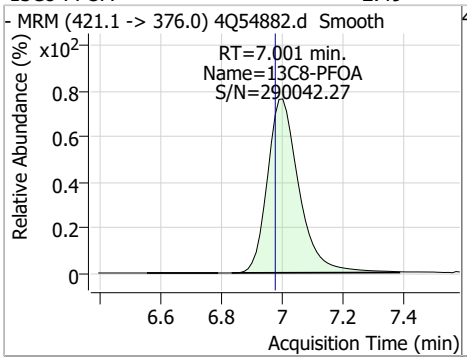
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.11	6.77	0.02	2674				

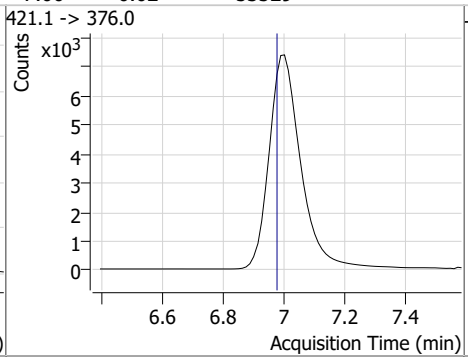


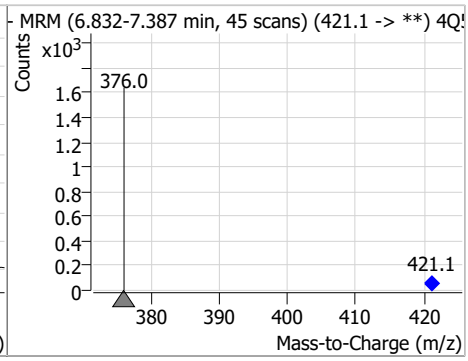




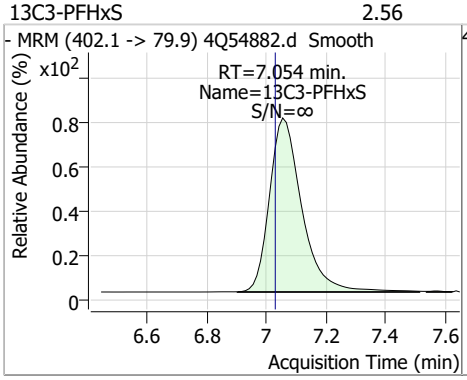
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.49	7.00	0.02	53529				

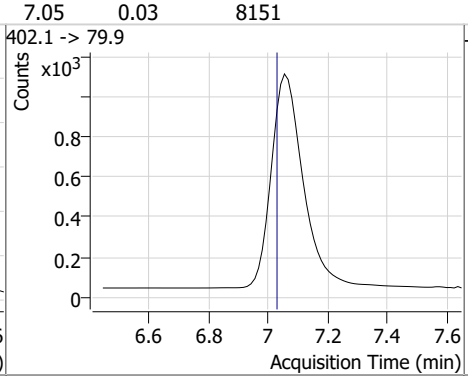


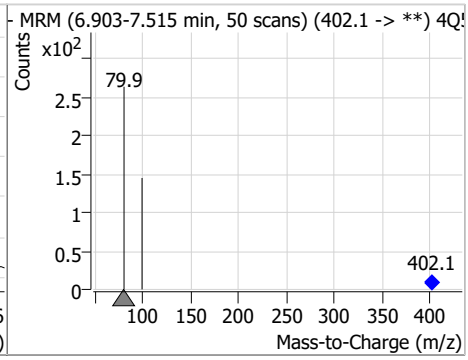




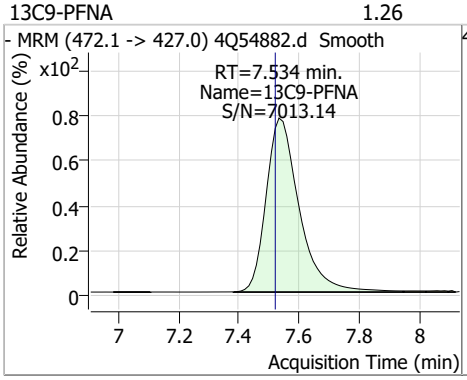
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.56	7.05	0.03	8151				

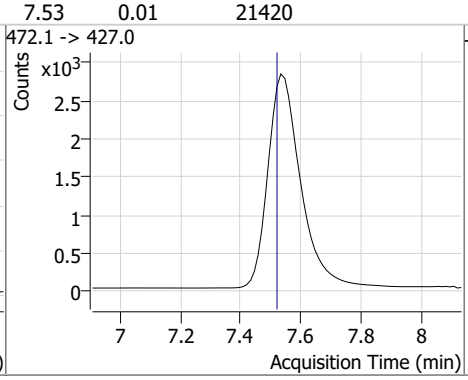


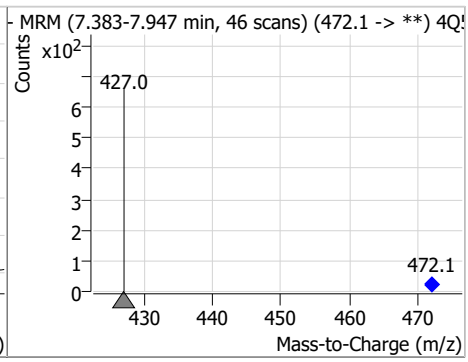




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.53	0.01	21420				

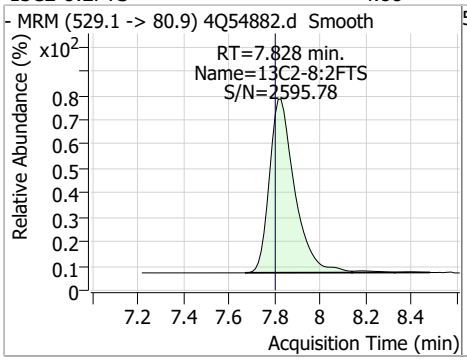


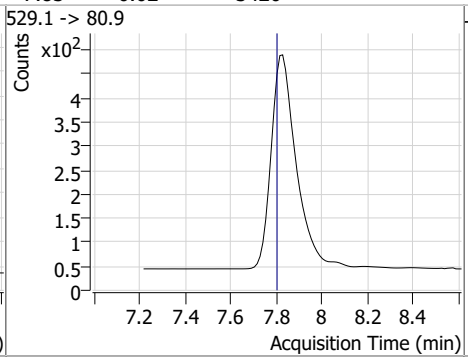


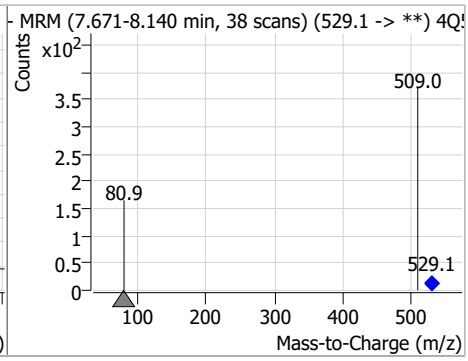


Perfluorinated Compounds by LC/MS/MS

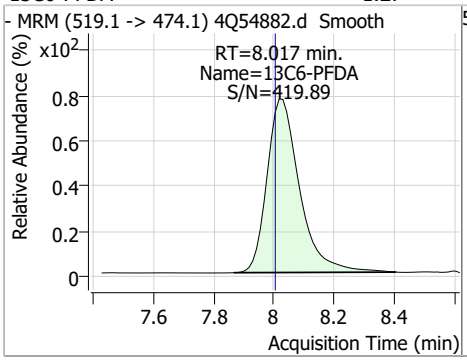
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.88	7.83	0.02	3420				

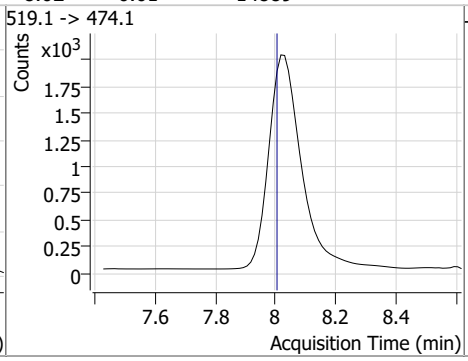


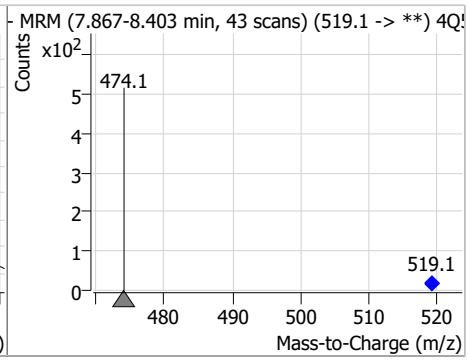




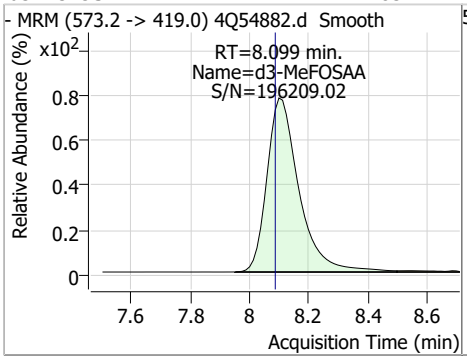
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.27	8.02	0.01	14889				

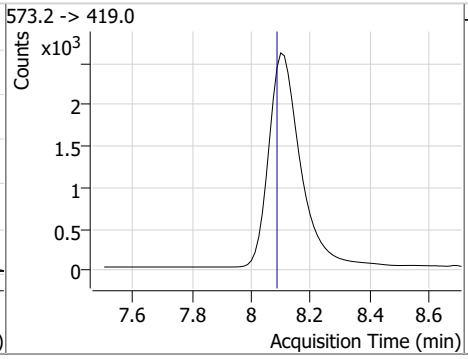


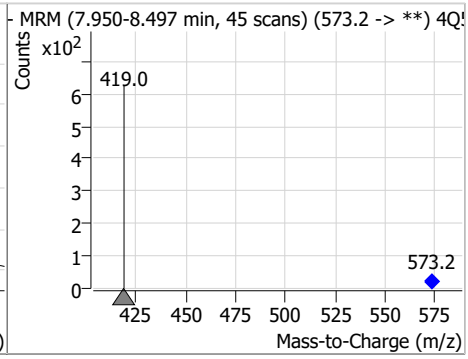




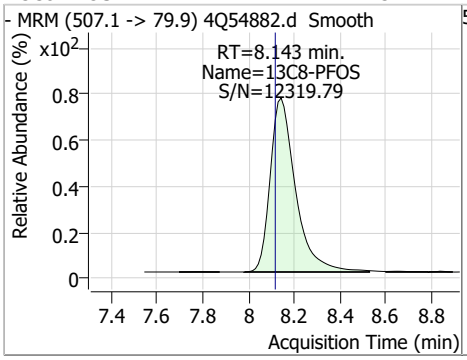
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.83	8.10	0.01	19404				

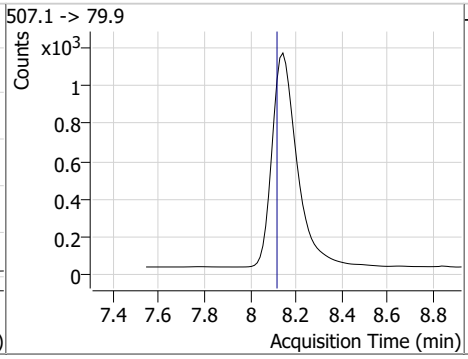


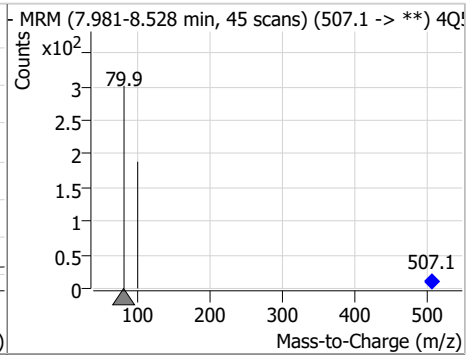




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.37	8.14	0.03	8666				

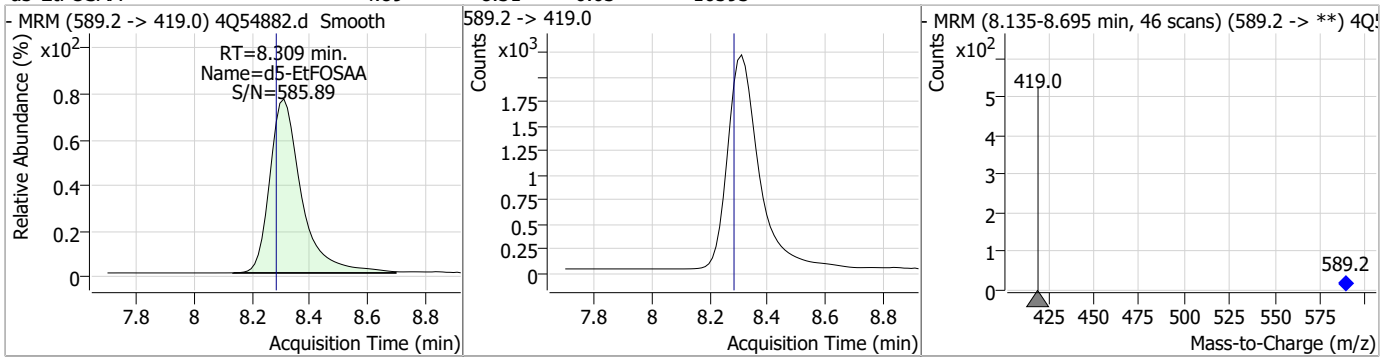




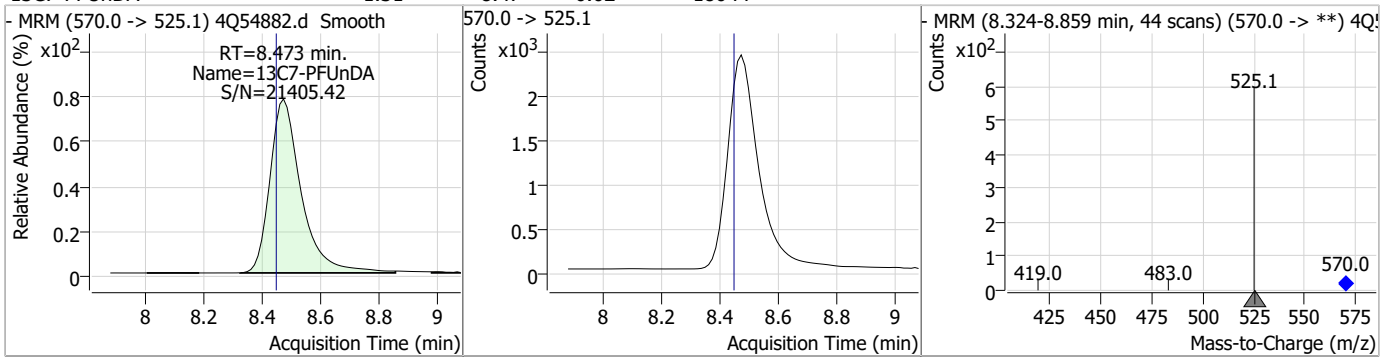


Perfluorinated Compounds by LC/MS/MS

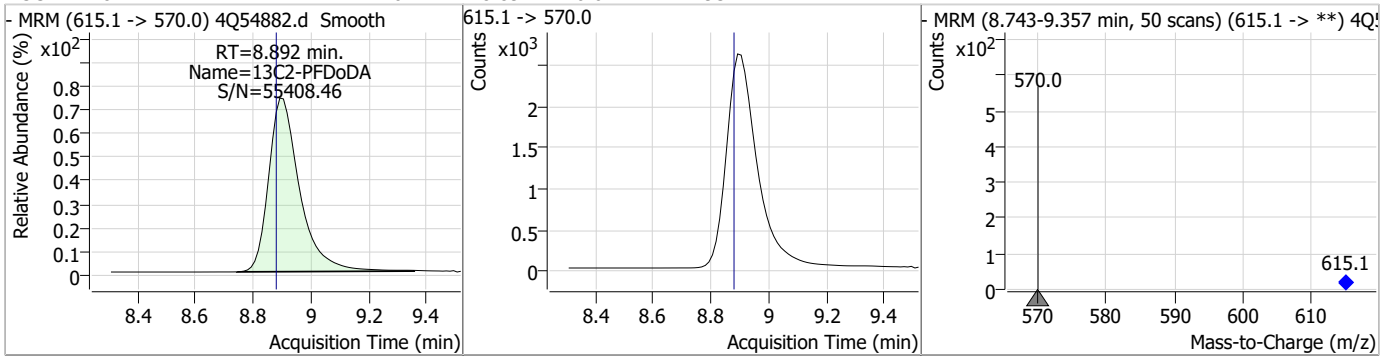
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.89	8.31	0.03	16593				



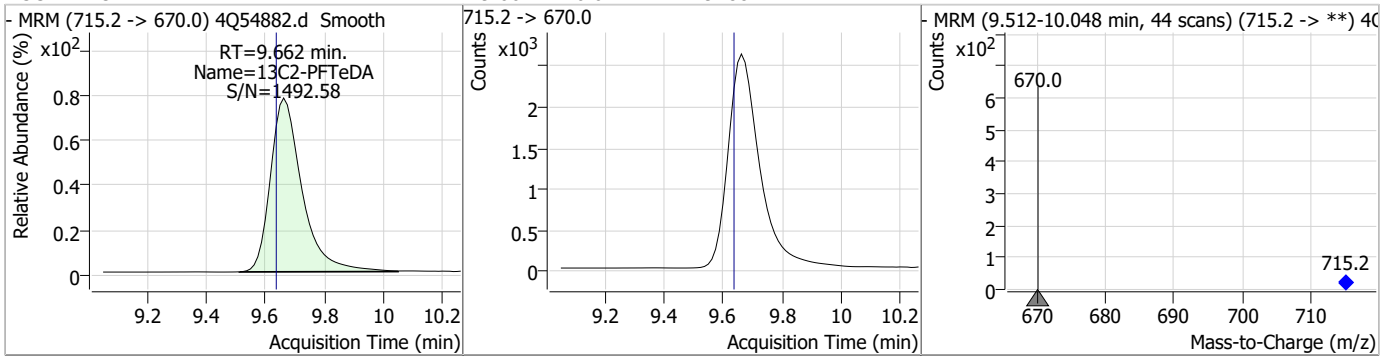
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.47	0.02	18044				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	8.89	0.01	19321				

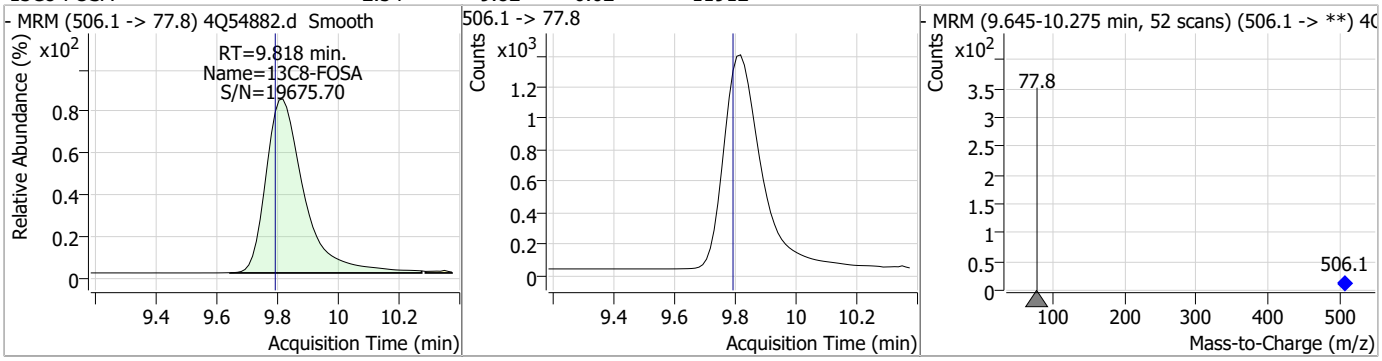


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.21	9.66	0.02	19288				

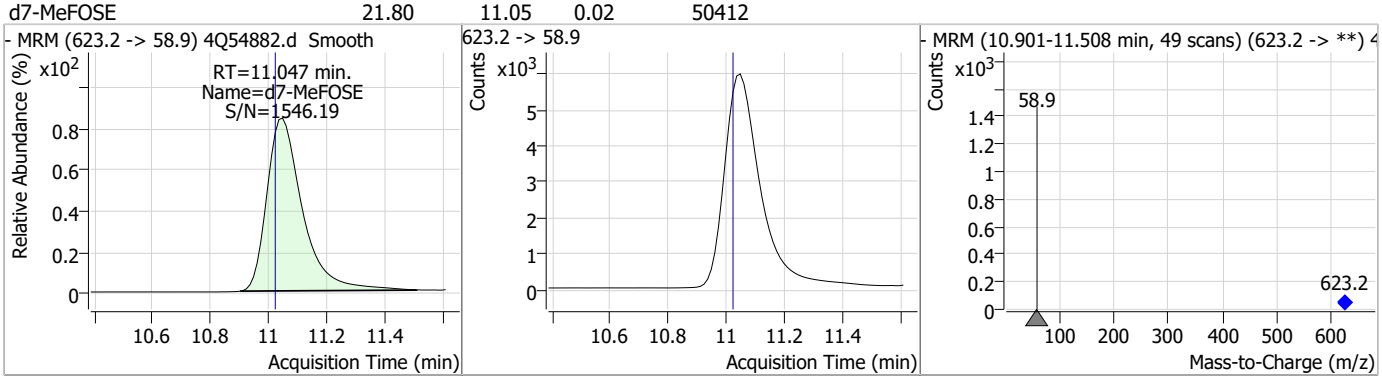


Perfluorinated Compounds by LC/MS/MS

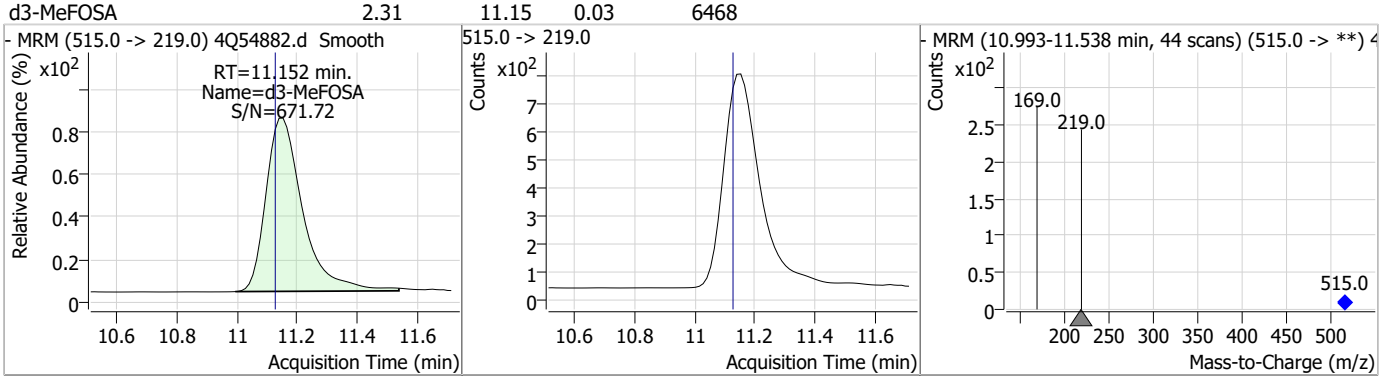
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.54	9.82	0.02	11912				



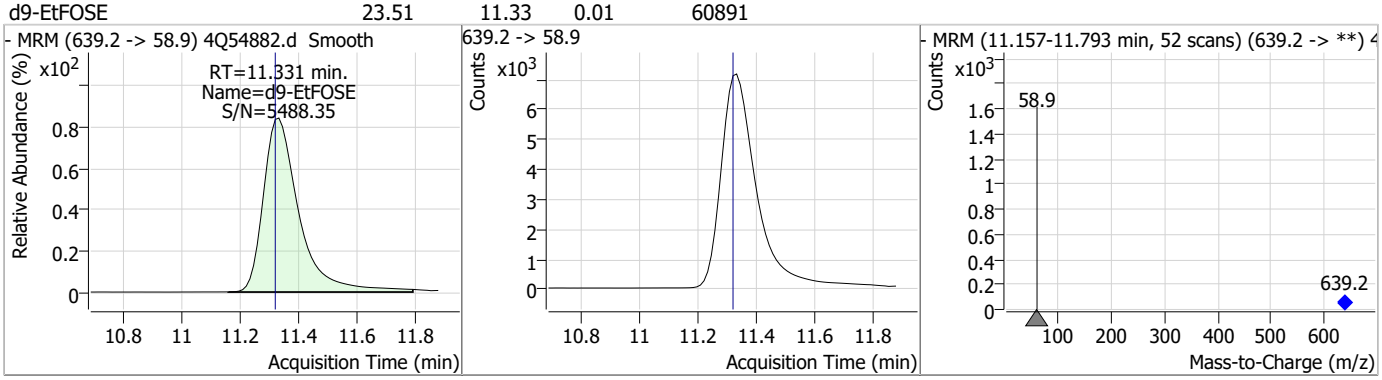
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.80	11.05	0.02	50412				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.31	11.15	0.03	6468				

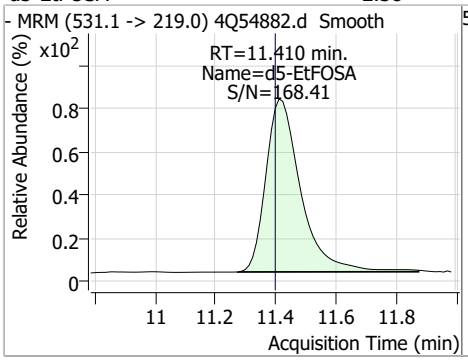


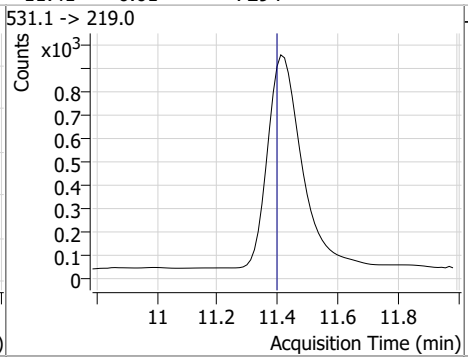
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.51	11.33	0.01	60891				

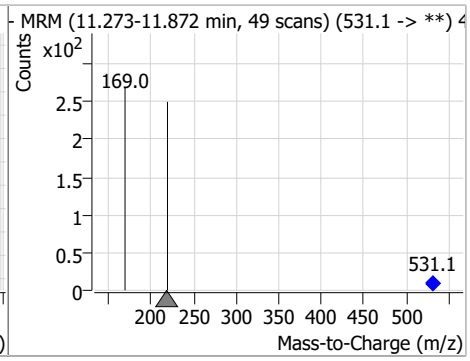


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.38	11.41	0.01	7294				







Manual Integration Approval Summary

Sample Number:	S4Q804-ICCB	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q54882.D	**Analyst approved:**	12/10/23 12:52 Anna Ludwig
Injection Time:	12/08/23 19:06	**Supervisor approved:**	12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.99	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 12/11/23 16:36

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54883.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 7:21:41 PM
Sample Name : op495-bs
Vial : P2-C5
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP495,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.765	216.8 -> 171.9	68301	10.00	µg/L	0.091
M5-PFPeA	4.200	268.3 -> 223.0	39216	5.00	µg/L	0.037
M5-PFHxA	5.372	318.0 -> 273.0	30593	2.50	µg/L	0.037
M4-PFHpA	6.317	367.1 -> 322.0	30702	2.50	µg/L	0.025
M8-PFOA	7.001	421.1 -> 376.0	49095	2.50	µg/L	0.025
M9-PFNA	7.534	472.1 -> 427.0	18862	1.25	µg/L	0.012
M6-PFDA	8.029	519.1 -> 474.1	13222	1.25	µg/L	0.025
M7-PFUnDA	8.473	570.0 -> 525.1	16204	1.25	µg/L	0.025
M2-PFDoDA	8.892	615.1 -> 570.0	16615	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	15551	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	7636	2.50	µg/L	0.025
M3-PFBS	5.227	302.1 -> 79.9	8511	2.50	µg/L	0.038
M3-PFHxS	7.054	402.1 -> 79.9	7231	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	7754	2.50	µg/L	0.026
M2-4:2FTS	5.071	329.1 -> 80.9	851	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2202	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	3245	5.00	µg/L	0.025
M3-MeFOSAA	8.111	573.2 -> 419.0	16769	5.00	µg/L	0.025
M3-HFPO-DA	5.714	286.9 -> 168.9	29621	10.00	µg/L	0.025
M5-EtFOSAA	8.309	589.2 -> 419.0	14498	5.00	µg/L	0.026
M7-MeFOSE	11.047	623.2 -> 58.9	26908	25.00	µg/L	0.025
M9-EtFOSE	11.331	639.2 -> 58.9	38645	25.00	µg/L	0.012
M5-EtFOSA	11.422	531.1 -> 219.0	5157	2.50	µg/L	0.025
M3-MeFOSA	11.152	515.0 -> 219.0	4854	2.50	µg/L	0.026
13C4-PFOS	8.144	502.8 -> 79.9	6267	2.50	µg/L	0.026
13C3-PFBA	2.755	216.0 -> 172.0	42736	5.00	µg/L	0.077
18O2-PFHxS	7.054	403.0 -> 83.9	3949	2.50	µg/L	0.013
13C4-PFOA	7.002	417.1 -> 372.0	47916	2.50	µg/L	0.025
13C2-PFDA	8.017	515.1 -> 470.1	13871	1.25	µg/L	0.013
13C5-PFNA	7.534	468.0 -> 423.0	17467	1.25	µg/L	0.025
13C2-PFHxA	5.373	315.1 -> 270.0	30135	2.50	µg/L	0.037
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	851	4.54	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2202	5.42	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C2-8:2FTS	7.828	529.1 -> 80.9	3245	5.96	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 119.2%		
13C2-PFDoDA	8.892	615.1 -> 570.0	16615	1.20	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C2-PFTeDA	9.662	715.2 -> 670.0	15551	1.13	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C3-PFBS	5.227	302.1 -> 79.9	8511	2.81	µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.5%		
13C3-PFHxS	7.054	402.1 -> 79.9	7231	2.92	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 116.8%		
13C4-PFBA	2.765	216.8 -> 171.9	68301	7.61 µg/L		0.091
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C4-PFHpA	6.317	367.1 -> 322.0	30702	2.89 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 115.6%		
13C5-PFHxA	5.372	318.0 -> 273.0	30593	2.76 µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.2%		
13C5-PFPeA	4.200	268.3 -> 223.0	39216	5.67 µg/L		0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.4%		
13C6-PFDA	8.029	519.1 -> 474.1	13222	1.31 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C7-PFUnDA	8.473	570.0 -> 525.1	16204	1.36 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C8-FOSA	9.818	506.1 -> 77.8	7636	1.88 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 75.2%		
13C8-PFOA	7.001	421.1 -> 376.0	49095	2.77 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.9%		
13C8-PFOS	8.143	507.1 -> 79.9	7754	2.44 µg/L		0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C9-PFNA	7.534	472.1 -> 427.0	18862	1.35 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.8%		
d3-MeFOSAA	8.111	573.2 -> 419.0	16769	4.82 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C3-HFPO-DA	5.714	286.9 -> 168.9	29621	10.68 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
d3-MeFOSA	11.152	515.0 -> 219.0	4854	2.00 µg/L		0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.1%		
d5-EtFOSAA	8.309	589.2 -> 419.0	14498	4.93 µg/L		0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
d7-MeFOSE	11.047	623.2 -> 58.9	26908	13.43 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 53.7%		
d9-EtFOSE	11.331	639.2 -> 58.9	38645	17.22 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 68.9%		
d5-EtFOSA	11.422	531.1 -> 219.0	5157	1.94 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.7%		
Target Compounds						QValue
4:2FTS	5.072	327.1 -> 307.0	15304	10.44 µg/L		99
		327.1 -> 80.9	6475			
6:2FTS	6.774	427.1 -> 407.0	22531	9.74 µg/L		99
		427.1 -> 80.9	8174			
8:2FTS	7.829	527.1 -> 507.0	16213	9.48 µg/L		99
		527.1 -> 80.8	6703			
EtFOSAA	8.310	584.2 -> 419.1	6049	2.29 µg/L	m	76
		584.2 -> 526.0	2755			
FOSA	9.810	498.1 -> 77.9	8467	2.47 µg/L		100
		498.1 -> 478.0	242			
MeFOSAA	8.112	570.1 -> 419.0	6779	2.82 µg/L	m	87
		570.1 -> 483.0	1491			
PFBA	2.758	212.8 -> 168.9	22031	10.07 µg/L		100
PFBS	5.216	298.7 -> 79.9	5653	2.14 µg/L		98
		298.7 -> 98.8	2352			
PFDA	8.017	512.9 -> 469.0	22635	2.33 µg/L		99
		512.9 -> 219.0	4781			
PFDoDA	8.893	613.1 -> 569.0	31372	2.62 µg/L		95
		613.1 -> 319.0	5986			
PFDS	9.032	599.0 -> 79.9	5109	2.48 µg/L		92

Perfluorinated Compounds by LC/MS/MS

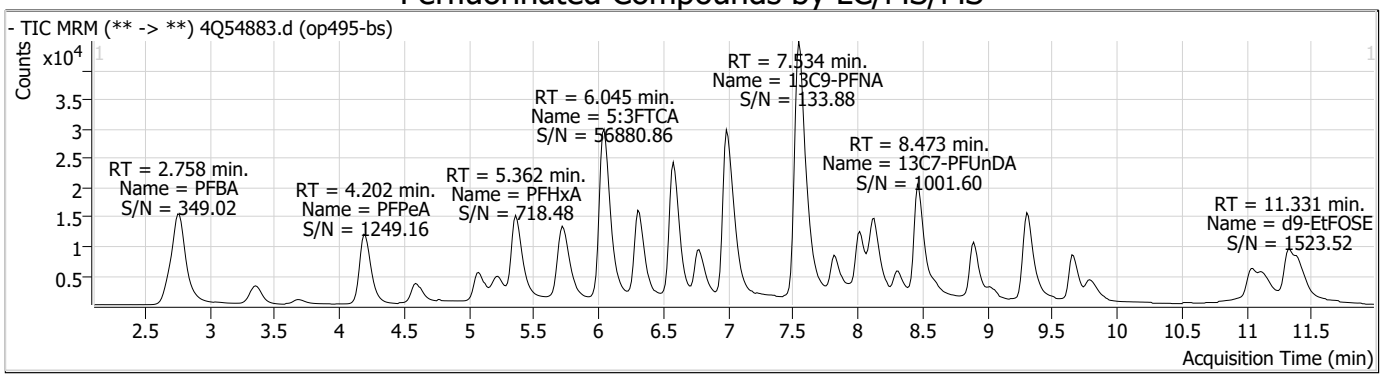
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2402				
PFHpA	6.317	363.1 -> 319.0	41908	2.42	µg/L		100
		363.1 -> 169.0	7646				
PFHpS	7.637	449.0 -> 79.9	7313	2.38	µg/L		99
		449.0 -> 98.9	3861				
PFHxA	5.362	313.0 -> 269.0	23762	2.43	µg/L		99
		313.0 -> 118.9	624				
PFHxS	7.055	398.7 -> 79.9	5384	2.31	µg/L	m	91
		398.7 -> 98.9	2870				
PFNA	7.534	463.0 -> 419.0	27464	2.48	µg/L		96
		463.0 -> 219.0	6900				
PFNS	8.598	548.8 -> 79.9	3733	2.82	µg/L		98
		548.8 -> 98.9	1803				
PFOA	7.003	413.0 -> 369.0	49501	2.45	µg/L		97
		413.0 -> 169.0	10361				
PFOS	8.144	498.9 -> 79.9	7466	2.31	µg/L	m	53
		498.9 -> 98.8	3456				
PFPeA	4.202	263.0 -> 219.0	37948	4.92	µg/L		100
PFPeS	6.307	349.1 -> 79.9	5218	2.38	µg/L		97
		349.1 -> 98.9	2307				
PFTeDA	9.662	713.1 -> 669.0	26228	2.42	µg/L		99
		713.1 -> 168.9	2849				
PFTrDA	9.292	663.0 -> 619.0	33816	2.60	µg/L		100
		663.0 -> 168.9	4595				
PFUnDA	8.474	563.1 -> 519.0	29168	2.47	µg/L		96
		563.1 -> 269.1	6670				
11Cl-PF3OUdS	9.319	630.9 -> 450.9	41151	5.05	µg/L		98
		632.9 -> 452.9	12376				
9Cl-PF3ONS	8.476	530.8 -> 351.0	42196	5.12	µg/L		97
		532.8 -> 353.0	13523				
ADONA	6.581	376.9 -> 250.9	106237	5.31	µg/L		99
		376.9 -> 84.8	26046				
HFPO-DA	5.715	284.9 -> 168.9	14603	5.15	µg/L		100
		284.9 -> 184.9	1391				
3:3FTCA	3.692	241.0 -> 177.0	4289	12.33	µg/L		98
		241.0 -> 117.0	411				
5:3FTCA	6.045	341.0 -> 237.1	110408	63.41	µg/L		99
		341.0 -> 217.0	78401				
7:3FTCA	7.562	441.0 -> 316.9	58524	64.09	µg/L		94
		441.0 -> 336.9	144996				
EtFOSA	11.412	526.0 -> 219.0	11475	5.23	µg/L		99
		526.0 -> 169.0	15790				
EtFOSE	11.345	630.0 -> 58.9	16050	11.74	µg/L		100
MeFOSA	11.140	511.9 -> 219.0	8004	4.63	µg/L		99
		511.9 -> 169.0	11783				
MeFOSE	11.060	616.1 -> 58.9	12473	11.68	µg/L		100
PFDoDS	9.789	699.1 -> 79.9	3558	2.26	µg/L		96
		699.1 -> 98.8	1921				
NFDHA	5.253	295.0 -> 201.0	3404	4.92	µg/L		98
		295.0 -> 84.9	926				
PFMBA	4.591	279.0 -> 85.1	21681	5.10	µg/L		100
PFMPA	3.357	229.0 -> 84.9	23367	5.01	µg/L		100
PFEESA	5.747	314.8 -> 134.9	33098	4.59	µg/L		99
		314.8 -> 82.9	1205				

 # = Qualifier out of range, m = manually integrated, + = Area summed

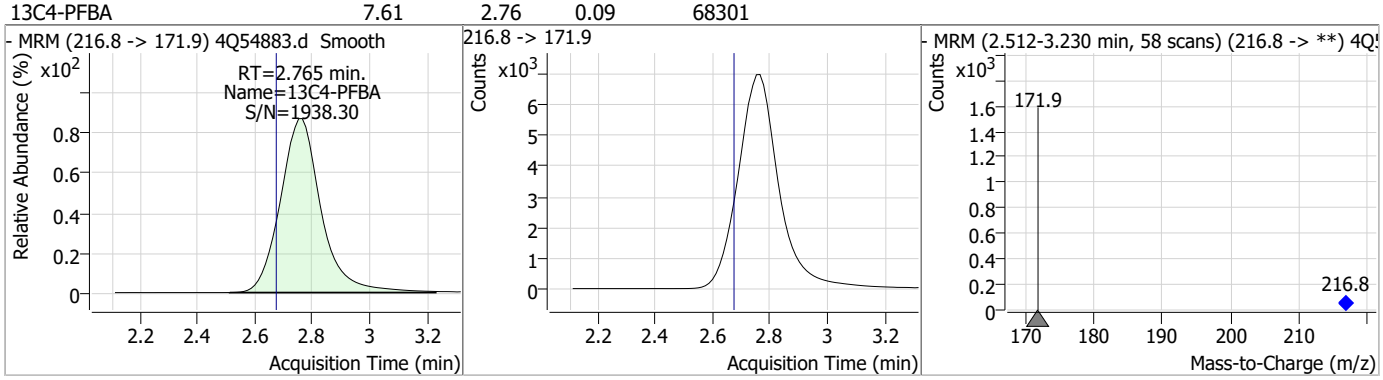
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

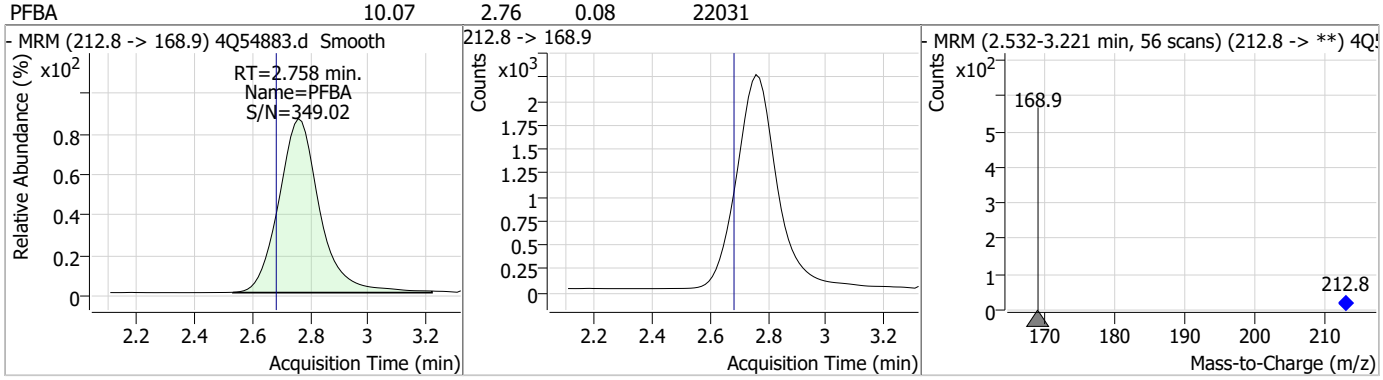
Perfluorinated Compounds by LC/MS/MS



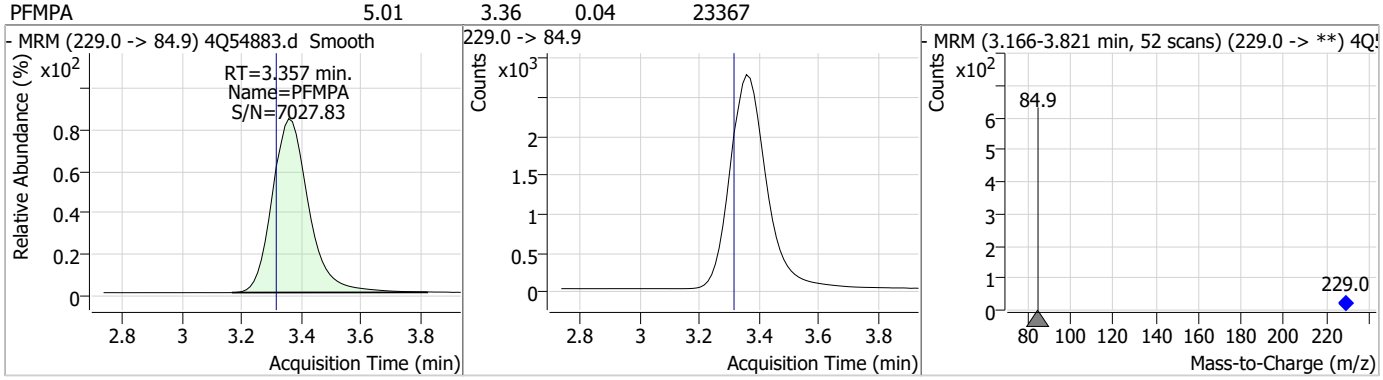
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.61	2.76	0.09	68301				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.07	2.76	0.08	22031				

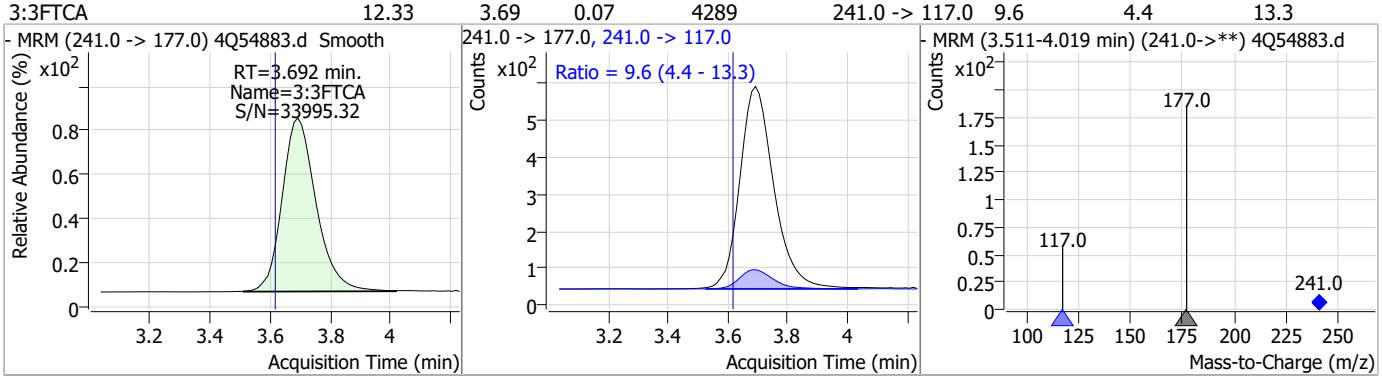


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.01	3.36	0.04	23367				

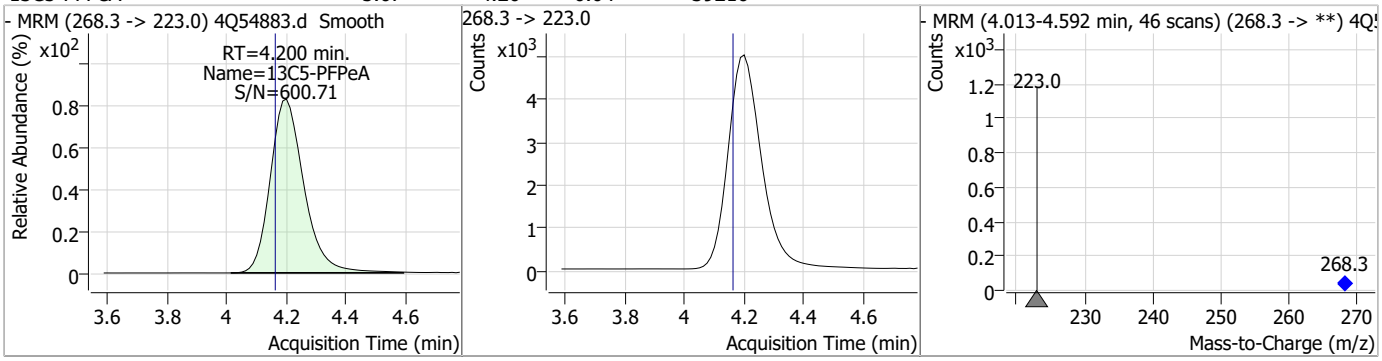


Perfluorinated Compounds by LC/MS/MS

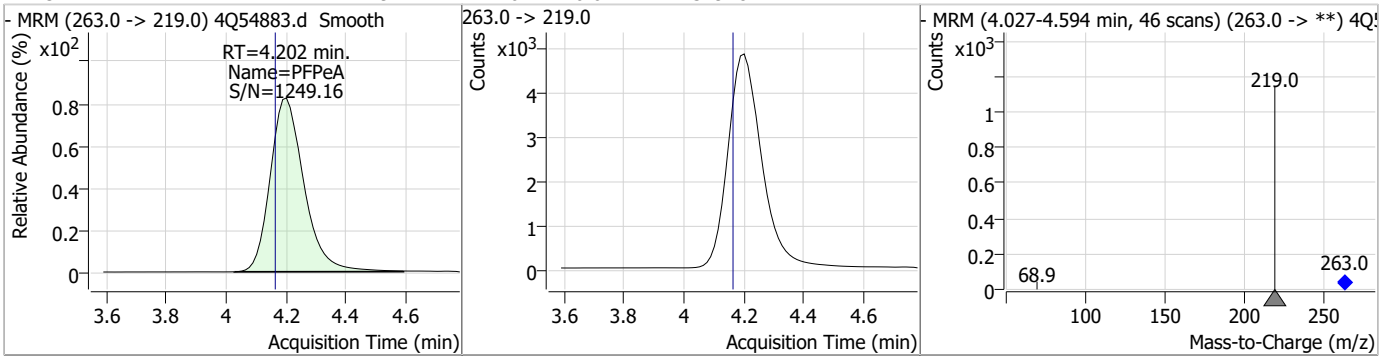
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	12.33	3.69	0.07	4289	241.0 -> 117.0	9.6	4.4	13.3



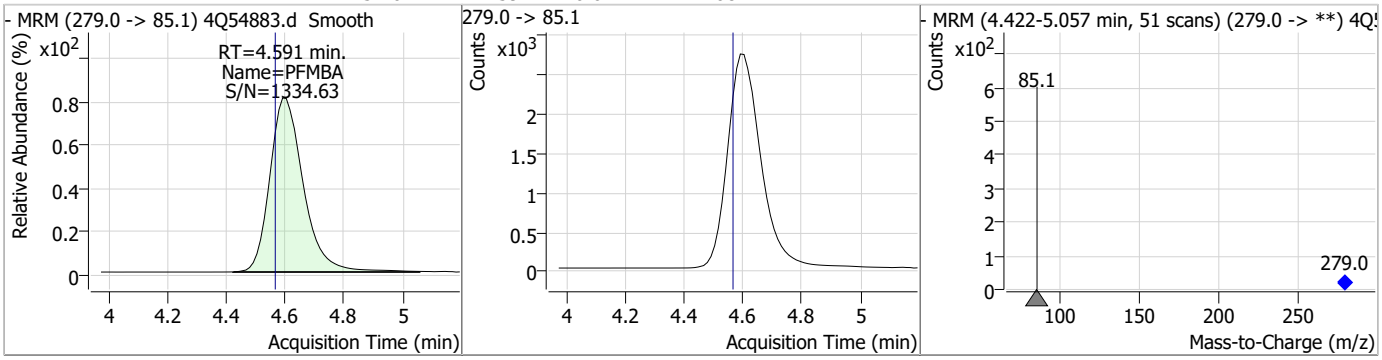
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.67	4.20	0.04	39216				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.92	4.20	0.04	37948				

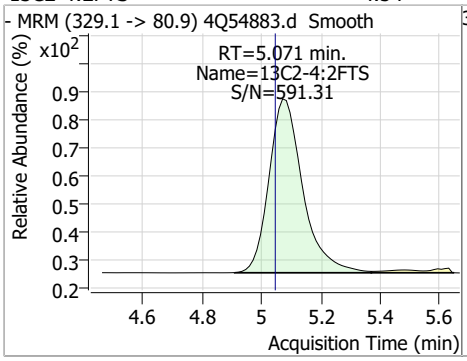


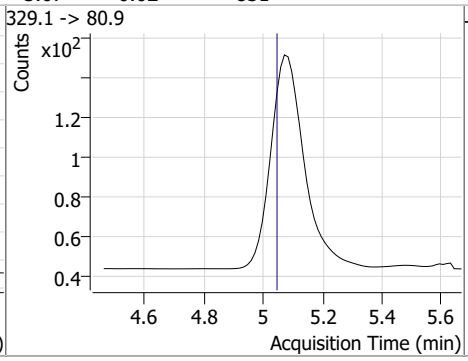
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.10	4.59	0.02	21681				

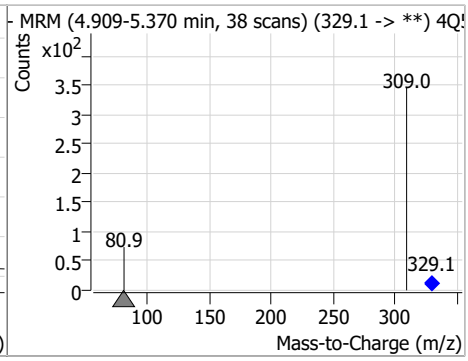


Perfluorinated Compounds by LC/MS/MS

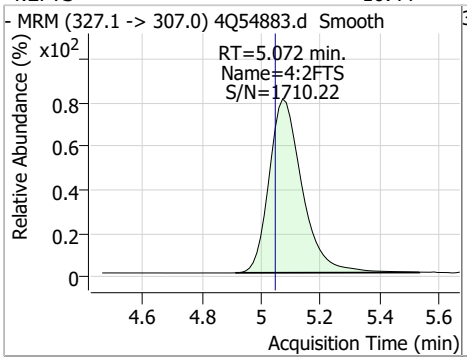
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.54	5.07	0.02	851				

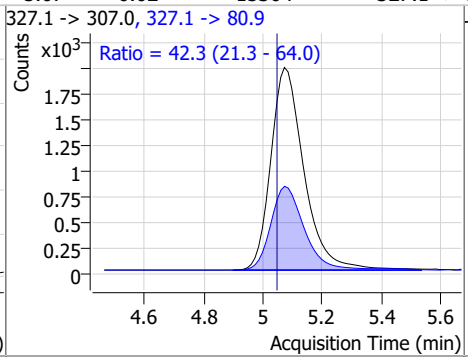


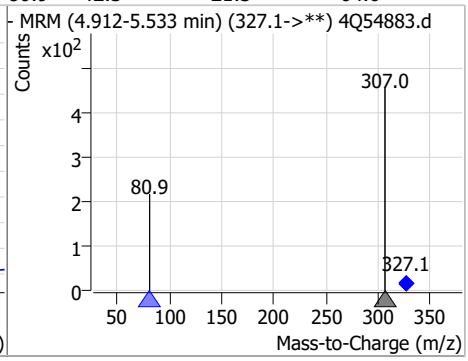




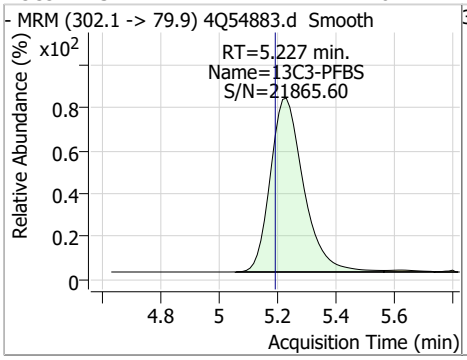
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.44	5.07	0.02	15304	327.1 -> 80.9	42.3	21.3	64.0

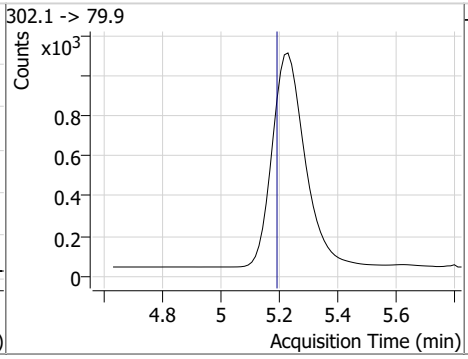


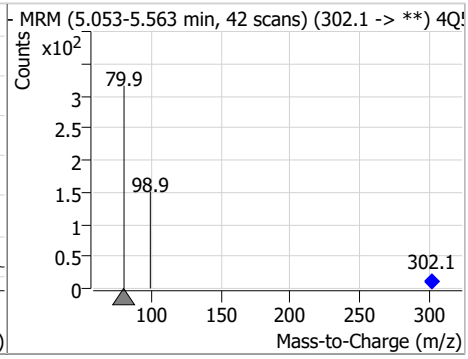




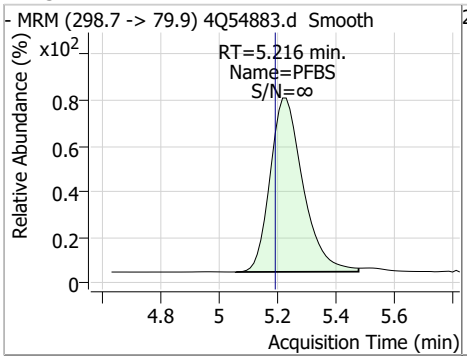
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.81	5.23	0.04	8511				

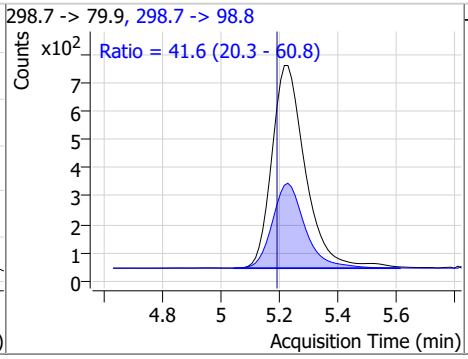


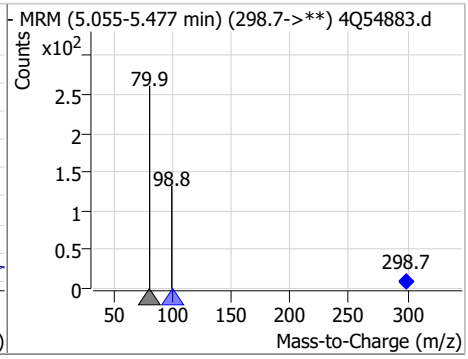




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.14	5.22	0.03	5653	298.7 -> 98.8	41.6	20.3	60.8

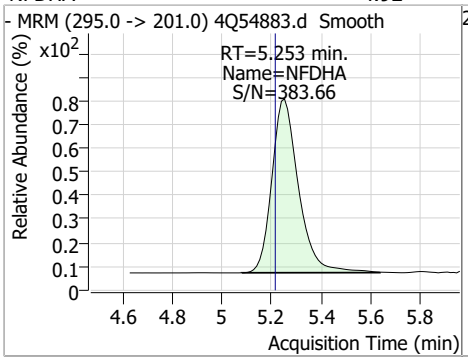


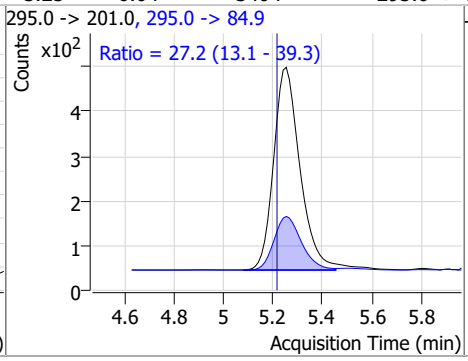


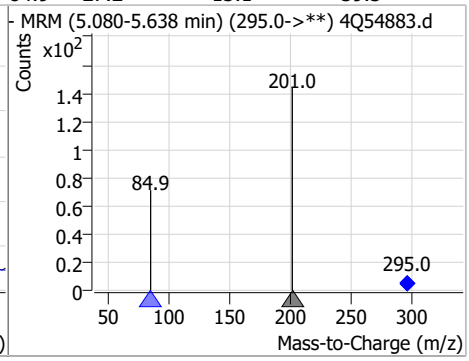


Perfluorinated Compounds by LC/MS/MS

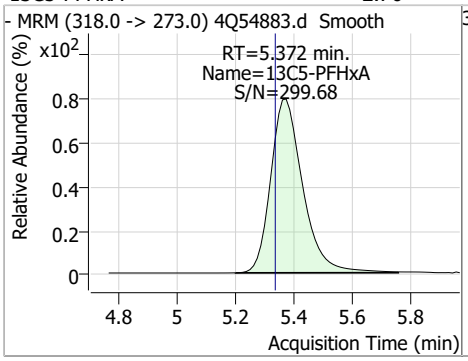
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.92	5.25	0.04	3404	295.0 -> 84.9	27.2	13.1	39.3

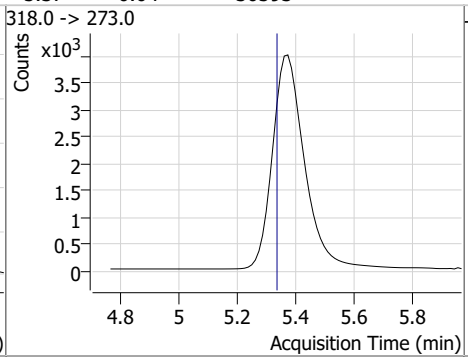


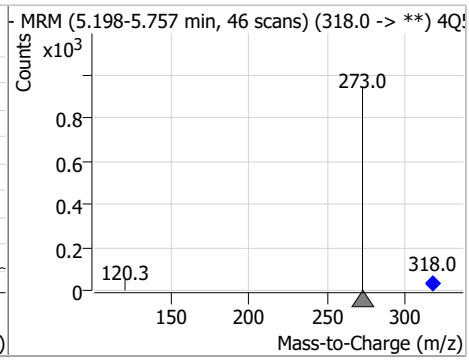




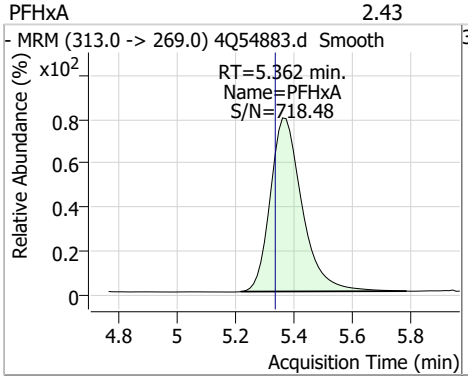
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.76	5.37	0.04	30593				

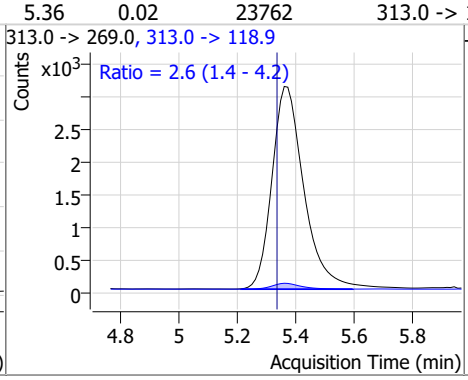


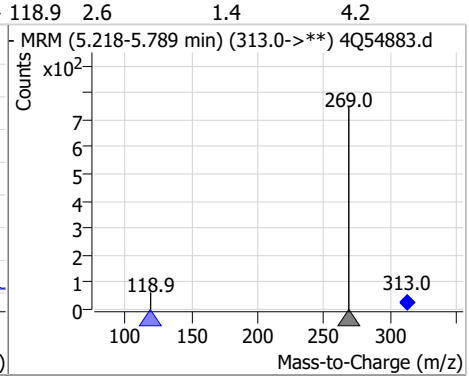




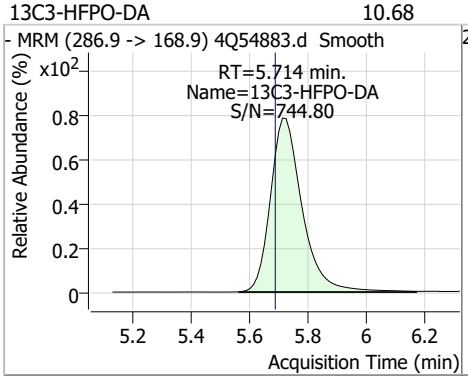
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.43	5.36	0.02	23762	313.0 -> 118.9	2.6	1.4	4.2

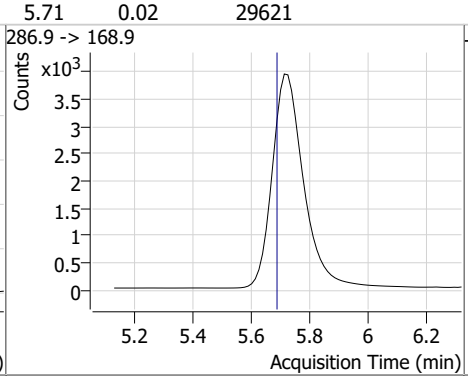


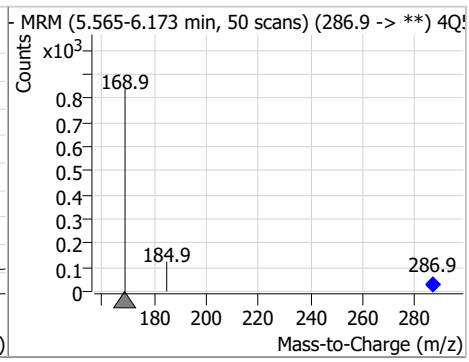




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.68	5.71	0.02	29621				

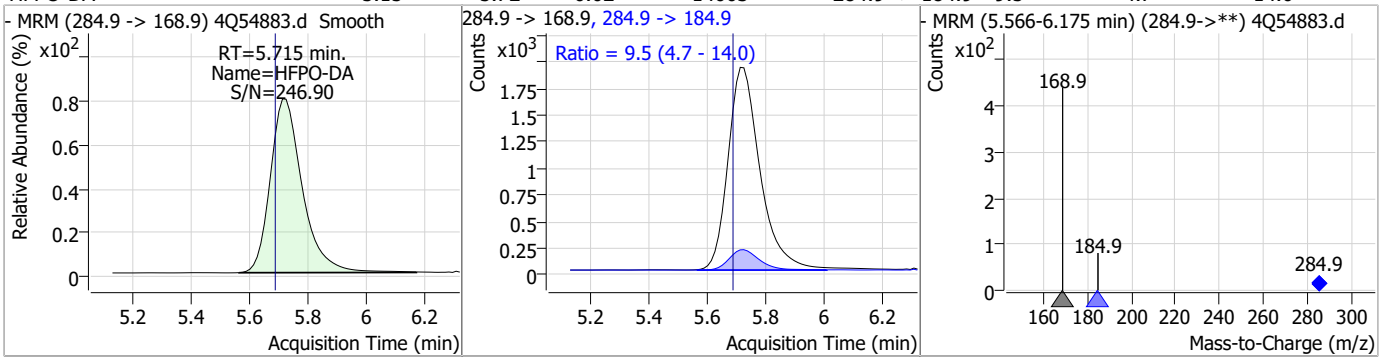




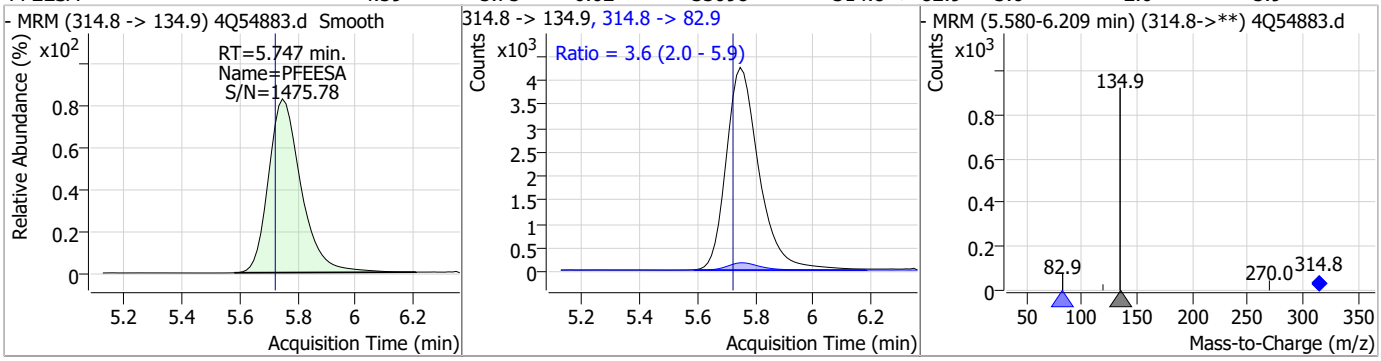


Perfluorinated Compounds by LC/MS/MS

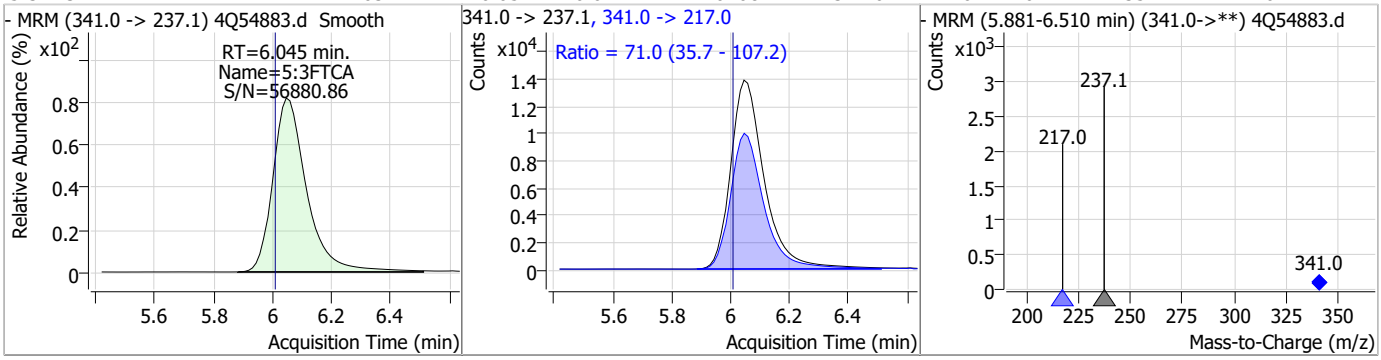
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.15	5.72	0.02	14603	284.9 -> 184.9	9.5	4.7	14.0



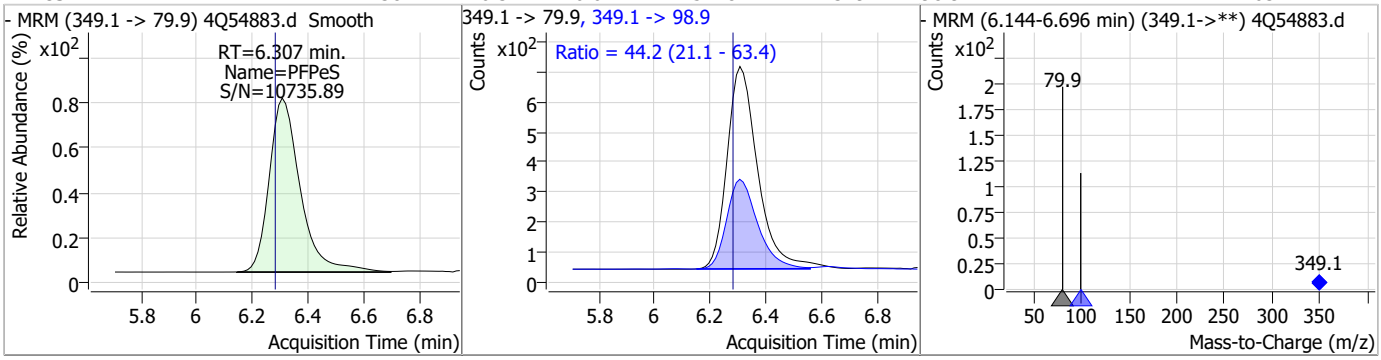
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.59	5.75	0.02	33098	314.8 -> 82.9	3.6	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	63.41	6.05	0.04	110408	341.0 -> 217.0	71.0	35.7	107.2

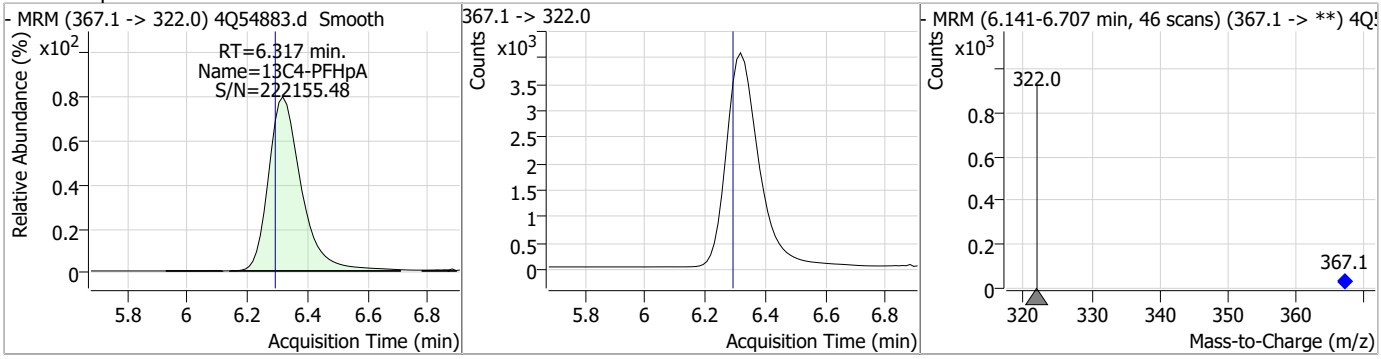


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.38	6.31	0.02	5218	349.1 -> 98.9	44.2	21.1	63.4

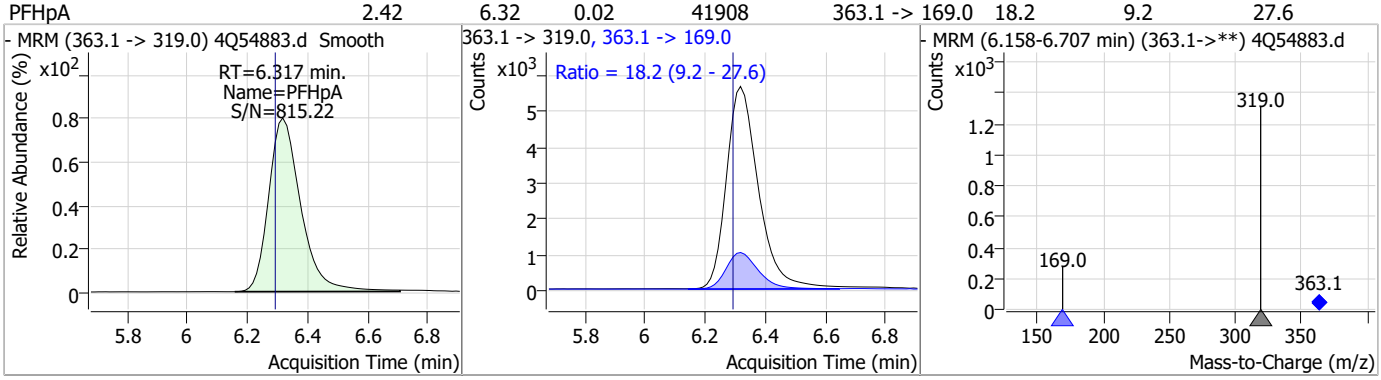


Perfluorinated Compounds by LC/MS/MS

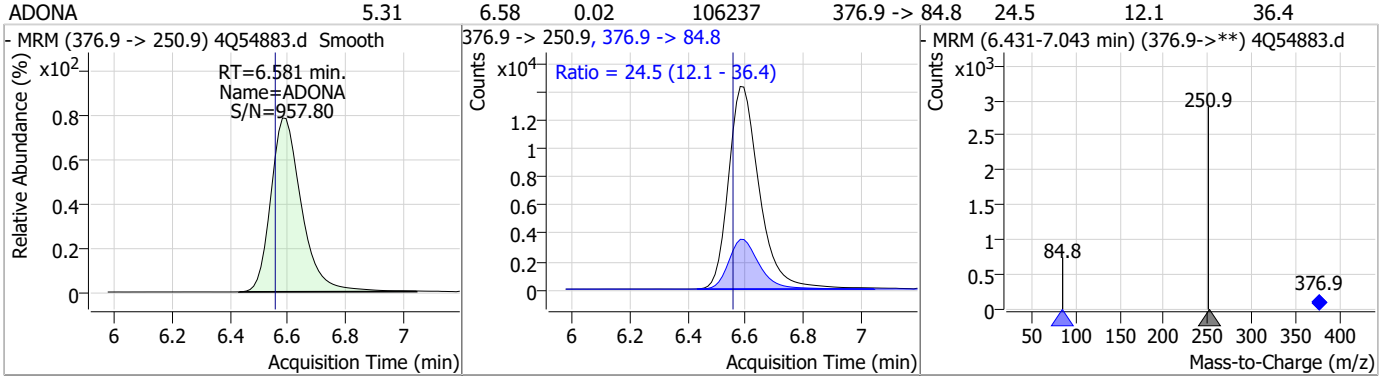
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.89	6.32	0.02	30702				



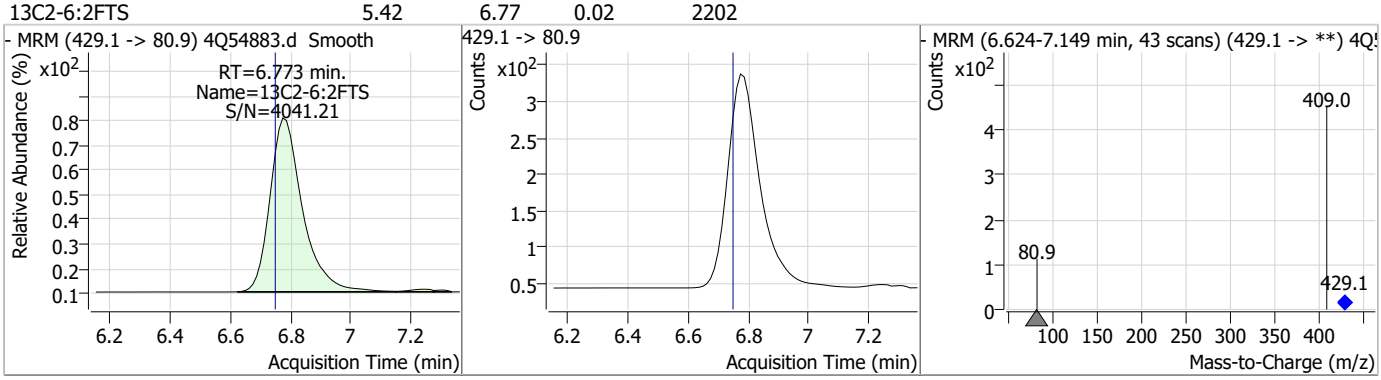
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.42	6.32	0.02	41908	363.1 -> 169.0	18.2	9.2	27.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.31	6.58	0.02	106237	376.9 -> 84.8	24.5	12.1	36.4

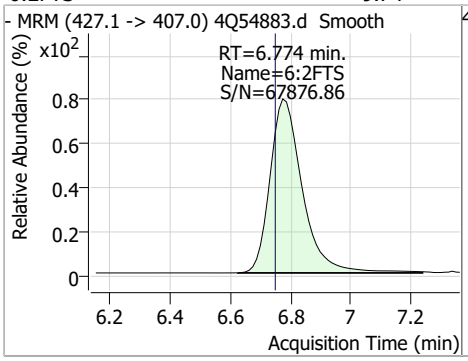


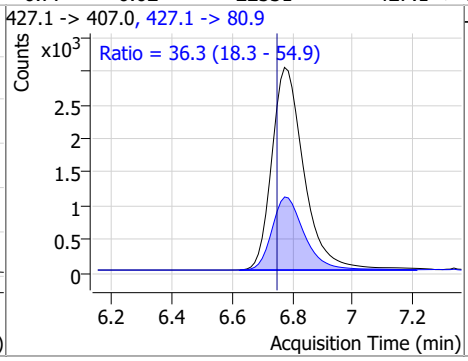
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.42	6.77	0.02	2202				

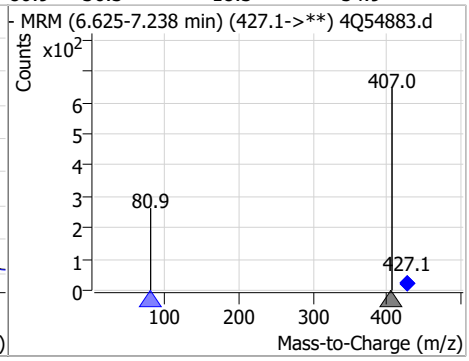


Perfluorinated Compounds by LC/MS/MS

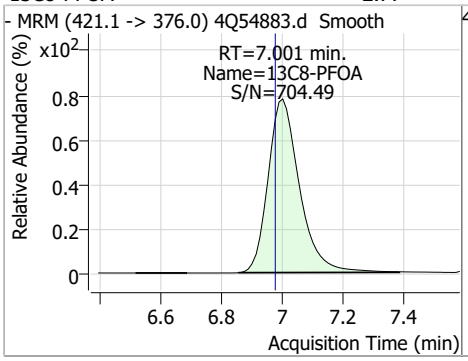
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.74	6.77	0.02	22531	427.1 -> 80.9	36.3	18.3	54.9

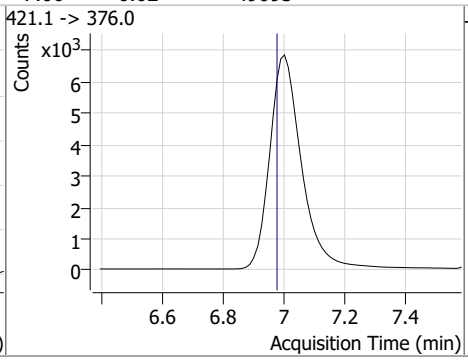


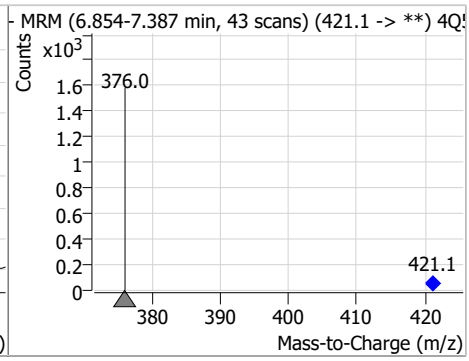




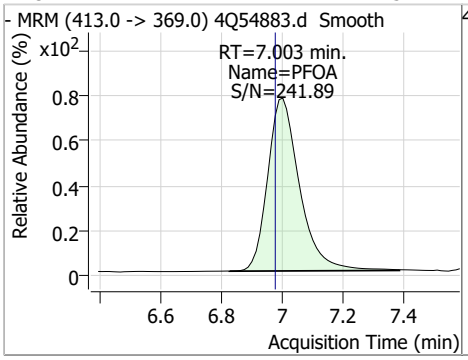
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.77	7.00	0.02	49095				

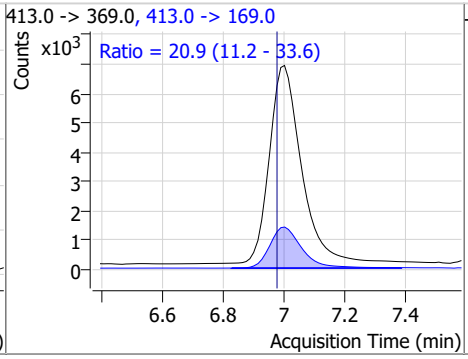


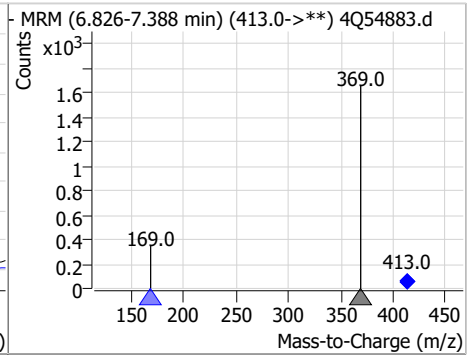




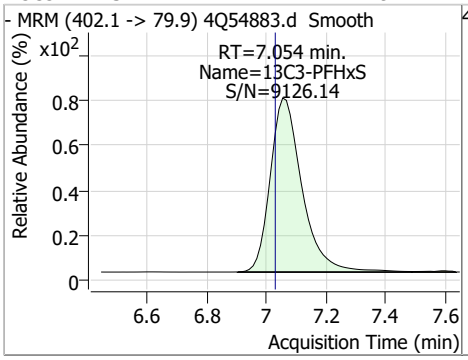
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.45	7.00	0.02	49501	413.0 -> 169.0	20.9	11.2	33.6

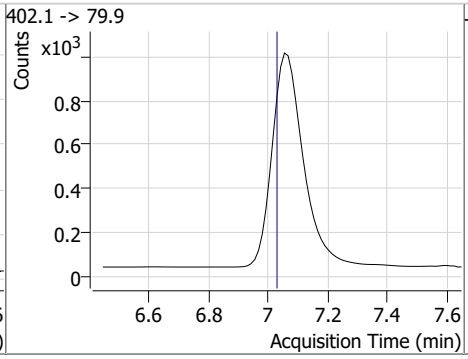


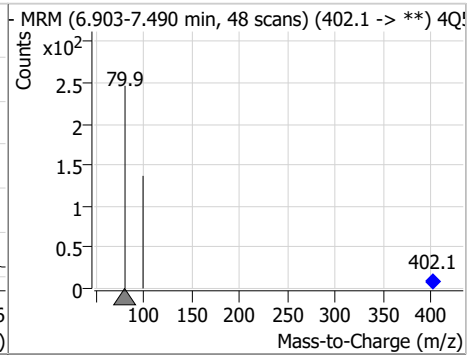




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.92	7.05	0.03	7231				

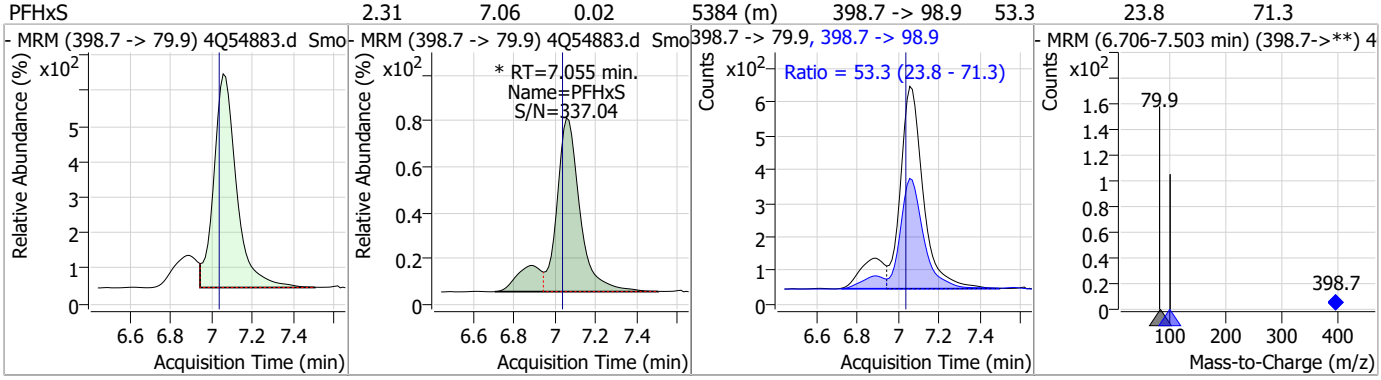




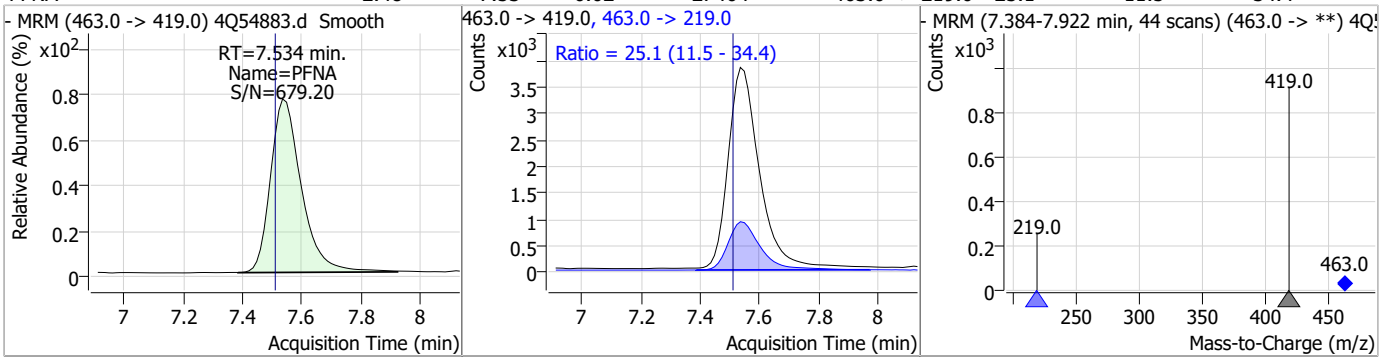


Perfluorinated Compounds by LC/MS/MS

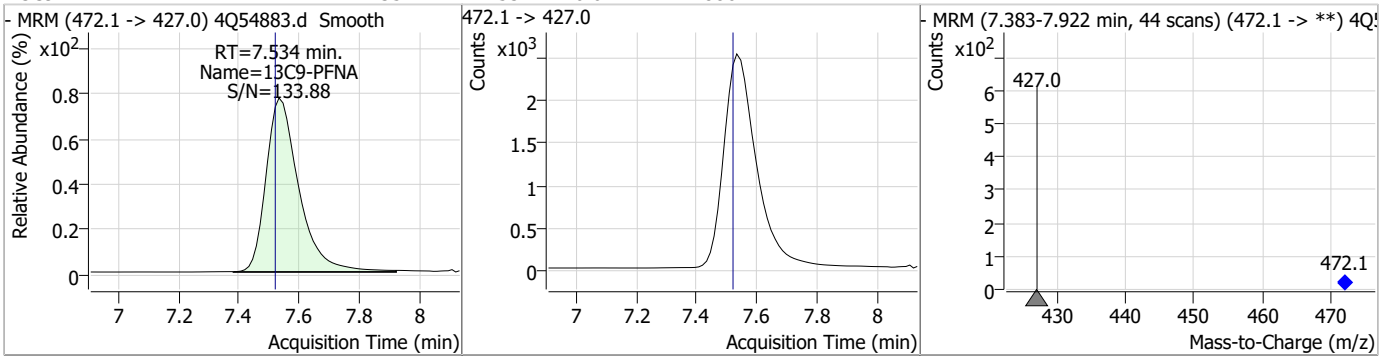
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.31	7.06	0.02	5384 (m)	398.7 -> 98.9	53.3	23.8	71.3



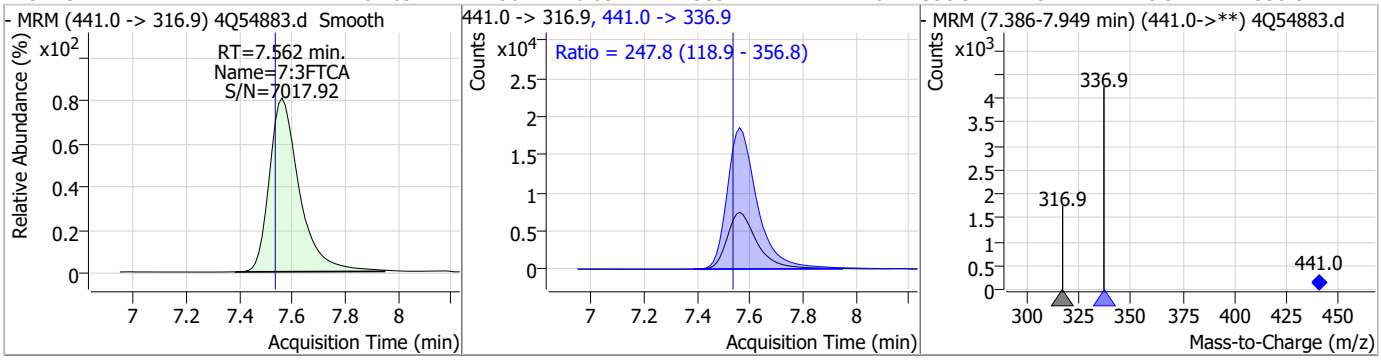
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.48	7.53	0.02	27464	463.0 -> 219.0	25.1	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.35	7.53	0.01	18862				

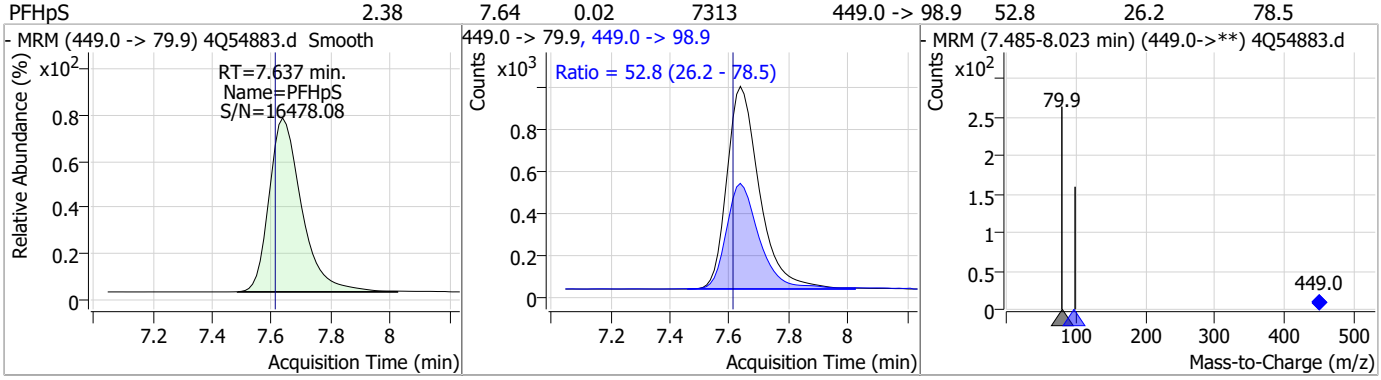


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	64.09	7.56	0.03	58524	441.0 -> 336.9	247.8	118.9	356.8

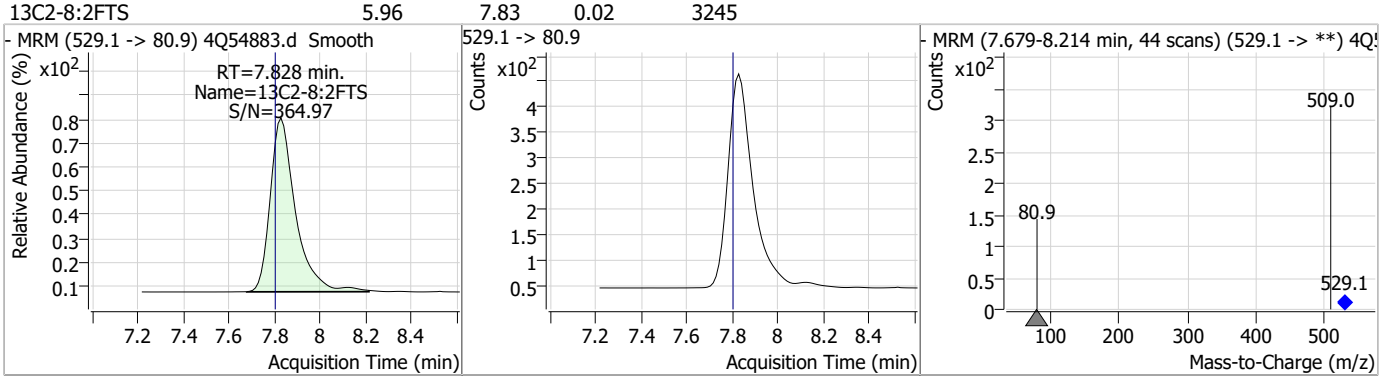


Perfluorinated Compounds by LC/MS/MS

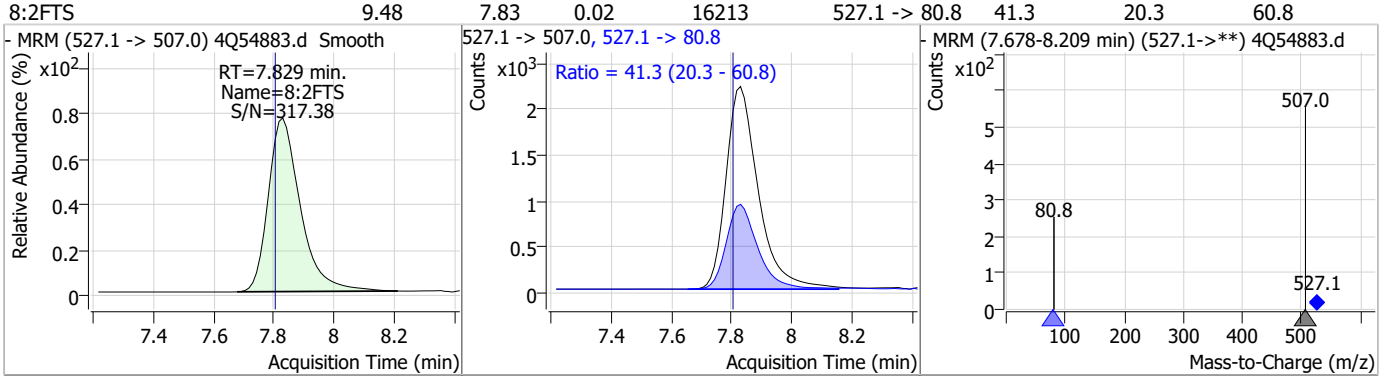
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.38	7.64	0.02	7313	449.0 -> 98.9	52.8	26.2	78.5



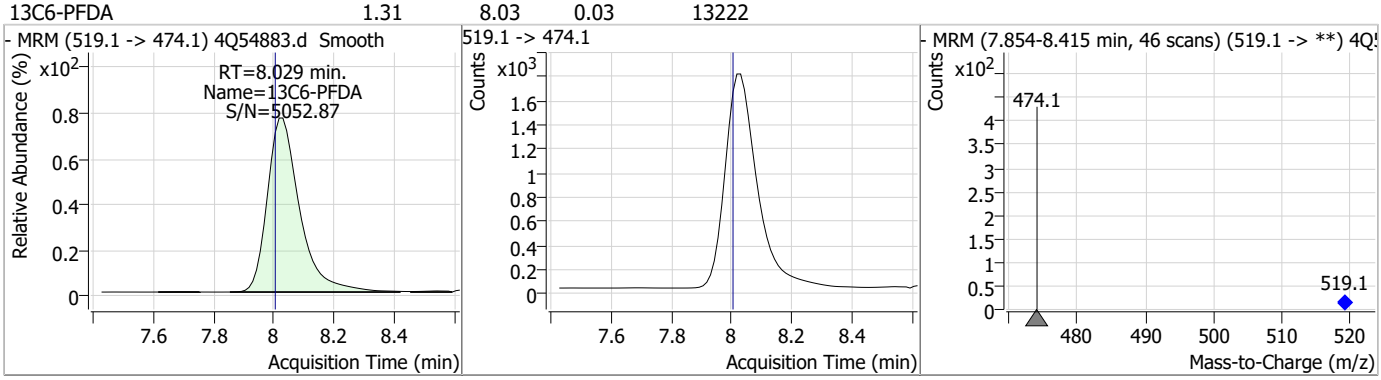
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.96	7.83	0.02	3245				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.48	7.83	0.02	16213	527.1 -> 80.8	41.3	20.3	60.8

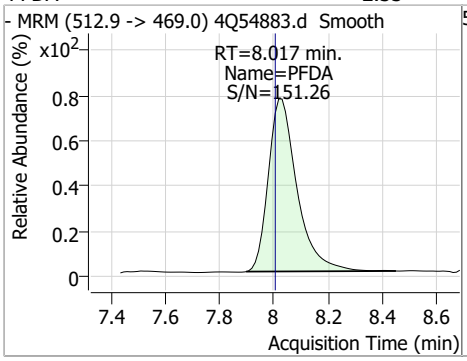


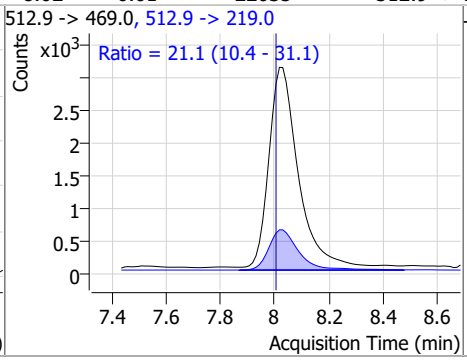
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	8.03	0.03	13222				

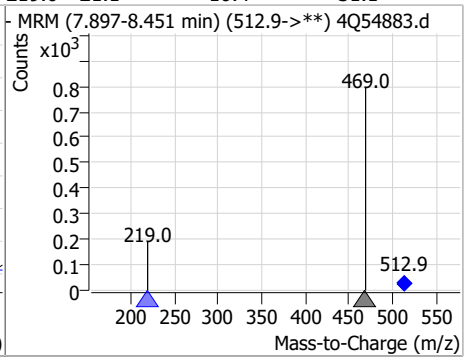


Perfluorinated Compounds by LC/MS/MS

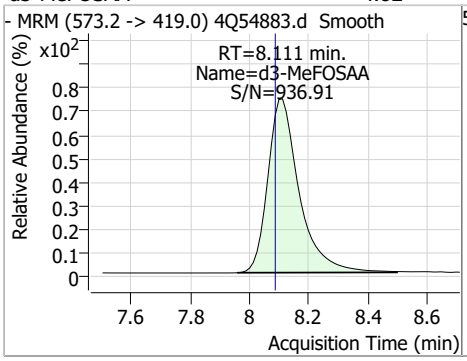
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.33	8.02	0.01	22635	512.9 -> 219.0	21.1	10.4	31.1

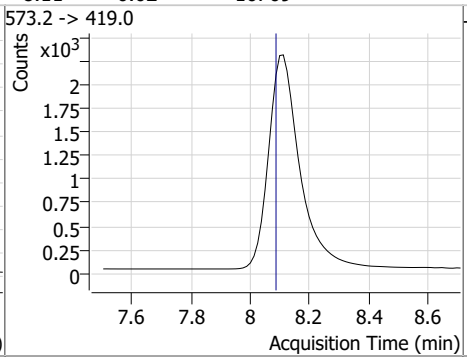


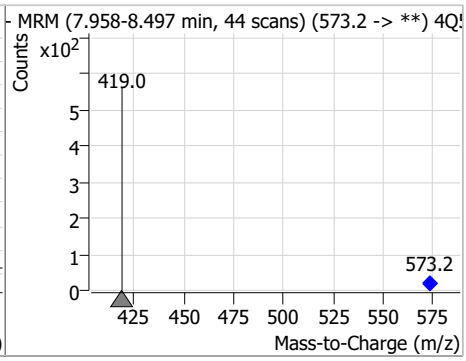




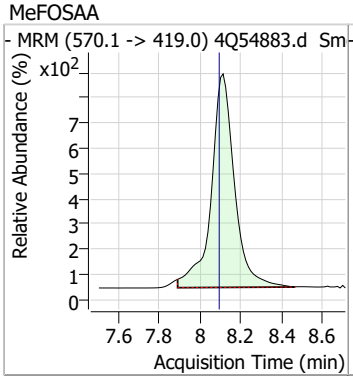
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.82	8.11	0.02	16769				

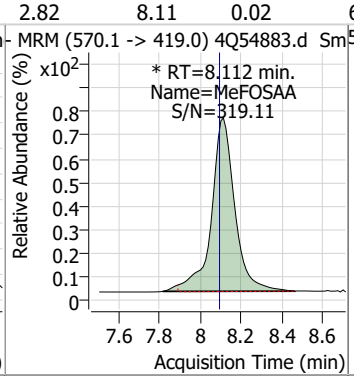


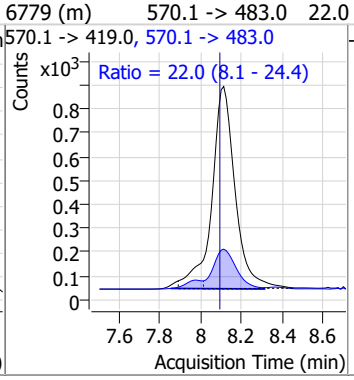


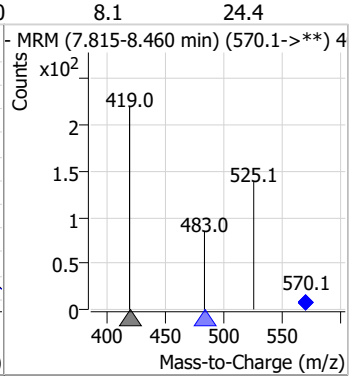


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.82	8.11	0.02	6779 (m)	570.1 -> 483.0	22.0	8.1	24.4

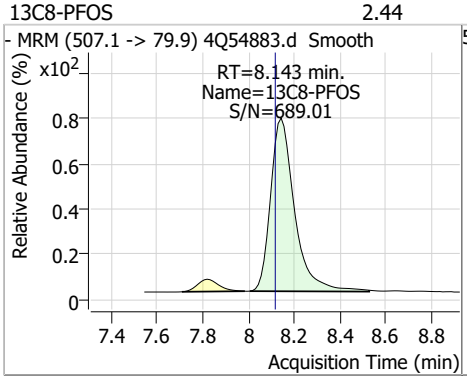


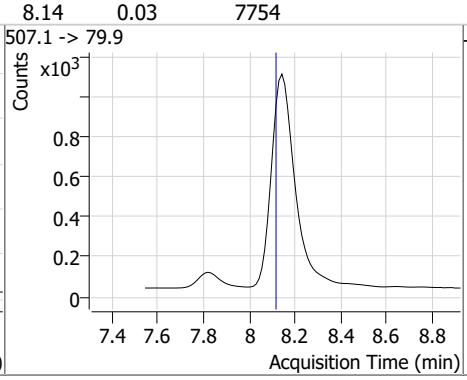


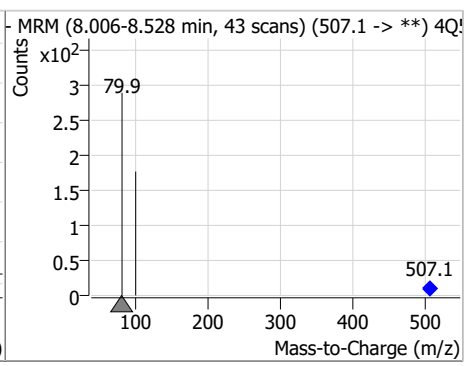




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.44	8.14	0.03	7754				

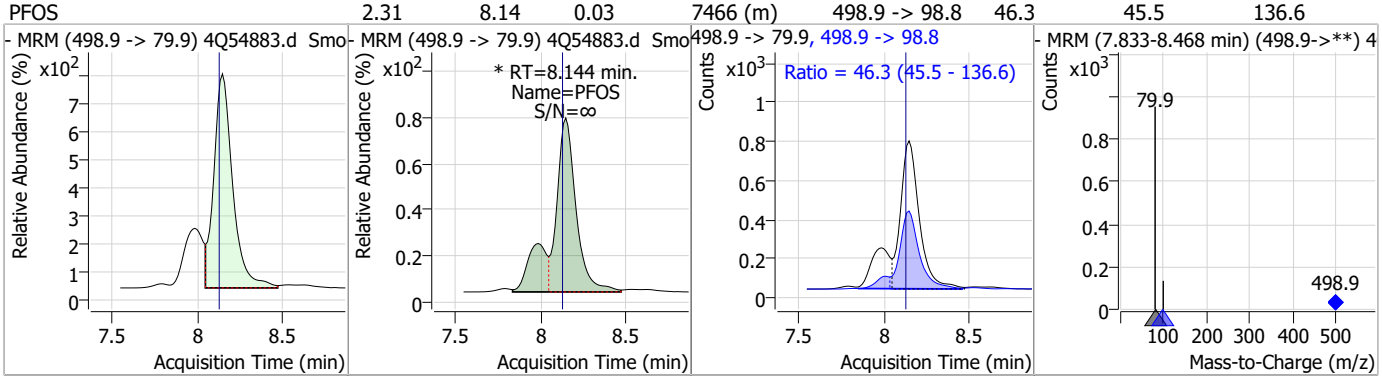




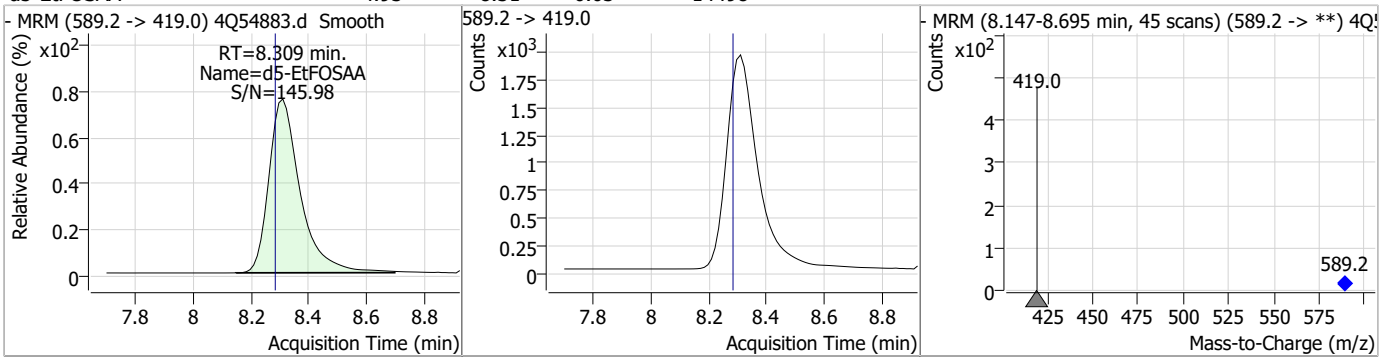


Perfluorinated Compounds by LC/MS/MS

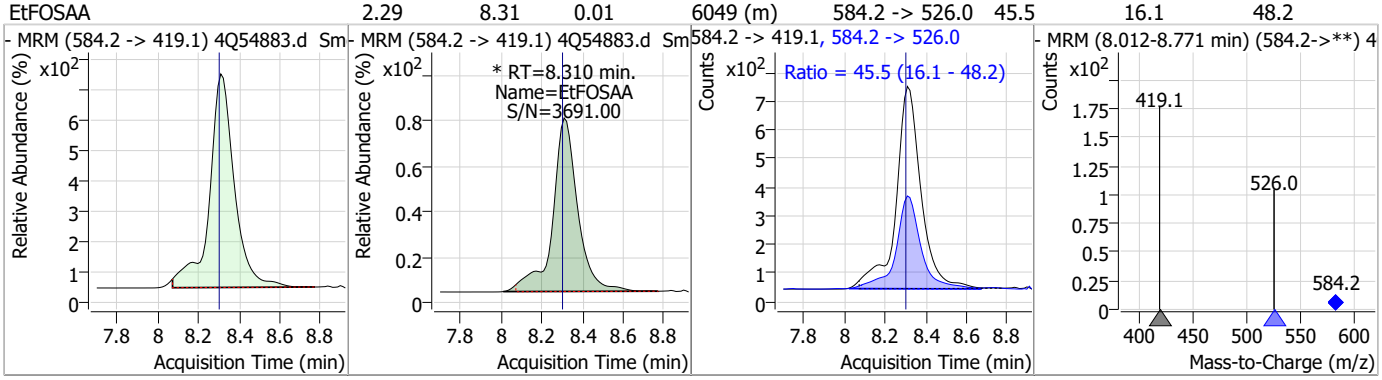
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.31	8.14	0.03	7466 (m)	498.9 -> 98.8	46.3	45.5	136.6



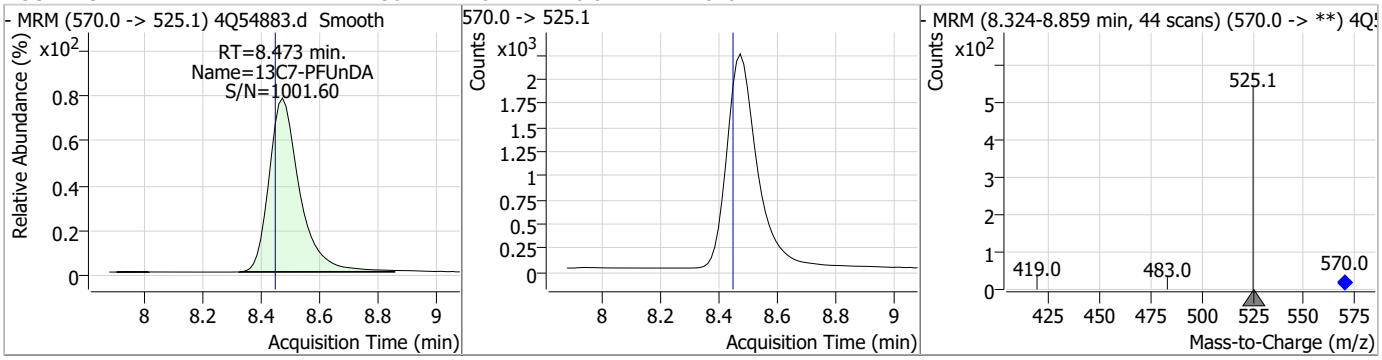
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.93	8.31	0.03	14498				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.29	8.31	0.01	6049 (m)	584.2 -> 526.0	45.5	16.1	48.2

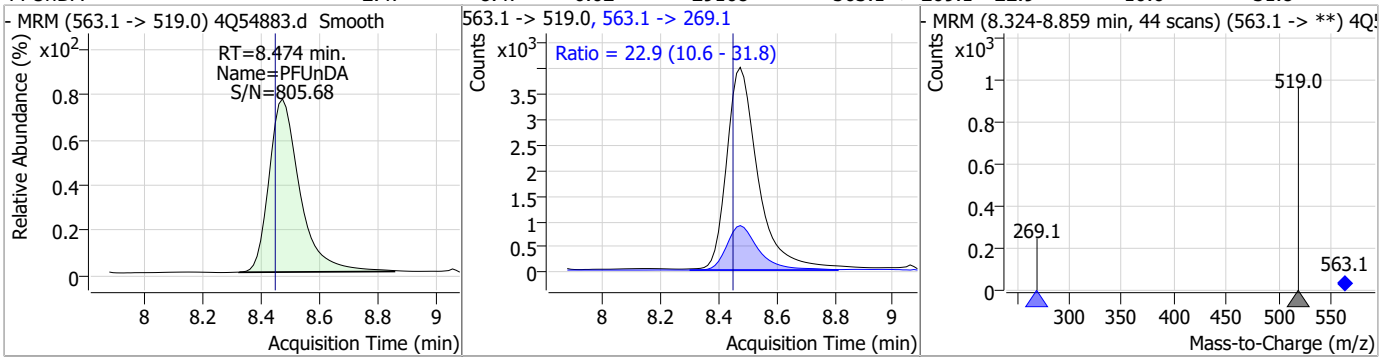


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.36	8.47	0.02	16204				

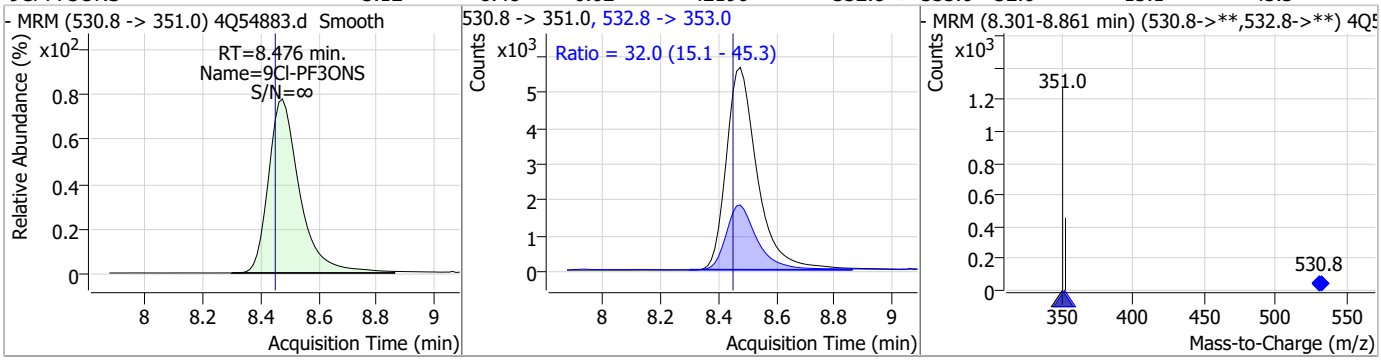


Perfluorinated Compounds by LC/MS/MS

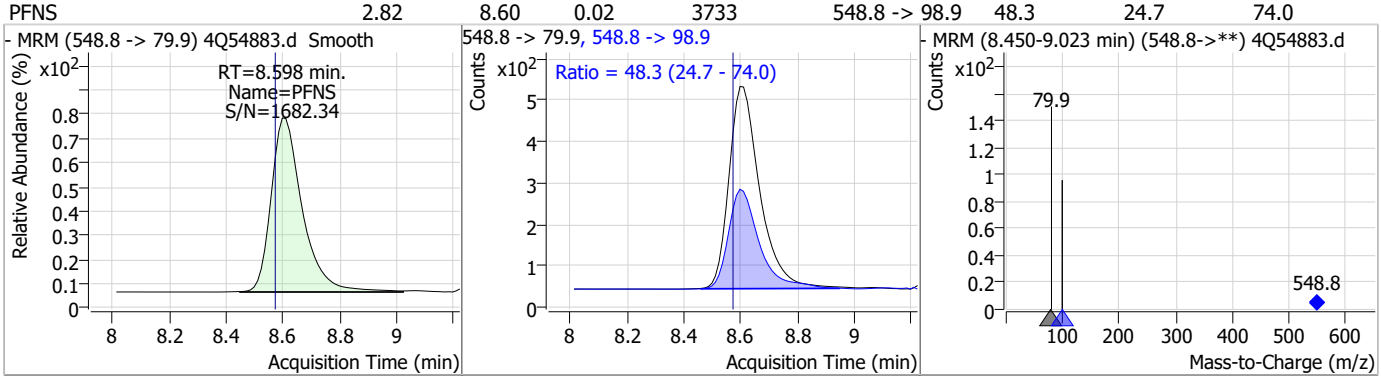
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.47	8.47	0.02	29168	563.1 -> 269.1	22.9	10.6	31.8



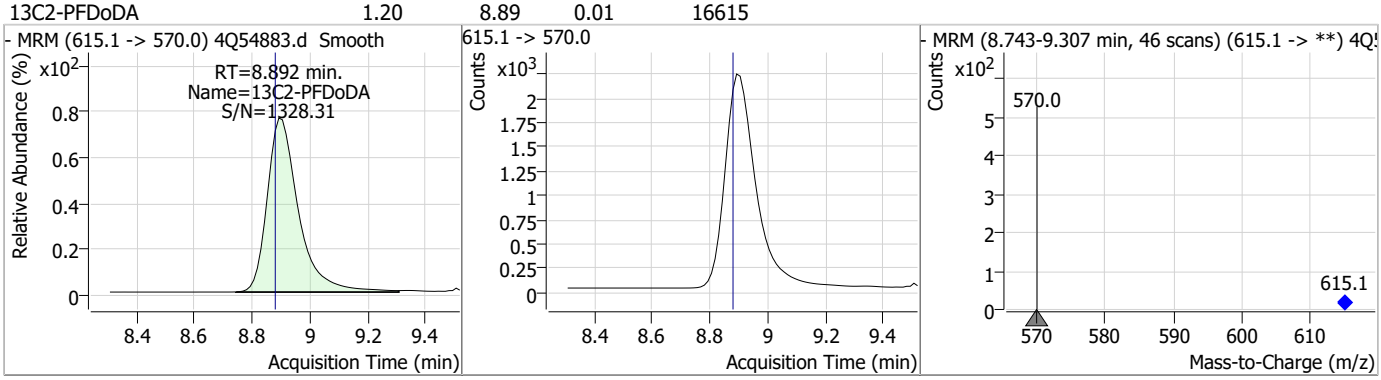
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.12	8.48	0.02	42196	532.8 -> 353.0	32.0	15.1	45.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.82	8.60	0.02	3733	548.8 -> 98.9	48.3	24.7	74.0

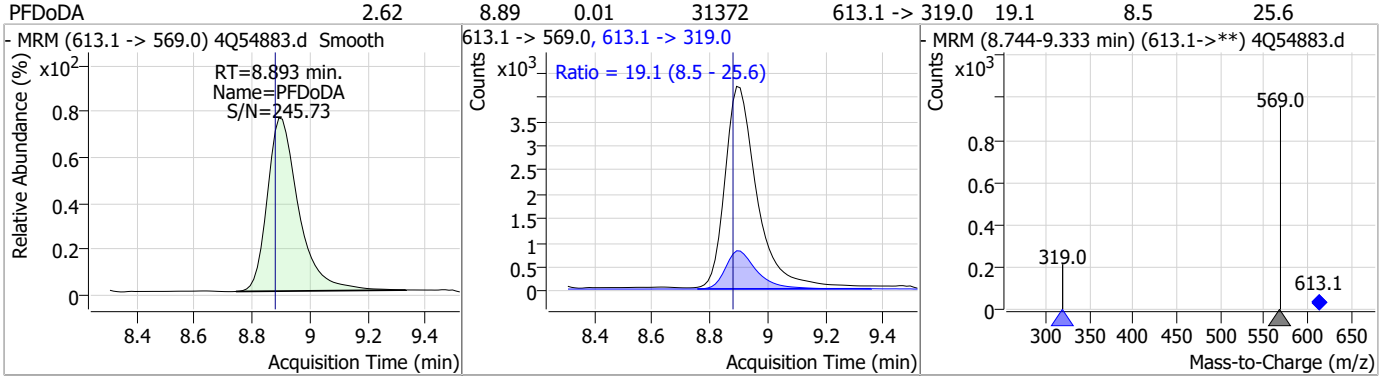


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	8.89	0.01	16615				

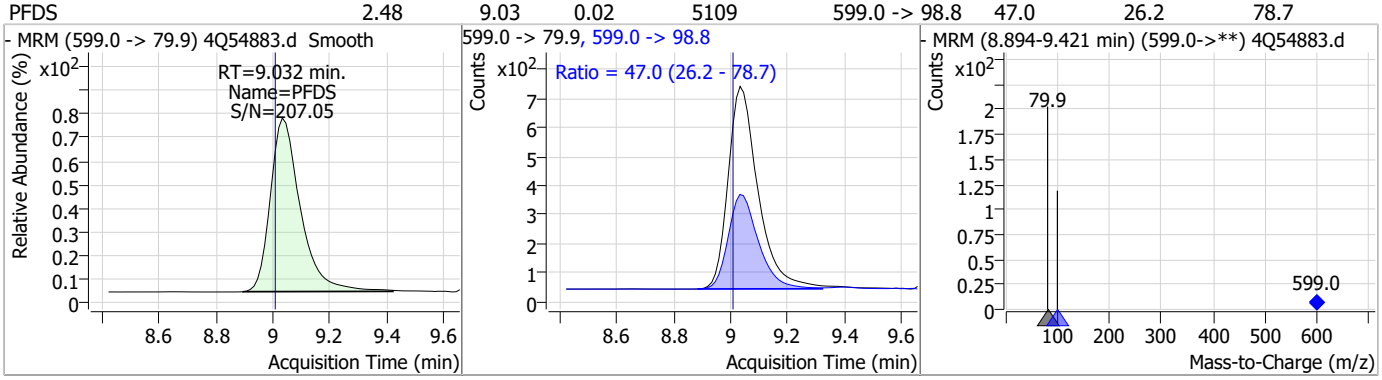


Perfluorinated Compounds by LC/MS/MS

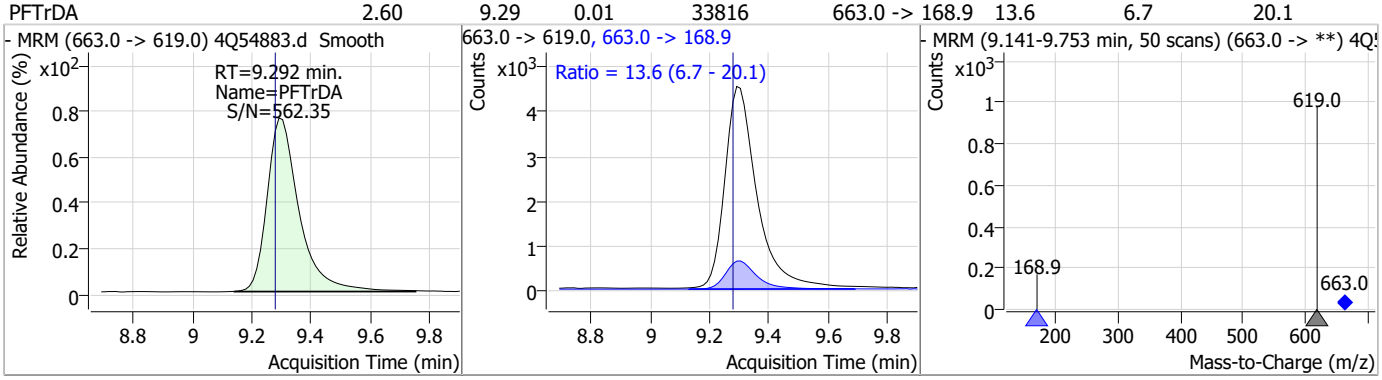
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.62	8.89	0.01	31372	613.1 -> 319.0	19.1	8.5	25.6



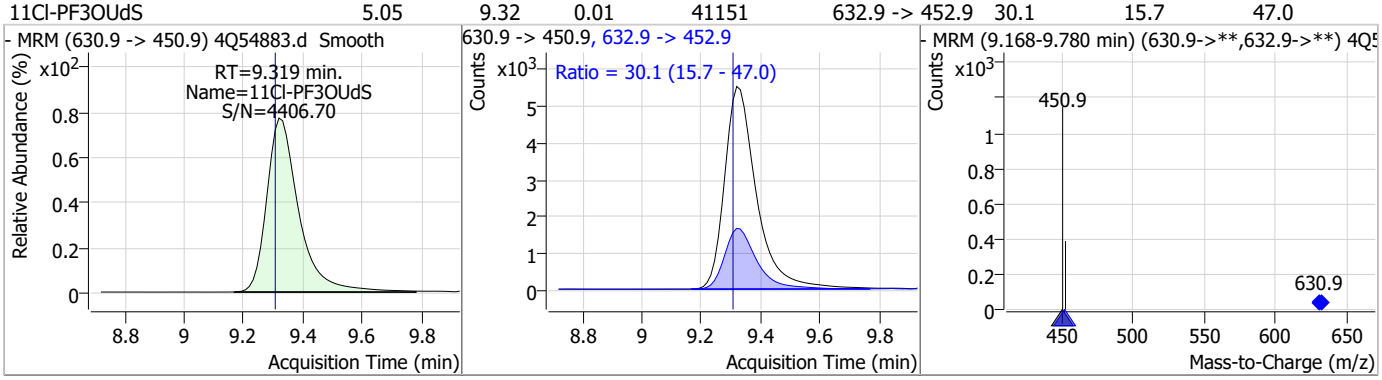
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.48	9.03	0.02	5109	599.0 -> 98.8	47.0	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.60	9.29	0.01	33816	663.0 -> 168.9	13.6	6.7	20.1

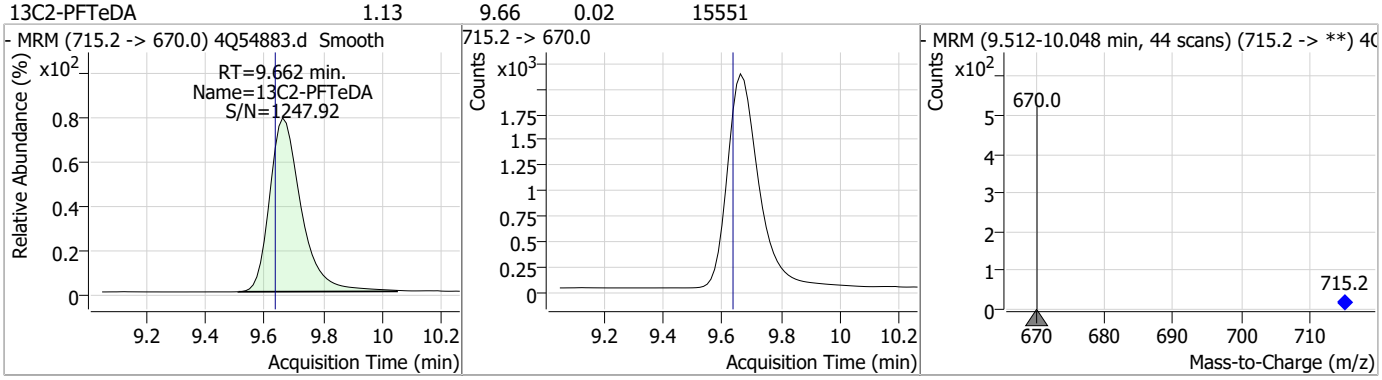


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	5.05	9.32	0.01	41151	632.9 -> 452.9	30.1	15.7	47.0

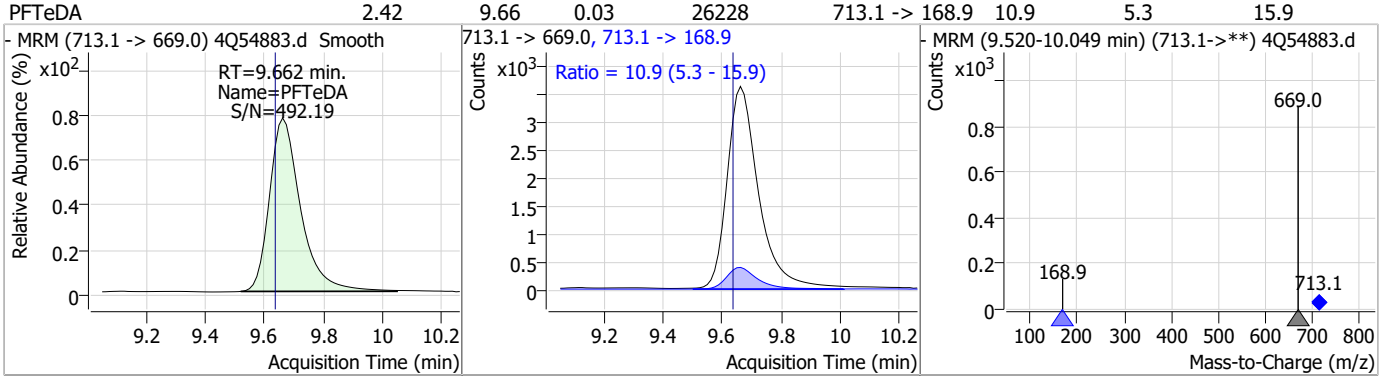


Perfluorinated Compounds by LC/MS/MS

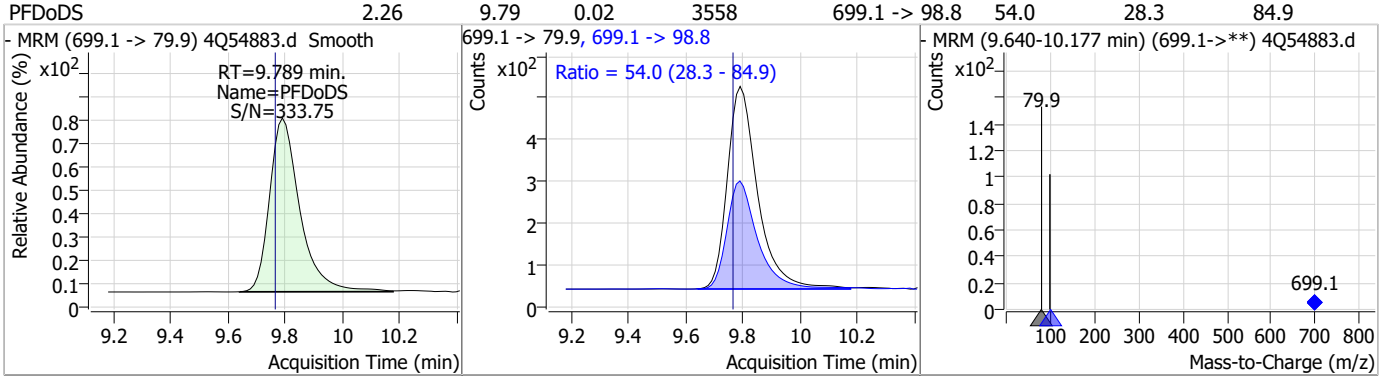
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.13	9.66	0.02	15551				



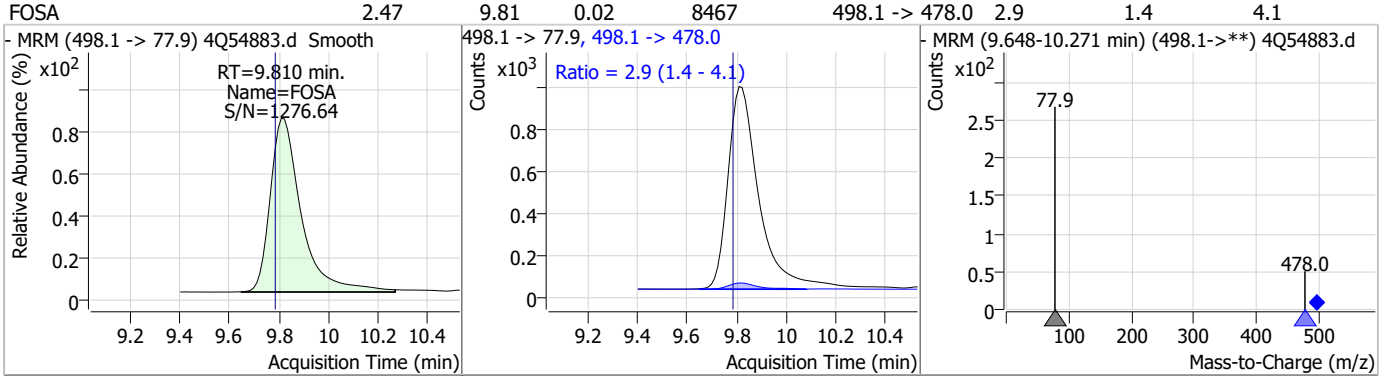
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.42	9.66	0.03	26228	713.1 -> 168.9	10.9	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.26	9.79	0.02	3558	699.1 -> 98.8	54.0	28.3	84.9

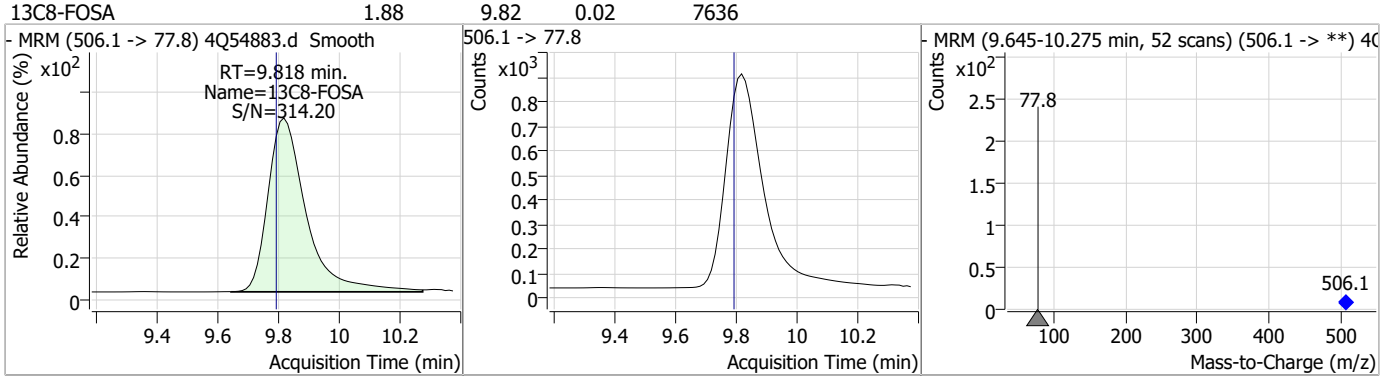


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.47	9.81	0.02	8467	498.1 -> 478.0	2.9	1.4	4.1

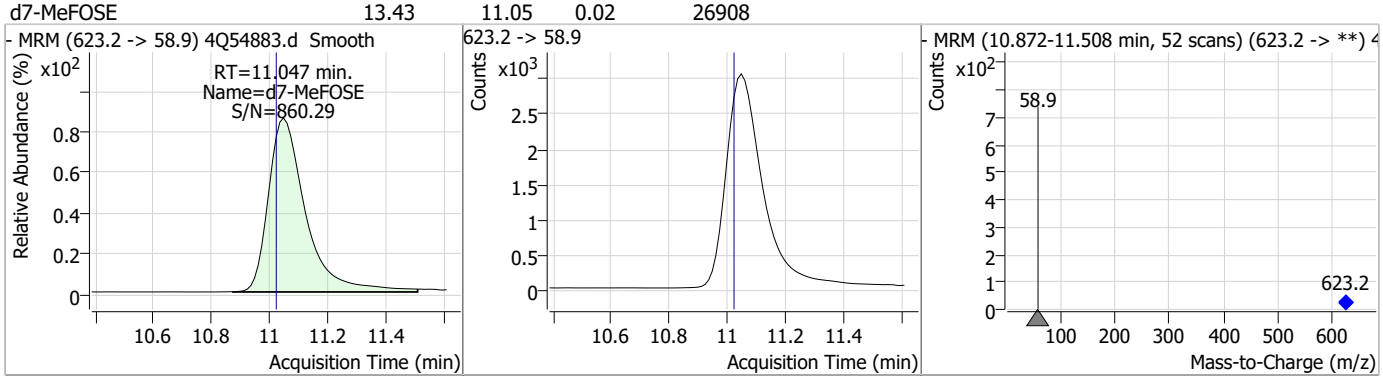


Perfluorinated Compounds by LC/MS/MS

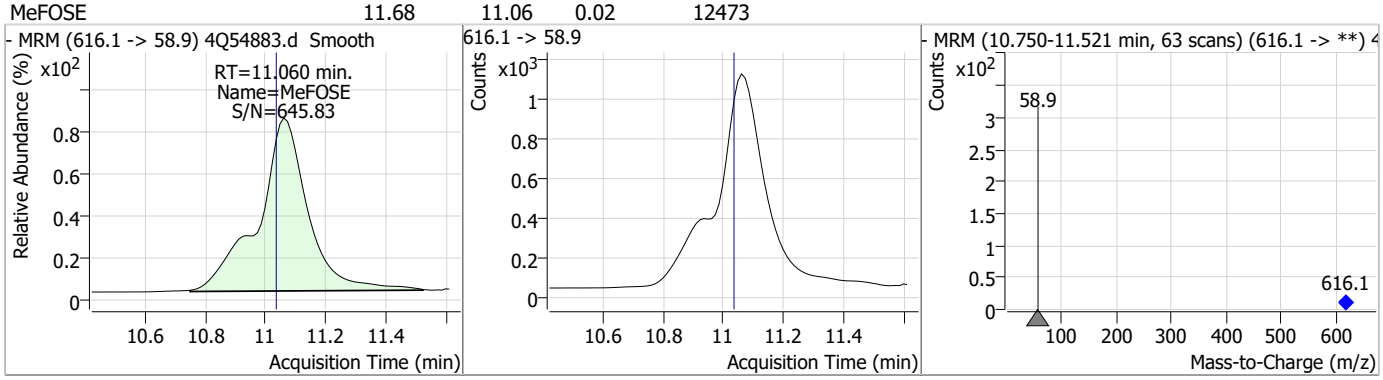
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.88	9.82	0.02	7636				



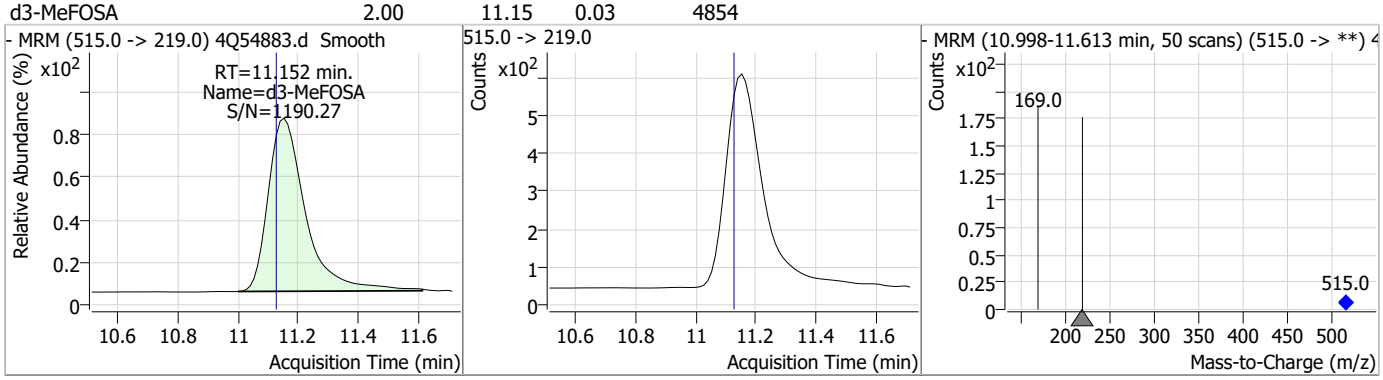
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	13.43	11.05	0.02	26908				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.68	11.06	0.02	12473				

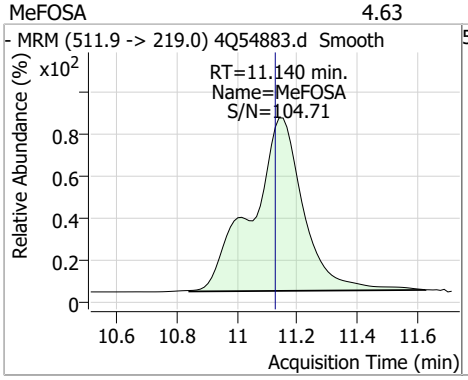


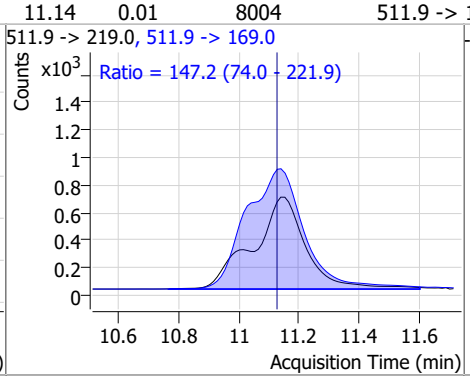
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.00	11.15	0.03	4854				

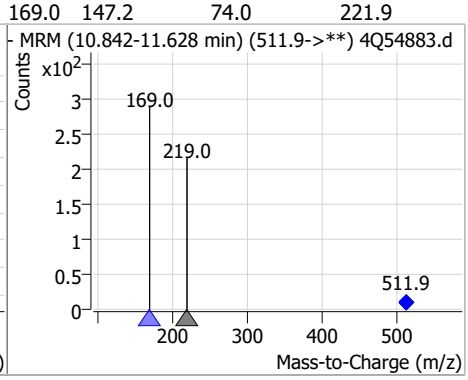


Perfluorinated Compounds by LC/MS/MS

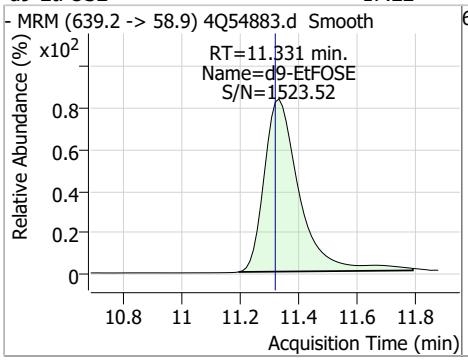
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.63	11.14	0.01	8004	511.9 -> 169.0	147.2	74.0	221.9

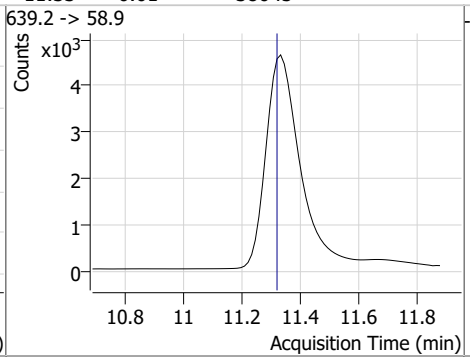


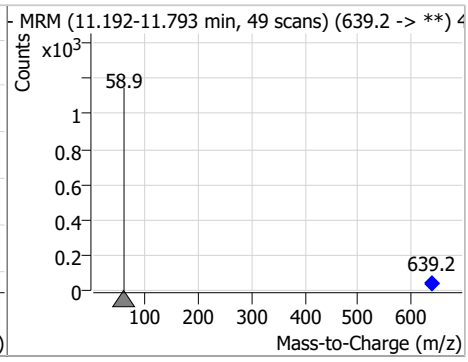




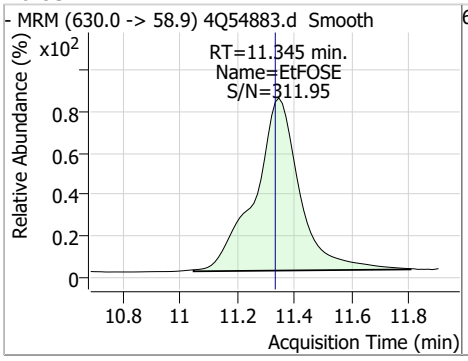
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	17.22	11.33	0.01	38645				

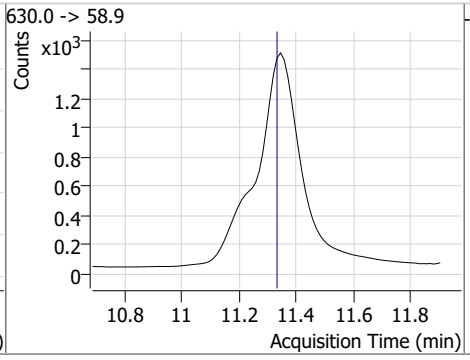


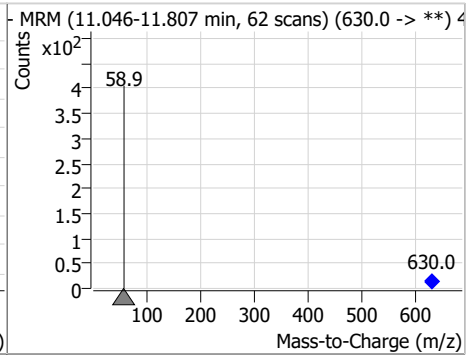




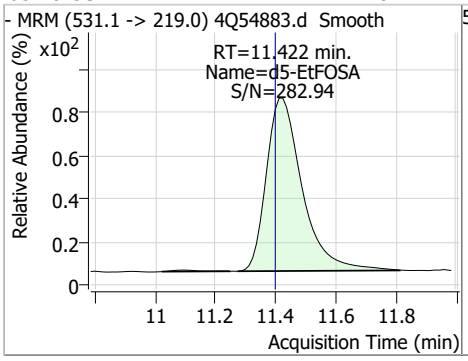
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.74	11.34	0.01	16050				

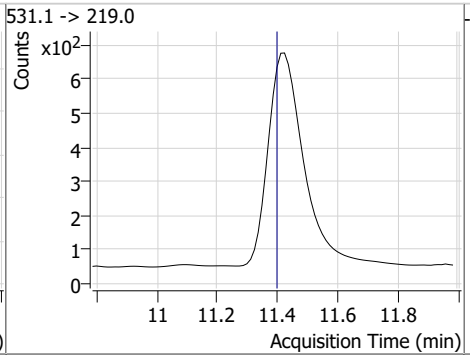


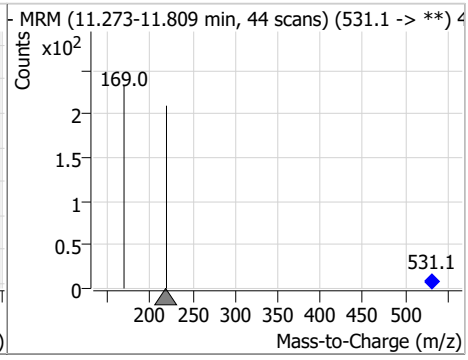




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	1.94	11.42	0.02	5157				

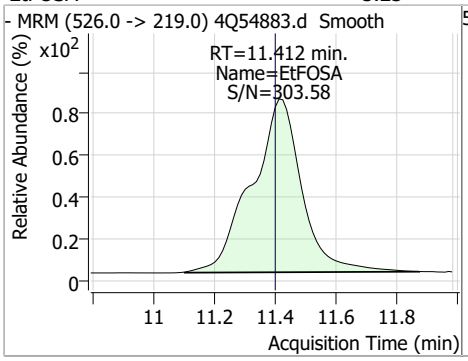


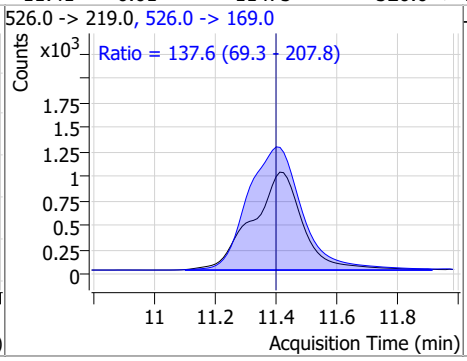


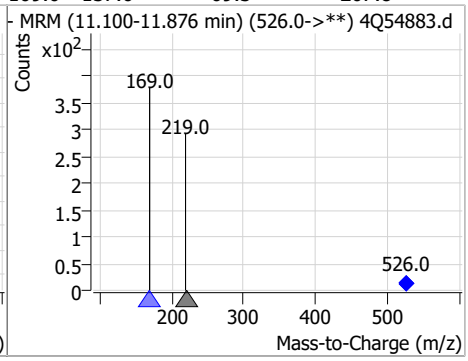


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.23	11.41	0.01	11475	526.0 -> 169.0	137.6	69.3	207.8







Manual Integration Approval Summary

Sample Number: OP495-BS
Lab FileID: 4Q54883.D
Injection Time: 12/08/23 19:21
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 16:36 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.05	Split peak
MeFOSAA	2355-31-9		8.11	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.14	Split peak
EtFOSAA	2991-50-6		8.31	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 12/11/23 16:36

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54884.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 7:36:25 PM
Sample Name : op495-llbs:3
Vial : P2-C6
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP495,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.752	216.8 -> 171.9	99747	10.00	µg/L	0.078
M5-PFPeA	4.187	268.3 -> 223.0	38371	5.00	µg/L	0.025
M5-PFHxA	5.372	318.0 -> 273.0	29942	2.50	µg/L	0.037
M4-PFHpA	6.317	367.1 -> 322.0	29875	2.50	µg/L	0.025
M8-PFOA	6.989	421.1 -> 376.0	47703	2.50	µg/L	0.012
M9-PFNA	7.534	472.1 -> 427.0	18221	1.25	µg/L	0.012
M6-PFDA	8.017	519.1 -> 474.1	12928	1.25	µg/L	0.013
M7-PFUnDA	8.473	570.0 -> 525.1	15951	1.25	µg/L	0.025
M2-PFDoDA	8.892	615.1 -> 570.0	16023	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	14911	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	7840	2.50	µg/L	0.025
M3-PFBS	5.227	302.1 -> 79.9	8356	2.50	µg/L	0.038
M3-PFHxS	7.054	402.1 -> 79.9	7256	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	7493	2.50	µg/L	0.026
M2-4:2FTS	5.071	329.1 -> 80.9	961	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2158	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	3079	5.00	µg/L	0.025
M3-MeFOSAA	8.111	573.2 -> 419.0	17235	5.00	µg/L	0.025
M3-HFPO-DA	5.714	286.9 -> 168.9	30074	10.00	µg/L	0.025
M5-EtFOSAA	8.309	589.2 -> 419.0	14238	5.00	µg/L	0.026
M7-MeFOSE	11.047	623.2 -> 58.9	26831	25.00	µg/L	0.025
M9-EtFOSE	11.331	639.2 -> 58.9	36939	25.00	µg/L	0.012
M5-EtFOSA	11.410	531.1 -> 219.0	4956	2.50	µg/L	0.012
M3-MeFOSA	11.139	515.0 -> 219.0	4422	2.50	µg/L	0.012
13C4-PFOS	8.144	502.8 -> 79.9	6020	2.50	µg/L	0.026
13C3-PFBA	2.755	216.0 -> 172.0	42899	5.00	µg/L	0.077
18O2-PFHxS	7.054	403.0 -> 83.9	3935	2.50	µg/L	0.013
13C4-PFOA	6.989	417.1 -> 372.0	48276	2.50	µg/L	0.012
13C2-PFDA	8.017	515.1 -> 470.1	13411	1.25	µg/L	0.013
13C5-PFNA	7.534	468.0 -> 423.0	17289	1.25	µg/L	0.025
13C2-PFHxA	5.373	315.1 -> 270.0	30138	2.50	µg/L	0.037
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	961	5.14	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2158	5.33	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C2-8:2FTS	7.828	529.1 -> 80.9	3079	5.68	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C2-PFDoDA	8.892	615.1 -> 570.0	16023	1.20	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C2-PFTeDA	9.662	715.2 -> 670.0	14911	1.12	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.6%		
13C3-PFBS	5.227	302.1 -> 79.9	8356	2.77	µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C3-PFHxS	7.054	402.1 -> 79.9	7256	2.94	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.6%		
13C4-PFBA	2.752	216.8 -> 171.9	99747	11.07 µg/L		0.078
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.7%		
13C4-PFHpA	6.317	367.1 -> 322.0	29875	2.81 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 112.5%		
13C5-PFHxA	5.372	318.0 -> 273.0	29942	2.70 µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.9%		
13C5-PFPeA	4.187	268.3 -> 223.0	38371	5.55 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 110.9%		
13C6-PFDA	8.017	519.1 -> 474.1	12928	1.32 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C7-PFUnDA	8.473	570.0 -> 525.1	15951	1.39 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 110.9%		
13C8-FOSA	9.818	506.1 -> 77.8	7840	2.01 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 80.4%		
13C8-PFOA	6.989	421.1 -> 376.0	47703	2.67 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C8-PFOS	8.143	507.1 -> 79.9	7493	2.46 µg/L		0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C9-PFNA	7.534	472.1 -> 427.0	18221	1.32 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.2%		
d3-MeFOSAA	8.111	573.2 -> 419.0	17235	5.16 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C3-HFPO-DA	5.714	286.9 -> 168.9	30074	10.84 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
d3-MeFOSA	11.139	515.0 -> 219.0	4422	1.90 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 76.0%		
d5-EtFOSAA	8.309	589.2 -> 419.0	14238	5.04 µg/L		0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
d7-MeFOSE	11.047	623.2 -> 58.9	26831	13.94 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 55.8%		
d9-EtFOSE	11.331	639.2 -> 58.9	36939	17.14 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 68.5%		
d5-EtFOSA	11.410	531.1 -> 219.0	4956	1.94 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 77.7%		
Target Compounds						QValue
4:2FTS	5.072	327.1 -> 307.0	4875	2.95 µg/L		98
		327.1 -> 80.9	2132			
6:2FTS	6.774	427.1 -> 407.0	6663	2.94 µg/L		98
		427.1 -> 80.9	2534			
8:2FTS	7.829	527.1 -> 507.0	5323	3.28 µg/L		94
		527.1 -> 80.8	1955			
EtFOSAA	8.310	584.2 -> 419.1	1963	0.76 µg/L	m	90
		584.2 -> 526.0	745			
FOSA	9.823	498.1 -> 77.9	2636	0.75 µg/L		98
		498.1 -> 478.0	88			
MeFOSAA	8.112	570.1 -> 419.0	2088	0.84 µg/L	m	96
		570.1 -> 483.0	379			
PFBA	2.758	212.8 -> 168.9	9717	3.04 µg/L		100
PFBS	5.228	298.7 -> 79.9	1765	0.68 µg/L		97
		298.7 -> 98.8	753			
PFDA	8.017	512.9 -> 469.0	7454	0.78 µg/L		99
		512.9 -> 219.0	1577			
PFDoDA	8.893	613.1 -> 569.0	9344	0.81 µg/L		98
		613.1 -> 319.0	1694			
PFDS	9.032	599.0 -> 79.9	1489	0.75 µg/L		99

Perfluorinated Compounds by LC/MS/MS

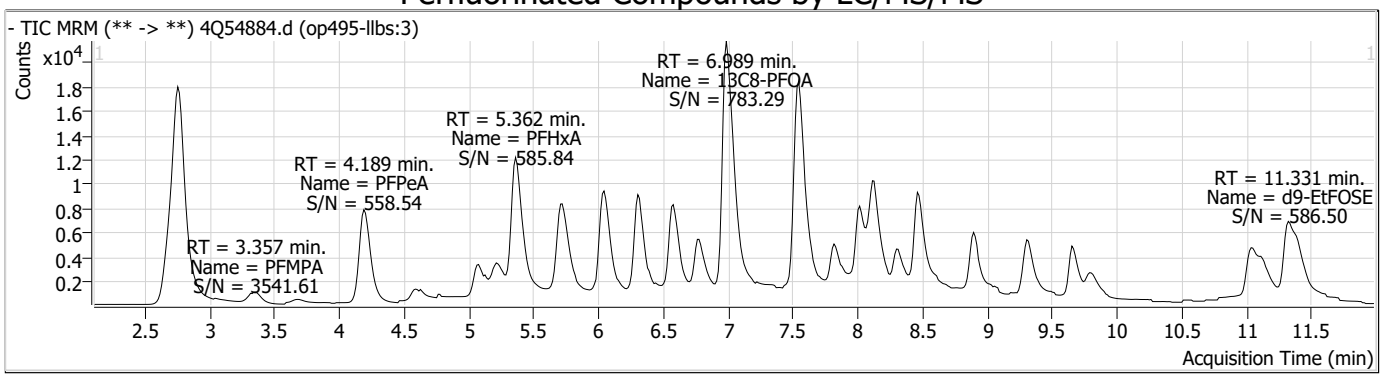
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	776				
PFHpA	6.317	363.1 -> 319.0	12744	0.76	µg/L		99
		363.1 -> 169.0	2280				
PFHpS	7.637	449.0 -> 79.9	2383	0.80	µg/L		95
		449.0 -> 98.9	1156				
PFHxA	5.362	313.0 -> 269.0	6940	0.73	µg/L		99
		313.0 -> 118.9	207				
PFHxS	7.055	398.7 -> 79.9	1710	0.73	µg/L	m	93
		398.7 -> 98.9	893				
PFNA	7.534	463.0 -> 419.0	7764	0.73	µg/L		97
		463.0 -> 219.0	1913				
PFNS	8.598	548.8 -> 79.9	1062	0.83	µg/L		97
		548.8 -> 98.9	546				
PFOA	6.990	413.0 -> 369.0	14318	0.73	µg/L		99
		413.0 -> 169.0	3171				
PFOS	8.144	498.9 -> 79.9	2379	0.76	µg/L	#	46
		498.9 -> 98.8	953				
PFPeA	4.189	263.0 -> 219.0	11202	1.48	µg/L		100
PFPeS	6.307	349.1 -> 79.9	1502	0.68	µg/L		92
		349.1 -> 98.9	708				
PFTeDA	9.662	713.1 -> 669.0	7718	0.74	µg/L		95
		713.1 -> 168.9	964				
PFTrDA	9.304	663.0 -> 619.0	10114	0.81	µg/L		99
		663.0 -> 168.9	1393				
PFUnDA	8.474	563.1 -> 519.0	9406	0.81	µg/L		96
		563.1 -> 269.1	2174				
11Cl-PF3OUdS	9.319	630.9 -> 450.9	12622	1.52	µg/L		97
		632.9 -> 452.9	3726				
9Cl-PF3ONS	8.476	530.8 -> 351.0	12539	1.50	µg/L		96
		532.8 -> 353.0	4093				
ADONA	6.581	376.9 -> 250.9	31964	1.57	µg/L		99
		376.9 -> 84.8	7872				
HFPO-DA	5.728	284.9 -> 168.9	4508	1.57	µg/L		100
		284.9 -> 184.9	431				
3:3FTCA	3.679	241.0 -> 177.0	1640	3.23	µg/L		99
		241.0 -> 117.0	152				
5:3FTCA	6.045	341.0 -> 237.1	32364	18.99	µg/L		100
		341.0 -> 217.0	23063				
7:3FTCA	7.562	441.0 -> 316.9	18292	20.47	µg/L		96
		441.0 -> 336.9	42413				
EtFOSA	11.412	526.0 -> 219.0	3208	1.52	µg/L		96
		526.0 -> 169.0	4603				
EtFOSE	11.345	630.0 -> 58.9	5112	3.91	µg/L		100
MeFOSA	11.140	511.9 -> 219.0	2133	1.35	µg/L		96
		511.9 -> 169.0	3264				
MeFOSE	11.060	616.1 -> 58.9	3971	3.73	µg/L		100
PFDoDS	9.789	699.1 -> 79.9	1024	0.67	µg/L		93
		699.1 -> 98.8	631				
NFDHA	5.241	295.0 -> 201.0	1050	1.55	µg/L		94
		295.0 -> 84.9	308				
PFMBA	4.591	279.0 -> 85.1	6483	1.56	µg/L		100
PFMPA	3.357	229.0 -> 84.9	7402	1.62	µg/L		100
PFEESA	5.747	314.8 -> 134.9	9880	1.40	µg/L		100
		314.8 -> 82.9	398				

 # = Qualifier out of range, m = manually integrated, + = Area summed

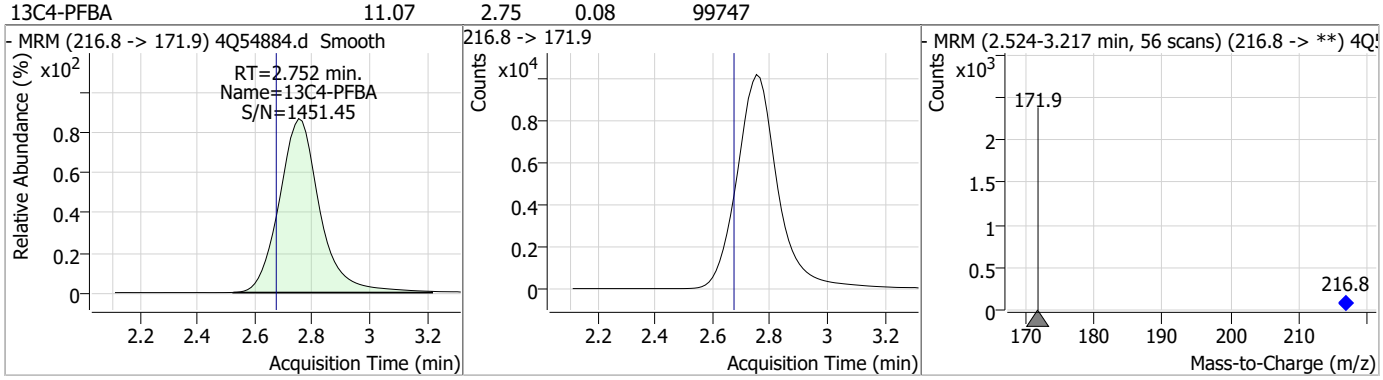
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

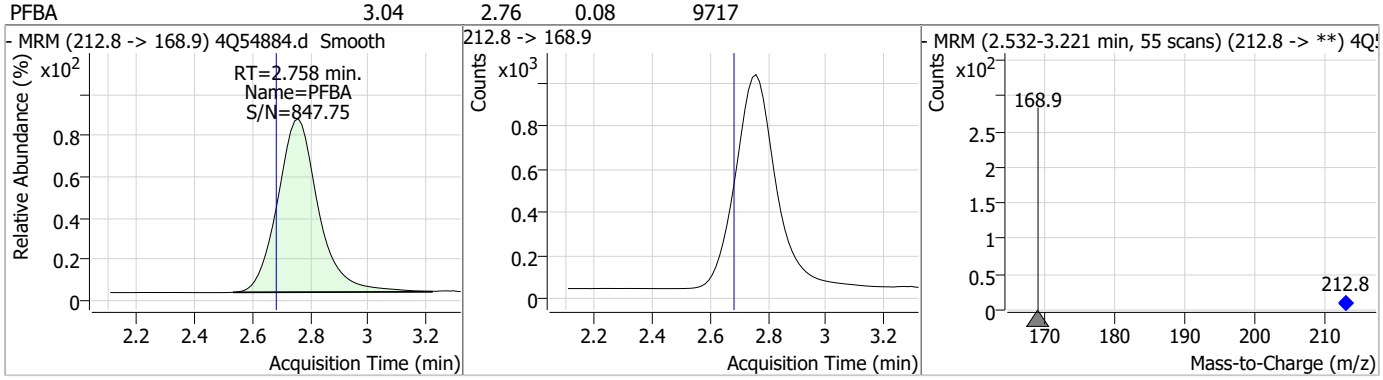
Perfluorinated Compounds by LC/MS/MS



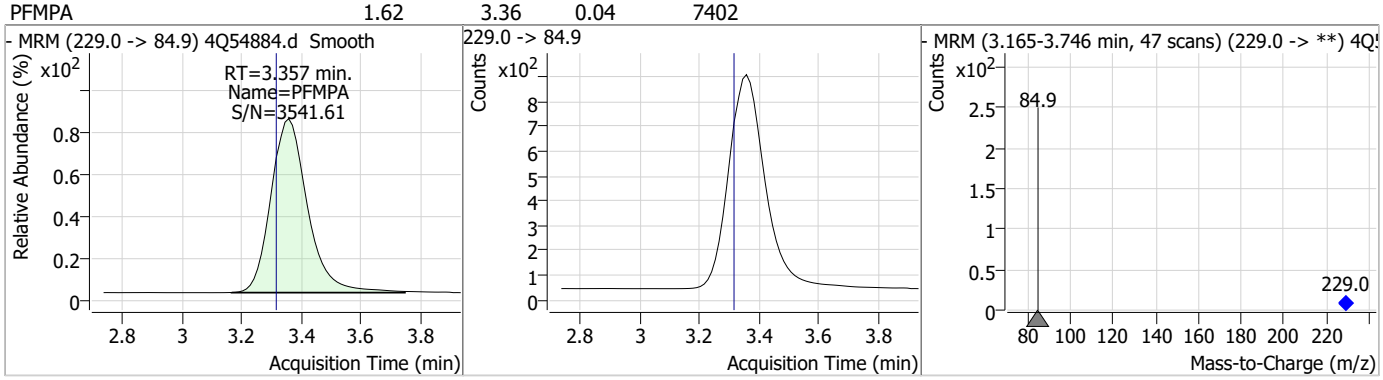
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.07	2.75	0.08	99747				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.04	2.76	0.08	9717				

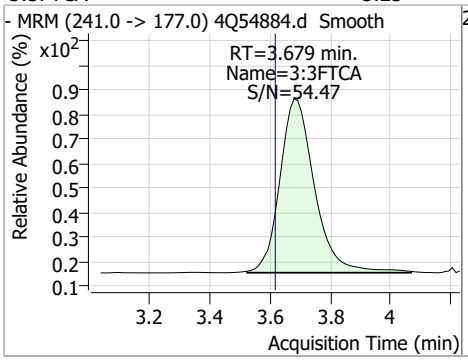


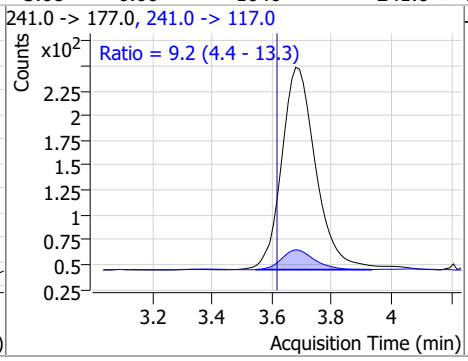
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	1.62	3.36	0.04	7402				

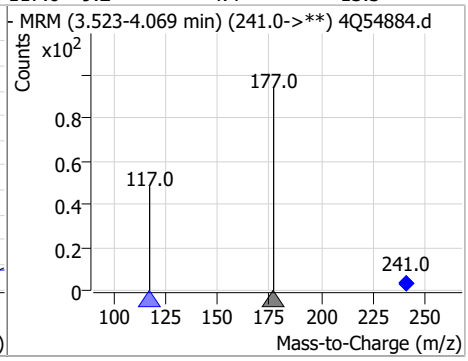


Perfluorinated Compounds by LC/MS/MS

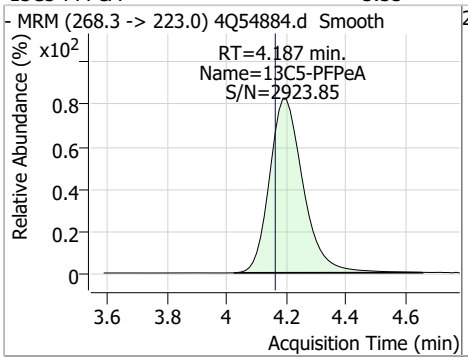
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	3.23	3.68	0.06	1640	241.0 -> 117.0	9.2	4.4	13.3

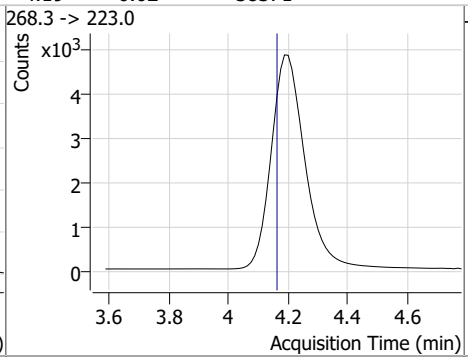


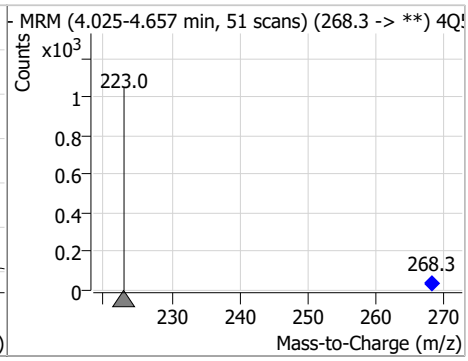




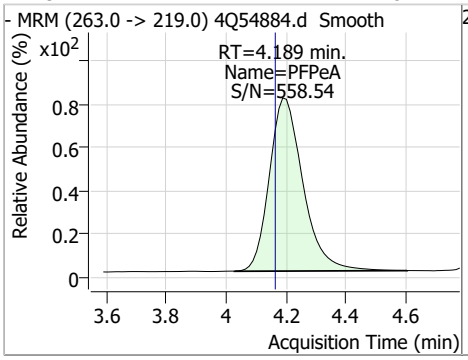
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.55	4.19	0.02	38371				

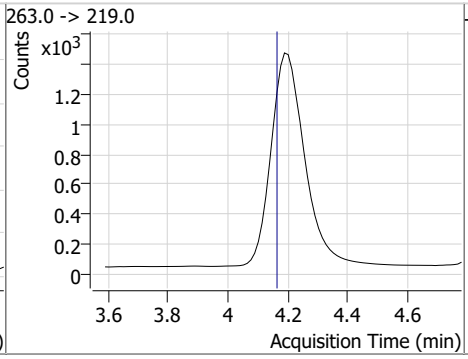


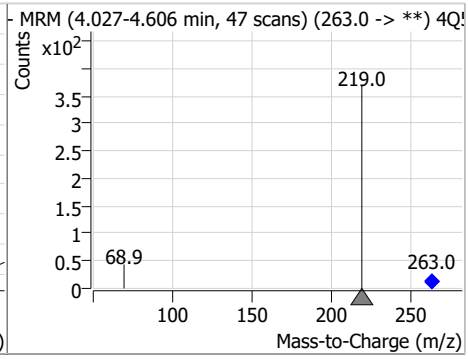




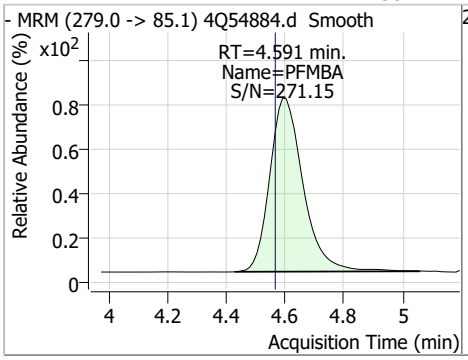
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.48	4.19	0.02	11202				

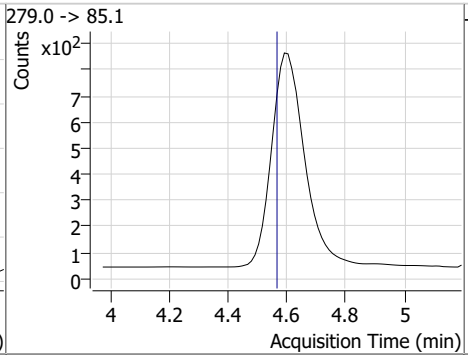


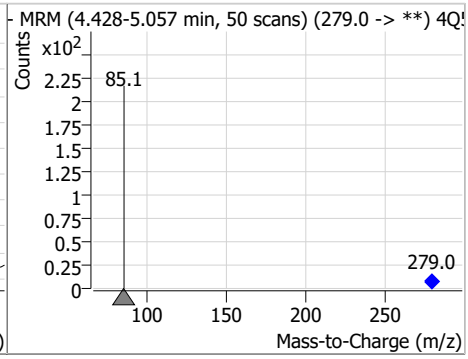




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	1.56	4.59	0.02	6483				

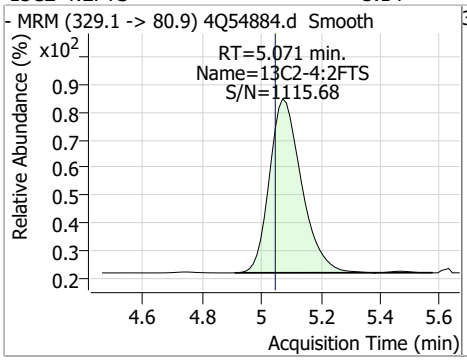


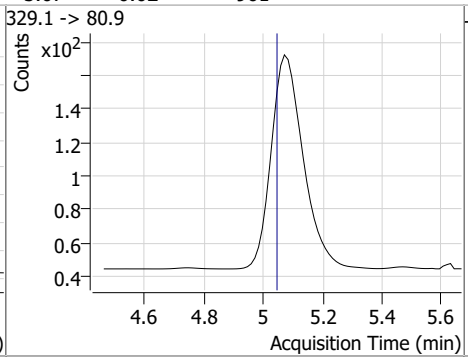


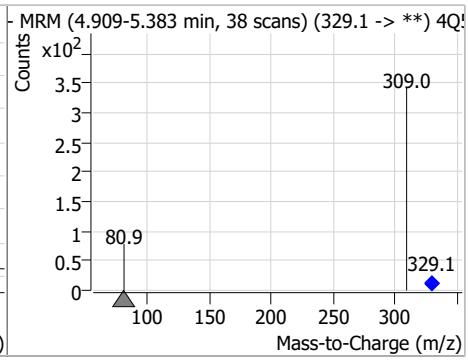


Perfluorinated Compounds by LC/MS/MS

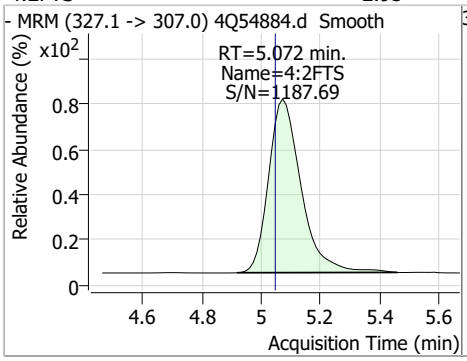
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.14	5.07	0.02	961				

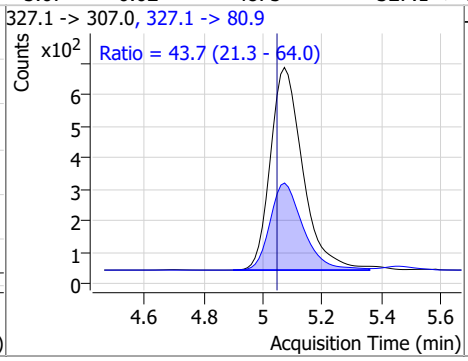


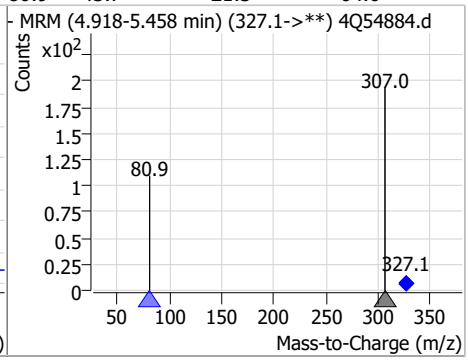




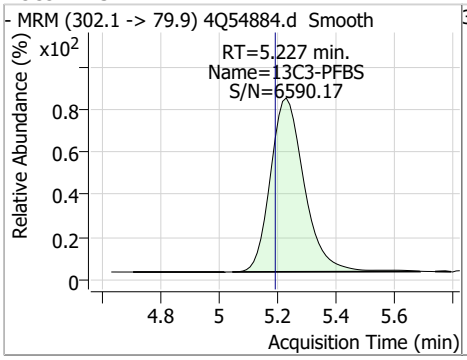
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.95	5.07	0.02	4875	327.1 -> 80.9	43.7	21.3	64.0

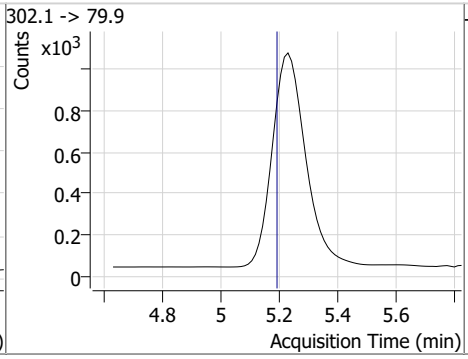


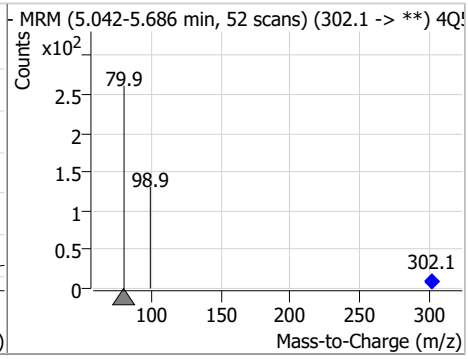




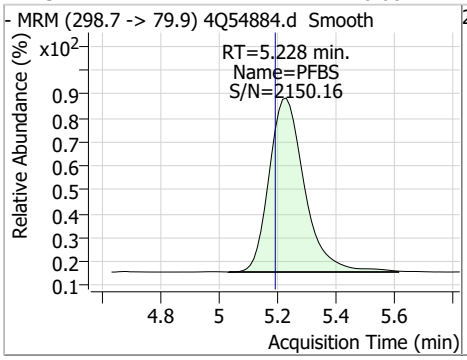
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.77	5.23	0.04	8356				

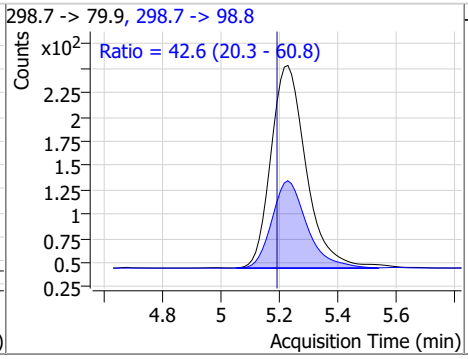


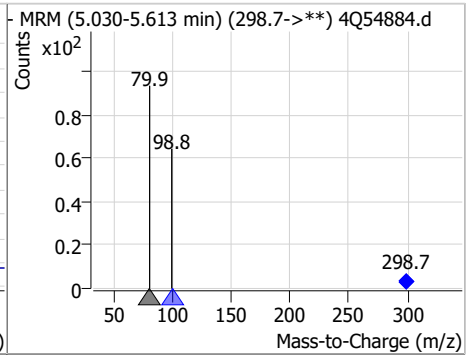




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.68	5.23	0.04	1765	298.7 -> 98.8	42.6	20.3	60.8

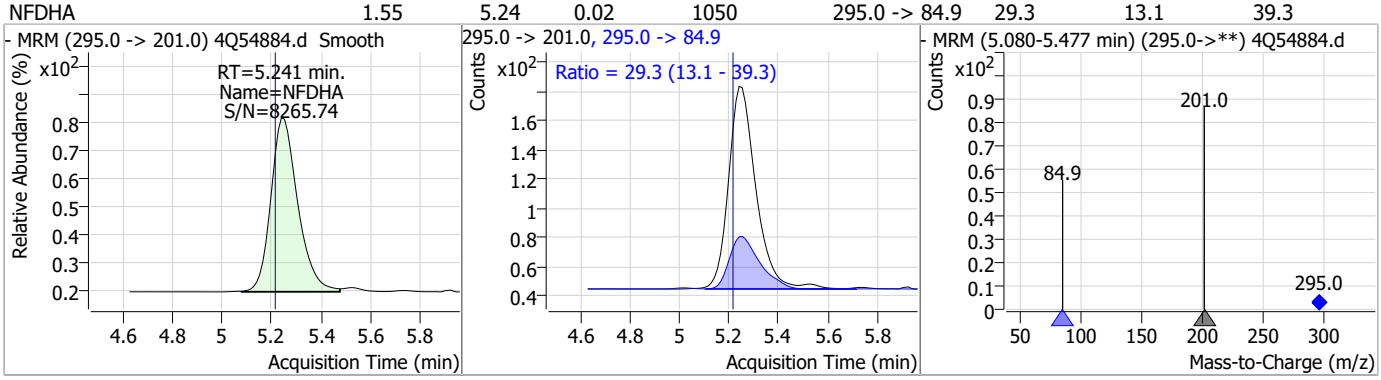




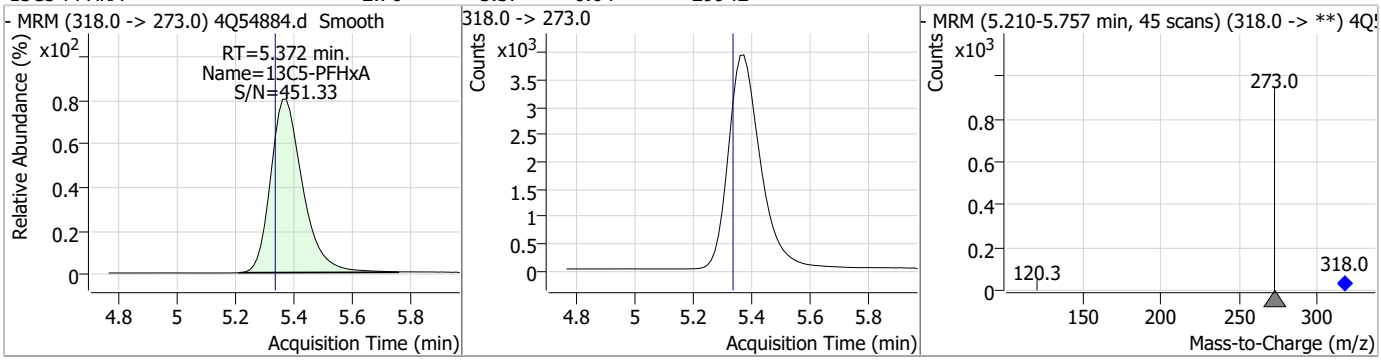


Perfluorinated Compounds by LC/MS/MS

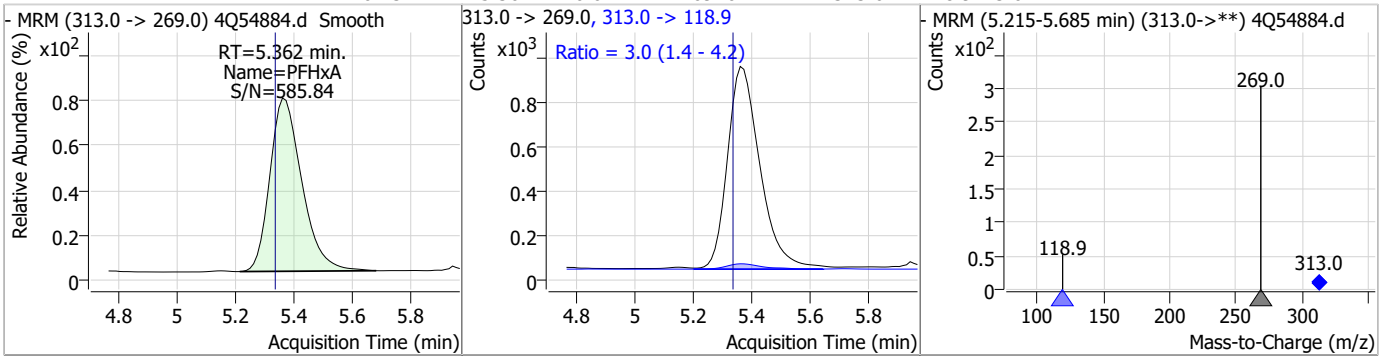
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	1.55	5.24	0.02	1050	295.0 -> 84.9	29.3	13.1	39.3



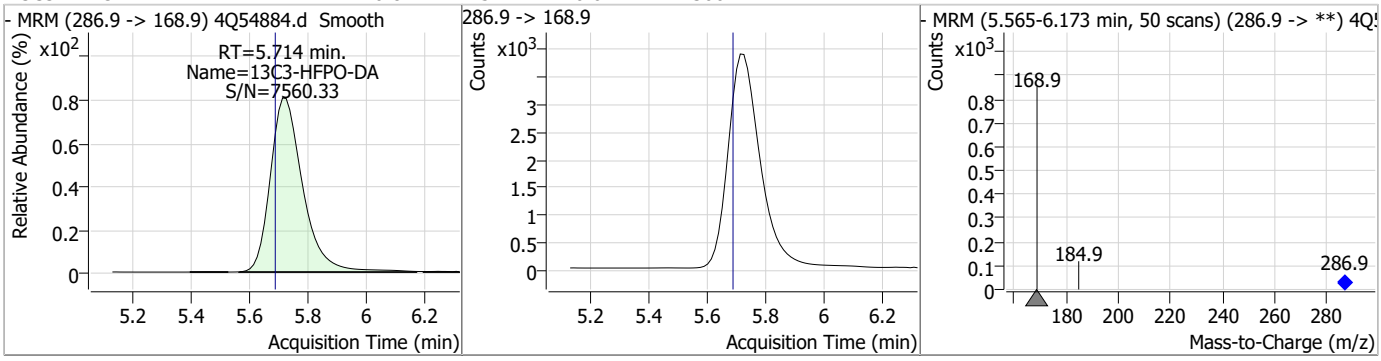
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.70	5.37	0.04	29942				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.73	5.36	0.02	6940	313.0 -> 118.9	3.0	1.4	4.2

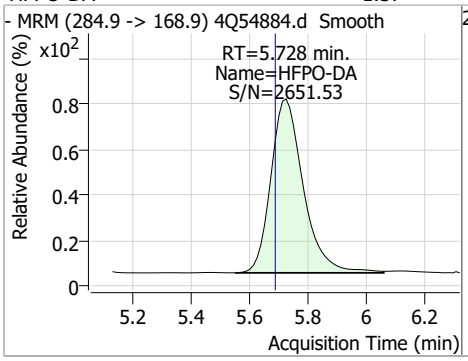


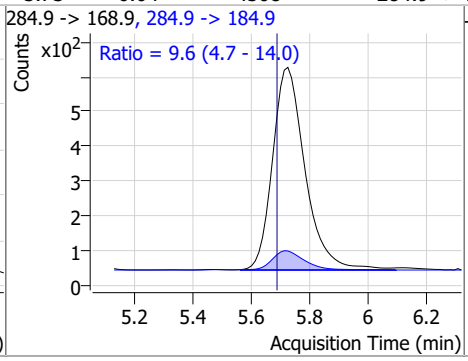
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.84	5.71	0.02	30074				

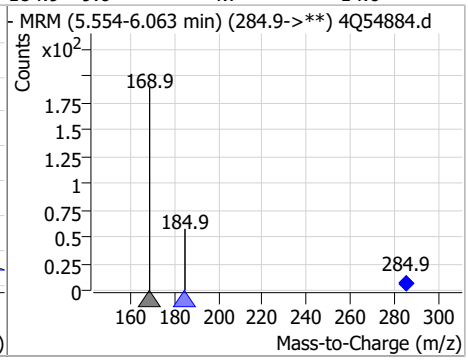


Perfluorinated Compounds by LC/MS/MS

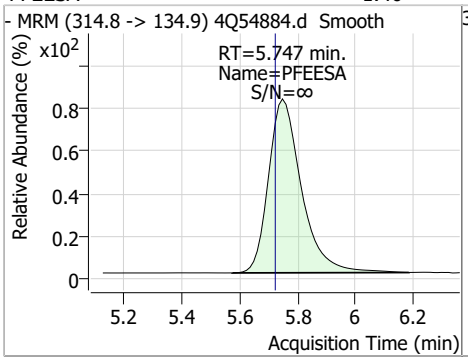
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.57	5.73	0.04	4508	284.9 -> 184.9	9.6	4.7	14.0

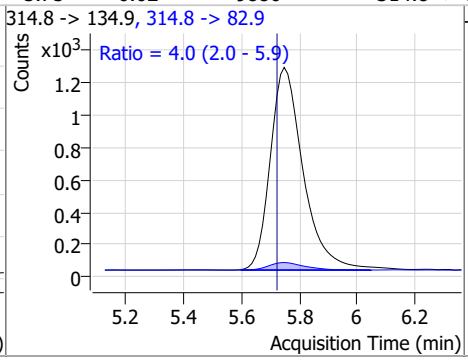


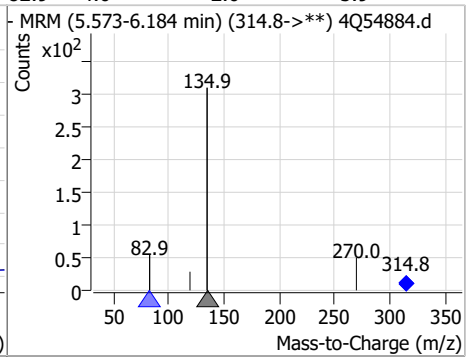




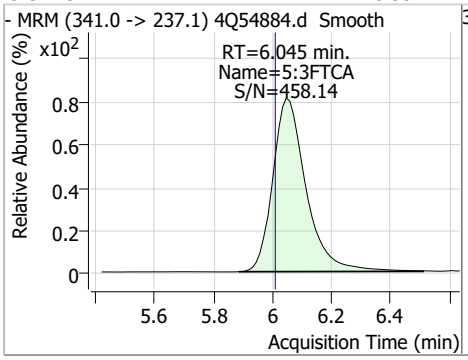
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	1.40	5.75	0.02	9880	314.8 -> 82.9	4.0	2.0	5.9

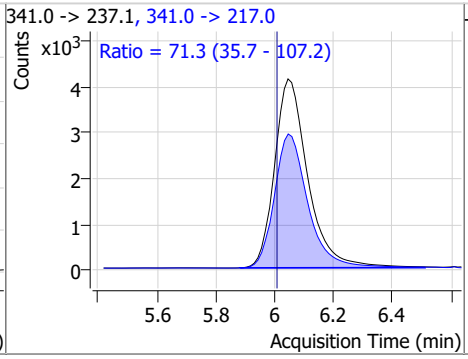


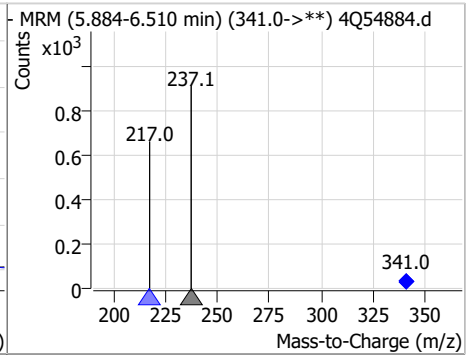




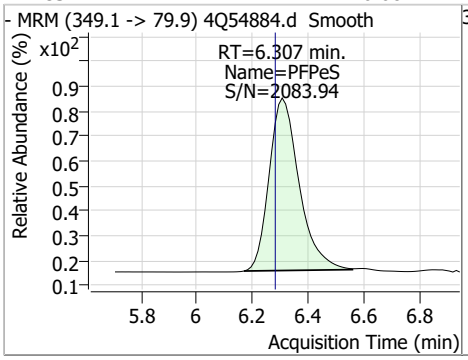
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	18.99	6.05	0.04	32364	341.0 -> 217.0	71.3	35.7	107.2

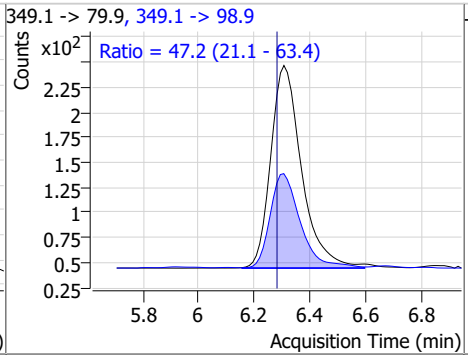


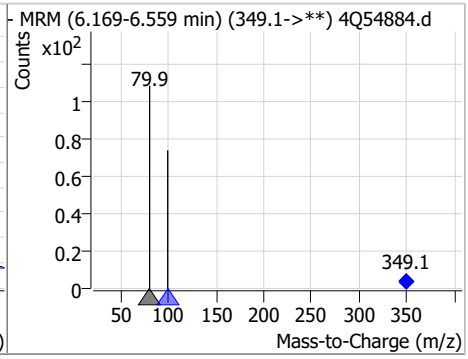




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.68	6.31	0.02	1502	349.1 -> 98.9	47.2	21.1	63.4

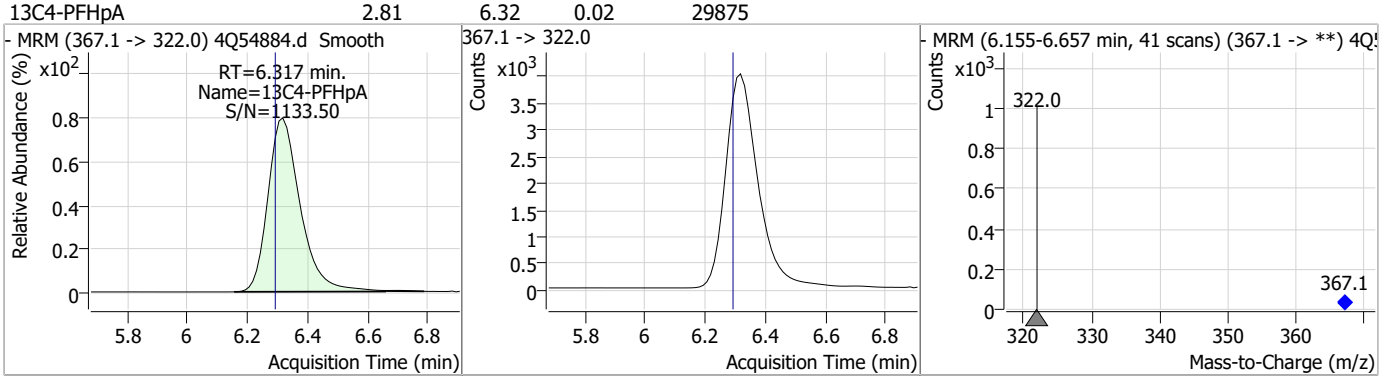




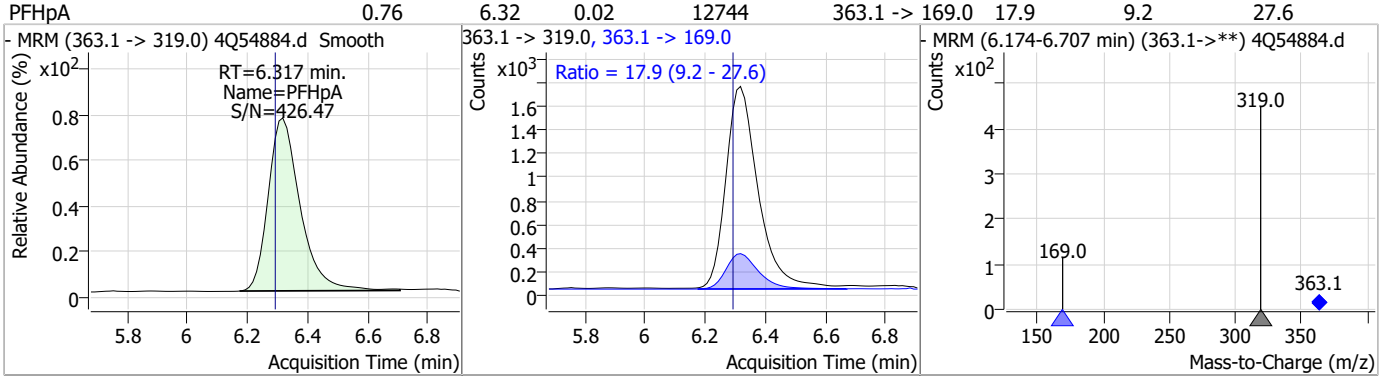


Perfluorinated Compounds by LC/MS/MS

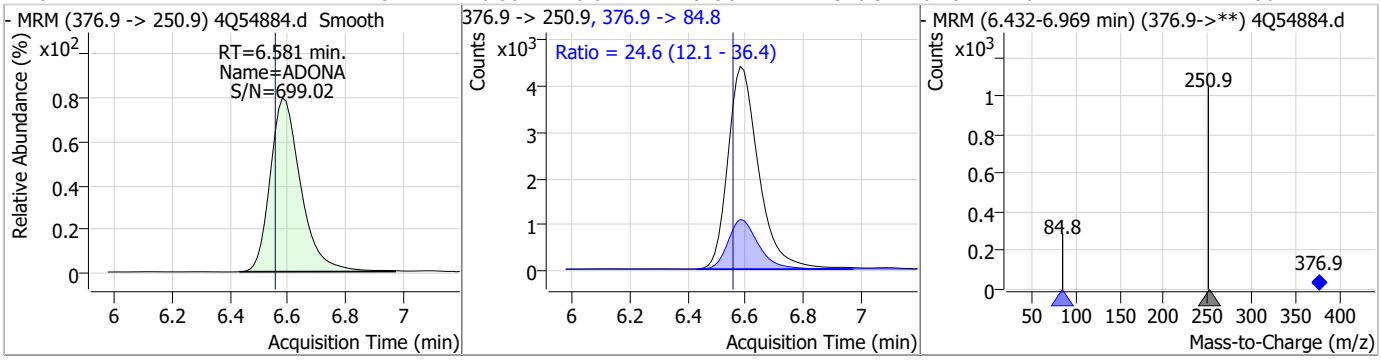
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.81	6.32	0.02	29875				



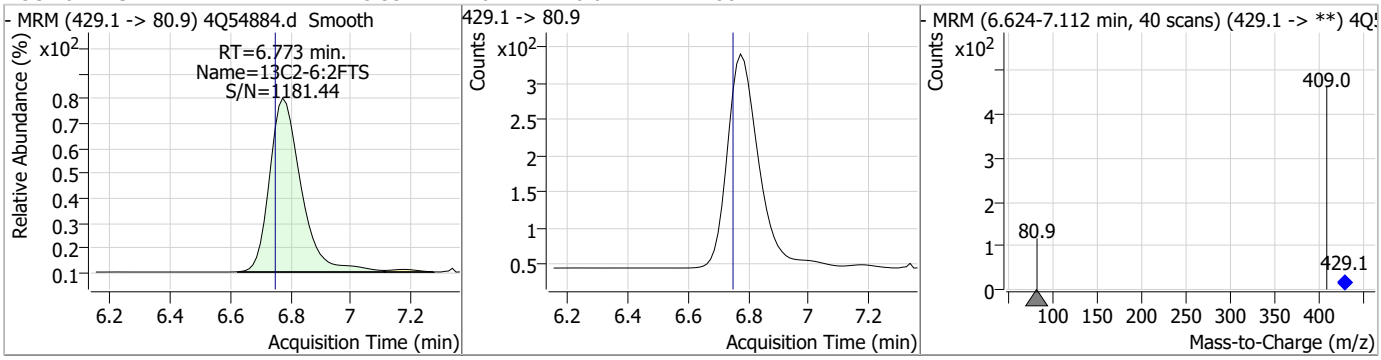
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.76	6.32	0.02	12744	363.1 -> 169.0	17.9	9.2	27.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.57	6.58	0.02	31964	376.9 -> 84.8	24.6	12.1	36.4

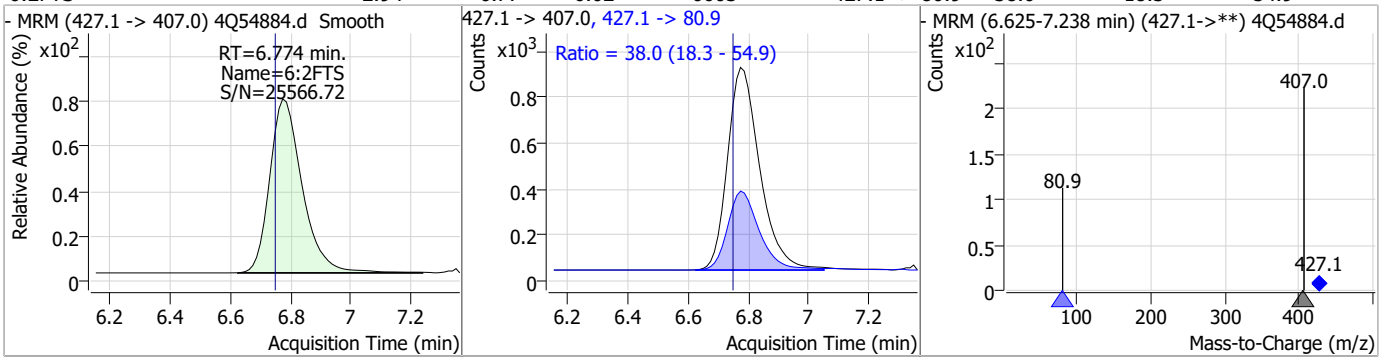


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.33	6.77	0.02	2158				

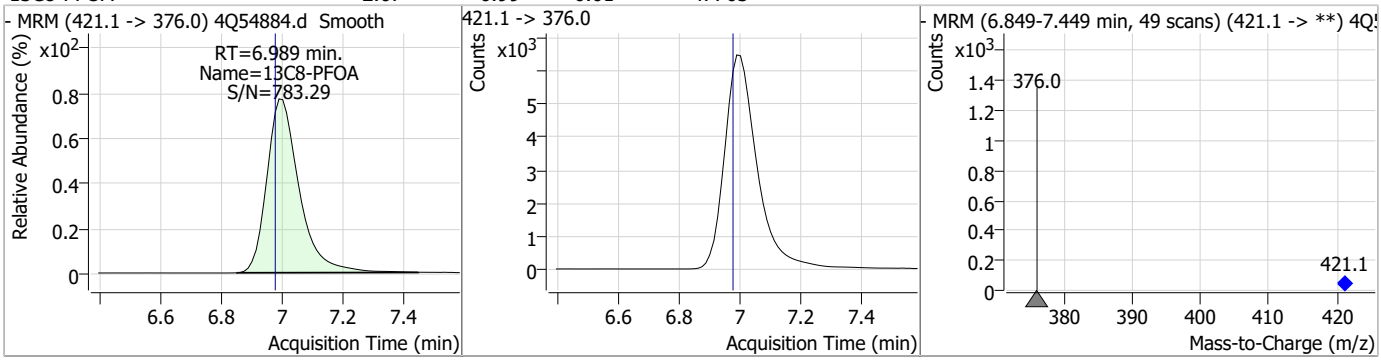


Perfluorinated Compounds by LC/MS/MS

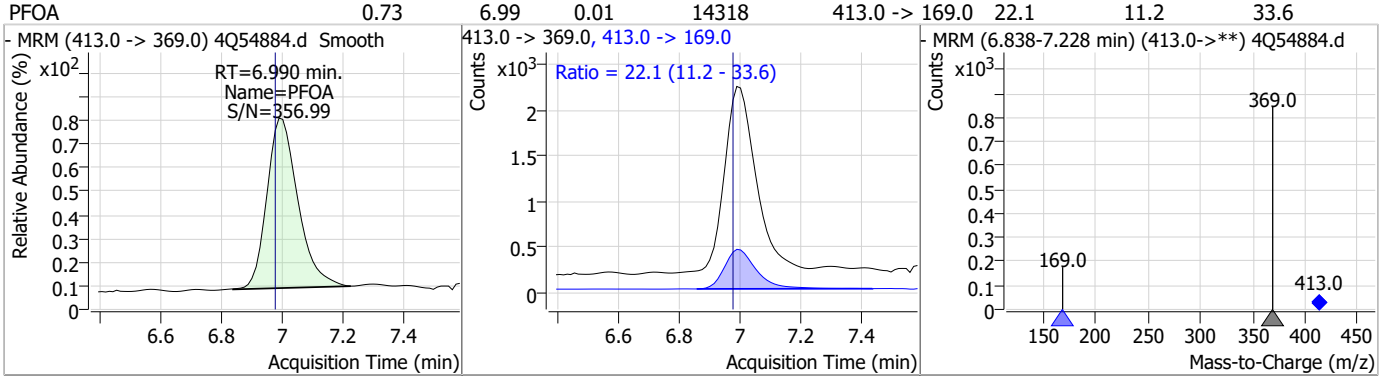
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.94	6.77	0.02	6663	427.1 -> 80.9	38.0	18.3	54.9



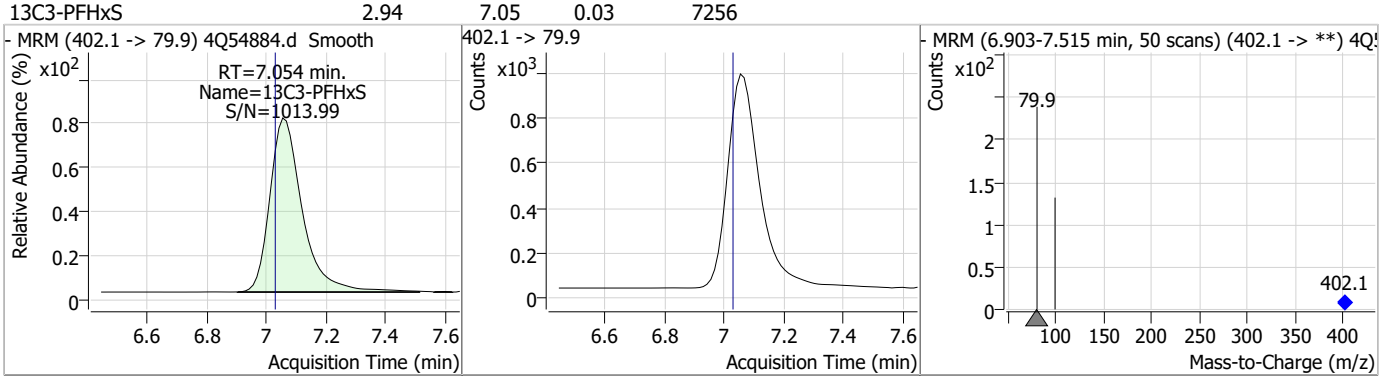
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.67	6.99	0.01	47703				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.73	6.99	0.01	14318	413.0 -> 169.0	22.1	11.2	33.6

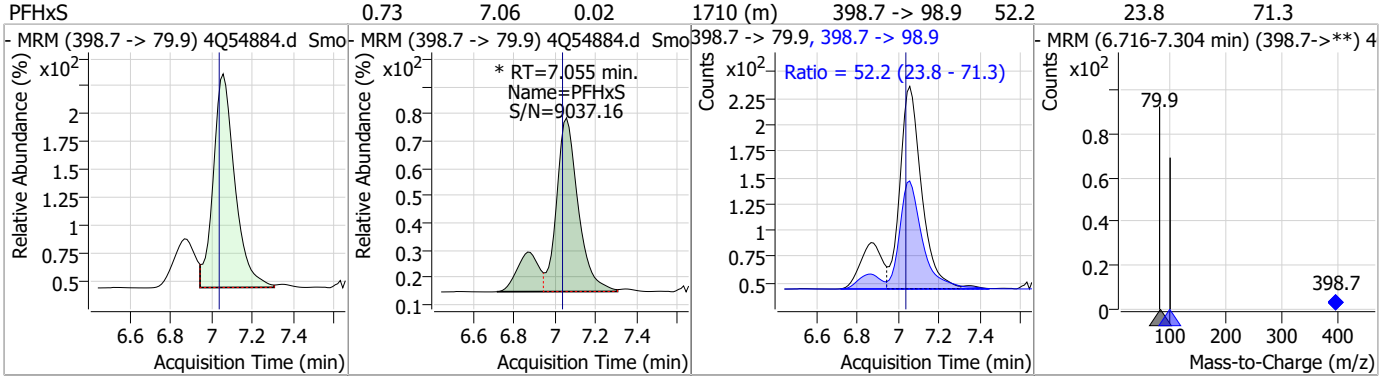


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.94	7.05	0.03	7256				

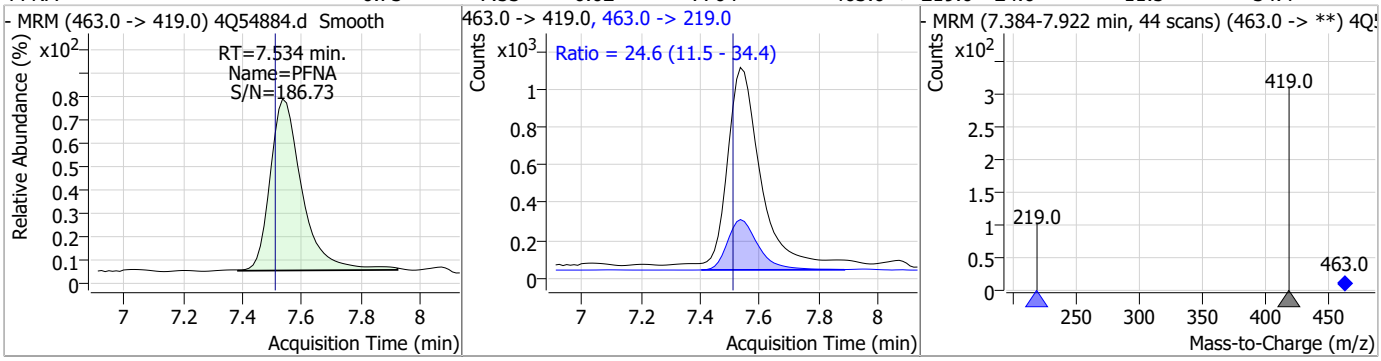


Perfluorinated Compounds by LC/MS/MS

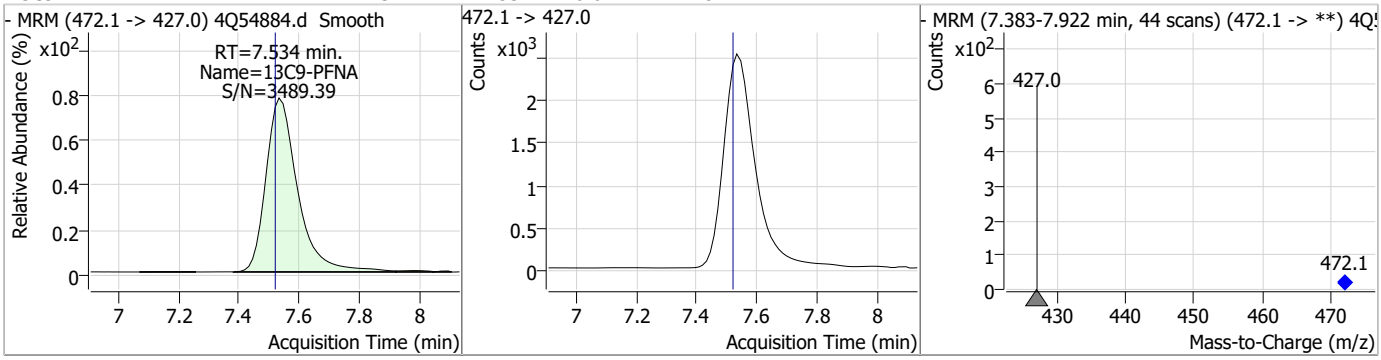
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.73	7.06	0.02	1710 (m)	398.7 -> 98.9	52.2	23.8	71.3



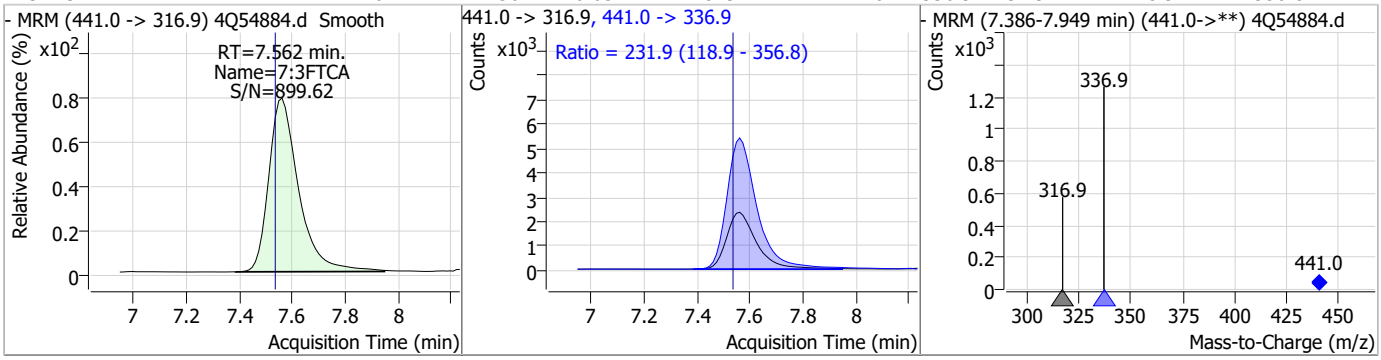
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.73	7.53	0.02	7764	463.0 -> 219.0	24.6	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.32	7.53	0.01	18221				

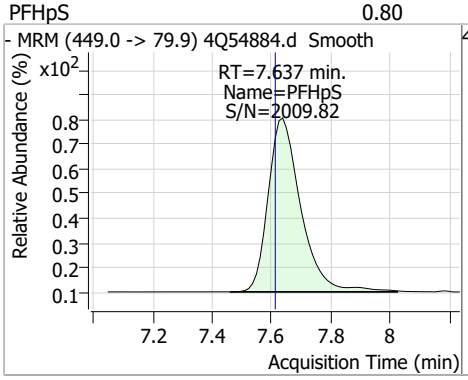


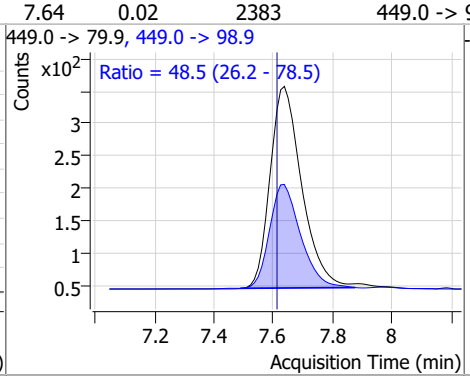
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	20.47	7.56	0.03	18292	441.0 -> 336.9	231.9	118.9	356.8

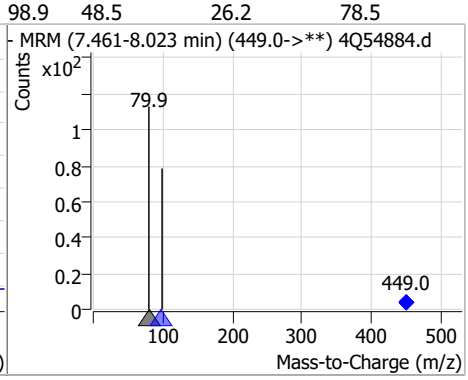


Perfluorinated Compounds by LC/MS/MS

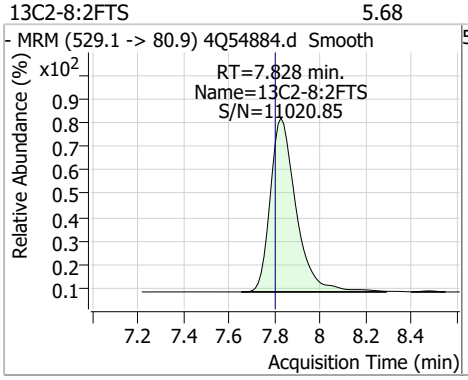
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.80	7.64	0.02	2383	449.0 -> 98.9	48.5	26.2	78.5

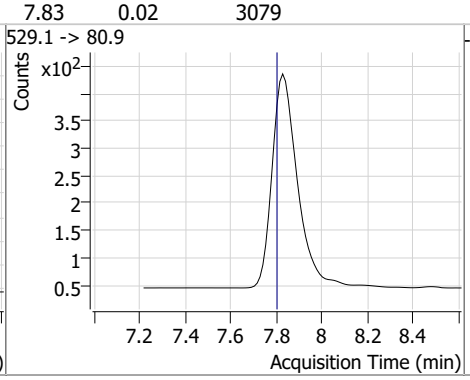


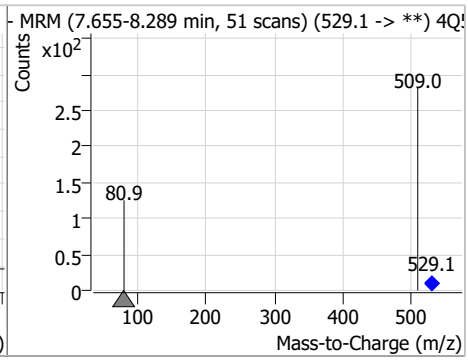




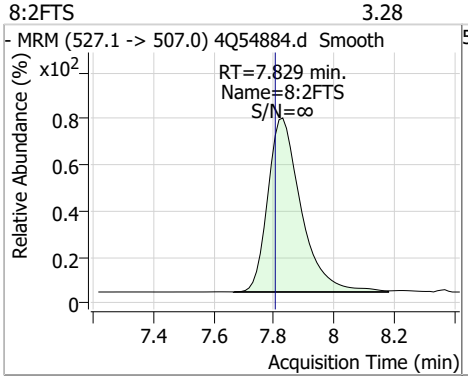
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.68	7.83	0.02	3079				

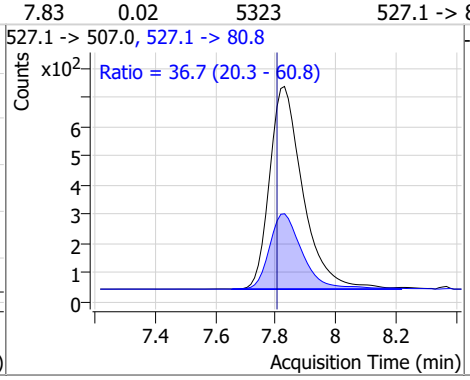


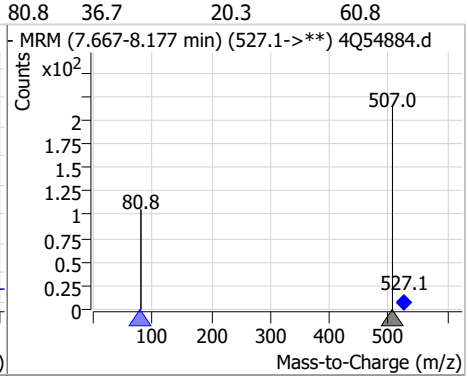




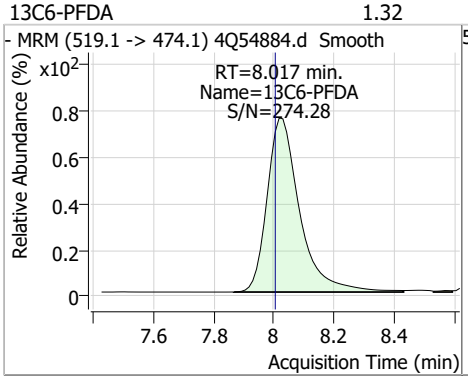
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	3.28	7.83	0.02	5323	527.1 -> 80.8	36.7	20.3	60.8

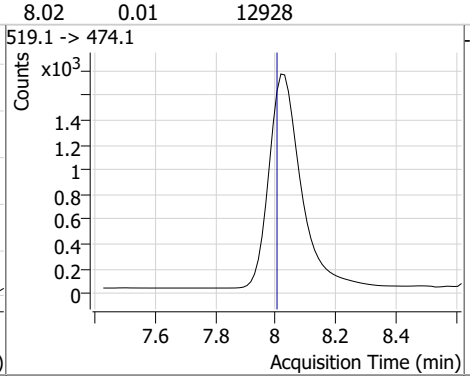


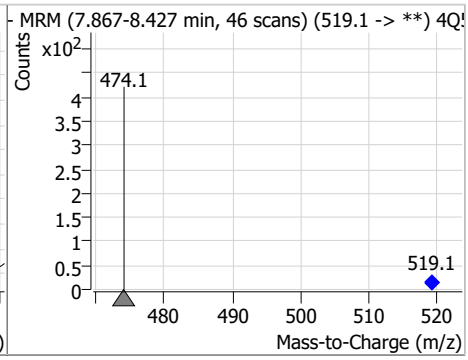




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.32	8.02	0.01	12928				

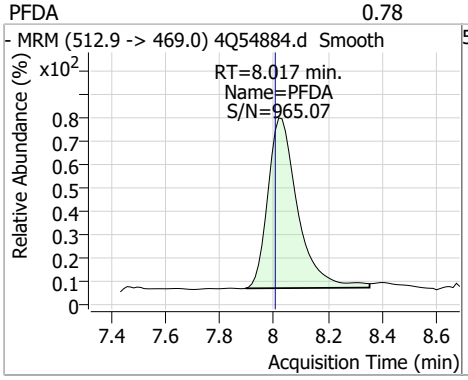


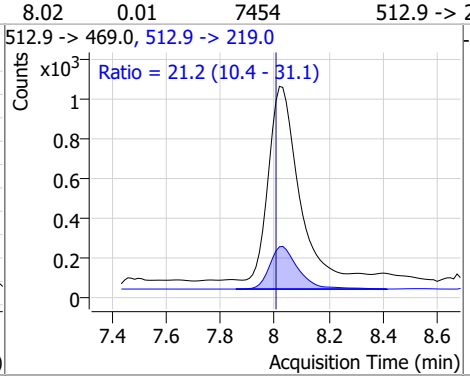


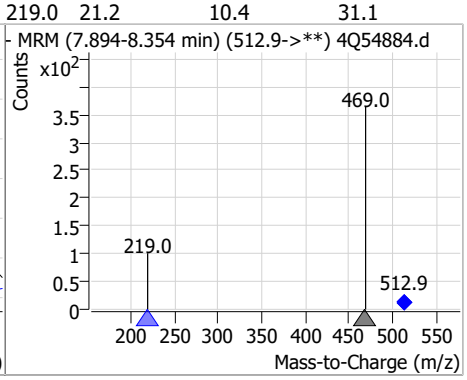


Perfluorinated Compounds by LC/MS/MS

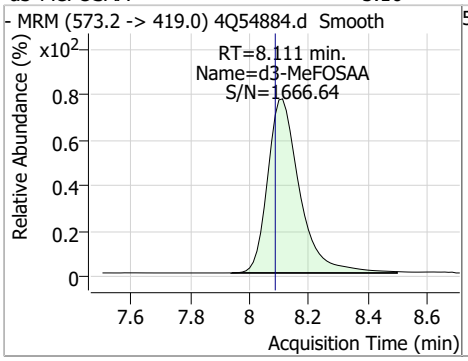
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.78	8.02	0.01	7454	512.9 -> 219.0	21.2	10.4	31.1

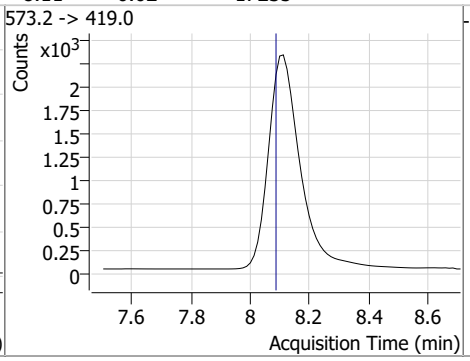


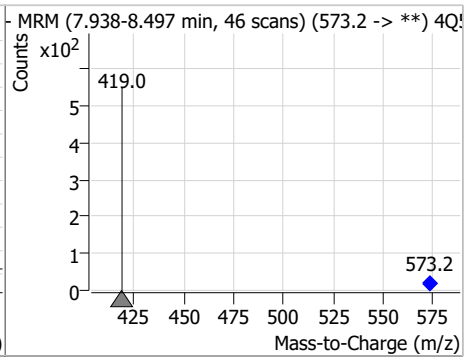




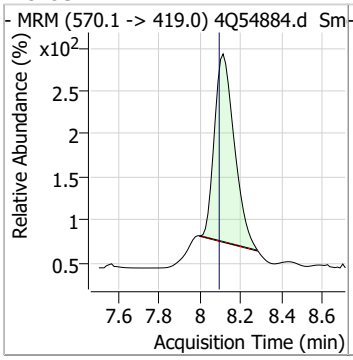
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.16	8.11	0.02	17235				

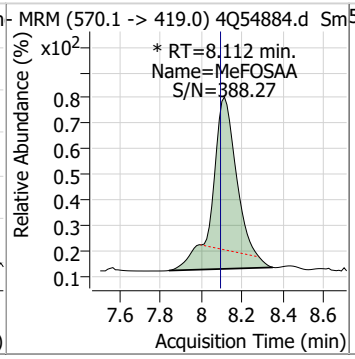


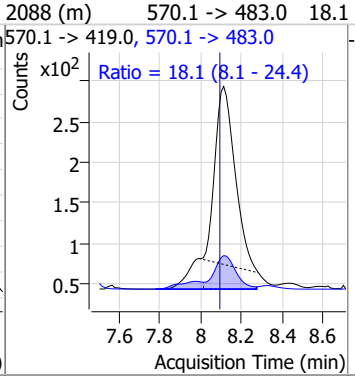


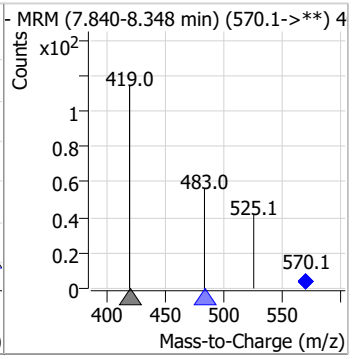


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.84	8.11	0.02	2088 (m)	570.1 -> 483.0	18.1	8.1	24.4

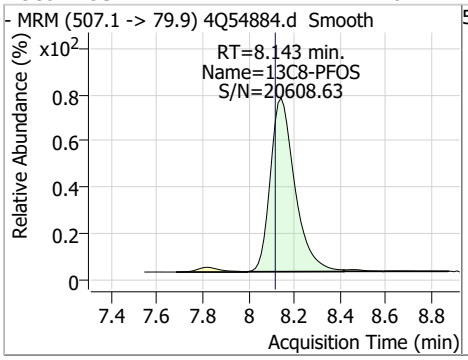


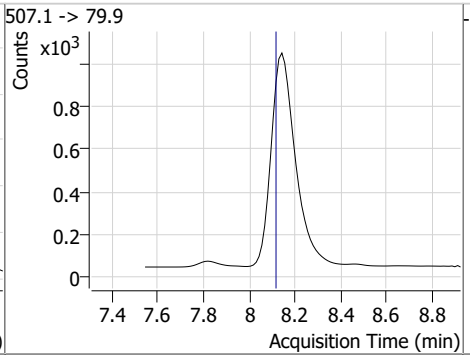


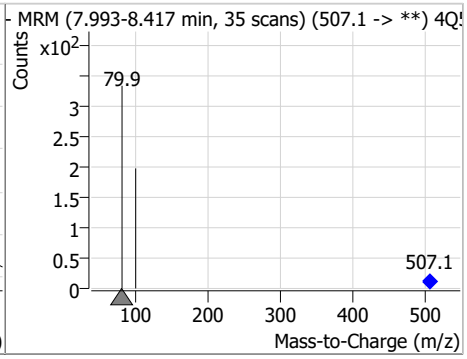




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.46	8.14	0.03	7493				

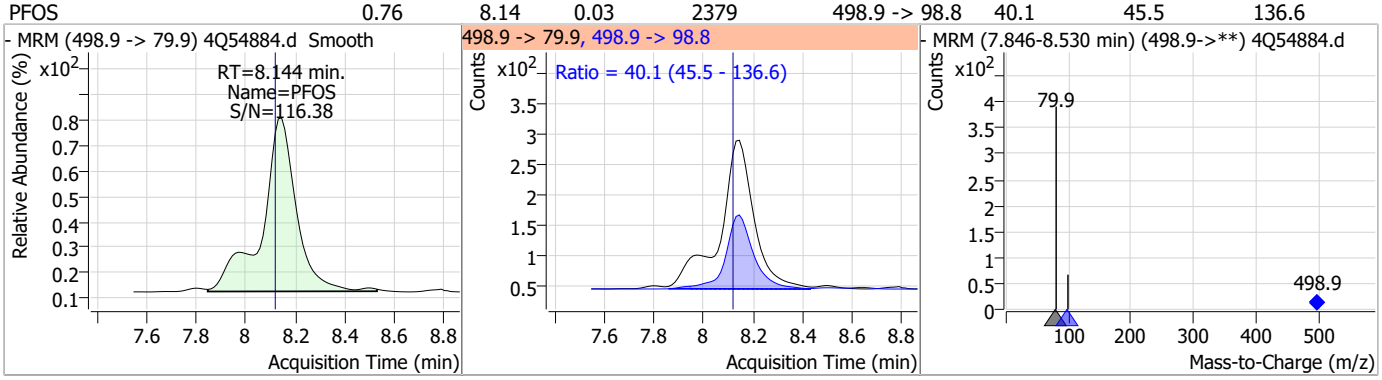




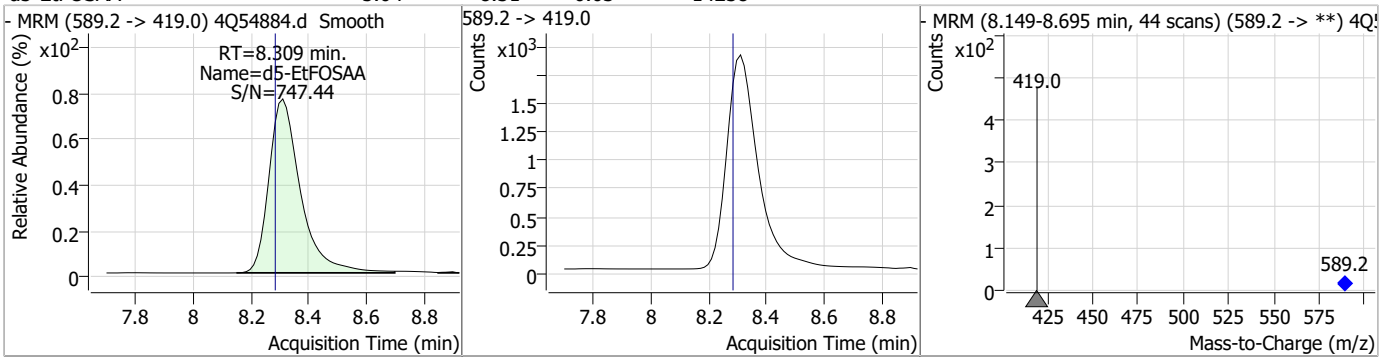


Perfluorinated Compounds by LC/MS/MS

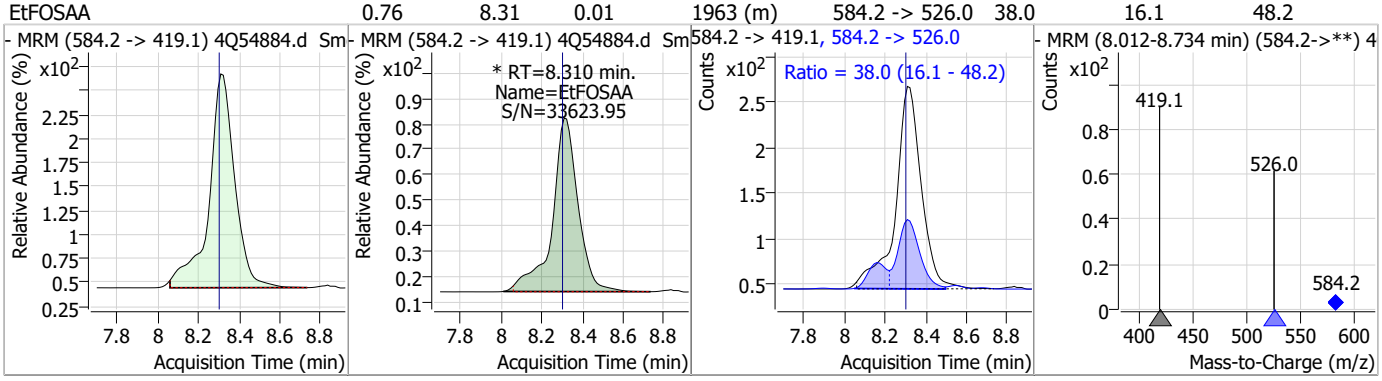
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.76	8.14	0.03	2379	498.9 -> 98.8	40.1	45.5	136.6



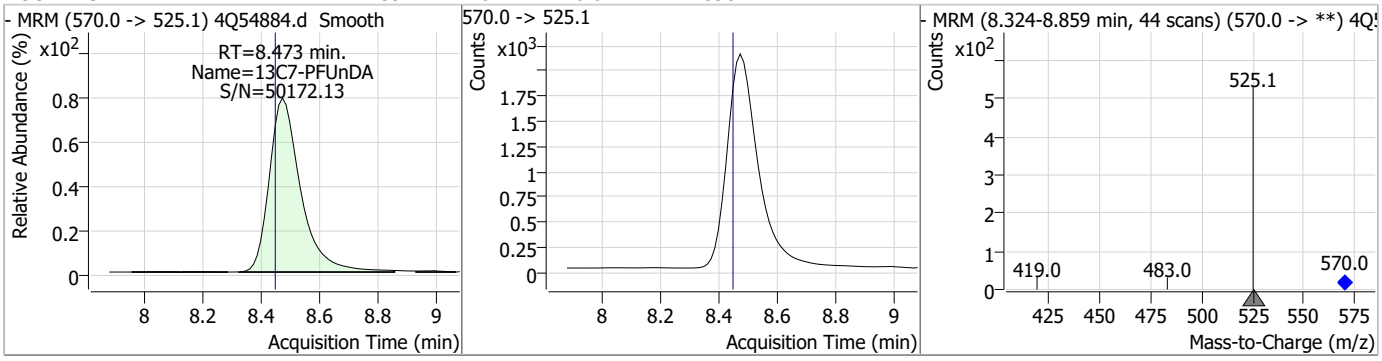
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.04	8.31	0.03	14238				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.76	8.31	0.01	1963 (m)	584.2 -> 526.0	38.0	16.1	48.2

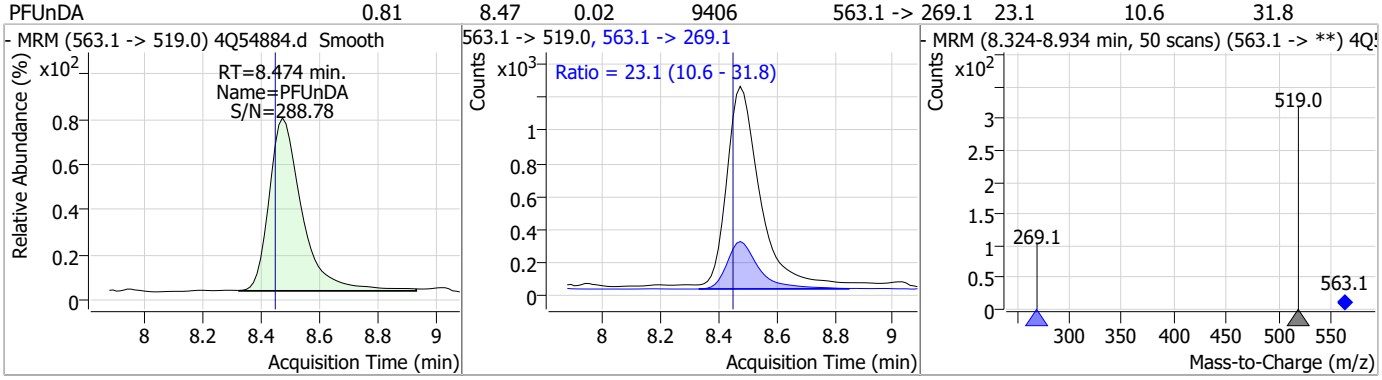


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.39	8.47	0.02	15951				

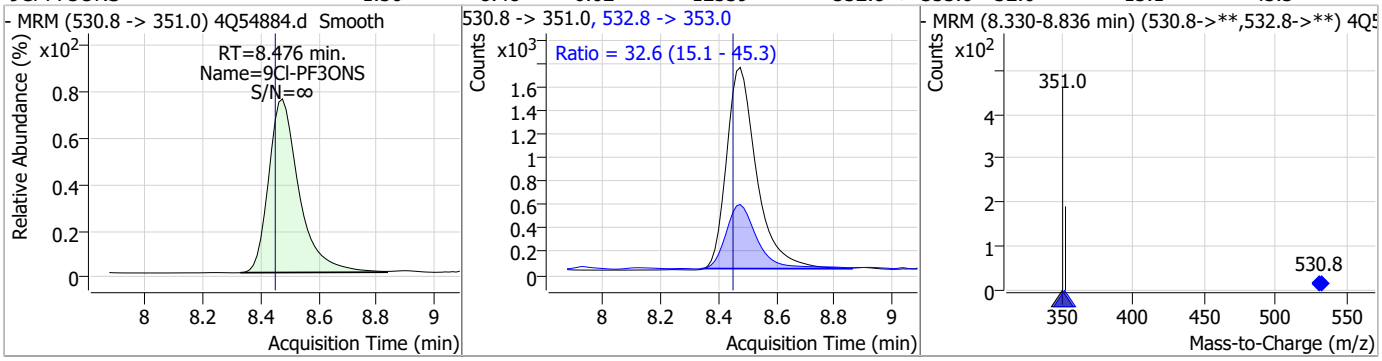


Perfluorinated Compounds by LC/MS/MS

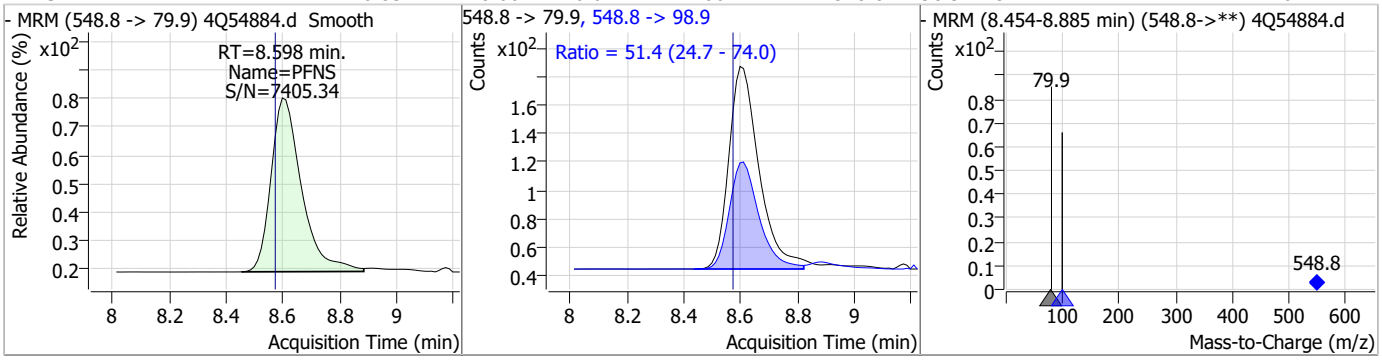
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.81	8.47	0.02	9406	563.1 -> 269.1	23.1	10.6	31.8



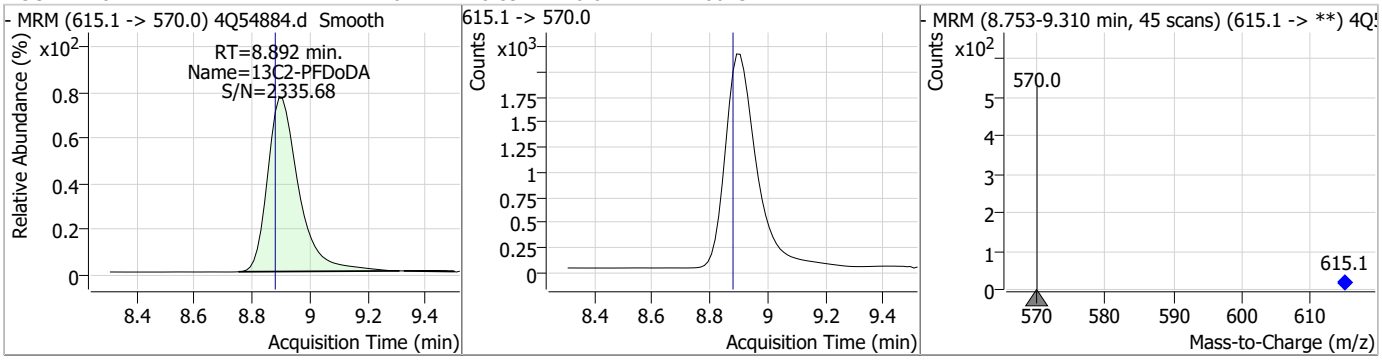
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.50	8.48	0.02	12539	532.8 -> 353.0	32.6	15.1	45.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.83	8.60	0.02	1062	548.8 -> 98.9	51.4	24.7	74.0

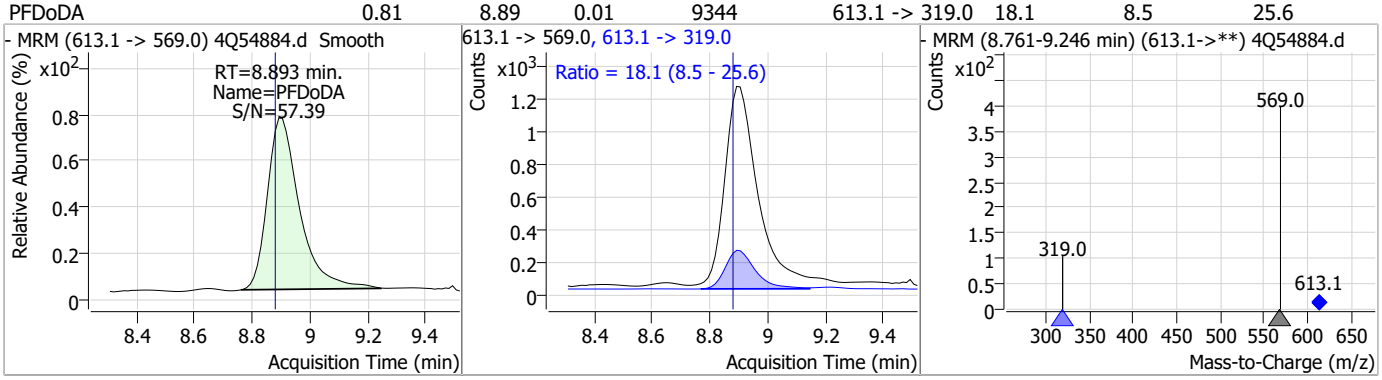


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.20	8.89	0.01	16023				

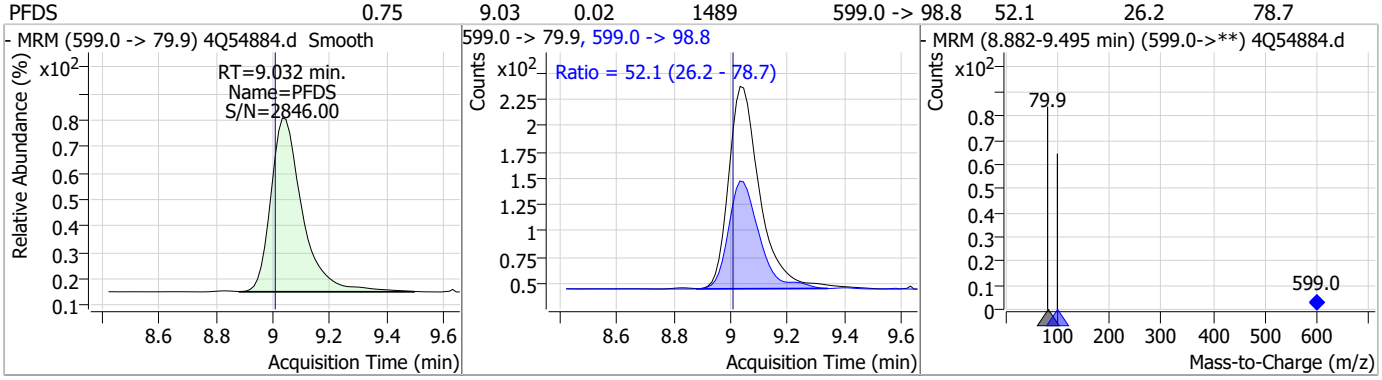


Perfluorinated Compounds by LC/MS/MS

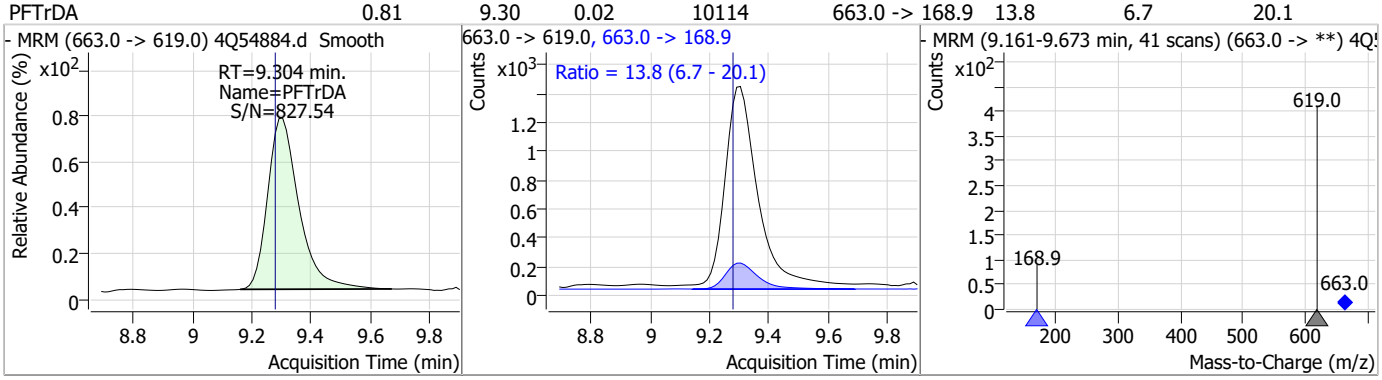
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.81	8.89	0.01	9344	613.1 -> 319.0	18.1	8.5	25.6



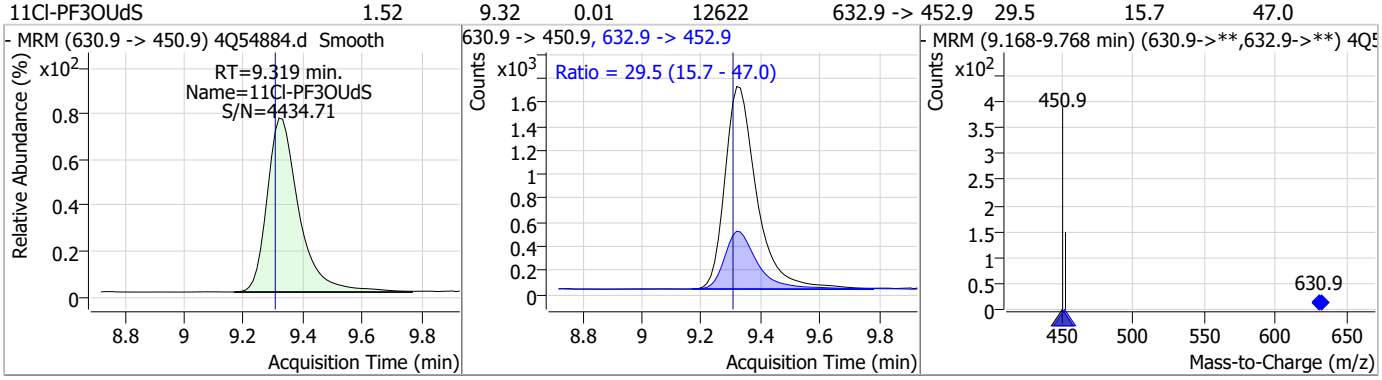
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.75	9.03	0.02	1489	599.0 -> 98.8	52.1	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.81	9.30	0.02	10114	663.0 -> 168.9	13.8	6.7	20.1

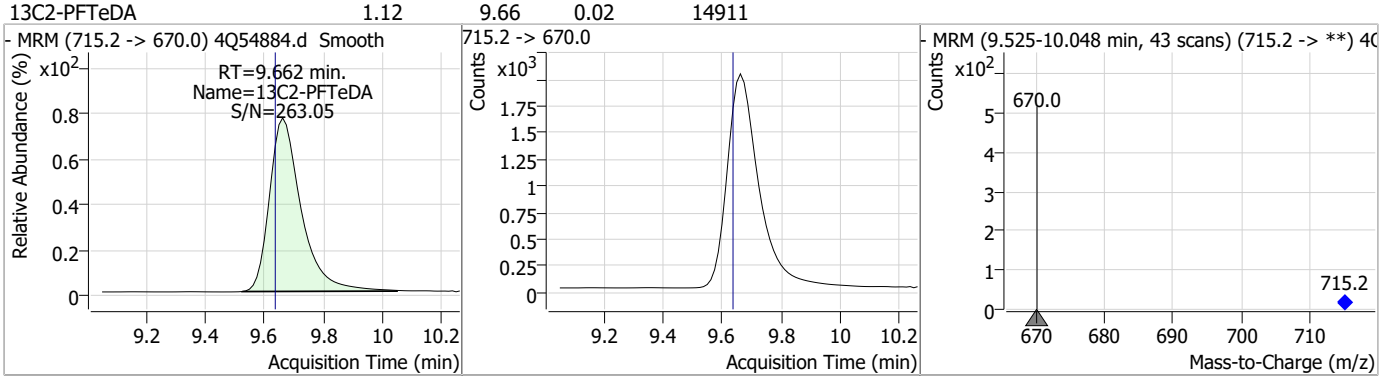


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.52	9.32	0.01	12622	632.9 -> 452.9	29.5	15.7	47.0

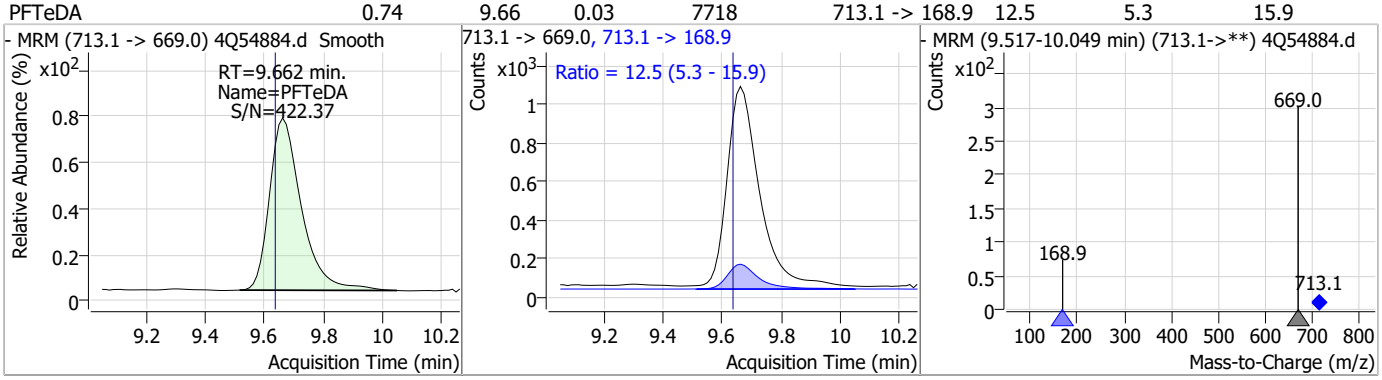


Perfluorinated Compounds by LC/MS/MS

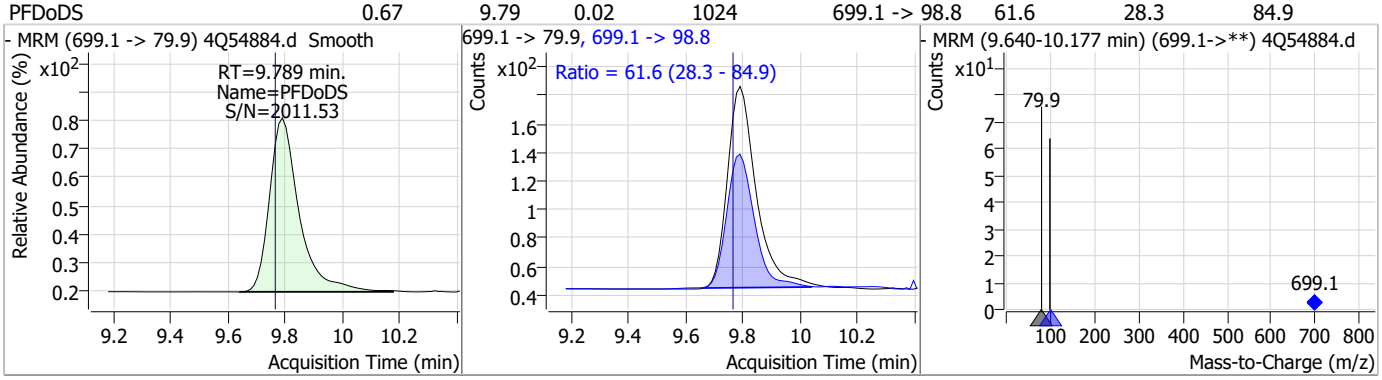
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.12	9.66	0.02	14911				



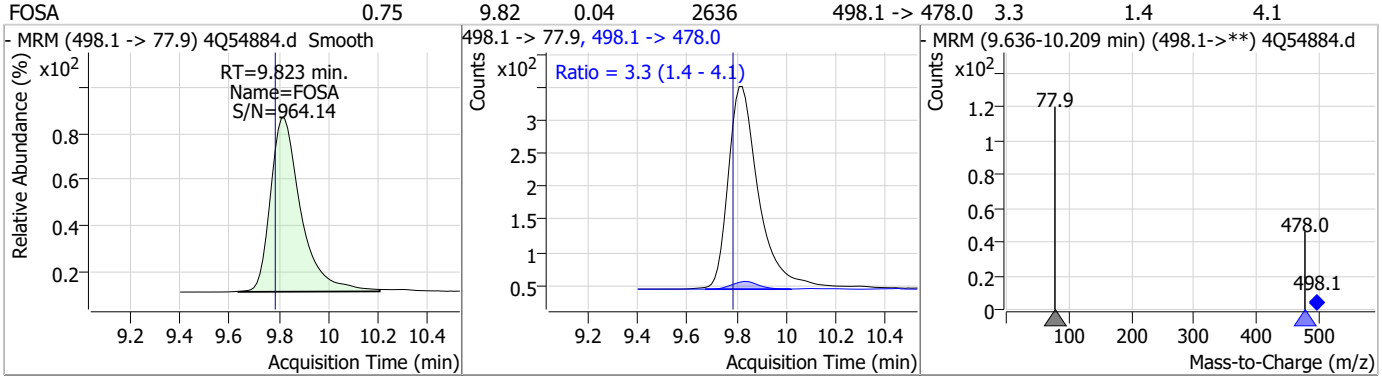
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.74	9.66	0.03	7718	713.1 -> 168.9	12.5	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.67	9.79	0.02	1024	699.1 -> 98.8	61.6	28.3	84.9

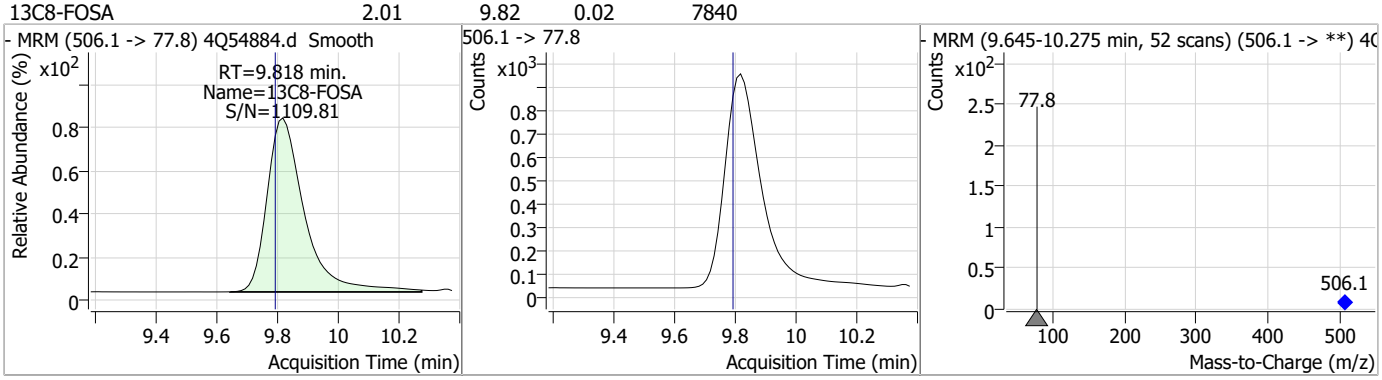


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.75	9.82	0.04	2636	498.1 -> 478.0	3.3	1.4	4.1

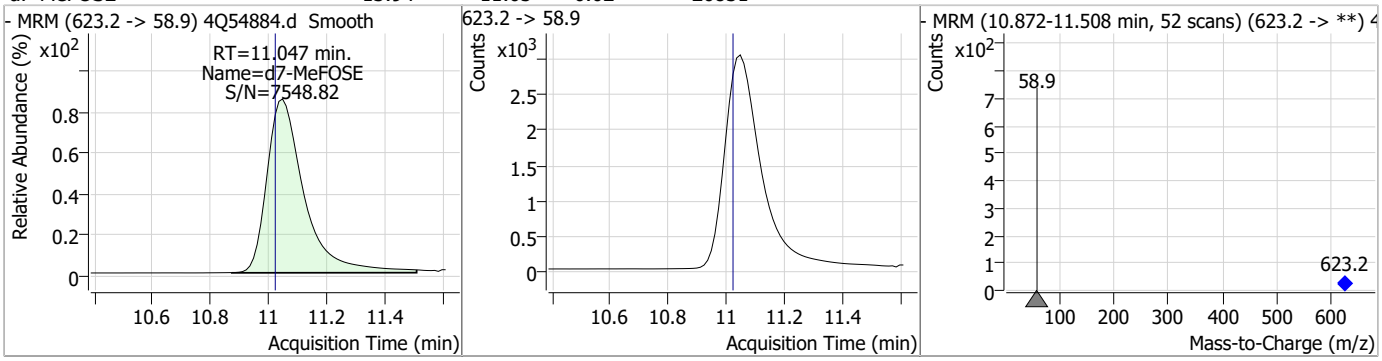


Perfluorinated Compounds by LC/MS/MS

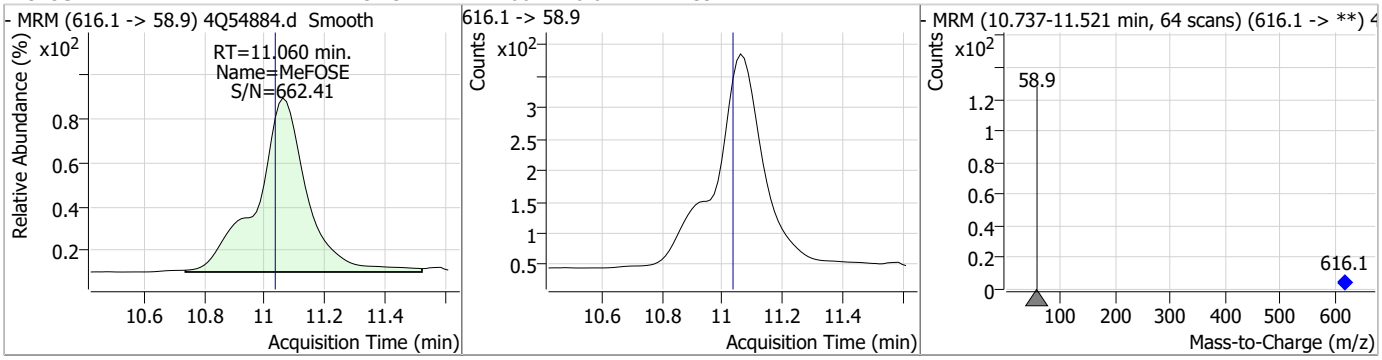
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.01	9.82	0.02	7840				



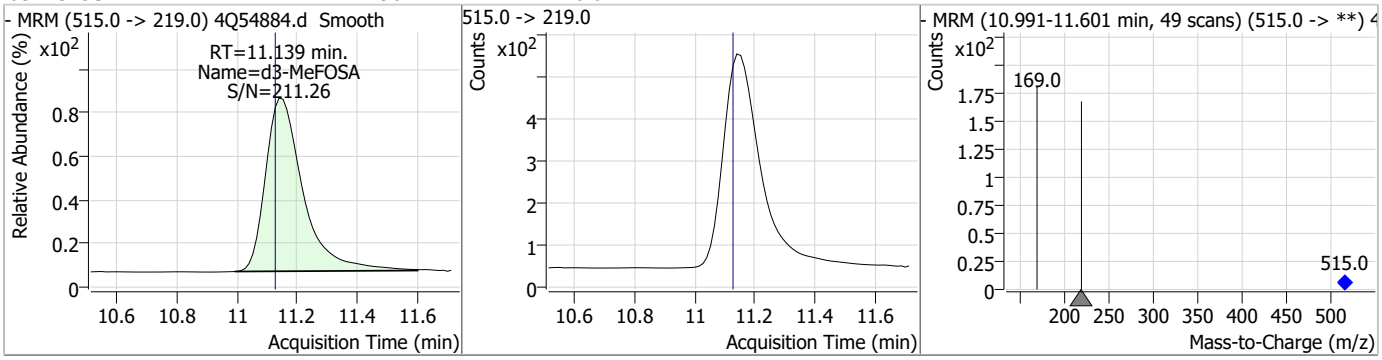
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	13.94	11.05	0.02	26831				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	3.73	11.06	0.02	3971				

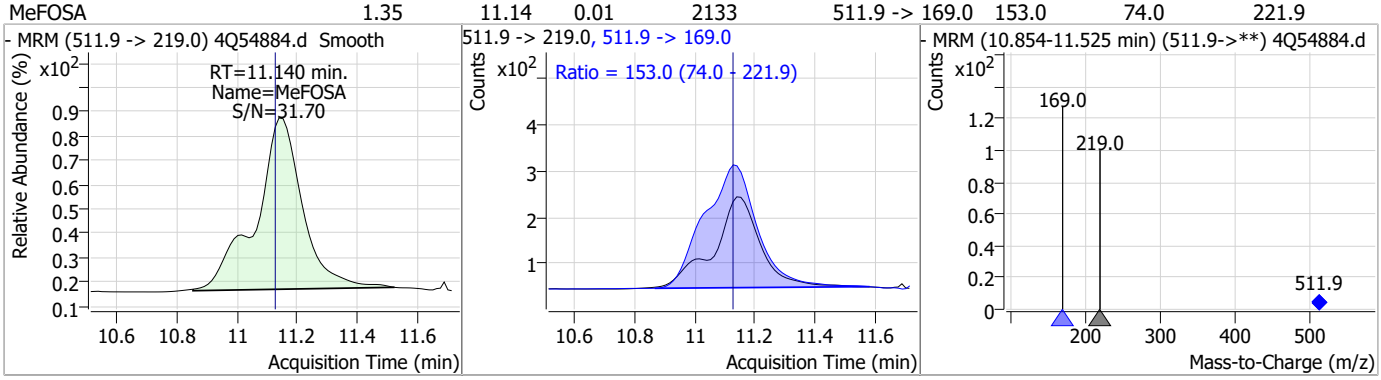


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.90	11.14	0.01	4422				

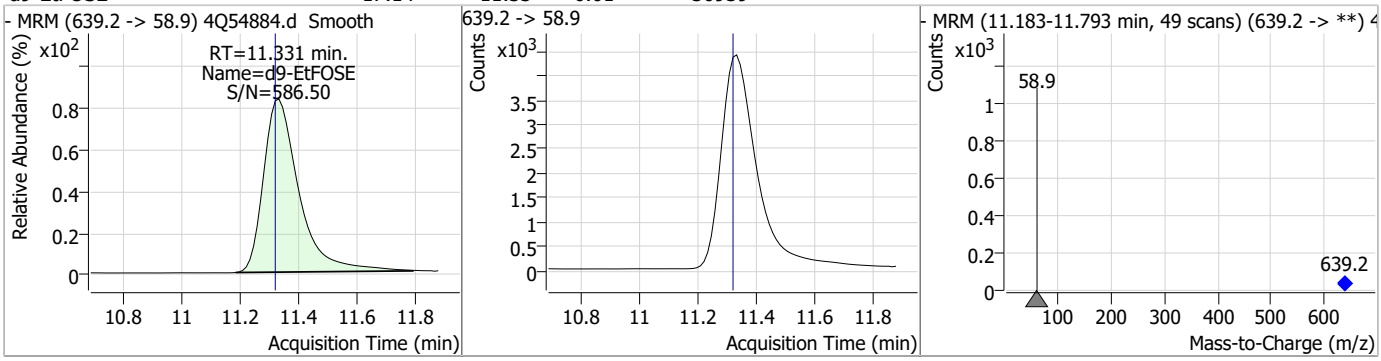


Perfluorinated Compounds by LC/MS/MS

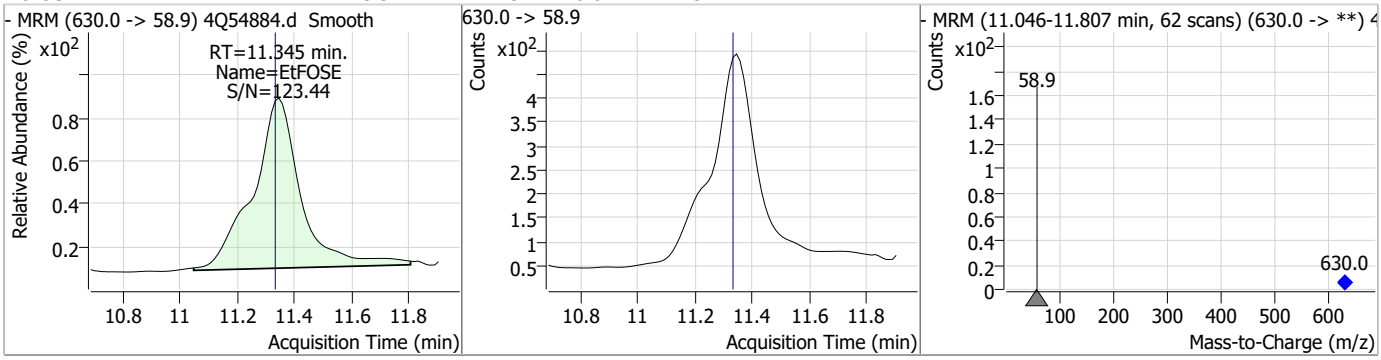
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.35	11.14	0.01	2133	511.9 -> 169.0	153.0	74.0	221.9



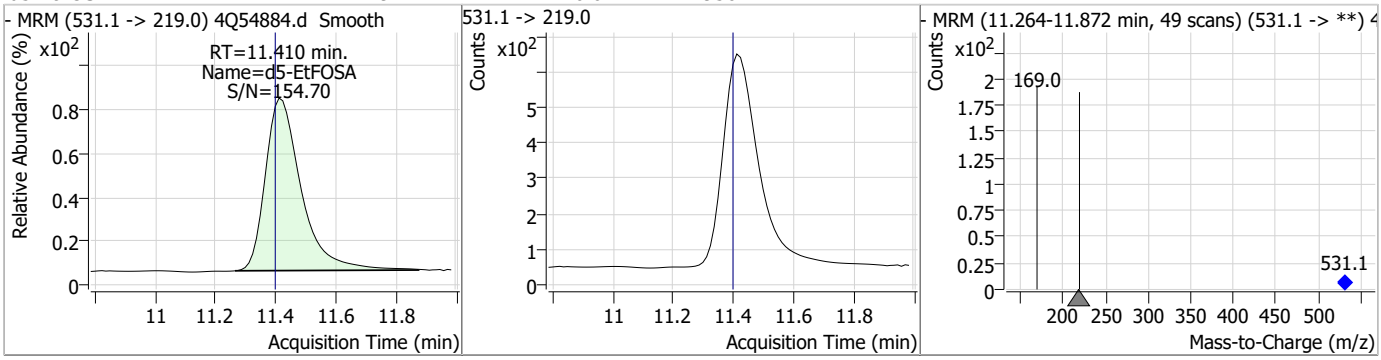
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	17.14	11.33	0.01	36939				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	3.91	11.34	0.01	5112				

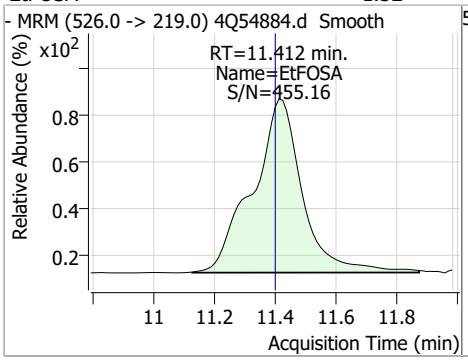


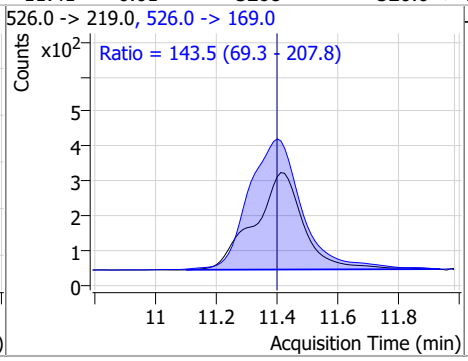
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	1.94	11.41	0.01	4956				

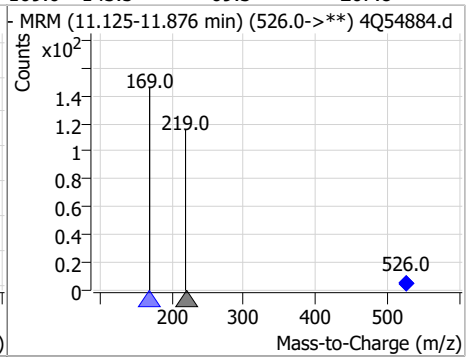


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	1.52	11.41	0.01	3208	526.0 -> 169.0	143.5	69.3	207.8







Manual Integration Approval Summary

Sample Number: OP495-LLBS
Lab FileID: 4Q54884.D
Injection Time: 12/08/23 19:36
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 16:36 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.05	Split peak
MeFOSAA	2355-31-9		8.11	Split peak
EtFOSAA	2991-50-6		8.31	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 12/11/23 16:36

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54889.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 8:50:10 PM
Sample Name : op495-ms
Vial : P2-D2
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP495,S4Q804,550,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.752	216.8 -> 171.9	94150	10.00	µg/L	0.078
M5-PFPeA	4.200	268.3 -> 223.0	37907	5.00	µg/L	0.037
M5-PFHxA	5.372	318.0 -> 273.0	29514	2.50	µg/L	0.037
M4-PFHpA	6.317	367.1 -> 322.0	28749	2.50	µg/L	0.025
M8-PFOA	7.001	421.1 -> 376.0	47897	2.50	µg/L	0.025
M9-PFNA	7.534	472.1 -> 427.0	17688	1.25	µg/L	0.012
M6-PFDA	8.017	519.1 -> 474.1	12116	1.25	µg/L	0.013
M7-PFUnDA	8.473	570.0 -> 525.1	14090	1.25	µg/L	0.025
M2-PFDoDA	8.892	615.1 -> 570.0	14556	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	14321	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	8057	2.50	µg/L	0.025
M3-PFBS	5.227	302.1 -> 79.9	8223	2.50	µg/L	0.038
M3-PFHxS	7.054	402.1 -> 79.9	6666	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	6914	2.50	µg/L	0.026
M2-4:2FTS	5.071	329.1 -> 80.9	933	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2269	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	2894	5.00	µg/L	0.025
M3-MeFOSAA	8.111	573.2 -> 419.0	16576	5.00	µg/L	0.025
M3-HFPO-DA	5.727	286.9 -> 168.9	29115	10.00	µg/L	0.037
M5-EtFOSAA	8.309	589.2 -> 419.0	14118	5.00	µg/L	0.026
M7-MeFOSE	11.047	623.2 -> 58.9	34014	25.00	µg/L	0.025
M9-EtFOSE	11.331	639.2 -> 58.9	47716	25.00	µg/L	0.012
M5-EtFOSA	11.410	531.1 -> 219.0	5601	2.50	µg/L	0.012
M3-MeFOSA	11.152	515.0 -> 219.0	5192	2.50	µg/L	0.026
13C4-PFOS	8.144	502.8 -> 79.9	5794	2.50	µg/L	0.026
13C3-PFBA	2.755	216.0 -> 172.0	42293	5.00	µg/L	0.077
18O2-PFHxS	7.054	403.0 -> 83.9	4074	2.50	µg/L	0.013
13C4-PFOA	7.002	417.1 -> 372.0	47845	2.50	µg/L	0.025
13C2-PFDA	8.029	515.1 -> 470.1	13011	1.25	µg/L	0.025
13C5-PFNA	7.534	468.0 -> 423.0	17500	1.25	µg/L	0.025
13C2-PFHxA	5.373	315.1 -> 270.0	30989	2.50	µg/L	0.037
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	933	4.83	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2269	5.41	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
13C2-8:2FTS	7.828	529.1 -> 80.9	2894	5.15	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C2-PFDoDA	8.892	615.1 -> 570.0	14556	1.12	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.6%		
13C2-PFTeDA	9.662	715.2 -> 670.0	14321	1.11	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 88.7%		
13C3-PFBS	5.227	302.1 -> 79.9	8223	2.63	µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C3-PFHxS	7.054	402.1 -> 79.9	6666	2.61	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C4-PFBA	2.752	216.8 -> 171.9	94150	10.60 µg/L		0.078
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C4-PFHpA	6.317	367.1 -> 322.0	28749	2.63 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C5-PFHxA	5.372	318.0 -> 273.0	29514	2.58 µg/L		0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C5-PFPeA	4.200	268.3 -> 223.0	37907	5.33 µg/L		0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C6-PFDA	8.017	519.1 -> 474.1	12116	1.28 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C7-PFUnDA	8.473	570.0 -> 525.1	14090	1.26 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C8-FOSA	9.818	506.1 -> 77.8	8057	2.15 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 85.8%		
13C8-PFOA	7.001	421.1 -> 376.0	47897	2.71 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C8-PFOS	8.143	507.1 -> 79.9	6914	2.36 µg/L		0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C9-PFNA	7.534	472.1 -> 427.0	17688	1.26 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.9%		
d3-MeFOSAA	8.111	573.2 -> 419.0	16576	5.15 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C3-HFPO-DA	5.727	286.9 -> 168.9	29115	10.20 µg/L		0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
d3-MeFOSA	11.152	515.0 -> 219.0	5192	2.32 µg/L		0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%		
d5-EtFOSAA	8.309	589.2 -> 419.0	14118	5.19 µg/L		0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
d7-MeFOSE	11.047	623.2 -> 58.9	34014	18.36 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 73.5%		
d9-EtFOSE	11.331	639.2 -> 58.9	47716	23.00 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
d5-EtFOSA	11.410	531.1 -> 219.0	5601	2.28 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.2%		
Target Compounds						**QValue**
4:2FTS	5.072	327.1 -> 307.0	16024	9.97 µg/L		100
		327.1 -> 80.9	6878			
6:2FTS	6.774	427.1 -> 407.0	22985	9.64 µg/L		98
		427.1 -> 80.9	8084			
8:2FTS	7.829	527.1 -> 507.0	15951	10.46 µg/L		100
		527.1 -> 80.8	6420			
EtFOSAA	8.310	584.2 -> 419.1	5856	2.27 µg/L	m	80
		584.2 -> 526.0	2540			
FOSA	9.810	498.1 -> 77.9	9026	2.49 µg/L		99
		498.1 -> 478.0	273			
MeFOSAA	8.112	570.1 -> 419.0	6154	2.59 µg/L		86
		570.1 -> 483.0	1368			
PFBA	2.758	212.8 -> 168.9	30133	9.99 µg/L		100
PFBS	5.228	298.7 -> 79.9	5807	2.28 µg/L		93
		298.7 -> 98.8	2111			
PFDA	8.017	512.9 -> 469.0	21746	2.44 µg/L		98
		512.9 -> 219.0	4324			
PFDoDA	8.905	613.1 -> 569.0	27011	2.58 µg/L		96
		613.1 -> 319.0	5042			
PFDS	9.032	599.0 -> 79.9	4290	2.33 µg/L		99

Perfluorinated Compounds by LC/MS/MS

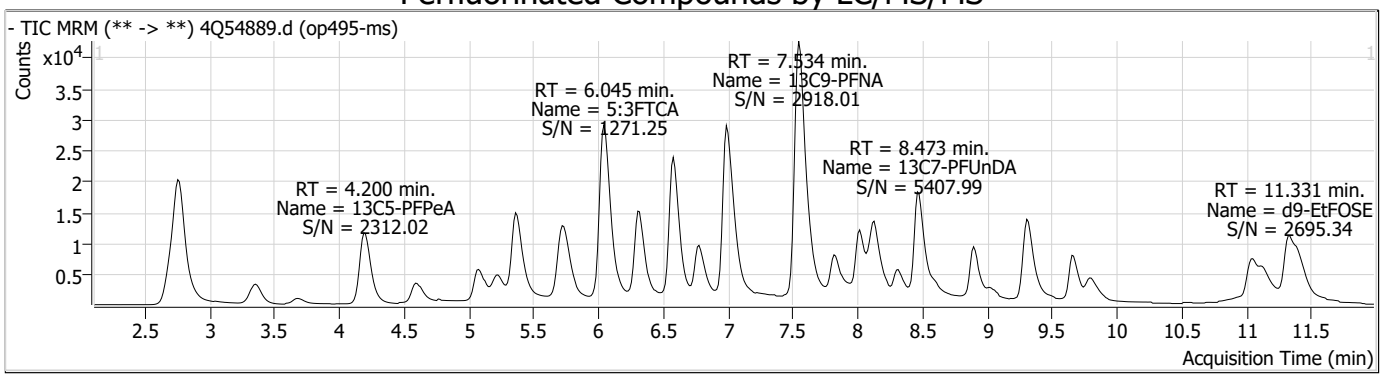
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2296				
PFHpA	6.317	363.1 -> 319.0	39625	2.45	µg/L		99
		363.1 -> 169.0	7404				
PFHpS	7.637	449.0 -> 79.9	7222	2.63	µg/L		97
		449.0 -> 98.9	3601				
PFHxA	5.375	313.0 -> 269.0	22790	2.42	µg/L		99
		313.0 -> 118.9	735				
PFHxS	7.055	398.7 -> 79.9	4861	2.26	µg/L	m	92
		398.7 -> 98.9	2572				
PFNA	7.534	463.0 -> 419.0	25890	2.49	µg/L		97
		463.0 -> 219.0	6359				
PFNS	8.611	548.8 -> 79.9	3340	2.83	µg/L		93
		548.8 -> 98.9	1818				
PFOA	7.003	413.0 -> 369.0	46386	2.35	µg/L		98
		413.0 -> 169.0	9939				
PFOS	8.144	498.9 -> 79.9	6783	2.36	µg/L	m	59
		498.9 -> 98.8	3550				
PFPeA	4.202	263.0 -> 219.0	35876	4.81	µg/L		100
PFPeS	6.307	349.1 -> 79.9	4770	2.36	µg/L		97
		349.1 -> 98.9	2109				
PFTeDA	9.662	713.1 -> 669.0	24610	2.47	µg/L		100
		713.1 -> 168.9	2593				
PFTrDA	9.292	663.0 -> 619.0	30450	2.67	µg/L		97
		663.0 -> 168.9	4412				
PFUnDA	8.474	563.1 -> 519.0	26666	2.60	µg/L		99
		563.1 -> 269.1	5729				
11Cl-PF3OUdS	9.319	630.9 -> 450.9	35582	4.44	µg/L		99
		632.9 -> 452.9	10924				
9Cl-PF3ONS	8.476	530.8 -> 351.0	38843	4.79	µg/L		97
		532.8 -> 353.0	10998				
ADONA	6.581	376.9 -> 250.9	104071	5.29	µg/L		100
		376.9 -> 84.8	25165				
HFPO-DA	5.728	284.9 -> 168.9	13983	5.02	µg/L		99
		284.9 -> 184.9	1288				
3:3FTCA	3.679	241.0 -> 177.0	5143	10.73	µg/L		98
		241.0 -> 117.0	416				
5:3FTCA	6.045	341.0 -> 237.1	106729	63.54	µg/L		99
		341.0 -> 217.0	75811				
7:3FTCA	7.562	441.0 -> 316.9	56367	63.99	µg/L		98
		441.0 -> 336.9	136464				
EtFOSA	11.424	526.0 -> 219.0	12094	5.07	µg/L		99
		526.0 -> 169.0	16553				
EtFOSE	11.345	630.0 -> 58.9	19693	11.66	µg/L		100
MeFOSA	11.140	511.9 -> 219.0	8189	4.43	µg/L	m	98
		511.9 -> 169.0	11920				
MeFOSE	11.060	616.1 -> 58.9	13449	9.97	µg/L	m	100
PFDoDS	9.789	699.1 -> 79.9	3352	2.39	µg/L		97
		699.1 -> 98.8	1831				
NFDHA	5.253	295.0 -> 201.0	3327	4.99	µg/L		98
		295.0 -> 84.9	903				
PFMBA	4.603	279.0 -> 85.1	20902	5.09	µg/L		100
PFMPA	3.357	229.0 -> 84.9	23410	5.19	µg/L		100
PFEESA	5.747	314.8 -> 134.9	32905	4.73	µg/L		99
		314.8 -> 82.9	1210				

 # = Qualifier out of range, m = manually integrated, + = Area summed

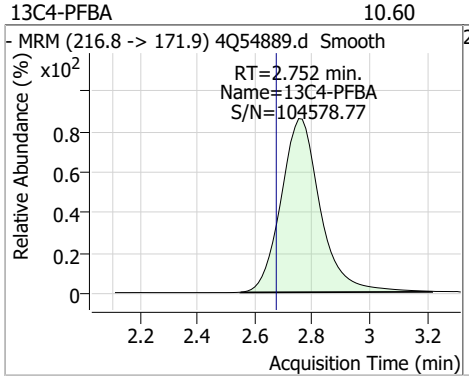
Perfluorinated Compounds by LC/MS/MS

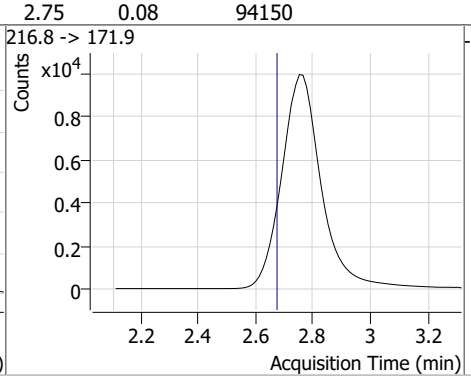
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

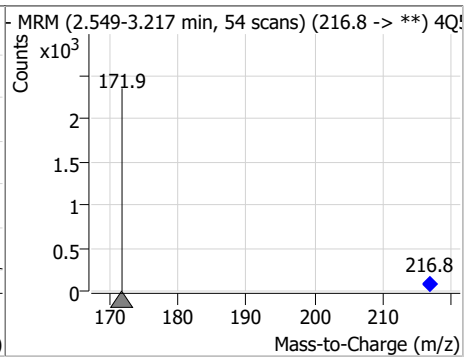
Perfluorinated Compounds by LC/MS/MS



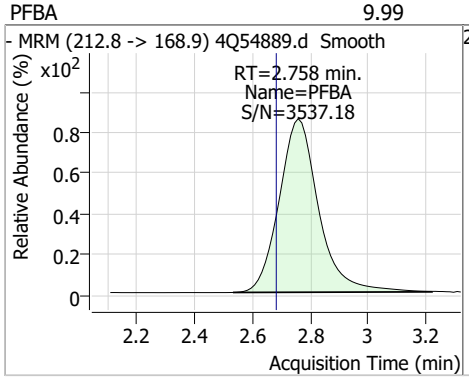
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.60	2.75	0.08	94150				

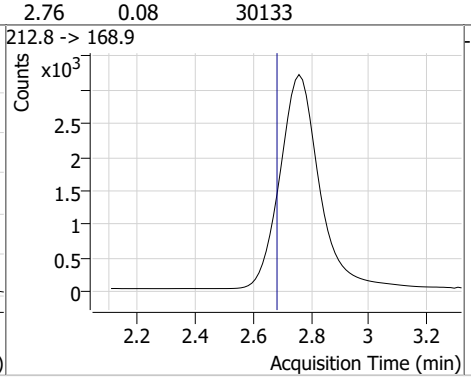


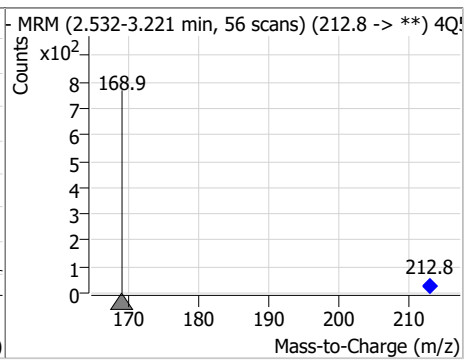




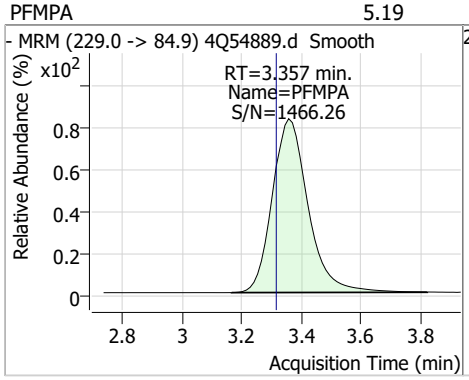
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.99	2.76	0.08	30133				

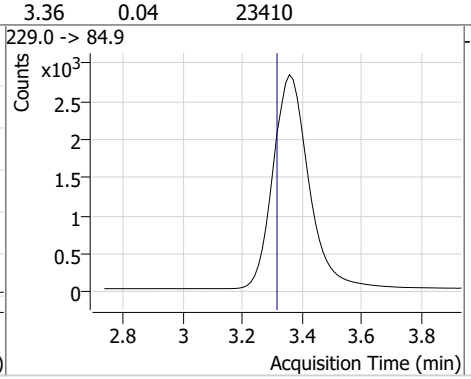


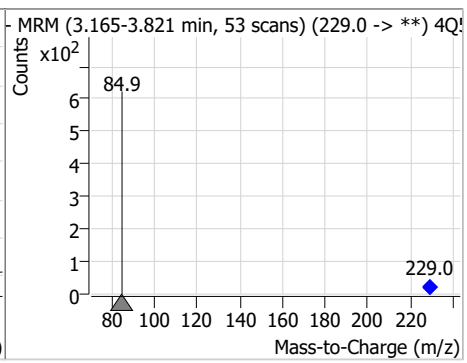




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	5.19	3.36	0.04	23410				

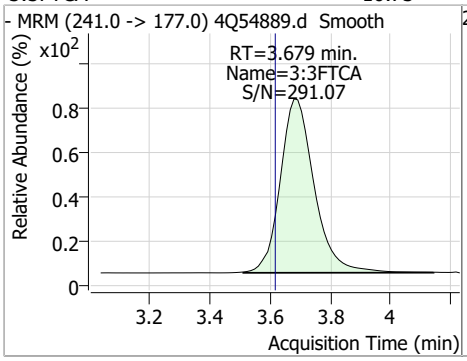


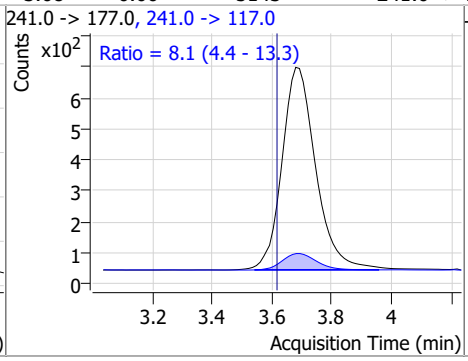


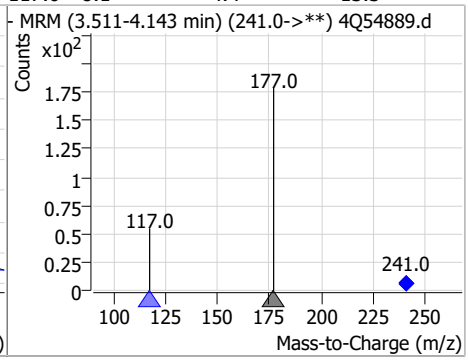


Perfluorinated Compounds by LC/MS/MS

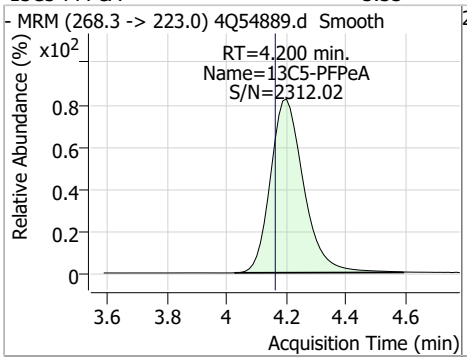
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.73	3.68	0.06	5143	241.0 -> 117.0	8.1	4.4	13.3

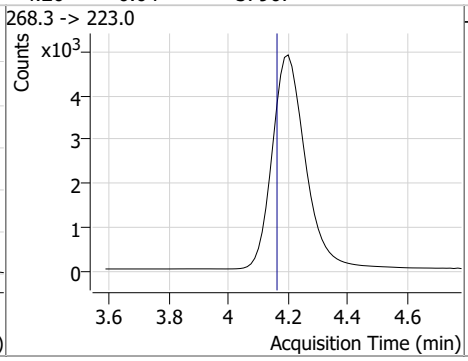


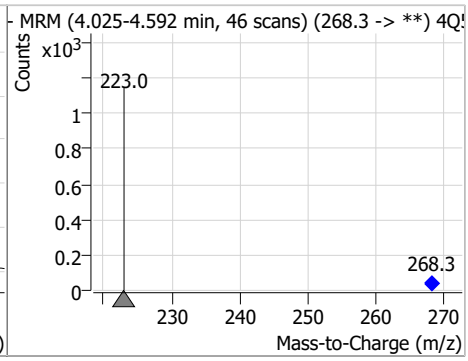




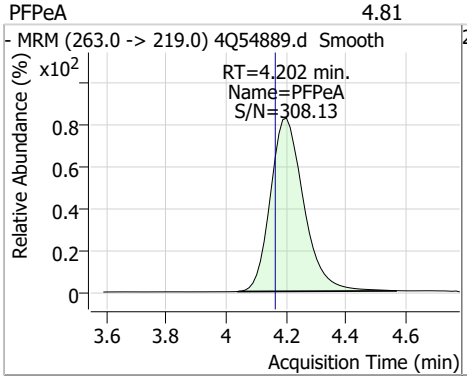
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.33	4.20	0.04	37907				

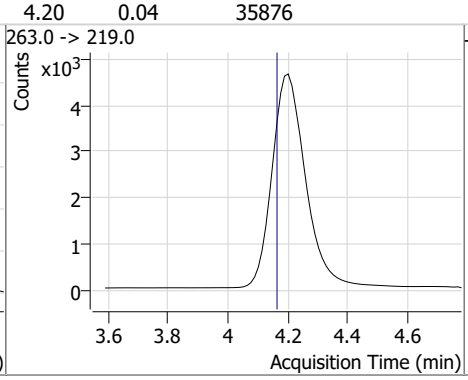


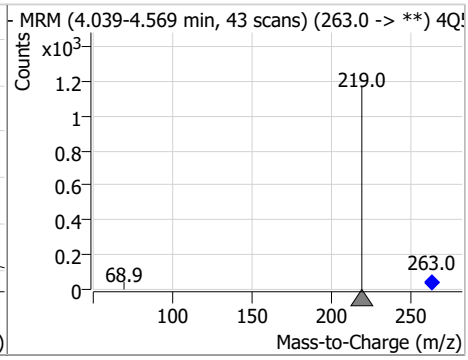




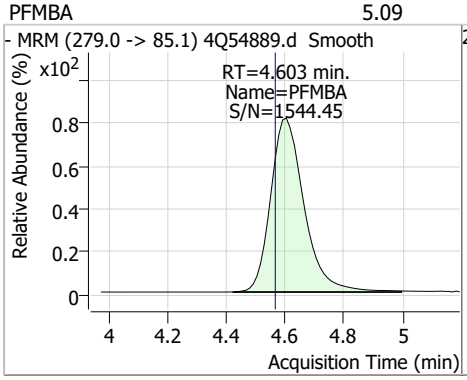
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.81	4.20	0.04	35876				

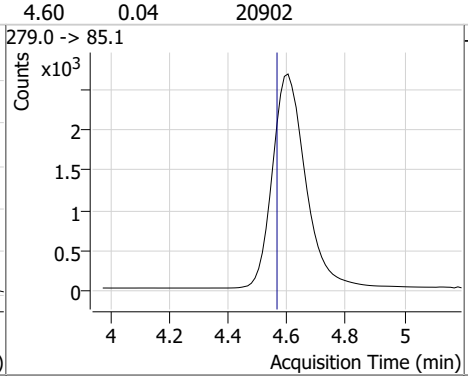


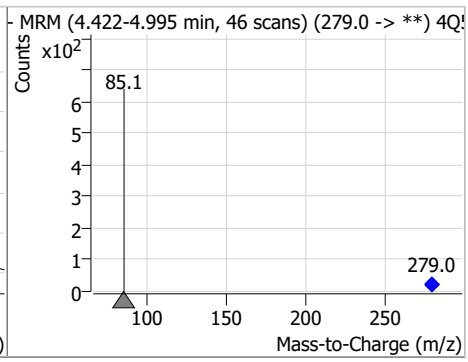




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	5.09	4.60	0.04	20902				

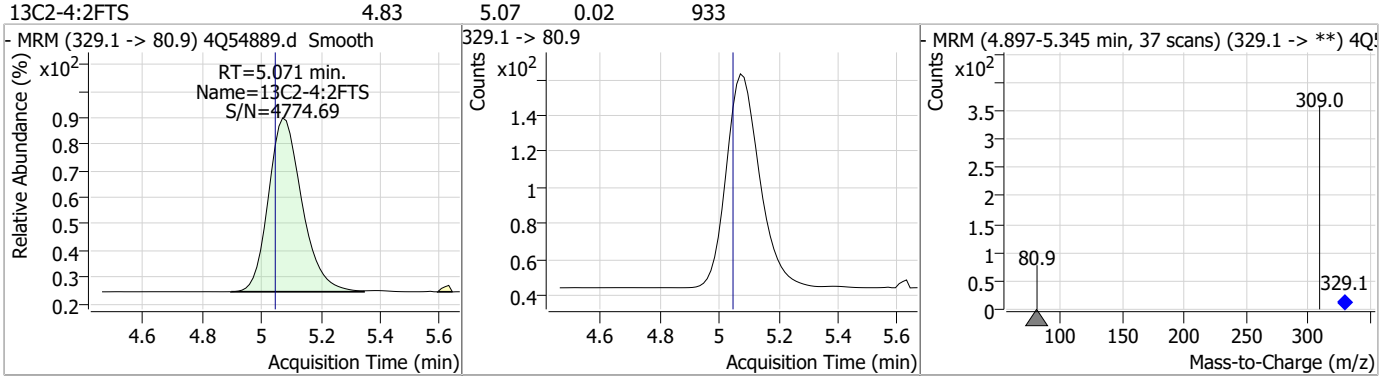




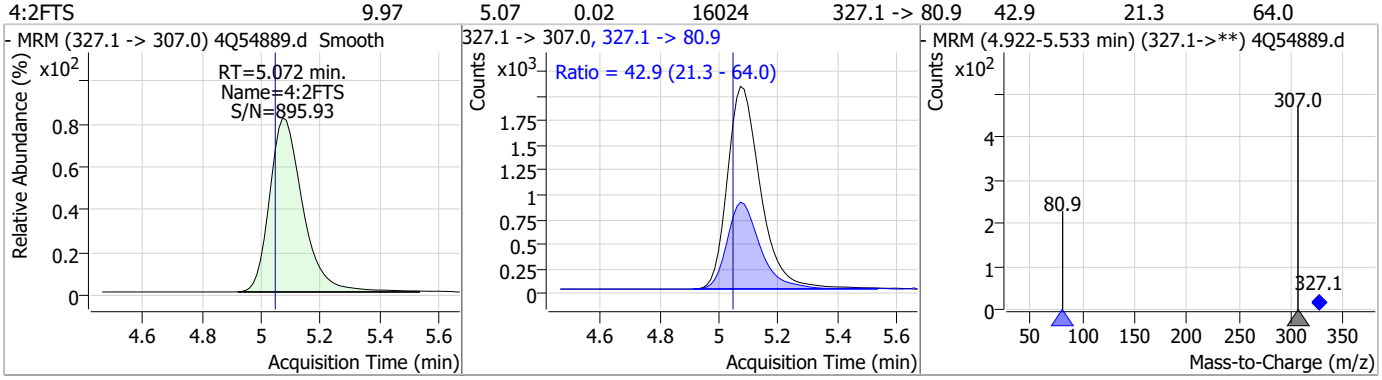


Perfluorinated Compounds by LC/MS/MS

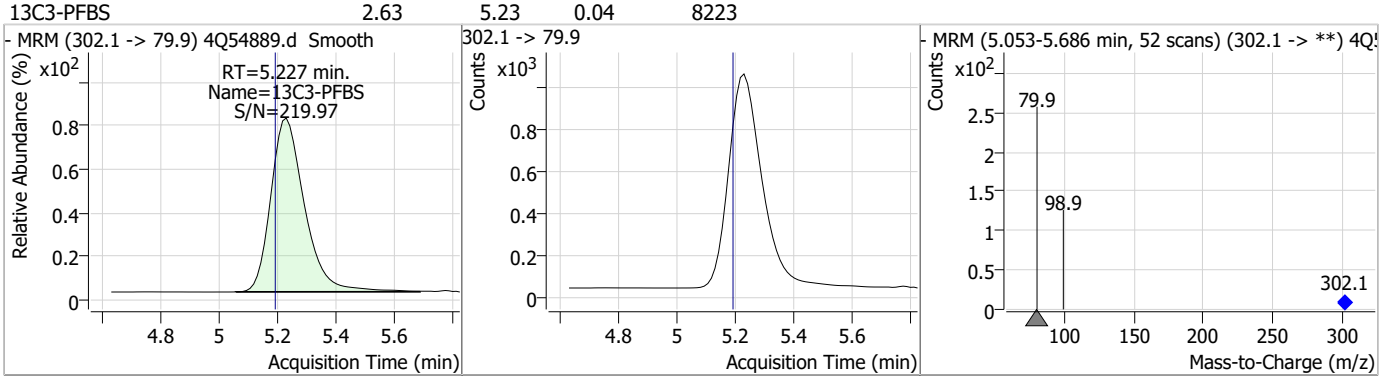
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.83	5.07	0.02	933				



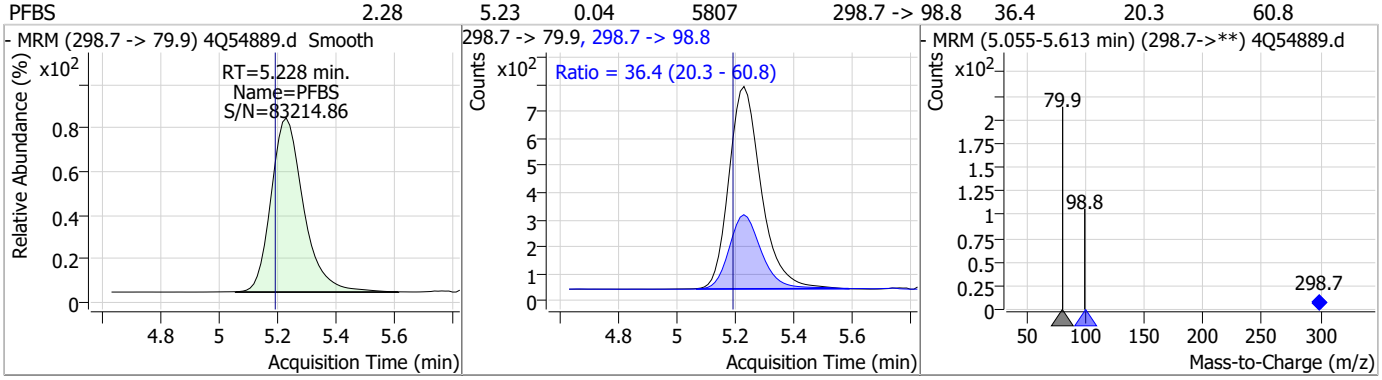
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.97	5.07	0.02	16024	327.1 -> 80.9	42.9	21.3	64.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.63	5.23	0.04	8223				

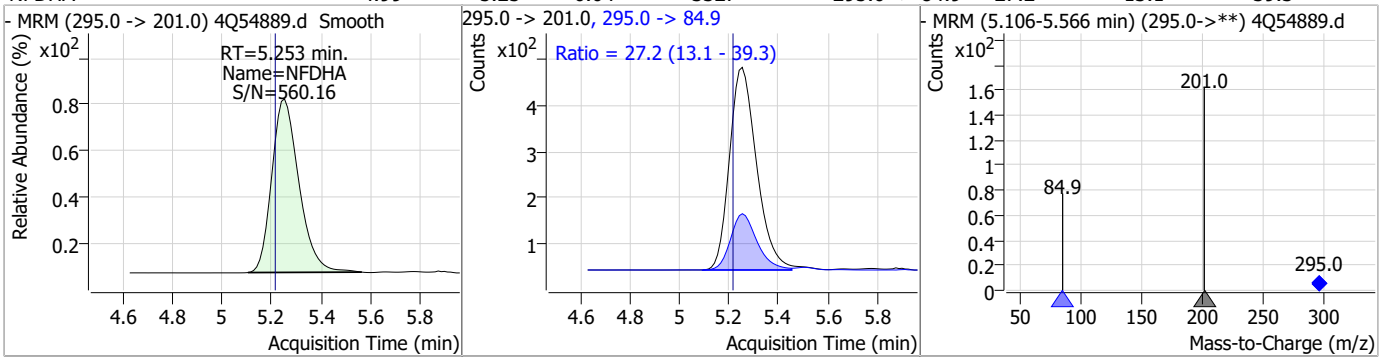


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.28	5.23	0.04	5807	298.7 -> 98.8	36.4	20.3	60.8

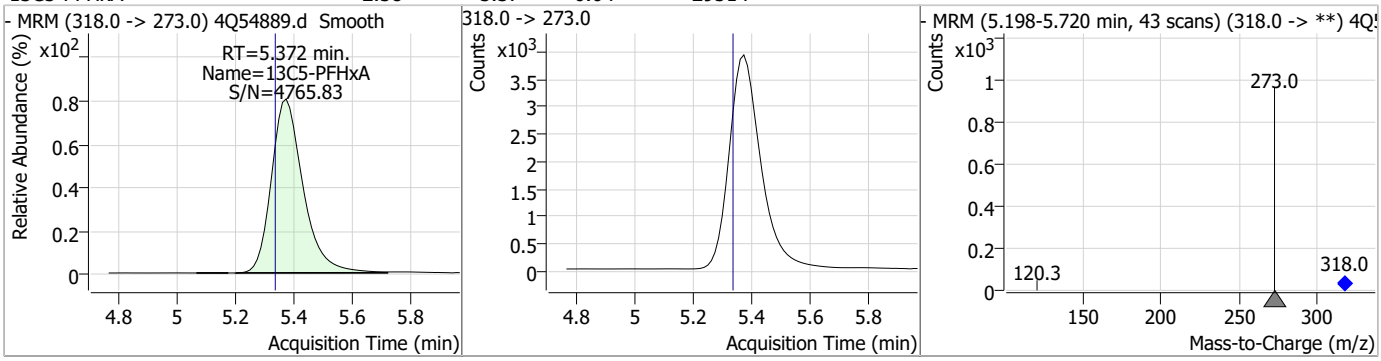


Perfluorinated Compounds by LC/MS/MS

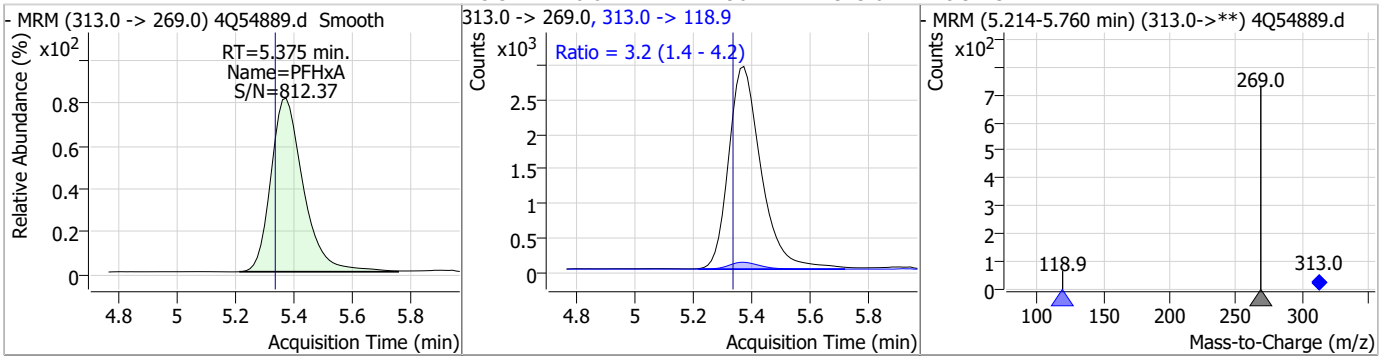
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.99	5.25	0.04	3327	295.0 -> 84.9	27.2	13.1	39.3



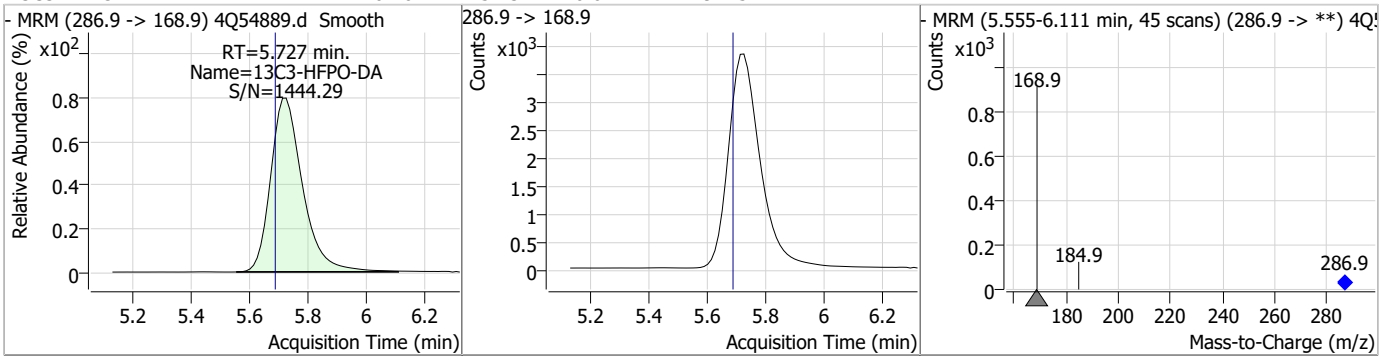
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.58	5.37	0.04	29514				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.42	5.37	0.04	22790	313.0 -> 118.9	3.2	1.4	4.2

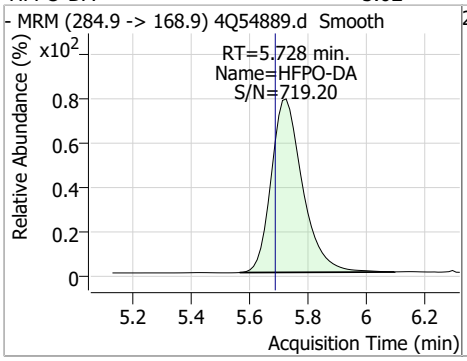


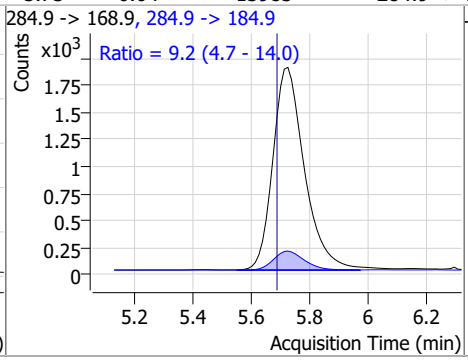
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.20	5.73	0.04	29115				

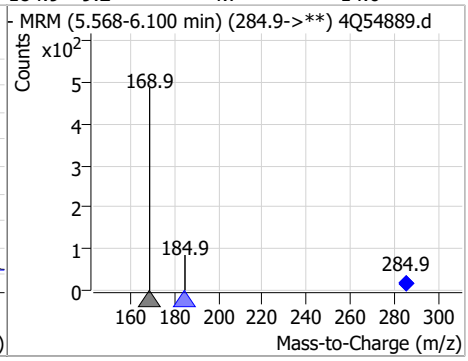


Perfluorinated Compounds by LC/MS/MS

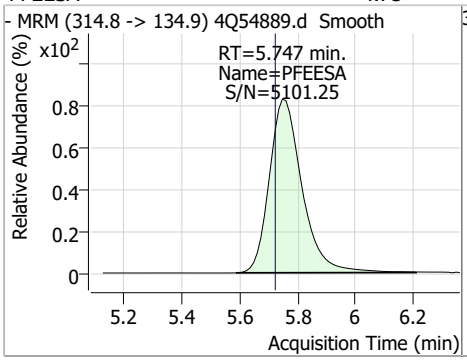
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.02	5.73	0.04	13983	284.9 -> 184.9	9.2	4.7	14.0

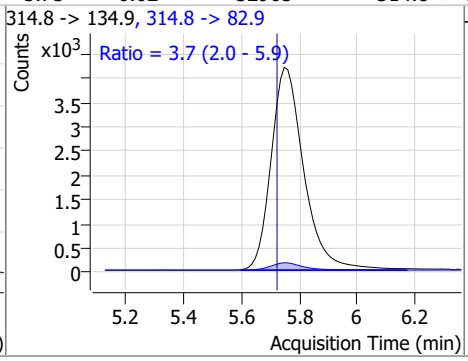


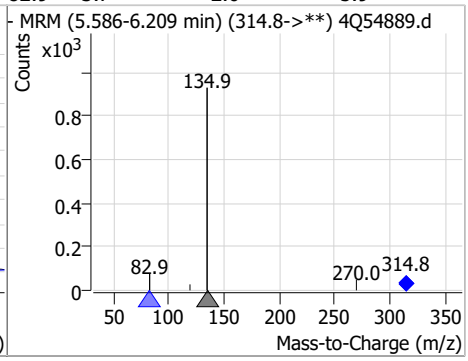




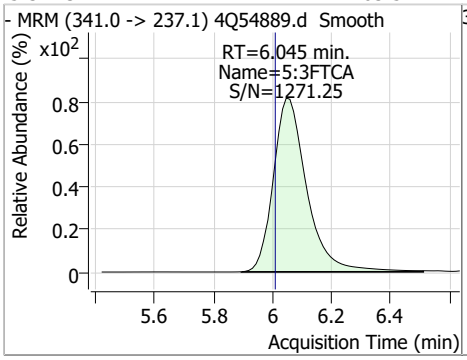
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.73	5.75	0.02	32905	314.8 -> 82.9	3.7	2.0	5.9

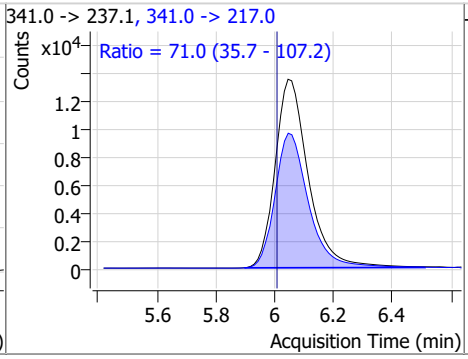


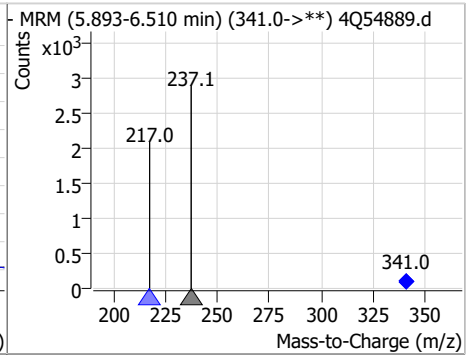




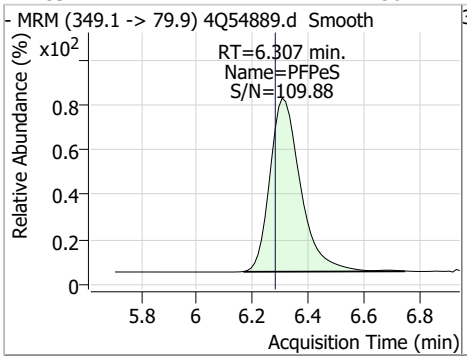
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	63.54	6.05	0.04	106729	341.0 -> 217.0	71.0	35.7	107.2

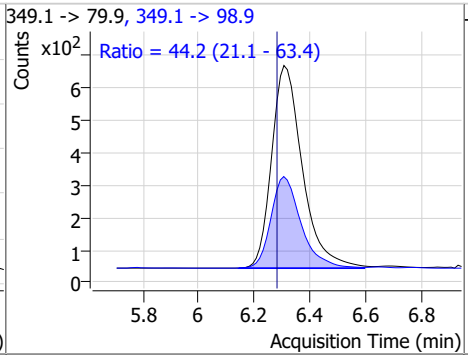


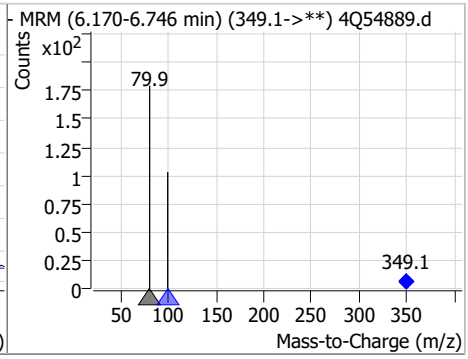




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.36	6.31	0.02	4770	349.1 -> 98.9	44.2	21.1	63.4

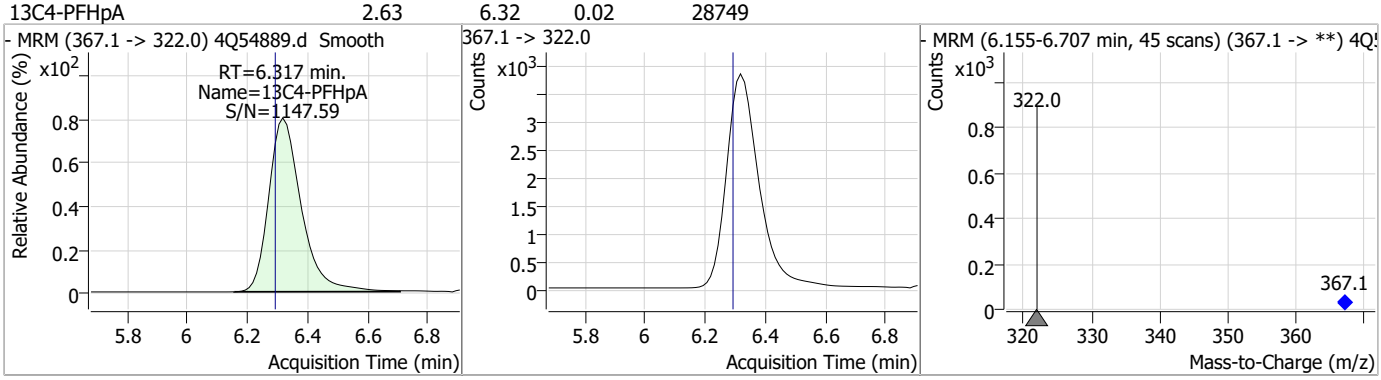




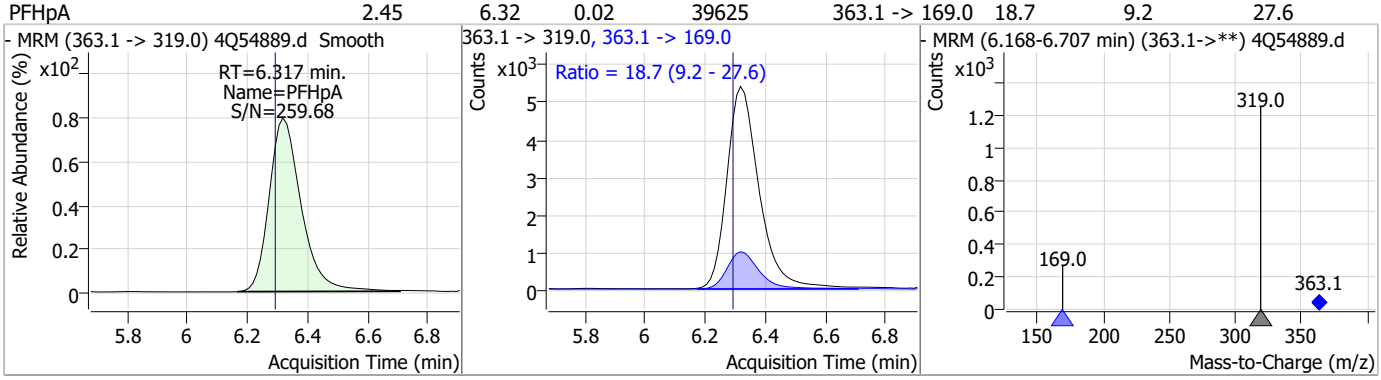


Perfluorinated Compounds by LC/MS/MS

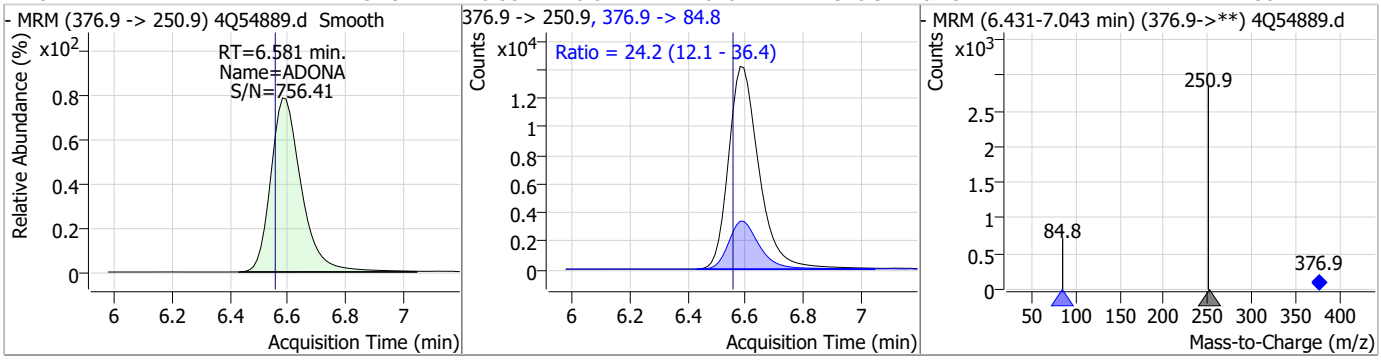
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.63	6.32	0.02	28749				



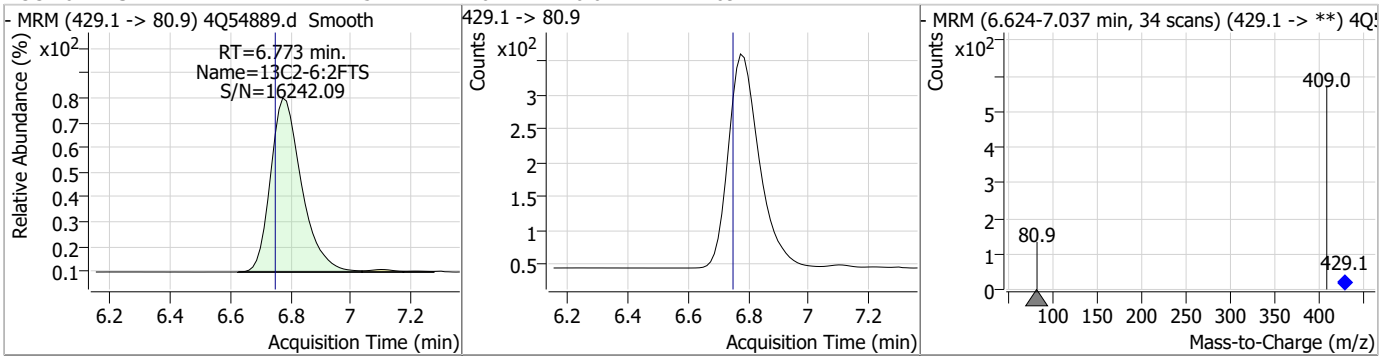
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.45	6.32	0.02	39625	363.1 -> 169.0	18.7	9.2	27.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.29	6.58	0.02	104071	376.9 -> 84.8	24.2	12.1	36.4

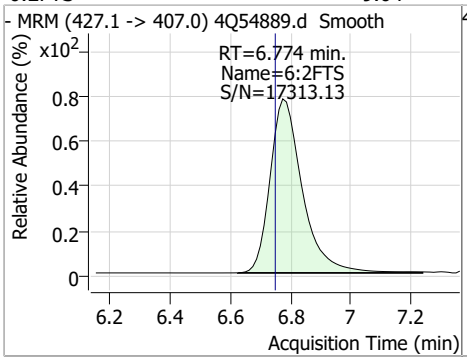


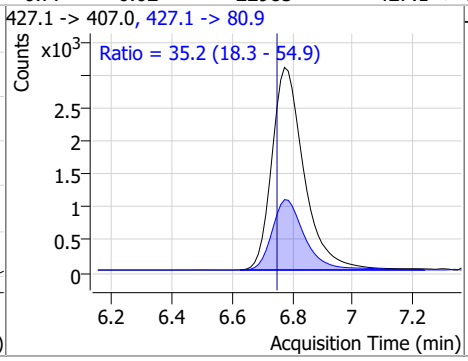
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.41	6.77	0.02	2269				

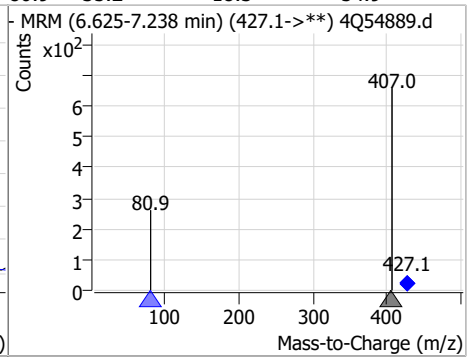


Perfluorinated Compounds by LC/MS/MS

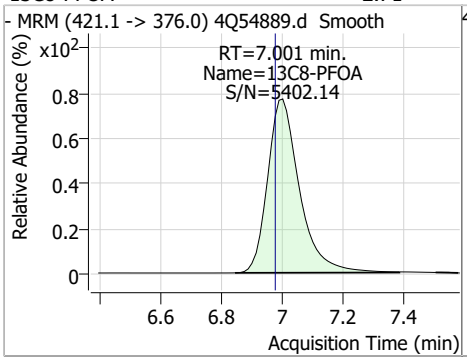
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.64	6.77	0.02	22985	427.1 -> 80.9	35.2	18.3	54.9

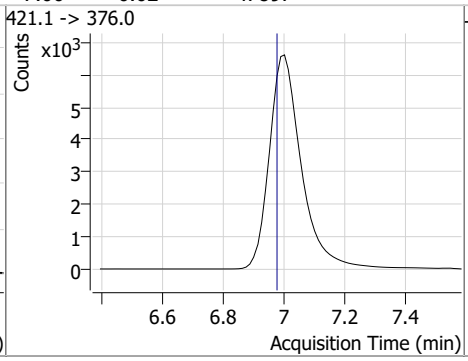


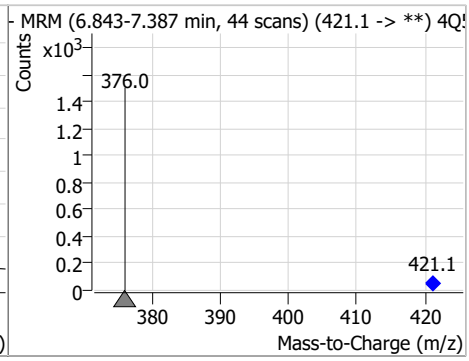




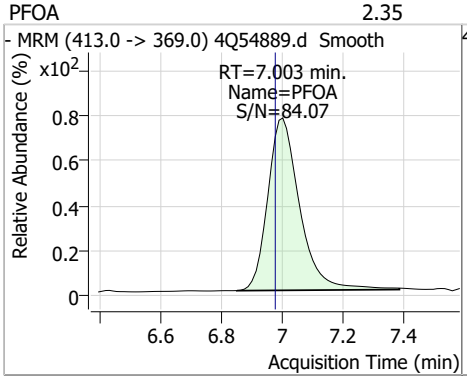
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.71	7.00	0.02	47897				

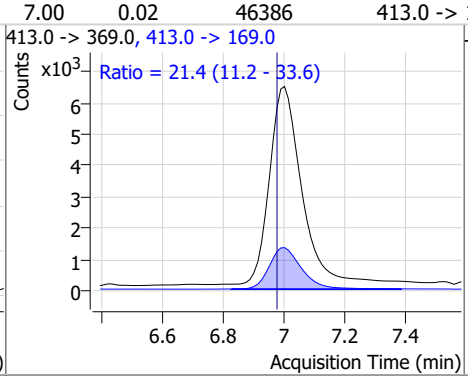


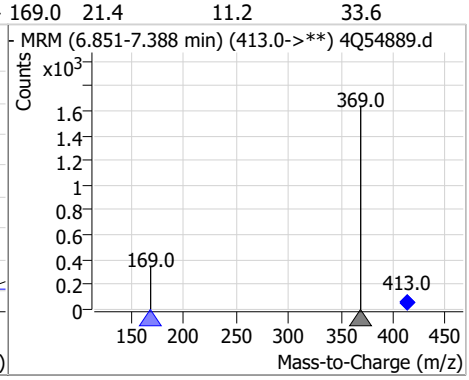




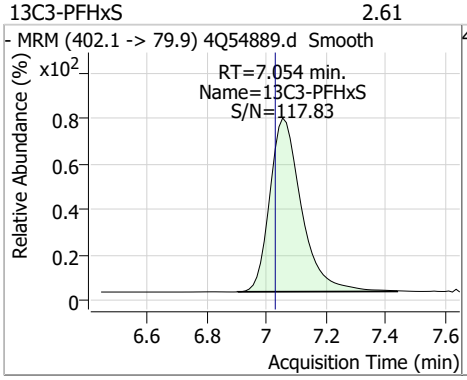
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.35	7.00	0.02	46386	413.0 -> 169.0	21.4	11.2	33.6

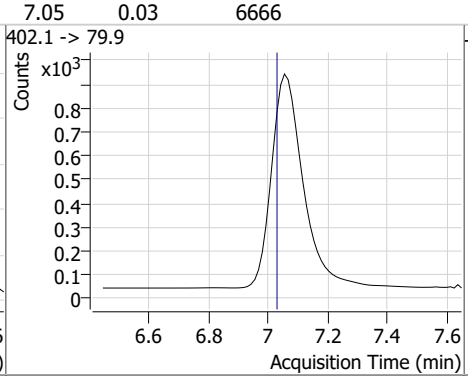


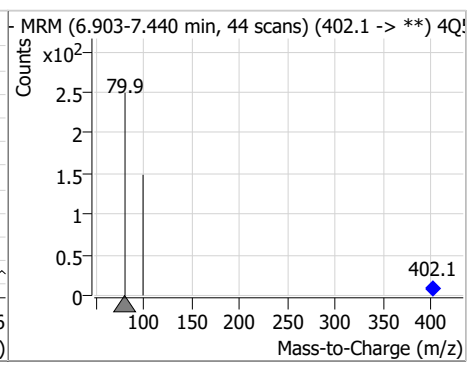




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.61	7.05	0.03	6666				

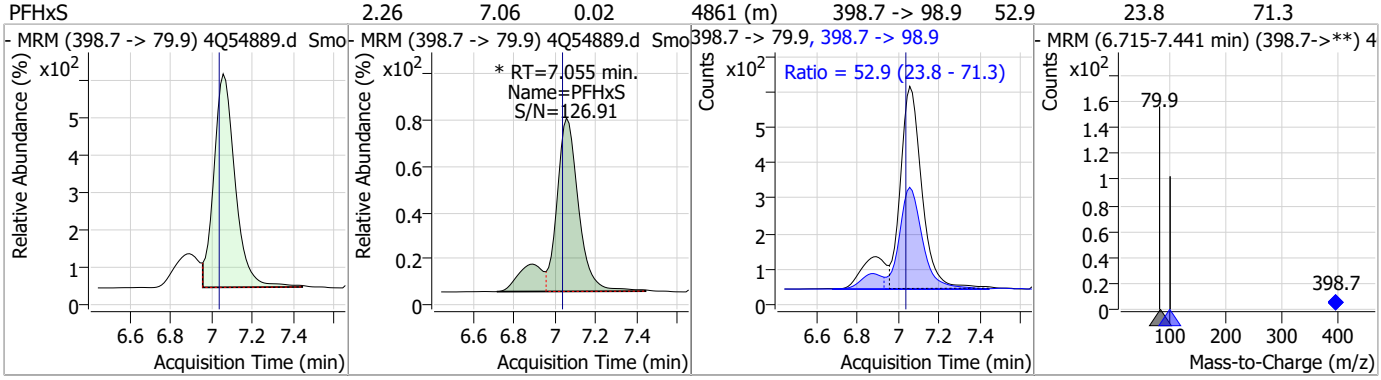




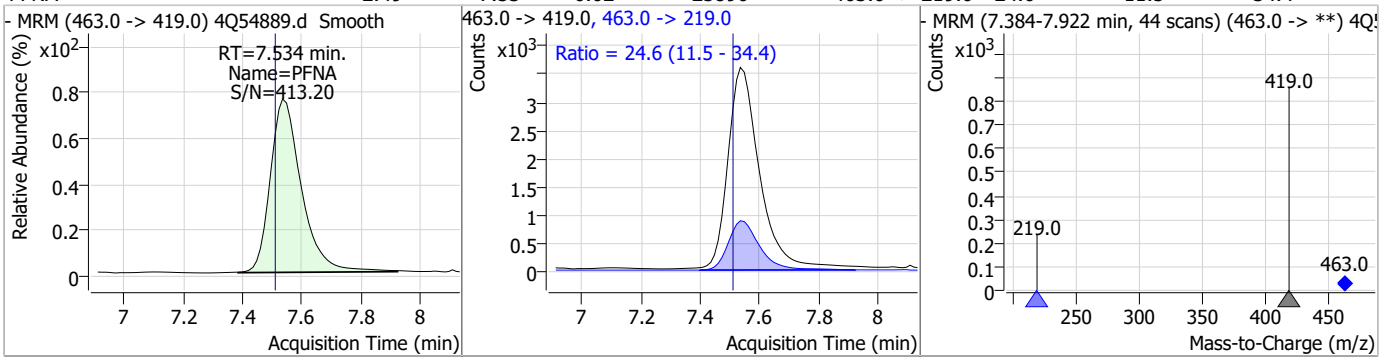


Perfluorinated Compounds by LC/MS/MS

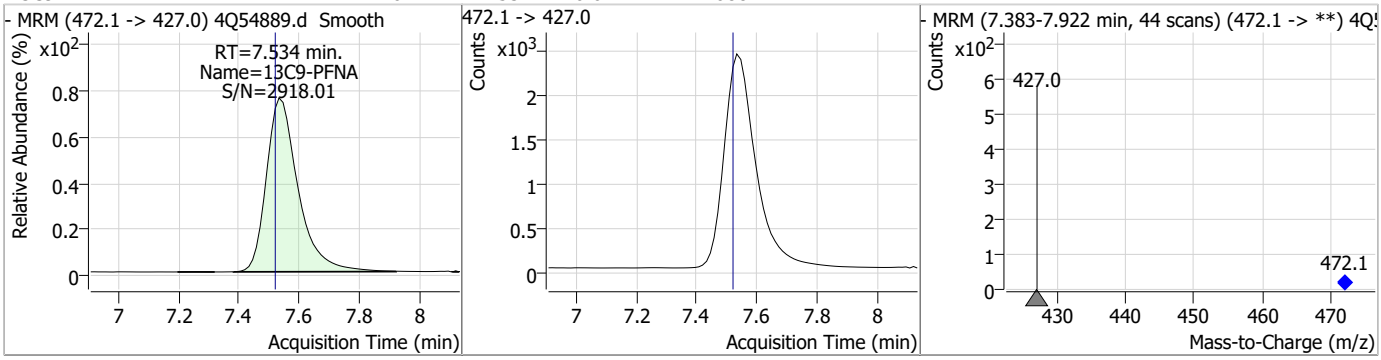
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.26	7.06	0.02	4861 (m)	398.7 -> 98.9	52.9	23.8	71.3



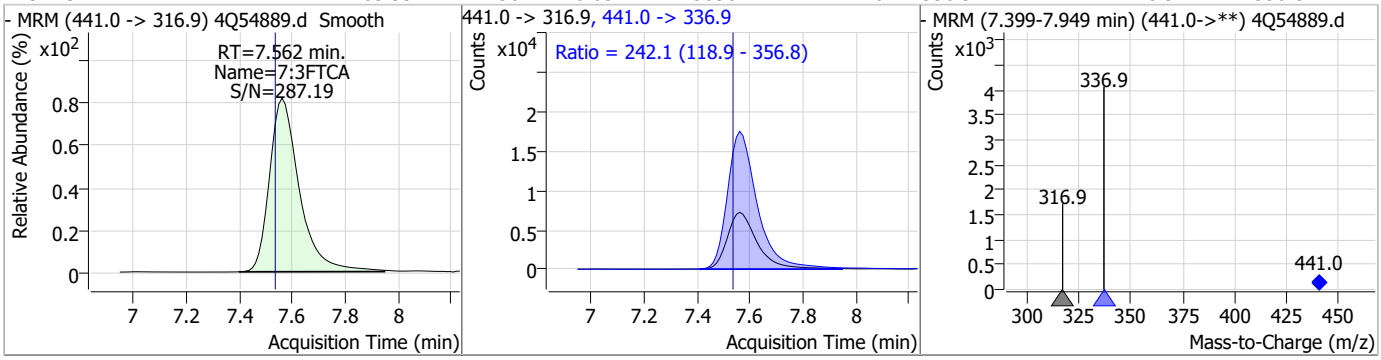
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.49	7.53	0.02	25890	463.0 -> 219.0	24.6	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.26	7.53	0.01	17688				

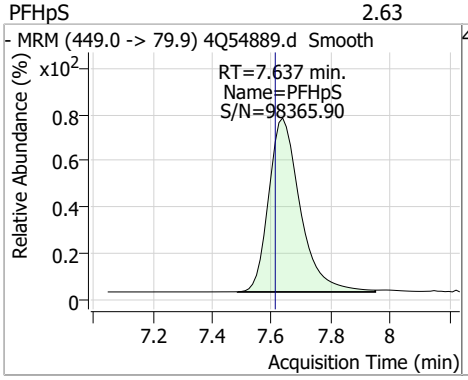


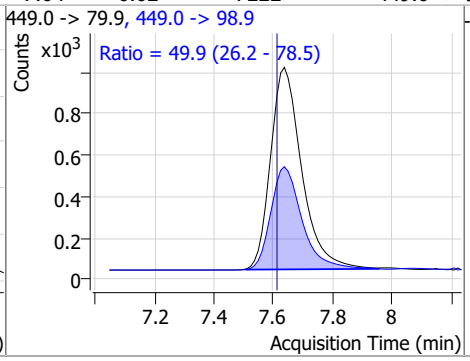
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	63.99	7.56	0.03	56367	441.0 -> 336.9	242.1	118.9	356.8

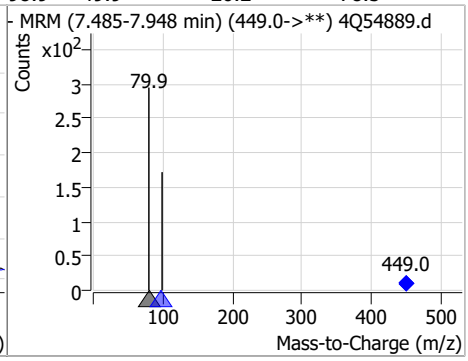


Perfluorinated Compounds by LC/MS/MS

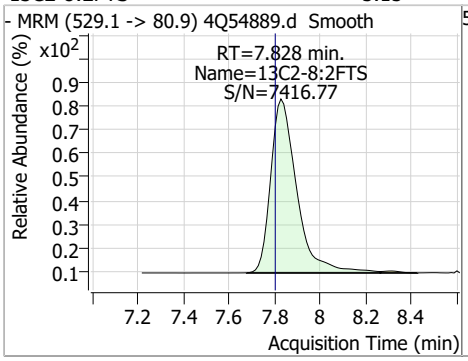
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.63	7.64	0.02	7222	449.0 -> 98.9	49.9	26.2	78.5

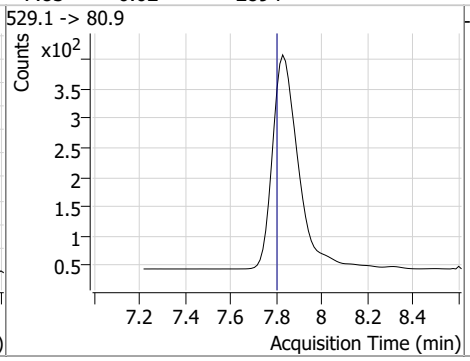


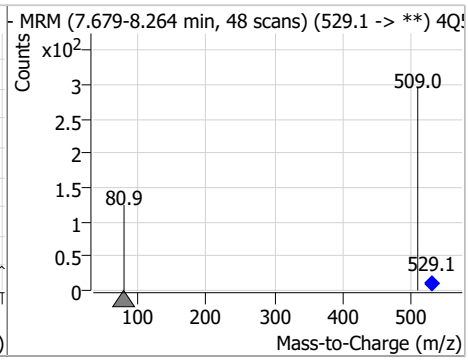




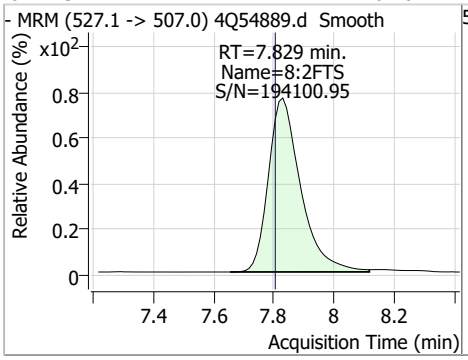
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.15	7.83	0.02	2894				

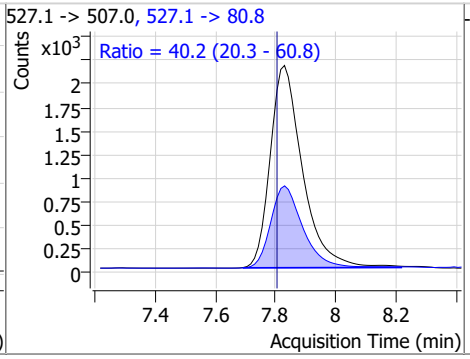


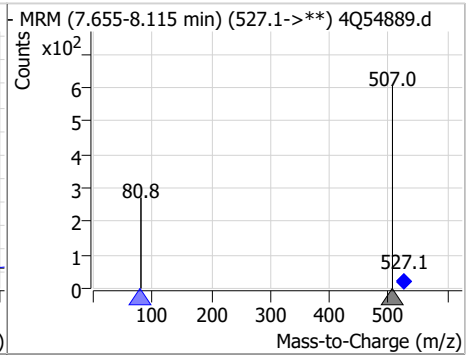




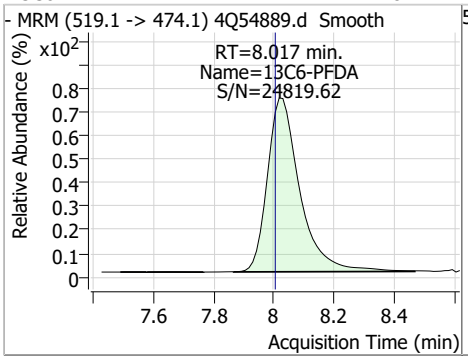
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.46	7.83	0.02	15951	527.1 -> 80.8	40.2	20.3	60.8

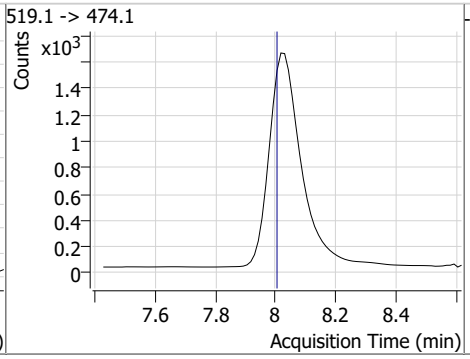


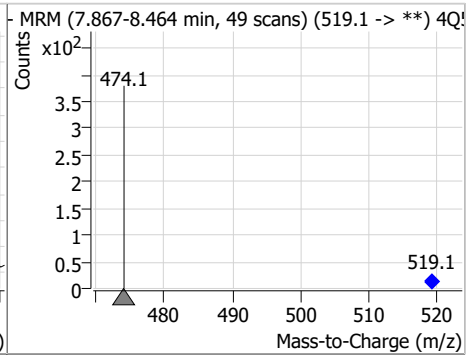




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.28	8.02	0.01	12116				

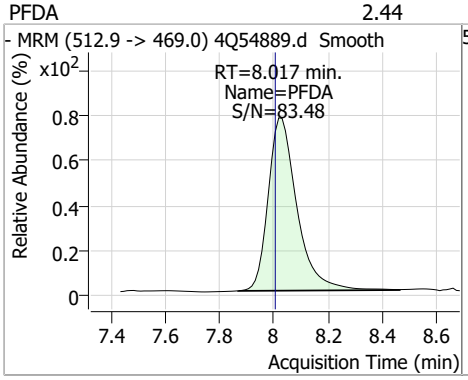


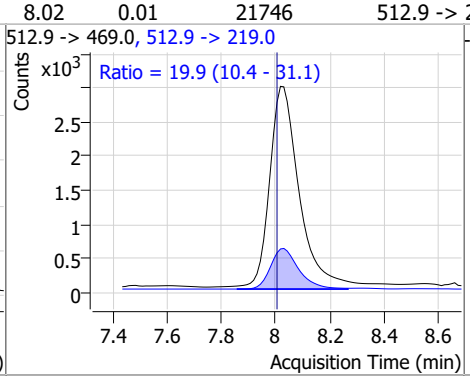


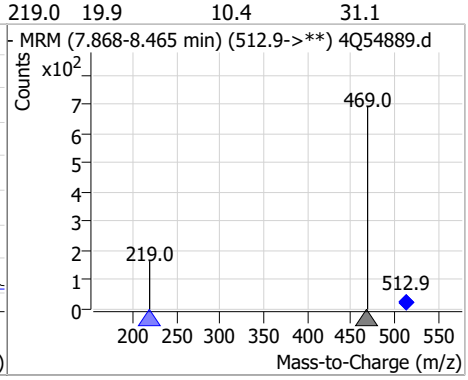


Perfluorinated Compounds by LC/MS/MS

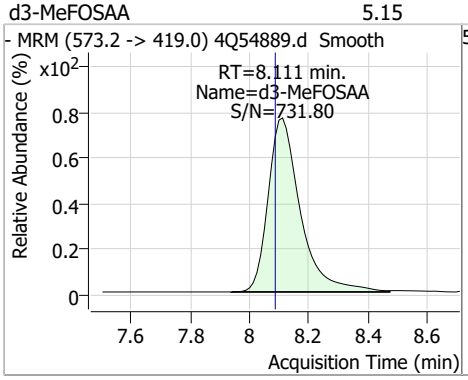
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.44	8.02	0.01	21746	512.9 -> 219.0	19.9	10.4	31.1

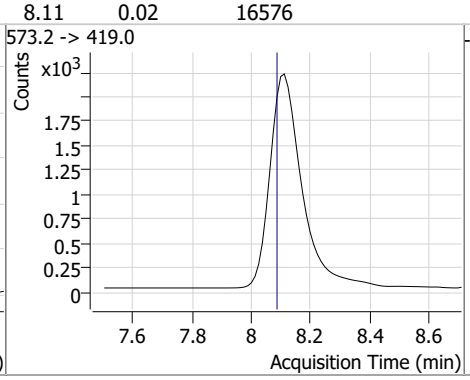


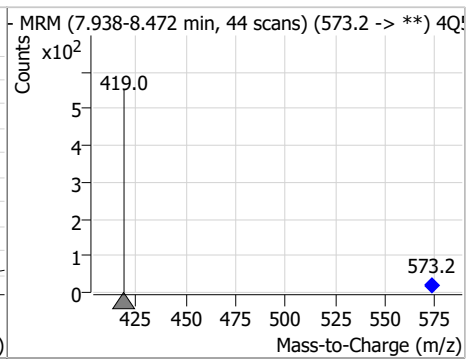




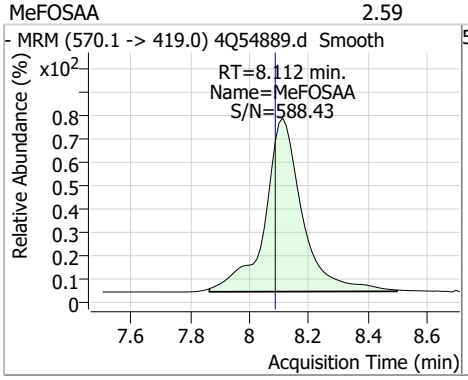
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.15	8.11	0.02	16576				

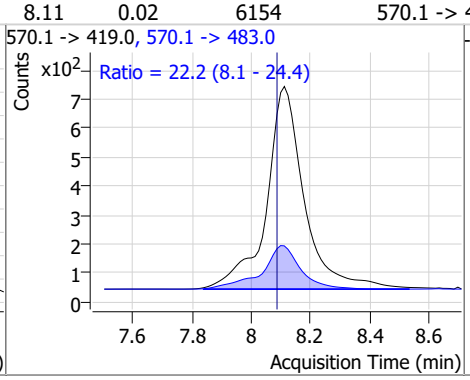


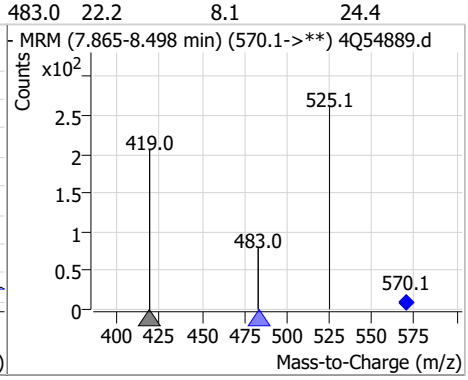




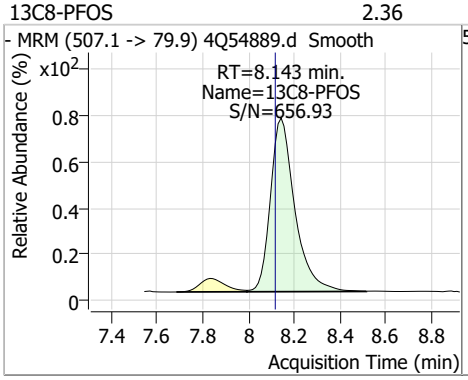
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.59	8.11	0.02	6154	570.1 -> 483.0	22.2	8.1	24.4

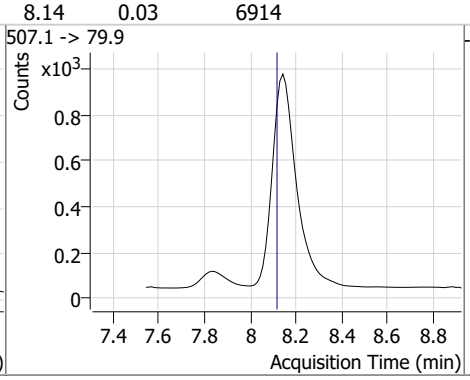


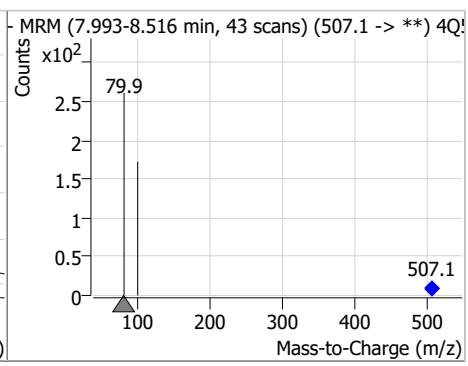




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.36	8.14	0.03	6914				

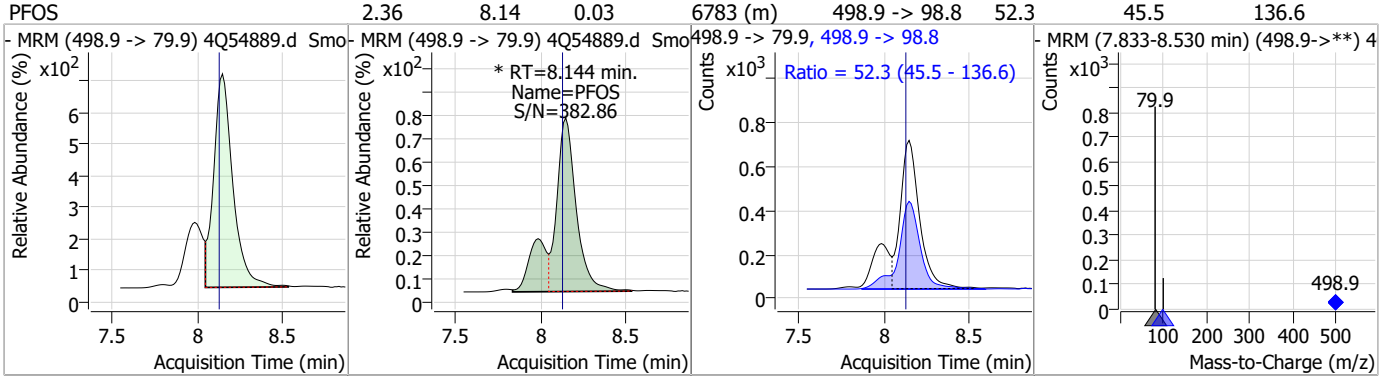




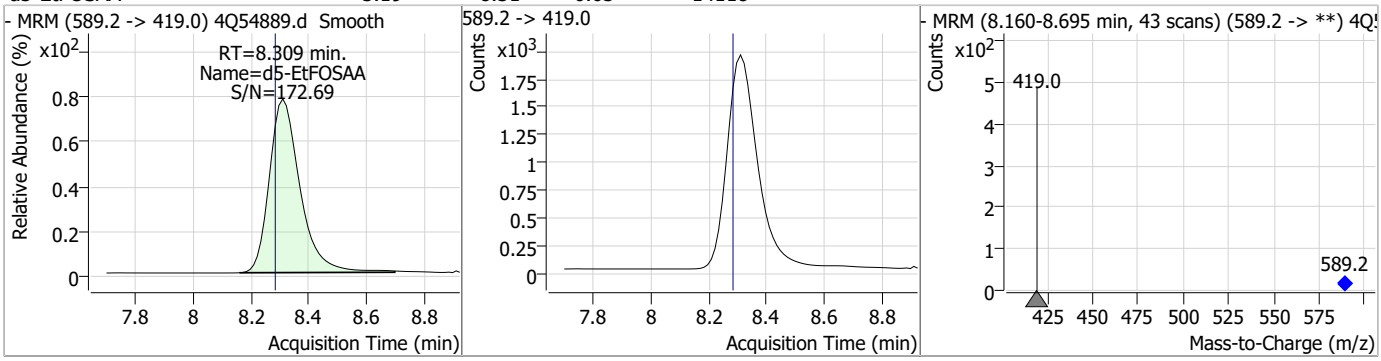


Perfluorinated Compounds by LC/MS/MS

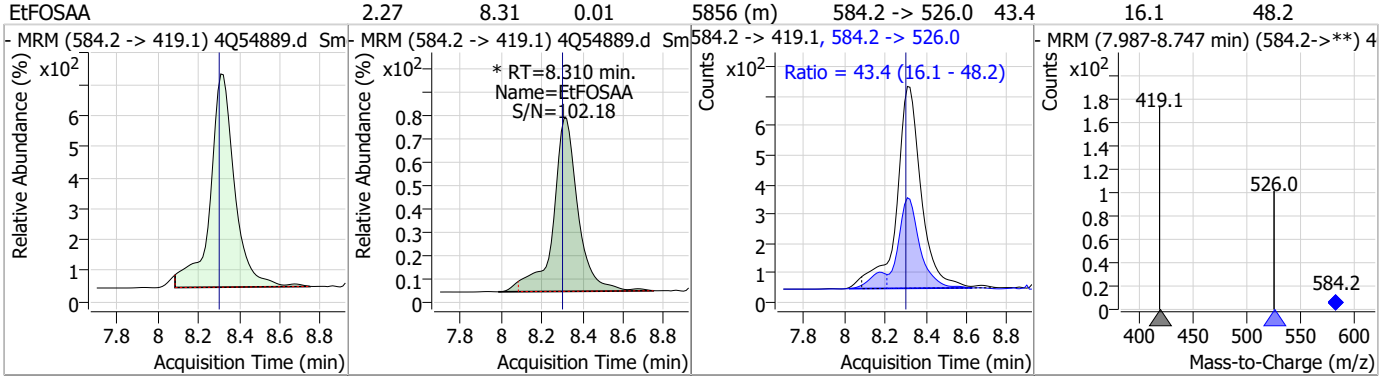
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.36	8.14	0.03	6783 (m)	498.9 -> 98.8	52.3	45.5	136.6



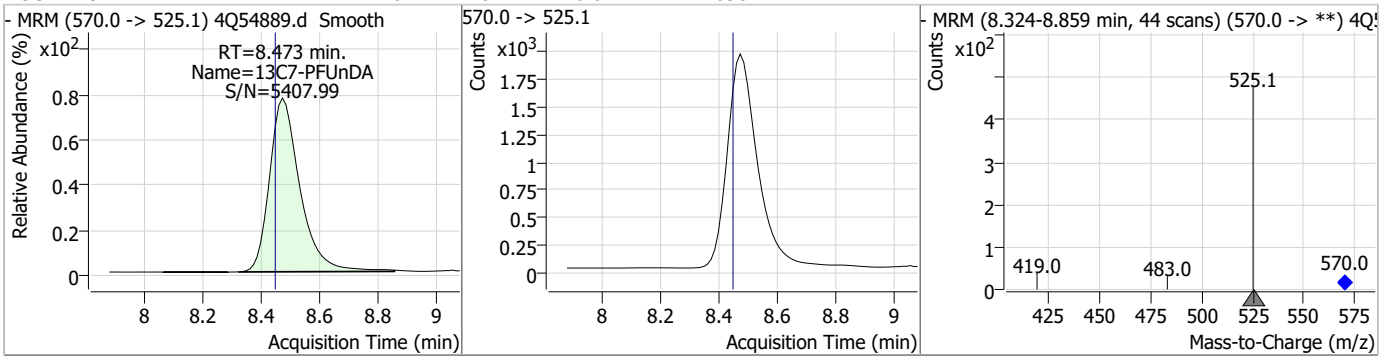
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.19	8.31	0.03	14118				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.27	8.31	0.01	5856 (m)	584.2 -> 526.0	43.4	16.1	48.2

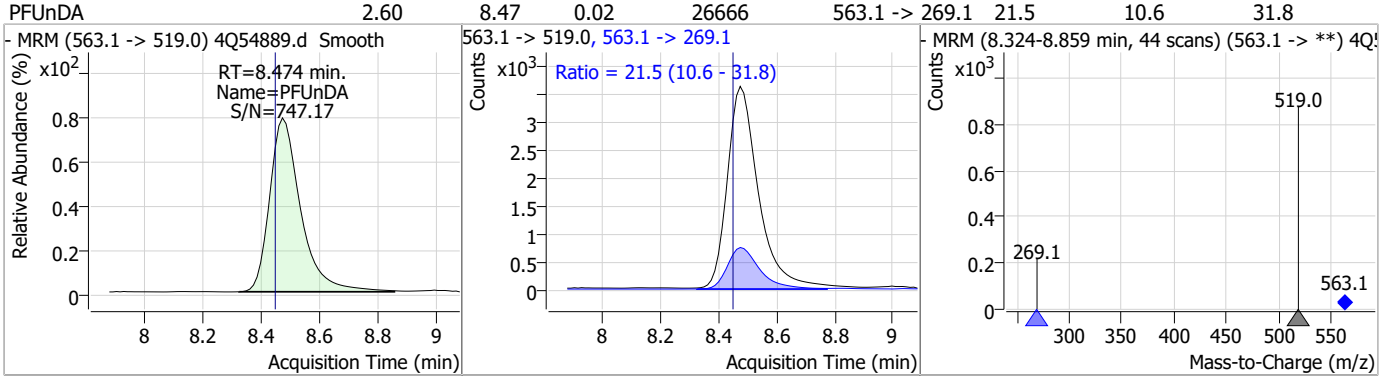


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.26	8.47	0.02	14090				

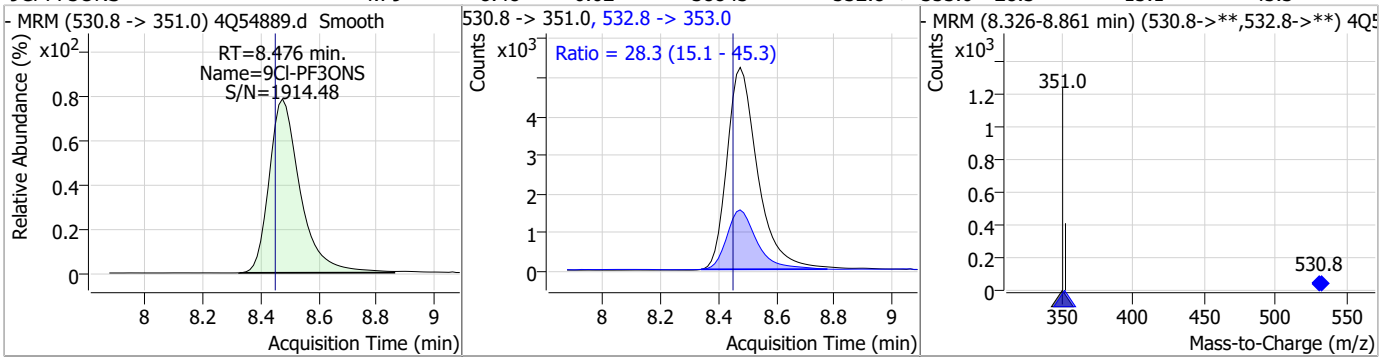


Perfluorinated Compounds by LC/MS/MS

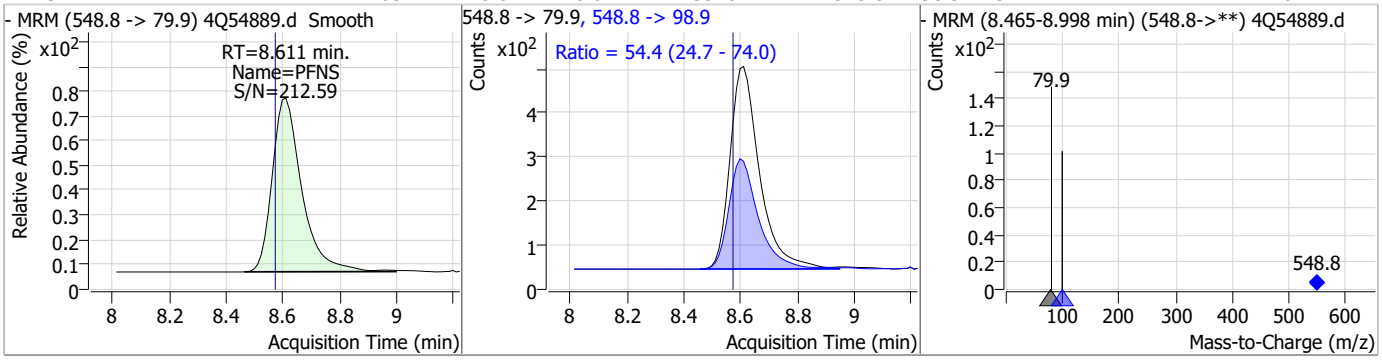
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.60	8.47	0.02	26666	563.1 -> 269.1	21.5	10.6	31.8



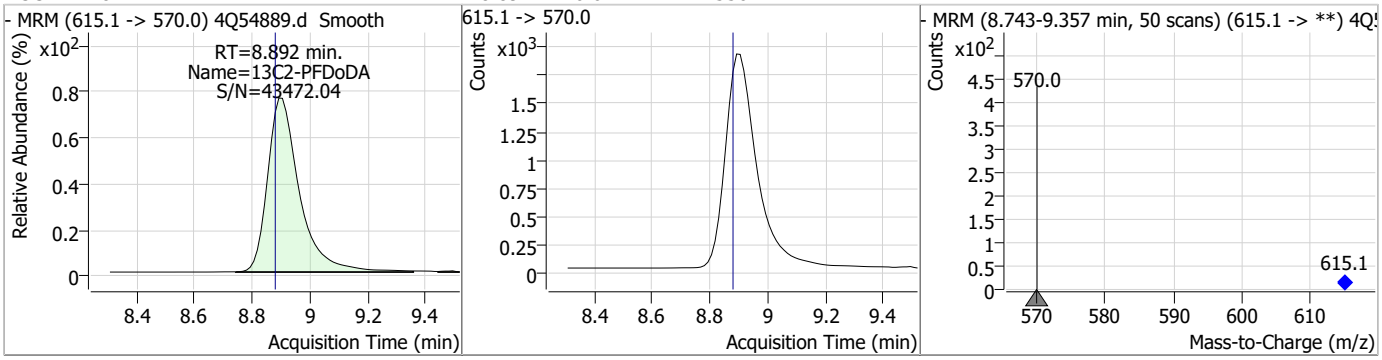
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.79	8.48	0.02	38843	532.8 -> 353.0	28.3	15.1	45.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.83	8.61	0.04	3340	548.8 -> 98.9	54.4	24.7	74.0

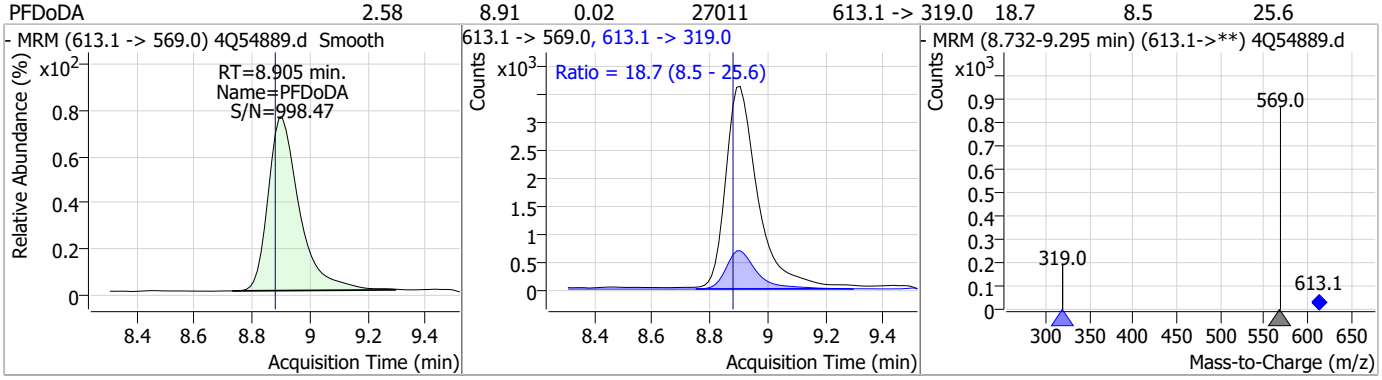


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.12	8.89	0.01	14556				

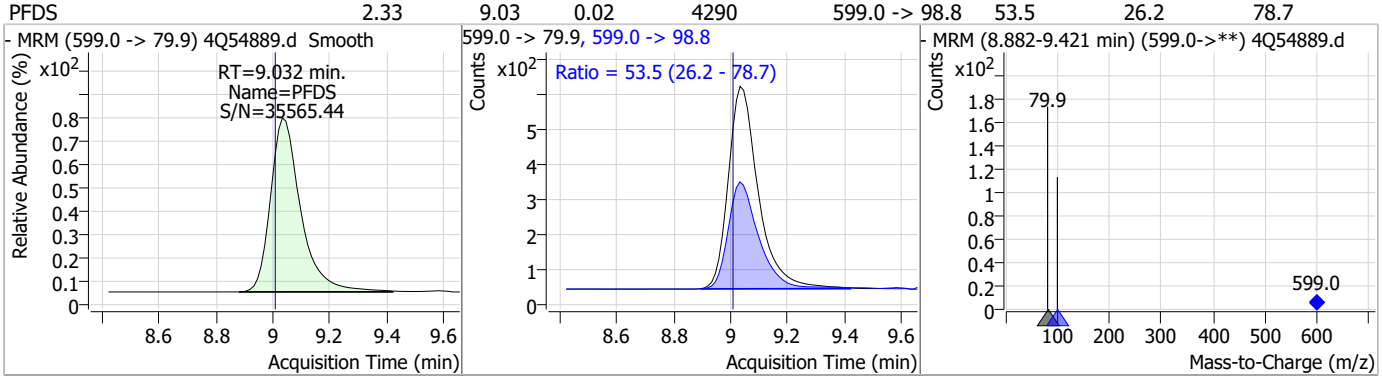


Perfluorinated Compounds by LC/MS/MS

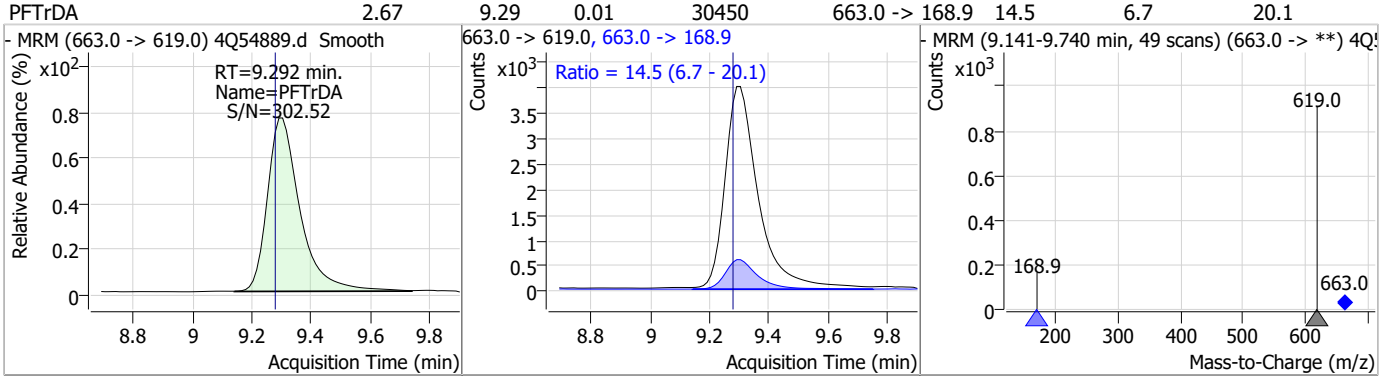
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.58	8.91	0.02	27011	613.1 -> 319.0	18.7	8.5	25.6



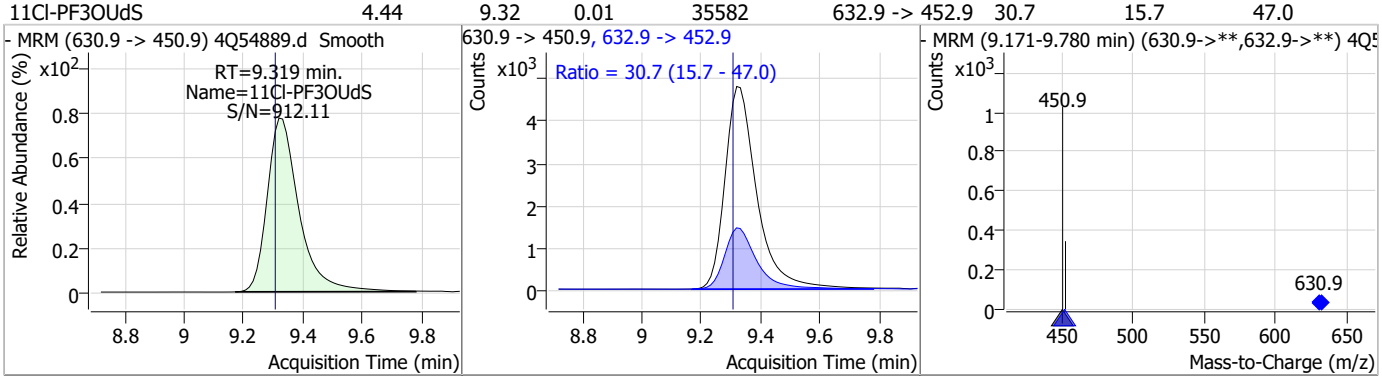
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.33	9.03	0.02	4290	599.0 -> 98.8	53.5	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.67	9.29	0.01	30450	663.0 -> 168.9	14.5	6.7	20.1

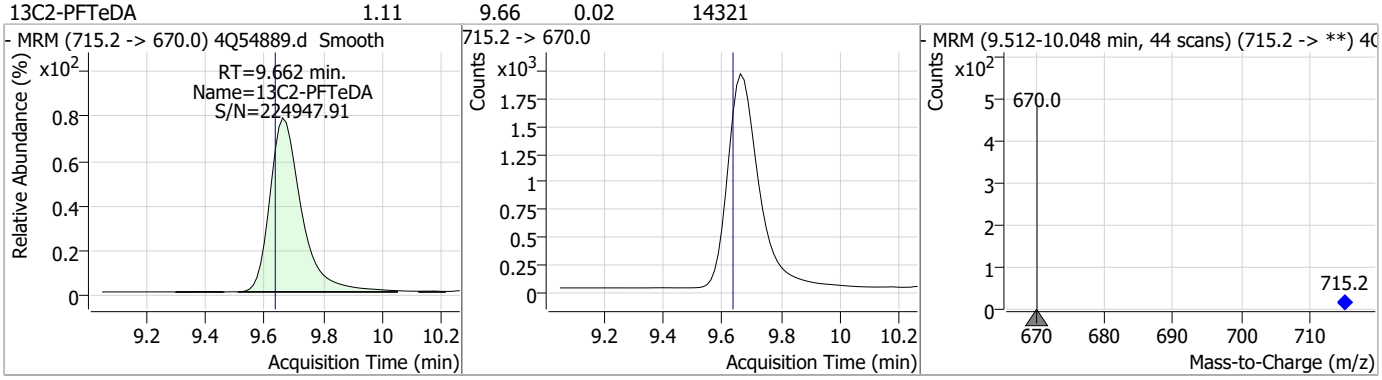


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.44	9.32	0.01	35582	632.9 -> 452.9	30.7	15.7	47.0

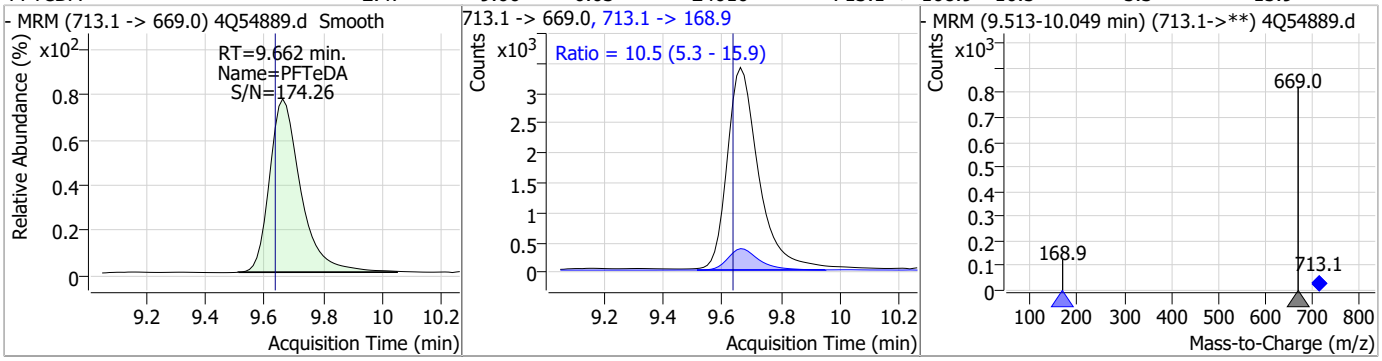


Perfluorinated Compounds by LC/MS/MS

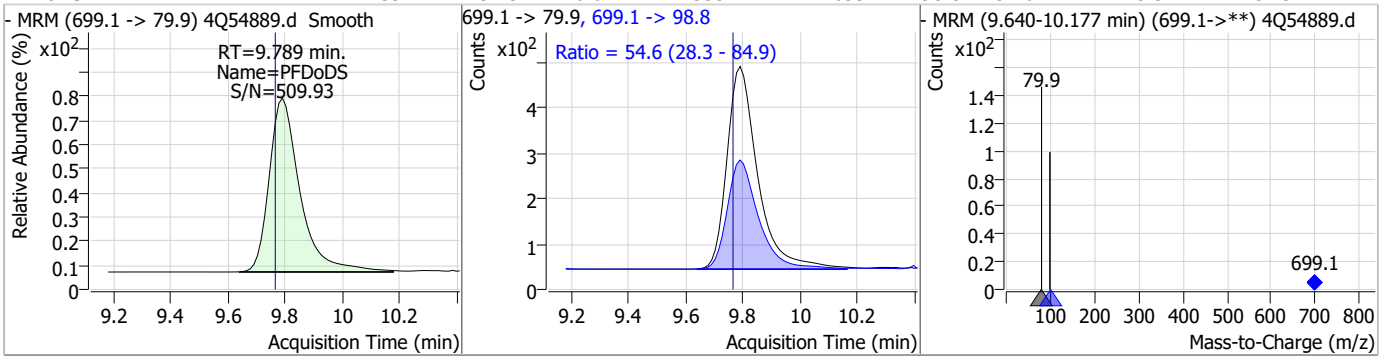
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.11	9.66	0.02	14321				



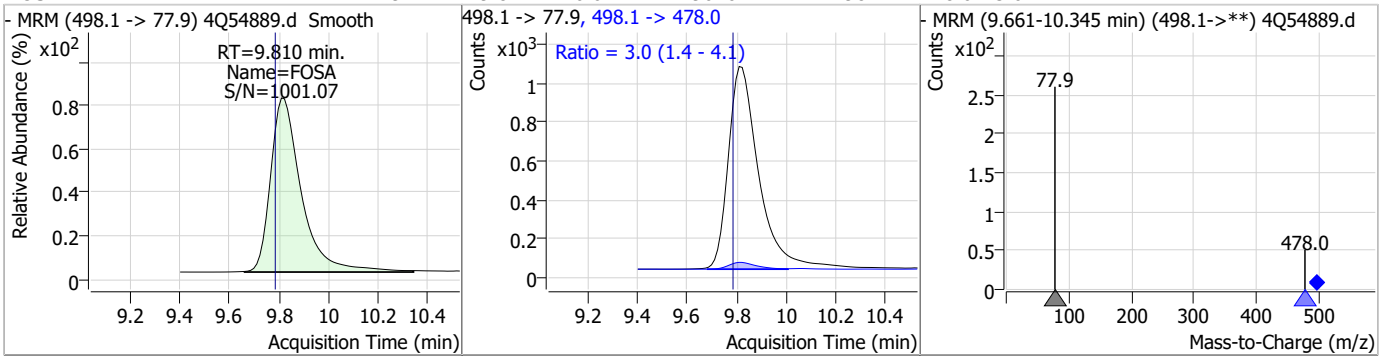
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.47	9.66	0.03	24610	713.1 -> 168.9	10.5	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.39	9.79	0.02	3352	699.1 -> 98.8	54.6	28.3	84.9

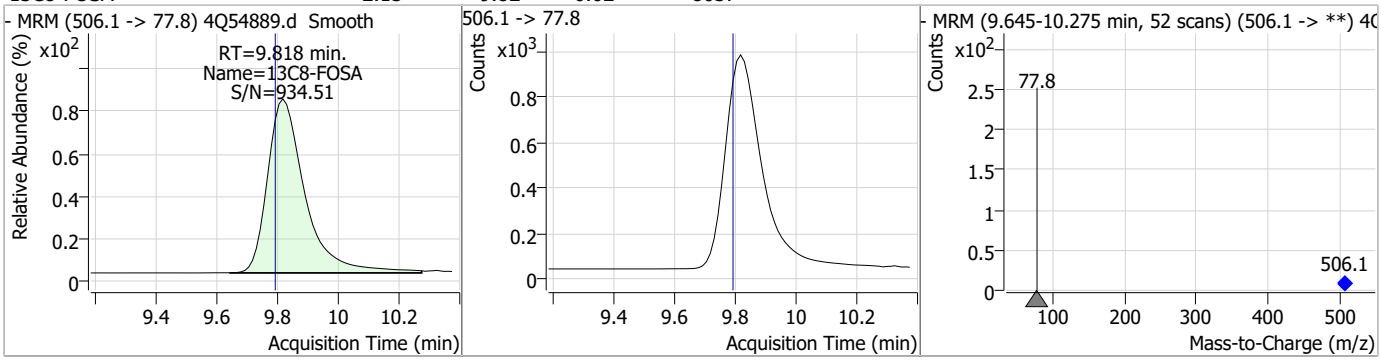


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.49	9.81	0.02	9026	498.1 -> 478.0	3.0	1.4	4.1

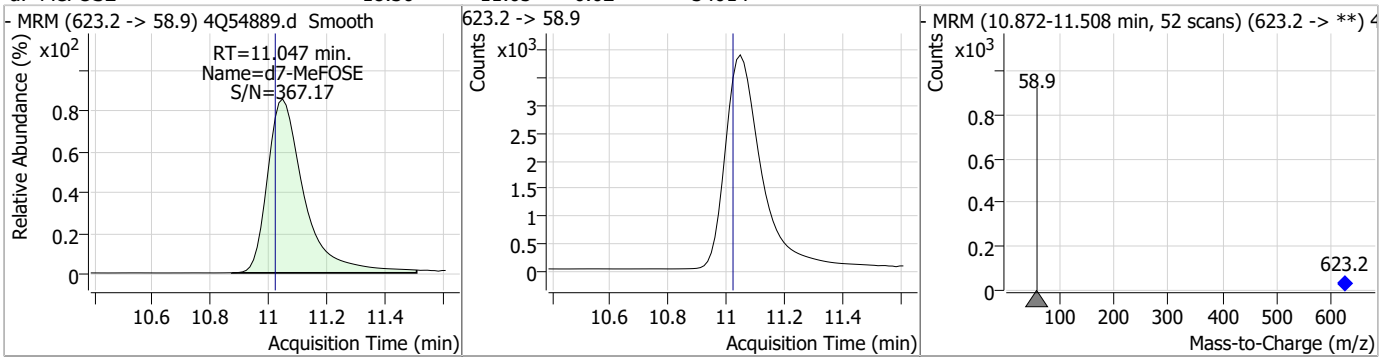


Perfluorinated Compounds by LC/MS/MS

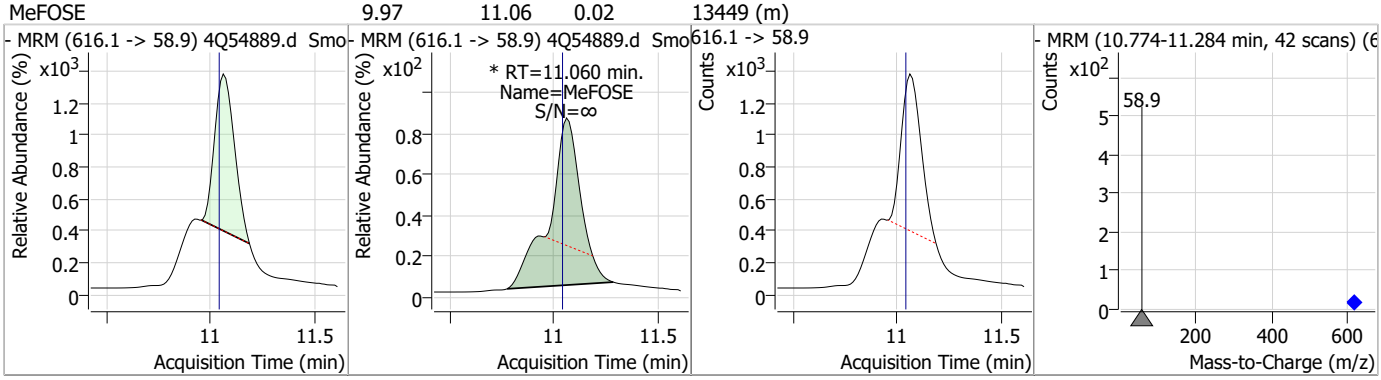
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.15	9.82	0.02	8057				



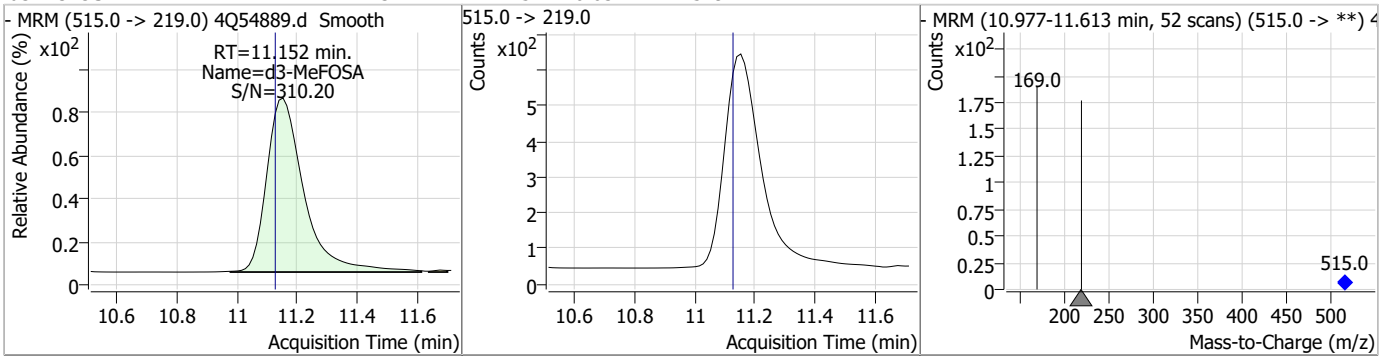
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	18.36	11.05	0.02	34014				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	9.97	11.06	0.02	13449 (m)				

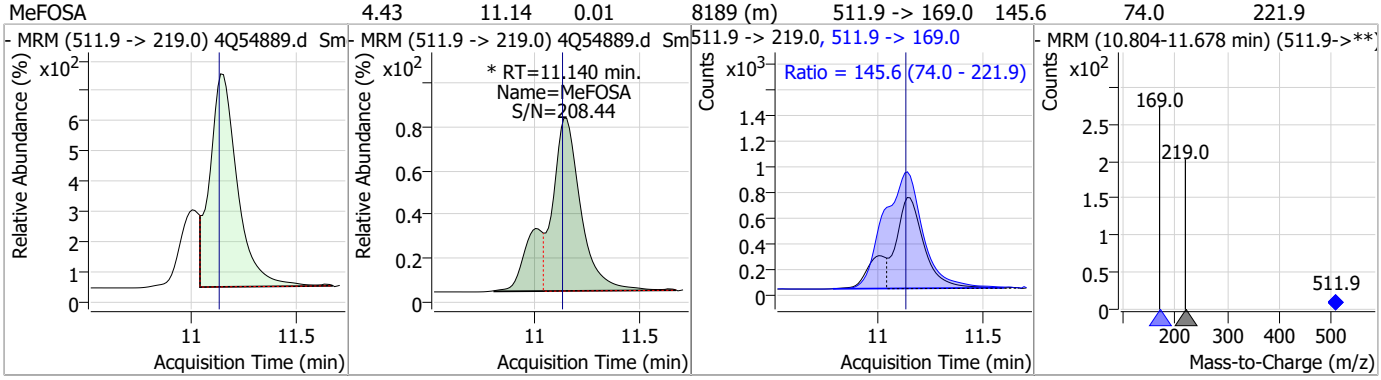


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.32	11.15	0.03	5192				

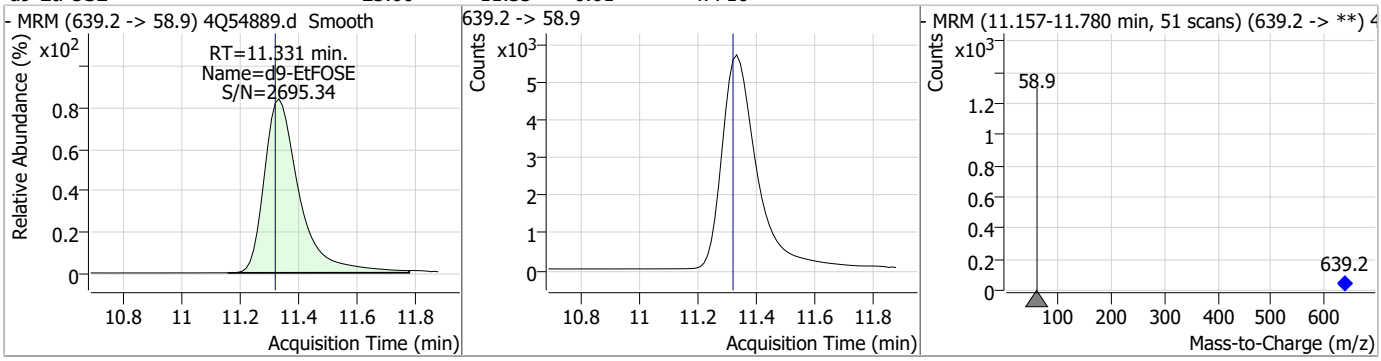


Perfluorinated Compounds by LC/MS/MS

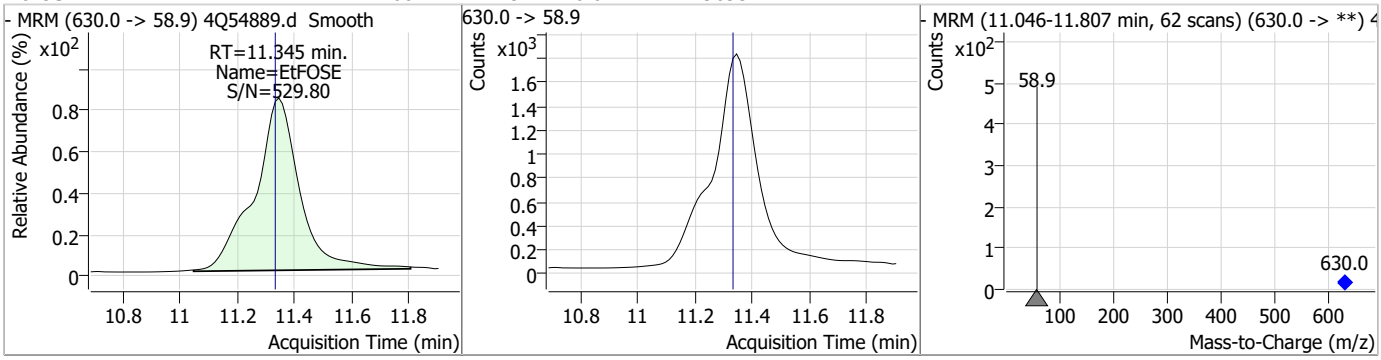
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.43	11.14	0.01	8189 (m)	511.9 -> 169.0	145.6	74.0	221.9



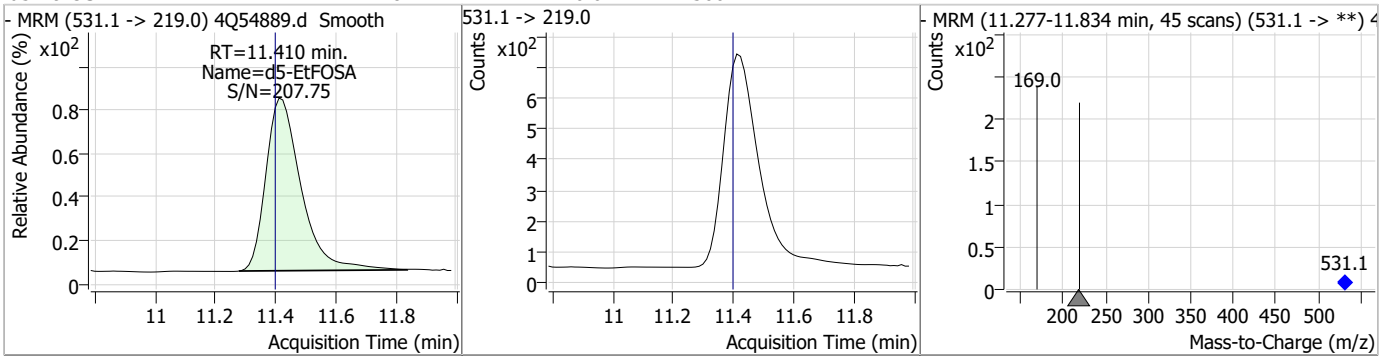
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.00	11.33	0.01	47716				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.66	11.34	0.01	19693				

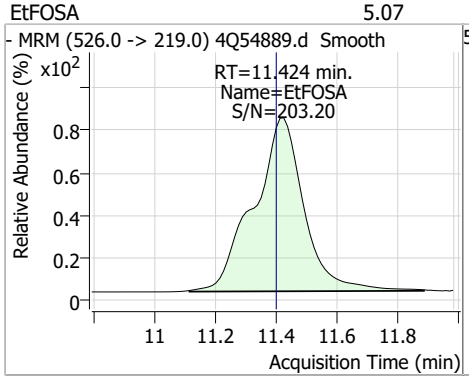


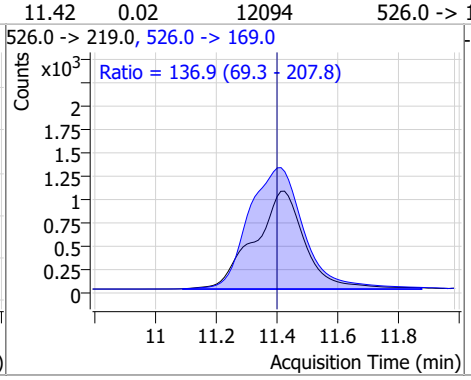
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.28	11.41	0.01	5601				

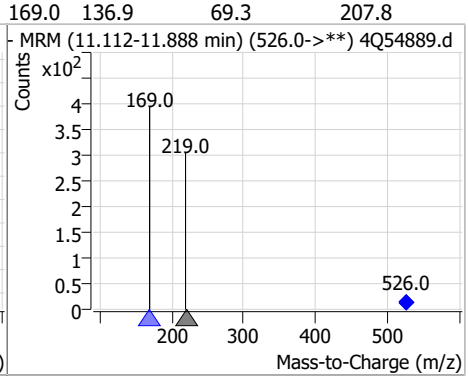


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	5.07	11.42	0.02	12094	526.0 -> 169.0	136.9	69.3	207.8







Manual Integration Approval Summary

Sample Number: OP495-MS
Lab FileID: 4Q54889.D
Injection Time: 12/08/23 20:50
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:57 Anna Ludwig
Supervisor approved: 12/11/23 16:36 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.14	Split peak
EtFOSAA	2991-50-6		8.31	Split peak
MeFOSE	24448-09-7		11.06	Split peak
MeFOSA	31506-32-8		11.14	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54891.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 9:19:42 PM
Sample Name : op495-dup
Vial : P2-D4
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP495,S4Q804,530,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.765	216.8 -> 171.9	95837	10.00	µg/L	0.091
M5-PFPeA	4.200	268.3 -> 223.0	37490	5.00	µg/L	0.037
M5-PFHxA	5.372	318.0 -> 273.0	30442	2.50	µg/L	0.037
M4-PFHpA	6.317	367.1 -> 322.0	29005	2.50	µg/L	0.025
M8-PFOA	7.001	421.1 -> 376.0	47821	2.50	µg/L	0.025
M9-PFNA	7.534	472.1 -> 427.0	17962	1.25	µg/L	0.012
M6-PFDA	8.029	519.1 -> 474.1	11495	1.25	µg/L	0.025
M7-PFUnDA	8.473	570.0 -> 525.1	13914	1.25	µg/L	0.025
M2-PFDoDA	8.892	615.1 -> 570.0	13723	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	13481	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	6946	2.50	µg/L	0.025
M3-PFBS	5.227	302.1 -> 79.9	8131	2.50	µg/L	0.038
M3-PFHxS	7.054	402.1 -> 79.9	7123	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	7858	2.50	µg/L	0.026
M2-4:2FTS	5.083	329.1 -> 80.9	946	5.00	µg/L	0.037
M2-6:2FTS	6.786	429.1 -> 80.9	2280	5.00	µg/L	0.037
M2-8:2FTS	7.828	529.1 -> 80.9	2922	5.00	µg/L	0.025
M3-MeFOSAA	8.111	573.2 -> 419.0	15860	5.00	µg/L	0.025
M3-HFPO-DA	5.727	286.9 -> 168.9	28516	10.00	µg/L	0.037
M5-EtFOSAA	8.309	589.2 -> 419.0	13050	5.00	µg/L	0.026
M7-MeFOSE	11.047	623.2 -> 58.9	28263	25.00	µg/L	0.025
M9-EtFOSE	11.331	639.2 -> 58.9	42374	25.00	µg/L	0.012
M5-EtFOSA	11.422	531.1 -> 219.0	5515	2.50	µg/L	0.025
M3-MeFOSA	11.139	515.0 -> 219.0	4581	2.50	µg/L	0.012
13C4-PFOS	8.144	502.8 -> 79.9	5731	2.50	µg/L	0.026
13C3-PFBA	2.768	216.0 -> 172.0	41483	5.00	µg/L	0.090
18O2-PFHxS	7.054	403.0 -> 83.9	3983	2.50	µg/L	0.013
13C4-PFOA	7.002	417.1 -> 372.0	48975	2.50	µg/L	0.025
13C2-PFDA	8.029	515.1 -> 470.1	13061	1.25	µg/L	0.025
13C5-PFNA	7.547	468.0 -> 423.0	17583	1.25	µg/L	0.038
13C2-PFHxA	5.373	315.1 -> 270.0	30685	2.50	µg/L	0.037
System Monitoring Compounds						
13C2-4:2FTS	5.083	329.1 -> 80.9	946	5.01	µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-6:2FTS	6.786	429.1 -> 80.9	2280	5.56	µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
13C2-8:2FTS	7.828	529.1 -> 80.9	2922	5.32	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C2-PFDoDA	8.892	615.1 -> 570.0	13723	1.05	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 84.1%		
13C2-PFTeDA	9.662	715.2 -> 670.0	13481	1.04	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 83.2%		
13C3-PFBS	5.227	302.1 -> 79.9	8131	2.66	µg/L	0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C3-PFHxS	7.054	402.1 -> 79.9	7123	2.85	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 114.1%	
13C4-PFBA	2.765	216.8 -> 171.9	95837	11.00 µg/L	0.091
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 110.0%	
13C4-PFHpA	6.317	367.1 -> 322.0	29005	2.68 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C5-PFHxA	5.372	318.0 -> 273.0	30442	2.69 µg/L	0.037
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.7%	
13C5-PFPeA	4.200	268.3 -> 223.0	37490	5.32 µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C6-PFDA	8.029	519.1 -> 474.1	11495	1.21 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C7-PFUnDA	8.473	570.0 -> 525.1	13914	1.24 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C8-FOSA	9.818	506.1 -> 77.8	6946	1.87 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 74.8%	
13C8-PFOA	7.001	421.1 -> 376.0	47821	2.64 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C8-PFOS	8.143	507.1 -> 79.9	7858	2.71 µg/L	0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C9-PFNA	7.534	472.1 -> 427.0	17962	1.28 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.0%	
d3-MeFOSAA	8.111	573.2 -> 419.0	15860	4.98 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C3-HFPO-DA	5.727	286.9 -> 168.9	28516	10.09 µg/L	0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
d3-MeFOSA	11.139	515.0 -> 219.0	4581	2.07 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 82.7%	
d5-EtFOSAA	8.309	589.2 -> 419.0	13050	4.85 µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d7-MeFOSE	11.047	623.2 -> 58.9	28263	15.42 µg/L	0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 61.7%	
d9-EtFOSE	11.331	639.2 -> 58.9	42374	20.65 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 82.6%	
d5-EtFOSA	11.422	531.1 -> 219.0	5515	2.27 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.8%	

Target Compounds					QValue
4:2FTS	-	327.1 -> 307.0 327.1 -> 80.9	-	N.D.	
6:2FTS	-	427.1 -> 407.0 427.1 -> 80.9	-	N.D.	
8:2FTS	-	527.1 -> 507.0 527.1 -> 80.8	-	N.D.	
EtFOSAA	-	584.2 -> 419.1 584.2 -> 526.0	-	N.D.	
FOSA	-	498.1 -> 77.9 498.1 -> 478.0	-	N.D.	
MeFOSAA	-	570.1 -> 419.0 570.1 -> 483.0	-	N.D.	
PFBA	-	212.8 -> 168.9	-	N.D.	
PFBS	-	298.7 -> 79.9 298.7 -> 98.8	-	N.D.	
PFDA	-	512.9 -> 469.0 512.9 -> 219.0	-	N.D.	
PFDoDA	-	613.1 -> 569.0 613.1 -> 319.0	-	N.D.	
PFDS	-	599.0 -> 79.9	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

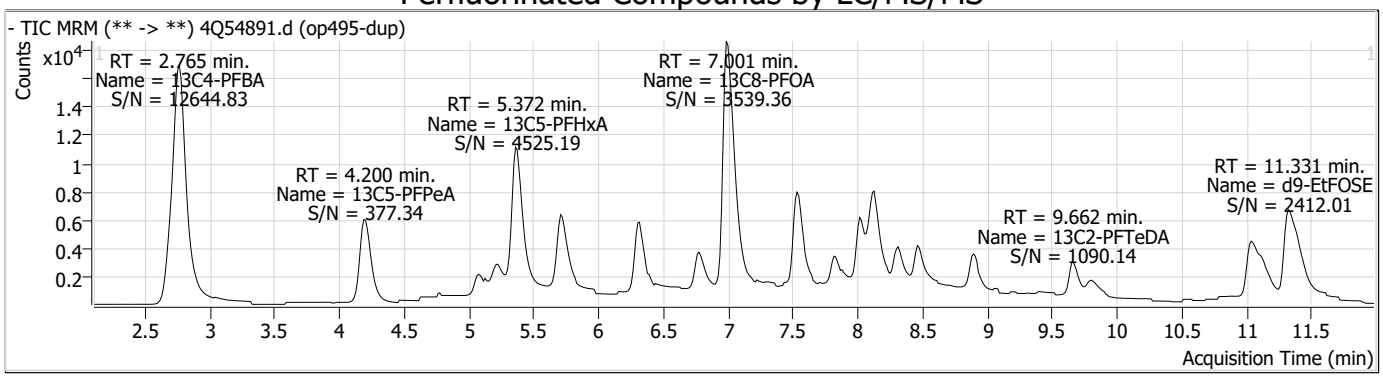
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		599.0 -> 98.8				
PFHpA	-	363.1 -> 319.0	-	N.D.		
		363.1 -> 169.0				
PFHpS	-	449.0 -> 79.9	-	N.D.		
		449.0 -> 98.9				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 118.9				
PFHxS	-	398.7 -> 79.9	-	N.D.		
		398.7 -> 98.9				
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	548.8 -> 79.9	-	N.D.		
		548.8 -> 98.9				
PFOA	-	413.0 -> 369.0	-	N.D.		
		413.0 -> 169.0				
PFOS	-	498.9 -> 79.9	-	N.D.		
		498.9 -> 98.8				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.1 -> 79.9	-	N.D.		
		349.1 -> 98.9				
PFTeDA	-	713.1 -> 669.0	-	N.D.		
		713.1 -> 168.9				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 168.9				
PFUnDA	-	563.1 -> 519.0	-	N.D.		
		563.1 -> 269.1				
11Cl-PF3OUdS	-	630.9 -> 450.9	-	N.D.		
		632.9 -> 452.9				
9Cl-PF3ONS	-	530.8 -> 351.0	-	N.D.		
		532.8 -> 353.0				
ADONA	-	376.9 -> 250.9	-	N.D.		
		376.9 -> 84.8				
HFPO-DA	-	284.9 -> 168.9	-	N.D.		
		284.9 -> 184.9				
3:3FTCA	-	241.0 -> 177.0	-	N.D.		
		241.0 -> 117.0				
5:3FTCA	-	341.0 -> 237.1	-	N.D.		
		341.0 -> 217.0				
7:3FTCA	-	441.0 -> 316.9	-	N.D.		
		441.0 -> 336.9				
EtFOSA	-	526.0 -> 219.0	-	N.D.		
		526.0 -> 169.0				
EtFOSE	-	630.0 -> 58.9	-	N.D.		
MeFOSA	-	511.9 -> 219.0	-	N.D.		
		511.9 -> 169.0				
MeFOSE	-	616.1 -> 58.9	-	N.D.		
PFDoDS	-	699.1 -> 79.9	-	N.D.		
		699.1 -> 98.8				
NFDHA	-	295.0 -> 201.0	-	N.D.		
		295.0 -> 84.9				
PFMBA	-	279.0 -> 85.1	-	N.D.		
PFMPA	-	229.0 -> 84.9	-	N.D.		
PFEESA	-	314.8 -> 134.9	-	N.D.		
		314.8 -> 82.9				

 # = Qualifier out of range, m = manually integrated, + = Area summed

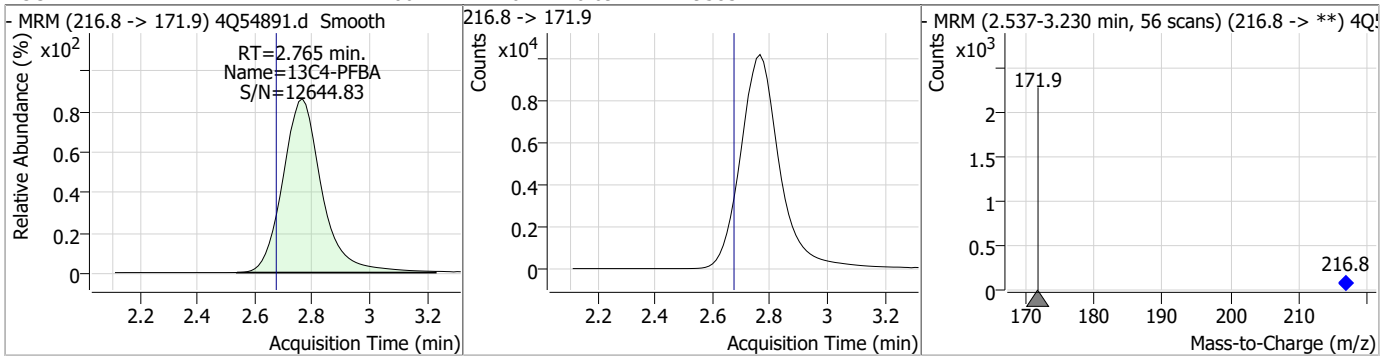
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

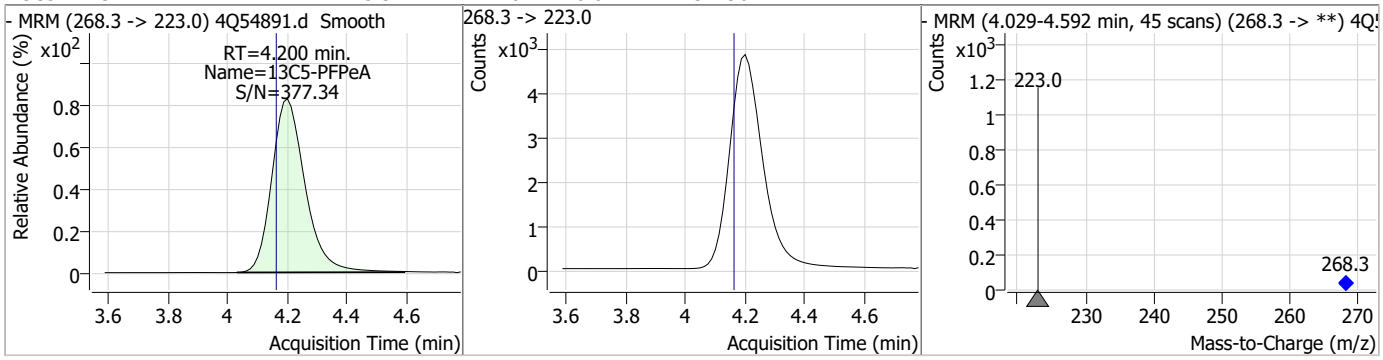
Perfluorinated Compounds by LC/MS/MS



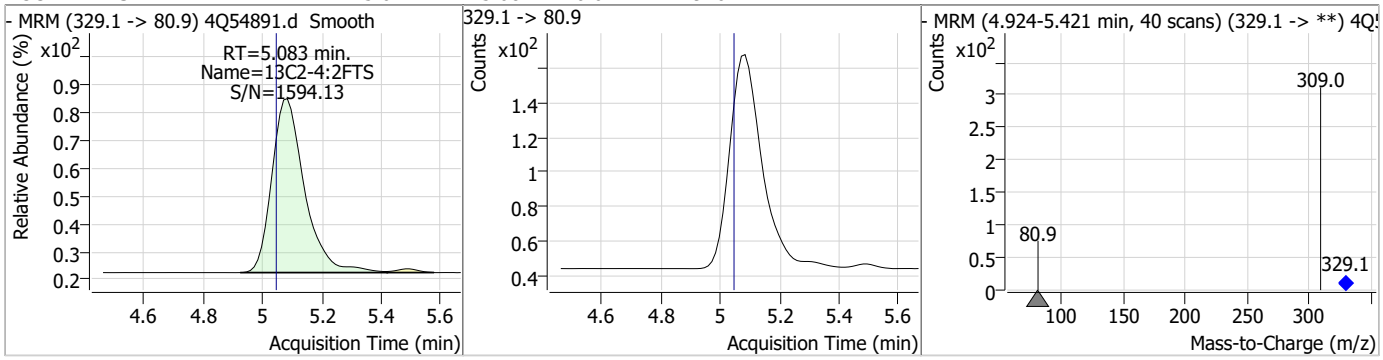
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.00	2.76	0.09	95837				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.32	4.20	0.04	37490				

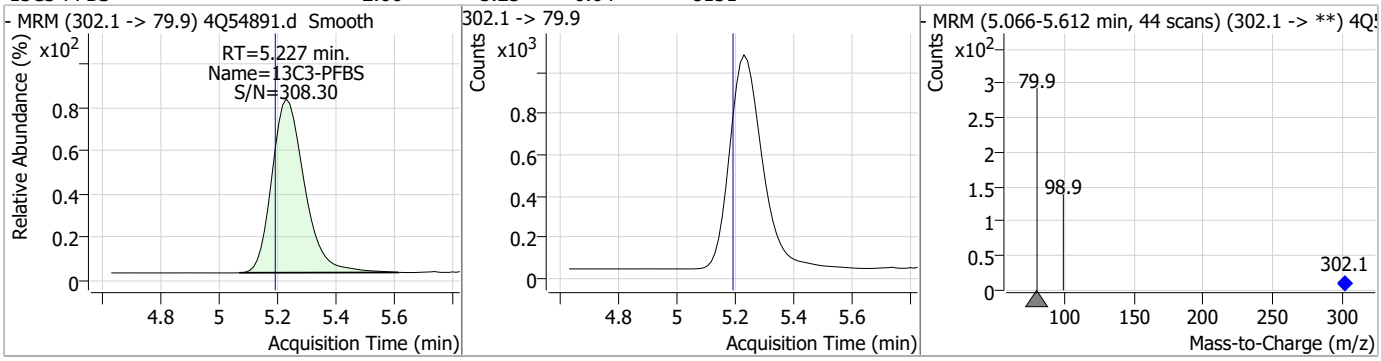


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.01	5.08	0.04	946				

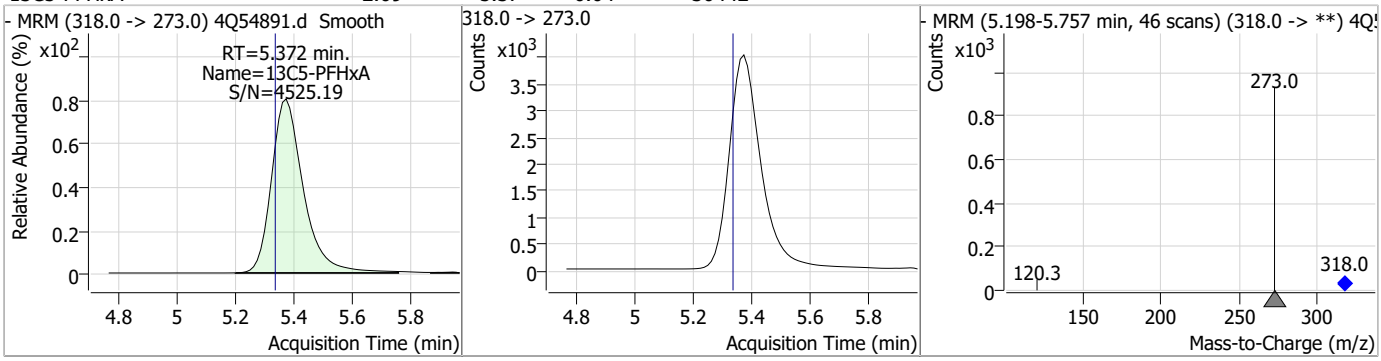


Perfluorinated Compounds by LC/MS/MS

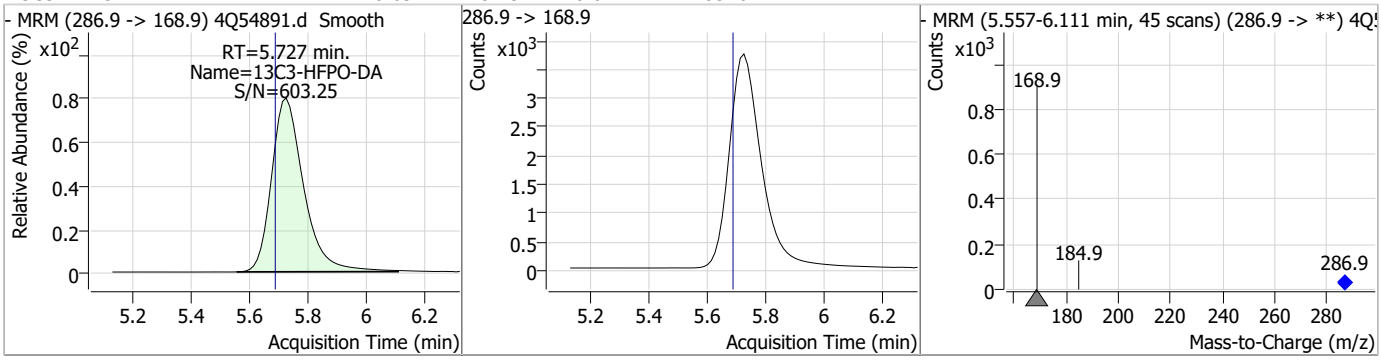
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.66	5.23	0.04	8131				



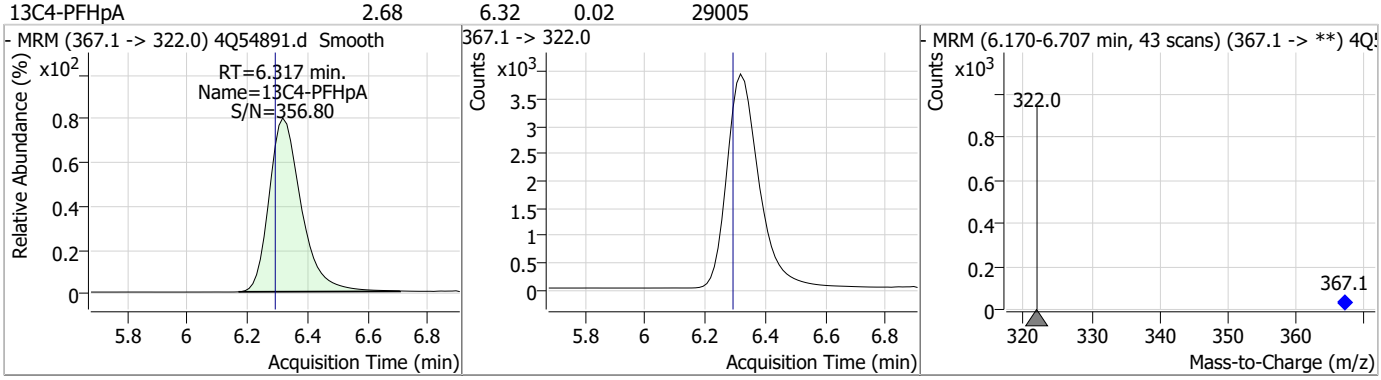
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.69	5.37	0.04	30442				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.09	5.73	0.04	28516				

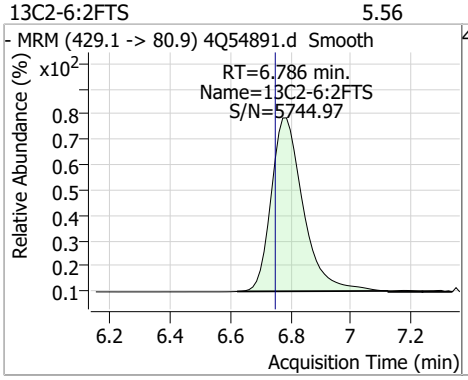


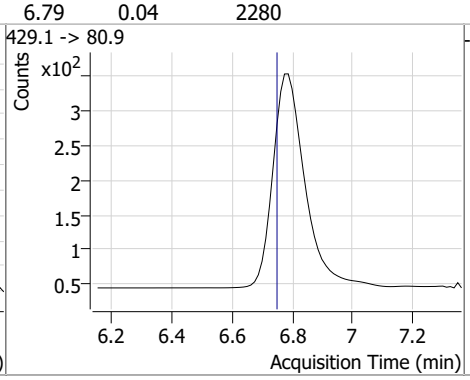
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.68	6.32	0.02	29005				

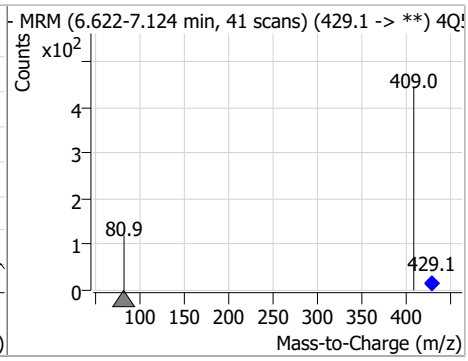


Perfluorinated Compounds by LC/MS/MS

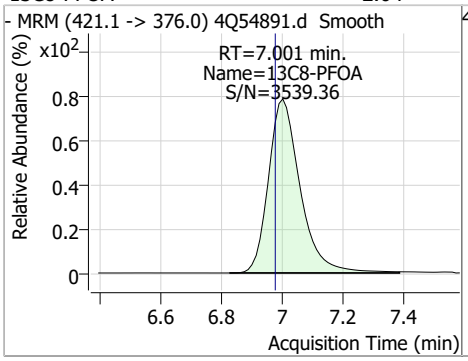
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.56	6.79	0.04	2280				

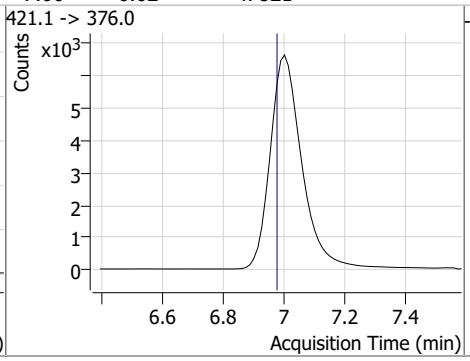


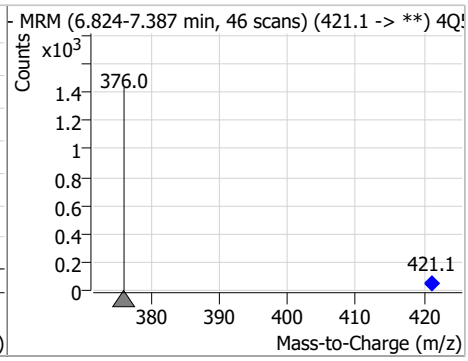




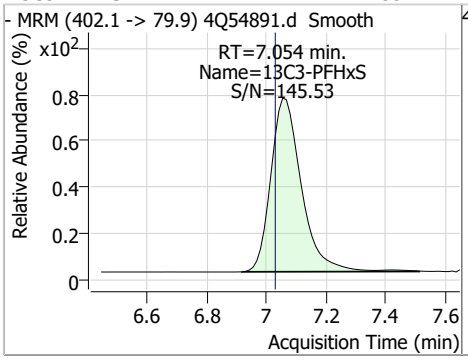
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.64	7.00	0.02	47821				

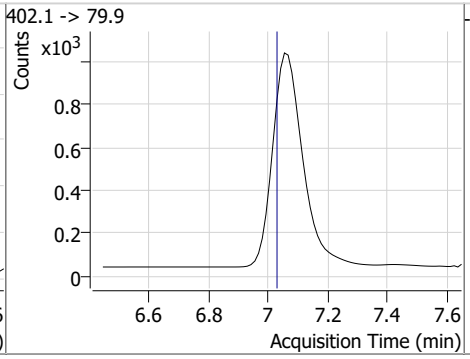


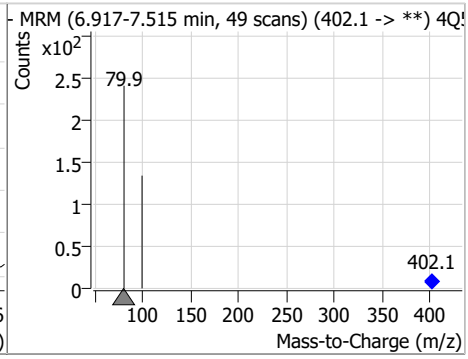




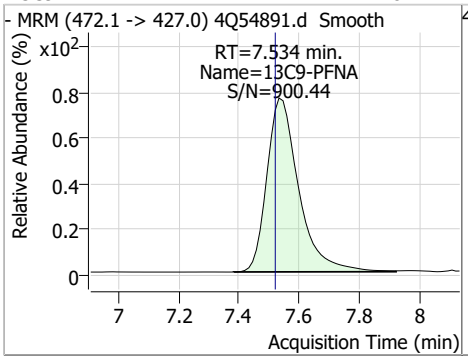
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.85	7.05	0.03	7123				

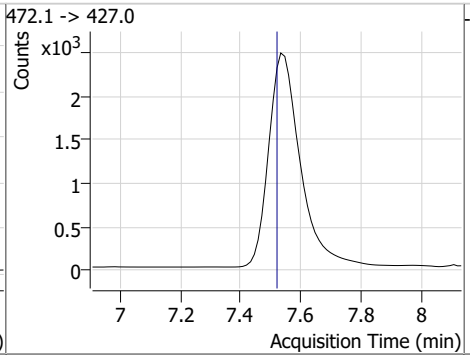


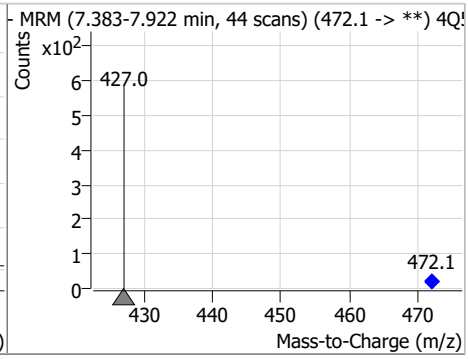




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.53	0.01	17962				

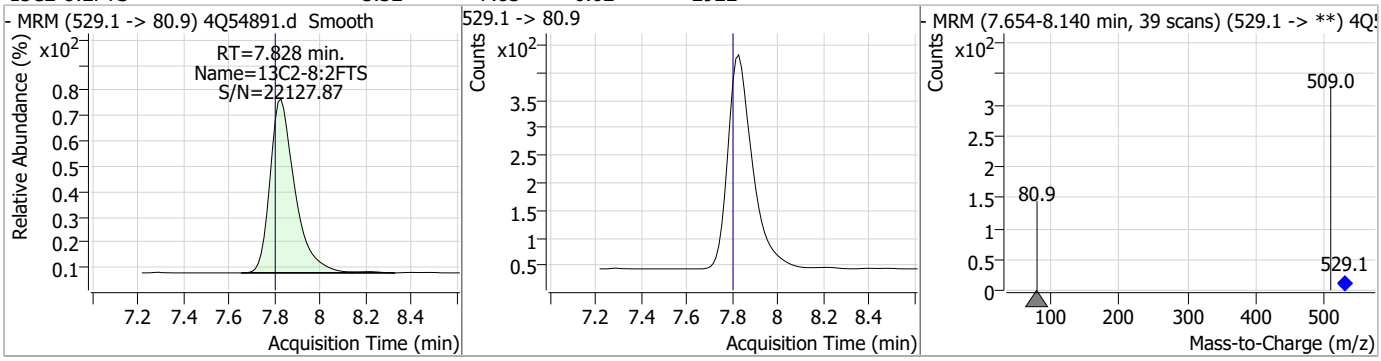




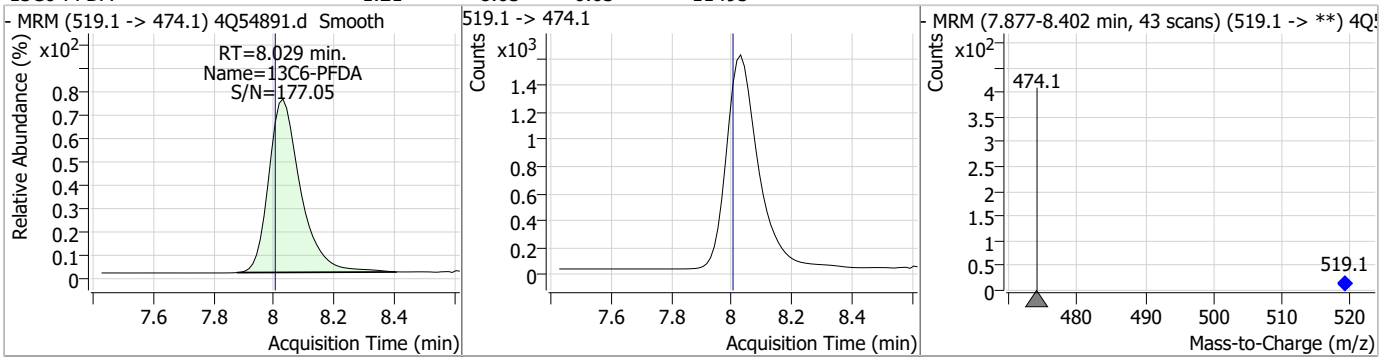


Perfluorinated Compounds by LC/MS/MS

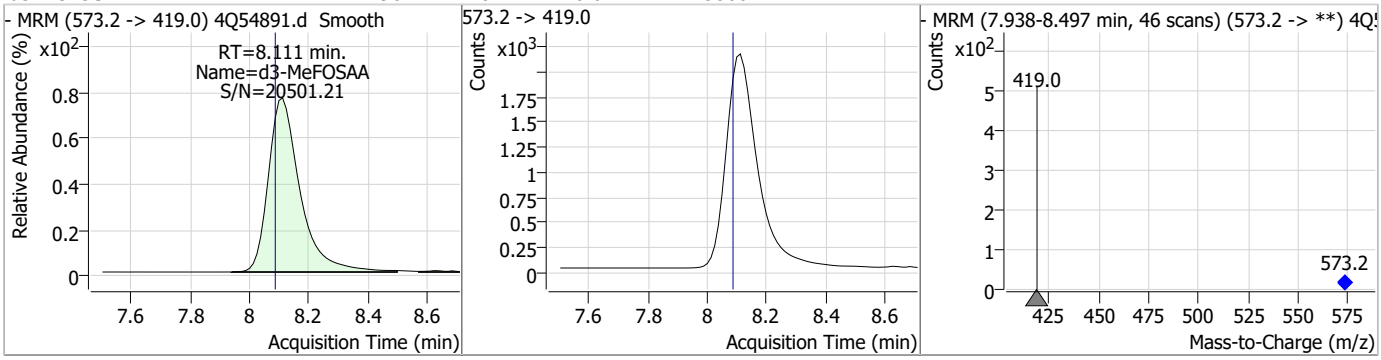
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.32	7.83	0.02	2922				



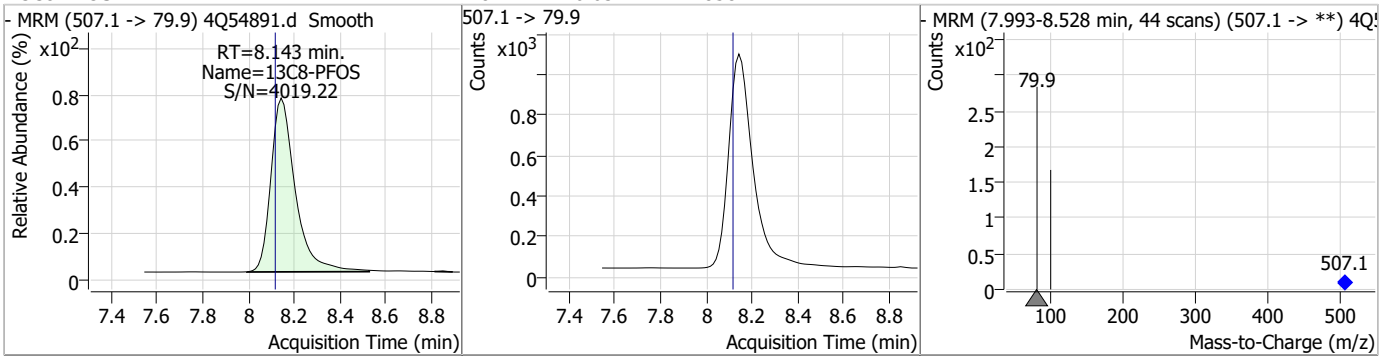
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.21	8.03	0.03	11495				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.98	8.11	0.02	15860				

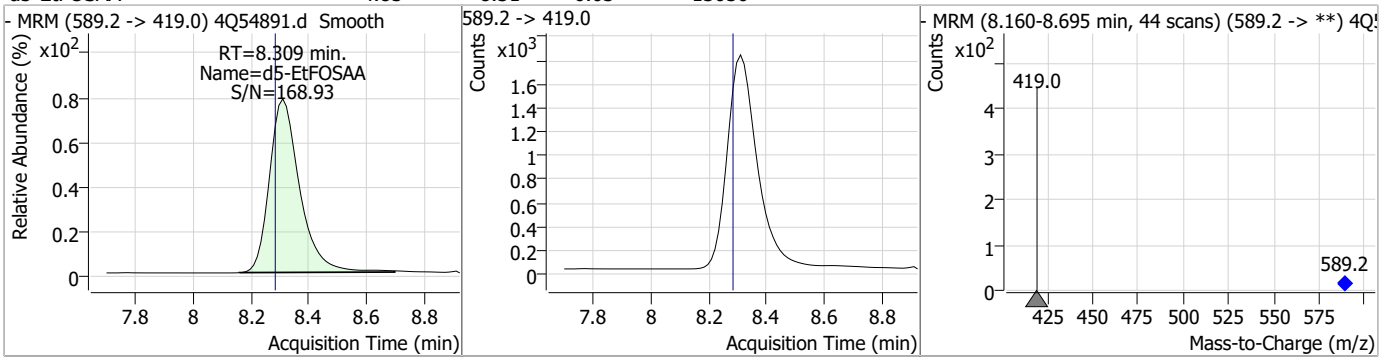


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.71	8.14	0.03	7858				

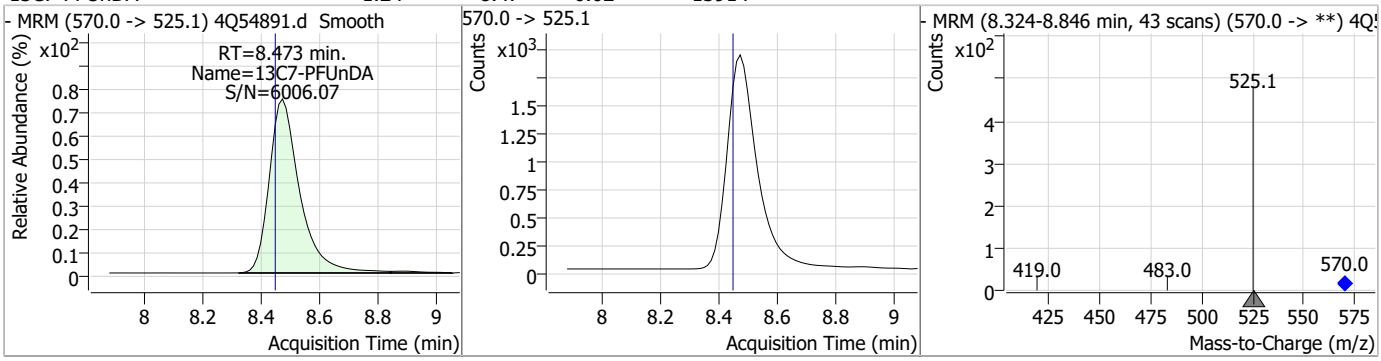


Perfluorinated Compounds by LC/MS/MS

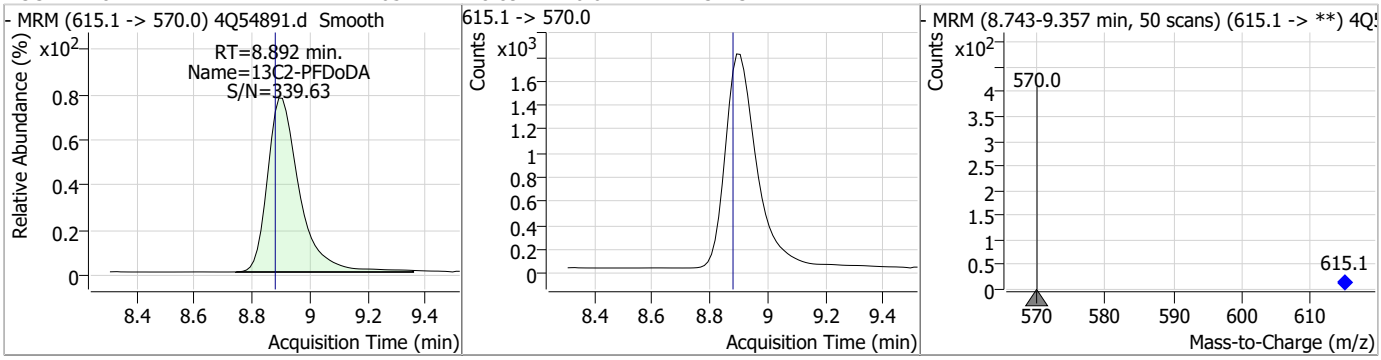
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.85	8.31	0.03	13050				



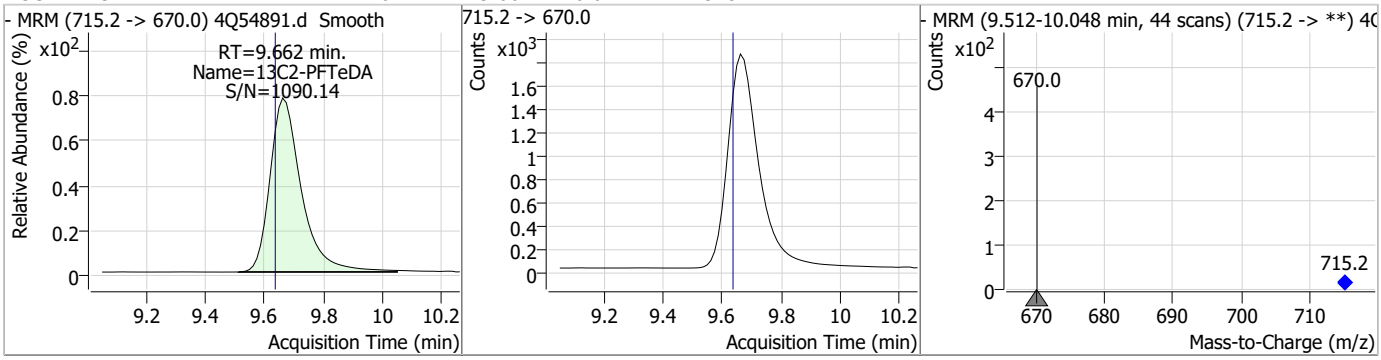
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.47	0.02	13914				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.05	8.89	0.01	13723				

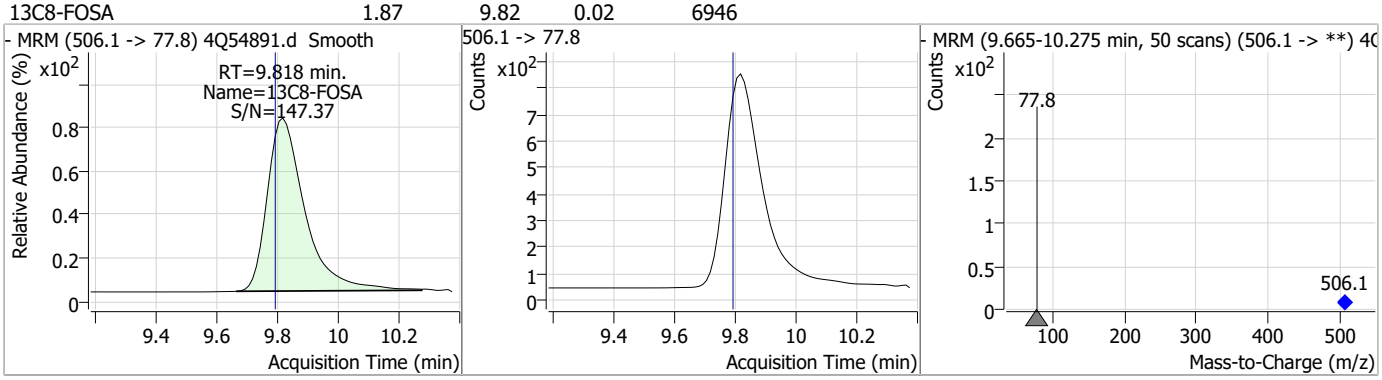


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.04	9.66	0.02	13481				

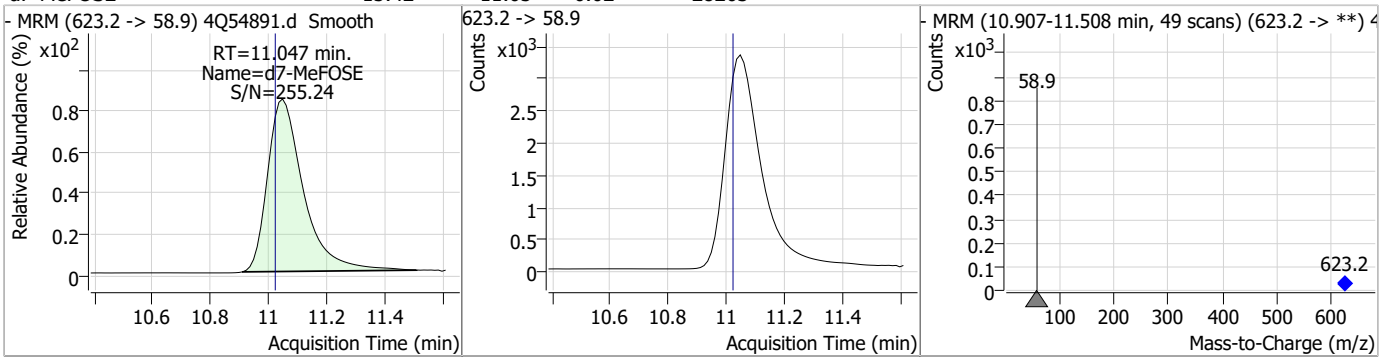


Perfluorinated Compounds by LC/MS/MS

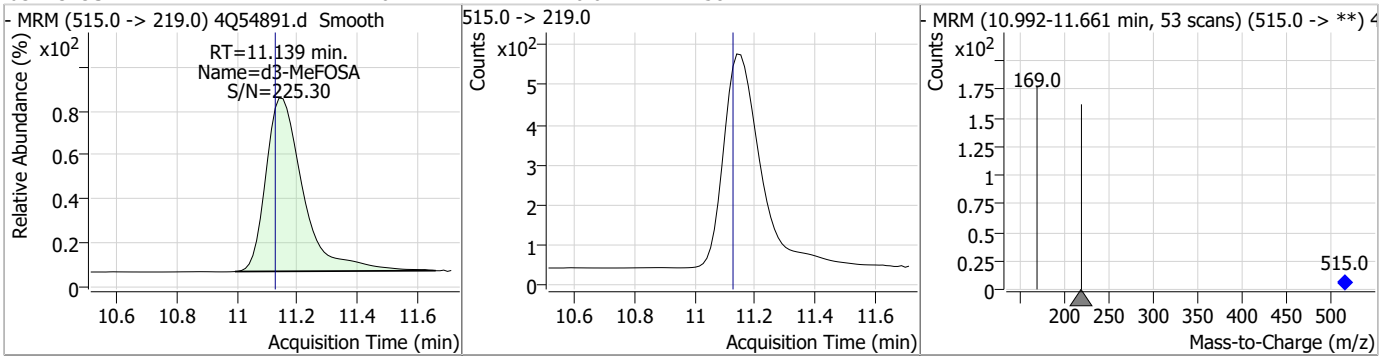
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.87	9.82	0.02	6946				



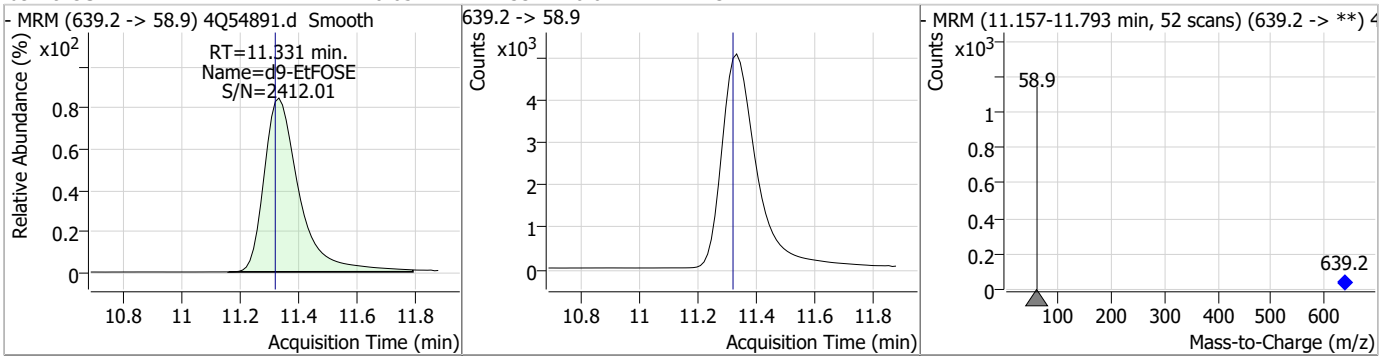
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	15.42	11.05	0.02	28263				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.07	11.14	0.01	4581				

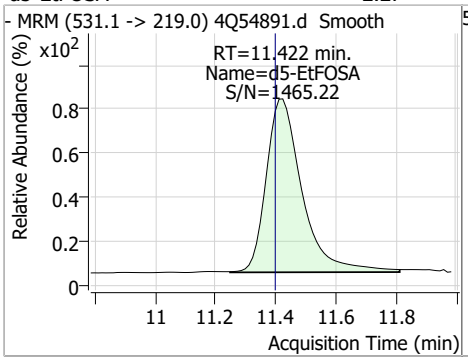


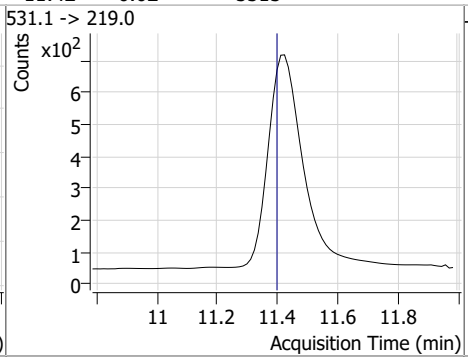
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	20.65	11.33	0.01	42374				

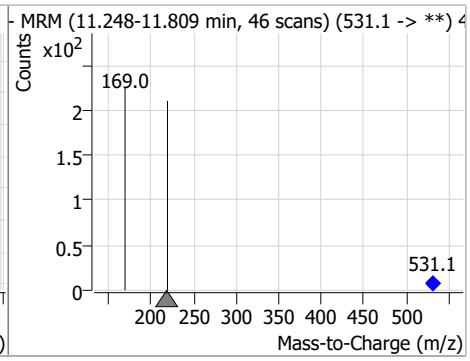


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.27	11.42	0.02	5515				







Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

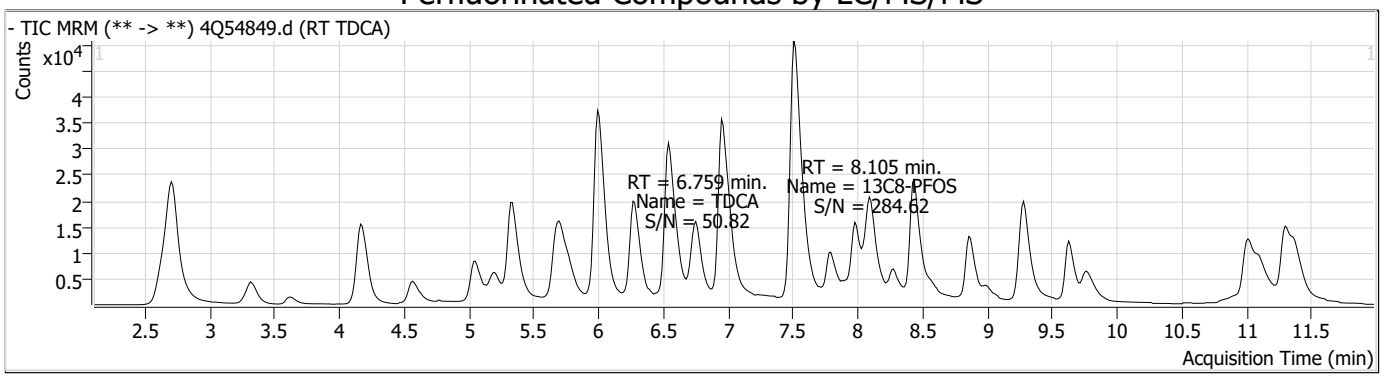
Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54849.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 10:54:00 AM
Sample Name : RT TDCA
Vial : P1-B1
DA Method File : TDCA.quantmethod.xml
Batch Name : s4q804_TDCA.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

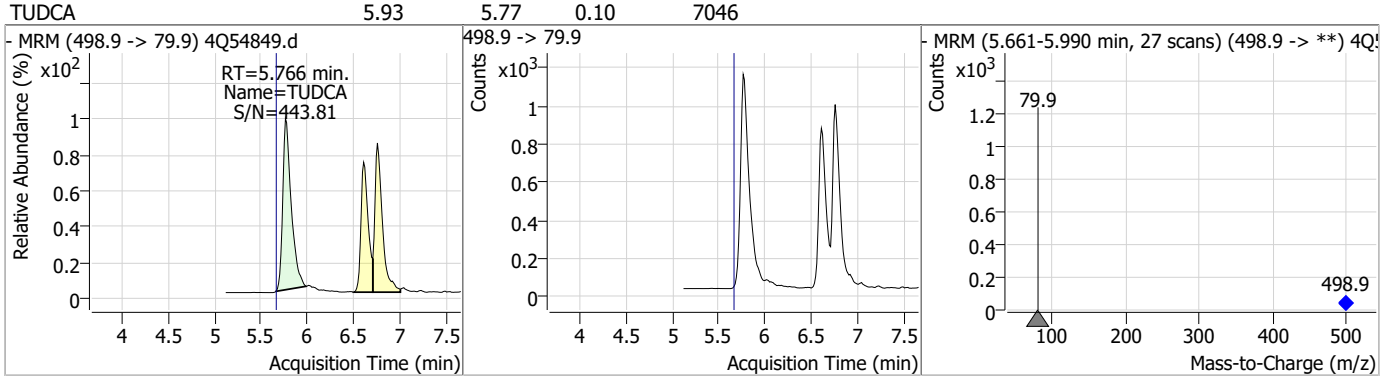
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Internal Standards							
M8-PFOS	8.105	507.1 -> 79.9	13411	2.50	µg/L		0.062
13C4-PFOS	8.106	502.8 -> 79.9	10969	2.50	µg/L		0.062
System Monitoring Compounds							
13C8-PFOS	8.105	507.1 -> 79.9	13411	3.10	µg/L		0.062
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 124.0%			
Target Compounds							QValue
PFOS	8.106	498.9 -> 79.9	12889	2.81	µg/L	m	92
		498.9 -> 98.8	5873				
TCDCA	6.610	498.9 -> 79.9	4217	6.81	ng/ml		100
TDCA	6.759	498.9 -> 79.9	5427	9.68	ng/ml		100
TUDCA	5.766	498.9 -> 79.9	7046	5.93	ng/ml		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

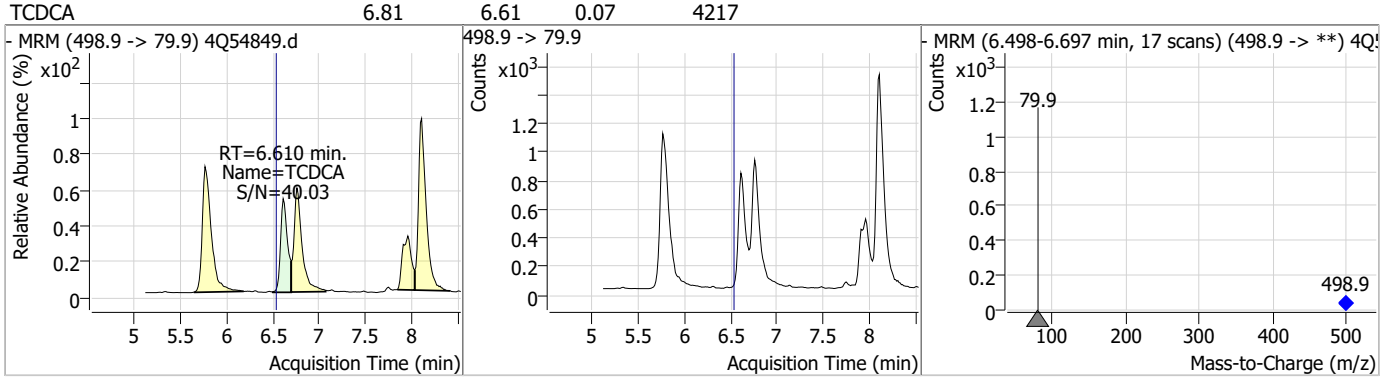
Perfluorinated Compounds by LC/MS/MS



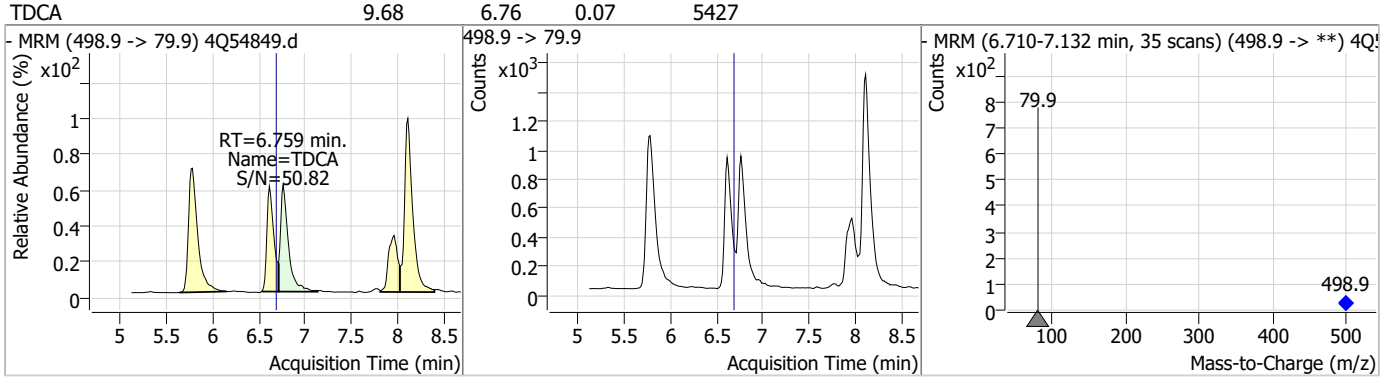
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TUDCA	5.93	5.77	0.10	7046				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TCDCA	6.81	6.61	0.07	4217				

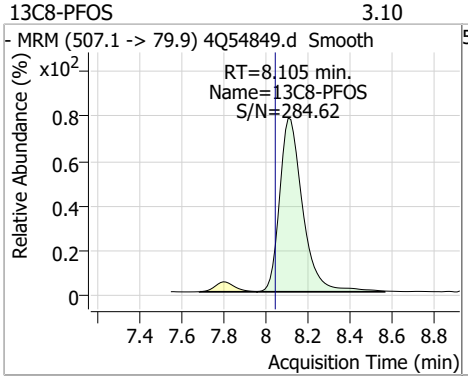


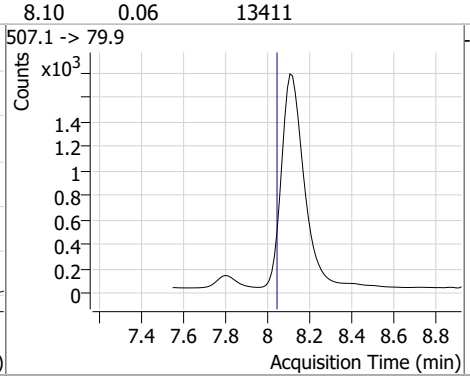
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
TDCA	9.68	6.76	0.07	5427				

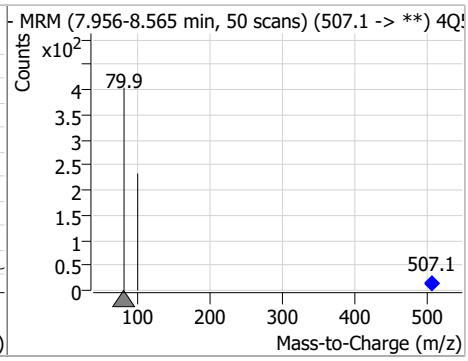


Perfluorinated Compounds by LC/MS/MS

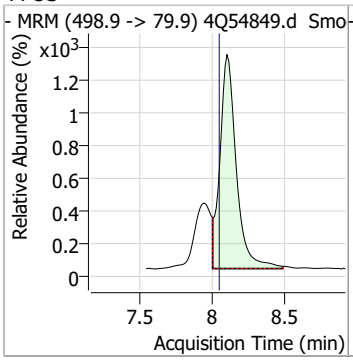
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.10	8.10	0.06	13411				

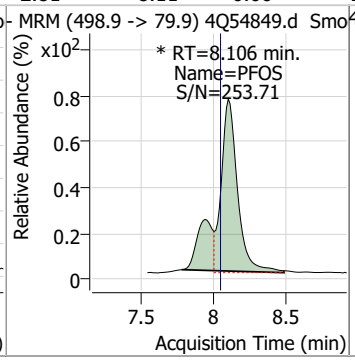


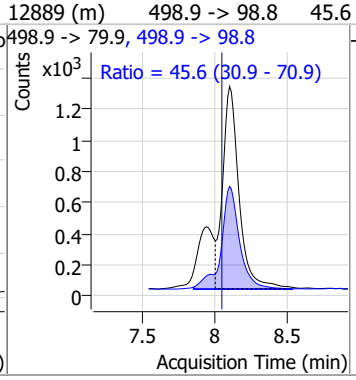


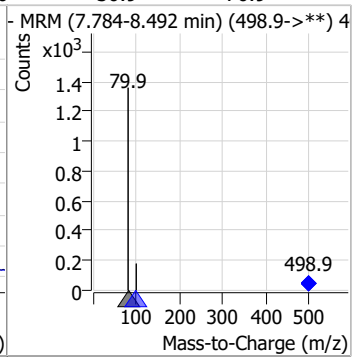


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.81	8.11	0.06	12889 (m)	498.9 -> 98.8	45.6	30.9	70.9









Manual Integration Approval Summary

Sample Number:	S4Q804-RT	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q54849.D	**Analyst approved:**	12/10/23 12:52 Anna Ludwig
Injection Time:	12/08/23 10:54	**Supervisor approved:**	12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54850.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 11:08:43 AM
Sample Name : RT BR_LN
Vial : P1-B2
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	109577	10.00	µg/L	0.012
M5-PFPeA	4.162	268.3 -> 223.0	48116	5.00	µg/L	0.000
M5-PFHxA	5.334	318.0 -> 273.0	38330	2.50	µg/L	0.000
M4-PFHpA	6.280	367.1 -> 322.0	35630	2.50	µg/L	-0.012
M8-PFOA	6.964	421.1 -> 376.0	56973	2.50	µg/L	-0.012
M9-PFNA	7.509	472.1 -> 427.0	22614	1.25	µg/L	-0.012
M6-PFDA	7.992	519.1 -> 474.1	16475	1.25	µg/L	-0.012
M7-PFUnDA	8.436	570.0 -> 525.1	18484	1.25	µg/L	-0.012
M2-PFDoDA	8.867	615.1 -> 570.0	20923	1.25	µg/L	-0.012
M2-PFTeDA	9.637	715.2 -> 670.0	21263	1.25	µg/L	0.000
M8-FOSA	9.781	506.1 -> 77.8	11885	2.50	µg/L	-0.012
M3-PFBS	5.190	302.1 -> 79.9	10561	2.50	µg/L	0.000
M3-PFHxS	7.029	402.1 -> 79.9	8520	2.50	µg/L	0.000
M8-PFOS	8.117	507.1 -> 79.9	9271	2.50	µg/L	0.000
M2-4:2FTS	5.046	329.1 -> 80.9	1179	5.00	µg/L	0.000
M2-6:2FTS	6.748	429.1 -> 80.9	2435	5.00	µg/L	0.000
M2-8:2FTS	7.791	529.1 -> 80.9	3373	5.00	µg/L	-0.012
M3-MeFOSAA	8.074	573.2 -> 419.0	20080	5.00	µg/L	-0.012
M3-HFPO-DA	5.689	286.9 -> 168.9	38767	10.00	µg/L	0.000
M5-EtFOSAA	8.271	589.2 -> 419.0	17695	5.00	µg/L	-0.012
M7-MeFOSE	11.022	623.2 -> 58.9	54556	25.00	µg/L	0.000
M9-EtFOSE	11.306	639.2 -> 58.9	65060	25.00	µg/L	-0.012
M5-EtFOSA	11.398	531.1 -> 219.0	7671	2.50	µg/L	0.000
M3-MeFOSA	11.114	515.0 -> 219.0	7453	2.50	µg/L	-0.012
13C4-PFOS	8.106	502.8 -> 79.9	7793	2.50	µg/L	-0.012
13C3-PFBA	2.691	216.0 -> 172.0	52810	5.00	µg/L	0.013
18O2-PFHxS	7.028	403.0 -> 83.9	5235	2.50	µg/L	-0.012
13C4-PFOA	6.964	417.1 -> 372.0	59749	2.50	µg/L	-0.012
13C2-PFDA	7.992	515.1 -> 470.1	17180	1.25	µg/L	-0.012
13C5-PFNA	7.509	468.0 -> 423.0	22242	1.25	µg/L	0.000
13C2-PFHxA	5.335	315.1 -> 270.0	40598	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.046	329.1 -> 80.9	1179	4.75	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C2-6:2FTS	6.748	429.1 -> 80.9	2435	4.52	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.4%		
13C2-8:2FTS	7.791	529.1 -> 80.9	3373	4.67	µg/L	-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C2-PFDoDA	8.867	615.1 -> 570.0	20923	1.22	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C2-PFTeDA	9.637	715.2 -> 670.0	21263	1.25	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C3-PFBS	5.190	302.1 -> 79.9	10561	2.63	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C3-PFHxS	7.029	402.1 -> 79.9	8520	2.60	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C4-PFBA	2.686	216.8 -> 171.9	109577	9.88 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C4-PFHpA	6.280	367.1 -> 322.0	35630	2.49 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C5-PFHxA	5.334	318.0 -> 273.0	38330	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFPeA	4.162	268.3 -> 223.0	48116	5.16 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C6-PFDA	7.992	519.1 -> 474.1	16475	1.32 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C7-PFUnDA	8.436	570.0 -> 525.1	18484	1.25 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C8-FOSA	9.781	506.1 -> 77.8	11885	2.35 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C8-PFOA	6.964	421.1 -> 376.0	56973	2.58 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C8-PFOS	8.117	507.1 -> 79.9	9271	2.35 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C9-PFNA	7.509	472.1 -> 427.0	22614	1.27 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%		
d3-MeFOSAA	8.074	573.2 -> 419.0	20080	4.64 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C3-HFPO-DA	5.689	286.9 -> 168.9	38767	10.37 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
d3-MeFOSA	11.114	515.0 -> 219.0	7453	2.47 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%		
d5-EtFOSAA	8.271	589.2 -> 419.0	17695	4.84 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
d7-MeFOSE	11.022	623.2 -> 58.9	54556	21.90 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 87.6%		
d9-EtFOSE	11.306	639.2 -> 58.9	65060	23.32 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
d5-EtFOSA	11.398	531.1 -> 219.0	7671	2.32 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.9%		
Target Compounds						**QValue**
4:2FTS	5.047	327.1 -> 307.0	103905	51.16 µg/L		97
		327.1 -> 80.9	42237			
6:2FTS	6.749	427.1 -> 407.0	133922	52.32 µg/L		98
		427.1 -> 80.9	47757			
8:2FTS	7.792	527.1 -> 507.0	96759	54.43 µg/L		98
		527.1 -> 80.8	37751			
EtFOSAA	8.284	584.2 -> 419.1	40376	12.51 µg/L		85
		584.2 -> 526.0	16337			
FOSA	9.785	498.1 -> 77.9	152926	28.63 µg/L	m	98
		498.1 -> 478.0	5436			
MeFOSAA	8.075	570.1 -> 419.0	42693	14.83 µg/L		93
		570.1 -> 483.0	8287			
PFBA	2.682	212.8 -> 168.9	181473	51.71 µg/L		100
PFBS	5.191	298.7 -> 79.9	36638	11.18 µg/L		97
		298.7 -> 98.8	14206			
PFDA	7.992	512.9 -> 469.0	147416	12.18 µg/L		99
		512.9 -> 219.0	29566			
PFDoDA	8.868	613.1 -> 569.0	208217	13.82 µg/L		100
		613.1 -> 319.0	36008			
PFDS	9.008	599.0 -> 79.9	31505	12.77 µg/L		93

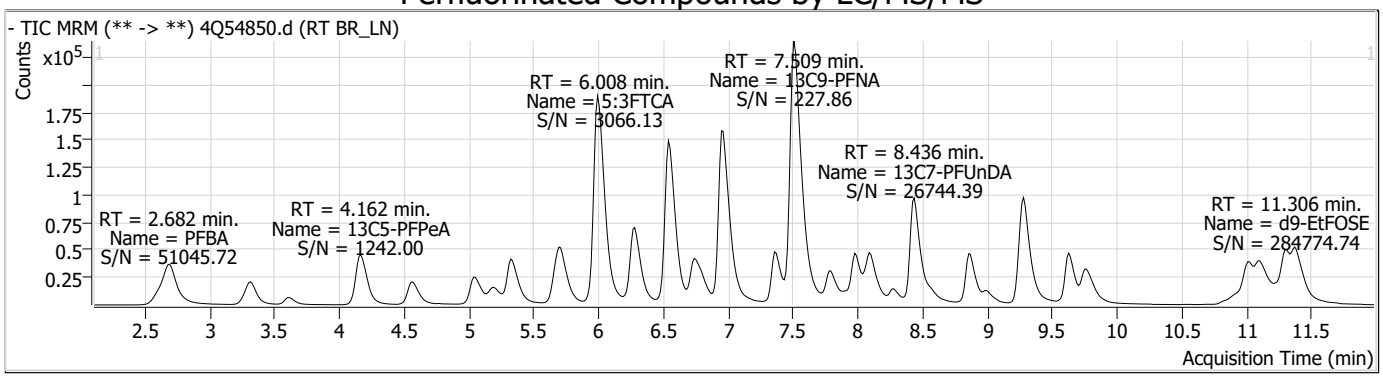
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	15050				
PFHpA	6.280	363.1 -> 319.0	275243	13.72	µg/L		98
		363.1 -> 169.0	47994				
PFHpS	7.612	449.0 -> 79.9	44856	12.19	µg/L		100
		449.0 -> 98.9	23353				
PFHxA	5.337	313.0 -> 269.0	157141	12.85	µg/L		99
		313.0 -> 118.9	5108				
PFHxS	7.030	398.7 -> 79.9	31747	11.55	µg/L	m	94
		398.7 -> 98.9	16274				
PFNA	7.371	463.0 -> 419.0	385448	29.01	µg/L	m	96
		463.0 -> 219.0	96237				
PFNS	8.574	548.8 -> 79.9	21414	13.54	µg/L		95
		548.8 -> 98.9	11287				
PFOA	6.965	413.0 -> 369.0	656626	28.03	µg/L	m	97
		413.0 -> 169.0	138186				
PFOS	8.106	498.9 -> 79.9	46215	11.98	µg/L	#m	52
		498.9 -> 98.8	20888				
PFPeA	4.164	263.0 -> 219.0	244735	25.85	µg/L		100
PFPeS	6.282	349.1 -> 79.9	32626	12.61	µg/L		97
		349.1 -> 98.9	14406				
PFTeDA	9.637	713.1 -> 669.0	198691	13.43	µg/L		99
		713.1 -> 168.9	20078				
PFTrDA	9.267	663.0 -> 619.0	229108	13.99	µg/L		98
		663.0 -> 168.9	32225				
PFUnDA	8.437	563.1 -> 519.0	173424	12.90	µg/L		100
		563.1 -> 269.1	37151				
11Cl-PF3OUdS	9.294	630.9 -> 450.9	263908	24.72	µg/L		99
		632.9 -> 452.9	81419				
9Cl-PF3ONS	8.438	530.8 -> 351.0	251590	23.32	µg/L		100
		532.8 -> 353.0	76603				
ADONA	6.556	376.9 -> 250.9	696640	26.61	µg/L		100
		376.9 -> 84.8	167896				
HFPO-DA	5.690	284.9 -> 168.9	97169	26.20	µg/L		100
		284.9 -> 184.9	9150				
3:3FTCA	3.617	241.0 -> 177.0	35968	64.47	µg/L		100
		241.0 -> 117.0	3208				
5:3FTCA	6.008	341.0 -> 237.1	698089	319.99	µg/L		100
		341.0 -> 217.0	499659				
7:3FTCA	7.524	441.0 -> 316.9	364678	318.77	µg/L		98
		441.0 -> 336.9	857839				
EtFOSA	11.399	526.0 -> 219.0	145844	44.66	µg/L		96
		526.0 -> 169.0	208885				
EtFOSE	11.320	630.0 -> 58.9	190689	82.82	µg/L		100
MeFOSA	11.115	511.9 -> 219.0	115075	43.36	µg/L	m	98
		511.9 -> 169.0	167905				
MeFOSE	11.035	616.1 -> 58.9	190571	88.04	µg/L		100
PFDoDS	9.765	699.1 -> 79.9	24953	13.26	µg/L		97
		699.1 -> 98.8	13582				
NFDHA	5.216	295.0 -> 201.0	21479	24.79	µg/L		97
		295.0 -> 84.9	5327				
PFMBA	4.566	279.0 -> 85.1	131289	25.19	µg/L		100
PFMPA	3.315	229.0 -> 84.9	145882	25.47	µg/L		100
PFEESA	5.722	314.8 -> 134.9	209661	23.19	µg/L		99
		314.8 -> 82.9	7234				

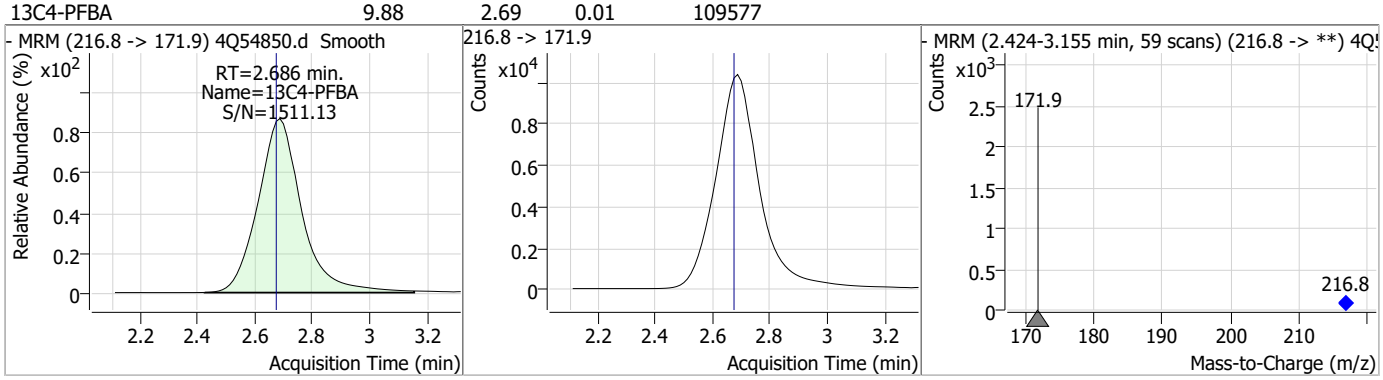
 # = Qualifier out of range, m = manually integrated, + = Area summed

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

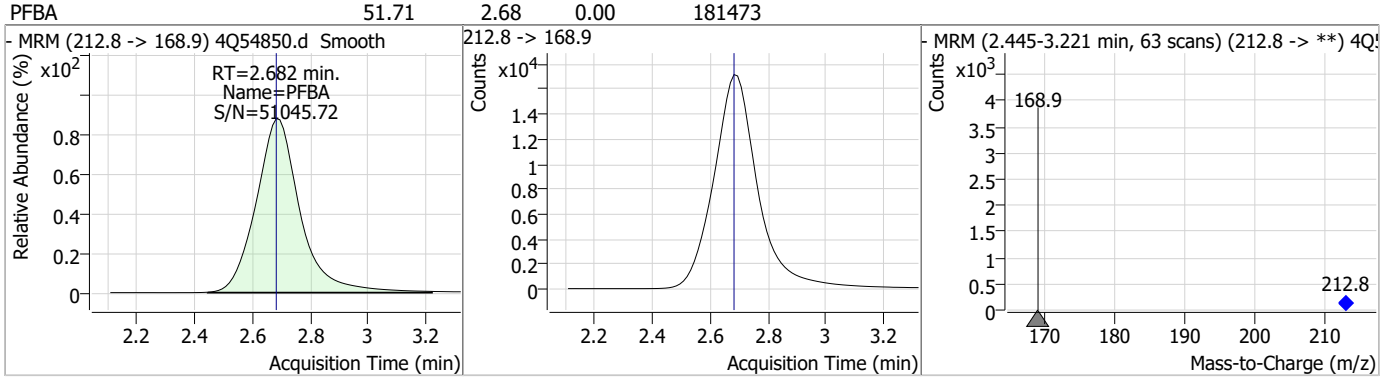
Perfluorinated Compounds by LC/MS/MS



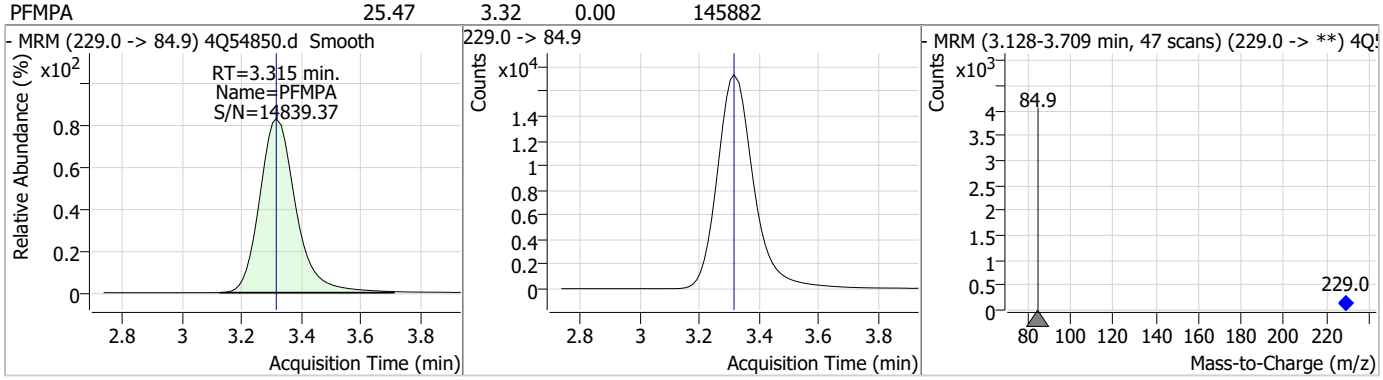
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.88	2.69	0.01	109577				



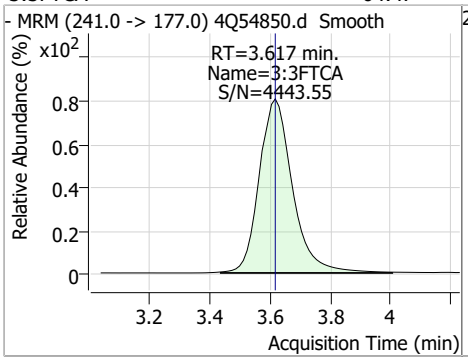
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	51.71	2.68	0.00	181473				

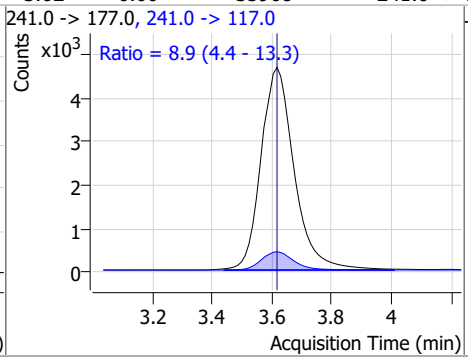


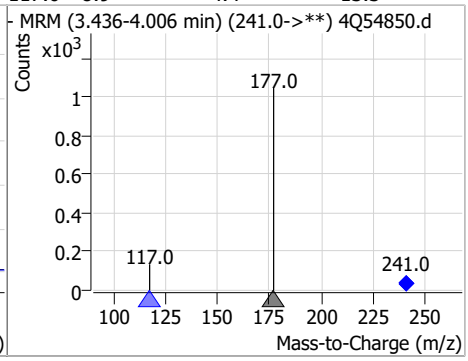
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	25.47	3.32	0.00	145882				



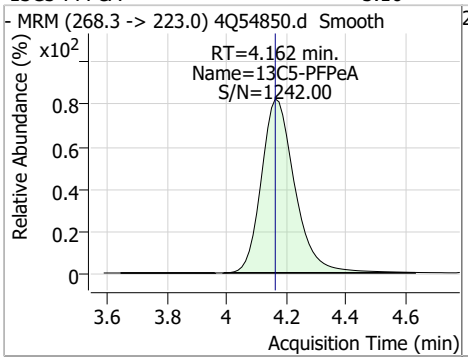
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	64.47	3.62	0.00	35968	241.0 -> 117.0	8.9	4.4	13.3

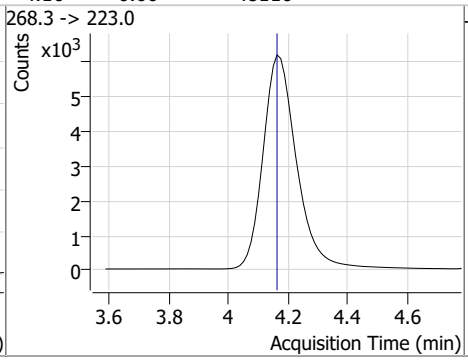


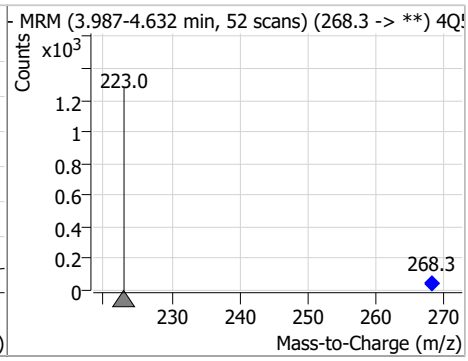




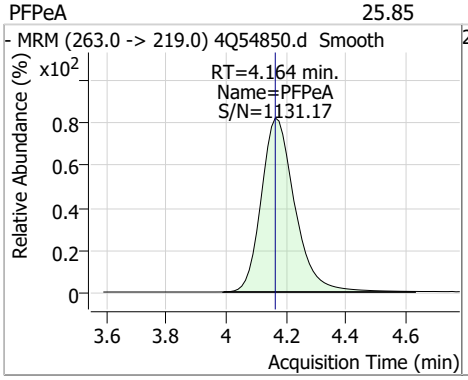
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.16	4.16	0.00	48116				

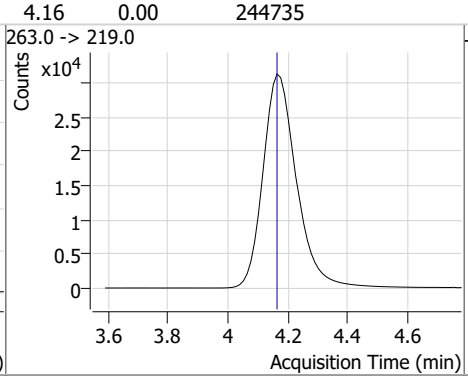


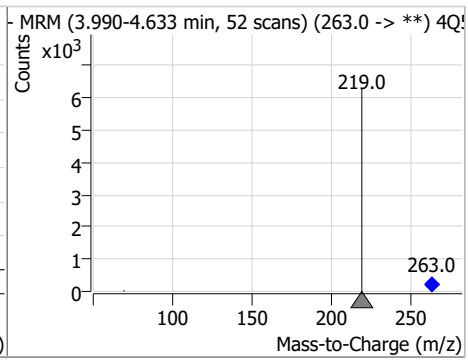




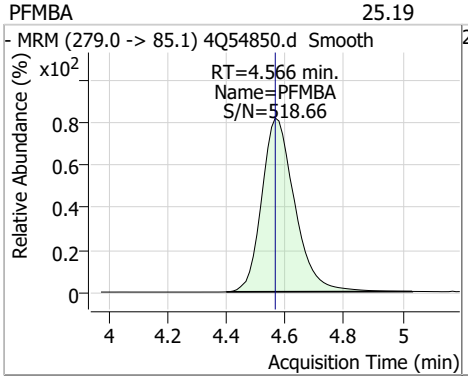
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	25.85	4.16	0.00	244735				

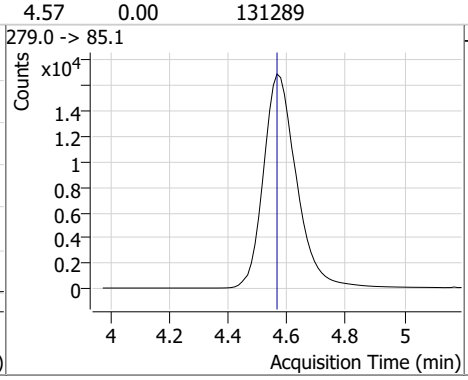


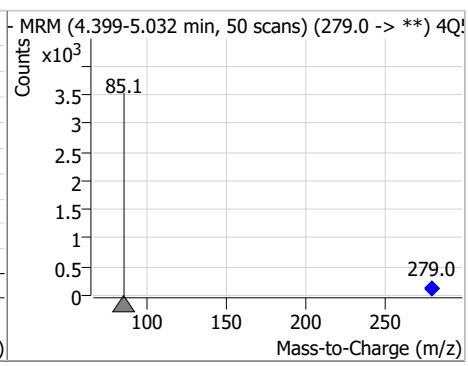




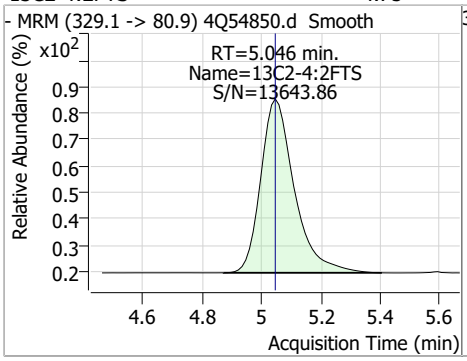
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.19	4.57	0.00	131289				

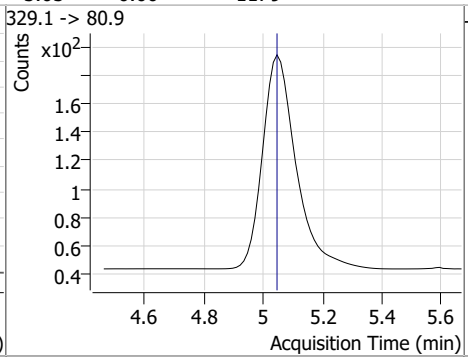


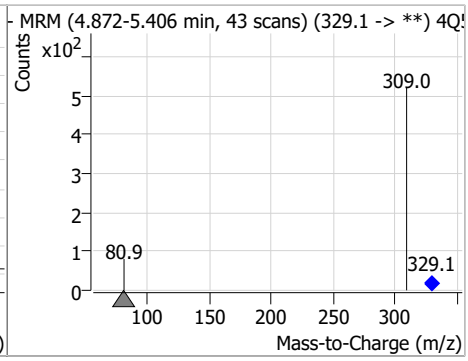




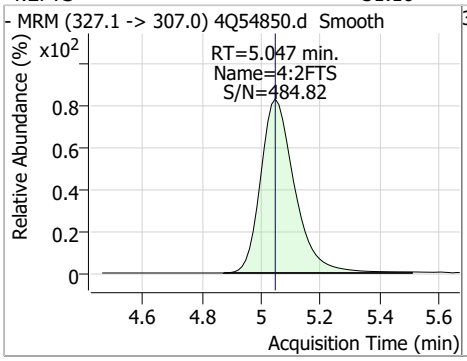
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.75	5.05	0.00	1179				

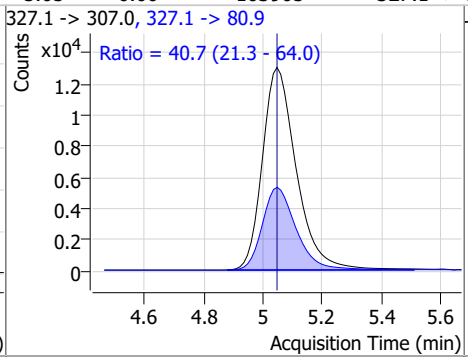


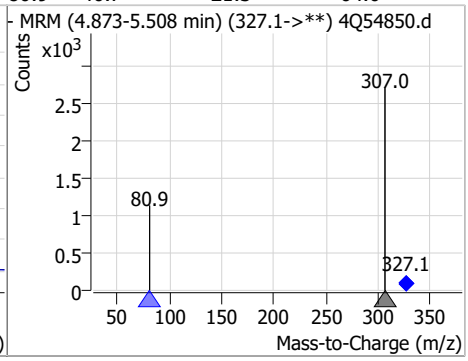




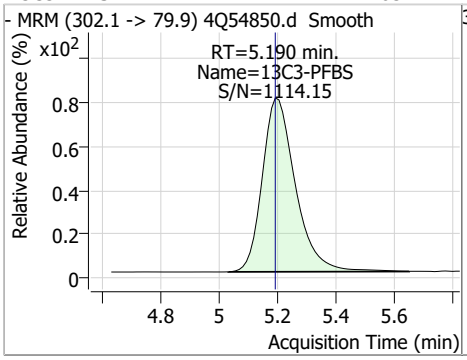
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	51.16	5.05	0.00	103905	327.1 -> 80.9	40.7	21.3	64.0

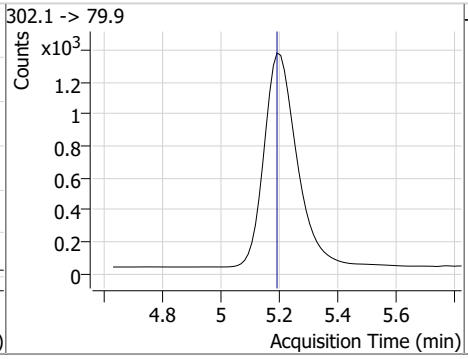


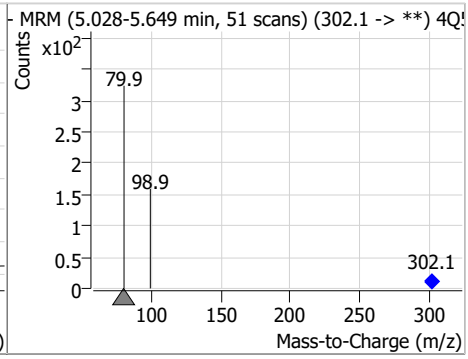




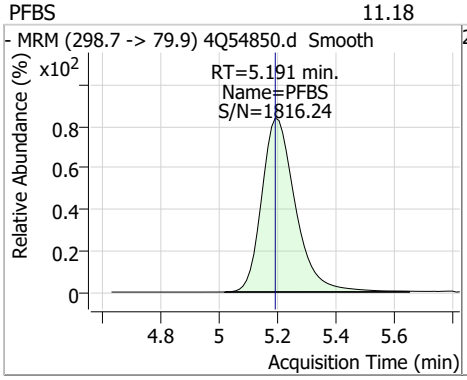
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.63	5.19	0.00	10561				

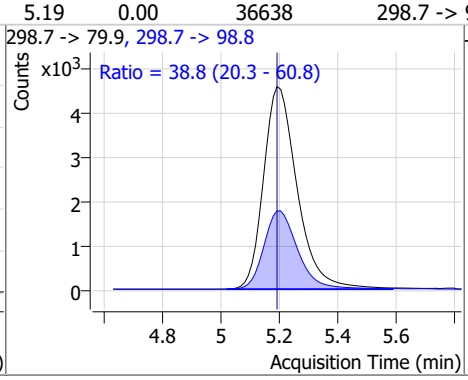


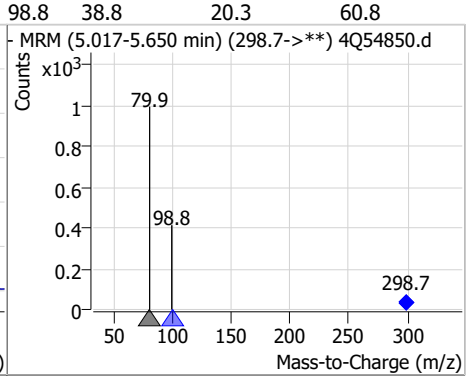




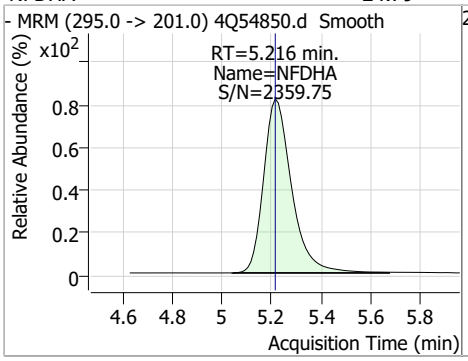
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.18	5.19	0.00	36638	298.7 -> 98.8	38.8	20.3	60.8

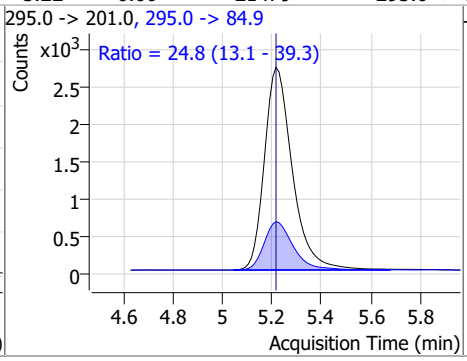


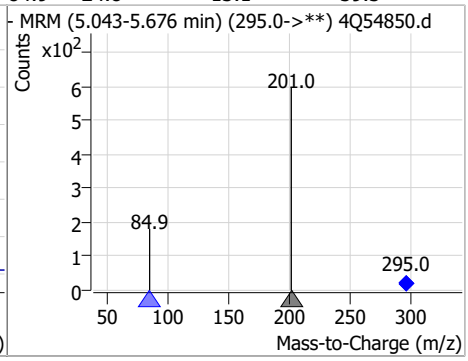




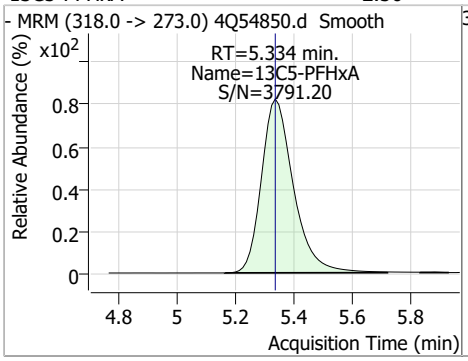
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	24.79	5.22	0.00	21479	295.0 -> 84.9	24.8	13.1	39.3

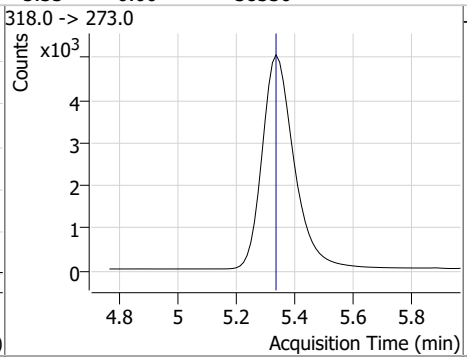


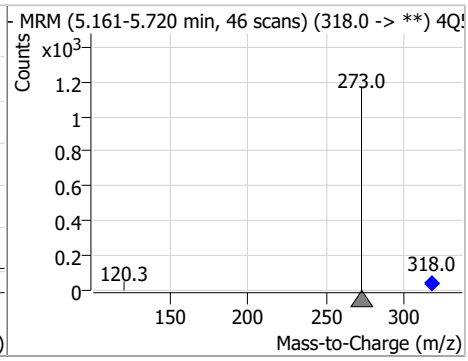




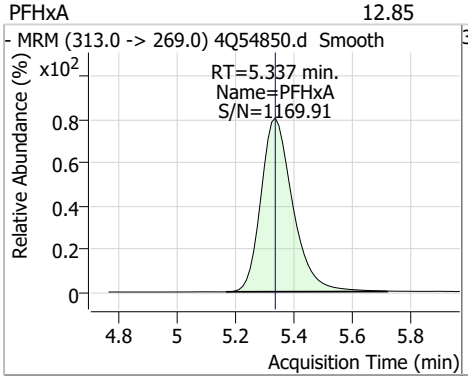
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.33	0.00	38330				

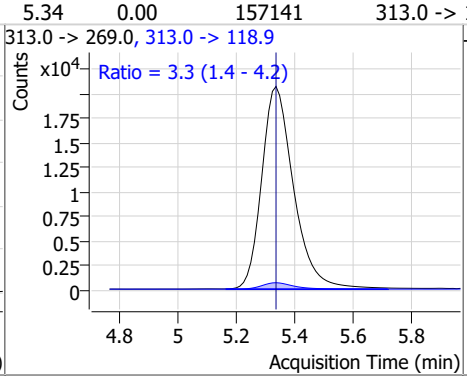


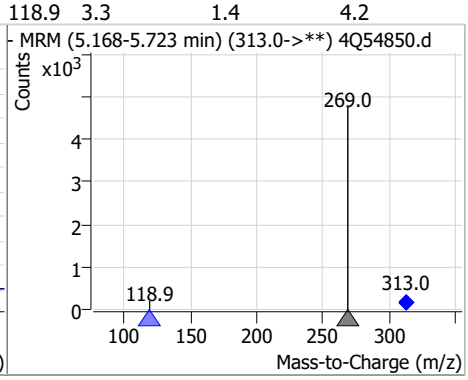




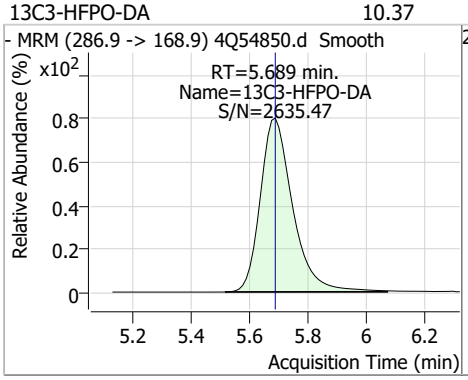
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.85	5.34	0.00	157141	313.0 -> 118.9	3.3	1.4	4.2

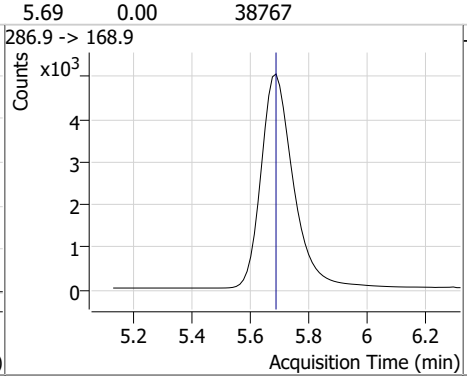


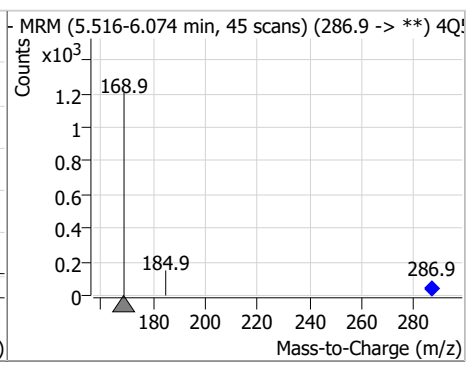




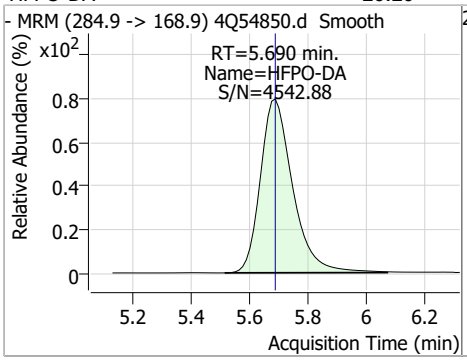
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.37	5.69	0.00	38767				

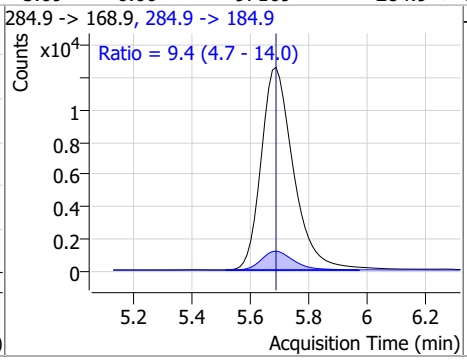


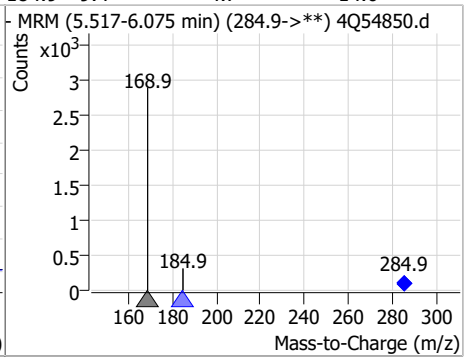




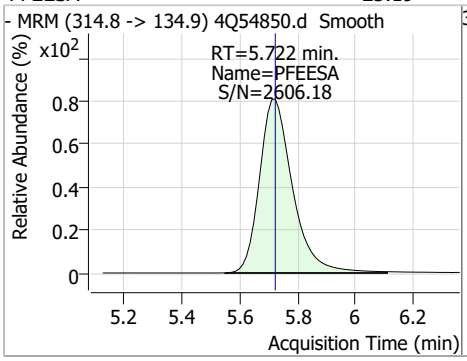
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	26.20	5.69	0.00	97169	284.9 -> 184.9	9.4	4.7	14.0

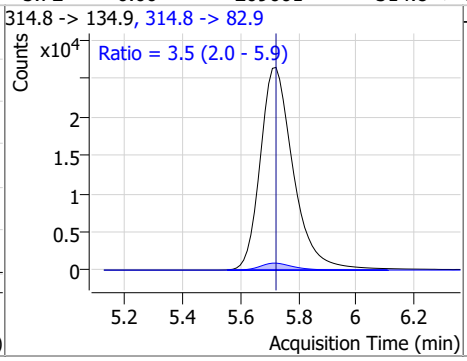


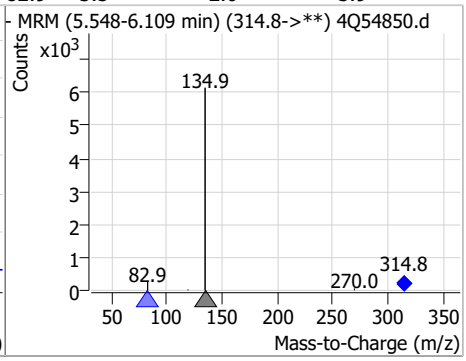




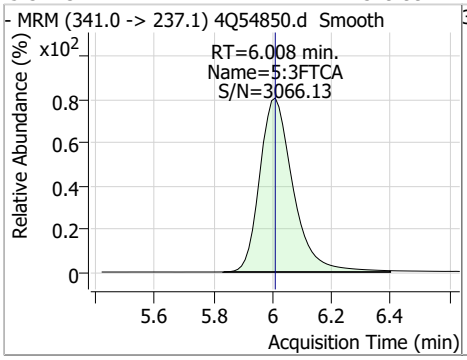
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	23.19	5.72	0.00	209661	314.8 -> 82.9	3.5	2.0	5.9

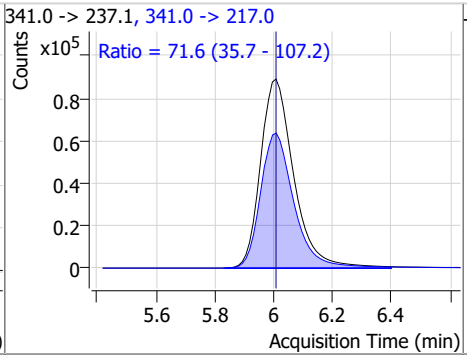


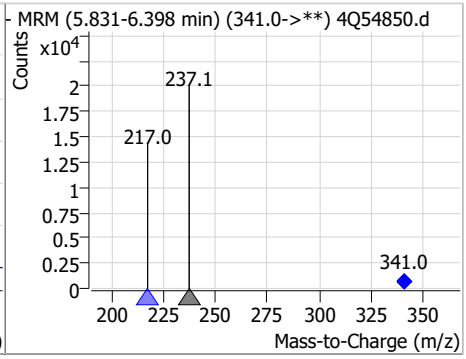




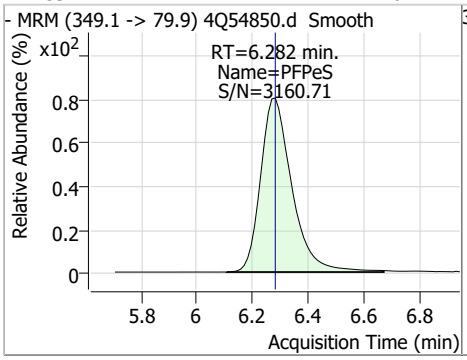
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	319.99	6.01	0.00	698089	341.0 -> 217.0	71.6	35.7	107.2

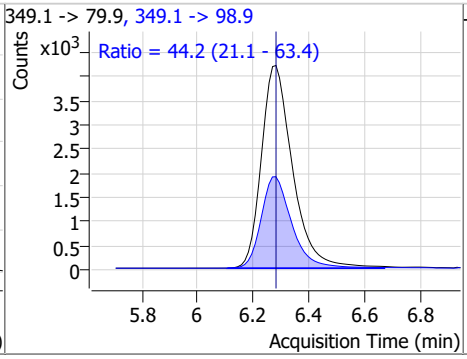


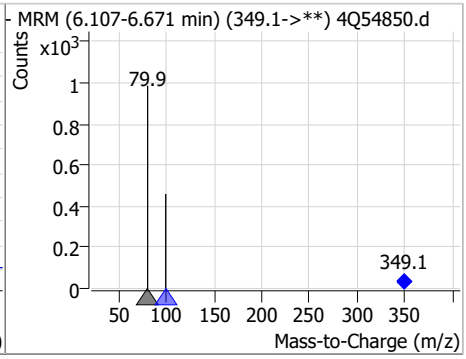




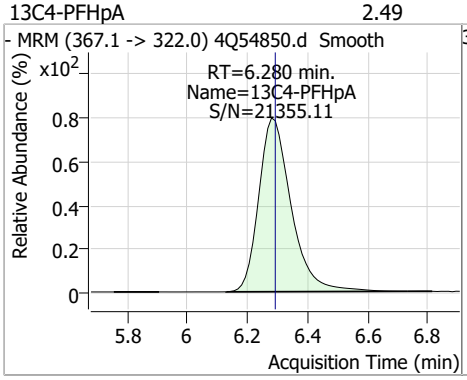
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	12.61	6.28	0.00	32626	349.1 -> 98.9	44.2	21.1	63.4

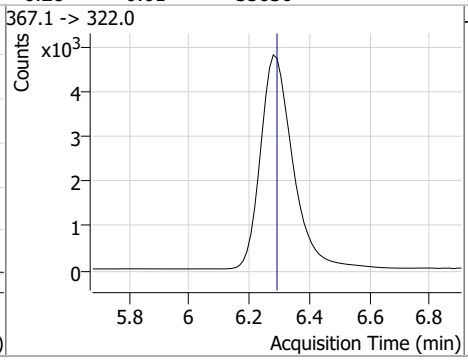


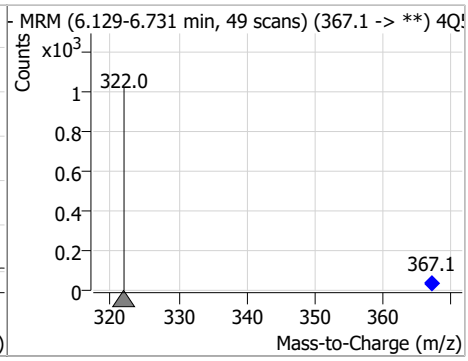




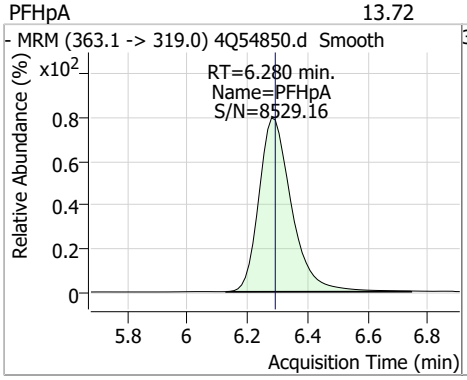
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.28	-0.01	35630				

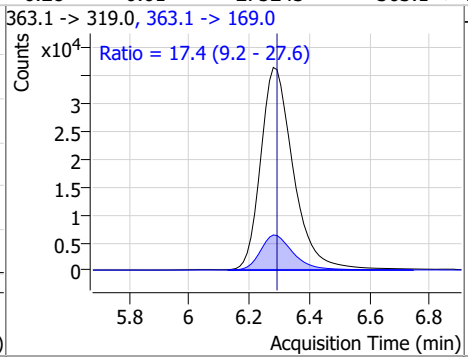


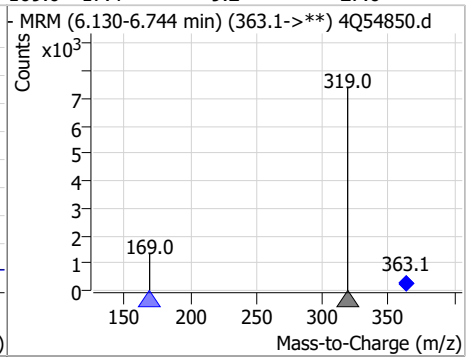




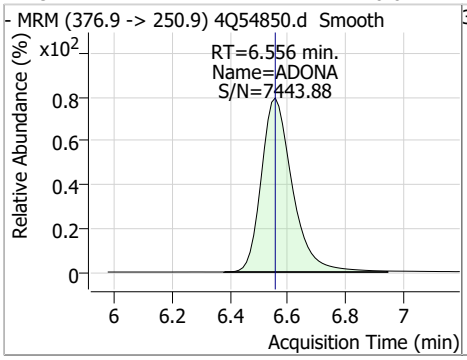
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	13.72	6.28	-0.01	275243	363.1 -> 169.0	17.4	9.2	27.6

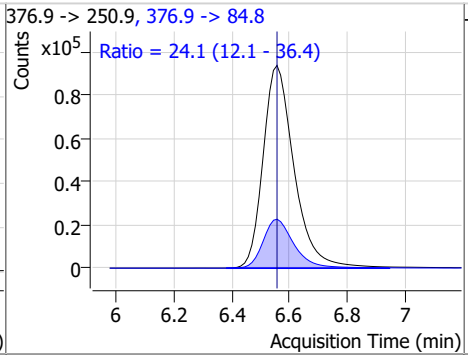


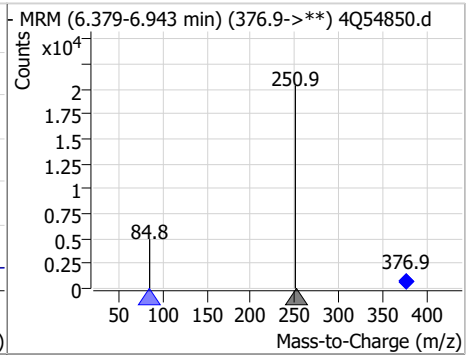




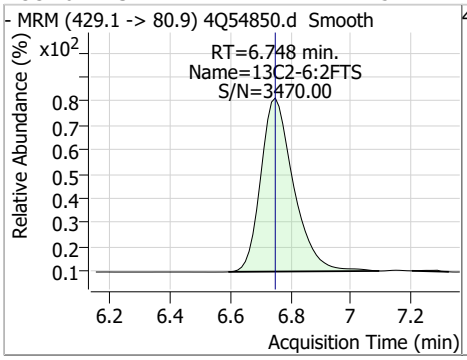
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	26.61	6.56	0.00	696640	376.9 -> 84.8	24.1	12.1	36.4

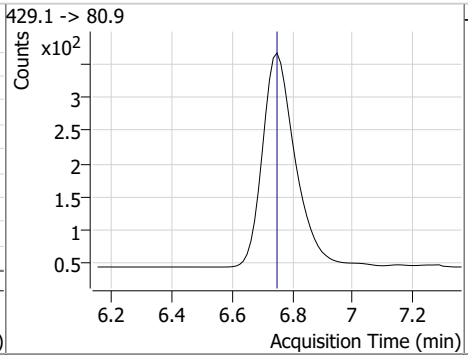


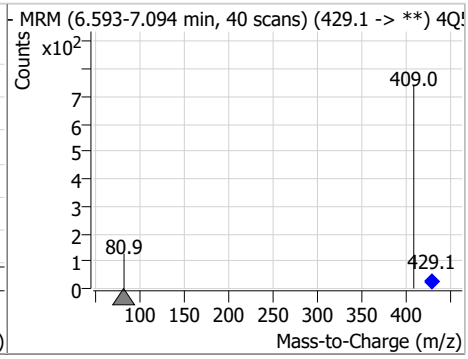




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.52	6.75	0.00	2435				

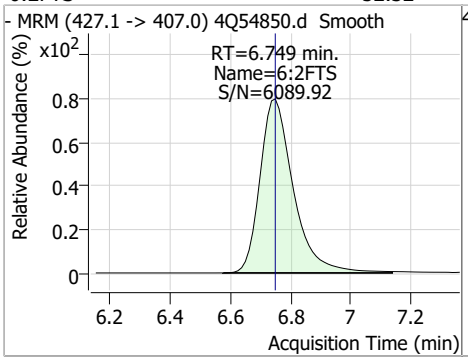


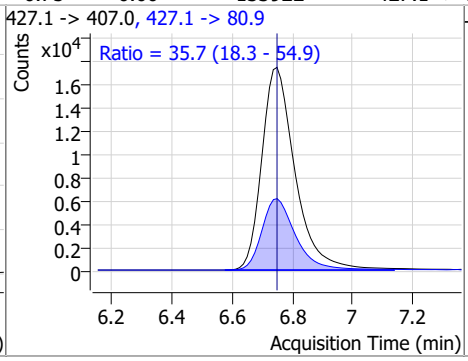


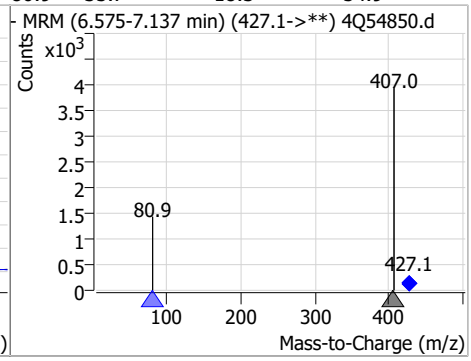


Perfluorinated Compounds by LC/MS/MS

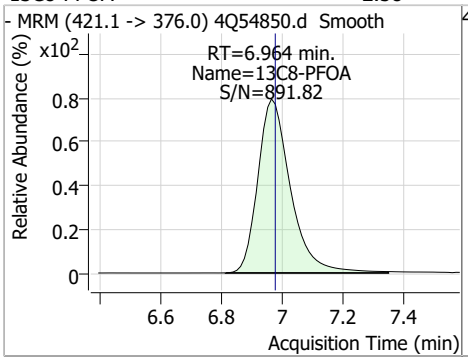
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	52.32	6.75	0.00	133922	427.1 -> 80.9	35.7	18.3	54.9

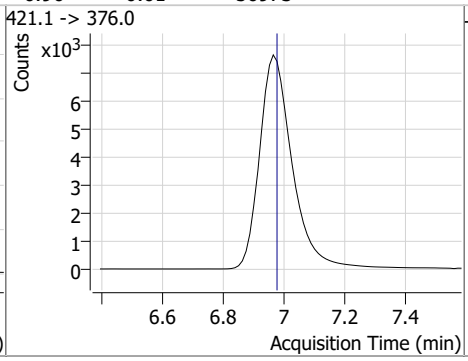


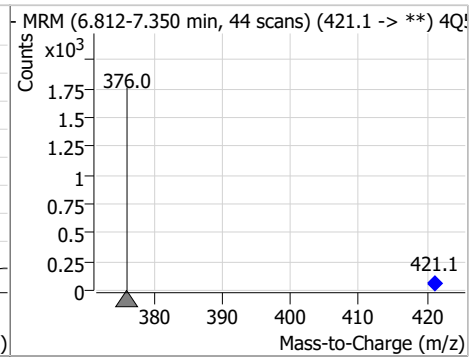




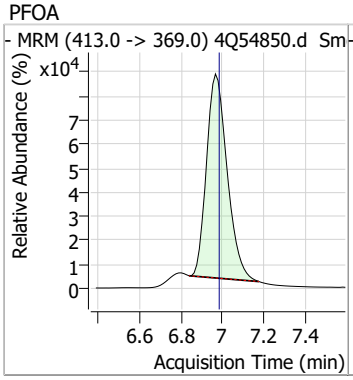
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.58	6.96	-0.01	56973				

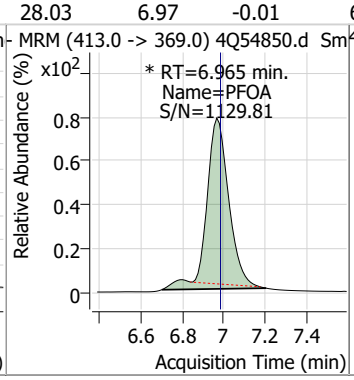


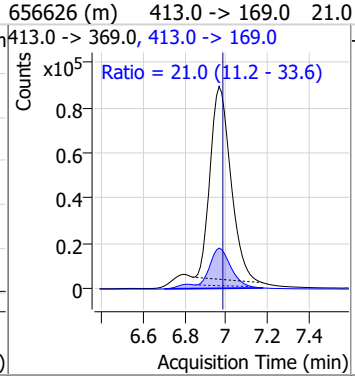


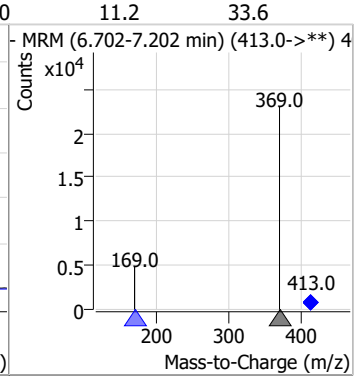


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	28.03	6.97	-0.01	656626 (m)	413.0 -> 169.0	21.0	11.2	33.6

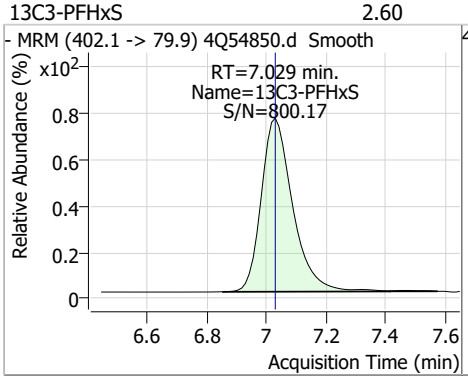


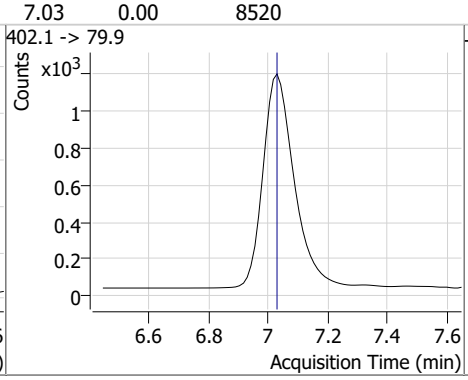


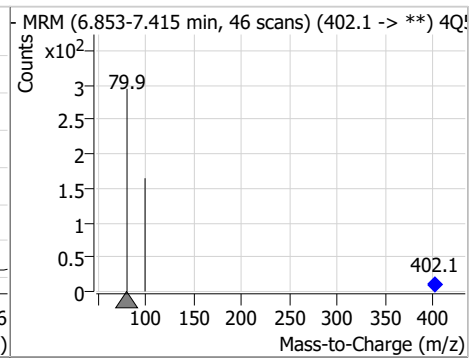




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.60	7.03	0.00	8520				

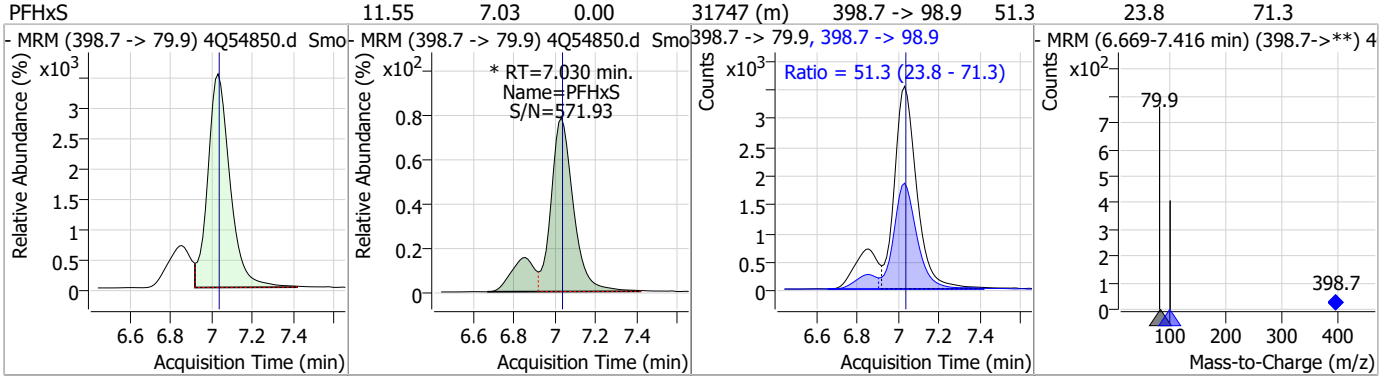




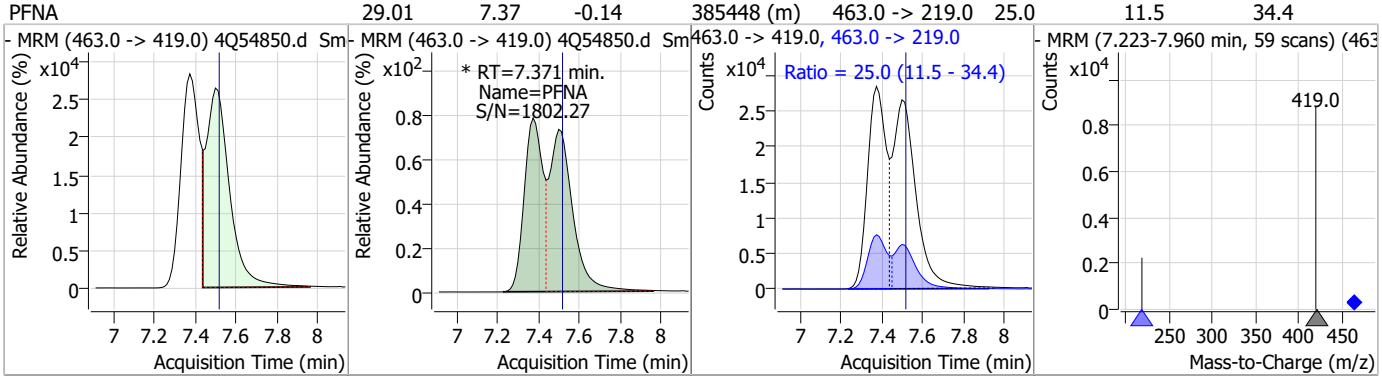


Perfluorinated Compounds by LC/MS/MS

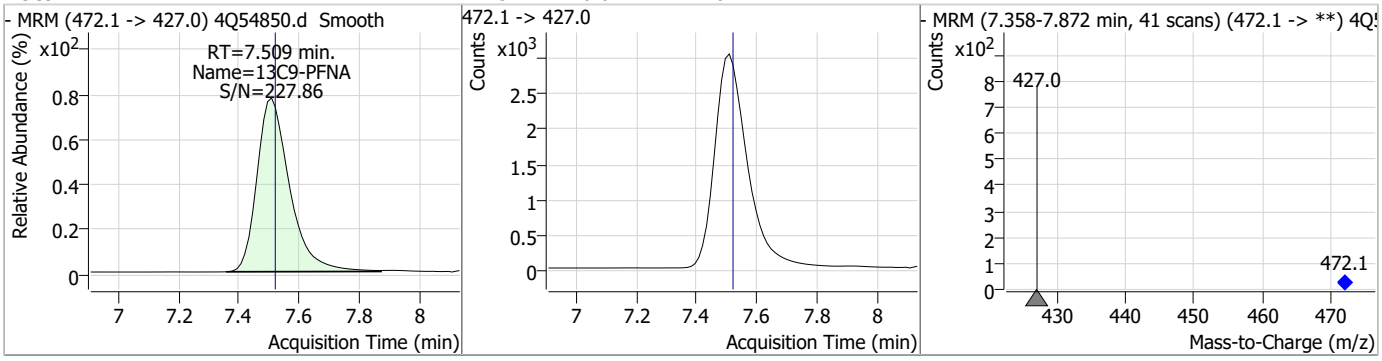
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.55	7.03	0.00	31747 (m)	398.7 -> 98.9	51.3	23.8	71.3



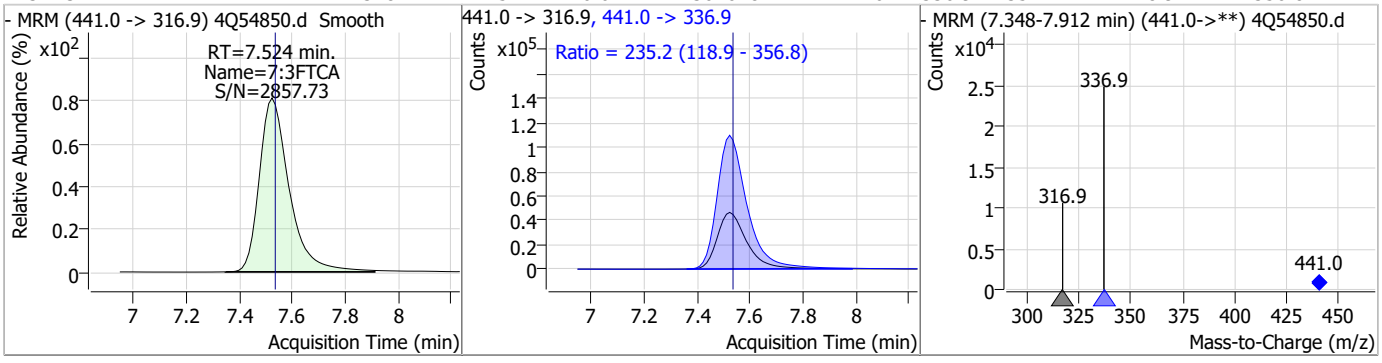
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	29.01	7.37	-0.14	385448 (m)	463.0 -> 219.0	25.0	11.5	34.4



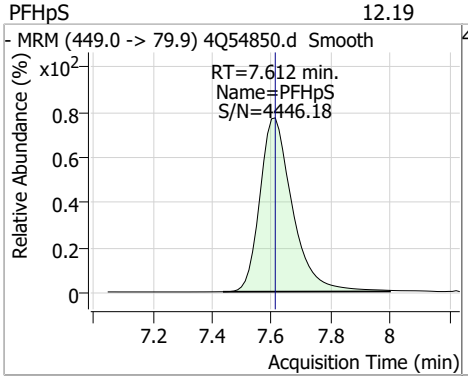
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.27	7.51	-0.01	22614				

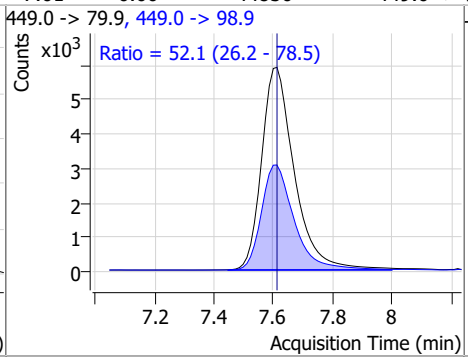


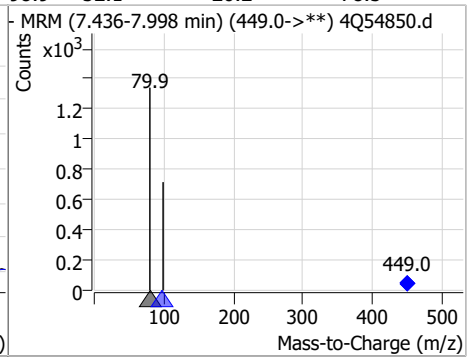
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	318.77	7.52	-0.01	364678	441.0 -> 336.9	235.2	118.9	356.8



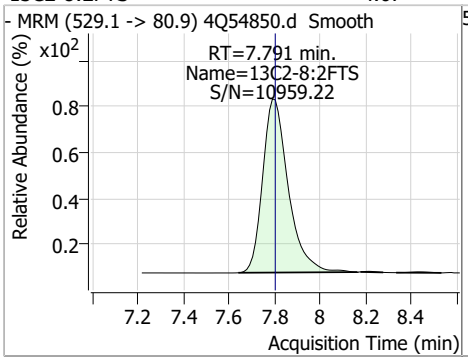
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	12.19	7.61	0.00	44856	449.0 -> 98.9	52.1	26.2	78.5

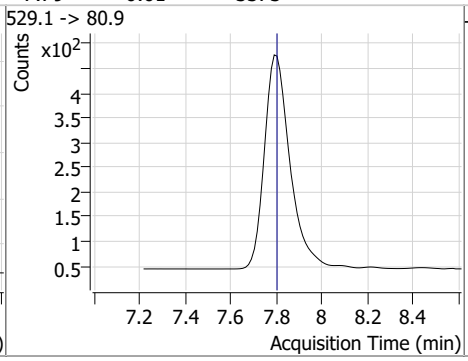


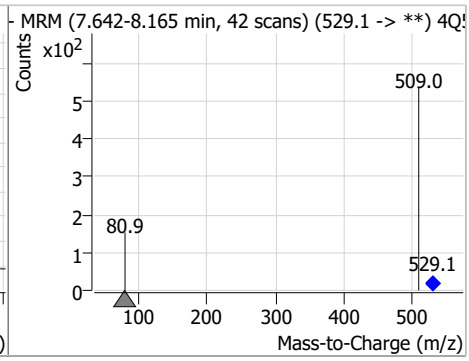




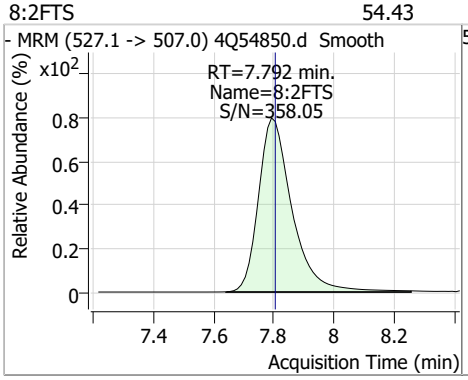
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.67	7.79	-0.01	3373				

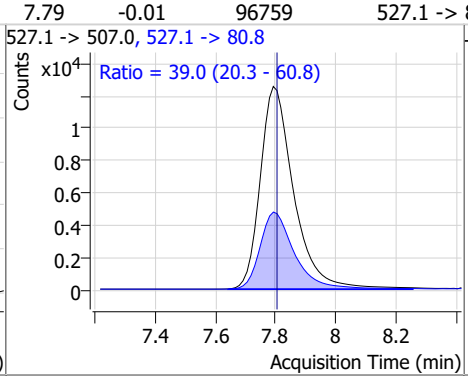


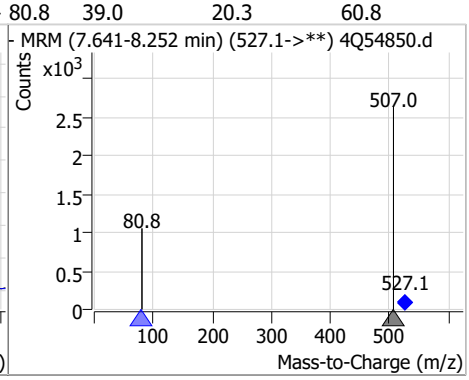




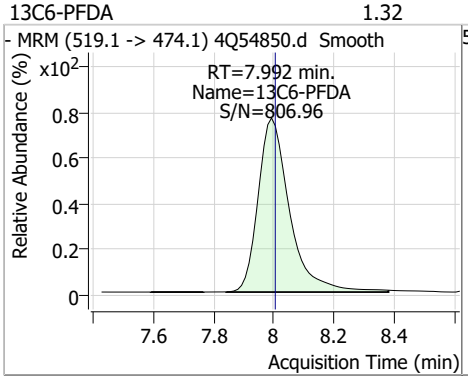
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	54.43	7.79	-0.01	96759	527.1 -> 80.8	39.0	20.3	60.8

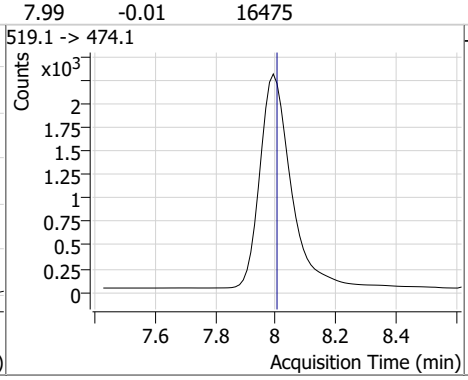


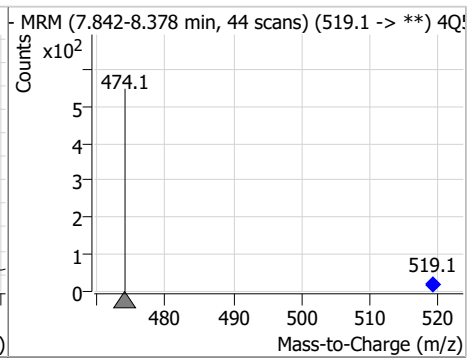




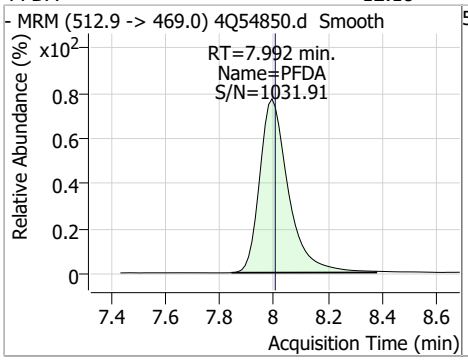
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.32	7.99	-0.01	16475				

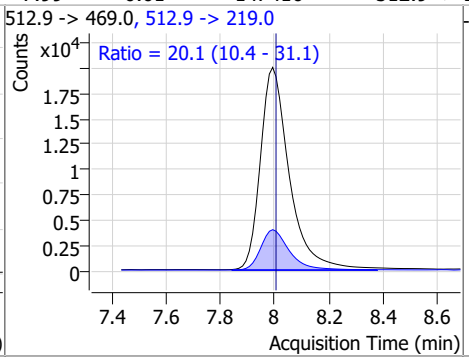


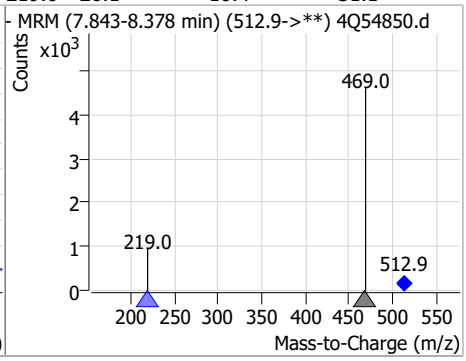




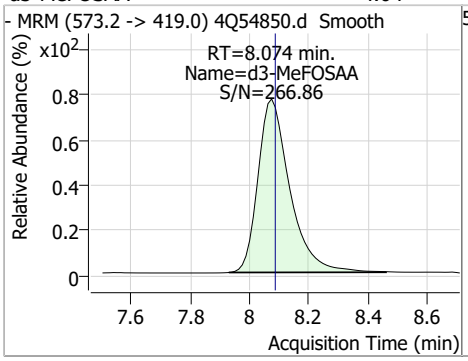
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	12.18	7.99	-0.01	147416	512.9 -> 219.0	20.1	10.4	31.1

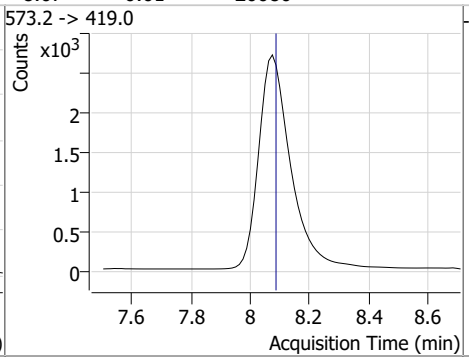


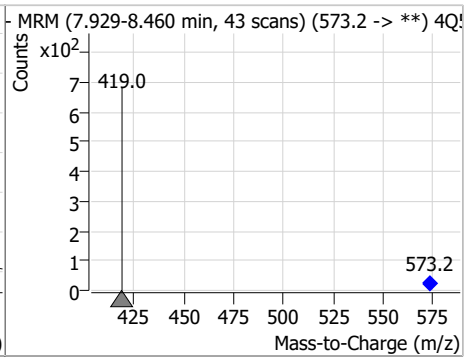




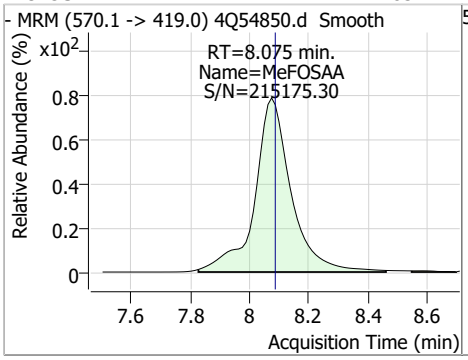
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.64	8.07	-0.01	20080				

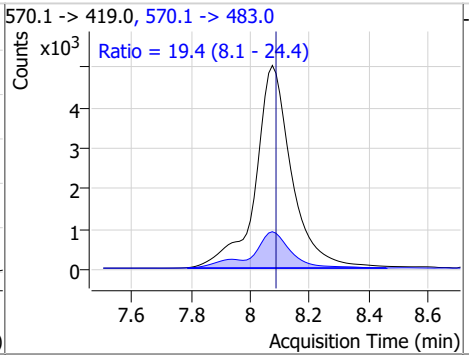


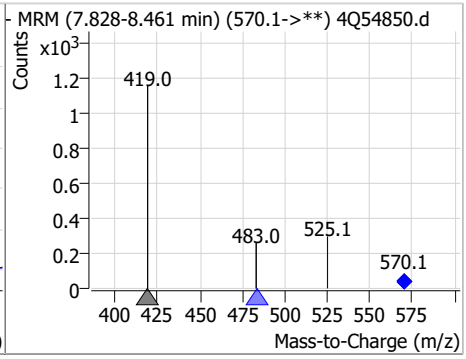




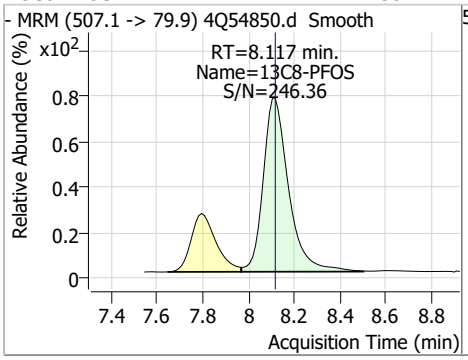
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	14.83	8.07	-0.01	42693	570.1 -> 483.0	19.4	8.1	24.4

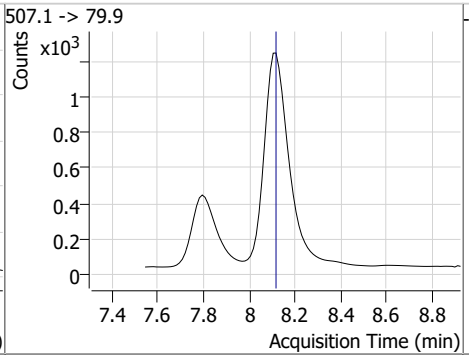


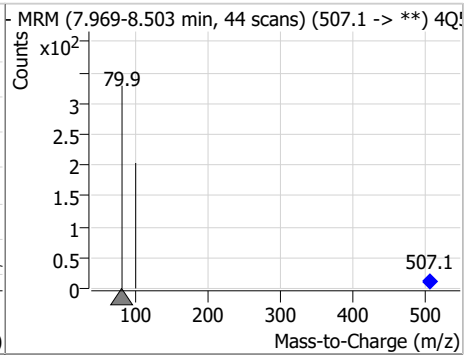




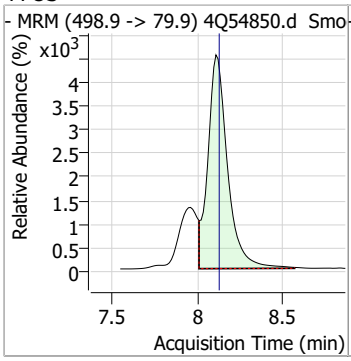
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.35	8.12	0.00	9271				

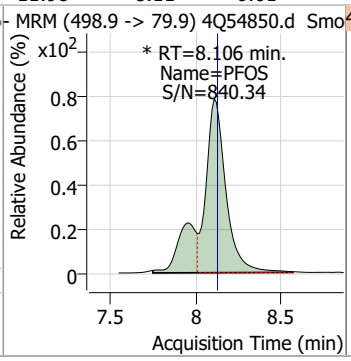


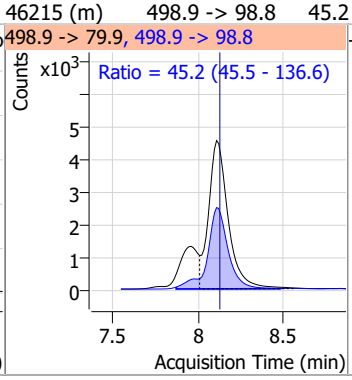


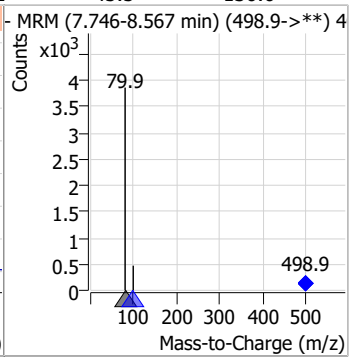


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	11.98	8.11	-0.01	46215 (m)	498.9 -> 98.8	45.2	45.5	136.6

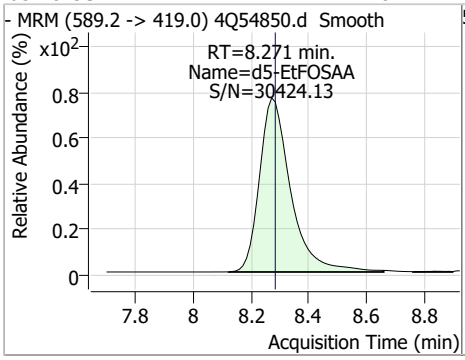


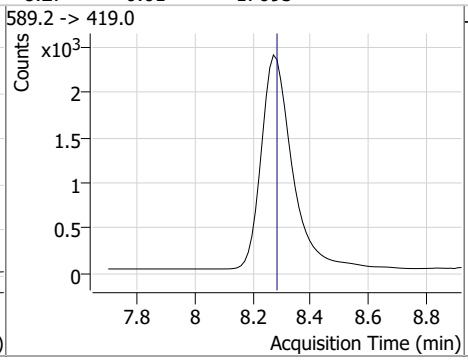


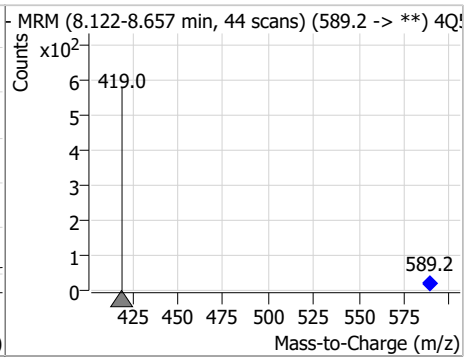




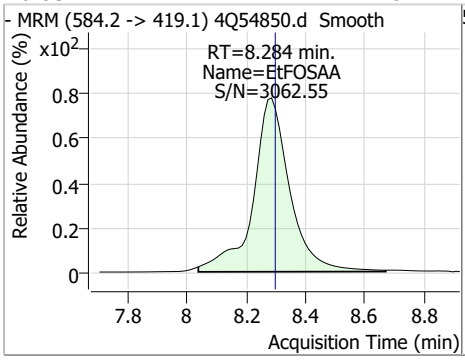
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.84	8.27	-0.01	17695				

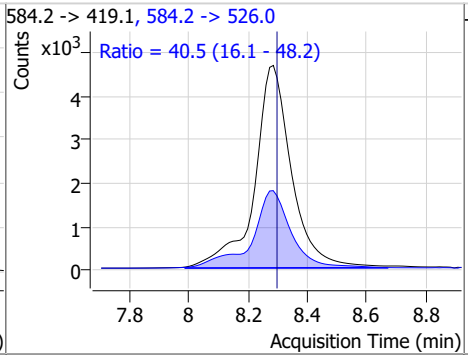


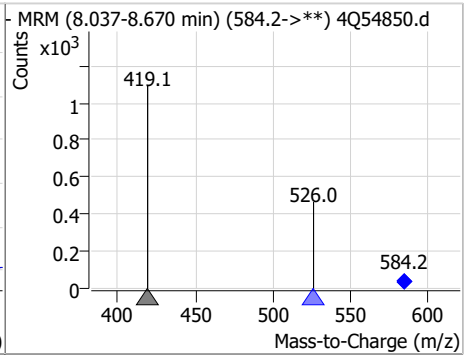




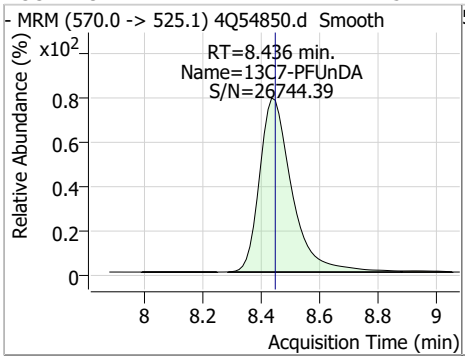
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	12.51	8.28	-0.01	40376	584.2 -> 526.0	40.5	16.1	48.2

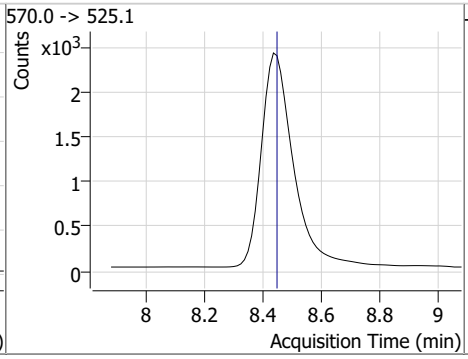


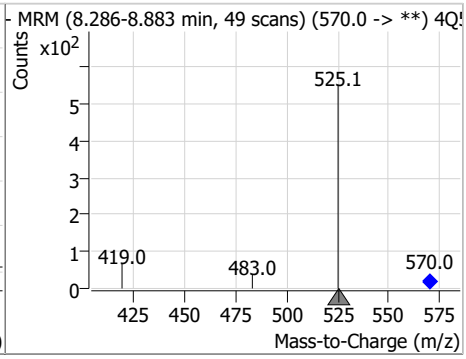




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.25	8.44	-0.01	18484				

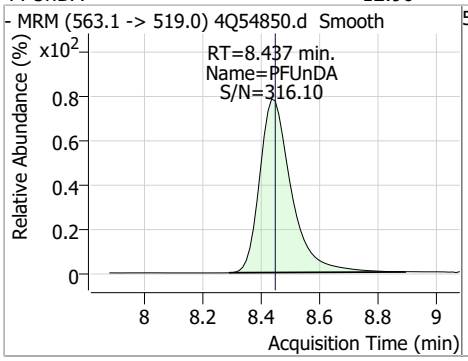


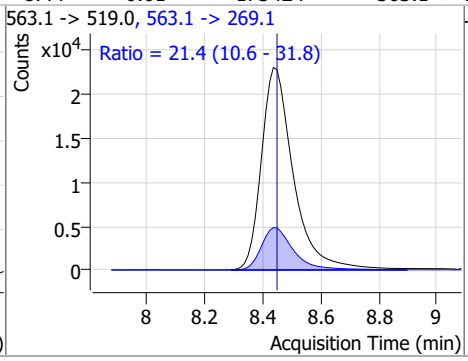


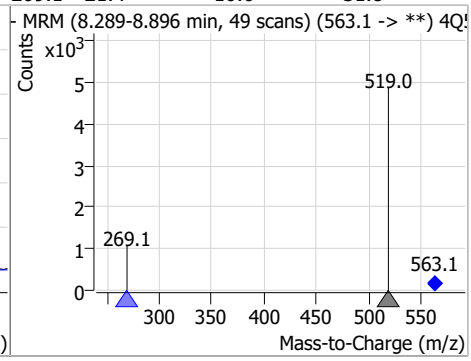


Perfluorinated Compounds by LC/MS/MS

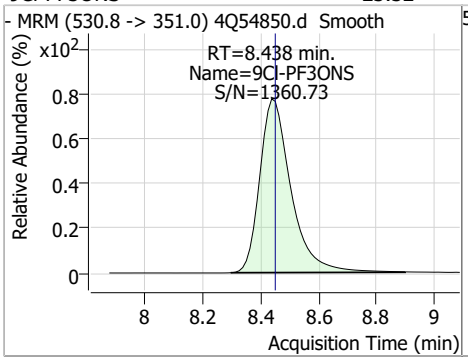
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	12.90	8.44	-0.01	173424	563.1 -> 269.1	21.4	10.6	31.8

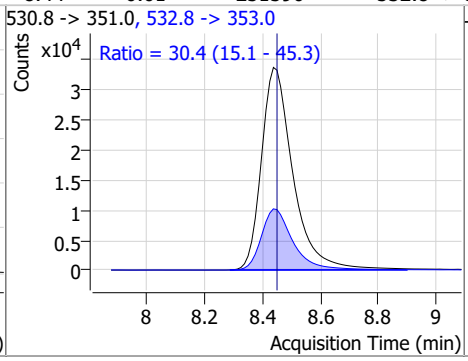


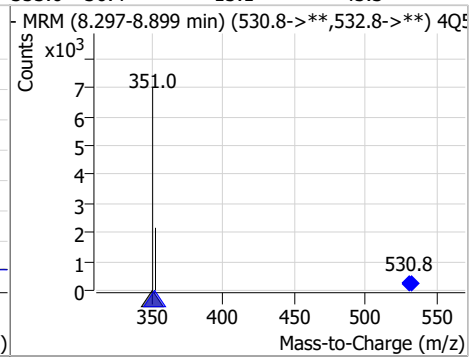




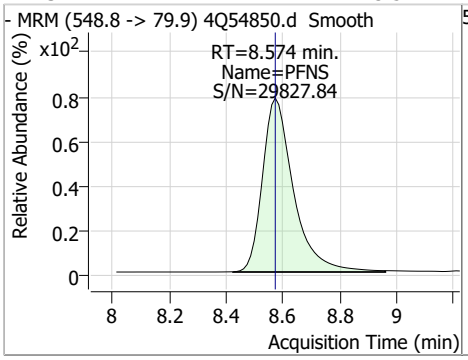
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	23.32	8.44	-0.01	251590	532.8 -> 353.0	30.4	15.1	45.3

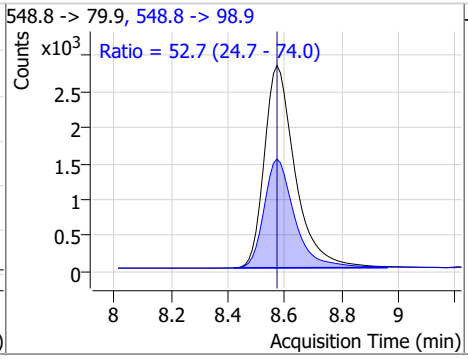


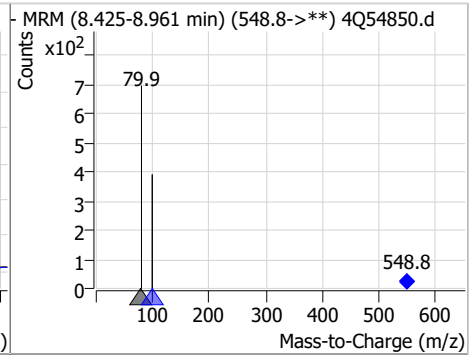




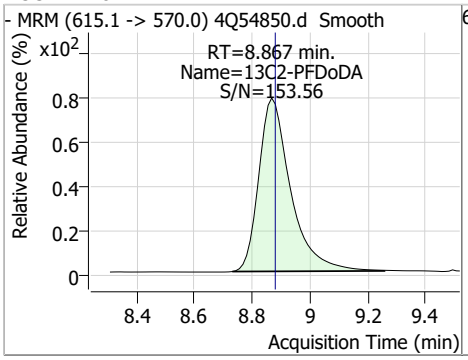
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.54	8.57	0.00	21414	548.8 -> 98.9	52.7	24.7	74.0

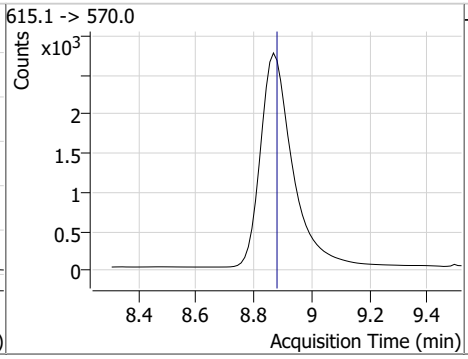


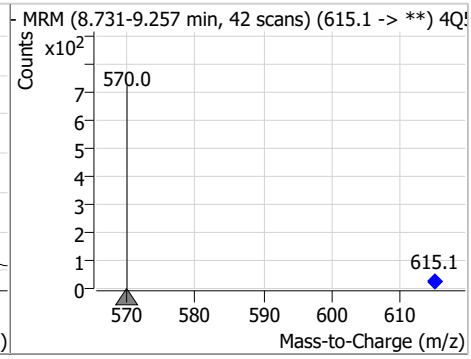




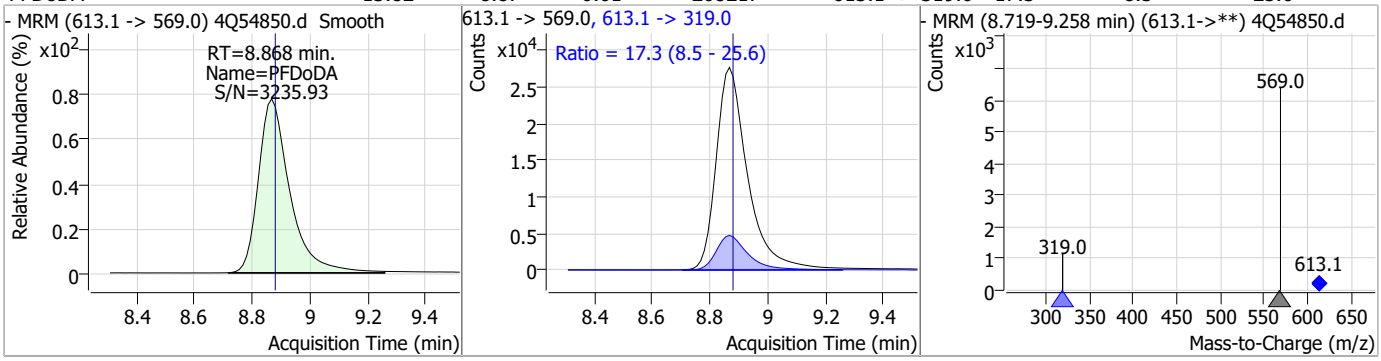
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	8.87	-0.01	20923				



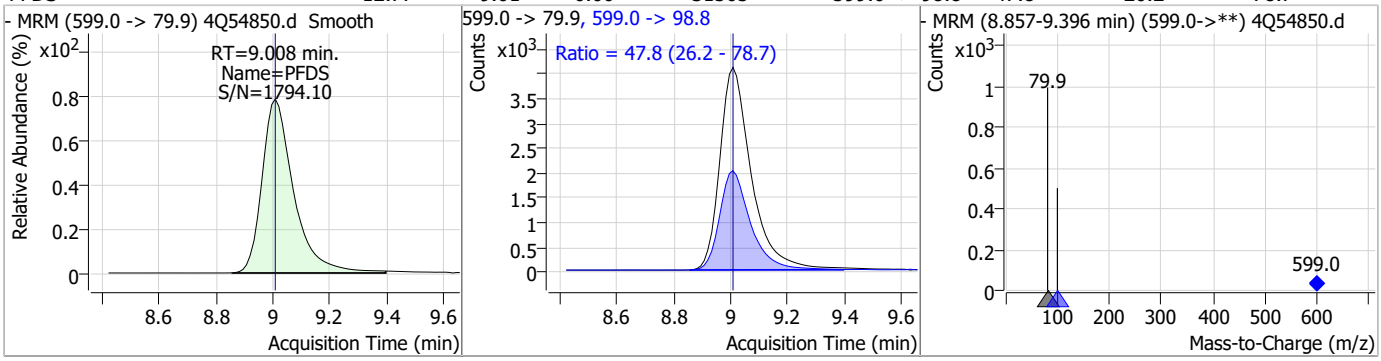




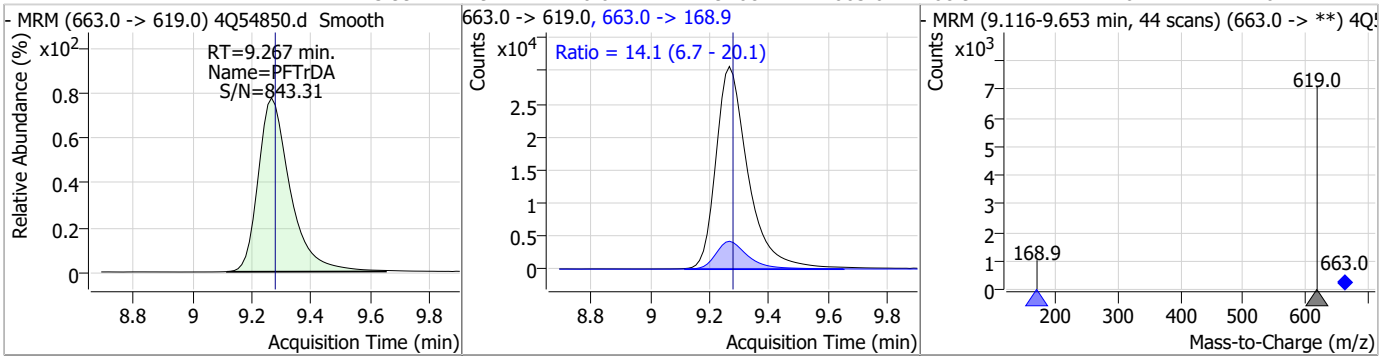
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	13.82	8.87	-0.01	208217	613.1 -> 319.0	17.3	8.5	25.6



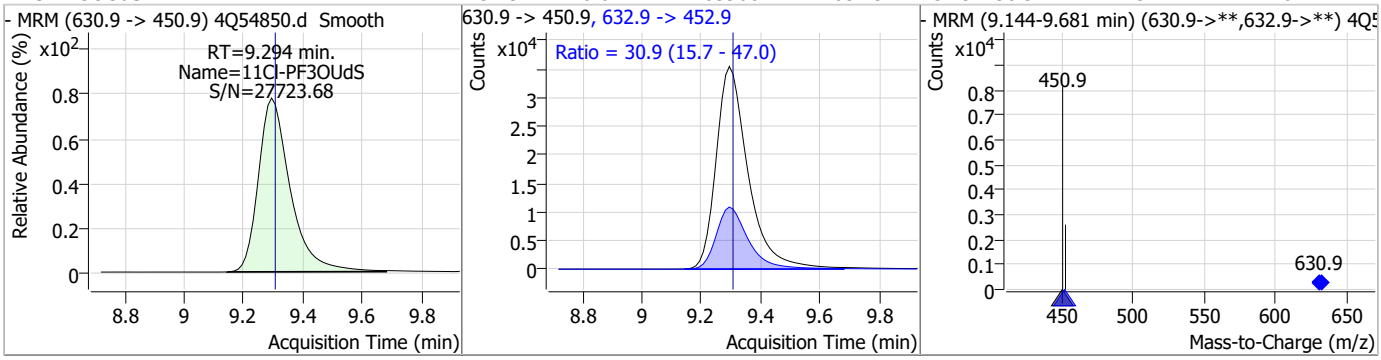
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	12.77	9.01	0.00	31505	599.0 -> 98.8	47.8	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.99	9.27	-0.01	229108	663.0 -> 168.9	14.1	6.7	20.1

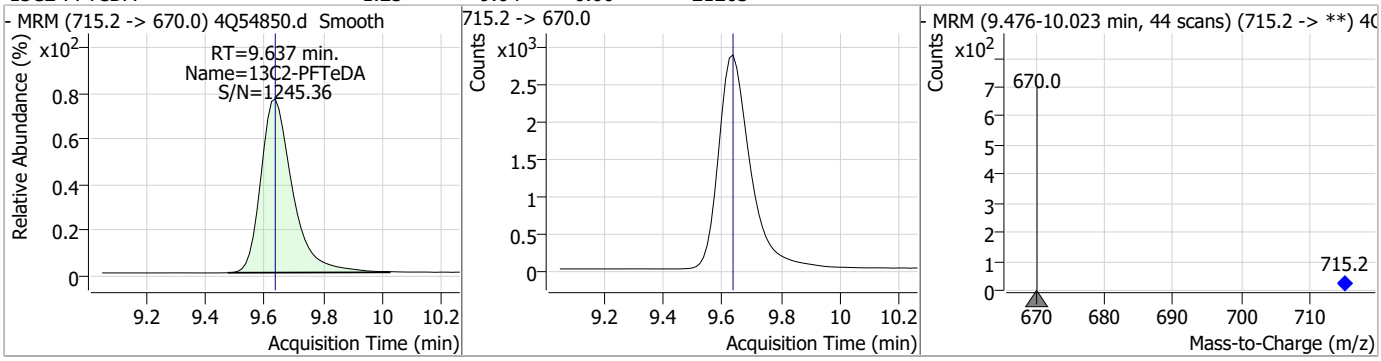


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	24.72	9.29	-0.01	263908	632.9 -> 452.9	30.9	15.7	47.0

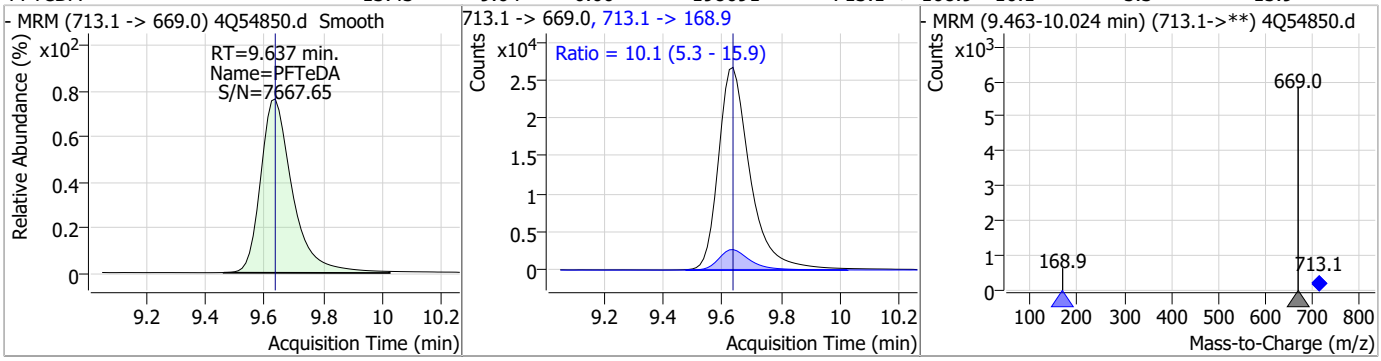


Perfluorinated Compounds by LC/MS/MS

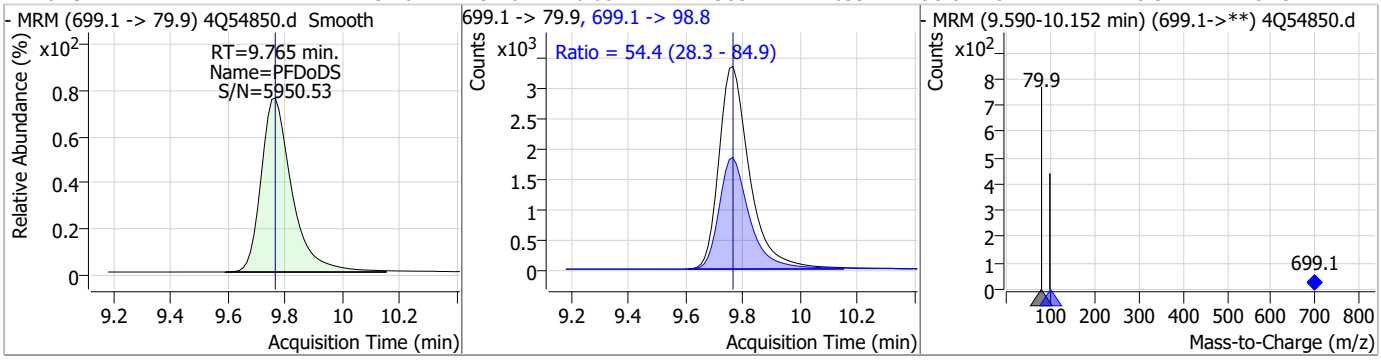
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.64	0.00	21263				



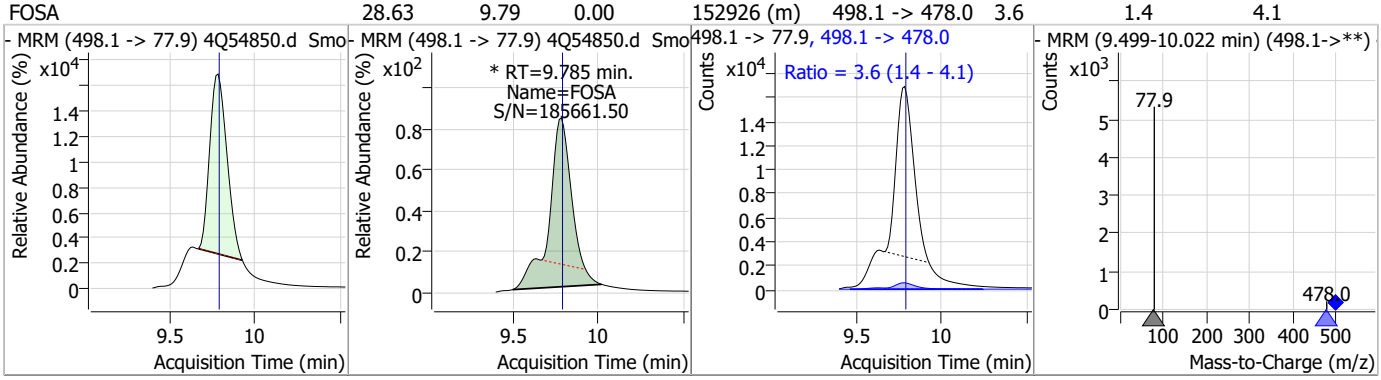
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	13.43	9.64	0.00	198691	713.1 -> 168.9	10.1	5.3	15.9



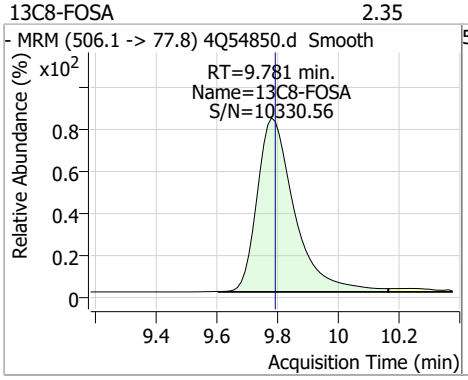
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	13.26	9.76	0.00	24953	699.1 -> 98.8	54.4	28.3	84.9

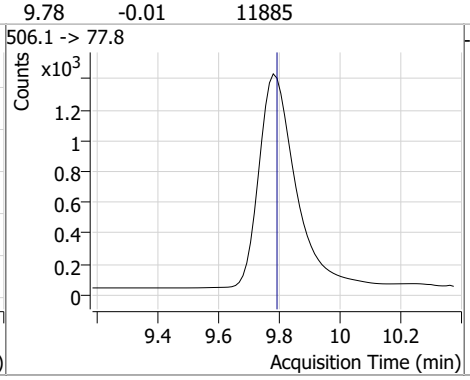


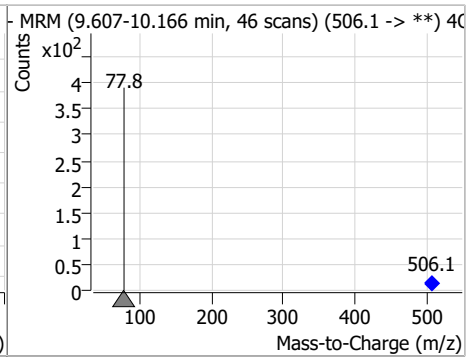
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	28.63	9.79	0.00	152926 (m)	498.1 -> 478.0	3.6	1.4	4.1



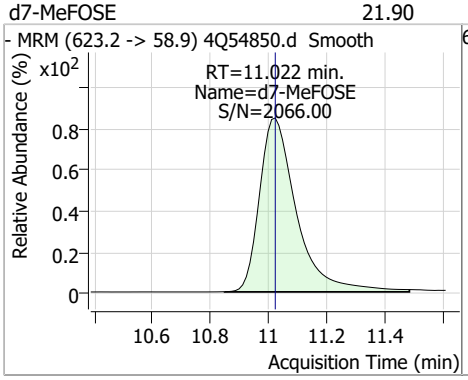
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.35	9.78	-0.01	11885				

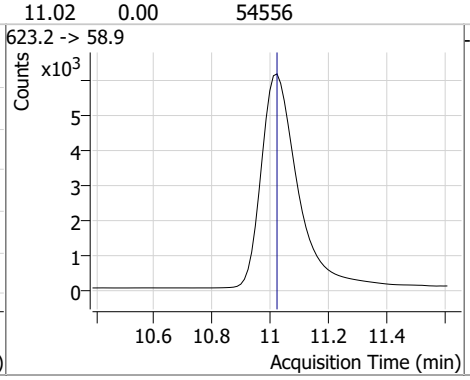


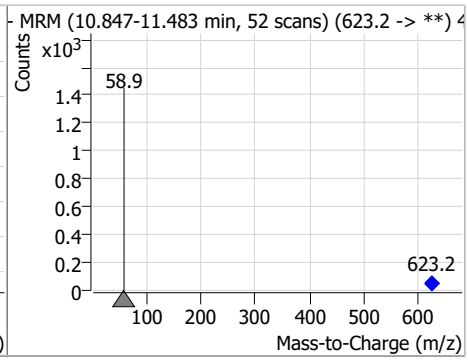




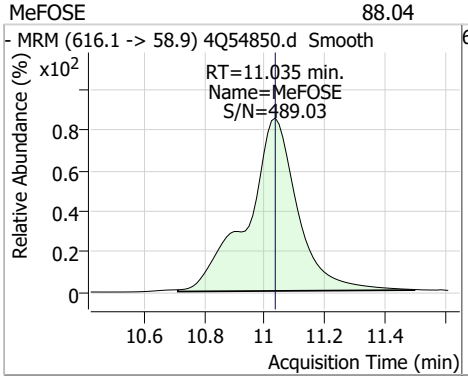
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	21.90	11.02	0.00	54556				

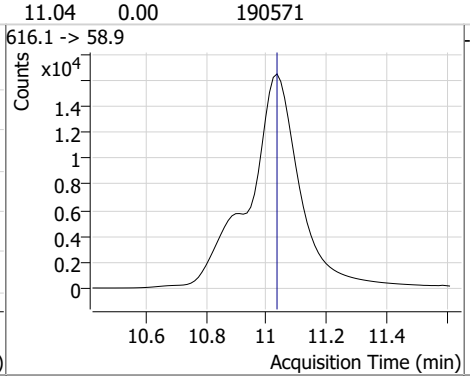


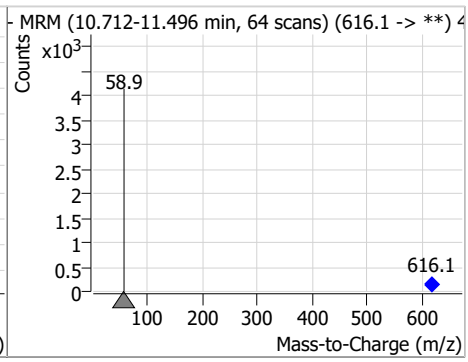




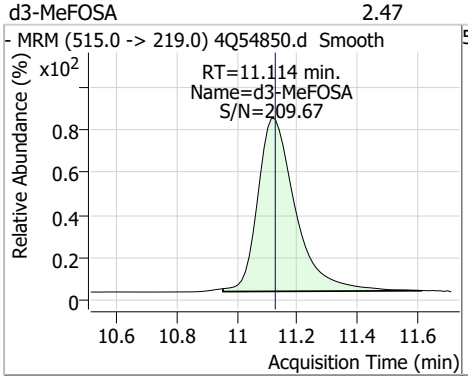
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	88.04	11.04	0.00	190571				

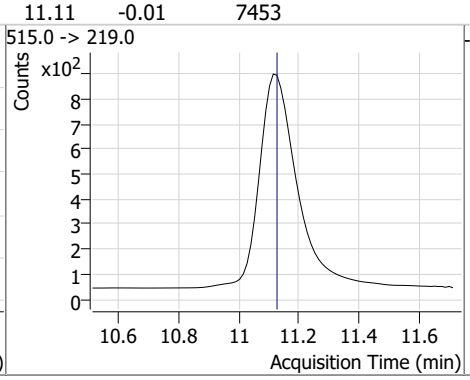


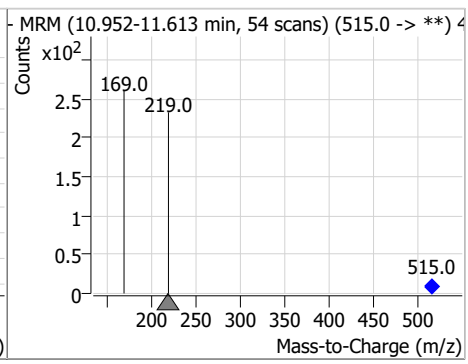




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	11.11	-0.01	7453				

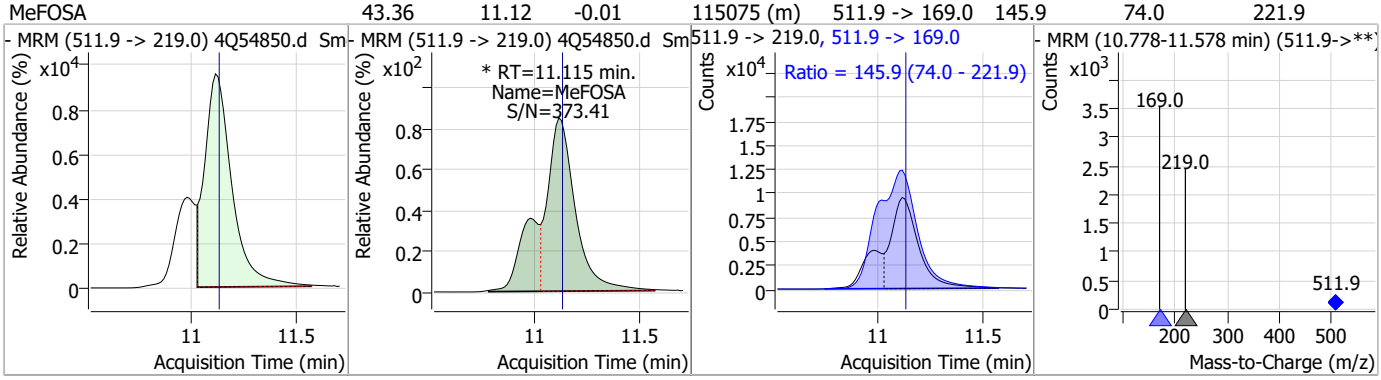




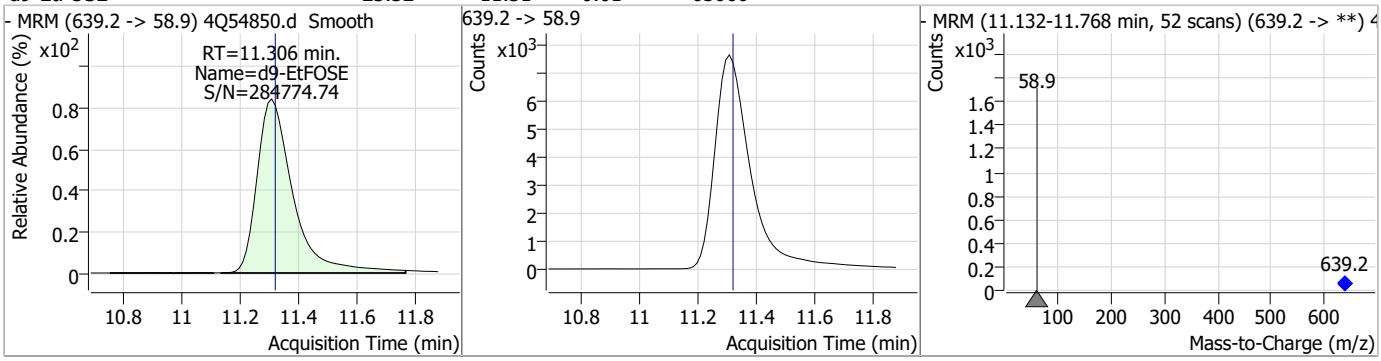


Perfluorinated Compounds by LC/MS/MS

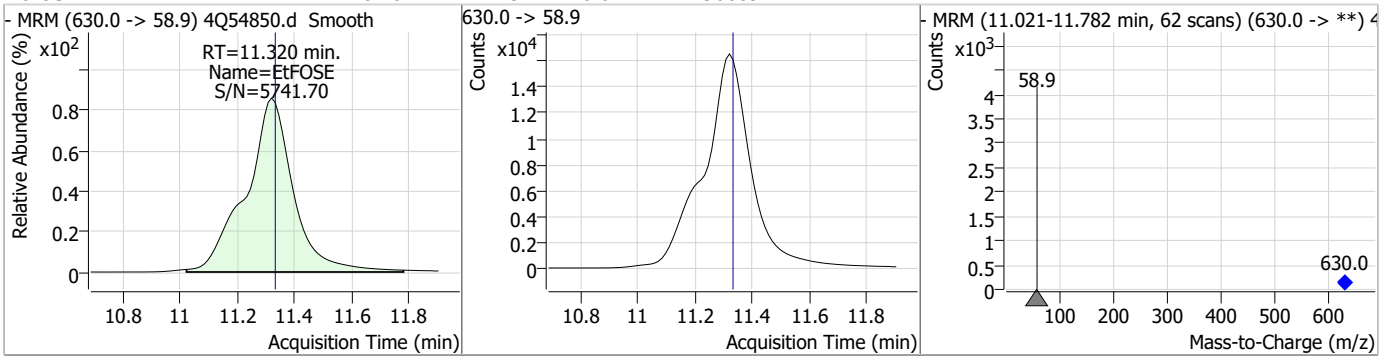
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	43.36	11.12	-0.01	115075 (m)	511.9 -> 169.0	145.9	74.0	221.9



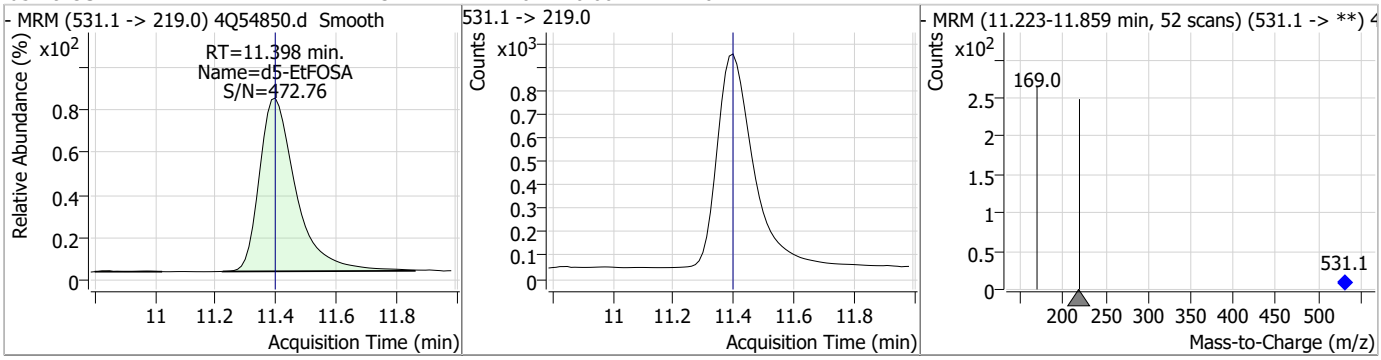
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.32	11.31	-0.01	65060				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	82.82	11.32	-0.01	190689				

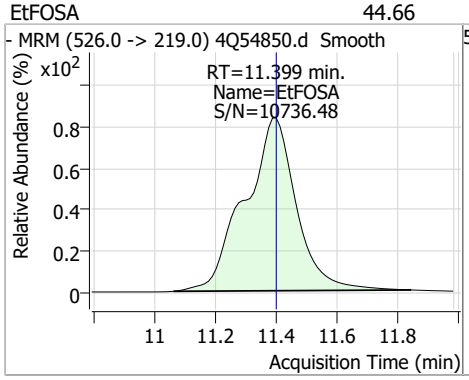


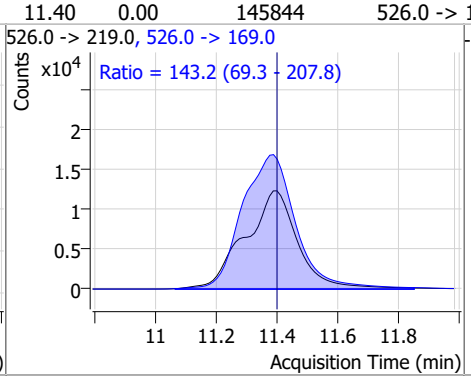
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.32	11.40	0.00	7671				

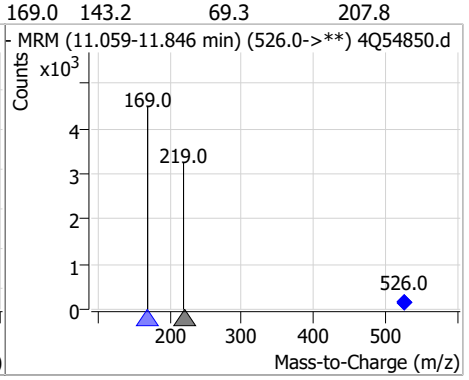


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	44.66	11.40	0.00	145844	526.0 -> 169.0	143.2	69.3	207.8







Manual Integration Approval Summary

Sample Number: S4Q804-RT
Lab FileID: 4Q54850.D
Injection Time: 12/08/23 11:08
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.96	Split peak
Perfluorohexanesulfonic acid	355-46-4		7.03	Split peak
Perfluorononanoic acid	375-95-1		7.37	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak
PFOSA	754-91-6		9.79	Split peak
MeFOSA	31506-32-8		11.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie
12/11/23 15:42

QQQ Check Tune Report

Instrument Name	LCMS4-Q
MS Model	G6470A
MS Instrument Serial	SG2004G105
Software_Firmware Version	10.0.142, FW: A.00.08.100
Tune Date & Time	04 December 2023 11:25:52
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.67E+0 [R] (Torr); 3.50E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	4000
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.00	0.01	Pass	0.70	0.72	0.02	Pass	202777
302.00	302.00	0.00	Pass	0.70	0.71	0.01	Pass	118515
601.98	602.01	0.03	Pass	0.70	0.68	-0.02	Pass	292915
1033.99	1034.02	0.03	Pass	0.70	0.69	-0.01	Pass	405873
1633.95	1633.99	0.04	Pass	0.70	0.69	-0.01	Pass	773026
2233.91	2233.91	0.00	Pass	0.70	0.71	0.01	Pass	485475

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.08	0.08	Pass	0.70	0.59	-0.11	Pass	42638
112.99	112.99	0.00	Pass	0.70	0.68	-0.02	Pass	151020
302.00	302.01	0.01	Pass	0.70	0.68	-0.02	Pass	112041
601.98	601.97	-0.01	Pass	0.70	0.68	-0.02	Pass	188919
1033.99	1033.98	-0.01	Pass	0.70	0.67	-0.03	Pass	312165
1633.95	1633.93	-0.02	Pass	0.70	0.70	0.00	Pass	552126
2233.91	2233.91	0.00	Pass	0.70	0.71	0.01	Pass	515692

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.81	-0.18	Pass	1.20	1.65	0.45	Pass	289969
302.00	301.84	-0.16	Pass	1.20	1.25	0.05	Pass	180926
601.98	601.88	-0.10	Pass	1.20	1.14	-0.06	Pass	411910
1033.99	1033.97	-0.02	Pass	1.20	1.14	-0.06	Pass	639151
1633.95	1633.99	0.04	Pass	1.20	1.14	-0.06	Pass	1506417
2233.91	2233.96	0.05	Pass	1.20	1.15	-0.05	Pass	1018316

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	1.20	1.06	-0.14	Pass	60618
112.99	113.00	0.01	Pass	1.20	1.18	-0.02	Pass	212281
302.00	301.99	-0.01	Pass	1.20	1.35	0.15	Pass	166450
601.98	601.97	-0.01	Pass	1.20	1.40	0.20	Pass	369094
1033.99	1033.98	-0.01	Pass	1.20	1.51	0.31	Pass	664259
1633.95	1633.93	-0.02	Pass	1.20	1.35	0.15	Pass	2016790
2233.91	2233.94	0.03	Pass	1.20	1.17	-0.03	Pass	1372594

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.68	-0.31	Pass	2.50	2.91	0.41	Pass	339595
302.00	301.80	-0.20	Pass	2.50	2.47	-0.03	Pass	223657
601.98	601.80	-0.18	Pass	2.50	2.51	0.01	Pass	634092
1033.99	1033.52	-0.47	Pass	2.50	2.64	0.14	Pass	1351348
1633.95	1633.50	-0.45	Pass	2.50	2.88	0.38	Pass	4706322
2233.91	2233.38	-0.53	Pass	2.50	3.15	0.65	Pass	4309825

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	2.50	2.36	-0.14	Pass	76756
112.99	112.97	-0.02	Pass	2.50	2.43	-0.07	Pass	291228
302.00	302.00	0.00	Pass	2.50	2.61	0.11	Pass	227107
601.98	601.96	-0.02	Pass	2.50	2.60	0.10	Pass	564001
1033.99	1034.01	0.02	Pass	2.50	2.66	0.16	Pass	1190821
1633.95	1633.98	0.03	Pass	2.50	2.46	-0.04	Pass	4202035
2233.91	2233.90	-0.01	Pass	2.50	2.23	-0.27	Pass	4290357

Manual Integration Approval Summary

Sample Number: S4Q804-IC804
Lab FileID: 4Q54851.D
Injection Time: 12/08/23 11:23

Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
EtFOSE	1691-99-2		11.32	Split peak
EtFOSA	4151-50-2		11.40	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54852.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 11:38:18 AM
Sample Name : ic804-1
Vial : P1-A2
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	95084	10.00	µg/L	0.012
M5-PFPeA	4.162	268.3 -> 223.0	40685	5.00	µg/L	0.000
M5-PFHxA	5.334	318.0 -> 273.0	32988	2.50	µg/L	0.000
M4-PFHpA	6.292	367.1 -> 322.0	31422	2.50	µg/L	0.000
M8-PFOA	6.964	421.1 -> 376.0	51339	2.50	µg/L	-0.012
M9-PFNA	7.509	472.1 -> 427.0	19744	1.25	µg/L	-0.012
M6-PFDA	7.992	519.1 -> 474.1	13003	1.25	µg/L	-0.012
M7-PFUnDA	8.449	570.0 -> 525.1	17542	1.25	µg/L	0.000
M2-PFDoDA	8.867	615.1 -> 570.0	18439	1.25	µg/L	-0.012
M2-PFTeDA	9.637	715.2 -> 670.0	18112	1.25	µg/L	0.000
M8-FOSA	9.781	506.1 -> 77.8	11195	2.50	µg/L	-0.012
M3-PFBS	5.202	302.1 -> 79.9	8909	2.50	µg/L	0.013
M3-PFHxS	7.029	402.1 -> 79.9	7560	2.50	µg/L	0.000
M8-PFOS	8.117	507.1 -> 79.9	8298	2.50	µg/L	0.000
M2-4:2FTS	5.046	329.1 -> 80.9	1254	5.00	µg/L	0.000
M2-6:2FTS	6.748	429.1 -> 80.9	2595	5.00	µg/L	0.000
M2-8:2FTS	7.804	529.1 -> 80.9	3392	5.00	µg/L	0.000
M3-MeFOSAA	8.074	573.2 -> 419.0	19113	5.00	µg/L	-0.012
M3-HFPO-DA	5.689	286.9 -> 168.9	33418	10.00	µg/L	0.000
M5-EtFOSAA	8.283	589.2 -> 419.0	15482	5.00	µg/L	0.000
M7-MeFOSE	11.022	623.2 -> 58.9	52293	25.00	µg/L	0.000
M9-EtFOSE	11.306	639.2 -> 58.9	60619	25.00	µg/L	-0.012
M5-EtFOSA	11.397	531.1 -> 219.0	6934	2.50	µg/L	0.000
M3-MeFOSA	11.126	515.0 -> 219.0	6245	2.50	µg/L	0.000
13C4-PFOS	8.118	502.8 -> 79.9	6765	2.50	µg/L	0.000
13C3-PFBA	2.691	216.0 -> 172.0	45431	5.00	µg/L	0.013
18O2-PFHxS	7.028	403.0 -> 83.9	4914	2.50	µg/L	-0.012
13C4-PFOA	6.964	417.1 -> 372.0	55018	2.50	µg/L	-0.012
13C2-PFDA	7.992	515.1 -> 470.1	15568	1.25	µg/L	-0.012
13C5-PFNA	7.509	468.0 -> 423.0	19286	1.25	µg/L	0.000
13C2-PFHxA	5.335	315.1 -> 270.0	34907	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.046	329.1 -> 80.9	1254	5.38	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C2-6:2FTS	6.748	429.1 -> 80.9	2595	5.13	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C2-8:2FTS	7.804	529.1 -> 80.9	3392	5.01	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-PFDoDA	8.867	615.1 -> 570.0	18439	1.19	µg/L	-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C2-PFTeDA	9.637	715.2 -> 670.0	18112	1.17	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C3-PFBS	5.202	302.1 -> 79.9	8909	2.37	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C3-PFHxS	7.029	402.1 -> 79.9	7560	2.45	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C4-PFBA	2.686	216.8 -> 171.9	95084	9.97 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	6.292	367.1 -> 322.0	31422	2.55 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C5-PFHxA	5.334	318.0 -> 273.0	32988	2.56 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C5-PFPeA	4.162	268.3 -> 223.0	40685	5.08 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C6-PFDA	7.992	519.1 -> 474.1	13003	1.15 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C7-PFUnDA	8.449	570.0 -> 525.1	17542	1.31 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C8-FOSA	9.781	506.1 -> 77.8	11195	2.55 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C8-PFOA	6.964	421.1 -> 376.0	51339	2.53 µg/L		-0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C8-PFOS	8.117	507.1 -> 79.9	8298	2.42 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C9-PFNA	7.509	472.1 -> 427.0	19744	1.28 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.2%		
d3-MeFOSAA	8.074	573.2 -> 419.0	19113	5.09 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C3-HFPO-DA	5.689	286.9 -> 168.9	33418	10.40 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
d3-MeFOSA	11.126	515.0 -> 219.0	6245	2.39 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%		
d5-EtFOSAA	8.283	589.2 -> 419.0	15482	4.87 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
d7-MeFOSE	11.022	623.2 -> 58.9	52293	24.18 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
d9-EtFOSE	11.306	639.2 -> 58.9	60619	25.02 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
d5-EtFOSA	11.397	531.1 -> 219.0	6934	2.42 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%		
Target Compounds						**QValue**
4:2FTS	5.047	327.1 -> 307.0	1558	0.72 µg/L		98
		327.1 -> 80.9	648			
6:2FTS	6.749	427.1 -> 407.0	2077	0.76 µg/L		93
		427.1 -> 80.9	673			
8:2FTS	7.804	527.1 -> 507.0	1346	0.75 µg/L		98
		527.1 -> 80.8	529			
EtFOSAA	8.284	584.2 -> 419.1	551	0.20 µg/L		96
		584.2 -> 526.0	164			
FOSA	9.785	498.1 -> 77.9	971	0.19 µg/L		97
		498.1 -> 478.0	37			
MeFOSAA	8.075	570.1 -> 419.0	545	0.20 µg/L	m	96
		570.1 -> 483.0	81			
PFBA	2.695	212.8 -> 168.9	2328	0.76 µg/L		100
PFBS	5.191	298.7 -> 79.9	518	0.19 µg/L		93
		298.7 -> 98.8	234			
PFDA	7.992	512.9 -> 469.0	2253	0.24 µg/L		88
		512.9 -> 219.0	338			
PFDoDA	8.868	613.1 -> 569.0	2308	0.17 µg/L		89
		613.1 -> 319.0	503			
PFDS	9.008	599.0 -> 79.9	441	0.20 µg/L		91

Perfluorinated Compounds by LC/MS/MS

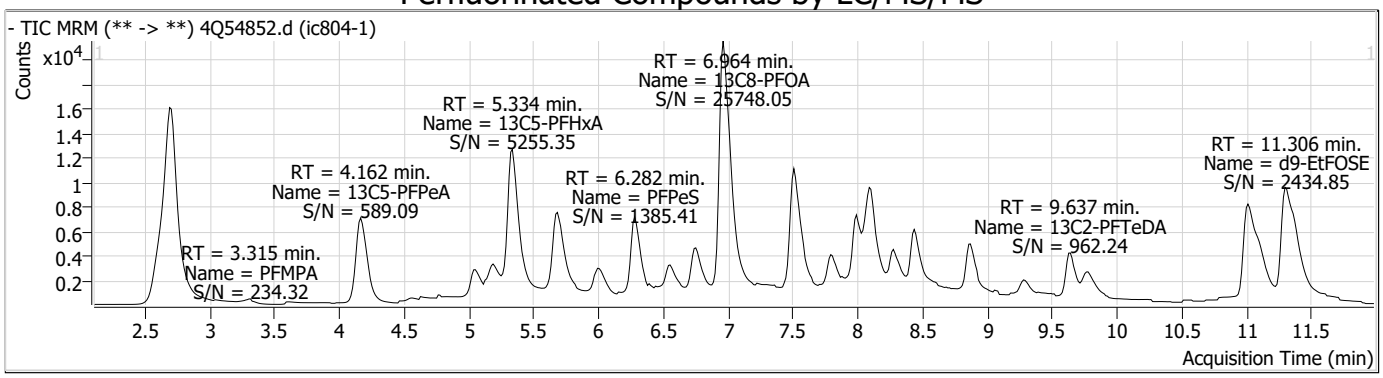
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	203				
PFHpA	6.293	363.1 -> 319.0	3438	0.19	µg/L		94
		363.1 -> 169.0	536				
PFHpS	7.612	449.0 -> 79.9	632	0.19	µg/L		91
		449.0 -> 98.9	368				
PFHxA	5.337	313.0 -> 269.0	2084	0.20	µg/L		99
		313.0 -> 118.9	66				
PFHxS	7.030	398.7 -> 79.9	454	0.19	µg/L	m	99
		398.7 -> 98.9	214				
PFNA	7.510	463.0 -> 419.0	2107	0.18	µg/L	m	99
		463.0 -> 219.0	495				
PFNS	8.574	548.8 -> 79.9	267	0.19	µg/L		98
		548.8 -> 98.9	136				
PFOA	6.978	413.0 -> 369.0	3902	0.18	µg/L		98
		413.0 -> 169.0	904				
PFOS	8.119	498.9 -> 79.9	824	0.24	µg/L	#m	40
		498.9 -> 98.8	280				
PFPeA	4.164	263.0 -> 219.0	3114	0.39	µg/L		100
PFPeS	6.282	349.1 -> 79.9	367	0.16	µg/L		99
		349.1 -> 98.9	153				
PFTeDA	9.637	713.1 -> 669.0	2576	0.20	µg/L		97
		713.1 -> 168.9	246				
PFTrDA	9.267	663.0 -> 619.0	2608	0.18	µg/L		88
		663.0 -> 168.9	476				
PFUnDA	8.449	563.1 -> 519.0	2092	0.16	µg/L		90
		563.1 -> 269.1	537				
11Cl-PF3OUdS	9.294	630.9 -> 450.9	3203	0.35	µg/L		97
		632.9 -> 452.9	1047				
9Cl-PF3ONS	8.451	530.8 -> 351.0	3283	0.35	µg/L		98
		532.8 -> 353.0	961				
ADONA	6.556	376.9 -> 250.9	8666	0.38	µg/L		100
		376.9 -> 84.8	2097				
HFPO-DA	5.690	284.9 -> 168.9	1182	0.37	µg/L		96
		284.9 -> 184.9	128				
3:3FTCA	3.617	241.0 -> 177.0	423	0.87	µg/L		99
		241.0 -> 117.0	37				
5:3FTCA	6.008	341.0 -> 237.1	8499	4.53	µg/L		97
		341.0 -> 217.0	5884				
7:3FTCA	7.524	441.0 -> 316.9	4678	4.75	µg/L		88
		441.0 -> 336.9	10190				
EtFOSA	11.399	526.0 -> 219.0	1187	0.40	µg/L		92
		526.0 -> 169.0	1530				
EtFOSE	11.320	630.0 -> 58.9	2179	1.02	µg/L		100
MeFOSA	11.115	511.9 -> 219.0	840	0.38	µg/L		96
		511.9 -> 169.0	1286				
MeFOSE	11.035	616.1 -> 58.9	2158	1.04	µg/L		100
PFDoDS	9.764	699.1 -> 79.9	309	0.18	µg/L		98
		699.1 -> 98.8	179				
NFDHA	5.216	295.0 -> 201.0	293	0.39	µg/L		88
		295.0 -> 84.9	59				
PFMBA	4.566	279.0 -> 85.1	1729	0.39	µg/L		100
PFMPA	3.315	229.0 -> 84.9	1898	0.39	µg/L		100
PFEESA	5.722	314.8 -> 134.9	2585	0.33	µg/L		94
		314.8 -> 82.9	148				

 # = Qualifier out of range, m = manually integrated, + = Area summed

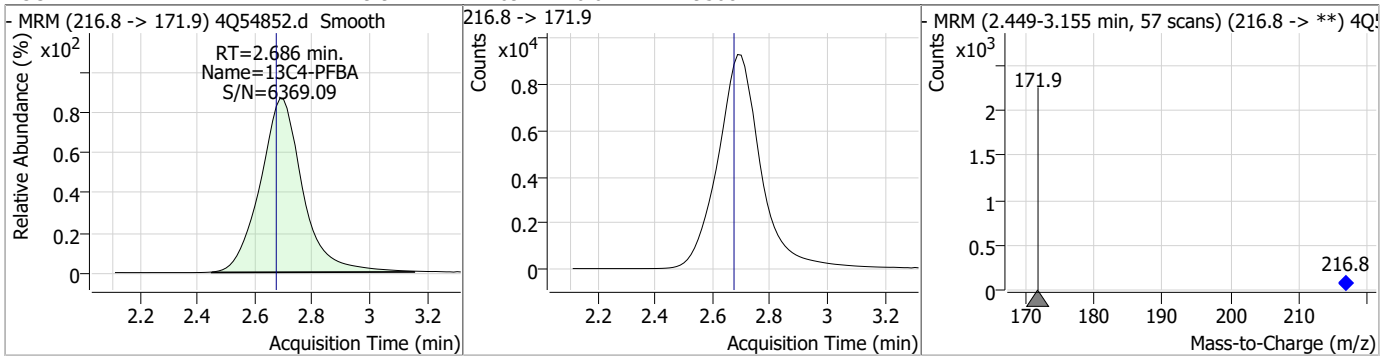
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

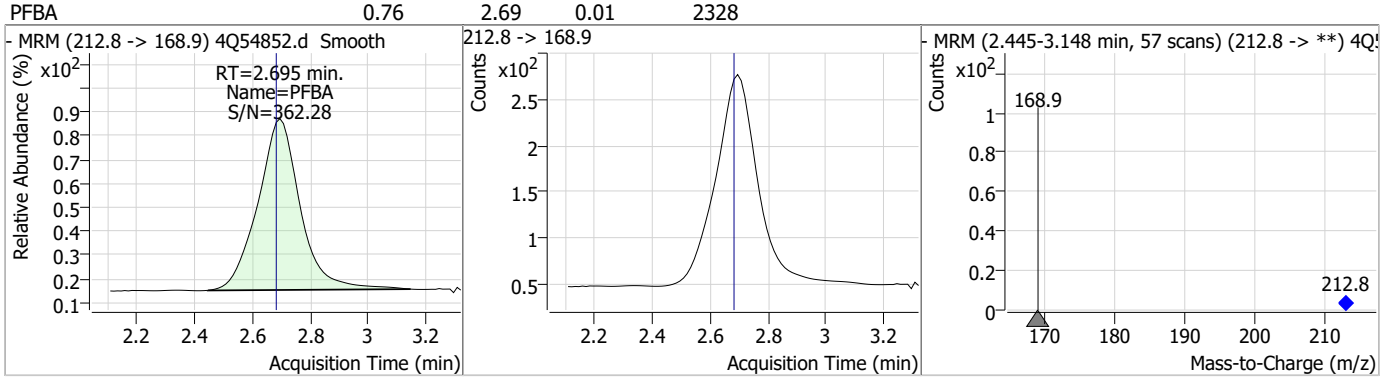
Perfluorinated Compounds by LC/MS/MS



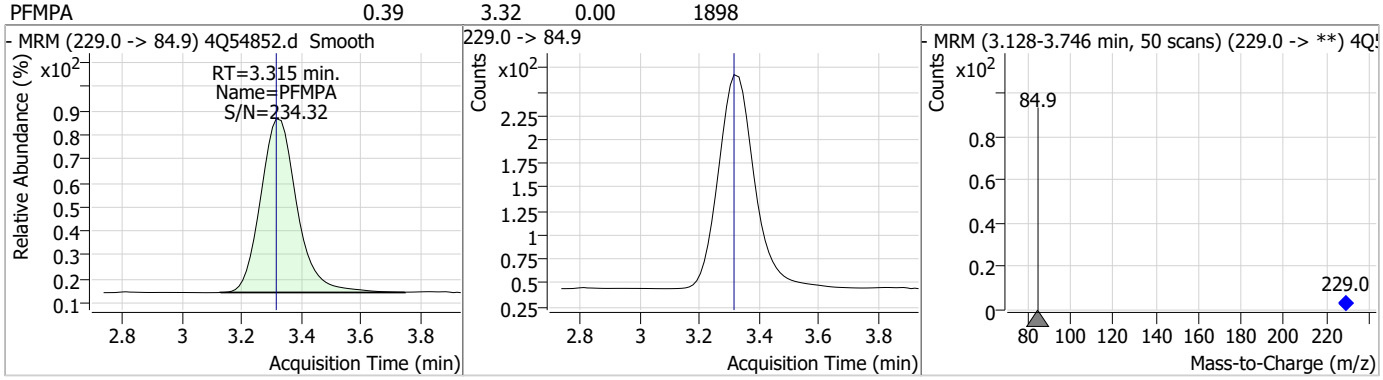
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.97	2.69	0.01	95084				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.76	2.69	0.01	2328				

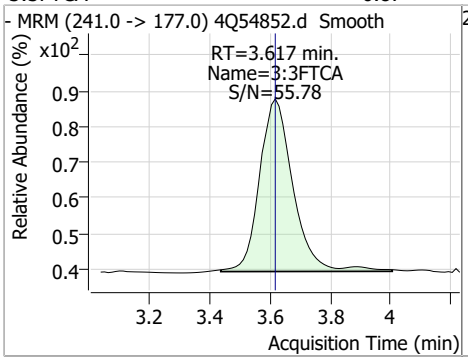


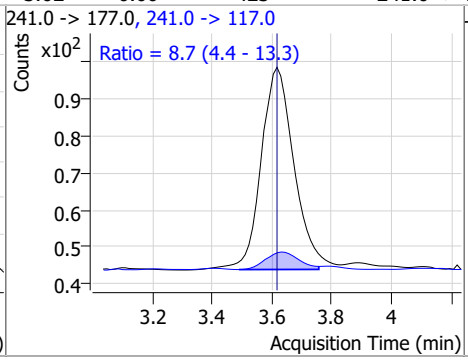
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.39	3.32	0.00	1898				

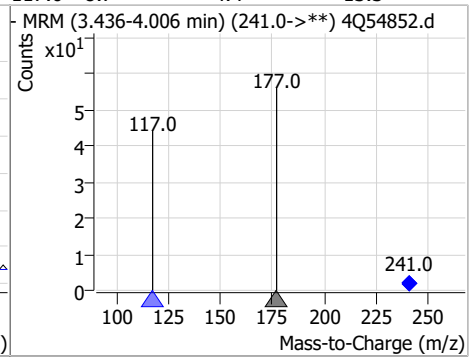


Perfluorinated Compounds by LC/MS/MS

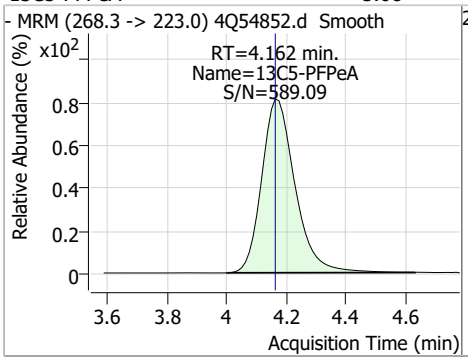
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.87	3.62	0.00	423	241.0 -> 117.0	8.7	4.4	13.3

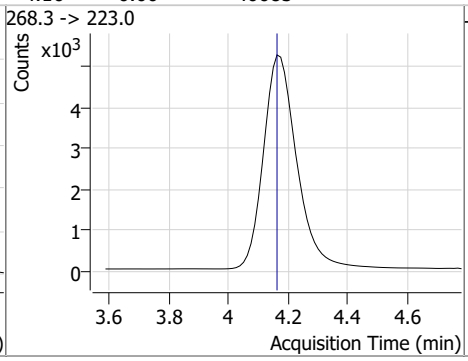


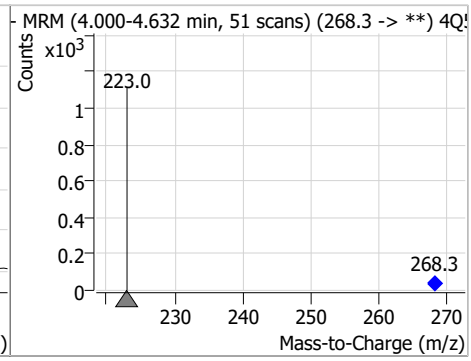




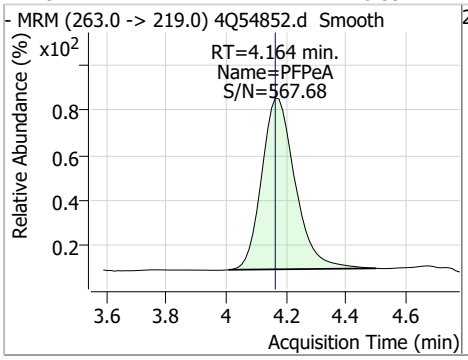
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.08	4.16	0.00	40685				

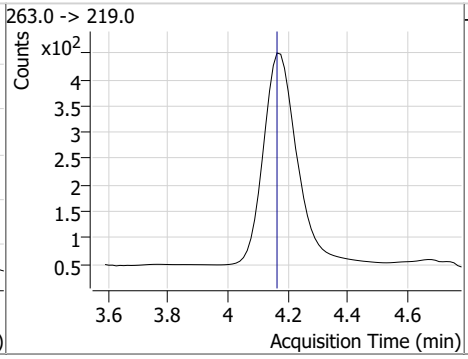


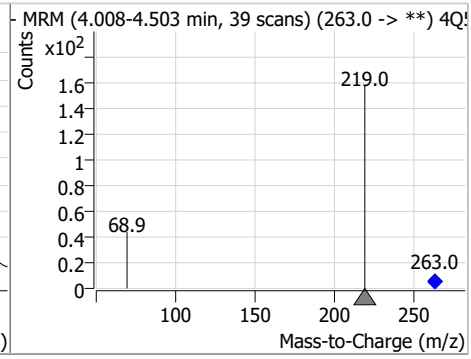




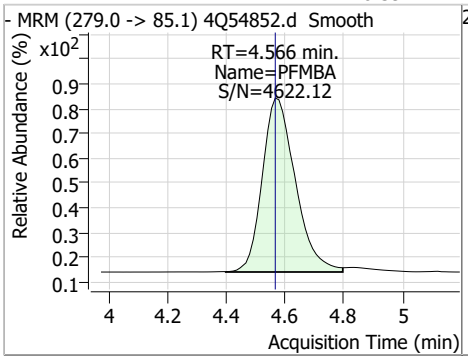
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.39	4.16	0.00	3114				

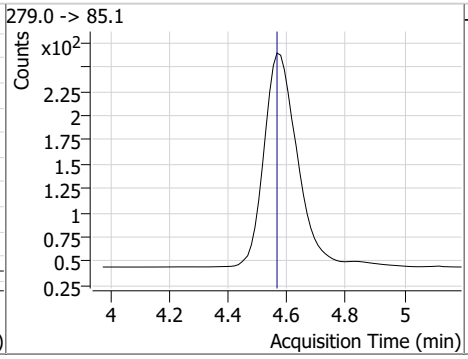


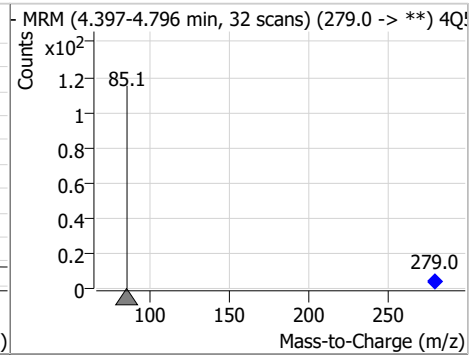




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.39	4.57	0.00	1729				

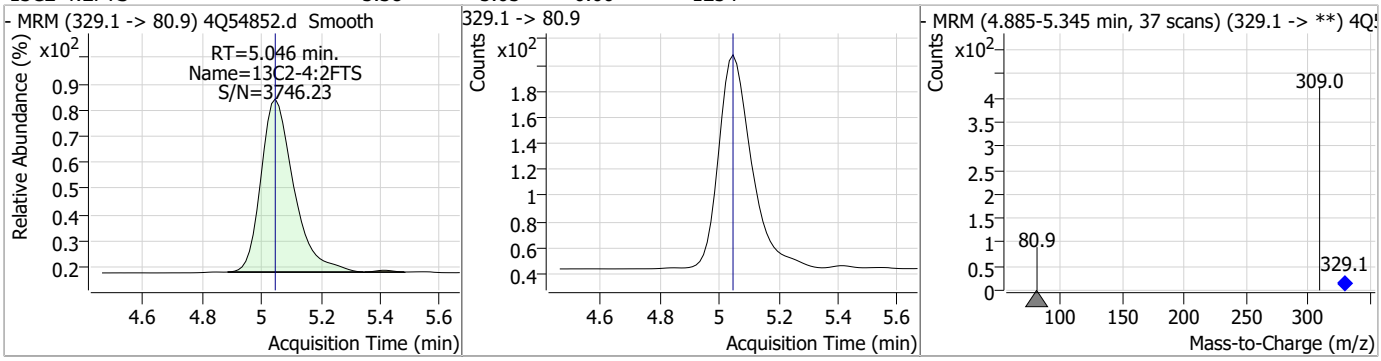




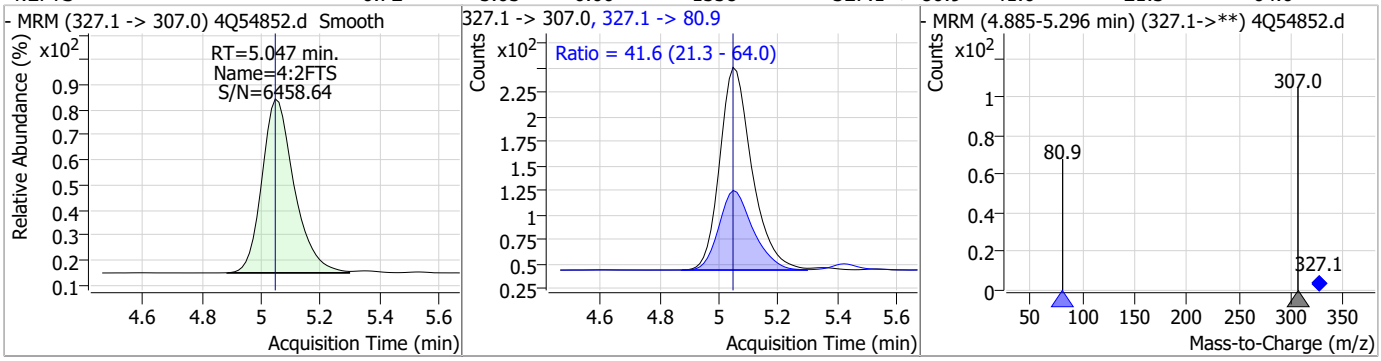


Perfluorinated Compounds by LC/MS/MS

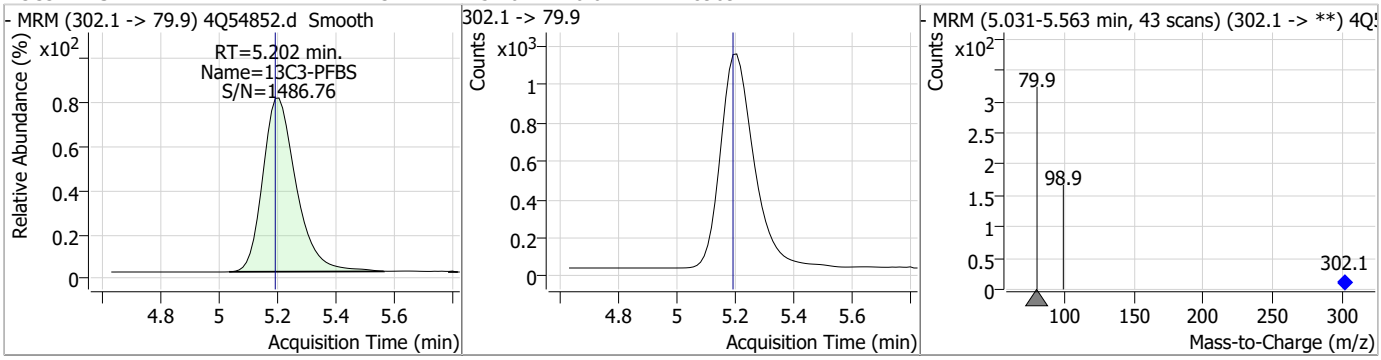
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.38	5.05	0.00	1254				



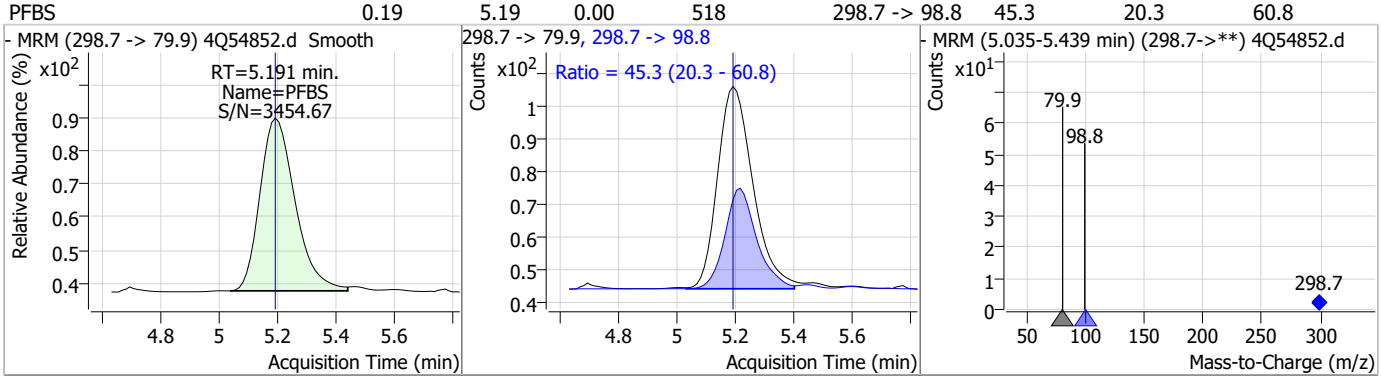
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.72	5.05	0.00	1558	327.1 -> 80.9	41.6	21.3	64.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.37	5.20	0.01	8909				

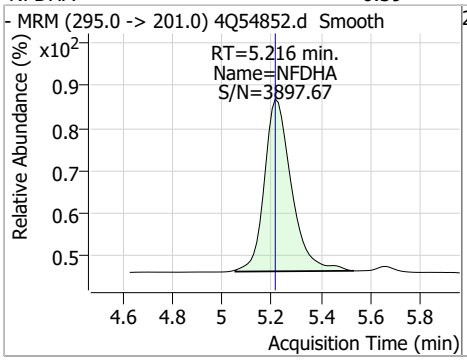


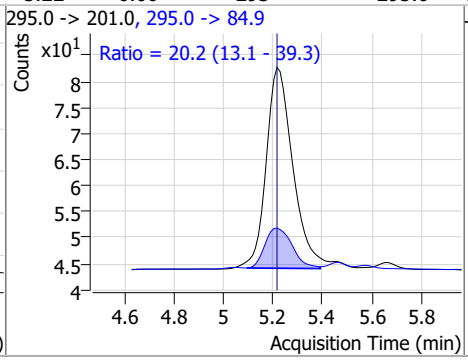
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.19	5.19	0.00	518	298.7 -> 98.8	45.3	20.3	60.8

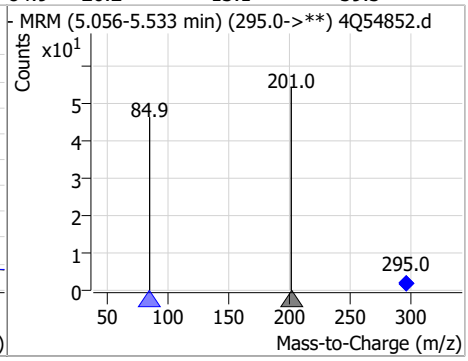


Perfluorinated Compounds by LC/MS/MS

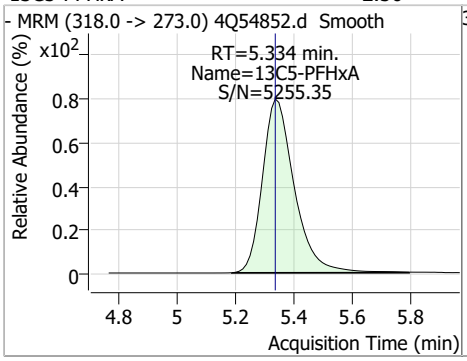
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.39	5.22	0.00	293	295.0 -> 84.9	20.2	13.1	39.3

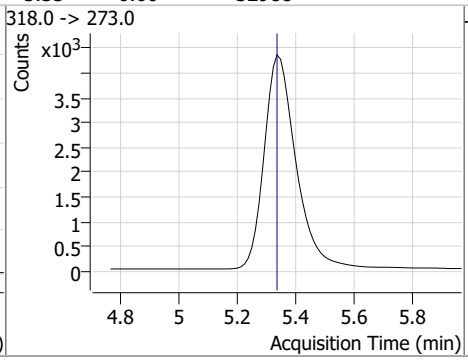


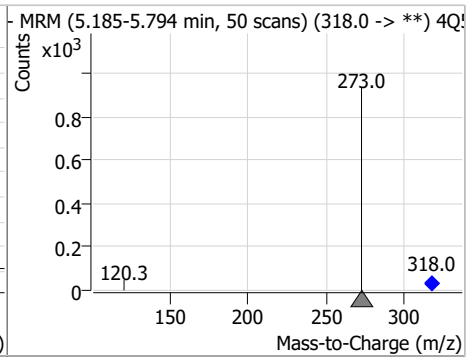




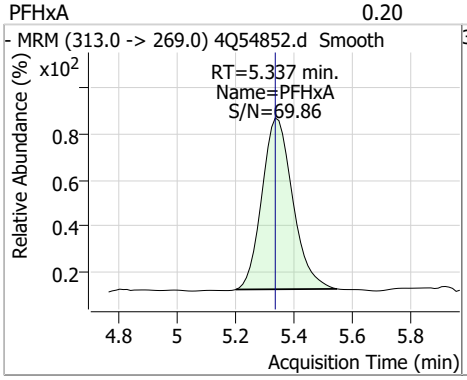
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.33	0.00	32988				

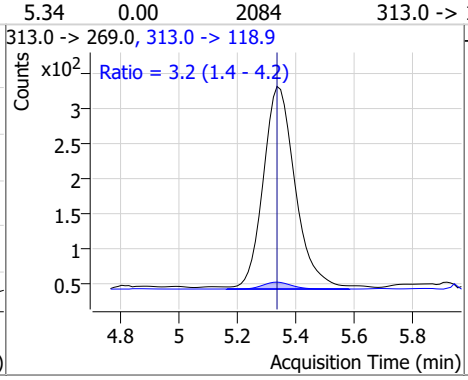


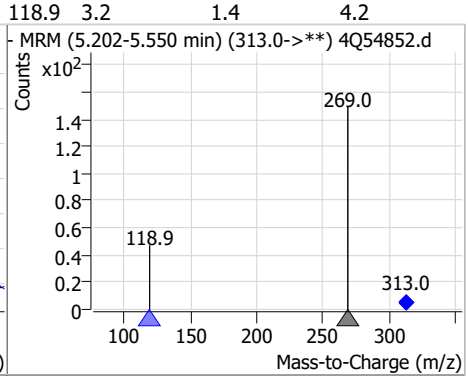




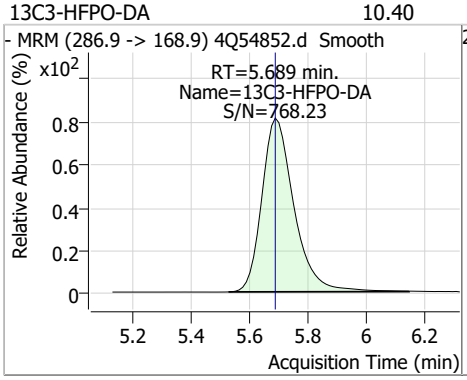
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.20	5.34	0.00	2084	313.0 -> 118.9	3.2	1.4	4.2

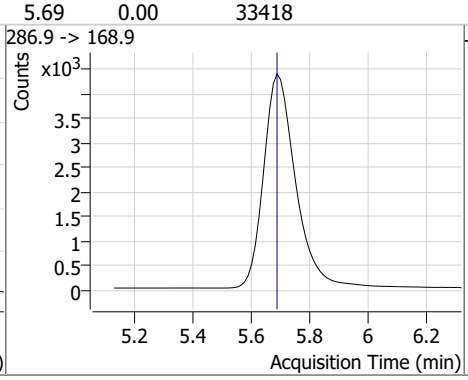


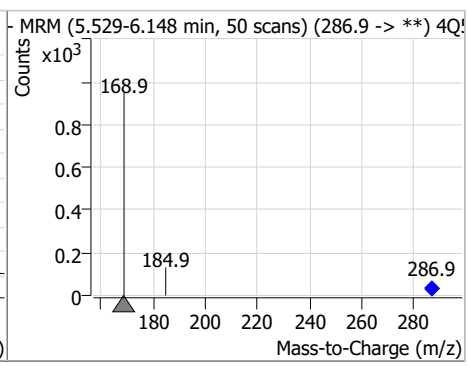




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.40	5.69	0.00	33418				

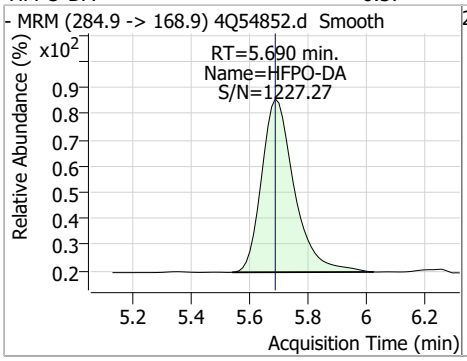


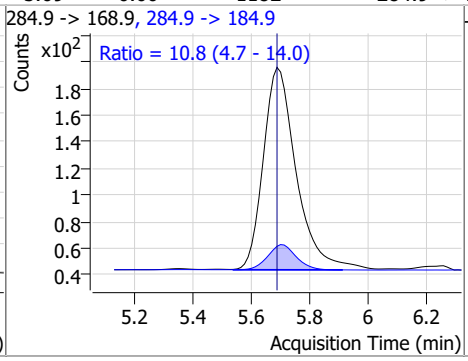


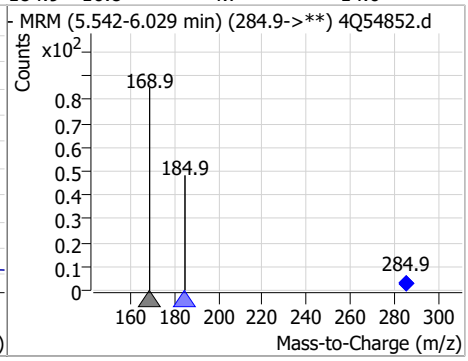


Perfluorinated Compounds by LC/MS/MS

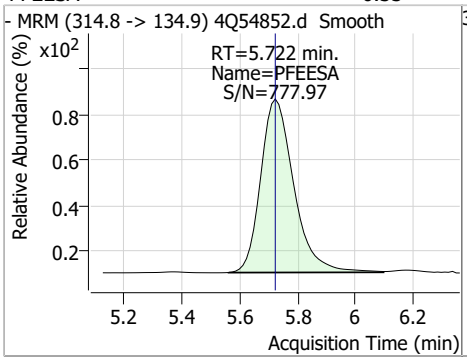
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.37	5.69	0.00	1182	284.9 -> 184.9	10.8	4.7	14.0

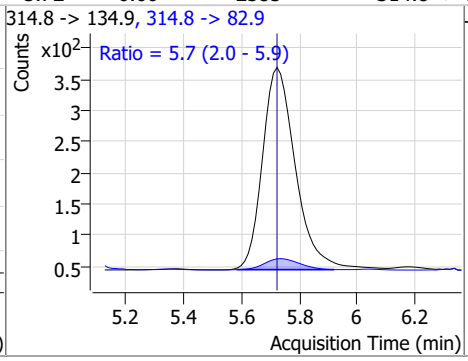


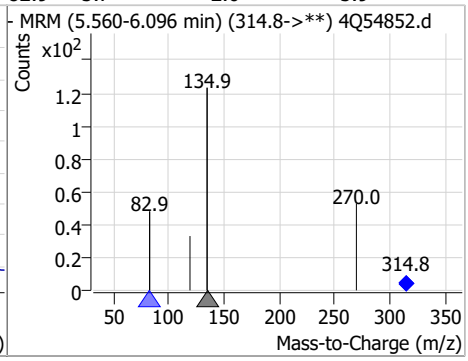




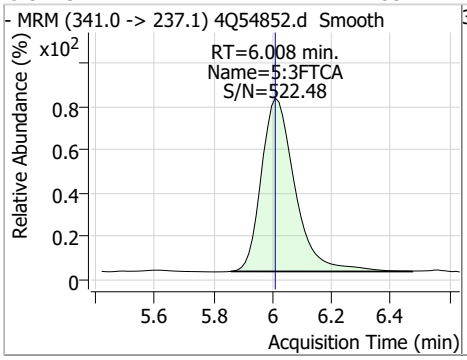
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.33	5.72	0.00	2585	314.8 -> 82.9	5.7	2.0	5.9

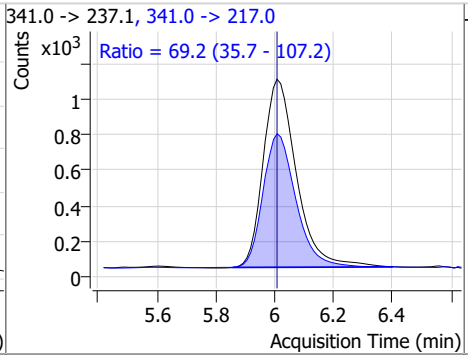


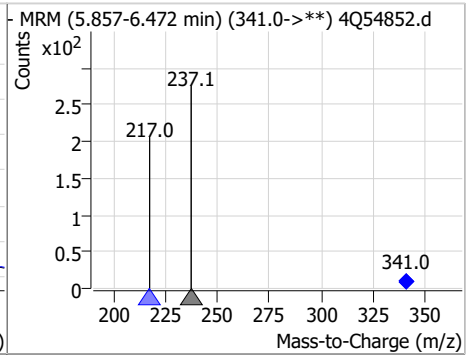




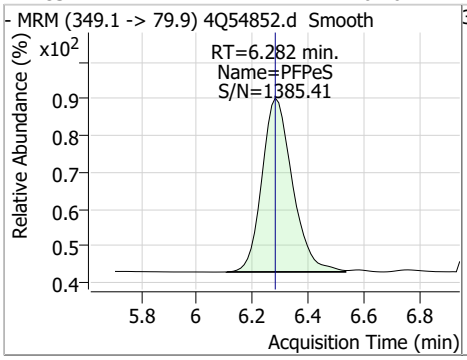
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.53	6.01	0.00	8499	341.0 -> 217.0	69.2	35.7	107.2

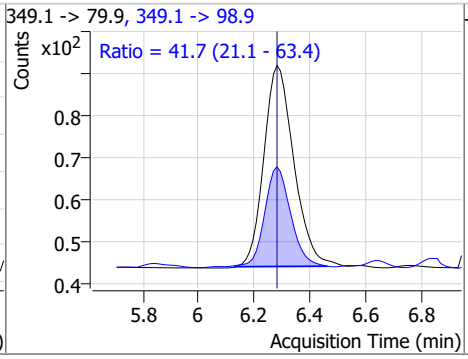


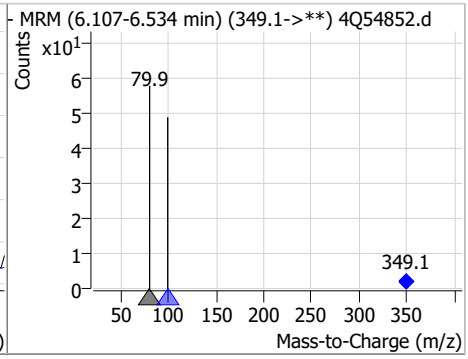




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.16	6.28	0.00	367	349.1 -> 98.9	41.7	21.1	63.4

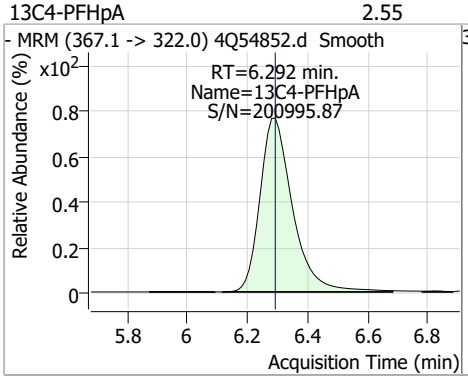


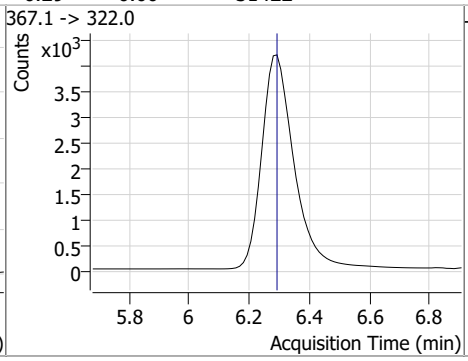


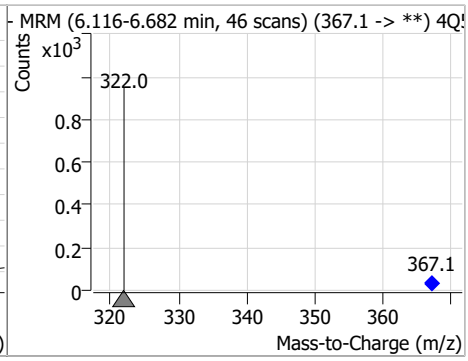


Perfluorinated Compounds by LC/MS/MS

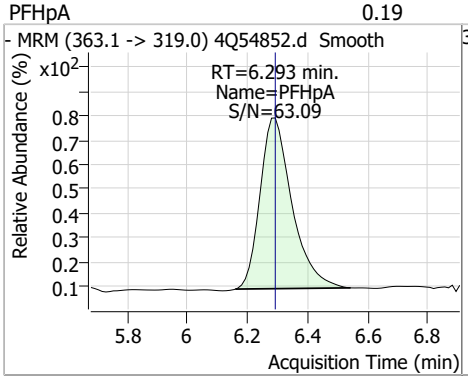
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.55	6.29	0.00	31422				

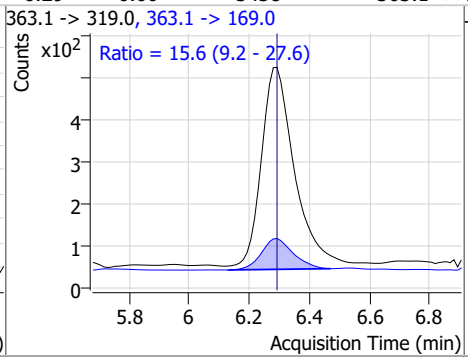


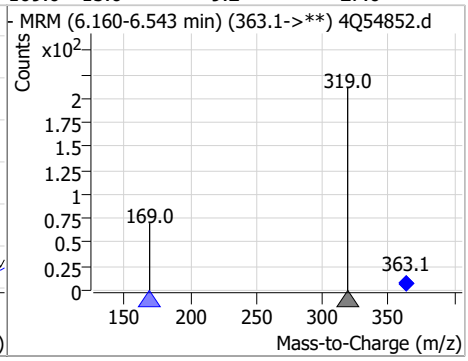




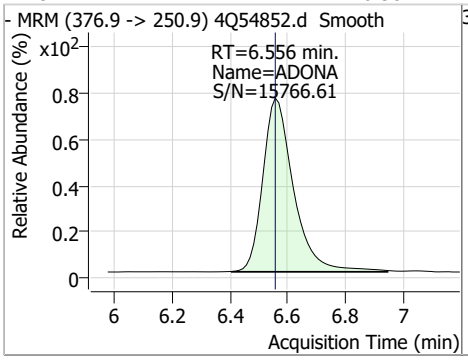
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.19	6.29	0.00	3438	363.1 -> 169.0	15.6	9.2	27.6

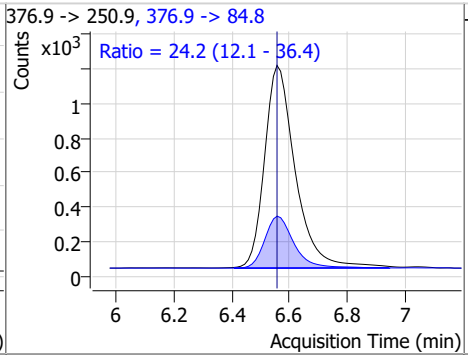


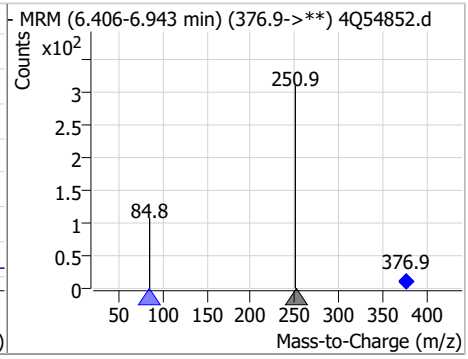




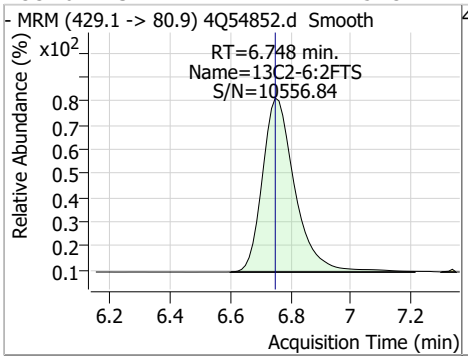
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.38	6.56	0.00	8666	376.9 -> 84.8	24.2	12.1	36.4

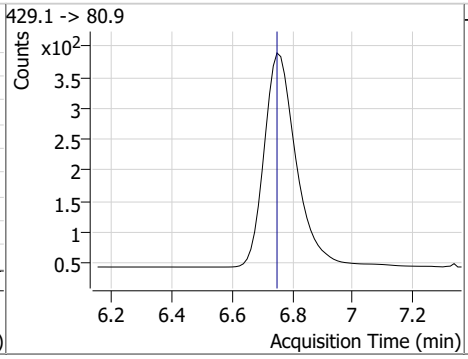


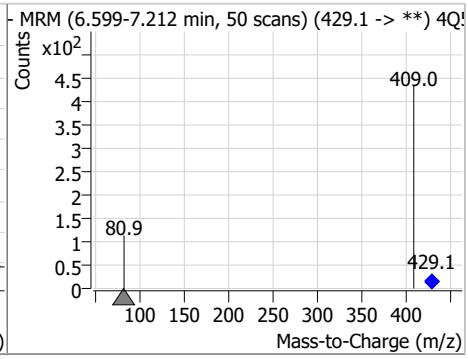




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.13	6.75	0.00	2595				

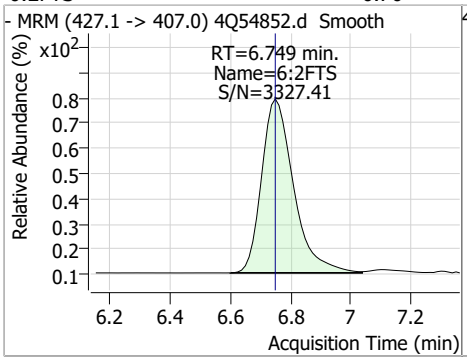


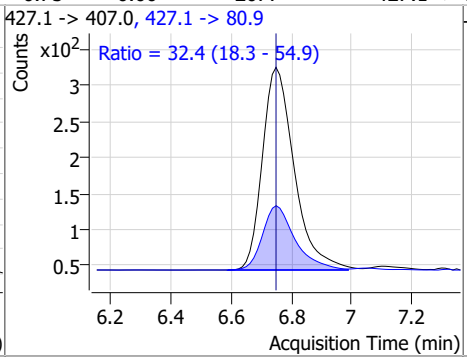


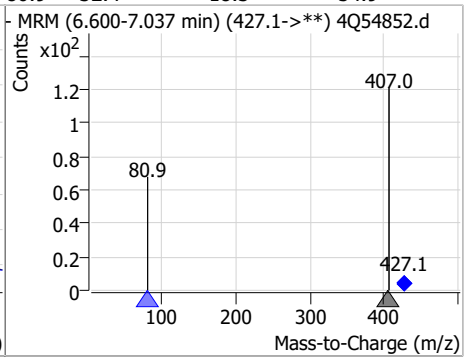


Perfluorinated Compounds by LC/MS/MS

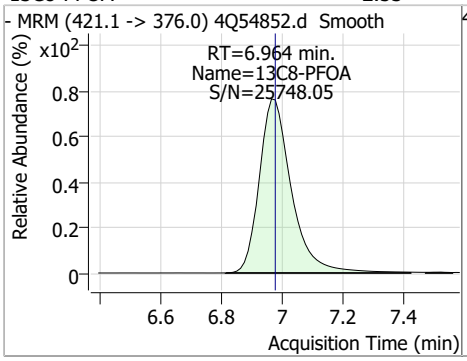
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.76	6.75	0.00	2077	427.1 -> 80.9	32.4	18.3	54.9

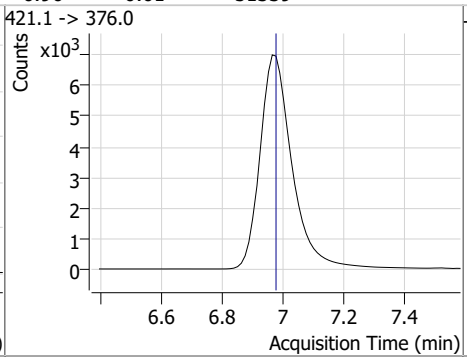


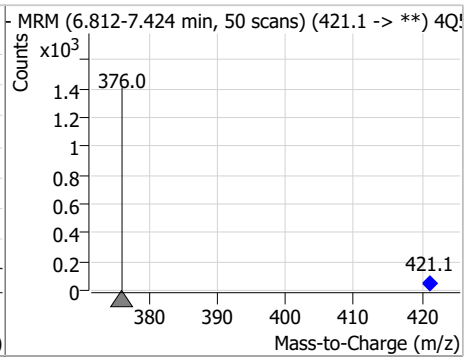




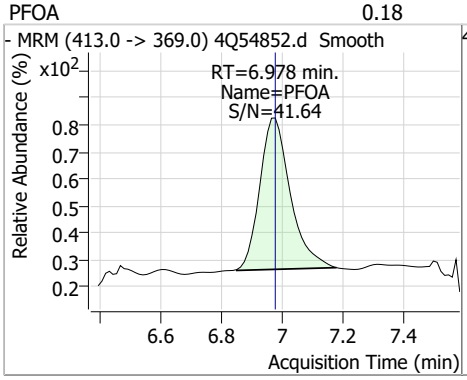
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.53	6.96	-0.01	51339				

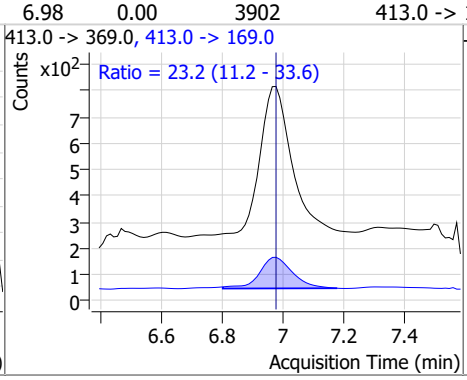


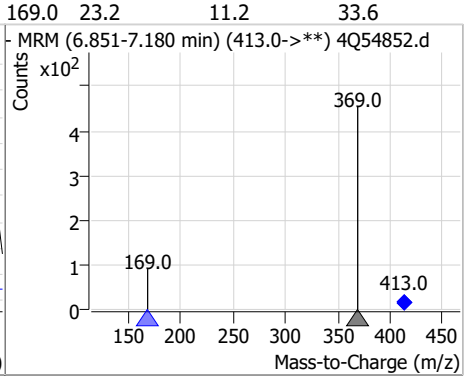




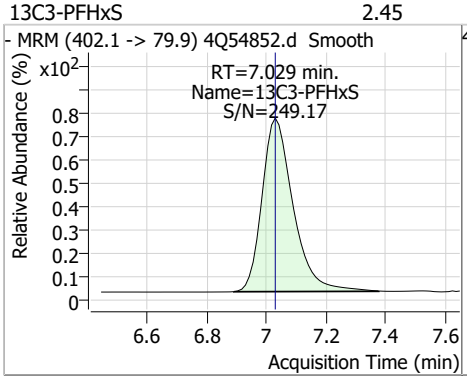
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.18	6.98	0.00	3902	413.0 -> 169.0	23.2	11.2	33.6

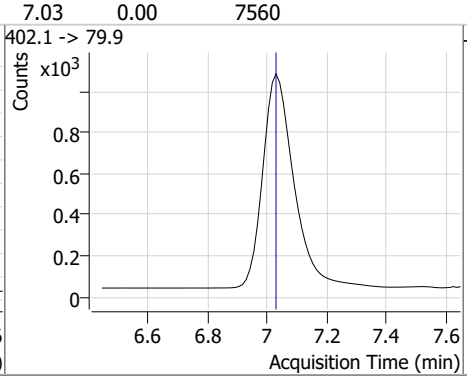


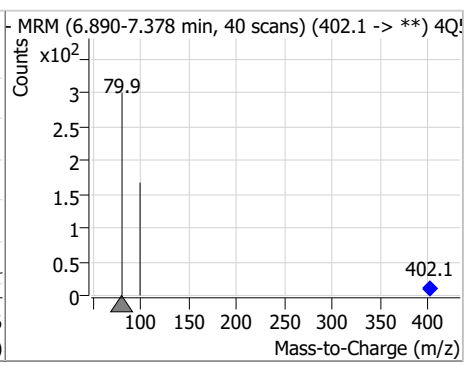




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.45	7.03	0.00	7560				

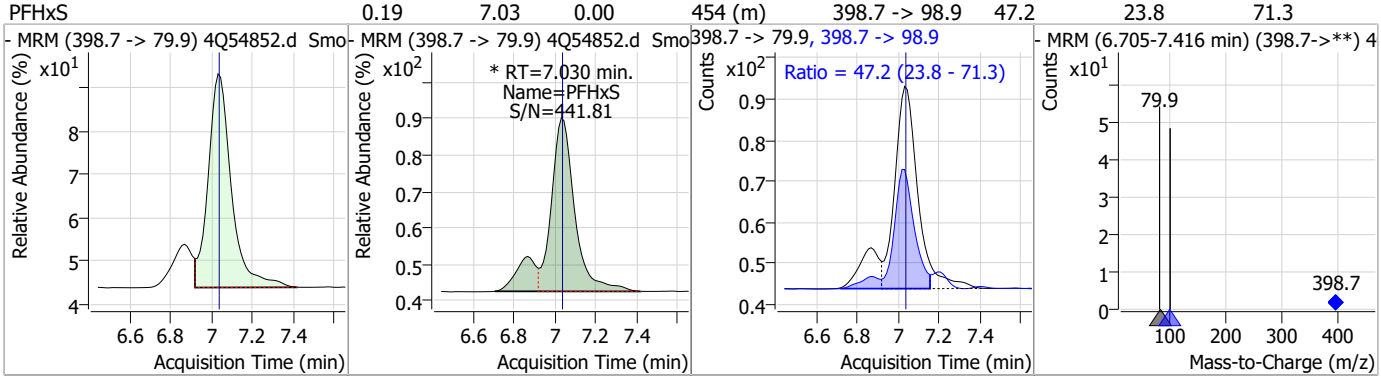




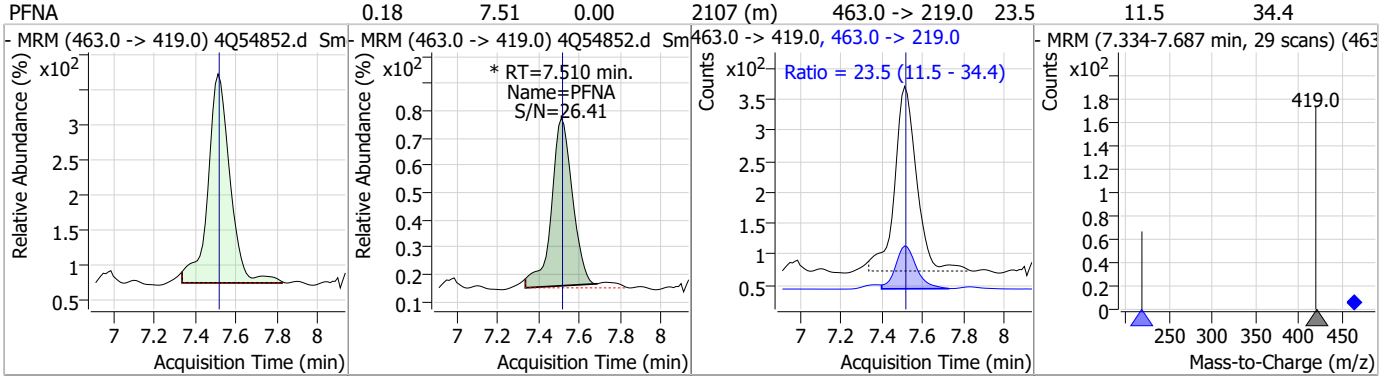


Perfluorinated Compounds by LC/MS/MS

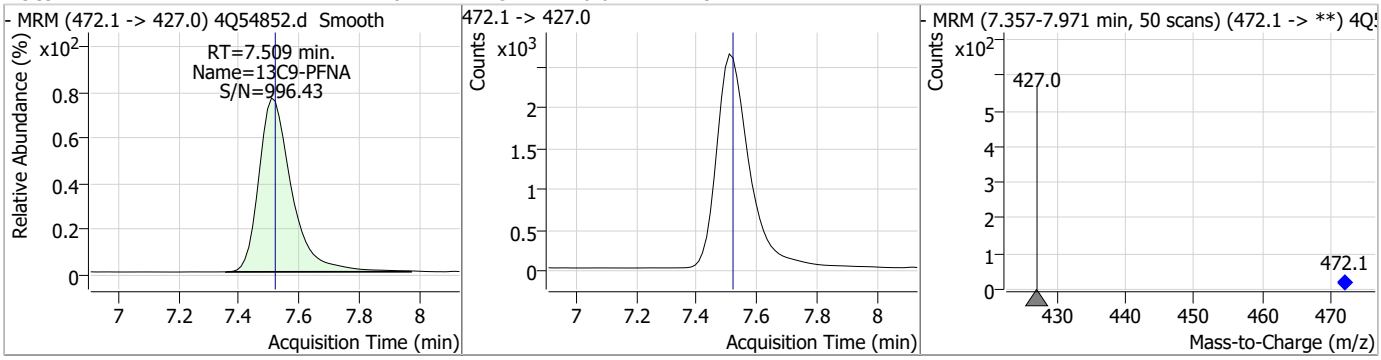
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.19	7.03	0.00	454 (m)	398.7 -> 98.9	47.2	23.8	71.3



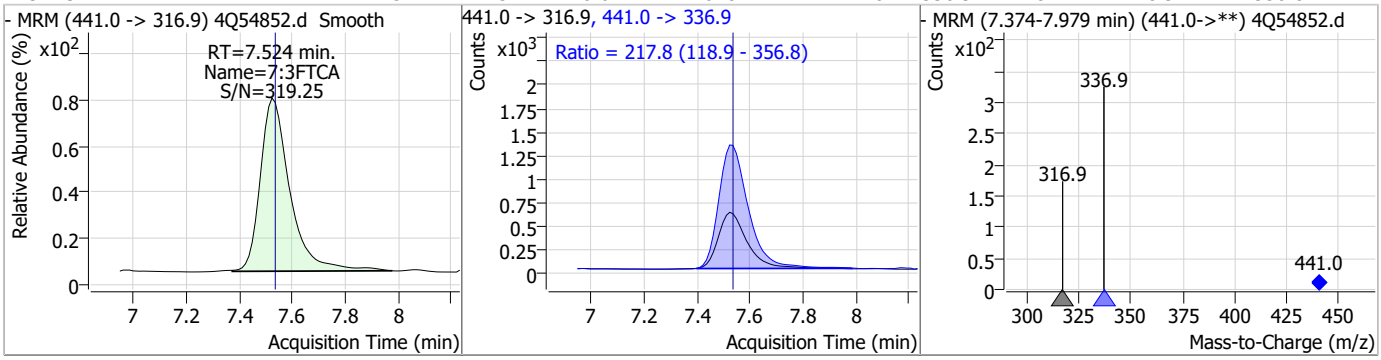
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.18	7.51	0.00	2107 (m)	463.0 -> 219.0	23.5	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.51	-0.01	19744				

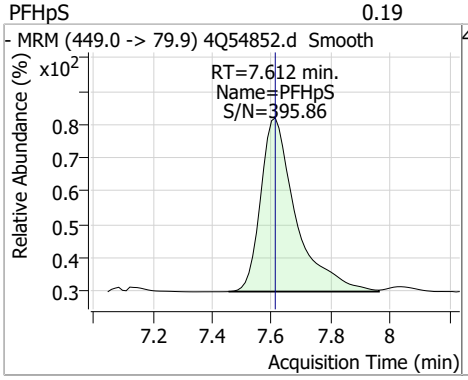


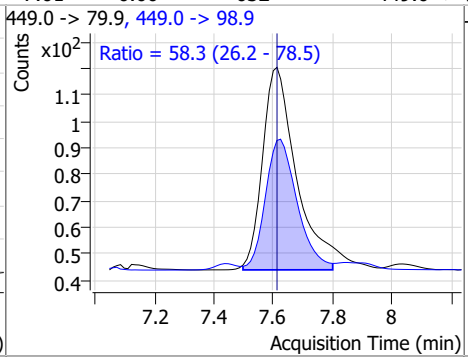
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	4.75	7.52	-0.01	4678	441.0 -> 336.9	217.8	118.9	356.8

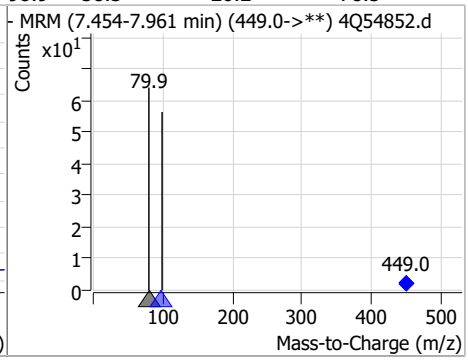


Perfluorinated Compounds by LC/MS/MS

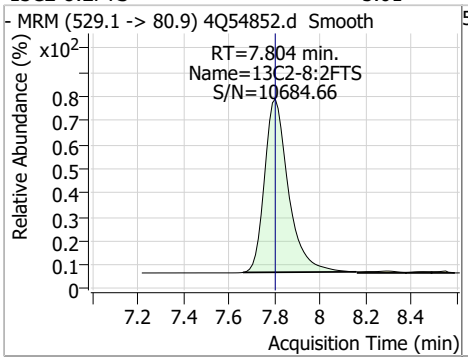
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.19	7.61	0.00	632	449.0 -> 98.9	58.3	26.2	78.5

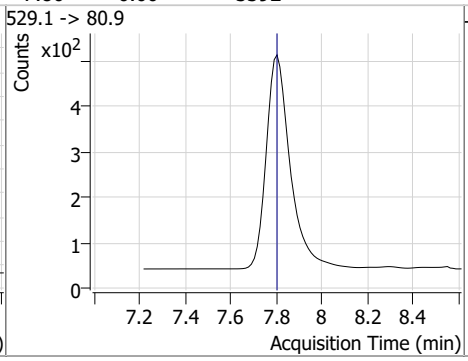


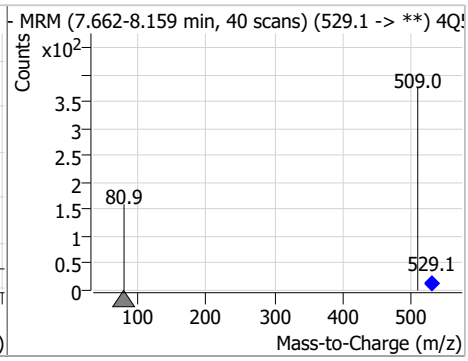




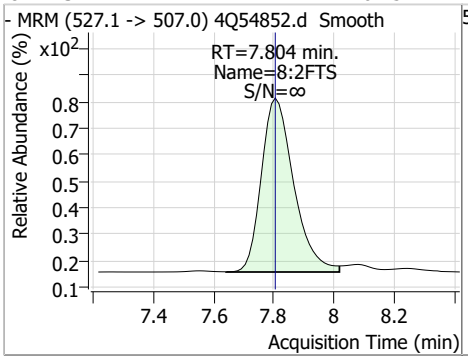
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.01	7.80	0.00	3392				

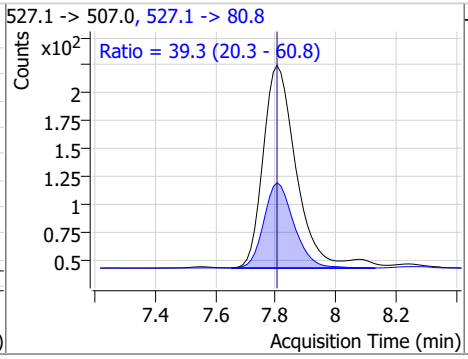


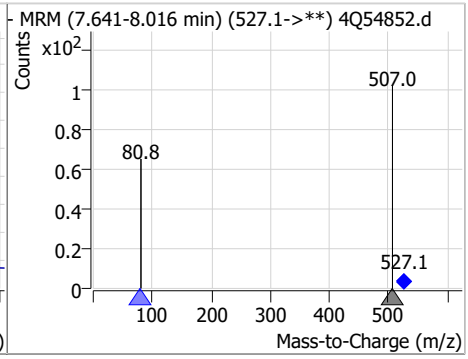




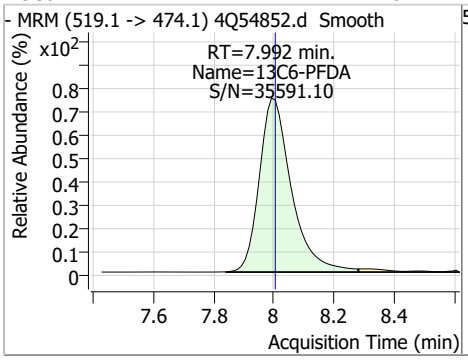
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.75	7.80	0.00	1346	527.1 -> 80.8	39.3	20.3	60.8

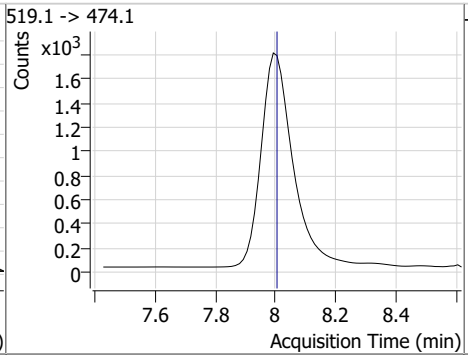


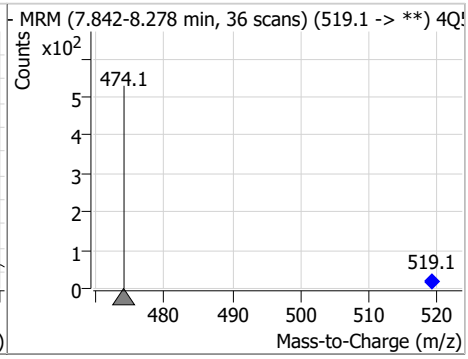




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.15	7.99	-0.01	13003				

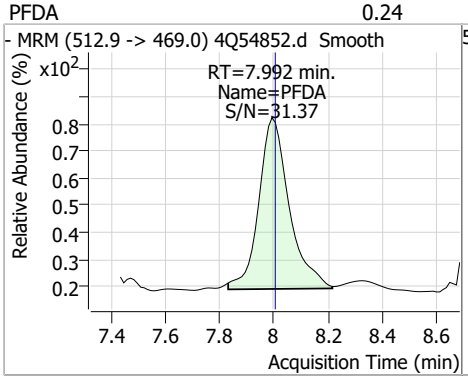


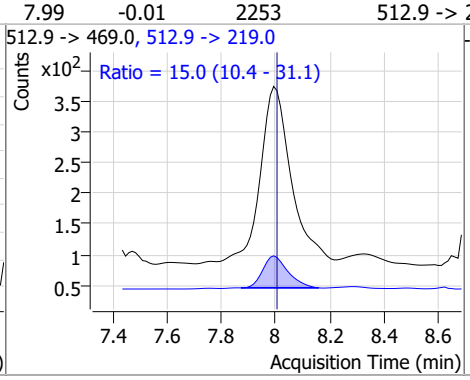


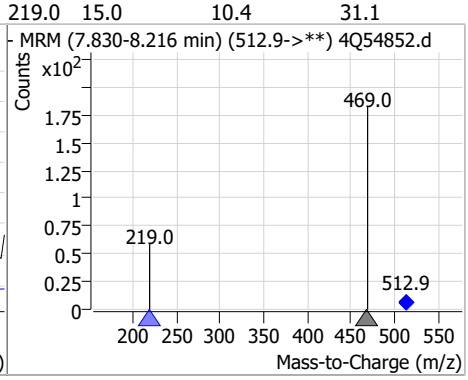


Perfluorinated Compounds by LC/MS/MS

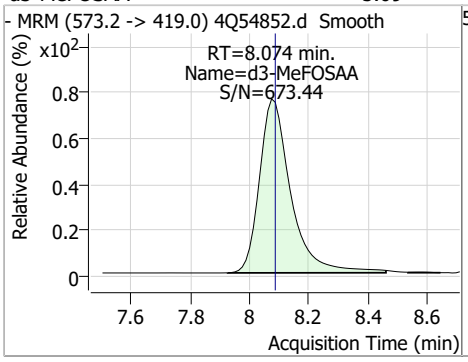
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.24	7.99	-0.01	2253	512.9 -> 219.0	15.0	10.4	31.1

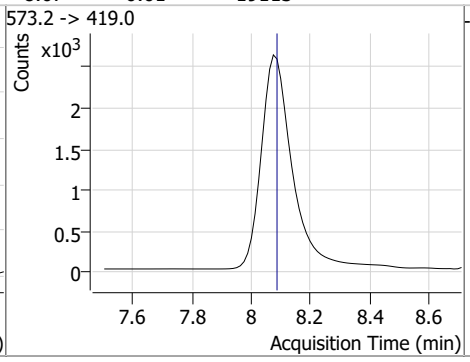


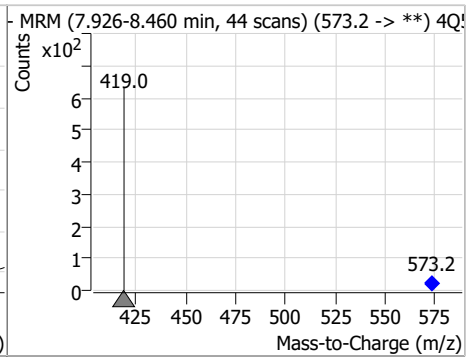




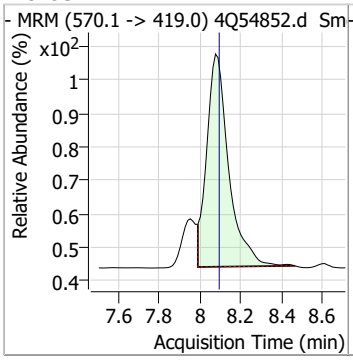
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.09	8.07	-0.01	19113				

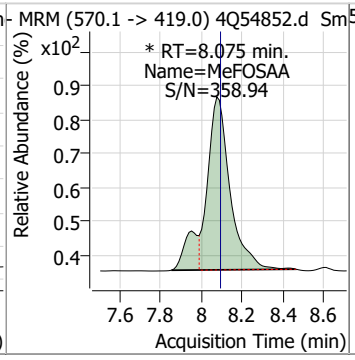


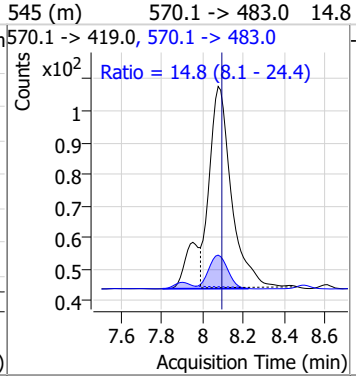


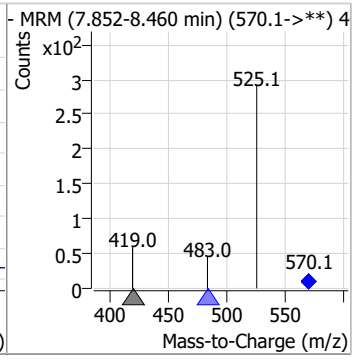


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.20	8.07	-0.01	545 (m)	570.1 -> 483.0	14.8	8.1	24.4

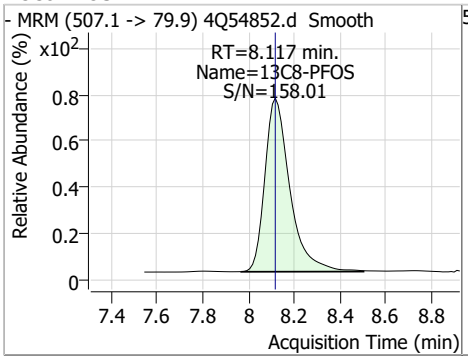


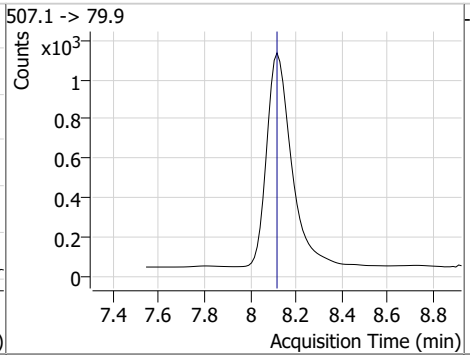


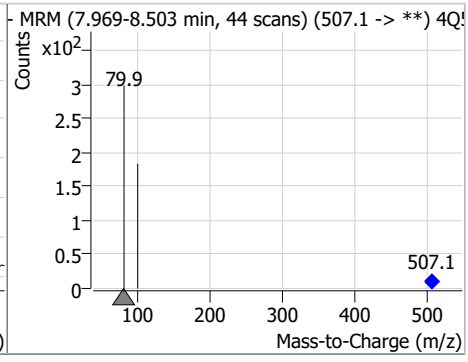




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.42	8.12	0.00	8298				

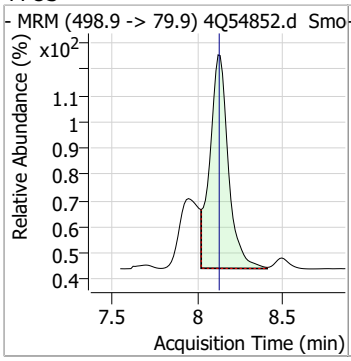


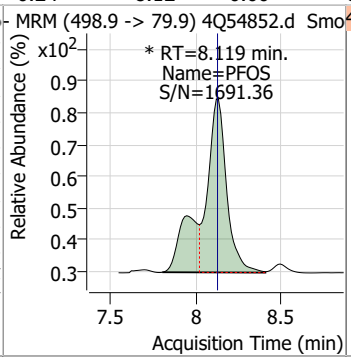


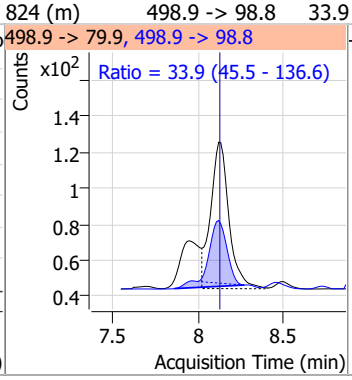


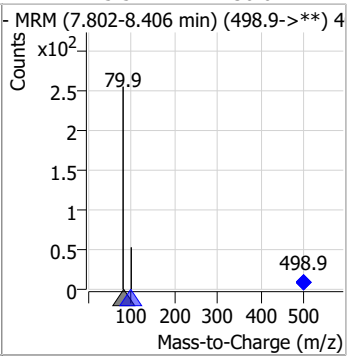
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.24	8.12	0.00	824 (m)	498.9 -> 98.8	33.9	45.5	136.6

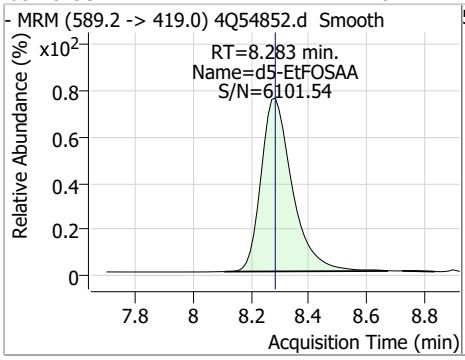


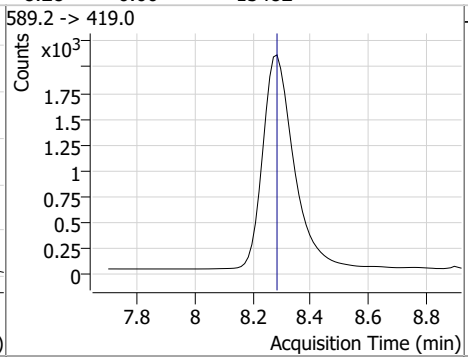


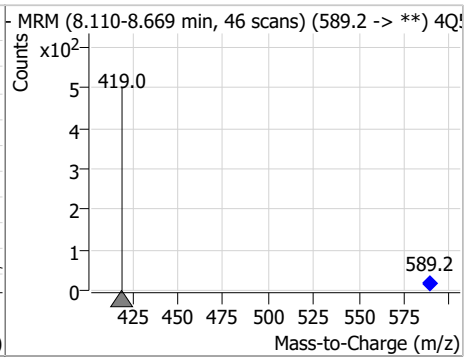




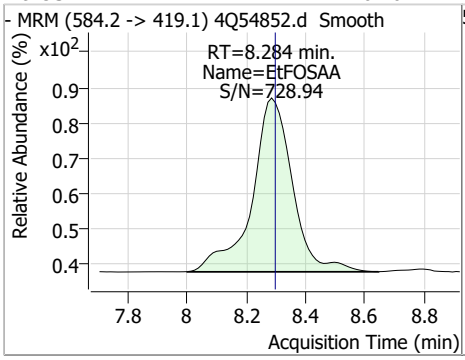
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.87	8.28	0.00	15482				

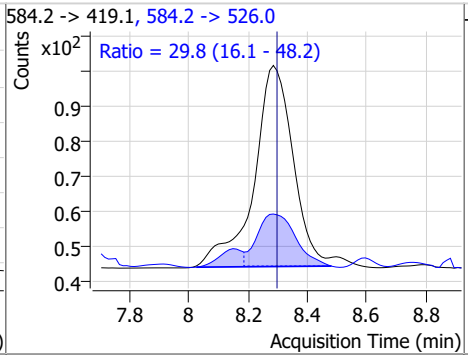


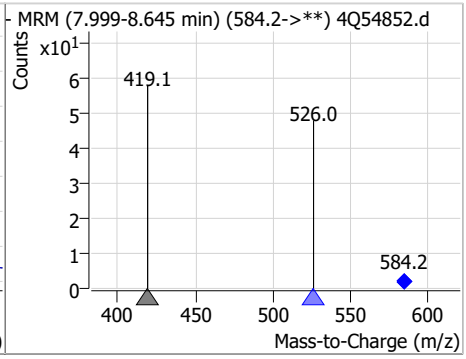




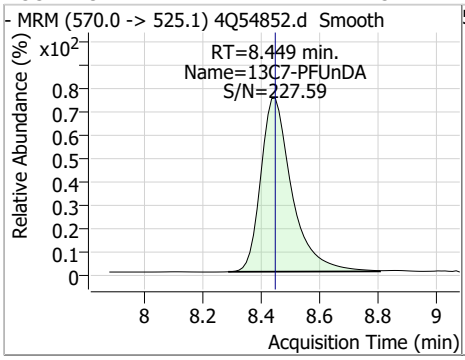
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.20	8.28	-0.01	551	584.2 -> 526.0	29.8	16.1	48.2

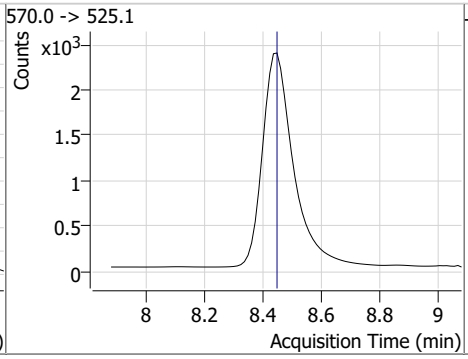


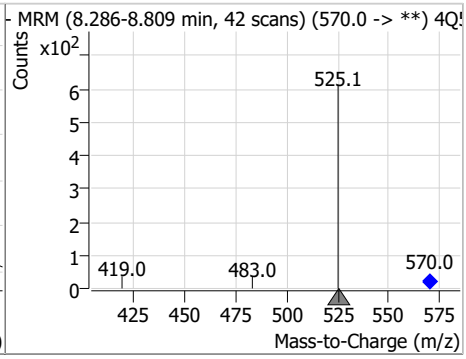




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.31	8.45	0.00	17542				

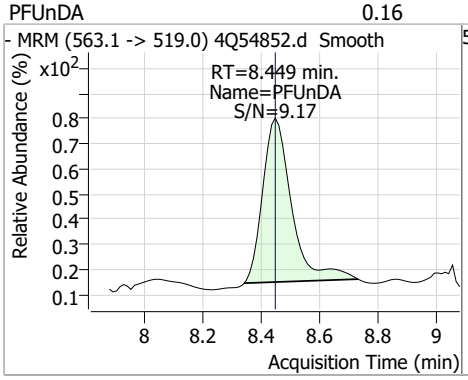


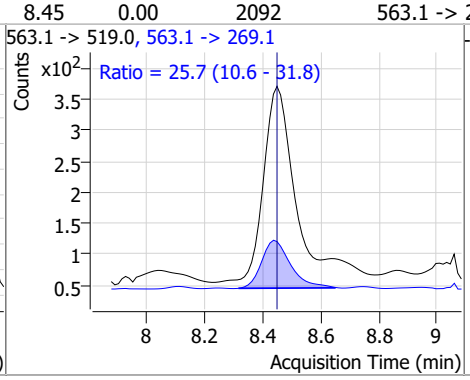


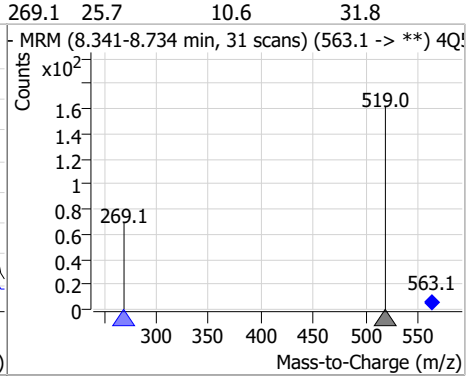


Perfluorinated Compounds by LC/MS/MS

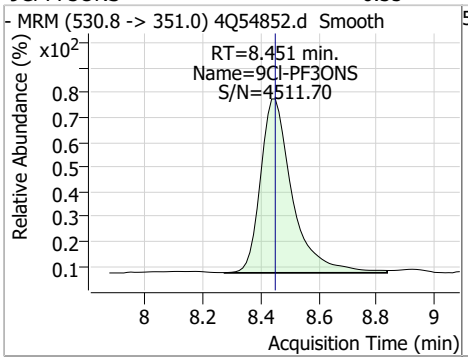
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.16	8.45	0.00	2092	563.1 -> 269.1	25.7	10.6	31.8

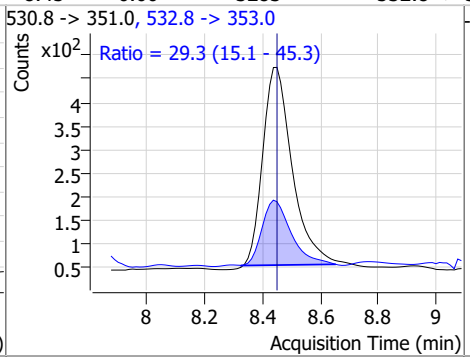


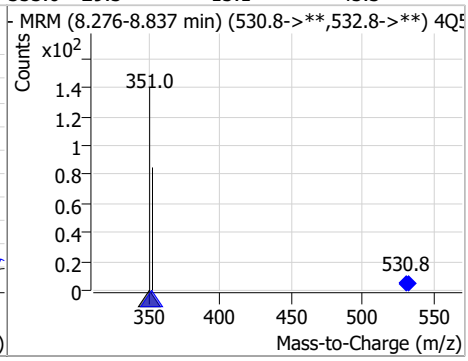




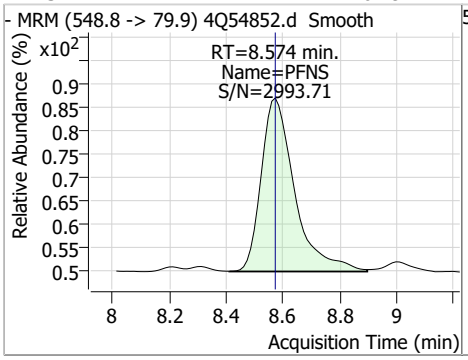
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.35	8.45	0.00	3283	532.8 -> 353.0	29.3	15.1	45.3

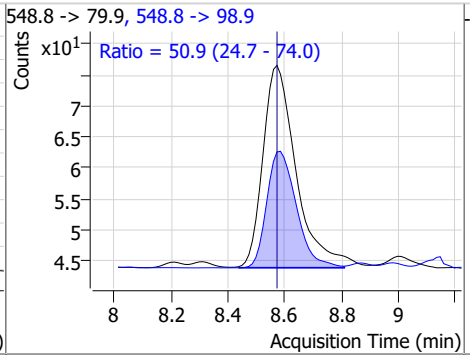


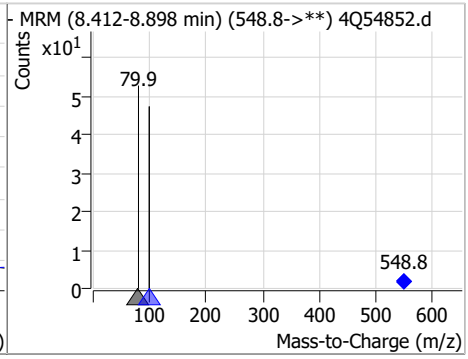




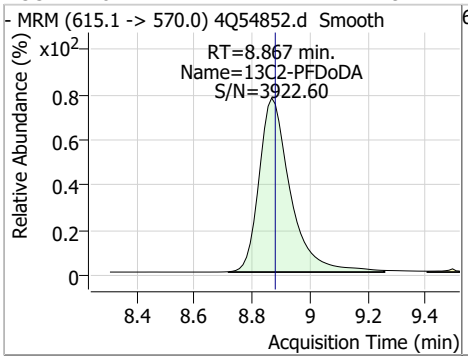
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.19	8.57	0.00	267	548.8 -> 98.9	50.9	24.7	74.0

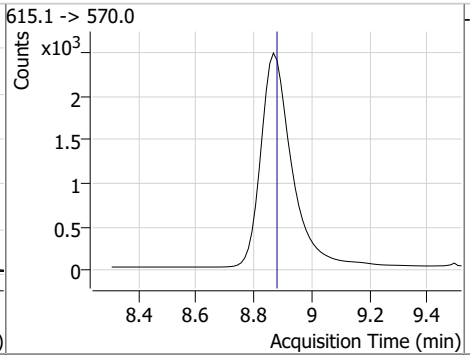


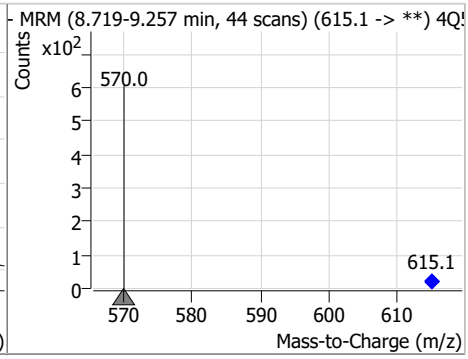




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.19	8.87	-0.01	18439				

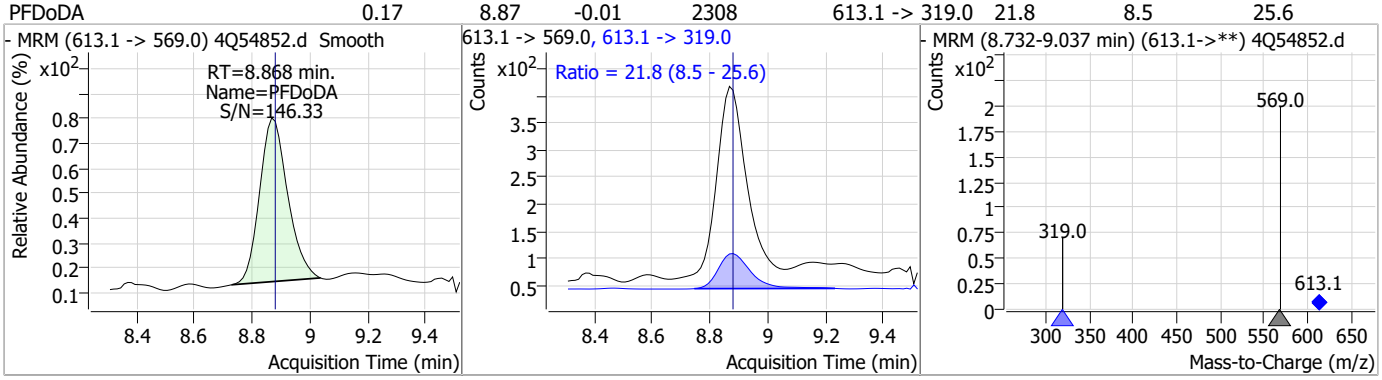




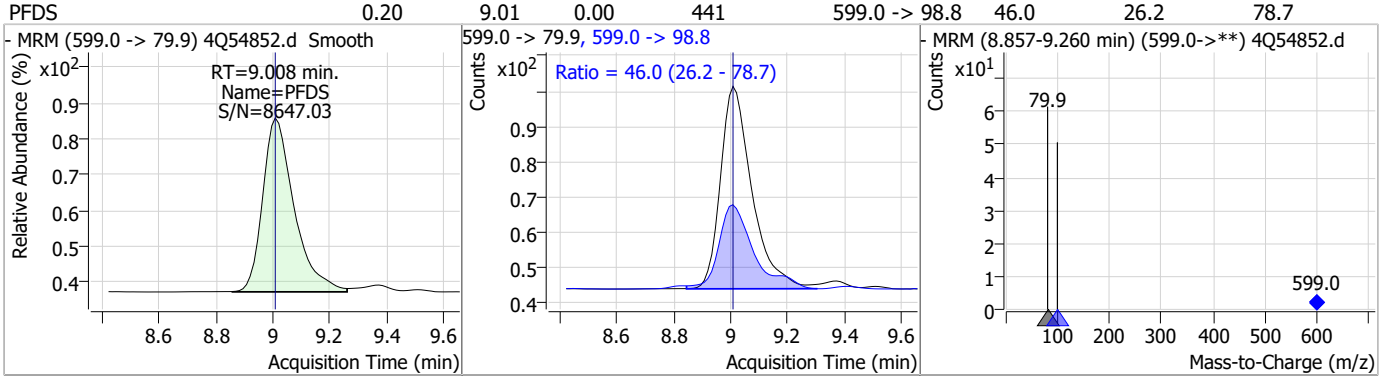


Perfluorinated Compounds by LC/MS/MS

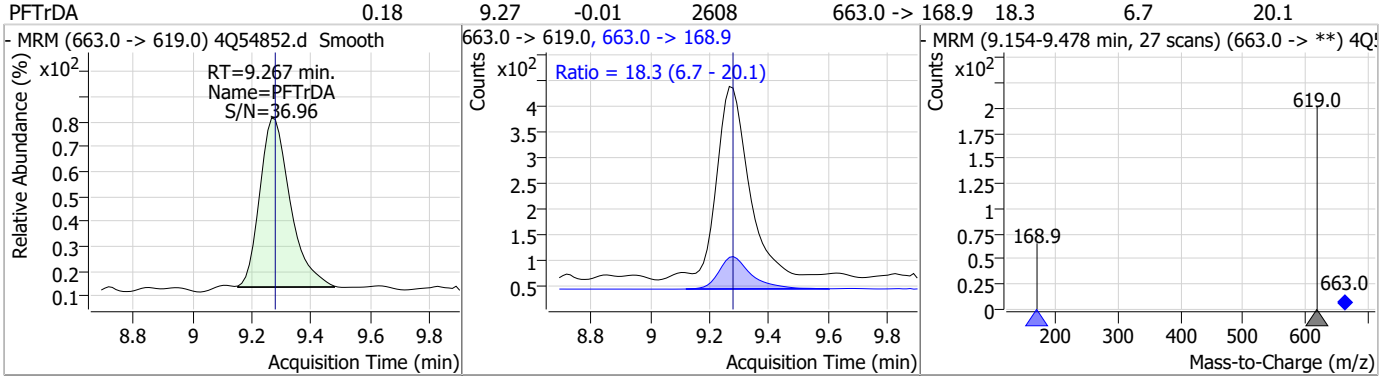
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.17	8.87	-0.01	2308	613.1 -> 319.0	21.8	8.5	25.6



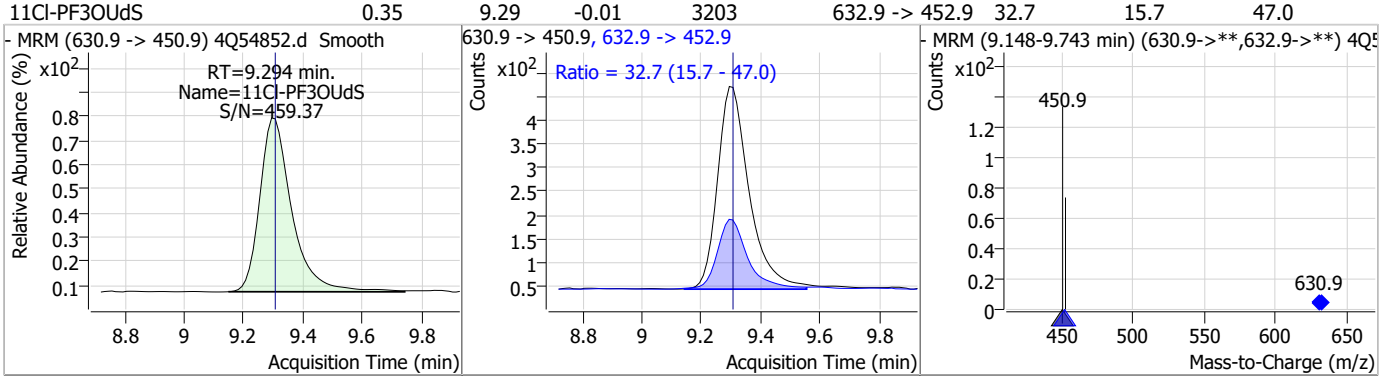
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.20	9.01	0.00	441	599.0 -> 98.8	46.0	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.18	9.27	-0.01	2608	663.0 -> 168.9	18.3	6.7	20.1

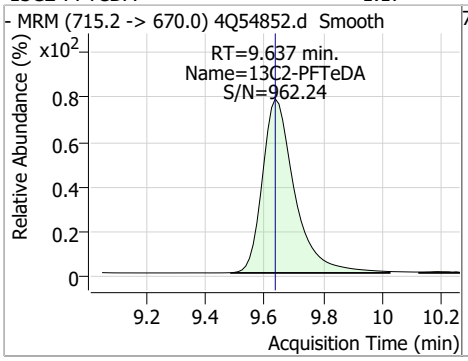


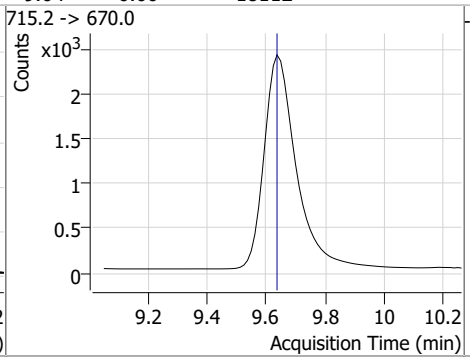
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.35	9.29	-0.01	3203	632.9 -> 452.9	32.7	15.7	47.0

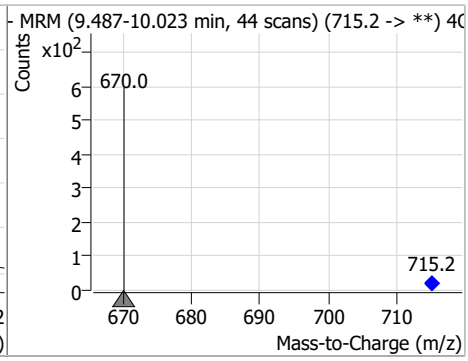


Perfluorinated Compounds by LC/MS/MS

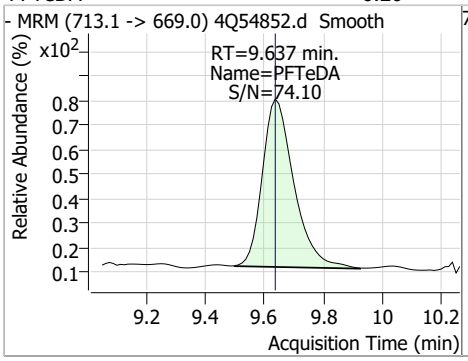
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.17	9.64	0.00	18112				

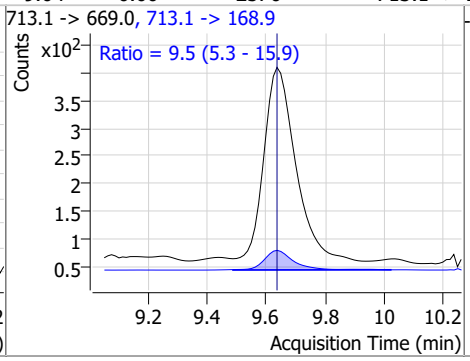


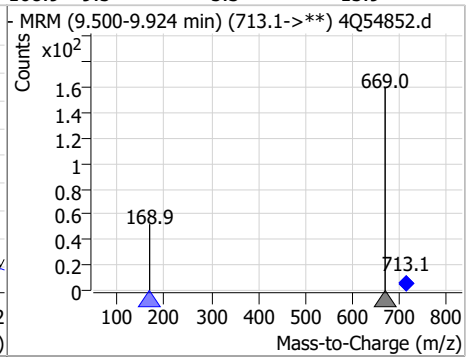




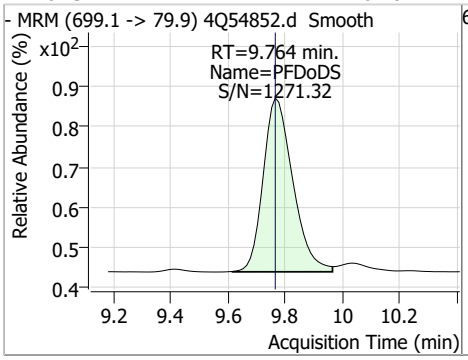
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.20	9.64	0.00	2576	713.1 -> 168.9	9.5	5.3	15.9

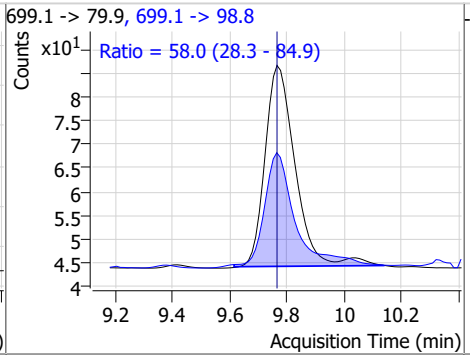


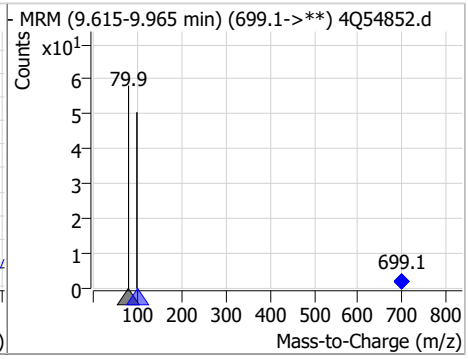




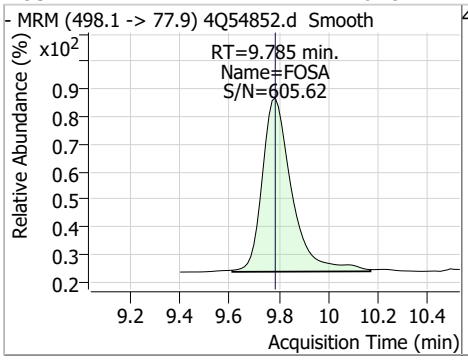
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.18	9.76	0.00	309	699.1 -> 98.8	58.0	28.3	84.9

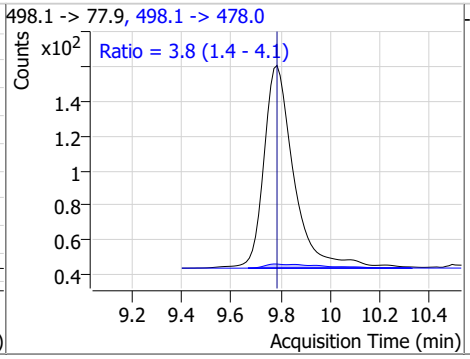


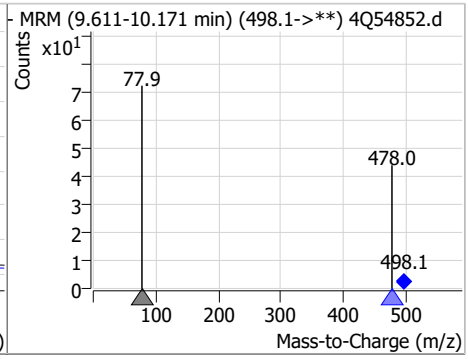




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.19	9.79	0.00	971	498.1 -> 478.0	3.8	1.4	4.1

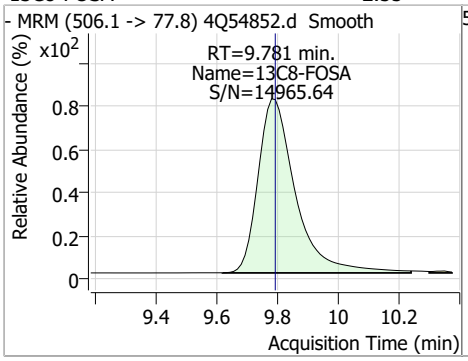


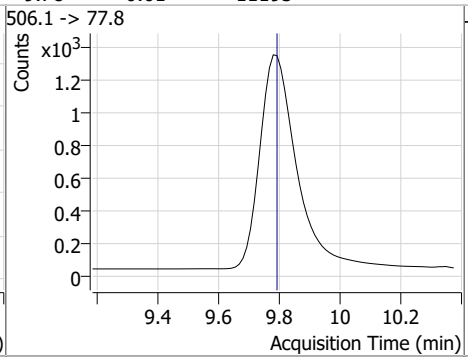


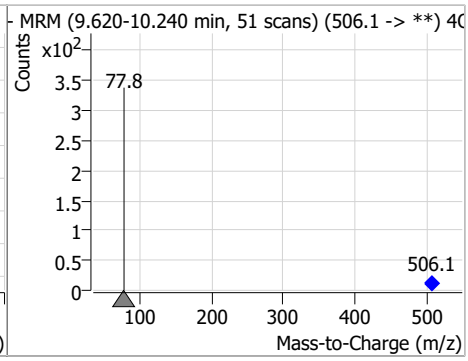


Perfluorinated Compounds by LC/MS/MS

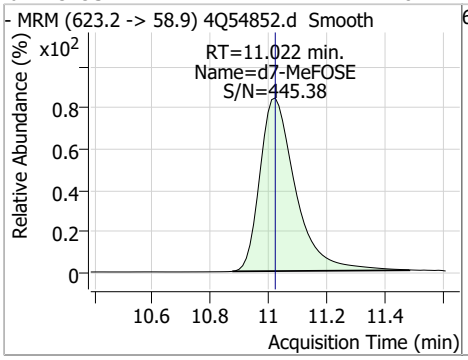
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.55	9.78	-0.01	11195				

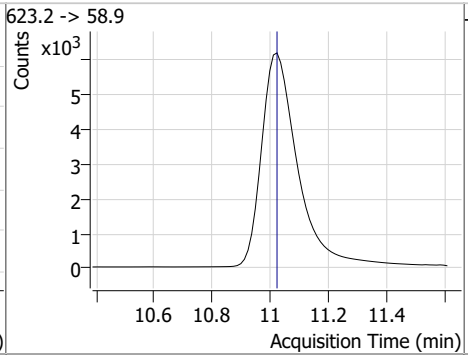


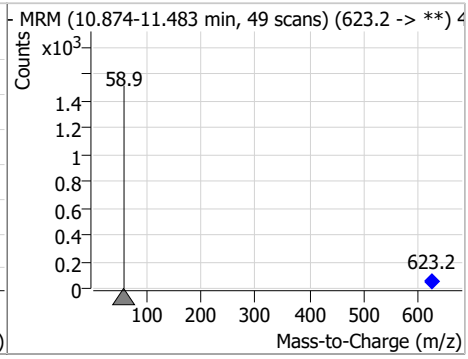




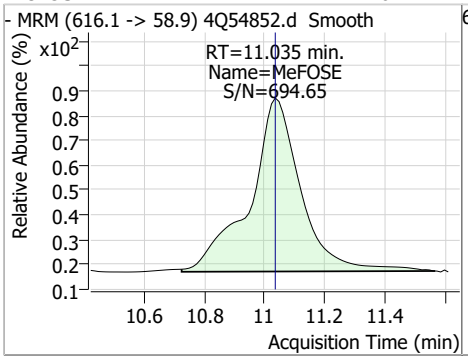
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.18	11.02	0.00	52293				

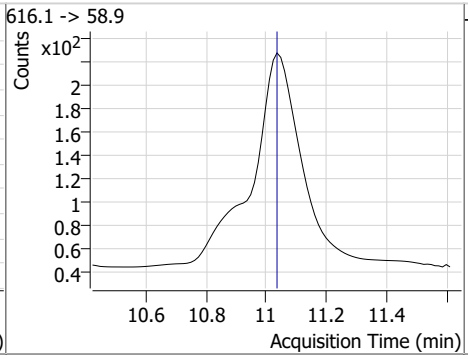


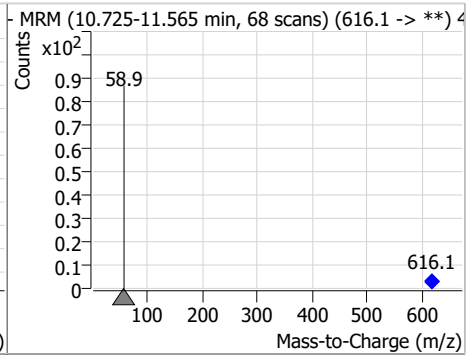




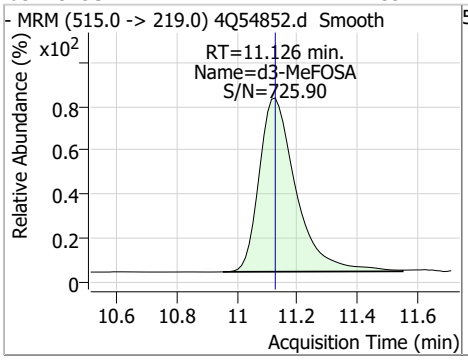
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.04	11.04	0.00	2158				

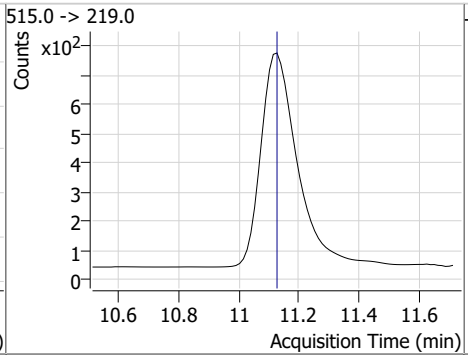


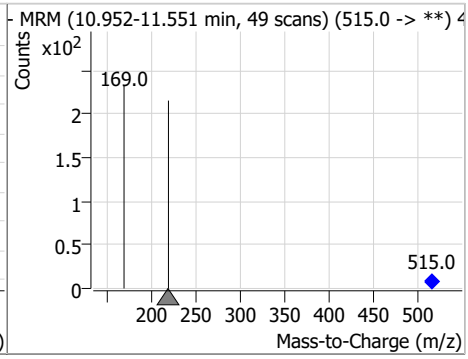




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.39	11.13	0.00	6245				

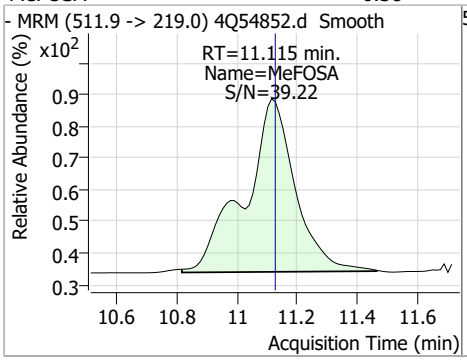


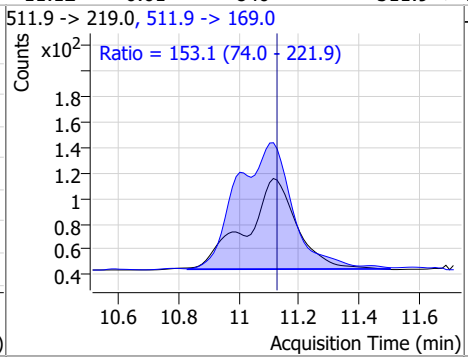


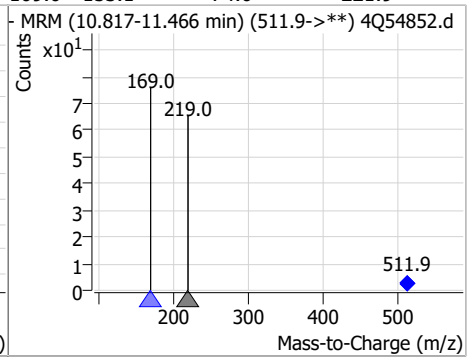


Perfluorinated Compounds by LC/MS/MS

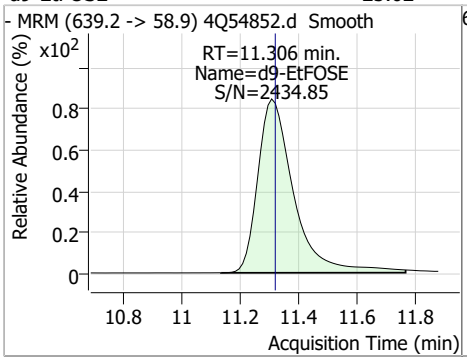
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.38	11.12	-0.01	840	511.9 -> 169.0	153.1	74.0	221.9

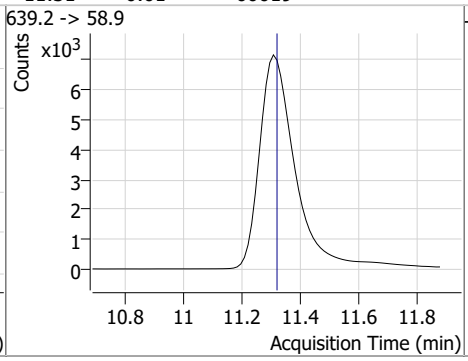


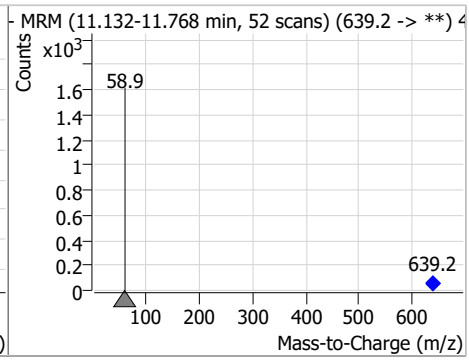




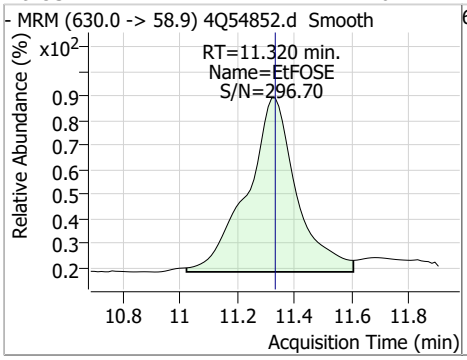
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.02	11.31	-0.01	60619				

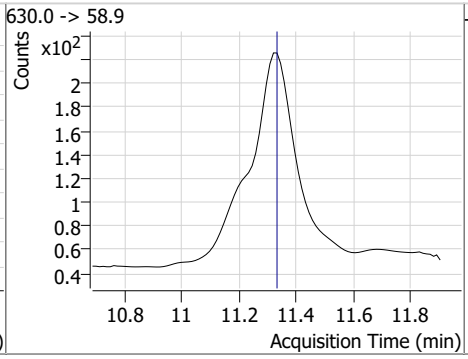


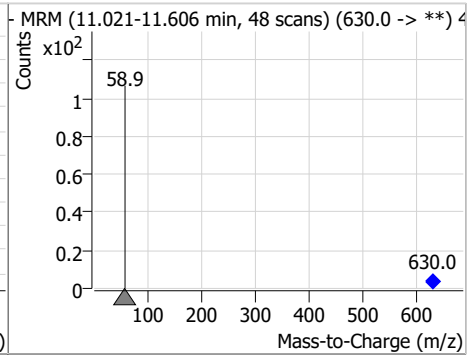




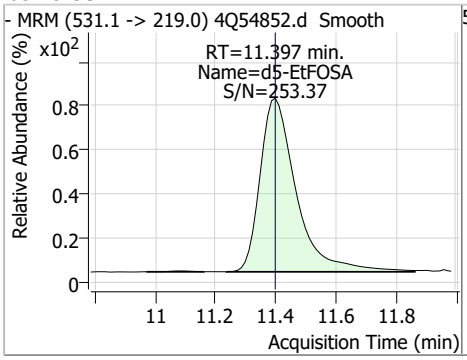
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.02	11.32	-0.01	2179				

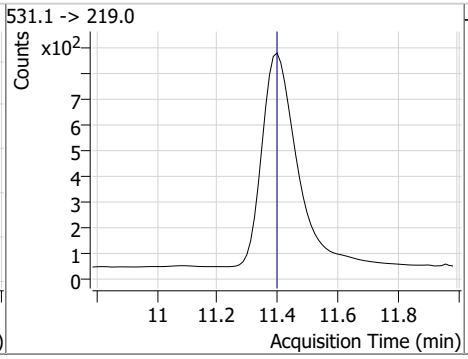


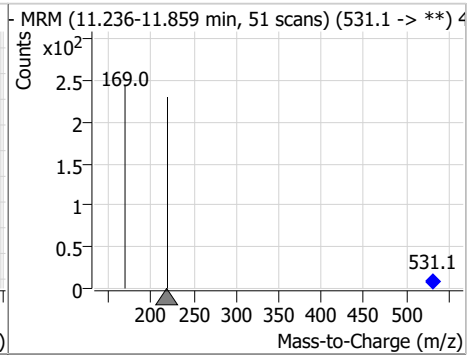




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.42	11.40	0.00	6934				

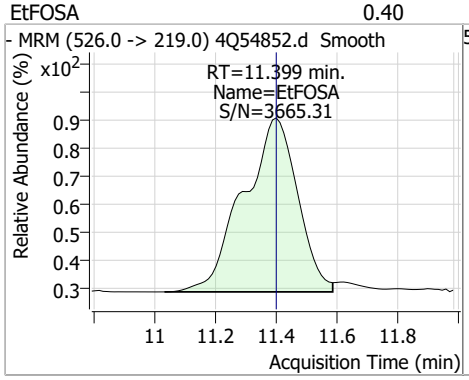


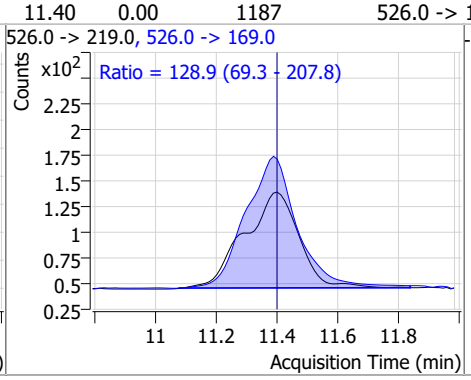


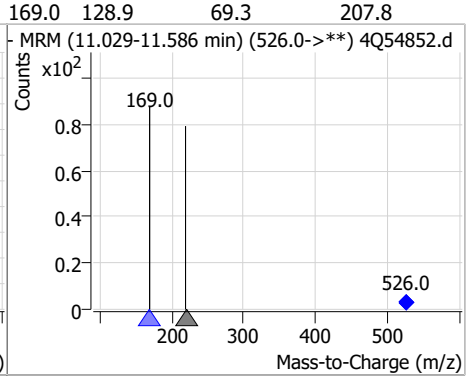


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.40	11.40	0.00	1187	526.0 -> 169.0	128.9	69.3	207.8







7.7.2

7

Manual Integration Approval Summary

Sample Number:	S4Q804-IC804	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q54852.D	**Analyst approved:**	12/10/23 12:52 Anna Ludwig
Injection Time:	12/08/23 11:38	**Supervisor approved:**	12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.03	Split peak
Perfluorononanoic acid	375-95-1		7.51	Poorly defined baseline
MeFOSAA	2355-31-9		8.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54853.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 11:53:03 AM
Sample Name : ic804-2
Vial : P1-A3
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	98674	10.00	µg/L	0.012
M5-PFPeA	4.162	268.3 -> 223.0	41310	5.00	µg/L	0.000
M5-PFHxA	5.334	318.0 -> 273.0	33063	2.50	µg/L	0.000
M4-PFHpA	6.292	367.1 -> 322.0	32710	2.50	µg/L	0.000
M8-PFOA	6.976	421.1 -> 376.0	51954	2.50	µg/L	0.000
M9-PFNA	7.509	472.1 -> 427.0	20101	1.25	µg/L	-0.012
M6-PFDA	7.992	519.1 -> 474.1	14794	1.25	µg/L	-0.012
M7-PFUnDA	8.448	570.0 -> 525.1	18213	1.25	µg/L	0.000
M2-PFDoDA	8.880	615.1 -> 570.0	19768	1.25	µg/L	0.000
M2-PFTeDA	9.637	715.2 -> 670.0	18453	1.25	µg/L	0.000
M8-FOSA	9.794	506.1 -> 77.8	10756	2.50	µg/L	0.000
M3-PFBS	5.202	302.1 -> 79.9	9554	2.50	µg/L	0.013
M3-PFHxS	7.029	402.1 -> 79.9	7502	2.50	µg/L	0.000
M8-PFOS	8.117	507.1 -> 79.9	8684	2.50	µg/L	0.000
M2-4:2FTS	5.046	329.1 -> 80.9	1362	5.00	µg/L	0.000
M2-6:2FTS	6.748	429.1 -> 80.9	2855	5.00	µg/L	0.000
M2-8:2FTS	7.804	529.1 -> 80.9	3525	5.00	µg/L	0.000
M3-MeFOSAA	8.074	573.2 -> 419.0	20027	5.00	µg/L	-0.012
M3-HFPO-DA	5.689	286.9 -> 168.9	33471	10.00	µg/L	0.000
M5-EtFOSAA	8.283	589.2 -> 419.0	16617	5.00	µg/L	0.000
M7-MeFOSE	11.022	623.2 -> 58.9	57217	25.00	µg/L	0.000
M9-EtFOSE	11.306	639.2 -> 58.9	62397	25.00	µg/L	-0.012
M5-EtFOSA	11.397	531.1 -> 219.0	7078	2.50	µg/L	0.000
M3-MeFOSA	11.126	515.0 -> 219.0	6282	2.50	µg/L	0.000
13C4-PFOS	8.118	502.8 -> 79.9	6596	2.50	µg/L	0.000
13C3-PFBA	2.678	216.0 -> 172.0	46375	5.00	µg/L	0.000
18O2-PFHxS	7.041	403.0 -> 83.9	4968	2.50	µg/L	0.000
13C4-PFOA	6.977	417.1 -> 372.0	55132	2.50	µg/L	0.000
13C2-PFDA	7.992	515.1 -> 470.1	15765	1.25	µg/L	-0.012
13C5-PFNA	7.509	468.0 -> 423.0	21376	1.25	µg/L	0.000
13C2-PFHxA	5.335	315.1 -> 270.0	36612	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.046	329.1 -> 80.9	1362	5.77	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 115.5%		
13C2-6:2FTS	6.748	429.1 -> 80.9	2855	5.58	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
13C2-8:2FTS	7.804	529.1 -> 80.9	3525	5.15	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C2-PFDoDA	8.880	615.1 -> 570.0	19768	1.25	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C2-PFTeDA	9.637	715.2 -> 670.0	18453	1.18	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C3-PFBS	5.202	302.1 -> 79.9	9554	2.51	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFHxS	7.029	402.1 -> 79.9	7502	2.41	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C4-PFBA	2.686	216.8 -> 171.9	98674	10.13 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C4-PFHpA	6.292	367.1 -> 322.0	32710	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C5-PFHxA	5.334	318.0 -> 273.0	33063	2.45 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C5-PFPeA	4.162	268.3 -> 223.0	41310	4.92 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C6-PFDA	7.992	519.1 -> 474.1	14794	1.29 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C7-PFUnDA	8.448	570.0 -> 525.1	18213	1.35 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 107.7%		
13C8-FOSA	9.794	506.1 -> 77.8	10756	2.52 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C8-PFOA	6.976	421.1 -> 376.0	51954	2.55 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C8-PFOS	8.117	507.1 -> 79.9	8684	2.60 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C9-PFNA	7.509	472.1 -> 427.0	20101	1.17 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 93.9%		
d3-MeFOSAA	8.074	573.2 -> 419.0	20027	5.47 µg/L		-0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C3-HFPO-DA	5.689	286.9 -> 168.9	33471	9.93 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
d3-MeFOSA	11.126	515.0 -> 219.0	6282	2.46 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%		
d5-EtFOSAA	8.283	589.2 -> 419.0	16617	5.36 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
d7-MeFOSE	11.022	623.2 -> 58.9	57217	27.13 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
d9-EtFOSE	11.306	639.2 -> 58.9	62397	26.42 µg/L		-0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
d5-EtFOSA	11.397	531.1 -> 219.0	7078	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%		
Target Compounds						QValue
4:2FTS	5.047	327.1 -> 307.0	2828	1.21 µg/L		97
		327.1 -> 80.9	1270			
6:2FTS	6.749	427.1 -> 407.0	3697	1.23 µg/L		92
		427.1 -> 80.9	1539			
8:2FTS	7.804	527.1 -> 507.0	2843	1.53 µg/L		95
		527.1 -> 80.8	1244			
EtFOSAA	8.284	584.2 -> 419.1	1039	0.34 µg/L	m	74
		584.2 -> 526.0	486			
FOSA	9.785	498.1 -> 77.9	1823	0.38 µg/L		98
		498.1 -> 478.0	66			
MeFOSAA	8.075	570.1 -> 419.0	1107	0.39 µg/L	m	81
		570.1 -> 483.0	270			
PFBA	2.682	212.8 -> 168.9	4195	1.33 µg/L		100
PFBS	5.191	298.7 -> 79.9	953	0.32 µg/L		94
		298.7 -> 98.8	349			
PFDA	7.992	512.9 -> 469.0	3570	0.33 µg/L		98
		512.9 -> 219.0	710			
PFDoDA	8.880	613.1 -> 569.0	5102	0.36 µg/L		98
		613.1 -> 319.0	920			
PFDS	9.008	599.0 -> 79.9	691	0.30 µg/L		98

Perfluorinated Compounds by LC/MS/MS

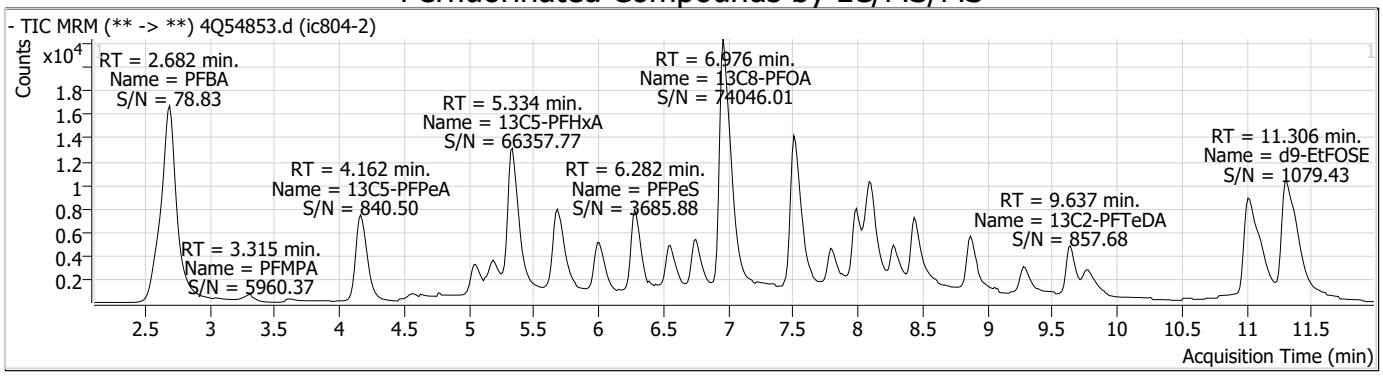
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	374				
PFHpA	6.293	363.1 -> 319.0	5834	0.32	µg/L		95
		363.1 -> 169.0	1200				
PFHpS	7.612	449.0 -> 79.9	1048	0.30	µg/L		93
		449.0 -> 98.9	596				
PFHxA	5.337	313.0 -> 269.0	3707	0.35	µg/L		99
		313.0 -> 118.9	113				
PFHxS	7.043	398.7 -> 79.9	813	0.34	µg/L	m	95
		398.7 -> 98.9	413				
PFNA	7.510	463.0 -> 419.0	4078	0.35	µg/L		91
		463.0 -> 219.0	1113				
PFNS	8.586	548.8 -> 79.9	543	0.37	µg/L		75
		548.8 -> 98.9	360				
PFOA	6.978	413.0 -> 369.0	7947	0.37	µg/L		99
		413.0 -> 169.0	1760				
PFOS	8.106	498.9 -> 79.9	1267	0.35	µg/L	m	55
		498.9 -> 98.8	611				
PFPeA	4.164	263.0 -> 219.0	5556	0.68	µg/L		100
PFPeS	6.282	349.1 -> 79.9	721	0.32	µg/L		87
		349.1 -> 98.9	363				
PFTeDA	9.637	713.1 -> 669.0	4684	0.36	µg/L		99
		713.1 -> 168.9	509				
PFTrDA	9.279	663.0 -> 619.0	5328	0.34	µg/L		100
		663.0 -> 168.9	721				
PFUnDA	8.449	563.1 -> 519.0	4502	0.34	µg/L		98
		563.1 -> 269.1	916				
11Cl-PF3OUdS	9.294	630.9 -> 450.9	5803	0.63	µg/L		99
		632.9 -> 452.9	1772				
9Cl-PF3ONS	8.451	530.8 -> 351.0	6403	0.69	µg/L		96
		532.8 -> 353.0	1812				
ADONA	6.556	376.9 -> 250.9	16007	0.71	µg/L		100
		376.9 -> 84.8	3845				
HFPO-DA	5.690	284.9 -> 168.9	2124	0.66	µg/L		98
		284.9 -> 184.9	214				
3:3FTCA	3.617	241.0 -> 177.0	834	1.66	µg/L		100
		241.0 -> 117.0	75				
5:3FTCA	6.008	341.0 -> 237.1	16299	8.66	µg/L		96
		341.0 -> 217.0	11080				
7:3FTCA	7.536	441.0 -> 316.9	8481	8.59	µg/L		97
		441.0 -> 336.9	20535				
EtFOSA	11.399	526.0 -> 219.0	2130	0.71	µg/L		99
		526.0 -> 169.0	2984				
EtFOSE	11.320	630.0 -> 58.9	3750	1.70	µg/L		100
MeFOSA	11.115	511.9 -> 219.0	1649	0.74	µg/L		97
		511.9 -> 169.0	2369				
MeFOSE	11.035	616.1 -> 58.9	3777	1.66	µg/L		100
PFDoDS	9.764	699.1 -> 79.9	585	0.33	µg/L		91
		699.1 -> 98.8	368				
NFDHA	5.216	295.0 -> 201.0	640	0.86	µg/L		84
		295.0 -> 84.9	116				
PFMBA	4.566	279.0 -> 85.1	3043	0.68	µg/L		100
PFMPA	3.315	229.0 -> 84.9	3392	0.69	µg/L		100
PFEESA	5.722	314.8 -> 134.9	4832	0.62	µg/L		99
		314.8 -> 82.9	179				

 # = Qualifier out of range, m = manually integrated, + = Area summed

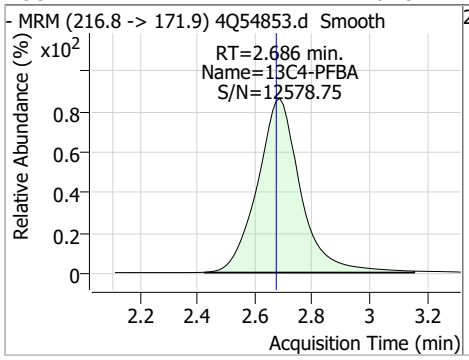
Perfluorinated Compounds by LC/MS/MS

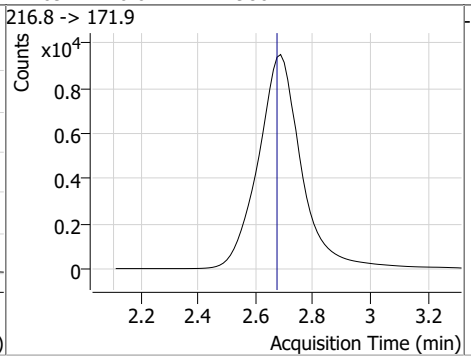
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

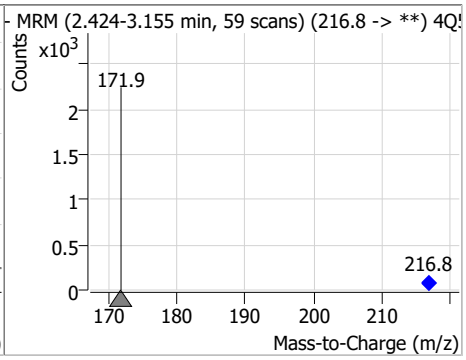
Perfluorinated Compounds by LC/MS/MS



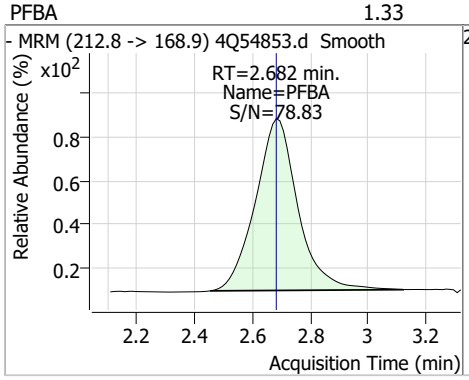
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.13	2.69	0.01	98674				

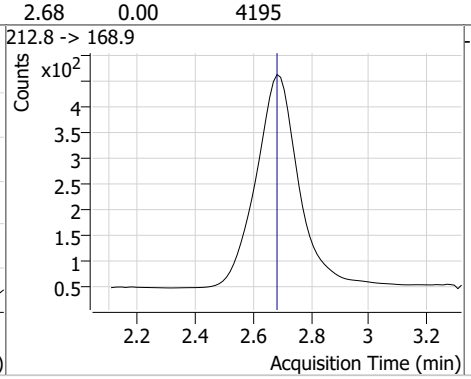


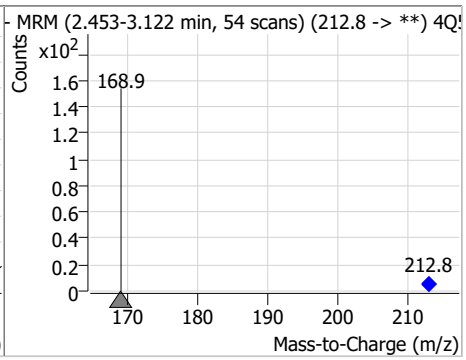




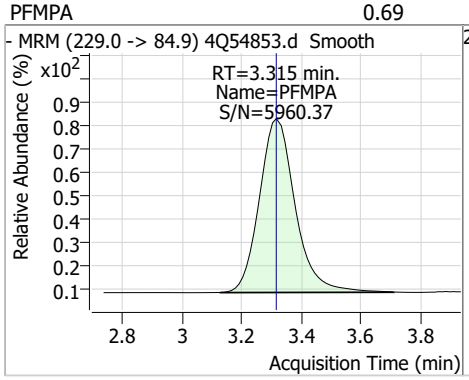
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.33	2.68	0.00	4195				

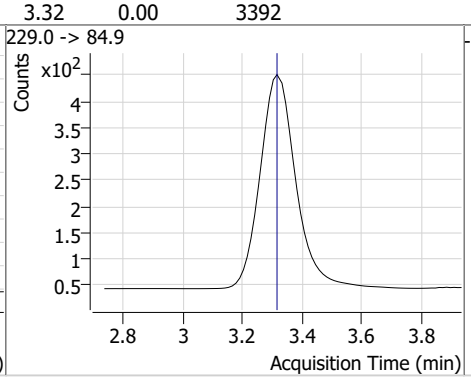


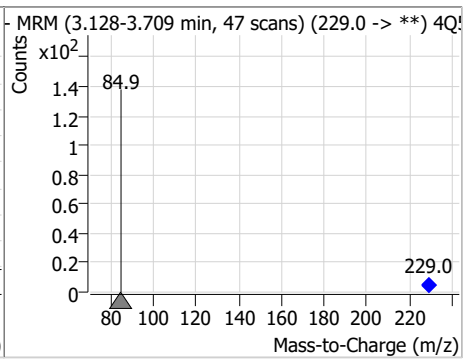




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.69	3.32	0.00	3392				

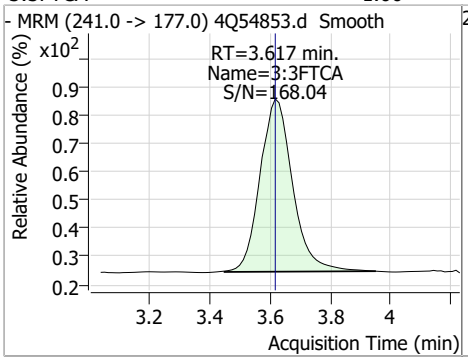


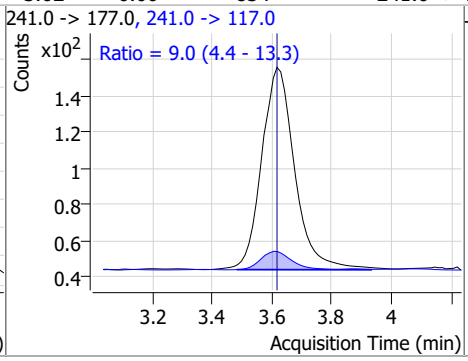


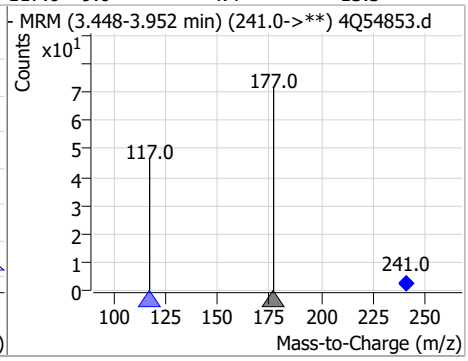


Perfluorinated Compounds by LC/MS/MS

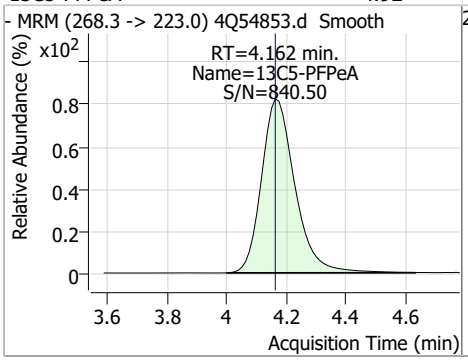
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	1.66	3.62	0.00	834	241.0 -> 117.0	9.0	4.4	13.3

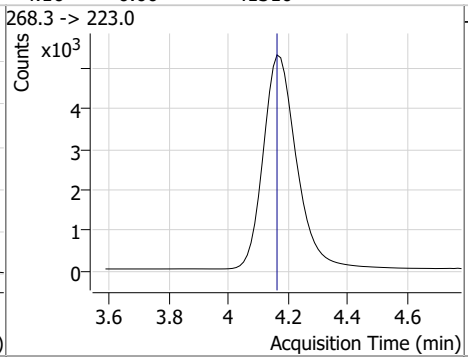


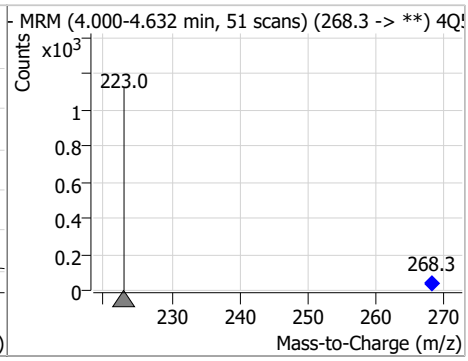




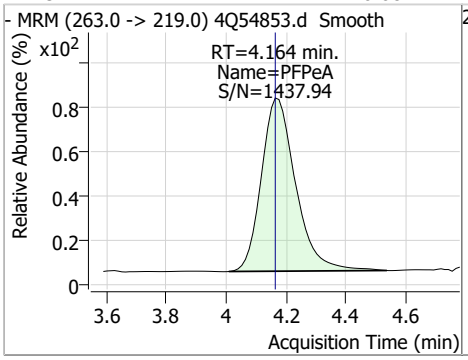
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.92	4.16	0.00	41310				

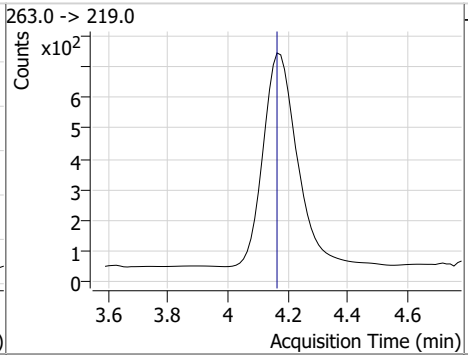


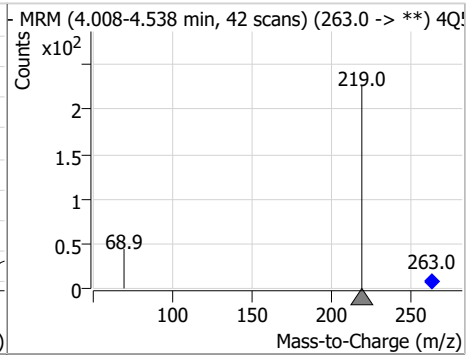




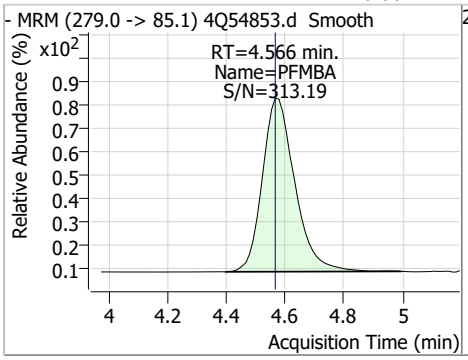
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.68	4.16	0.00	5556				

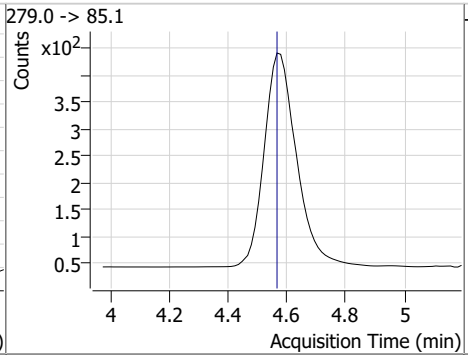


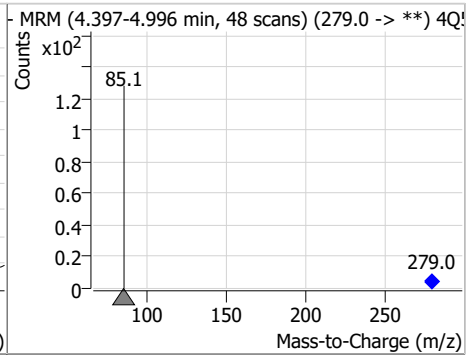




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.68	4.57	0.00	3043				

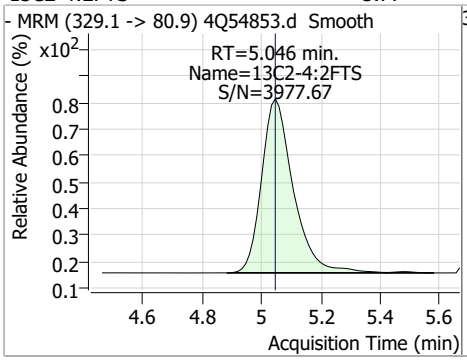


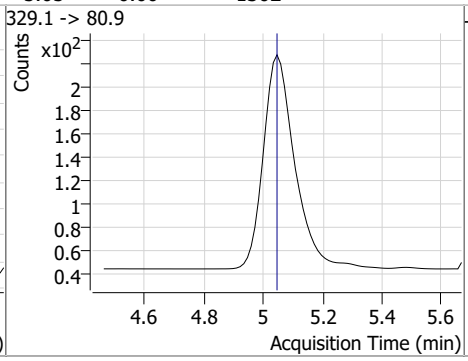


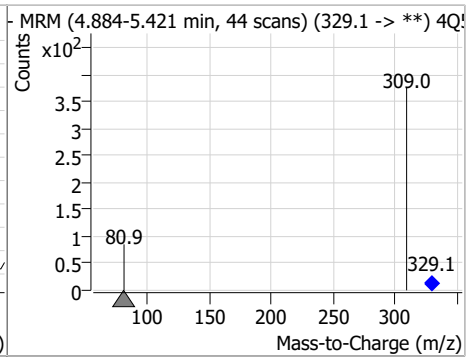


Perfluorinated Compounds by LC/MS/MS

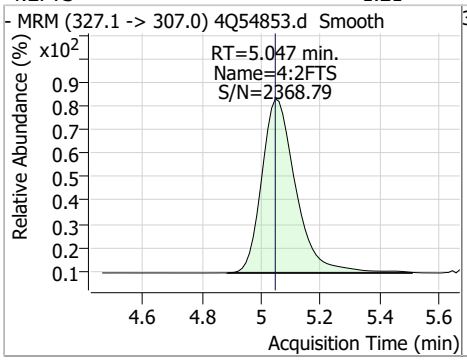
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.77	5.05	0.00	1362				

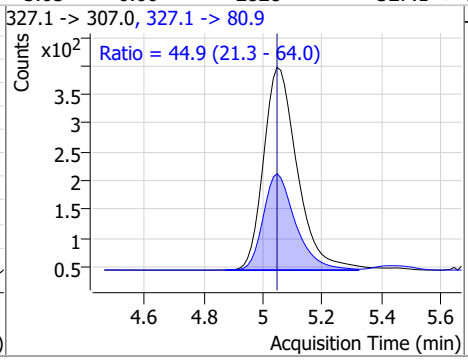


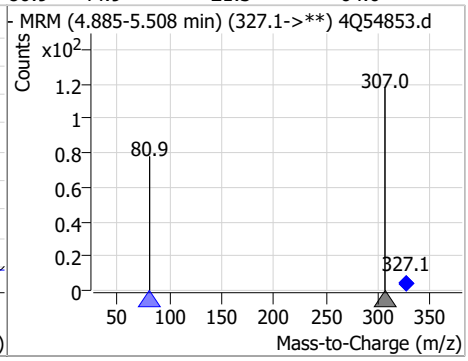




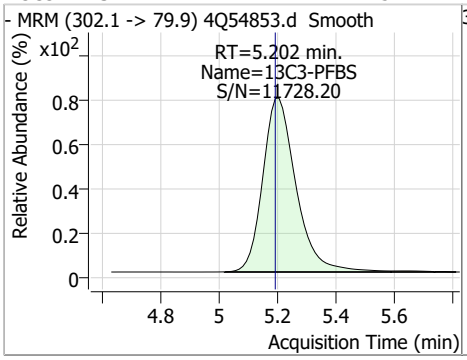
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.21	5.05	0.00	2828	327.1 -> 80.9	44.9	21.3	64.0

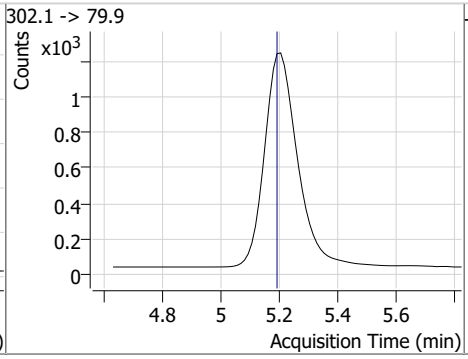


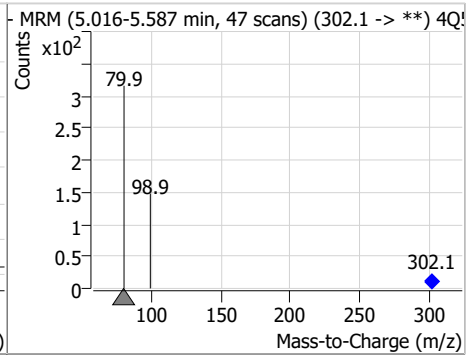




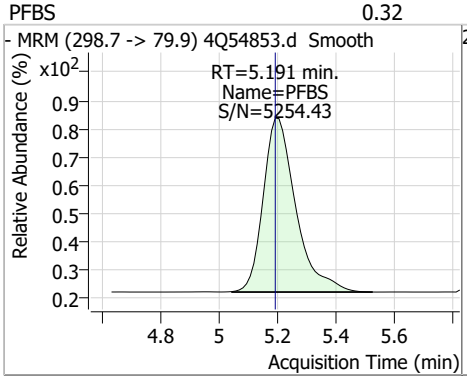
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.51	5.20	0.01	9554				

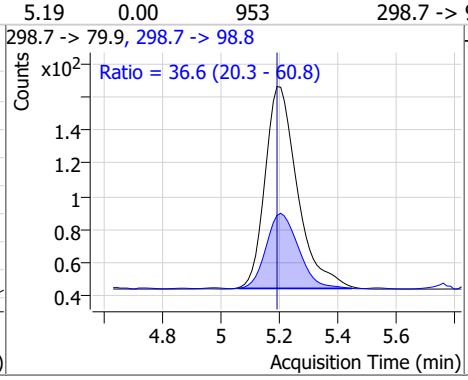


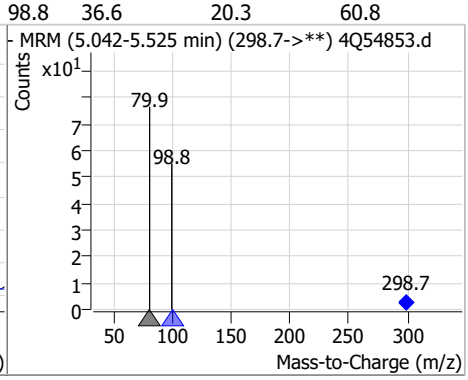




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.32	5.19	0.00	953	298.7 -> 98.8	36.6	20.3	60.8

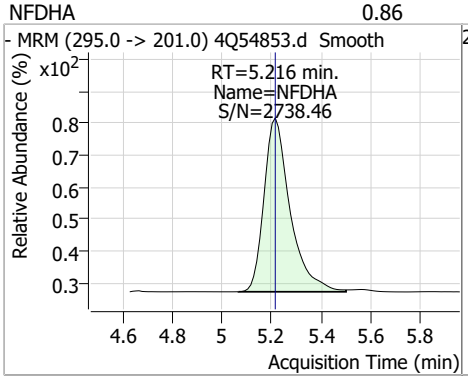


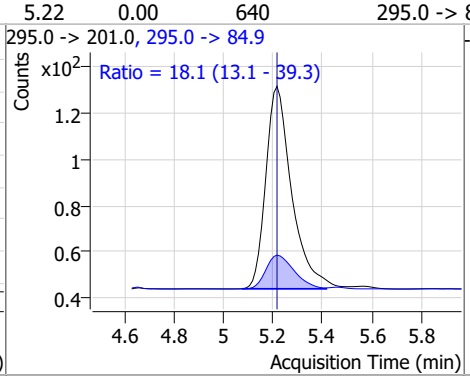


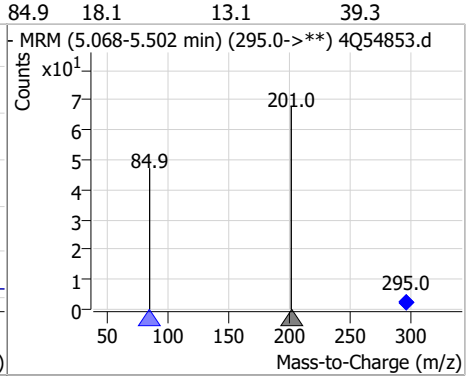


Perfluorinated Compounds by LC/MS/MS

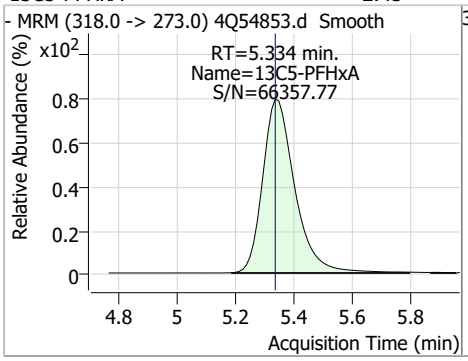
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.86	5.22	0.00	640	295.0 -> 84.9	18.1	13.1	39.3

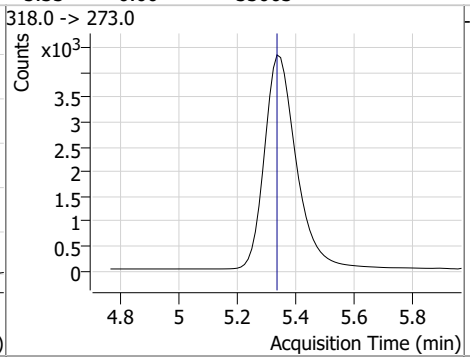


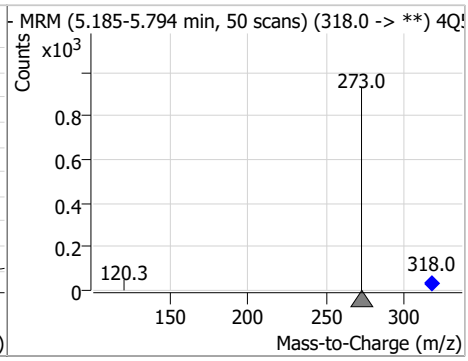




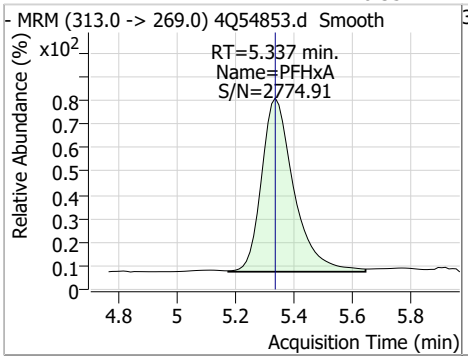
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.45	5.33	0.00	33063				

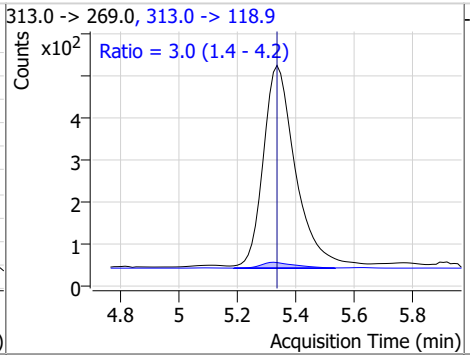


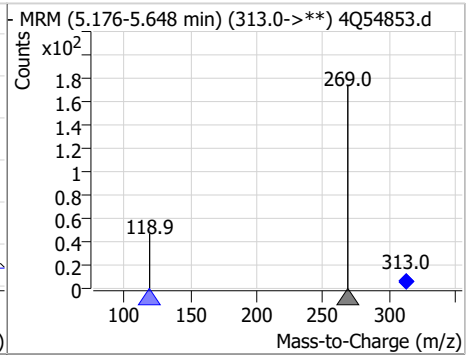




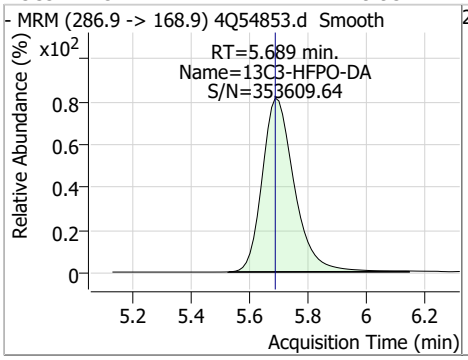
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.35	5.34	0.00	3707	313.0 -> 118.9	3.0	1.4	4.2

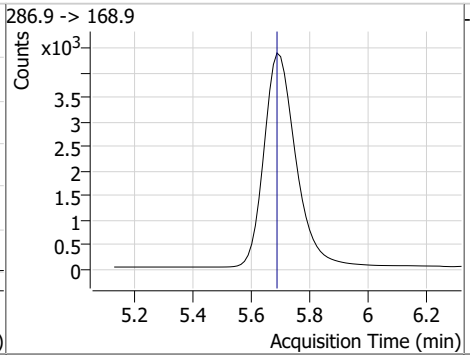


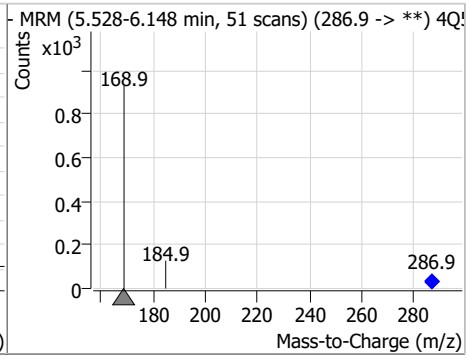




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.93	5.69	0.00	33471				

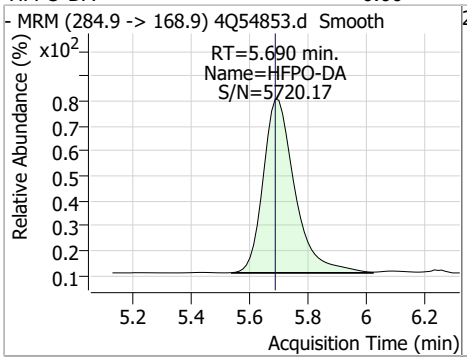


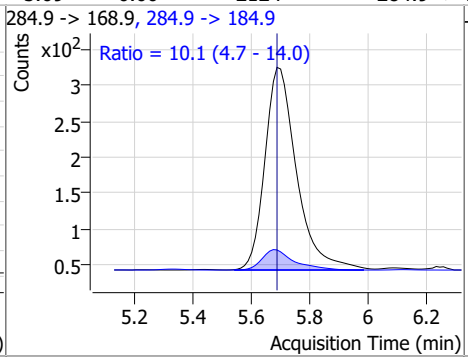


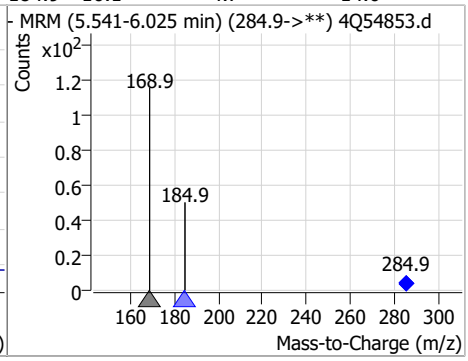


Perfluorinated Compounds by LC/MS/MS

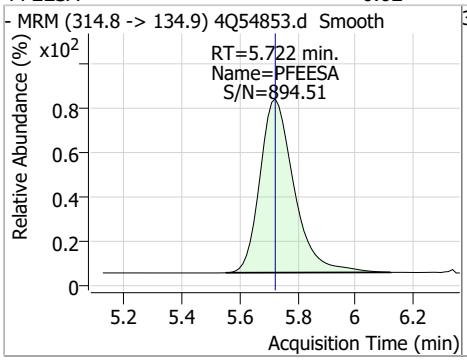
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.66	5.69	0.00	2124	284.9 -> 184.9	10.1	4.7	14.0

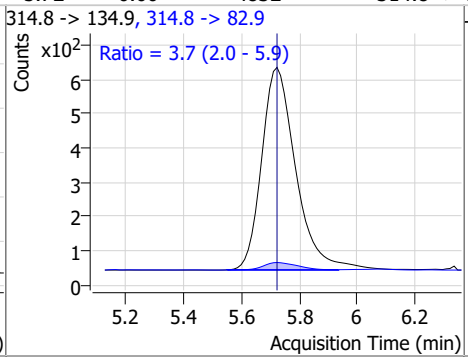


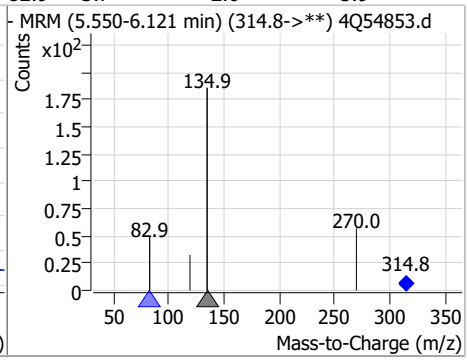




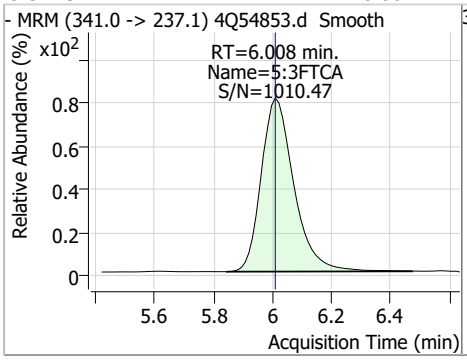
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.62	5.72	0.00	4832	314.8 -> 82.9	3.7	2.0	5.9

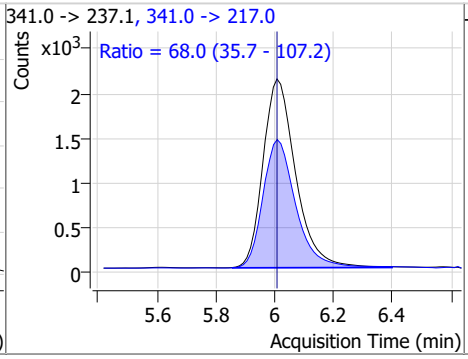


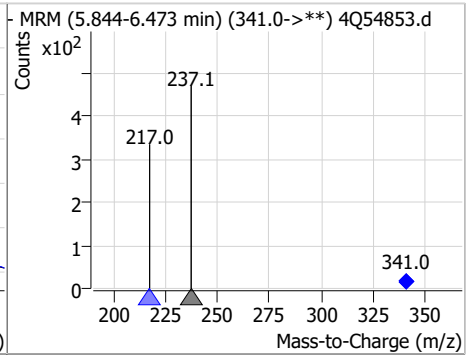




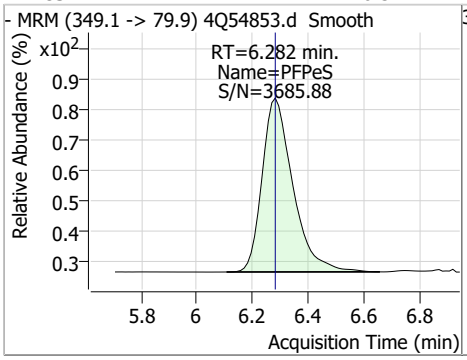
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	8.66	6.01	0.00	16299	341.0 -> 217.0	68.0	35.7	107.2

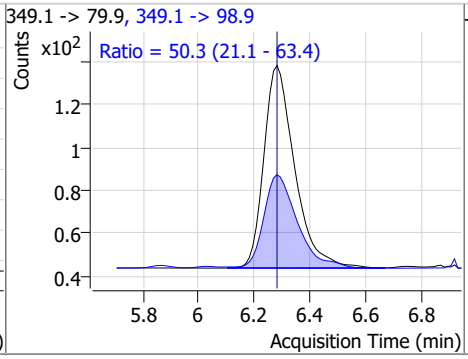


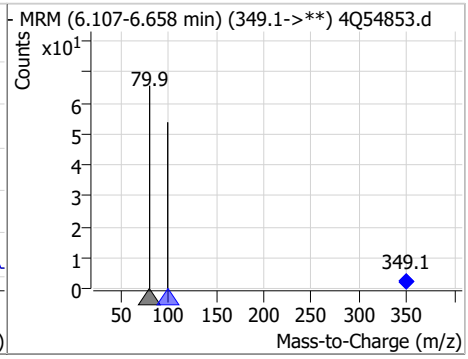




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.32	6.28	0.00	721	349.1 -> 98.9	50.3	21.1	63.4

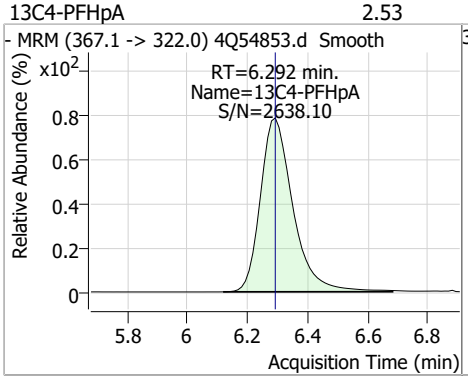


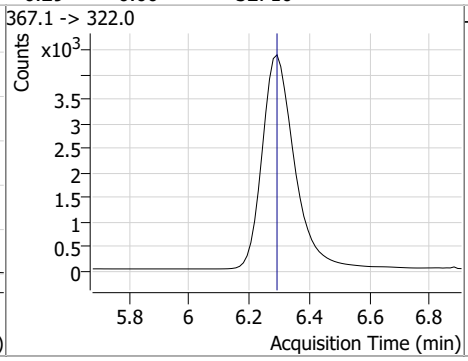


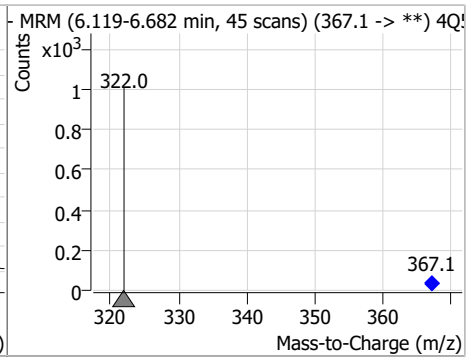


Perfluorinated Compounds by LC/MS/MS

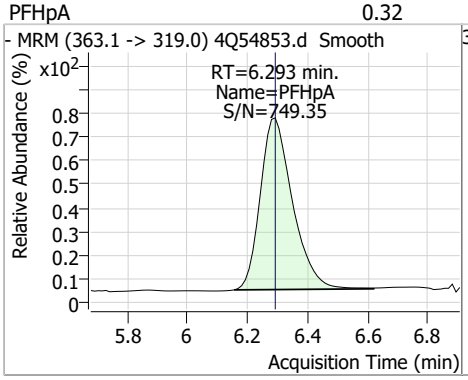
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.53	6.29	0.00	32710				

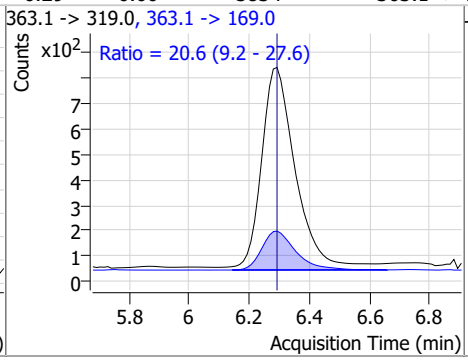


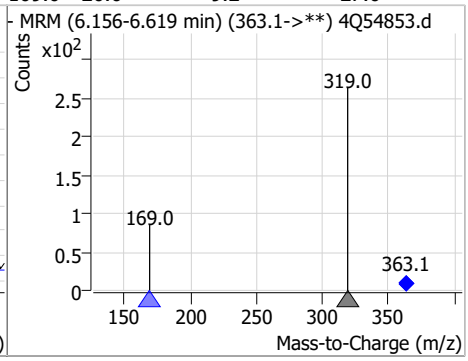




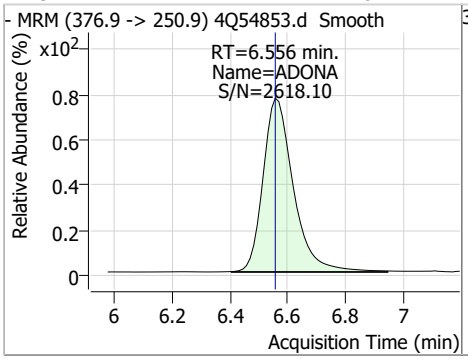
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.32	6.29	0.00	5834	363.1 -> 169.0	20.6	9.2	27.6

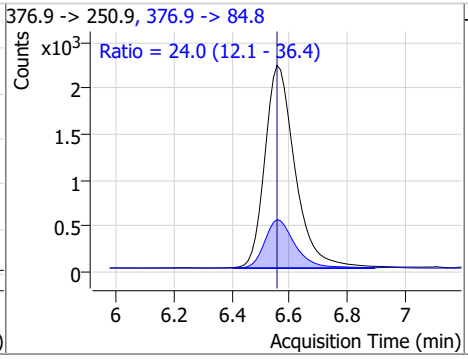


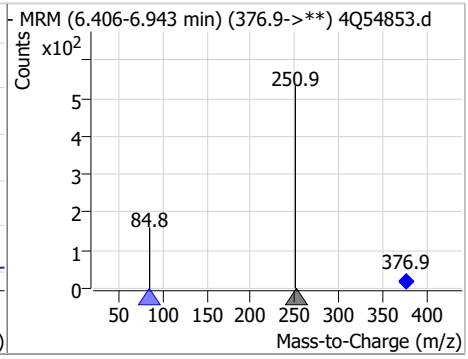




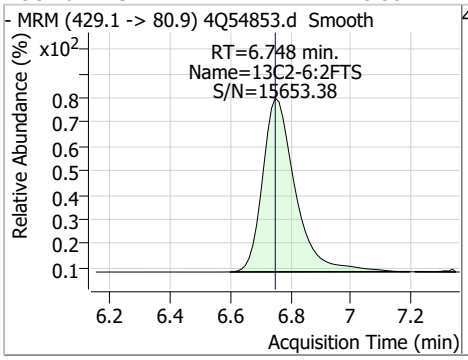
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.71	6.56	0.00	16007	376.9 -> 84.8	24.0	12.1	36.4

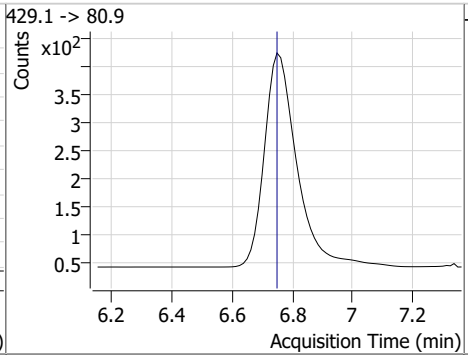


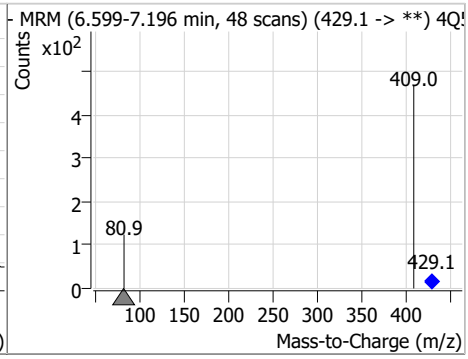




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.58	6.75	0.00	2855				

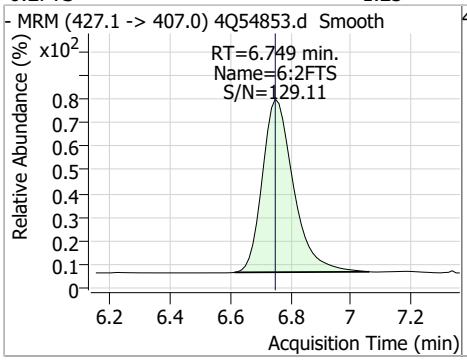


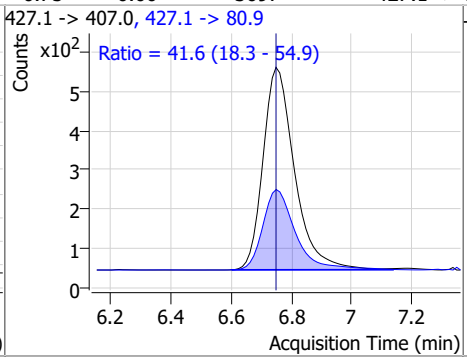


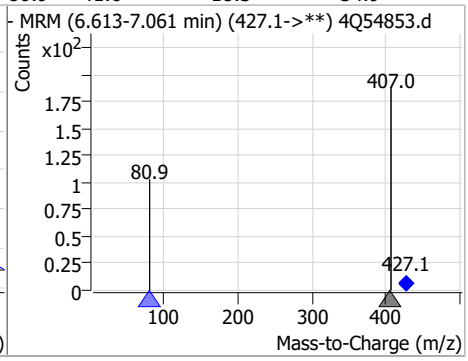


Perfluorinated Compounds by LC/MS/MS

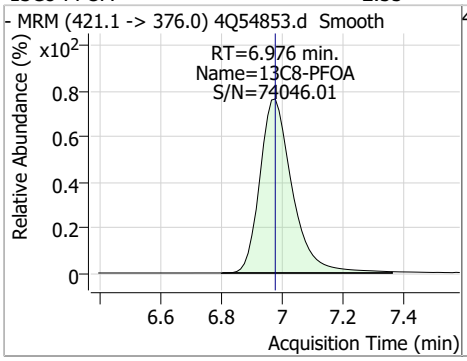
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.23	6.75	0.00	3697	427.1 -> 80.9	41.6	18.3	54.9

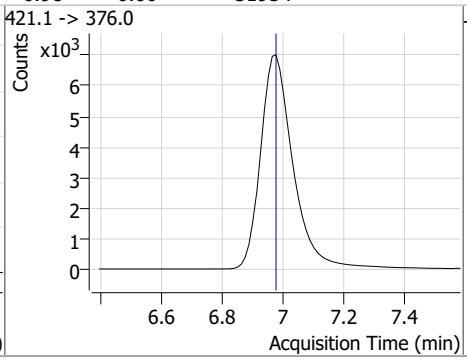


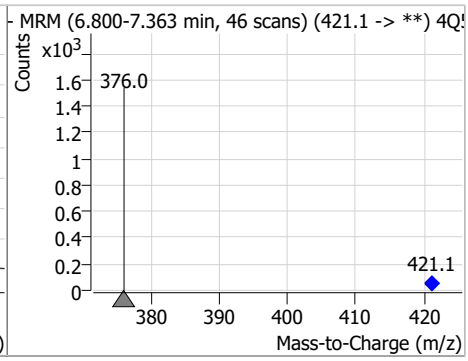




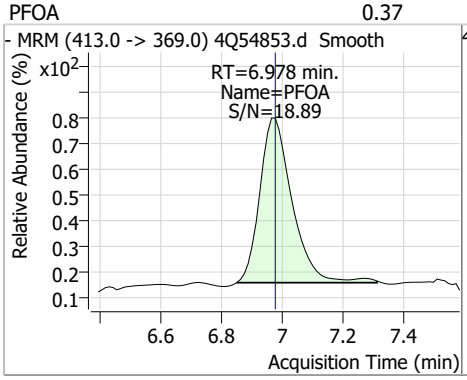
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.55	6.98	0.00	51954				

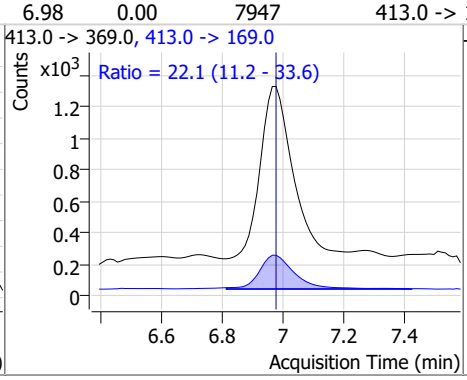


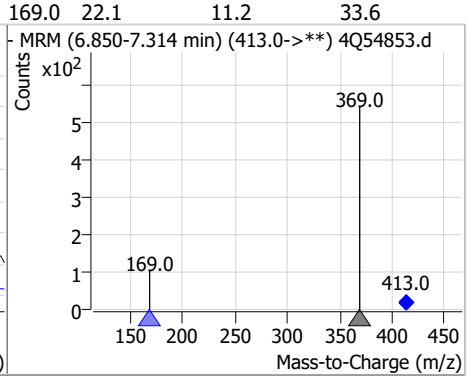




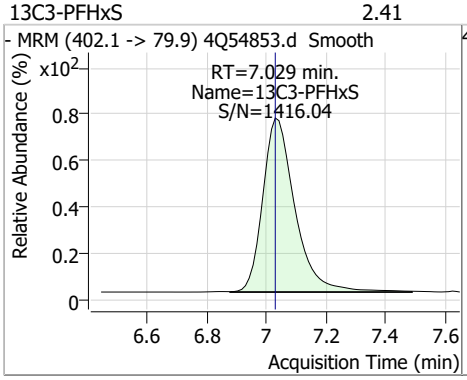
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.37	6.98	0.00	7947	413.0 -> 169.0	22.1	11.2	33.6

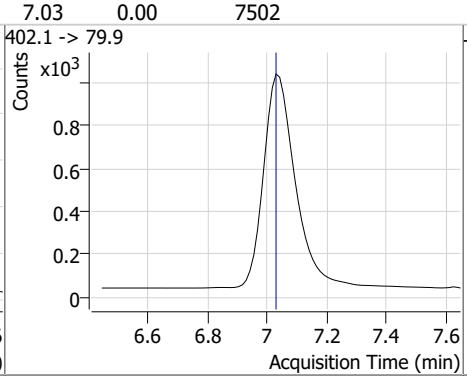


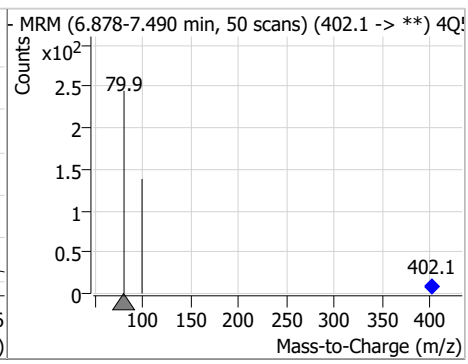




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.41	7.03	0.00	7502				

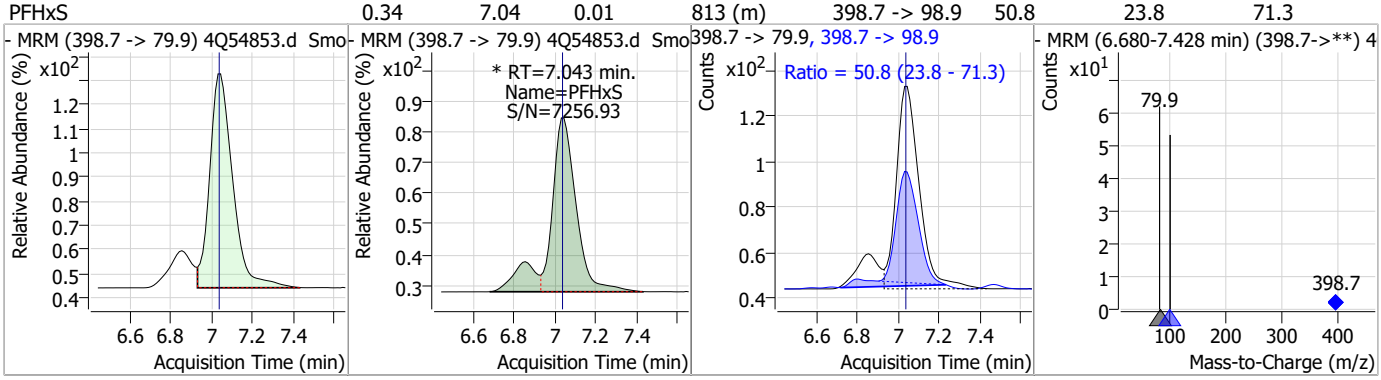




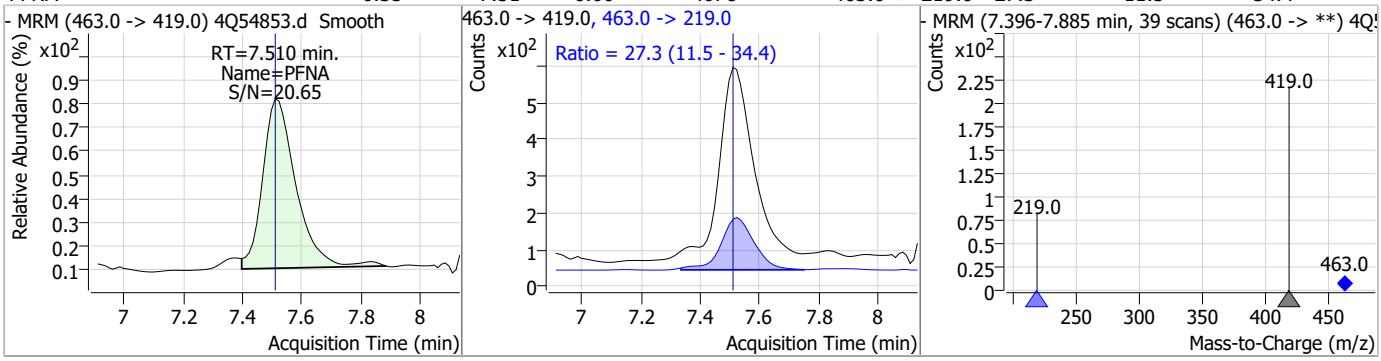


Perfluorinated Compounds by LC/MS/MS

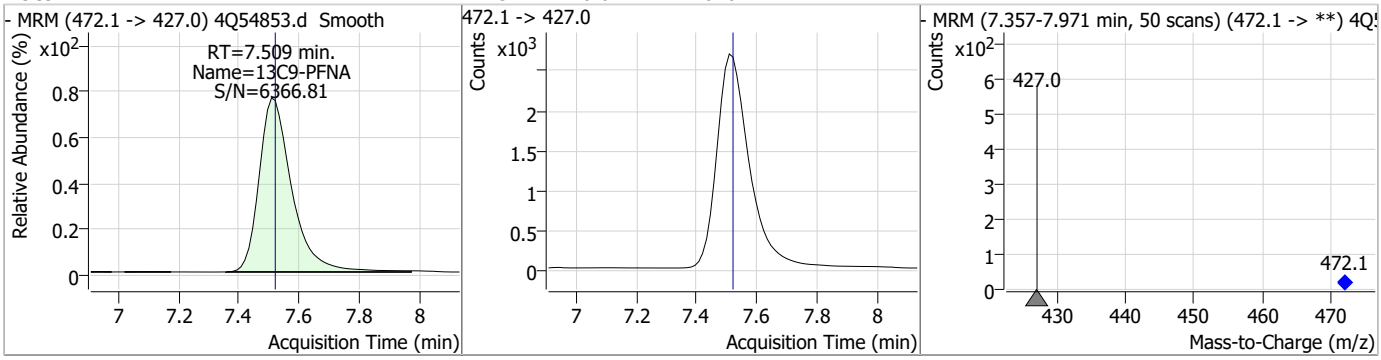
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.34	7.04	0.01	813 (m)	398.7 -> 98.9	50.8	23.8	71.3



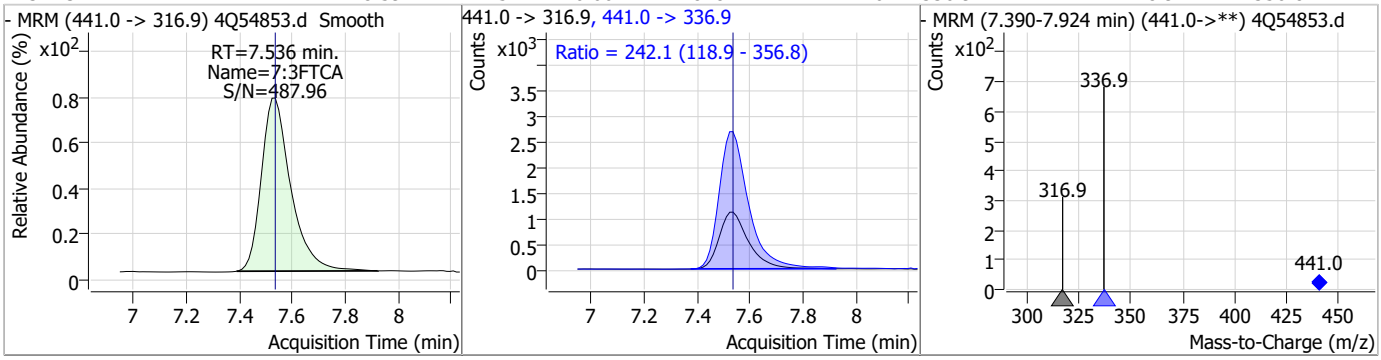
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.35	7.51	0.00	4078	463.0 -> 219.0	27.3	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.17	7.51	-0.01	20101				

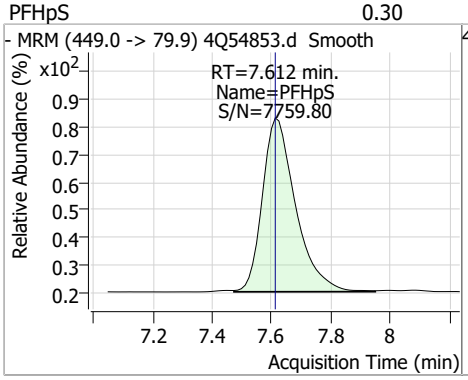


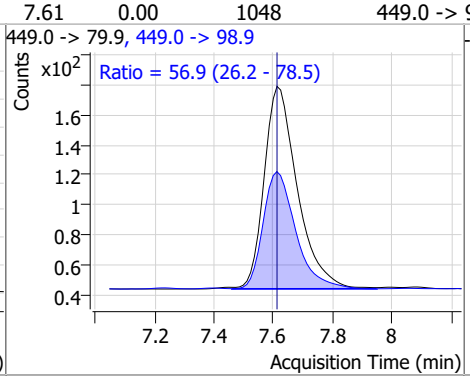
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	8.59	7.54	0.00	8481	441.0 -> 336.9	242.1	118.9	356.8

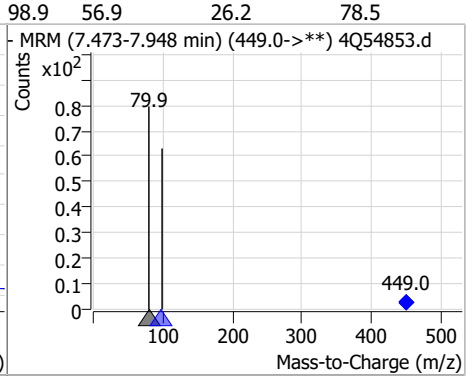


Perfluorinated Compounds by LC/MS/MS

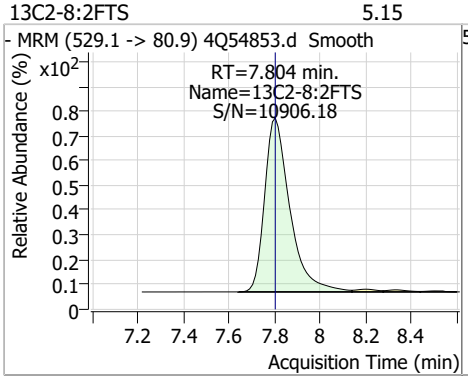
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.30	7.61	0.00	1048	449.0 -> 98.9	56.9	26.2	78.5

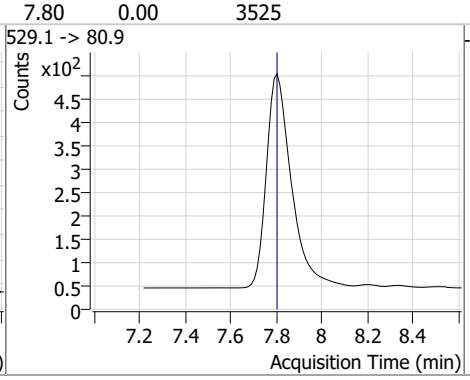


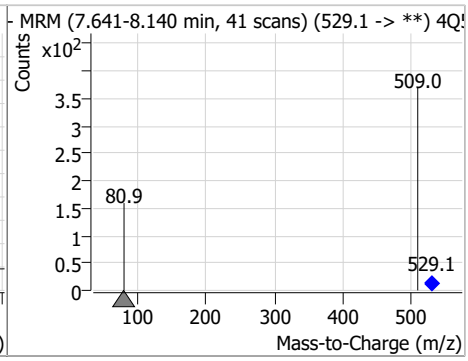




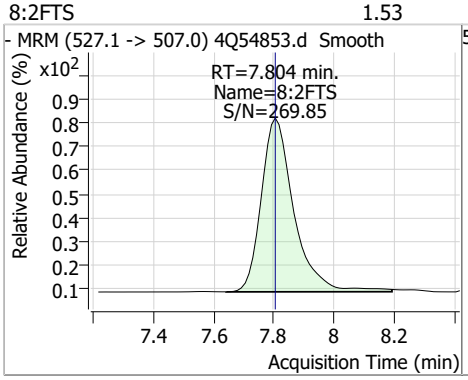
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.15	7.80	0.00	3525				

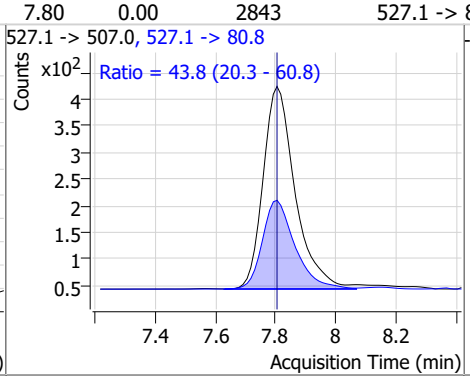


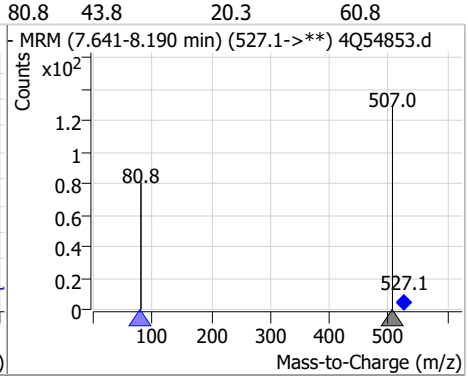




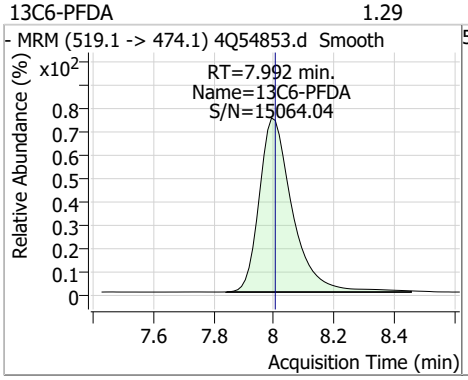
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.53	7.80	0.00	2843	527.1 -> 80.8	43.8	20.3	60.8

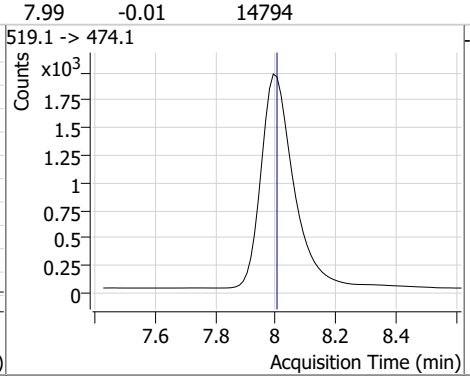


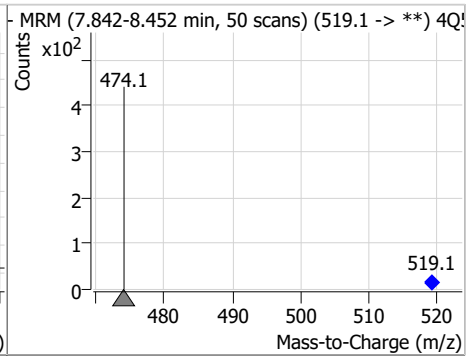




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.29	7.99	-0.01	14794				

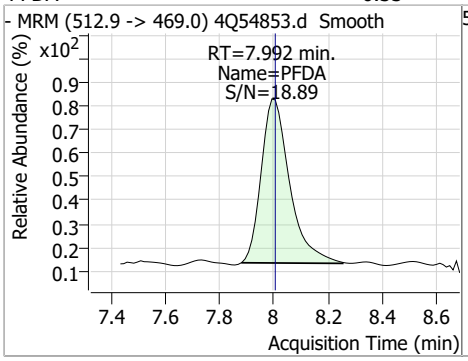


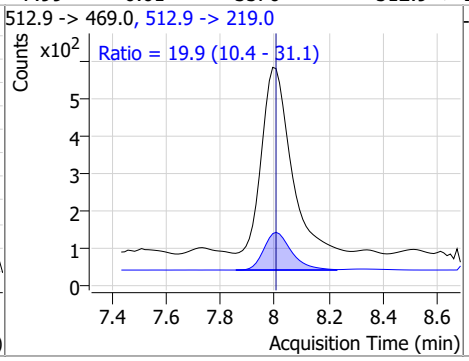


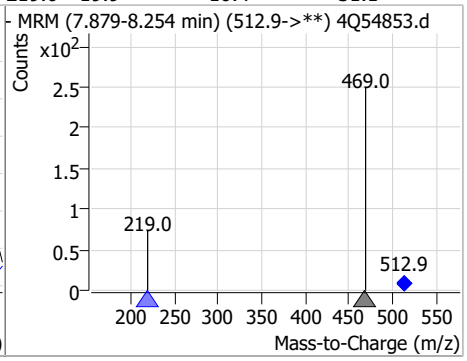


Perfluorinated Compounds by LC/MS/MS

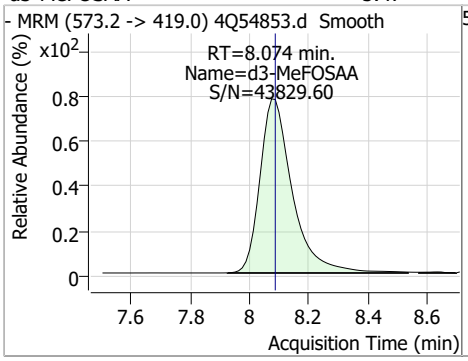
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.33	7.99	-0.01	3570	512.9 -> 219.0	19.9	10.4	31.1

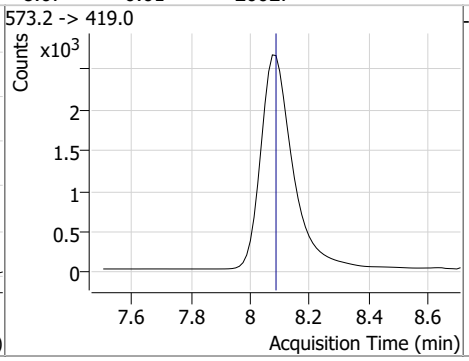


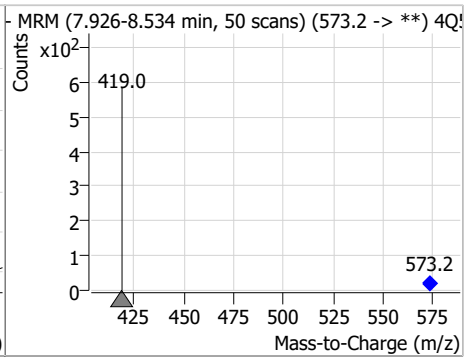




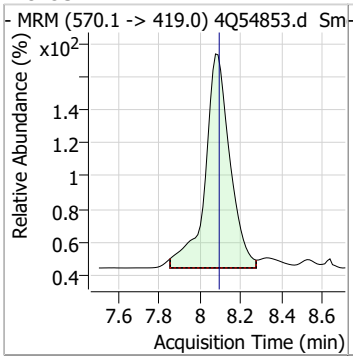
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.47	8.07	-0.01	20027				

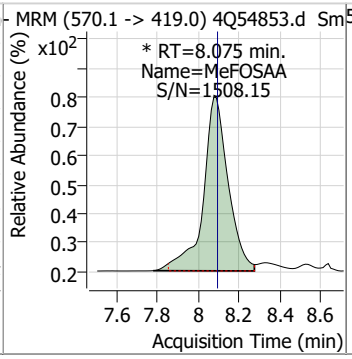


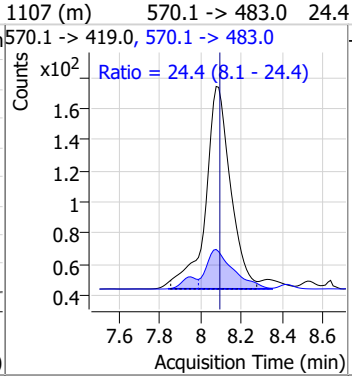


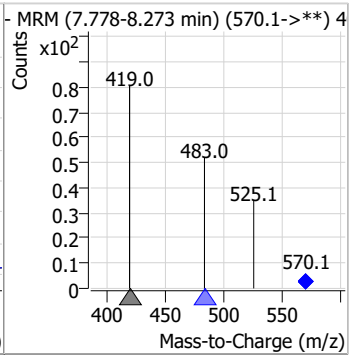


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.39	8.07	-0.01	1107 (m)	570.1 -> 483.0	24.4	8.1	24.4

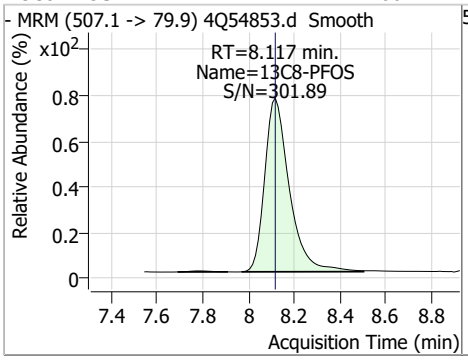


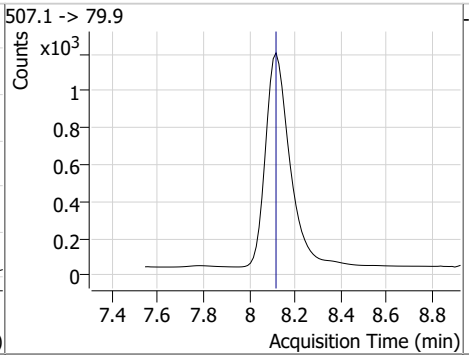


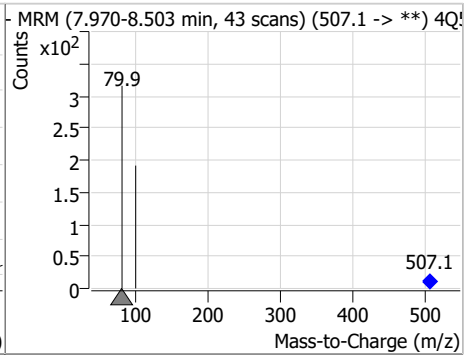




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.60	8.12	0.00	8684				

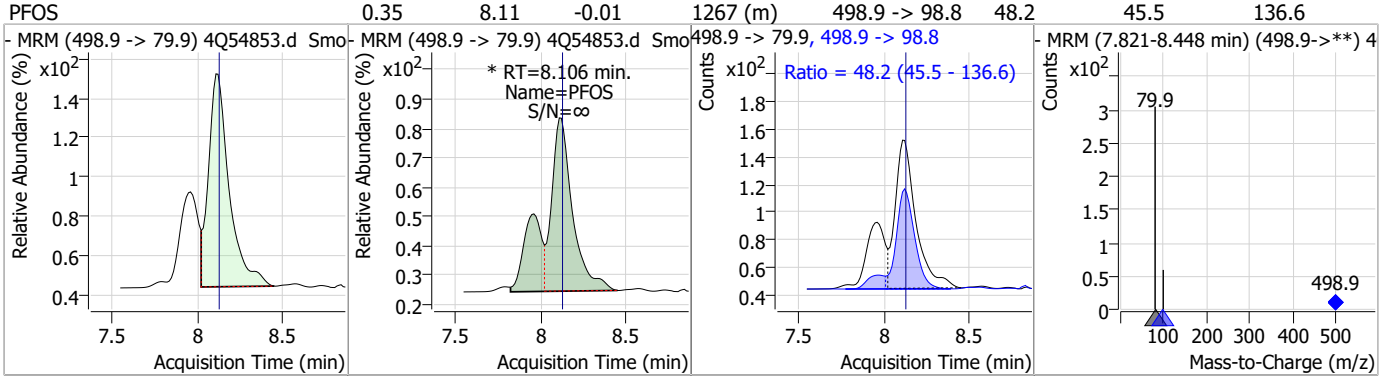




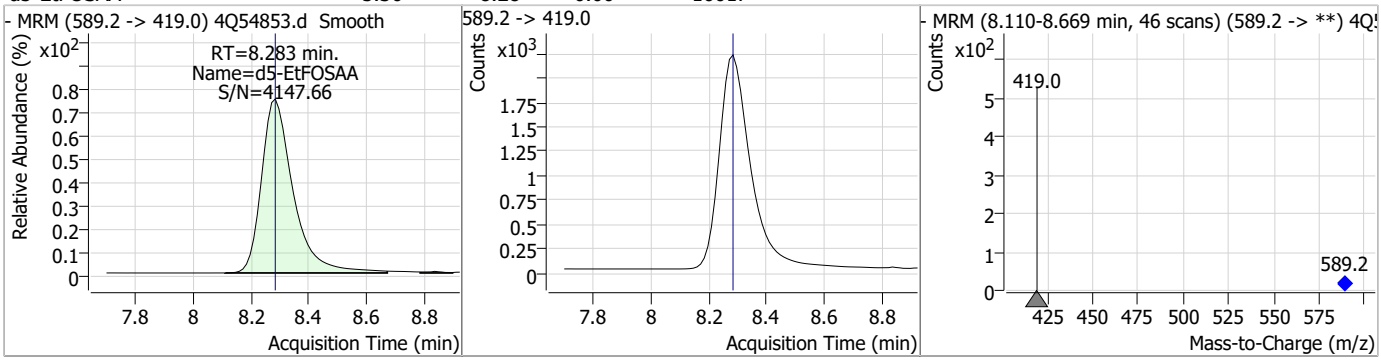


Perfluorinated Compounds by LC/MS/MS

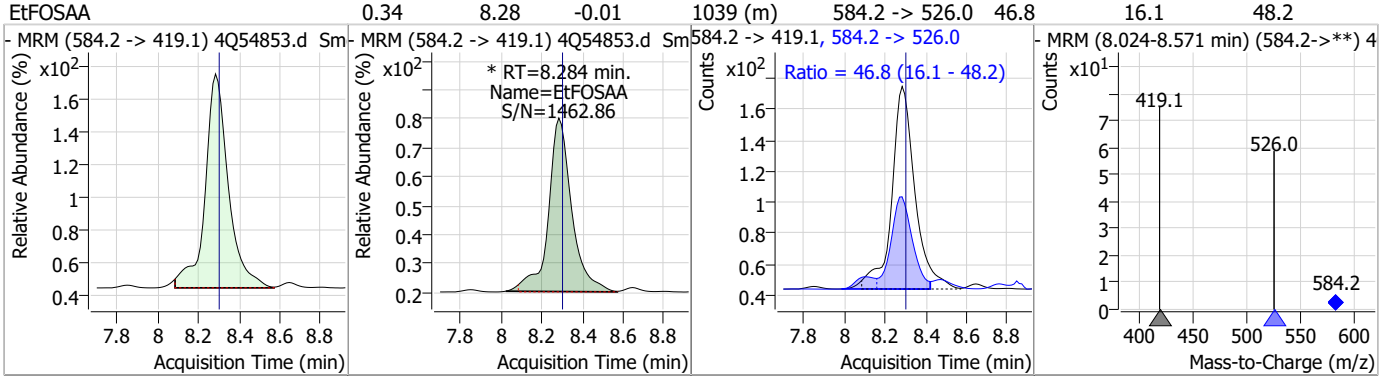
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.35	8.11	-0.01	1267 (m)	498.9 -> 98.8	48.2	45.5	136.6



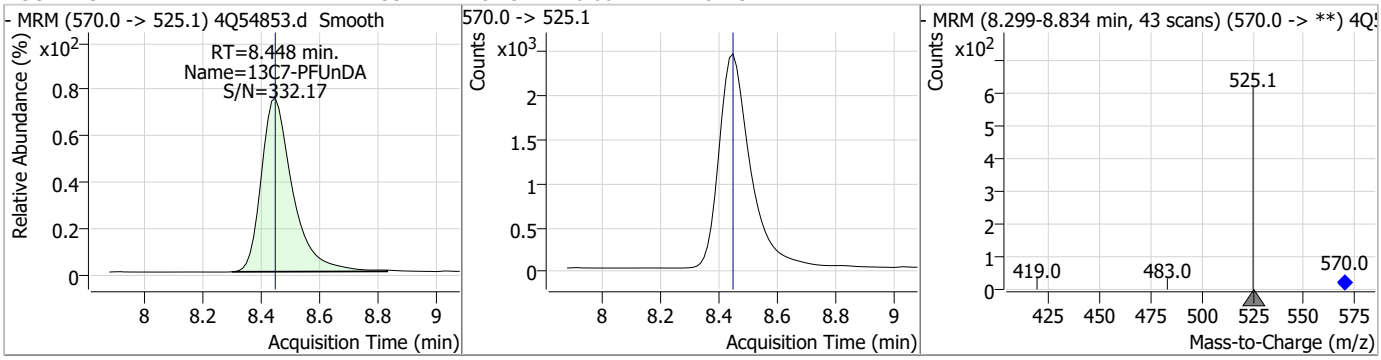
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.36	8.28	0.00	16617				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.34	8.28	-0.01	1039 (m)	584.2 -> 526.0	46.8	16.1	48.2

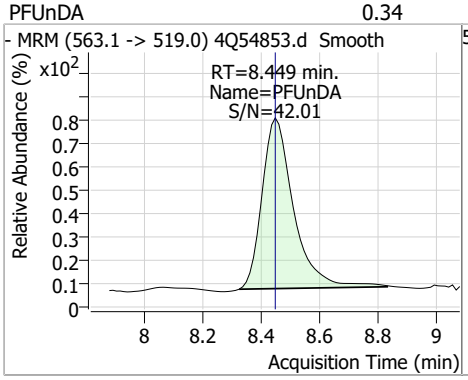


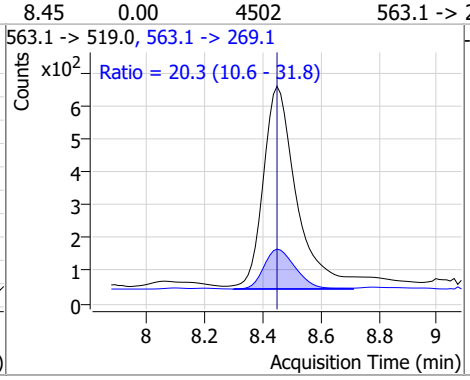
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.45	0.00	18213				

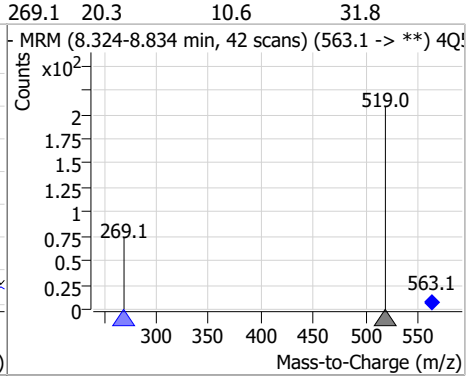


Perfluorinated Compounds by LC/MS/MS

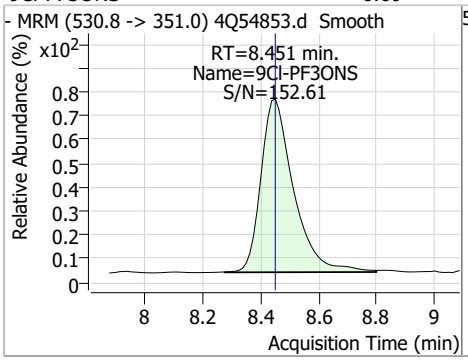
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.34	8.45	0.00	4502	563.1 -> 269.1	20.3	10.6	31.8

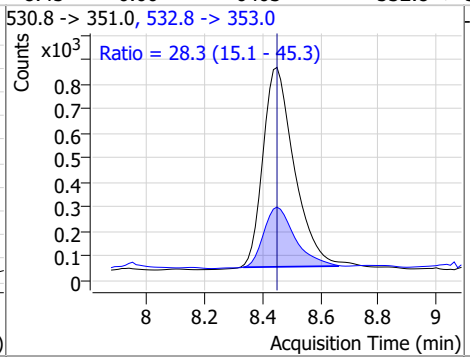


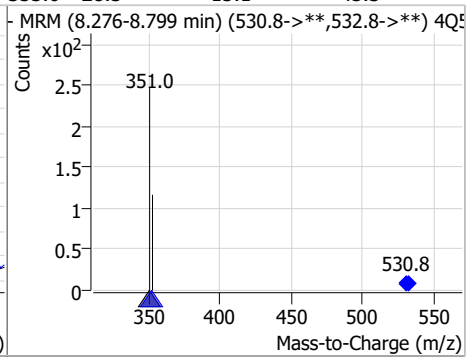




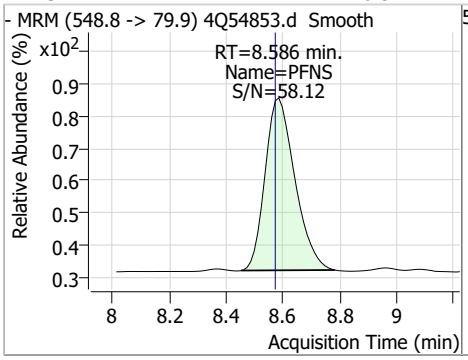
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.69	8.45	0.00	6403	532.8 -> 353.0	28.3	15.1	45.3

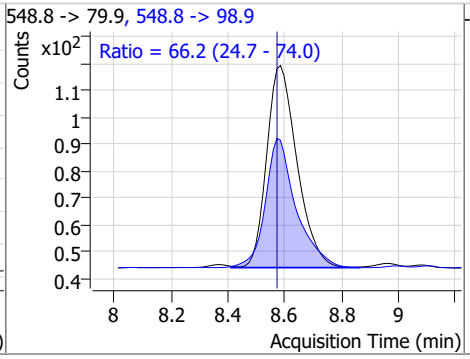


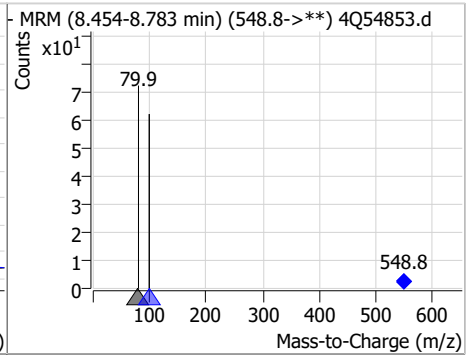




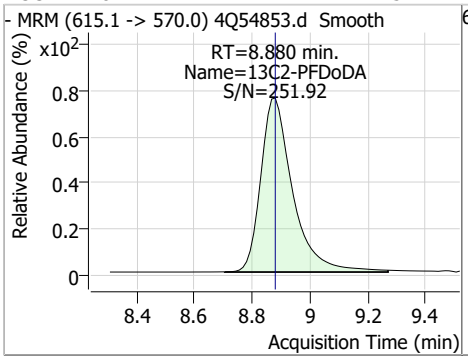
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.37	8.59	0.01	543	548.8 -> 98.9	66.2	24.7	74.0

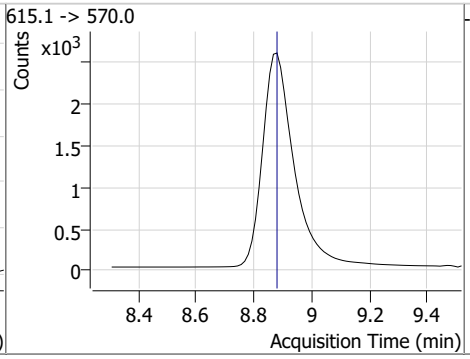


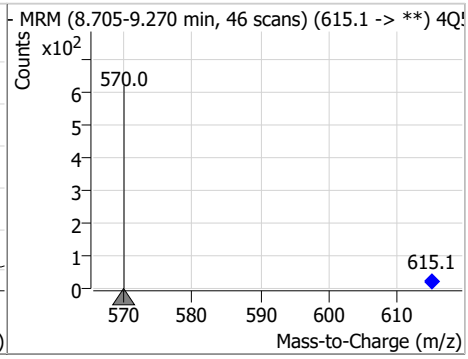




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.25	8.88	0.00	19768				

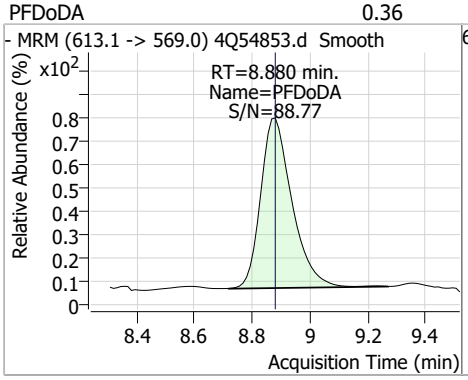


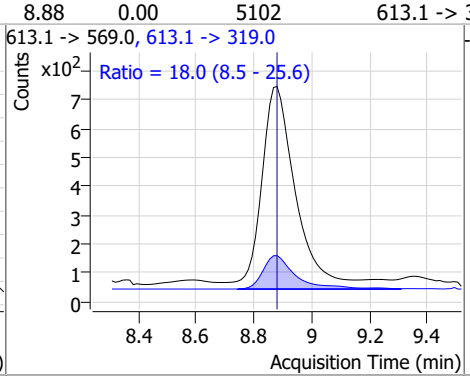


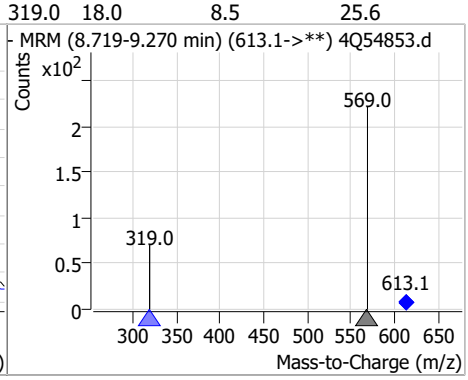


Perfluorinated Compounds by LC/MS/MS

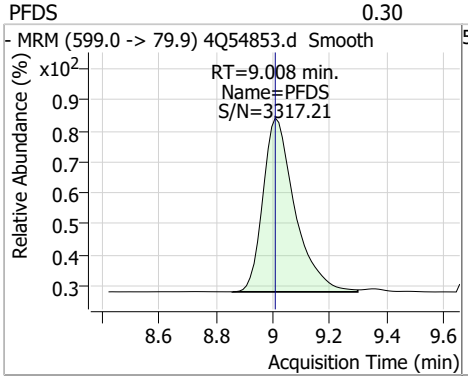
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.36	8.88	0.00	5102	613.1 -> 319.0	18.0	8.5	25.6

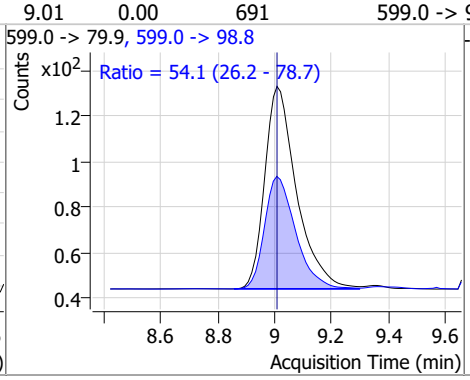


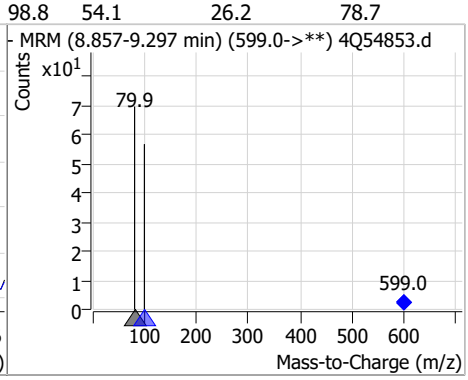




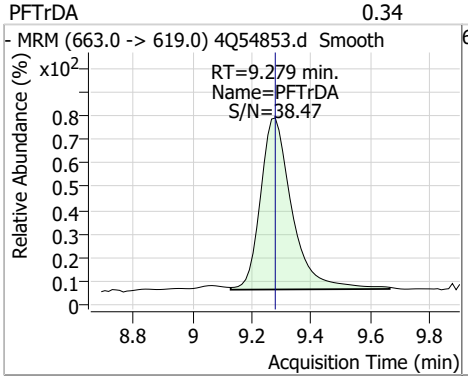
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.30	9.01	0.00	691	599.0 -> 98.8	54.1	26.2	78.7

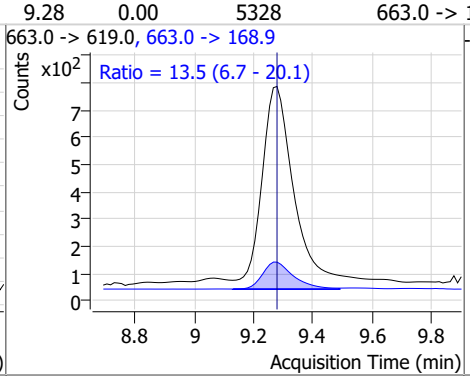


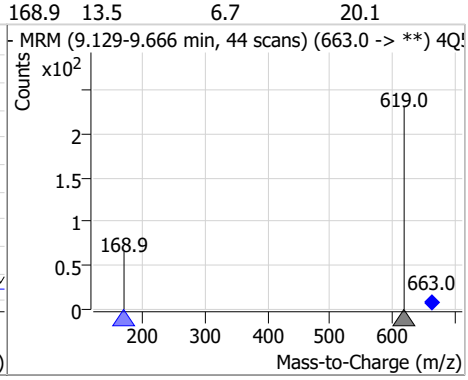




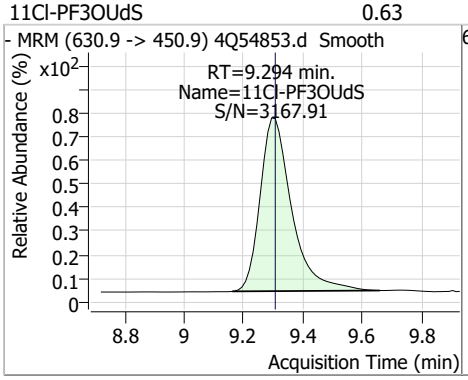
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.34	9.28	0.00	5328	663.0 -> 168.9	13.5	6.7	20.1

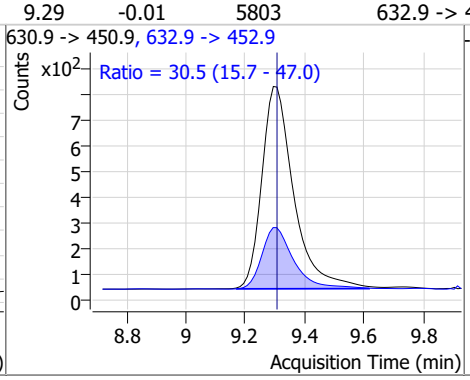


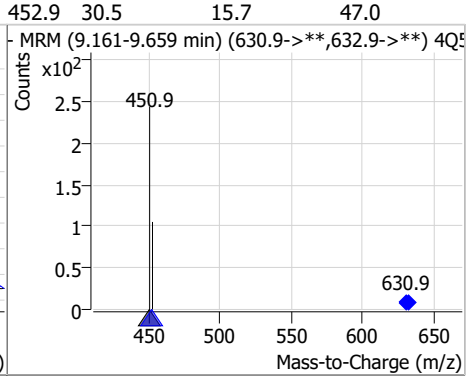




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.63	9.29	-0.01	5803	632.9 -> 452.9	30.5	15.7	47.0

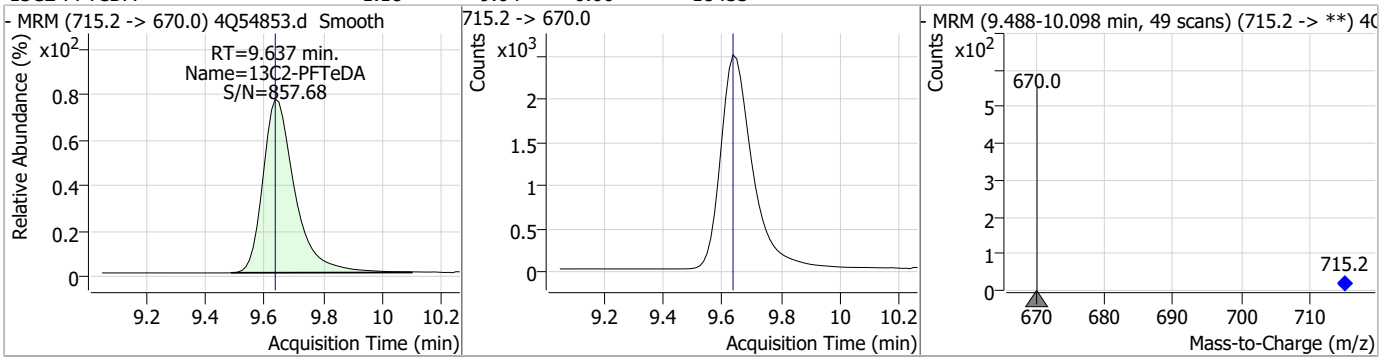




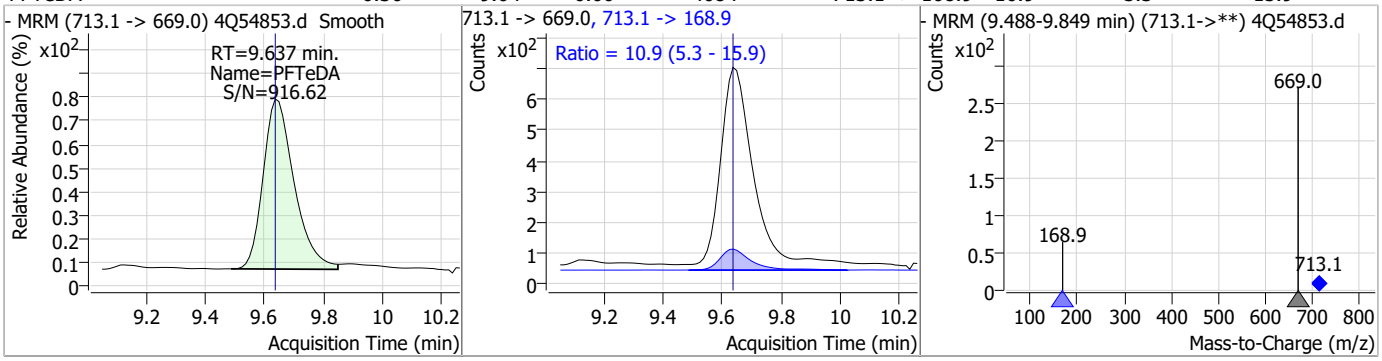


Perfluorinated Compounds by LC/MS/MS

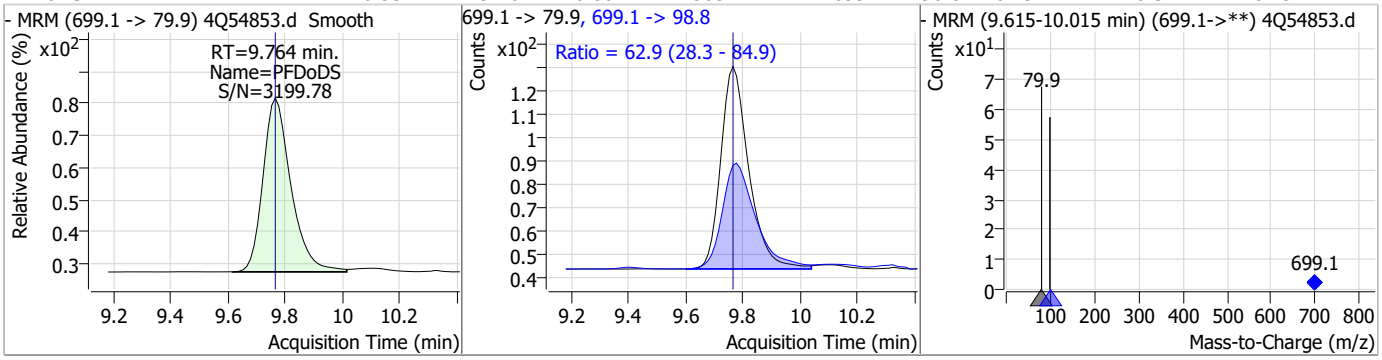
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	9.64	0.00	18453				



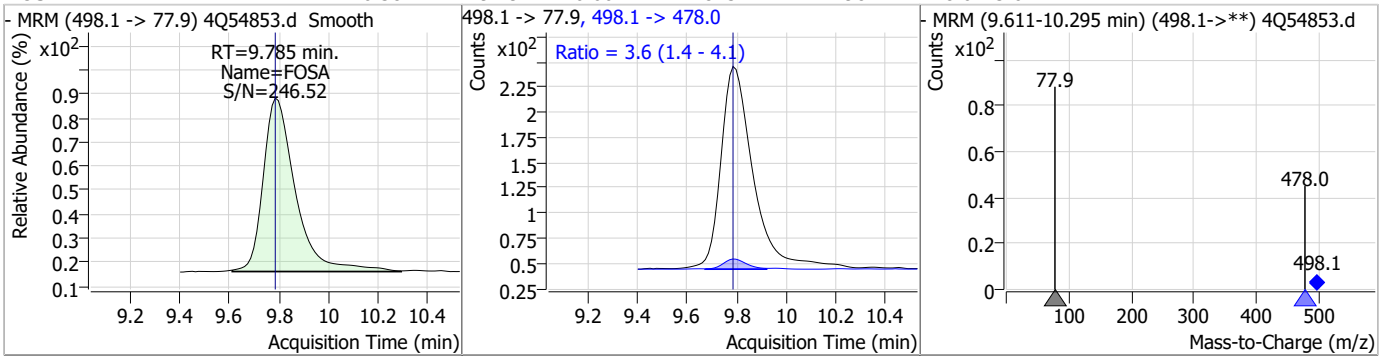
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.36	9.64	0.00	4684	713.1 -> 168.9	10.9	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.33	9.76	0.00	585	699.1 -> 98.8	62.9	28.3	84.9

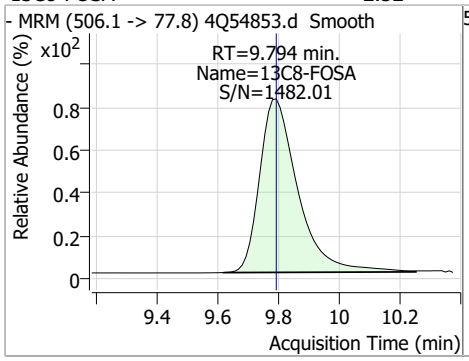


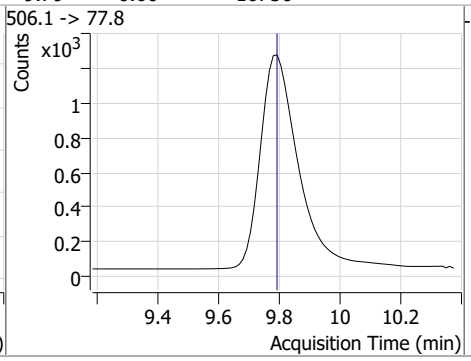
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.38	9.79	0.00	1823	498.1 -> 478.0	3.6	1.4	4.1

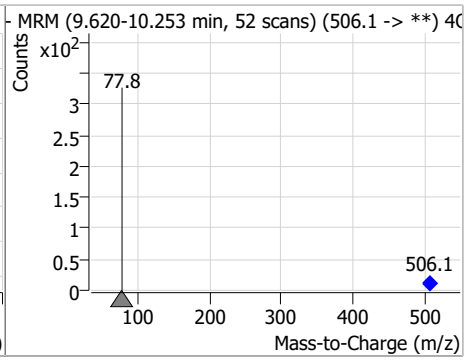


Perfluorinated Compounds by LC/MS/MS

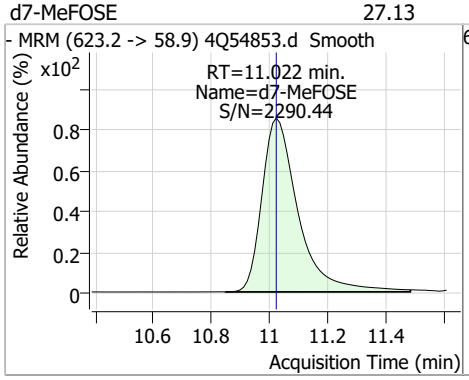
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.52	9.79	0.00	10756				

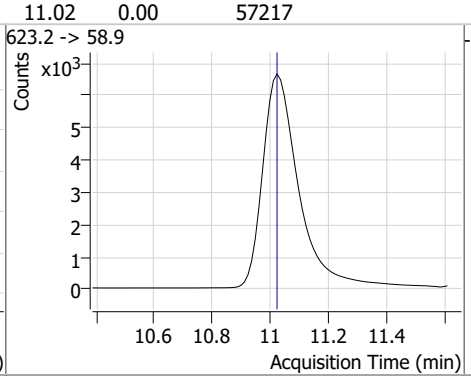


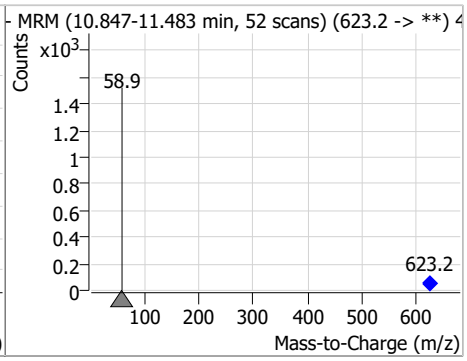




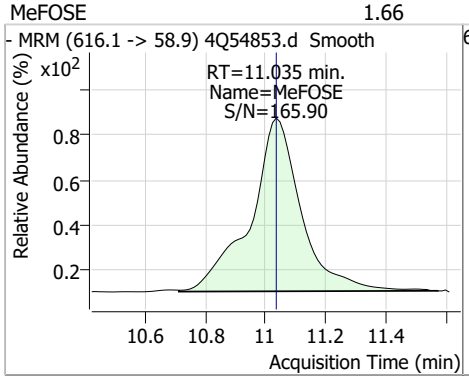
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	27.13	11.02	0.00	57217				

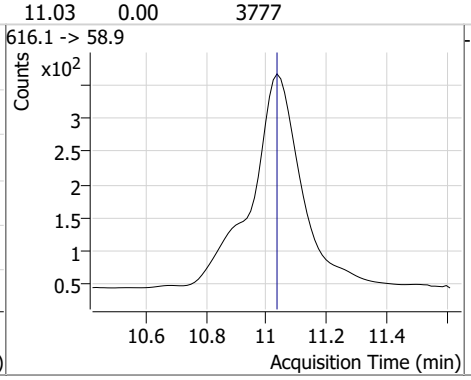


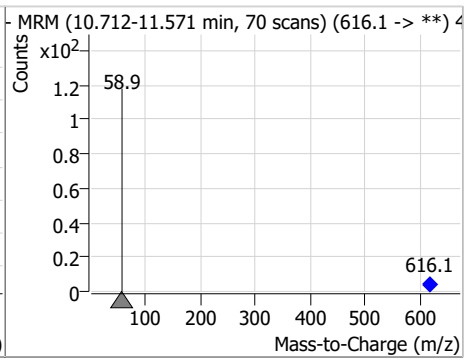




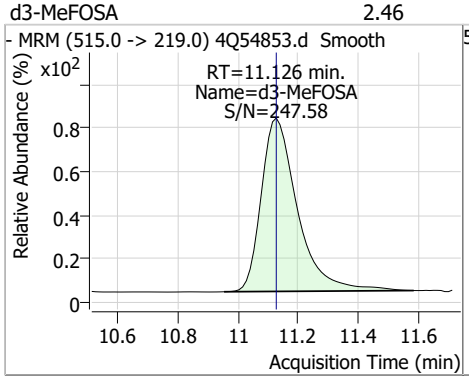
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.66	11.03	0.00	3777				

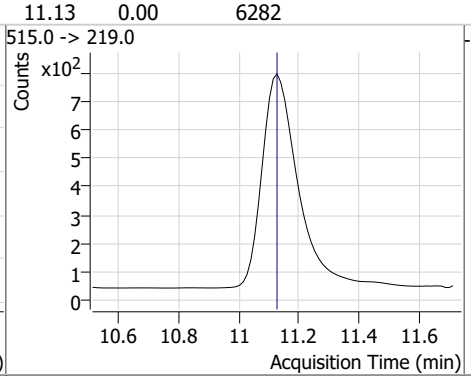


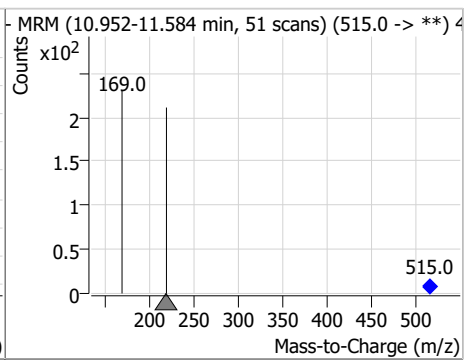




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.46	11.13	0.00	6282				

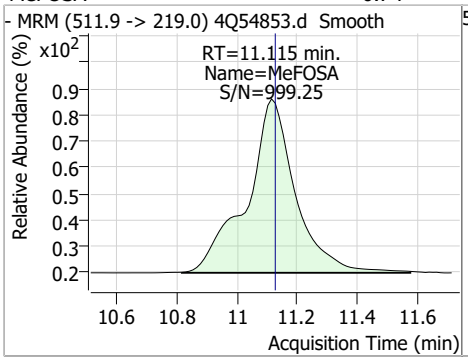


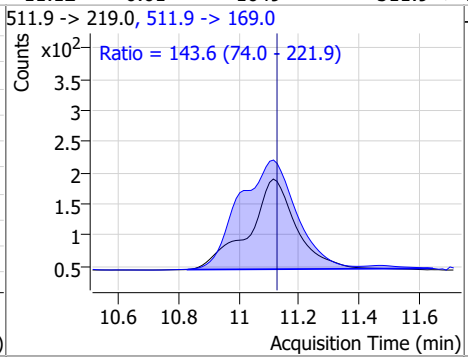


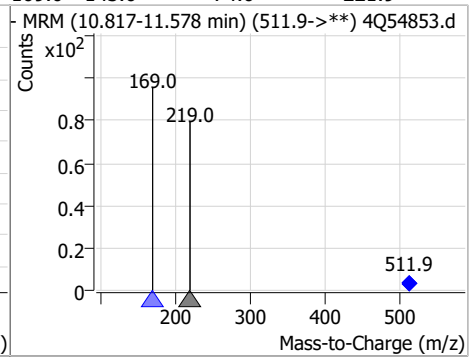


Perfluorinated Compounds by LC/MS/MS

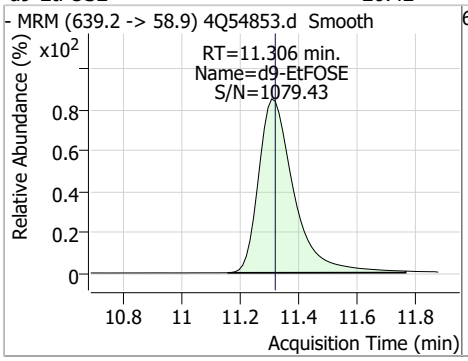
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.74	11.12	-0.01	1649	511.9 -> 169.0	143.6	74.0	221.9

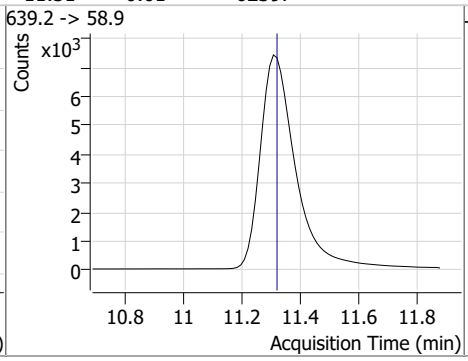


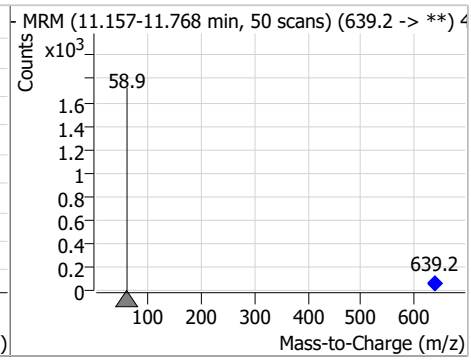




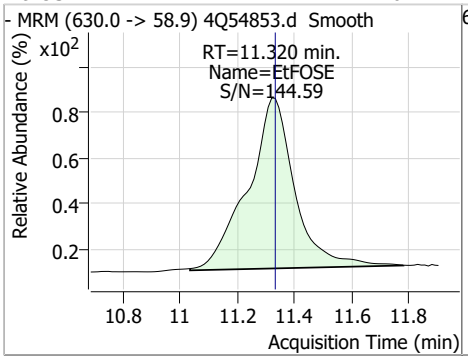
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.42	11.31	-0.01	62397				

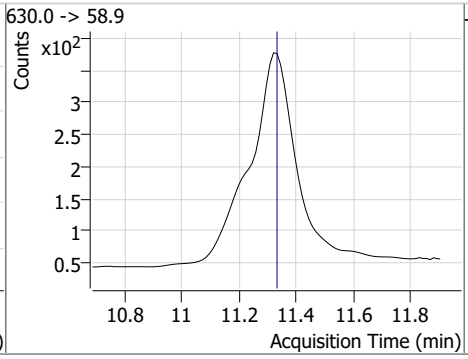


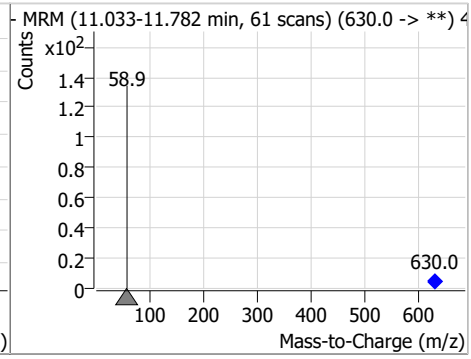




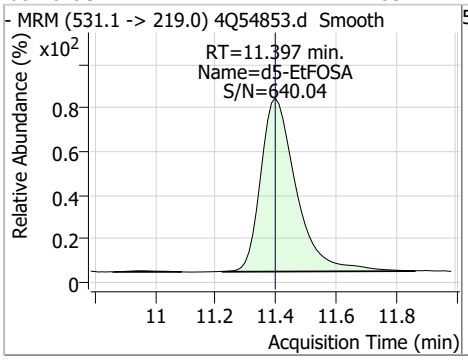
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.70	11.32	-0.01	3750				

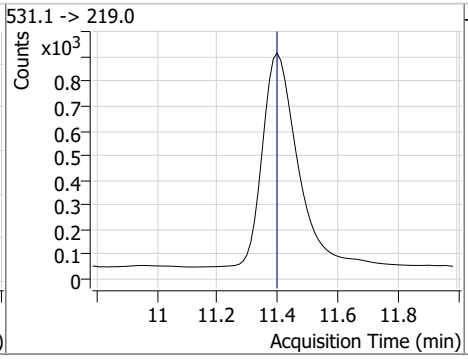


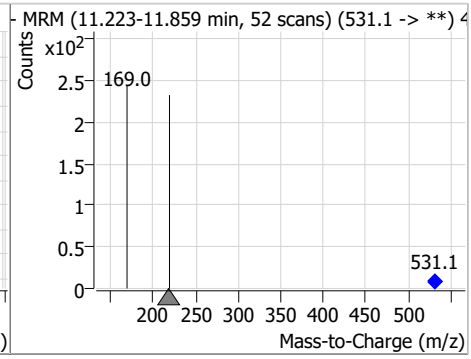




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.53	11.40	0.00	7078				

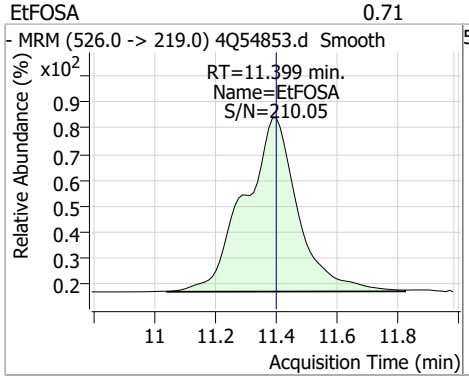


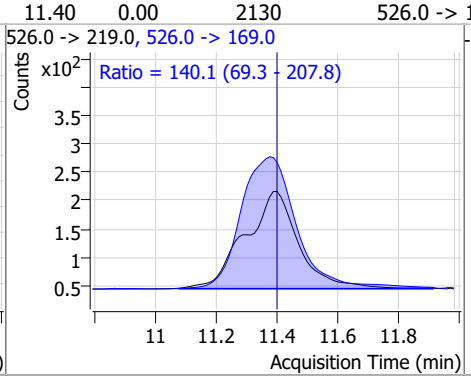


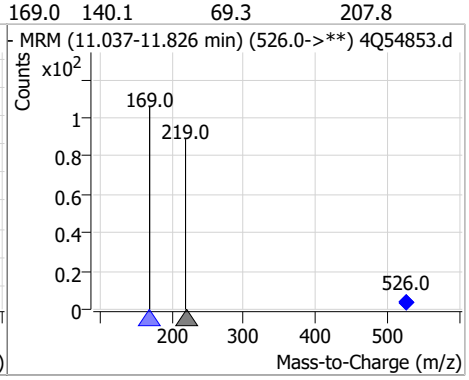


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.71	11.40	0.00	2130	526.0 -> 169.0	140.1	69.3	207.8







7.7.3

7

Manual Integration Approval Summary

Sample Number: S4Q804-IC804
Lab FileID: 4Q54853.D
Injection Time: 12/08/23 11:53

Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.04	Split peak
MeFOSAA	2355-31-9		8.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak
EtFOSAA	2991-50-6		8.28	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54854.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 12:07:50 PM
Sample Name : ic804-3
Vial : P1-A4
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.711	216.8 -> 171.9	115774	10.00	µg/L	0.037
M5-PFPeA	4.175	268.3 -> 223.0	48552	5.00	µg/L	0.012
M5-PFHxA	5.347	318.0 -> 273.0	37901	2.50	µg/L	0.012
M4-PFHpA	6.292	367.1 -> 322.0	36865	2.50	µg/L	0.000
M8-PFOA	6.976	421.1 -> 376.0	60354	2.50	µg/L	0.000
M9-PFNA	7.509	472.1 -> 427.0	22903	1.25	µg/L	-0.012
M6-PFDA	8.004	519.1 -> 474.1	16089	1.25	µg/L	0.000
M7-PFUnDA	8.448	570.0 -> 525.1	21233	1.25	µg/L	0.000
M2-PFDoDA	8.880	615.1 -> 570.0	22236	1.25	µg/L	0.000
M2-PFTeDA	9.637	715.2 -> 670.0	21528	1.25	µg/L	0.000
M8-FOSA	9.794	506.1 -> 77.8	13023	2.50	µg/L	0.000
M3-PFBS	5.202	302.1 -> 79.9	10406	2.50	µg/L	0.013
M3-PFHxS	7.029	402.1 -> 79.9	8915	2.50	µg/L	0.000
M8-PFOS	8.117	507.1 -> 79.9	9820	2.50	µg/L	0.000
M2-4:2FTS	5.058	329.1 -> 80.9	1365	5.00	µg/L	0.012
M2-6:2FTS	6.748	429.1 -> 80.9	3094	5.00	µg/L	0.000
M2-8:2FTS	7.804	529.1 -> 80.9	3996	5.00	µg/L	0.000
M3-MeFOSAA	8.086	573.2 -> 419.0	22070	5.00	µg/L	0.000
M3-HFPO-DA	5.689	286.9 -> 168.9	37989	10.00	µg/L	0.000
M5-EtFOSAA	8.283	589.2 -> 419.0	18209	5.00	µg/L	0.000
M7-MeFOSE	11.022	623.2 -> 58.9	64453	25.00	µg/L	0.000
M9-EtFOSE	11.319	639.2 -> 58.9	70593	25.00	µg/L	0.000
M5-EtFOSA	11.398	531.1 -> 219.0	8062	2.50	µg/L	0.000
M3-MeFOSA	11.126	515.0 -> 219.0	7284	2.50	µg/L	0.000
13C4-PFOS	8.118	502.8 -> 79.9	7876	2.50	µg/L	0.000
13C3-PFBA	2.703	216.0 -> 172.0	54728	5.00	µg/L	0.025
18O2-PFHxS	7.041	403.0 -> 83.9	5597	2.50	µg/L	0.000
13C4-PFOA	6.977	417.1 -> 372.0	65274	2.50	µg/L	0.000
13C2-PFDA	8.004	515.1 -> 470.1	17711	1.25	µg/L	0.000
13C5-PFNA	7.522	468.0 -> 423.0	23027	1.25	µg/L	0.012
13C2-PFHxA	5.348	315.1 -> 270.0	41601	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.058	329.1 -> 80.9	1365	5.14	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C2-6:2FTS	6.748	429.1 -> 80.9	3094	5.37	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C2-8:2FTS	7.804	529.1 -> 80.9	3996	5.18	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-PFDoDA	8.880	615.1 -> 570.0	22236	1.26	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-PFTeDA	9.637	715.2 -> 670.0	21528	1.22	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C3-PFBS	5.202	302.1 -> 79.9	10406	2.43	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C3-PFHxS	7.029	402.1 -> 79.9	8915	2.54	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C4-PFBA	2.711	216.8 -> 171.9	115774	10.07 µg/L		0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C4-PFHpA	6.292	367.1 -> 322.0	36865	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C5-PFHxA	5.347	318.0 -> 273.0	37901	2.47 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C5-PFPeA	4.175	268.3 -> 223.0	48552	5.08 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C6-PFDA	8.004	519.1 -> 474.1	16089	1.25 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C7-PFUnDA	8.448	570.0 -> 525.1	21233	1.40 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 111.8%		
13C8-FOSA	9.794	506.1 -> 77.8	13023	2.55 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C8-PFOA	6.976	421.1 -> 376.0	60354	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C8-PFOS	8.117	507.1 -> 79.9	9820	2.46 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C9-PFNA	7.509	472.1 -> 427.0	22903	1.24 µg/L		-0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.3%		
d3-MeFOSAA	8.086	573.2 -> 419.0	22070	5.05 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C3-HFPO-DA	5.689	286.9 -> 168.9	37989	9.92 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
d3-MeFOSA	11.126	515.0 -> 219.0	7284	2.39 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
d5-EtFOSAA	8.283	589.2 -> 419.0	18209	4.92 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
d7-MeFOSE	11.022	623.2 -> 58.9	64453	25.60 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
d9-EtFOSE	11.319	639.2 -> 58.9	70593	25.03 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
d5-EtFOSA	11.398	531.1 -> 219.0	8062	2.41 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.6%		
Target Compounds						QValue
4:2FTS	5.059	327.1 -> 307.0	11983	5.10 µg/L		97
		327.1 -> 80.9	4856			
6:2FTS	6.749	427.1 -> 407.0	15644	4.81 µg/L		98
		427.1 -> 80.9	5891			
8:2FTS	7.804	527.1 -> 507.0	11074	5.26 µg/L		99
		527.1 -> 80.8	4537			
EtFOSAA	8.284	584.2 -> 419.1	4267	1.28 µg/L	m	82
		584.2 -> 526.0	1796			
FOSA	9.798	498.1 -> 77.9	7216	1.23 µg/L		98
		498.1 -> 478.0	246			
MeFOSAA	8.087	570.1 -> 419.0	4388	1.39 µg/L		95
		570.1 -> 483.0	811			
PFBA	2.707	212.8 -> 168.9	18532	5.00 µg/L		100
PFBS	5.203	298.7 -> 79.9	3435	1.06 µg/L		100
		298.7 -> 98.8	1403			
PFDA	8.005	512.9 -> 469.0	15282	1.29 µg/L		98
		512.9 -> 219.0	2995			
PFDoDA	8.880	613.1 -> 569.0	19702	1.23 µg/L		94
		613.1 -> 319.0	3850			
PFDS	9.020	599.0 -> 79.9	3148	1.20 µg/L		95

Perfluorinated Compounds by LC/MS/MS

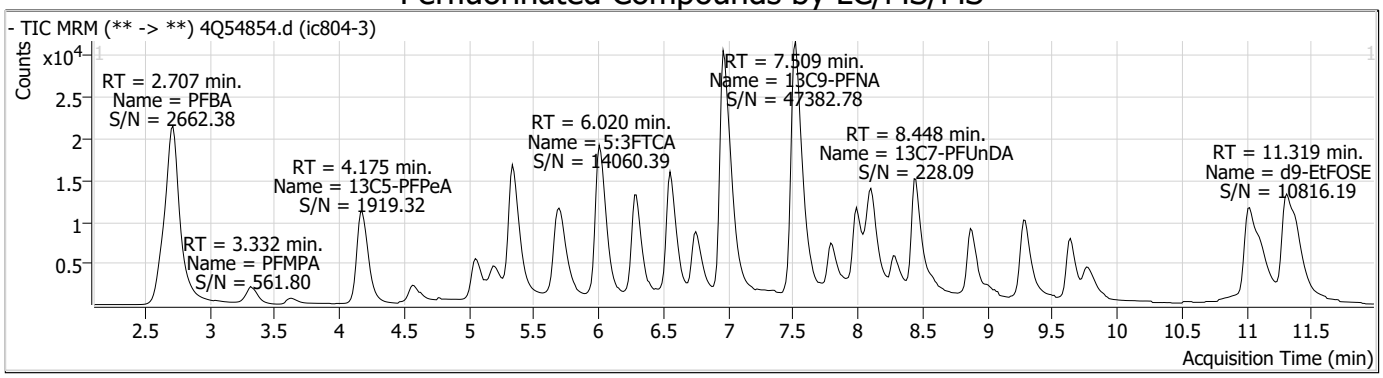
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	1542				
PFHpA	6.293	363.1 -> 319.0	25557	1.23	µg/L		100
		363.1 -> 169.0	4657				
PFHpS	7.612	449.0 -> 79.9	4644	1.19	µg/L		95
		449.0 -> 98.9	2268				
PFHxA	5.350	313.0 -> 269.0	14645	1.21	µg/L		98
		313.0 -> 118.9	516				
PFHxS	7.043	398.7 -> 79.9	3103	1.08	µg/L	m	99
		398.7 -> 98.9	1497				
PFNA	7.522	463.0 -> 419.0	17217	1.28	µg/L		98
		463.0 -> 219.0	4142				
PFNS	8.586	548.8 -> 79.9	2460	1.47	µg/L		99
		548.8 -> 98.9	1227				
PFOA	6.978	413.0 -> 369.0	30788	1.24	µg/L		98
		413.0 -> 169.0	6561				
PFOS	8.119	498.9 -> 79.9	4630	1.13	µg/L	m	59
		498.9 -> 98.8	2427				
PFPeA	4.177	263.0 -> 219.0	23497	2.46	µg/L		100
PFPeS	6.282	349.1 -> 79.9	3226	1.19	µg/L		97
		349.1 -> 98.9	1426				
PFTeDA	9.637	713.1 -> 669.0	18174	1.21	µg/L		100
		713.1 -> 168.9	1960				
PFTrDA	9.279	663.0 -> 619.0	22663	1.30	µg/L		98
		663.0 -> 168.9	3179				
PFUnDA	8.449	563.1 -> 519.0	17599	1.14	µg/L		96
		563.1 -> 269.1	4089				
11Cl-PF3OUdS	9.306	630.9 -> 450.9	25190	2.41	µg/L		97
		632.9 -> 452.9	7448				
9Cl-PF3ONS	8.451	530.8 -> 351.0	25966	2.46	µg/L		99
		532.8 -> 353.0	7661				
ADONA	6.568	376.9 -> 250.9	67226	2.62	µg/L		98
		376.9 -> 84.8	15529				
HFPO-DA	5.703	284.9 -> 168.9	9302	2.56	µg/L		98
		284.9 -> 184.9	813				
3:3FTCA	3.630	241.0 -> 177.0	3503	5.94	µg/L		100
		241.0 -> 117.0	308				
5:3FTCA	6.020	341.0 -> 237.1	67567	31.32	µg/L		99
		341.0 -> 217.0	47567				
7:3FTCA	7.536	441.0 -> 316.9	35887	31.73	µg/L		98
		441.0 -> 336.9	84311				
EtFOSA	11.399	526.0 -> 219.0	8782	2.56	µg/L		95
		526.0 -> 169.0	11651				
EtFOSE	11.320	630.0 -> 58.9	15599	6.24	µg/L		100
MeFOSA	11.128	511.9 -> 219.0	6655	2.57	µg/L	m	99
		511.9 -> 169.0	9937				
MeFOSE	11.035	616.1 -> 58.9	15409	6.03	µg/L		100
PFDoDS	9.764	699.1 -> 79.9	2409	1.21	µg/L		95
		699.1 -> 98.8	1273				
NFDHA	5.229	295.0 -> 201.0	2033	2.37	µg/L		91
		295.0 -> 84.9	625				
PFMBA	4.578	279.0 -> 85.1	13057	2.48	µg/L		100
PFMPA	3.332	229.0 -> 84.9	14040	2.43	µg/L		100
PFEESA	5.722	314.8 -> 134.9	20009	2.24	µg/L		99
		314.8 -> 82.9	688				

 # = Qualifier out of range, m = manually integrated, + = Area summed

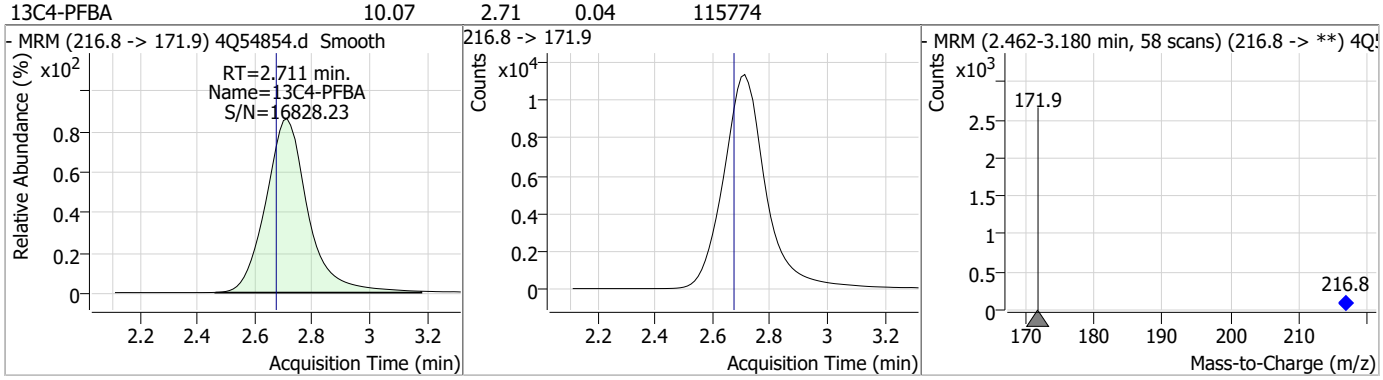
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

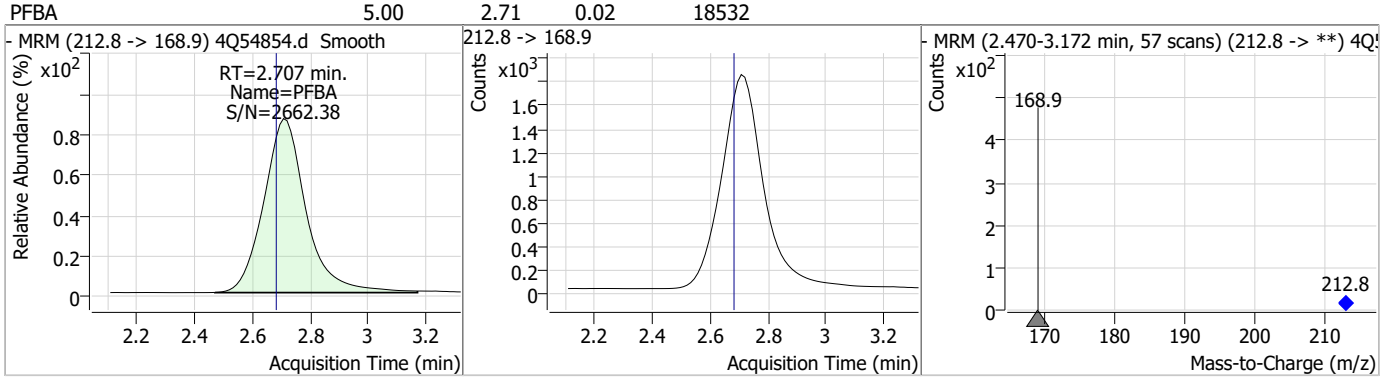
Perfluorinated Compounds by LC/MS/MS



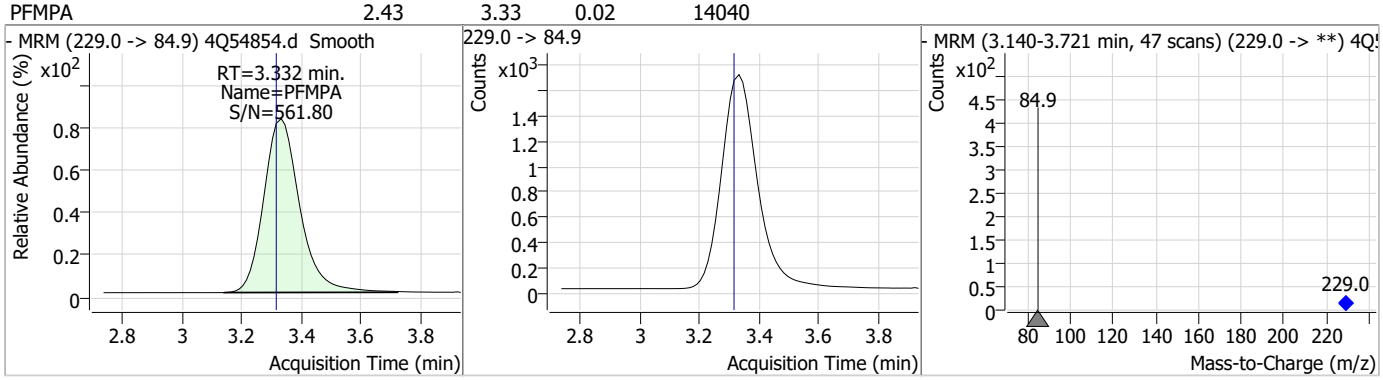
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.07	2.71	0.04	115774				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.00	2.71	0.02	18532				

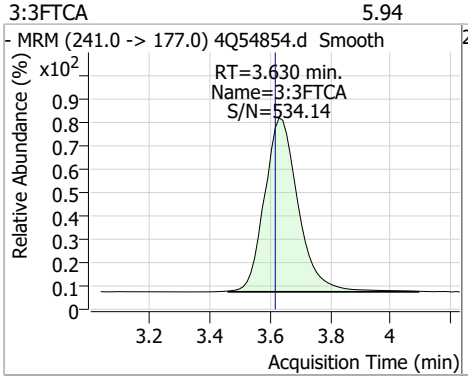


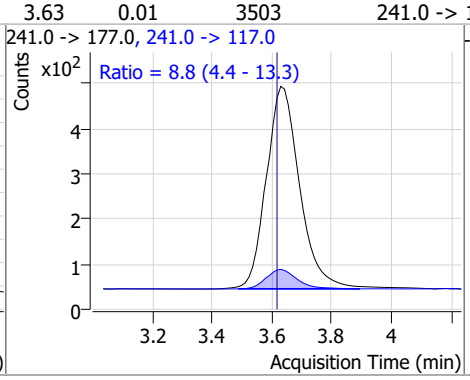
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	2.43	3.33	0.02	14040				

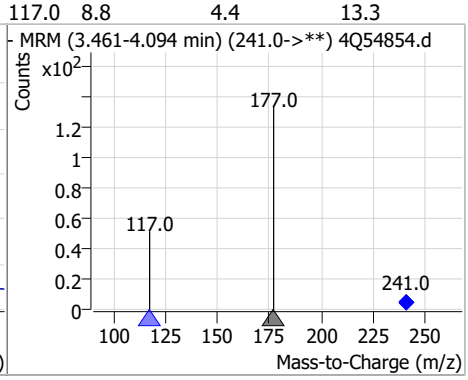


Perfluorinated Compounds by LC/MS/MS

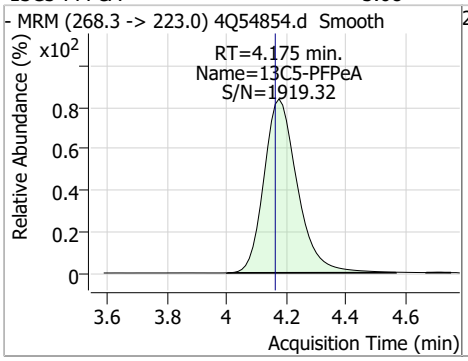
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	5.94	3.63	0.01	3503	241.0 -> 117.0	8.8	4.4	13.3

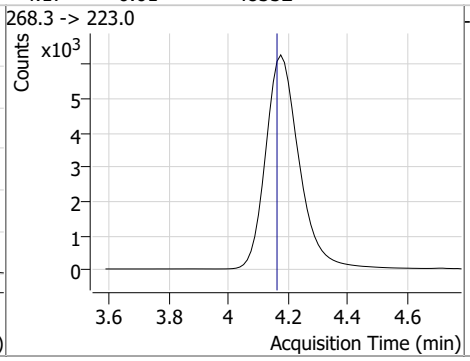


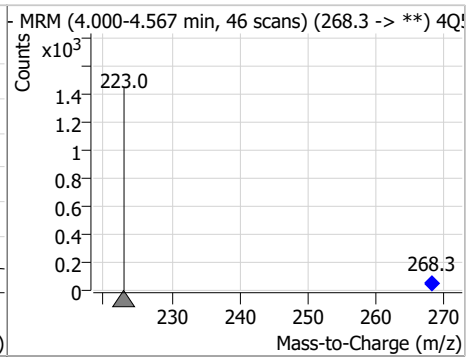




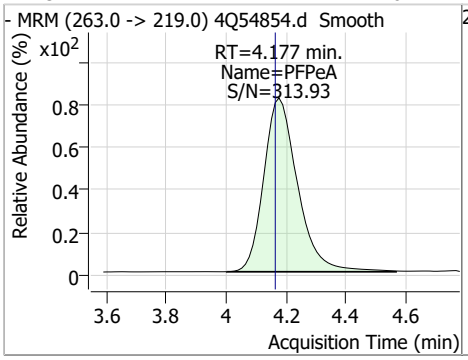
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.08	4.17	0.01	48552				

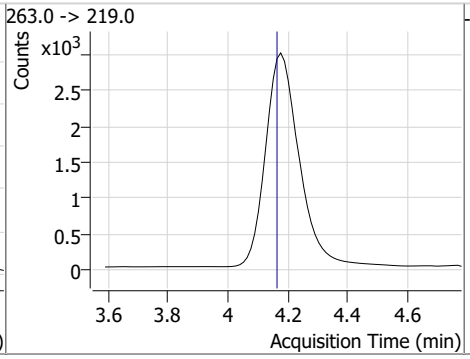


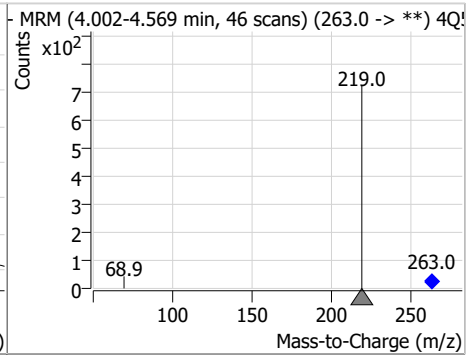




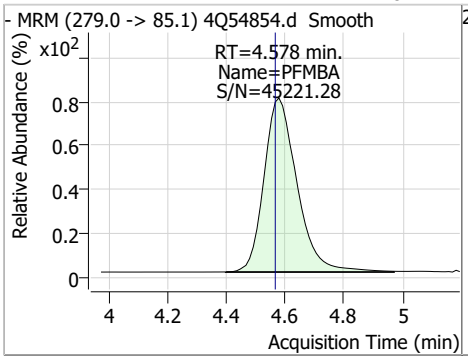
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.46	4.18	0.01	23497				

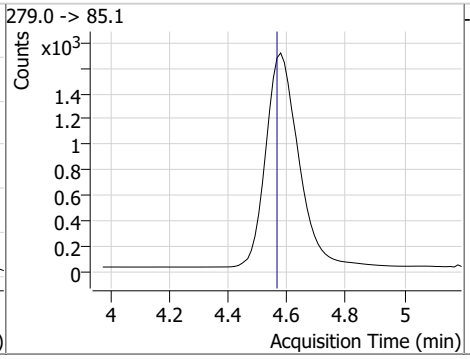


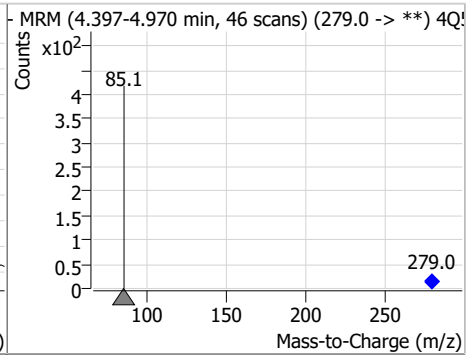




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	2.48	4.58	0.01	13057				

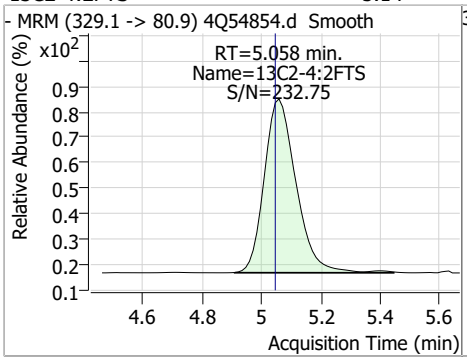


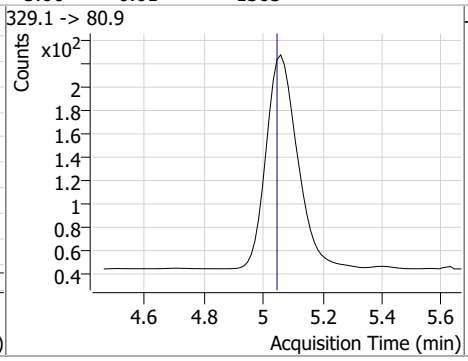


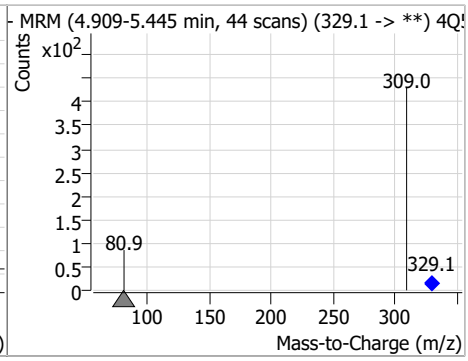


Perfluorinated Compounds by LC/MS/MS

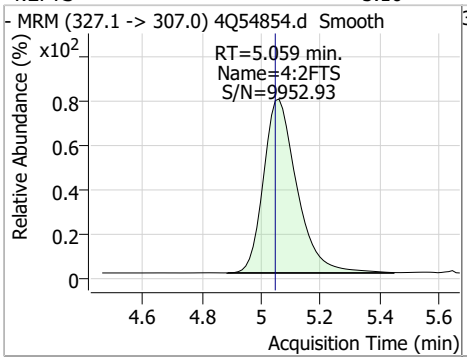
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.14	5.06	0.01	1365				

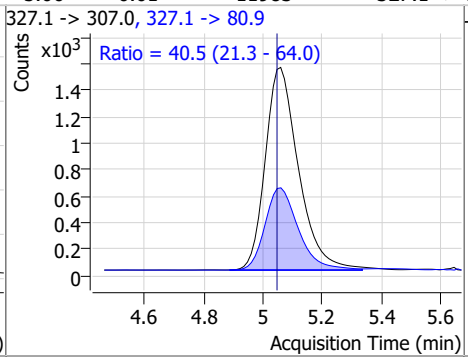


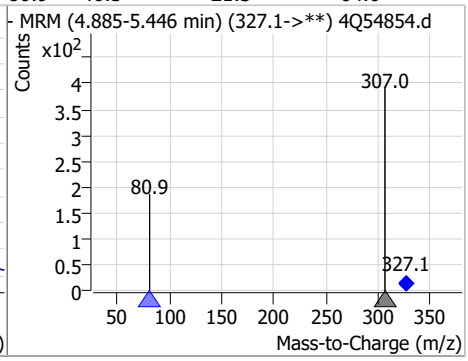




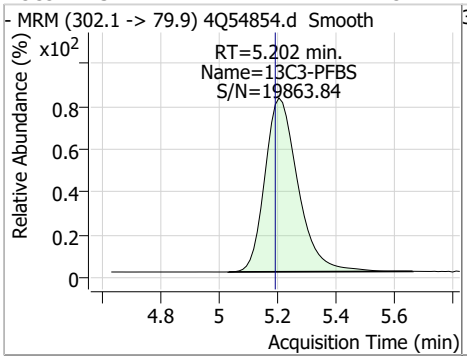
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.10	5.06	0.01	11983	327.1 -> 80.9	40.5	21.3	64.0

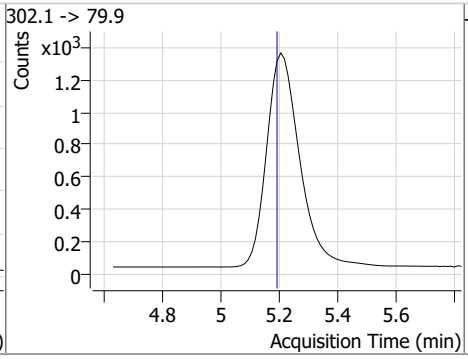


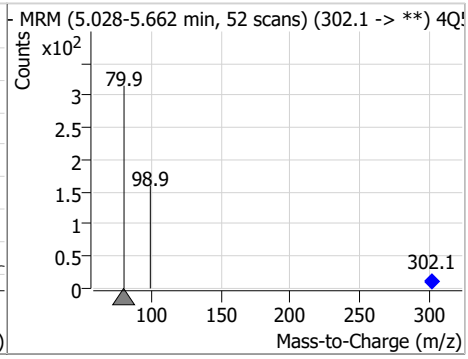




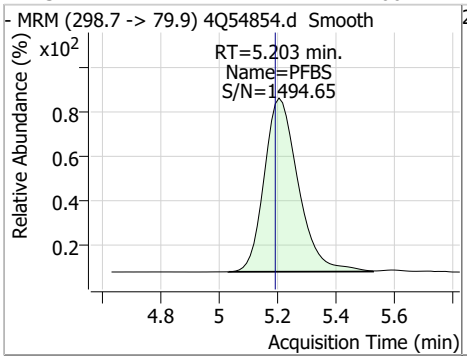
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.43	5.20	0.01	10406				

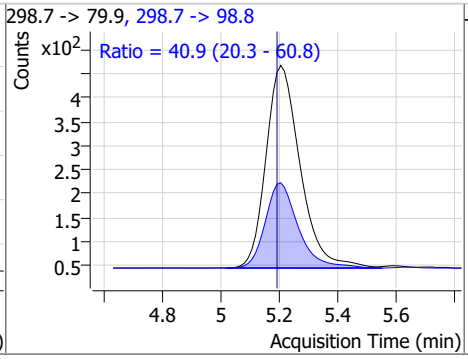


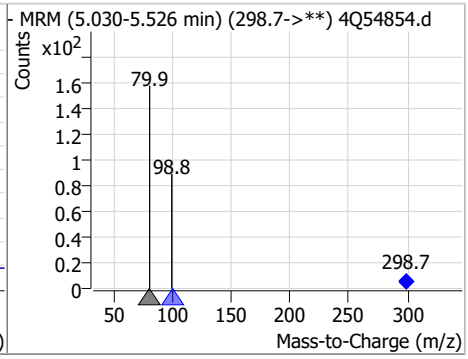




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.06	5.20	0.01	3435	298.7 -> 98.8	40.9	20.3	60.8

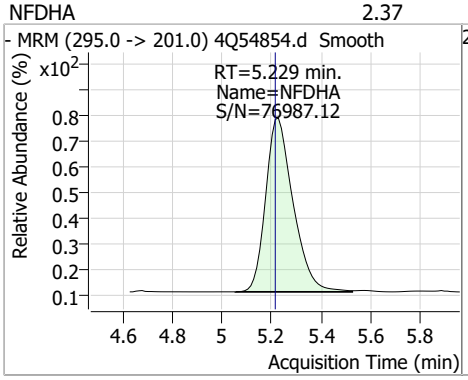


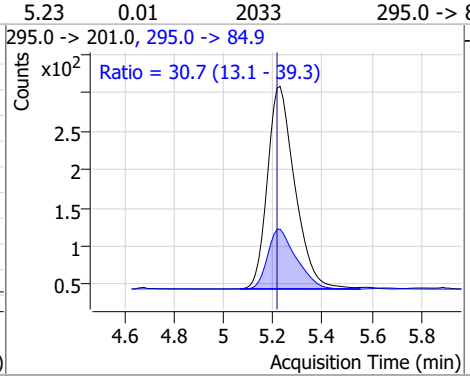


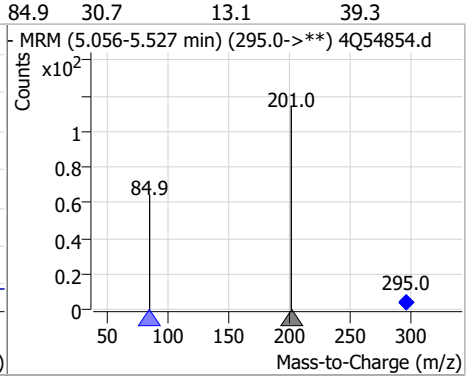


Perfluorinated Compounds by LC/MS/MS

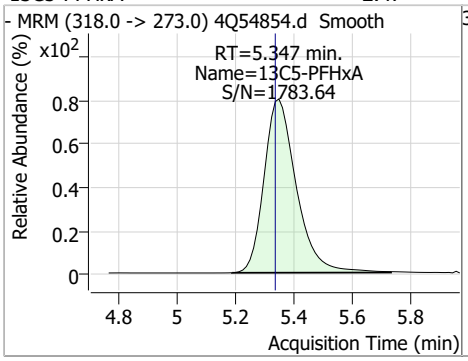
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	2.37	5.23	0.01	2033	295.0 -> 84.9	30.7	13.1	39.3

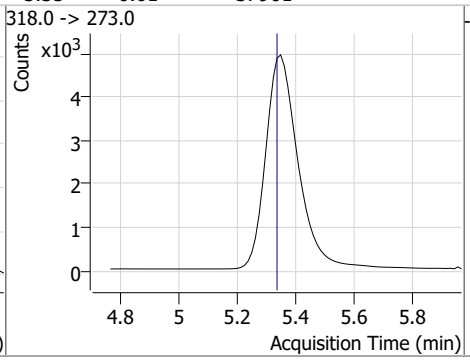


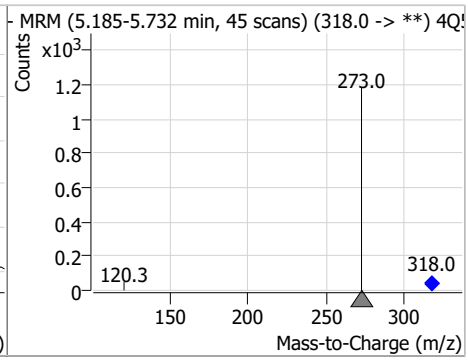




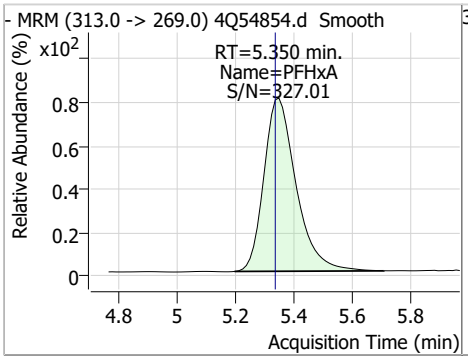
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.47	5.35	0.01	37901				

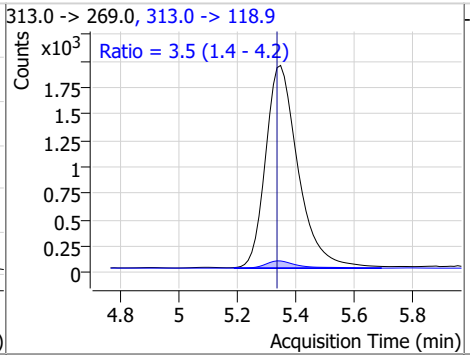


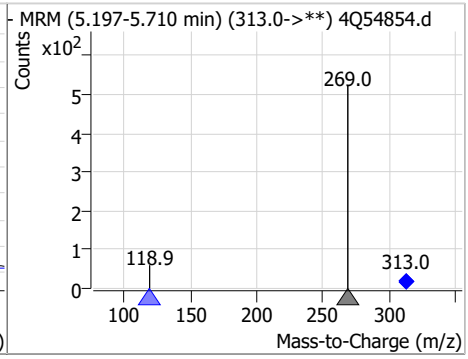




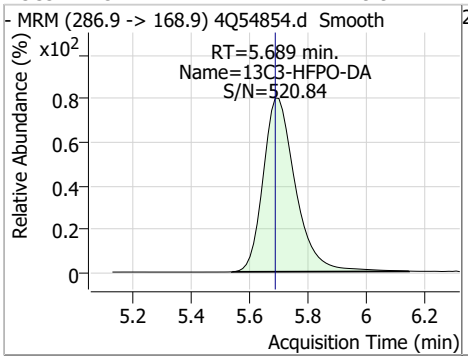
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.21	5.35	0.01	14645	313.0 -> 118.9	3.5	1.4	4.2

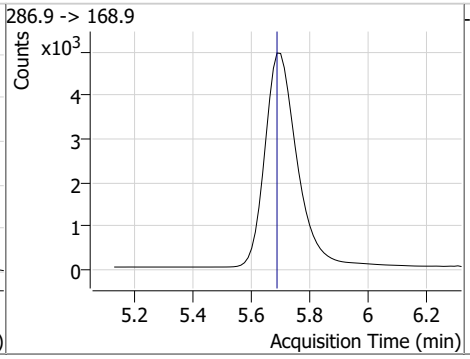


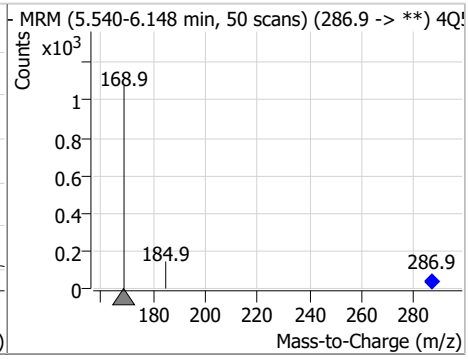




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.92	5.69	0.00	37989				

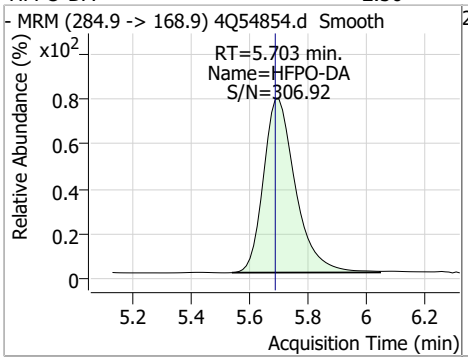


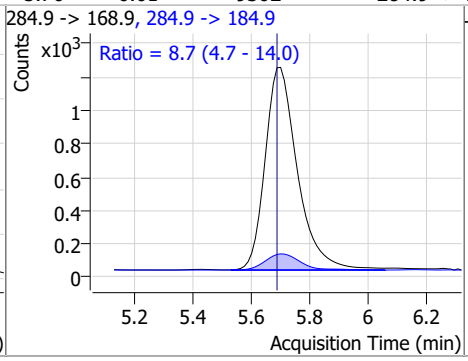


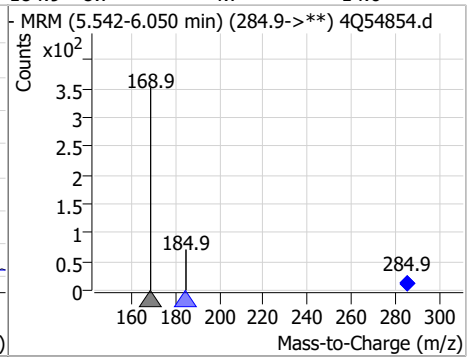


Perfluorinated Compounds by LC/MS/MS

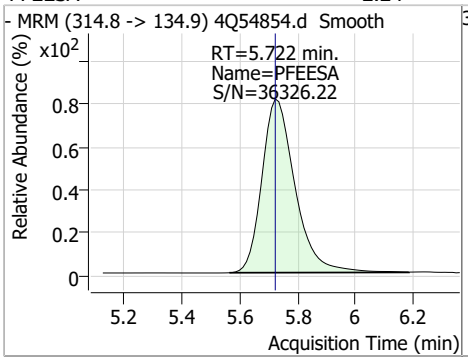
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.56	5.70	0.01	9302	284.9 -> 184.9	8.7	4.7	14.0

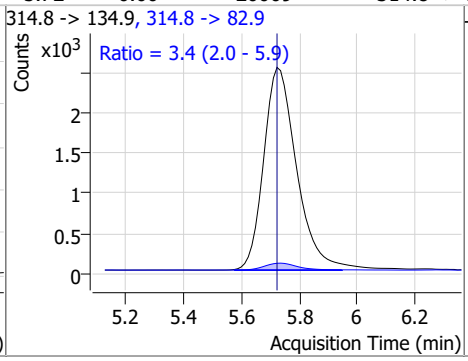


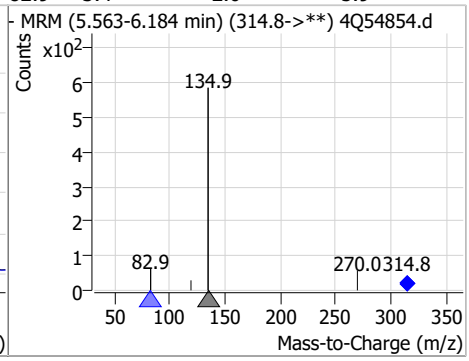




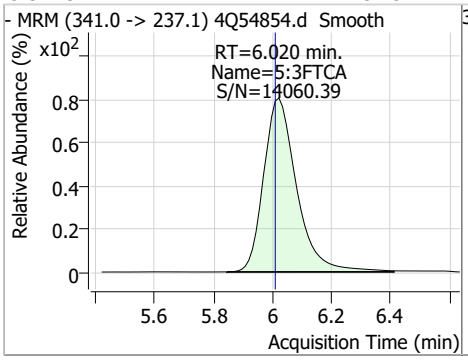
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	2.24	5.72	0.00	20009	314.8 -> 82.9	3.4	2.0	5.9

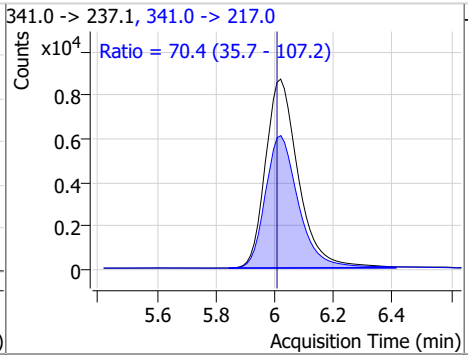


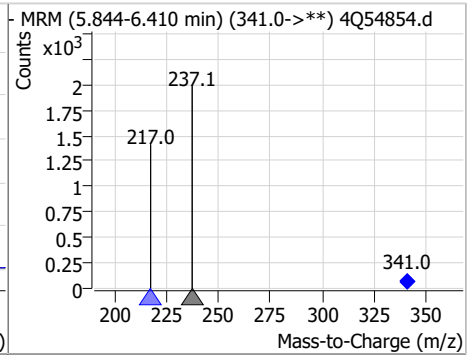




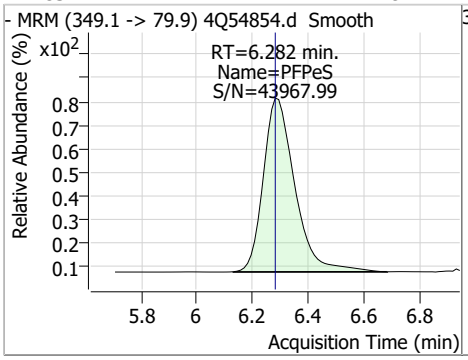
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	31.32	6.02	0.01	67567	341.0 -> 217.0	70.4	35.7	107.2

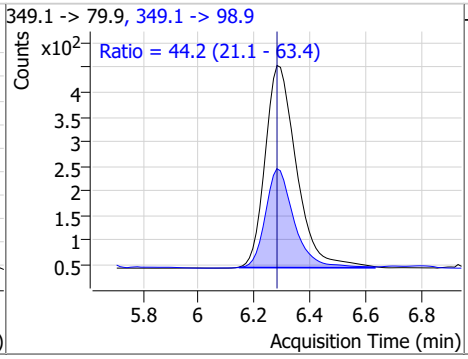


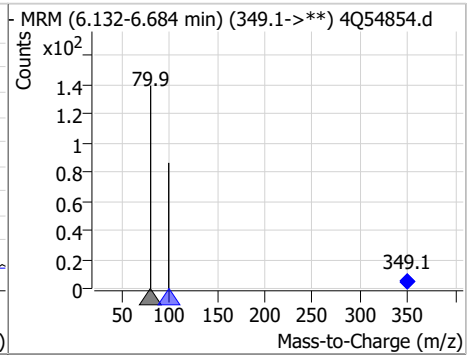




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.19	6.28	0.00	3226	349.1 -> 98.9	44.2	21.1	63.4

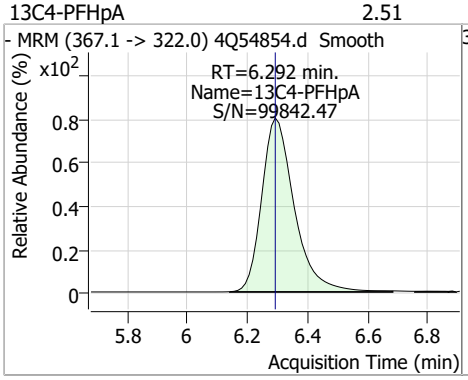


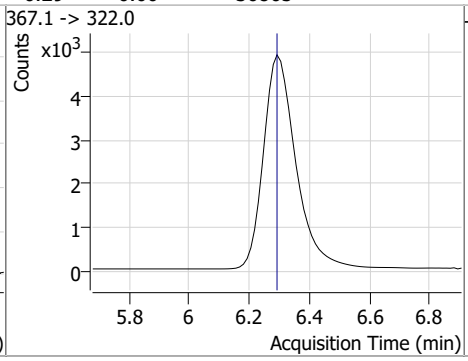


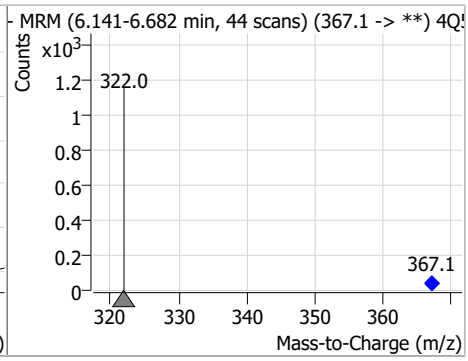


Perfluorinated Compounds by LC/MS/MS

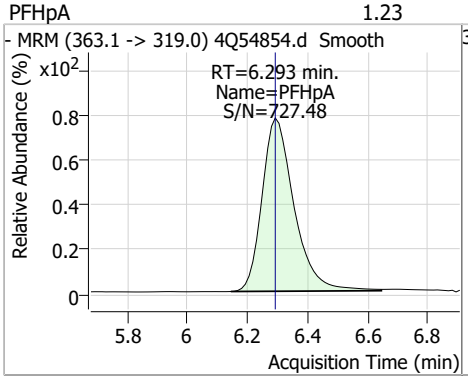
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	6.29	0.00	36865				

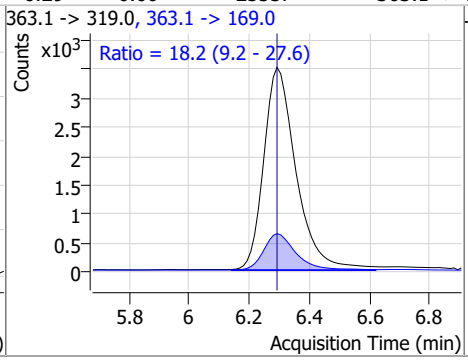


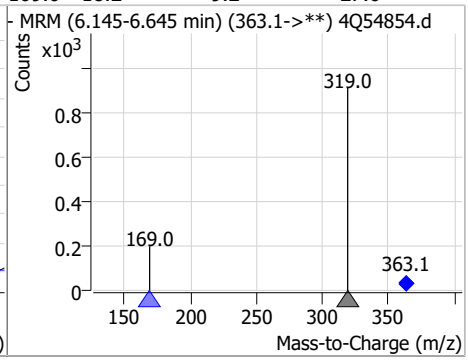




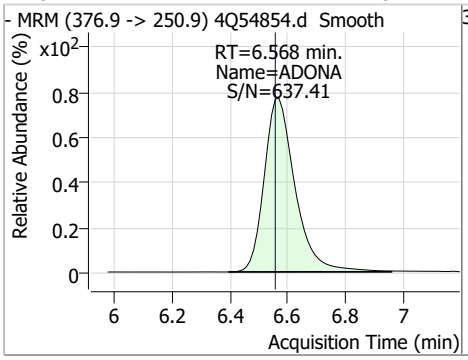
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.23	6.29	0.00	25557	363.1 -> 169.0	18.2	9.2	27.6

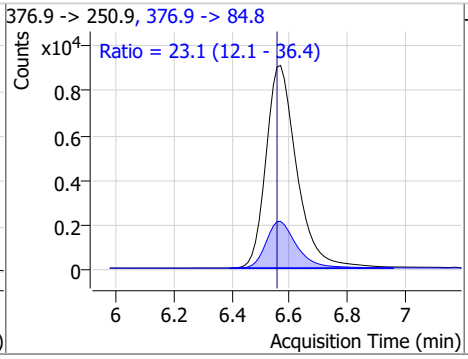


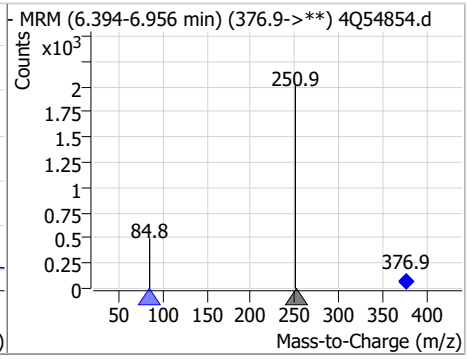




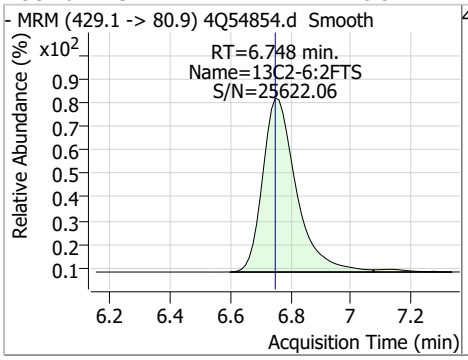
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	2.62	6.57	0.01	67226	376.9 -> 84.8	23.1	12.1	36.4

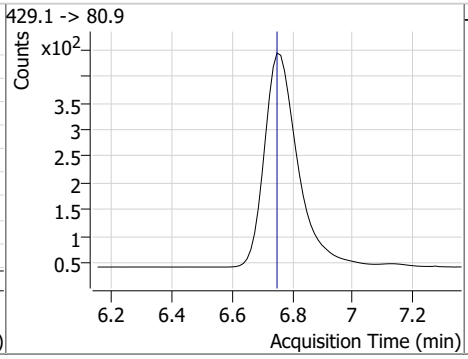


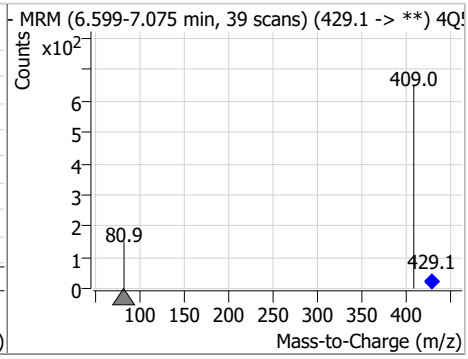




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.37	6.75	0.00	3094				

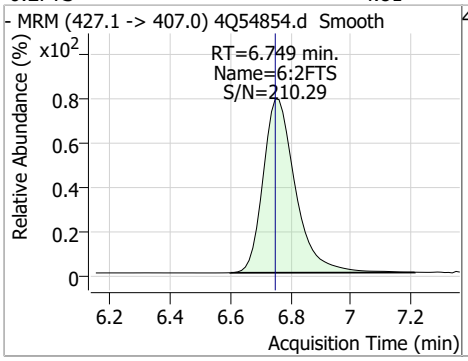


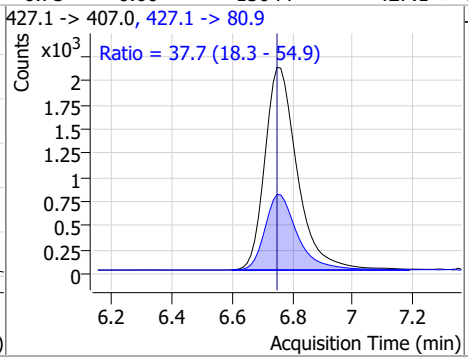


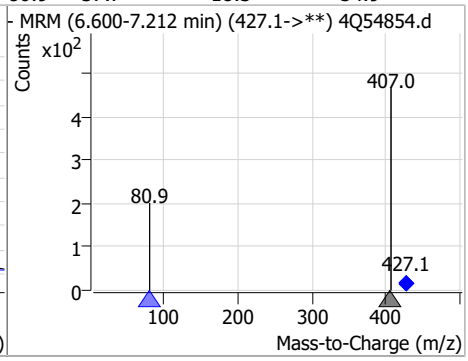


Perfluorinated Compounds by LC/MS/MS

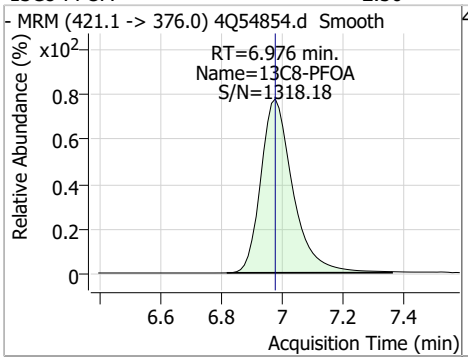
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	4.81	6.75	0.00	15644	427.1 -> 80.9	37.7	18.3	54.9

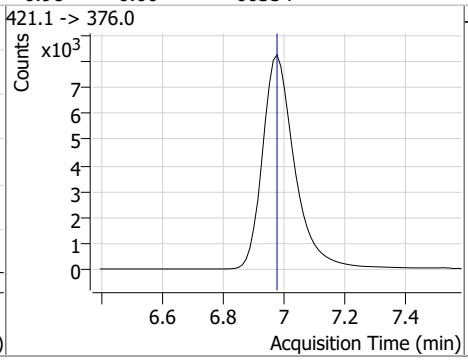


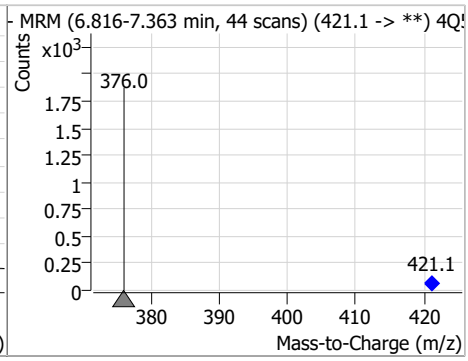




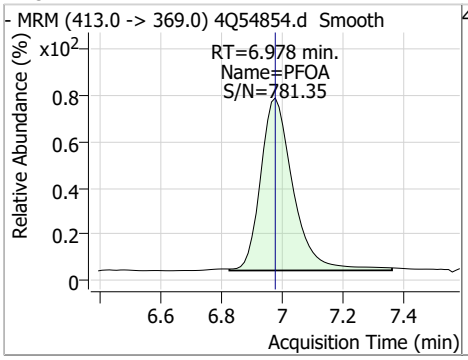
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.50	6.98	0.00	60354				

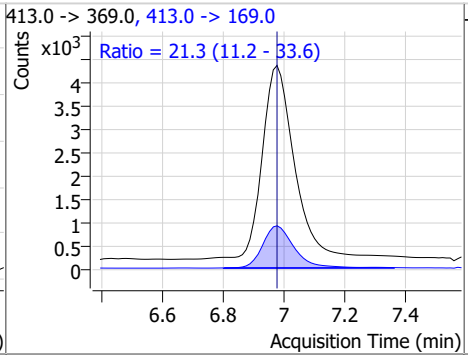


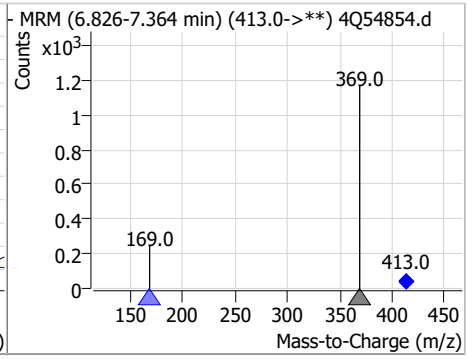




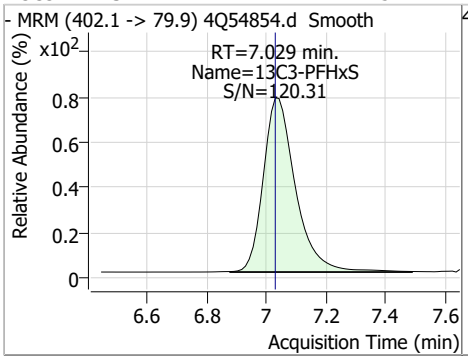
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.24	6.98	0.00	30788	413.0 -> 169.0	21.3	11.2	33.6

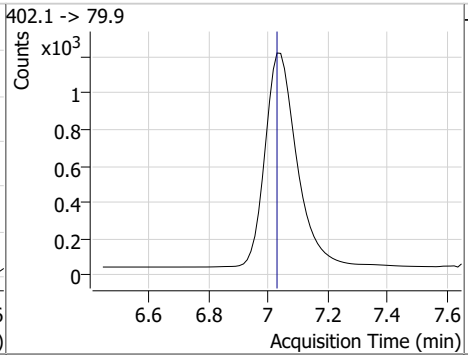


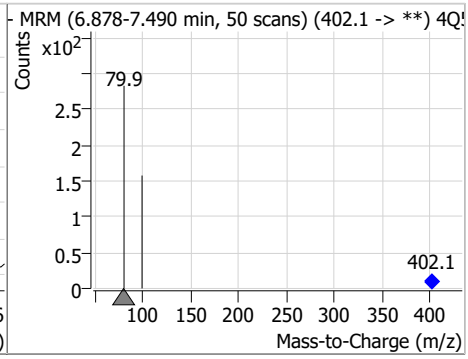




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.54	7.03	0.00	8915				

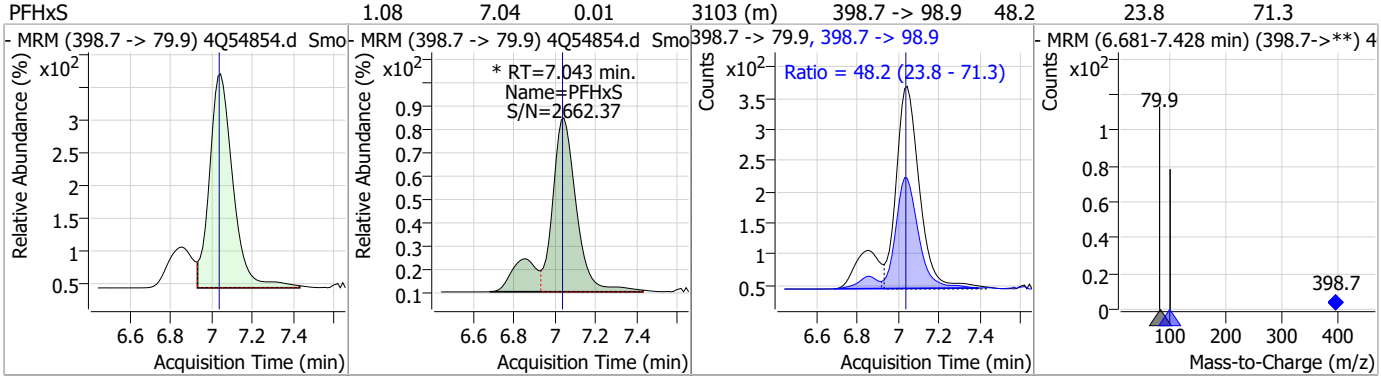




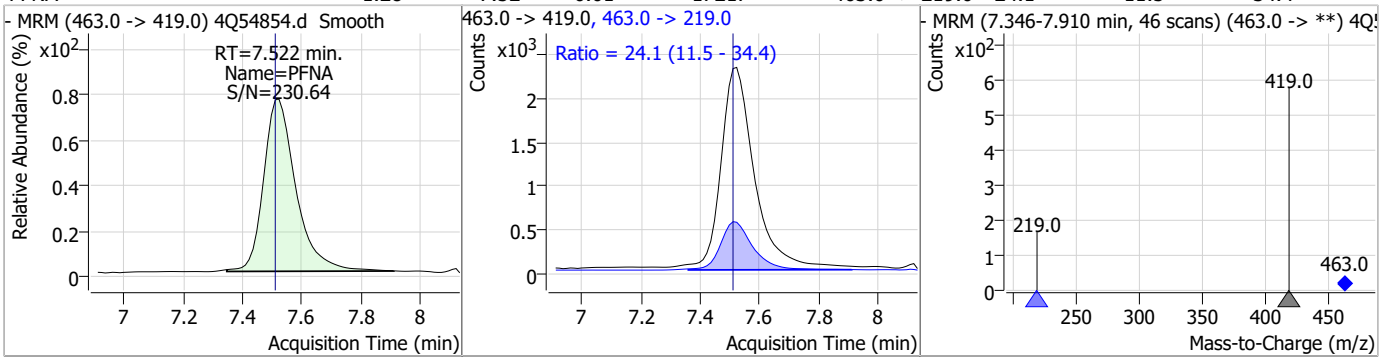


Perfluorinated Compounds by LC/MS/MS

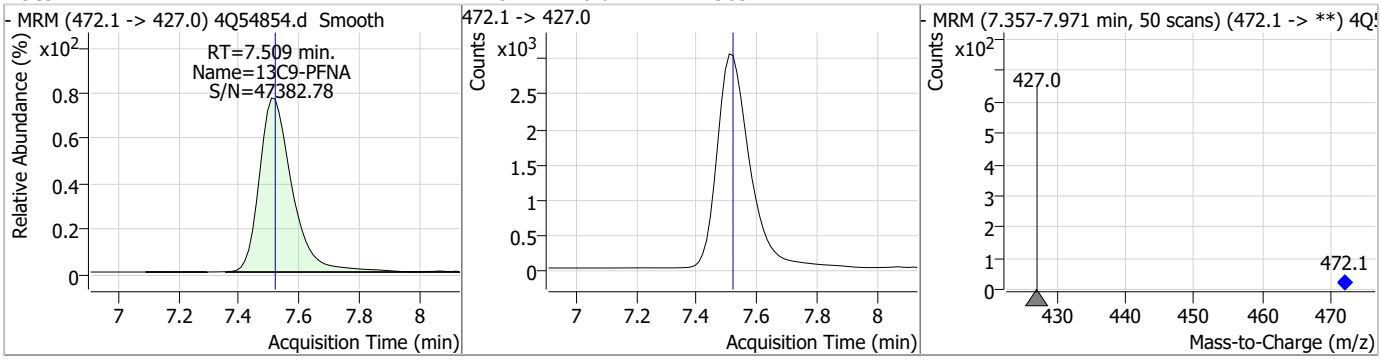
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.08	7.04	0.01	3103 (m)	398.7 -> 98.9	48.2	23.8	71.3



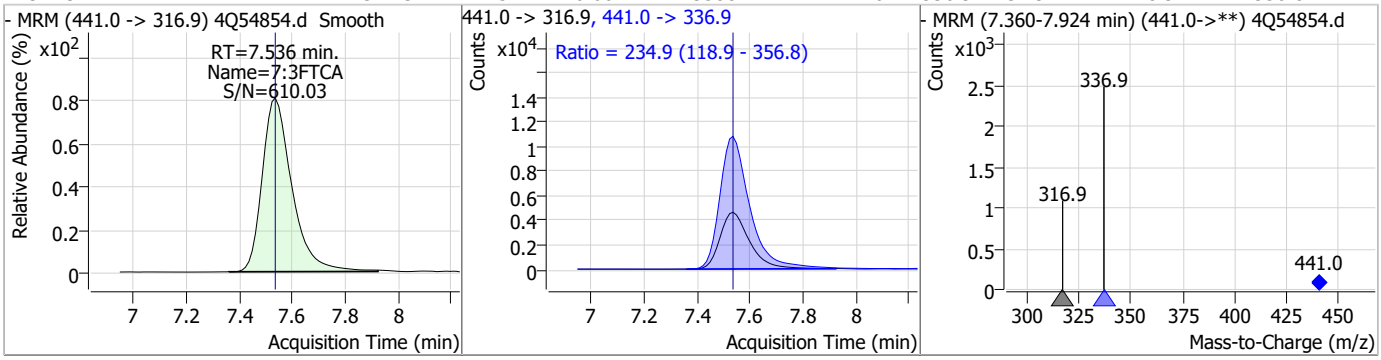
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.28	7.52	0.01	17217	463.0 -> 219.0	24.1	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.24	7.51	-0.01	22903				

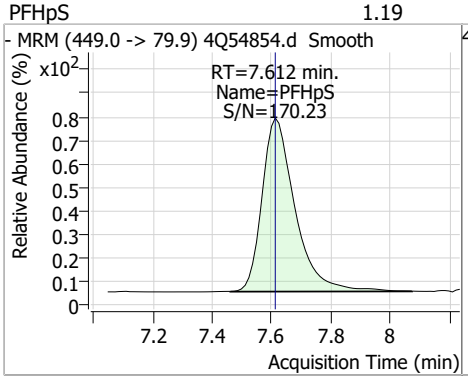


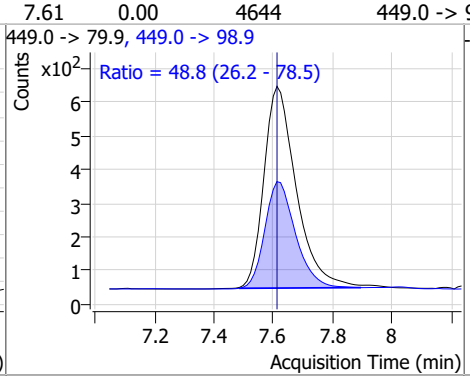
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	31.73	7.54	0.00	35887	441.0 -> 336.9	234.9	118.9	356.8

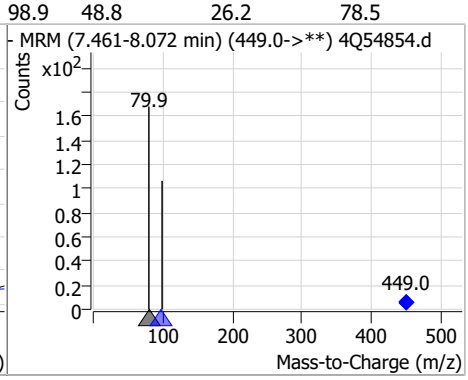


Perfluorinated Compounds by LC/MS/MS

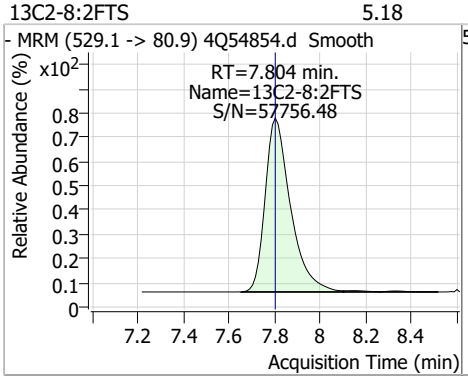
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.19	7.61	0.00	4644	449.0 -> 98.9	48.8	26.2	78.5

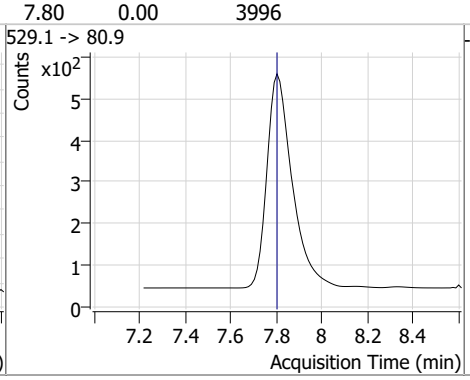


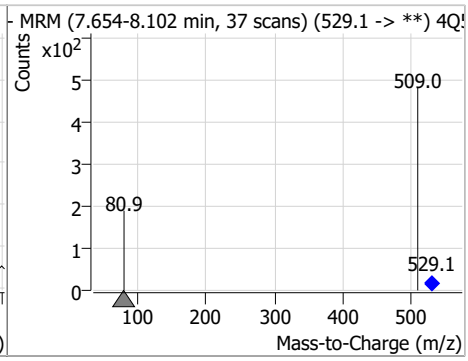




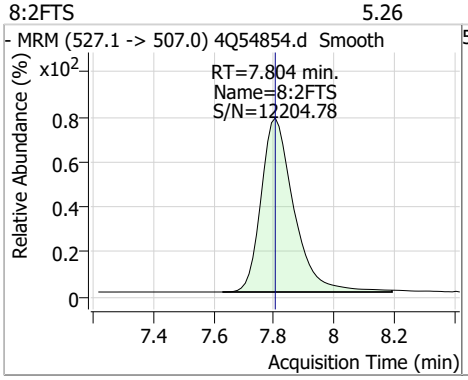
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.18	7.80	0.00	3996				

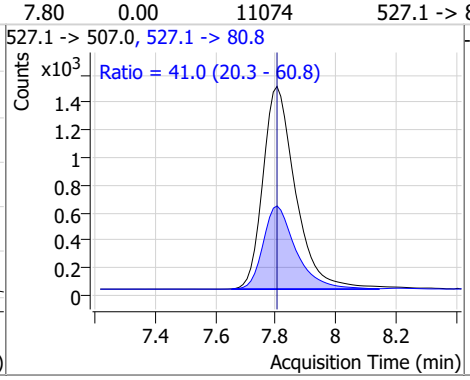


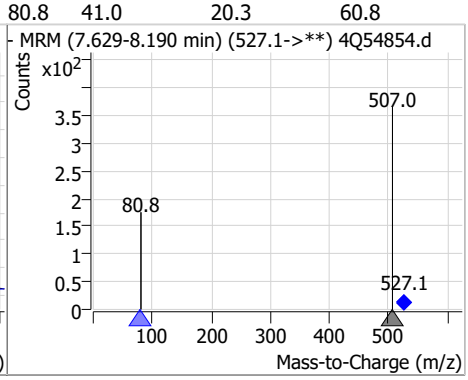




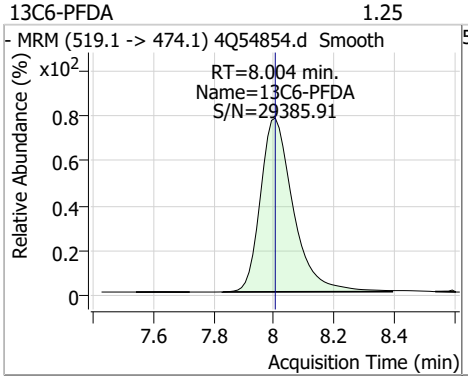
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.26	7.80	0.00	11074	527.1 -> 80.8	41.0	20.3	60.8

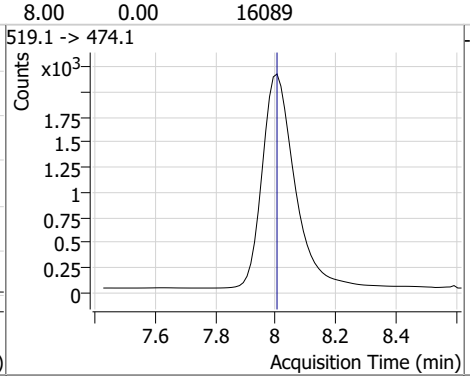


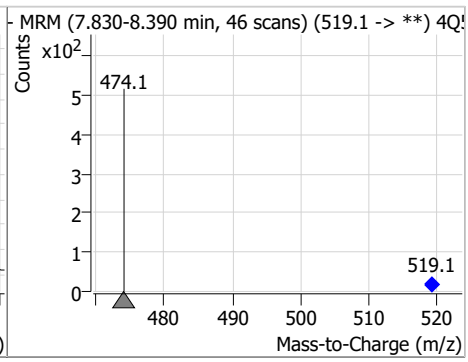




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.00	0.00	16089				

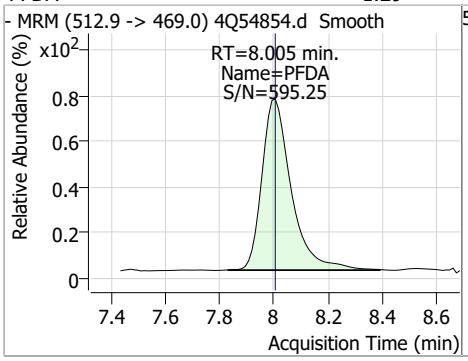


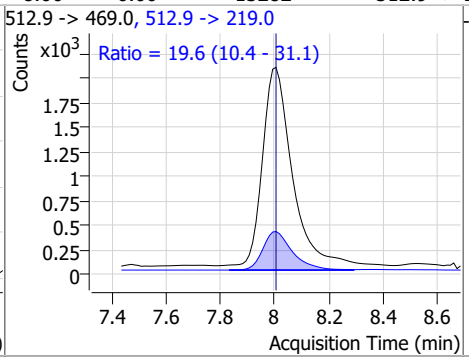


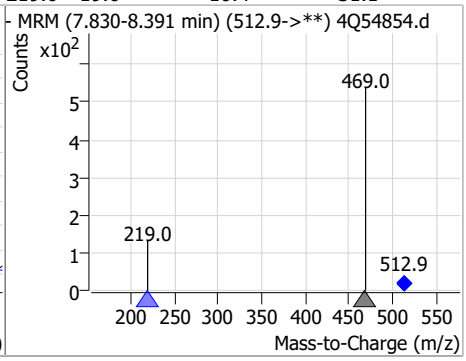


Perfluorinated Compounds by LC/MS/MS

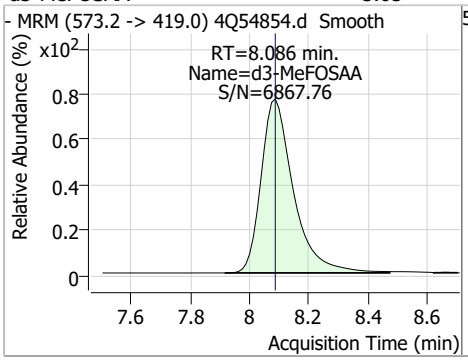
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.29	8.00	0.00	15282	512.9 -> 219.0	19.6	10.4	31.1

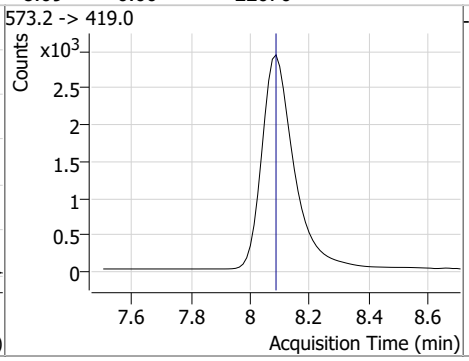


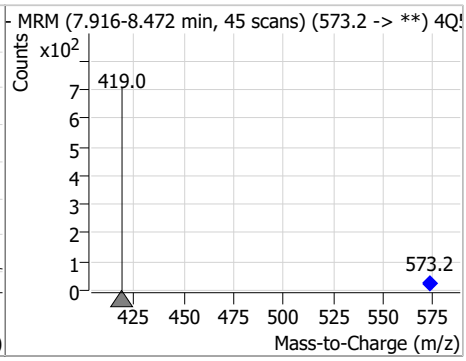




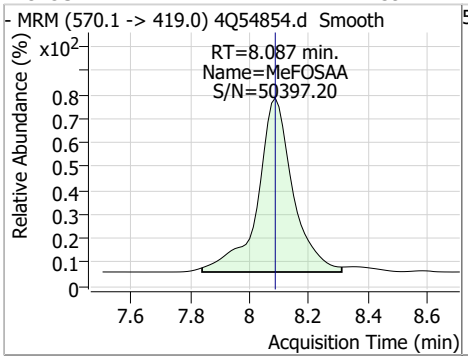
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.05	8.09	0.00	22070				

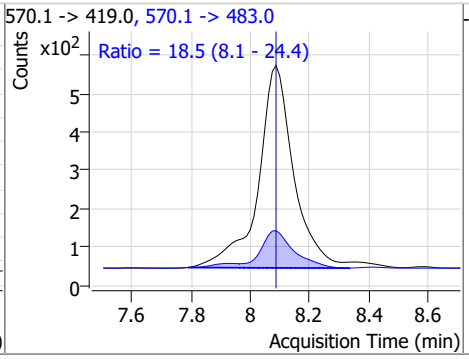


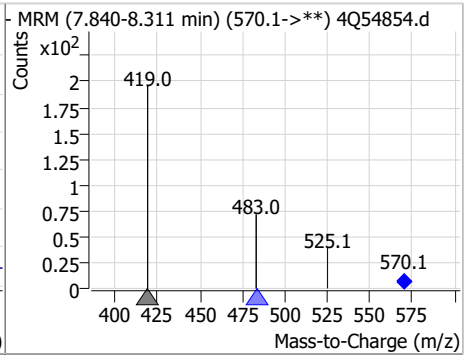




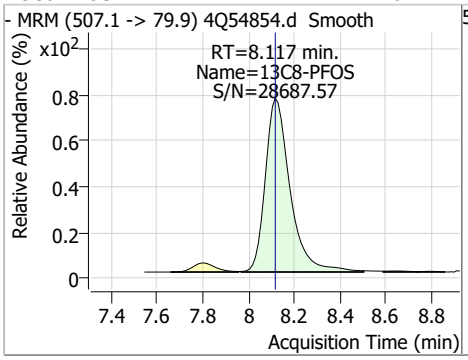
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.39	8.09	0.00	4388	570.1 -> 483.0	18.5	8.1	24.4

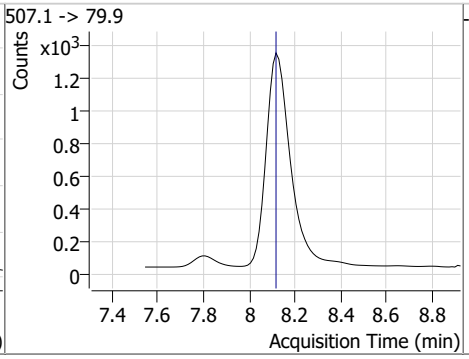


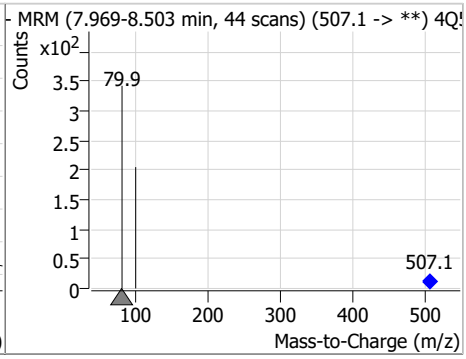




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.46	8.12	0.00	9820				

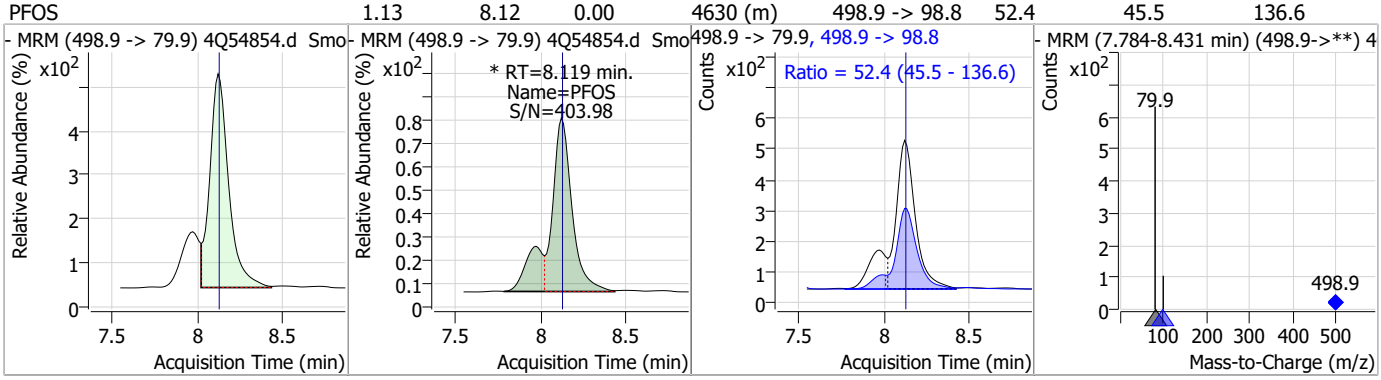




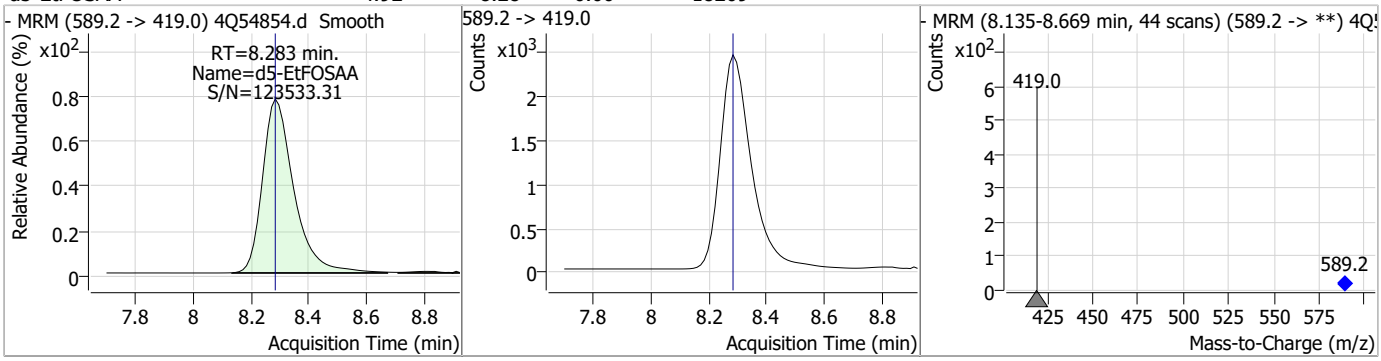


Perfluorinated Compounds by LC/MS/MS

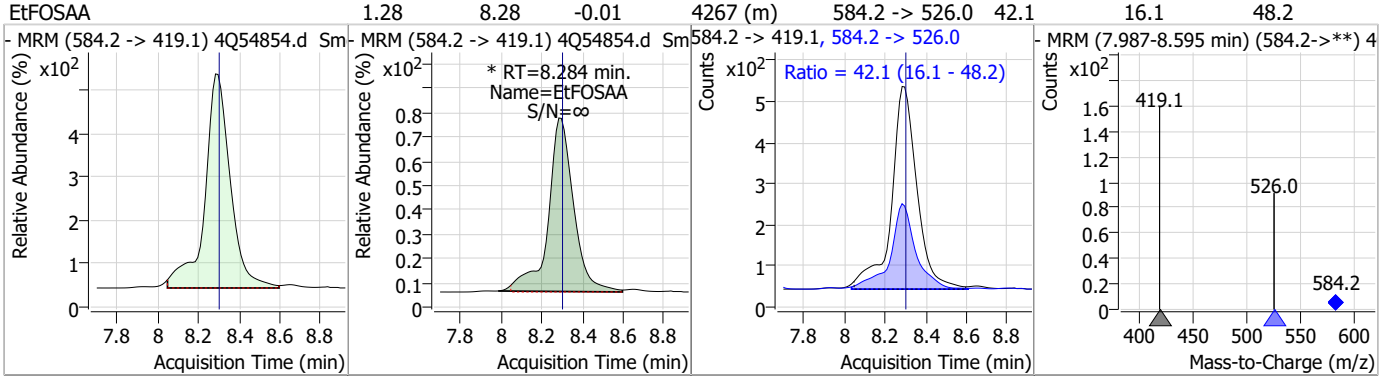
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.13	8.12	0.00	4630 (m)	498.9 -> 98.8	52.4	45.5	136.6



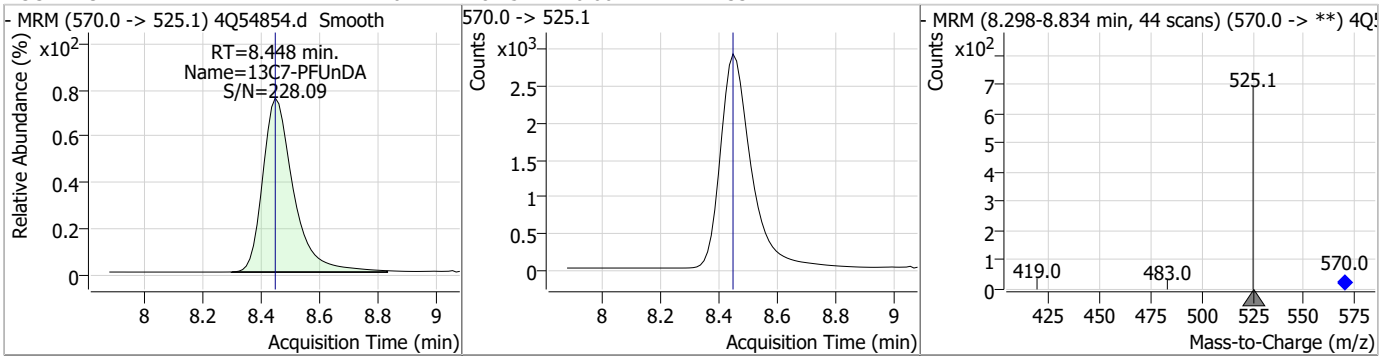
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.92	8.28	0.00	18209				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.28	8.28	-0.01	4267 (m)	584.2 -> 526.0	42.1	16.1	48.2

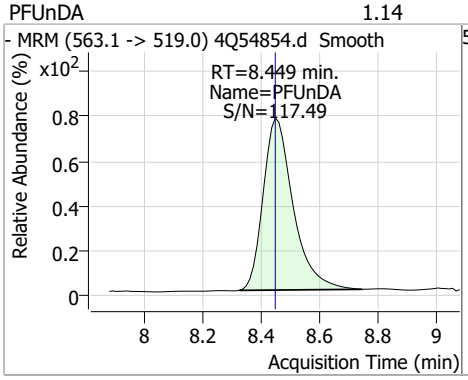


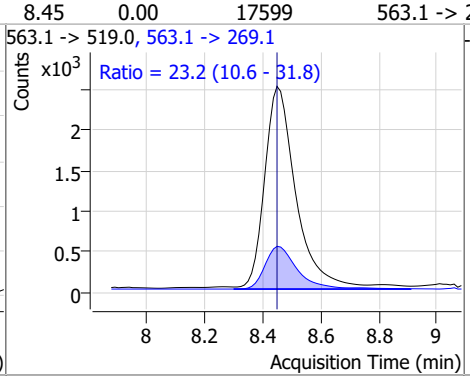
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.40	8.45	0.00	21233				

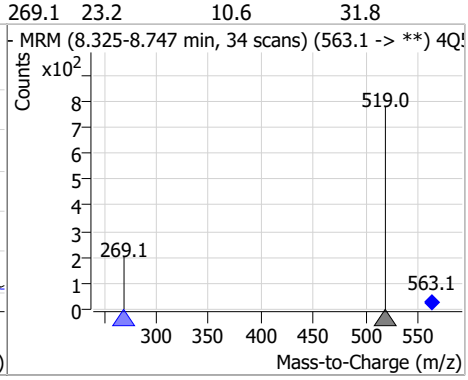


Perfluorinated Compounds by LC/MS/MS

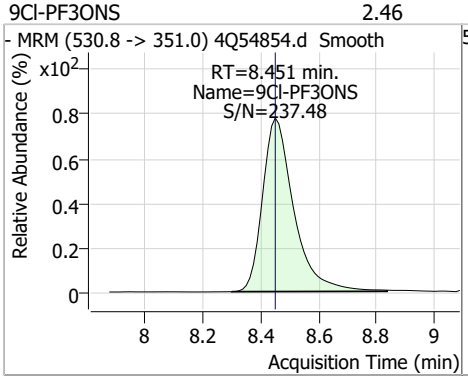
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.14	8.45	0.00	17599	563.1 -> 269.1	23.2	10.6	31.8

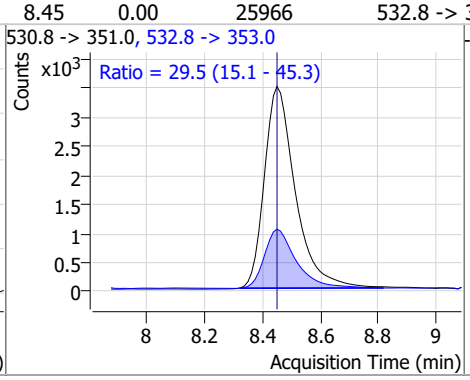


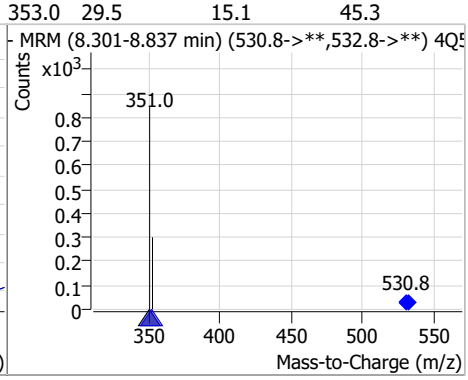




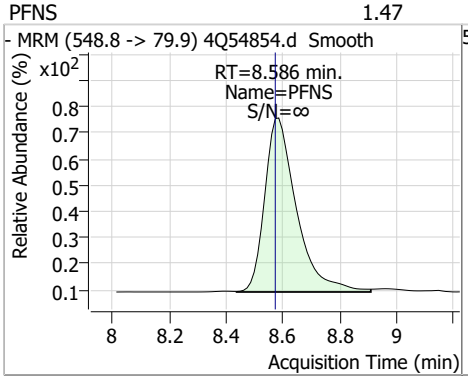
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	2.46	8.45	0.00	25966	532.8 -> 353.0	29.5	15.1	45.3

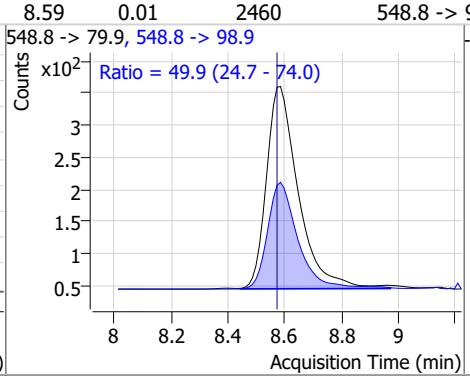


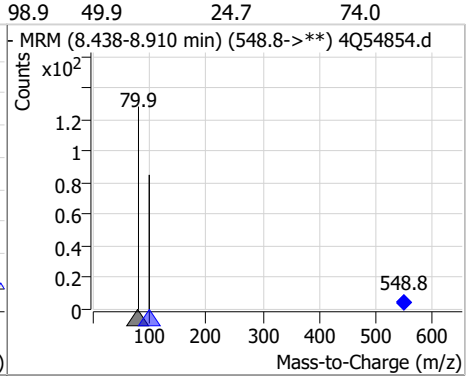




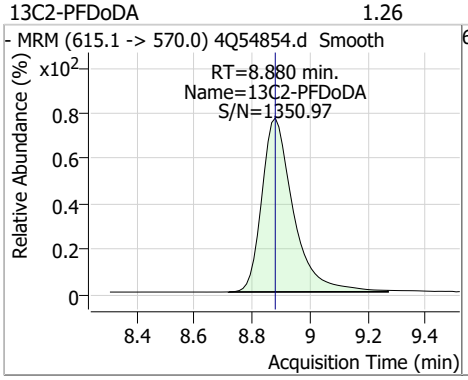
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.47	8.59	0.01	2460	548.8 -> 98.9	49.9	24.7	74.0

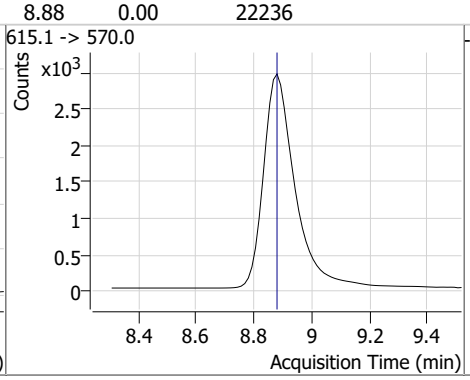


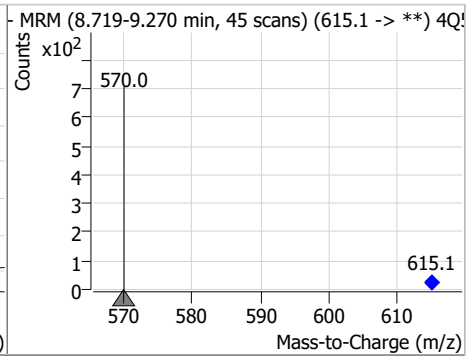




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.26	8.88	0.00	22236				

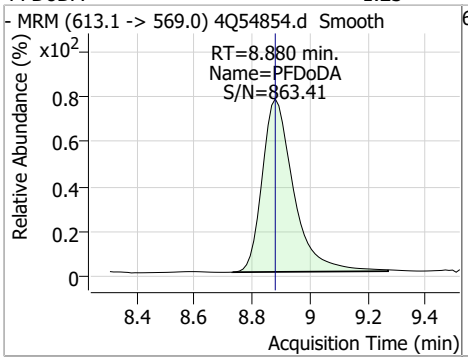


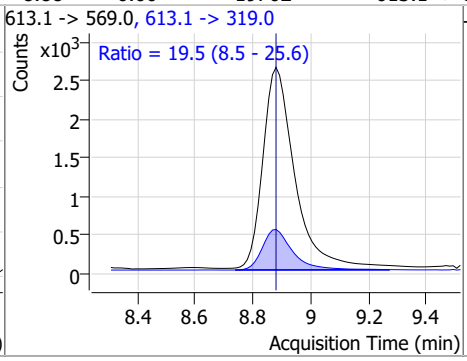


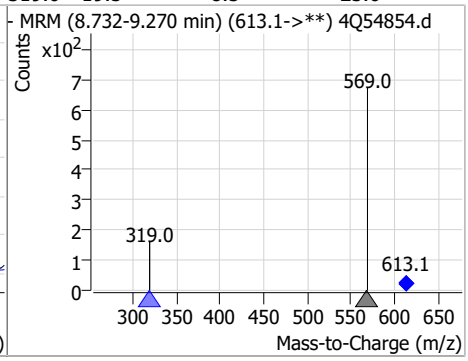


Perfluorinated Compounds by LC/MS/MS

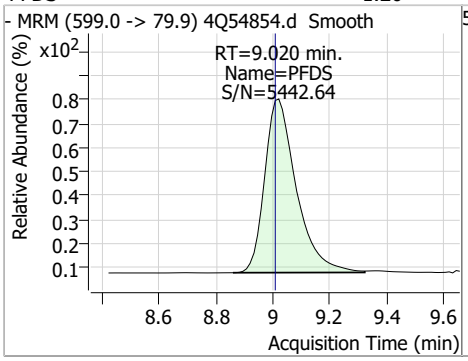
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.23	8.88	0.00	19702	613.1 -> 319.0	19.5	8.5	25.6

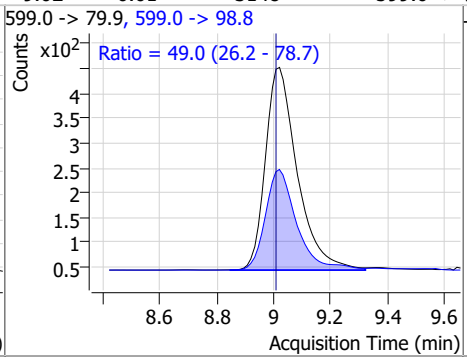


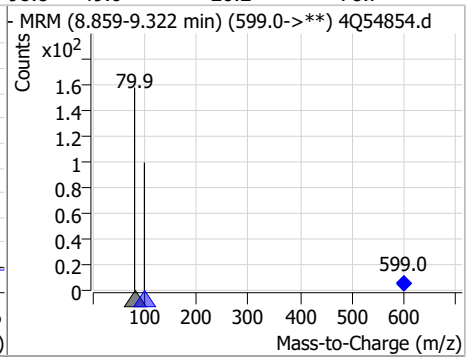




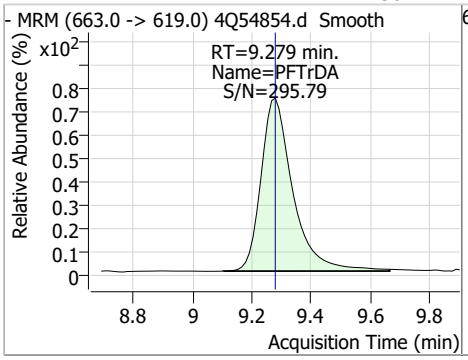
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.20	9.02	0.01	3148	599.0 -> 98.8	49.0	26.2	78.7

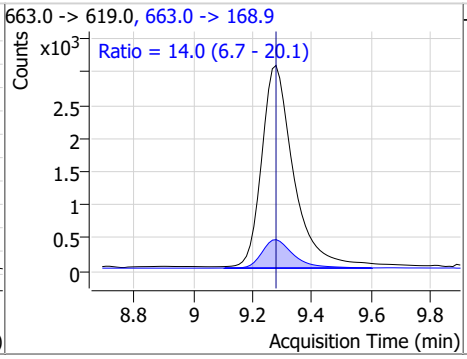


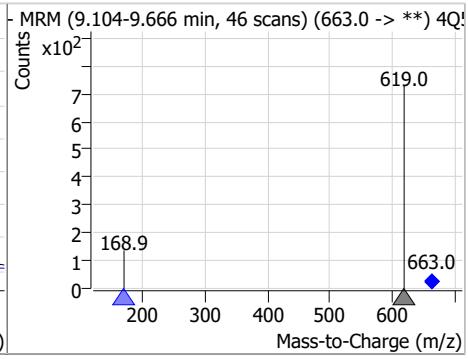




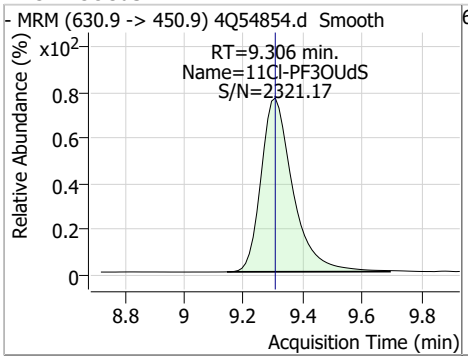
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.30	9.28	0.00	22663	663.0 -> 168.9	14.0	6.7	20.1

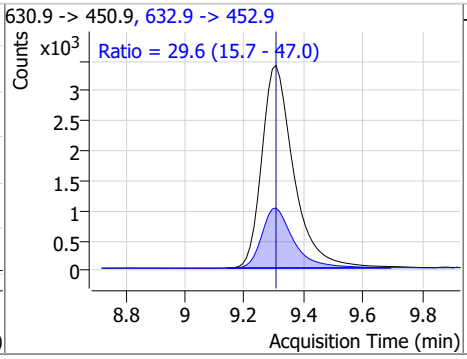


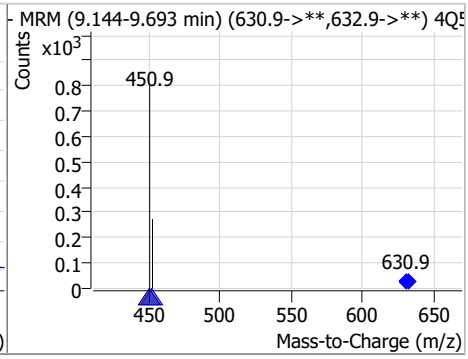




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	2.41	9.31	0.00	25190	632.9 -> 452.9	29.6	15.7	47.0

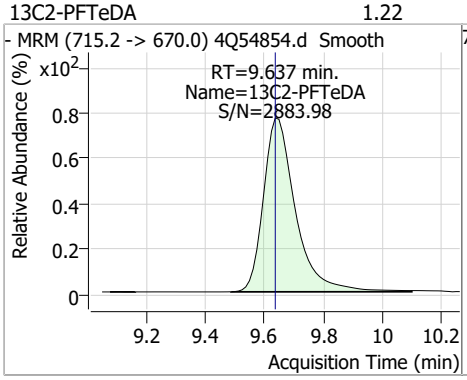


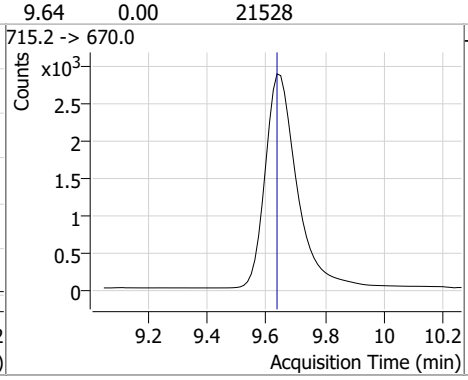


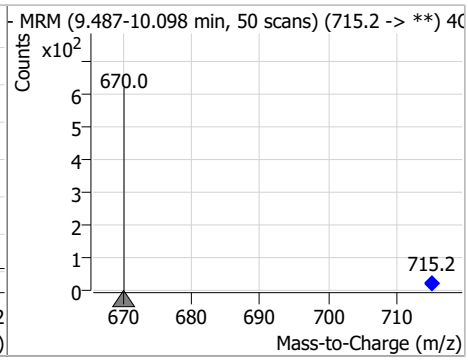


Perfluorinated Compounds by LC/MS/MS

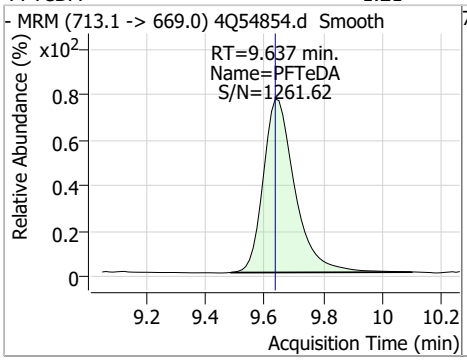
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.22	9.64	0.00	21528				

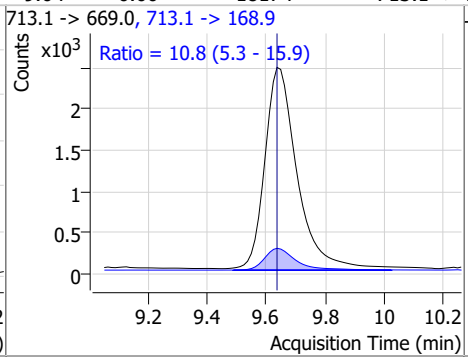


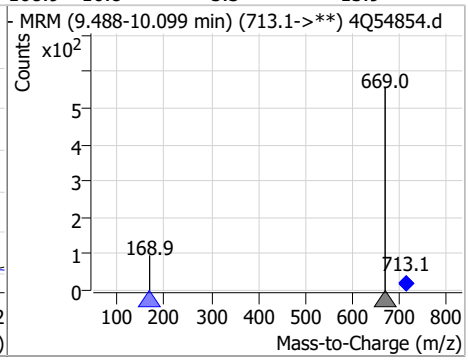




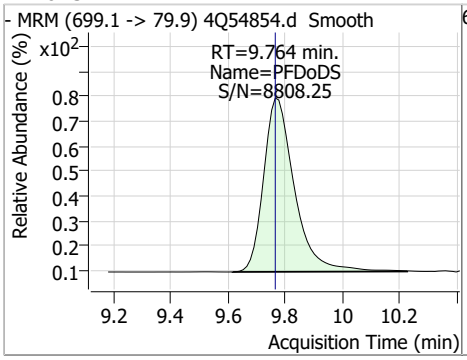
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.21	9.64	0.00	18174	713.1 -> 168.9	10.8	5.3	15.9

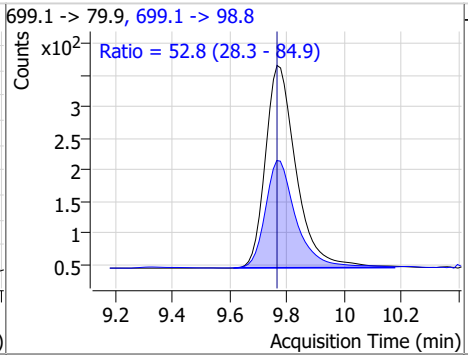


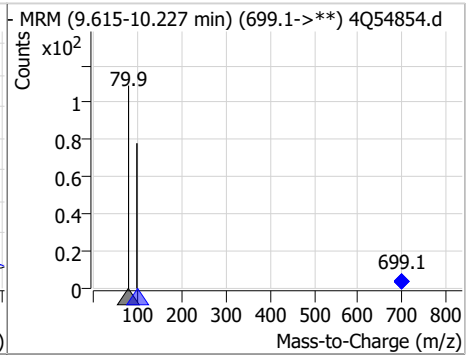




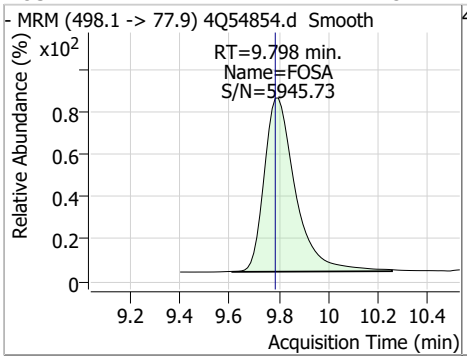
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	1.21	9.76	0.00	2409	699.1 -> 98.8	52.8	28.3	84.9

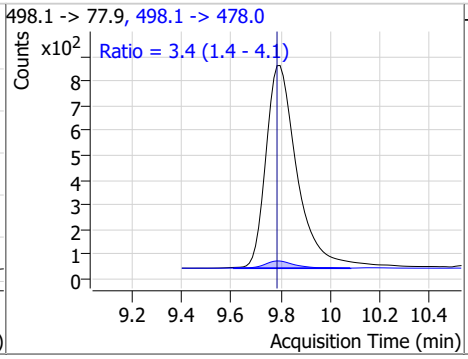


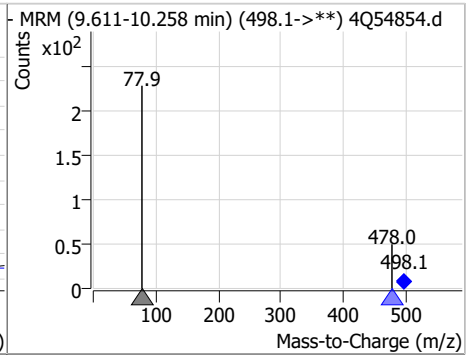




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.23	9.80	0.01	7216	498.1 -> 478.0	3.4	1.4	4.1

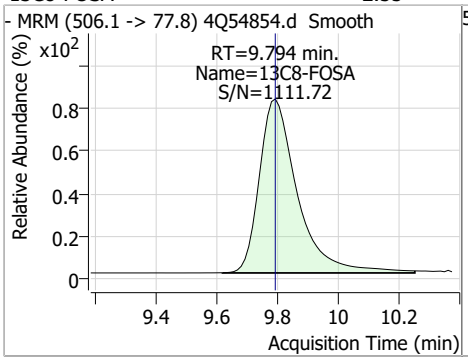


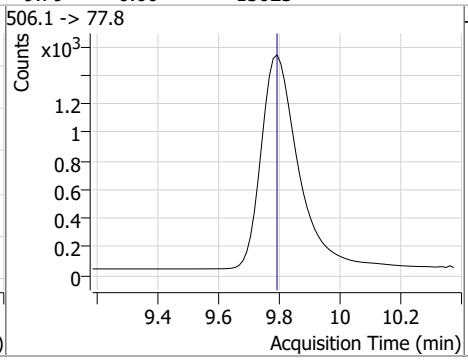


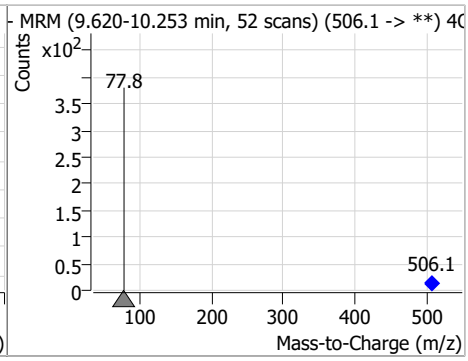


Perfluorinated Compounds by LC/MS/MS

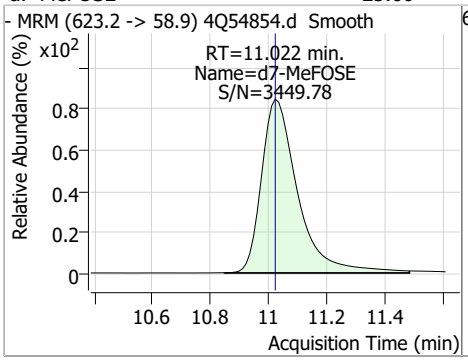
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.55	9.79	0.00	13023				

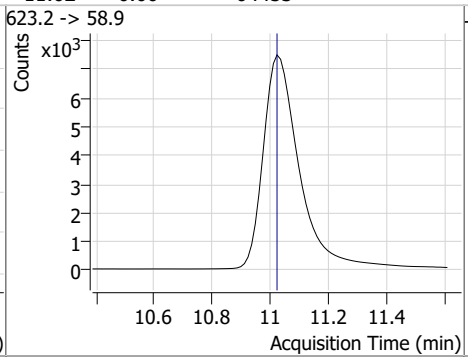


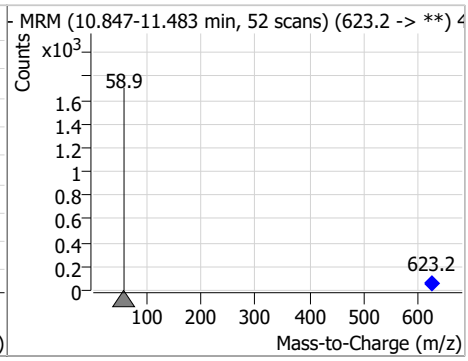




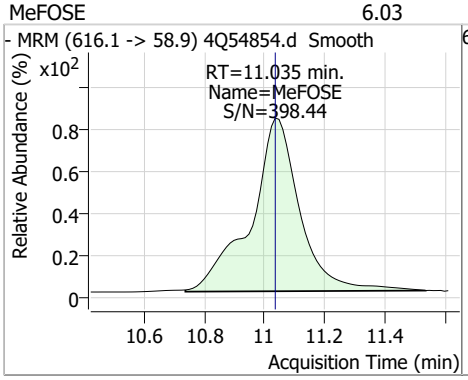
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.60	11.02	0.00	64453				

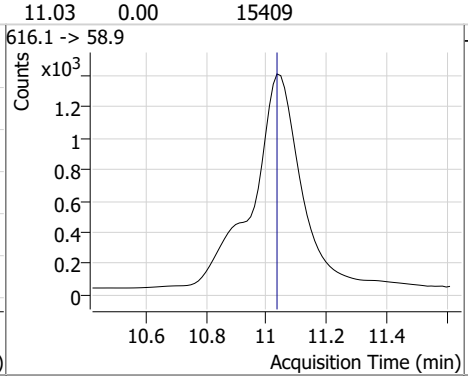


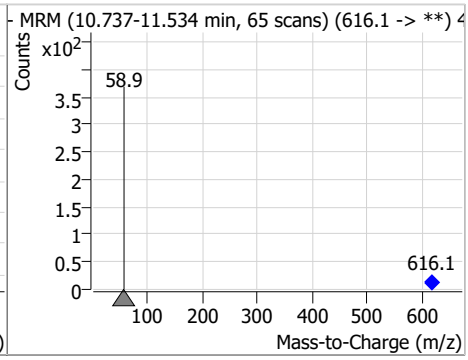




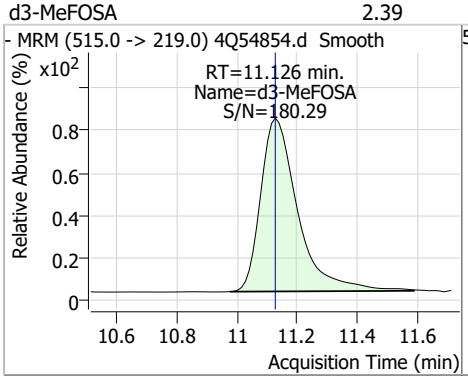
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	6.03	11.03	0.00	15409				

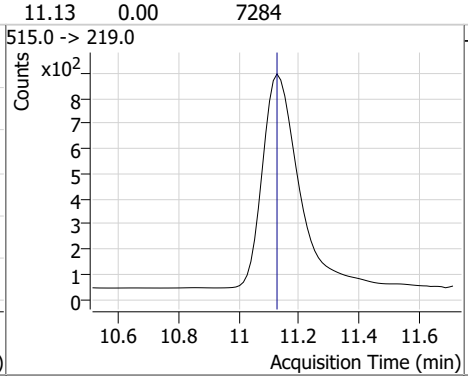


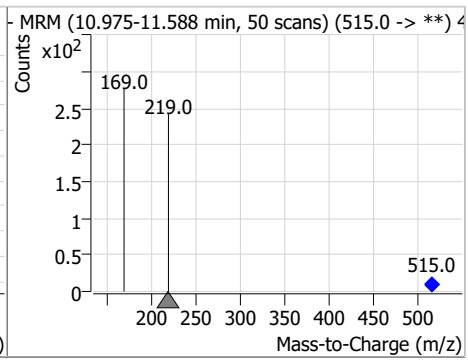




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.39	11.13	0.00	7284				

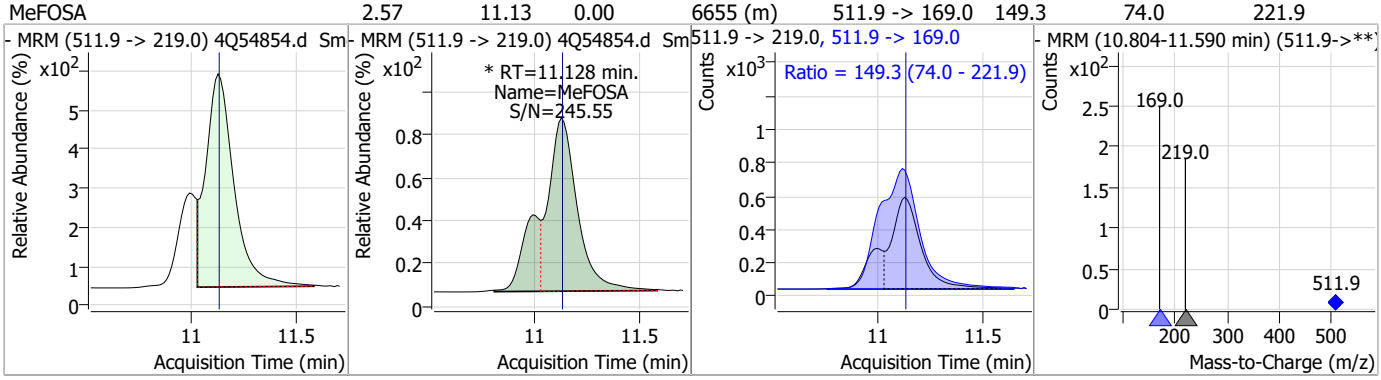




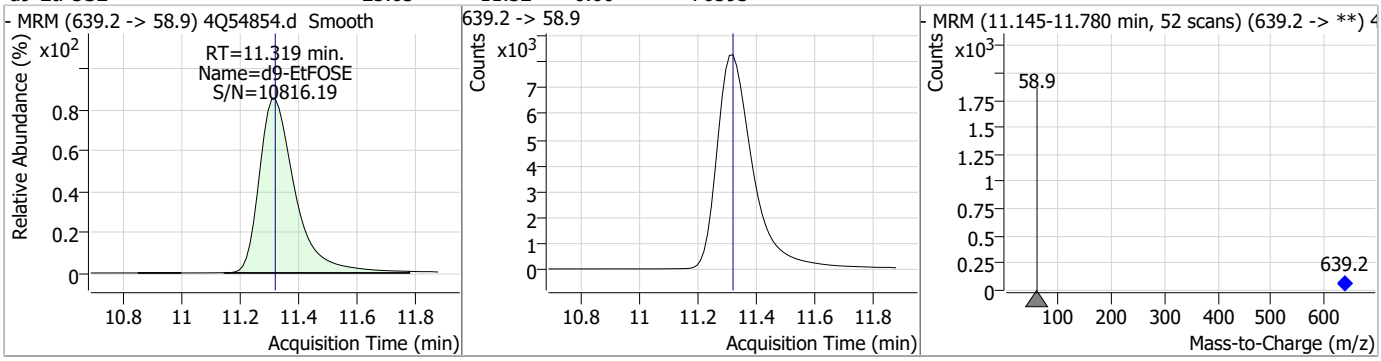


Perfluorinated Compounds by LC/MS/MS

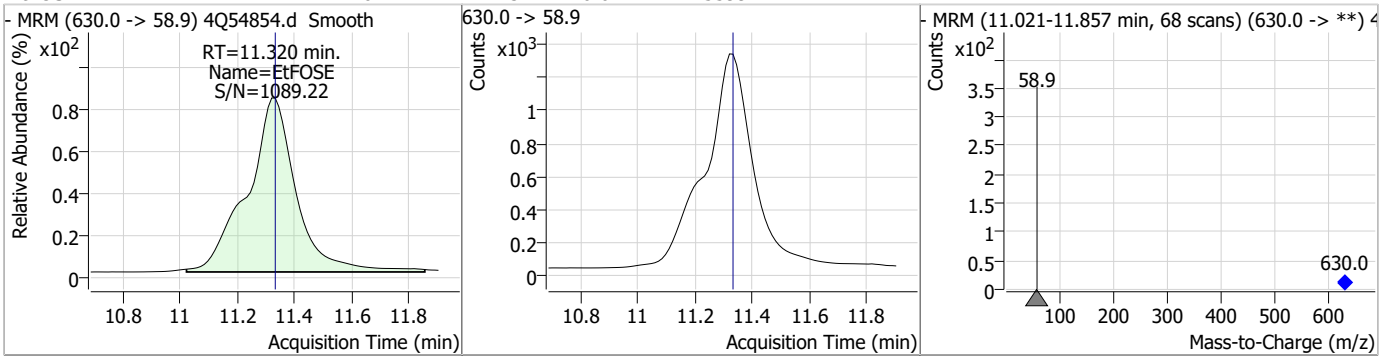
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.57	11.13	0.00	6655 (m)	511.9 -> 169.0	149.3	74.0	221.9



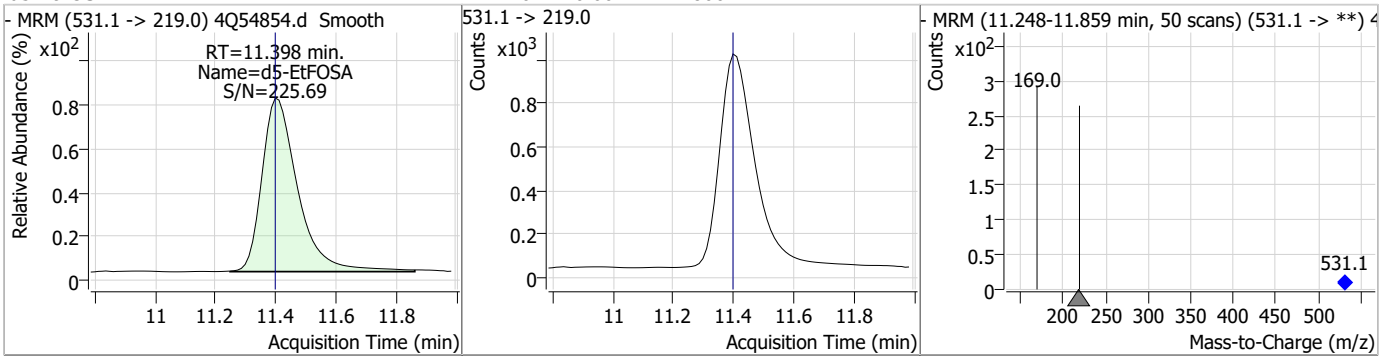
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.03	11.32	0.00	70593				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	6.24	11.32	-0.01	15599				

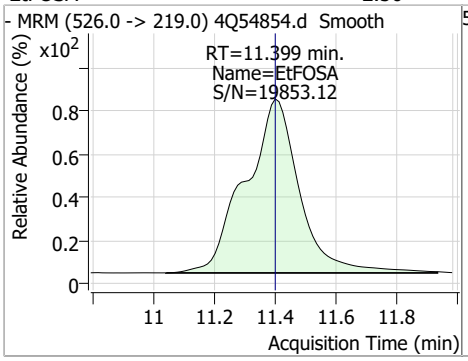


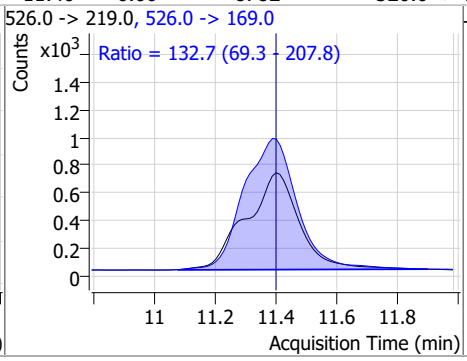
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.41	11.40	0.00	8062				

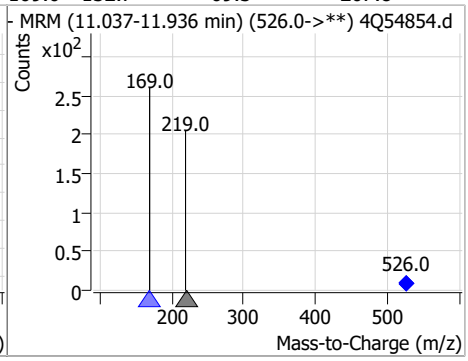


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	2.56	11.40	0.00	8782	526.0 -> 169.0	132.7	69.3	207.8







Manual Integration Approval Summary

Sample Number: S4Q804-IC804
Lab FileID: 4Q54854.D
Injection Time: 12/08/23 12:07

Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.04	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak
EtFOSAA	2991-50-6		8.28	Split peak
MeFOSA	31506-32-8		11.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54855.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 12:22:33 PM
Sample Name : icc804-4
Vial : P1-A5
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.674	216.8 -> 171.9	104245	10.00	µg/L	0.000
M5-PFPeA	4.162	268.3 -> 223.0	44219	5.00	µg/L	0.000
M5-PFHxA	5.334	318.0 -> 273.0	35384	2.50	µg/L	0.000
M4-PFHpA	6.292	367.1 -> 322.0	34383	2.50	µg/L	0.000
M8-PFOA	6.976	421.1 -> 376.0	55862	2.50	µg/L	0.000
M9-PFNA	7.521	472.1 -> 427.0	22122	1.25	µg/L	0.000
M6-PFDA	8.004	519.1 -> 474.1	15377	1.25	µg/L	0.000
M7-PFUnDA	8.449	570.0 -> 525.1	19087	1.25	µg/L	0.000
M2-PFDoDA	8.880	615.1 -> 570.0	20356	1.25	µg/L	0.000
M2-PFTeDA	9.637	715.2 -> 670.0	19306	1.25	µg/L	0.000
M8-FOSA	9.794	506.1 -> 77.8	11663	2.50	µg/L	0.000
M3-PFBS	5.190	302.1 -> 79.9	9879	2.50	µg/L	0.000
M3-PFHxS	7.029	402.1 -> 79.9	8143	2.50	µg/L	0.000
M8-PFOS	8.117	507.1 -> 79.9	9284	2.50	µg/L	0.000
M2-4:2FTS	5.046	329.1 -> 80.9	1351	5.00	µg/L	0.000
M2-6:2FTS	6.748	429.1 -> 80.9	2962	5.00	µg/L	0.000
M2-8:2FTS	7.804	529.1 -> 80.9	3863	5.00	µg/L	0.000
M3-MeFOSAA	8.086	573.2 -> 419.0	20322	5.00	µg/L	0.000
M3-HFPO-DA	5.689	286.9 -> 168.9	34746	10.00	µg/L	0.000
M5-EtFOSAA	8.283	589.2 -> 419.0	16962	5.00	µg/L	0.000
M7-MeFOSE	11.022	623.2 -> 58.9	54274	25.00	µg/L	0.000
M9-EtFOSE	11.319	639.2 -> 58.9	62425	25.00	µg/L	0.000
M5-EtFOSA	11.398	531.1 -> 219.0	7194	2.50	µg/L	0.000
M3-MeFOSA	11.126	515.0 -> 219.0	6564	2.50	µg/L	0.000
13C4-PFOS	8.118	502.8 -> 79.9	7016	2.50	µg/L	0.000
13C3-PFBA	2.678	216.0 -> 172.0	50259	5.00	µg/L	0.000
18O2-PFHxS	7.041	403.0 -> 83.9	5183	2.50	µg/L	0.000
13C4-PFOA	6.977	417.1 -> 372.0	59791	2.50	µg/L	0.000
13C2-PFDA	8.004	515.1 -> 470.1	16802	1.25	µg/L	0.000
13C5-PFNA	7.509	468.0 -> 423.0	21489	1.25	µg/L	0.000
13C2-PFHxA	5.335	315.1 -> 270.0	38995	2.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.046	329.1 -> 80.9	1351	5.49	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C2-6:2FTS	6.748	429.1 -> 80.9	2962	5.55	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C2-8:2FTS	7.804	529.1 -> 80.9	3863	5.41	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C2-PFDoDA	8.880	615.1 -> 570.0	20356	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-PFTeDA	9.637	715.2 -> 670.0	19306	1.16	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C3-PFBS	5.190	302.1 -> 79.9	9879	2.49	µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C3-PFHxS	7.029	402.1 -> 79.9	8143	2.51	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C4-PFBA	2.674	216.8 -> 171.9	104245	9.88 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C4-PFHpA	6.292	367.1 -> 322.0	34383	2.50 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C5-PFHxA	5.334	318.0 -> 273.0	35384	2.46 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C5-PFPeA	4.162	268.3 -> 223.0	44219	4.94 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C6-PFDA	8.004	519.1 -> 474.1	15377	1.26 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C7-PFUnDA	8.449	570.0 -> 525.1	19087	1.32 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C8-FOSA	9.794	506.1 -> 77.8	11663	2.57 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C8-PFOA	6.976	421.1 -> 376.0	55862	2.53 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C8-PFOS	8.117	507.1 -> 79.9	9284	2.61 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C9-PFNA	7.521	472.1 -> 427.0	22122	1.28 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.8%		
d3-MeFOSAA	8.086	573.2 -> 419.0	20322	5.22 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C3-HFPO-DA	5.689	286.9 -> 168.9	34746	9.68 µg/L		0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
d3-MeFOSA	11.126	515.0 -> 219.0	6564	2.42 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%		
d5-EtFOSAA	8.283	589.2 -> 419.0	16962	5.15 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
d7-MeFOSE	11.022	623.2 -> 58.9	54274	24.20 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
d9-EtFOSE	11.319	639.2 -> 58.9	62425	24.85 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
d5-EtFOSA	11.398	531.1 -> 219.0	7194	2.42 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%		
Target Compounds						QValue
4:2FTS	5.047	327.1 -> 307.0	19922	8.56 µg/L		100
		327.1 -> 80.9	8505			
6:2FTS	6.749	427.1 -> 407.0	26403	8.48 µg/L		100
		427.1 -> 80.9	9662			
8:2FTS	7.804	527.1 -> 507.0	19326	9.49 µg/L		100
		527.1 -> 80.8	7827			
EtFOSAA	8.297	584.2 -> 419.1	7623	2.46 µg/L	m	91
		584.2 -> 526.0	2812			
FOSA	9.785	498.1 -> 77.9	12086	2.31 µg/L		100
		498.1 -> 478.0	333			
MeFOSAA	8.087	570.1 -> 419.0	6992	2.40 µg/L		92
		570.1 -> 483.0	1390			
PFBA	2.682	212.8 -> 168.9	30601	9.17 µg/L		100
PFBS	5.191	298.7 -> 79.9	6030	1.97 µg/L		100
		298.7 -> 98.8	2445			
PFDA	8.005	512.9 -> 469.0	24830	2.20 µg/L		100
		512.9 -> 219.0	5147			
PFDoDA	8.880	613.1 -> 569.0	34714	2.37 µg/L		100
		613.1 -> 319.0	5925			
PFDS	9.008	599.0 -> 79.9	5445	2.20 µg/L		100

Perfluorinated Compounds by LC/MS/MS

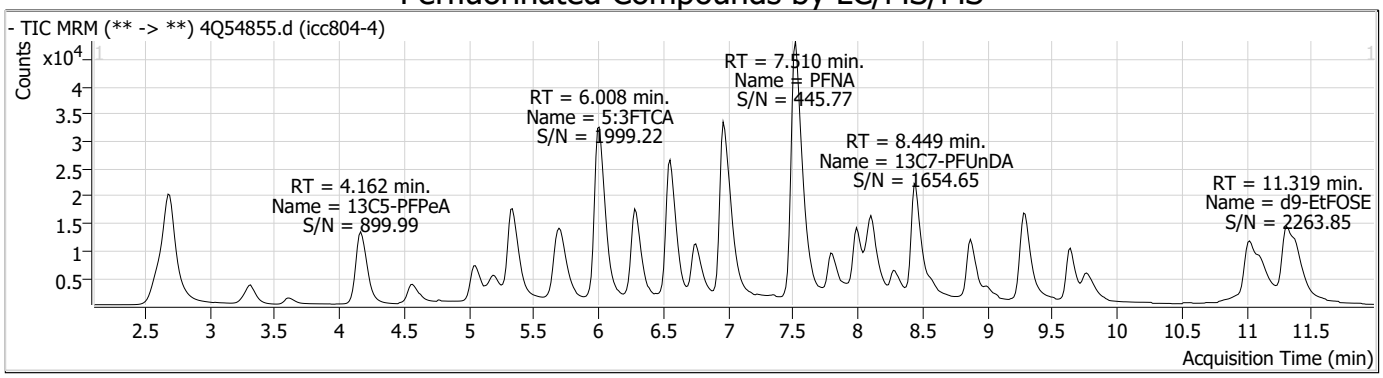
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2857				
PFHpA	6.293	363.1 -> 319.0	44937	2.32	µg/L		100
		363.1 -> 169.0	8278				
PFHpS	7.612	449.0 -> 79.9	7822	2.12	µg/L		100
		449.0 -> 98.9	4093				
PFHxA	5.337	313.0 -> 269.0	26261	2.33	µg/L		100
		313.0 -> 118.9	730				
PFHxS	7.030	398.7 -> 79.9	5766	2.20	µg/L	m	96
		398.7 -> 98.9	2584				
PFNA	7.510	463.0 -> 419.0	29605	2.28	µg/L		100
		463.0 -> 219.0	6796				
PFNS	8.574	548.8 -> 79.9	4011	2.53	µg/L		100
		548.8 -> 98.9	1979				
PFOA	6.978	413.0 -> 369.0	50224	2.19	µg/L		100
		413.0 -> 169.0	11244				
PFOS	8.119	498.9 -> 79.9	7040	1.82	µg/L	m	59
		498.9 -> 98.8	3689				
PFPeA	4.164	263.0 -> 219.0	40246	4.63	µg/L		100
PFPeS	6.282	349.1 -> 79.9	5390	2.18	µg/L		100
		349.1 -> 98.9	2279				
PFTeDA	9.637	713.1 -> 669.0	31768	2.36	µg/L		100
		713.1 -> 168.9	3365				
PFTrDA	9.279	663.0 -> 619.0	38368	2.41	µg/L		100
		663.0 -> 168.9	5134				
PFUnDA	8.449	563.1 -> 519.0	32076	2.31	µg/L		100
		563.1 -> 269.1	6801				
11Cl-PF3OUdS	9.306	630.9 -> 450.9	43604	4.56	µg/L		100
		632.9 -> 452.9	13667				
9Cl-PF3ONS	8.451	530.8 -> 351.0	45789	4.74	µg/L		100
		532.8 -> 353.0	13838				
ADONA	6.556	376.9 -> 250.9	116329	4.96	µg/L		100
		376.9 -> 84.8	28200				
HFPO-DA	5.690	284.9 -> 168.9	15785	4.75	µg/L		100
		284.9 -> 184.9	1478				
3:3FTCA	3.617	241.0 -> 177.0	6043	11.39	µg/L		100
		241.0 -> 117.0	536				
5:3FTCA	6.008	341.0 -> 237.1	115879	57.54	µg/L		100
		341.0 -> 217.0	82812				
7:3FTCA	7.536	441.0 -> 316.9	61800	58.52	µg/L		100
		441.0 -> 336.9	147017				
EtFOSA	11.399	526.0 -> 219.0	14515	4.74	µg/L		100
		526.0 -> 169.0	20110				
EtFOSE	11.332	630.0 -> 58.9	26385	11.94	µg/L		100
MeFOSA	11.128	511.9 -> 219.0	11060	4.73	µg/L		100
		511.9 -> 169.0	16360				
MeFOSE	11.035	616.1 -> 58.9	25303	11.75	µg/L		100
PFDoDS	9.764	699.1 -> 79.9	4090	2.17	µg/L		100
		699.1 -> 98.8	2314				
NFDHA	5.216	295.0 -> 201.0	3689	4.61	µg/L		100
		295.0 -> 84.9	968				
PFMBA	4.566	279.0 -> 85.1	22314	4.66	µg/L		100
PFMPA	3.315	229.0 -> 84.9	23979	4.55	µg/L		100
PFEESA	5.722	314.8 -> 134.9	34478	4.13	µg/L		100
		314.8 -> 82.9	1352				

 # = Qualifier out of range, m = manually integrated, + = Area summed

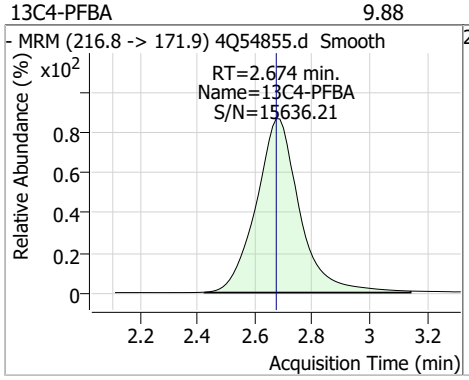
Perfluorinated Compounds by LC/MS/MS

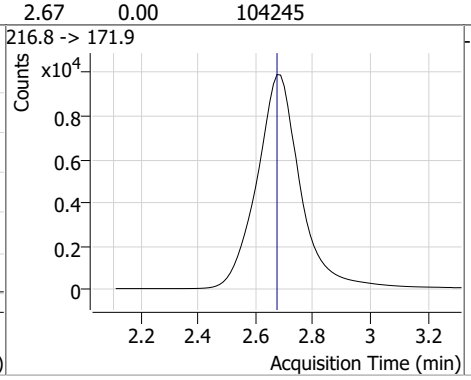
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

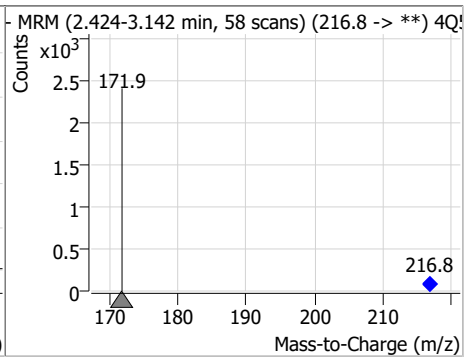
Perfluorinated Compounds by LC/MS/MS



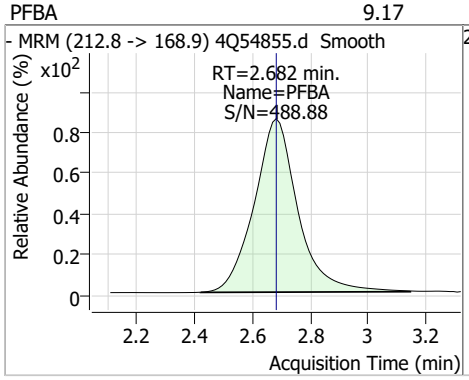
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.88	2.67	0.00	104245				

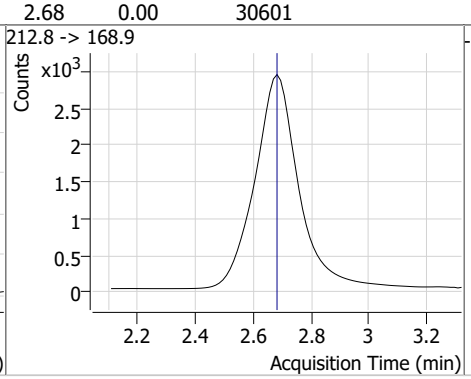


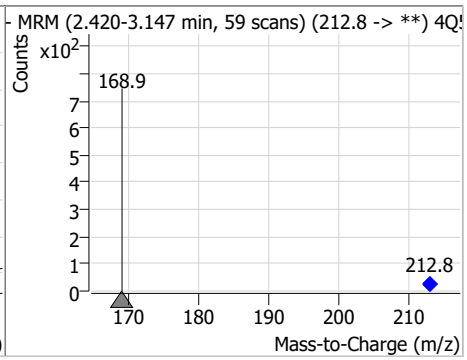




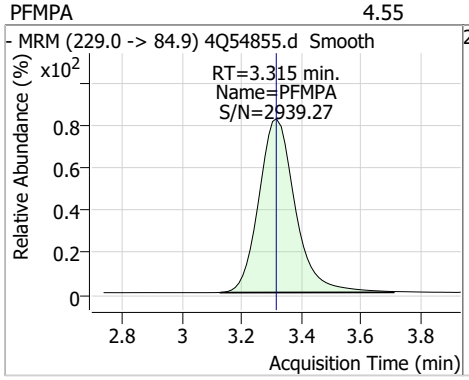
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.17	2.68	0.00	30601				

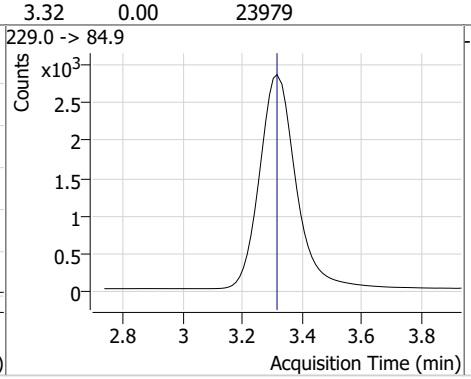


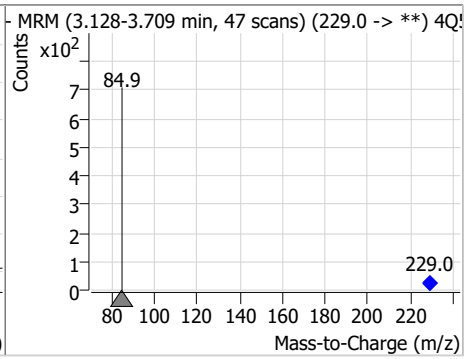




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.55	3.32	0.00	23979				

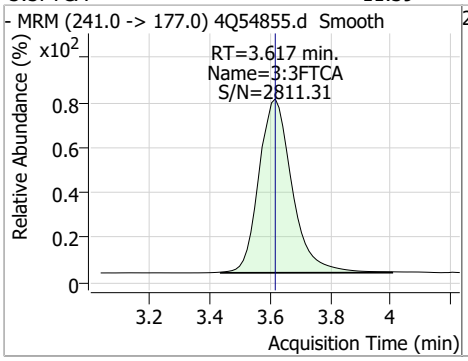


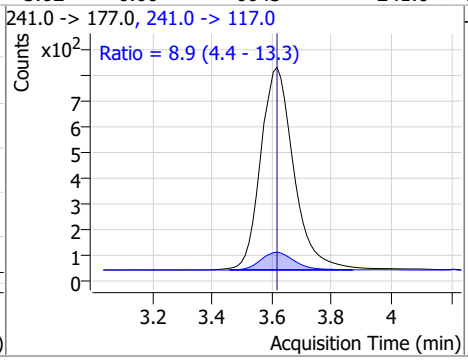


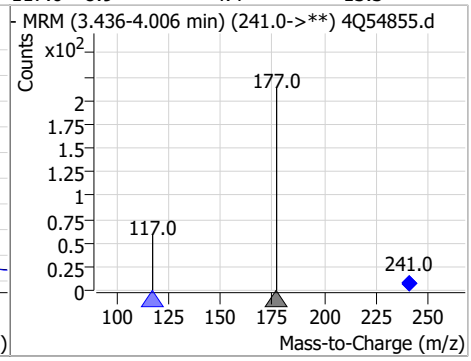


Perfluorinated Compounds by LC/MS/MS

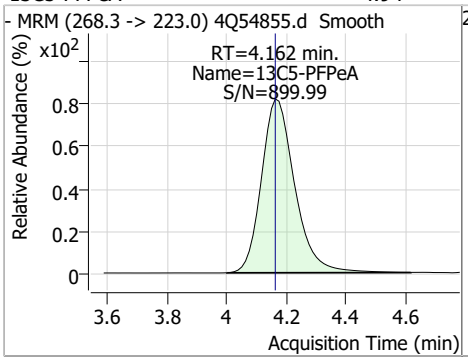
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.39	3.62	0.00	6043	241.0 -> 117.0	8.9	4.4	13.3

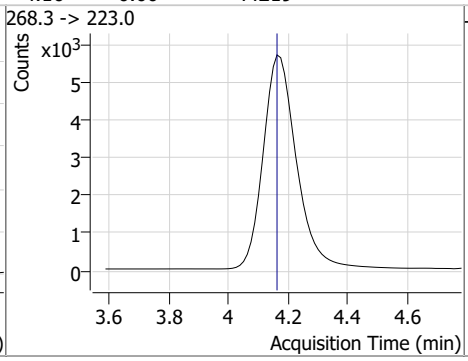


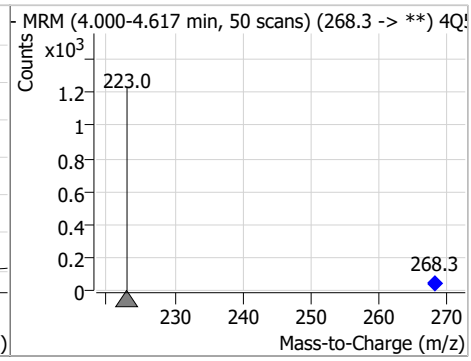




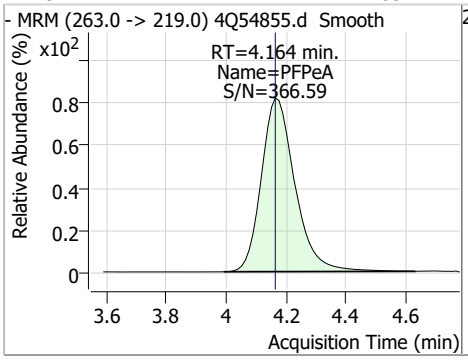
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.94	4.16	0.00	44219				

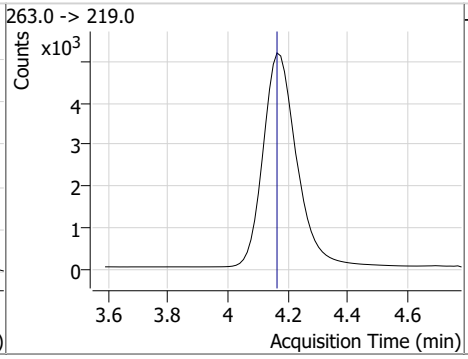


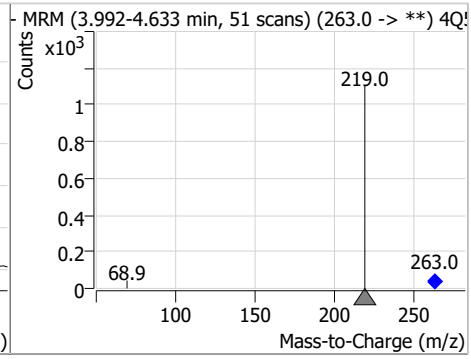




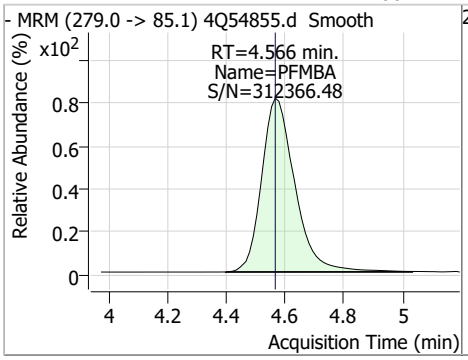
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.63	4.16	0.00	40246				

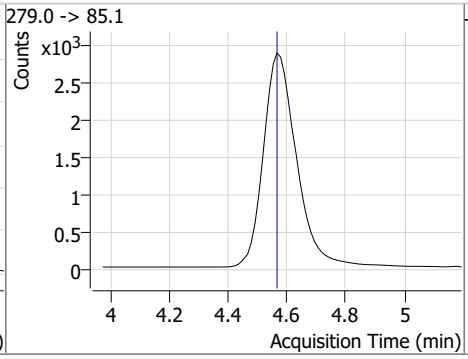


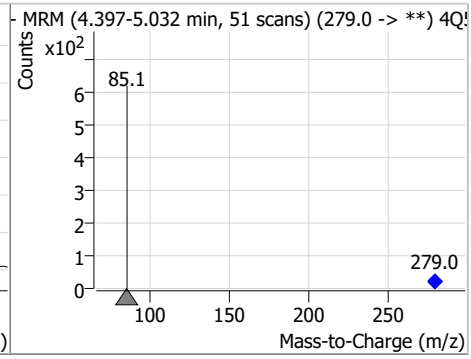




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.66	4.57	0.00	22314				

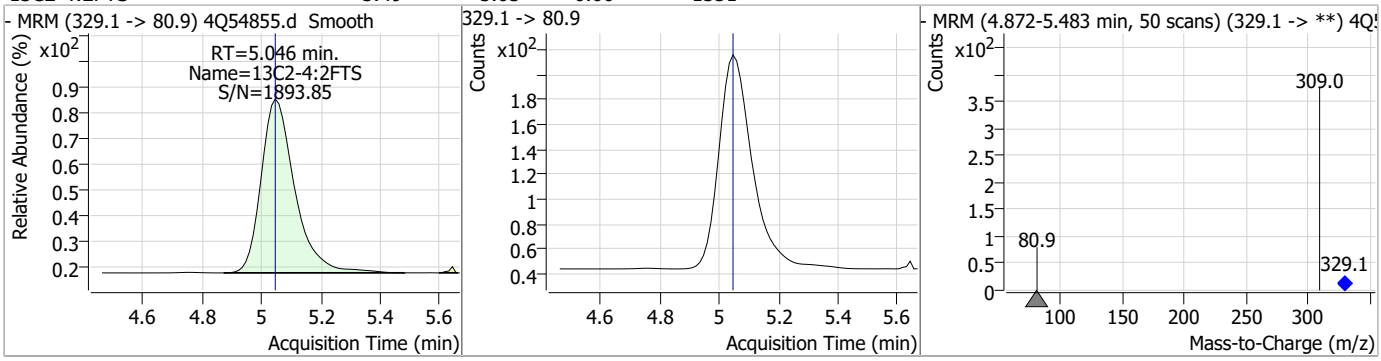




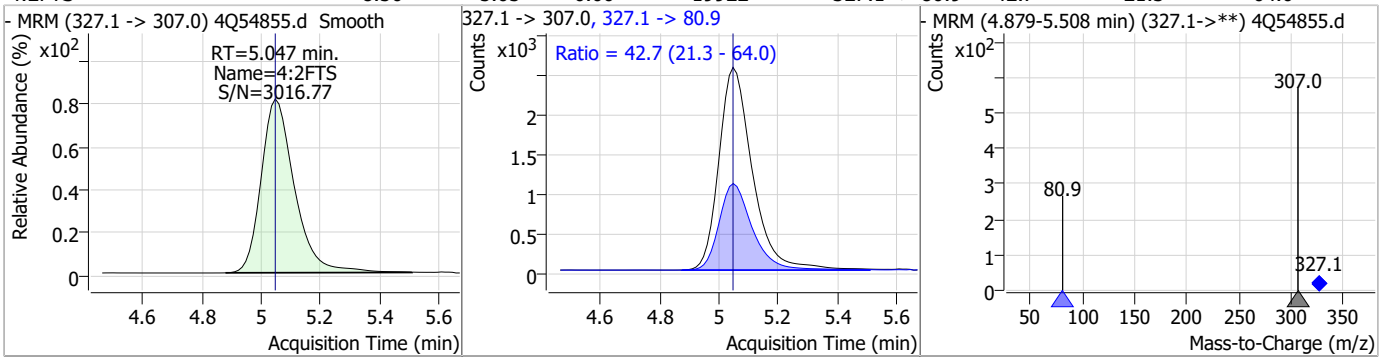


Perfluorinated Compounds by LC/MS/MS

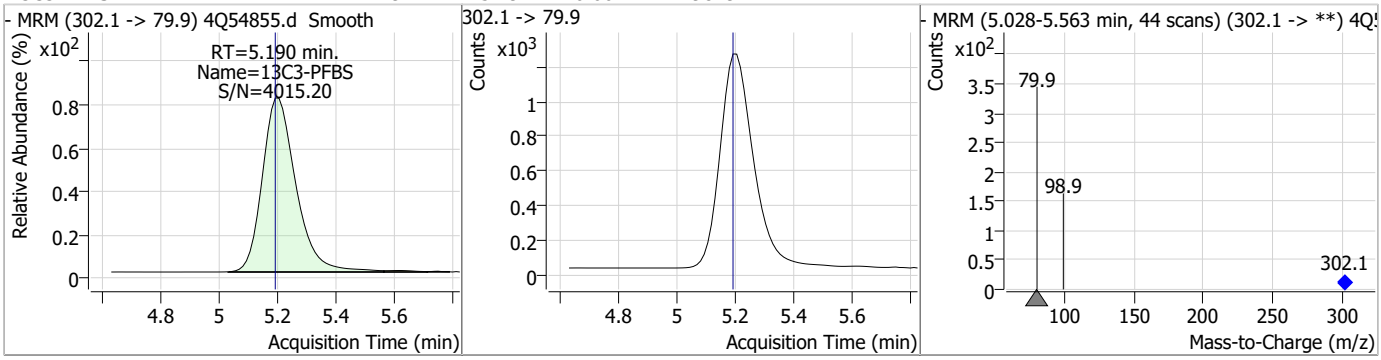
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.49	5.05	0.00	1351				



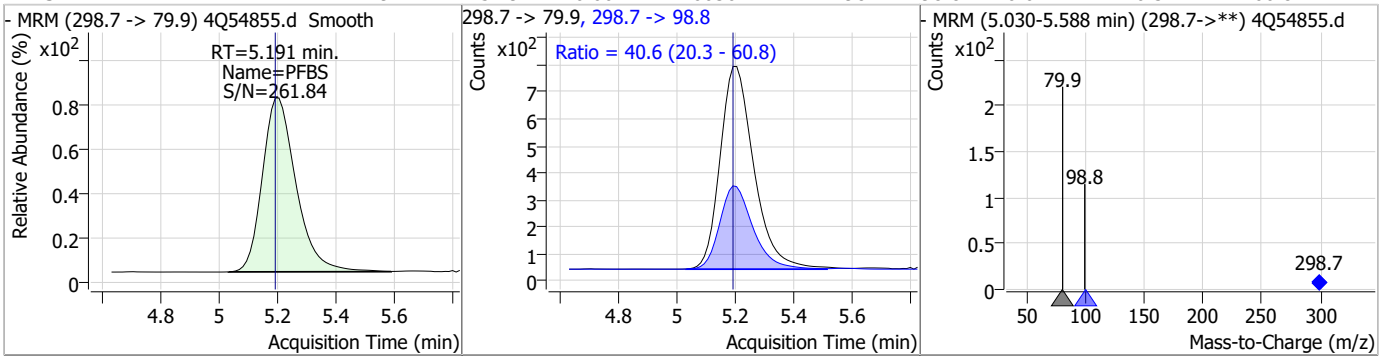
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.56	5.05	0.00	19922	327.1 -> 80.9	42.7	21.3	64.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.49	5.19	0.00	9879				

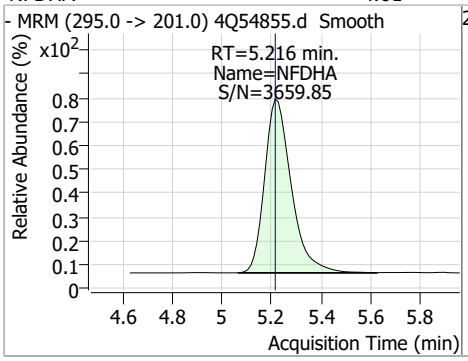


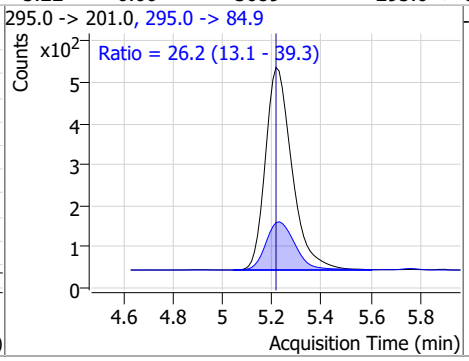
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.97	5.19	0.00	6030	298.7 -> 98.8	40.6	20.3	60.8

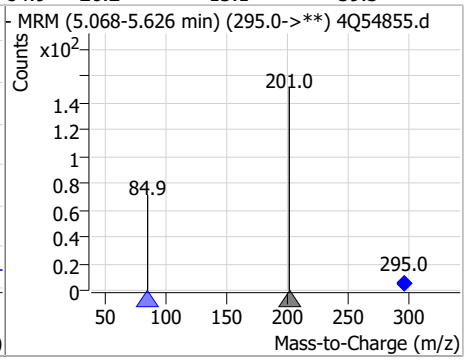


Perfluorinated Compounds by LC/MS/MS

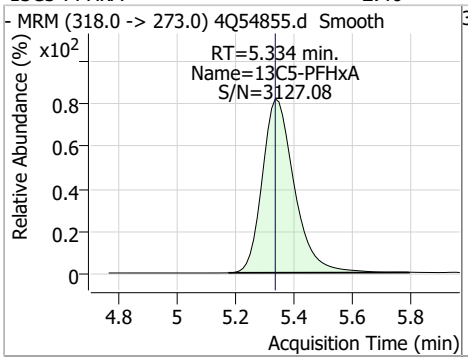
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.61	5.22	0.00	3689	295.0 -> 84.9	26.2	13.1	39.3

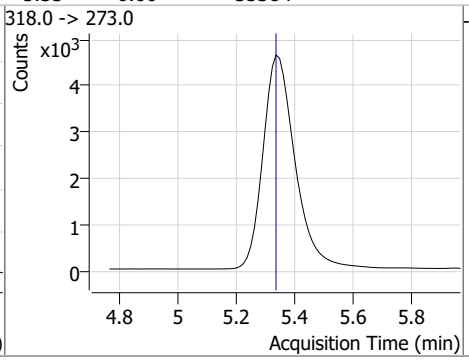


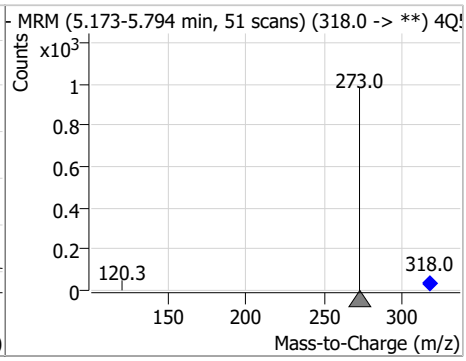




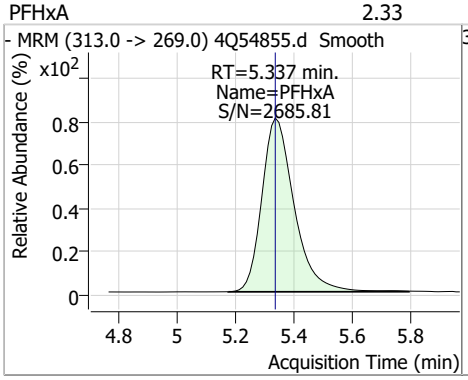
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.33	0.00	35384				

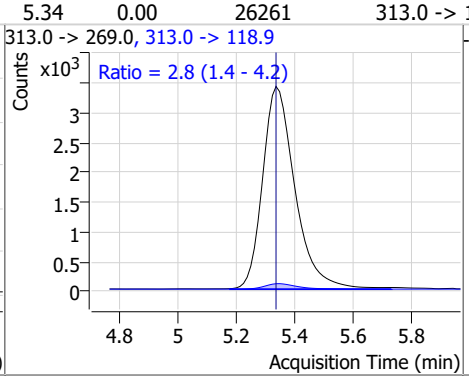


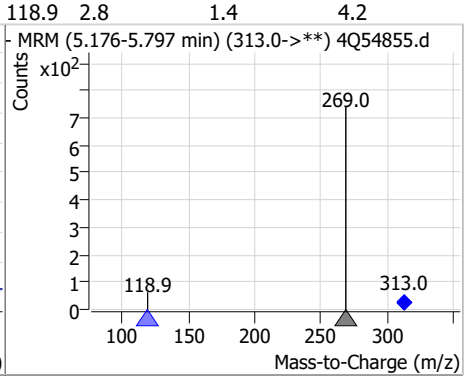




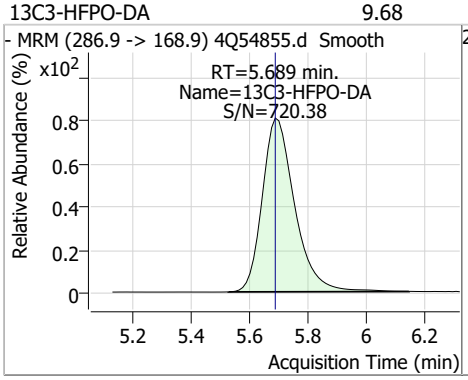
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.33	5.34	0.00	26261	313.0 -> 118.9	2.8	1.4	4.2

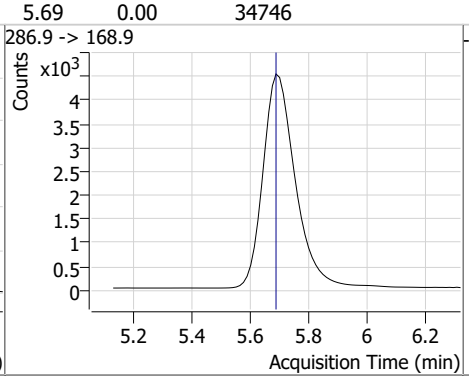


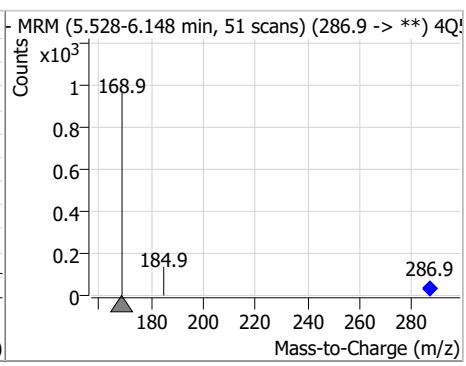




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.68	5.69	0.00	34746				

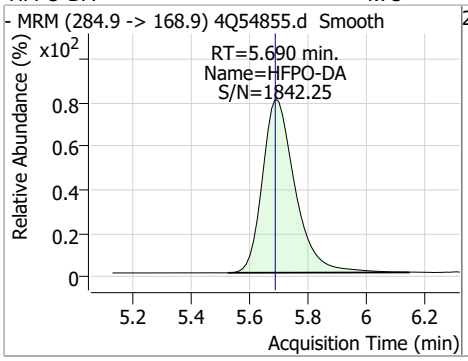


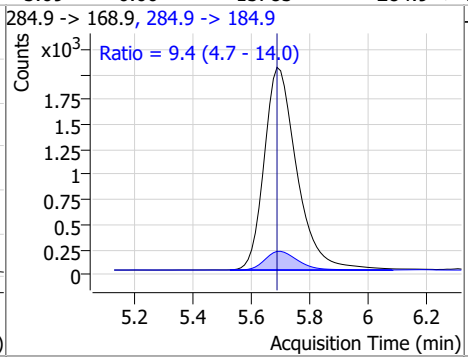


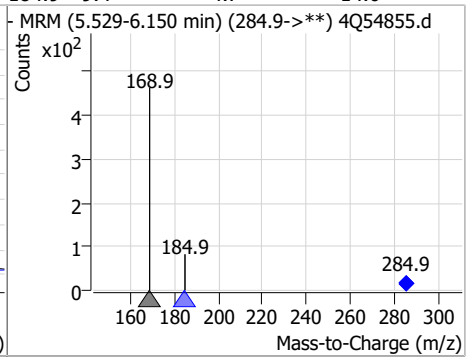


Perfluorinated Compounds by LC/MS/MS

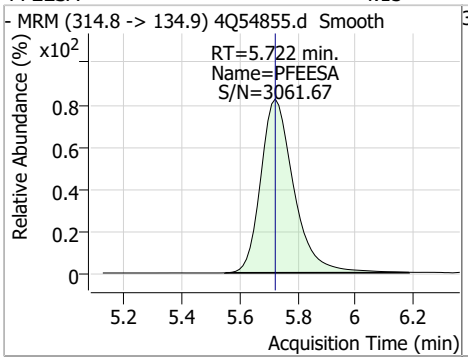
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.75	5.69	0.00	15785	284.9 -> 184.9	9.4	4.7	14.0

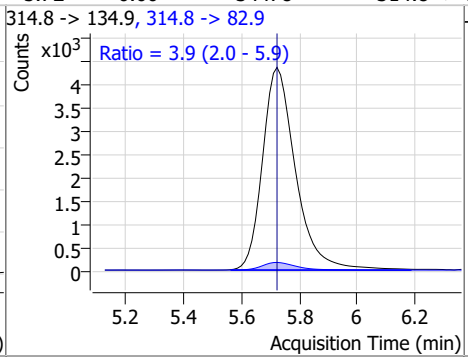


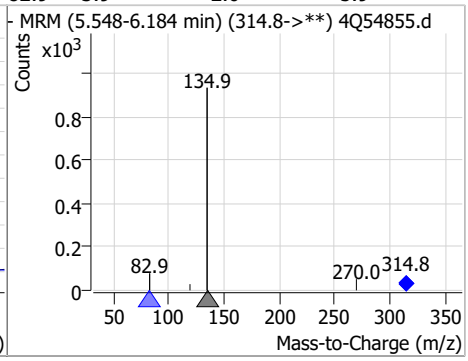




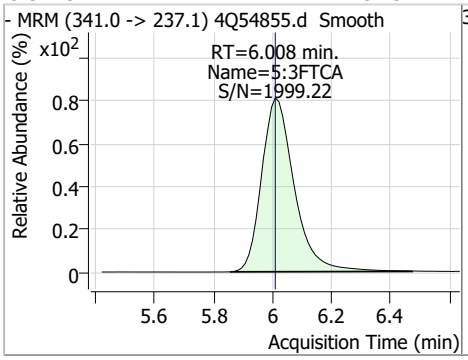
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.13	5.72	0.00	34478	314.8 -> 82.9	3.9	2.0	5.9

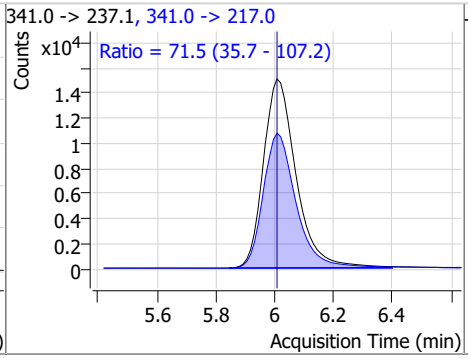


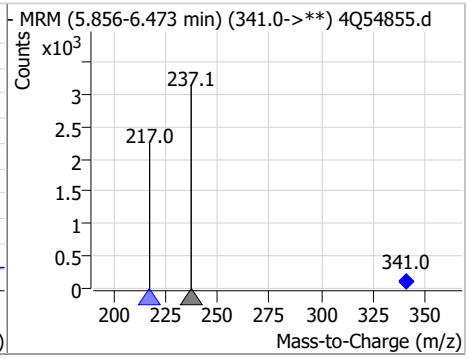




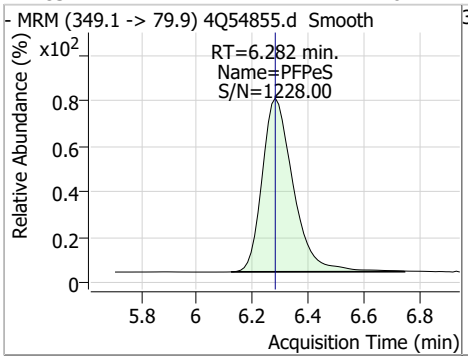
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	57.54	6.01	0.00	115879	341.0 -> 217.0	71.5	35.7	107.2

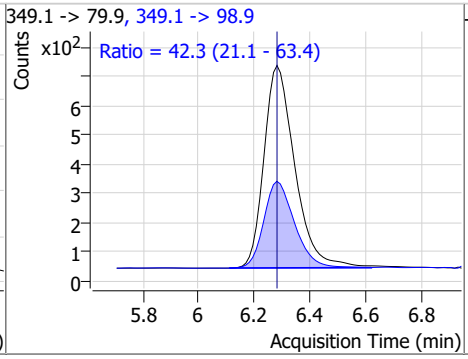


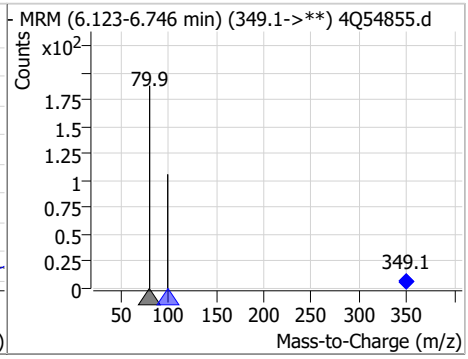




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.18	6.28	0.00	5390	349.1 -> 98.9	42.3	21.1	63.4

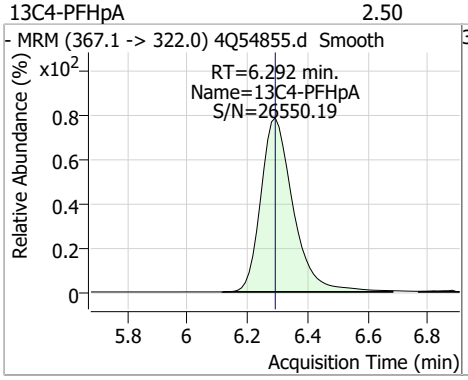


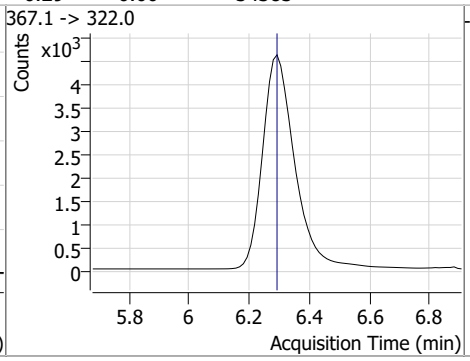


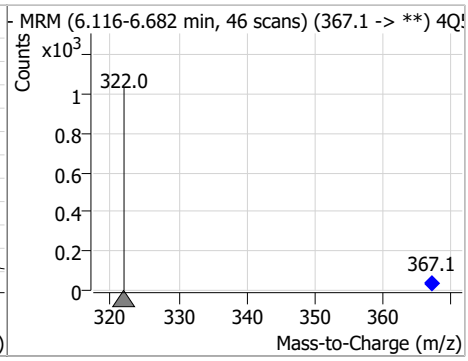


Perfluorinated Compounds by LC/MS/MS

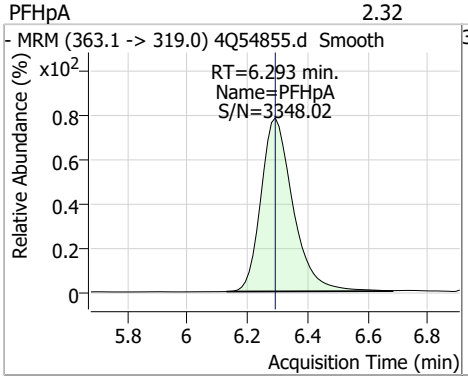
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.50	6.29	0.00	34383				

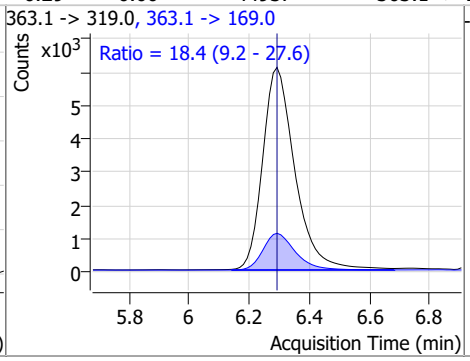


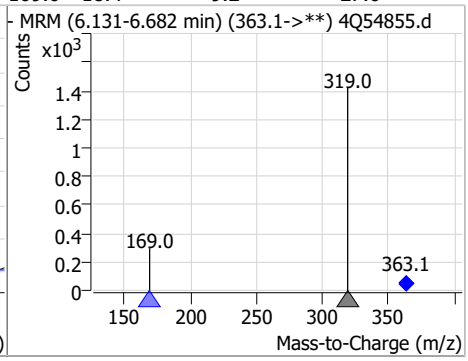




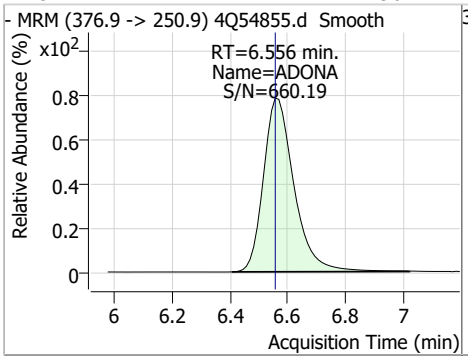
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.32	6.29	0.00	44937	363.1 -> 169.0	18.4	9.2	27.6

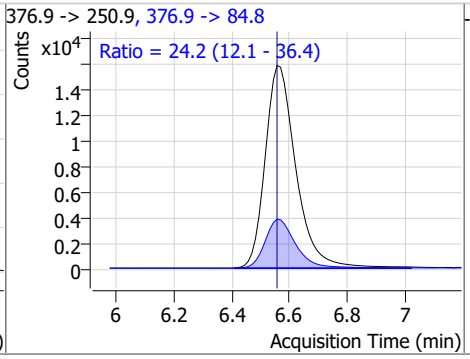


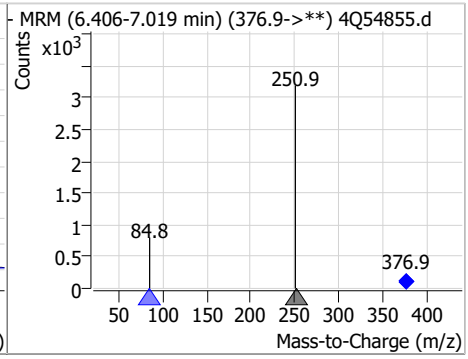




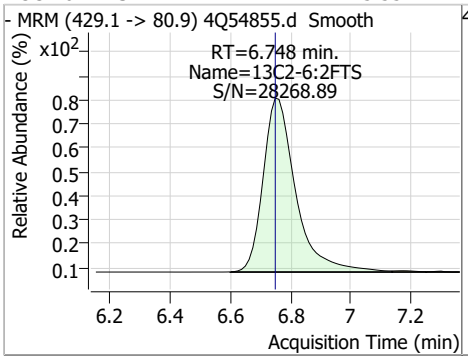
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.96	6.56	0.00	116329	376.9 -> 84.8	24.2	12.1	36.4

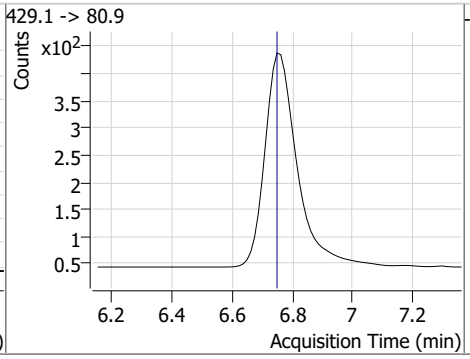


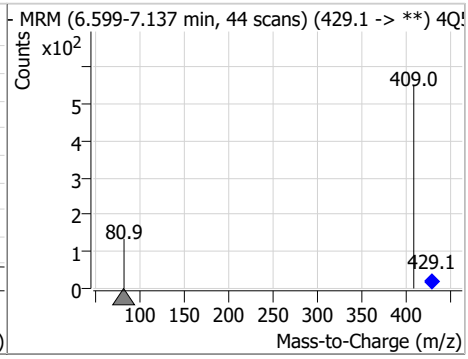




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.55	6.75	0.00	2962				

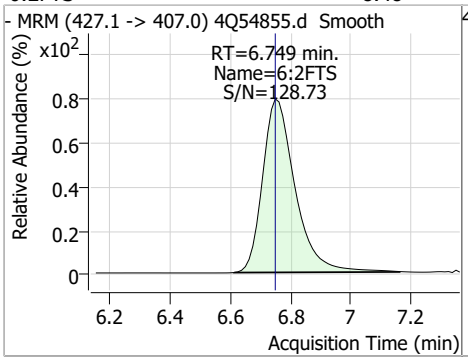


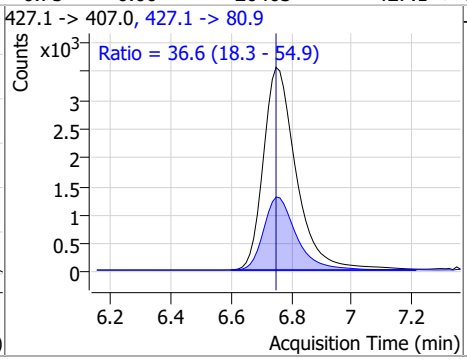


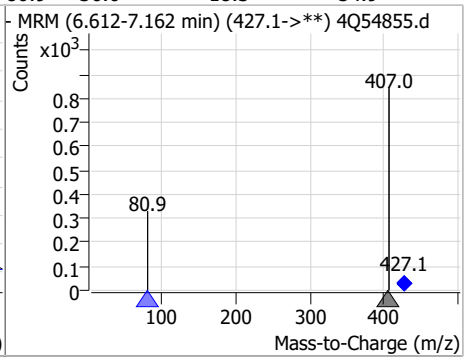


Perfluorinated Compounds by LC/MS/MS

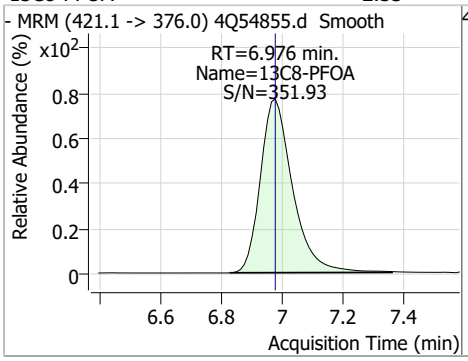
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	8.48	6.75	0.00	26403	427.1 -> 80.9	36.6	18.3	54.9

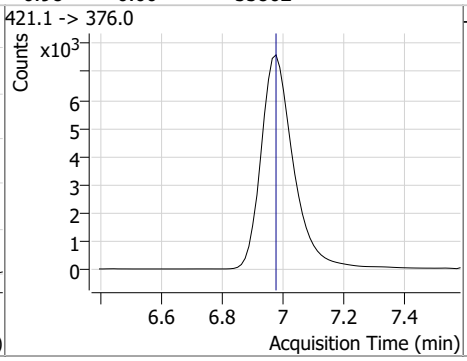


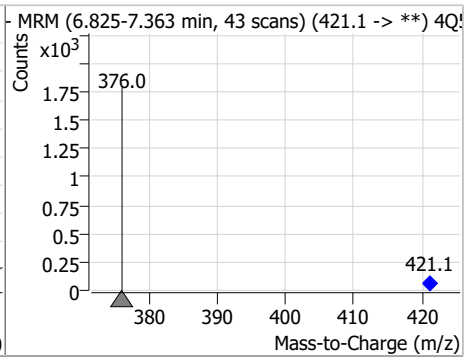




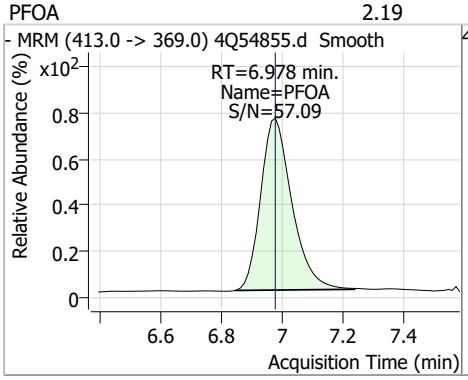
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.53	6.98	0.00	55862				

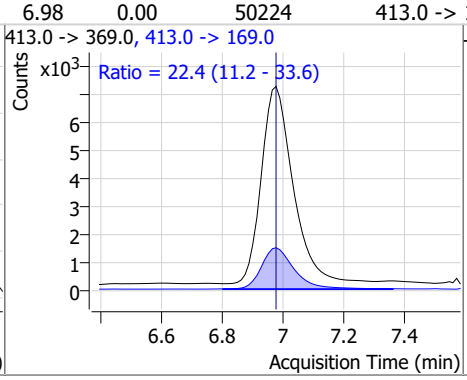


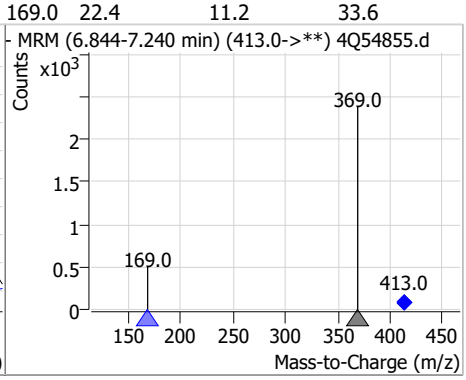




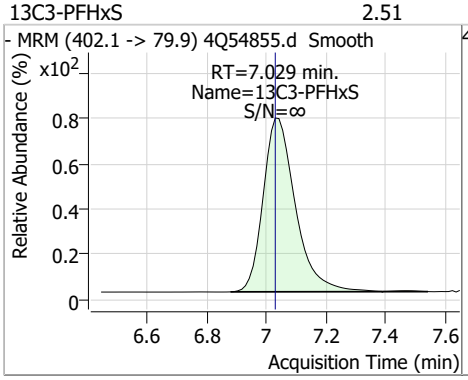
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.19	6.98	0.00	50224	413.0 -> 169.0	22.4	11.2	33.6

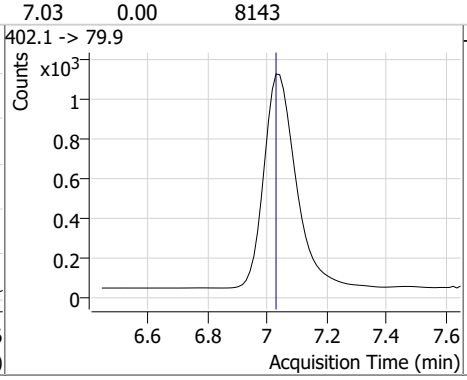


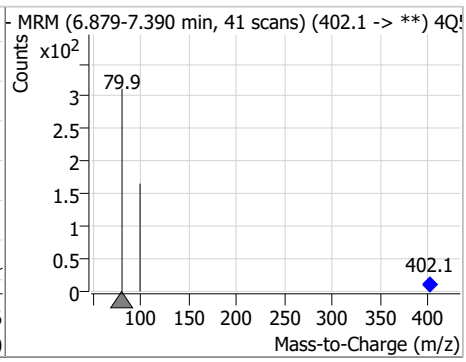




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.51	7.03	0.00	8143				

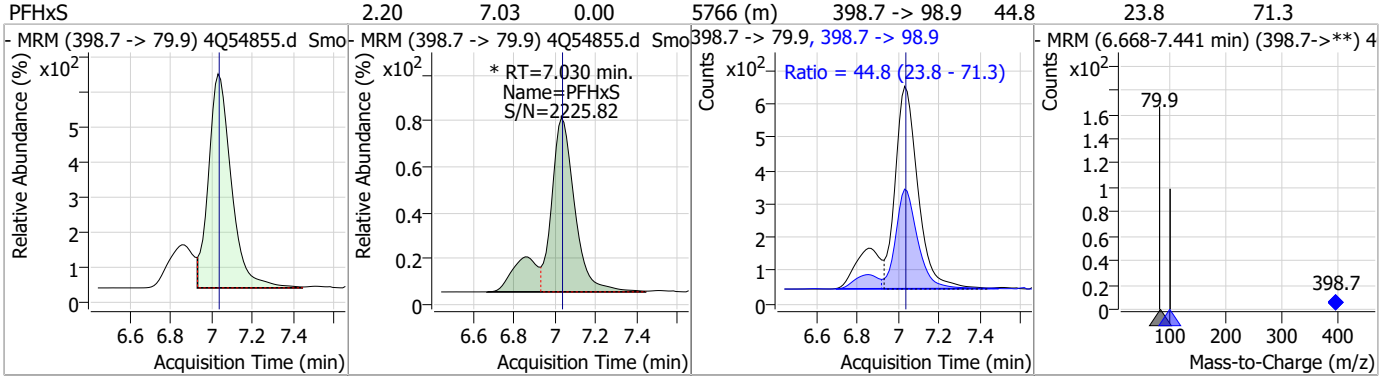




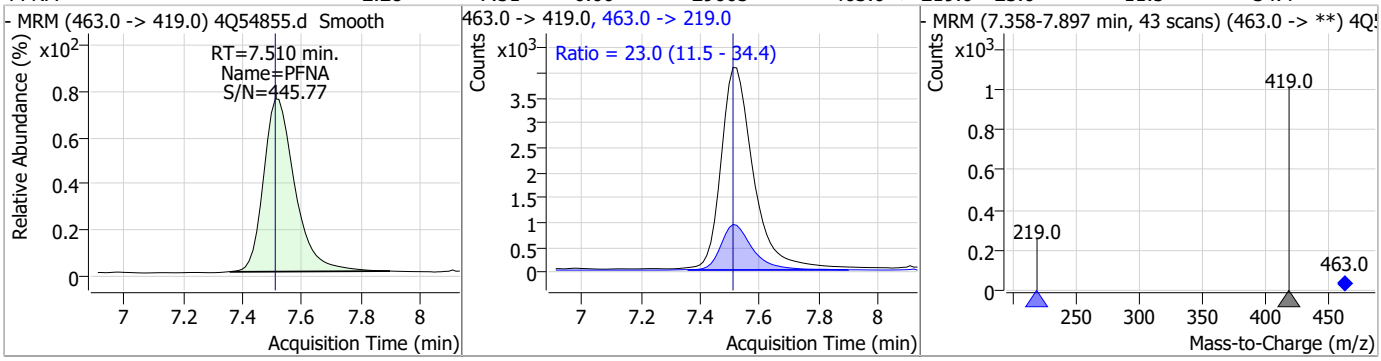


Perfluorinated Compounds by LC/MS/MS

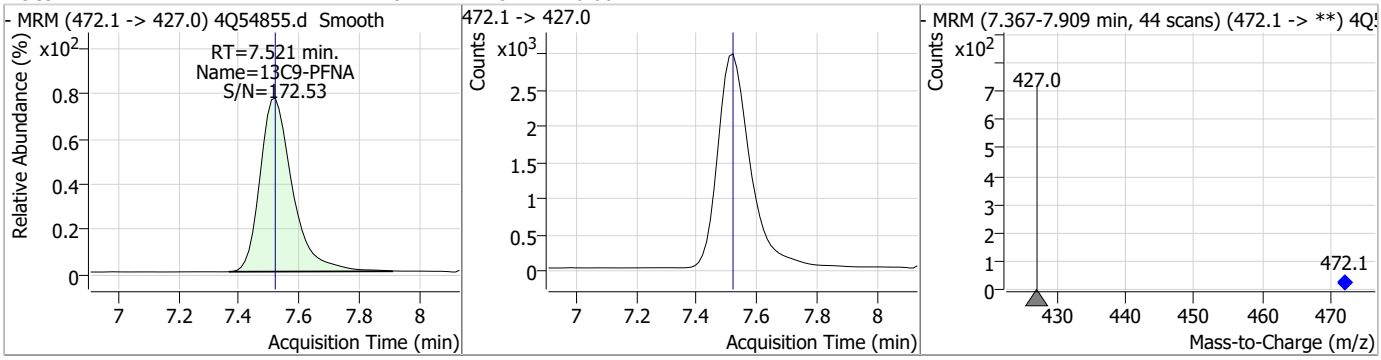
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.20	7.03	0.00	5766 (m)	398.7 -> 98.9	44.8	23.8	71.3



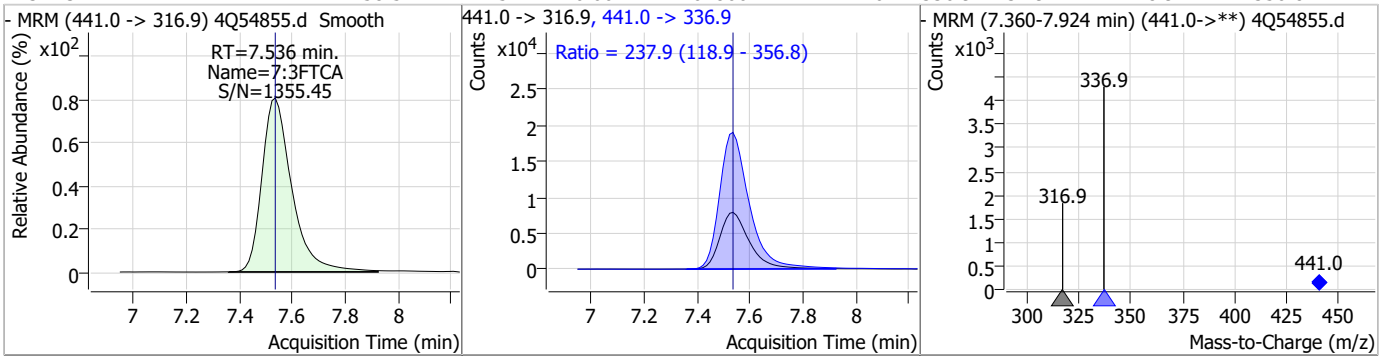
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.28	7.51	0.00	29605	463.0 -> 219.0	23.0	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.52	0.00	22122				

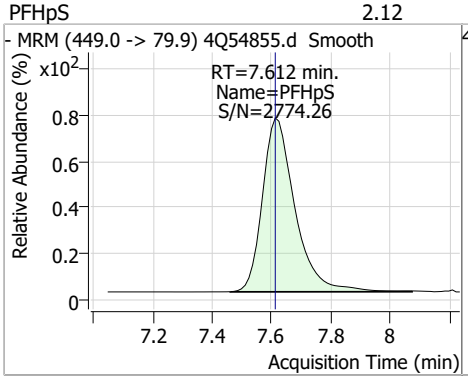


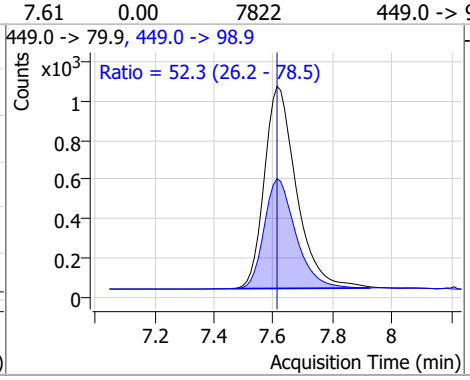
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	58.52	7.54	0.00	61800	441.0 -> 336.9	237.9	118.9	356.8

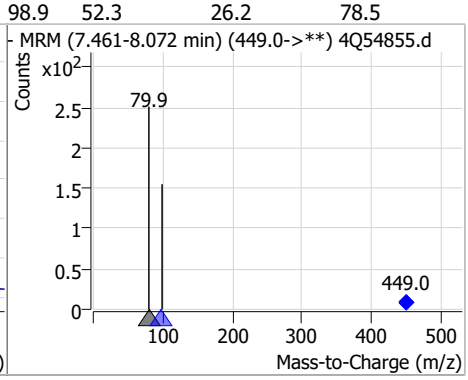


Perfluorinated Compounds by LC/MS/MS

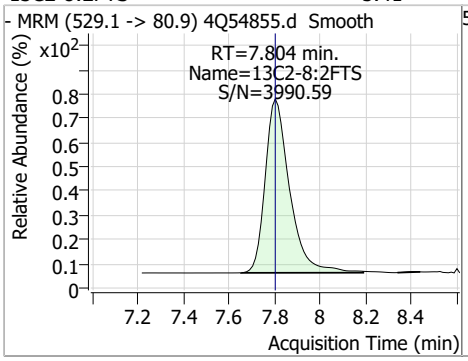
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.12	7.61	0.00	7822	449.0 -> 98.9	52.3	26.2	78.5

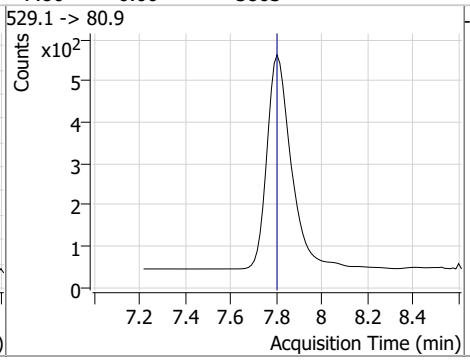


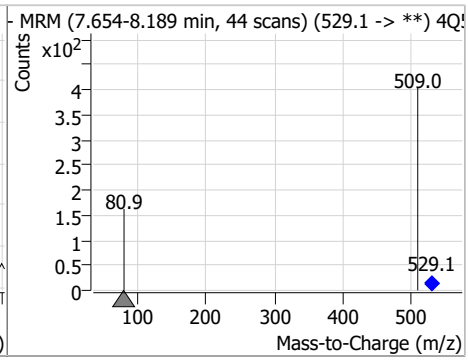




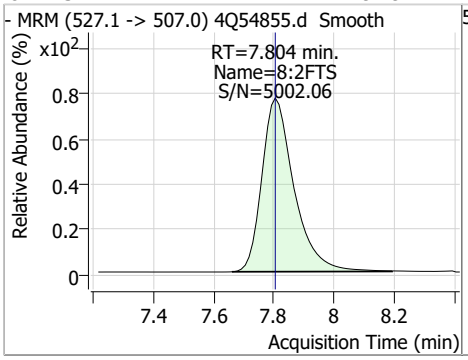
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.41	7.80	0.00	3863				

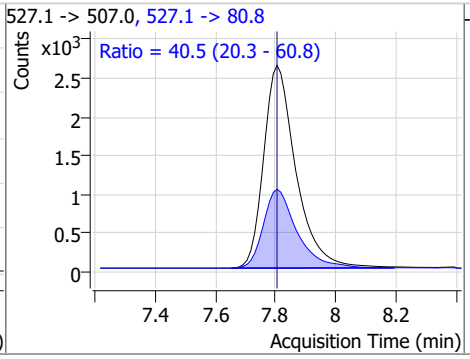


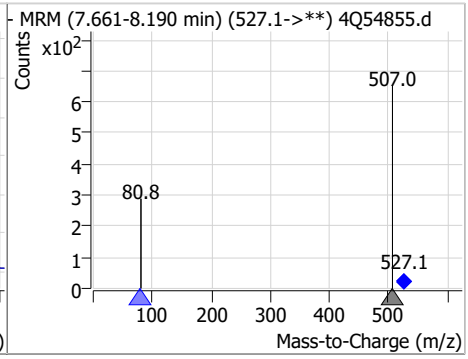




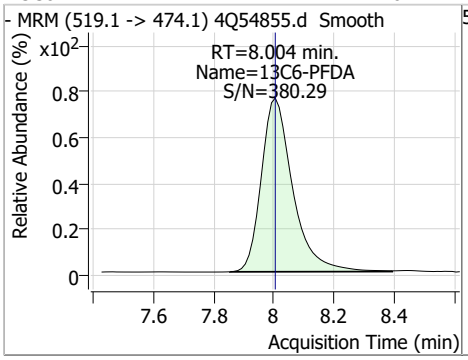
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.49	7.80	0.00	19326	527.1 -> 80.8	40.5	20.3	60.8

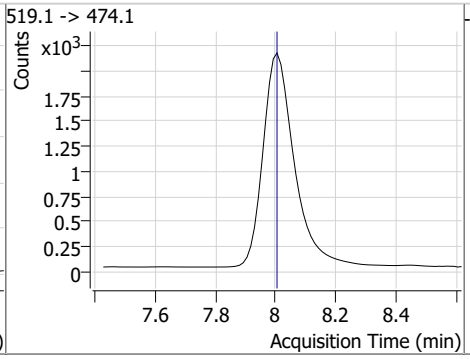


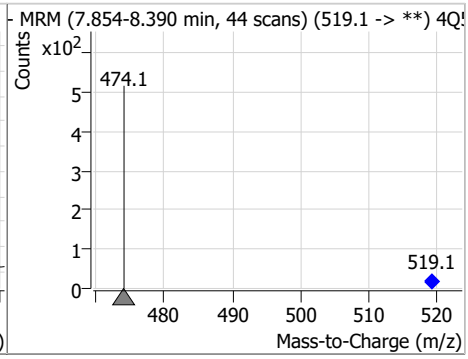




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.00	0.00	15377				

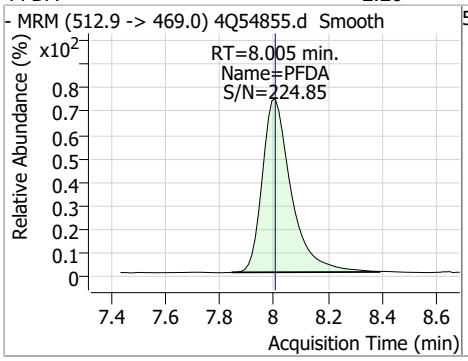


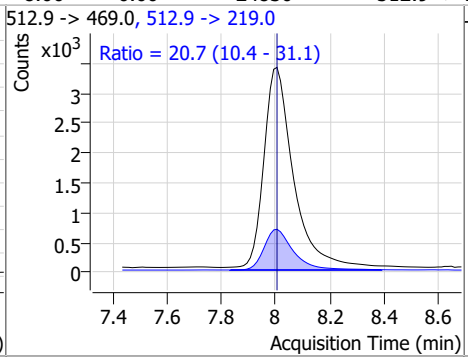


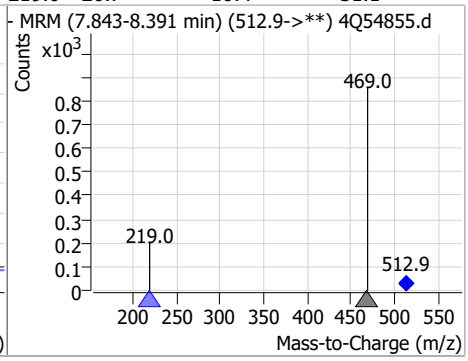


Perfluorinated Compounds by LC/MS/MS

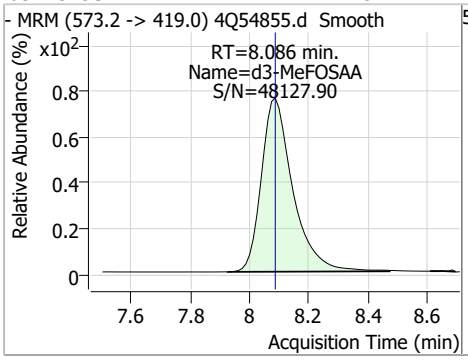
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.20	8.00	0.00	24830	512.9 -> 219.0	20.7	10.4	31.1

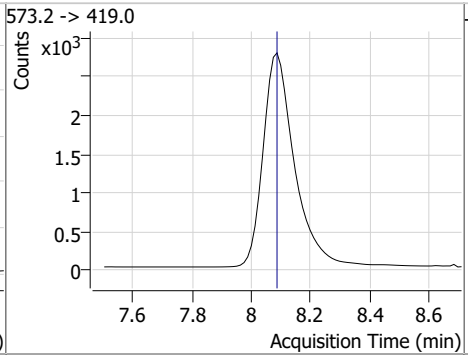


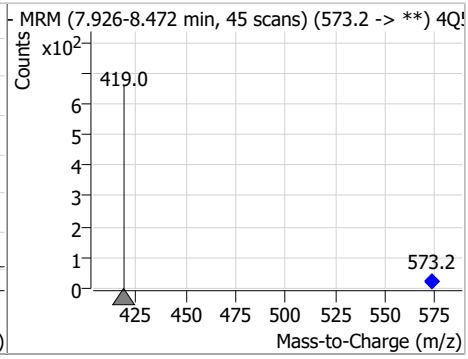




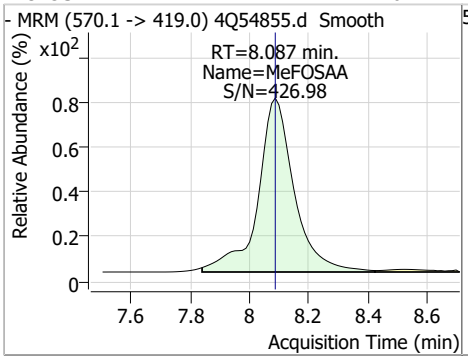
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.22	8.09	0.00	20322				

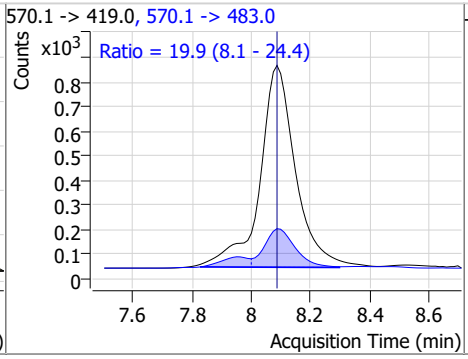


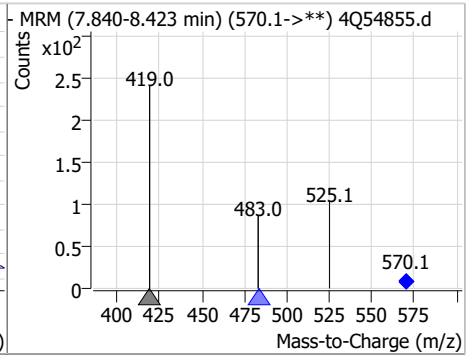




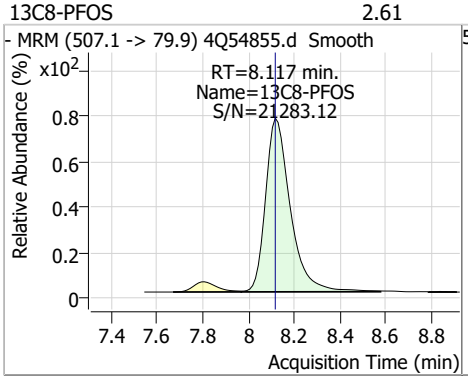
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.40	8.09	0.00	6992	570.1 -> 483.0	19.9	8.1	24.4

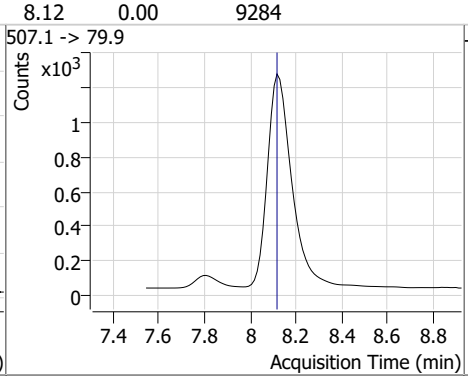


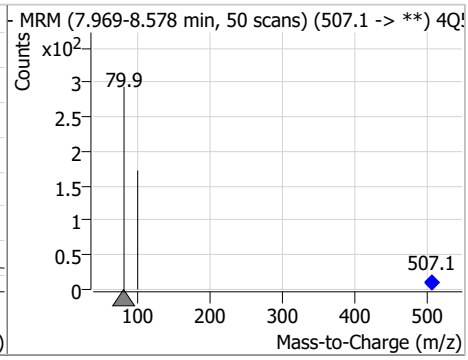




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.61	8.12	0.00	9284				

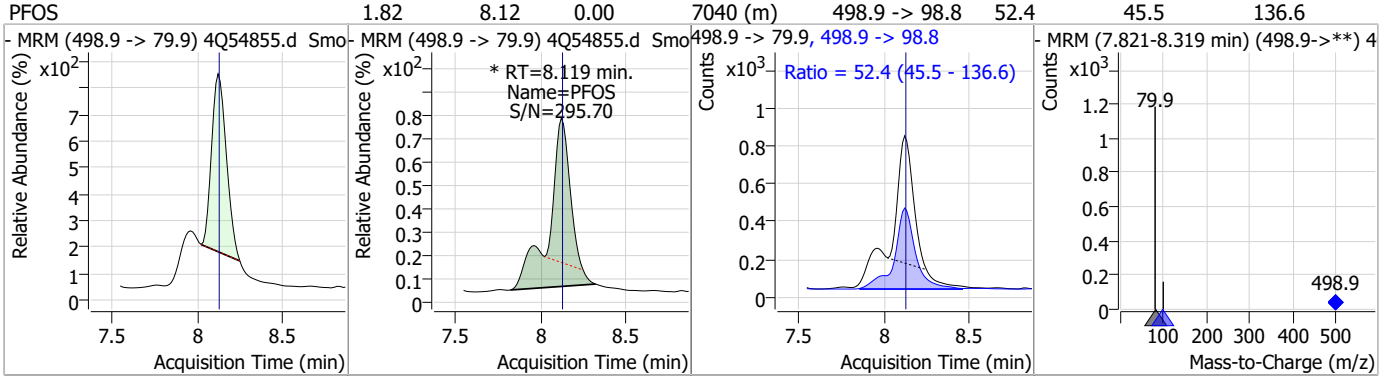




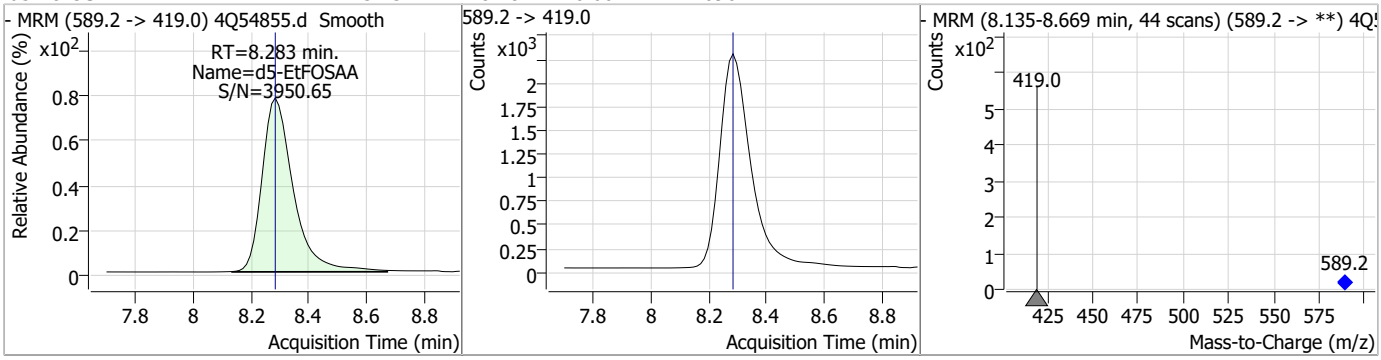


Perfluorinated Compounds by LC/MS/MS

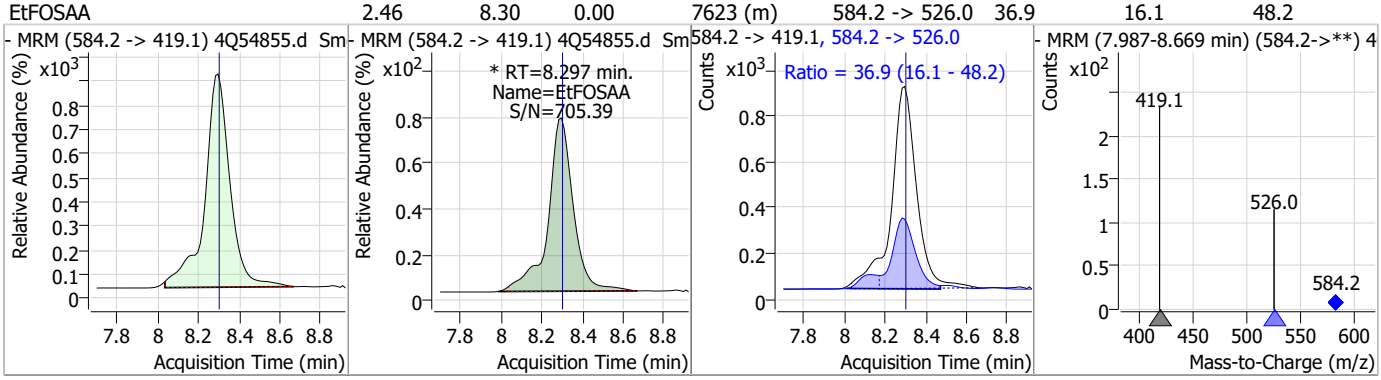
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.82	8.12	0.00	7040 (m)	498.9 -> 98.8	52.4	45.5	136.6



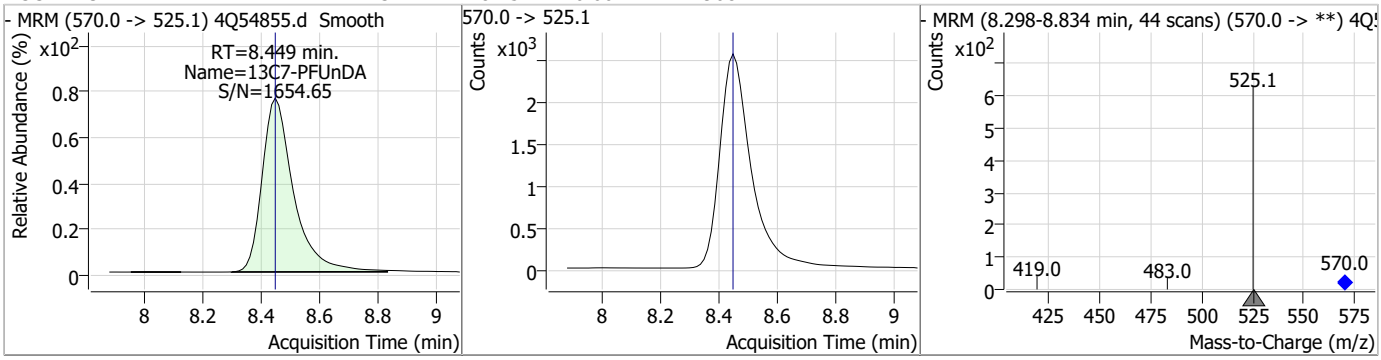
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.15	8.28	0.00	16962				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.46	8.30	0.00	7623 (m)	584.2 -> 526.0	36.9	16.1	48.2

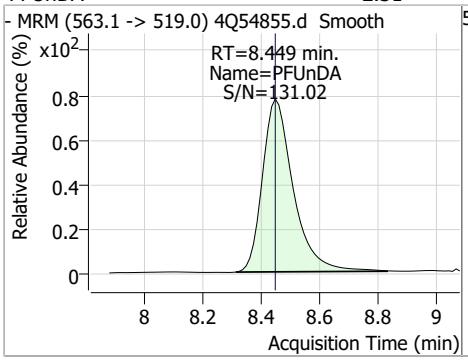


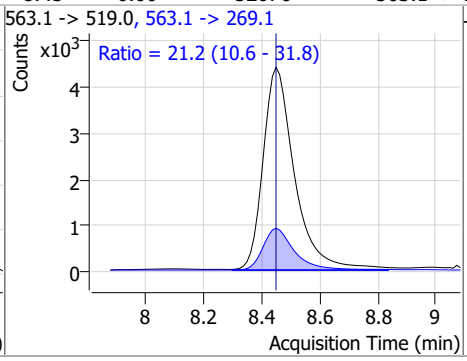
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.45	0.00	19087				

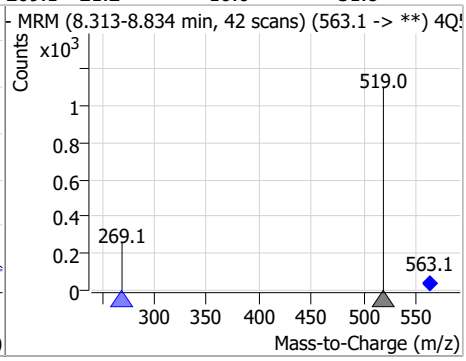


Perfluorinated Compounds by LC/MS/MS

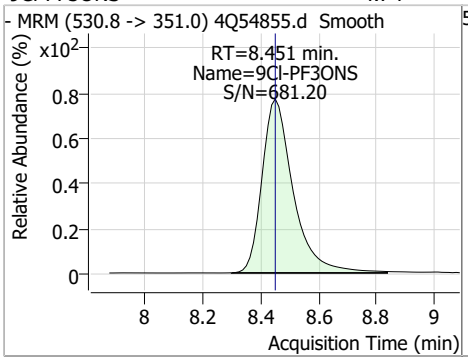
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.31	8.45	0.00	32076	563.1 -> 269.1	21.2	10.6	31.8

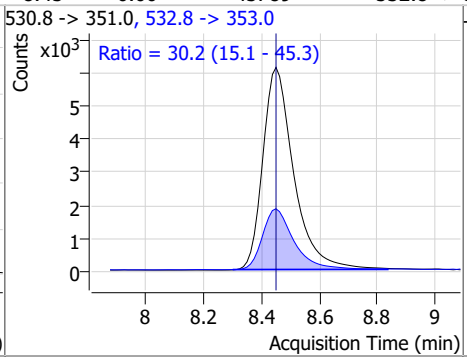


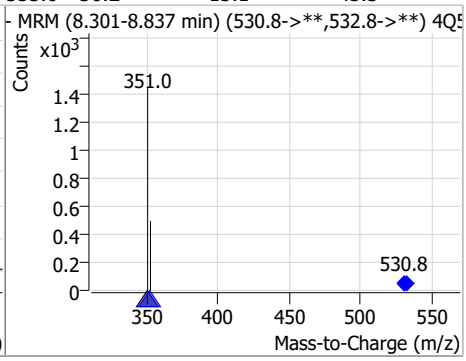




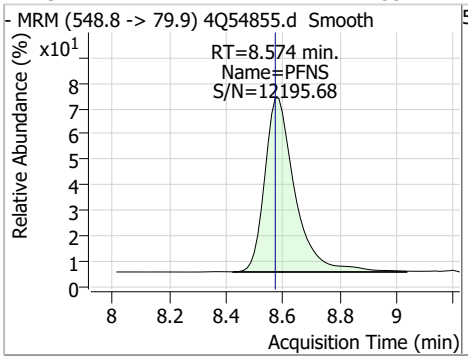
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.74	8.45	0.00	45789	532.8 -> 353.0	30.2	15.1	45.3

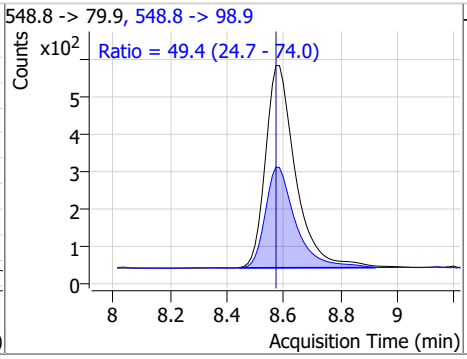


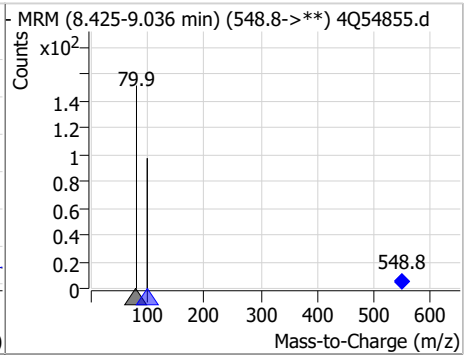




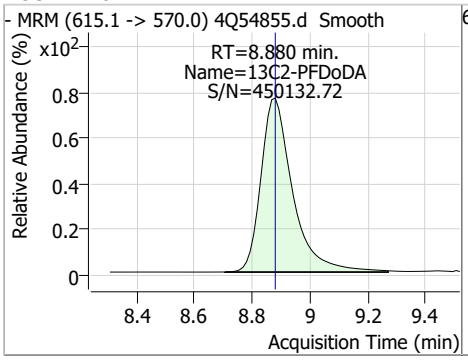
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.53	8.57	0.00	4011	548.8 -> 98.9	49.4	24.7	74.0

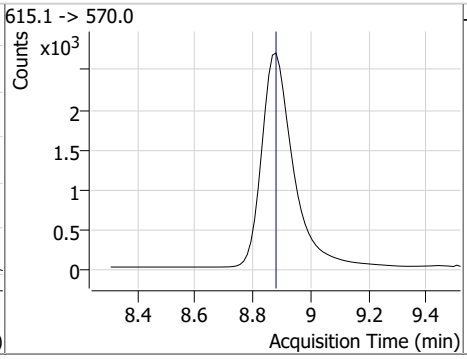


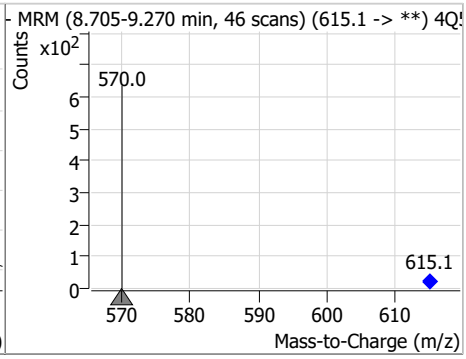




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	8.88	0.00	20356				

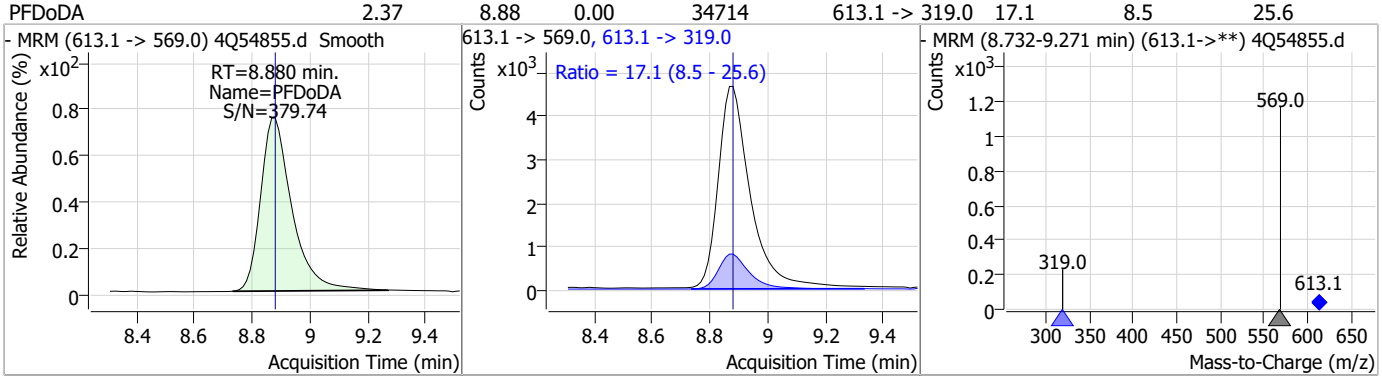




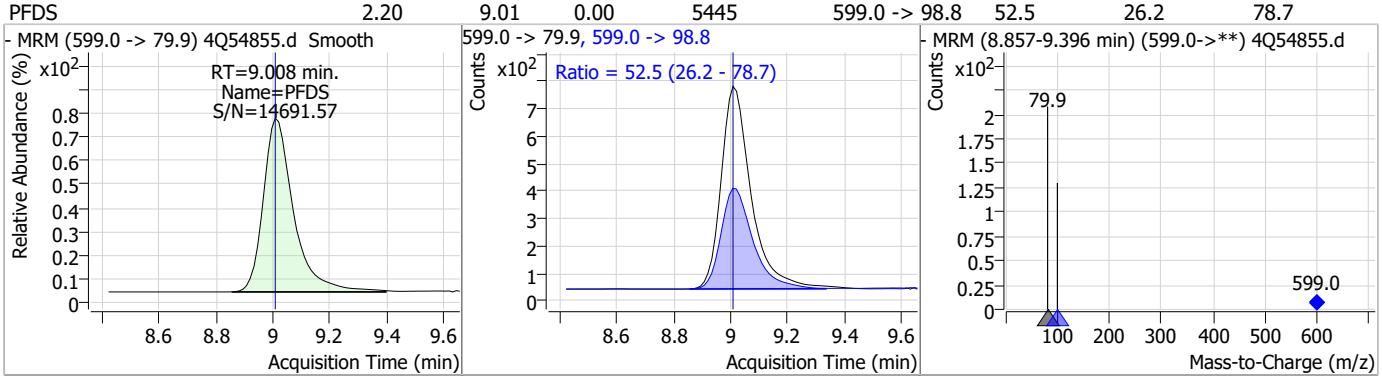


Perfluorinated Compounds by LC/MS/MS

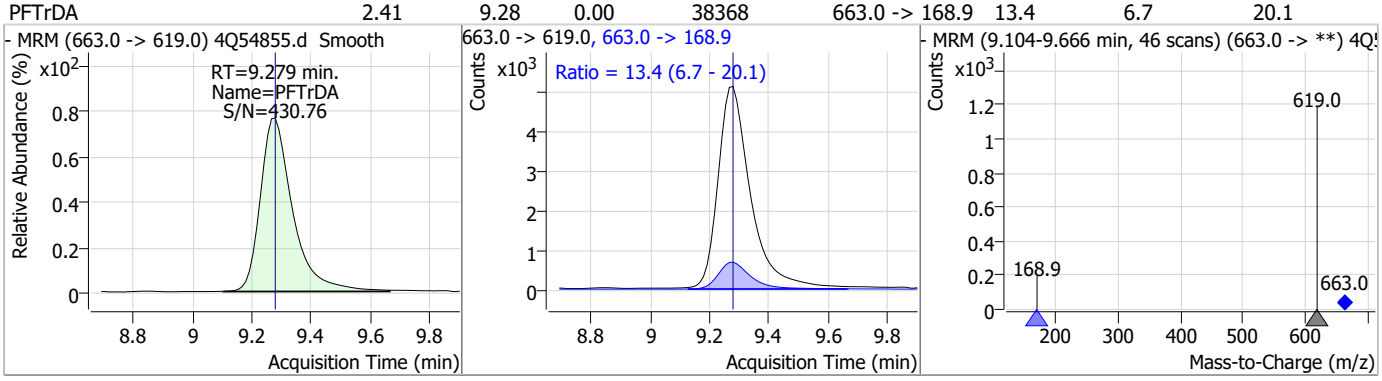
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.37	8.88	0.00	34714	613.1 -> 319.0	17.1	8.5	25.6



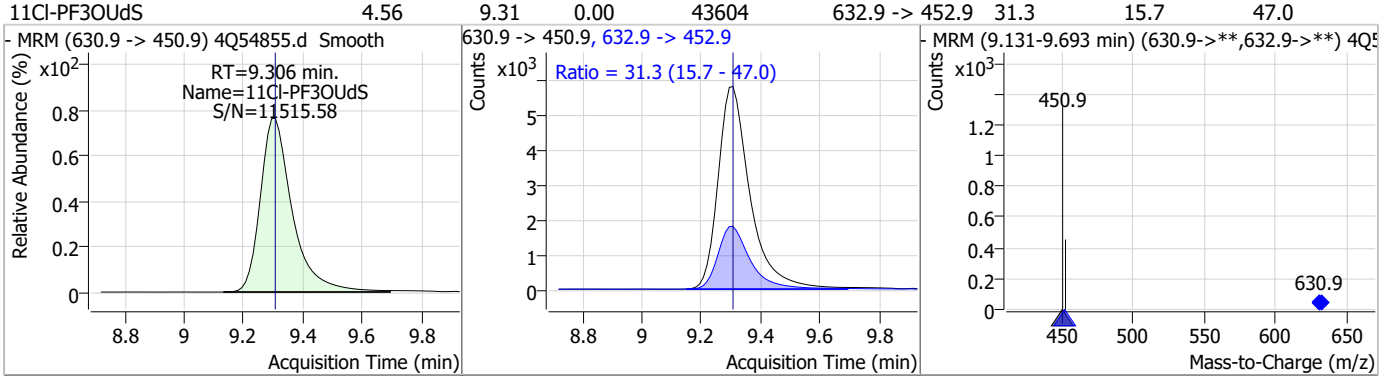
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.20	9.01	0.00	5445	599.0 -> 98.8	52.5	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.41	9.28	0.00	38368	663.0 -> 168.9	13.4	6.7	20.1

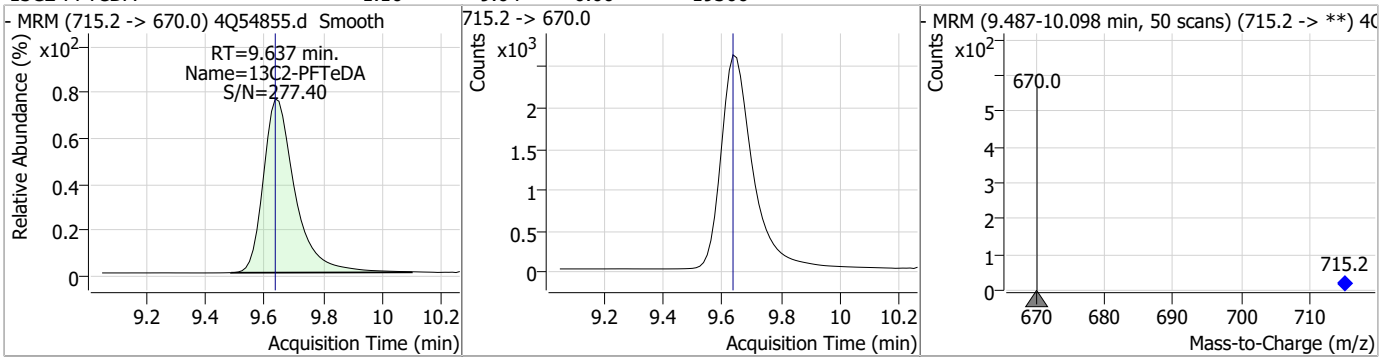


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.56	9.31	0.00	43604	632.9 -> 452.9	31.3	15.7	47.0

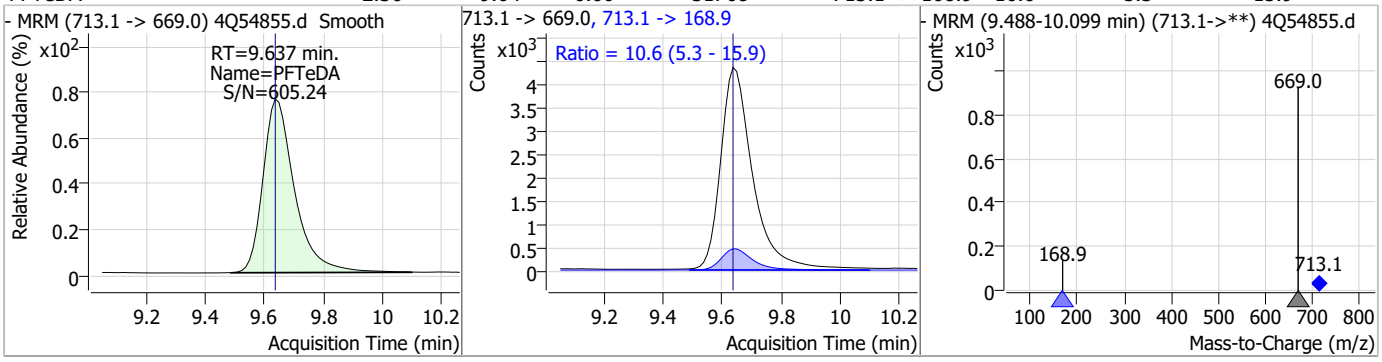


Perfluorinated Compounds by LC/MS/MS

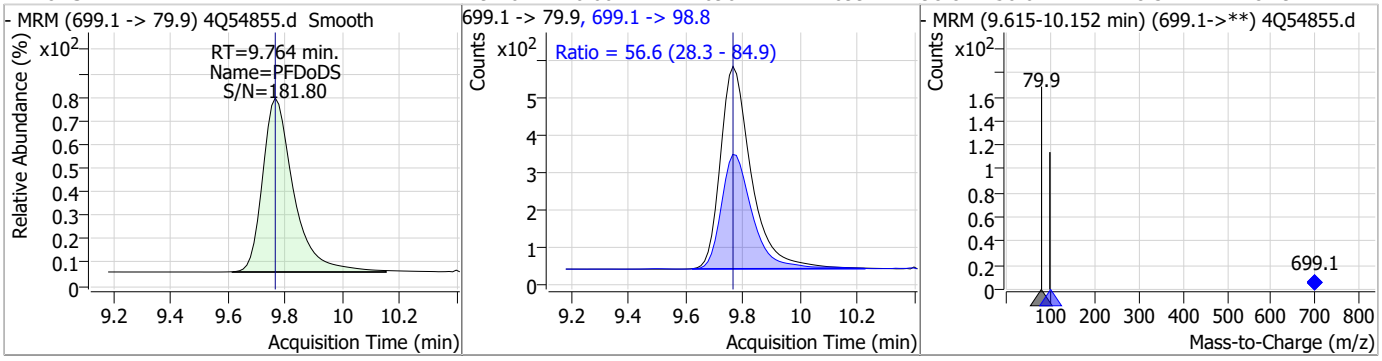
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.16	9.64	0.00	19306				



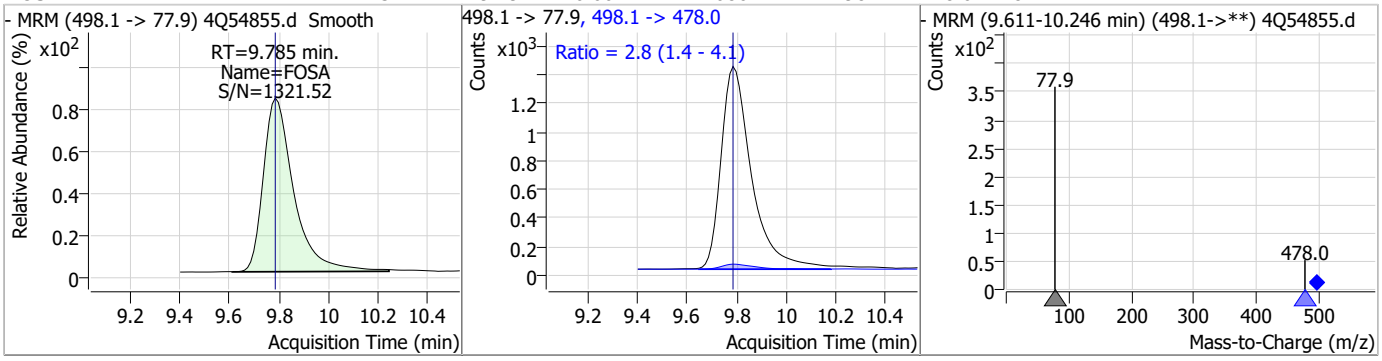
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.36	9.64	0.00	31768	713.1 -> 168.9	10.6	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.17	9.76	0.00	4090	699.1 -> 98.8	56.6	28.3	84.9

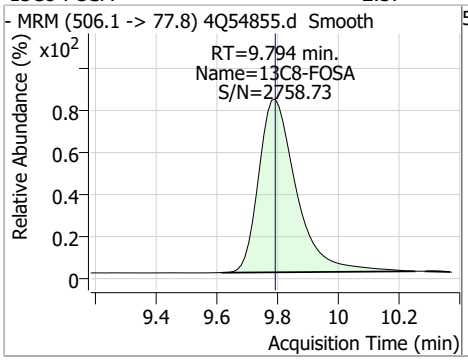


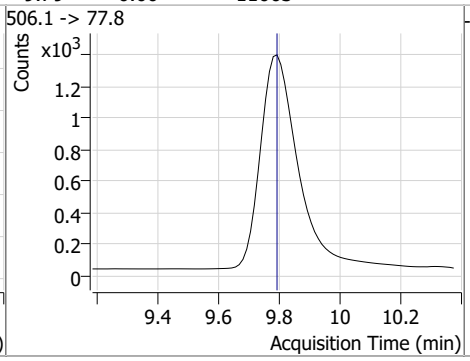
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.31	9.79	0.00	12086	498.1 -> 478.0	2.8	1.4	4.1

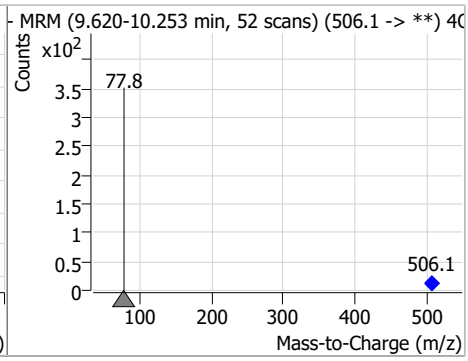


Perfluorinated Compounds by LC/MS/MS

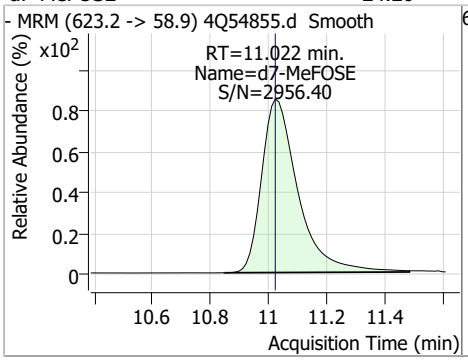
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.57	9.79	0.00	11663				

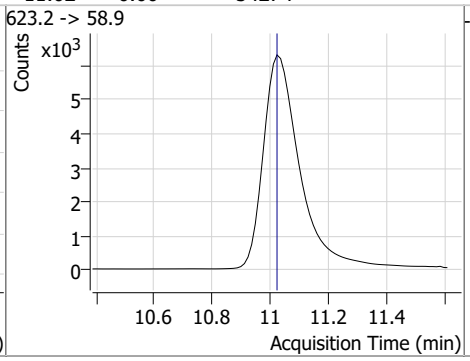


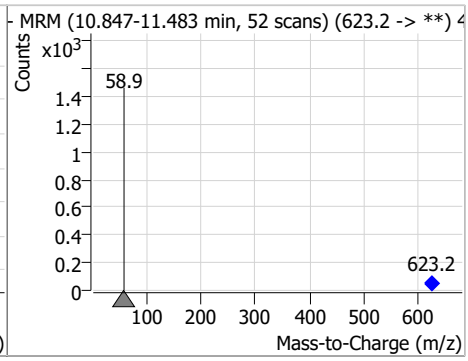




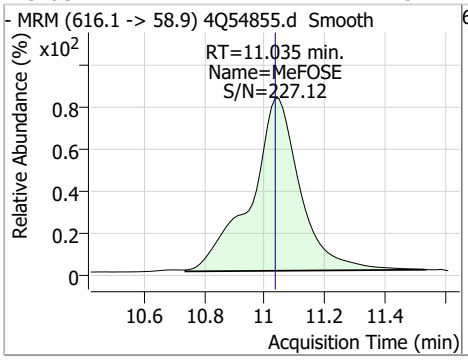
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.20	11.02	0.00	54274				

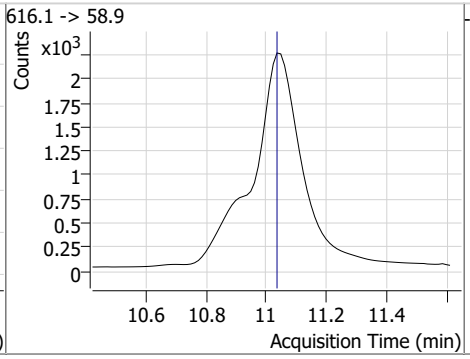


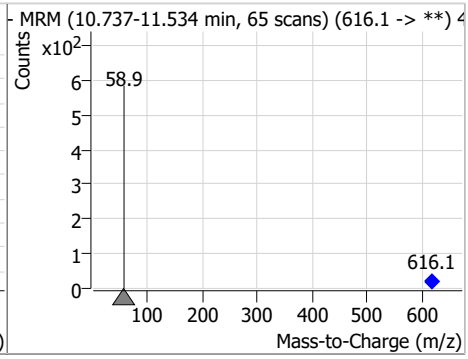




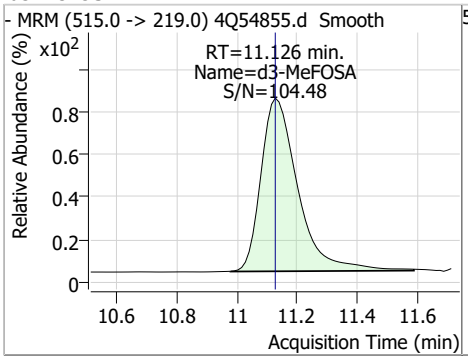
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.75	11.04	0.00	25303				

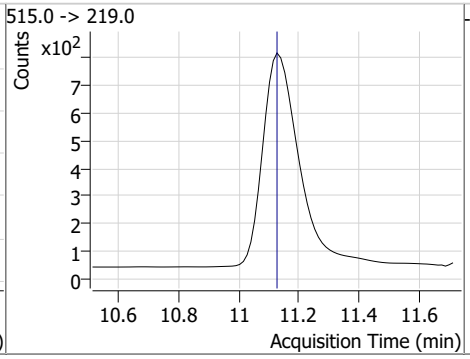


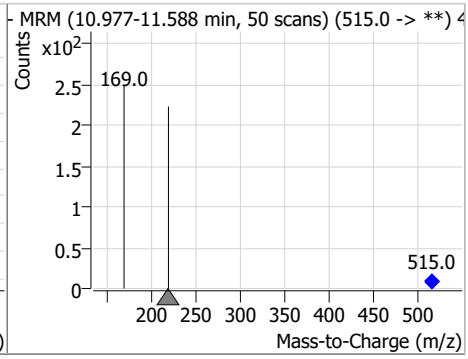




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.42	11.13	0.00	6564				

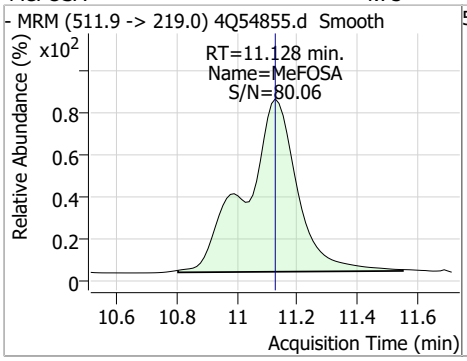


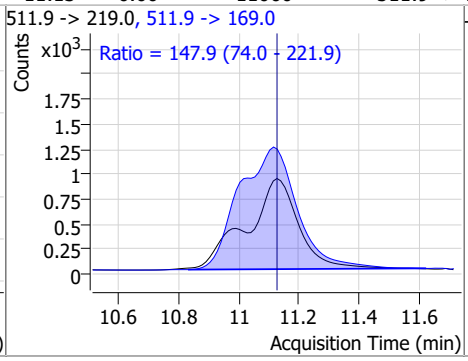


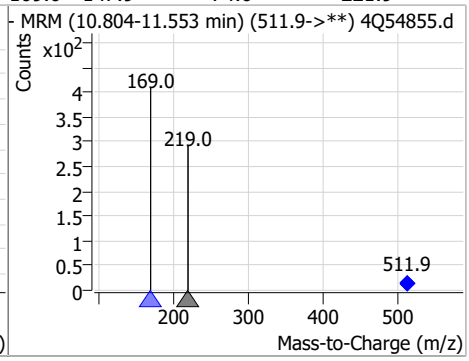


Perfluorinated Compounds by LC/MS/MS

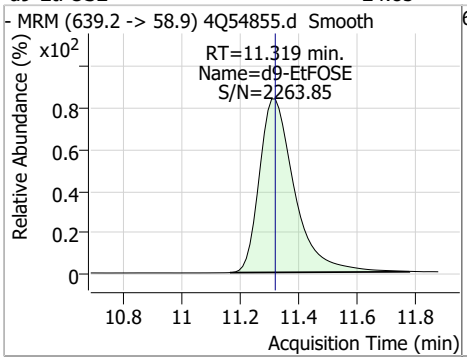
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.73	11.13	0.00	11060	511.9 -> 169.0	147.9	74.0	221.9

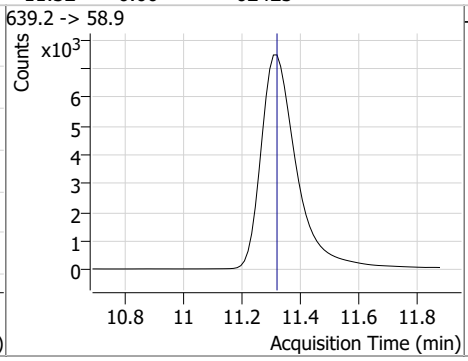


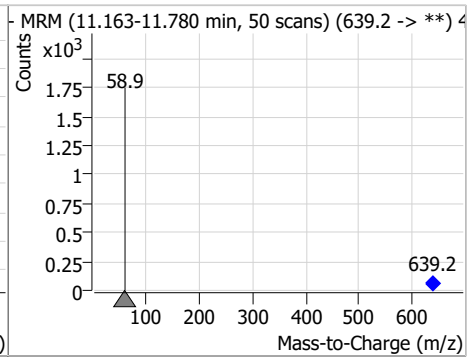




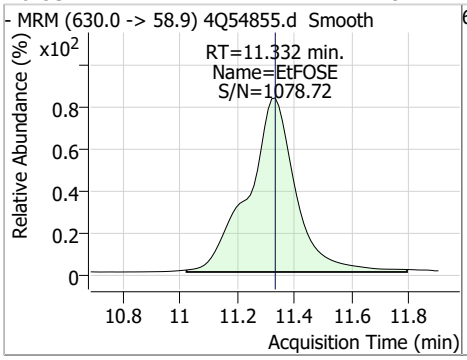
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.85	11.32	0.00	62425				

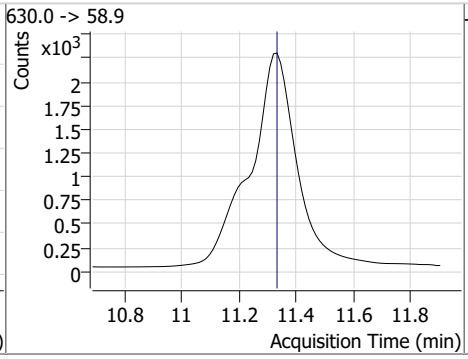


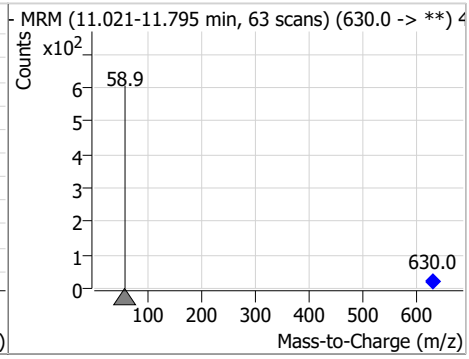




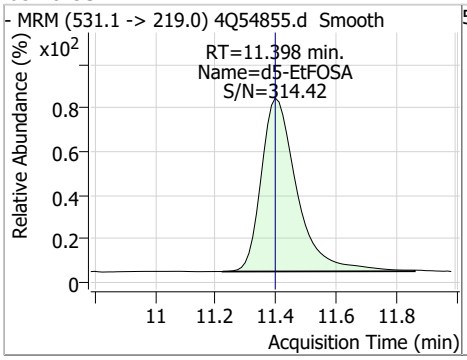
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.94	11.33	0.00	26385				

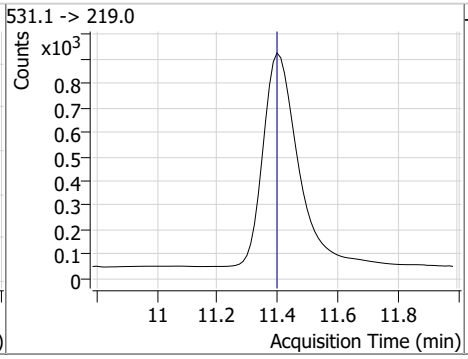


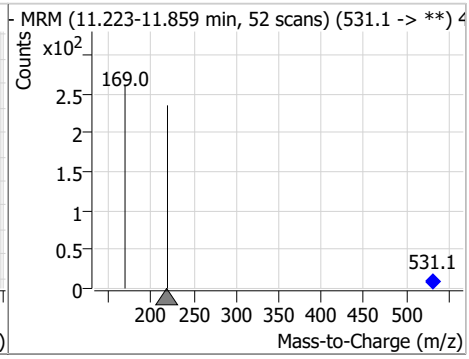




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.42	11.40	0.00	7194				

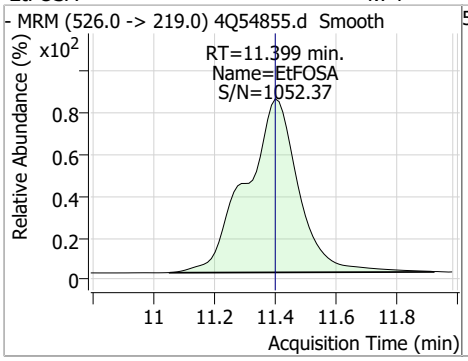


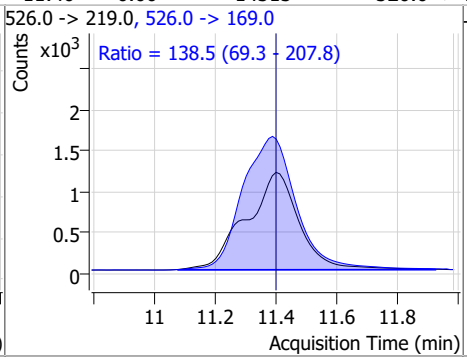


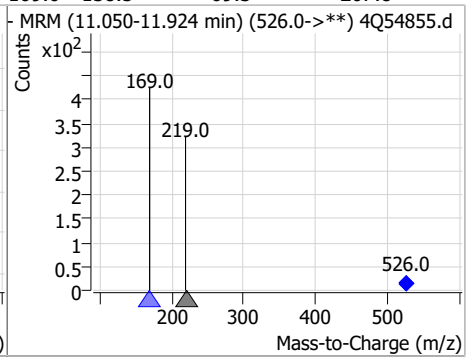


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	4.74	11.40	0.00	14515	526.0 -> 169.0	138.5	69.3	207.8







Manual Integration Approval Summary

Sample Number:	S4Q804-ICC804	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q54855.D	**Analyst approved:**	12/10/23 12:52 Anna Ludwig
Injection Time:	12/08/23 12:22	**Supervisor approved:**	12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54856.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 12:37:18 PM
Sample Name : ic804-5
Vial : P1-A6
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.699	216.8 -> 171.9	115726	10.00	µg/L	0.025
M5-PFPeA	4.175	268.3 -> 223.0	47986	5.00	µg/L	0.012
M5-PFHxA	5.347	318.0 -> 273.0	38296	2.50	µg/L	0.012
M4-PFHpA	6.292	367.1 -> 322.0	36844	2.50	µg/L	0.000
M8-PFOA	6.976	421.1 -> 376.0	59183	2.50	µg/L	0.000
M9-PFNA	7.521	472.1 -> 427.0	23873	1.25	µg/L	0.000
M6-PFDA	8.004	519.1 -> 474.1	15881	1.25	µg/L	0.000
M7-PFUnDA	8.448	570.0 -> 525.1	18876	1.25	µg/L	0.000
M2-PFDoDA	8.880	615.1 -> 570.0	21448	1.25	µg/L	0.000
M2-PFTeDA	9.649	715.2 -> 670.0	22005	1.25	µg/L	0.012
M8-FOSA	9.794	506.1 -> 77.8	12630	2.50	µg/L	0.000
M3-PFBS	5.202	302.1 -> 79.9	10776	2.50	µg/L	0.013
M3-PFHxS	7.042	402.1 -> 79.9	8597	2.50	µg/L	0.012
M8-PFOS	8.130	507.1 -> 79.9	9441	2.50	µg/L	0.012
M2-4:2FTS	5.046	329.1 -> 80.9	1273	5.00	µg/L	0.000
M2-6:2FTS	6.761	429.1 -> 80.9	2987	5.00	µg/L	0.012
M2-8:2FTS	7.804	529.1 -> 80.9	3770	5.00	µg/L	0.000
M3-MeFOSAA	8.086	573.2 -> 419.0	21416	5.00	µg/L	0.000
M3-HFPO-DA	5.689	286.9 -> 168.9	38099	10.00	µg/L	0.000
M5-EtFOSAA	8.283	589.2 -> 419.0	18419	5.00	µg/L	0.000
M7-MeFOSE	11.022	623.2 -> 58.9	65137	25.00	µg/L	0.000
M9-EtFOSE	11.319	639.2 -> 58.9	73150	25.00	µg/L	0.000
M5-EtFOSA	11.398	531.1 -> 219.0	8372	2.50	µg/L	0.000
M3-MeFOSA	11.126	515.0 -> 219.0	7137	2.50	µg/L	0.000
13C4-PFOS	8.118	502.8 -> 79.9	8365	2.50	µg/L	0.000
13C3-PFBA	2.703	216.0 -> 172.0	54543	5.00	µg/L	0.025
18O2-PFHxS	7.041	403.0 -> 83.9	5470	2.50	µg/L	0.000
13C4-PFOA	6.977	417.1 -> 372.0	64086	2.50	µg/L	0.000
13C2-PFDA	8.004	515.1 -> 470.1	17777	1.25	µg/L	0.000
13C5-PFNA	7.522	468.0 -> 423.0	22949	1.25	µg/L	0.012
13C2-PFHxA	5.348	315.1 -> 270.0	40737	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.046	329.1 -> 80.9	1273	4.90	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C2-6:2FTS	6.761	429.1 -> 80.9	2987	5.30	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-8:2FTS	7.804	529.1 -> 80.9	3770	5.00	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C2-PFDoDA	8.880	615.1 -> 570.0	21448	1.21	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C2-PFTeDA	9.649	715.2 -> 670.0	22005	1.25	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C3-PFBS	5.202	302.1 -> 79.9	10776	2.57	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C3-PFHxS	7.042	402.1 -> 79.9	8597	2.51	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFBA	2.699	216.8 -> 171.9	115726	10.10 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C4-PFHpA	6.292	367.1 -> 322.0	36844	2.57 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C5-PFHxA	5.347	318.0 -> 273.0	38296	2.55 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFPeA	4.175	268.3 -> 223.0	47986	5.13 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C6-PFDA	8.004	519.1 -> 474.1	15881	1.23 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C7-PFUnDA	8.448	570.0 -> 525.1	18876	1.24 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-FOSA	9.794	506.1 -> 77.8	12630	2.33 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C8-PFOA	6.976	421.1 -> 376.0	59183	2.50 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C8-PFOS	8.130	507.1 -> 79.9	9441	2.23 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 89.2%	
13C9-PFNA	7.521	472.1 -> 427.0	23873	1.30 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.9%	
d3-MeFOSAA	8.086	573.2 -> 419.0	21416	4.61 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C3-HFPO-DA	5.689	286.9 -> 168.9	38099	10.16 µg/L	0.000
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
d3-MeFOSA	11.126	515.0 -> 219.0	7137	2.21 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.3%	
d5-EtFOSAA	8.283	589.2 -> 419.0	18419	4.69 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.8%	
d7-MeFOSE	11.022	623.2 -> 58.9	65137	24.35 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d9-EtFOSE	11.319	639.2 -> 58.9	73150	24.42 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
d5-EtFOSA	11.398	531.1 -> 219.0	8372	2.36 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.4%	
Target Compounds					**QValue**
4:2FTS	5.059	327.1 -> 307.0	43767	19.96 µg/L	100
		327.1 -> 80.9	18556		
6:2FTS	6.761	427.1 -> 407.0	60624	19.31 µg/L	99
		427.1 -> 80.9	21764		
8:2FTS	7.804	527.1 -> 507.0	43403	21.84 µg/L	96
		527.1 -> 80.8	16556		
EtFOSAA	8.297	584.2 -> 419.1	16233	4.83 µg/L	84
		584.2 -> 526.0	6652		
FOSA	9.798	498.1 -> 77.9	28011	4.93 µg/L	99
		498.1 -> 478.0	862		
MeFOSAA	8.087	570.1 -> 419.0	17325	5.64 µg/L	95
		570.1 -> 483.0	3214		
PFBA	2.707	212.8 -> 168.9	75189	20.29 µg/L	100
PFBS	5.203	298.7 -> 79.9	14321	4.28 µg/L	96
		298.7 -> 98.8	5421		
PFDA	8.005	512.9 -> 469.0	58938	5.05 µg/L	99
		512.9 -> 219.0	12040		
PFDoDA	8.880	613.1 -> 569.0	81092	5.25 µg/L	98
		613.1 -> 319.0	14458		
PFDS	9.020	599.0 -> 79.9	12720	5.06 µg/L	95

Perfluorinated Compounds by LC/MS/MS

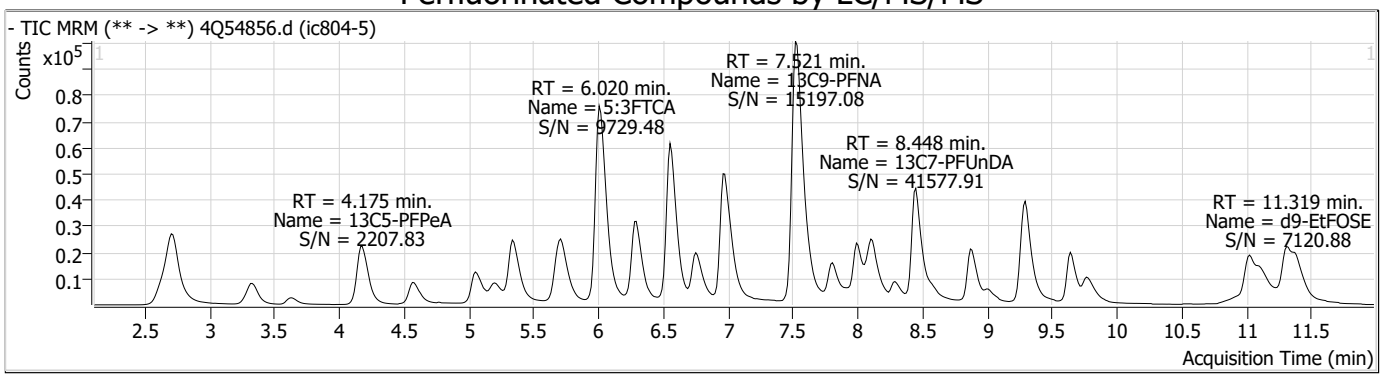
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	6206				
PFHpA	6.293	363.1 -> 319.0	106074	5.11	µg/L		99
		363.1 -> 169.0	19185				
PFHpS	7.624	449.0 -> 79.9	19003	5.07	µg/L		97
		449.0 -> 98.9	9558				
PFHxA	5.350	313.0 -> 269.0	60669	4.96	µg/L		99
		313.0 -> 118.9	1879				
PFHxS	7.043	398.7 -> 79.9	12975	4.68	µg/L	m	93
		398.7 -> 98.9	6777				
PFNA	7.522	463.0 -> 419.0	67735	4.83	µg/L		99
		463.0 -> 219.0	15992				
PFNS	8.586	548.8 -> 79.9	9182	5.70	µg/L		97
		548.8 -> 98.9	4702				
PFOA	6.978	413.0 -> 369.0	123853	5.09	µg/L		96
		413.0 -> 169.0	25527				
PFOS	8.119	498.9 -> 79.9	17969	4.57	µg/L	m	56
		498.9 -> 98.8	8931				
PFPeA	4.177	263.0 -> 219.0	95420	10.11	µg/L		100
PFPeS	6.282	349.1 -> 79.9	12775	4.89	µg/L		96
		349.1 -> 98.9	5704				
PFTeDA	9.650	713.1 -> 669.0	78056	5.10	µg/L		100
		713.1 -> 168.9	8142				
PFTrDA	9.279	663.0 -> 619.0	89935	5.36	µg/L		98
		663.0 -> 168.9	12659				
PFUnDA	8.449	563.1 -> 519.0	73145	5.33	µg/L		100
		563.1 -> 269.1	15643				
11Cl-PF3OUdS	9.306	630.9 -> 450.9	103918	9.91	µg/L		99
		632.9 -> 452.9	31700				
9Cl-PF3ONS	8.451	530.8 -> 351.0	106727	10.07	µg/L		99
		532.8 -> 353.0	31589				
ADONA	6.568	376.9 -> 250.9	276896	10.76	µg/L		100
		376.9 -> 84.8	66459				
HFPO-DA	5.703	284.9 -> 168.9	37346	10.24	µg/L		100
		284.9 -> 184.9	3523				
3:3FTCA	3.630	241.0 -> 177.0	14438	24.50	µg/L		100
		241.0 -> 117.0	1281				
5:3FTCA	6.020	341.0 -> 237.1	278851	127.94	µg/L		99
		341.0 -> 217.0	196397				
7:3FTCA	7.536	441.0 -> 316.9	147863	129.37	µg/L		99
		441.0 -> 336.9	349156				
EtFOSA	11.399	526.0 -> 219.0	34857	9.78	µg/L		99
		526.0 -> 169.0	47749				
EtFOSE	11.332	630.0 -> 58.9	63268	24.44	µg/L		100
MeFOSA	11.128	511.9 -> 219.0	27417	10.79	µg/L	m	96
		511.9 -> 169.0	39213				
MeFOSE	11.035	616.1 -> 58.9	62759	24.28	µg/L		100
PFDoDS	9.777	699.1 -> 79.9	9723	5.07	µg/L		97
		699.1 -> 98.8	5323				
NFDHA	5.229	295.0 -> 201.0	8221	9.50	µg/L		96
		295.0 -> 84.9	2314				
PFMBA	4.578	279.0 -> 85.1	52322	10.06	µg/L		100
PFMPA	3.332	229.0 -> 84.9	57711	10.10	µg/L		100
PFEESA	5.722	314.8 -> 134.9	83341	9.23	µg/L		98
		314.8 -> 82.9	2820				

 # = Qualifier out of range, m = manually integrated, + = Area summed

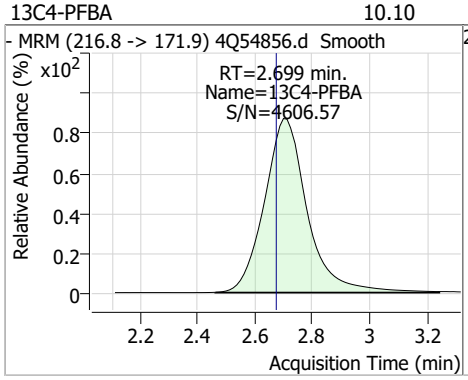
Perfluorinated Compounds by LC/MS/MS

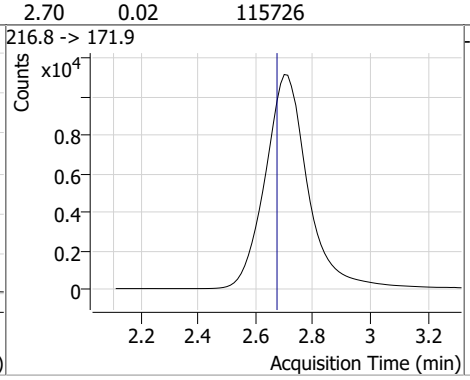
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

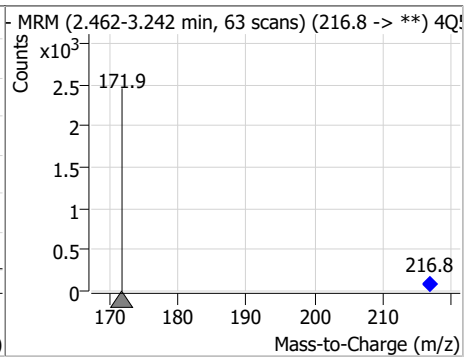
Perfluorinated Compounds by LC/MS/MS



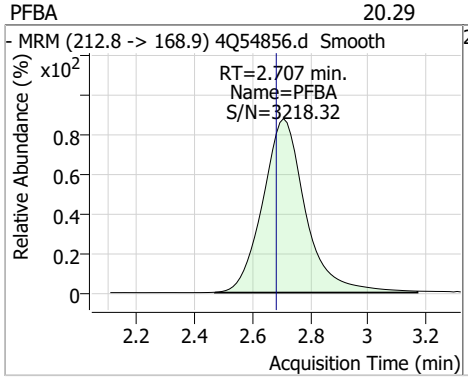
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.10	2.70	0.02	115726				

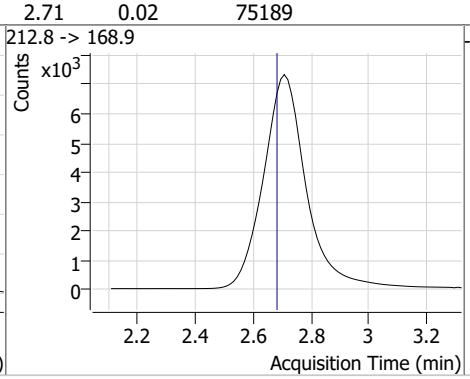


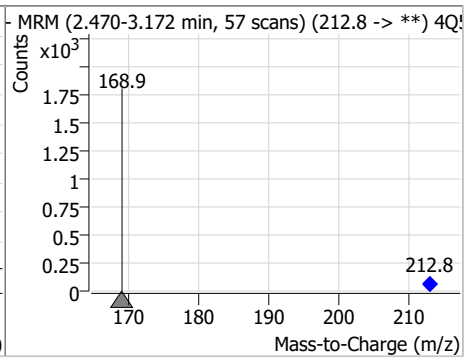




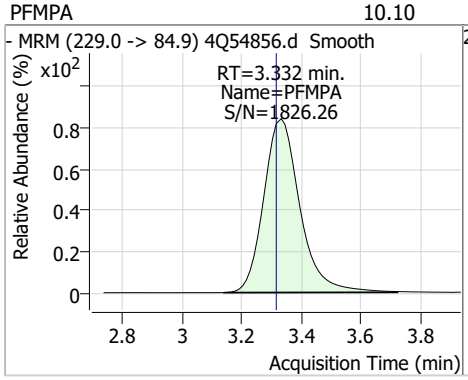
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.29	2.71	0.02	75189				

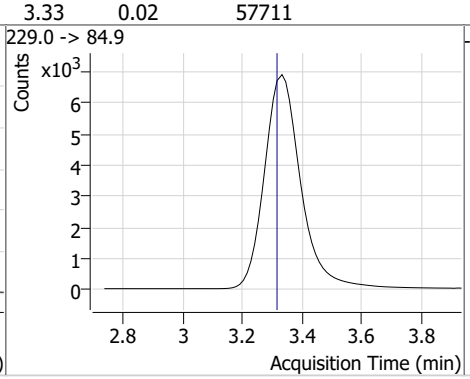


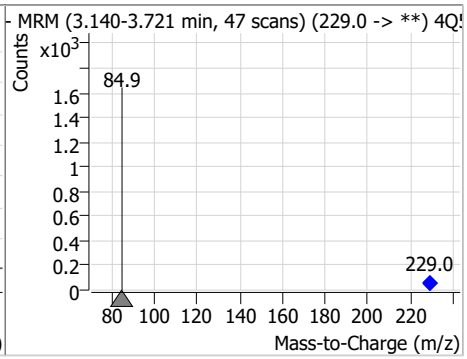




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	10.10	3.33	0.02	57711				

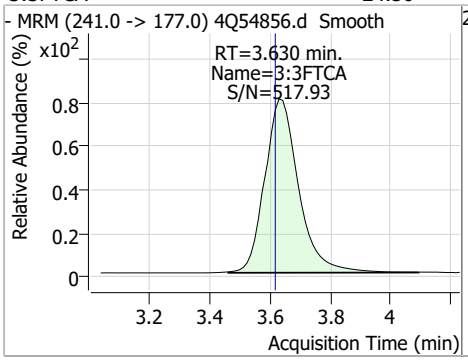


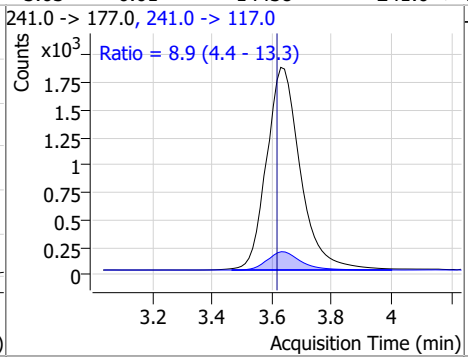


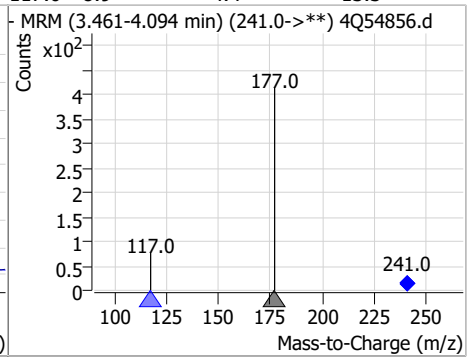


Perfluorinated Compounds by LC/MS/MS

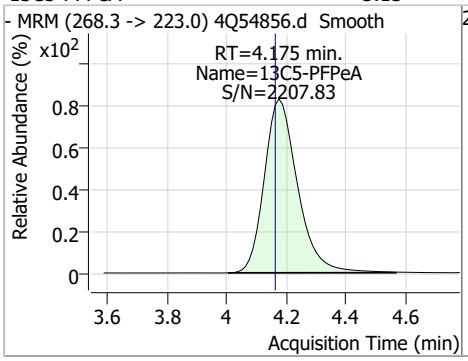
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	24.50	3.63	0.01	14438	241.0 -> 117.0	8.9	4.4	13.3

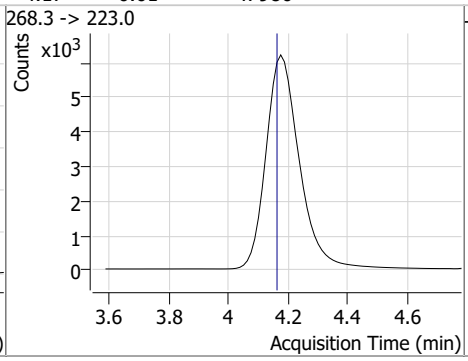


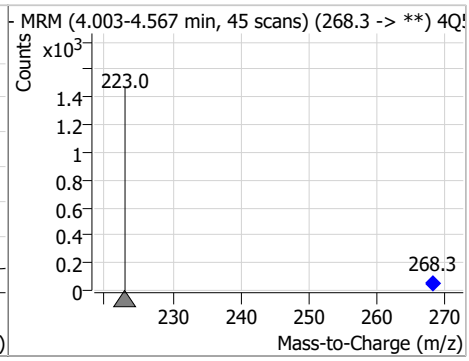




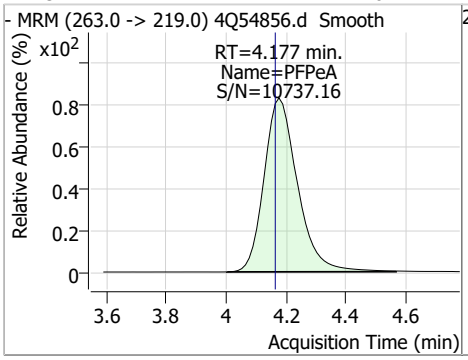
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.13	4.17	0.01	47986				

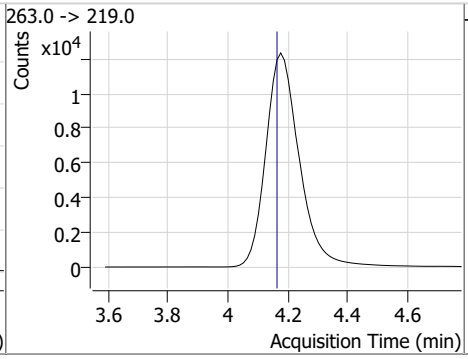


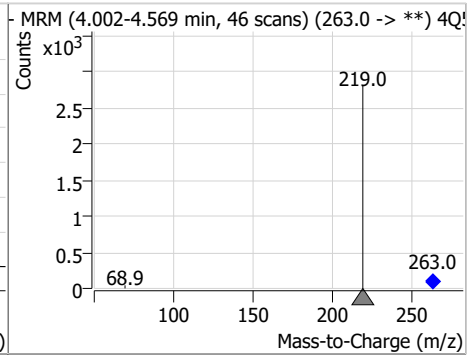




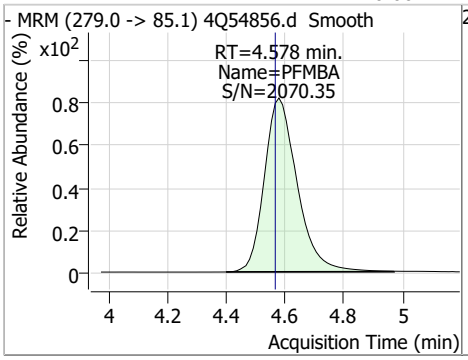
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.11	4.18	0.01	95420				

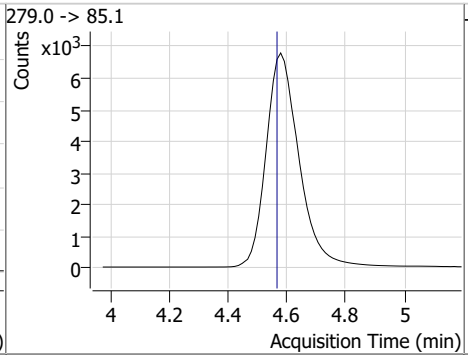


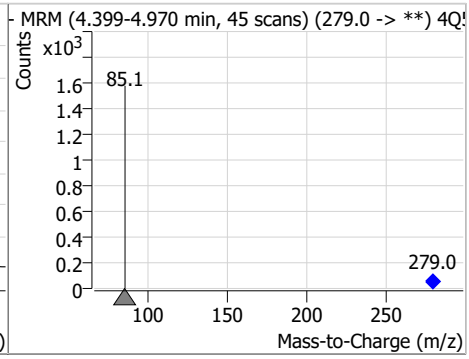




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	10.06	4.58	0.01	52322				

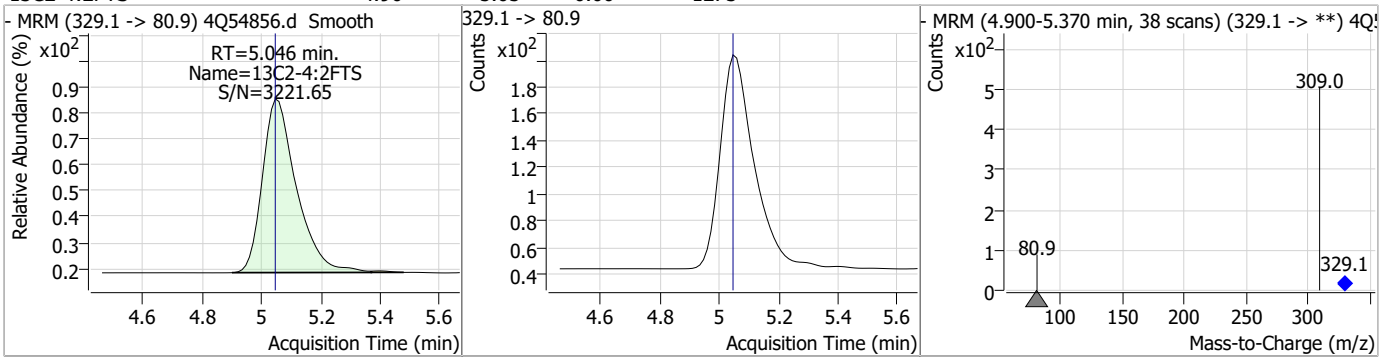




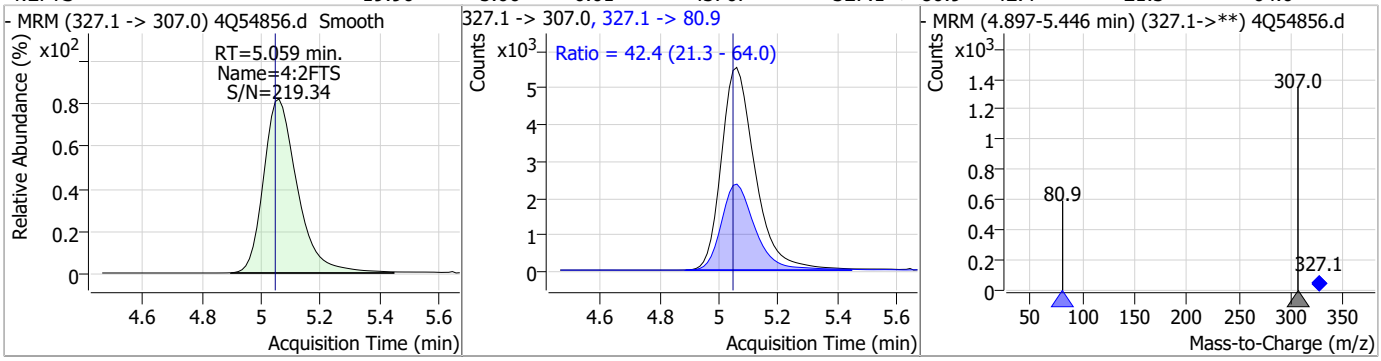


Perfluorinated Compounds by LC/MS/MS

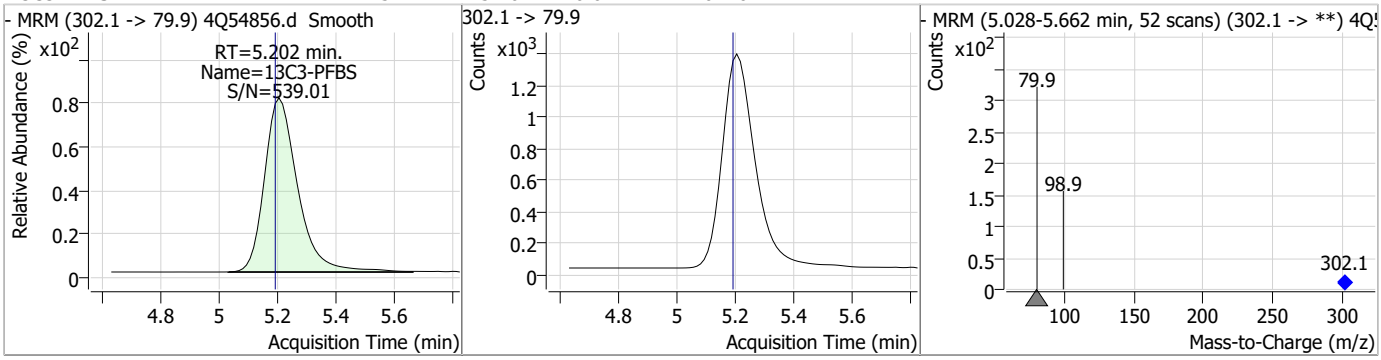
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.90	5.05	0.00	1273				



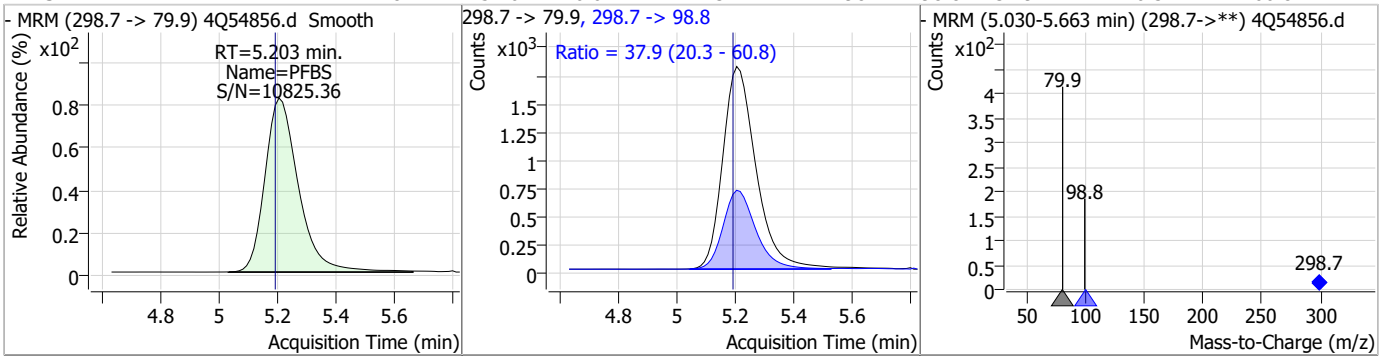
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.96	5.06	0.01	43767	327.1 -> 80.9	42.4	21.3	64.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.57	5.20	0.01	10776				

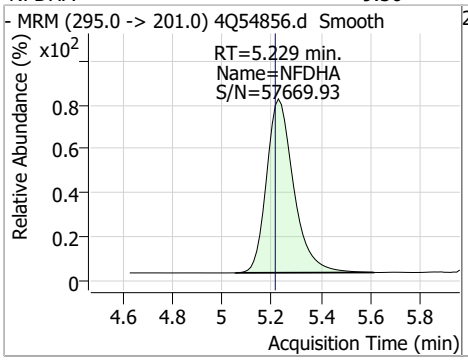


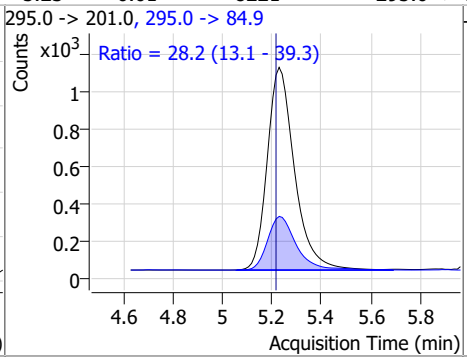
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.28	5.20	0.01	14321	298.7 -> 98.8	37.9	20.3	60.8

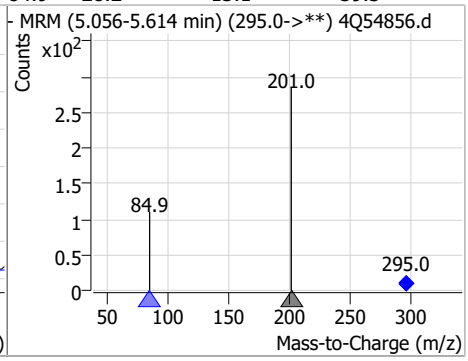


Perfluorinated Compounds by LC/MS/MS

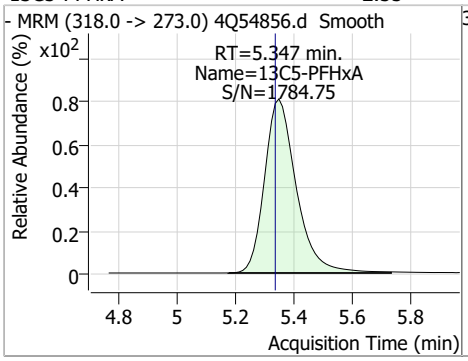
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	9.50	5.23	0.01	8221	295.0 -> 84.9	28.2	13.1	39.3

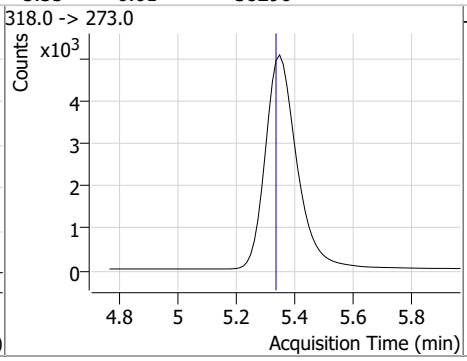


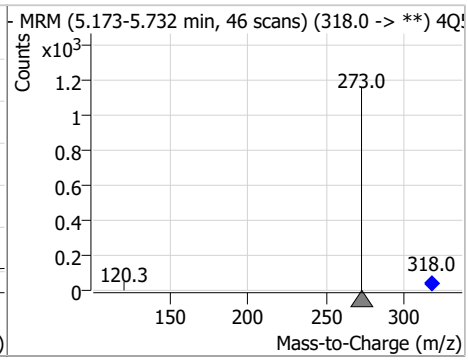




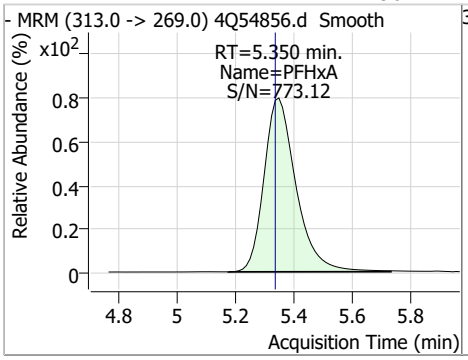
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.55	5.35	0.01	38296				

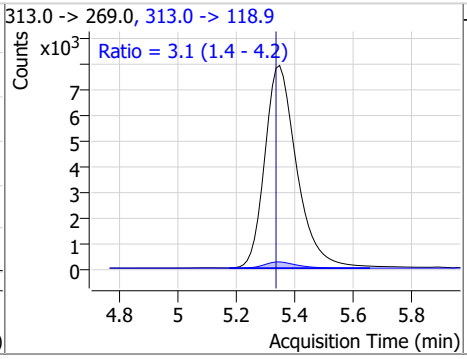


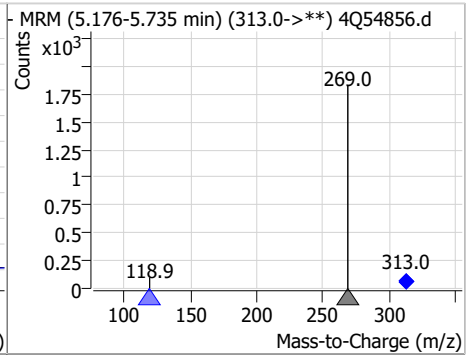




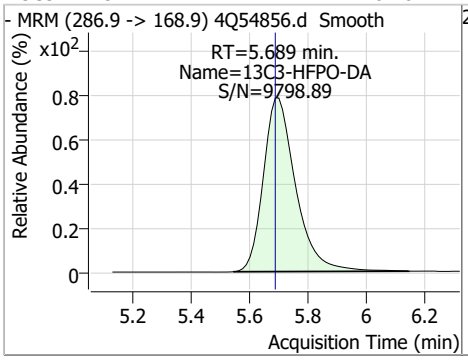
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.96	5.35	0.01	60669	313.0 -> 118.9	3.1	1.4	4.2

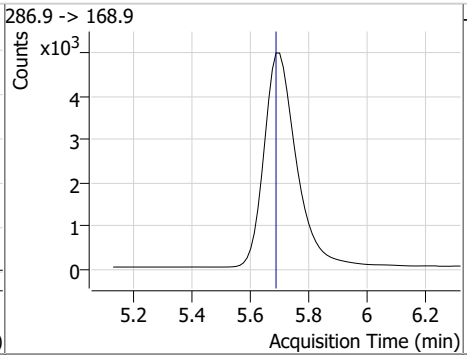


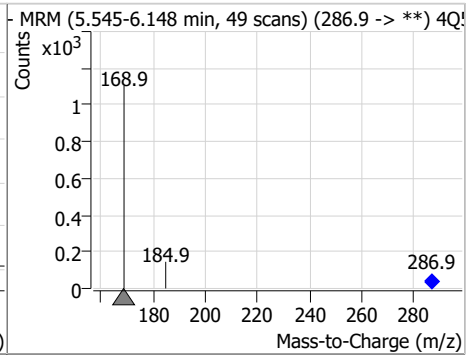




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.16	5.69	0.00	38099				

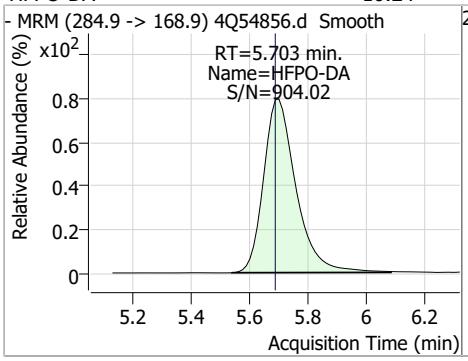


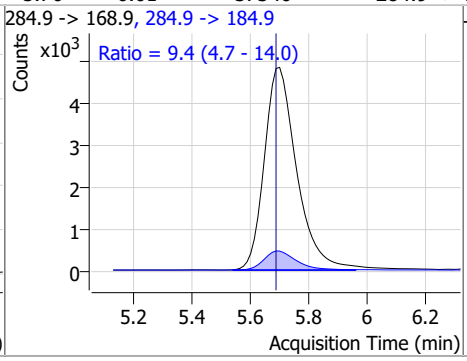


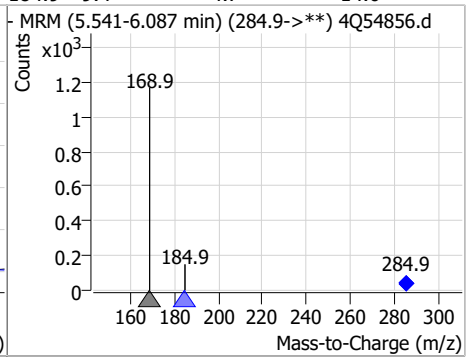


Perfluorinated Compounds by LC/MS/MS

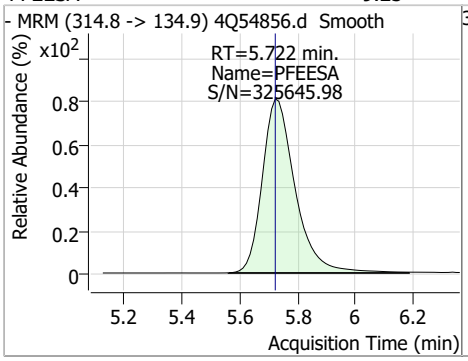
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.24	5.70	0.01	37346	284.9 -> 184.9	9.4	4.7	14.0

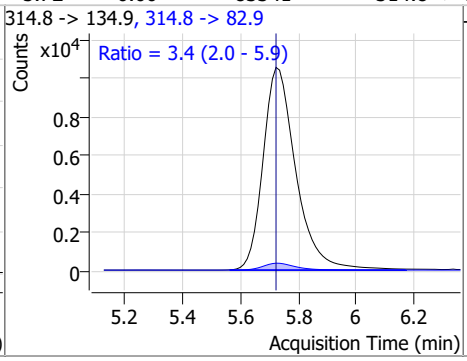


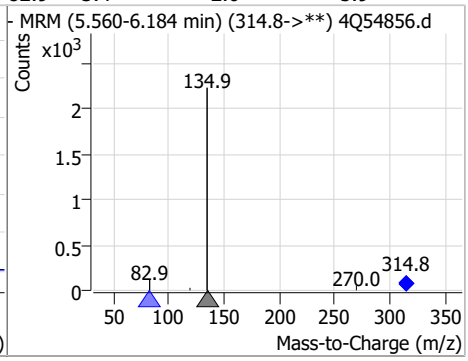




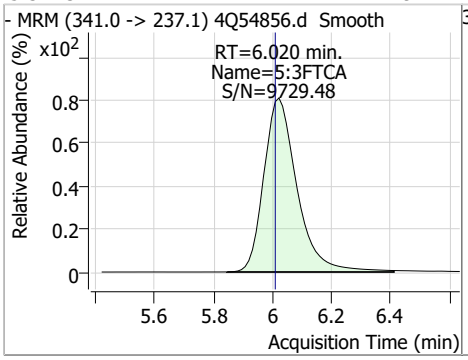
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	9.23	5.72	0.00	83341	314.8 -> 82.9	3.4	2.0	5.9

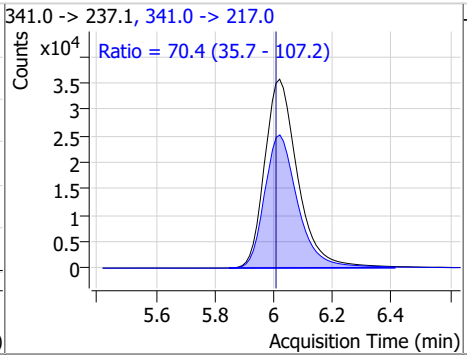


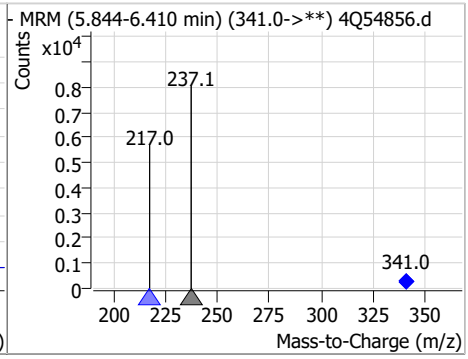




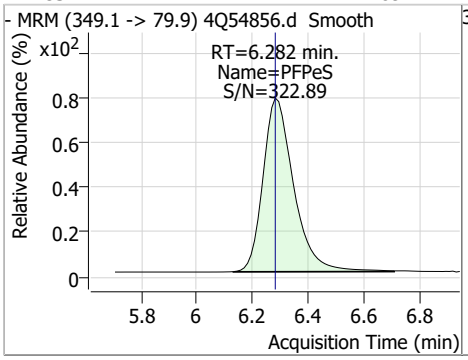
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	127.94	6.02	0.01	278851	341.0 -> 217.0	70.4	35.7	107.2

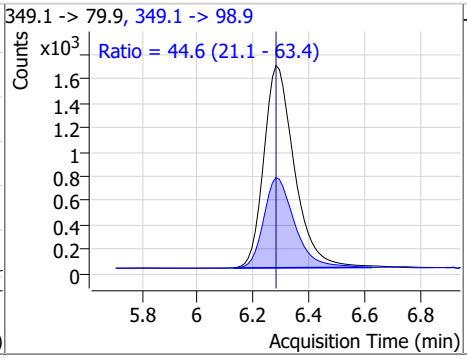


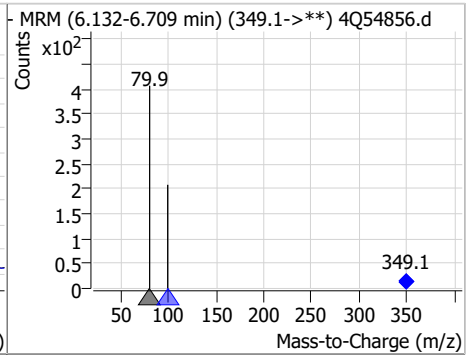




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.89	6.28	0.00	12775	349.1 -> 98.9	44.6	21.1	63.4

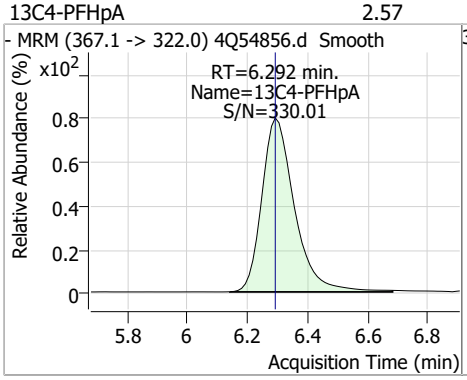


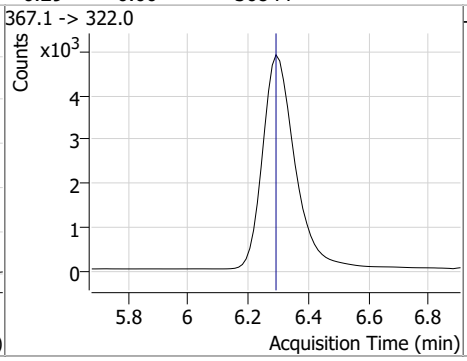


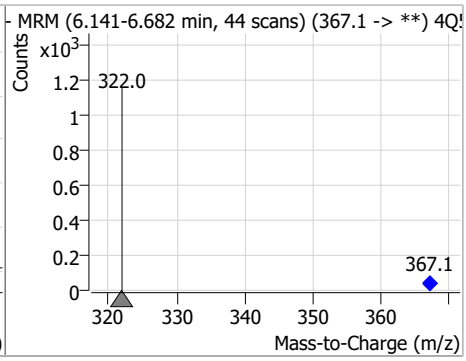


Perfluorinated Compounds by LC/MS/MS

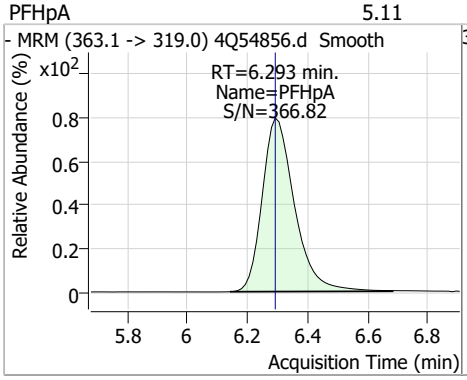
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.57	6.29	0.00	36844				

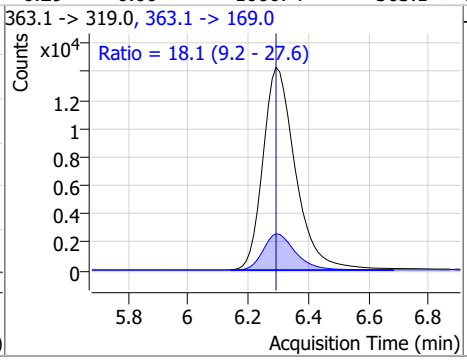


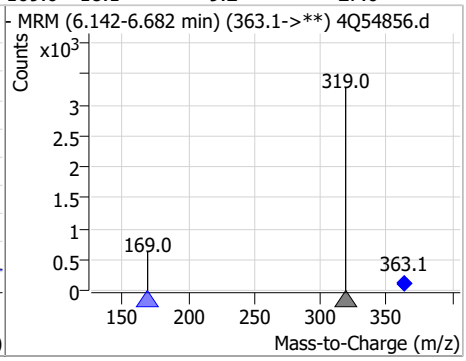




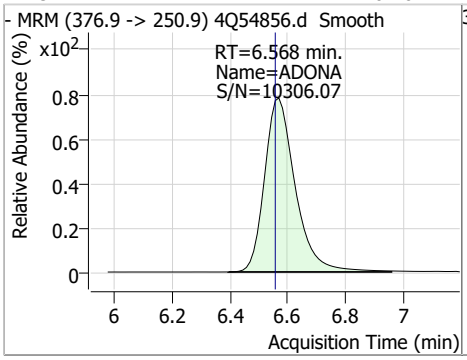
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	5.11	6.29	0.00	106074	363.1 -> 169.0	18.1	9.2	27.6

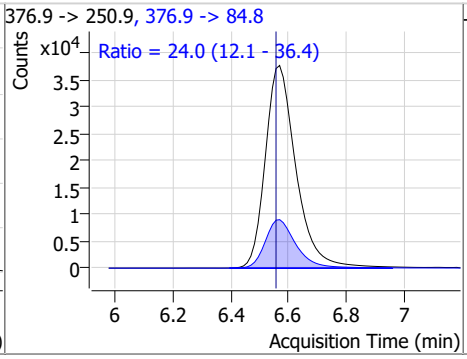


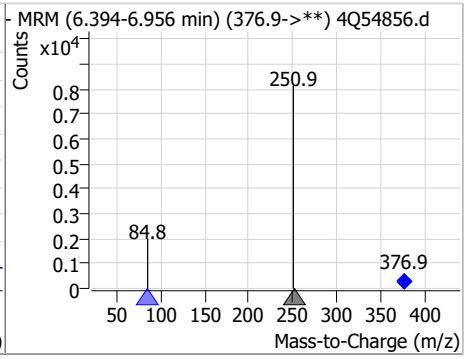




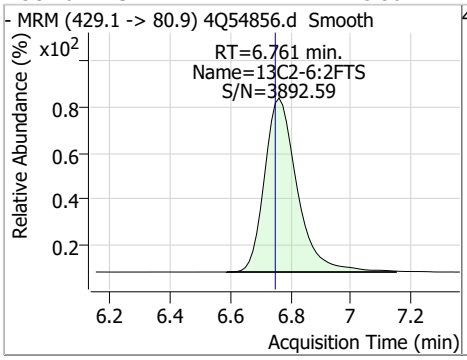
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	10.76	6.57	0.01	276896	376.9 -> 84.8	24.0	12.1	36.4

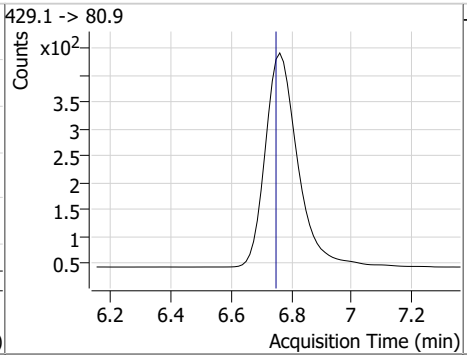


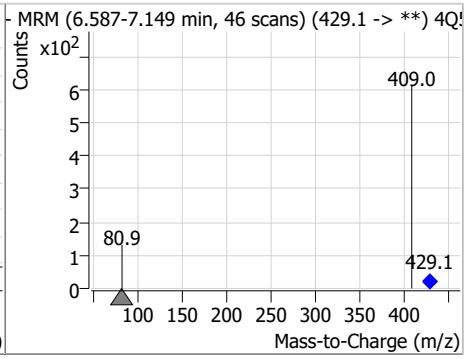




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.30	6.76	0.01	2987				

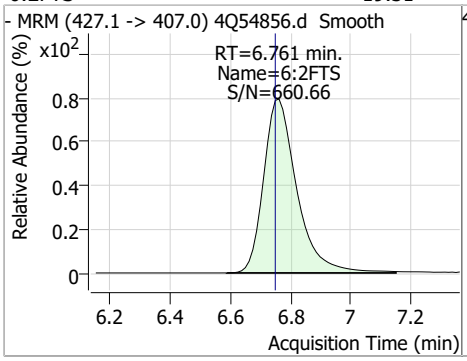


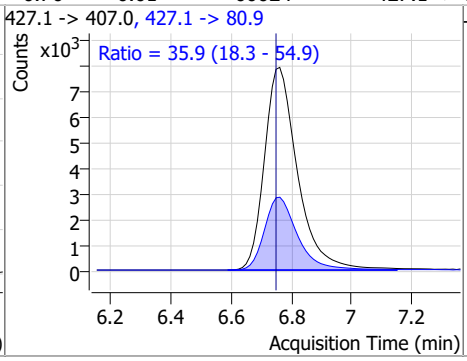


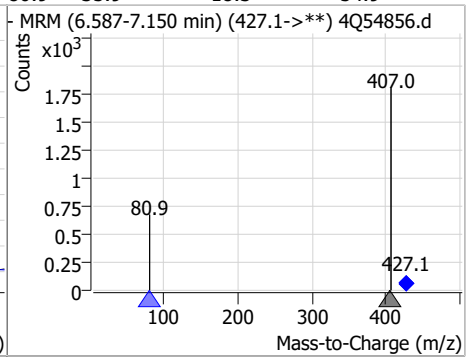


Perfluorinated Compounds by LC/MS/MS

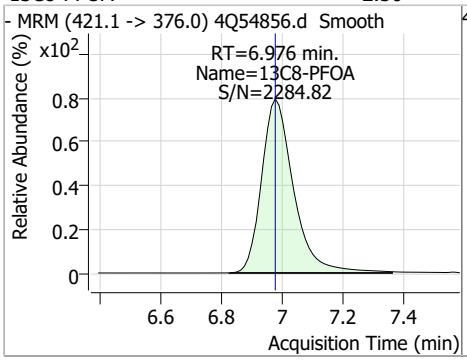
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.31	6.76	0.01	60624	427.1 -> 80.9	35.9	18.3	54.9

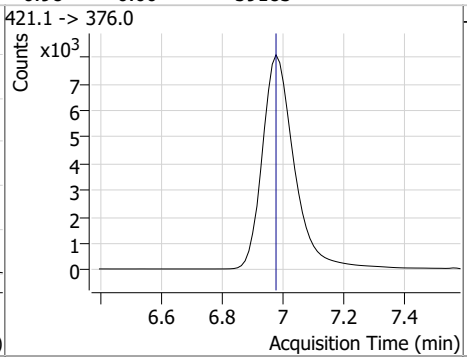


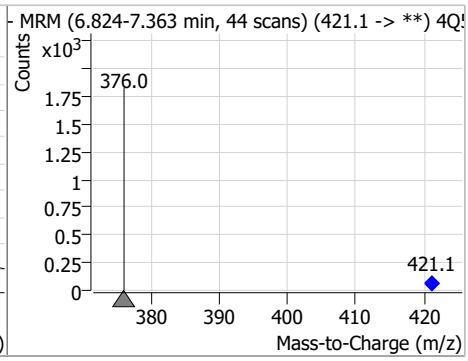




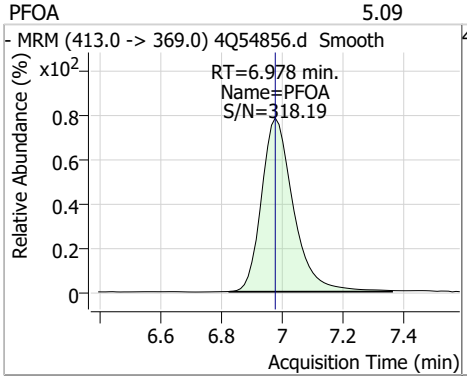
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.50	6.98	0.00	59183				

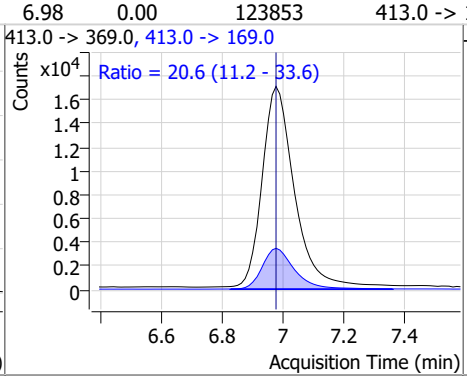


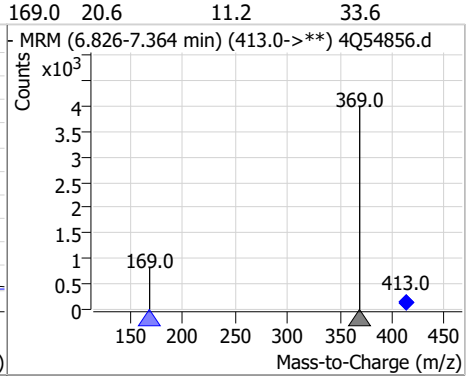




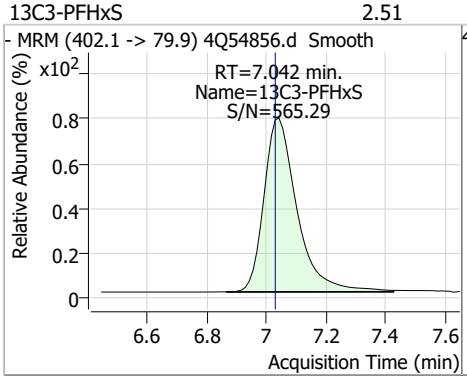
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.09	6.98	0.00	123853	413.0 -> 169.0	20.6	11.2	33.6

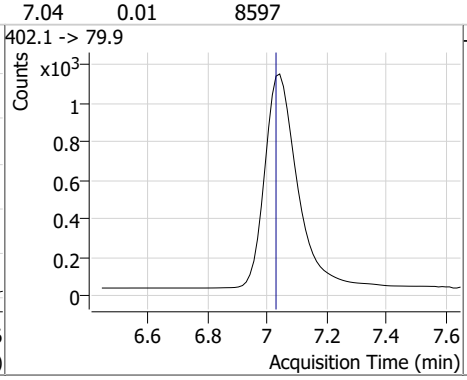


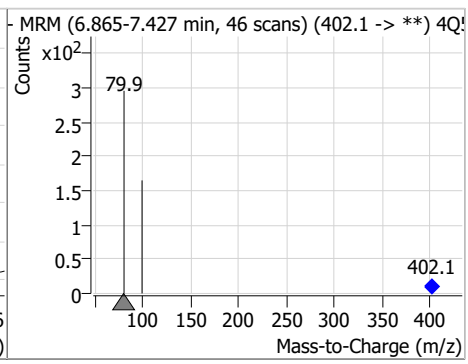




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.51	7.04	0.01	8597				

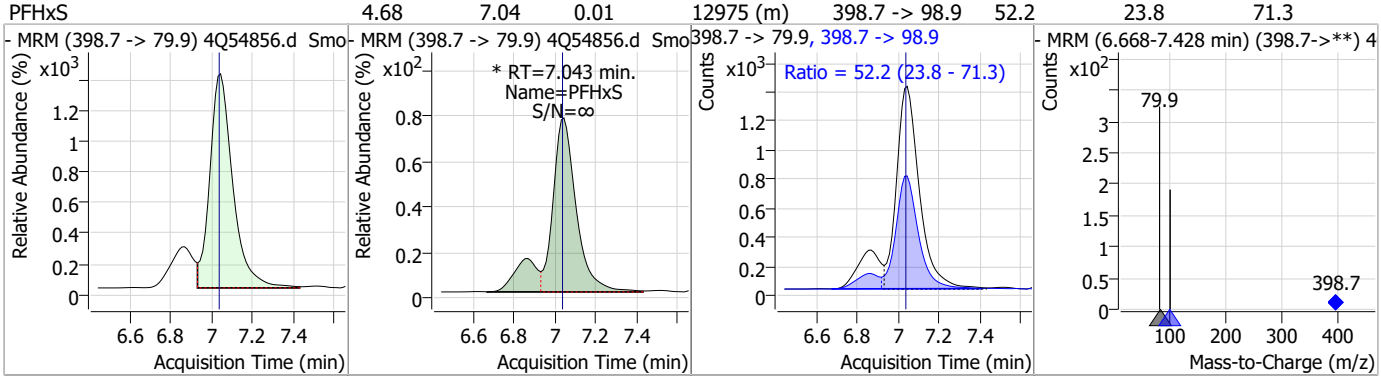




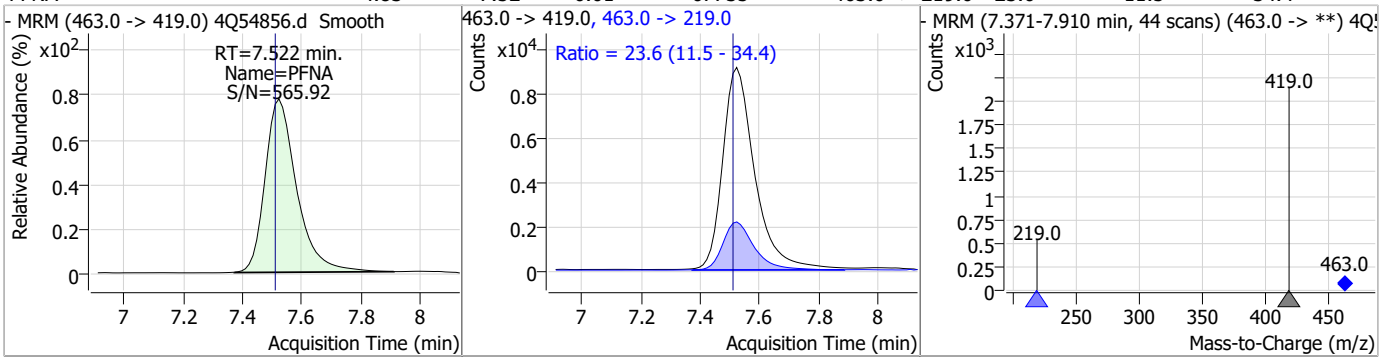


Perfluorinated Compounds by LC/MS/MS

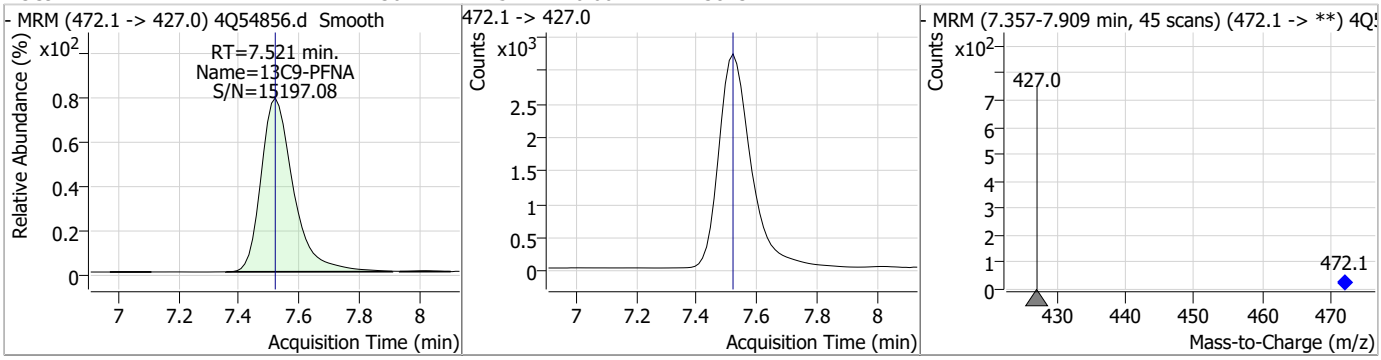
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.68	7.04	0.01	12975 (m)	398.7 -> 98.9	52.2	23.8	71.3



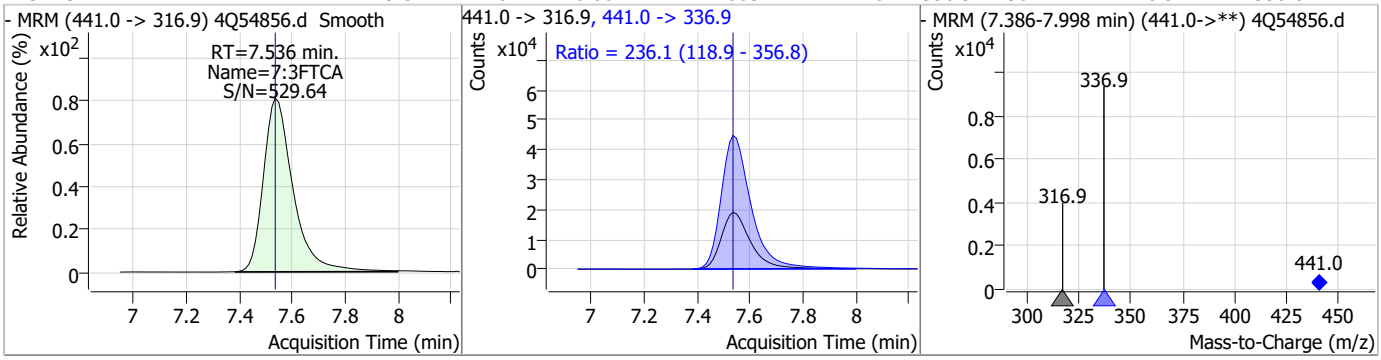
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.83	7.52	0.01	67735	463.0 -> 219.0	23.6	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.30	7.52	0.00	23873				

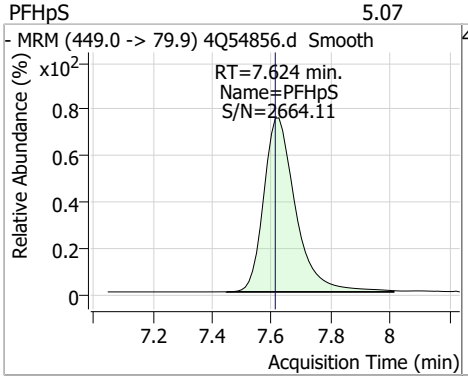


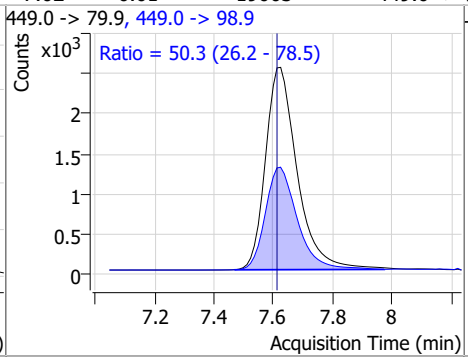
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	129.37	7.54	0.00	147863	441.0 -> 336.9	236.1	118.9	356.8

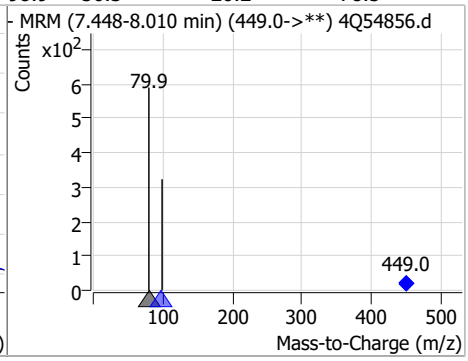


Perfluorinated Compounds by LC/MS/MS

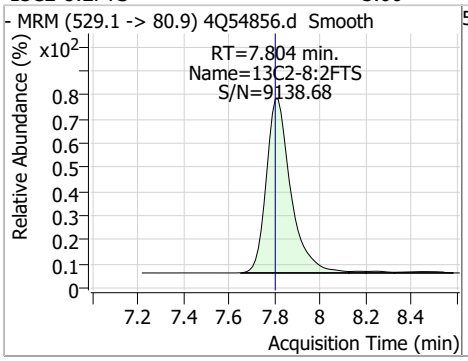
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.07	7.62	0.01	19003	449.0 -> 98.9	50.3	26.2	78.5

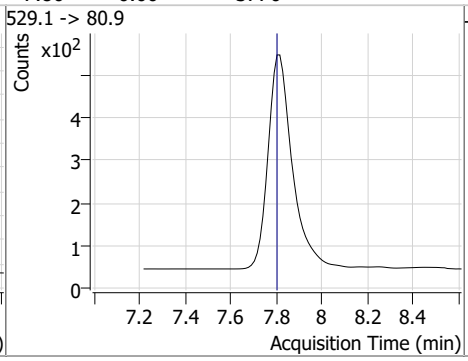


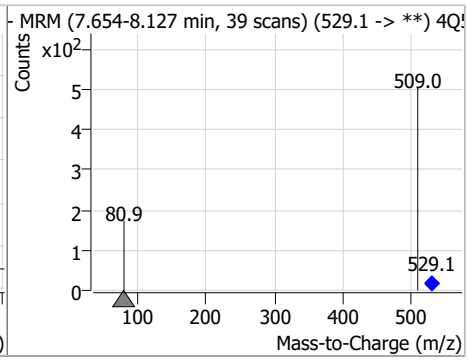




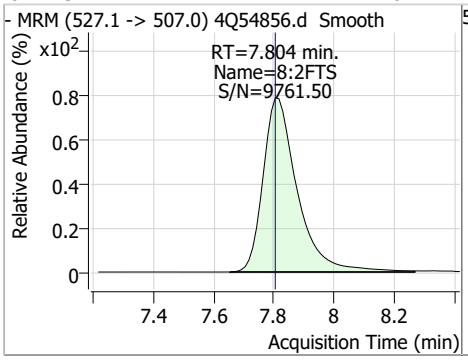
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.00	7.80	0.00	3770				

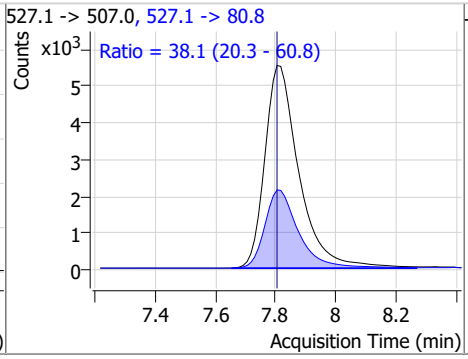


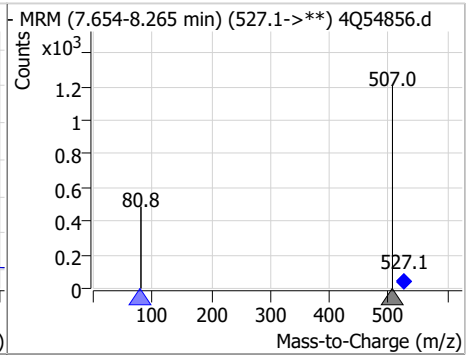




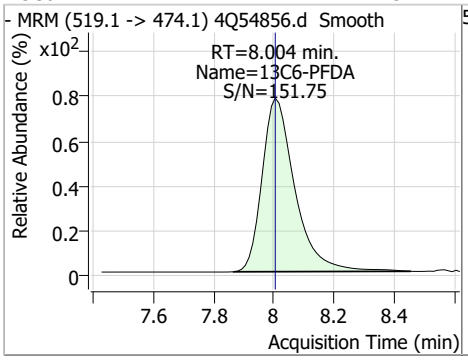
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.84	7.80	0.00	43403	527.1 -> 80.8	38.1	20.3	60.8

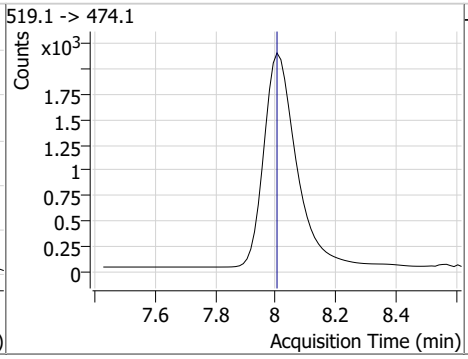


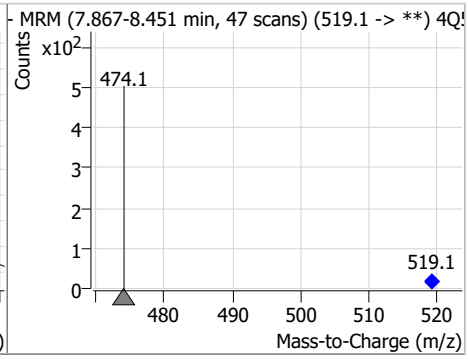




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.23	8.00	0.00	15881				

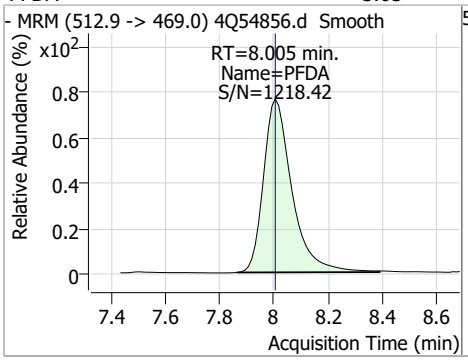


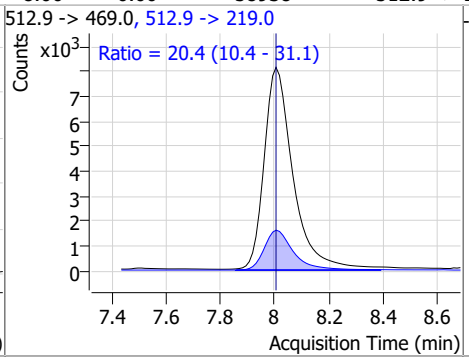


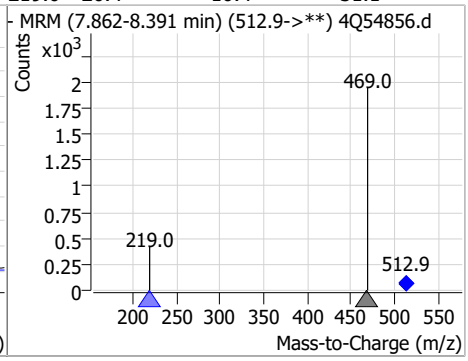


Perfluorinated Compounds by LC/MS/MS

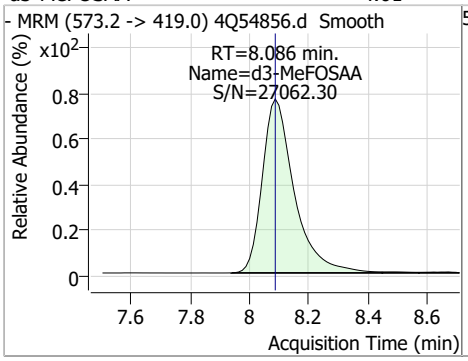
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	5.05	8.00	0.00	58938	512.9 -> 219.0	20.4	10.4	31.1

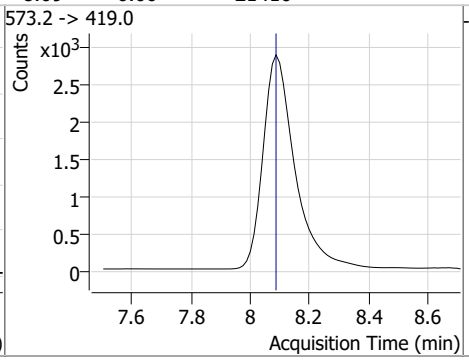


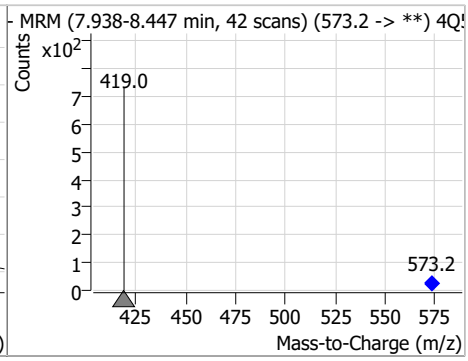




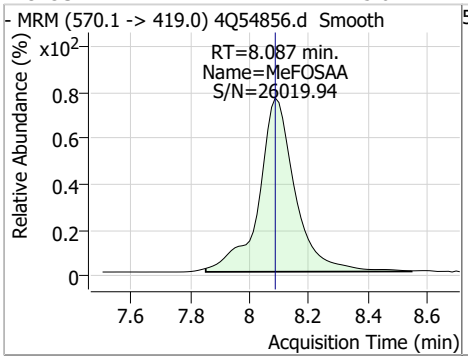
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.61	8.09	0.00	21416				

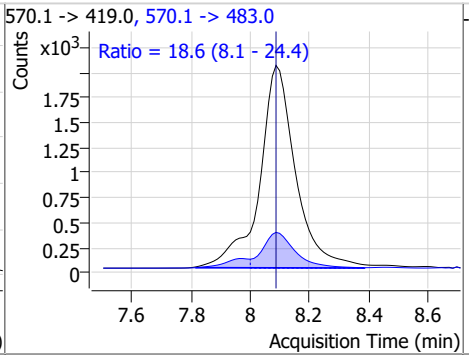


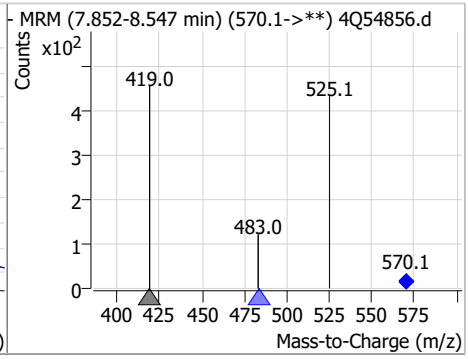




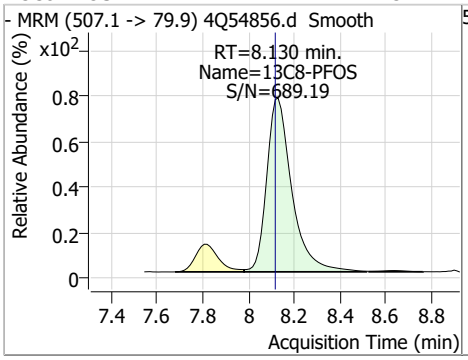
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.64	8.09	0.00	17325	570.1 -> 483.0	18.6	8.1	24.4

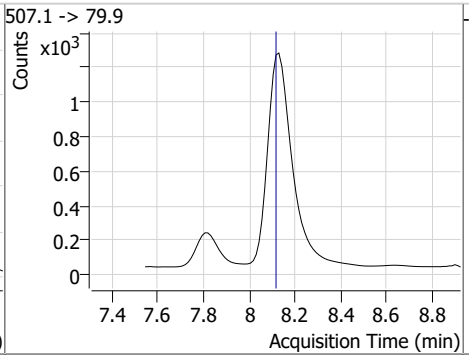


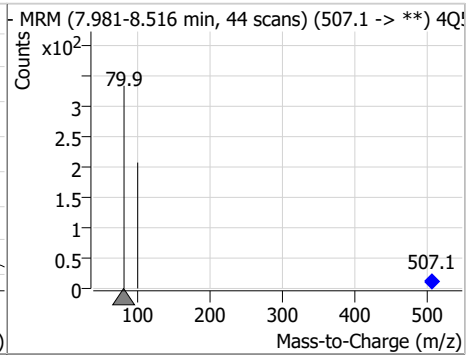




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.23	8.13	0.01	9441				

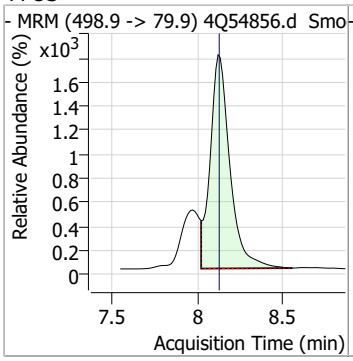


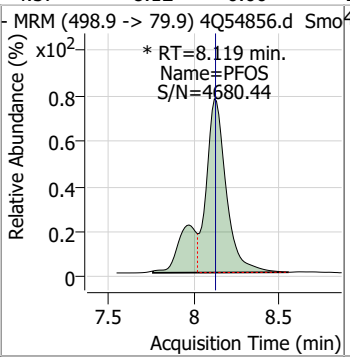


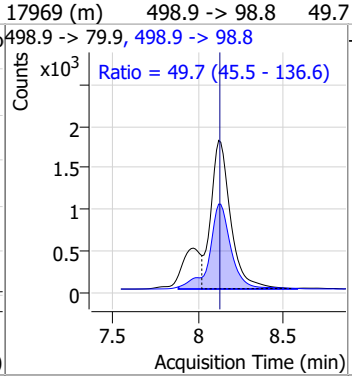


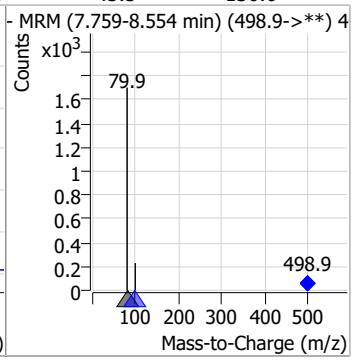
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.57	8.12	0.00	17969 (m)	498.9 -> 98.8	49.7	45.5	136.6

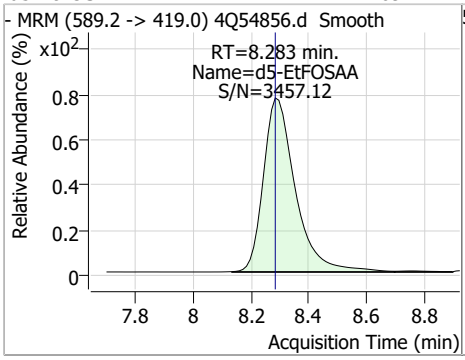


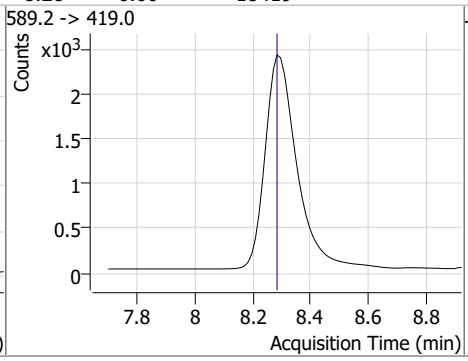


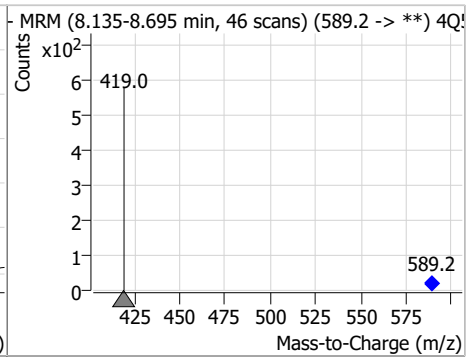




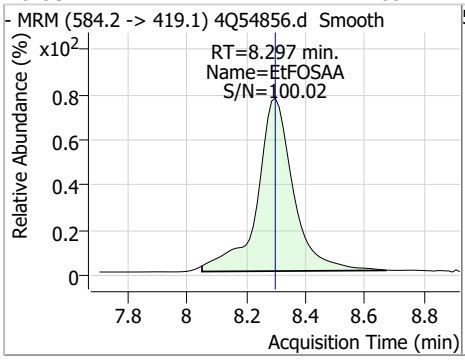
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.69	8.28	0.00	18419				

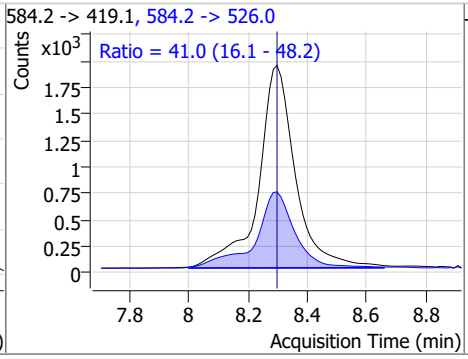


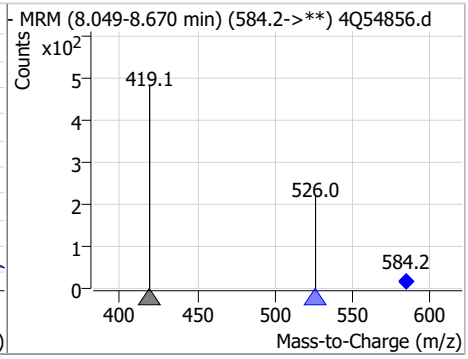




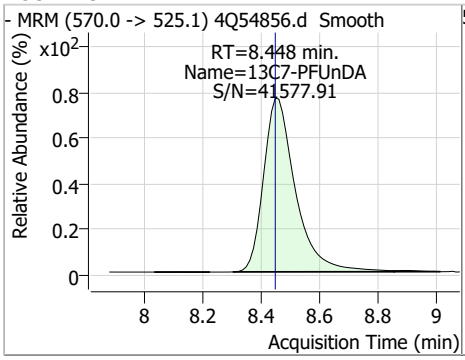
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.83	8.30	0.00	16233	584.2 -> 526.0	41.0	16.1	48.2

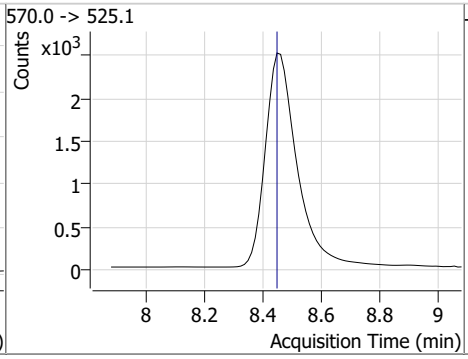


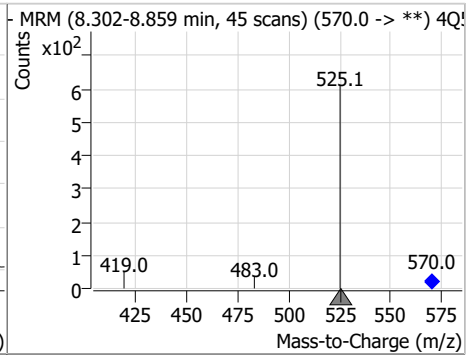




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.24	8.45	0.00	18876				

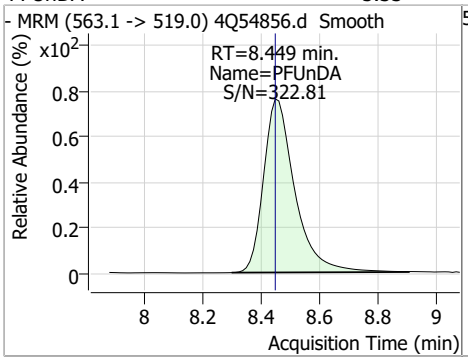


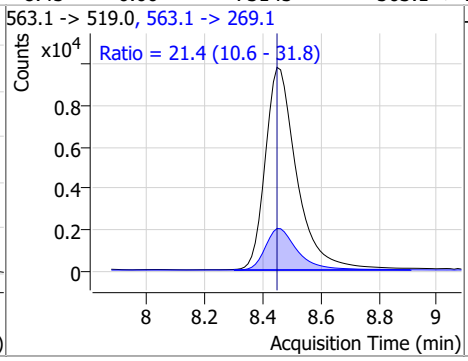


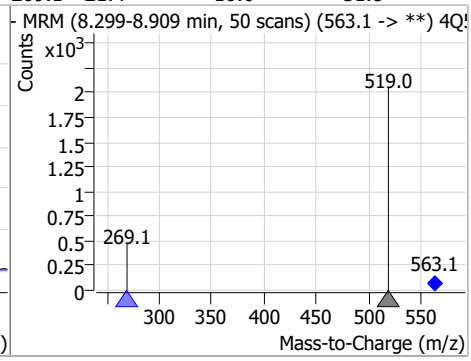


Perfluorinated Compounds by LC/MS/MS

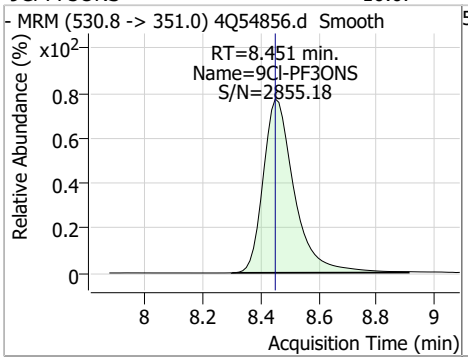
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	5.33	8.45	0.00	73145	563.1 -> 269.1	21.4	10.6	31.8

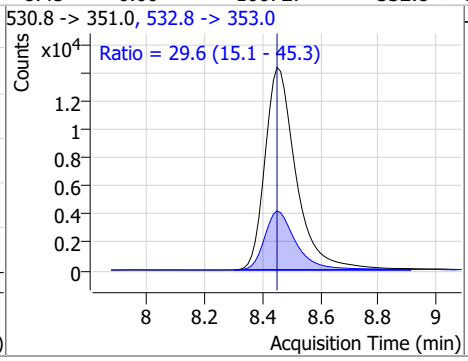


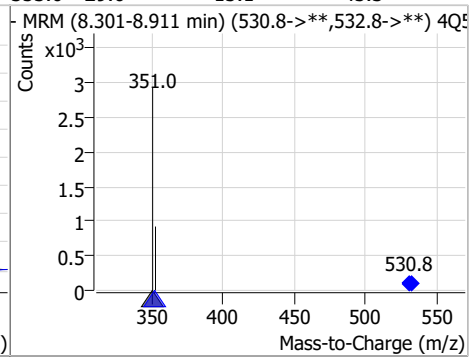




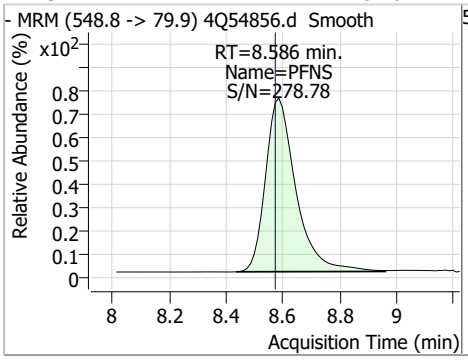
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	10.07	8.45	0.00	106727	532.8 -> 353.0	29.6	15.1	45.3

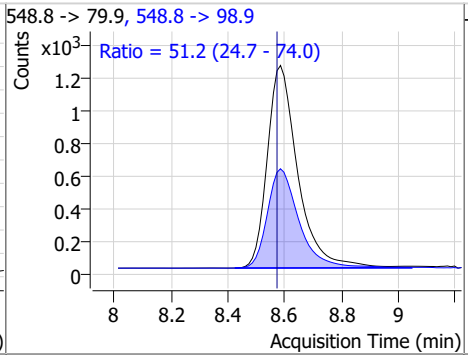


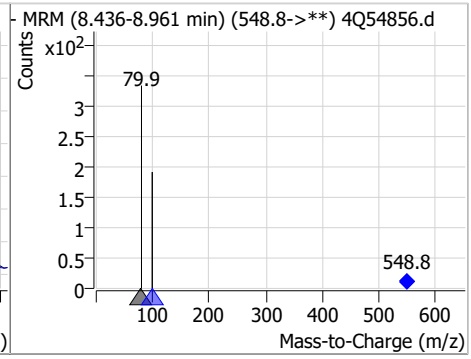




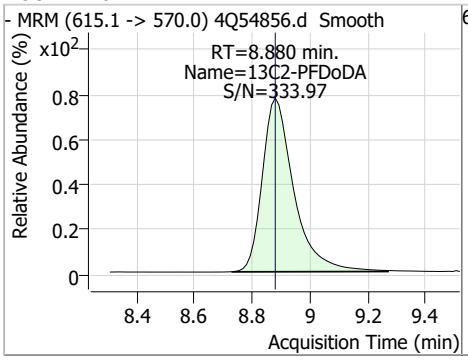
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.70	8.59	0.01	9182	548.8 -> 98.9	51.2	24.7	74.0

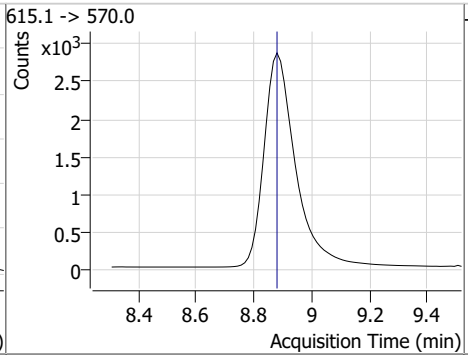


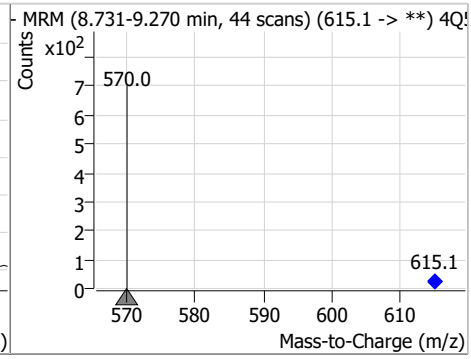




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	8.88	0.00	21448				

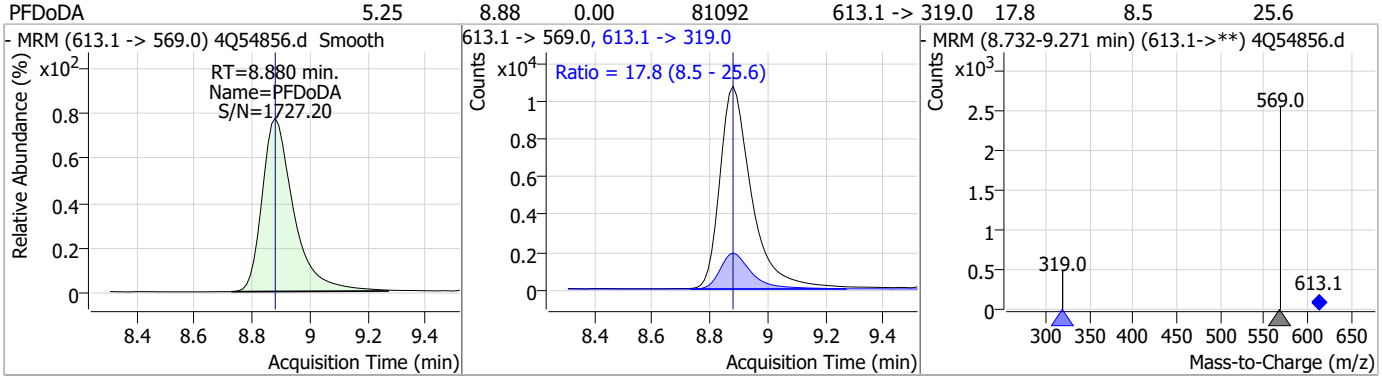




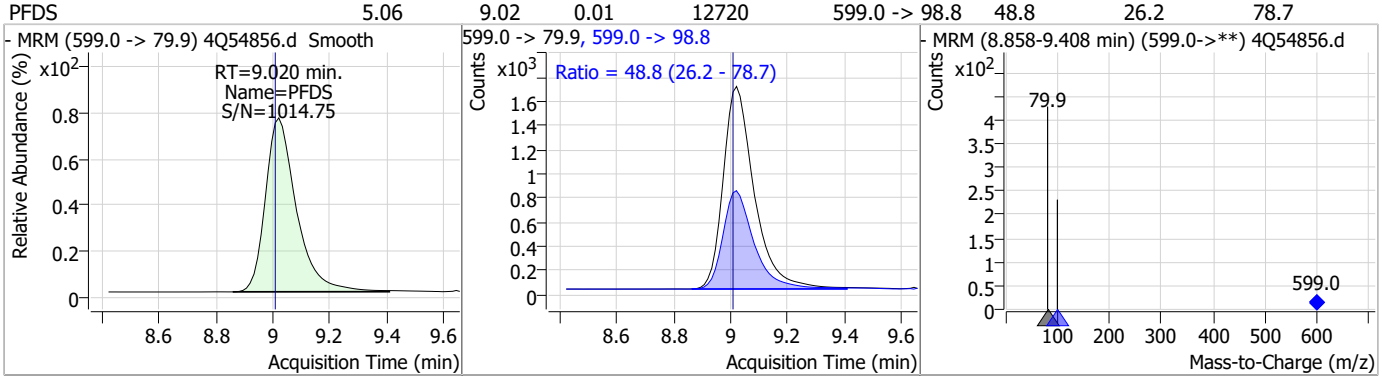


Perfluorinated Compounds by LC/MS/MS

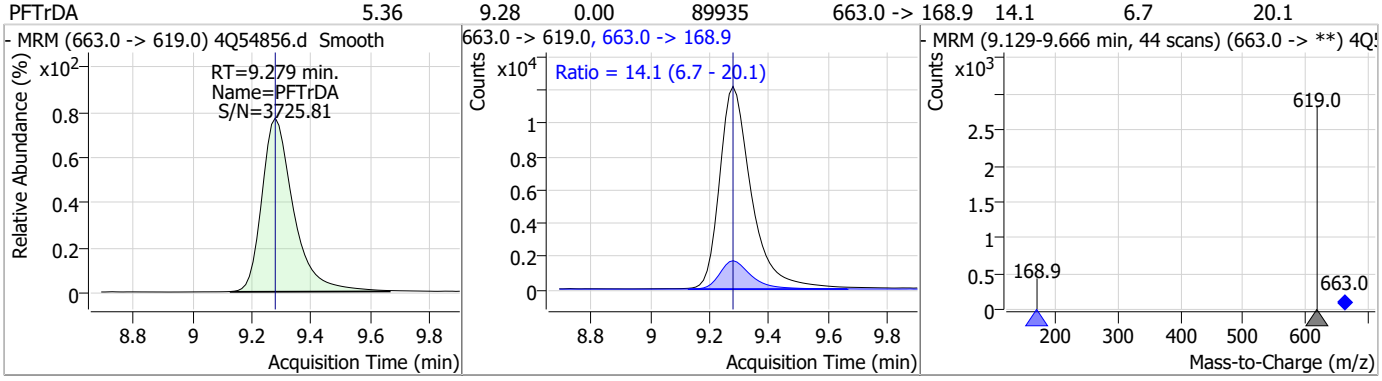
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.25	8.88	0.00	81092	613.1 -> 319.0	17.8	8.5	25.6



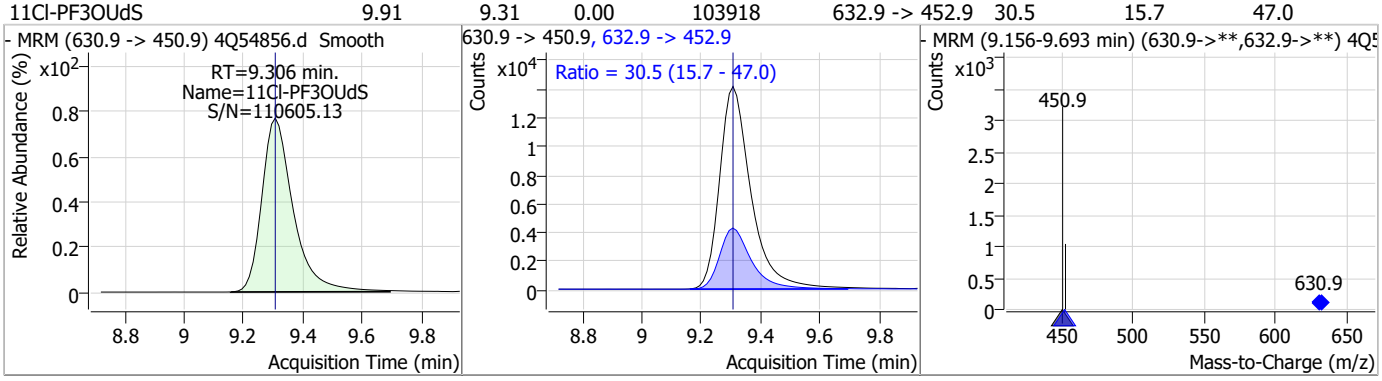
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.06	9.02	0.01	12720	599.0 -> 98.8	48.8	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.36	9.28	0.00	89935	663.0 -> 168.9	14.1	6.7	20.1

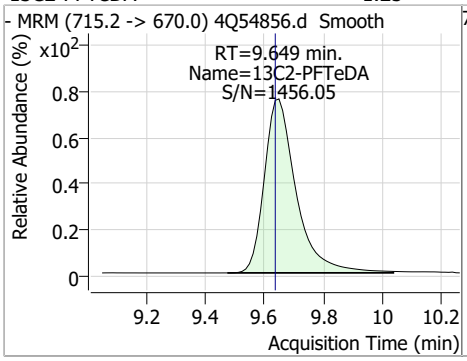


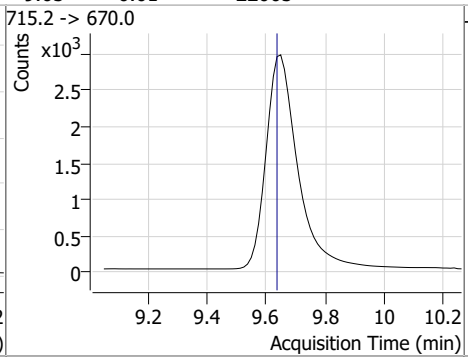
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.91	9.31	0.00	103918	632.9 -> 452.9	30.5	15.7	47.0

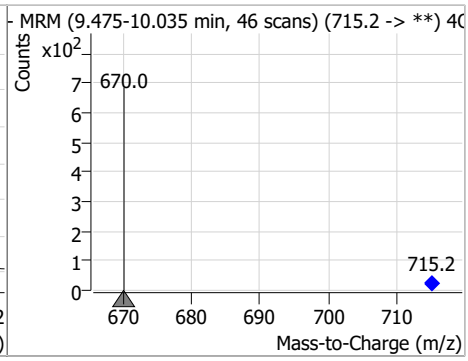


Perfluorinated Compounds by LC/MS/MS

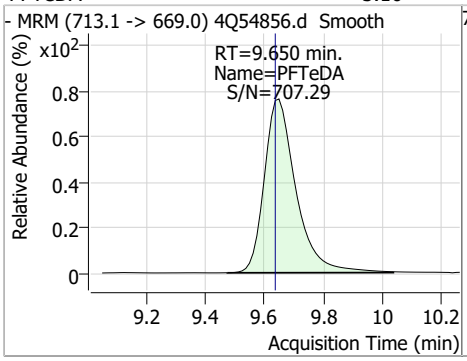
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.25	9.65	0.01	22005				

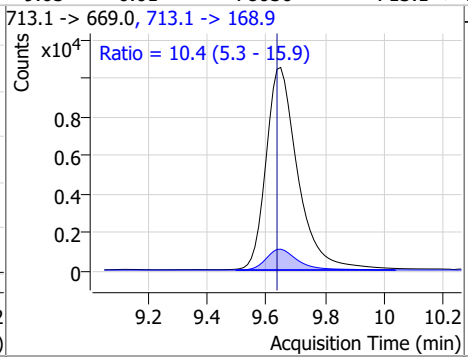


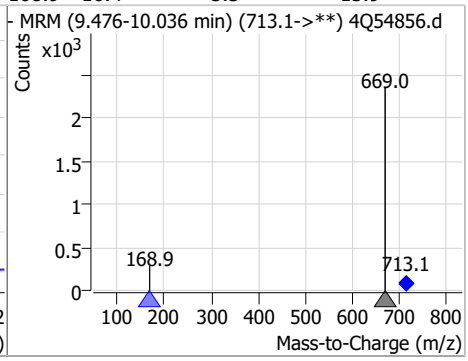




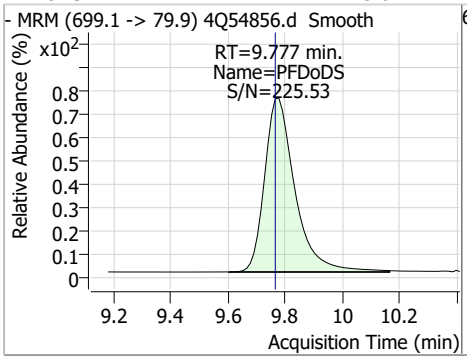
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.10	9.65	0.01	78056	713.1 -> 168.9	10.4	5.3	15.9

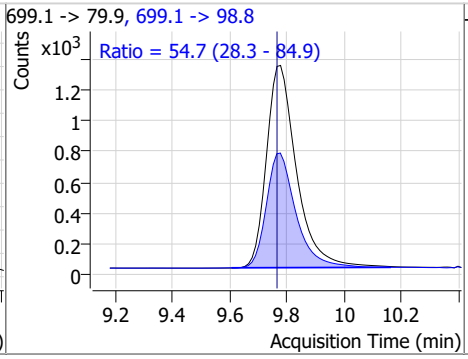


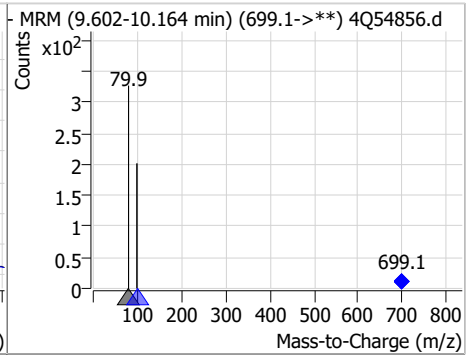




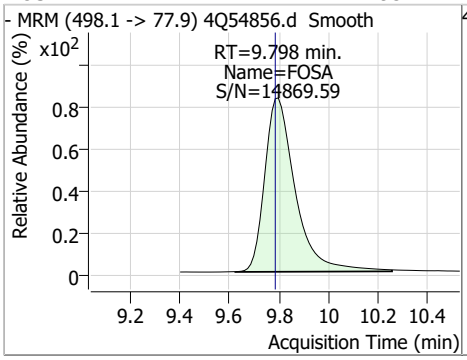
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	5.07	9.78	0.01	9723	699.1 -> 98.8	54.7	28.3	84.9

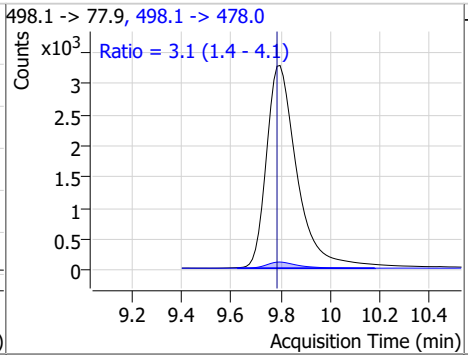


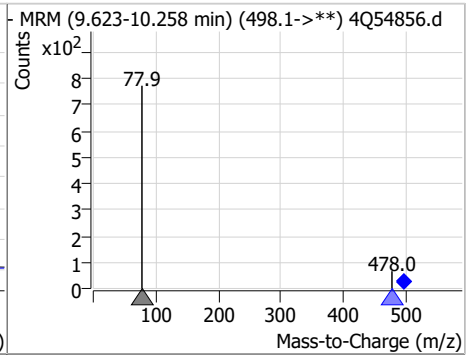




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.93	9.80	0.01	28011	498.1 -> 478.0	3.1	1.4	4.1

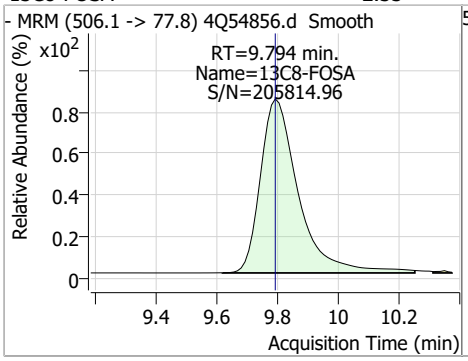


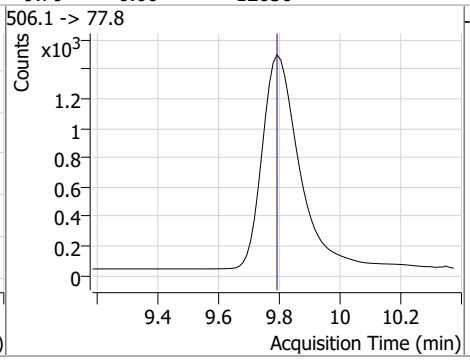


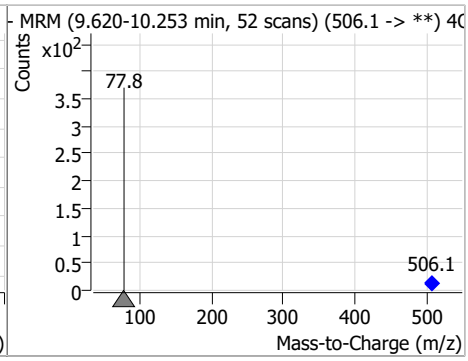


Perfluorinated Compounds by LC/MS/MS

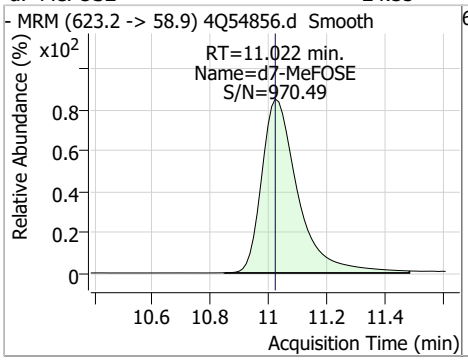
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.33	9.79	0.00	12630				

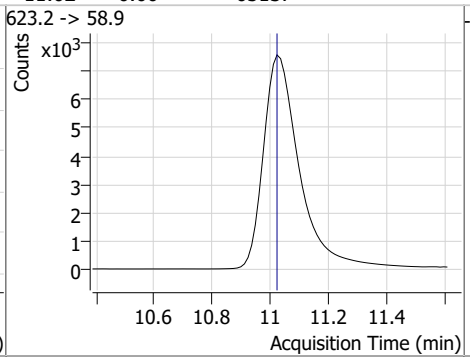


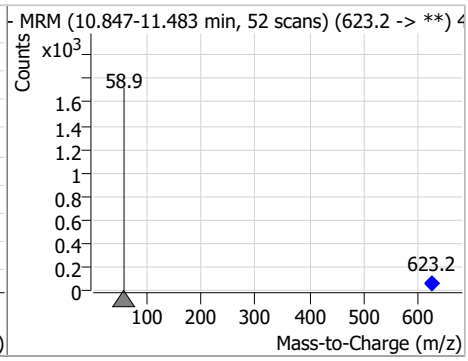




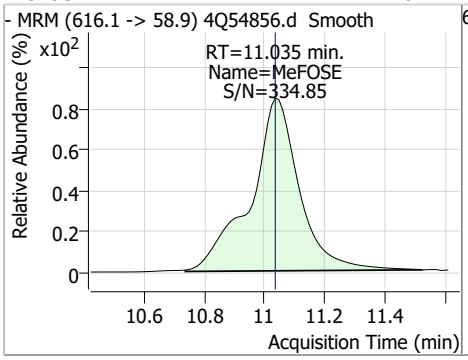
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.35	11.02	0.00	65137				

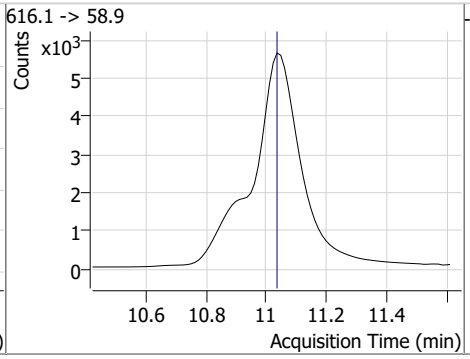


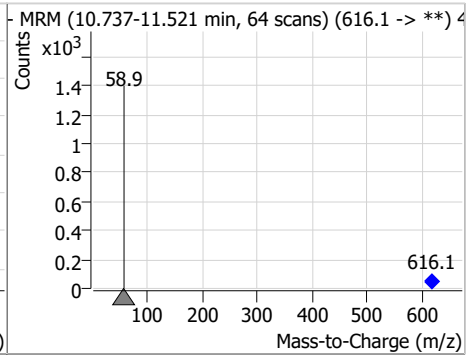




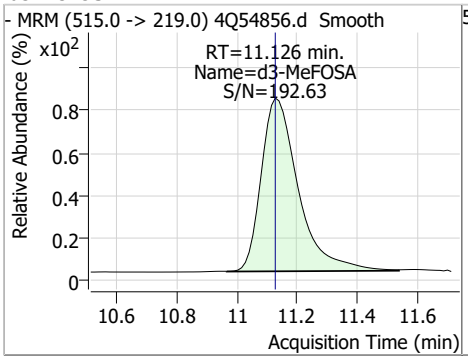
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	24.28	11.04	0.00	62759				

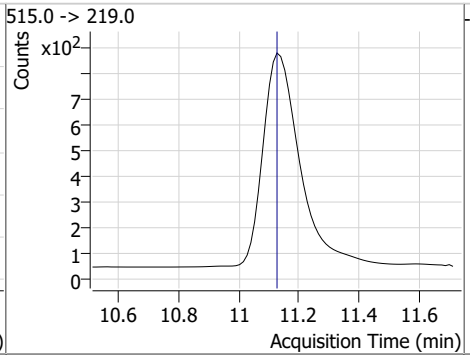


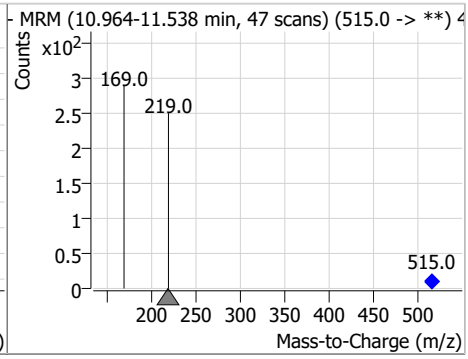




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.21	11.13	0.00	7137				

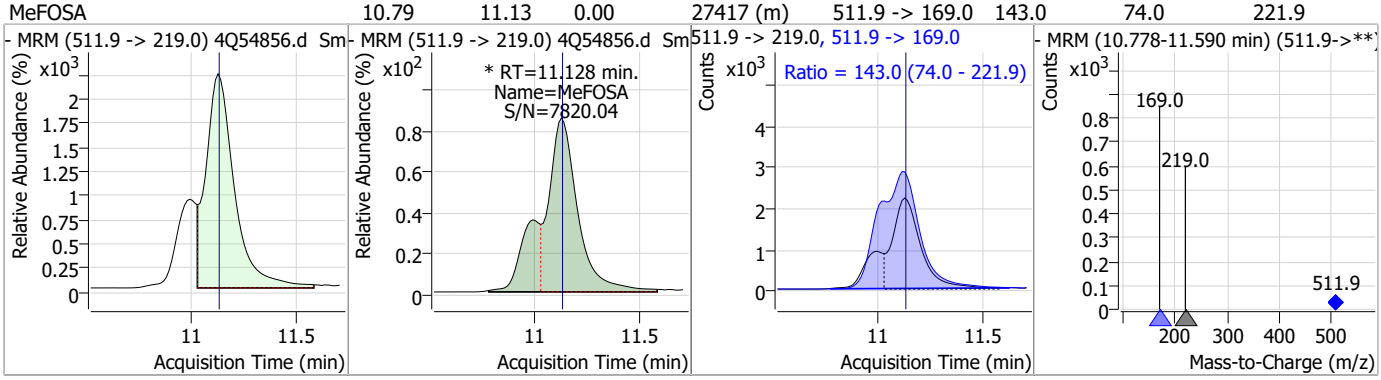




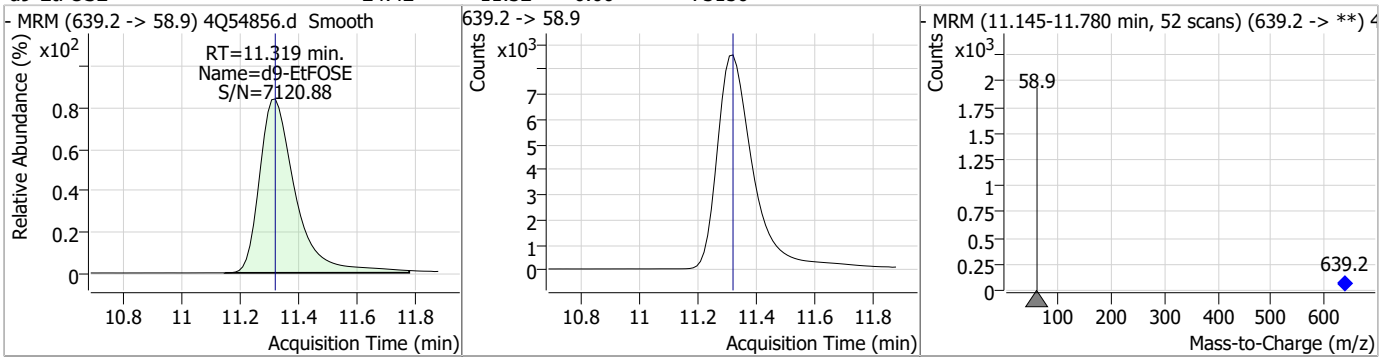


Perfluorinated Compounds by LC/MS/MS

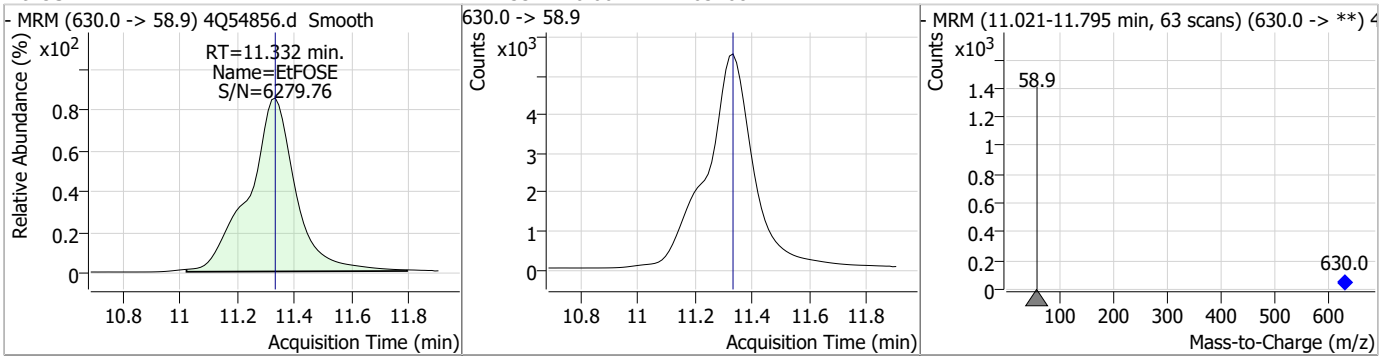
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	10.79	11.13	0.00	27417 (m)	511.9 -> 169.0	143.0	74.0	221.9



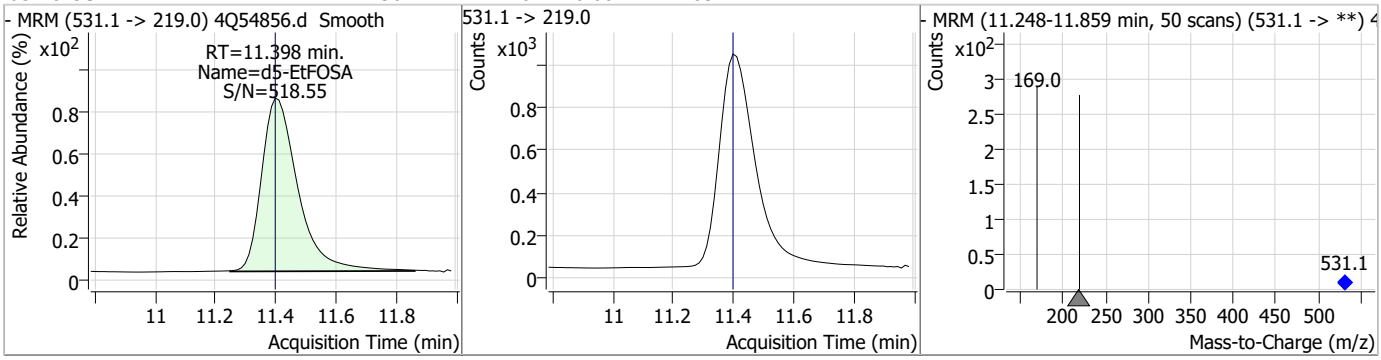
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.42	11.32	0.00	73150				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	24.44	11.33	0.00	63268				

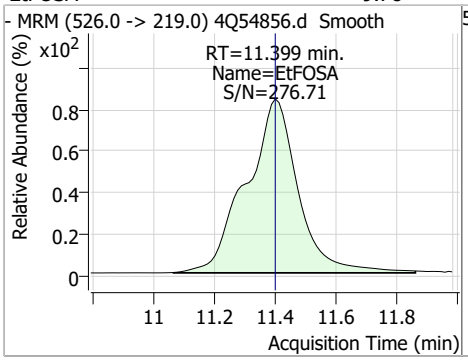


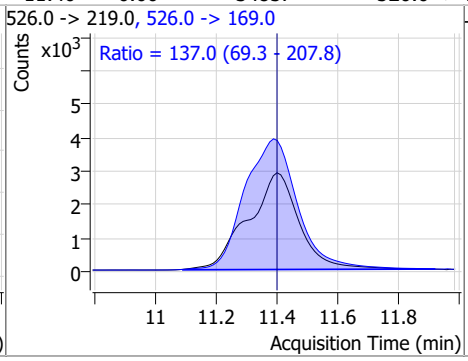
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.36	11.40	0.00	8372				

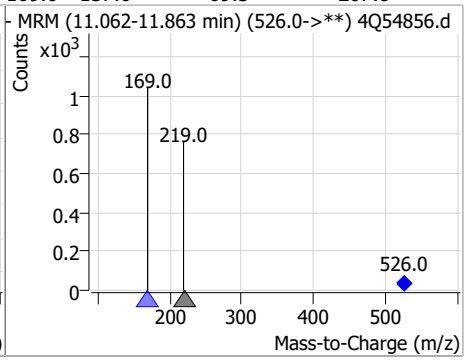


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	9.78	11.40	0.00	34857	526.0 -> 169.0	137.0	69.3	207.8







Manual Integration Approval Summary

Sample Number:	S4Q804-IC804	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q54856.D	**Analyst approved:**	12/10/23 12:52 Anna Ludwig
Injection Time:	12/08/23 12:37	**Supervisor approved:**	12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.04	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak
MeFOSA	31506-32-8		11.13	Split peak

4Q54857.D

Manual Integrations APPROVED (compounds with "m" flag)

Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54857.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 12:52:03 PM
Sample Name : ic804-6
Vial : P1-A7
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	94330	10.00	µg/L	0.012
M5-PFPeA	4.175	268.3 -> 223.0	40921	5.00	µg/L	0.012
M5-PFHxA	5.347	318.0 -> 273.0	32657	2.50	µg/L	0.012
M4-PFHpA	6.292	367.1 -> 322.0	30520	2.50	µg/L	0.000
M8-PFOA	6.976	421.1 -> 376.0	49387	2.50	µg/L	0.000
M9-PFNA	7.521	472.1 -> 427.0	19782	1.25	µg/L	0.000
M6-PFDA	8.004	519.1 -> 474.1	13327	1.25	µg/L	0.000
M7-PFUnDA	8.461	570.0 -> 525.1	15728	1.25	µg/L	0.012
M2-PFDoDA	8.880	615.1 -> 570.0	17955	1.25	µg/L	0.000
M2-PFTeDA	9.649	715.2 -> 670.0	19109	1.25	µg/L	0.012
M8-FOSA	9.794	506.1 -> 77.8	10519	2.50	µg/L	0.000
M3-PFBS	5.202	302.1 -> 79.9	8893	2.50	µg/L	0.013
M3-PFHxS	7.042	402.1 -> 79.9	7195	2.50	µg/L	0.012
M8-PFOS	8.117	507.1 -> 79.9	8393	2.50	µg/L	0.000
M2-4:2FTS	5.058	329.1 -> 80.9	1044	5.00	µg/L	0.012
M2-6:2FTS	6.761	429.1 -> 80.9	2242	5.00	µg/L	0.012
M2-8:2FTS	7.804	529.1 -> 80.9	3175	5.00	µg/L	0.000
M3-MeFOSAA	8.086	573.2 -> 419.0	17644	5.00	µg/L	0.000
M3-HFPO-DA	5.702	286.9 -> 168.9	31785	10.00	µg/L	0.012
M5-EtFOSAA	8.283	589.2 -> 419.0	15530	5.00	µg/L	0.000
M7-MeFOSE	11.034	623.2 -> 58.9	52624	25.00	µg/L	0.012
M9-EtFOSE	11.319	639.2 -> 58.9	56976	25.00	µg/L	0.000
M5-EtFOSA	11.397	531.1 -> 219.0	6847	2.50	µg/L	0.000
M3-MeFOSA	11.126	515.0 -> 219.0	6125	2.50	µg/L	0.000
13C4-PFOS	8.130	502.8 -> 79.9	6543	2.50	µg/L	0.012
13C3-PFBA	2.678	216.0 -> 172.0	44798	5.00	µg/L	0.000
18O2-PFHxS	7.041	403.0 -> 83.9	4649	2.50	µg/L	0.000
13C4-PFOA	6.977	417.1 -> 372.0	54011	2.50	µg/L	0.000
13C2-PFDA	8.004	515.1 -> 470.1	14483	1.25	µg/L	0.000
13C5-PFNA	7.522	468.0 -> 423.0	18818	1.25	µg/L	0.012
13C2-PFHxA	5.348	315.1 -> 270.0	35183	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.058	329.1 -> 80.9	1044	4.73	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C2-6:2FTS	6.761	429.1 -> 80.9	2242	4.68	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C2-8:2FTS	7.804	529.1 -> 80.9	3175	4.95	µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C2-PFDoDA	8.880	615.1 -> 570.0	17955	1.24	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C2-PFTeDA	9.649	715.2 -> 670.0	19109	1.33	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C3-PFBS	5.202	302.1 -> 79.9	8893	2.50	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C3-PFHxS	7.042	402.1 -> 79.9	7195	2.47	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.7%	
13C4-PFBA	2.686	216.8 -> 171.9	94330	10.03 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.292	367.1 -> 322.0	30520	2.46 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C5-PFHxA	5.347	318.0 -> 273.0	32657	2.52 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C5-PFPeA	4.175	268.3 -> 223.0	40921	5.07 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C6-PFDA	8.004	519.1 -> 474.1	13327	1.26 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C7-PFUnDA	8.461	570.0 -> 525.1	15728	1.27 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C8-FOSA	9.794	506.1 -> 77.8	10519	2.48 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C8-PFOA	6.976	421.1 -> 376.0	49387	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C8-PFOS	8.117	507.1 -> 79.9	8393	2.53 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C9-PFNA	7.521	472.1 -> 427.0	19782	1.31 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.0%	
d3-MeFOSAA	8.086	573.2 -> 419.0	17644	4.86 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.2%	
13C3-HFPO-DA	5.702	286.9 -> 168.9	31785	9.81 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
d3-MeFOSA	11.126	515.0 -> 219.0	6125	2.42 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
d5-EtFOSAA	8.283	589.2 -> 419.0	15530	5.05 µg/L	0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
d7-MeFOSE	11.034	623.2 -> 58.9	52624	25.16 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
d9-EtFOSE	11.319	639.2 -> 58.9	56976	24.32 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
d5-EtFOSA	11.397	531.1 -> 219.0	6847	2.47 µg/L	0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
Target Compounds					QValue
4:2FTS	5.059	327.1 -> 307.0	88024	48.97 µg/L	99
		327.1 -> 80.9	37102		
6:2FTS	6.761	427.1 -> 407.0	121720	51.65 µg/L	98
		427.1 -> 80.9	42870		
8:2FTS	7.804	527.1 -> 507.0	84315	50.39 µg/L	99
		527.1 -> 80.8	33462		
EtFOSAA	8.297	584.2 -> 419.1	35526	12.54 µg/L	87
		584.2 -> 526.0	13964		
FOSA	9.798	498.1 -> 77.9	59384	12.56 µg/L	99
		498.1 -> 478.0	1802		
MeFOSAA	8.087	570.1 -> 419.0	35809	14.16 µg/L	90
		570.1 -> 483.0	7309		
PFBA	2.682	212.8 -> 168.9	156501	51.80 µg/L	100
PFBS	5.203	298.7 -> 79.9	31936	11.58 µg/L	97
		298.7 -> 98.8	12389		
PFDA	8.005	512.9 -> 469.0	124626	12.73 µg/L	99
		512.9 -> 219.0	25358		
PFDoDA	8.880	613.1 -> 569.0	175425	13.57 µg/L	99
		613.1 -> 319.0	30723		
PFDS	9.020	599.0 -> 79.9	26875	12.03 µg/L	95

Perfluorinated Compounds by LC/MS/MS

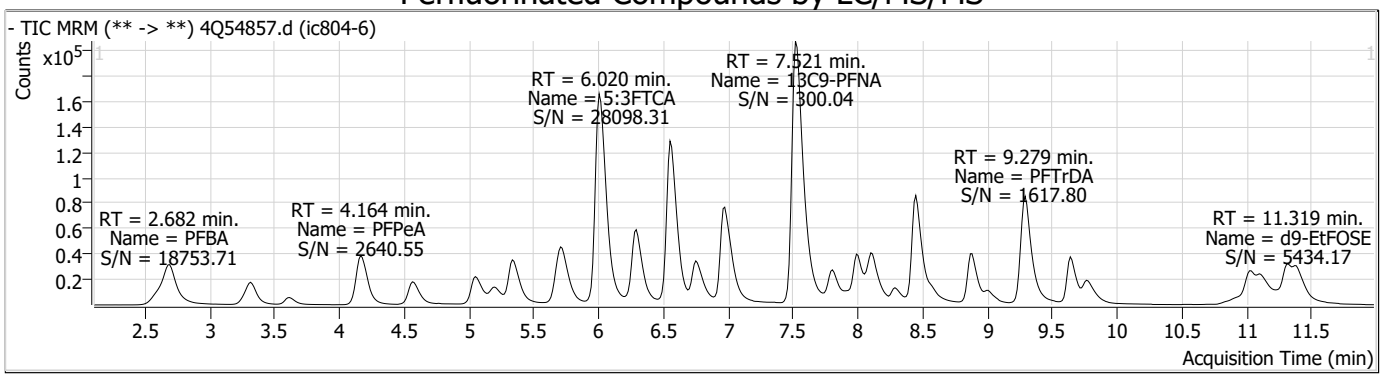
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	13164				
PFHpA	6.293	363.1 -> 319.0	227994	13.27	µg/L		100
		363.1 -> 169.0	41453				
PFHpS	7.624	449.0 -> 79.9	38943	11.69	µg/L		98
		449.0 -> 98.9	19940				
PFHxA	5.350	313.0 -> 269.0	133602	12.82	µg/L		99
		313.0 -> 118.9	4010				
PFHxS	7.043	398.7 -> 79.9	27487	11.84	µg/L	m	91
		398.7 -> 98.9	14719				
PFNA	7.522	463.0 -> 419.0	151051	13.00	µg/L		99
		463.0 -> 219.0	35288				
PFNS	8.586	548.8 -> 79.9	19001	13.27	µg/L		100
		548.8 -> 98.9	9439				
PFOA	6.978	413.0 -> 369.0	265296	13.06	µg/L		95
		413.0 -> 169.0	52916				
PFOS	8.119	498.9 -> 79.9	38142	10.92	µg/L	m	54
		498.9 -> 98.8	18194				
PFPeA	4.164	263.0 -> 219.0	208797	25.93	µg/L		100
PFPeS	6.282	349.1 -> 79.9	27378	12.53	µg/L		93
		349.1 -> 98.9	12744				
PFTeDA	9.650	713.1 -> 669.0	167961	12.63	µg/L		100
		713.1 -> 168.9	17868				
PFTrDA	9.279	663.0 -> 619.0	194692	13.86	µg/L		100
		663.0 -> 168.9	26435				
PFUnDA	8.461	563.1 -> 519.0	151981	13.29	µg/L		100
		563.1 -> 269.1	32452				
11Cl-PF3OUdS	9.306	630.9 -> 450.9	226944	25.93	µg/L		100
		632.9 -> 452.9	70717				
9Cl-PF3ONS	8.451	530.8 -> 351.0	220931	24.98	µg/L		99
		532.8 -> 353.0	68319				
ADONA	6.568	376.9 -> 250.9	596187	27.77	µg/L		100
		376.9 -> 84.8	142948				
HFPO-DA	5.703	284.9 -> 168.9	80430	26.45	µg/L		99
		284.9 -> 184.9	7848				
3:3FTCA	3.617	241.0 -> 177.0	30876	64.29	µg/L		99
		241.0 -> 117.0	2685				
5:3FTCA	6.020	341.0 -> 237.1	608405	327.34	µg/L		99
		341.0 -> 217.0	427777				
7:3FTCA	7.536	441.0 -> 316.9	315105	323.29	µg/L		100
		441.0 -> 336.9	752252				
EtFOSA	11.399	526.0 -> 219.0	74708	25.63	µg/L		99
		526.0 -> 169.0	102456				
EtFOSE	11.332	630.0 -> 58.9	129152	64.05	µg/L		100
MeFOSA	11.128	511.9 -> 219.0	55657	25.52	µg/L	m	97
		511.9 -> 169.0	84269				
MeFOSE	11.047	616.1 -> 58.9	134706	64.51	µg/L		100
PFDoDS	9.777	699.1 -> 79.9	21005	12.33	µg/L		99
		699.1 -> 98.8	11764				
NFDHA	5.229	295.0 -> 201.0	18100	24.52	µg/L		99
		295.0 -> 84.9	4691				
PFMBA	4.578	279.0 -> 85.1	113109	25.51	µg/L		100
PFMPA	3.315	229.0 -> 84.9	124273	25.51	µg/L		100
PFEESA	5.722	314.8 -> 134.9	181944	23.62	µg/L		98
		314.8 -> 82.9	5894				

 # = Qualifier out of range, m = manually integrated, + = Area summed

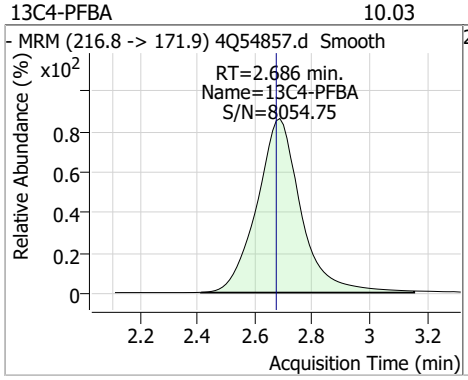
Perfluorinated Compounds by LC/MS/MS

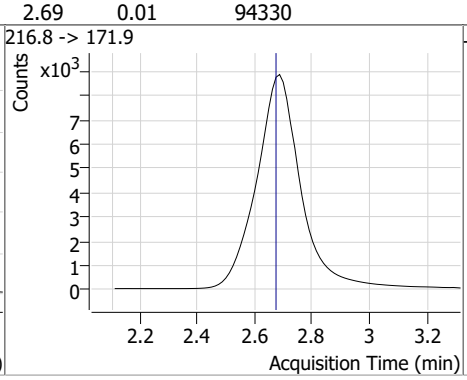
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

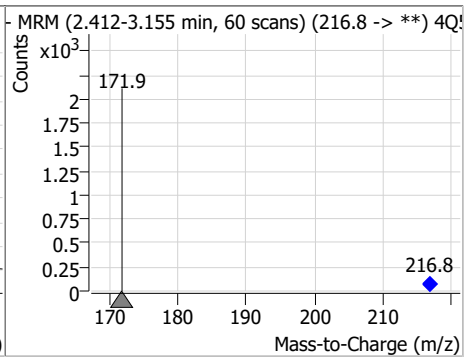
Perfluorinated Compounds by LC/MS/MS



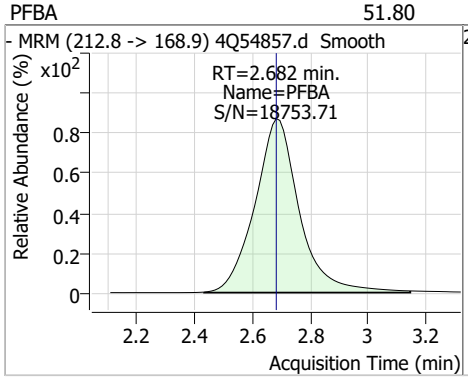
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.03	2.69	0.01	94330				

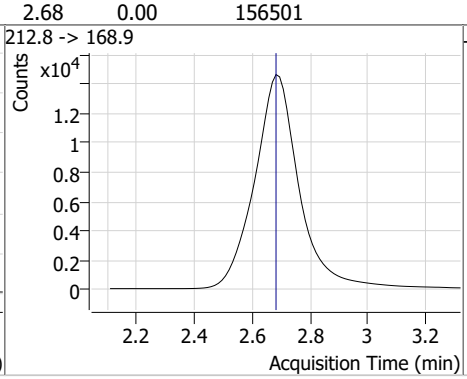


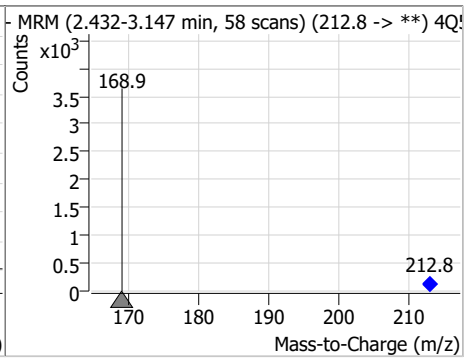




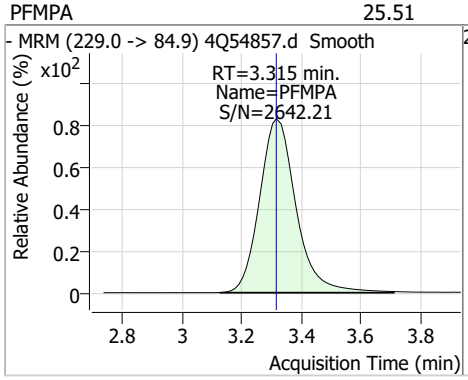
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	51.80	2.68	0.00	156501				

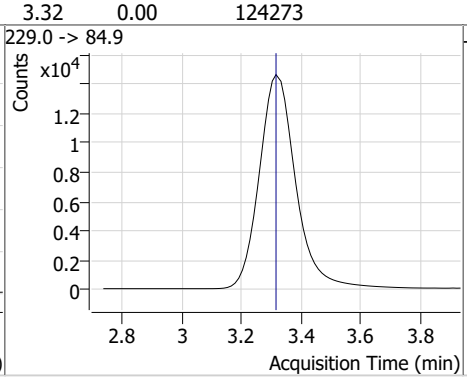


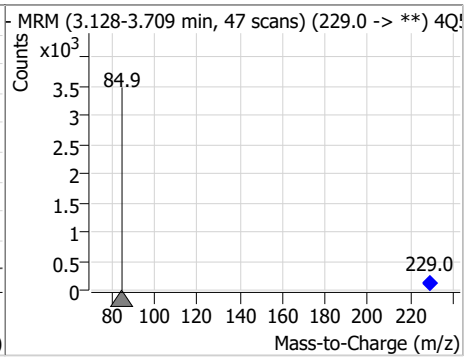




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	25.51	3.32	0.00	124273				

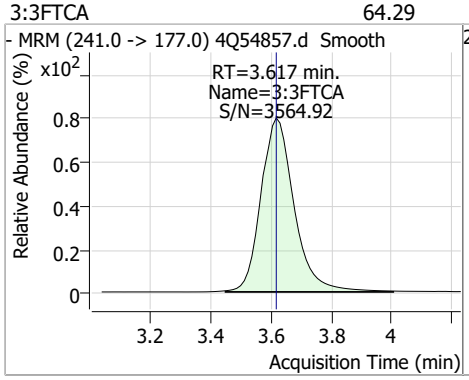


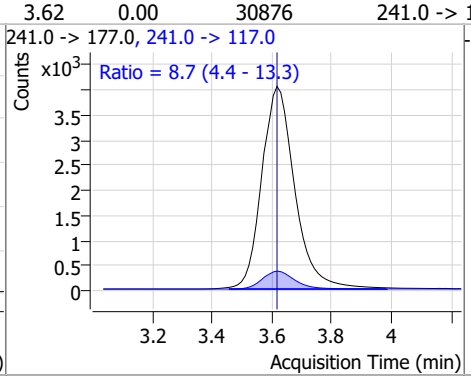


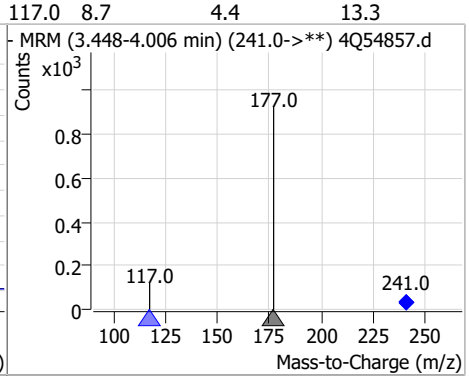


Perfluorinated Compounds by LC/MS/MS

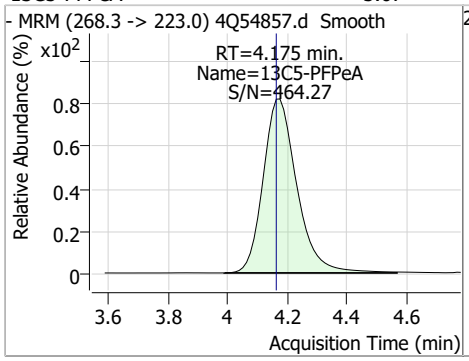
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	64.29	3.62	0.00	30876	241.0 -> 117.0	8.7	4.4	13.3

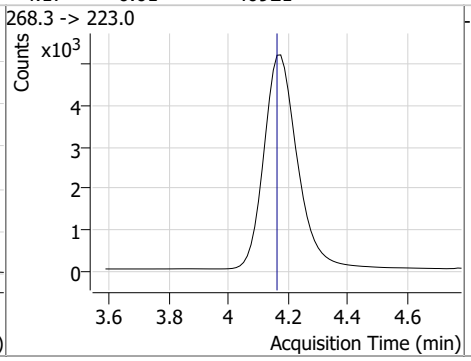


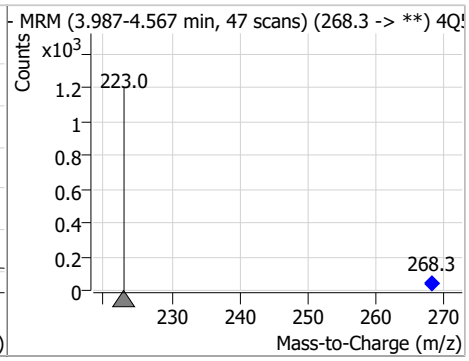




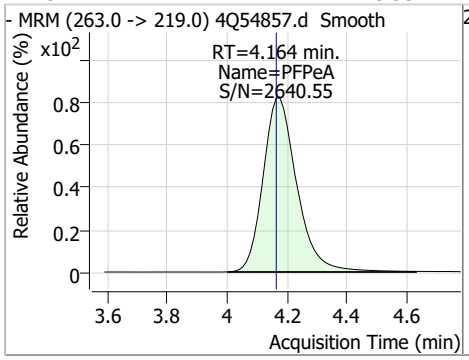
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.07	4.17	0.01	40921				

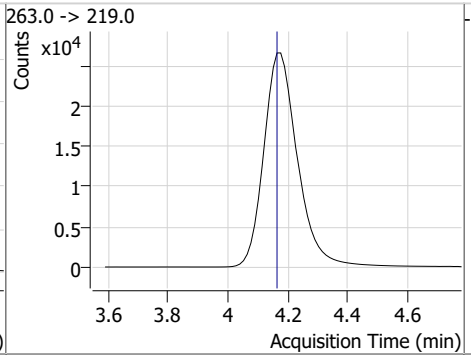


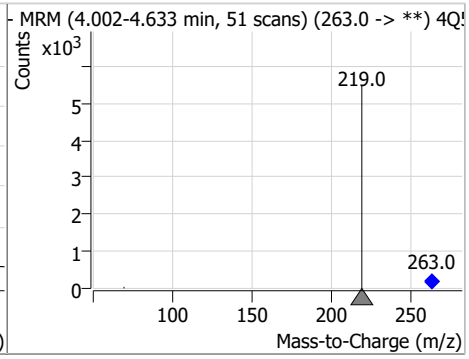




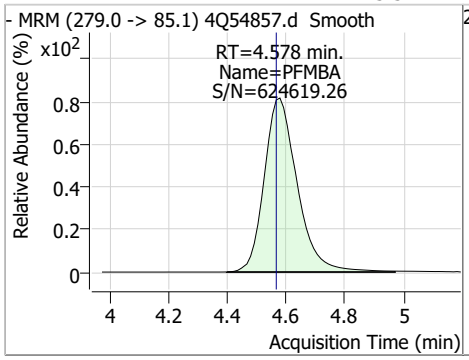
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	25.93	4.16	0.00	208797				

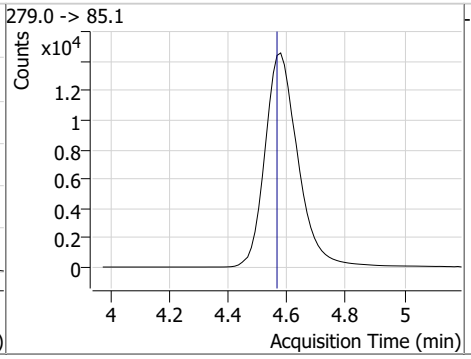


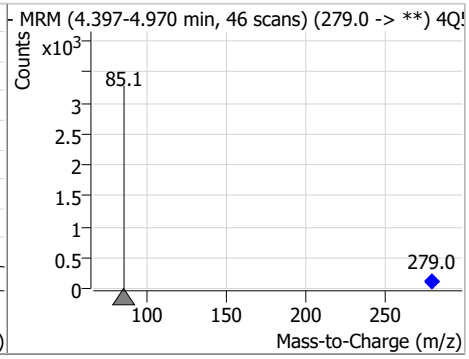




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	25.51	4.58	0.01	113109				

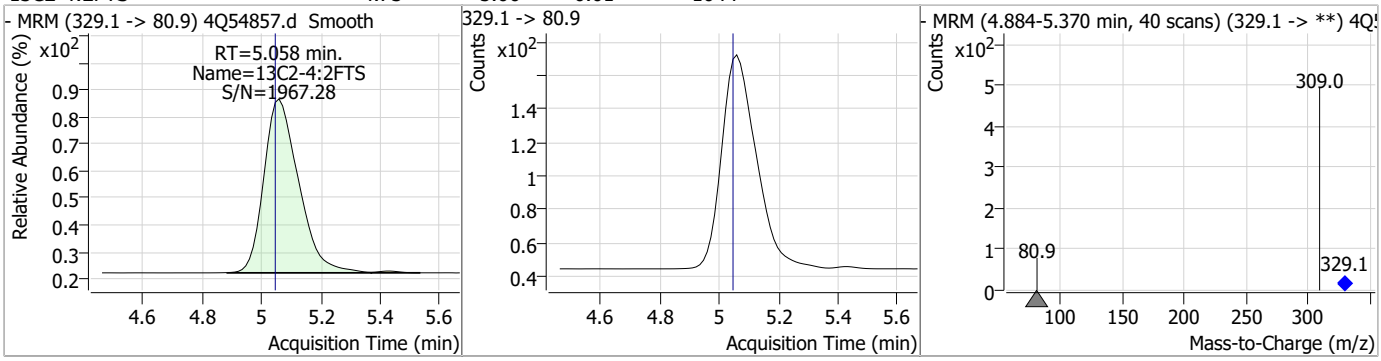




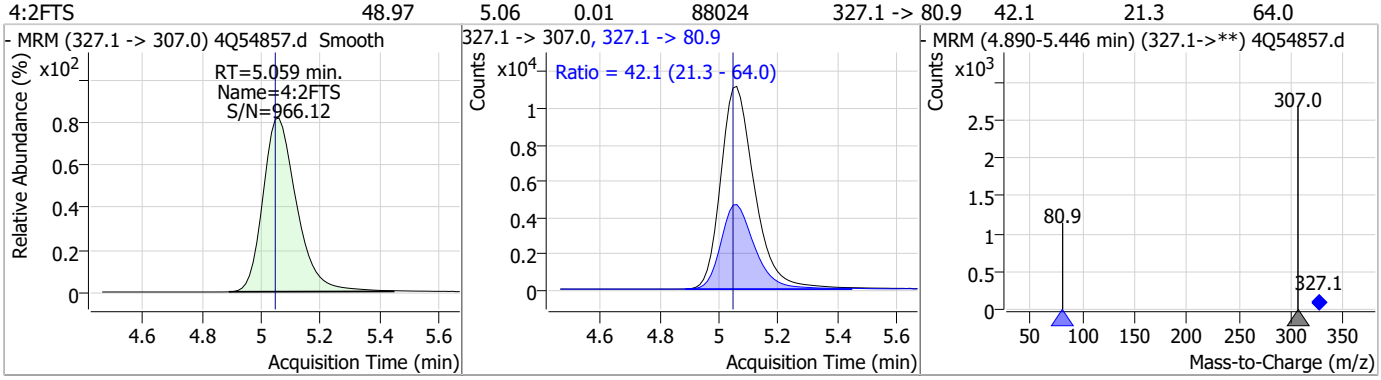


Perfluorinated Compounds by LC/MS/MS

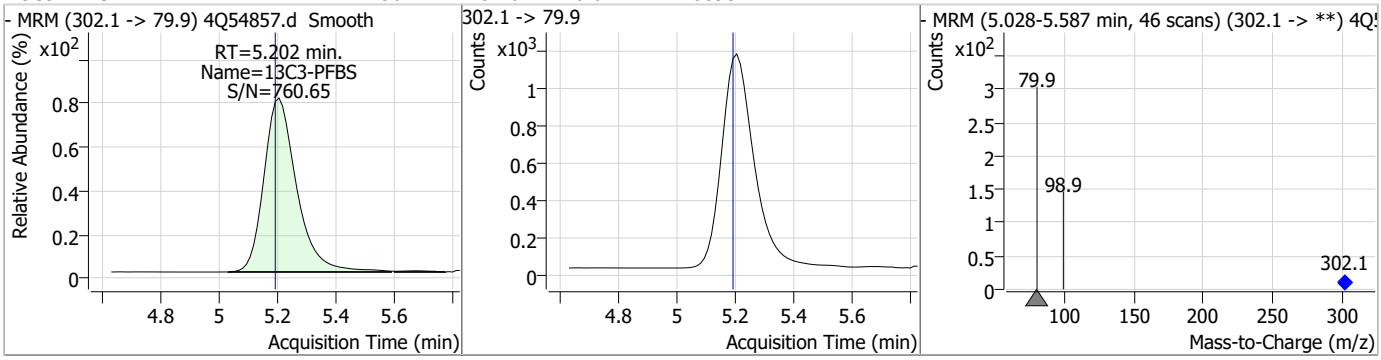
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.73	5.06	0.01	1044				



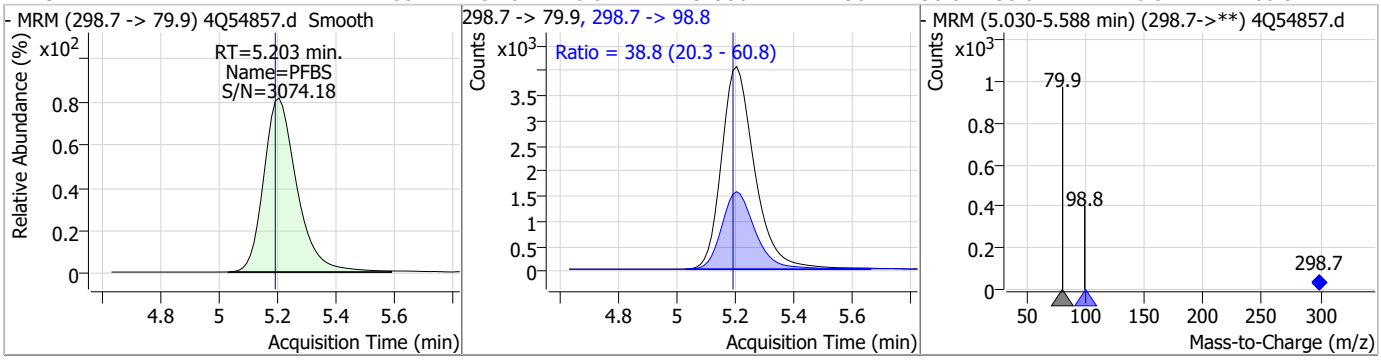
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	48.97	5.06	0.01	88024	327.1 -> 80.9	42.1	21.3	64.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.50	5.20	0.01	8893				

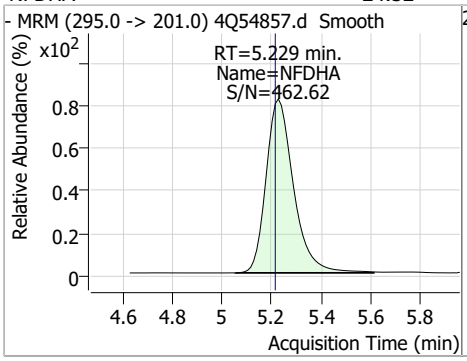


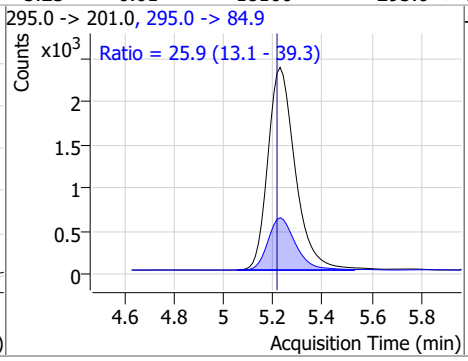
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	11.58	5.20	0.01	31936	298.7 -> 98.8	38.8	20.3	60.8

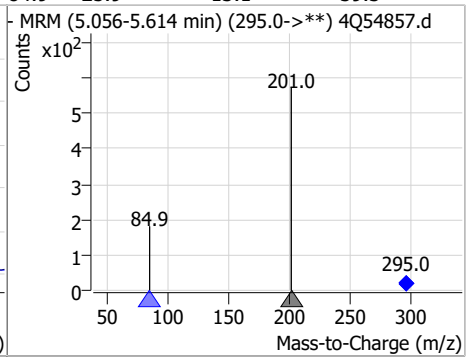


Perfluorinated Compounds by LC/MS/MS

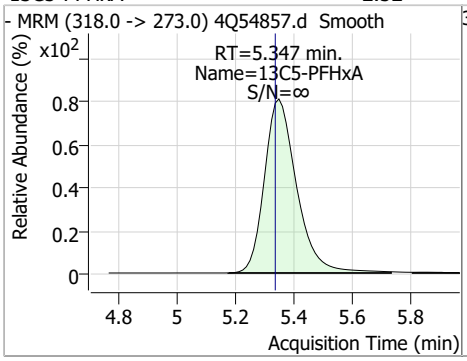
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	24.52	5.23	0.01	18100	295.0 -> 84.9	25.9	13.1	39.3

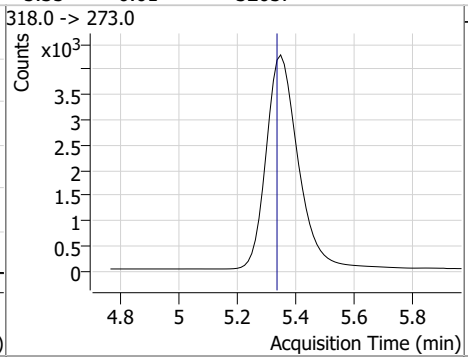


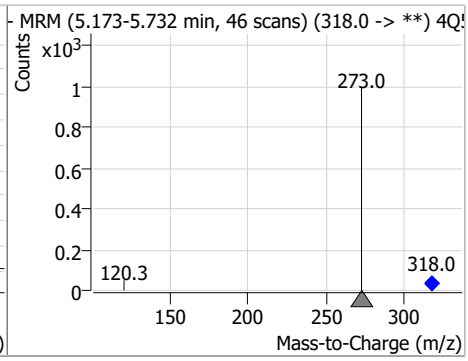




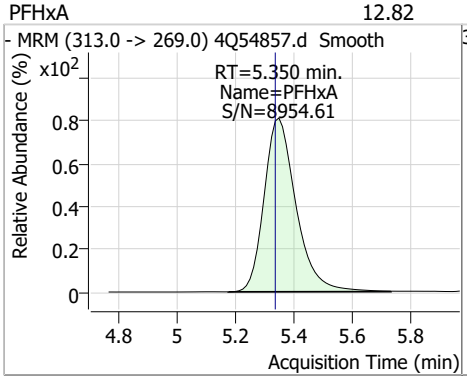
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	5.35	0.01	32657				

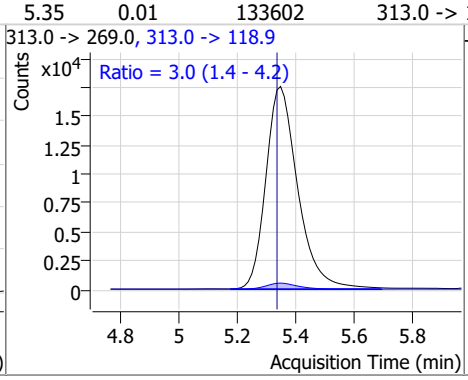


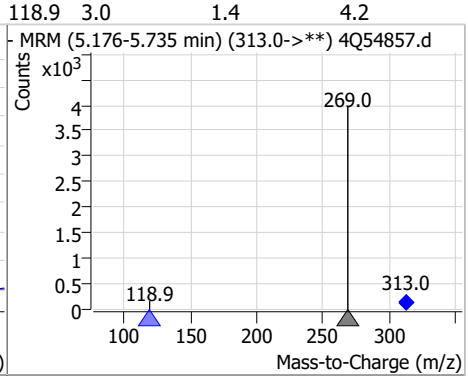




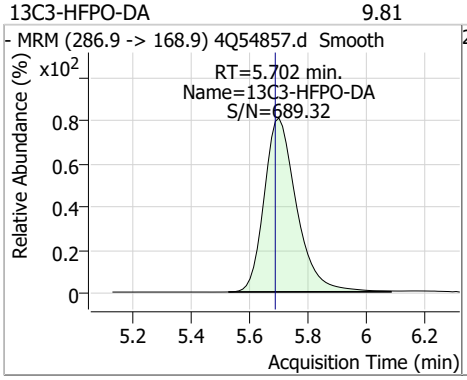
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.82	5.35	0.01	133602	313.0 -> 118.9	3.0	1.4	4.2

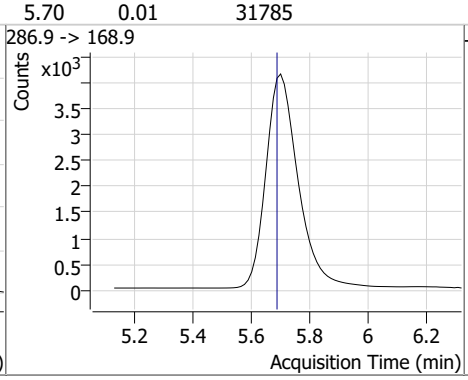


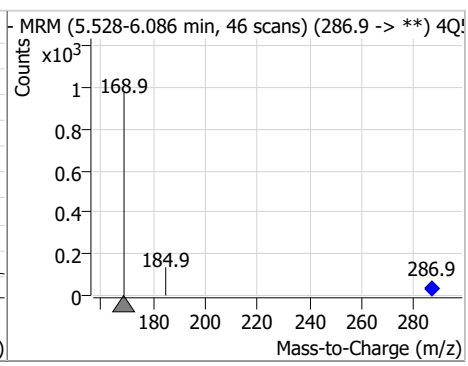




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.81	5.70	0.01	31785				

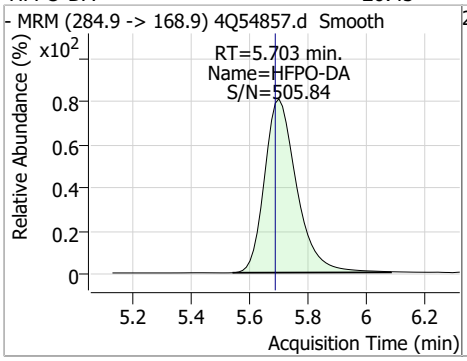


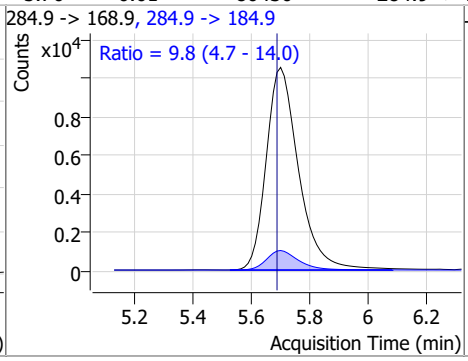


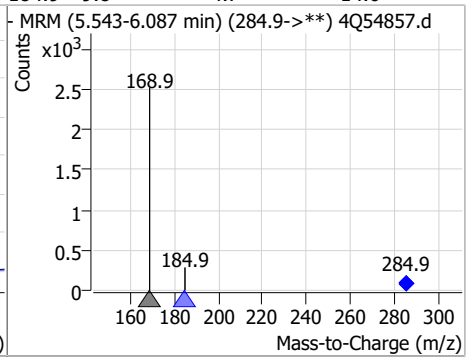


Perfluorinated Compounds by LC/MS/MS

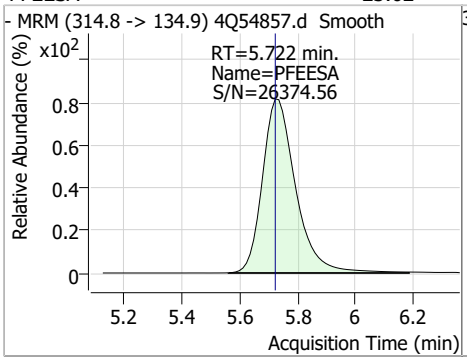
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	26.45	5.70	0.01	80430	284.9 -> 184.9	9.8	4.7	14.0

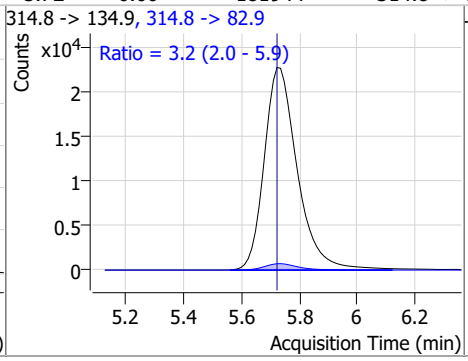


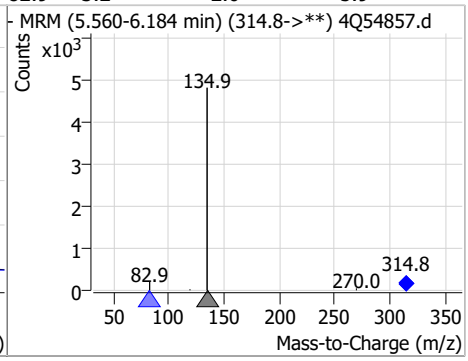




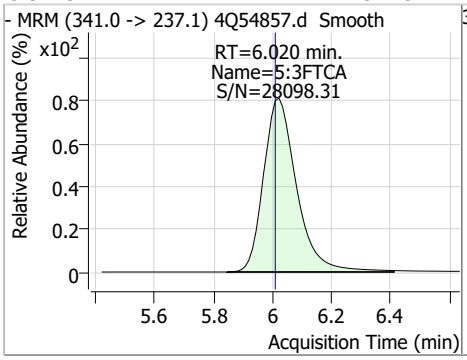
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	23.62	5.72	0.00	181944	314.8 -> 82.9	3.2	2.0	5.9

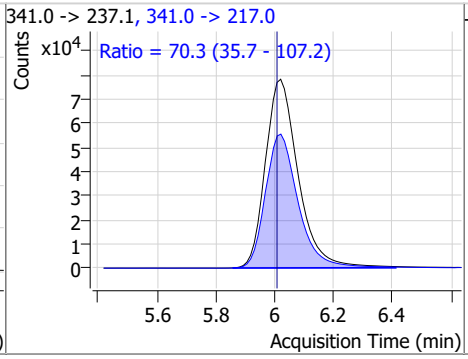


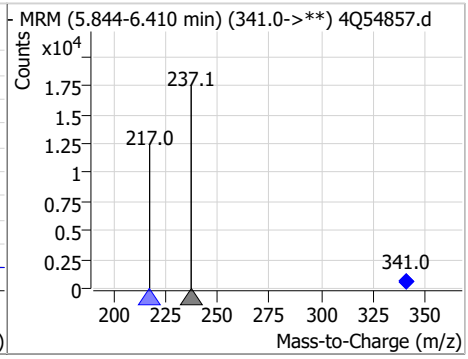




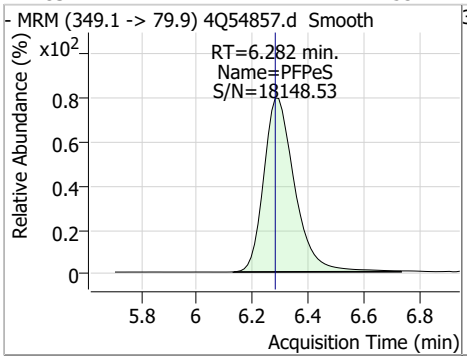
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	327.34	6.02	0.01	608405	341.0 -> 217.0	70.3	35.7	107.2

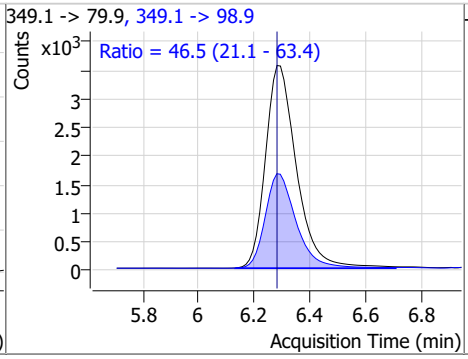


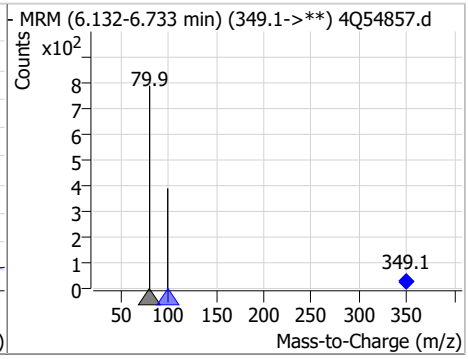




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	12.53	6.28	0.00	27378	349.1 -> 98.9	46.5	21.1	63.4

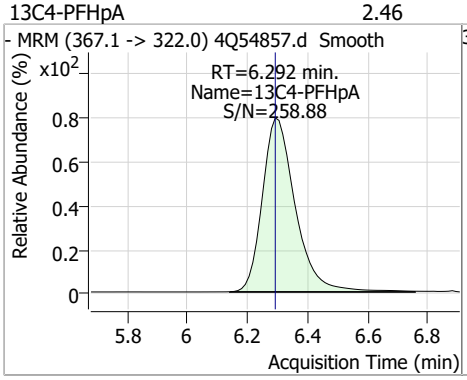


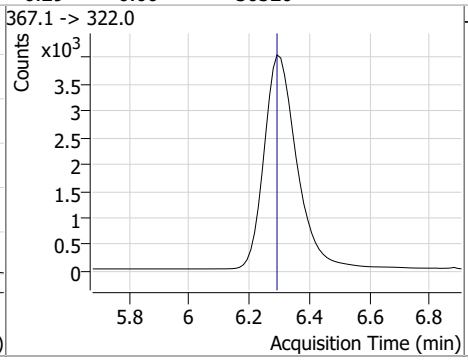


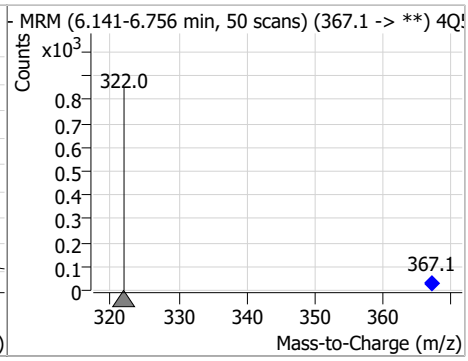


Perfluorinated Compounds by LC/MS/MS

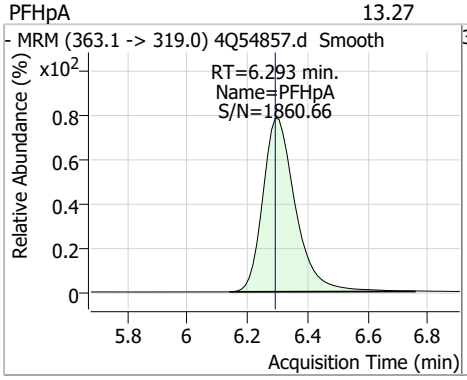
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.46	6.29	0.00	30520				

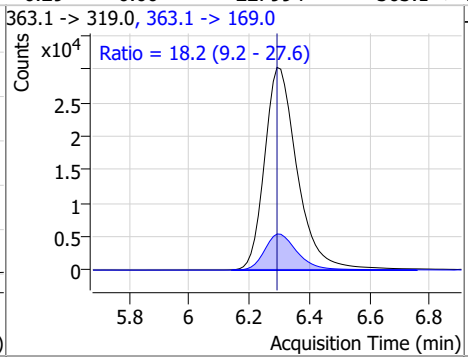


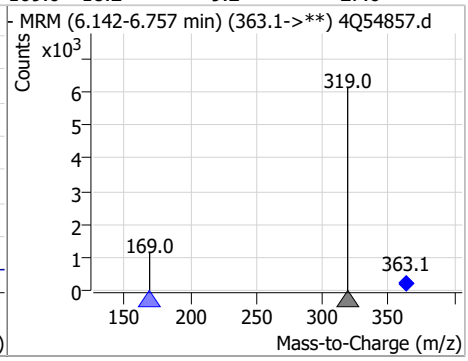




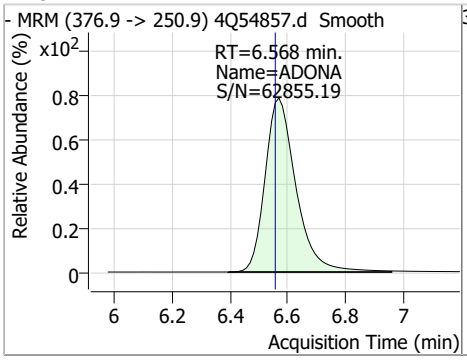
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	13.27	6.29	0.00	227994	363.1 -> 169.0	18.2	9.2	27.6

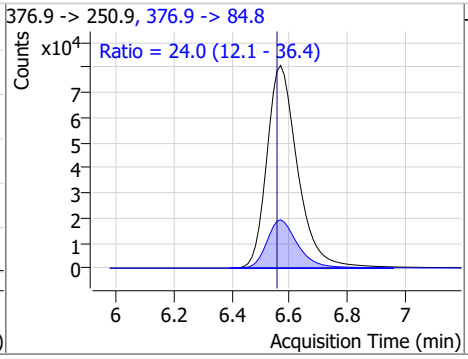


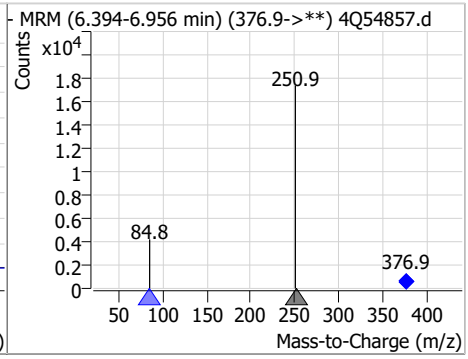




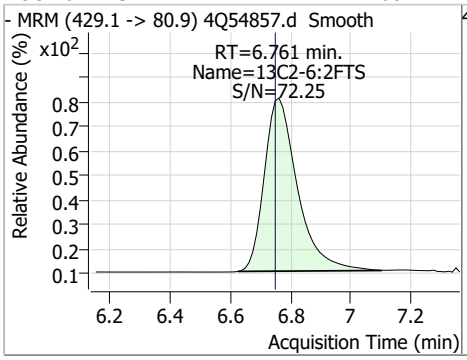
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	27.77	6.57	0.01	596187	376.9 -> 84.8	24.0	12.1	36.4

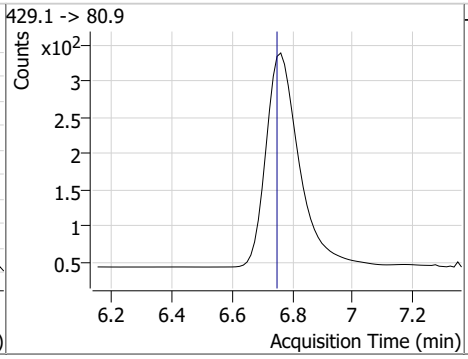


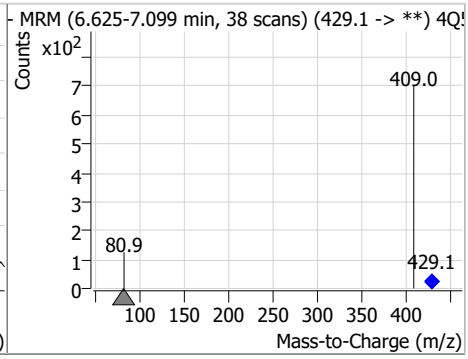




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.68	6.76	0.01	2242				

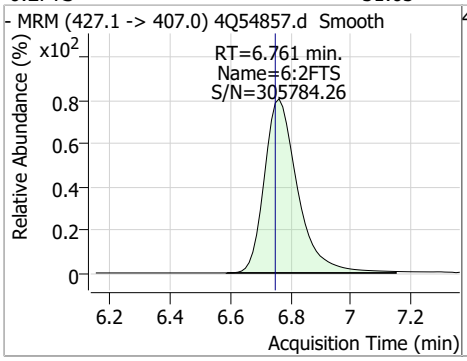


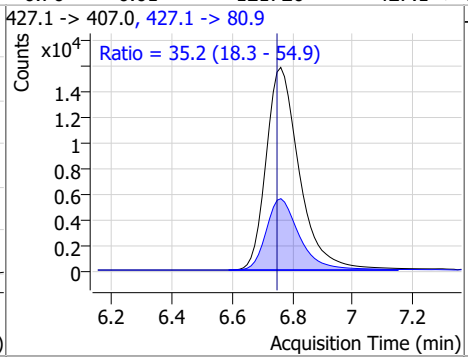


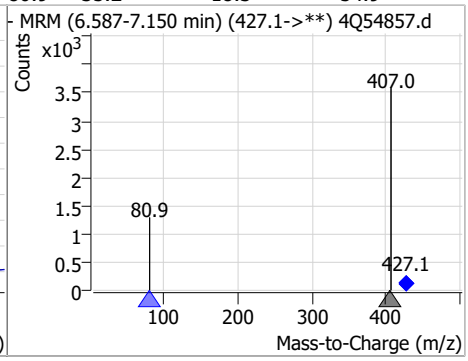


Perfluorinated Compounds by LC/MS/MS

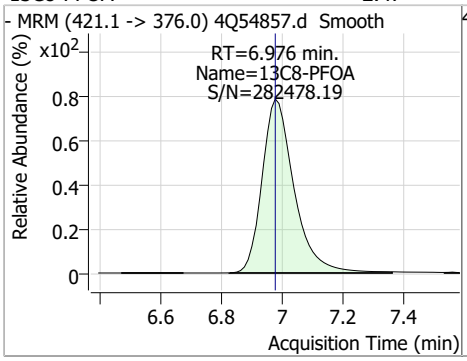
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	51.65	6.76	0.01	121720	427.1 -> 80.9	35.2	18.3	54.9

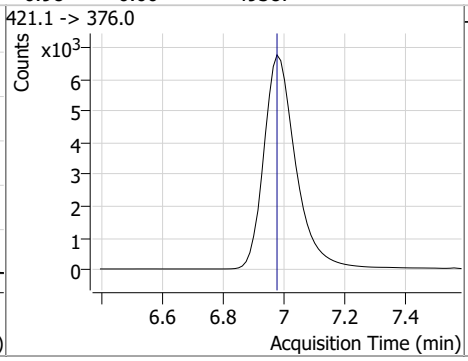


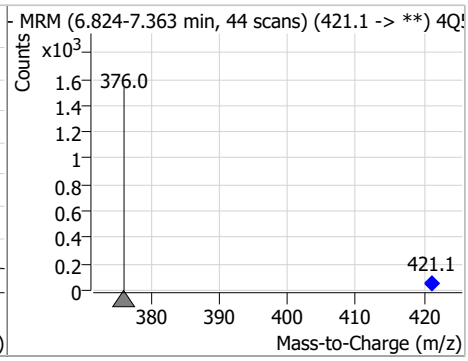




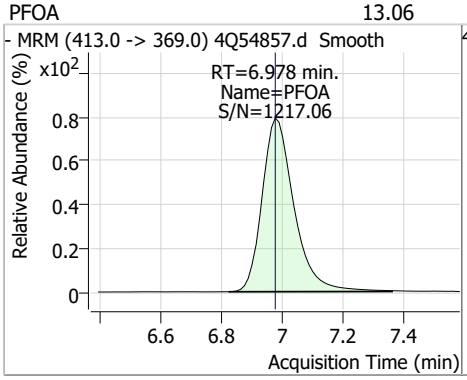
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.47	6.98	0.00	49387				

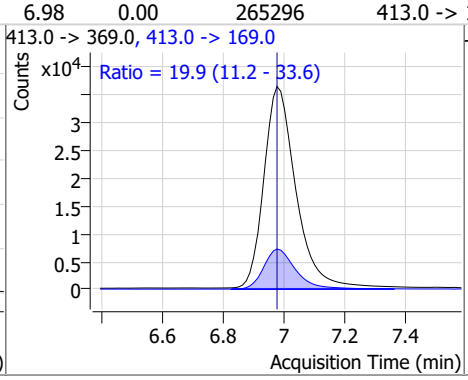


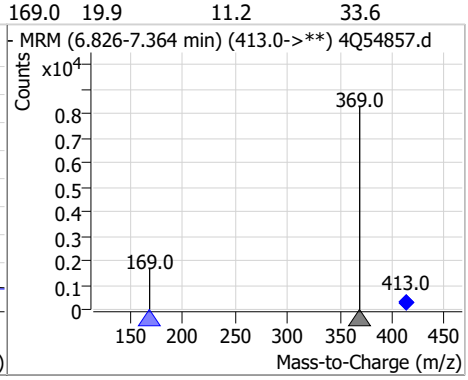




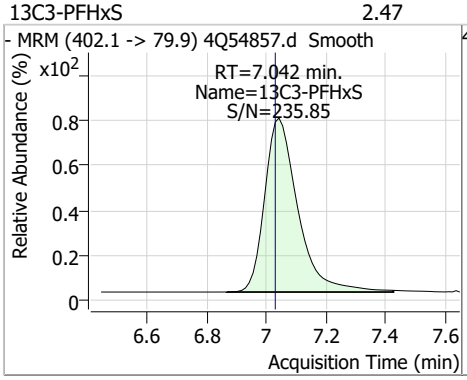
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	13.06	6.98	0.00	265296	413.0 -> 169.0	19.9	11.2	33.6

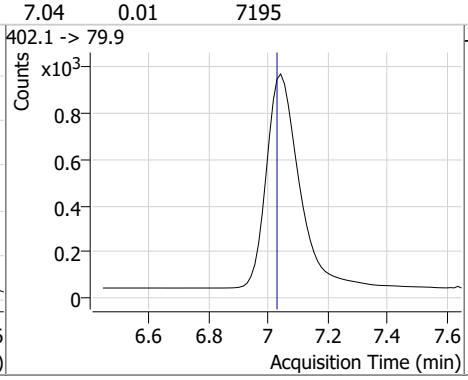


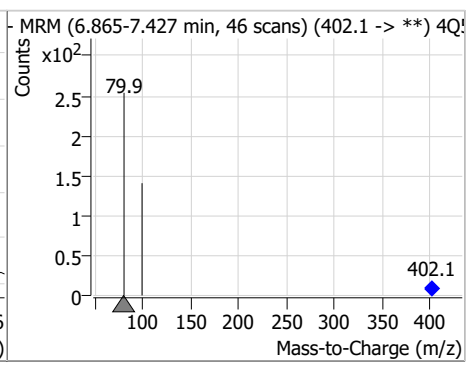




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.47	7.04	0.01	7195				

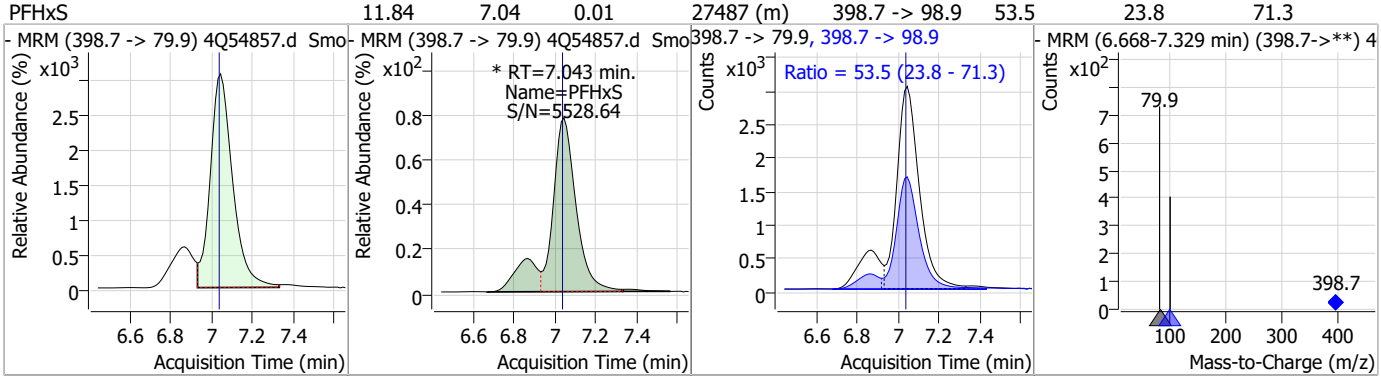




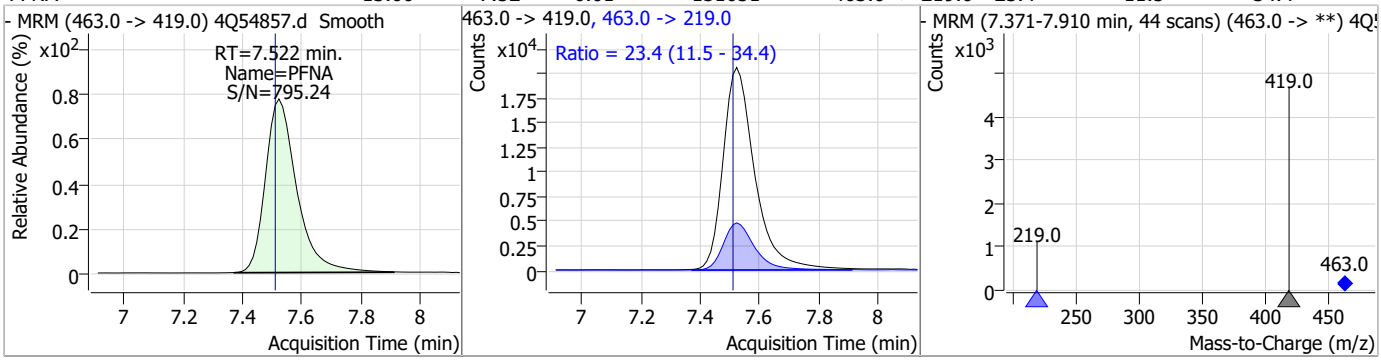


Perfluorinated Compounds by LC/MS/MS

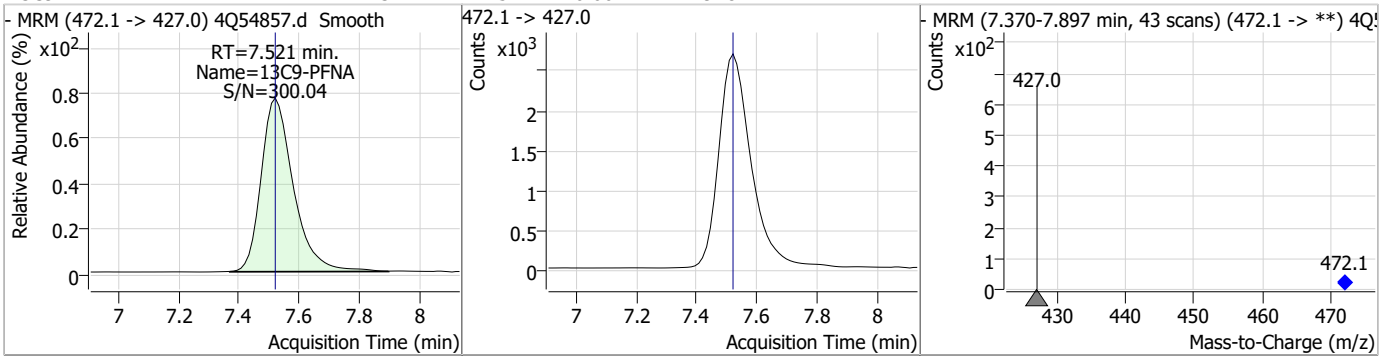
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.84	7.04	0.01	27487 (m)	398.7 -> 98.9	53.5	23.8	71.3



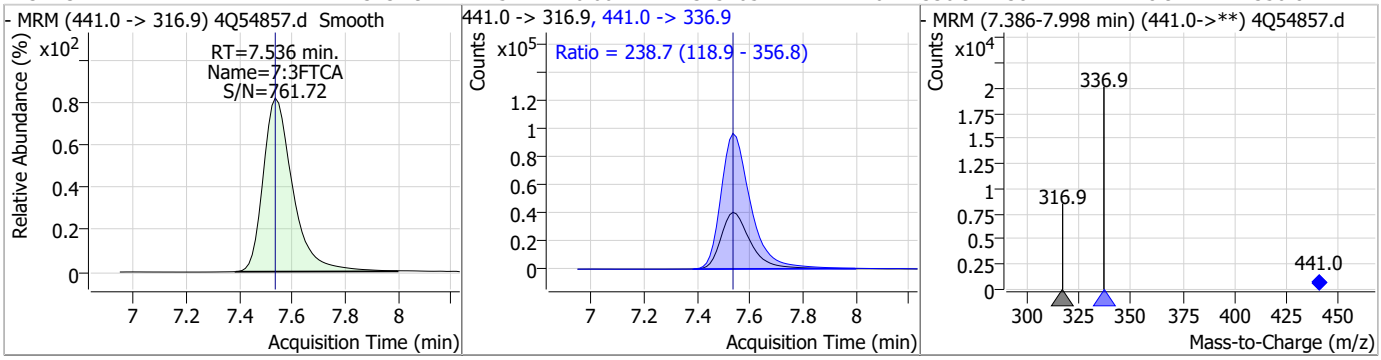
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	13.00	7.52	0.01	151051	463.0 -> 219.0	23.4	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.31	7.52	0.00	19782				

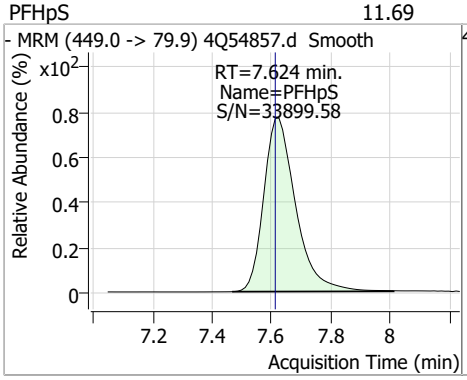


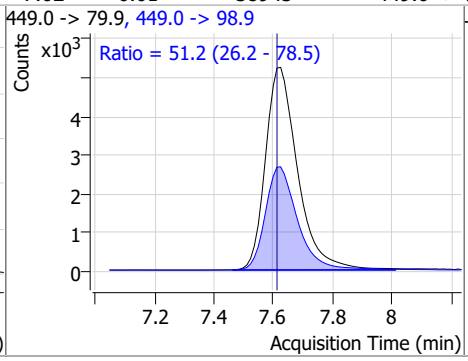
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	323.29	7.54	0.00	315105	441.0 -> 336.9	238.7	118.9	356.8

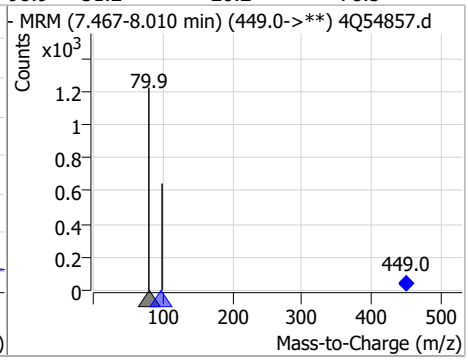


Perfluorinated Compounds by LC/MS/MS

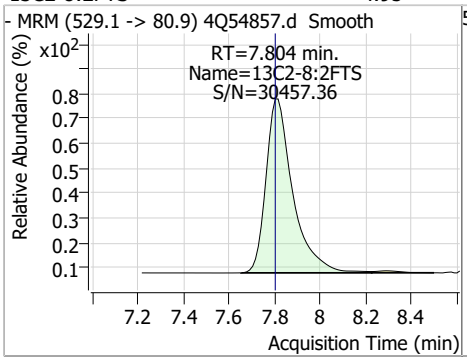
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	11.69	7.62	0.01	38943	449.0 -> 98.9	51.2	26.2	78.5

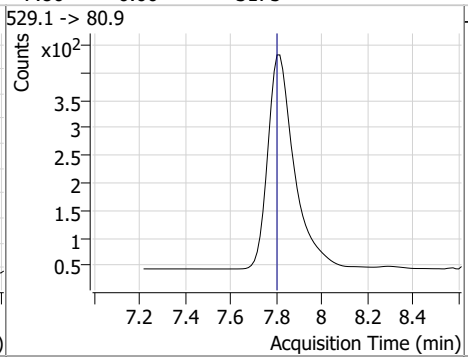


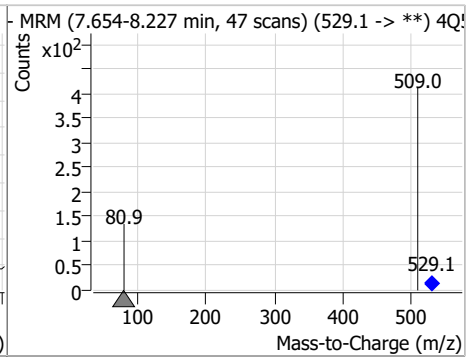




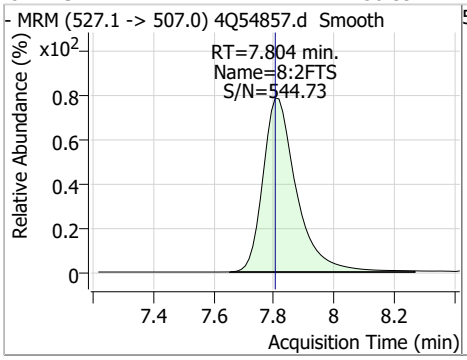
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.95	7.80	0.00	3175				

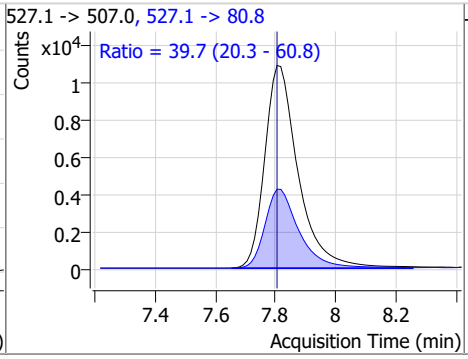


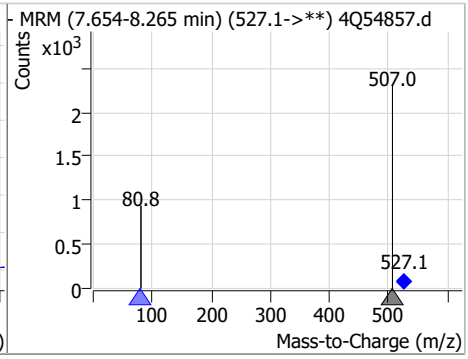




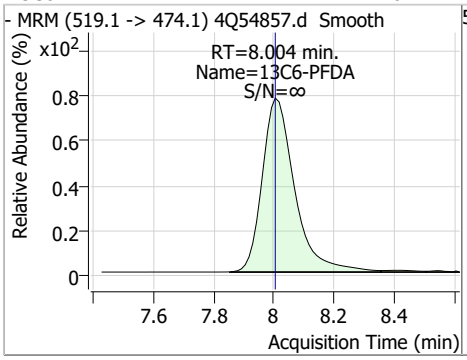
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	50.39	7.80	0.00	84315	527.1 -> 80.8	39.7	20.3	60.8

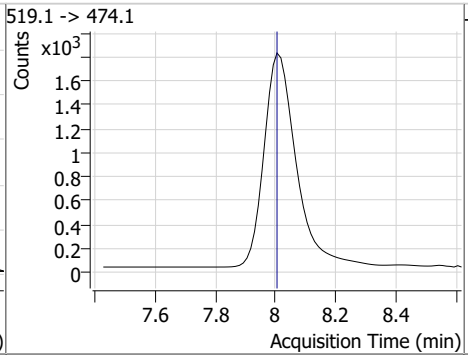


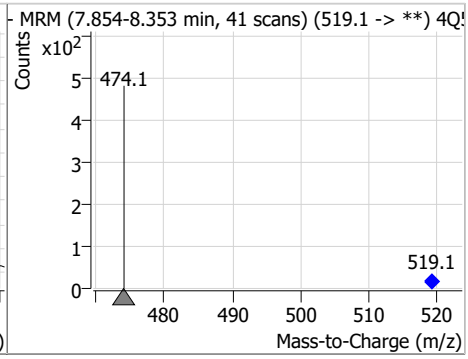




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.26	8.00	0.00	13327				

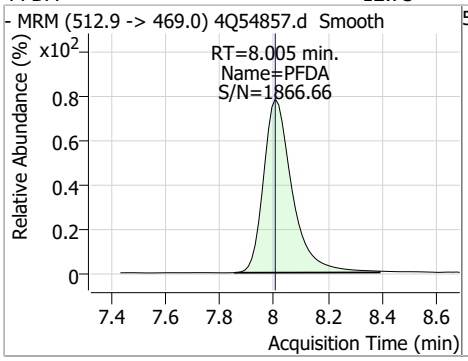


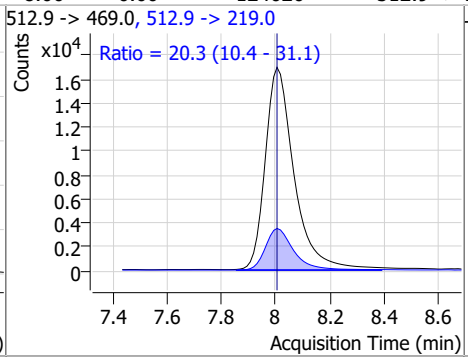


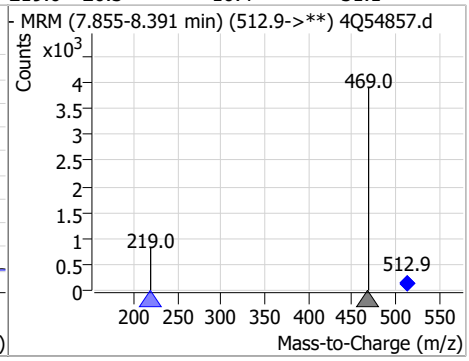


Perfluorinated Compounds by LC/MS/MS

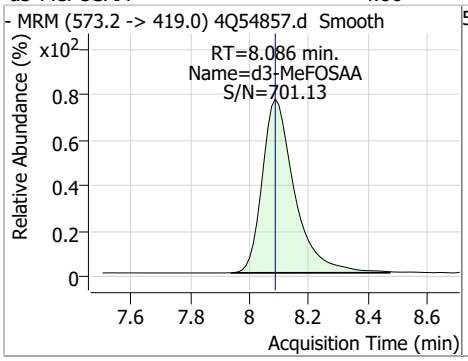
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	12.73	8.00	0.00	124626	512.9 -> 219.0	20.3	10.4	31.1

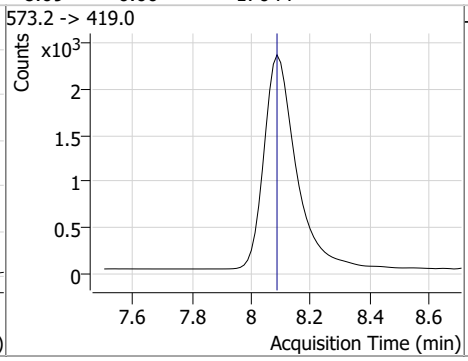


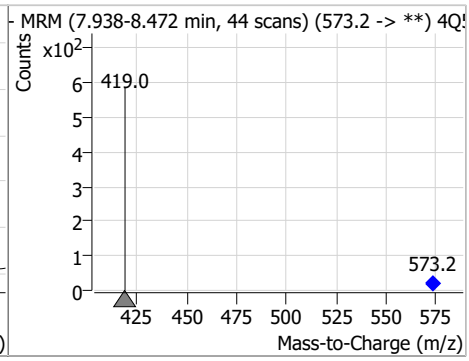




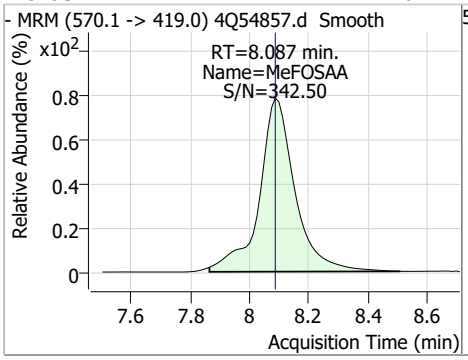
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.86	8.09	0.00	17644				

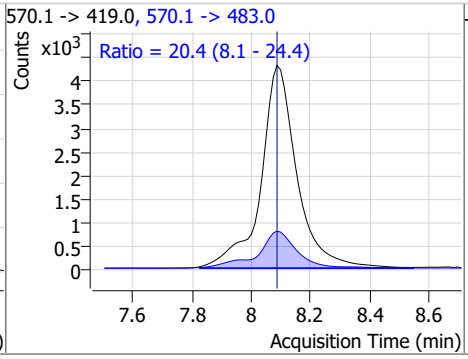


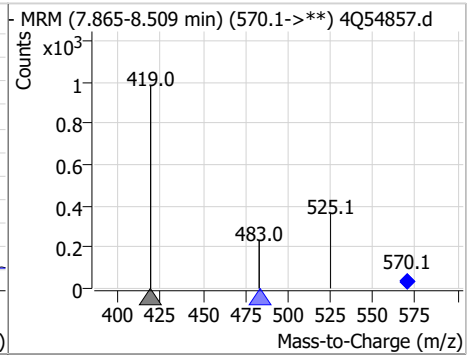




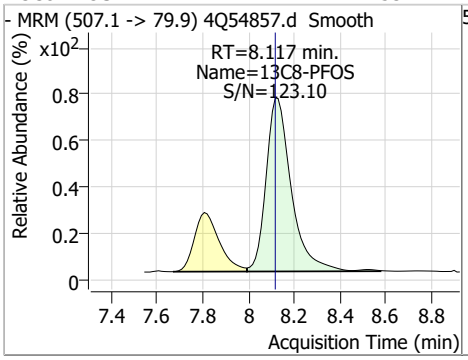
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	14.16	8.09	0.00	35809	570.1 -> 483.0	20.4	8.1	24.4

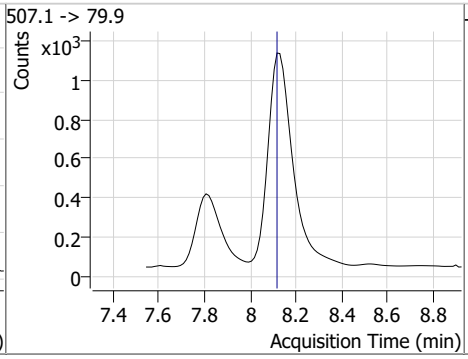


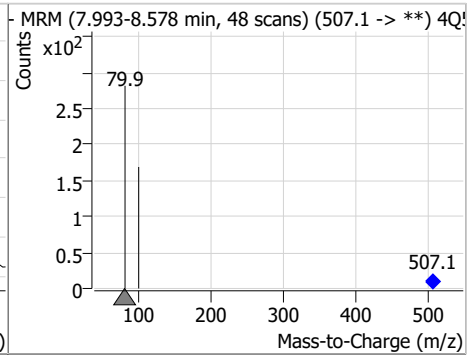




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.53	8.12	0.00	8393				

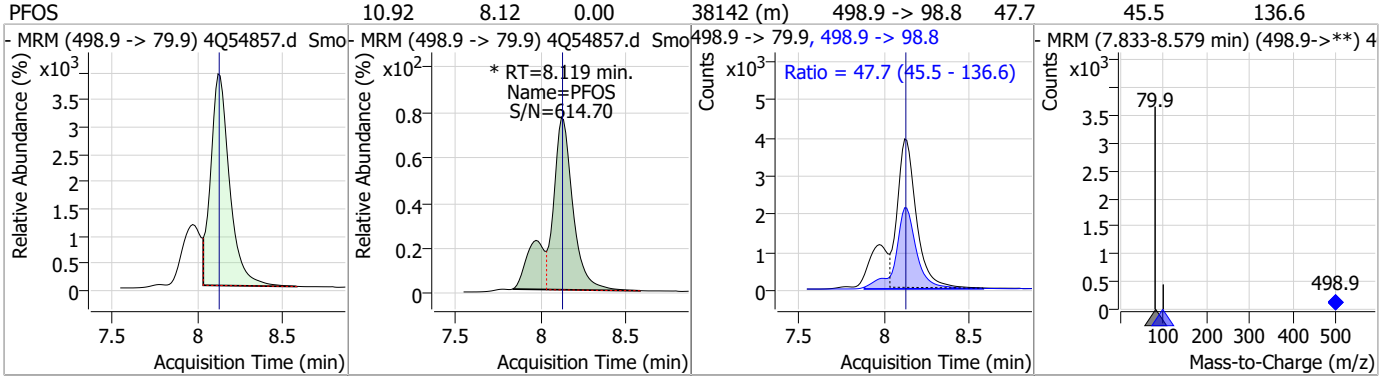




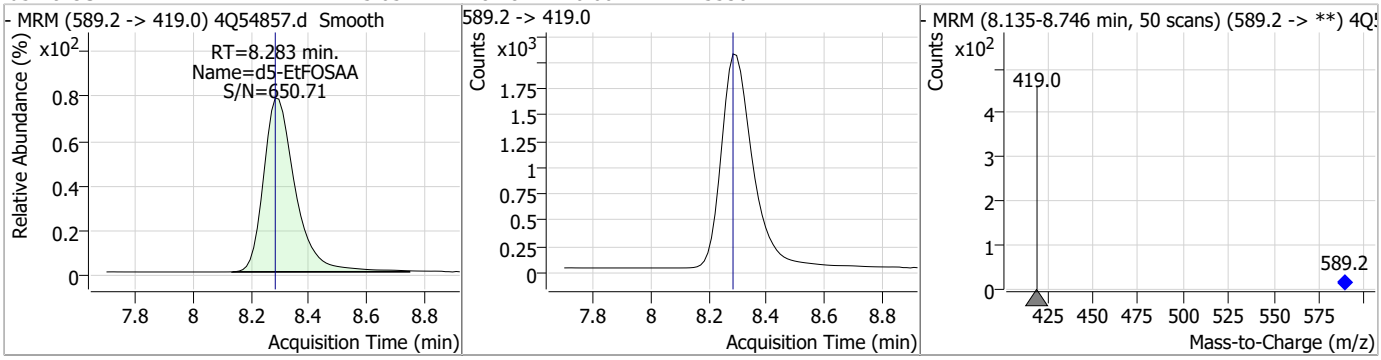


Perfluorinated Compounds by LC/MS/MS

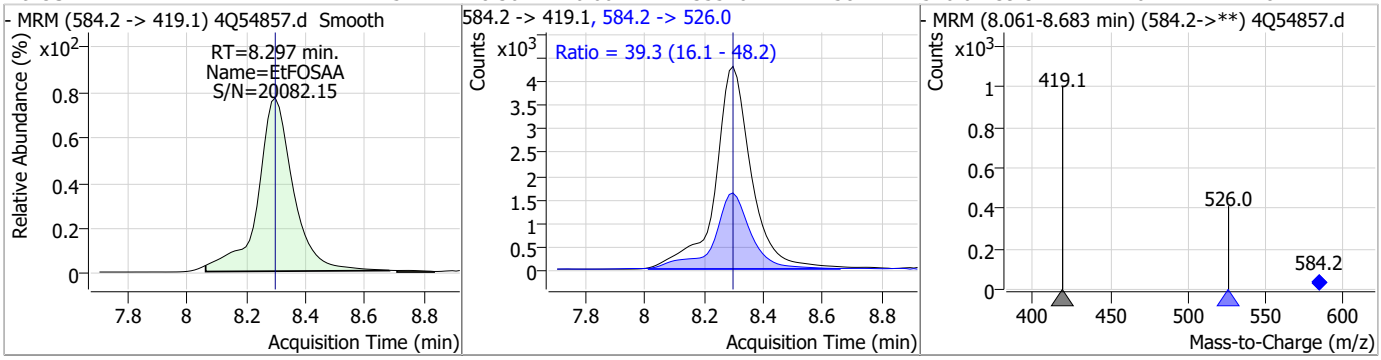
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	10.92	8.12	0.00	38142 (m)	498.9 -> 98.8	47.7	45.5	136.6



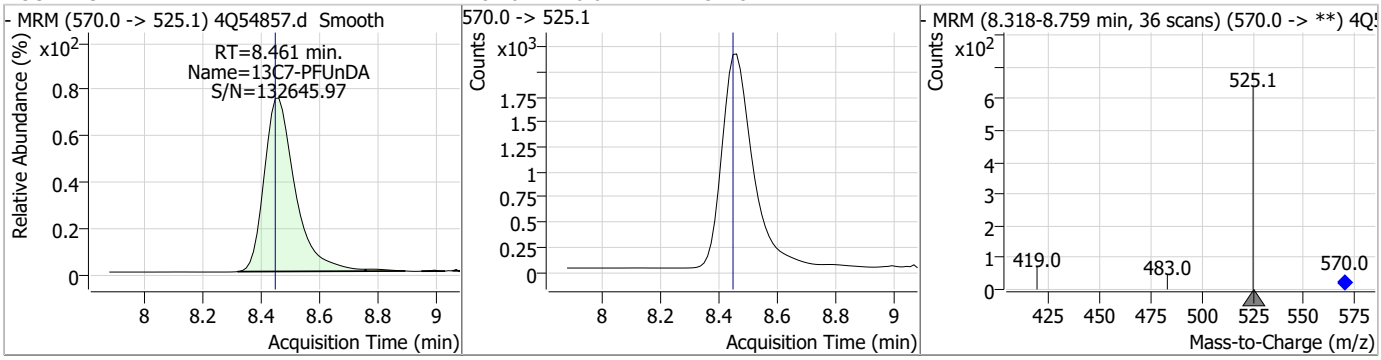
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.05	8.28	0.00	15530				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	12.54	8.30	0.00	35526	584.2 -> 526.0	39.3	16.1	48.2

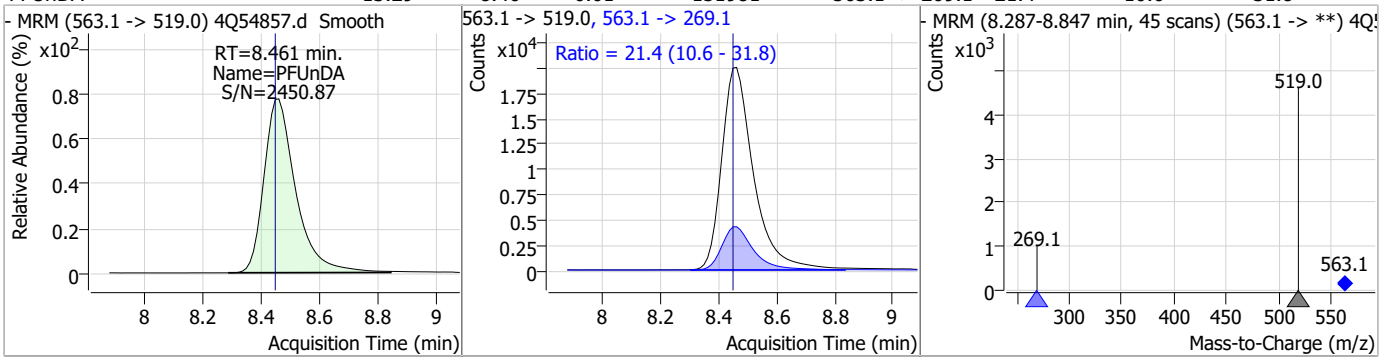


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.27	8.46	0.01	15728				

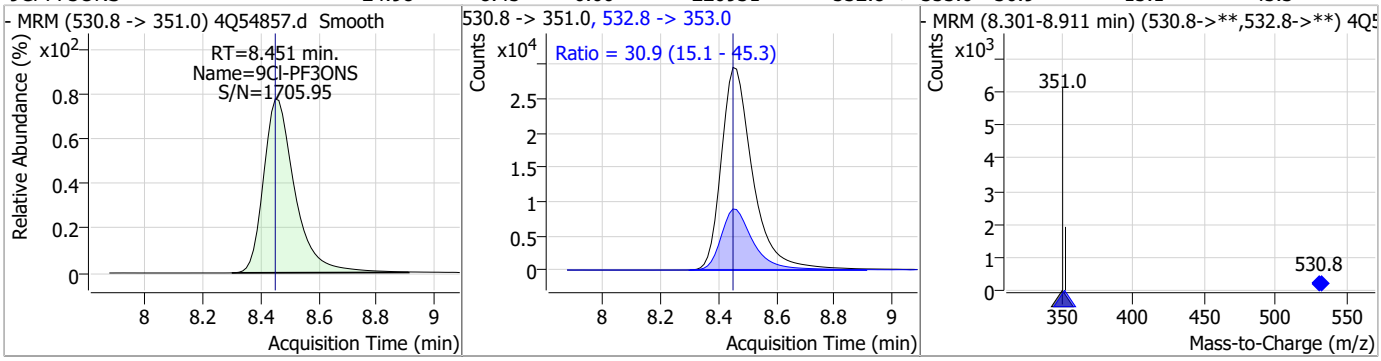


Perfluorinated Compounds by LC/MS/MS

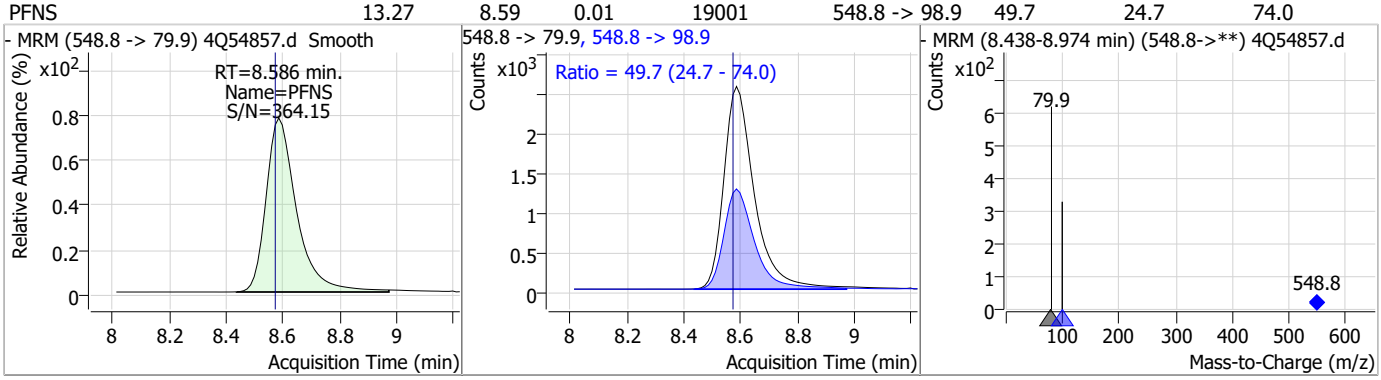
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	13.29	8.46	0.01	151981	563.1 -> 269.1	21.4	10.6	31.8



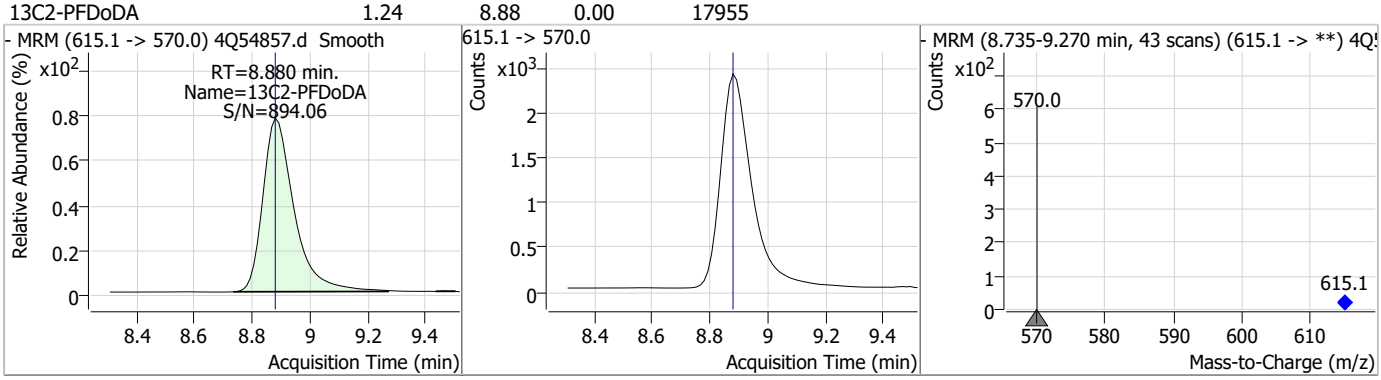
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	24.98	8.45	0.00	220931	532.8 -> 353.0	30.9	15.1	45.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	13.27	8.59	0.01	19001	548.8 -> 98.9	49.7	24.7	74.0

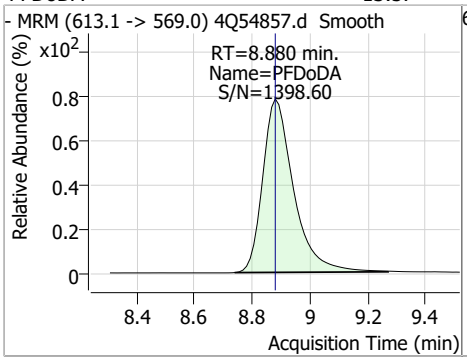


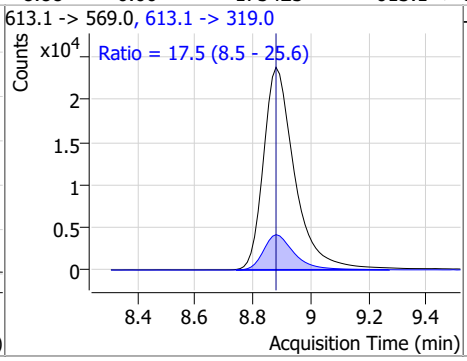
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.24	8.88	0.00	17955				

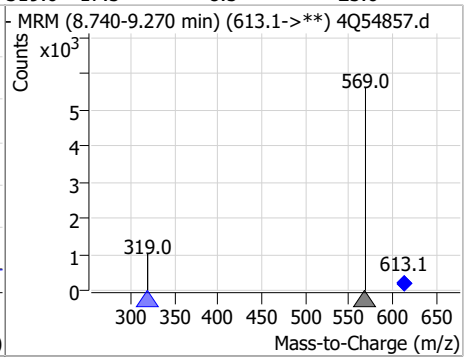


Perfluorinated Compounds by LC/MS/MS

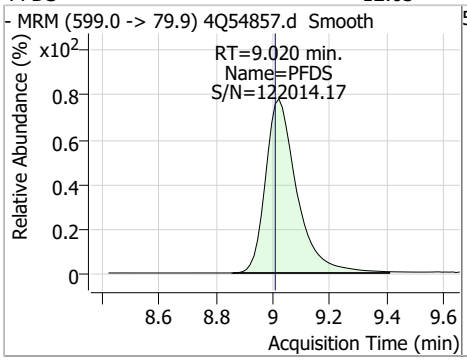
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	13.57	8.88	0.00	175425	613.1 -> 319.0	17.5	8.5	25.6

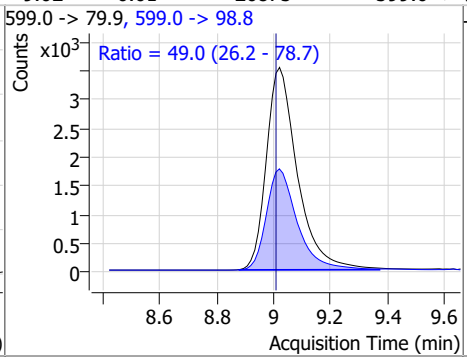


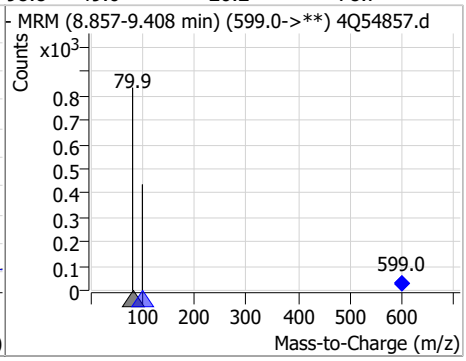




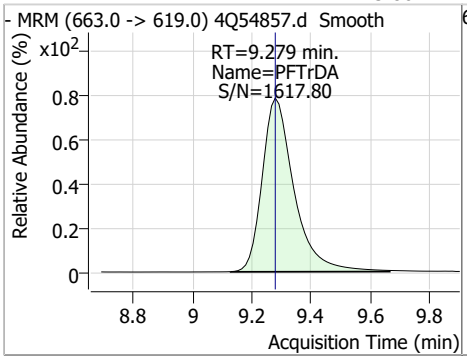
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	12.03	9.02	0.01	26875	599.0 -> 98.8	49.0	26.2	78.7

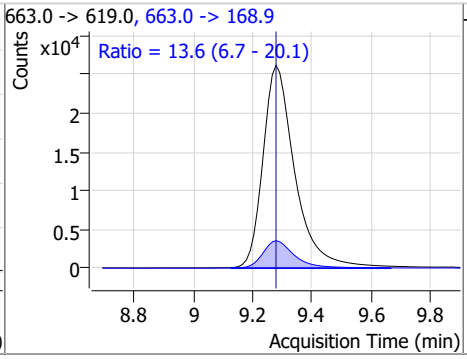


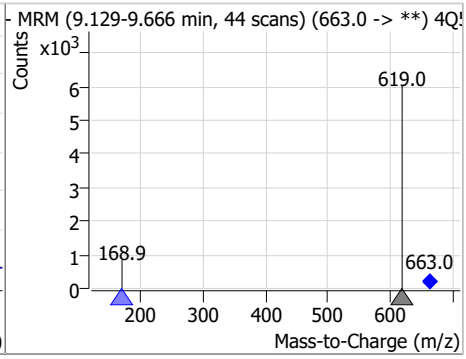




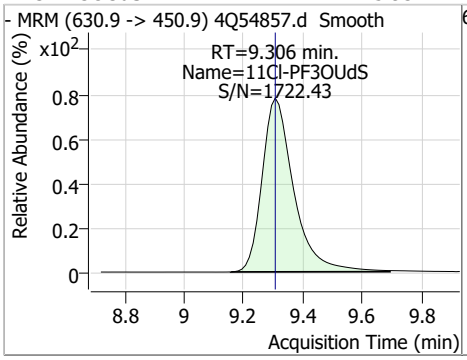
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	13.86	9.28	0.00	194692	663.0 -> 168.9	13.6	6.7	20.1

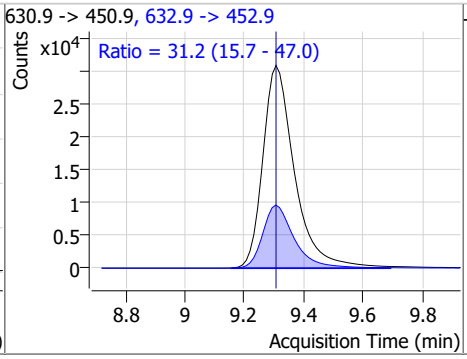


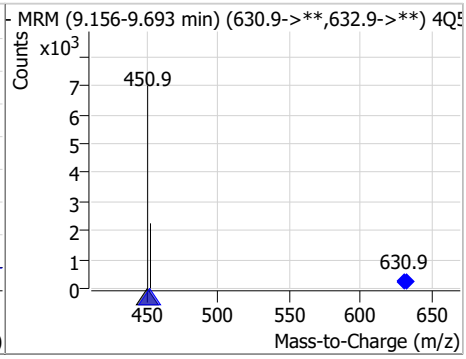




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	25.93	9.31	0.00	226944	632.9 -> 452.9	31.2	15.7	47.0

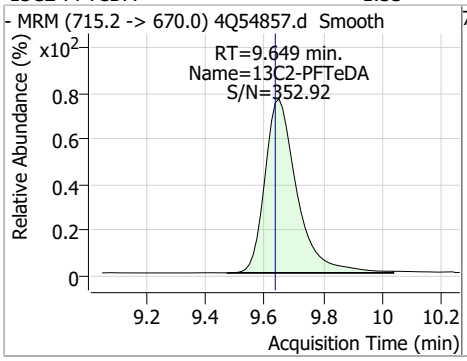


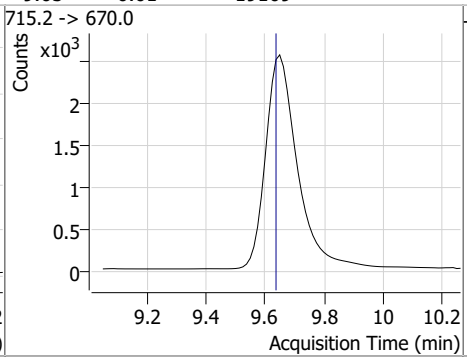


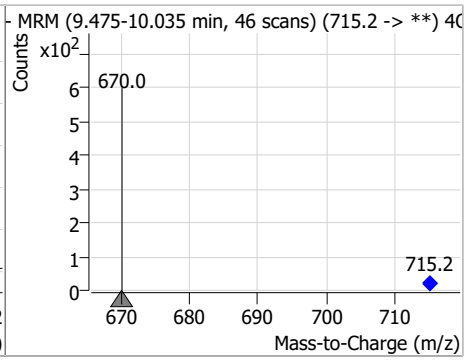


Perfluorinated Compounds by LC/MS/MS

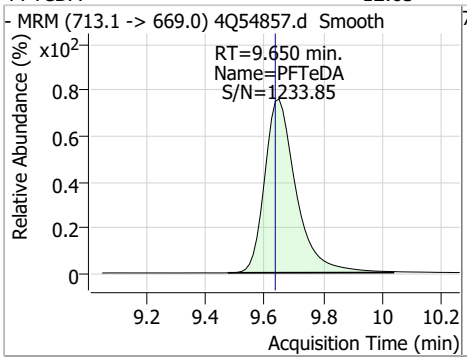
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.33	9.65	0.01	19109				

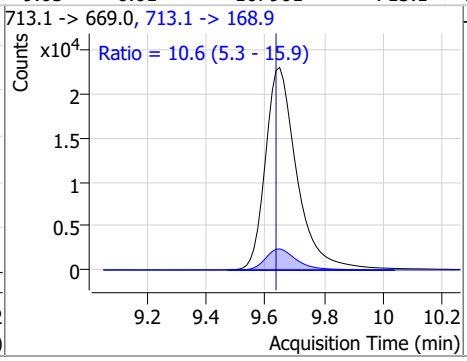


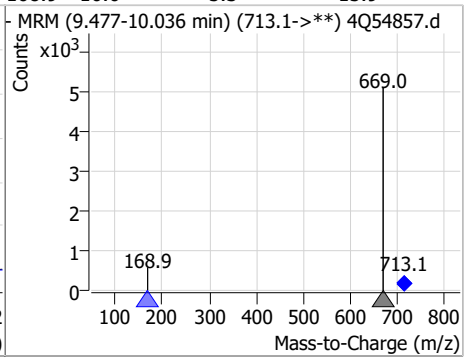




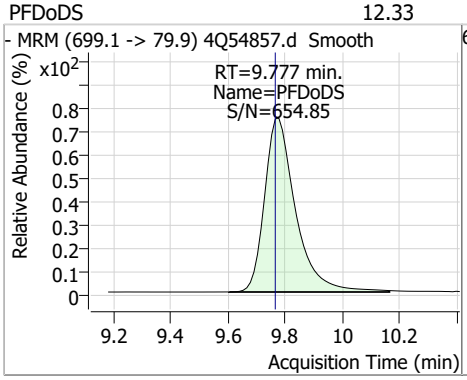
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	12.63	9.65	0.01	167961	713.1 -> 168.9	10.6	5.3	15.9

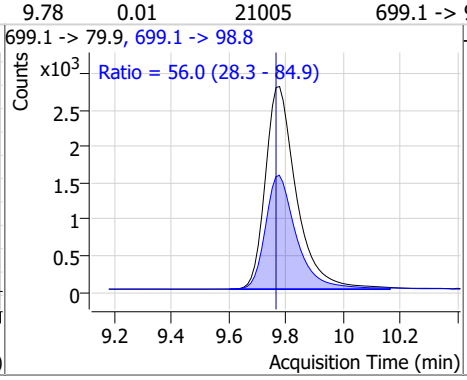


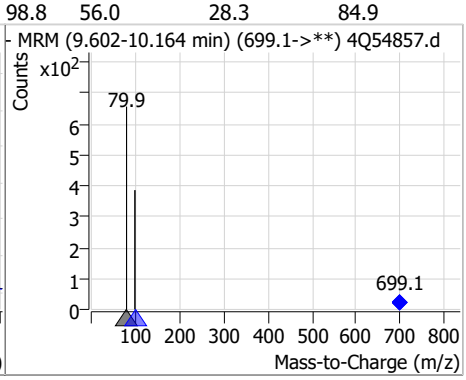




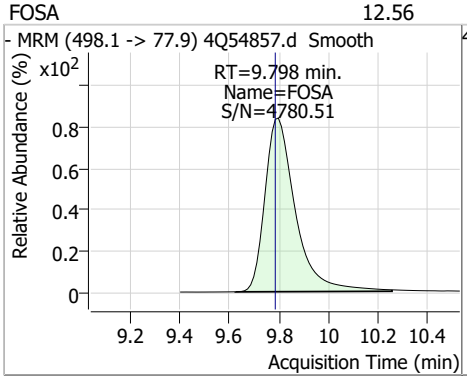
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	12.33	9.78	0.01	21005	699.1 -> 98.8	56.0	28.3	84.9

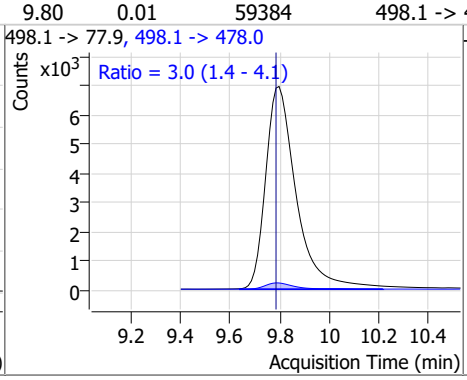


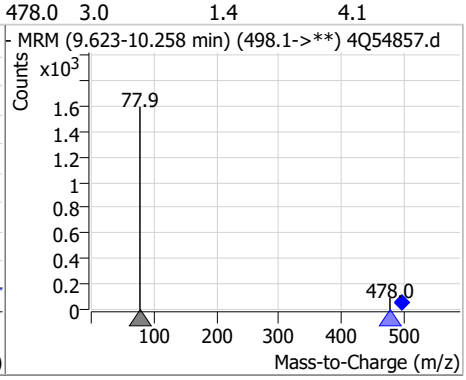




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	12.56	9.80	0.01	59384	498.1 -> 478.0	3.0	1.4	4.1

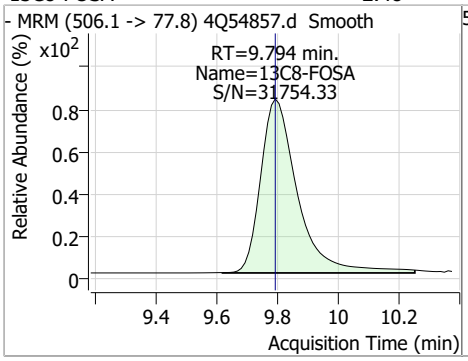


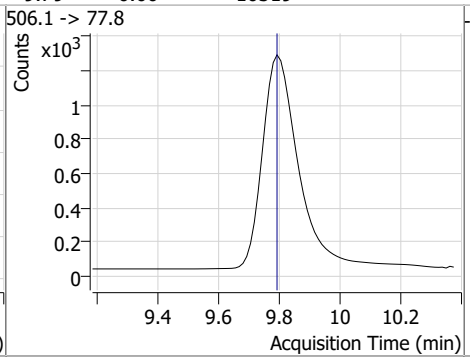


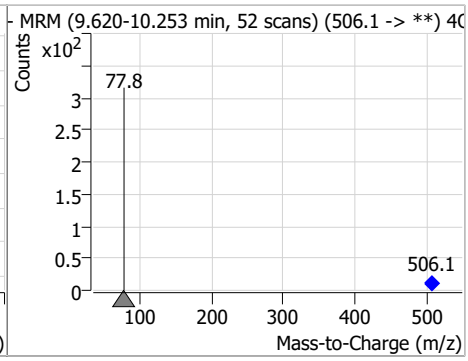


Perfluorinated Compounds by LC/MS/MS

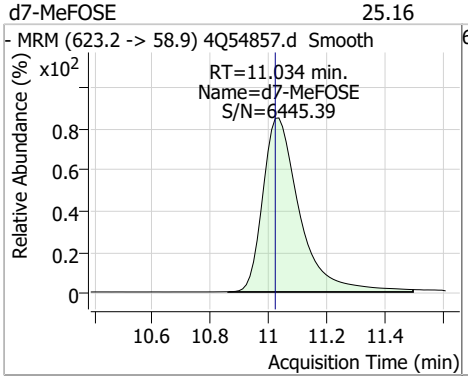
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	9.79	0.00	10519				

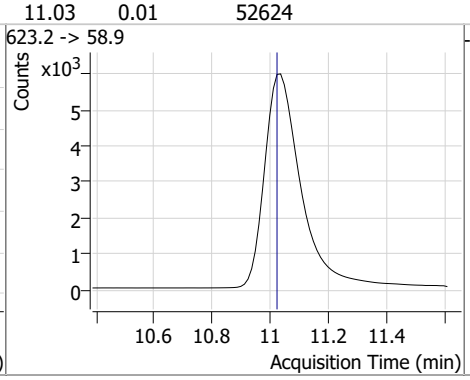


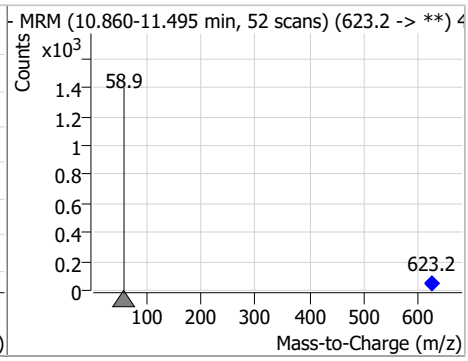




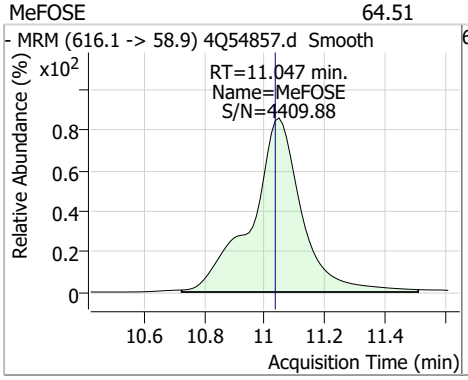
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.16	11.03	0.01	52624				

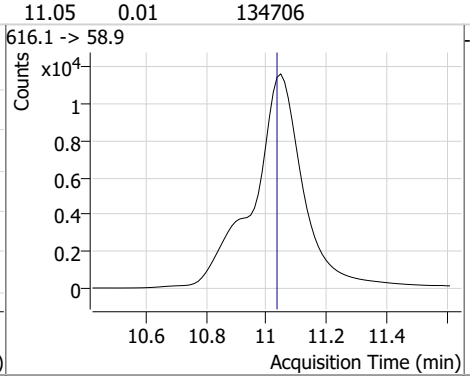


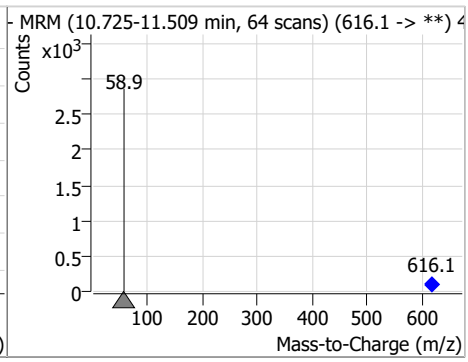




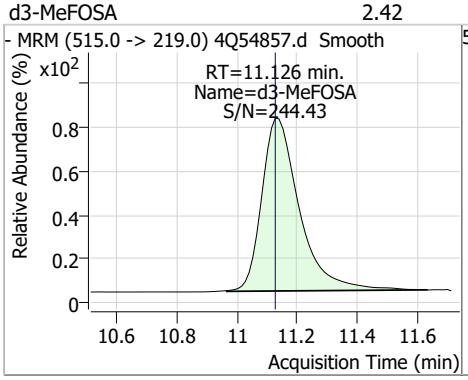
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	64.51	11.05	0.01	134706				

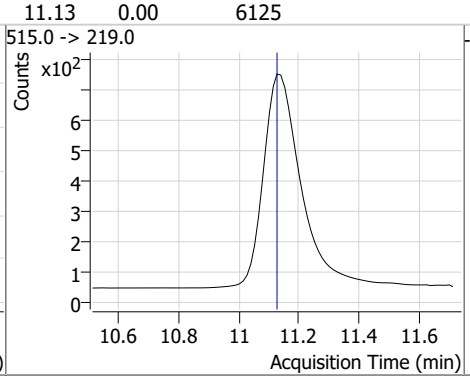


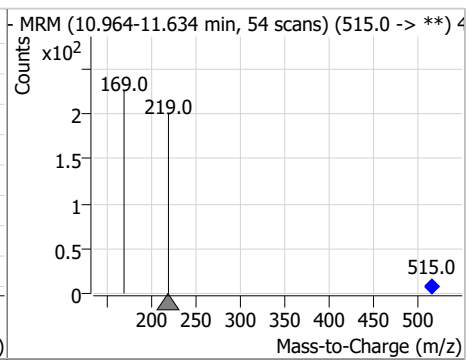




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.42	11.13	0.00	6125				

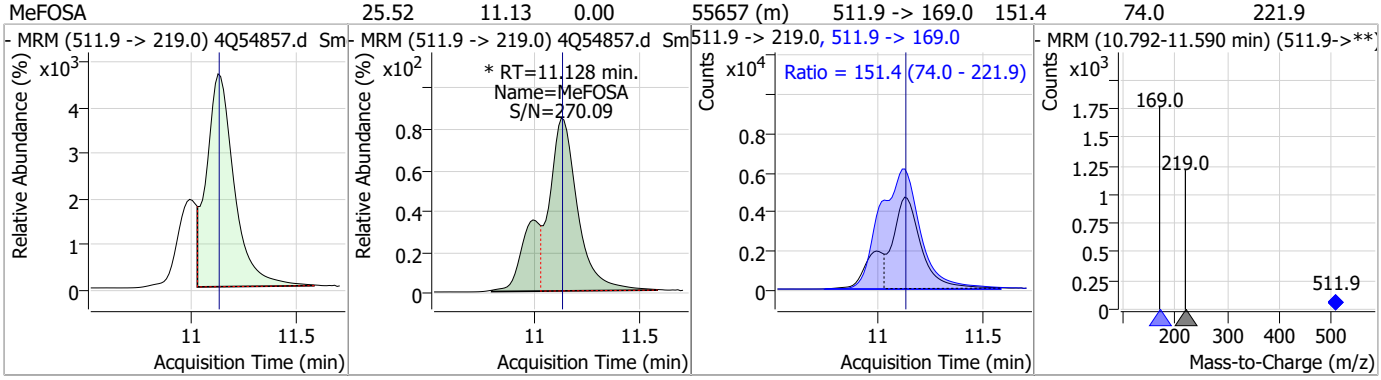




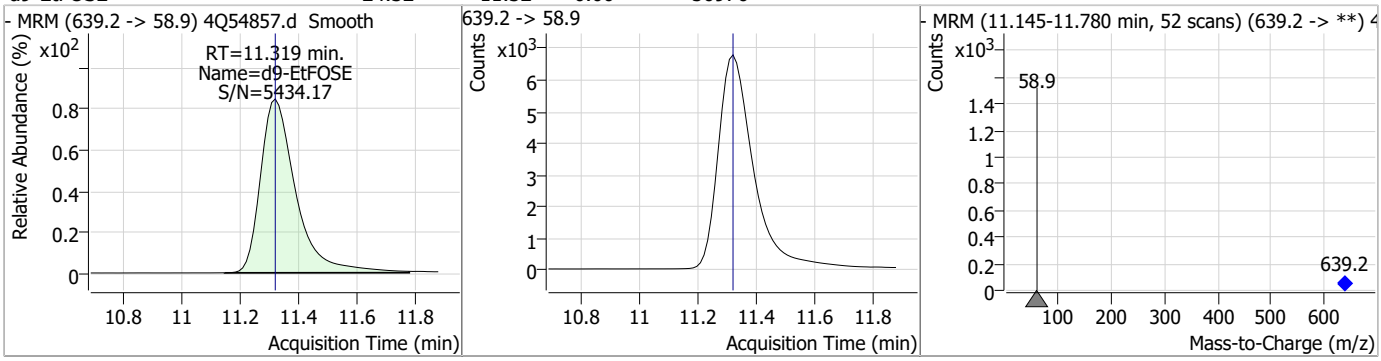


Perfluorinated Compounds by LC/MS/MS

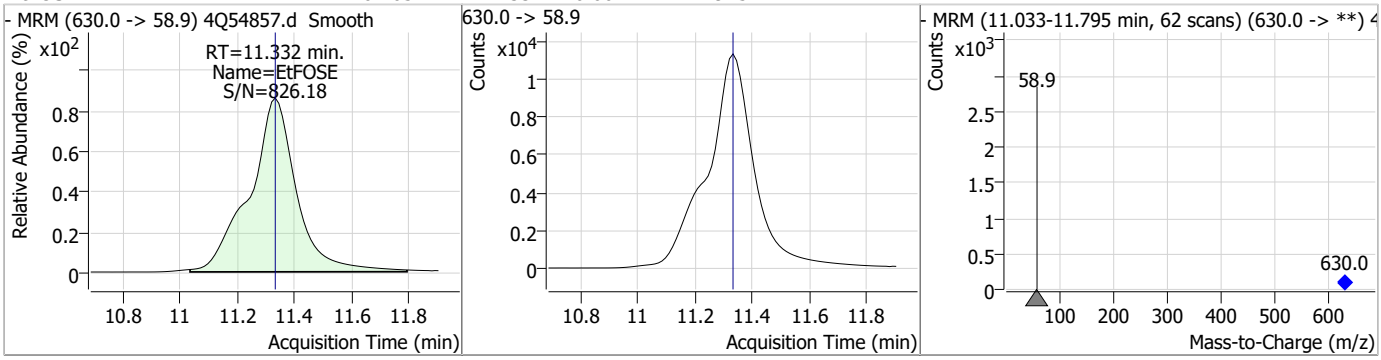
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	25.52	11.13	0.00	55657 (m)	511.9 -> 169.0	151.4	74.0	221.9



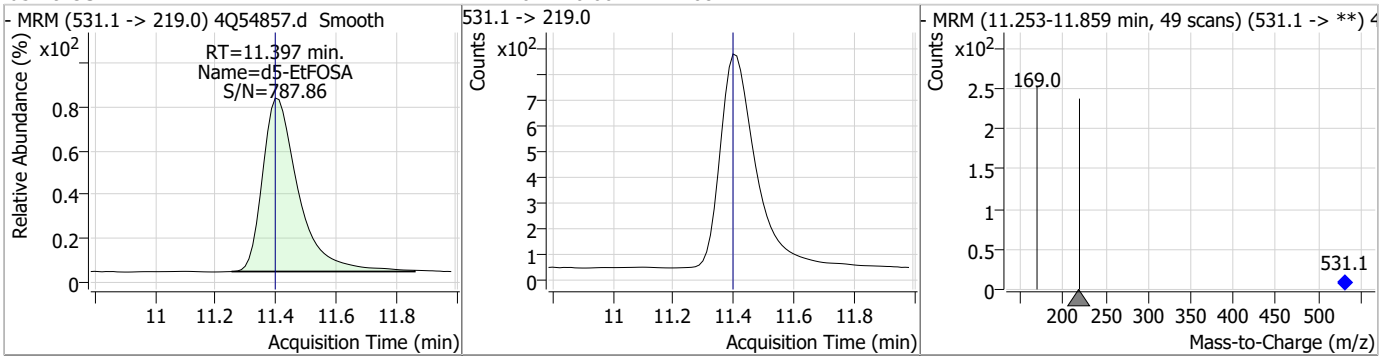
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.32	11.32	0.00	56976				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	64.05	11.33	0.00	129152				

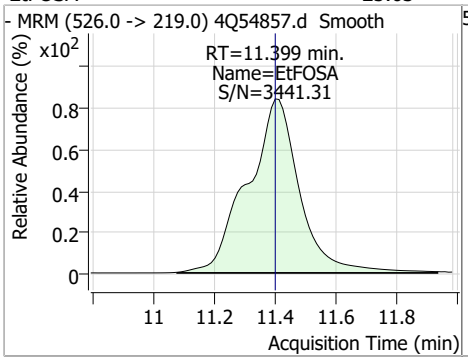


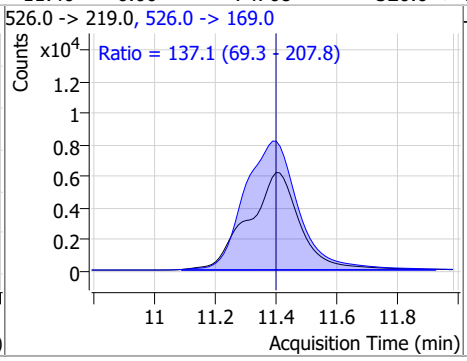
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.47	11.40	0.00	6847				

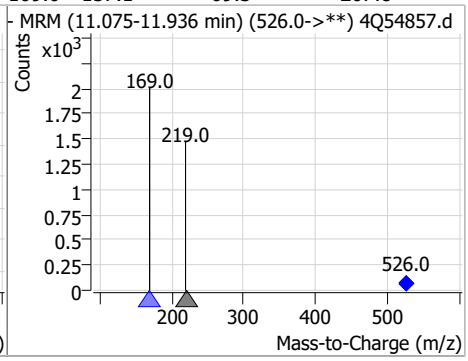


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	25.63	11.40	0.00	74708	526.0 -> 169.0	137.1	69.3	207.8







7.2.7

7

Manual Integration Approval Summary

Sample Number: S4Q804-IC804
Lab FileID: 4Q54857.D
Injection Time: 12/08/23 12:52
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.04	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak
MeFOSA	31506-32-8		11.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54858.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 1:06:48 PM
Sample Name : ic804-7
Vial : P1-A8
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	87354	10.00	µg/L	0.012
M5-PFPeA	4.175	268.3 -> 223.0	38177	5.00	µg/L	0.012
M5-PFHxA	5.347	318.0 -> 273.0	31540	2.50	µg/L	0.012
M4-PFHpA	6.304	367.1 -> 322.0	29075	2.50	µg/L	0.012
M8-PFOA	6.989	421.1 -> 376.0	45171	2.50	µg/L	0.012
M9-PFNA	7.521	472.1 -> 427.0	17839	1.25	µg/L	0.000
M6-PFDA	8.004	519.1 -> 474.1	12956	1.25	µg/L	0.000
M7-PFUnDA	8.461	570.0 -> 525.1	13655	1.25	µg/L	0.012
M2-PFDoDA	8.880	615.1 -> 570.0	17614	1.25	µg/L	0.000
M2-PFTeDA	9.649	715.2 -> 670.0	17401	1.25	µg/L	0.012
M8-FOSA	9.794	506.1 -> 77.8	9545	2.50	µg/L	0.000
M3-PFBS	5.202	302.1 -> 79.9	8388	2.50	µg/L	0.013
M3-PFHxS	7.042	402.1 -> 79.9	6986	2.50	µg/L	0.012
M8-PFOS	8.130	507.1 -> 79.9	7625	2.50	µg/L	0.012
M2-4:2FTS	5.058	329.1 -> 80.9	910	5.00	µg/L	0.012
M2-6:2FTS	6.773	429.1 -> 80.9	1824	5.00	µg/L	0.025
M2-8:2FTS	7.816	529.1 -> 80.9	2782	5.00	µg/L	0.012
M3-MeFOSAA	8.086	573.2 -> 419.0	16209	5.00	µg/L	0.000
M3-HFPO-DA	5.702	286.9 -> 168.9	31362	10.00	µg/L	0.012
M5-EtFOSAA	8.296	589.2 -> 419.0	13653	5.00	µg/L	0.012
M7-MeFOSE	11.022	623.2 -> 58.9	47430	25.00	µg/L	0.000
M9-EtFOSE	11.319	639.2 -> 58.9	52473	25.00	µg/L	0.000
M5-EtFOSA	11.397	531.1 -> 219.0	6812	2.50	µg/L	0.000
M3-MeFOSA	11.139	515.0 -> 219.0	6327	2.50	µg/L	0.012
13C4-PFOS	8.130	502.8 -> 79.9	5905	2.50	µg/L	0.012
13C3-PFBA	2.691	216.0 -> 172.0	41866	5.00	µg/L	0.013
18O2-PFHxS	7.041	403.0 -> 83.9	4305	2.50	µg/L	0.000
13C4-PFOA	6.989	417.1 -> 372.0	50091	2.50	µg/L	0.012
13C2-PFDA	8.004	515.1 -> 470.1	14220	1.25	µg/L	0.000
13C5-PFNA	7.522	468.0 -> 423.0	18843	1.25	µg/L	0.012
13C2-PFHxA	5.348	315.1 -> 270.0	33172	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.058	329.1 -> 80.9	910	4.45	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C2-6:2FTS	6.773	429.1 -> 80.9	1824	4.11	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 82.3%		
13C2-8:2FTS	7.816	529.1 -> 80.9	2782	4.69	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C2-PFDoDA	8.880	615.1 -> 570.0	17614	1.24	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C2-PFTeDA	9.649	715.2 -> 670.0	17401	1.23	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C3-PFBS	5.202	302.1 -> 79.9	8388	2.54	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C3-PFHxS	7.042	402.1 -> 79.9	6986	2.59	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C4-PFBA	2.686	216.8 -> 171.9	87354	9.94 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C4-PFHpA	6.304	367.1 -> 322.0	29075	2.49 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C5-PFHxA	5.347	318.0 -> 273.0	31540	2.58 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C5-PFPeA	4.175	268.3 -> 223.0	38177	5.01 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C6-PFDA	8.004	519.1 -> 474.1	12956	1.25 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C7-PFUnDA	8.461	570.0 -> 525.1	13655	1.12 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C8-FOSA	9.794	506.1 -> 77.8	9545	2.49 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C8-PFOA	6.989	421.1 -> 376.0	45171	2.44 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C8-PFOS	8.130	507.1 -> 79.9	7625	2.55 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C9-PFNA	7.521	472.1 -> 427.0	17839	1.18 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.5%		
d3-MeFOSAA	8.086	573.2 -> 419.0	16209	4.94 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C3-HFPO-DA	5.702	286.9 -> 168.9	31362	10.27 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
d3-MeFOSA	11.139	515.0 -> 219.0	6327	2.77 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 110.9%		
d5-EtFOSAA	8.296	589.2 -> 419.0	13653	4.92 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
d7-MeFOSE	11.022	623.2 -> 58.9	47430	25.12 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
d9-EtFOSE	11.319	639.2 -> 58.9	52473	24.82 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
d5-EtFOSA	11.397	531.1 -> 219.0	6812	2.72 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 108.9%		
Target Compounds						QValue
4:2FTS	5.059	327.1 -> 307.0	156049	99.56 µg/L		97
		327.1 -> 80.9	64039			
6:2FTS	6.761	427.1 -> 407.0	213255	111.24 µg/L		96
		427.1 -> 80.9	73444			
8:2FTS	7.816	527.1 -> 507.0	150566	102.68 µg/L		97
		527.1 -> 80.8	57915			
EtFOSAA	8.297	584.2 -> 419.1	66954	26.88 µg/L	m	88
		584.2 -> 526.0	26157			
FOSA	9.798	498.1 -> 77.9	113100	26.36 µg/L		99
		498.1 -> 478.0	3609			
MeFOSAA	8.087	570.1 -> 419.0	69981	30.11 µg/L		95
		570.1 -> 483.0	12849			
PFBA	2.682	212.8 -> 168.9	300524	107.42 µg/L		100
PFBS	5.203	298.7 -> 79.9	61484	23.63 µg/L		98
		298.7 -> 98.8	24288			
PFDA	8.005	512.9 -> 469.0	237667	24.97 µg/L		98
		512.9 -> 219.0	46893			
PFDoDA	8.880	613.1 -> 569.0	337475	26.60 µg/L		99
		613.1 -> 319.0	59206			
PFDS	9.020	599.0 -> 79.9	51524	25.39 µg/L		97

Perfluorinated Compounds by LC/MS/MS

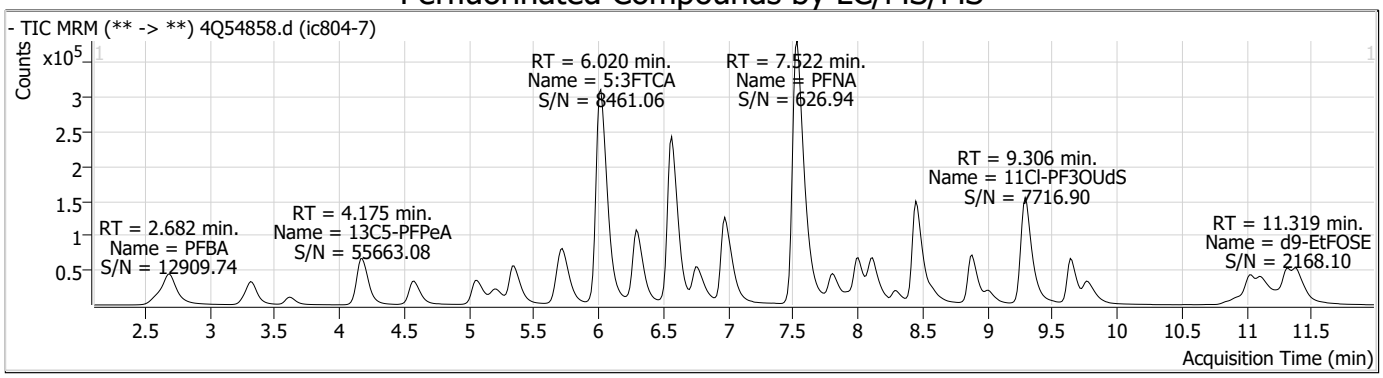
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	26101				
PFHpA	6.305	363.1 -> 319.0	446479	27.28	µg/L		99
		363.1 -> 169.0	79342				
PFHpS	7.624	449.0 -> 79.9	77955	25.77	µg/L		100
		449.0 -> 98.9	40719				
PFHxA	5.350	313.0 -> 269.0	263757	26.21	µg/L		99
		313.0 -> 118.9	8077				
PFHxS	7.043	398.7 -> 79.9	51447	22.83	µg/L	m	97
		398.7 -> 98.9	25465				
PFNA	7.522	463.0 -> 419.0	287697	27.45	µg/L		98
		463.0 -> 219.0	68946				
PFNS	8.586	548.8 -> 79.9	35851	27.56	µg/L		97
		548.8 -> 98.9	18559				
PFOA	6.990	413.0 -> 369.0	495670	26.68	µg/L		96
		413.0 -> 169.0	101555				
PFOS	8.131	498.9 -> 79.9	74590	23.50	µg/L	m	52
		498.9 -> 98.8	34238				
PFPeA	4.177	263.0 -> 219.0	402705	53.61	µg/L		100
PFPeS	6.294	349.1 -> 79.9	52797	24.88	µg/L		95
		349.1 -> 98.9	24033				
PFTeDA	9.650	713.1 -> 669.0	323093	26.68	µg/L		99
		713.1 -> 168.9	32906				
PFTrDA	9.279	663.0 -> 619.0	360692	26.17	µg/L		99
		663.0 -> 168.9	49646				
PFUnDA	8.461	563.1 -> 519.0	275616	27.75	µg/L		99
		563.1 -> 269.1	59539				
11Cl-PF3OUdS	9.306	630.9 -> 450.9	428216	49.59	µg/L		99
		632.9 -> 452.9	132787				
9Cl-PF3ONS	8.463	530.8 -> 351.0	407311	46.66	µg/L		100
		532.8 -> 353.0	122254				
ADONA	6.568	376.9 -> 250.9	1151101	54.35	µg/L		100
		376.9 -> 84.8	277421				
HFPO-DA	5.703	284.9 -> 168.9	158726	52.89	µg/L		99
		284.9 -> 184.9	15251				
3:3FTCA	3.617	241.0 -> 177.0	60644	136.36	µg/L		100
		241.0 -> 117.0	5330				
5:3FTCA	6.020	341.0 -> 237.1	1177771	656.12	µg/L		98
		341.0 -> 217.0	825148				
7:3FTCA	7.536	441.0 -> 316.9	606563	644.37	µg/L		99
		441.0 -> 336.9	1431693				
EtFOSA	11.399	526.0 -> 219.0	143025	49.31	µg/L		100
		526.0 -> 169.0	198112				
EtFOSE	11.332	630.0 -> 58.9	245376	132.13	µg/L		100
MeFOSA	11.128	511.9 -> 219.0	112208	49.81	µg/L	m	96
		511.9 -> 169.0	159992				
MeFOSE	11.047	616.1 -> 58.9	251819	133.81	µg/L		100
PFDoDS	9.777	699.1 -> 79.9	40747	26.33	µg/L		98
		699.1 -> 98.8	22426				
NFDHA	5.229	295.0 -> 201.0	34793	48.80	µg/L		99
		295.0 -> 84.9	8855				
PFMBA	4.578	279.0 -> 85.1	219615	53.10	µg/L		100
PFMPA	3.315	229.0 -> 84.9	243276	53.53	µg/L		100
PFEESA	5.734	314.8 -> 134.9	349223	46.95	µg/L		98
		314.8 -> 82.9	11549				

 # = Qualifier out of range, m = manually integrated, + = Area summed

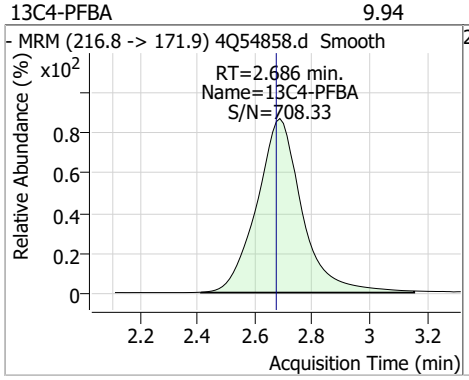
Perfluorinated Compounds by LC/MS/MS

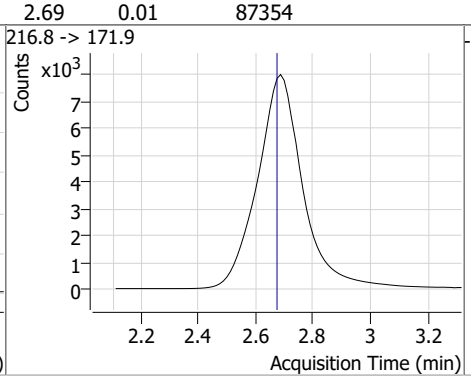
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

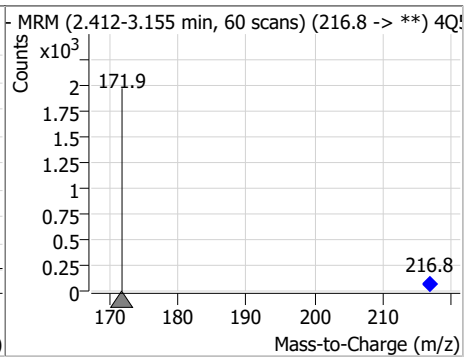
Perfluorinated Compounds by LC/MS/MS



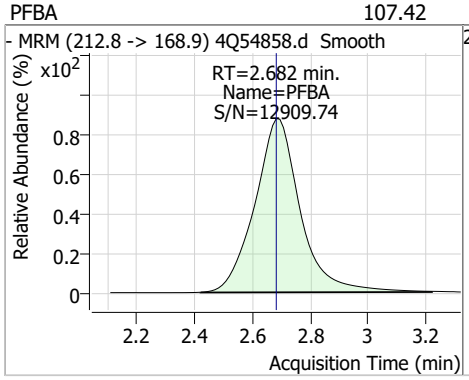
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.94	2.69	0.01	87354				

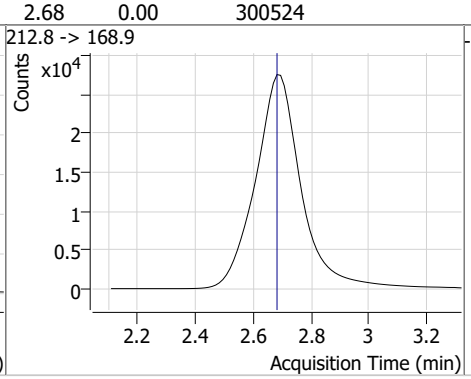


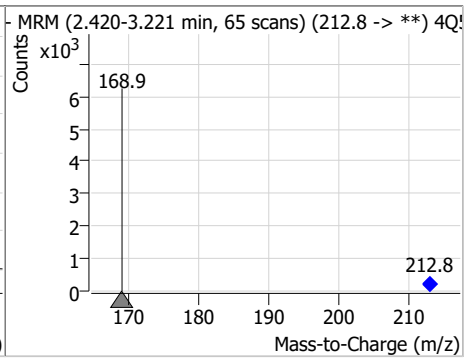




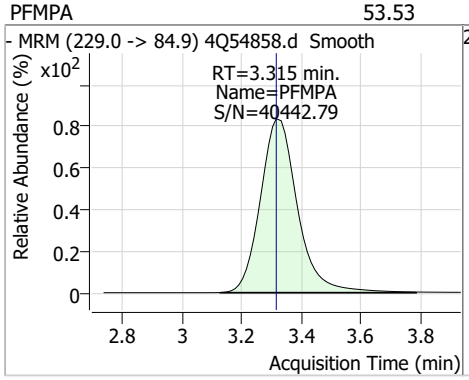
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	107.42	2.68	0.00	300524				

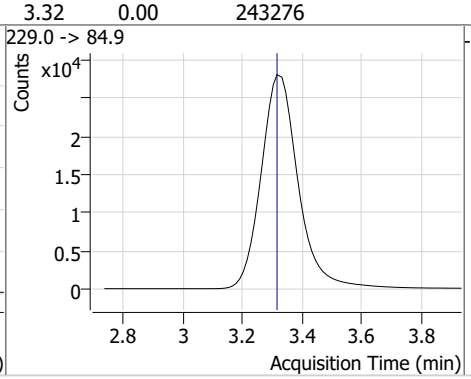


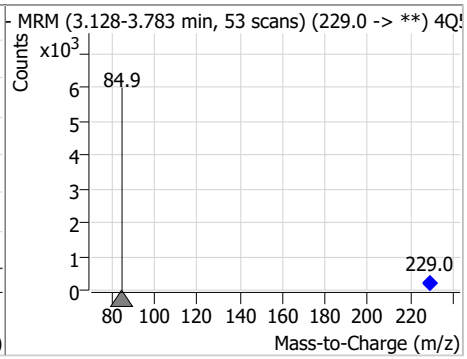




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	53.53	3.32	0.00	243276				

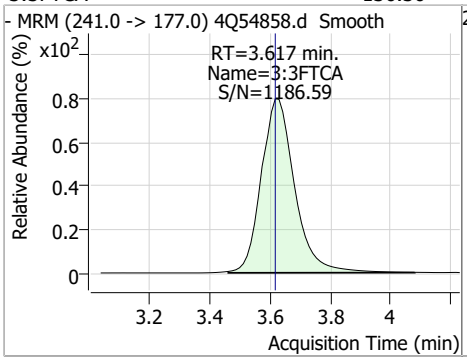


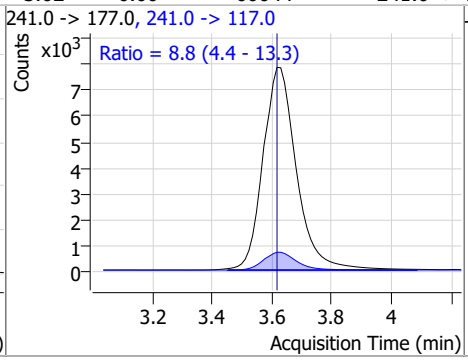


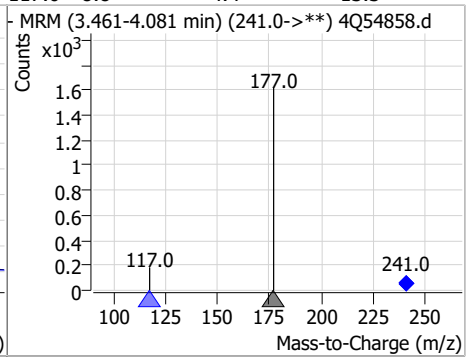


Perfluorinated Compounds by LC/MS/MS

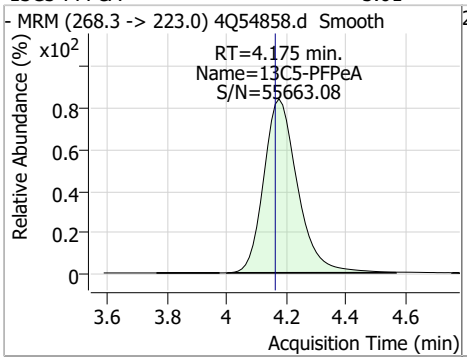
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	136.36	3.62	0.00	60644	241.0 -> 117.0	8.8	4.4	13.3

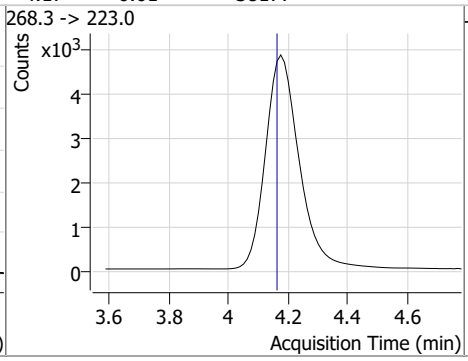


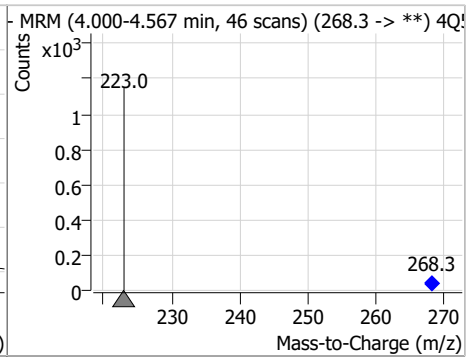




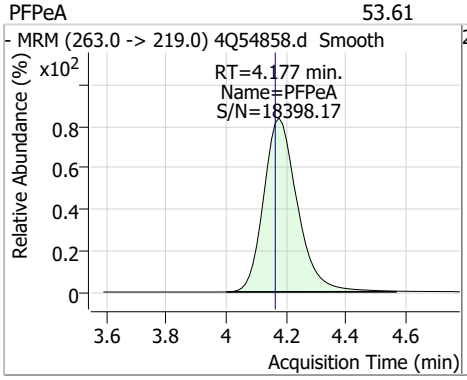
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.01	4.17	0.01	38177				

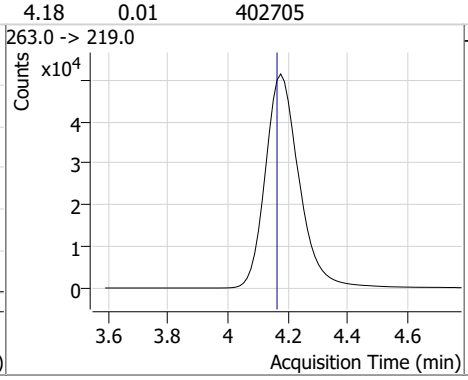


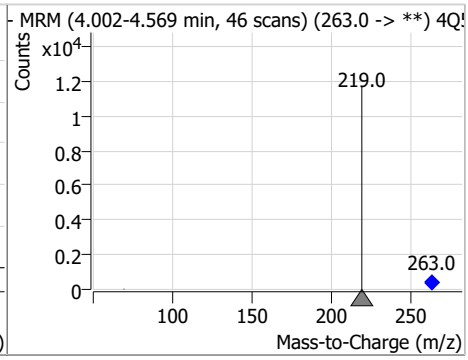




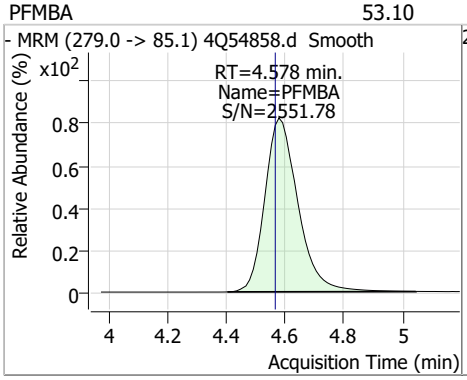
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	53.61	4.18	0.01	402705				

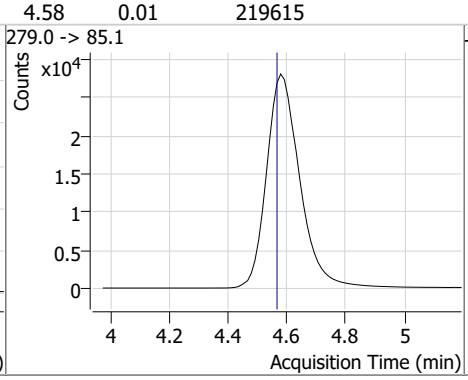


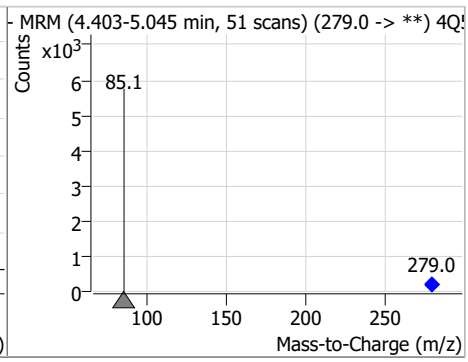




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	53.10	4.58	0.01	219615				

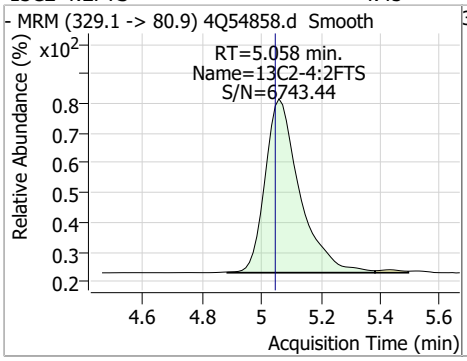


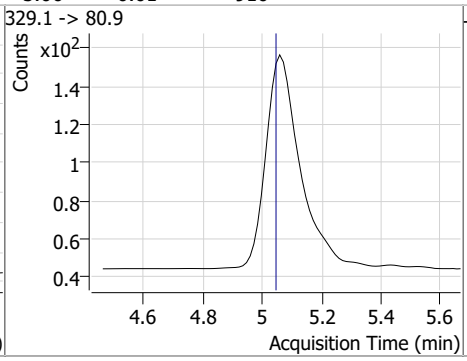


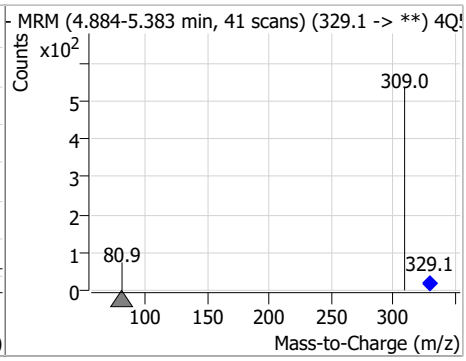


Perfluorinated Compounds by LC/MS/MS

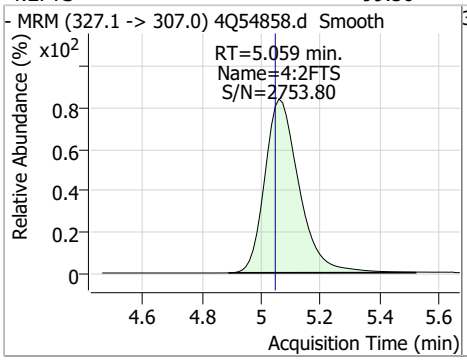
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.45	5.06	0.01	910				

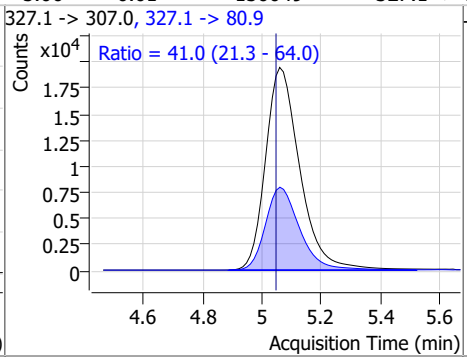


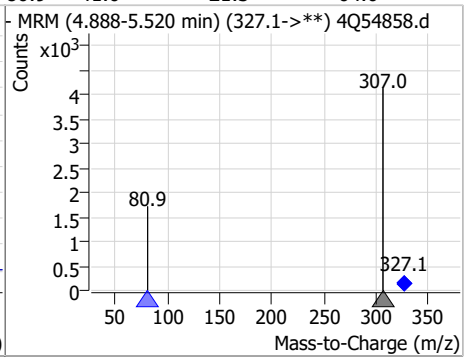




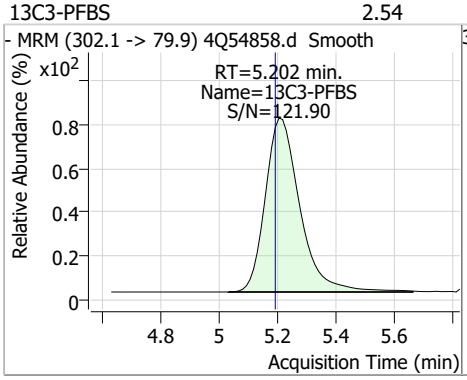
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	99.56	5.06	0.01	156049	327.1 -> 80.9	41.0	21.3	64.0

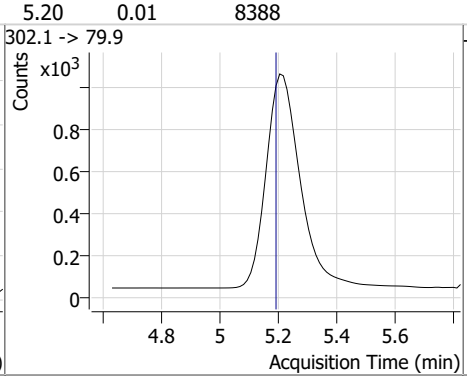


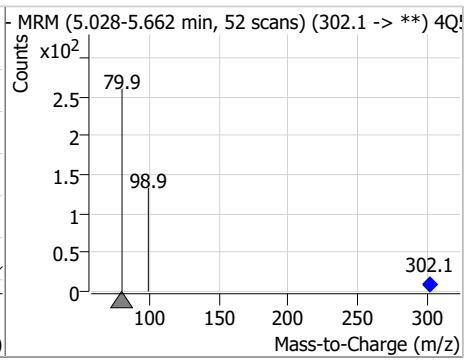




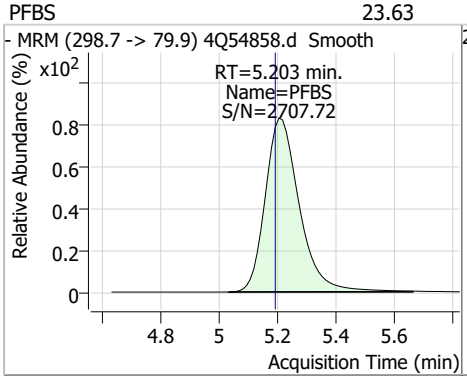
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.54	5.20	0.01	8388				

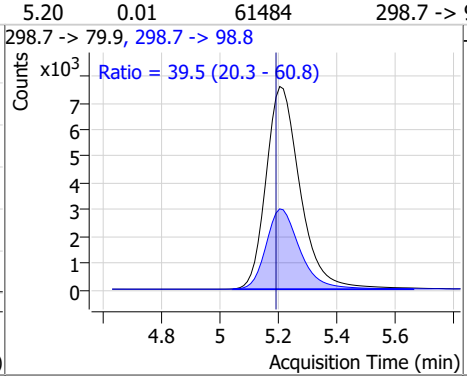


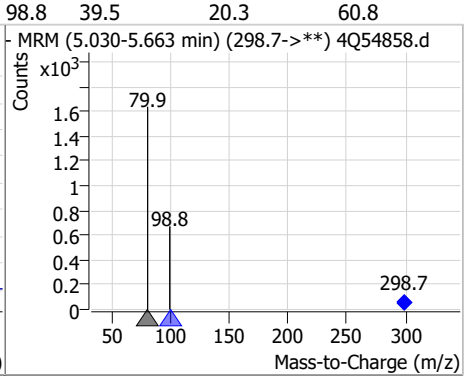




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	23.63	5.20	0.01	61484	298.7 -> 98.8	39.5	20.3	60.8

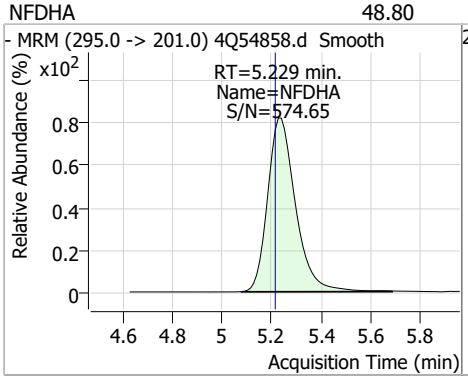


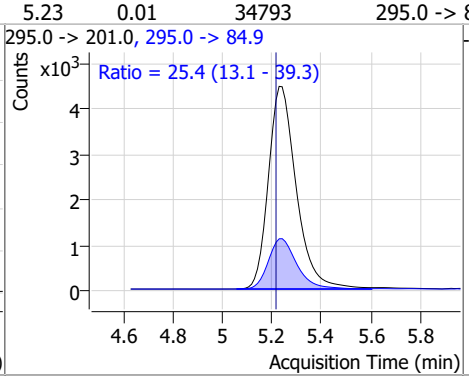


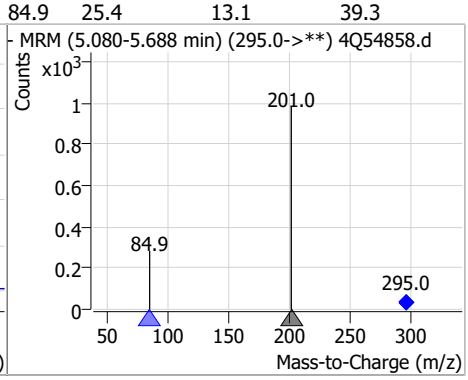


Perfluorinated Compounds by LC/MS/MS

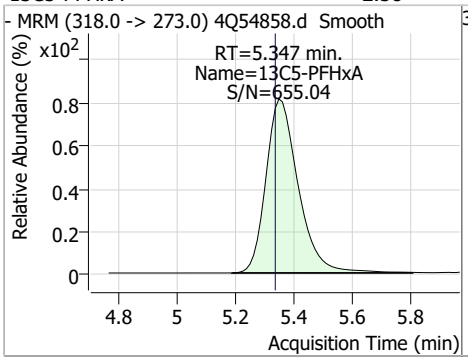
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	48.80	5.23	0.01	34793	295.0 -> 84.9	25.4	13.1	39.3

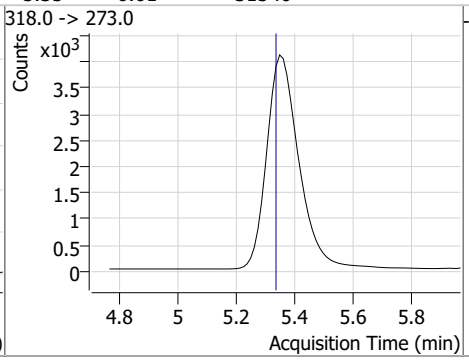


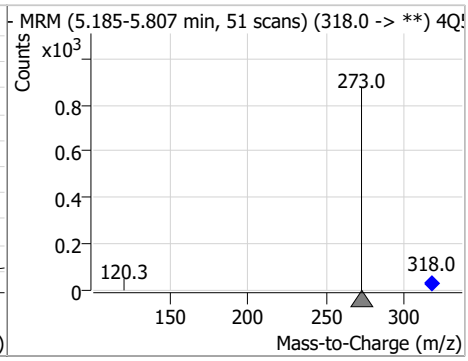




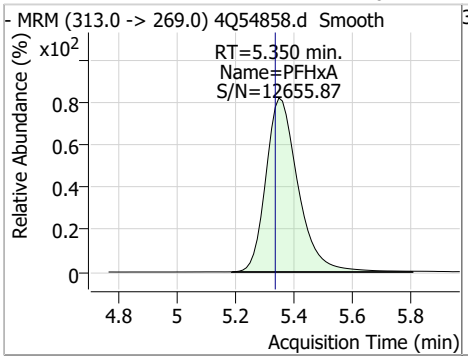
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.58	5.35	0.01	31540				

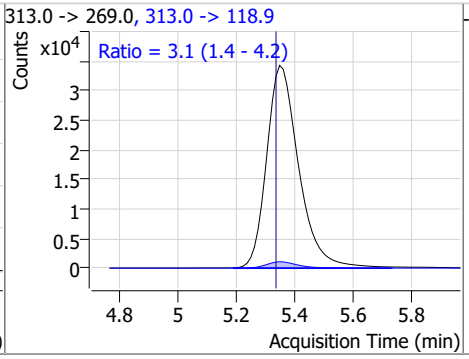


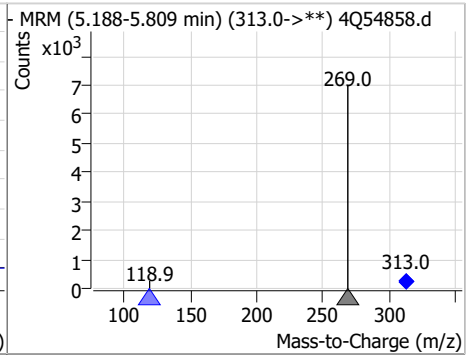




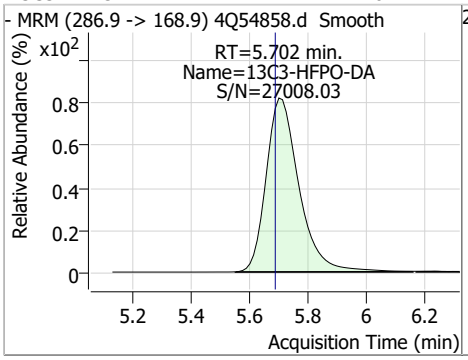
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	26.21	5.35	0.01	263757	313.0 -> 118.9	3.1	1.4	4.2

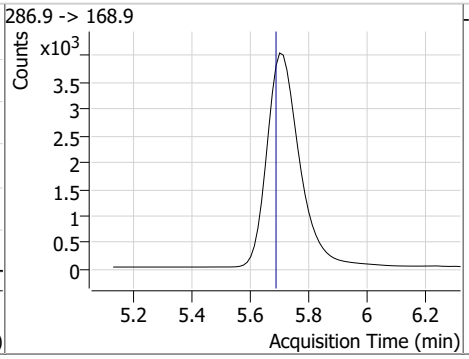


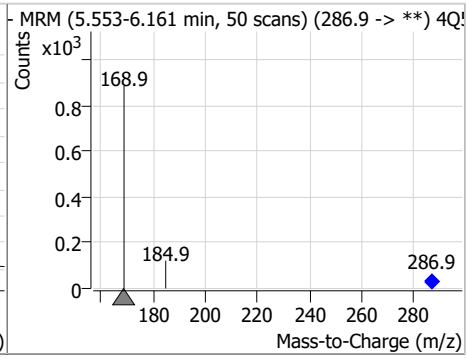




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.27	5.70	0.01	31362				

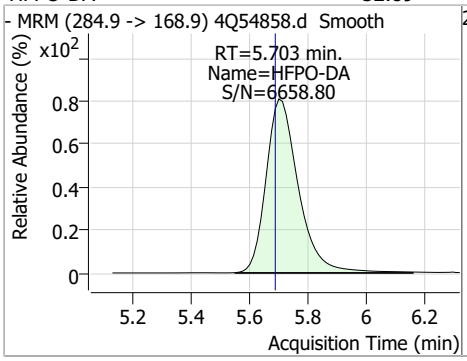


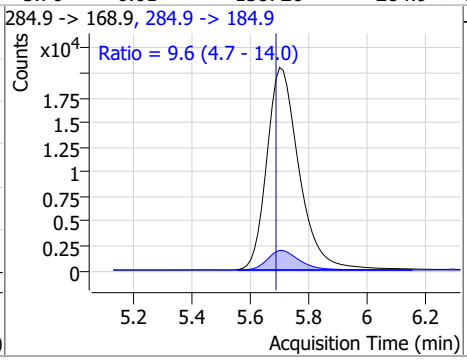


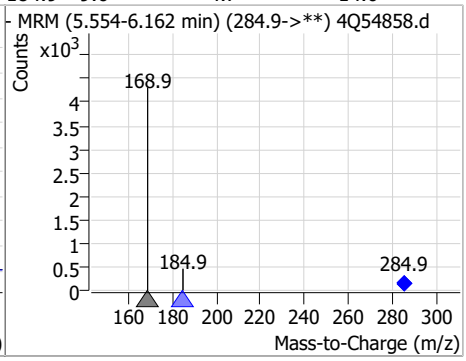


Perfluorinated Compounds by LC/MS/MS

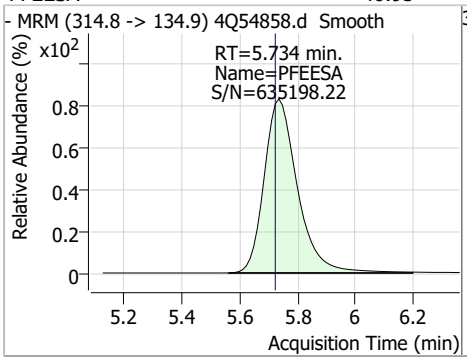
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	52.89	5.70	0.01	158726	284.9 -> 184.9	9.6	4.7	14.0

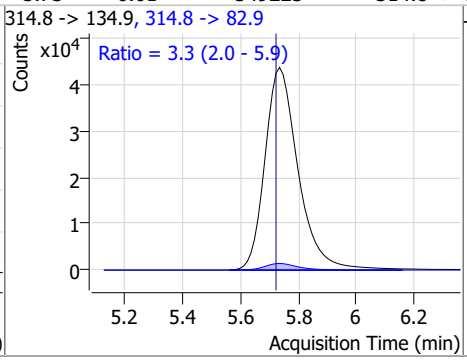


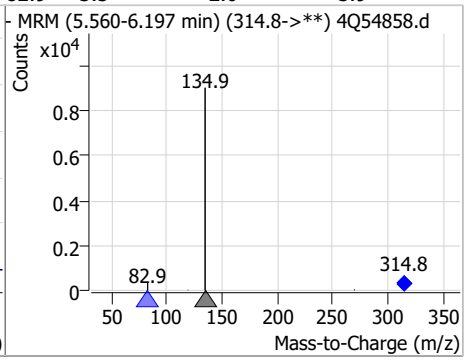




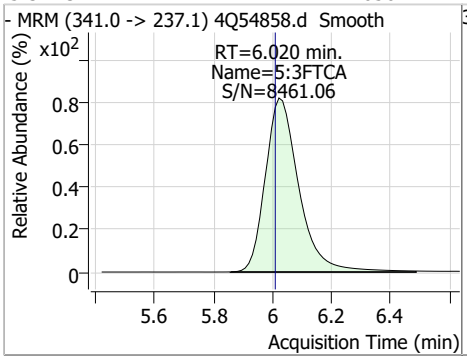
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	46.95	5.73	0.01	349223	314.8 -> 82.9	3.3	2.0	5.9

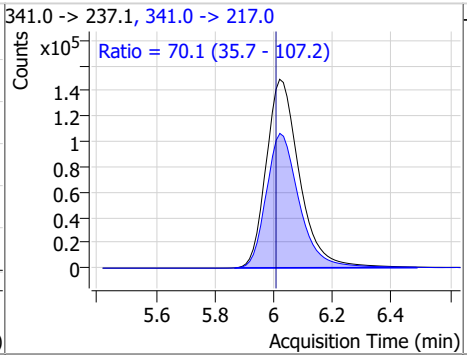


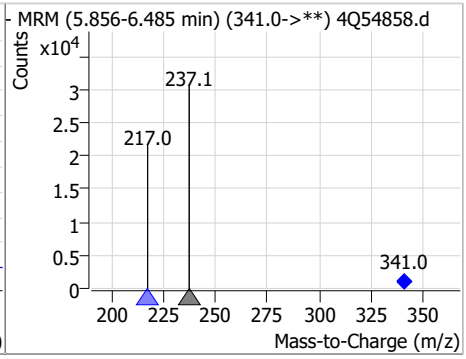




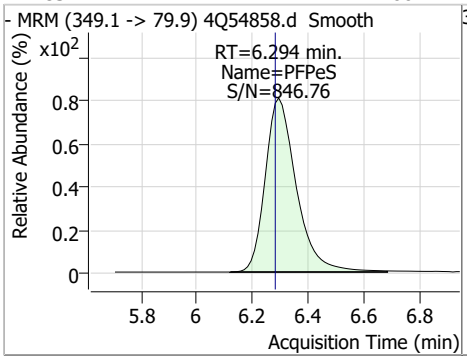
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	656.12	6.02	0.01	1177771	341.0 -> 217.0	70.1	35.7	107.2

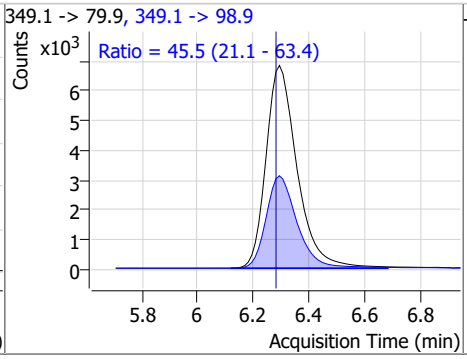


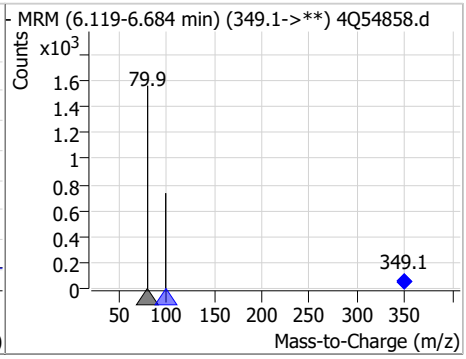




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	24.88	6.29	0.01	52797	349.1 -> 98.9	45.5	21.1	63.4

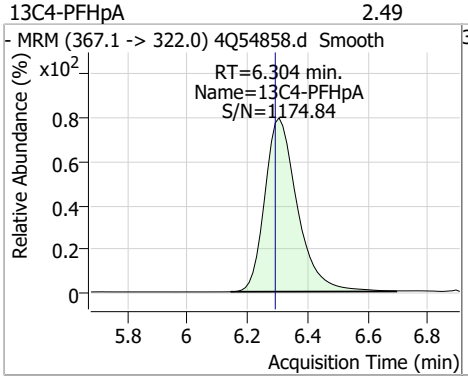


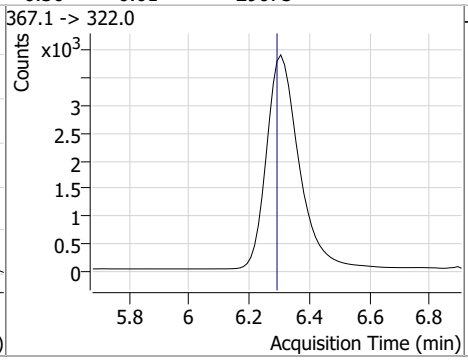


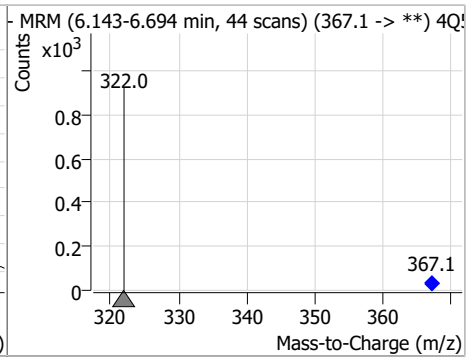


Perfluorinated Compounds by LC/MS/MS

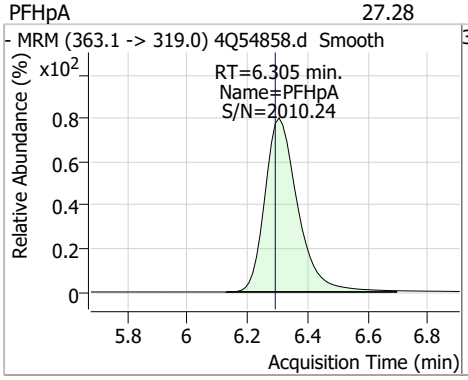
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.49	6.30	0.01	29075				

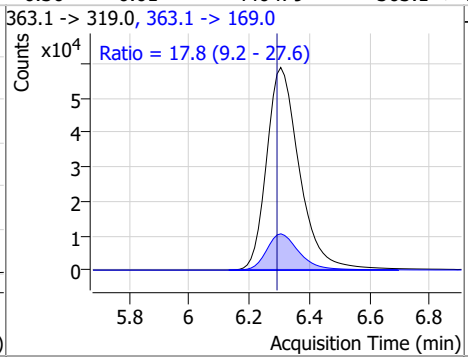


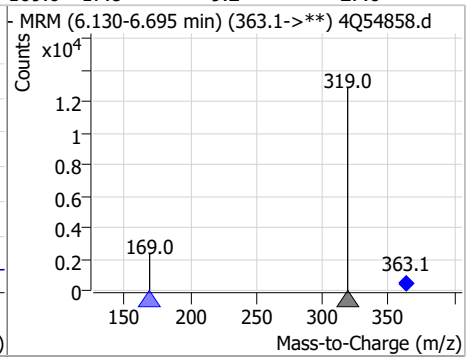




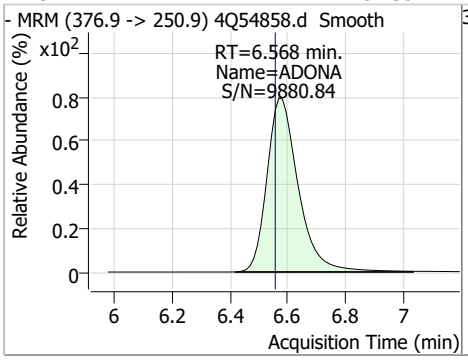
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	27.28	6.30	0.01	446479	363.1 -> 169.0	17.8	9.2	27.6

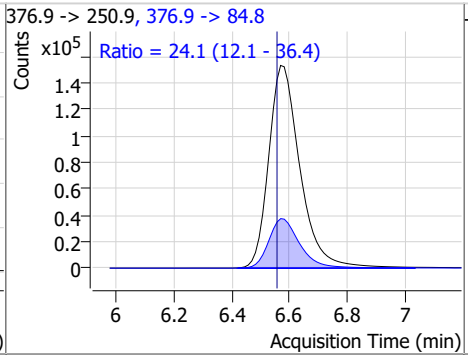


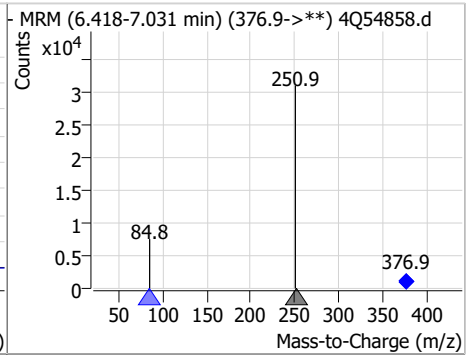




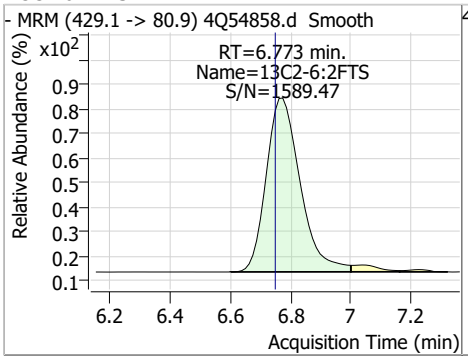
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	54.35	6.57	0.01	1151101	376.9 -> 84.8	24.1	12.1	36.4

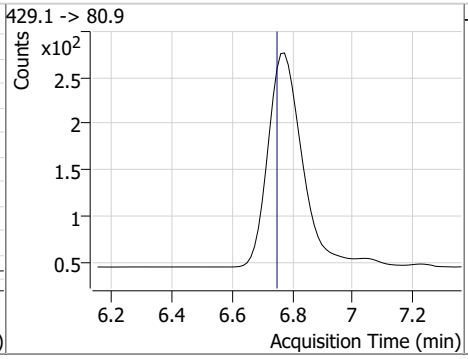


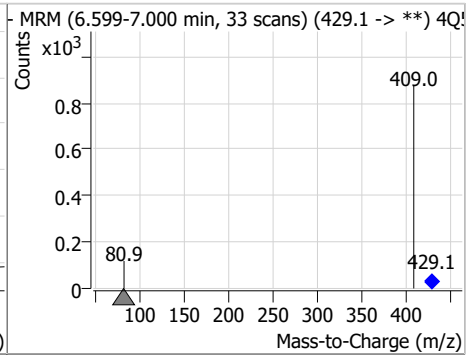




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.11	6.77	0.02	1824				

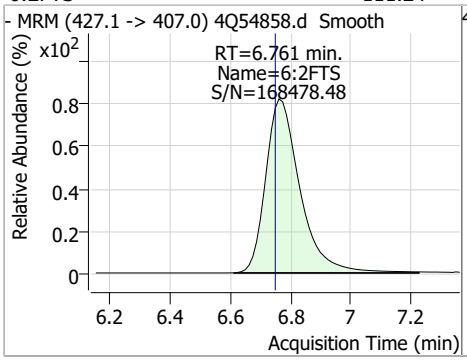


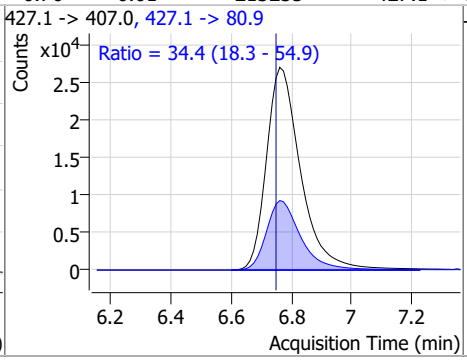


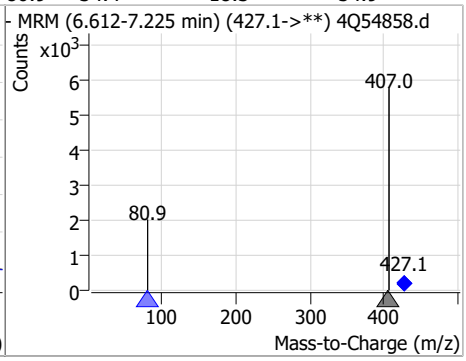


Perfluorinated Compounds by LC/MS/MS

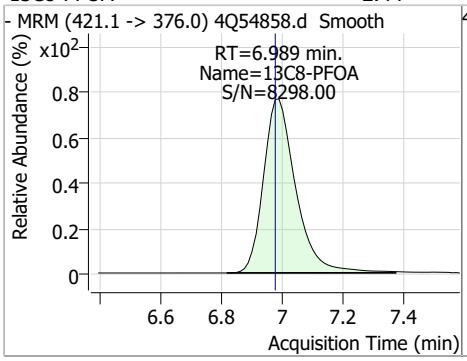
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	111.24	6.76	0.01	213255	427.1 -> 80.9	34.4	18.3	54.9

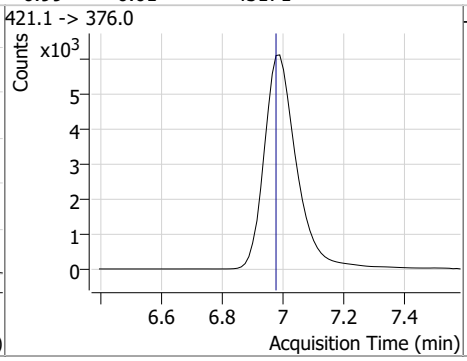


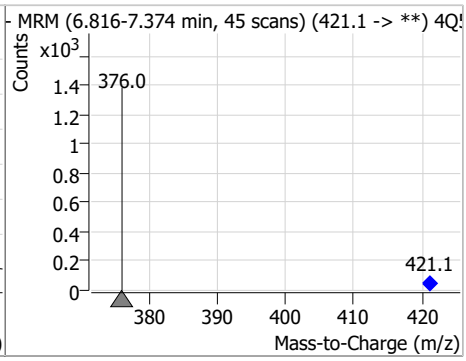




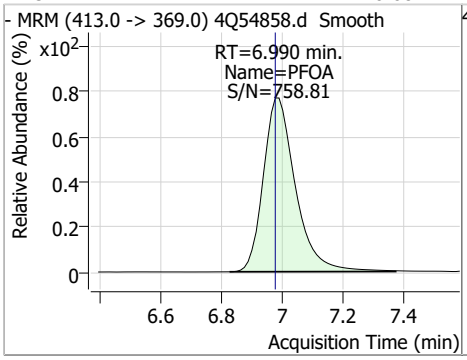
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.44	6.99	0.01	45171				

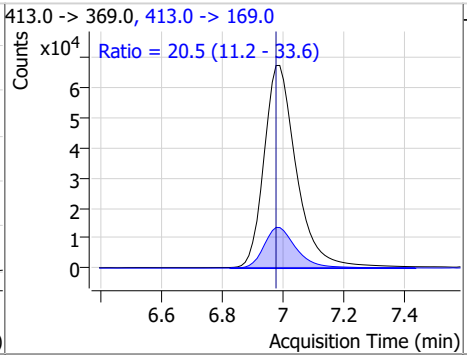


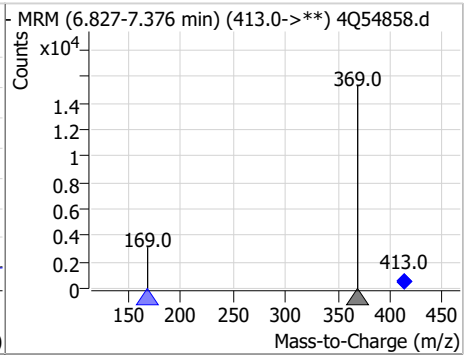




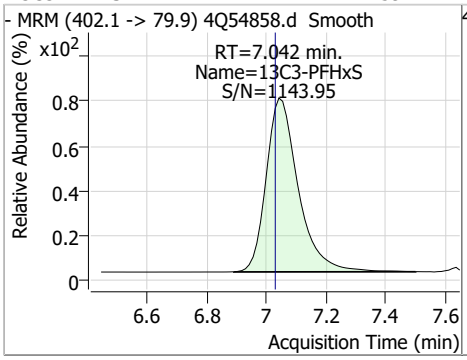
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	26.68	6.99	0.01	495670	413.0 -> 169.0	20.5	11.2	33.6

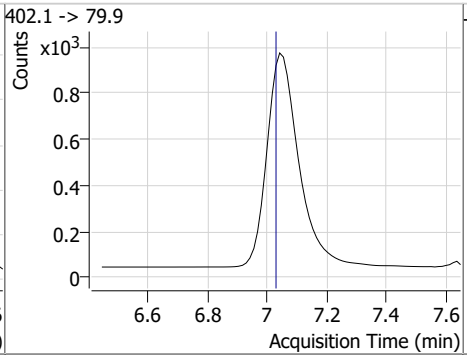


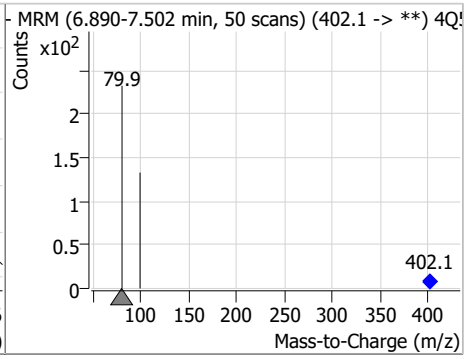




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.59	7.04	0.01	6986				

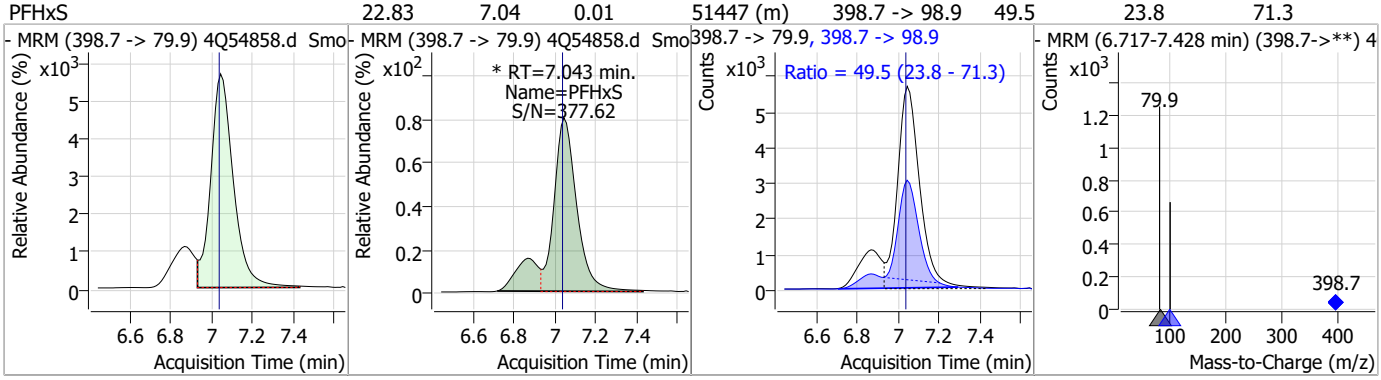




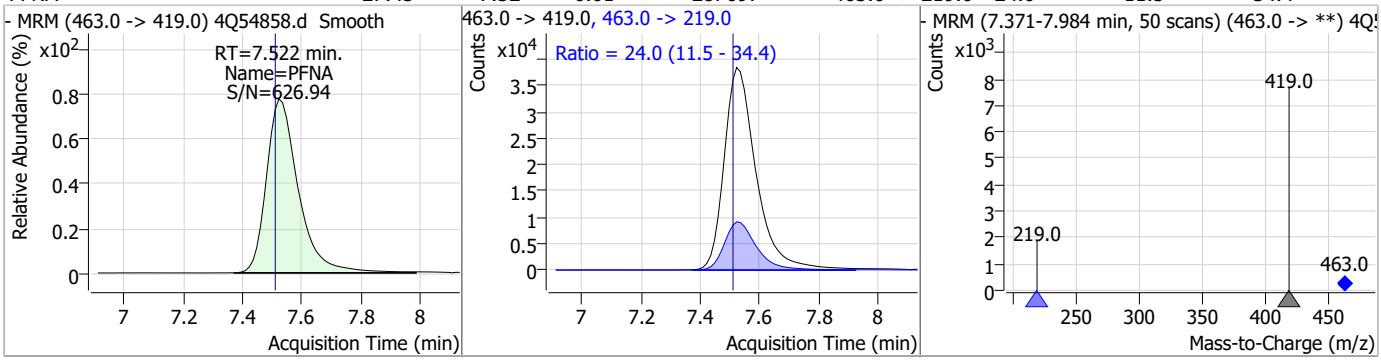


Perfluorinated Compounds by LC/MS/MS

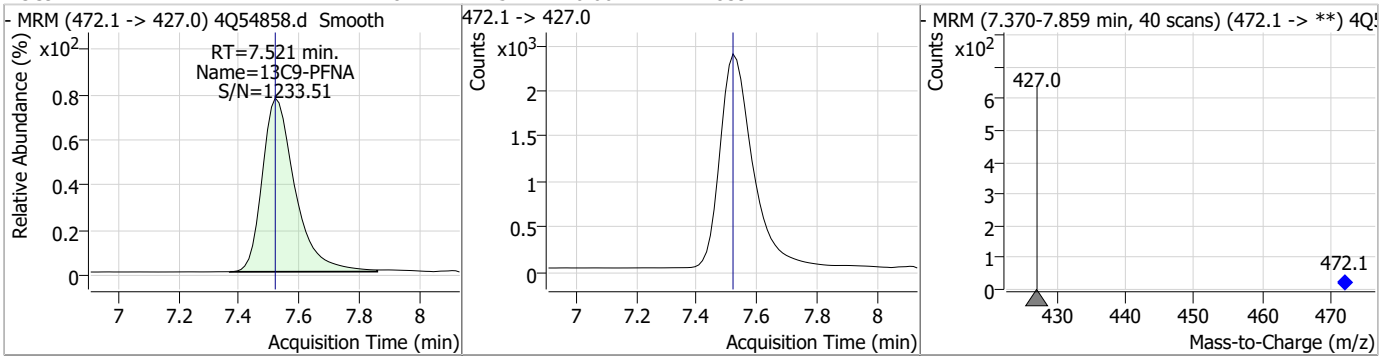
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	22.83	7.04	0.01	51447 (m)	398.7 -> 98.9	49.5	23.8	71.3



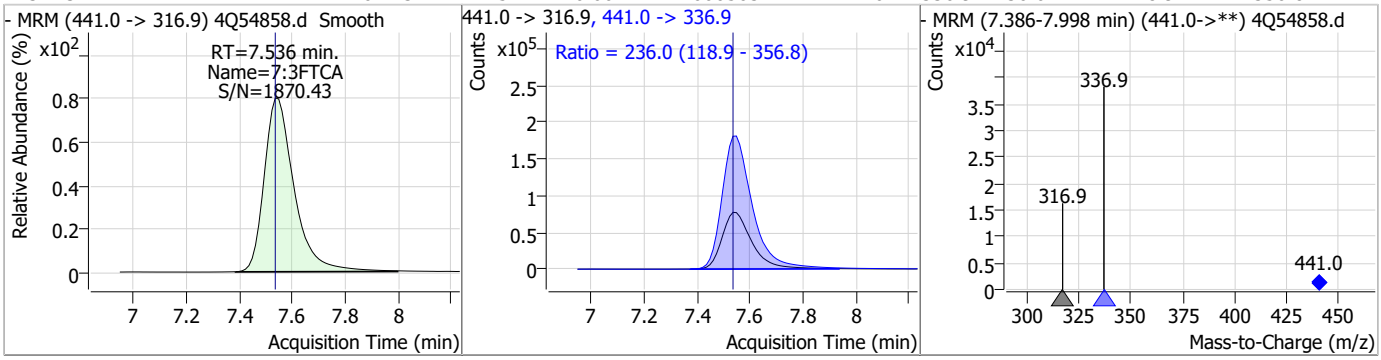
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	27.45	7.52	0.01	287697	463.0 -> 219.0	24.0	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.18	7.52	0.00	17839				

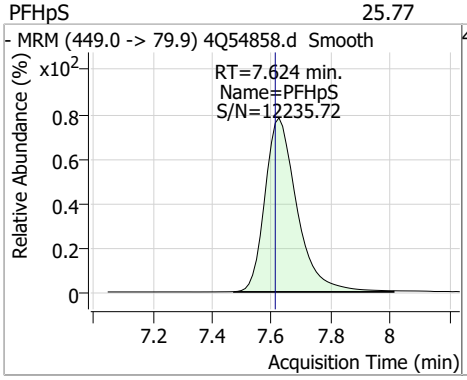


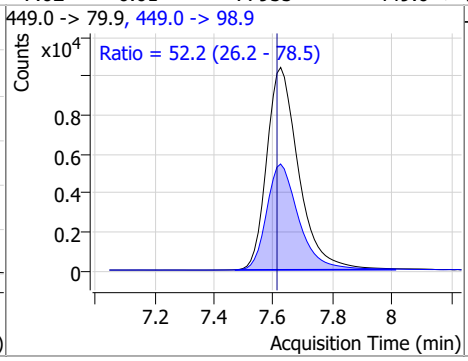
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	644.37	7.54	0.00	606563	441.0 -> 336.9	236.0	118.9	356.8

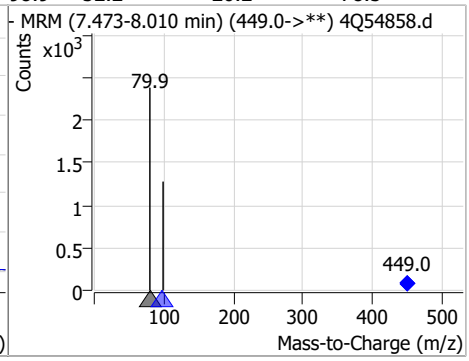


Perfluorinated Compounds by LC/MS/MS

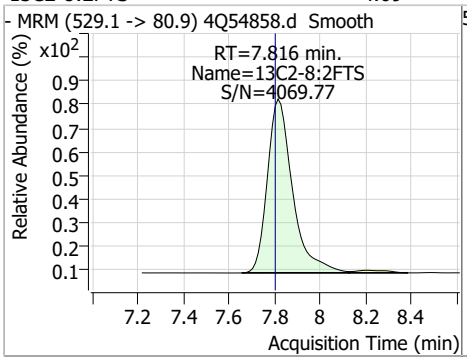
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	25.77	7.62	0.01	77955	449.0 -> 98.9	52.2	26.2	78.5

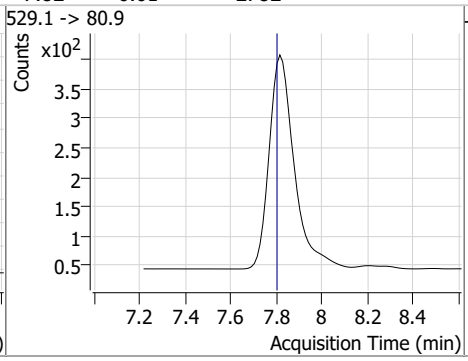


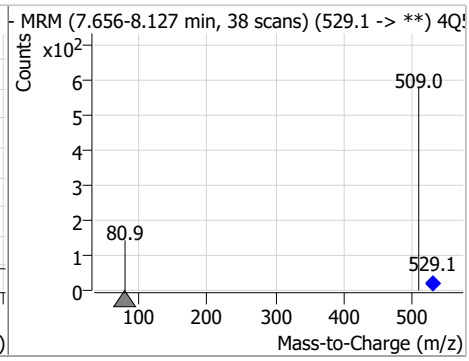




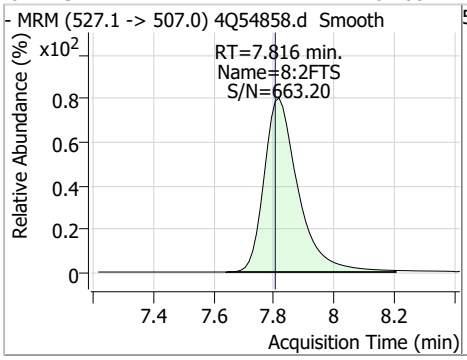
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.69	7.82	0.01	2782				

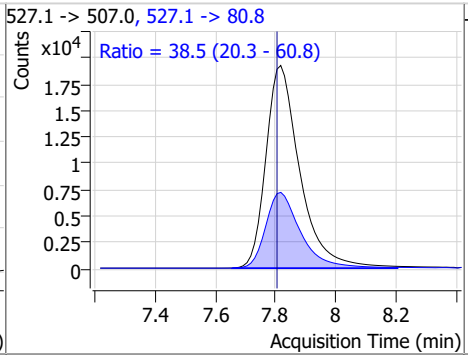


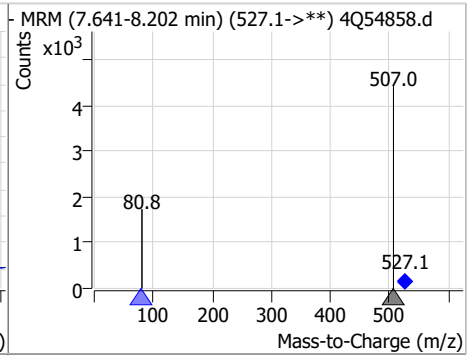




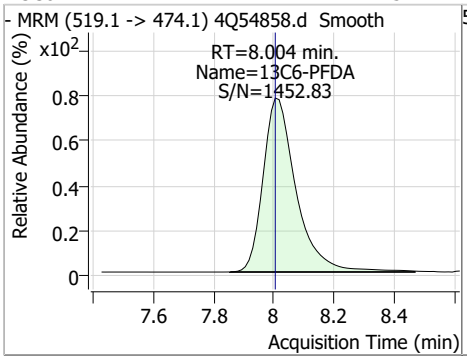
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	102.68	7.82	0.01	150566	527.1 -> 80.8	38.5	20.3	60.8

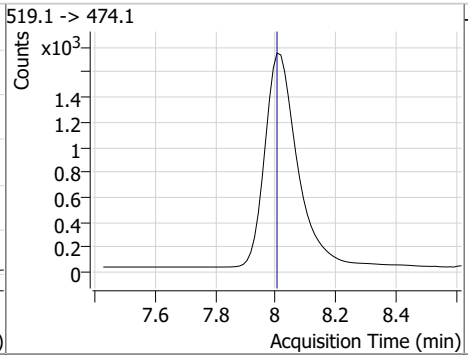


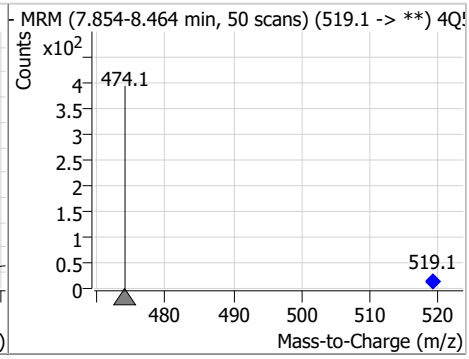




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.00	0.00	12956				

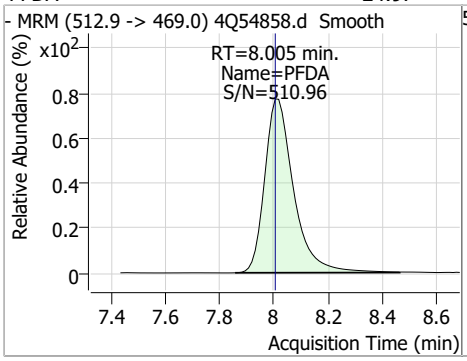


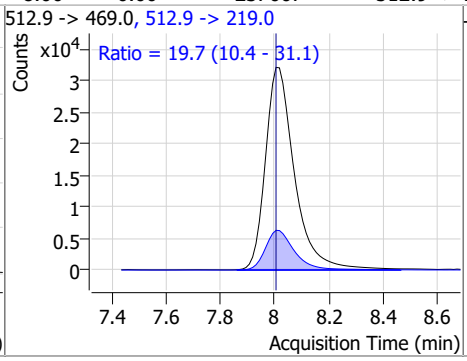


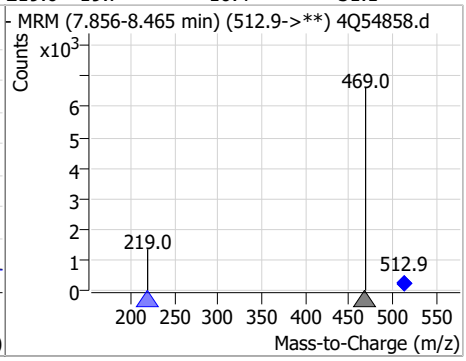


Perfluorinated Compounds by LC/MS/MS

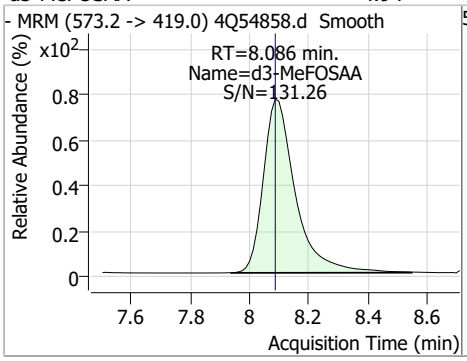
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	24.97	8.00	0.00	237667	512.9 -> 219.0	19.7	10.4	31.1

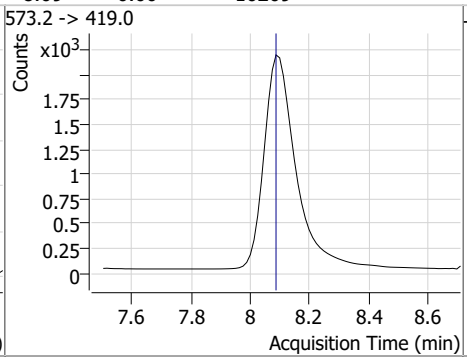


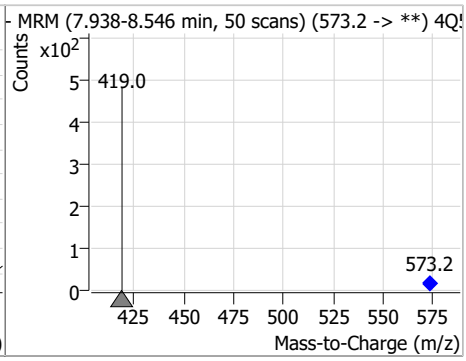




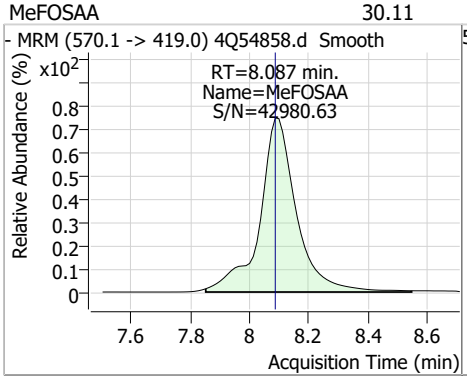
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.94	8.09	0.00	16209				

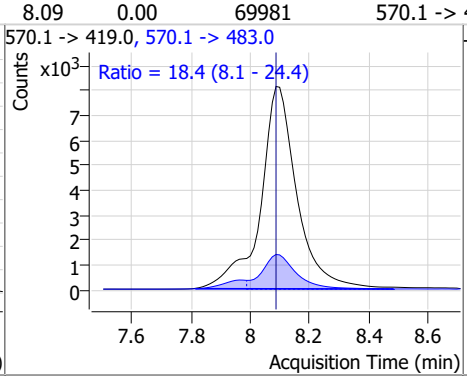


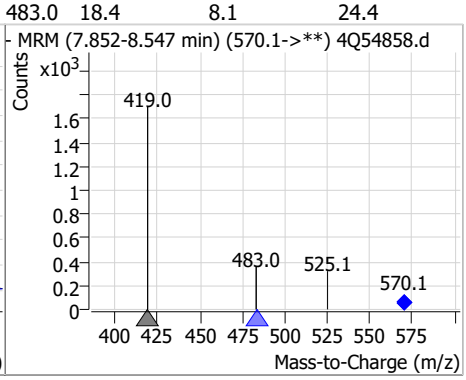




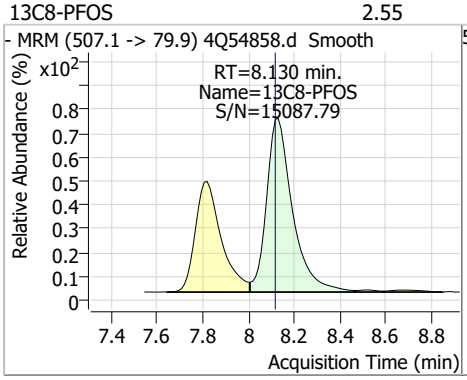
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	30.11	8.09	0.00	69981	570.1 -> 483.0	18.4	8.1	24.4

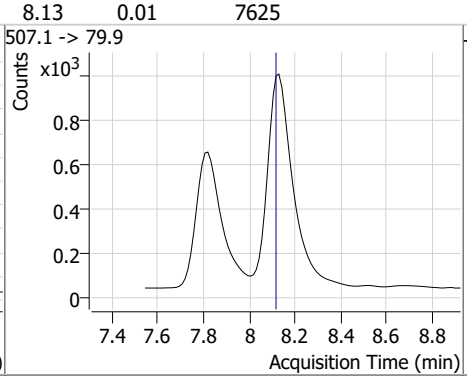


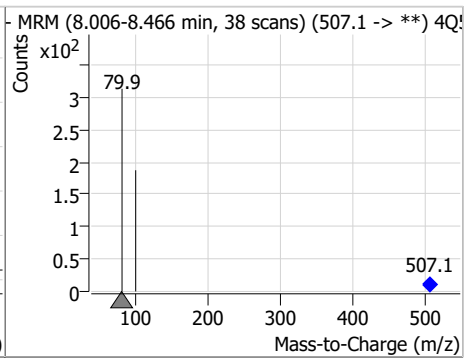




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.55	8.13	0.01	7625				

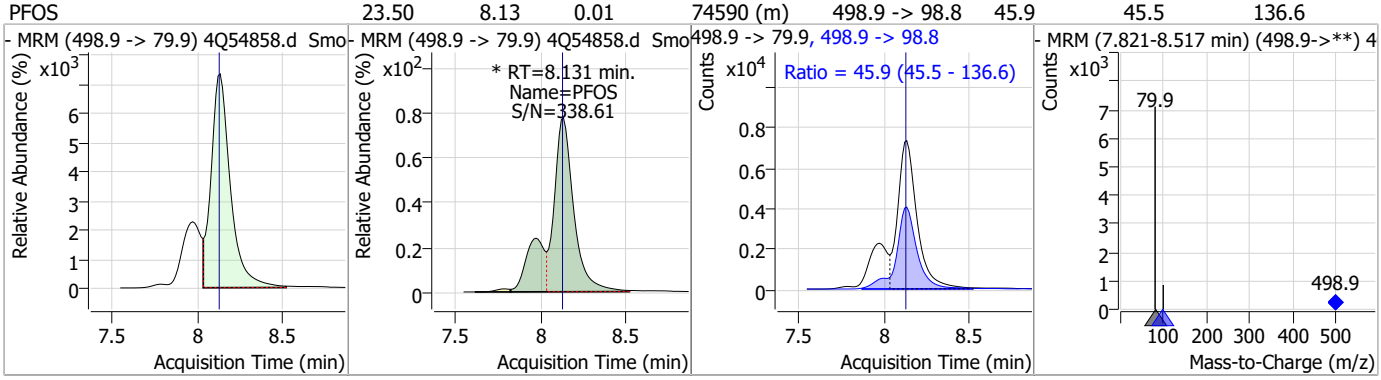




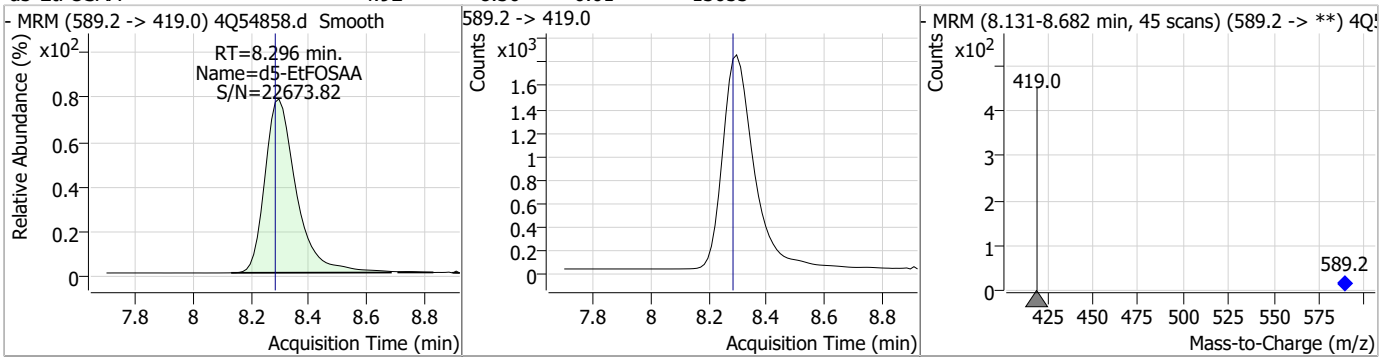


Perfluorinated Compounds by LC/MS/MS

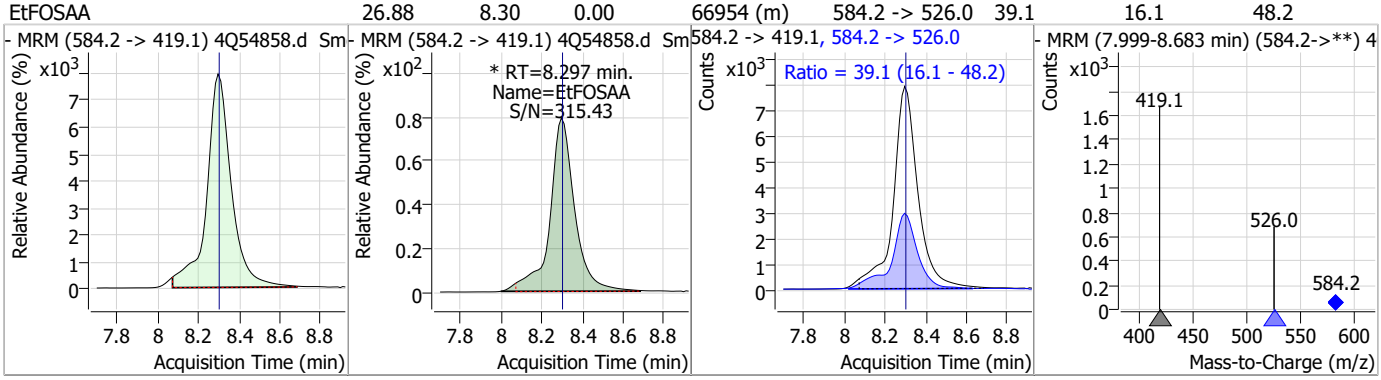
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.50	8.13	0.01	74590 (m)	498.9 -> 98.8	45.9	45.5	136.6



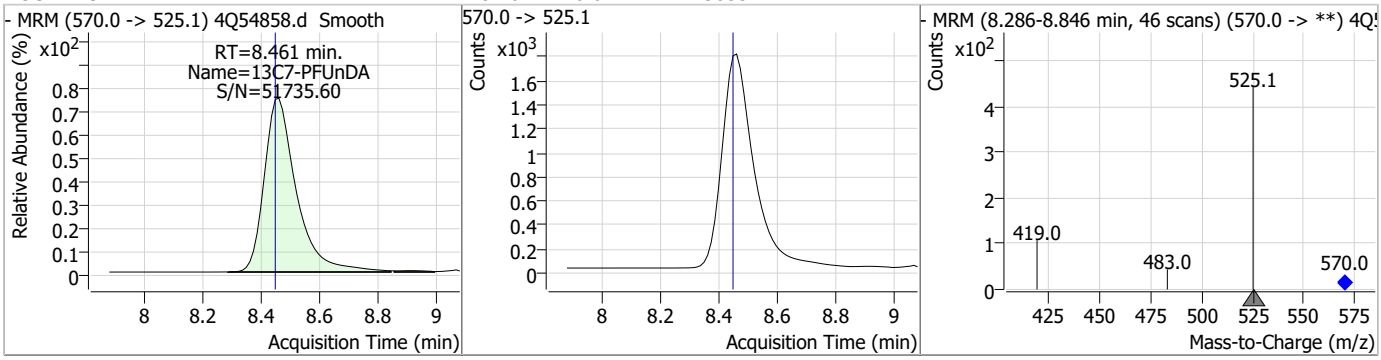
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.92	8.30	0.01	13653				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	26.88	8.30	0.00	66954 (m)	584.2 -> 526.0	39.1	16.1	48.2

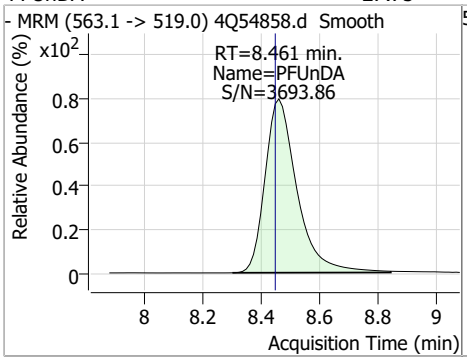


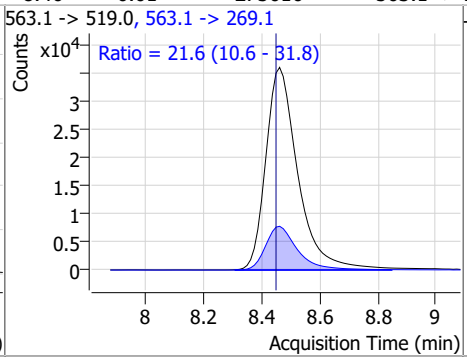
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.12	8.46	0.01	13655				

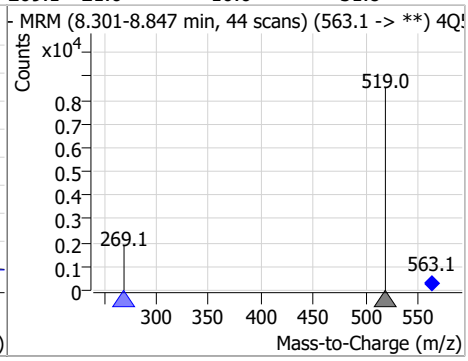


Perfluorinated Compounds by LC/MS/MS

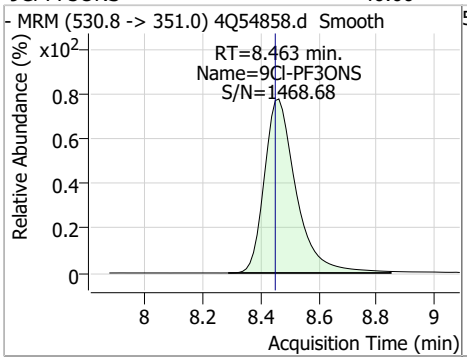
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	27.75	8.46	0.01	275616	563.1 -> 269.1	21.6	10.6	31.8

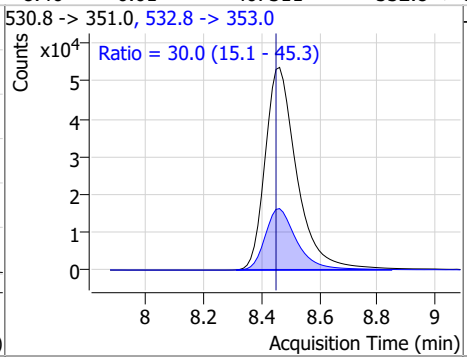


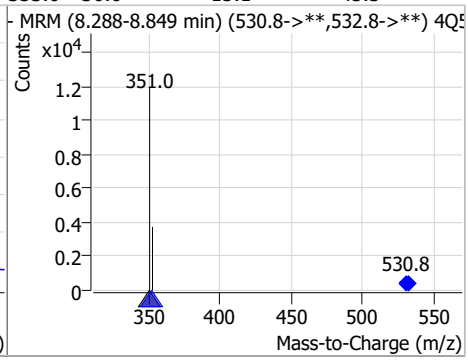




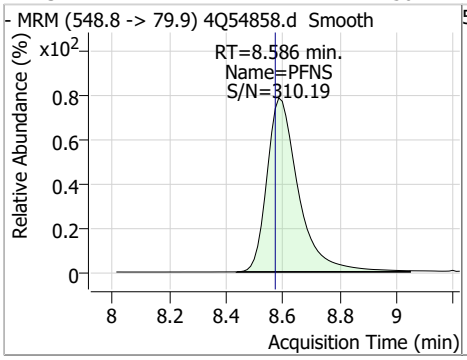
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	46.66	8.46	0.01	407311	532.8 -> 353.0	30.0	15.1	45.3

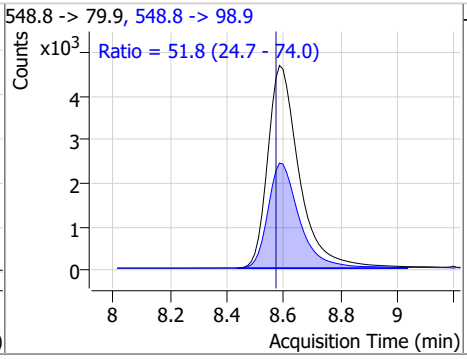


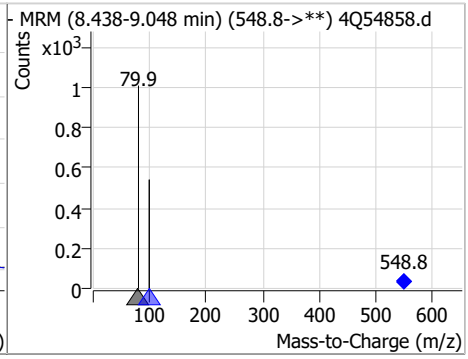




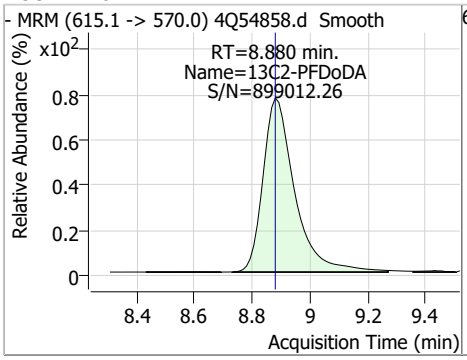
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	27.56	8.59	0.01	35851	548.8 -> 98.9	51.8	24.7	74.0

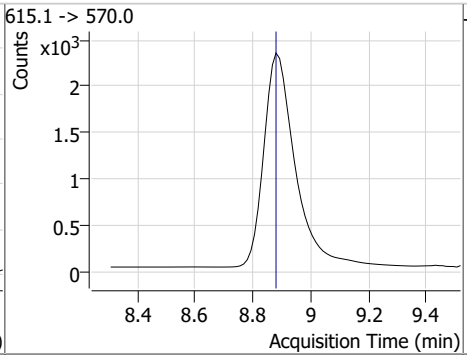


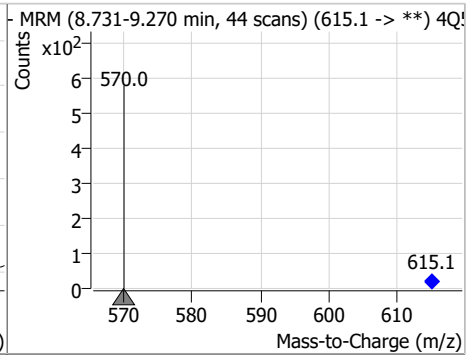




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.24	8.88	0.00	17614				

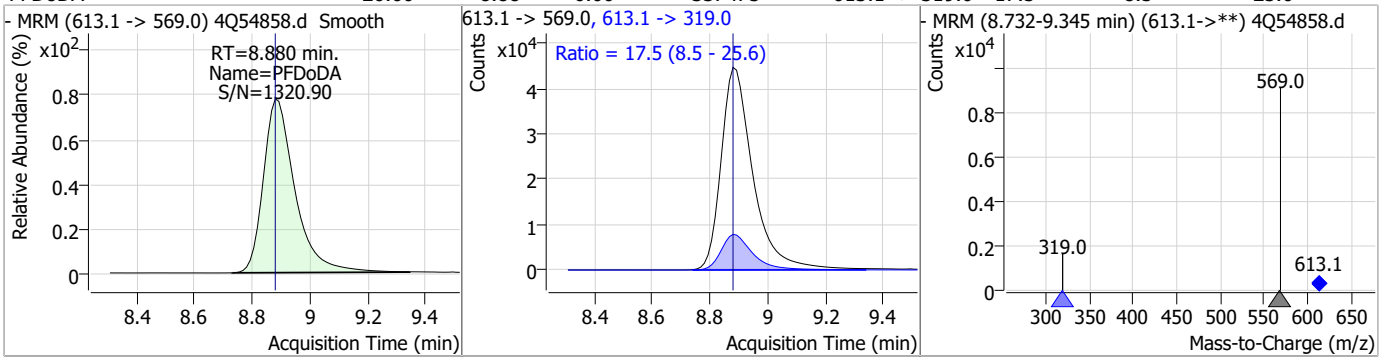




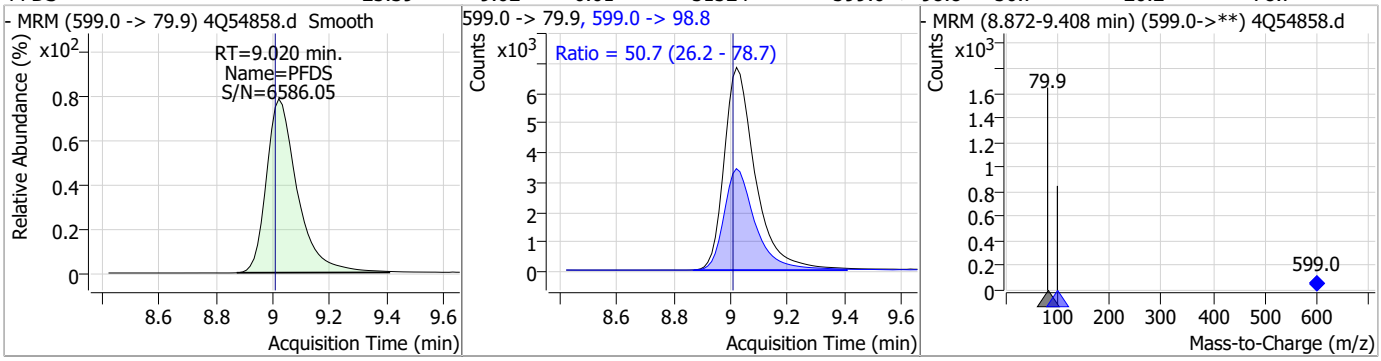


Perfluorinated Compounds by LC/MS/MS

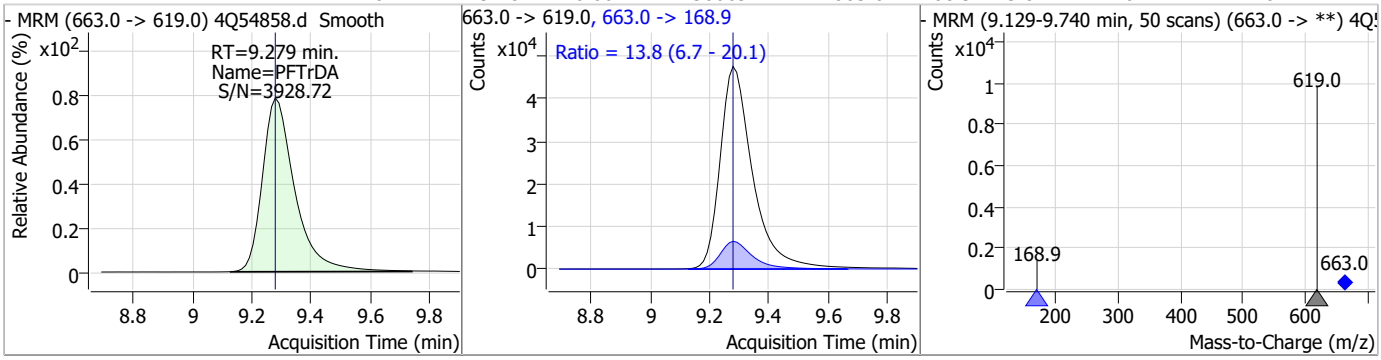
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	26.60	8.88	0.00	337475	613.1 -> 319.0	17.5	8.5	25.6



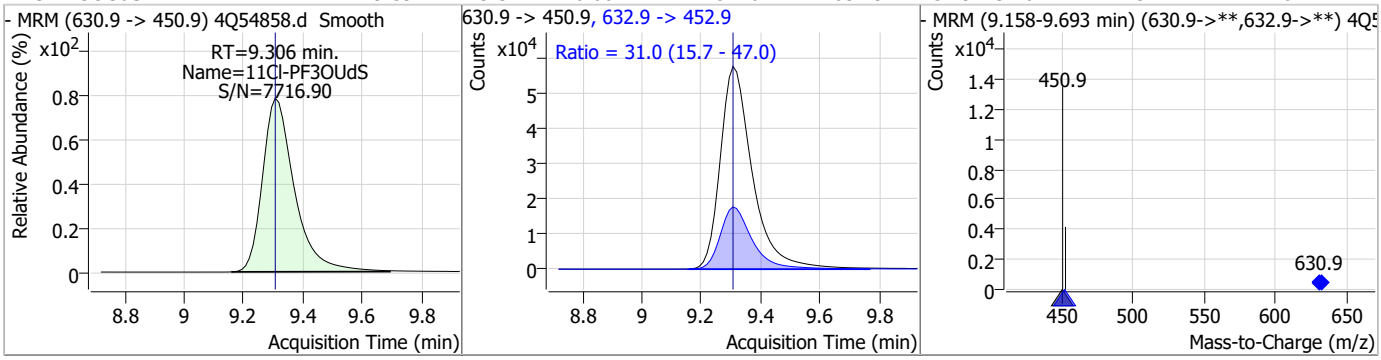
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	25.39	9.02	0.01	51524	599.0 -> 98.8	50.7	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	26.17	9.28	0.00	360692	663.0 -> 168.9	13.8	6.7	20.1

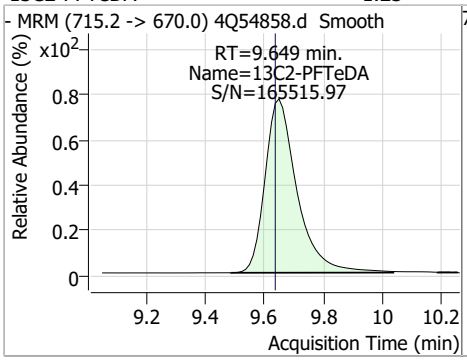


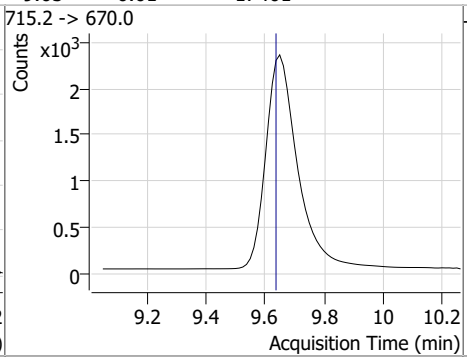
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	49.59	9.31	0.00	428216	632.9 -> 452.9	31.0	15.7	47.0

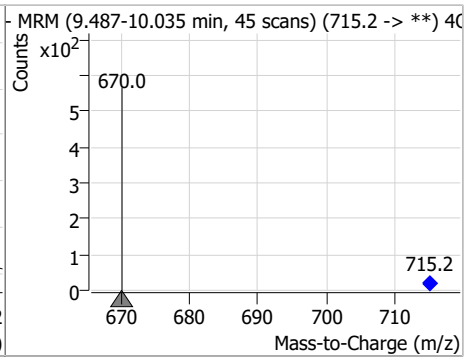


Perfluorinated Compounds by LC/MS/MS

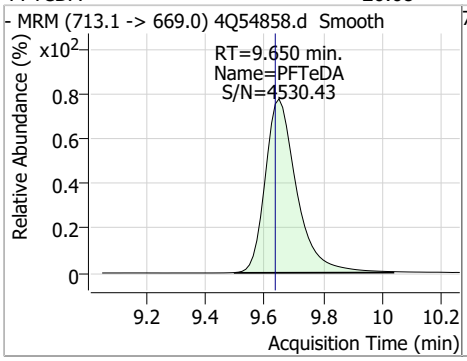
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.65	0.01	17401				

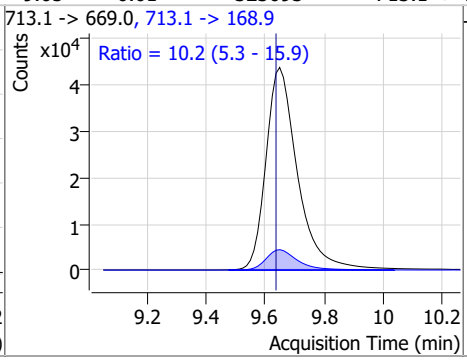


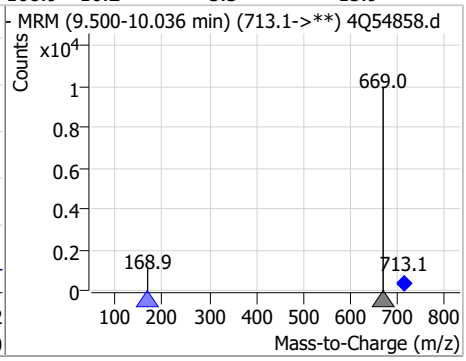




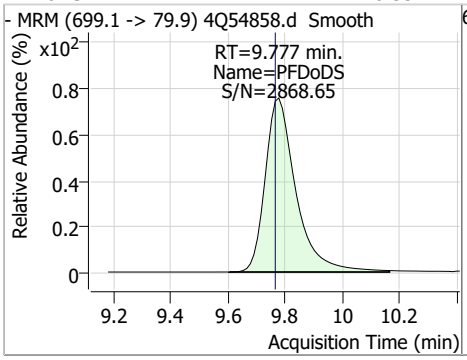
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	26.68	9.65	0.01	323093	713.1 -> 168.9	10.2	5.3	15.9

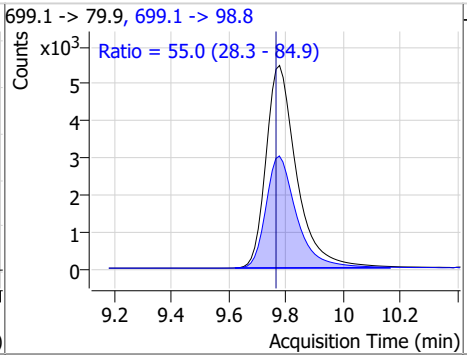


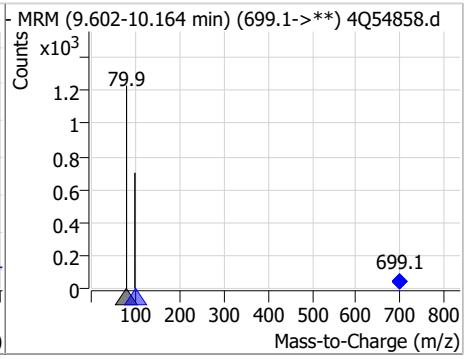




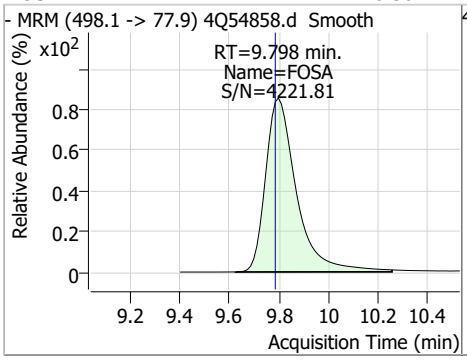
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	26.33	9.78	0.01	40747	699.1 -> 98.8	55.0	28.3	84.9

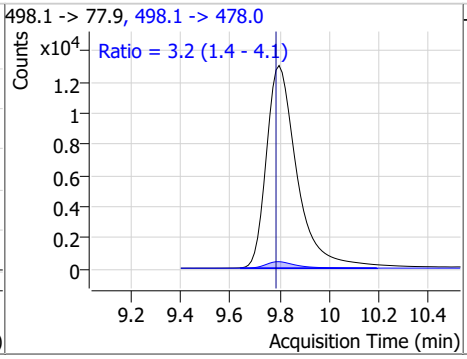


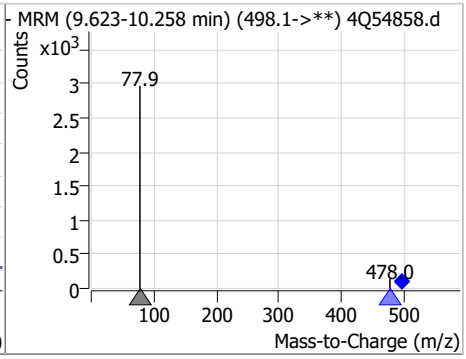




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	26.36	9.80	0.01	113100	498.1 -> 478.0	3.2	1.4	4.1

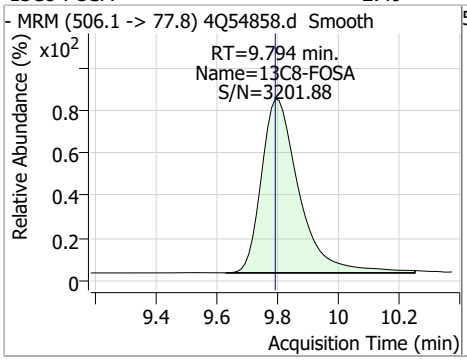


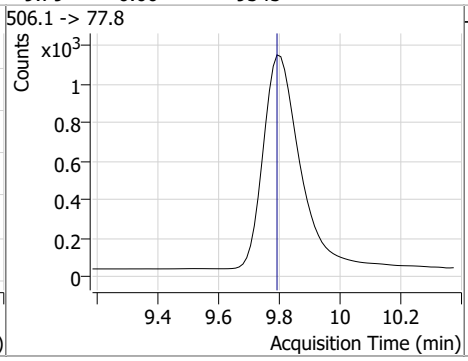


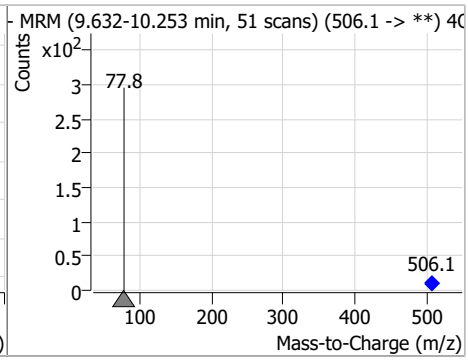


Perfluorinated Compounds by LC/MS/MS

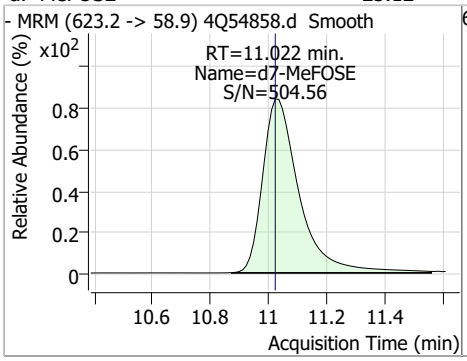
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.49	9.79	0.00	9545				

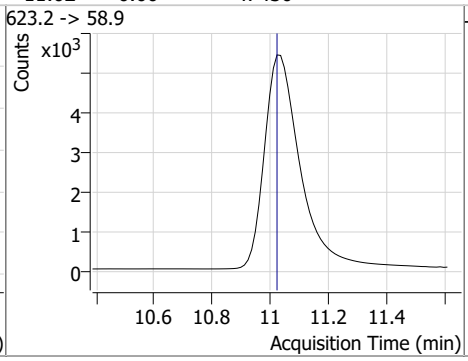


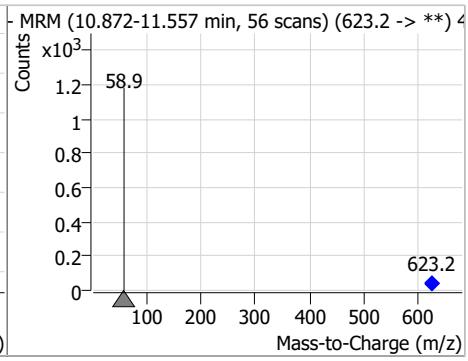




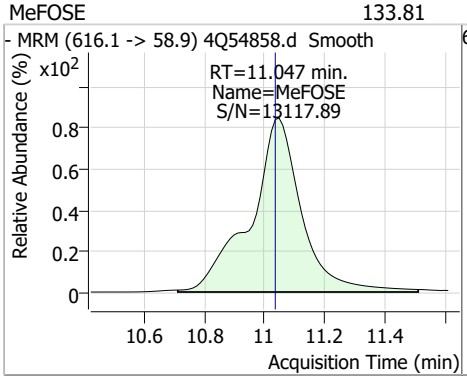
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	25.12	11.02	0.00	47430				

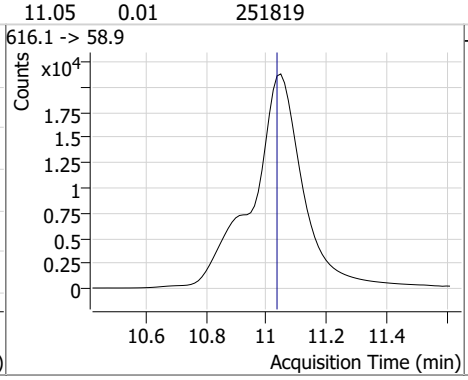


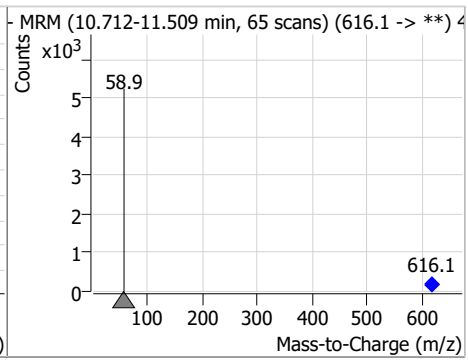




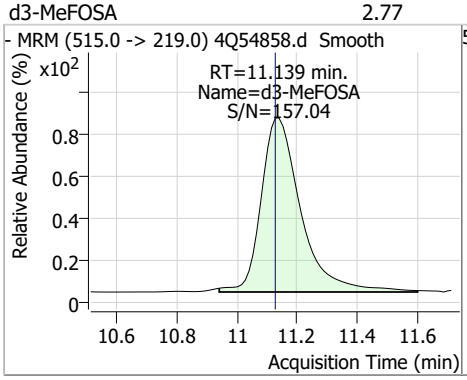
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	133.81	11.05	0.01	251819				

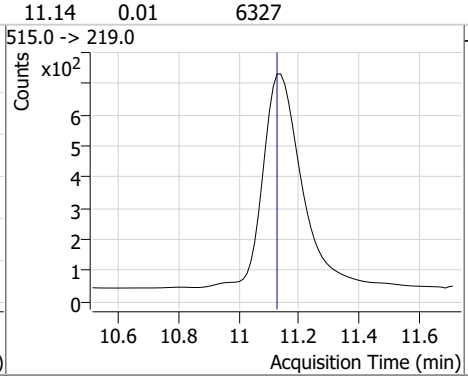


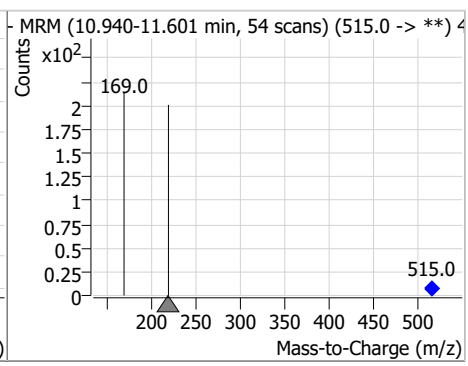




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.77	11.14	0.01	6327				

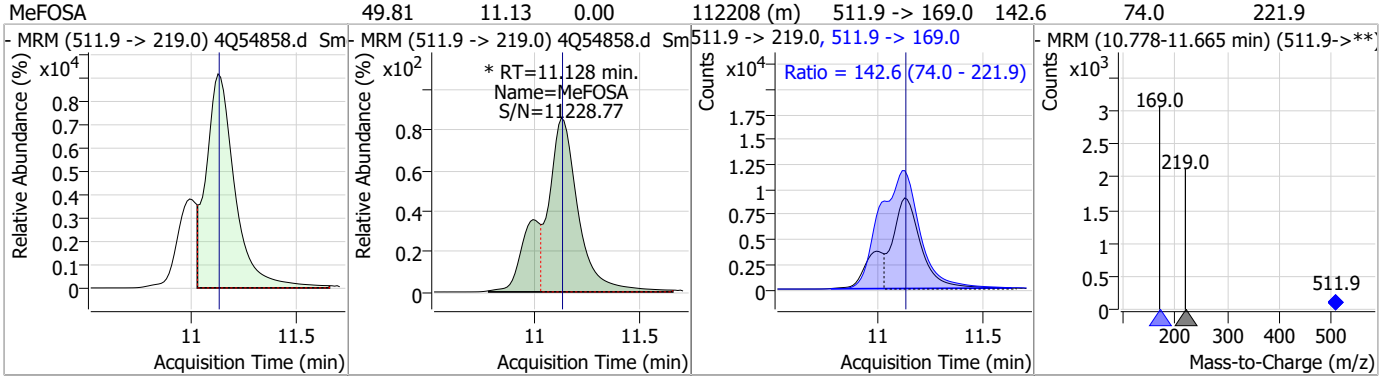




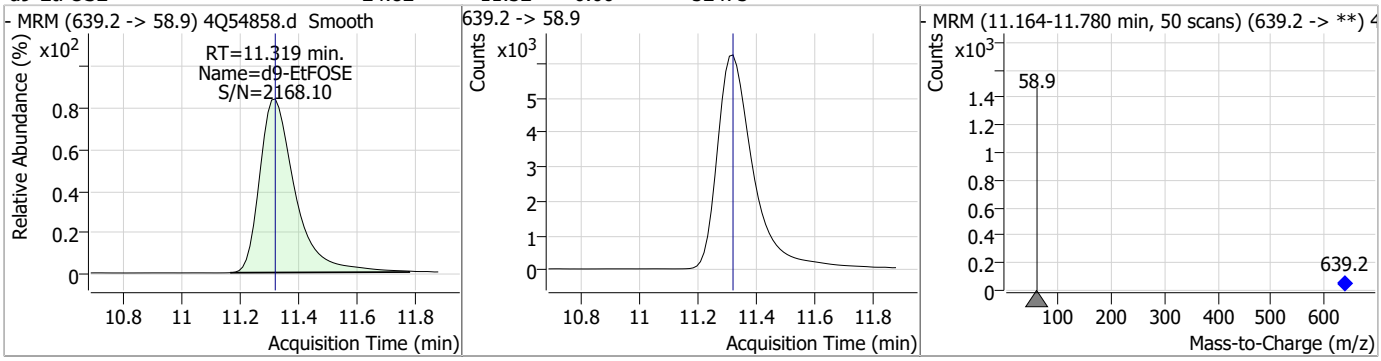


Perfluorinated Compounds by LC/MS/MS

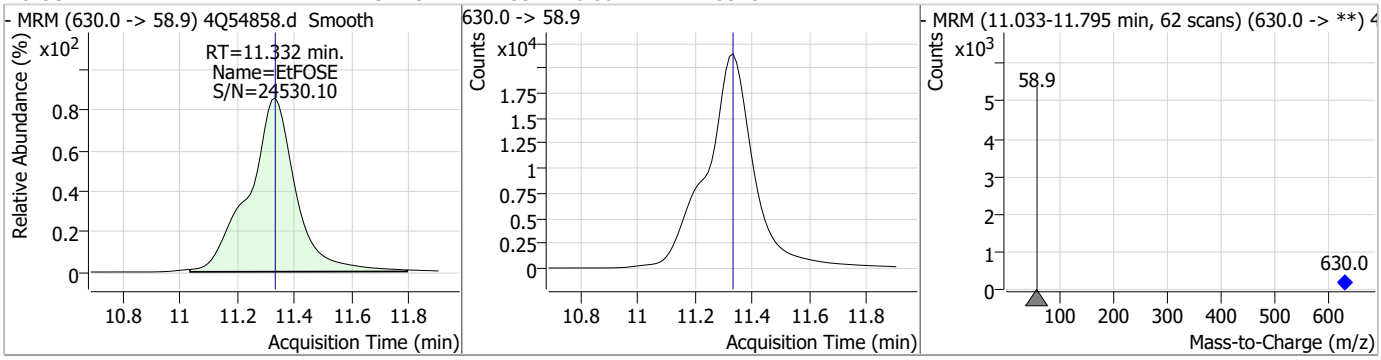
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.81	11.13	0.00	112208 (m)	511.9 -> 169.0	142.6	74.0	221.9



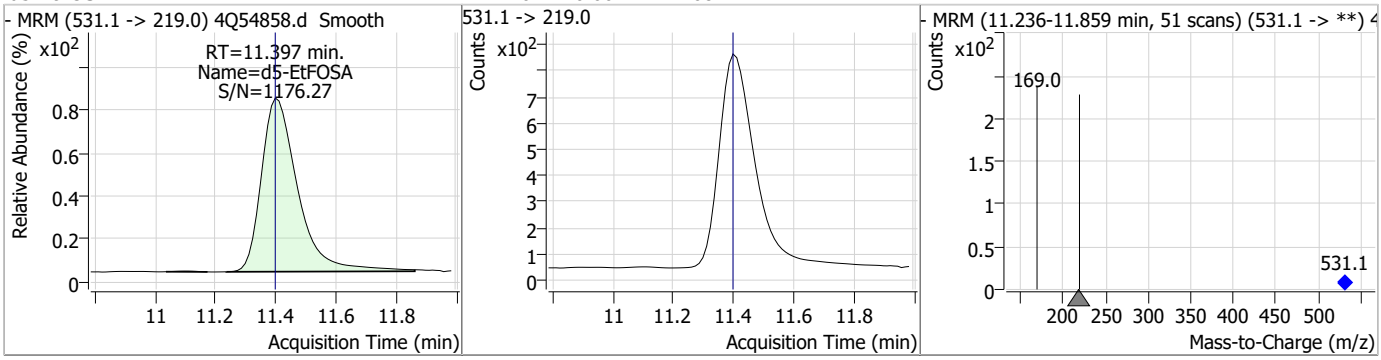
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.82	11.32	0.00	52473				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	132.13	11.33	0.00	245376				

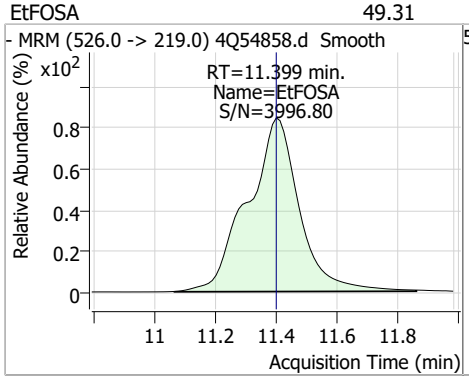


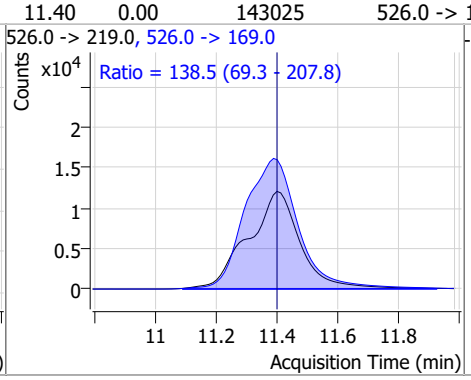
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.72	11.40	0.00	6812				

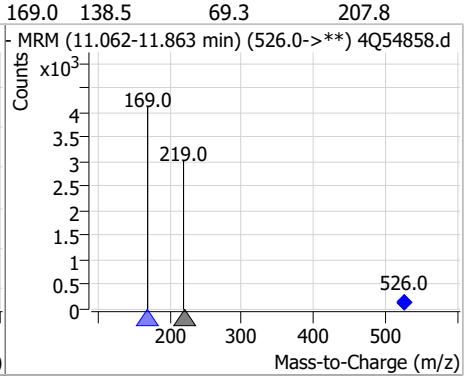


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	49.31	11.40	0.00	143025	526.0 -> 169.0	138.5	69.3	207.8







7.7.8

7

Manual Integration Approval Summary

Sample Number: S4Q804-IC804
Lab FileID: 4Q54858.D
Injection Time: 12/08/23 13:06
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.04	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.13	Split peak
EtFOSAA	2991-50-6		8.30	Split peak
MeFOSA	31506-32-8		11.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54859.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 1:21:34 PM
Sample Name : ic804-8
Vial : P1-A9
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	80421	10.00	µg/L	0.012
M5-PFPeA	4.175	268.3 -> 223.0	36882	5.00	µg/L	0.012
M5-PFHxA	5.347	318.0 -> 273.0	29785	2.50	µg/L	0.012
M4-PFHpA	6.304	367.1 -> 322.0	28286	2.50	µg/L	0.012
M8-PFOA	6.976	421.1 -> 376.0	41635	2.50	µg/L	0.000
M9-PFNA	7.521	472.1 -> 427.0	16711	1.25	µg/L	0.000
M6-PFDA	8.004	519.1 -> 474.1	11727	1.25	µg/L	0.000
M7-PFUnDA	8.461	570.0 -> 525.1	10494	1.25	µg/L	0.012
M2-PFDoDA	8.880	615.1 -> 570.0	17256	1.25	µg/L	0.000
M2-PFTeDA	9.649	715.2 -> 670.0	17801	1.25	µg/L	0.012
M8-FOSA	9.794	506.1 -> 77.8	8957	2.50	µg/L	0.000
M3-PFBS	5.202	302.1 -> 79.9	8154	2.50	µg/L	0.013
M3-PFHxS	7.042	402.1 -> 79.9	6475	2.50	µg/L	0.012
M8-PFOS	8.130	507.1 -> 79.9	7220	2.50	µg/L	0.012
M2-4:2FTS	5.071	329.1 -> 80.9	802	5.00	µg/L	0.025
M2-6:2FTS	6.761	429.1 -> 80.9	1794	5.00	µg/L	0.012
M2-8:2FTS	7.816	529.1 -> 80.9	2600	5.00	µg/L	0.012
M3-MeFOSAA	8.086	573.2 -> 419.0	14553	5.00	µg/L	0.000
M3-HFPO-DA	5.702	286.9 -> 168.9	30531	10.00	µg/L	0.012
M5-EtFOSAA	8.296	589.2 -> 419.0	12985	5.00	µg/L	0.012
M7-MeFOSE	11.034	623.2 -> 58.9	42706	25.00	µg/L	0.012
M9-EtFOSE	11.319	639.2 -> 58.9	49501	25.00	µg/L	0.000
M5-EtFOSA	11.397	531.1 -> 219.0	6219	2.50	µg/L	0.000
M3-MeFOSA	11.126	515.0 -> 219.0	6251	2.50	µg/L	0.000
13C4-PFOS	8.130	502.8 -> 79.9	5506	2.50	µg/L	0.012
13C3-PFBA	2.691	216.0 -> 172.0	38780	5.00	µg/L	0.013
18O2-PFHxS	7.041	403.0 -> 83.9	4082	2.50	µg/L	0.000
13C4-PFOA	6.977	417.1 -> 372.0	45401	2.50	µg/L	0.000
13C2-PFDA	8.004	515.1 -> 470.1	12291	1.25	µg/L	0.000
13C5-PFNA	7.522	468.0 -> 423.0	16952	1.25	µg/L	0.012
13C2-PFHxA	5.348	315.1 -> 270.0	33713	2.50	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	802	4.14	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 82.7%		
13C2-6:2FTS	6.761	429.1 -> 80.9	1794	4.27	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 85.4%		
13C2-8:2FTS	7.816	529.1 -> 80.9	2600	4.62	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C2-PFDoDA	8.880	615.1 -> 570.0	17256	1.40	µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 112.4%		
13C2-PFTeDA	9.649	715.2 -> 670.0	17801	1.46	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 116.7%		
13C3-PFBS	5.202	302.1 -> 79.9	8154	2.61	µg/L	0.013
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C3-PFHxS	7.042	402.1 -> 79.9	6475	2.53	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C4-PFBA	2.686	216.8 -> 171.9	80421	9.88 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C4-PFHpA	6.304	367.1 -> 322.0	28286	2.38 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C5-PFHxA	5.347	318.0 -> 273.0	29785	2.40 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C5-PFPeA	4.175	268.3 -> 223.0	36882	4.77 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C6-PFDA	8.004	519.1 -> 474.1	11727	1.31 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C7-PFUnDA	8.461	570.0 -> 525.1	10494	1.00 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 79.6%		
13C8-FOSA	9.794	506.1 -> 77.8	8957	2.51 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C8-PFOA	6.976	421.1 -> 376.0	41635	2.48 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C8-PFOS	8.130	507.1 -> 79.9	7220	2.59 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C9-PFNA	7.521	472.1 -> 427.0	16711	1.23 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.4%		
d3-MeFOSAA	8.086	573.2 -> 419.0	14553	4.76 µg/L		0.000
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C3-HFPO-DA	5.702	286.9 -> 168.9	30531	9.84 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
d3-MeFOSA	11.126	515.0 -> 219.0	6251	2.94 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 117.5%		
d5-EtFOSAA	8.296	589.2 -> 419.0	12985	5.02 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
d7-MeFOSE	11.034	623.2 -> 58.9	42706	24.26 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
d9-EtFOSE	11.319	639.2 -> 58.9	49501	25.11 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
d5-EtFOSA	11.397	531.1 -> 219.0	6219	2.66 µg/L		0.000
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.6%		
Target Compounds						QValue
4:2FTS	5.059	327.1 -> 307.0	343778	249.01 µg/L		96
		327.1 -> 80.9	138158			
6:2FTS	6.761	427.1 -> 407.0	451229	239.24 µg/L		98
		427.1 -> 80.9	159618			
8:2FTS	7.816	527.1 -> 507.0	335876	245.10 µg/L		93
		527.1 -> 80.8	122424			
EtFOSAA	8.297	584.2 -> 419.1	164432	69.41 µg/L	m	87
		584.2 -> 526.0	64387			
FOSA	9.798	498.1 -> 77.9	286320	71.11 µg/L		99
		498.1 -> 478.0	8726			
MeFOSAA	8.087	570.1 -> 419.0	161252	77.28 µg/L		94
		570.1 -> 483.0	30157			
PFBA	2.695	212.8 -> 168.9	755879	293.47 µg/L		100
PFBS	5.203	298.7 -> 79.9	156188	61.74 µg/L		96
		298.7 -> 98.8	59587			
PFDA	8.005	512.9 -> 469.0	569637	66.12 µg/L		99
		512.9 -> 219.0	114800			
PFDoDA	8.880	613.1 -> 569.0	857930	69.04 µg/L		99
		613.1 -> 319.0	151294			
PFDS	9.020	599.0 -> 79.9	136754	71.17 µg/L		95

Perfluorinated Compounds by LC/MS/MS

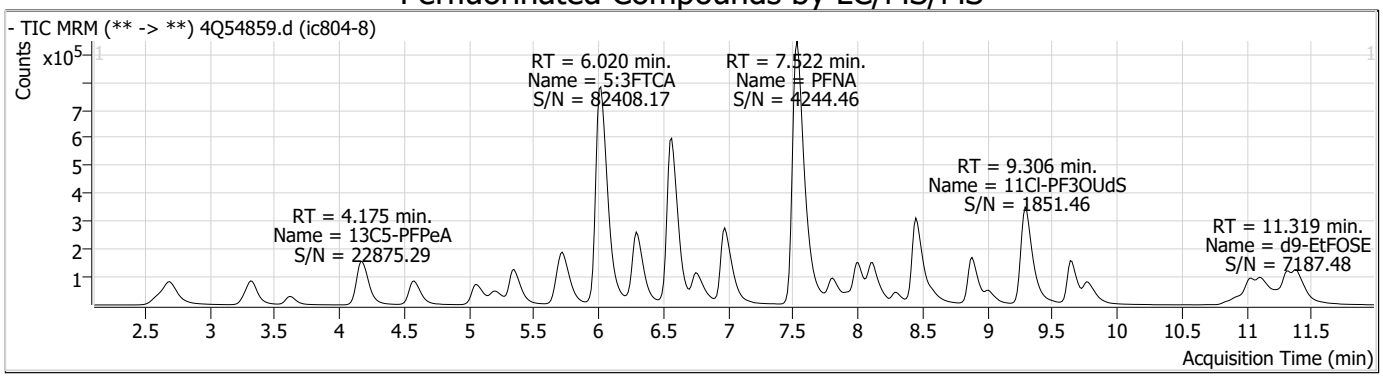
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	67378				
PFHpA	6.305	363.1 -> 319.0	1142171	71.72	µg/L		99
		363.1 -> 169.0	207156				
PFHpS	7.624	449.0 -> 79.9	201054	70.17	µg/L		98
		449.0 -> 98.9	102719				
PFHxA	5.350	313.0 -> 269.0	692521	72.86	µg/L		99
		313.0 -> 118.9	20840				
PFHxS	7.043	398.7 -> 79.9	131102	62.77	µg/L	m	96
		398.7 -> 98.9	66020				
PFNA	7.522	463.0 -> 419.0	730193	74.37	µg/L		98
		463.0 -> 219.0	173369				
PFNS	8.586	548.8 -> 79.9	84324	68.45	µg/L		98
		548.8 -> 98.9	42622				
PFOA	6.978	413.0 -> 369.0	1229376	71.80	µg/L		95
		413.0 -> 169.0	247650				
PFOS	8.131	498.9 -> 79.9	186662	62.11	µg/L	m	53
		498.9 -> 98.8	86406				
PFPeA	4.177	263.0 -> 219.0	1037607	142.99	µg/L		100
PFPeS	6.294	349.1 -> 79.9	139528	70.93	µg/L		97
		349.1 -> 98.9	61353				
PFTeDA	9.650	713.1 -> 669.0	815800	65.85	µg/L		100
		713.1 -> 168.9	85092				
PFTrDA	9.279	663.0 -> 619.0	846605	62.70	µg/L		99
		663.0 -> 168.9	116524				
PFUnDA	8.461	563.1 -> 519.0	599583	78.55	µg/L		99
		563.1 -> 269.1	125665				
11Cl-PF3OUdS	9.306	630.9 -> 450.9	1059526	126.03	µg/L		100
		632.9 -> 452.9	331689				
9Cl-PF3ONS	8.463	530.8 -> 351.0	923927	108.73	µg/L		100
		532.8 -> 353.0	278966				
ADONA	6.568	376.9 -> 250.9	2971732	144.12	µg/L		99
		376.9 -> 84.8	704639				
HFPO-DA	5.703	284.9 -> 168.9	413965	141.70	µg/L		99
		284.9 -> 184.9	40451				
3:3FTCA	3.630	241.0 -> 177.0	169213	413.28	µg/L		99
		241.0 -> 117.0	14743				
5:3FTCA	6.020	341.0 -> 237.1	3089388	1822.43	µg/L		100
		341.0 -> 217.0	2207363				
7:3FTCA	7.549	441.0 -> 316.9	1555794	1750.12	µg/L		99
		441.0 -> 336.9	3672355				
EtFOSA	11.399	526.0 -> 219.0	380913	143.87	µg/L		99
		526.0 -> 169.0	530061				
EtFOSE	11.332	630.0 -> 58.9	613834	350.39	µg/L		100
MeFOSA	11.128	511.9 -> 219.0	296242	133.09	µg/L	m	99
		511.9 -> 169.0	433007				
MeFOSE	11.047	616.1 -> 58.9	609091	359.46	µg/L		100
PFDoDS	9.777	699.1 -> 79.9	103059	70.32	µg/L		99
		699.1 -> 98.8	58977				
NFDHA	5.241	295.0 -> 201.0	79128	117.53	µg/L		98
		295.0 -> 84.9	20077				
PFMBA	4.578	279.0 -> 85.1	577375	144.50	µg/L		100
PFMPA	3.315	229.0 -> 84.9	644647	146.82	µg/L		100
PFEESA	5.734	314.8 -> 134.9	866197	123.31	µg/L		98
		314.8 -> 82.9	28941				

 # = Qualifier out of range, m = manually integrated, + = Area summed

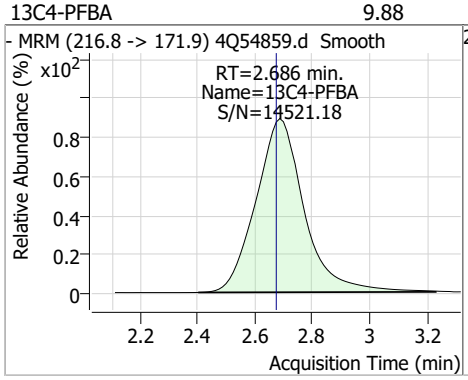
Perfluorinated Compounds by LC/MS/MS

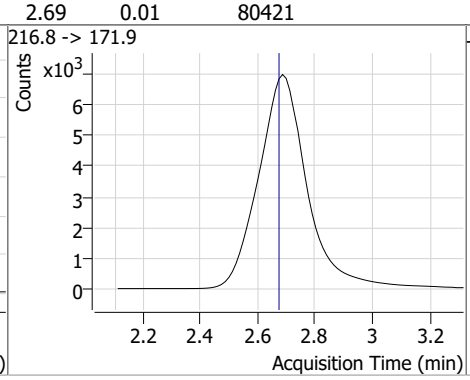
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

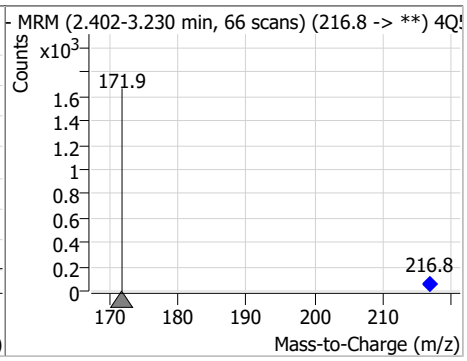
Perfluorinated Compounds by LC/MS/MS



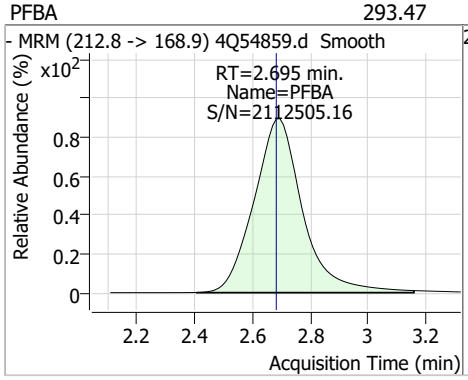
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.88	2.69	0.01	80421				

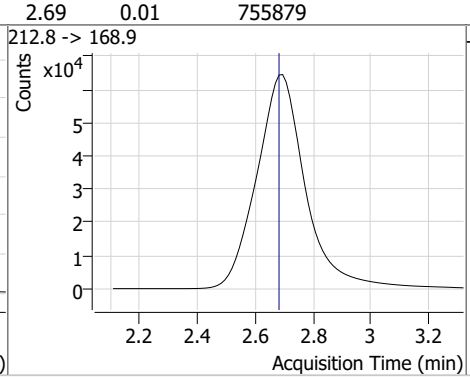


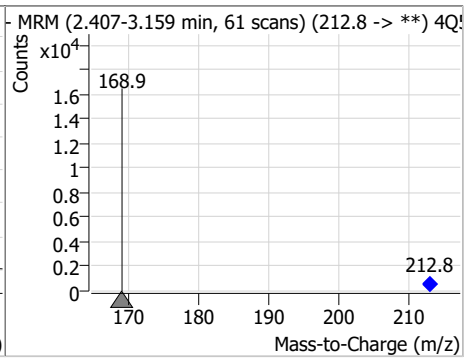




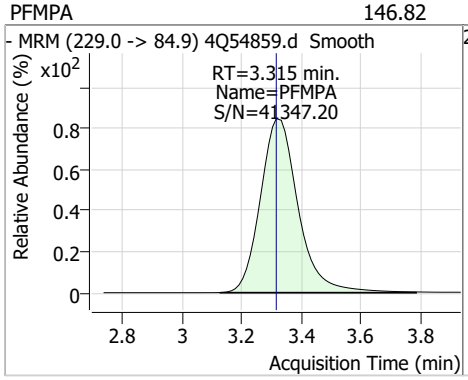
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	293.47	2.69	0.01	755879				

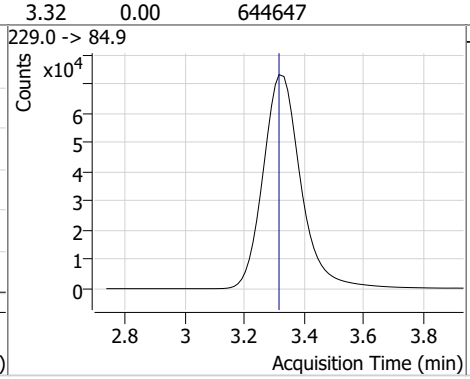


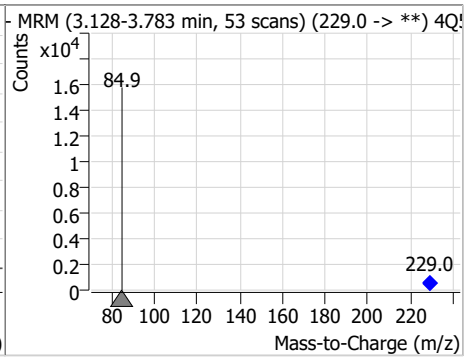




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	146.82	3.32	0.00	644647				

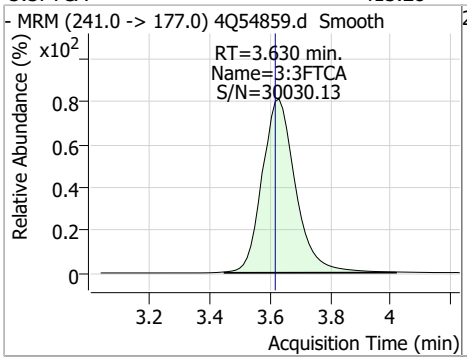


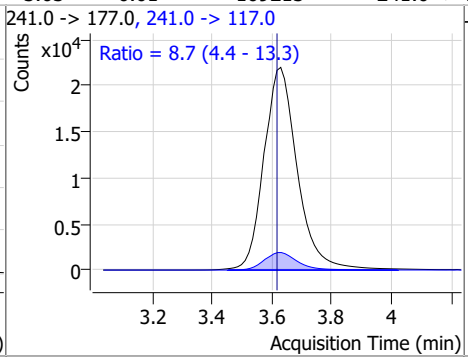


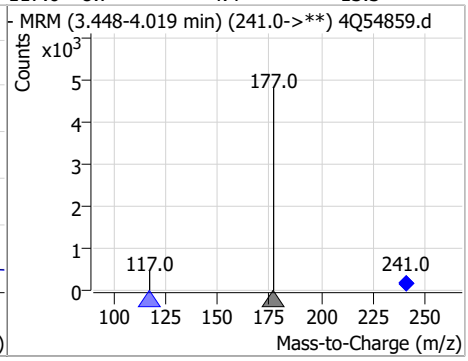


Perfluorinated Compounds by LC/MS/MS

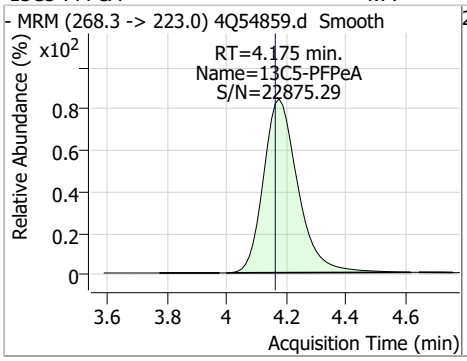
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	413.28	3.63	0.01	169213	241.0 -> 117.0	8.7	4.4	13.3

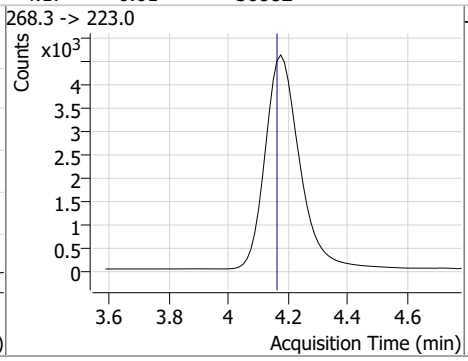


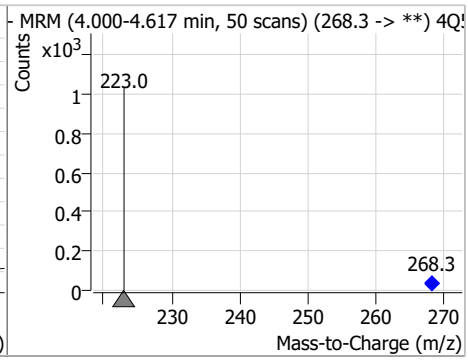




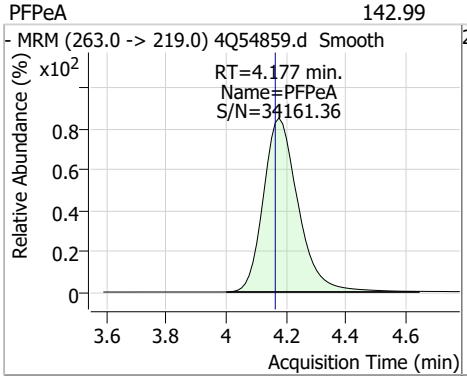
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.77	4.17	0.01	36882				

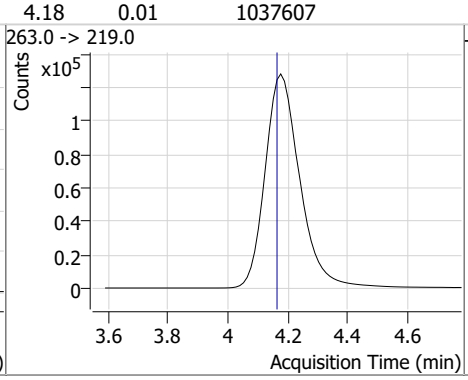


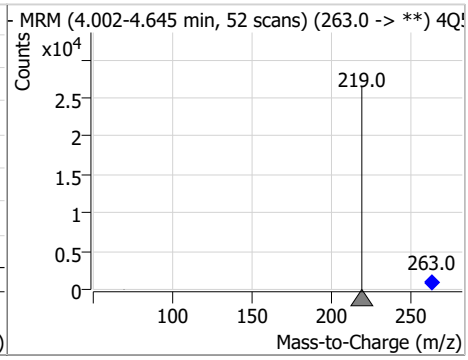




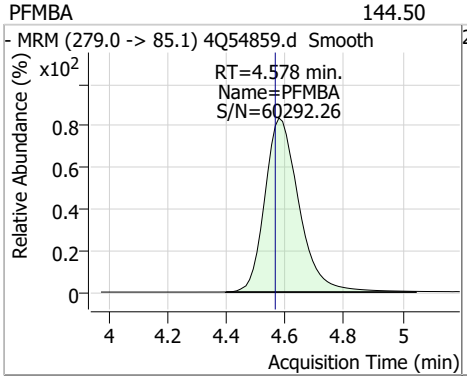
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	142.99	4.18	0.01	1037607				

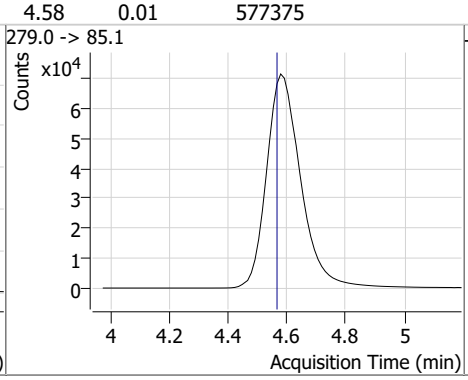


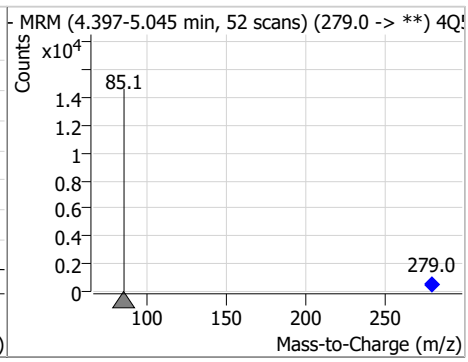




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	144.50	4.58	0.01	577375				

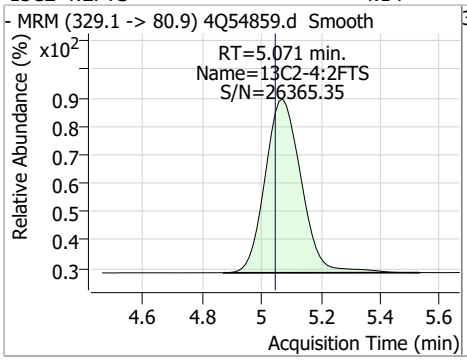


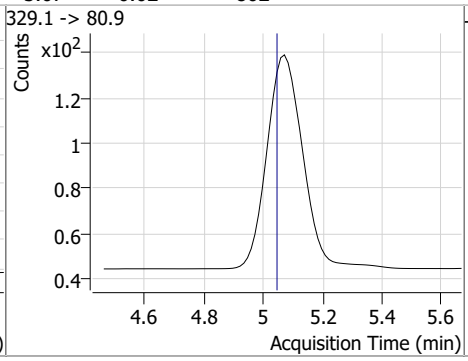


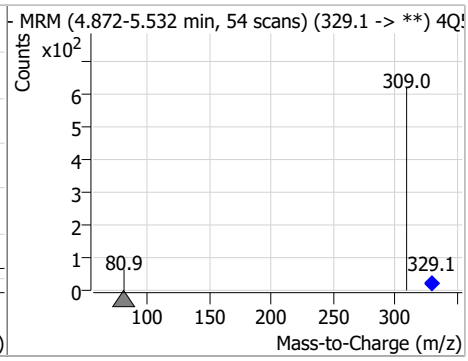


Perfluorinated Compounds by LC/MS/MS

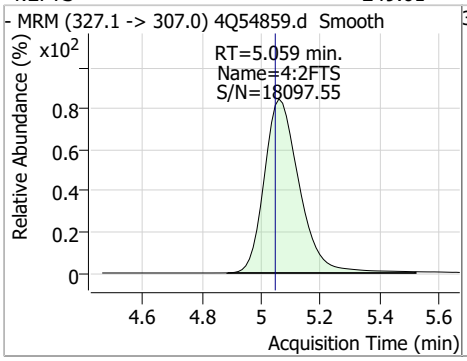
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.14	5.07	0.02	802				

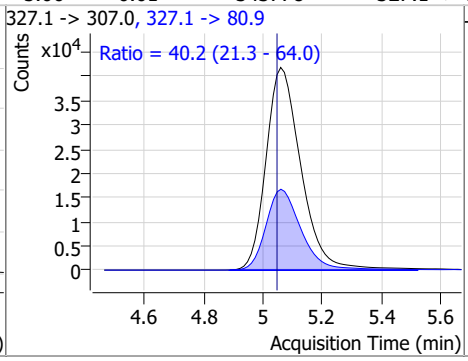


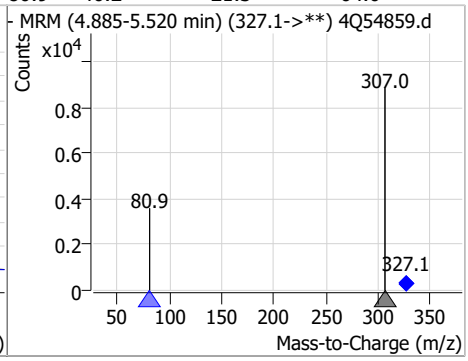




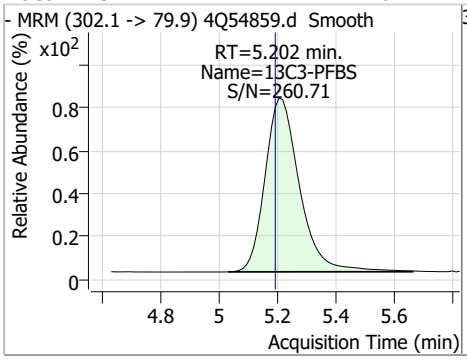
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	249.01	5.06	0.01	343778	327.1 -> 80.9	40.2	21.3	64.0

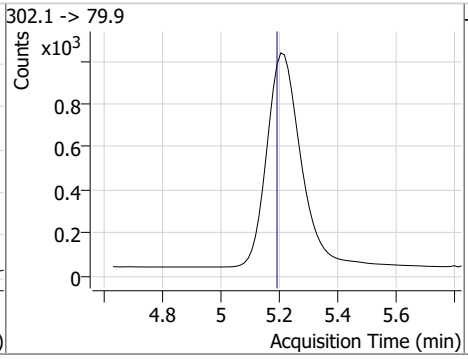


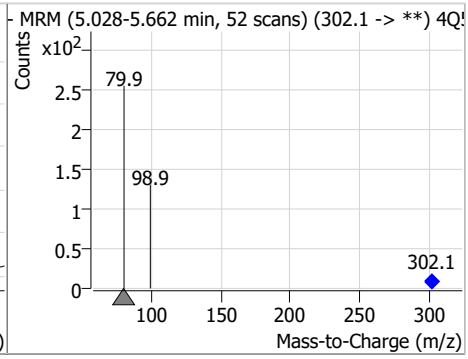




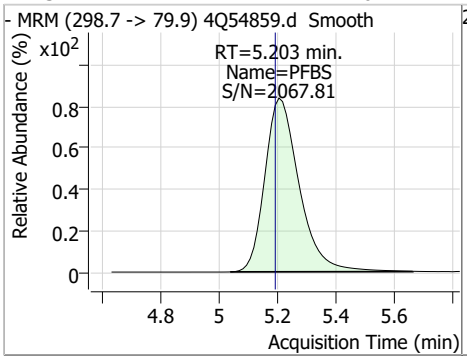
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.61	5.20	0.01	8154				

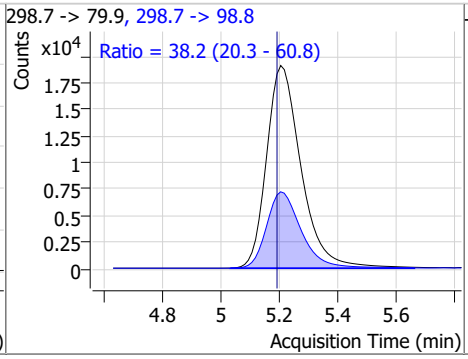


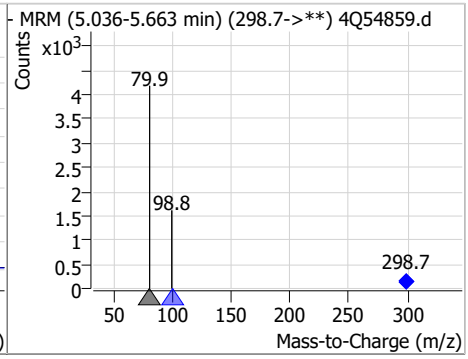




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	61.74	5.20	0.01	156188	298.7 -> 98.8	38.2	20.3	60.8

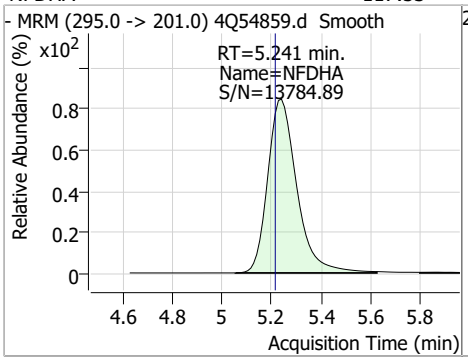


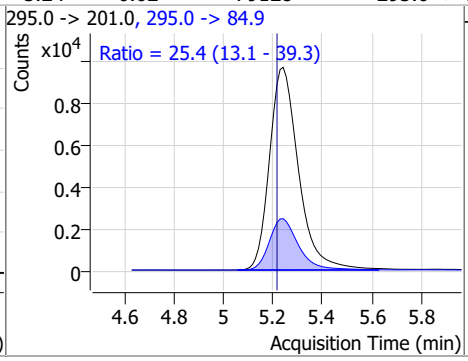


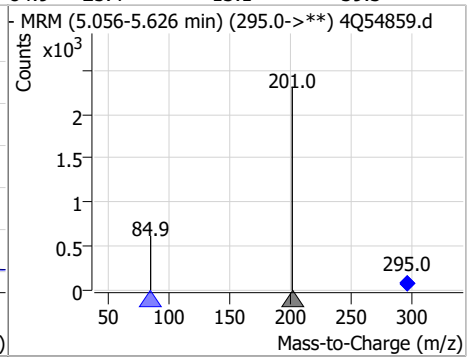


Perfluorinated Compounds by LC/MS/MS

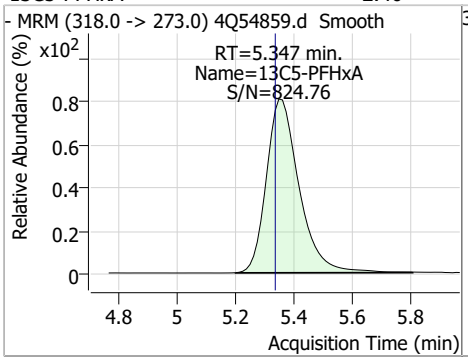
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	117.53	5.24	0.02	79128	295.0 -> 84.9	25.4	13.1	39.3

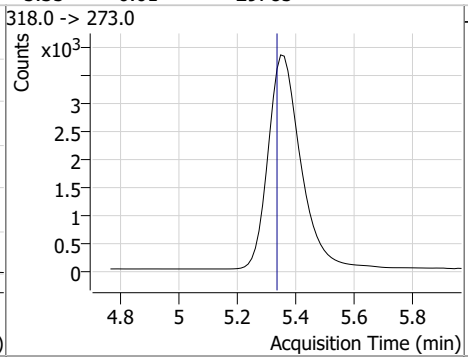


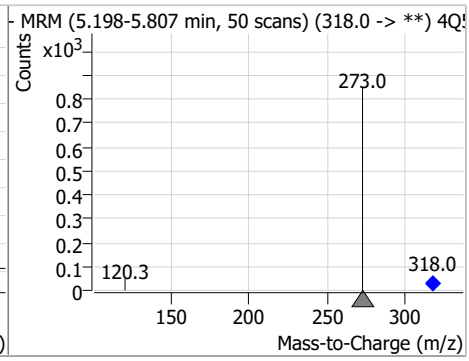




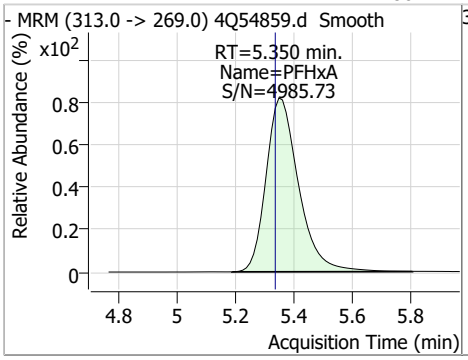
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.40	5.35	0.01	29785				

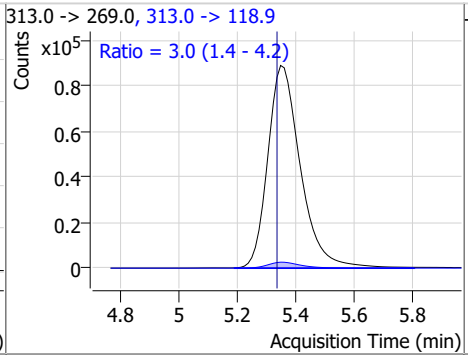


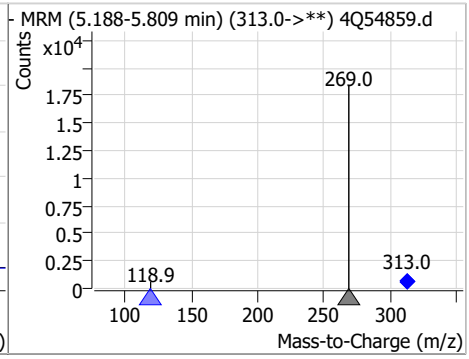




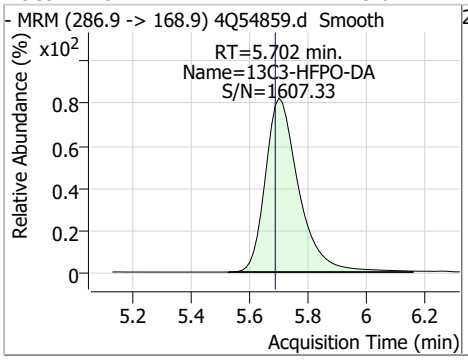
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	72.86	5.35	0.01	692521	313.0 -> 118.9	3.0	1.4	4.2

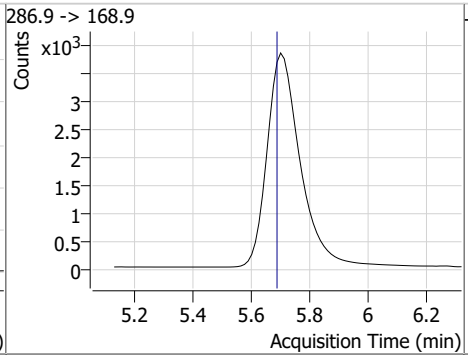


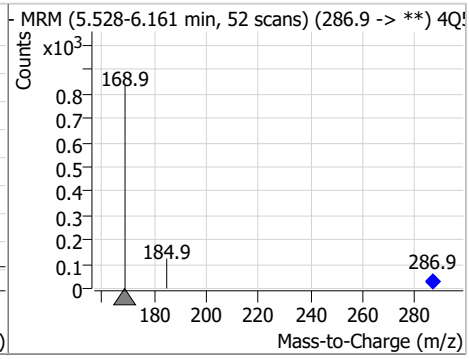




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.84	5.70	0.01	30531				

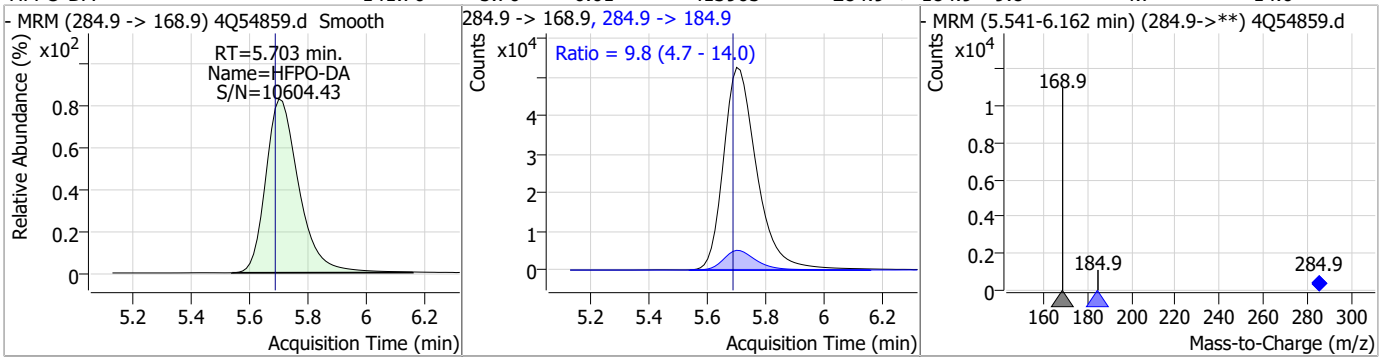




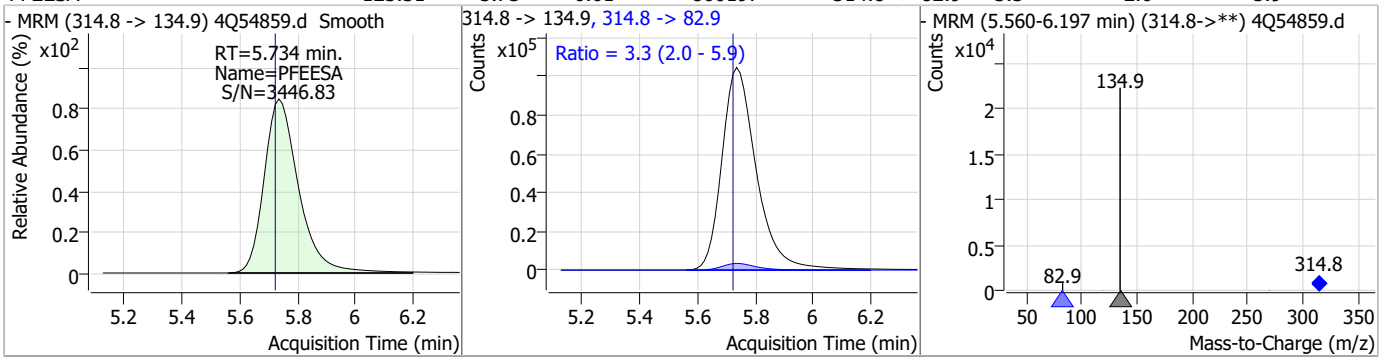


Perfluorinated Compounds by LC/MS/MS

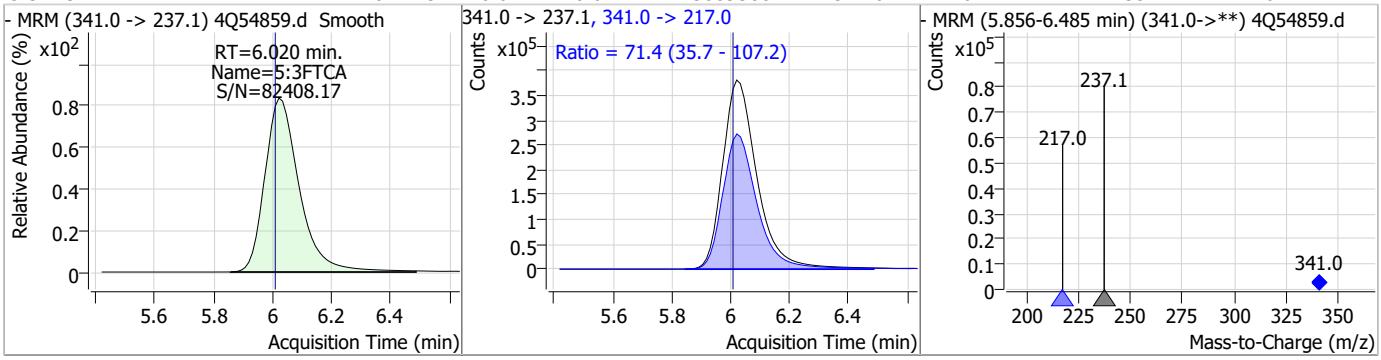
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	141.70	5.70	0.01	413965	284.9 -> 184.9	9.8	4.7	14.0



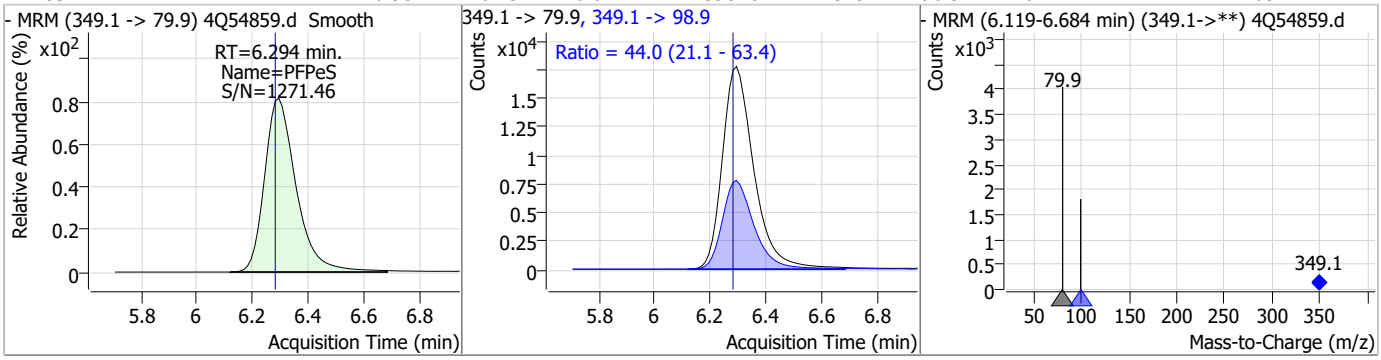
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	123.31	5.73	0.01	866197	314.8 -> 82.9	3.3	2.0	5.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	1822.43	6.02	0.01	3089388	341.0 -> 217.0	71.4	35.7	107.2

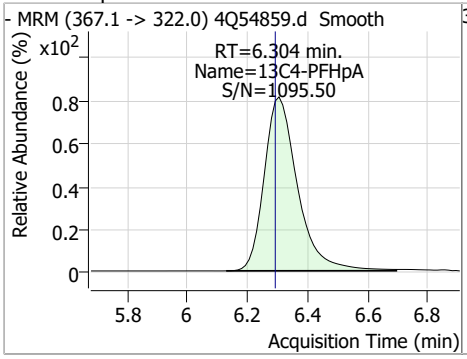


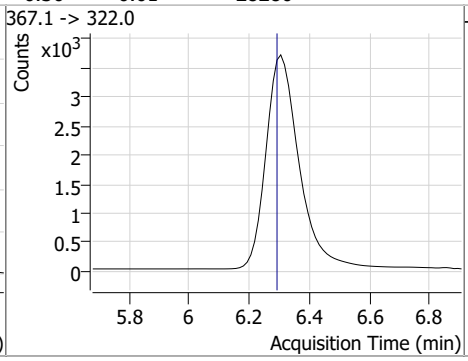
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	70.93	6.29	0.01	139528	349.1 -> 98.9	44.0	21.1	63.4

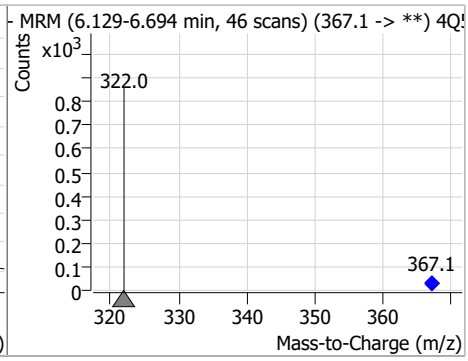


Perfluorinated Compounds by LC/MS/MS

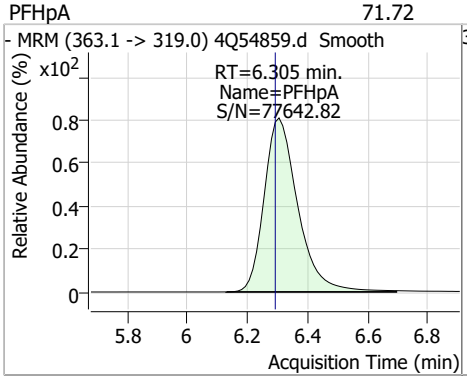
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.38	6.30	0.01	28286				

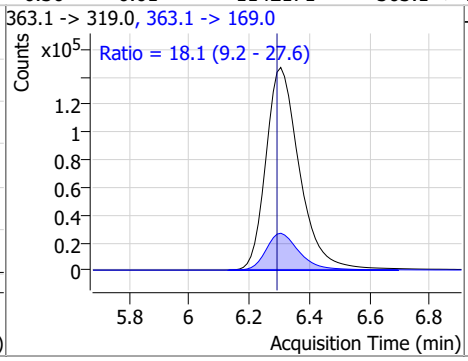


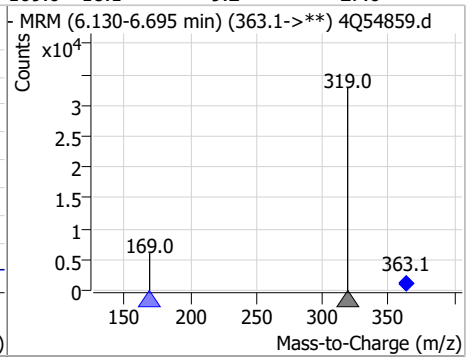




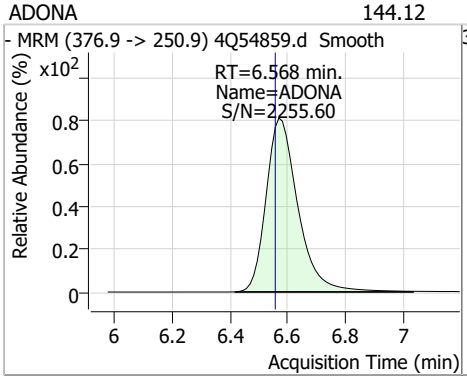
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	71.72	6.30	0.01	1142171	363.1 -> 169.0	18.1	9.2	27.6

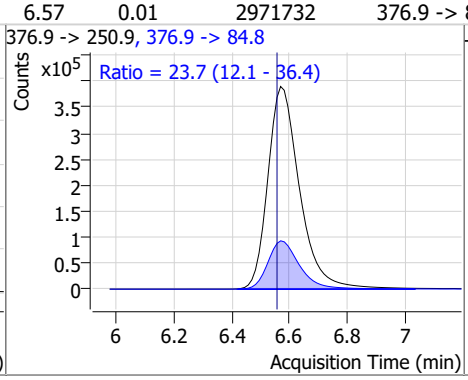


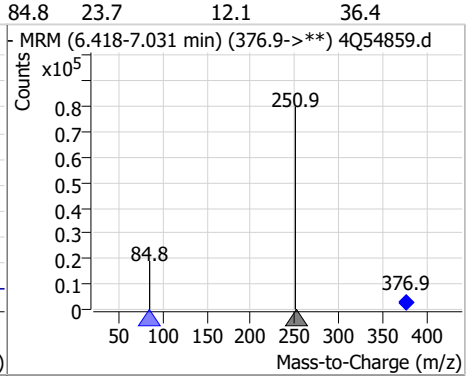




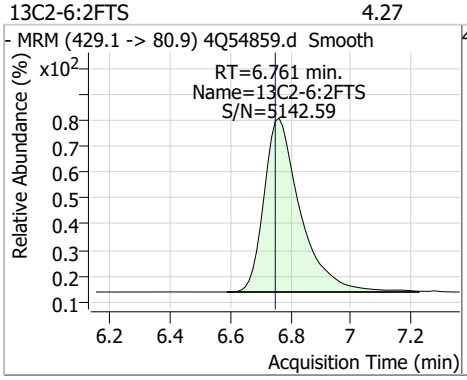
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	144.12	6.57	0.01	2971732	376.9 -> 84.8	23.7	12.1	36.4

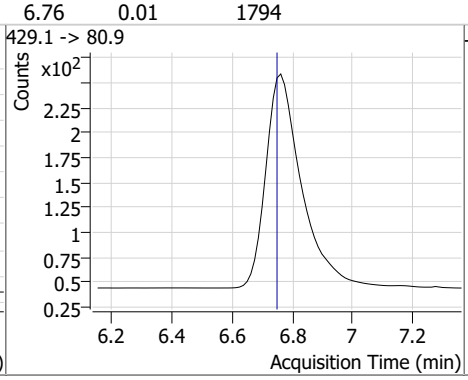


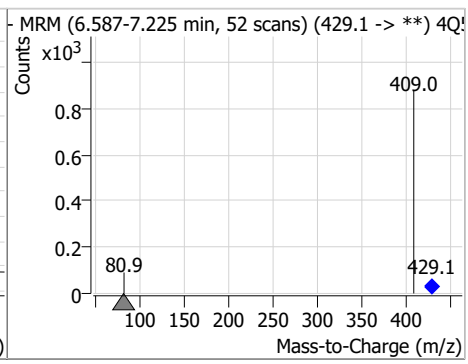




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.27	6.76	0.01	1794				

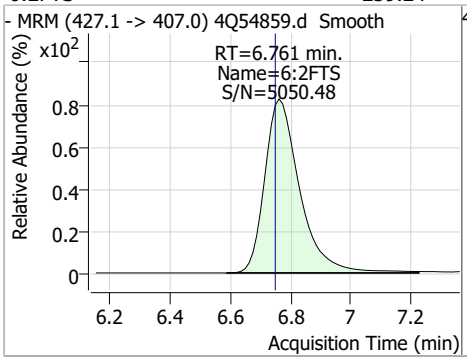


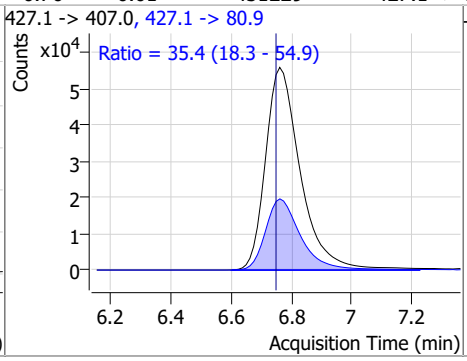


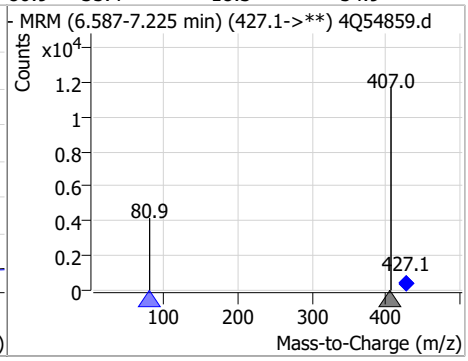


Perfluorinated Compounds by LC/MS/MS

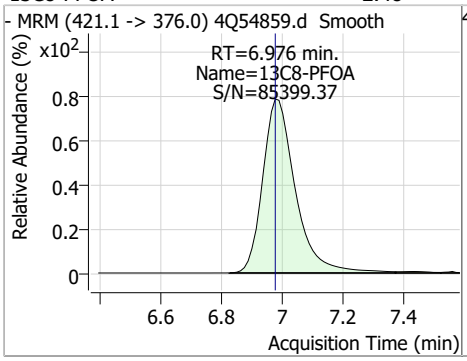
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	239.24	6.76	0.01	451229	427.1 -> 80.9	35.4	18.3	54.9

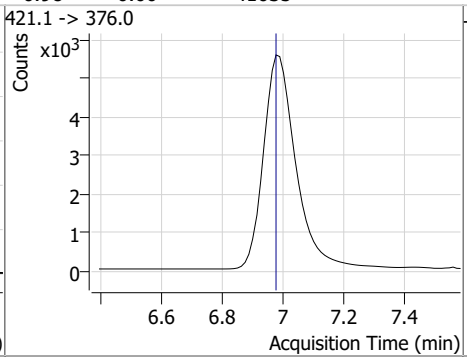


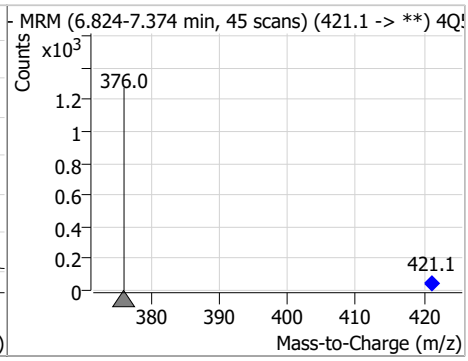




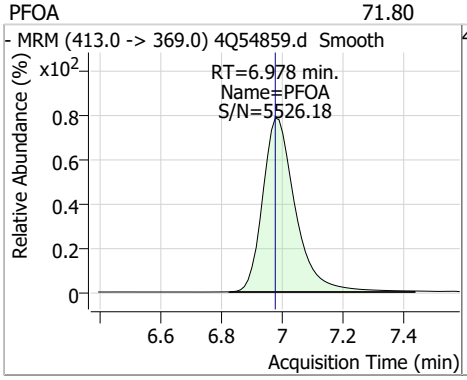
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.48	6.98	0.00	41635				

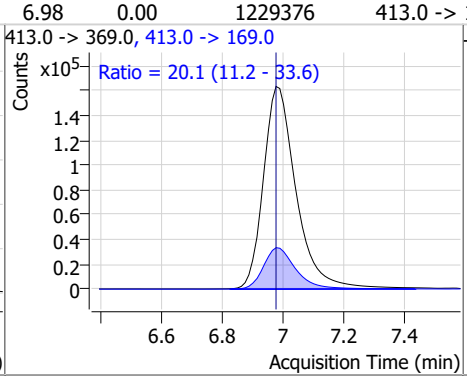


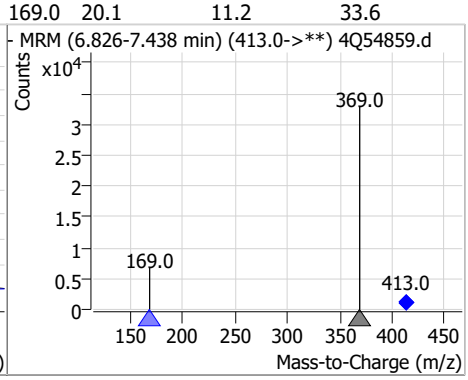




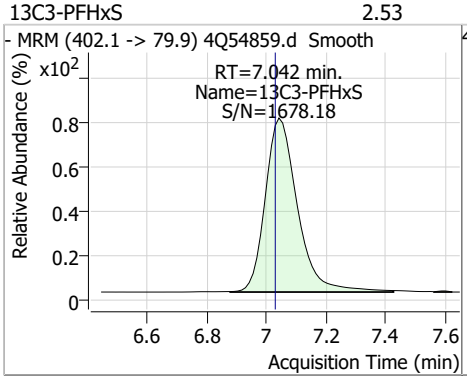
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	71.80	6.98	0.00	1229376	413.0 -> 169.0	20.1	11.2	33.6

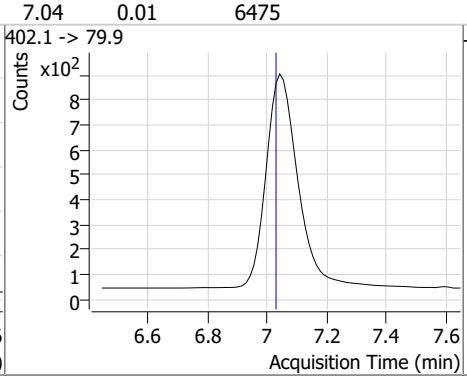


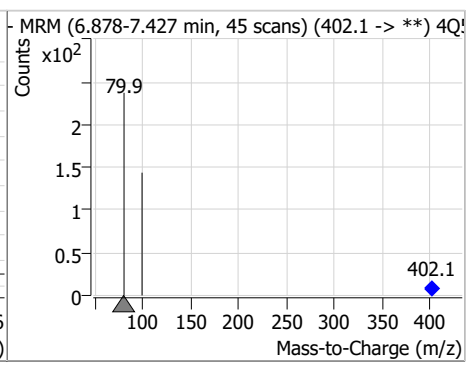




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.53	7.04	0.01	6475				

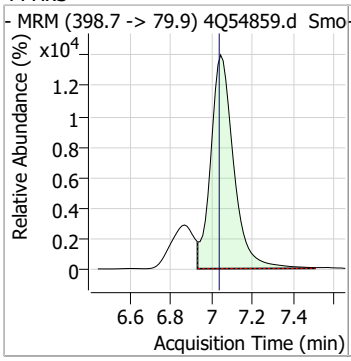


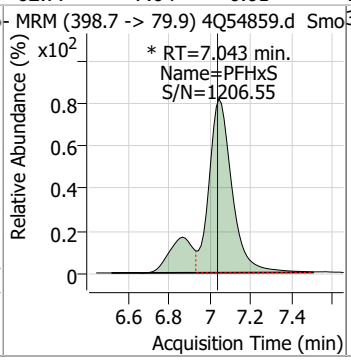


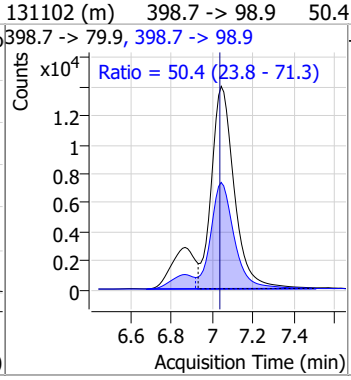


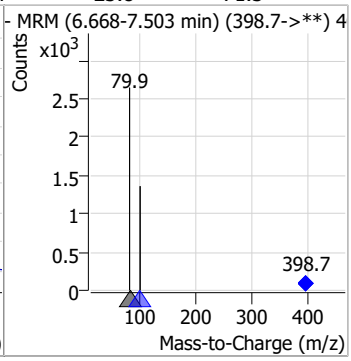
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	62.77	7.04	0.01	131102 (m)	398.7 -> 98.9	50.4	23.8	71.3

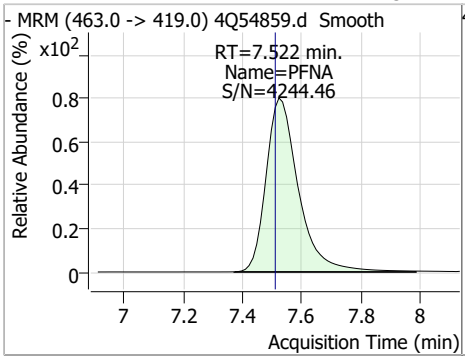


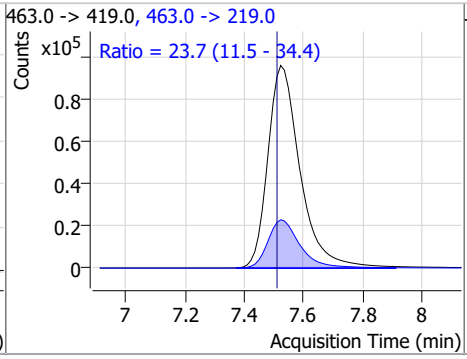


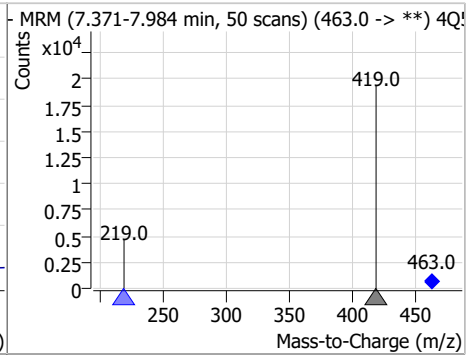




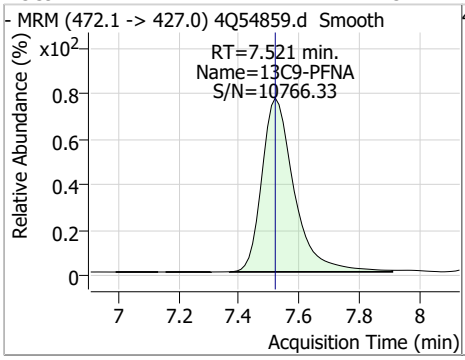
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	74.37	7.52	0.01	730193	463.0 -> 219.0	23.7	11.5	34.4

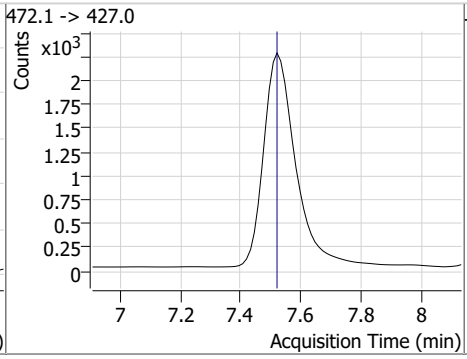


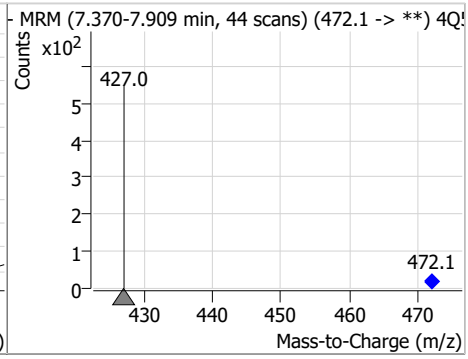




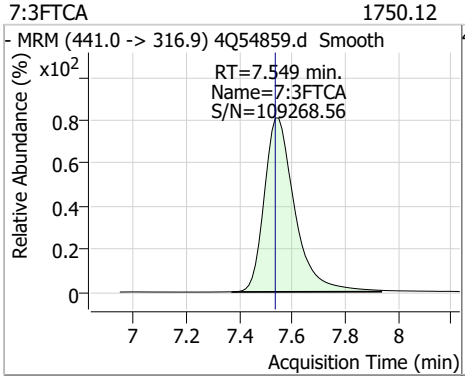
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	7.52	0.00	16711				

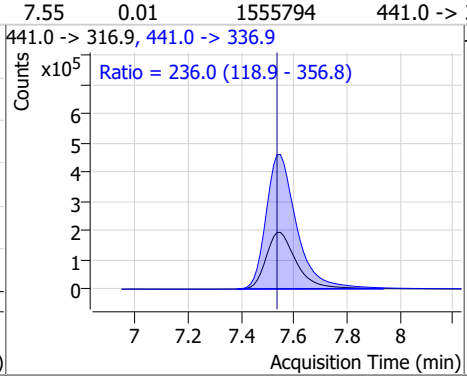


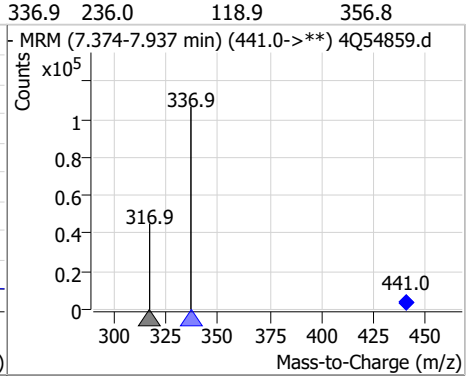




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	1750.12	7.55	0.01	1555794	441.0 -> 336.9	236.0	118.9	356.8

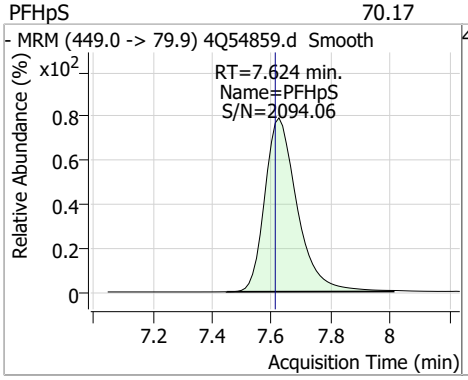


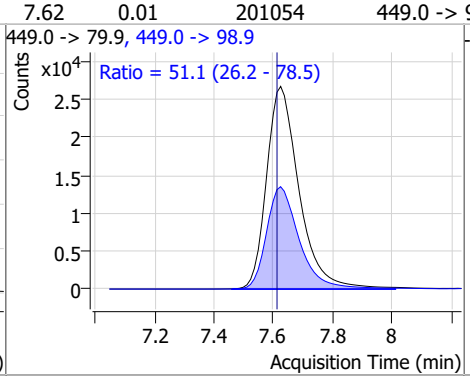


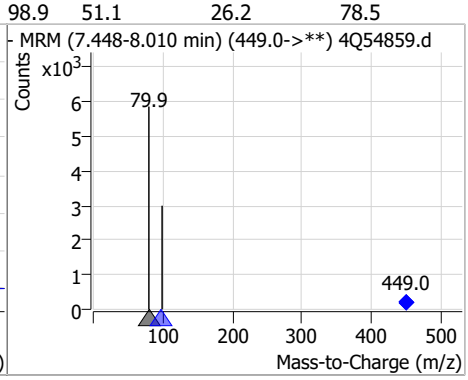


Perfluorinated Compounds by LC/MS/MS

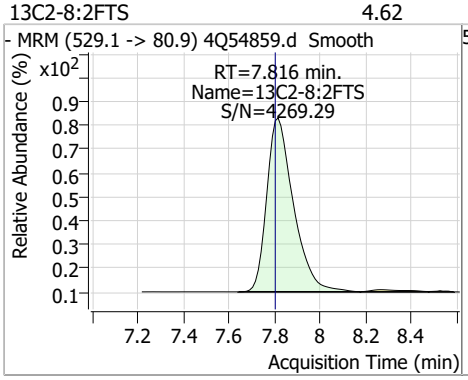
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	70.17	7.62	0.01	201054	449.0 -> 98.9	51.1	26.2	78.5

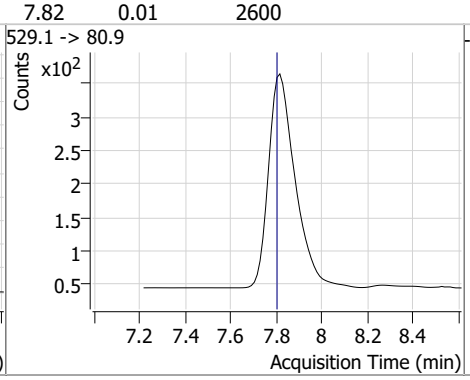


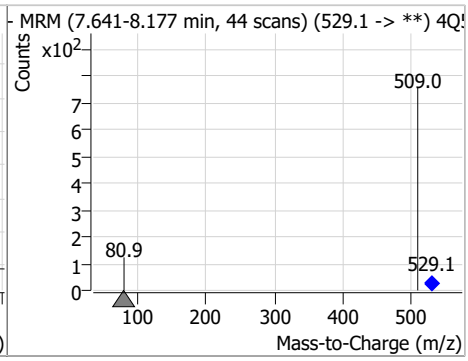




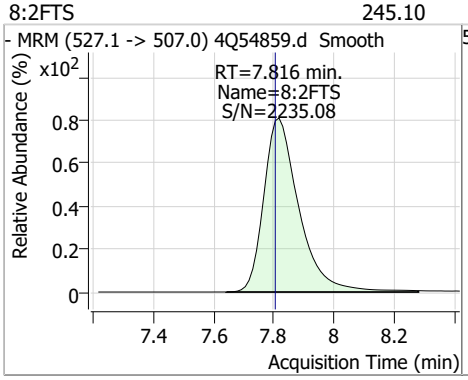
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.62	7.82	0.01	2600				

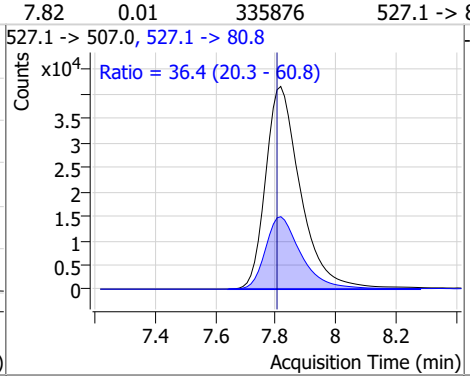


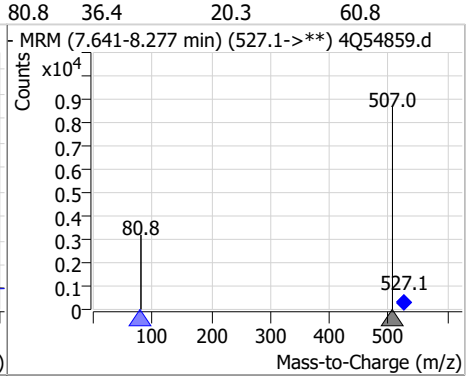




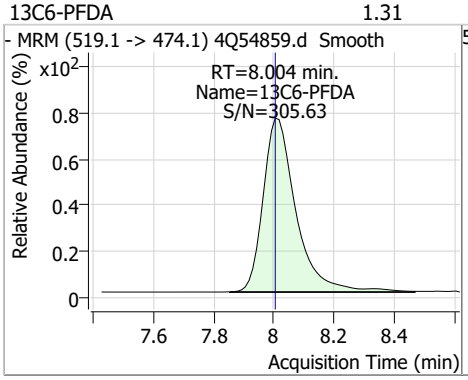
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	245.10	7.82	0.01	335876	527.1 -> 80.8	36.4	20.3	60.8

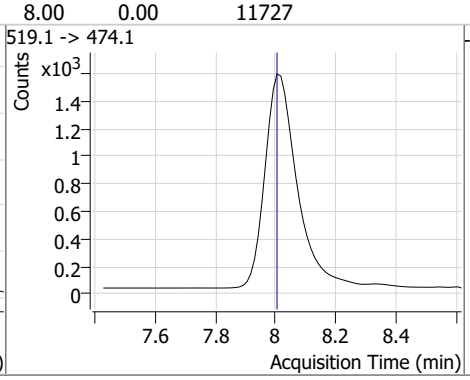


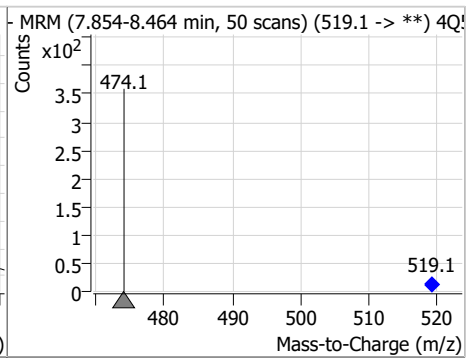




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.31	8.00	0.00	11727				

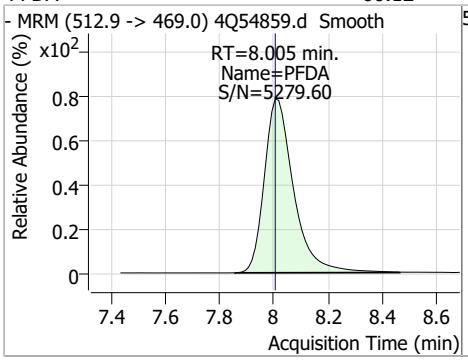


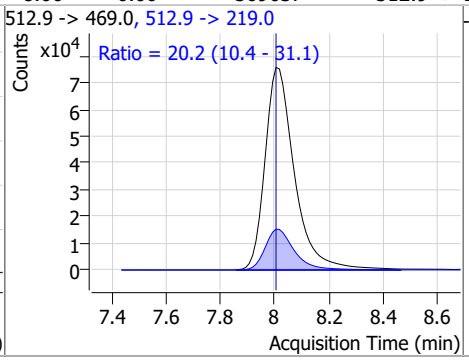


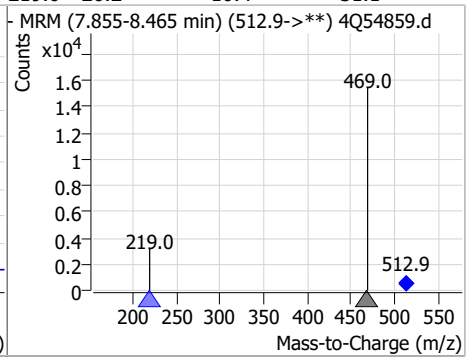


Perfluorinated Compounds by LC/MS/MS

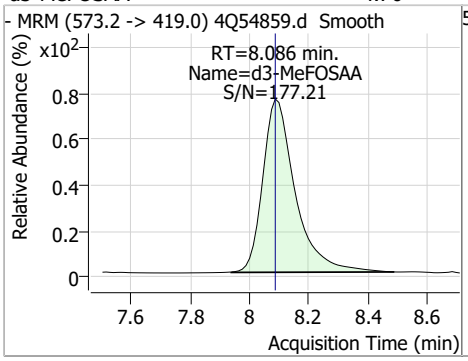
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	66.12	8.00	0.00	569637	512.9 -> 219.0	20.2	10.4	31.1

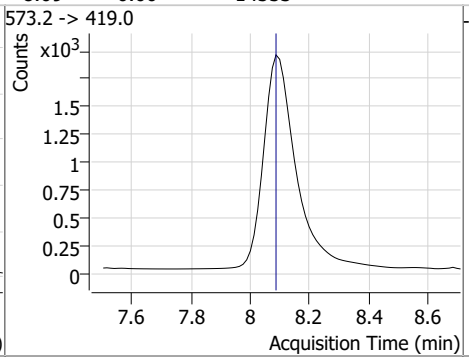


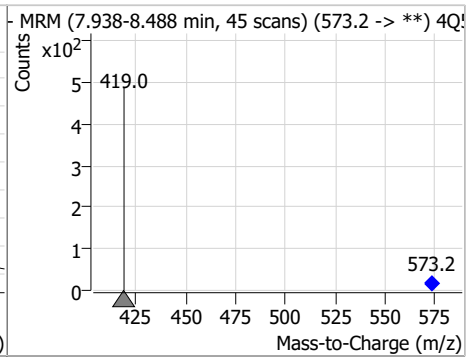




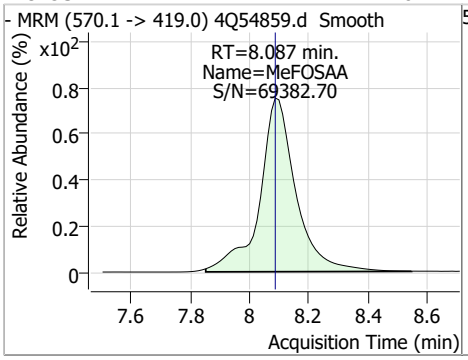
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.76	8.09	0.00	14553				

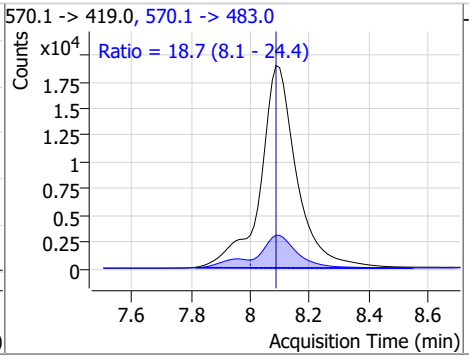


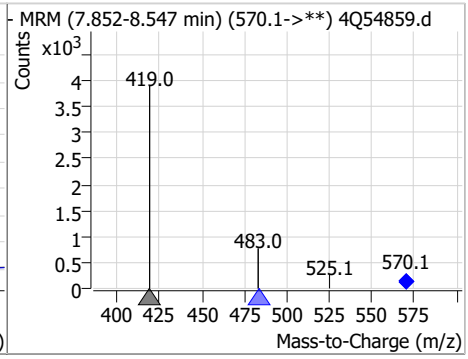




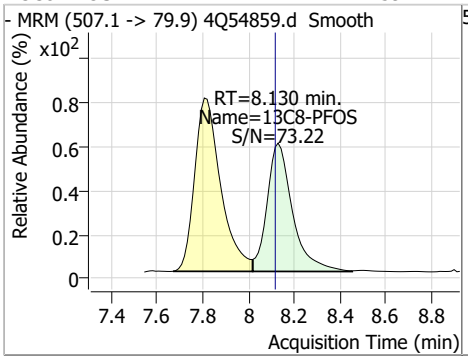
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	77.28	8.09	0.00	161252	570.1 -> 483.0	18.7	8.1	24.4

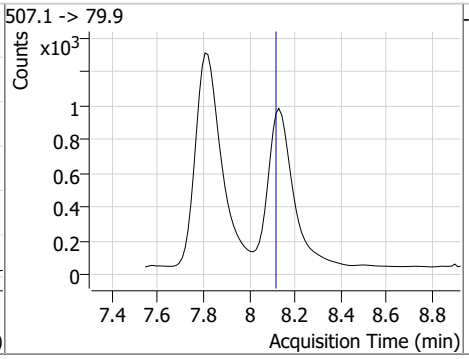


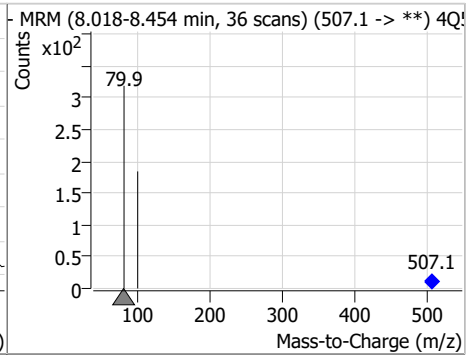




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.59	8.13	0.01	7220				

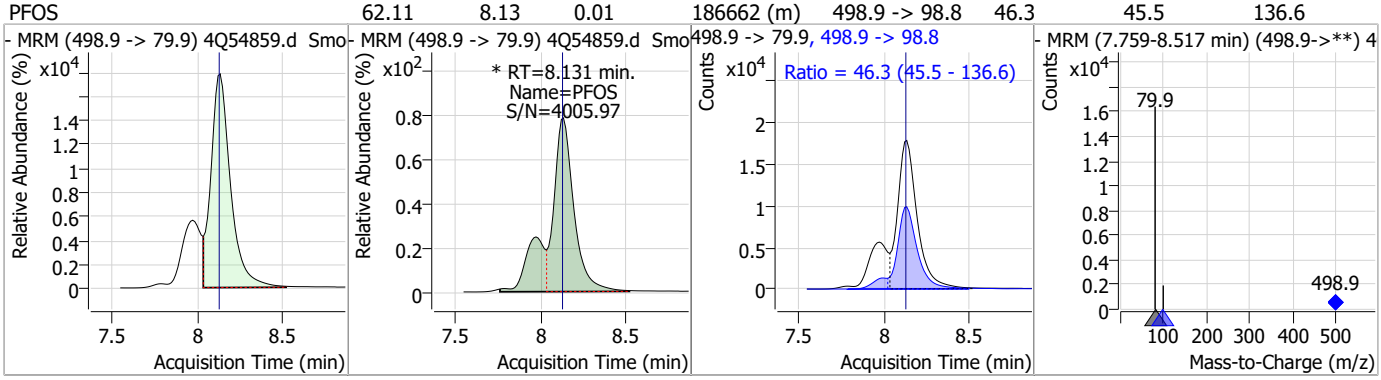




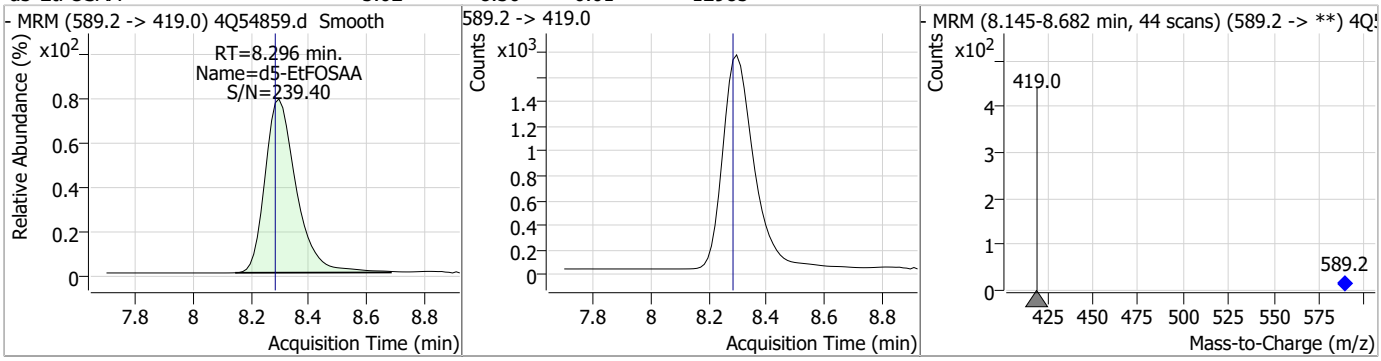


Perfluorinated Compounds by LC/MS/MS

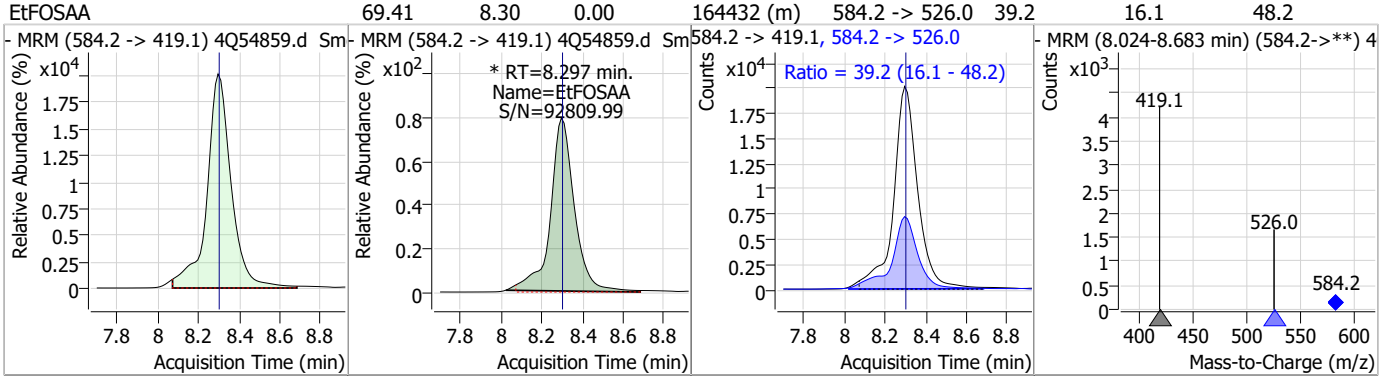
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	62.11	8.13	0.01	186662 (m)	498.9 -> 98.8	46.3	45.5	136.6



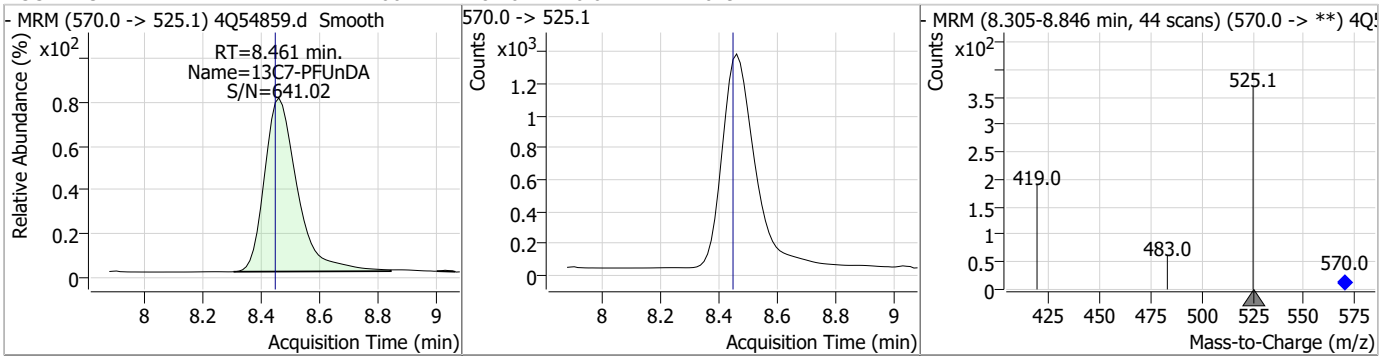
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.02	8.30	0.01	12985				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	69.41	8.30	0.00	164432 (m)	584.2 -> 526.0	39.2	16.1	48.2

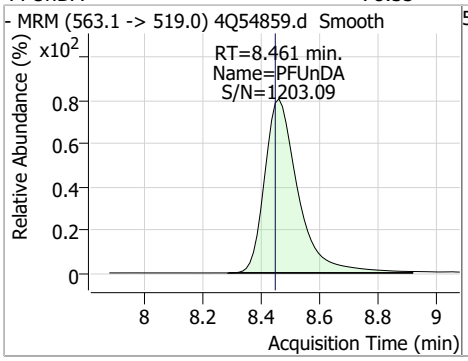


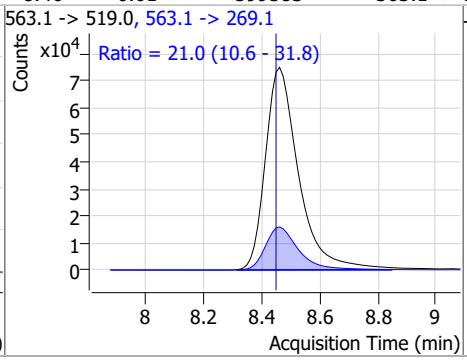
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.00	8.46	0.01	10494				

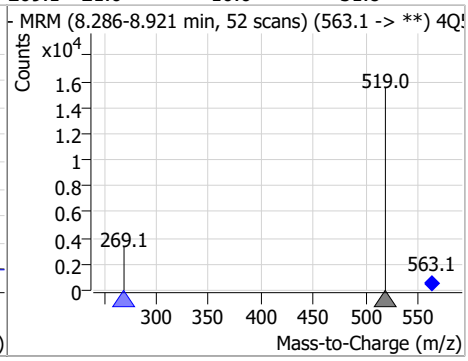


Perfluorinated Compounds by LC/MS/MS

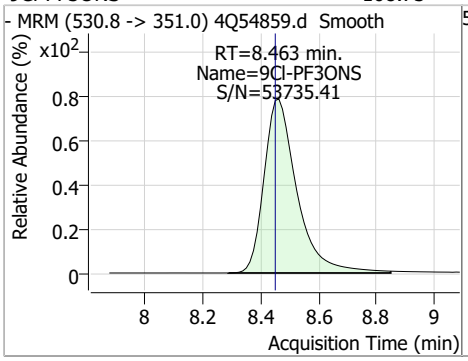
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	78.55	8.46	0.01	599583	563.1 -> 269.1	21.0	10.6	31.8

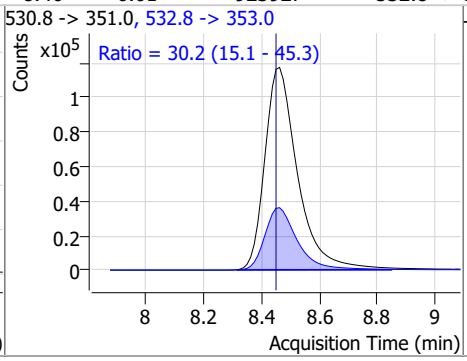


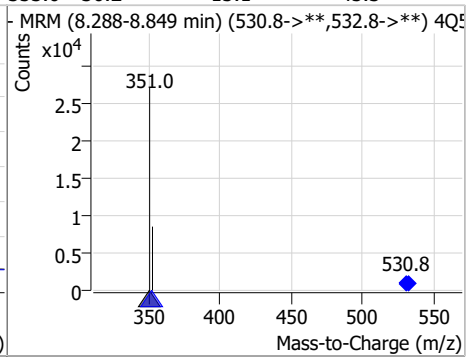




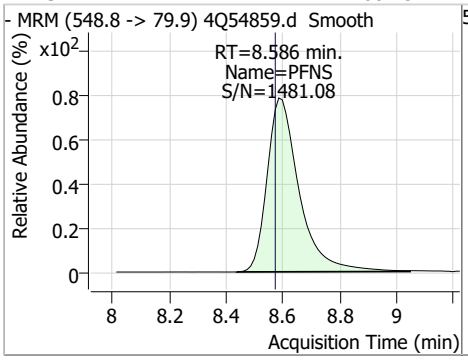
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	108.73	8.46	0.01	923927	532.8 -> 353.0	30.2	15.1	45.3

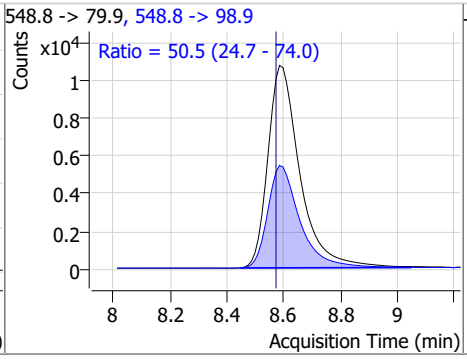


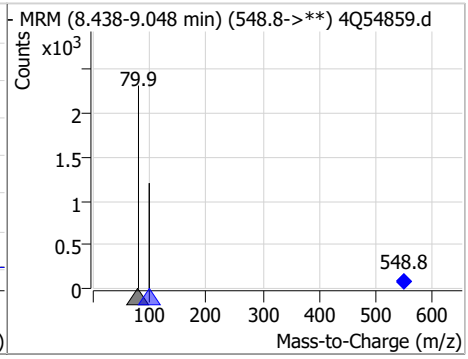




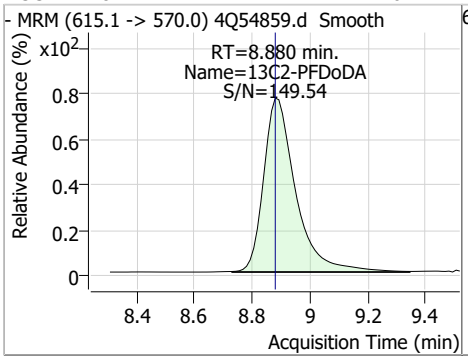
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	68.45	8.59	0.01	84324	548.8 -> 98.9	50.5	24.7	74.0

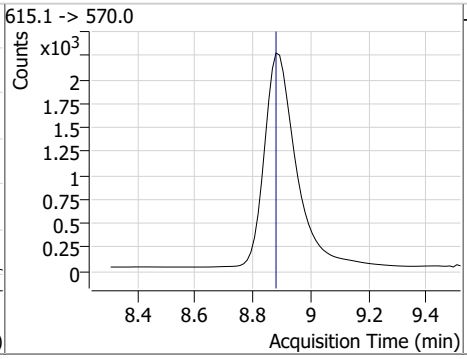


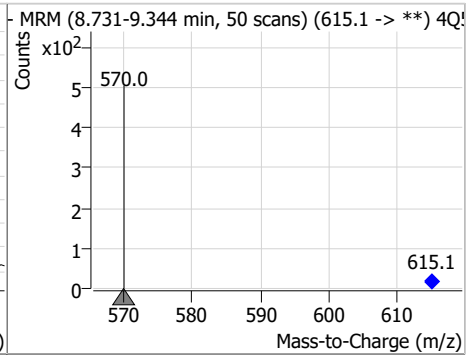




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.40	8.88	0.00	17256				

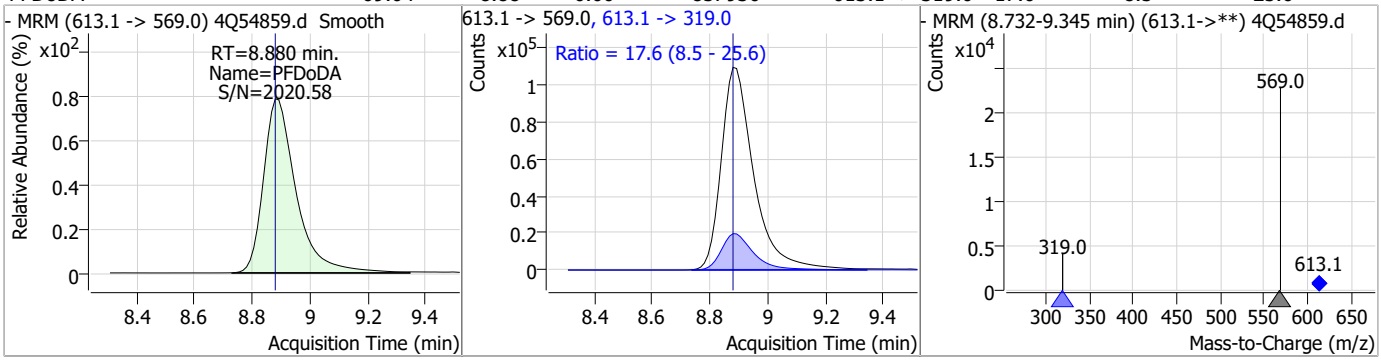




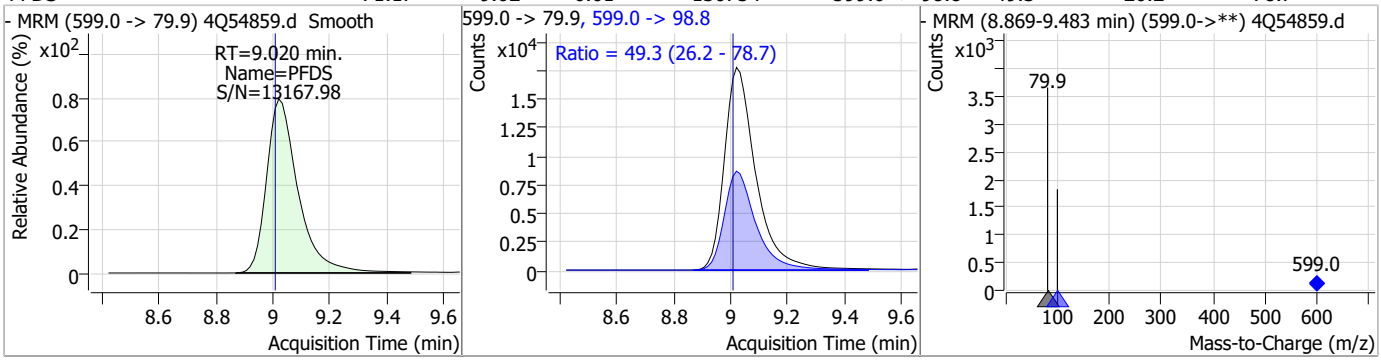


Perfluorinated Compounds by LC/MS/MS

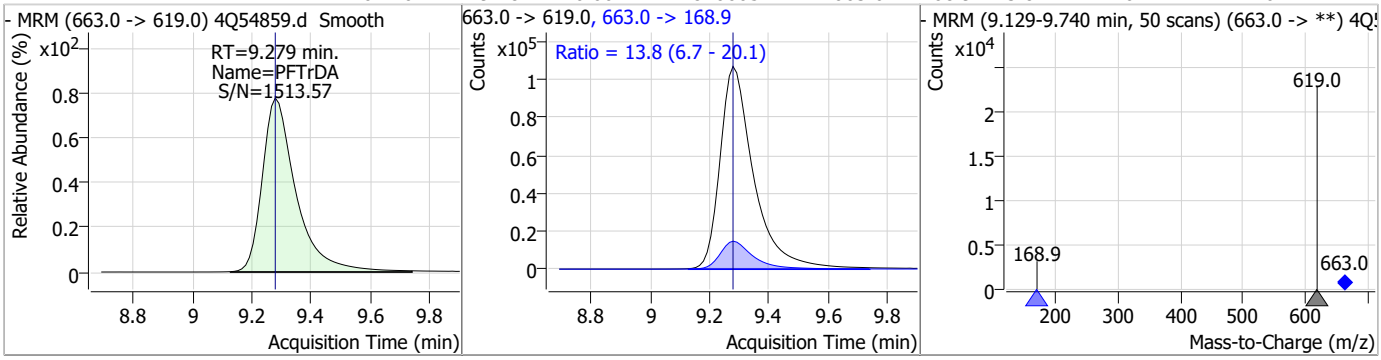
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	69.04	8.88	0.00	857930	613.1 -> 319.0	17.6	8.5	25.6



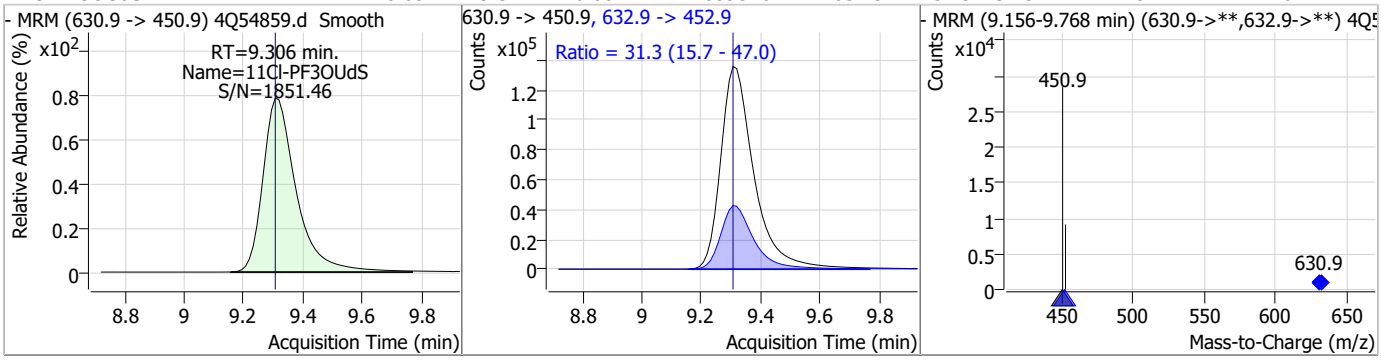
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	71.17	9.02	0.01	136754	599.0 -> 98.8	49.3	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	62.70	9.28	0.00	846605	663.0 -> 168.9	13.8	6.7	20.1

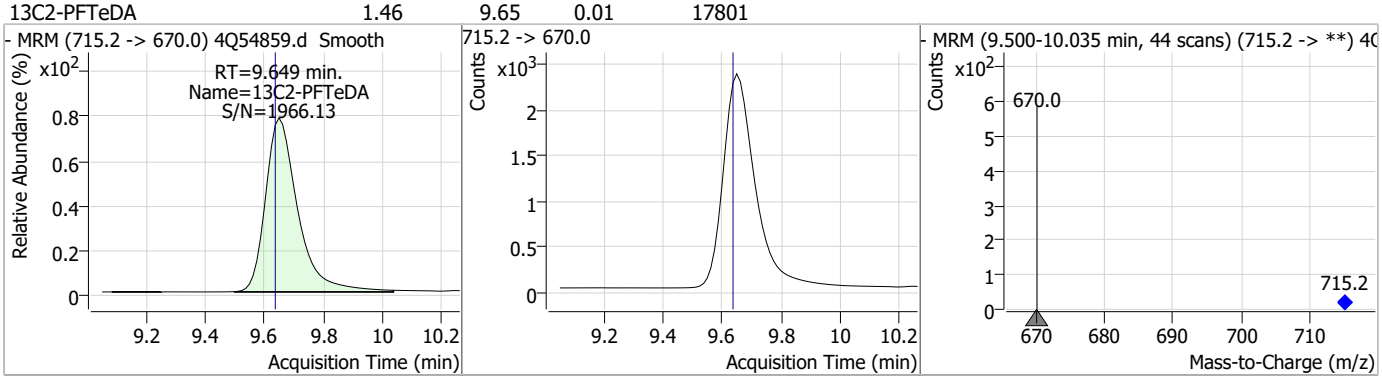


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	126.03	9.31	0.00	1059526	632.9 -> 452.9	31.3	15.7	47.0

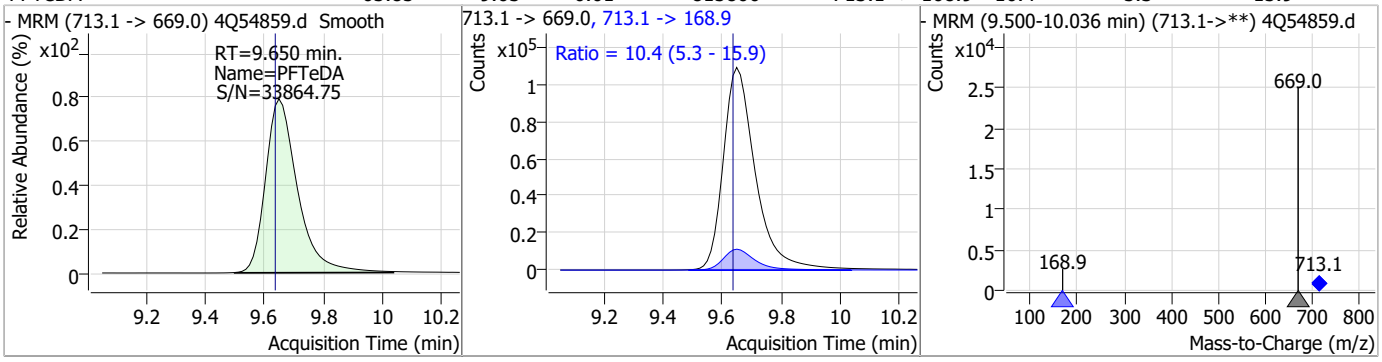


Perfluorinated Compounds by LC/MS/MS

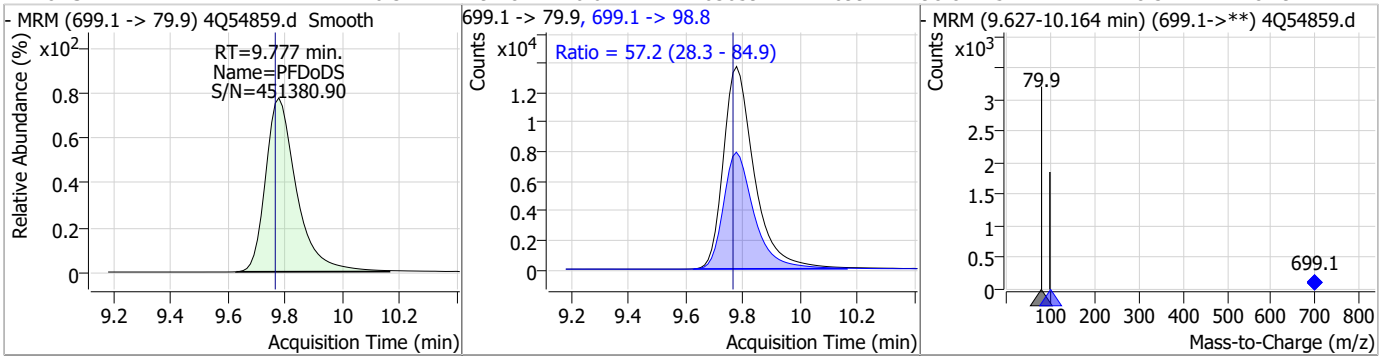
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.46	9.65	0.01	17801				



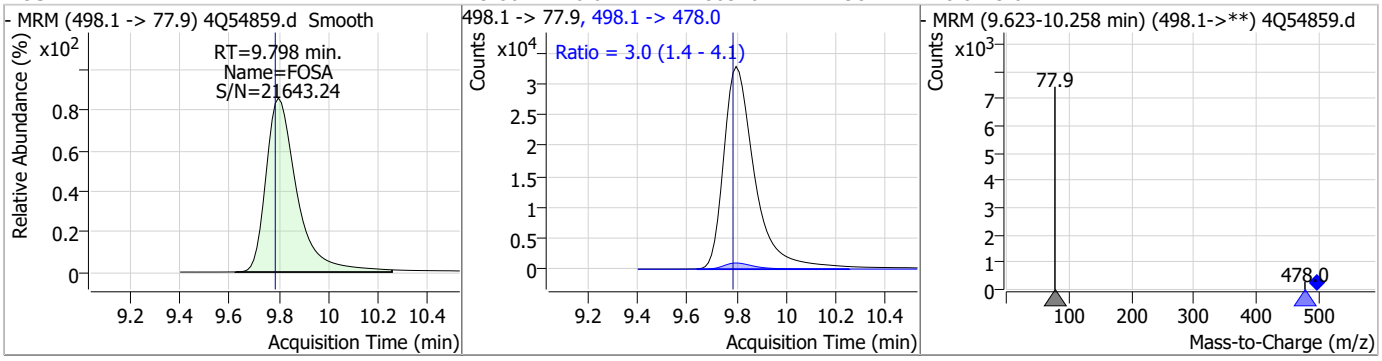
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	65.85	9.65	0.01	815800	713.1 -> 168.9	10.4	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	70.32	9.78	0.01	103059	699.1 -> 98.8	57.2	28.3	84.9

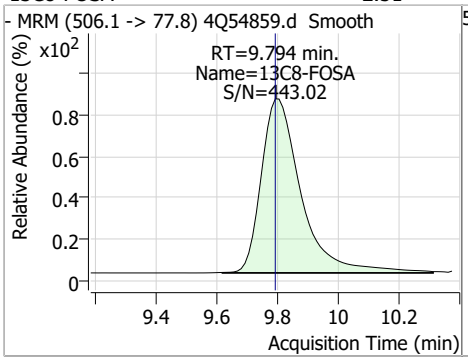


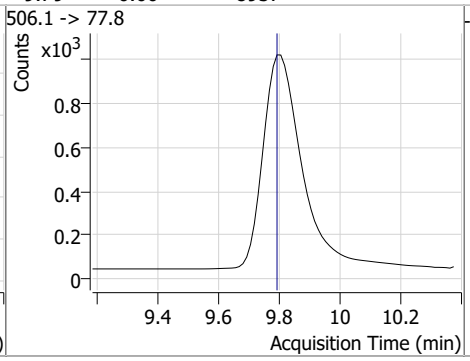
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	71.11	9.80	0.01	286320	498.1 -> 478.0	3.0	1.4	4.1

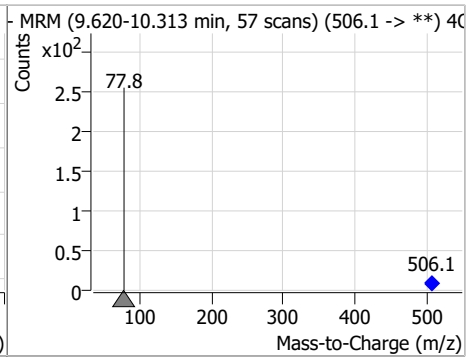


Perfluorinated Compounds by LC/MS/MS

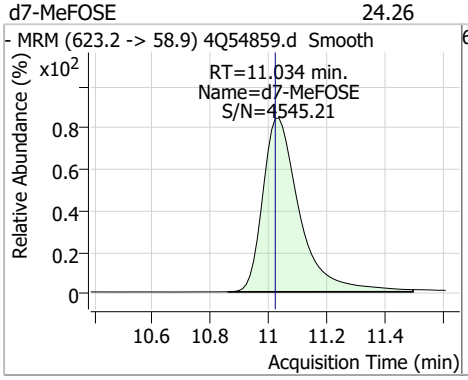
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.51	9.79	0.00	8957				

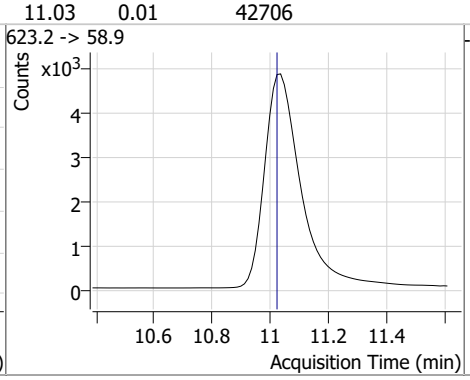


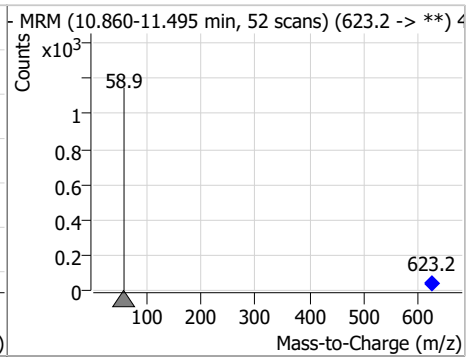




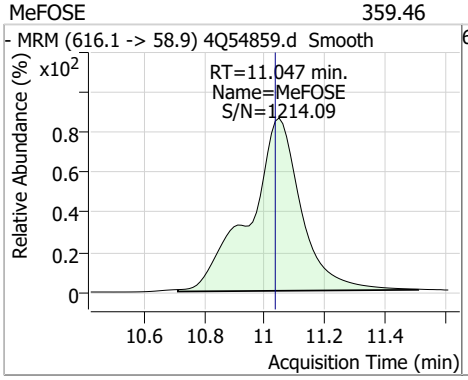
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.26	11.03	0.01	42706				

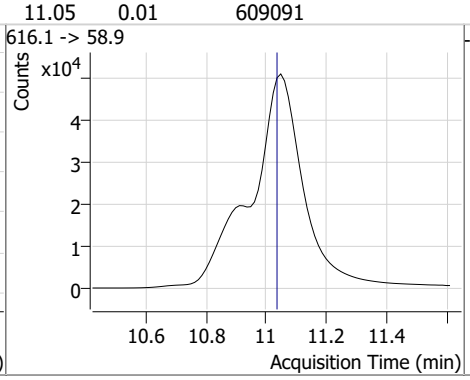


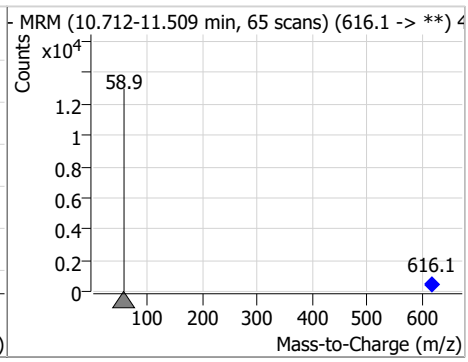




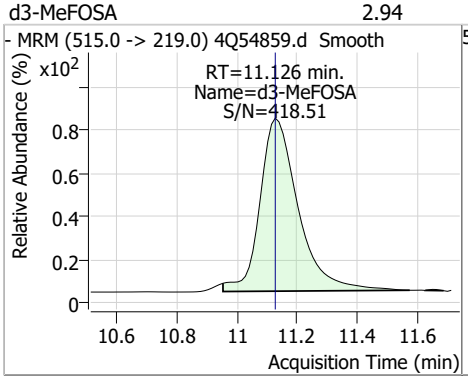
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	359.46	11.05	0.01	609091				

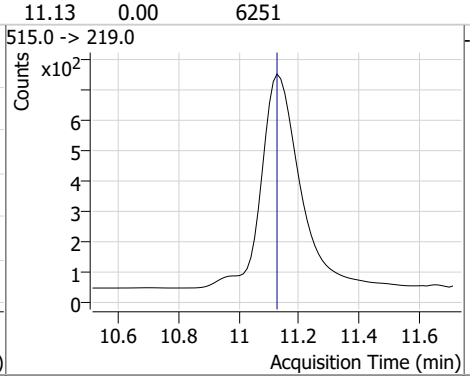


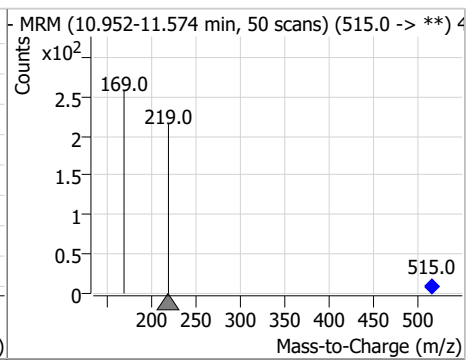




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.94	11.13	0.00	6251				

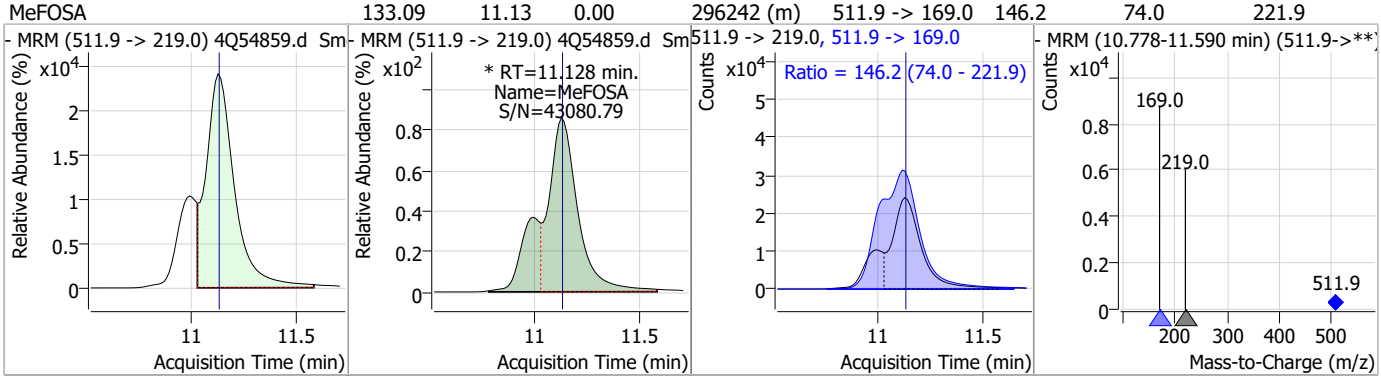




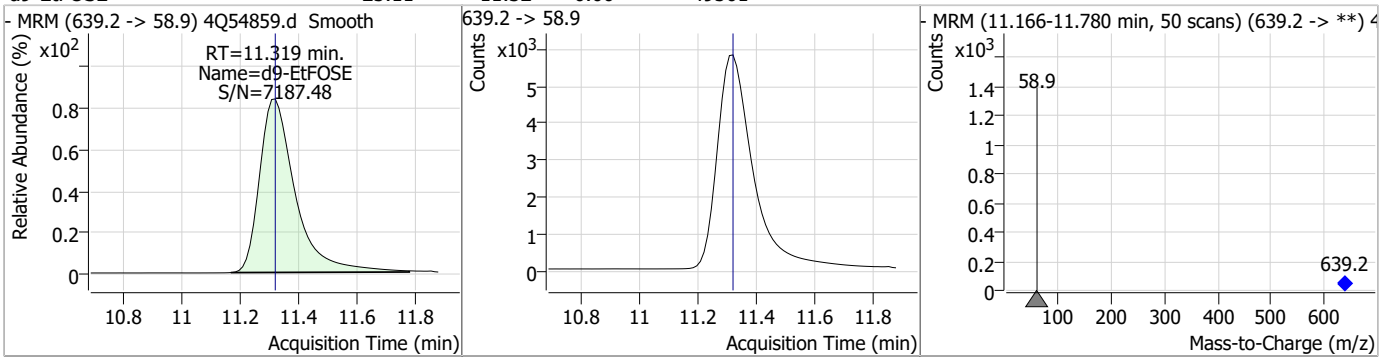


Perfluorinated Compounds by LC/MS/MS

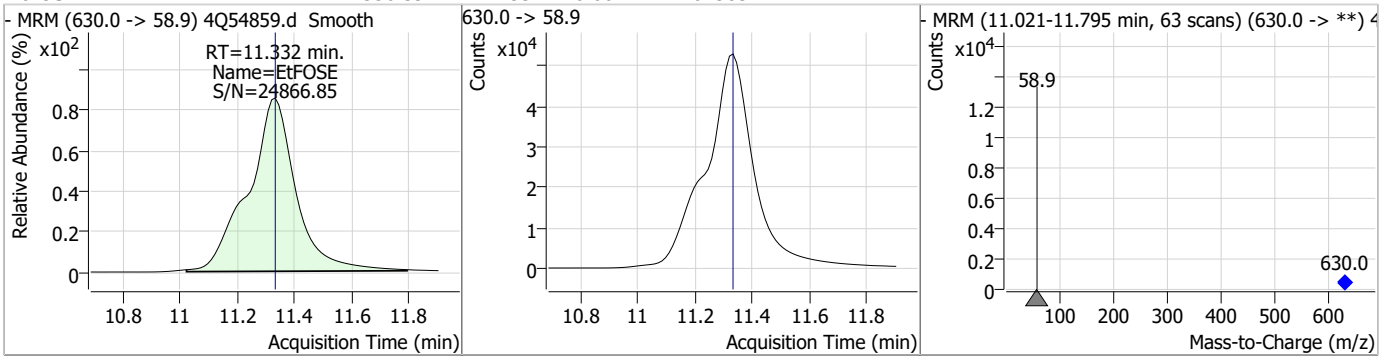
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	133.09	11.13	0.00	296242 (m)	511.9 -> 169.0	146.2	74.0	221.9



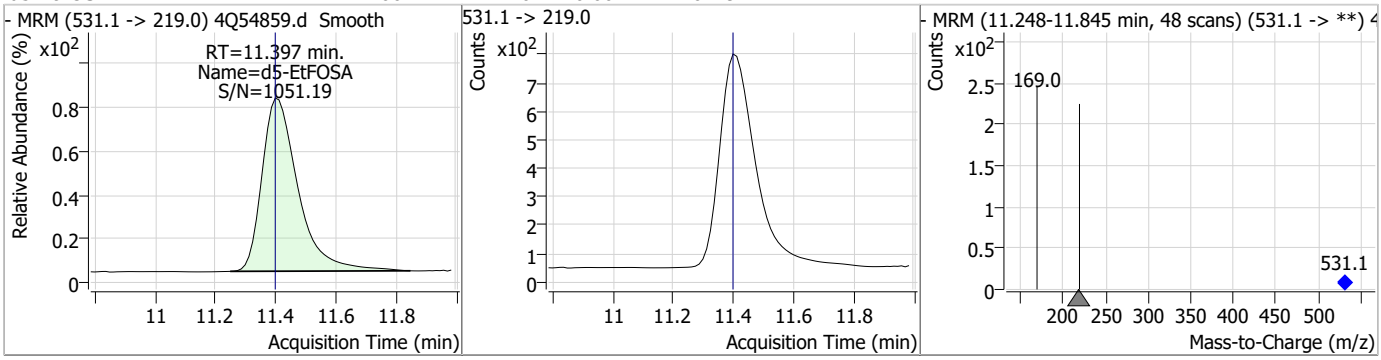
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.11	11.32	0.00	49501				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	350.39	11.33	0.00	613834				

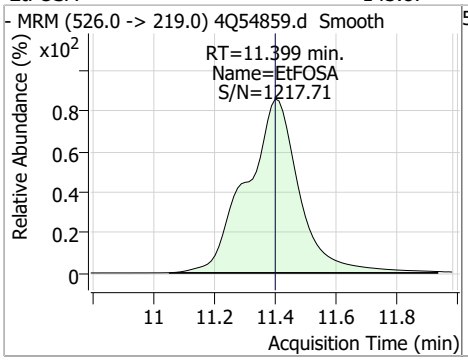


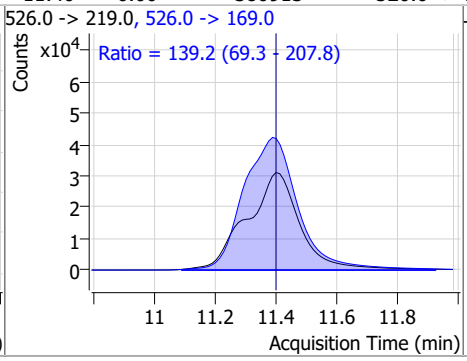
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.66	11.40	0.00	6219				

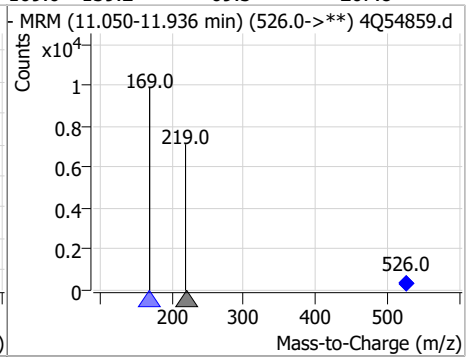


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	143.87	11.40	0.00	380913	526.0 -> 169.0	139.2	69.3	207.8







Manual Integration Approval Summary

Sample Number: S4Q804-IC804
Lab FileID: 4Q54859.D
Injection Time: 12/08/23 13:21
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.04	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.13	Split peak
EtFOSAA	2991-50-6		8.30	Split peak
MeFOSA	31506-32-8		11.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54861.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 1:51:04 PM
Sample Name : icv804-4
Vial : P1-B3
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	97277	10.00	µg/L	0.012
M5-PFPeA	4.175	268.3 -> 223.0	40979	5.00	µg/L	0.012
M5-PFHxA	5.359	318.0 -> 273.0	31396	2.50	µg/L	0.025
M4-PFHpA	6.304	367.1 -> 322.0	31363	2.50	µg/L	0.012
M8-PFOA	6.989	421.1 -> 376.0	50412	2.50	µg/L	0.012
M9-PFNA	7.521	472.1 -> 427.0	19771	1.25	µg/L	0.000
M6-PFDA	8.017	519.1 -> 474.1	13441	1.25	µg/L	0.013
M7-PFUnDA	8.461	570.0 -> 525.1	16784	1.25	µg/L	0.012
M2-PFDoDA	8.892	615.1 -> 570.0	18074	1.25	µg/L	0.012
M2-PFTeDA	9.649	715.2 -> 670.0	18182	1.25	µg/L	0.012
M8-FOSA	9.806	506.1 -> 77.8	10944	2.50	µg/L	0.012
M3-PFBS	5.215	302.1 -> 79.9	9120	2.50	µg/L	0.025
M3-PFHxS	7.054	402.1 -> 79.9	7670	2.50	µg/L	0.025
M8-PFOS	8.130	507.1 -> 79.9	7937	2.50	µg/L	0.012
M2-4:2FTS	5.058	329.1 -> 80.9	1122	5.00	µg/L	0.012
M2-6:2FTS	6.773	429.1 -> 80.9	2490	5.00	µg/L	0.025
M2-8:2FTS	7.816	529.1 -> 80.9	3234	5.00	µg/L	0.012
M3-MeFOSAA	8.099	573.2 -> 419.0	17761	5.00	µg/L	0.012
M3-HFPO-DA	5.714	286.9 -> 168.9	31663	10.00	µg/L	0.025
M5-EtFOSAA	8.296	589.2 -> 419.0	15184	5.00	µg/L	0.012
M7-MeFOSE	11.034	623.2 -> 58.9	51763	25.00	µg/L	0.012
M9-EtFOSE	11.319	639.2 -> 58.9	60457	25.00	µg/L	0.000
M5-EtFOSA	11.410	531.1 -> 219.0	6927	2.50	µg/L	0.012
M3-MeFOSA	11.139	515.0 -> 219.0	6458	2.50	µg/L	0.012
13C4-PFOS	8.130	502.8 -> 79.9	6755	2.50	µg/L	0.012
13C3-PFBA	2.691	216.0 -> 172.0	46185	5.00	µg/L	0.013
18O2-PFHxS	7.041	403.0 -> 83.9	4799	2.50	µg/L	0.000
13C4-PFOA	6.989	417.1 -> 372.0	55697	2.50	µg/L	0.012
13C2-PFDA	8.017	515.1 -> 470.1	15265	1.25	µg/L	0.013
13C5-PFNA	7.534	468.0 -> 423.0	20143	1.25	µg/L	0.025
13C2-PFHxA	5.360	315.1 -> 270.0	35338	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.058	329.1 -> 80.9	1122	4.93	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2490	5.04	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C2-8:2FTS	7.816	529.1 -> 80.9	3234	4.89	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-PFDoDA	8.892	615.1 -> 570.0	18074	1.18	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C2-PFTeDA	9.649	715.2 -> 670.0	18182	1.20	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C3-PFBS	5.215	302.1 -> 79.9	9120	2.48	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C3-PFHxS	7.054	402.1 -> 79.9	7670	2.55	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C4-PFBA	2.686	216.8 -> 171.9	97277	10.03 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C4-PFHpA	6.304	367.1 -> 322.0	31363	2.52 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C5-PFHxA	5.359	318.0 -> 273.0	31396	2.41 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C5-PFPeA	4.175	268.3 -> 223.0	40979	5.05 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C6-PFDA	8.017	519.1 -> 474.1	13441	1.21 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C7-PFUnDA	8.461	570.0 -> 525.1	16784	1.28 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C8-FOSA	9.806	506.1 -> 77.8	10944	2.50 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C8-PFOA	6.989	421.1 -> 376.0	50412	2.45 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C8-PFOS	8.130	507.1 -> 79.9	7937	2.32 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C9-PFNA	7.521	472.1 -> 427.0	19771	1.23 µg/L		0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.0%		
d3-MeFOSAA	8.099	573.2 -> 419.0	17761	4.74 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C3-HFPO-DA	5.714	286.9 -> 168.9	31663	9.73 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
d3-MeFOSA	11.139	515.0 -> 219.0	6458	2.47 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%		
d5-EtFOSAA	8.296	589.2 -> 419.0	15184	4.79 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
d7-MeFOSE	11.034	623.2 -> 58.9	51763	23.97 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
d9-EtFOSE	11.319	639.2 -> 58.9	60457	25.00 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d5-EtFOSA	11.410	531.1 -> 219.0	6927	2.42 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.8%		
Target Compounds						QValue
4:2FTS	5.059	327.1 -> 307.0	17219	8.91 µg/L		99
		327.1 -> 80.9	7499			
6:2FTS	6.774	427.1 -> 407.0	24030	9.18 µg/L		98
		427.1 -> 80.9	8478			
8:2FTS	7.816	527.1 -> 507.0	16791	9.85 µg/L		98
		527.1 -> 80.8	7038			
EtFOSAA	8.297	584.2 -> 419.1	6568	2.37 µg/L	m	91
		584.2 -> 526.0	2450			
FOSA	9.798	498.1 -> 77.9	11729	2.38 µg/L		99
		498.1 -> 478.0	365			
MeFOSAA	8.099	570.1 -> 419.0	7212	2.83 µg/L		92
		570.1 -> 483.0	1425			
PFBA	2.695	212.8 -> 168.9	29656	9.52 µg/L		100
PFBS	5.216	298.7 -> 79.9	5843	2.07 µg/L		97
		298.7 -> 98.8	2259			
PFDA	8.017	512.9 -> 469.0	23055	2.34 µg/L		99
		512.9 -> 219.0	4654			
PFDoDA	8.893	613.1 -> 569.0	32230	2.48 µg/L		97
		613.1 -> 319.0	5876			
PFDS	9.020	599.0 -> 79.9	5077	2.40 µg/L		94

Perfluorinated Compounds by LC/MS/MS

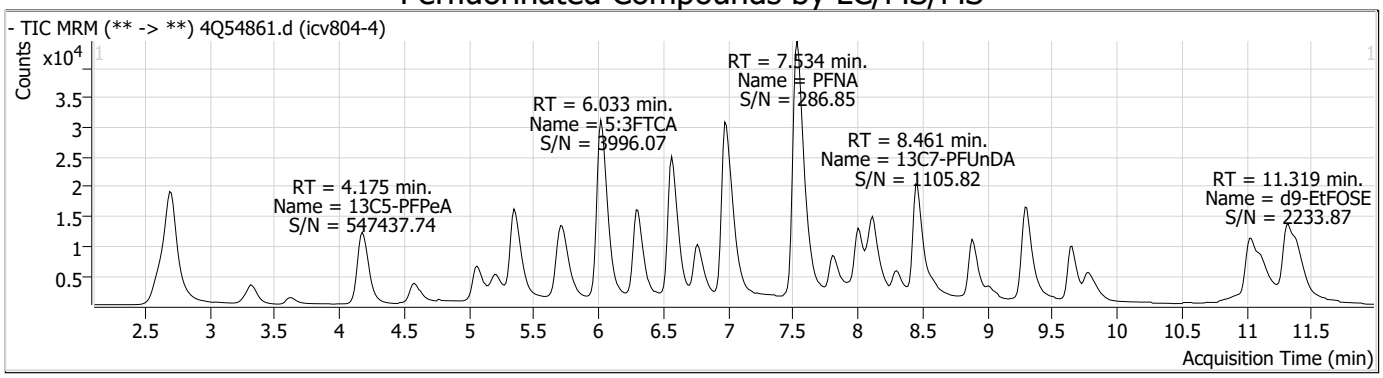
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2462				
PFHpA	6.305	363.1 -> 319.0	41778	2.37	µg/L		99
		363.1 -> 169.0	7824				
PFHpS	7.624	449.0 -> 79.9	7107	2.26	µg/L		94
		449.0 -> 98.9	4023				
PFHxA	5.362	313.0 -> 269.0	23780	2.37	µg/L		99
		313.0 -> 118.9	751				
PFHxS	7.055	398.7 -> 79.9	4778	1.93	µg/L	m	83
		398.7 -> 98.9	2822				
PFNA	7.534	463.0 -> 419.0	26663	2.30	µg/L		94
		463.0 -> 219.0	6936				
PFNS	8.598	548.8 -> 79.9	3455	2.55	µg/L		87
		548.8 -> 98.9	2025				
PFOA	6.990	413.0 -> 369.0	48113	2.32	µg/L		97
		413.0 -> 169.0	10043				
PFOS	8.131	498.9 -> 79.9	7388	2.24	µg/L	m	57
		498.9 -> 98.8	3730				
PFPeA	4.177	263.0 -> 219.0	36895	4.58	µg/L		100
PFPeS	6.294	349.1 -> 79.9	5136	2.20	µg/L		97
		349.1 -> 98.9	2261				
PFTeDA	9.650	713.1 -> 669.0	30770	2.43	µg/L		100
		713.1 -> 168.9	3296				
PFTrDA	9.292	663.0 -> 619.0	36931	2.61	µg/L		98
		663.0 -> 168.9	5315				
PFUnDA	8.461	563.1 -> 519.0	29861	2.45	µg/L		96
		563.1 -> 269.1	6833				
11Cl-PF3OUdS	9.319	630.9 -> 450.9	42161	4.84	µg/L		99
		632.9 -> 452.9	12973				
9Cl-PF3ONS	8.463	530.8 -> 351.0	41617	4.72	µg/L		100
		532.8 -> 353.0	12486				
ADONA	6.581	376.9 -> 250.9	109312	5.11	µg/L		98
		376.9 -> 84.8	25411				
HFPO-DA	5.715	284.9 -> 168.9	14585	4.81	µg/L		99
		284.9 -> 184.9	1401				
3:3FTCA	3.630	241.0 -> 177.0	5719	11.55	µg/L		100
		241.0 -> 117.0	502				
5:3FTCA	6.033	341.0 -> 237.1	109670	61.37	µg/L		99
		341.0 -> 217.0	77198				
7:3FTCA	7.549	441.0 -> 316.9	57240	61.08	µg/L		97
		441.0 -> 336.9	139284				
EtFOSA	11.412	526.0 -> 219.0	13781	4.67	µg/L		100
		526.0 -> 169.0	19005				
EtFOSE	11.332	630.0 -> 58.9	25128	11.74	µg/L		100
MeFOSA	11.128	511.9 -> 219.0	10425	4.53	µg/L		96
		511.9 -> 169.0	14931				
MeFOSE	11.047	616.1 -> 58.9	24373	11.87	µg/L		100
PFDoDS	9.777	699.1 -> 79.9	3985	2.47	µg/L		95
		699.1 -> 98.8	2117				
NFDHA	5.241	295.0 -> 201.0	3581	5.05	µg/L		98
		295.0 -> 84.9	905				
PFMBA	4.578	279.0 -> 85.1	21065	4.74	µg/L		100
PFMPA	3.332	229.0 -> 84.9	22799	4.67	µg/L		100
PFEESA	5.734	314.8 -> 134.9	33047	4.46	µg/L		99
		314.8 -> 82.9	1135				

 # = Qualifier out of range, m = manually integrated, + = Area summed

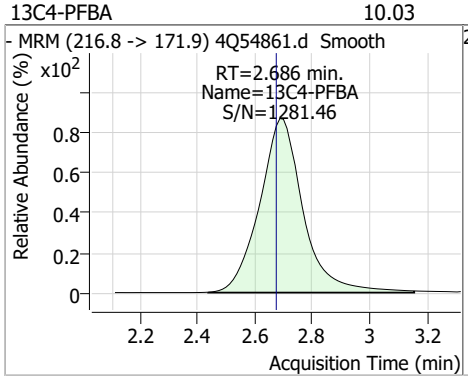
Perfluorinated Compounds by LC/MS/MS

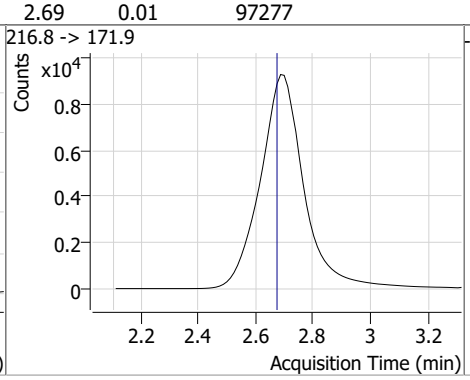
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

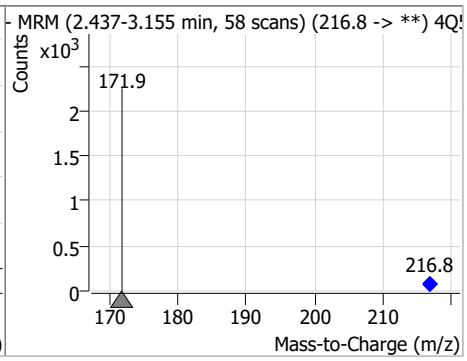
Perfluorinated Compounds by LC/MS/MS



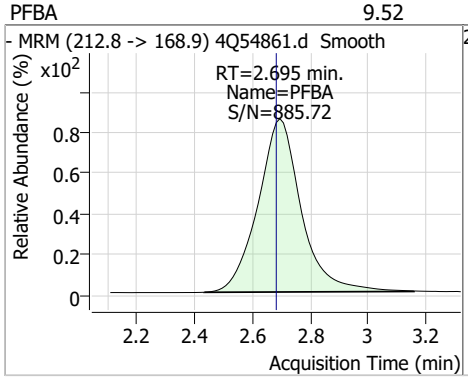
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.03	2.69	0.01	97277				

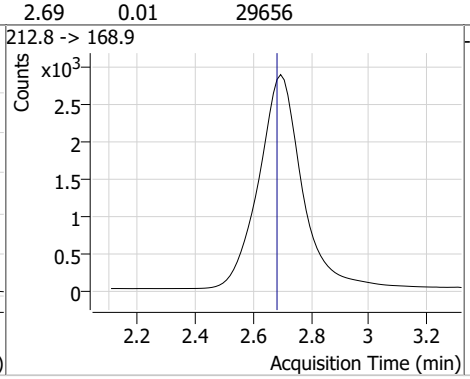


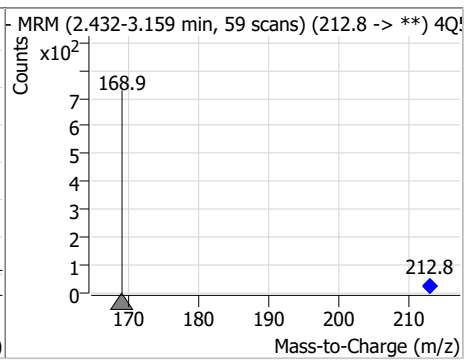




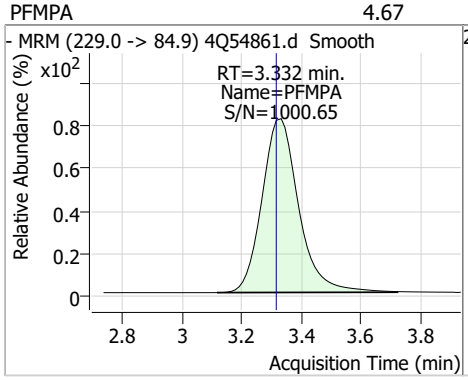
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.52	2.69	0.01	29656				

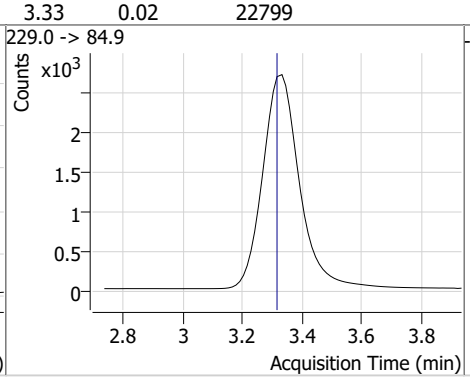


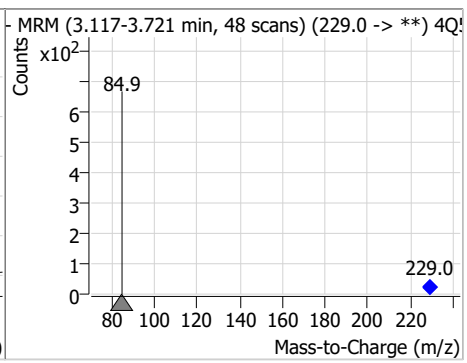




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.67	3.33	0.02	22799				

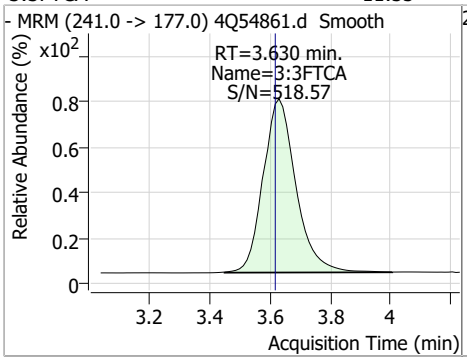


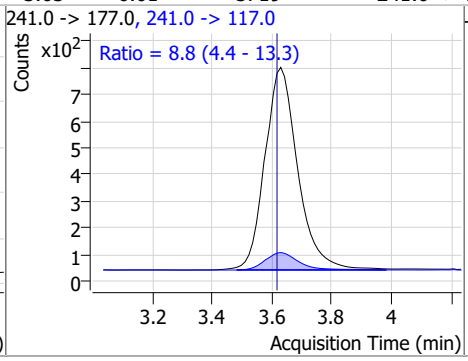


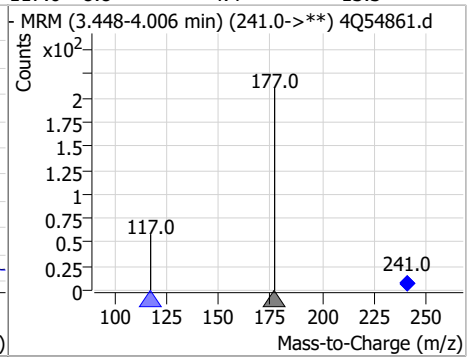


Perfluorinated Compounds by LC/MS/MS

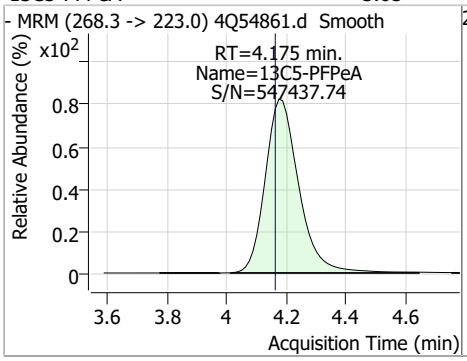
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.55	3.63	0.01	5719	241.0 -> 117.0	8.8	4.4	13.3

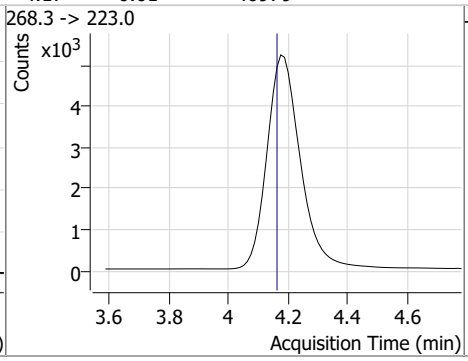


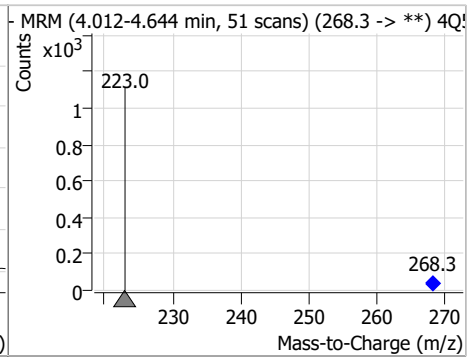




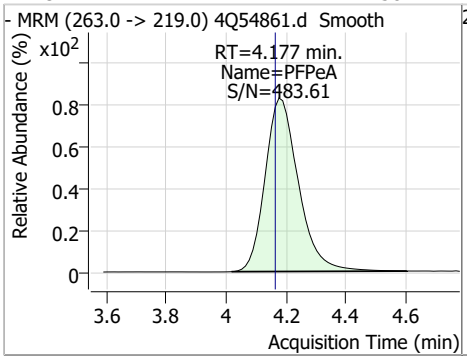
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.05	4.17	0.01	40979				

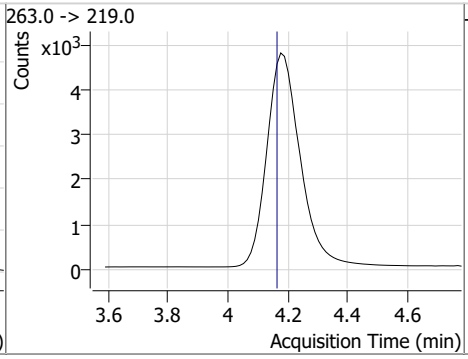


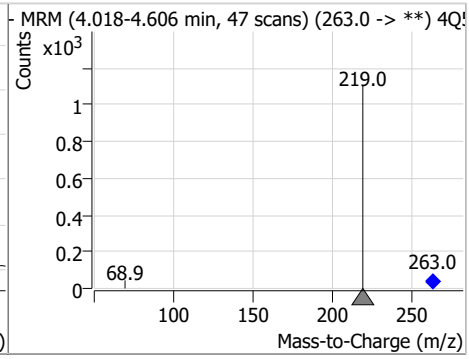




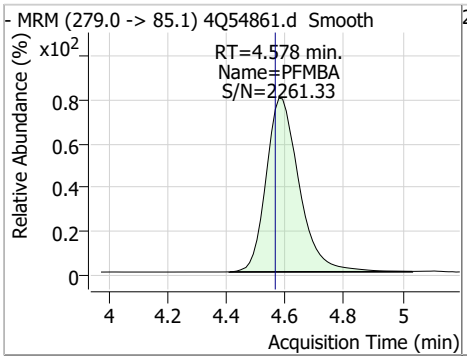
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.58	4.18	0.01	36895				

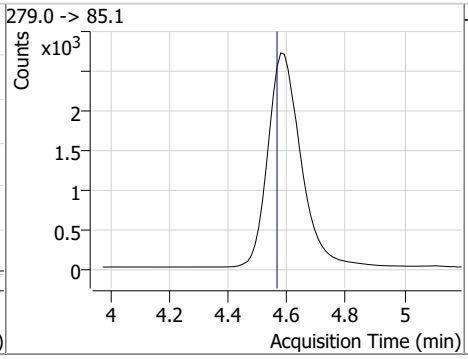


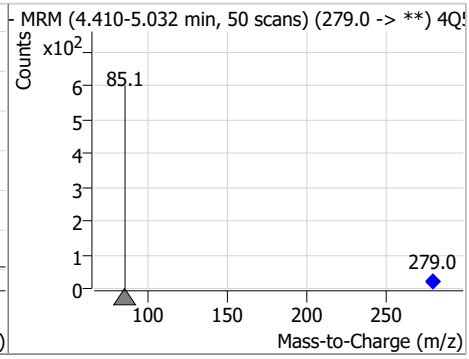




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.74	4.58	0.01	21065				

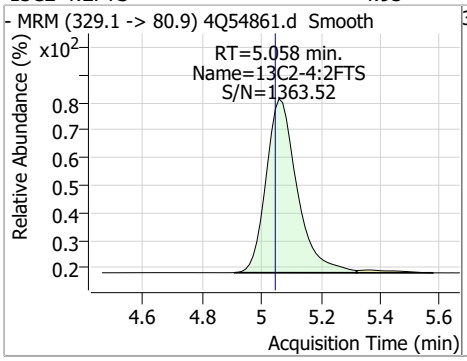


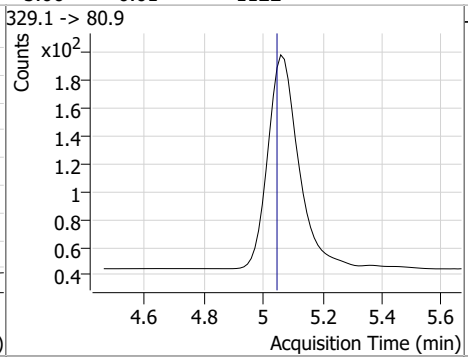


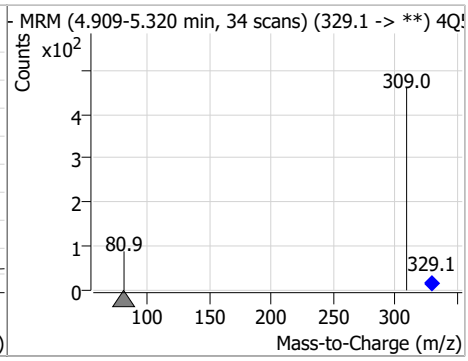


Perfluorinated Compounds by LC/MS/MS

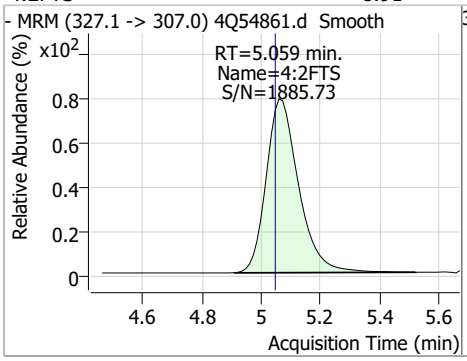
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.93	5.06	0.01	1122				

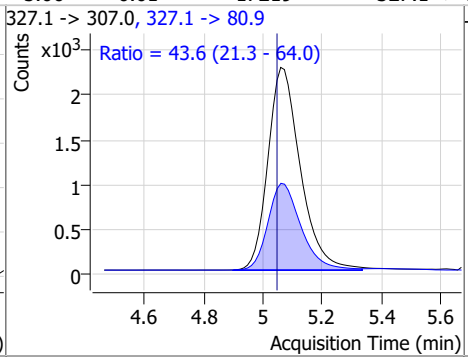


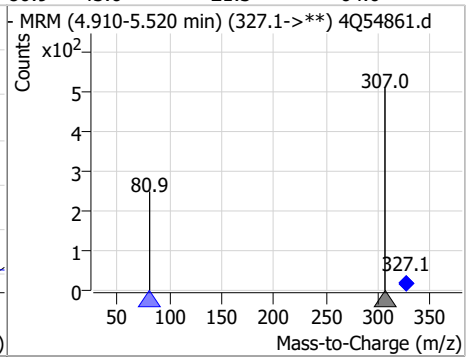




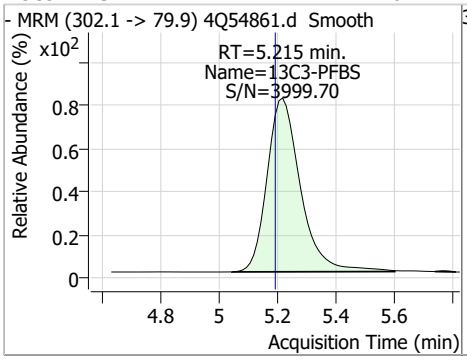
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.91	5.06	0.01	17219	327.1 -> 80.9	43.6	21.3	64.0

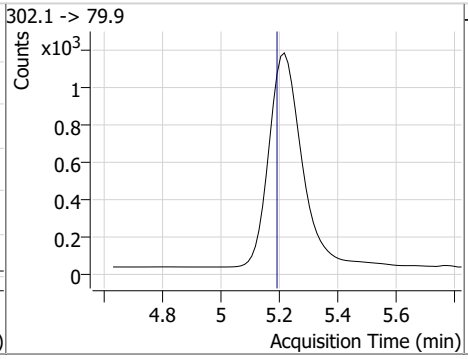


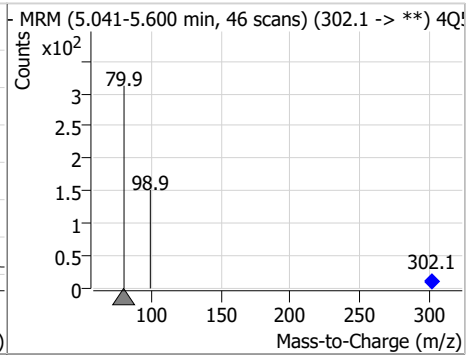




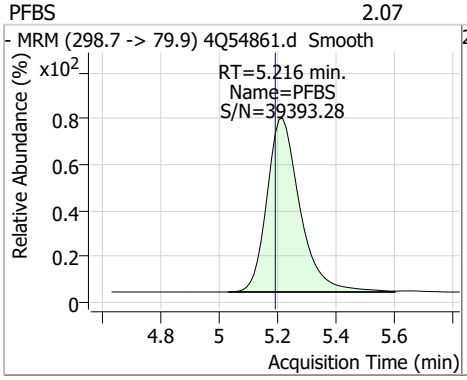
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.48	5.21	0.03	9120				

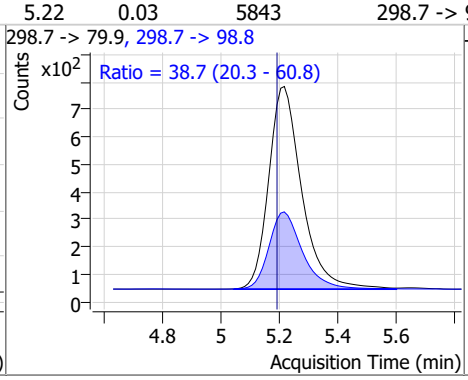


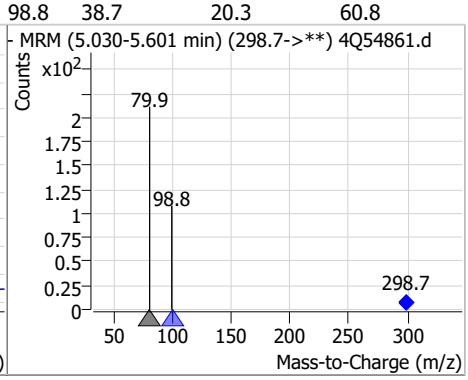




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.07	5.22	0.03	5843	298.7 -> 98.8	38.7	20.3	60.8

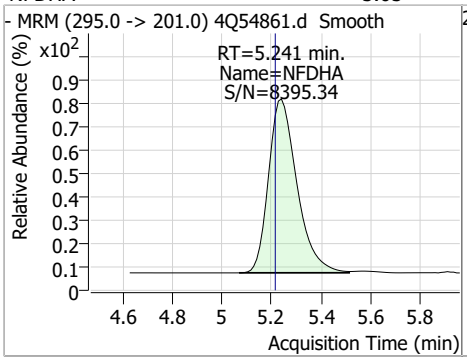


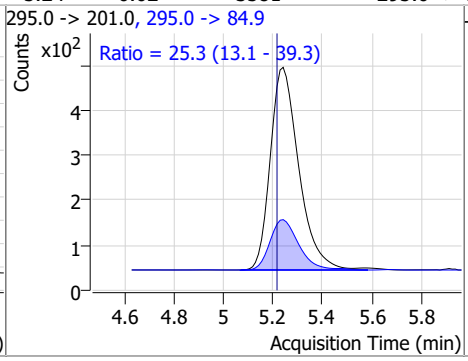


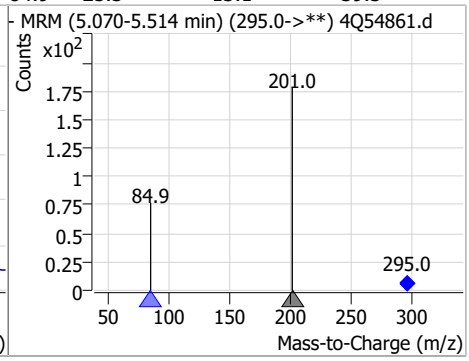


Perfluorinated Compounds by LC/MS/MS

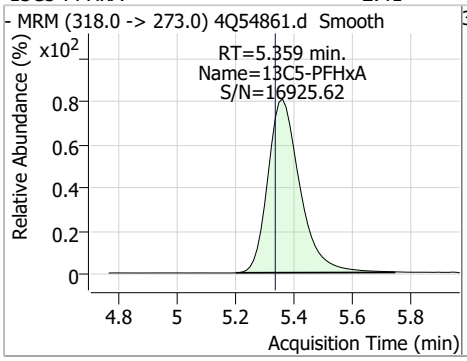
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	5.05	5.24	0.02	3581	295.0 -> 84.9	25.3	13.1	39.3

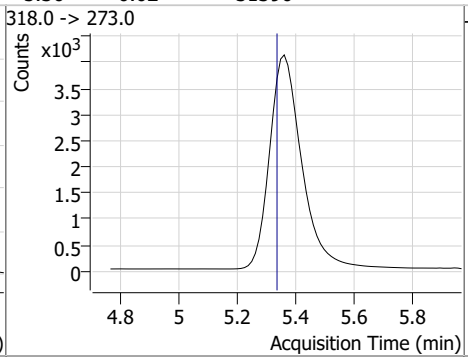


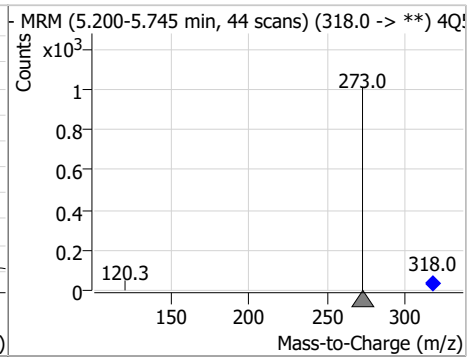




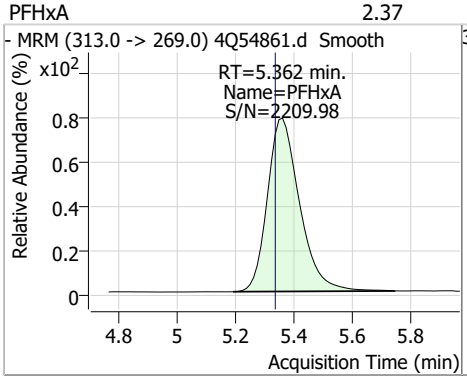
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.41	5.36	0.02	31396				

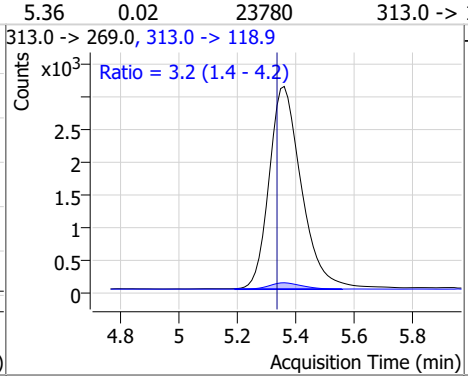


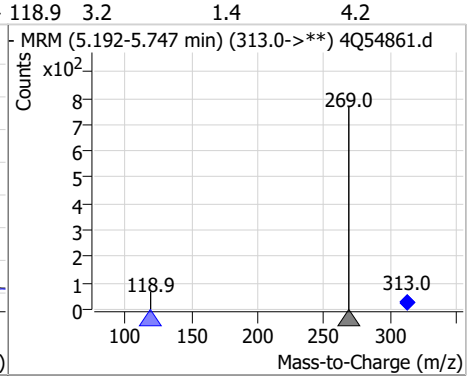




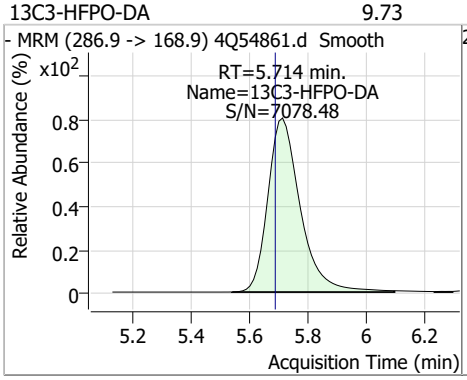
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.37	5.36	0.02	23780	313.0 -> 118.9	3.2	1.4	4.2

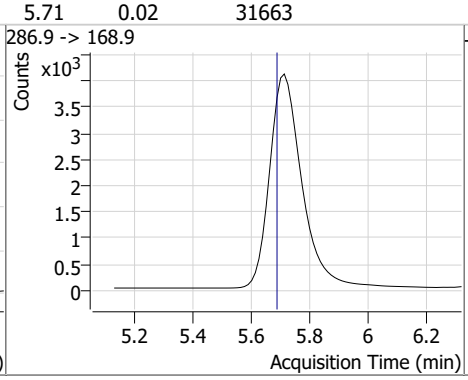


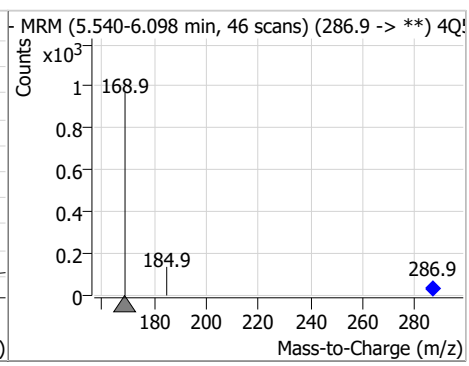




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.73	5.71	0.02	31663				

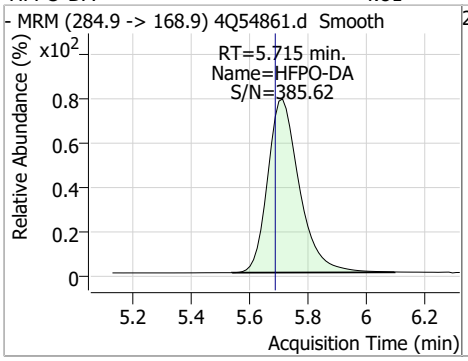


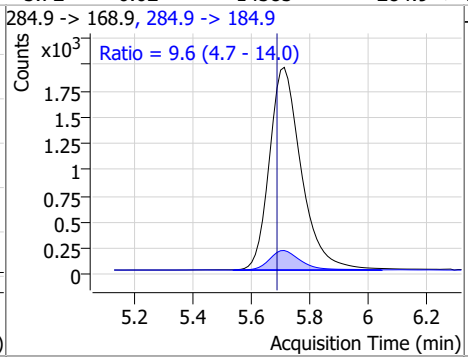


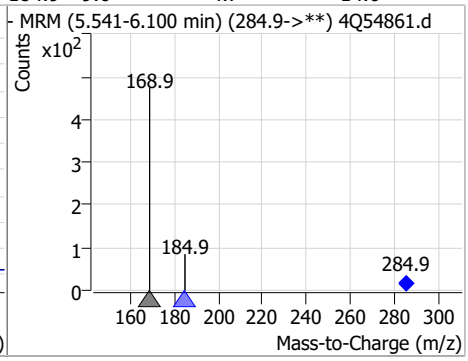


Perfluorinated Compounds by LC/MS/MS

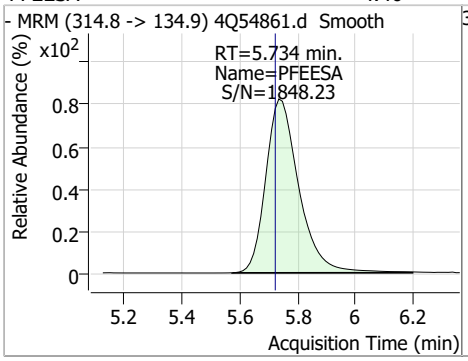
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.81	5.72	0.02	14585	284.9 -> 184.9	9.6	4.7	14.0

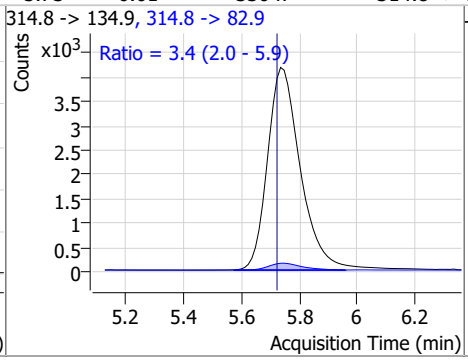


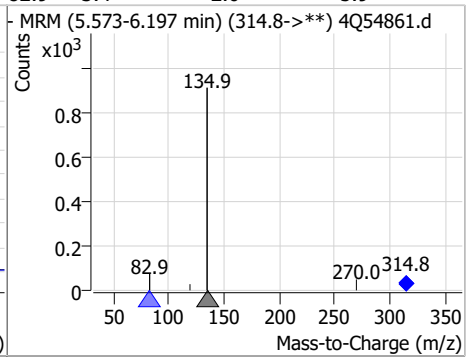




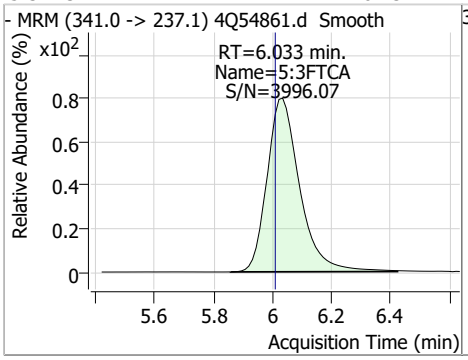
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.46	5.73	0.01	33047	314.8 -> 82.9	3.4	2.0	5.9

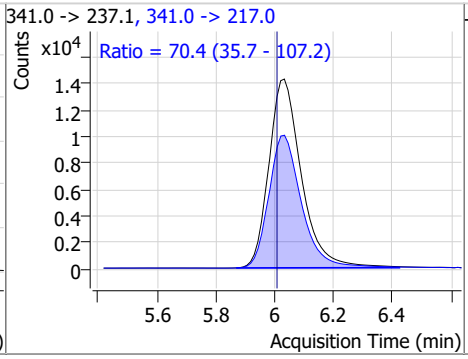


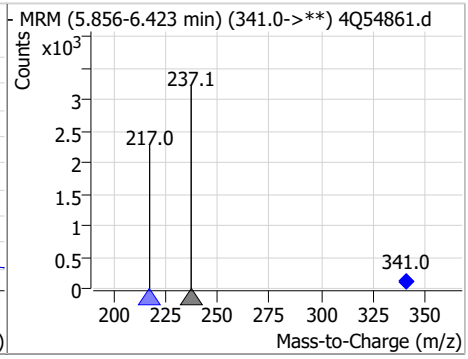




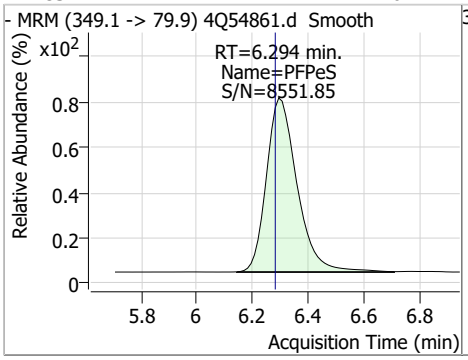
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	61.37	6.03	0.02	109670	341.0 -> 217.0	70.4	35.7	107.2

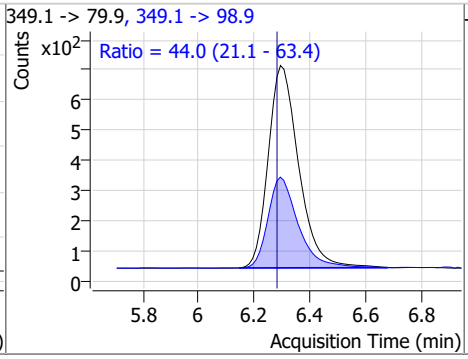


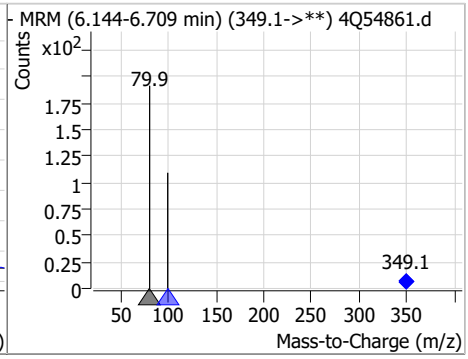




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.20	6.29	0.01	5136	349.1 -> 98.9	44.0	21.1	63.4

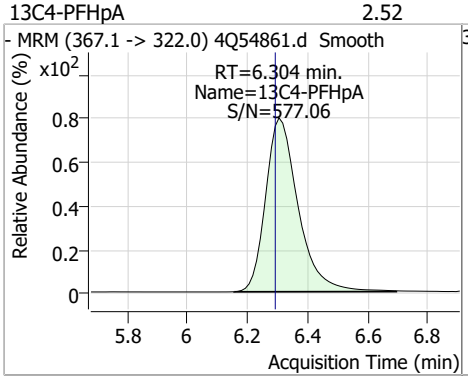


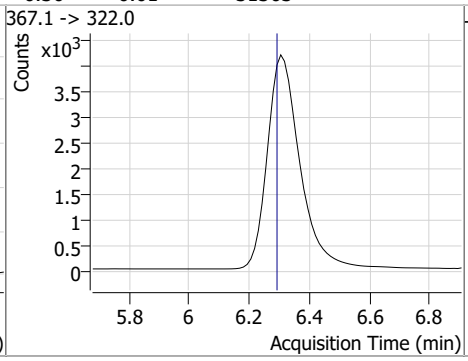


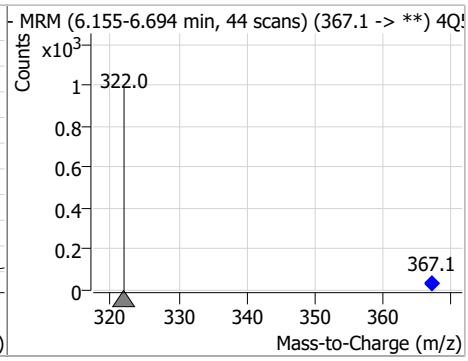


Perfluorinated Compounds by LC/MS/MS

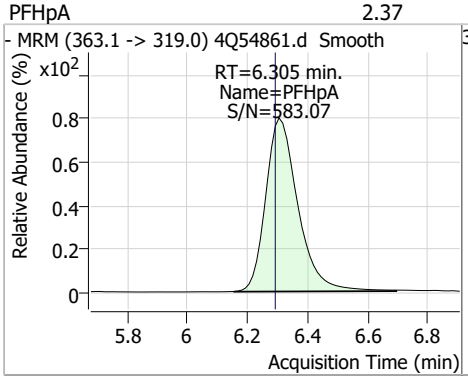
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.52	6.30	0.01	31363				

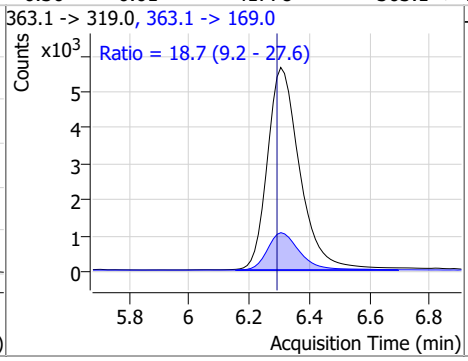


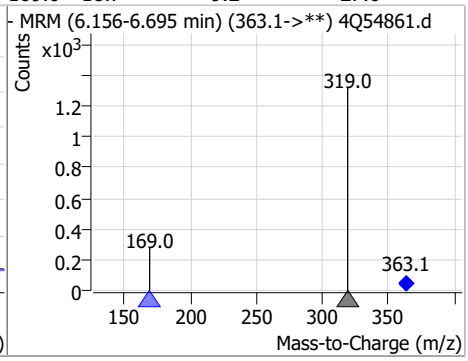




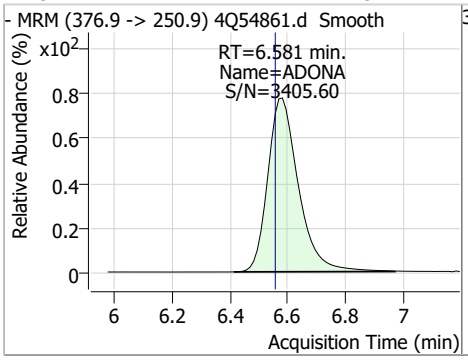
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.37	6.30	0.01	41778	363.1 -> 169.0	18.7	9.2	27.6

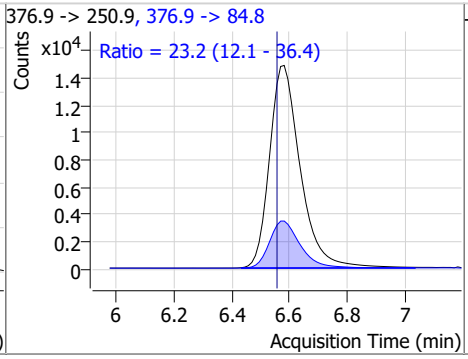


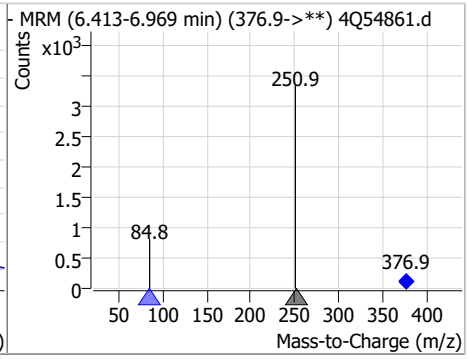




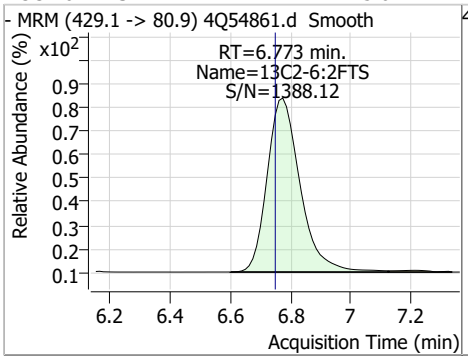
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.11	6.58	0.02	109312	376.9 -> 84.8	23.2	12.1	36.4

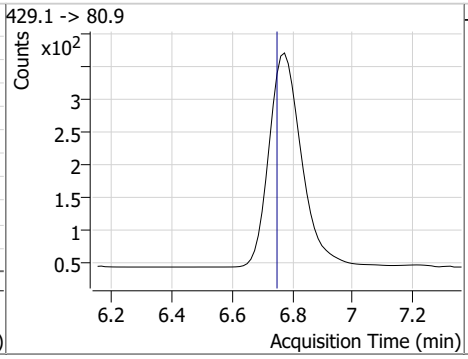


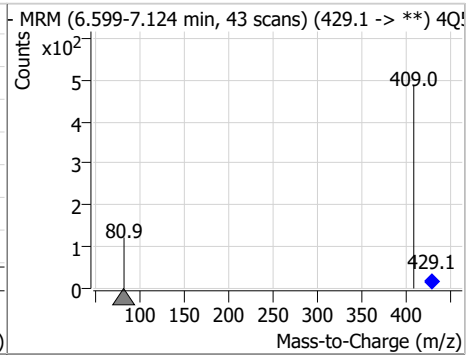




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.04	6.77	0.02	2490				

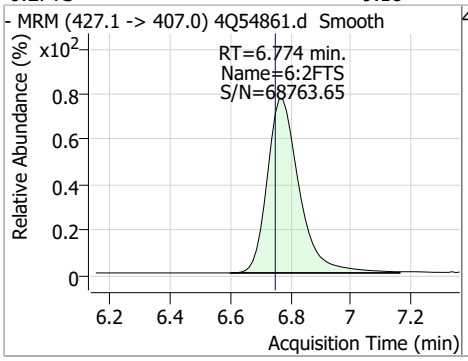


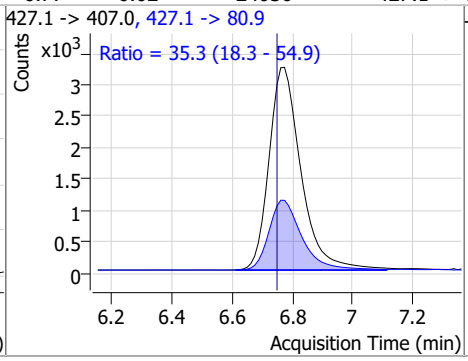


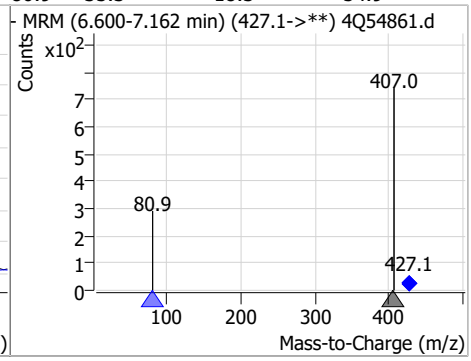


Perfluorinated Compounds by LC/MS/MS

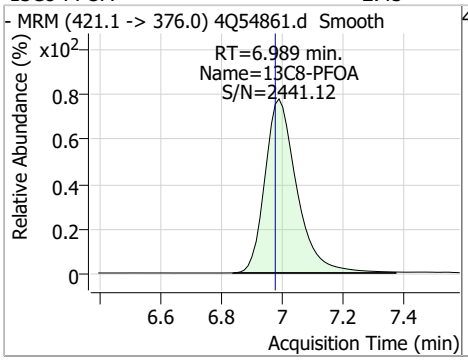
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.18	6.77	0.02	24030	427.1 -> 80.9	35.3	18.3	54.9

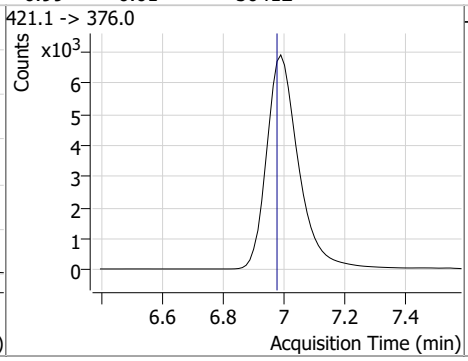


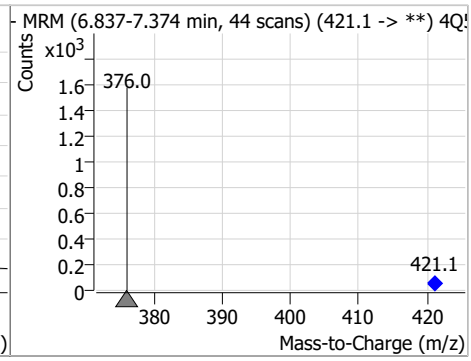




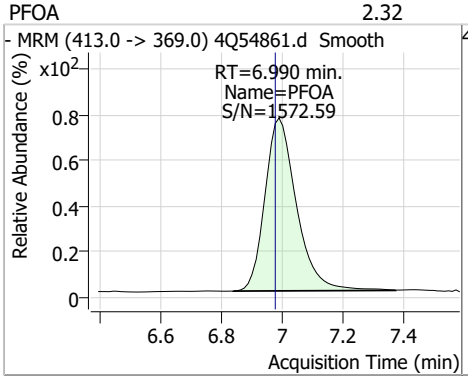
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.45	6.99	0.01	50412				

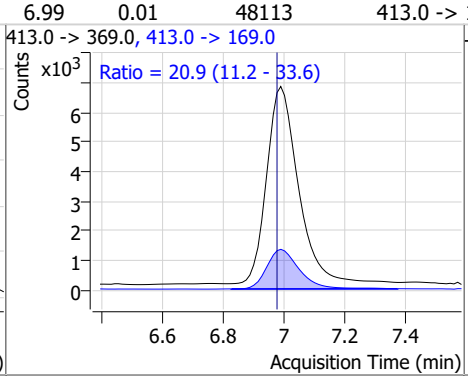


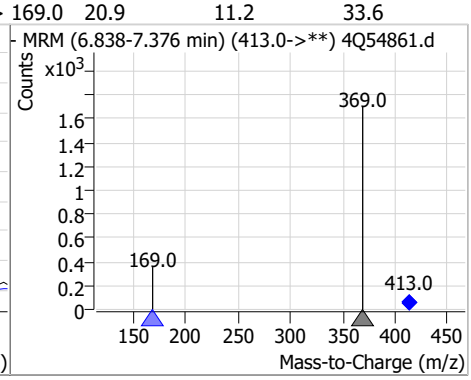




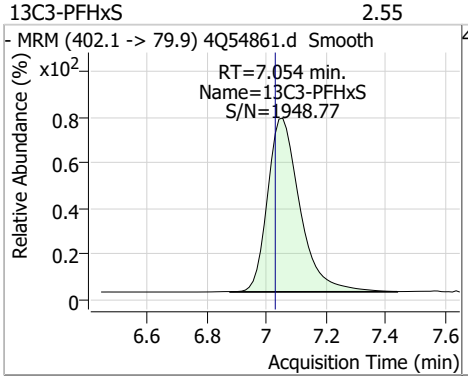
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.32	6.99	0.01	48113	413.0 -> 169.0	20.9	11.2	33.6

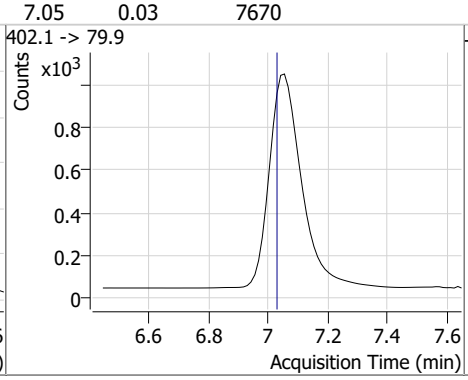


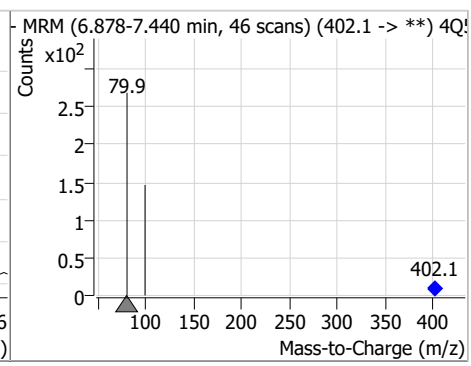




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.55	7.05	0.03	7670				

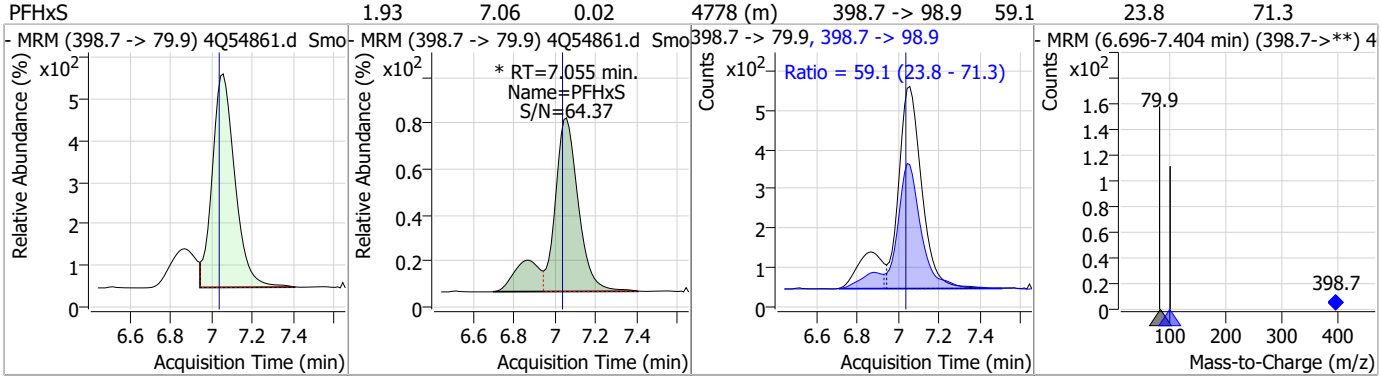




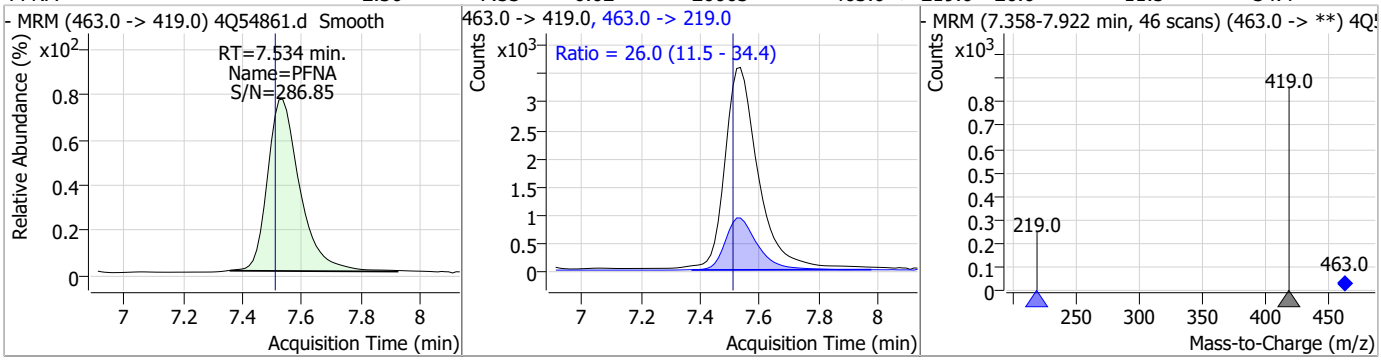


Perfluorinated Compounds by LC/MS/MS

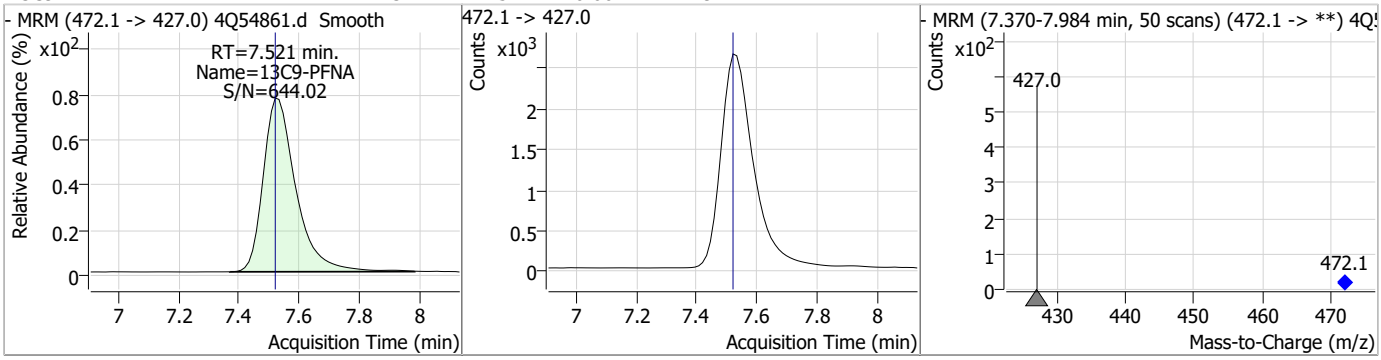
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.93	7.06	0.02	4778 (m)	398.7 -> 98.9	59.1	23.8	71.3



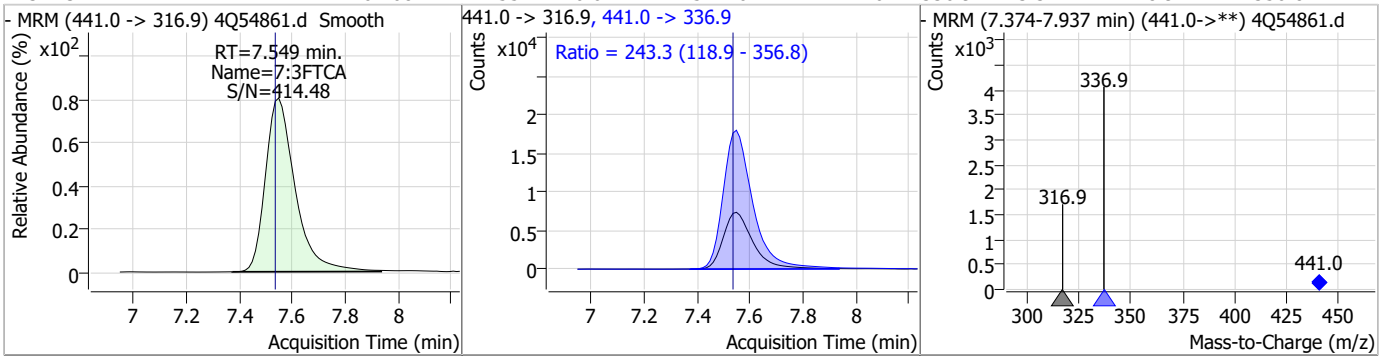
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.30	7.53	0.02	26663	463.0 -> 219.0	26.0	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.23	7.52	0.00	19771				

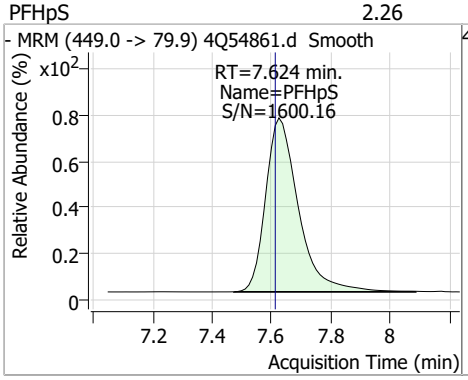


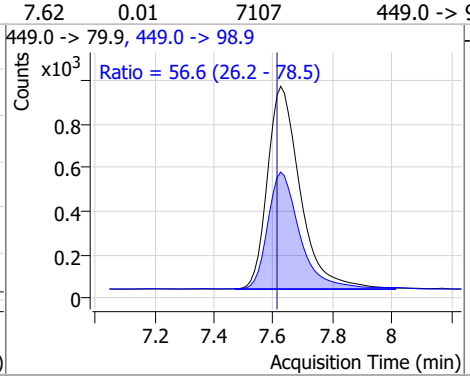
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	61.08	7.55	0.01	57240	441.0 -> 336.9	243.3	118.9	356.8

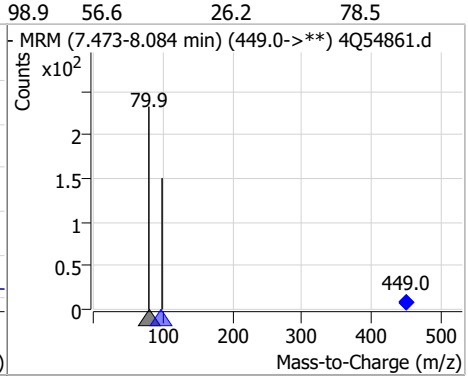


Perfluorinated Compounds by LC/MS/MS

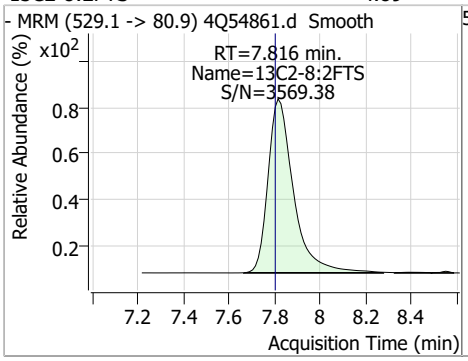
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.26	7.62	0.01	7107	449.0 -> 98.9	56.6	26.2	78.5

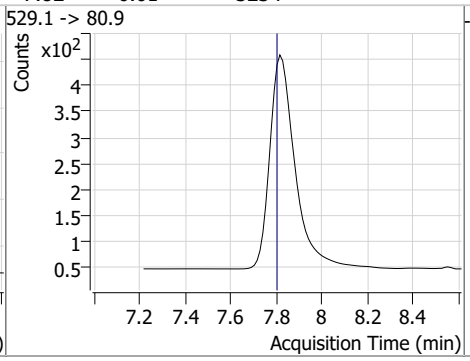


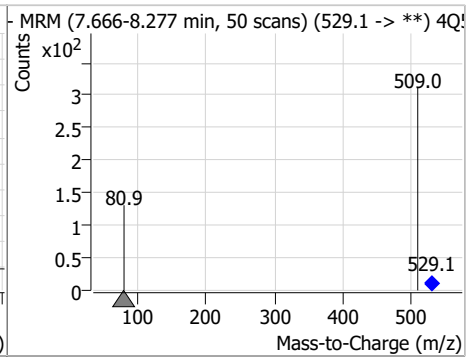




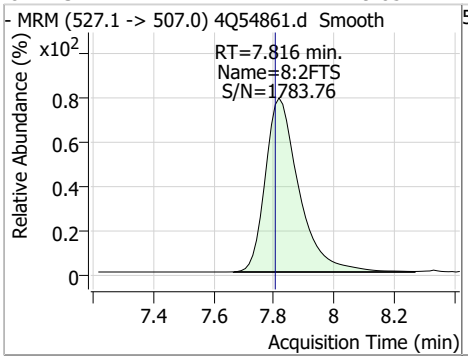
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.89	7.82	0.01	3234				

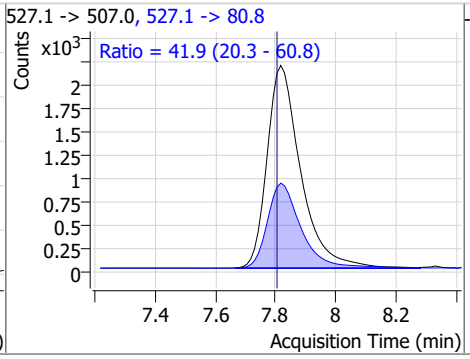


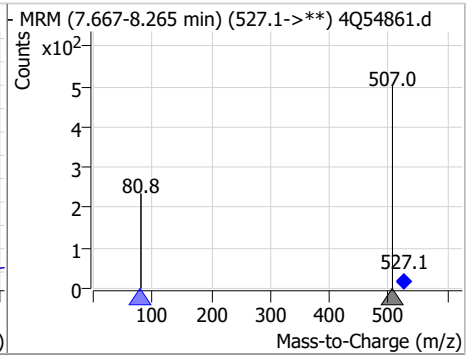




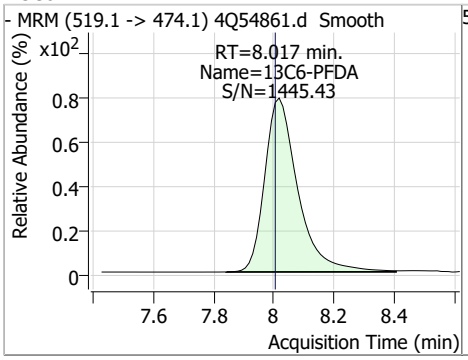
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.85	7.82	0.01	16791	527.1 -> 80.8	41.9	20.3	60.8

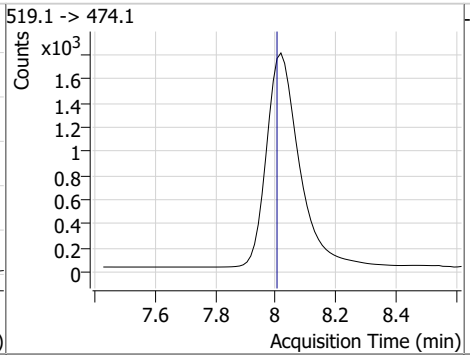


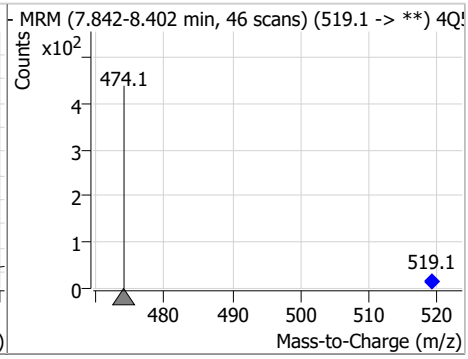




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.21	8.02	0.01	13441				

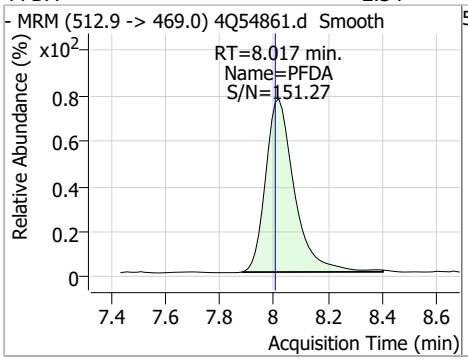


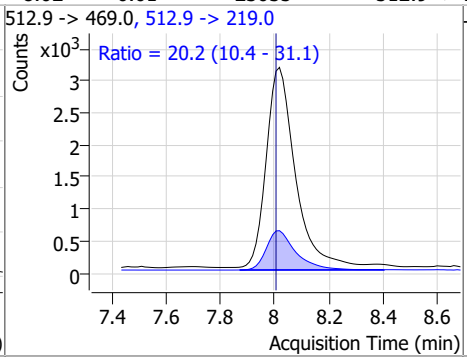


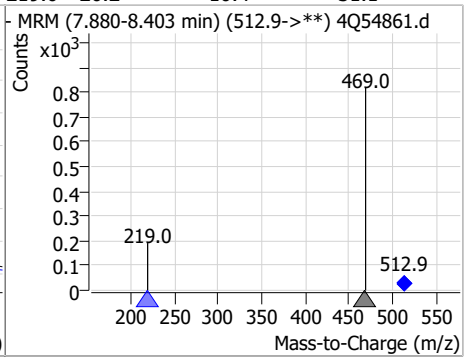


Perfluorinated Compounds by LC/MS/MS

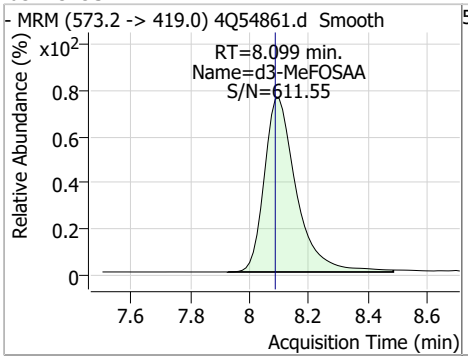
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.34	8.02	0.01	23055	512.9 -> 219.0	20.2	10.4	31.1

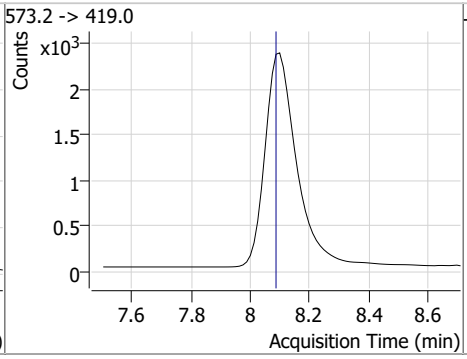


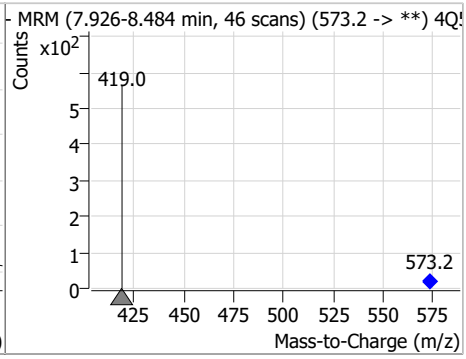




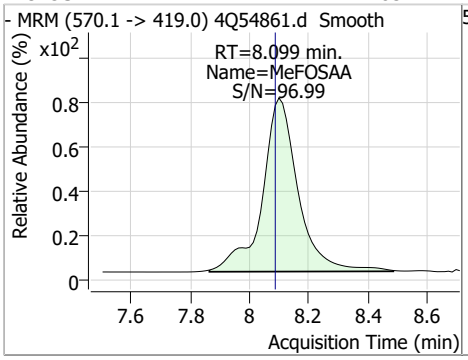
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.74	8.10	0.01	17761				

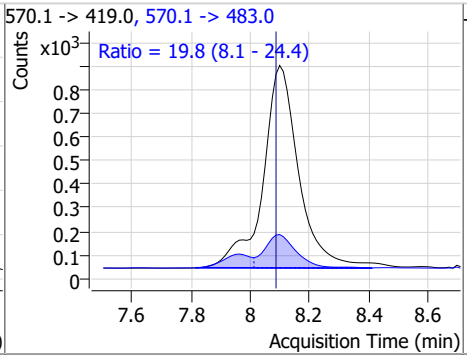


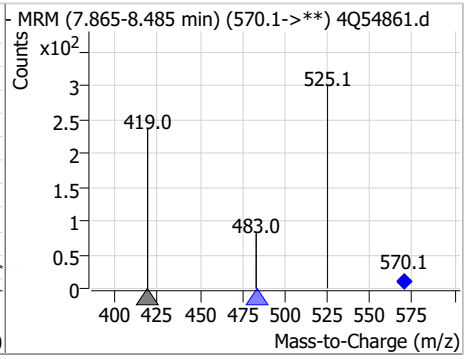




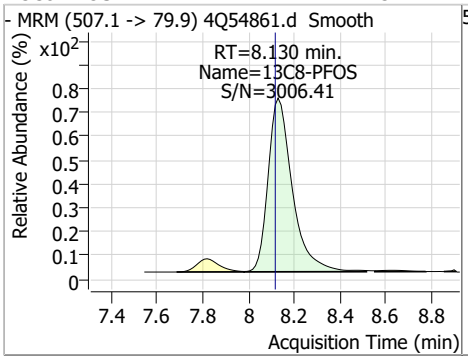
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.83	8.10	0.01	7212	570.1 -> 483.0	19.8	8.1	24.4

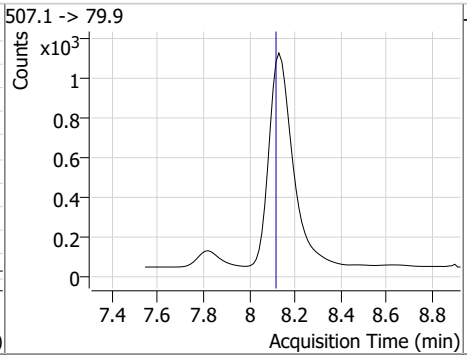


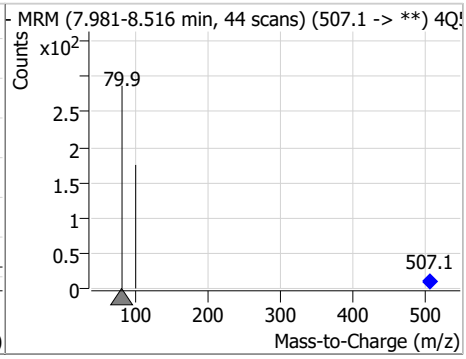




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.32	8.13	0.01	7937				

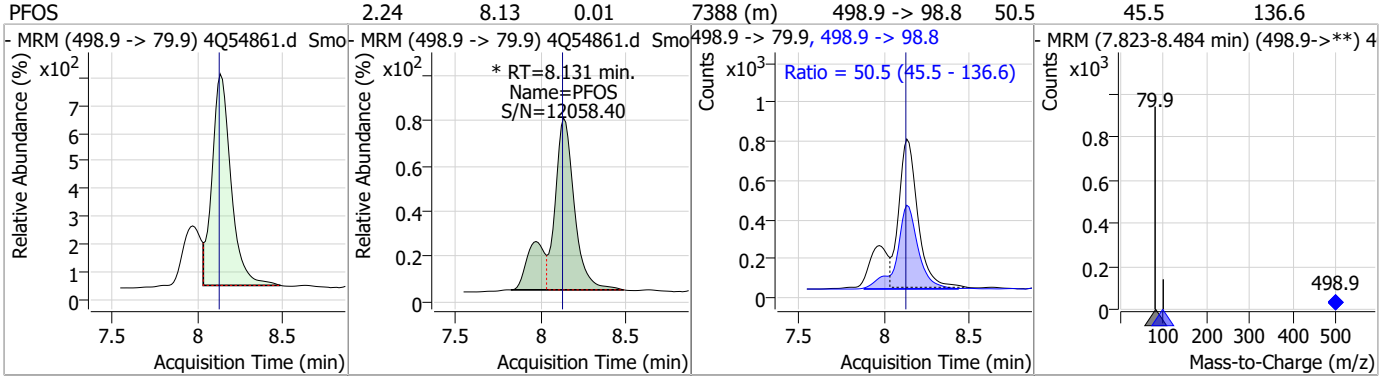




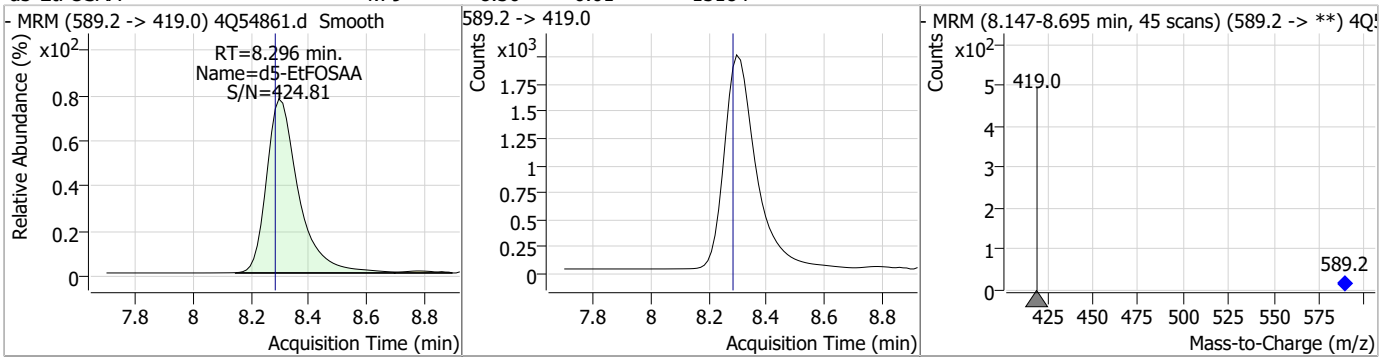


Perfluorinated Compounds by LC/MS/MS

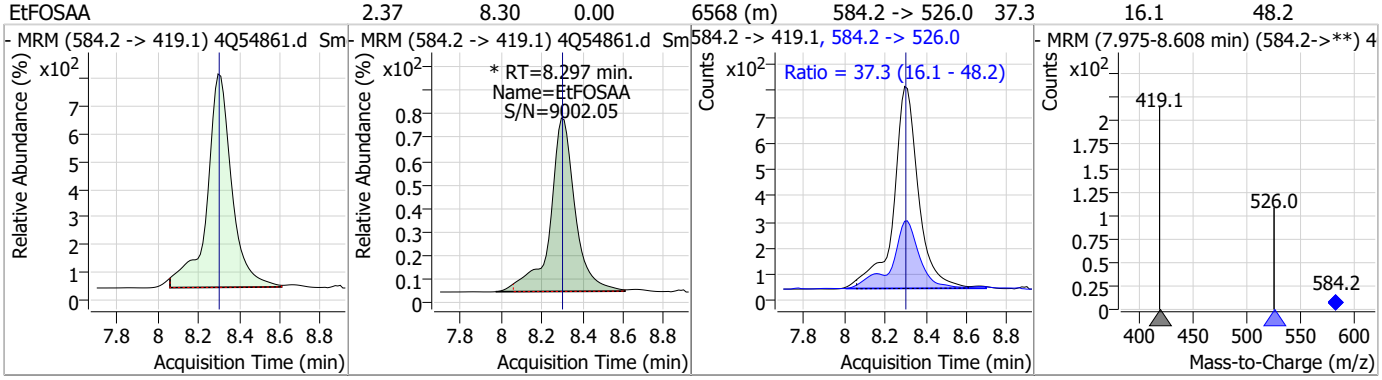
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.24	8.13	0.01	7388 (m)	498.9 -> 98.8	50.5	45.5	136.6



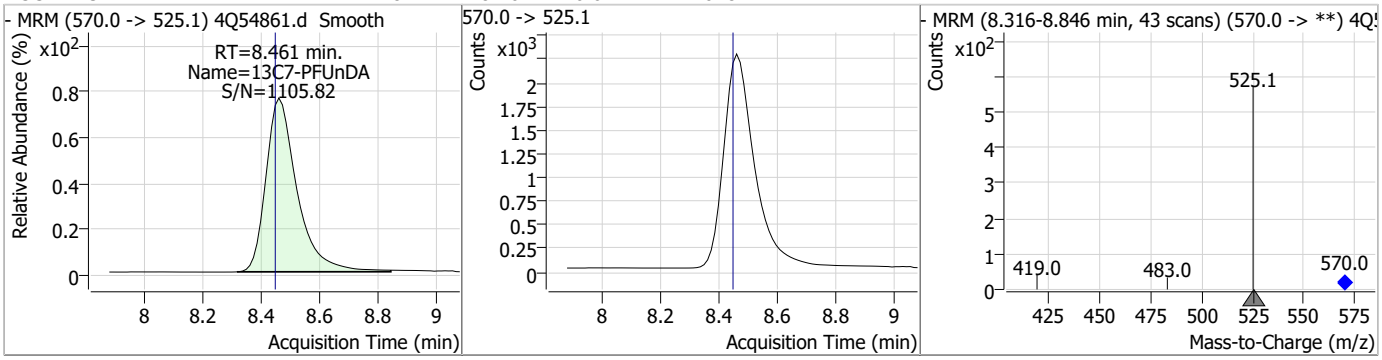
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.79	8.30	0.01	15184				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.37	8.30	0.00	6568 (m)	584.2 -> 526.0	37.3	16.1	48.2

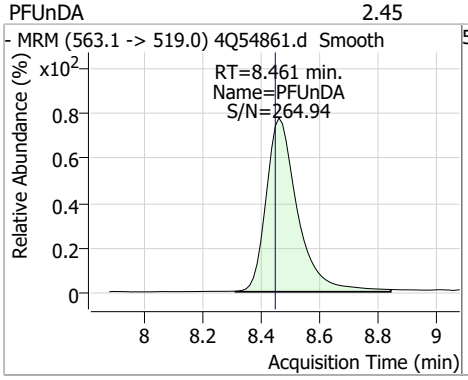


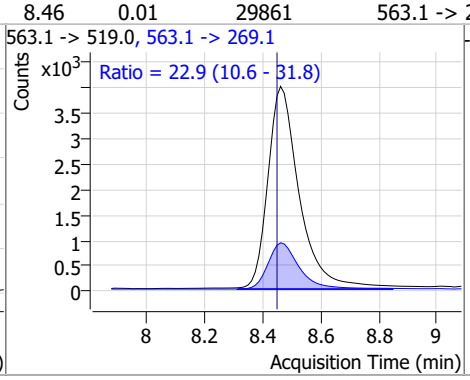
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.28	8.46	0.01	16784				

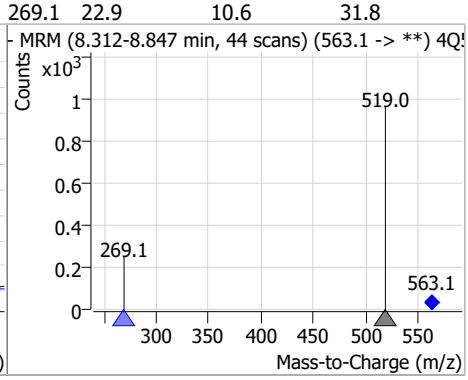


Perfluorinated Compounds by LC/MS/MS

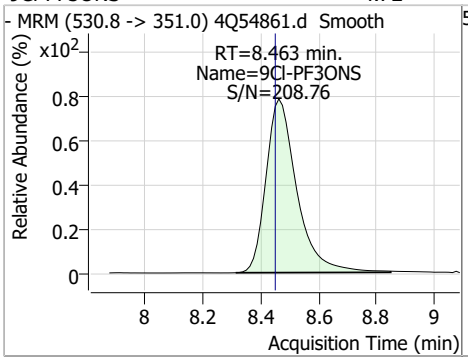
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.45	8.46	0.01	29861	563.1 -> 269.1	22.9	10.6	31.8

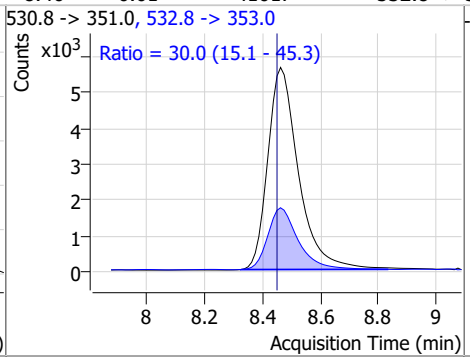


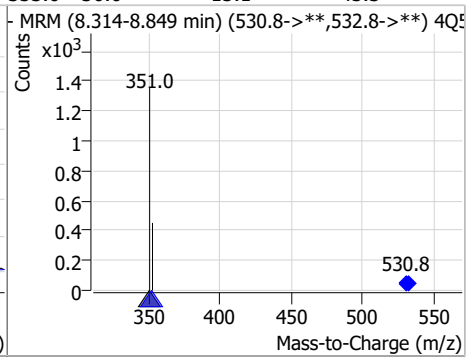




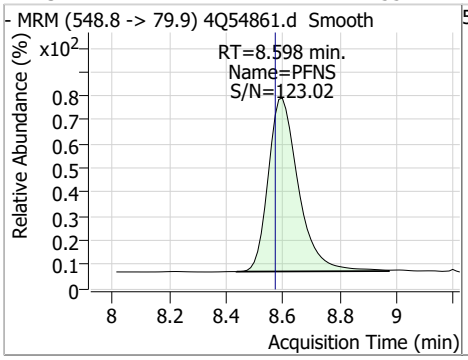
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.72	8.46	0.01	41617	532.8 -> 353.0	30.0	15.1	45.3

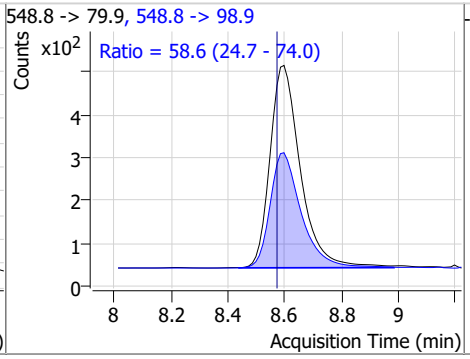


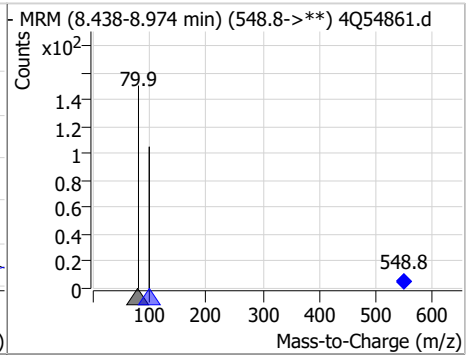




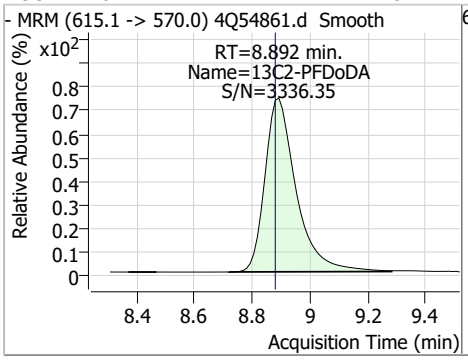
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.55	8.60	0.02	3455	548.8 -> 98.9	58.6	24.7	74.0

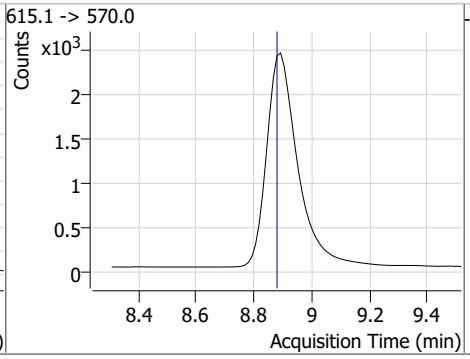


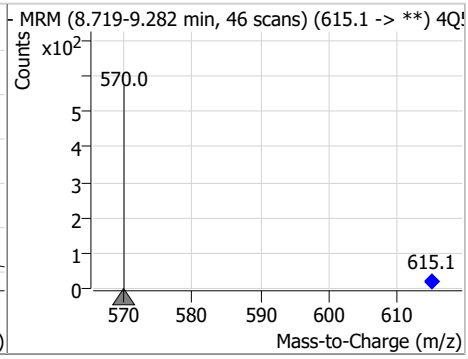




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.18	8.89	0.01	18074				

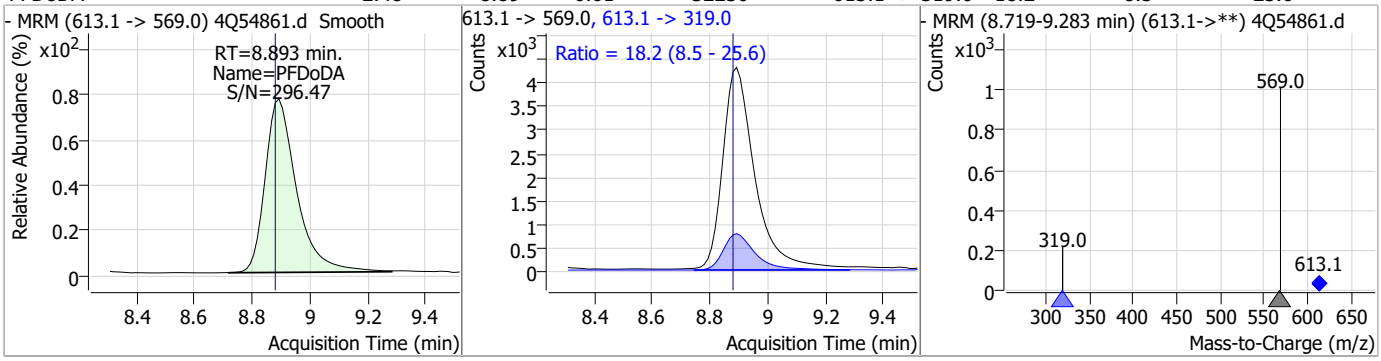




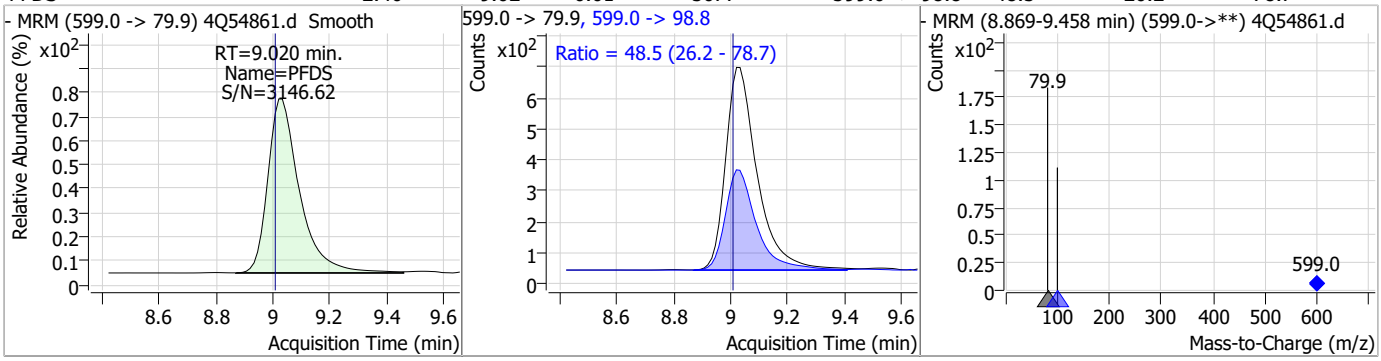


Perfluorinated Compounds by LC/MS/MS

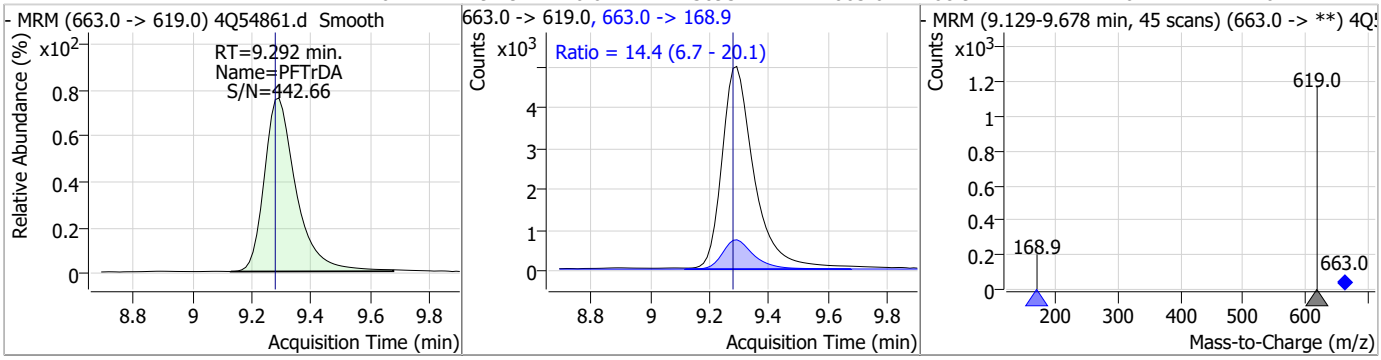
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.48	8.89	0.01	32230	613.1 -> 319.0	18.2	8.5	25.6



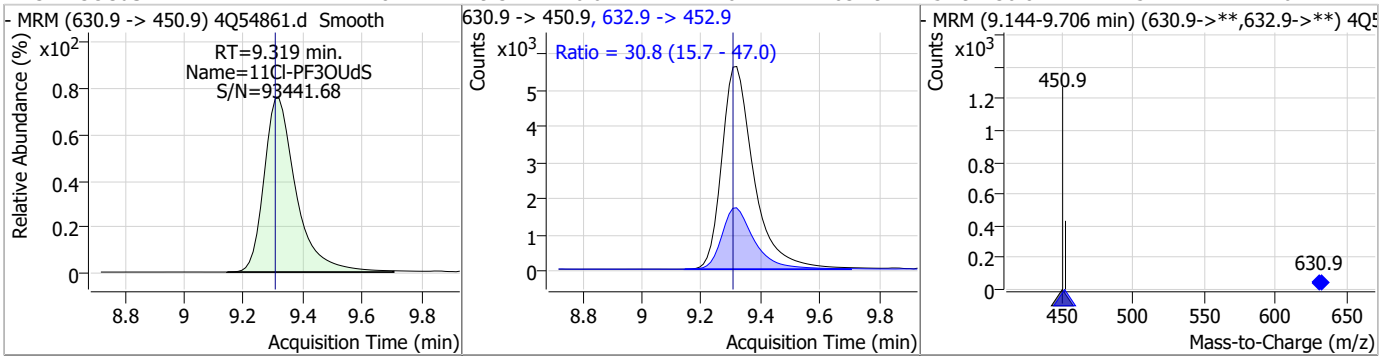
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.40	9.02	0.01	5077	599.0 -> 98.8	48.5	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.61	9.29	0.01	36931	663.0 -> 168.9	14.4	6.7	20.1

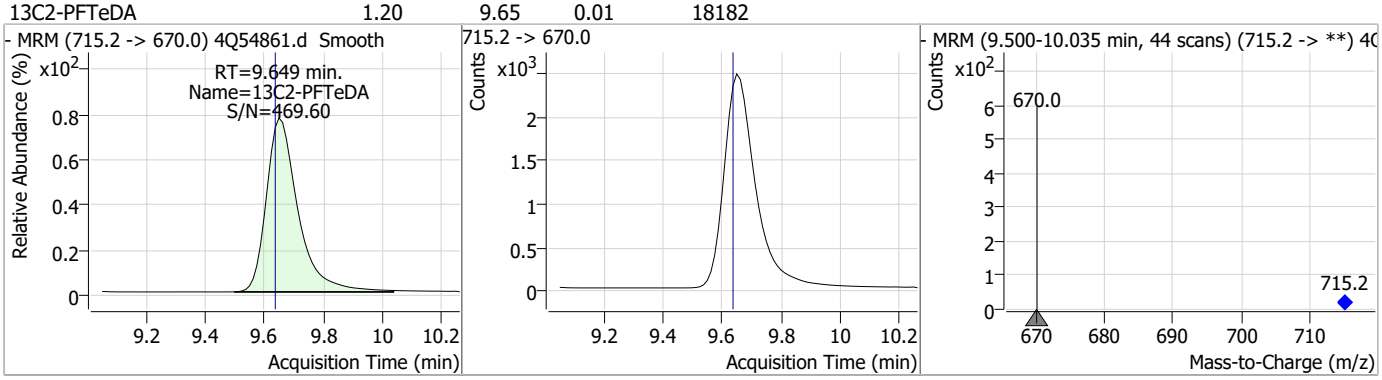


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.84	9.32	0.01	42161	632.9 -> 452.9	30.8	15.7	47.0

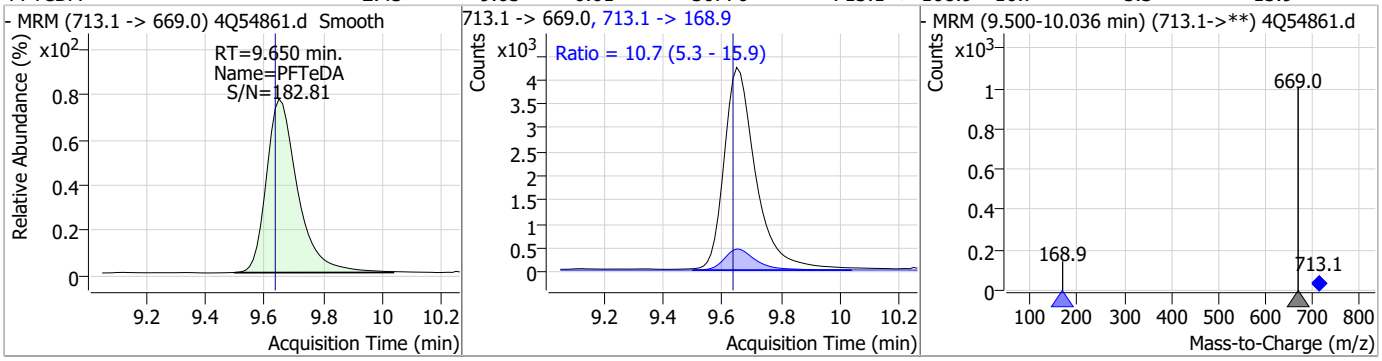


Perfluorinated Compounds by LC/MS/MS

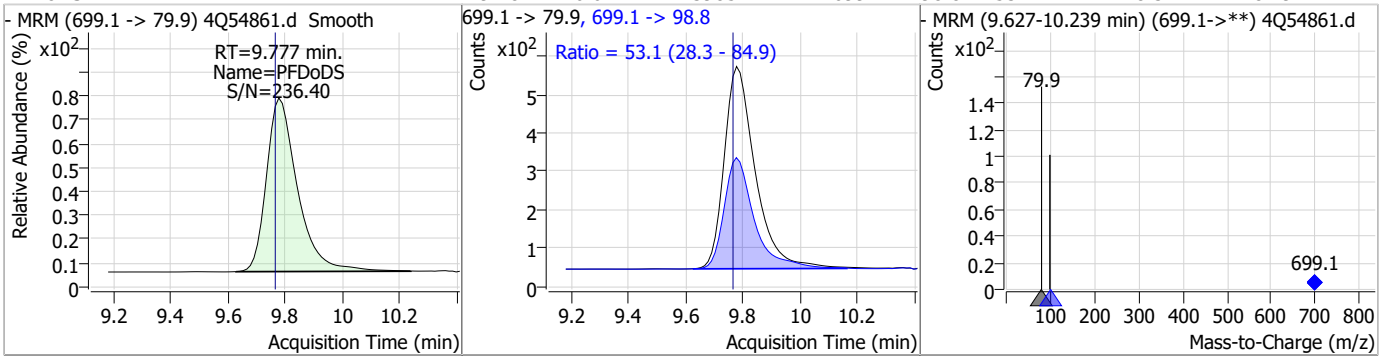
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.20	9.65	0.01	18182				



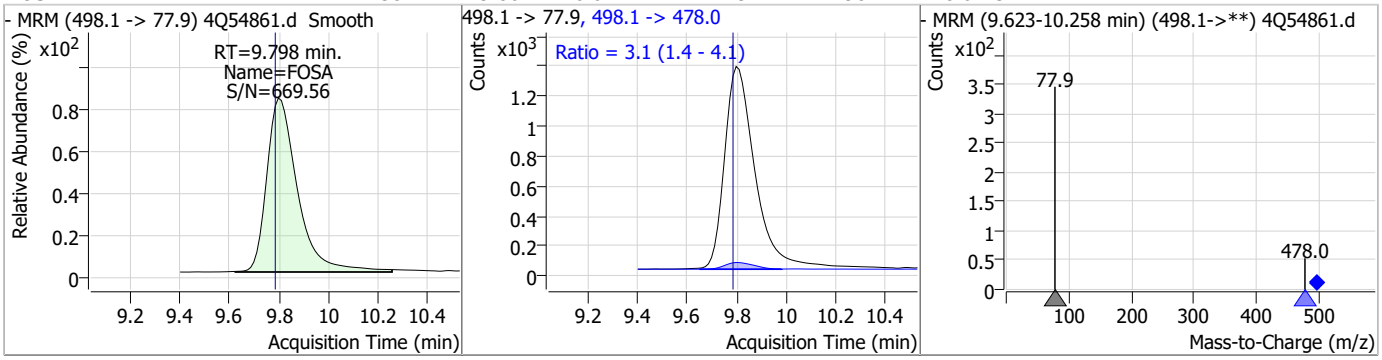
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.43	9.65	0.01	30770	713.1 -> 168.9	10.7	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.47	9.78	0.01	3985	699.1 -> 98.8	53.1	28.3	84.9

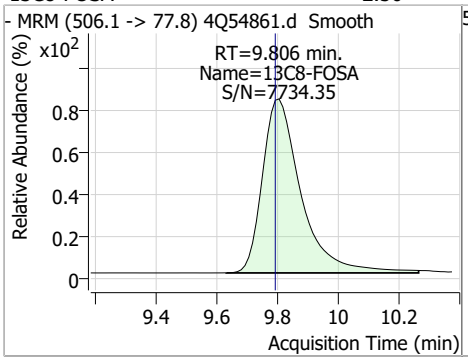


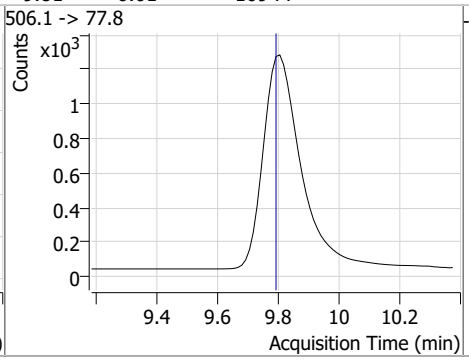
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.38	9.80	0.01	11729	498.1 -> 478.0	3.1	1.4	4.1

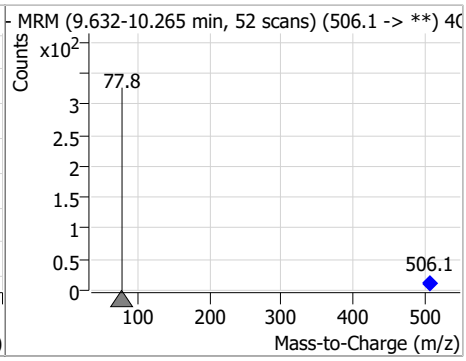


Perfluorinated Compounds by LC/MS/MS

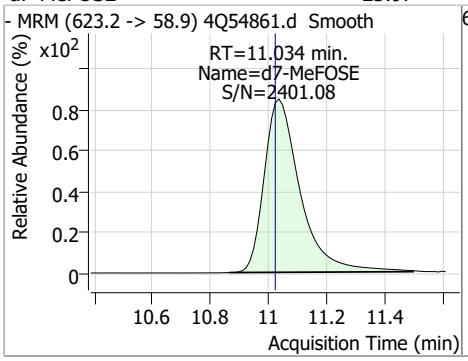
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.50	9.81	0.01	10944				

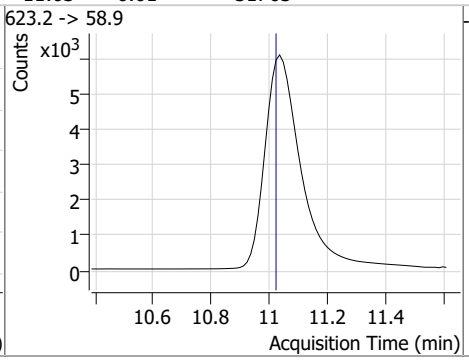


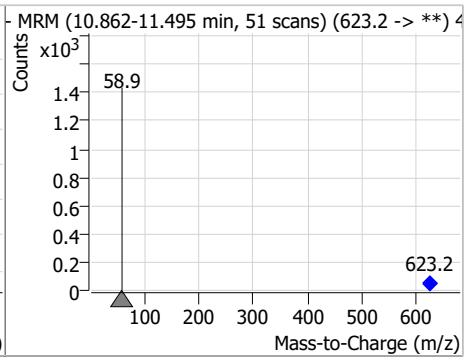




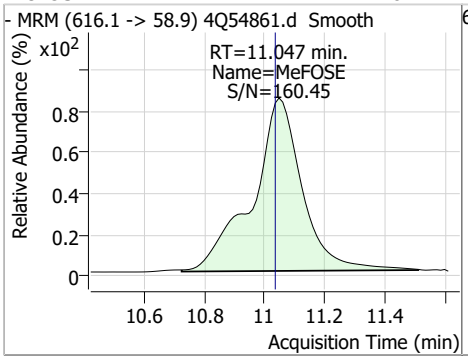
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.97	11.03	0.01	51763				

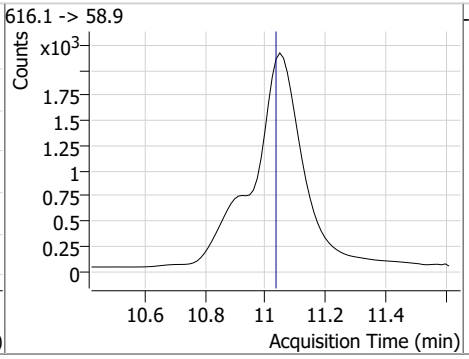


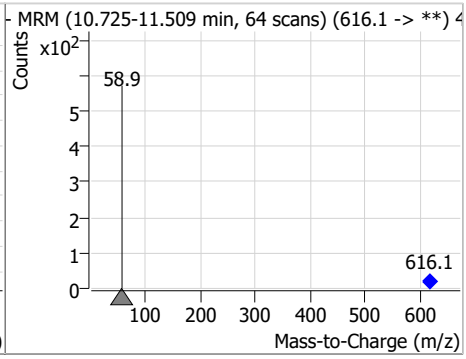




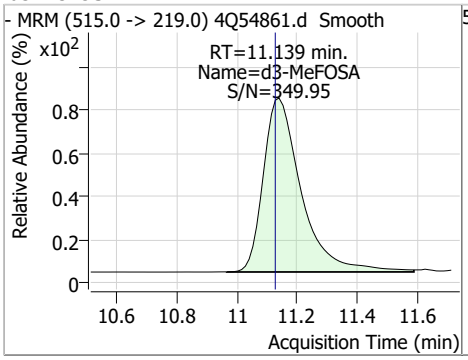
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.87	11.05	0.01	24373				

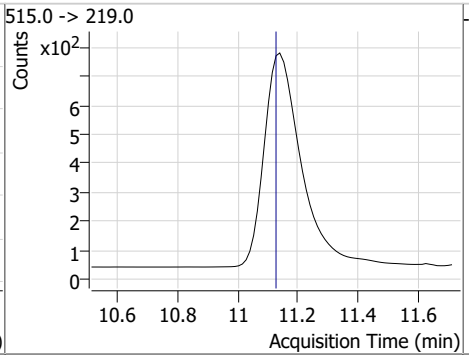


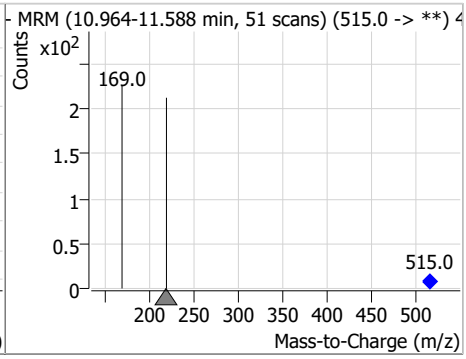




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.47	11.14	0.01	6458				

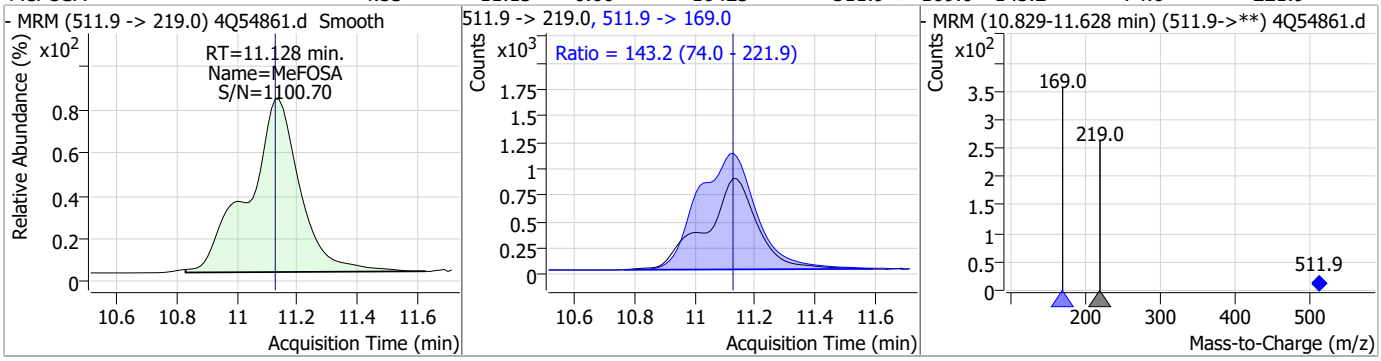




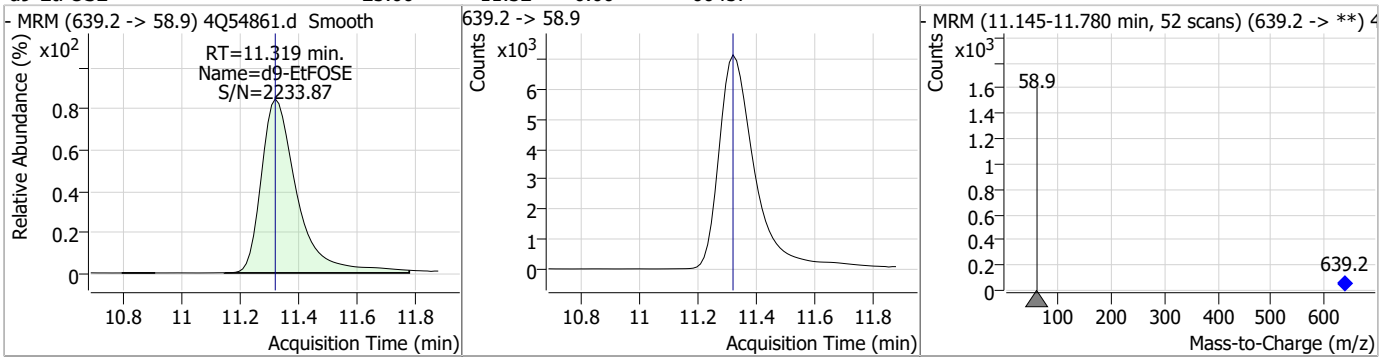


Perfluorinated Compounds by LC/MS/MS

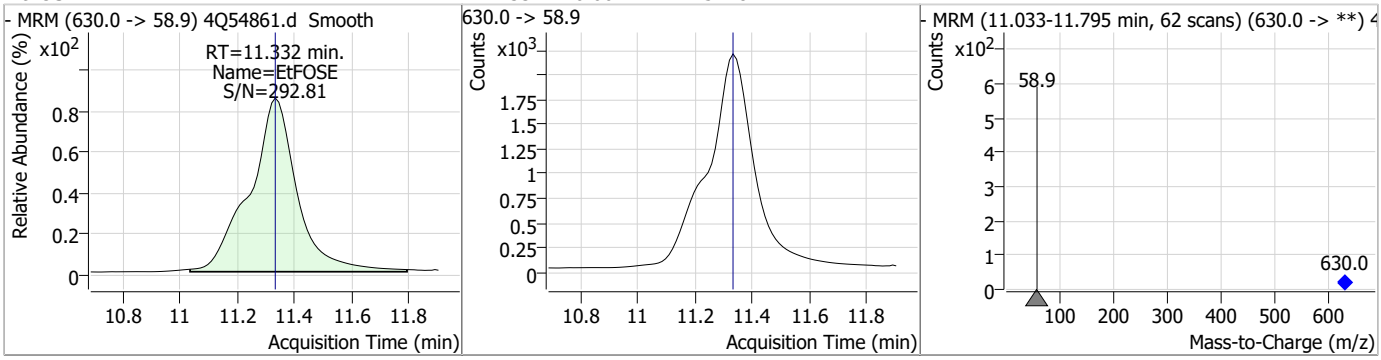
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.53	11.13	0.00	10425	511.9 -> 169.0	143.2	74.0	221.9



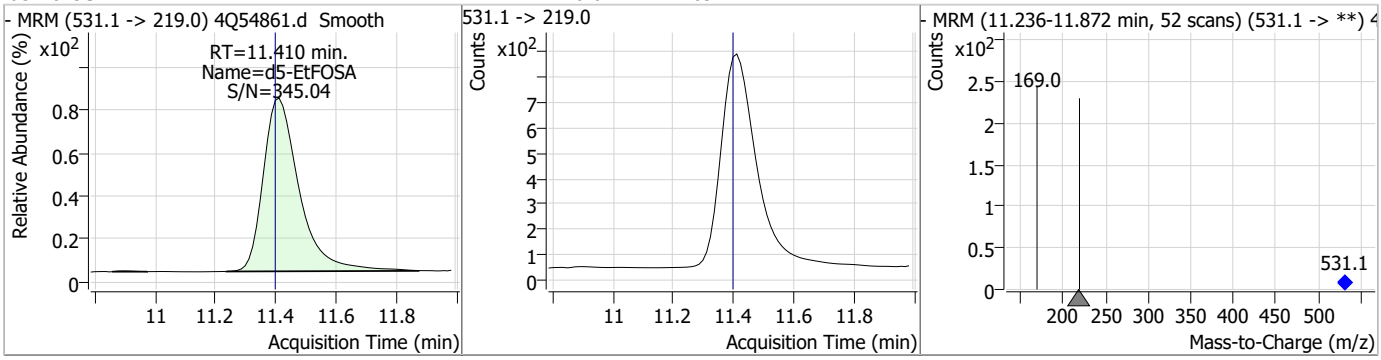
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.00	11.32	0.00	60457				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.74	11.33	0.00	25128				

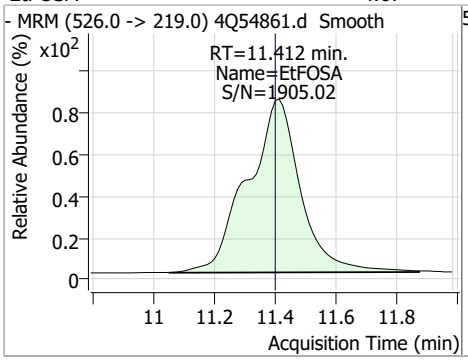


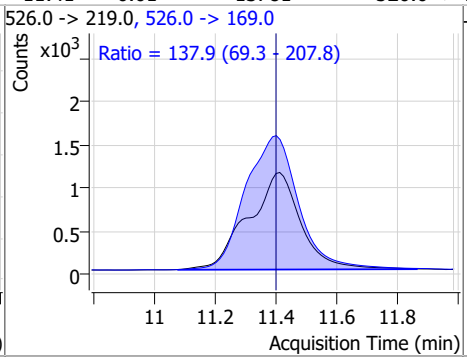
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.42	11.41	0.01	6927				

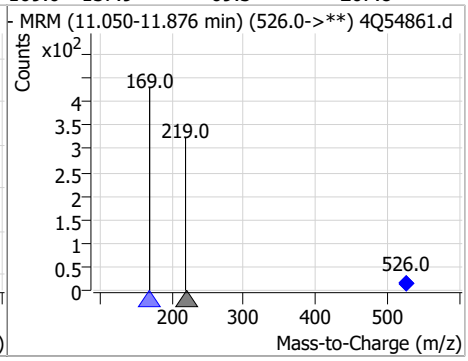


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	4.67	11.41	0.01	13781	526.0 -> 169.0	137.9	69.3	207.8







Manual Integration Approval Summary

Sample Number: S4Q804-ICV804
Lab FileID: 4Q54861.D
Injection Time: 12/08/23 13:51
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.13	Split peak
EtFOSAA	2991-50-6		8.30	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54862.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 2:05:49 PM
Sample Name : icv804-20
Vial : P1-B4
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	101781	10.00	µg/L	0.012
M5-PFPeA	4.175	268.3 -> 223.0	42215	5.00	µg/L	0.012
M5-PFHxA	5.359	318.0 -> 273.0	32530	2.50	µg/L	0.025
M4-PFHpA	6.304	367.1 -> 322.0	31586	2.50	µg/L	0.012
M8-PFOA	6.989	421.1 -> 376.0	50492	2.50	µg/L	0.012
M9-PFNA	7.521	472.1 -> 427.0	20056	1.25	µg/L	0.000
M6-PFDA	8.017	519.1 -> 474.1	14427	1.25	µg/L	0.013
M7-PFUnDA	8.461	570.0 -> 525.1	15810	1.25	µg/L	0.012
M2-PFDoDA	8.892	615.1 -> 570.0	18974	1.25	µg/L	0.012
M2-PFTeDA	9.649	715.2 -> 670.0	18902	1.25	µg/L	0.012
M8-FOSA	9.806	506.1 -> 77.8	10206	2.50	µg/L	0.012
M3-PFBS	5.215	302.1 -> 79.9	9077	2.50	µg/L	0.025
M3-PFHxS	7.042	402.1 -> 79.9	7629	2.50	µg/L	0.012
M8-PFOS	8.130	507.1 -> 79.9	8811	2.50	µg/L	0.012
M2-4:2FTS	5.071	329.1 -> 80.9	1092	5.00	µg/L	0.025
M2-6:2FTS	6.761	429.1 -> 80.9	2434	5.00	µg/L	0.012
M2-8:2FTS	7.816	529.1 -> 80.9	3241	5.00	µg/L	0.012
M3-MeFOSAA	8.099	573.2 -> 419.0	18370	5.00	µg/L	0.012
M3-HFPO-DA	5.714	286.9 -> 168.9	34086	10.00	µg/L	0.025
M5-EtFOSAA	8.296	589.2 -> 419.0	15250	5.00	µg/L	0.012
M7-MeFOSE	11.034	623.2 -> 58.9	52980	25.00	µg/L	0.012
M9-EtFOSE	11.319	639.2 -> 58.9	58926	25.00	µg/L	0.000
M5-EtFOSA	11.410	531.1 -> 219.0	6948	2.50	µg/L	0.012
M3-MeFOSA	11.139	515.0 -> 219.0	6801	2.50	µg/L	0.012
13C4-PFOS	8.130	502.8 -> 79.9	6698	2.50	µg/L	0.012
13C3-PFBA	2.691	216.0 -> 172.0	48350	5.00	µg/L	0.013
18O2-PFHxS	7.054	403.0 -> 83.9	4724	2.50	µg/L	0.013
13C4-PFOA	6.989	417.1 -> 372.0	55296	2.50	µg/L	0.012
13C2-PFDA	8.017	515.1 -> 470.1	15417	1.25	µg/L	0.013
13C5-PFNA	7.522	468.0 -> 423.0	19563	1.25	µg/L	0.012
13C2-PFHxA	5.360	315.1 -> 270.0	36994	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	1092	4.87	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C2-6:2FTS	6.761	429.1 -> 80.9	2434	5.00	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-8:2FTS	7.816	529.1 -> 80.9	3241	4.98	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C2-PFDoDA	8.892	615.1 -> 570.0	18974	1.23	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-PFTeDA	9.649	715.2 -> 670.0	18902	1.24	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C3-PFBS	5.215	302.1 -> 79.9	9077	2.51	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFHxS	7.042	402.1 -> 79.9	7629	2.58	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C4-PFBA	2.686	216.8 -> 171.9	101781	10.03 µg/L	0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.3%	
13C4-PFHpA	6.304	367.1 -> 322.0	31586	2.42 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C5-PFHxA	5.359	318.0 -> 273.0	32530	2.39 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C5-PFPeA	4.175	268.3 -> 223.0	42215	4.97 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C6-PFDA	8.017	519.1 -> 474.1	14427	1.29 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C7-PFUnDA	8.461	570.0 -> 525.1	15810	1.20 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C8-FOSA	9.806	506.1 -> 77.8	10206	2.35 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.0%	
13C8-PFOA	6.989	421.1 -> 376.0	50492	2.47 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C8-PFOS	8.130	507.1 -> 79.9	8811	2.60 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C9-PFNA	7.521	472.1 -> 427.0	20056	1.28 µg/L	0.000
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.4%	
d3-MeFOSAA	8.099	573.2 -> 419.0	18370	4.94 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C3-HFPO-DA	5.714	286.9 -> 168.9	34086	10.01 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
d3-MeFOSA	11.139	515.0 -> 219.0	6801	2.63 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 105.0%	
d5-EtFOSAA	8.296	589.2 -> 419.0	15250	4.85 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
d7-MeFOSE	11.034	623.2 -> 58.9	52980	24.74 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
d9-EtFOSE	11.319	639.2 -> 58.9	58926	24.57 µg/L	0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.3%	
d5-EtFOSA	11.410	531.1 -> 219.0	6948	2.45 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%	
Target Compounds					**QValue**
4:2FTS	5.059	327.1 -> 307.0	37172	19.76 µg/L	99
		327.1 -> 80.9	16008		
6:2FTS	6.761	427.1 -> 407.0	51737	20.22 µg/L	99
		427.1 -> 80.9	18541		
8:2FTS	7.816	527.1 -> 507.0	32179	18.84 µg/L	99
		527.1 -> 80.8	12849		
EtFOSAA	8.297	584.2 -> 419.1	52493	18.87 µg/L	86
		584.2 -> 526.0	20880		
FOSA	9.798	498.1 -> 77.9	85040	18.54 µg/L	99
		498.1 -> 478.0	2721		
MeFOSAA	8.099	570.1 -> 419.0	53868	20.45 µg/L	92
		570.1 -> 483.0	10660		
PFBA	2.695	212.8 -> 168.9	59022	18.11 µg/L	100
PFBS	5.216	298.7 -> 79.9	53494	19.00 µg/L	96
		298.7 -> 98.8	20335		
PFDA	8.017	512.9 -> 469.0	194270	18.33 µg/L	99
		512.9 -> 219.0	39089		
PFDoDA	8.893	613.1 -> 569.0	239635	17.54 µg/L	99
		613.1 -> 319.0	41582		
PFDS	9.020	599.0 -> 79.9	42841	18.27 µg/L	96

Perfluorinated Compounds by LC/MS/MS

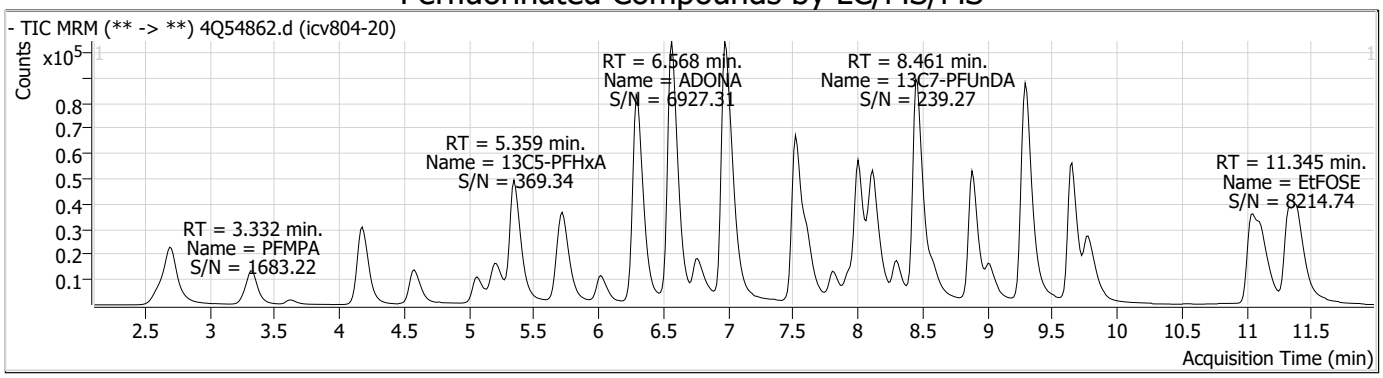
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	21323				
PFHpA	6.305	363.1 -> 319.0	342573	19.26	µg/L		98
		363.1 -> 169.0	60415				
PFHpS	7.624	449.0 -> 79.9	62357	17.83	µg/L		98
		449.0 -> 98.9	31850				
PFHxA	5.362	313.0 -> 269.0	215751	20.78	µg/L		99
		313.0 -> 118.9	6422				
PFHxS	7.043	398.7 -> 79.9	48440	19.69	µg/L	m	99
		398.7 -> 98.9	23389				
PFNA	7.534	463.0 -> 419.0	234109	19.87	µg/L		99
		463.0 -> 219.0	54990				
PFNS	8.598	548.8 -> 79.9	28708	19.10	µg/L		95
		548.8 -> 98.9	15106				
PFOA	6.990	413.0 -> 369.0	396269	19.08	µg/L		96
		413.0 -> 169.0	81598				
PFOS	8.131	498.9 -> 79.9	58487	15.95	µg/L	#m	50
		498.9 -> 98.8	25463				
PFPeA	4.177	263.0 -> 219.0	155608	18.73	µg/L		100
PFPeS	6.294	349.1 -> 79.9	46622	20.12	µg/L		97
		349.1 -> 98.9	20746				
PFTeDA	9.650	713.1 -> 669.0	272338	20.70	µg/L		99
		713.1 -> 168.9	28147				
PFTrDA	9.292	663.0 -> 619.0	275521	18.56	µg/L		99
		663.0 -> 168.9	38050				
PFUnDA	8.461	563.1 -> 519.0	223580	19.44	µg/L		99
		563.1 -> 269.1	46531				
11Cl-PF3OUdS	9.319	630.9 -> 450.9	181022	19.29	µg/L		99
		632.9 -> 452.9	55928				
9Cl-PF3ONS	8.463	530.8 -> 351.0	177189	18.68	µg/L		100
		532.8 -> 353.0	53407				
ADONA	6.568	376.9 -> 250.9	484269	21.04	µg/L		99
		376.9 -> 84.8	115482				
HFPO-DA	5.715	284.9 -> 168.9	60120	18.43	µg/L		97
		284.9 -> 184.9	6239				
3:3FTCA	3.630	241.0 -> 177.0	9495	18.32	µg/L		99
		241.0 -> 117.0	893				
5:3FTCA	6.020	341.0 -> 237.1	38497	20.79	µg/L		99
		341.0 -> 217.0	27164				
7:3FTCA	7.549	441.0 -> 316.9	18761	19.32	µg/L		91
		441.0 -> 336.9	41930				
EtFOSA	11.412	526.0 -> 219.0	52039	17.59	µg/L		78
		526.0 -> 169.0	57998				
EtFOSE	11.345	630.0 -> 58.9	204459	98.04	µg/L		100
MeFOSA	11.140	511.9 -> 219.0	43350	17.90	µg/L		73
		511.9 -> 169.0	49296				
MeFOSE	11.047	616.1 -> 58.9	217476	103.46	µg/L		100
PFDoDS	9.777	699.1 -> 79.9	31515	17.62	µg/L		99
		699.1 -> 98.8	17491				
NFDHA	5.241	295.0 -> 201.0	13592	18.48	µg/L		99
		295.0 -> 84.9	3599				
PFMBA	4.578	279.0 -> 85.1	87069	19.04	µg/L		100
PFMPA	3.332	229.0 -> 84.9	96445	19.19	µg/L		100
PFEESA	5.734	314.8 -> 134.9	135646	17.68	µg/L		98
		314.8 -> 82.9	4597				

 # = Qualifier out of range, m = manually integrated, + = Area summed

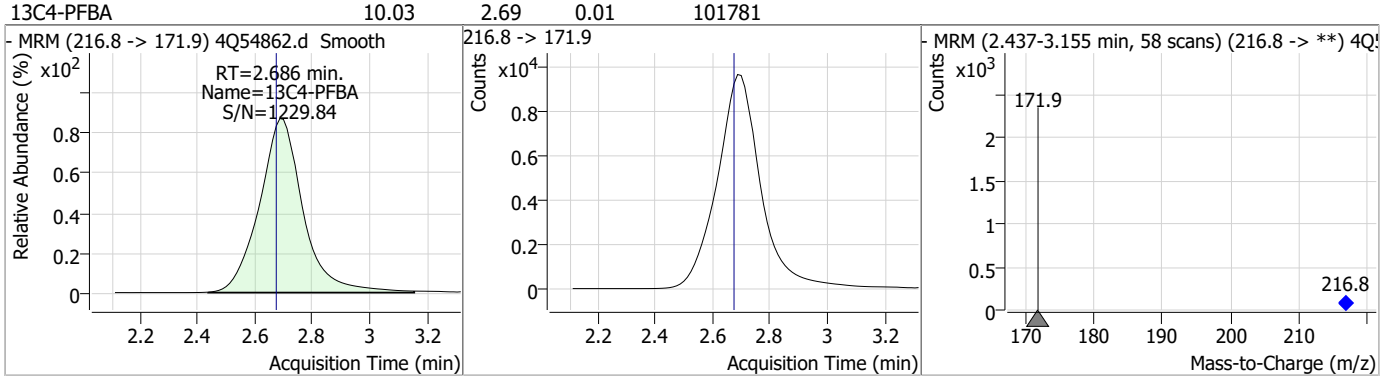
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

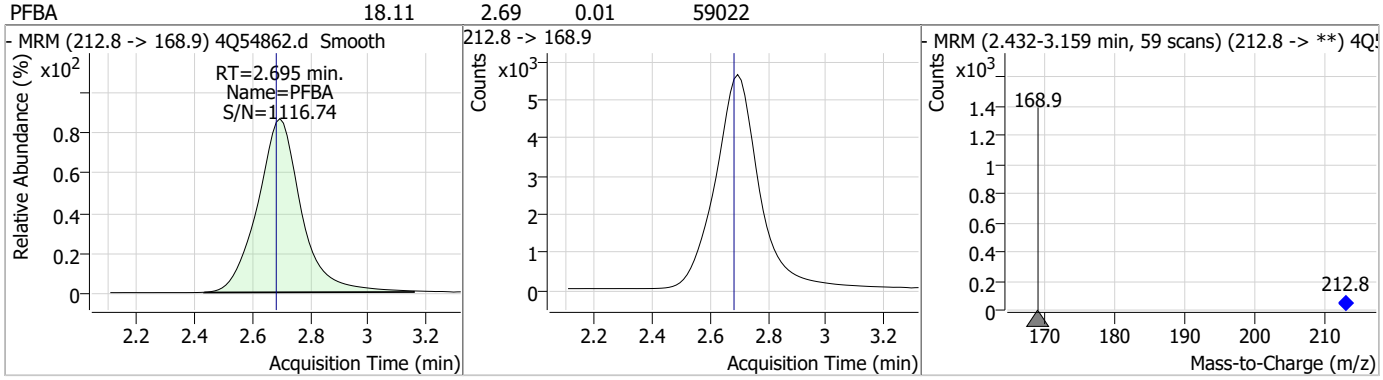
Perfluorinated Compounds by LC/MS/MS



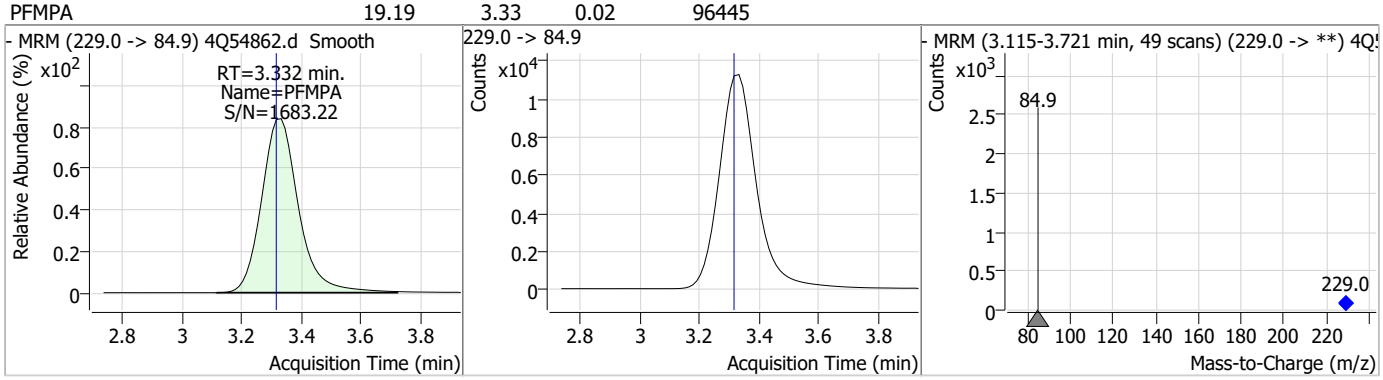
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.03	2.69	0.01	101781				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.11	2.69	0.01	59022				

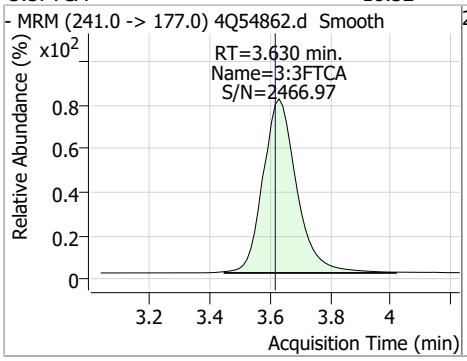


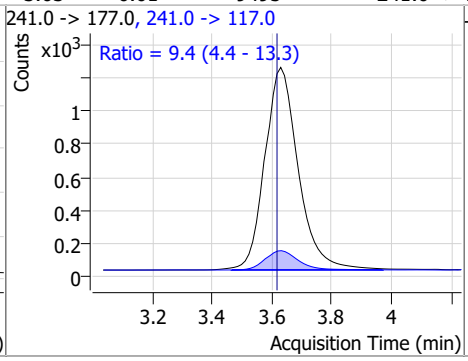
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	19.19	3.33	0.02	96445				

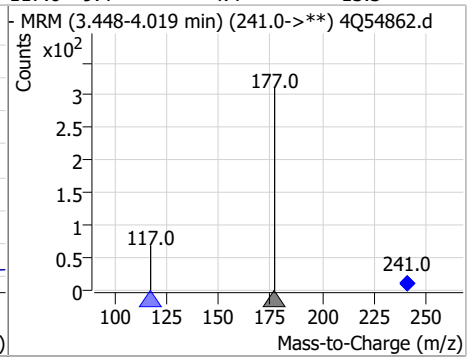


Perfluorinated Compounds by LC/MS/MS

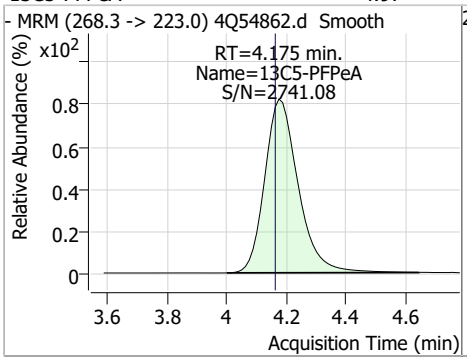
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	18.32	3.63	0.01	9495	241.0 -> 117.0	9.4	4.4	13.3

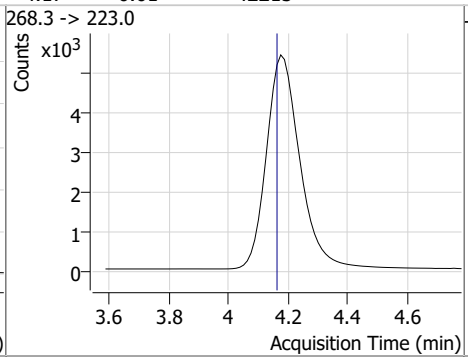


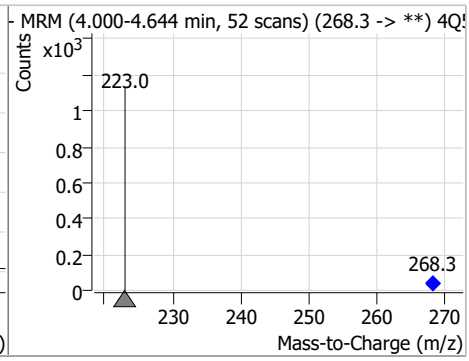




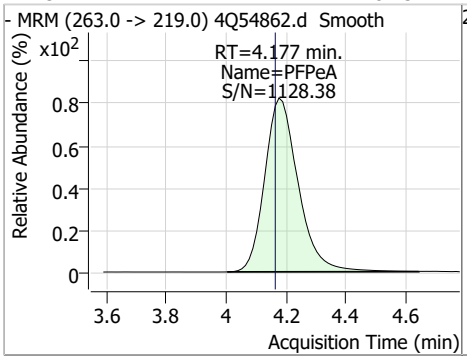
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.97	4.17	0.01	42215				

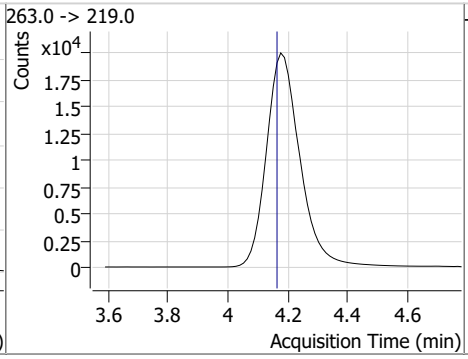


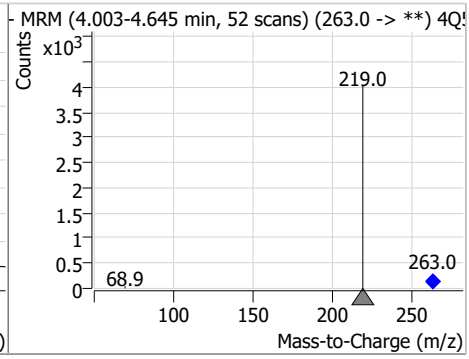




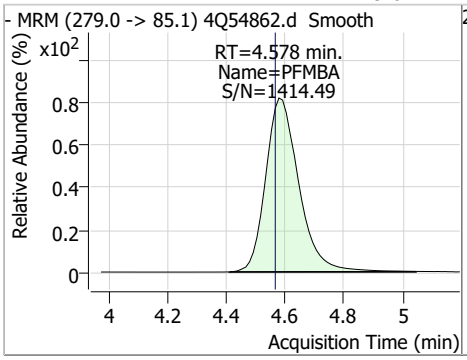
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.73	4.18	0.01	155608				

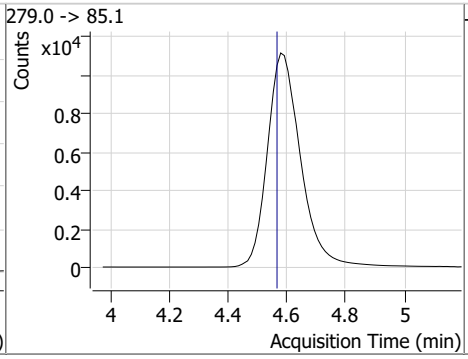


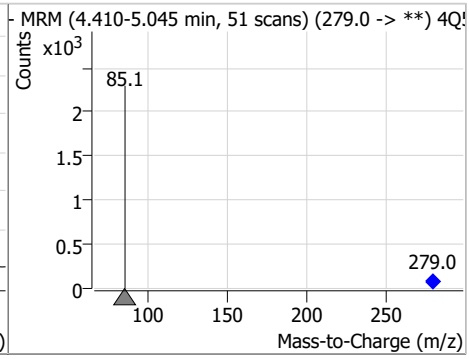




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	19.04	4.58	0.01	87069				

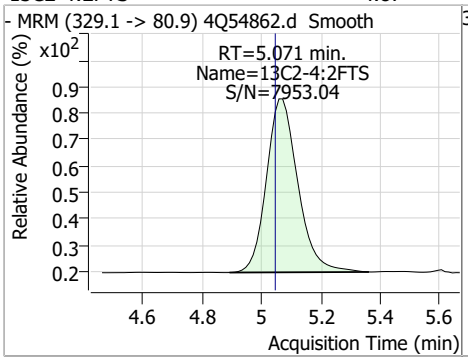


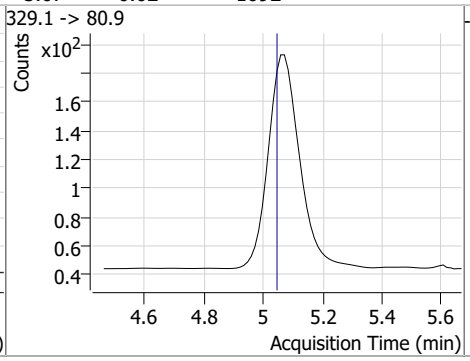


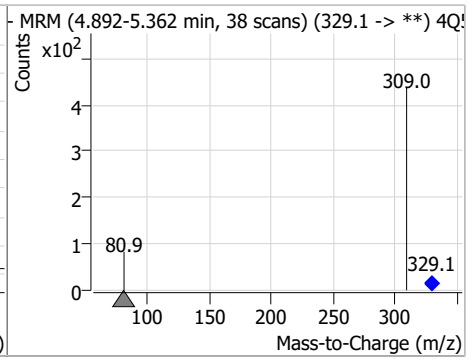


Perfluorinated Compounds by LC/MS/MS

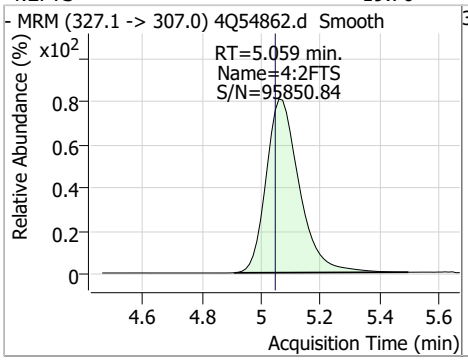
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.87	5.07	0.02	1092				

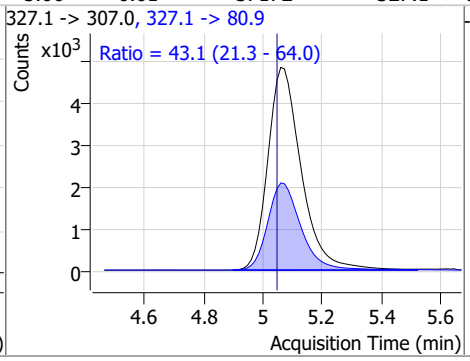


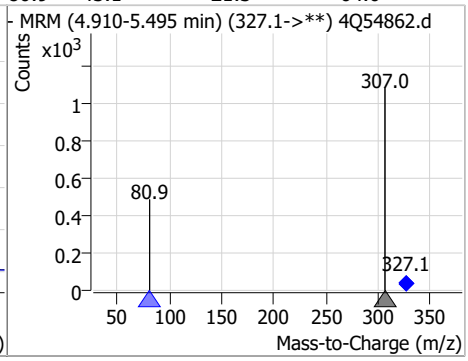




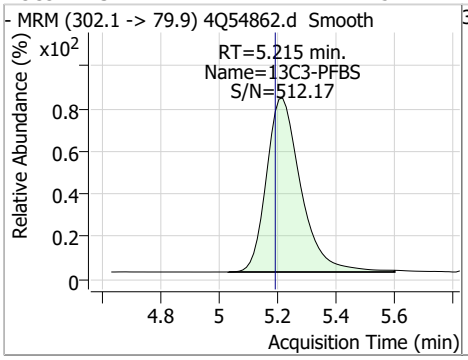
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.76	5.06	0.01	37172	327.1 -> 80.9	43.1	21.3	64.0

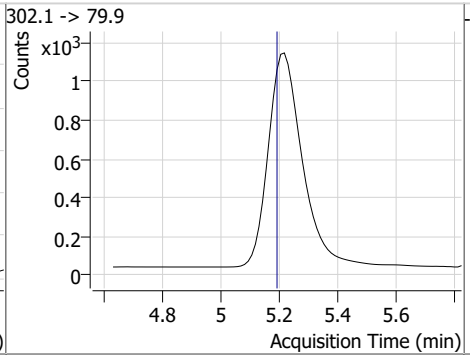


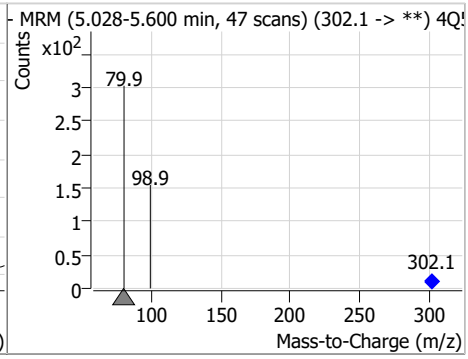




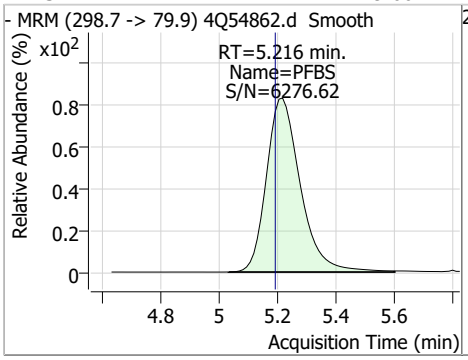
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.51	5.21	0.03	9077				

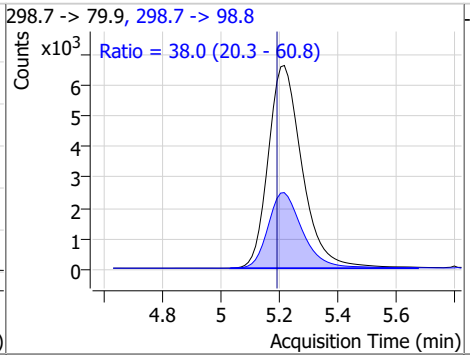


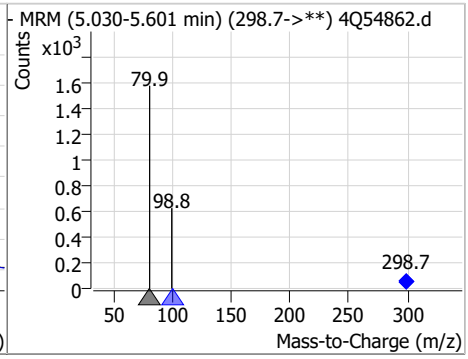




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.00	5.22	0.03	53494	298.7 -> 98.8	38.0	20.3	60.8

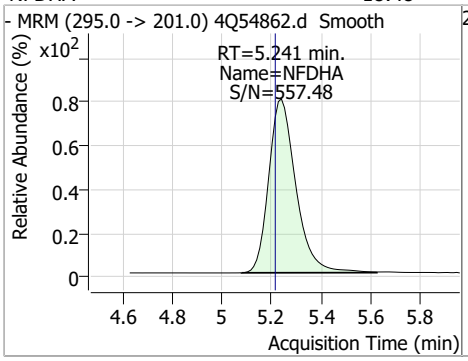


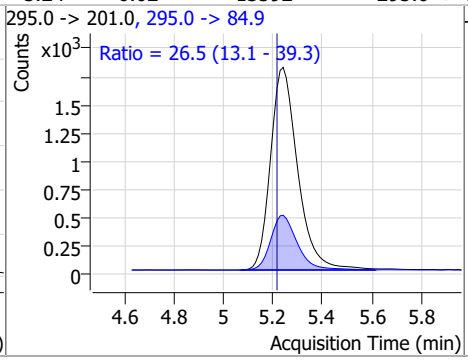


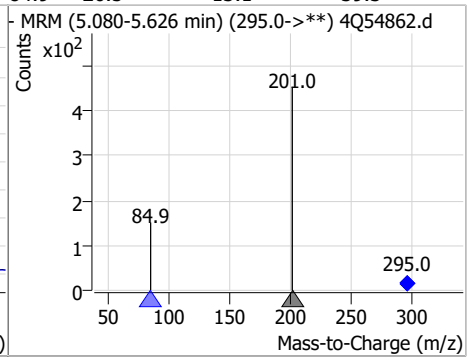


Perfluorinated Compounds by LC/MS/MS

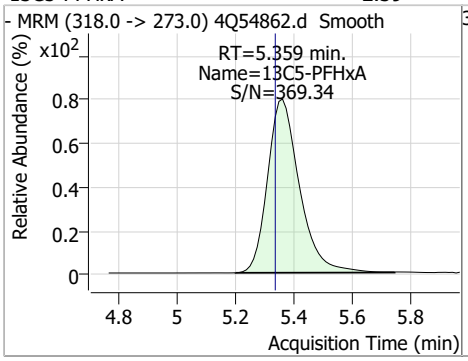
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	18.48	5.24	0.02	13592	295.0 -> 84.9	26.5	13.1	39.3

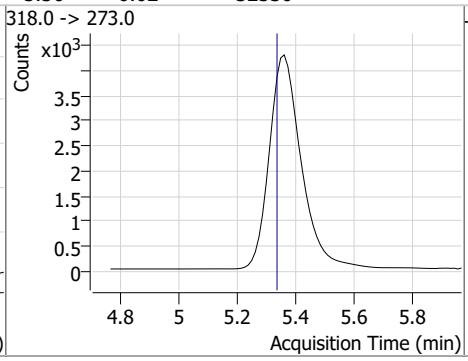


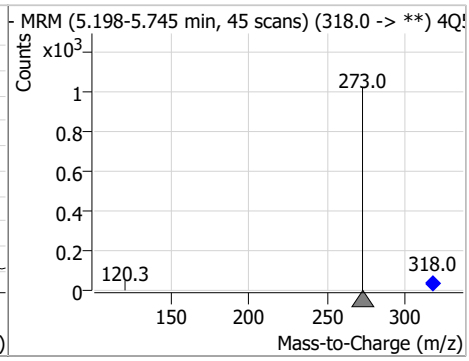




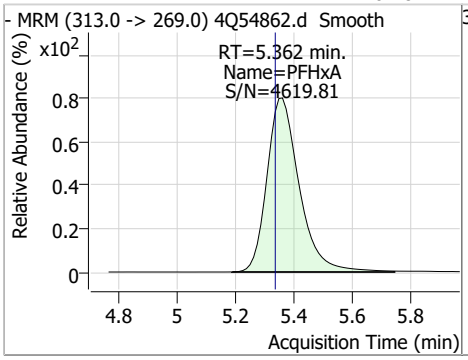
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.39	5.36	0.02	32530				

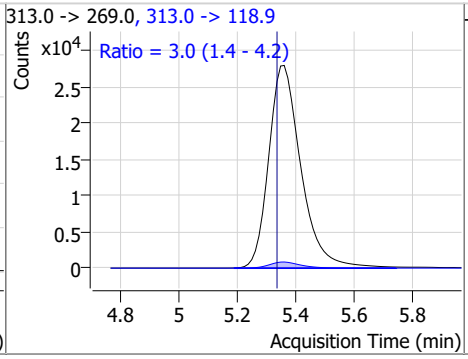


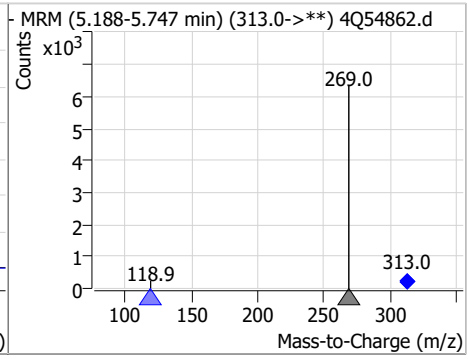




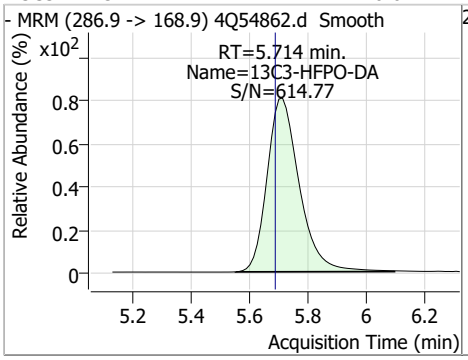
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.78	5.36	0.02	215751	313.0 -> 118.9	3.0	1.4	4.2

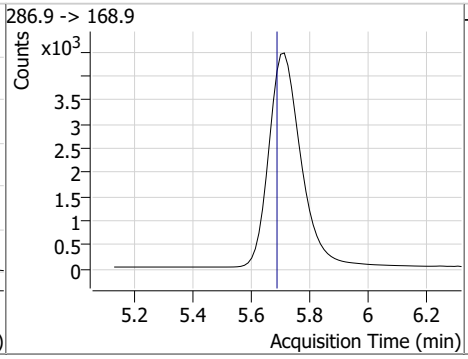


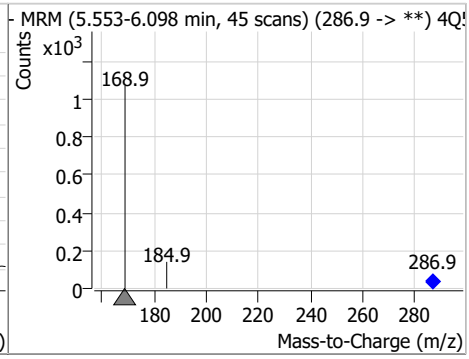




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.01	5.71	0.02	34086				

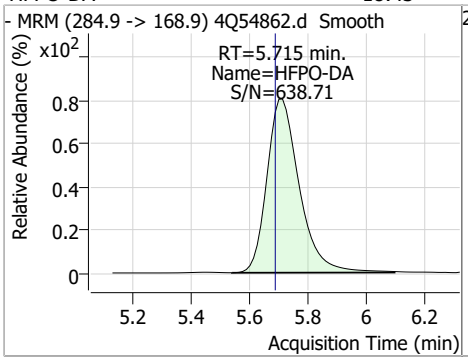


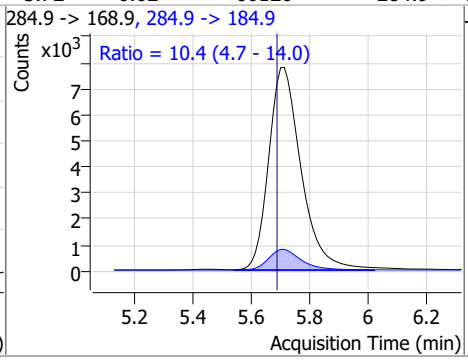


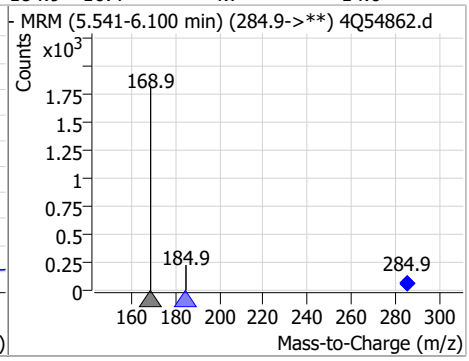


Perfluorinated Compounds by LC/MS/MS

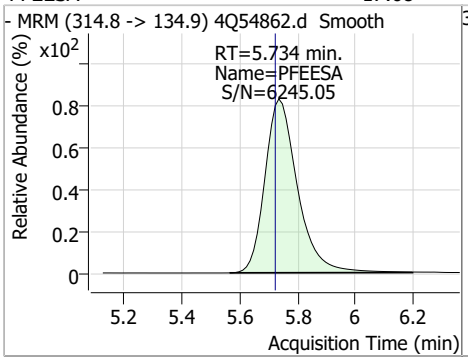
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.43	5.72	0.02	60120	284.9 -> 184.9	10.4	4.7	14.0

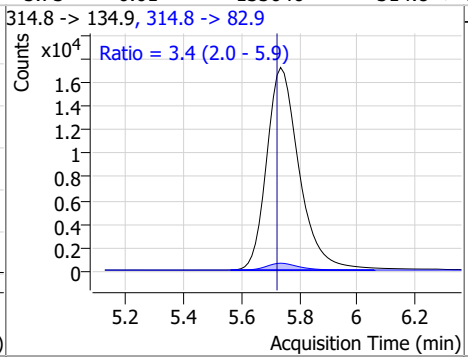


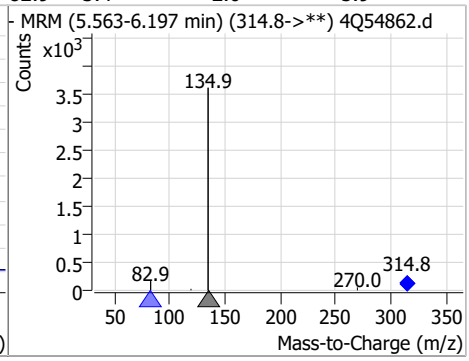




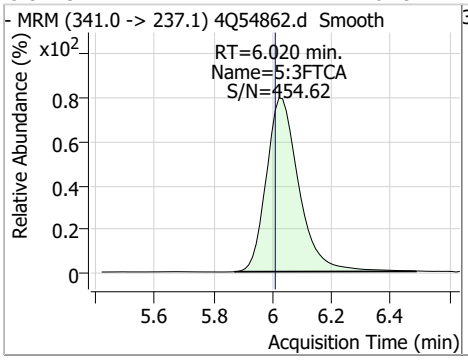
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	17.68	5.73	0.01	135646	314.8 -> 82.9	3.4	2.0	5.9

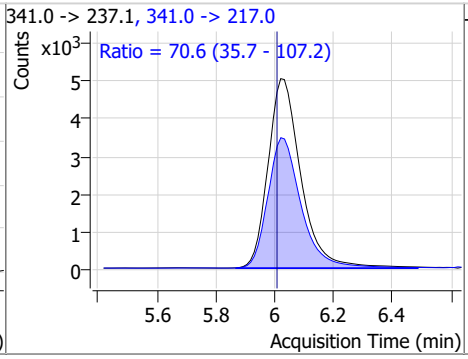


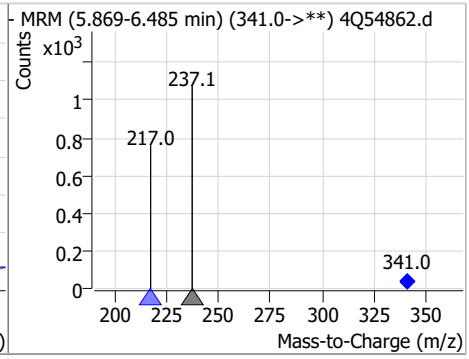




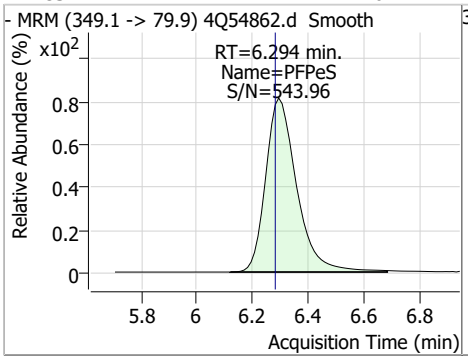
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	20.79	6.02	0.01	38497	341.0 -> 217.0	70.6	35.7	107.2

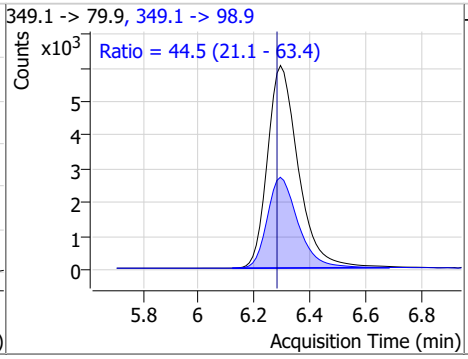


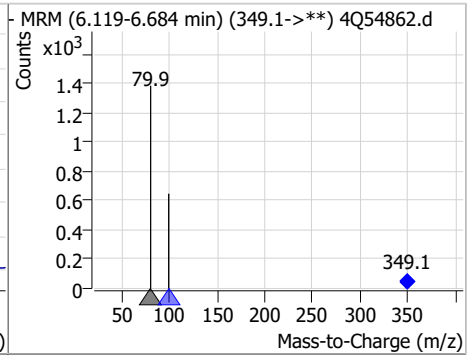




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.12	6.29	0.01	46622	349.1 -> 98.9	44.5	21.1	63.4

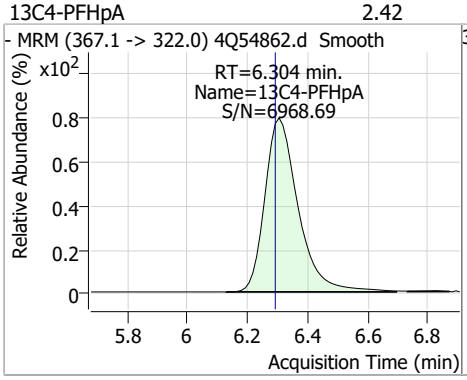


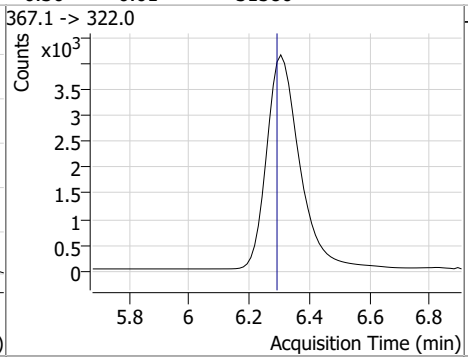


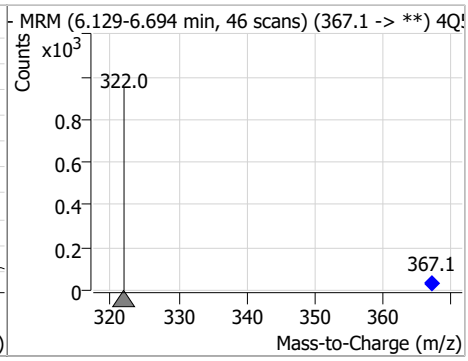


Perfluorinated Compounds by LC/MS/MS

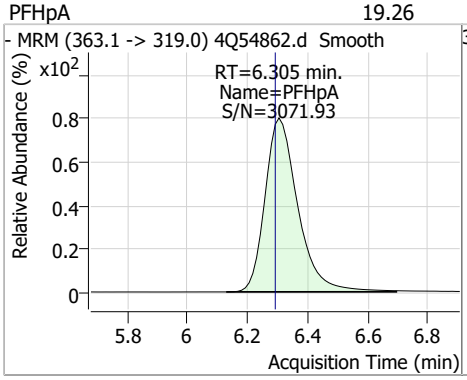
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.30	0.01	31586				

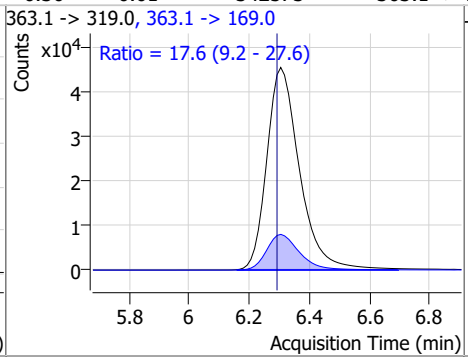


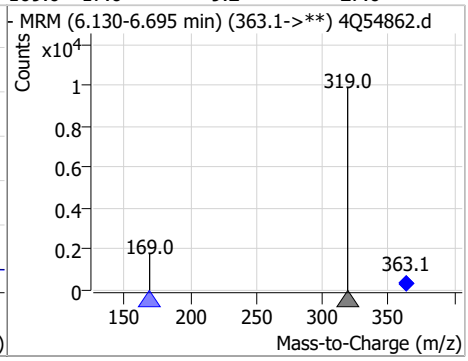




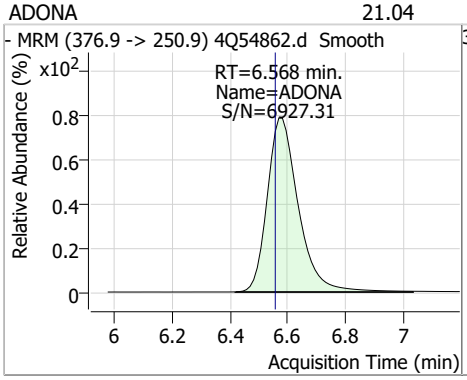
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.26	6.30	0.01	342573	363.1 -> 169.0	17.6	9.2	27.6

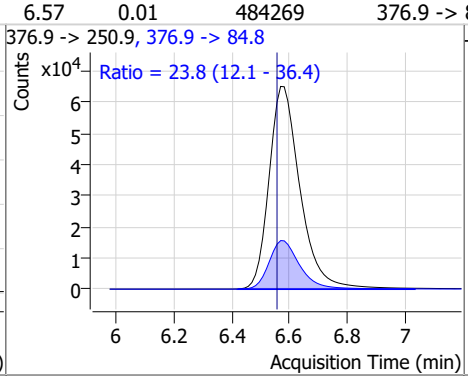


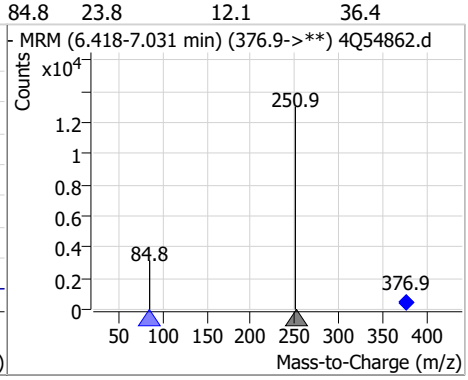




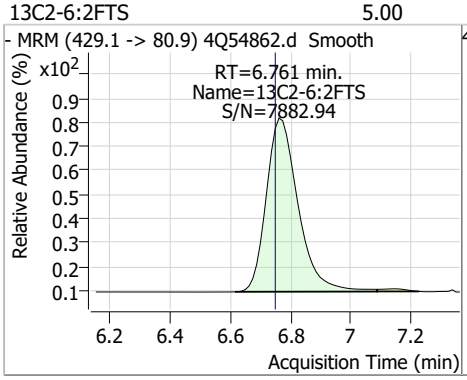
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	21.04	6.57	0.01	484269	376.9 -> 84.8	23.8	12.1	36.4

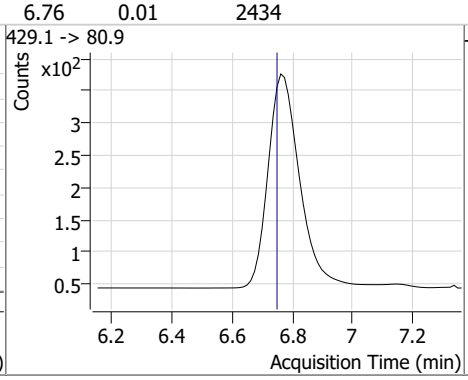


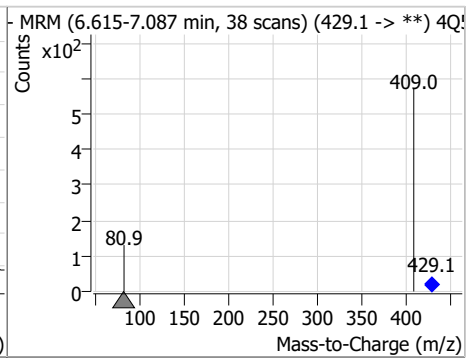




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.00	6.76	0.01	2434				

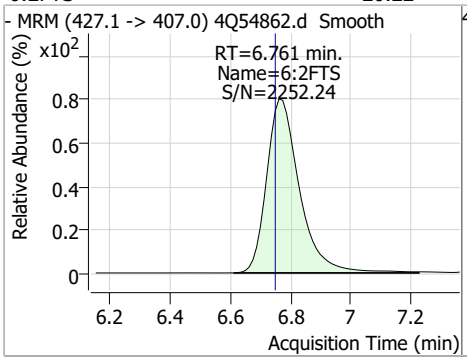


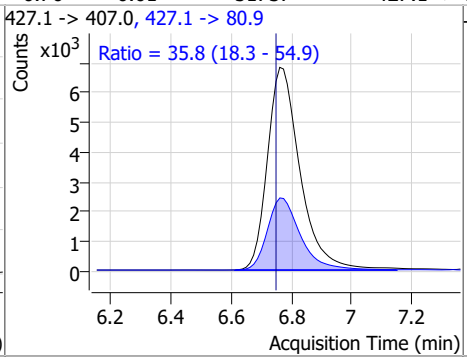


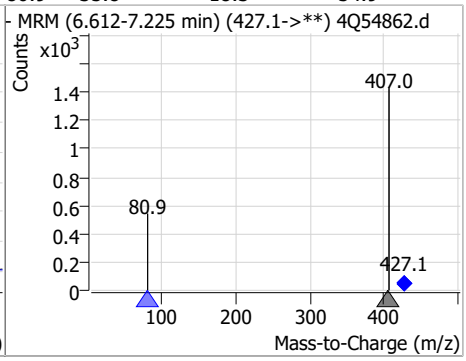


Perfluorinated Compounds by LC/MS/MS

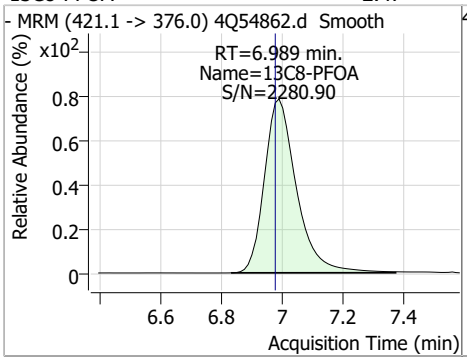
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.22	6.76	0.01	51737	427.1 -> 80.9	35.8	18.3	54.9

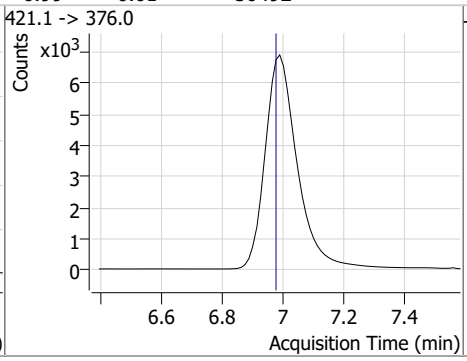


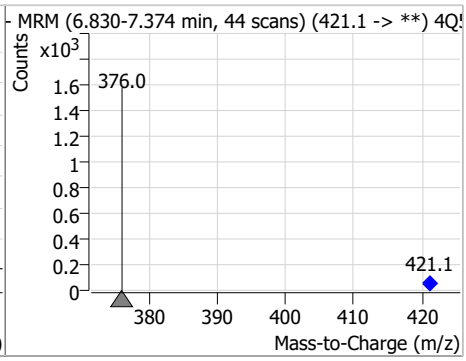




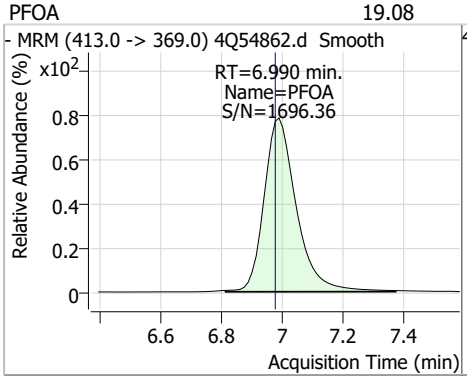
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.47	6.99	0.01	50492				

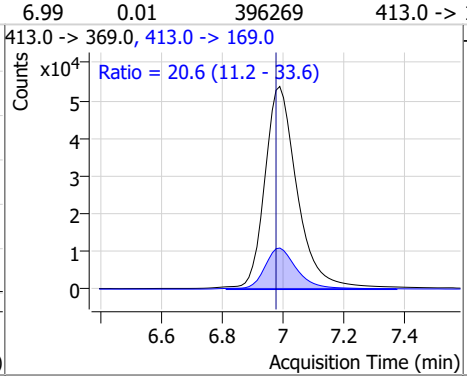


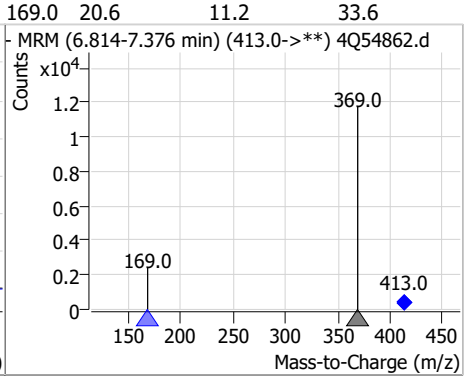




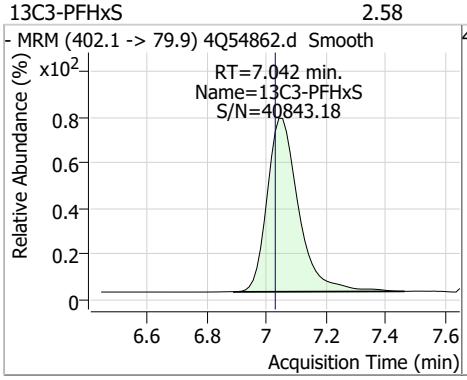
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.08	6.99	0.01	396269	413.0 -> 169.0	20.6	11.2	33.6

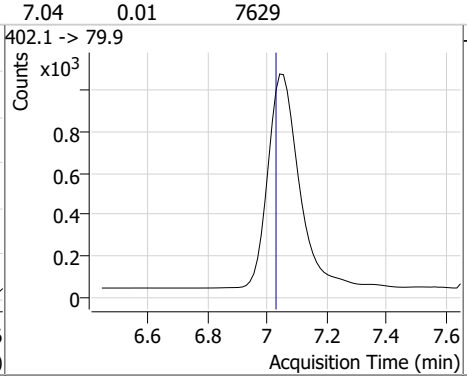


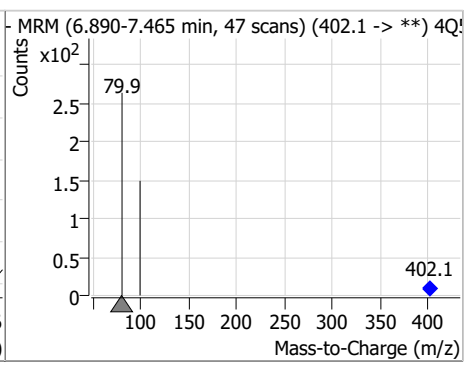




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.58	7.04	0.01	7629				

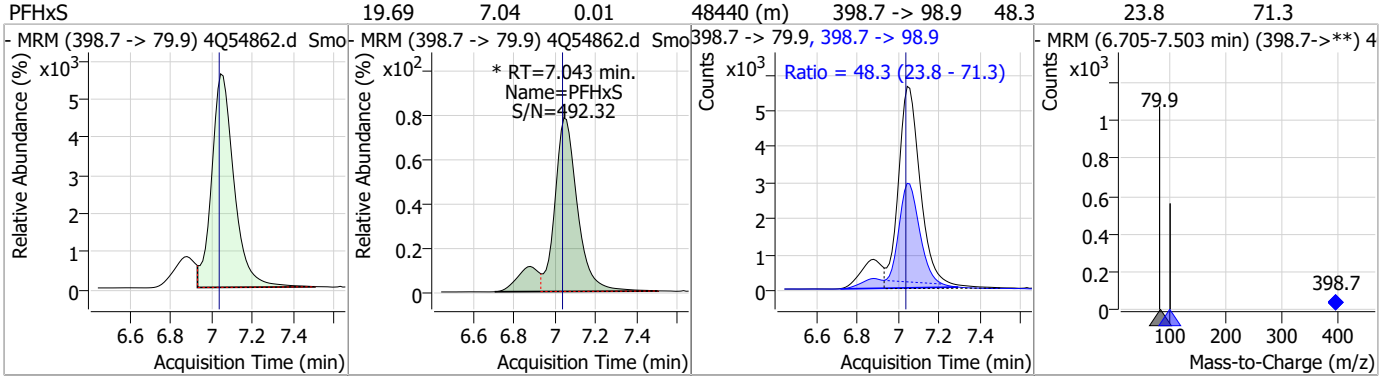




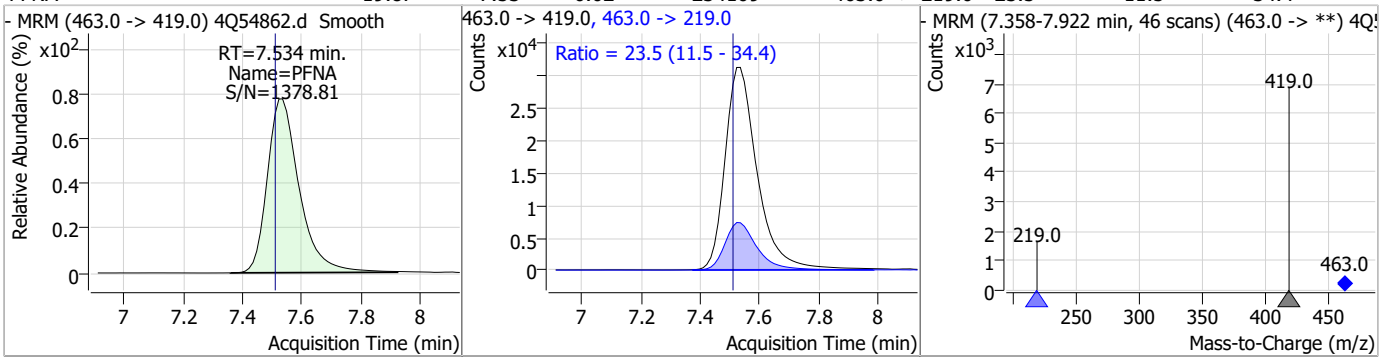


Perfluorinated Compounds by LC/MS/MS

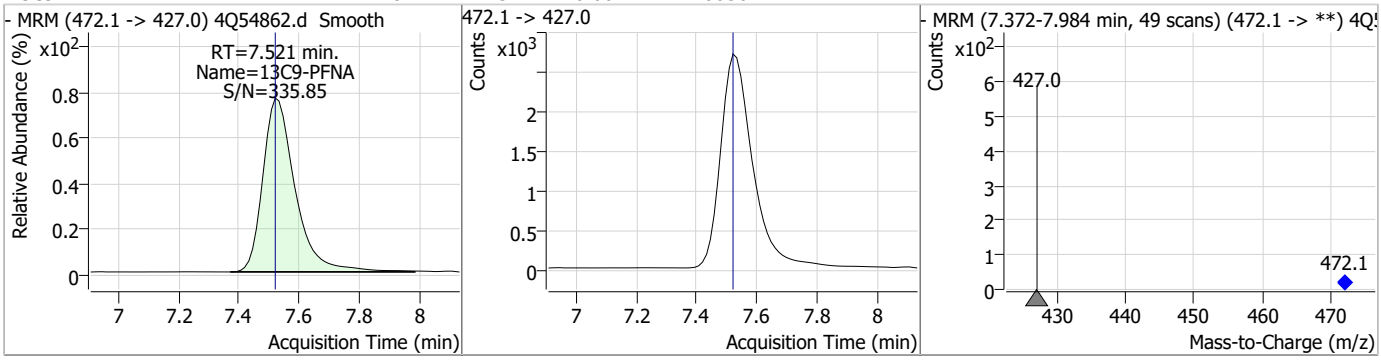
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.69	7.04	0.01	48440 (m)	398.7 -> 98.9	48.3	23.8	71.3



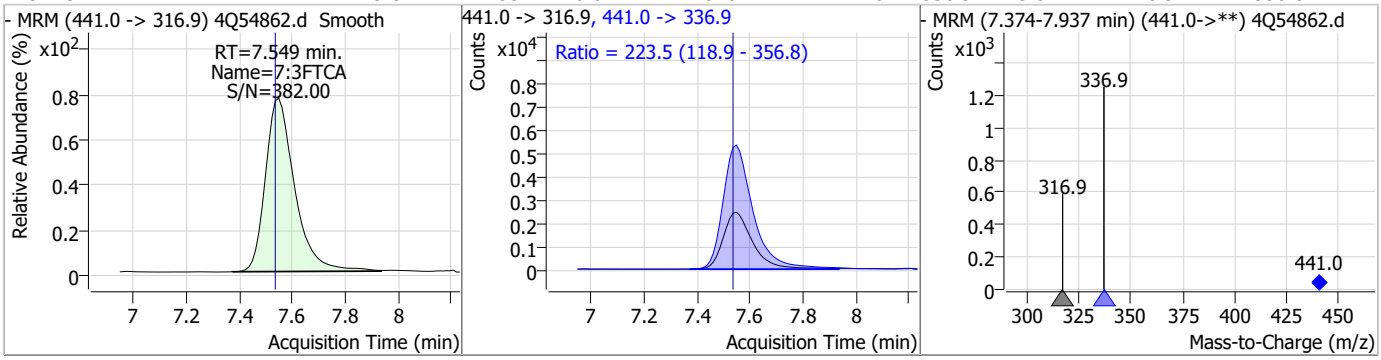
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.87	7.53	0.02	234109	463.0 -> 219.0	23.5	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.28	7.52	0.00	20056				

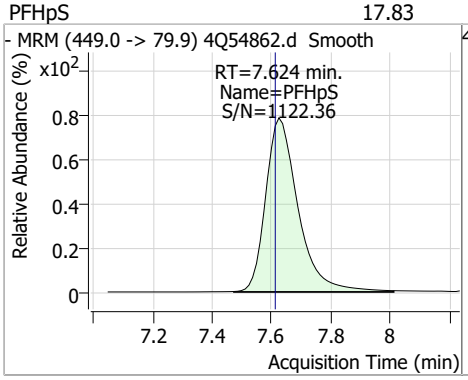


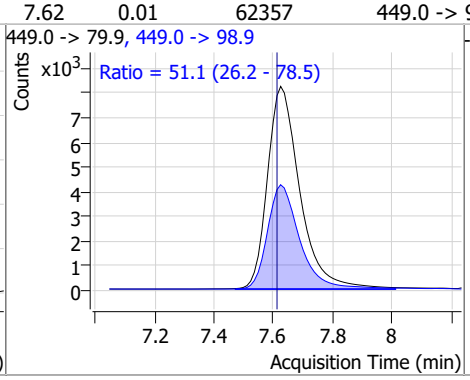
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	19.32	7.55	0.01	18761	441.0 -> 336.9	223.5	118.9	356.8

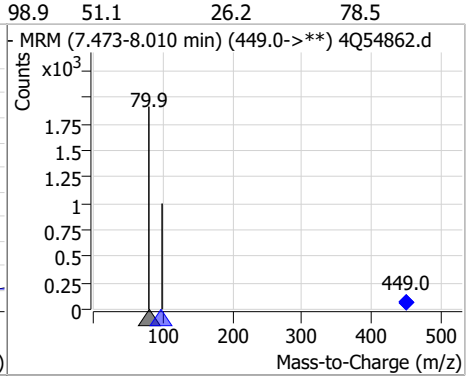


Perfluorinated Compounds by LC/MS/MS

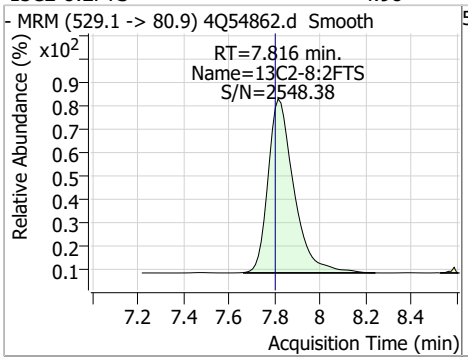
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.83	7.62	0.01	62357	449.0 -> 98.9	51.1	26.2	78.5

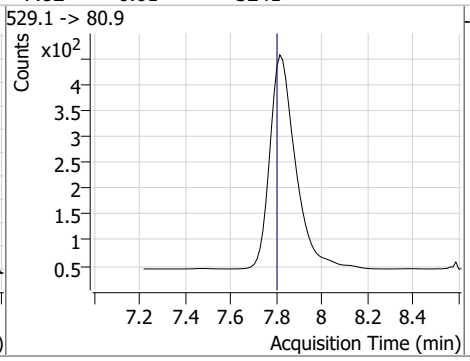


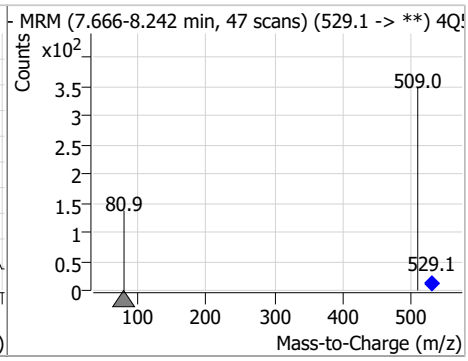




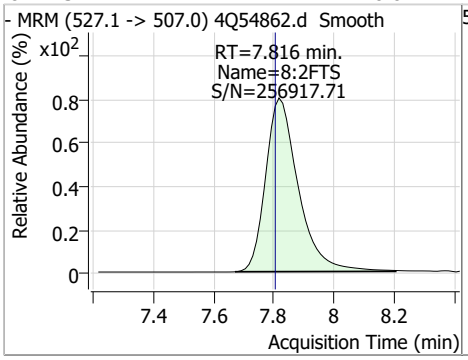
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.98	7.82	0.01	3241				

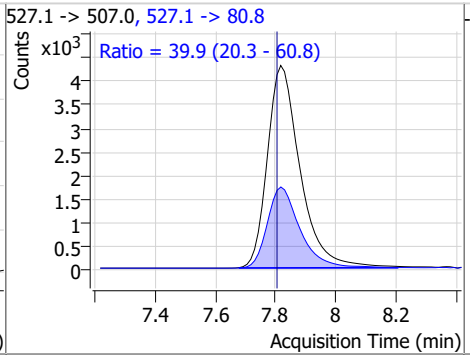


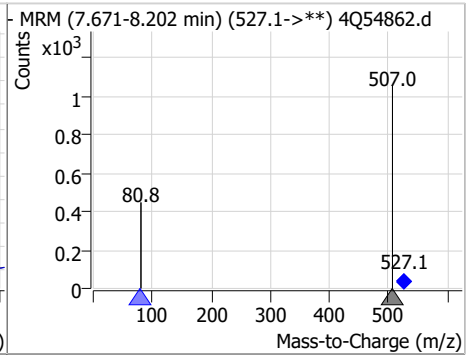




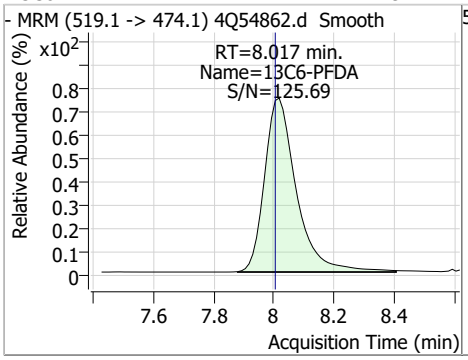
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.84	7.82	0.01	32179	527.1 -> 80.8	39.9	20.3	60.8

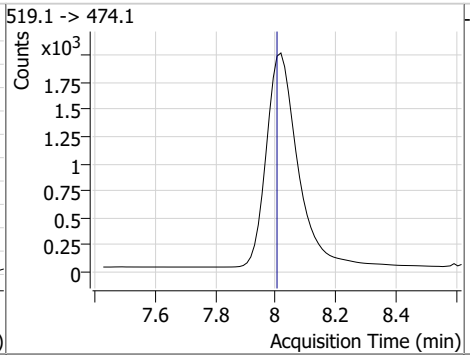


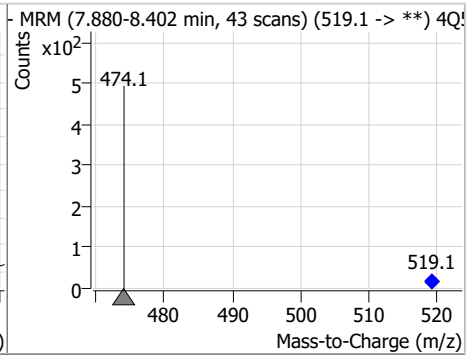




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.29	8.02	0.01	14427				

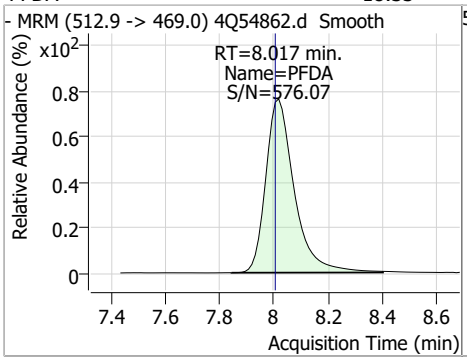


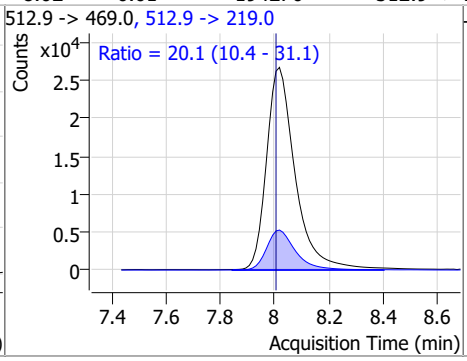


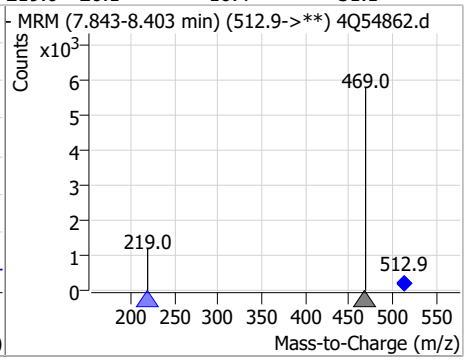


Perfluorinated Compounds by LC/MS/MS

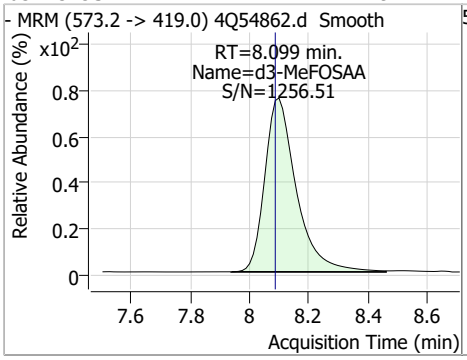
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.33	8.02	0.01	194270	512.9 -> 219.0	20.1	10.4	31.1

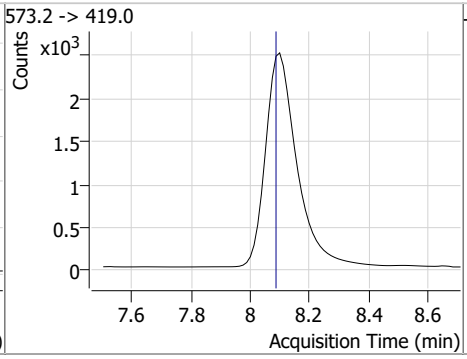


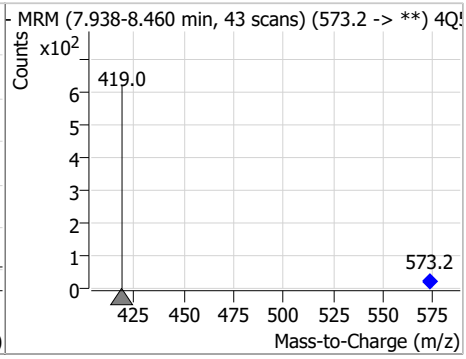




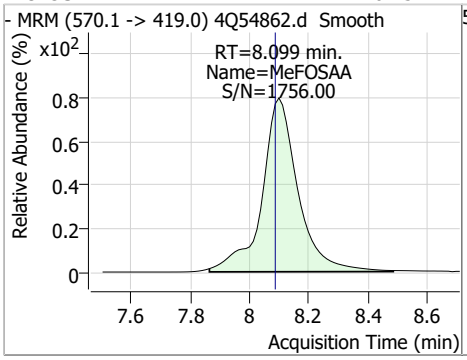
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.94	8.10	0.01	18370				

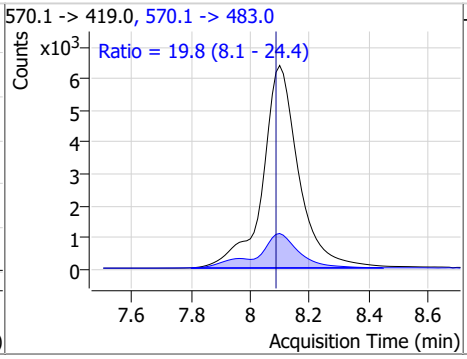


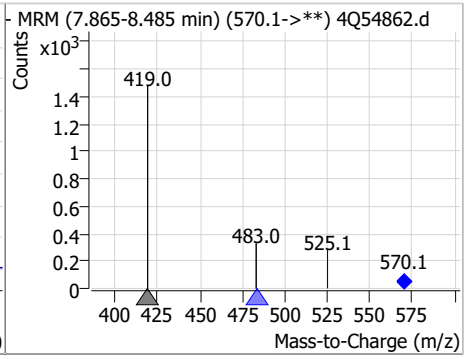




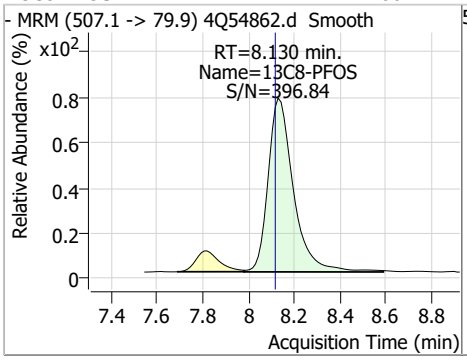
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.45	8.10	0.01	53868	570.1 -> 483.0	19.8	8.1	24.4

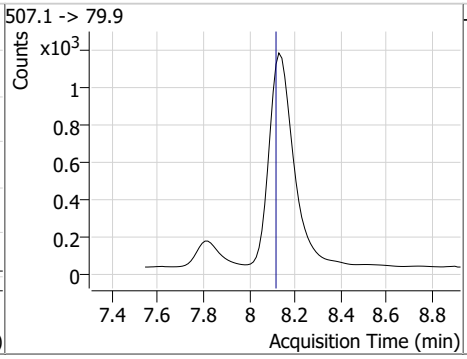


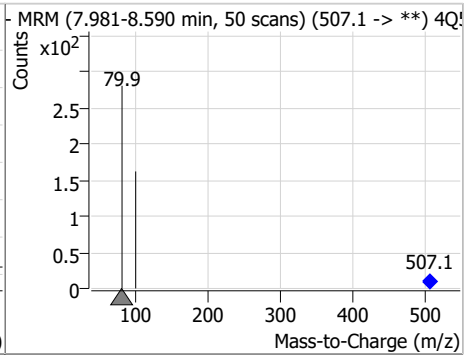




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.60	8.13	0.01	8811				

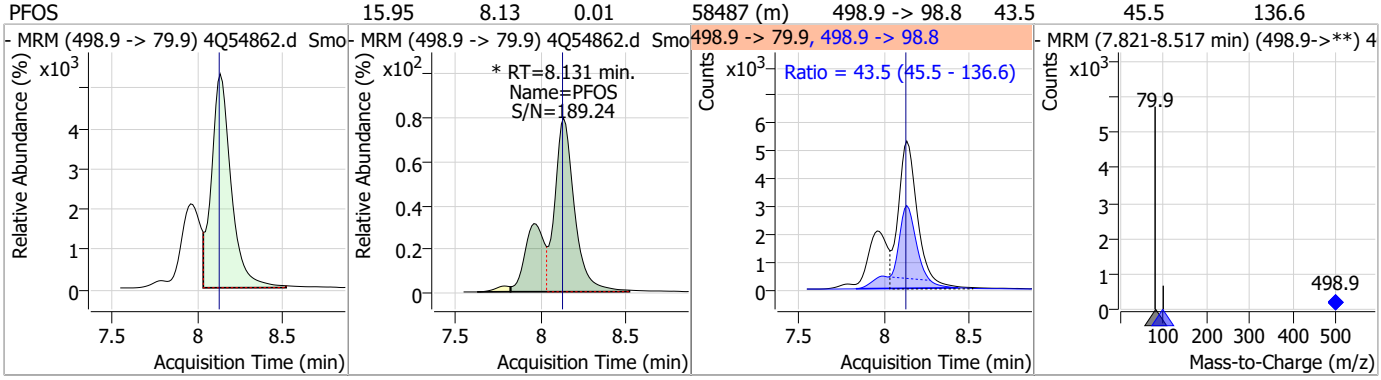




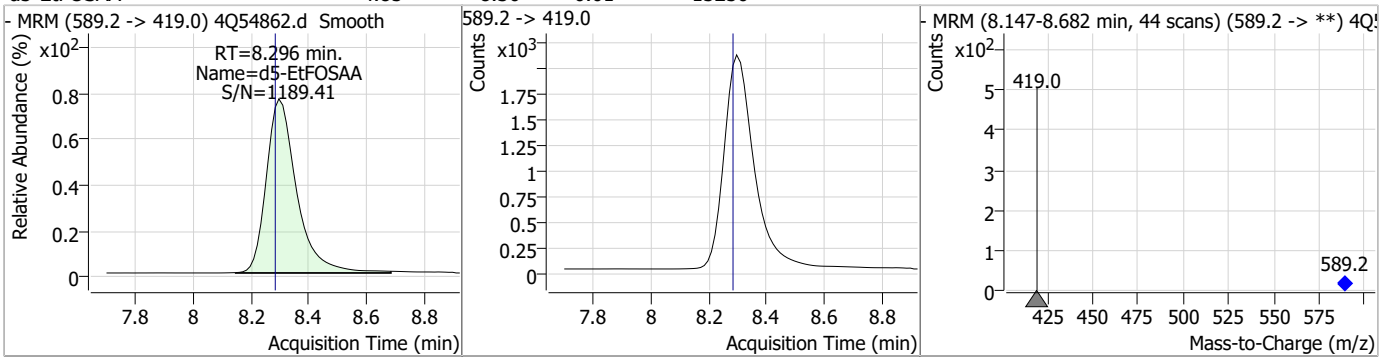


Perfluorinated Compounds by LC/MS/MS

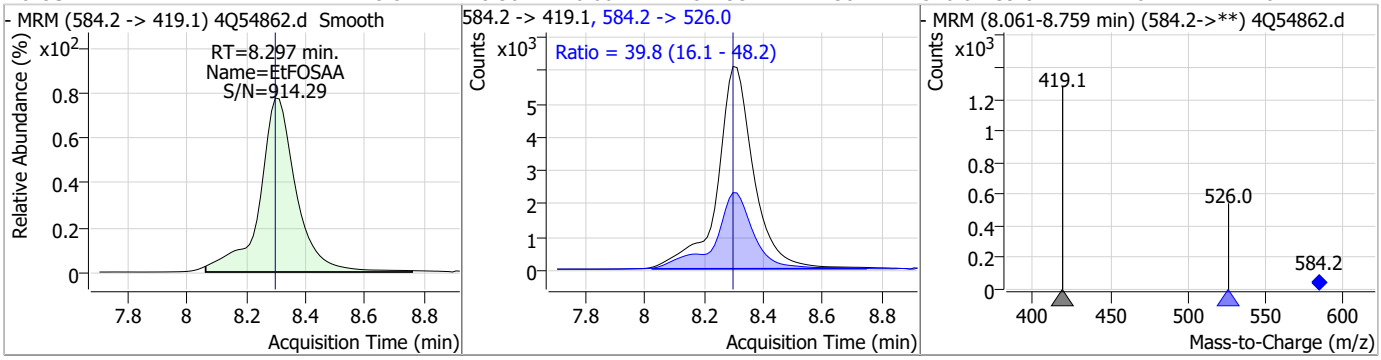
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	15.95	8.13	0.01	58487 (m)	498.9 -> 98.8	43.5	45.5	136.6



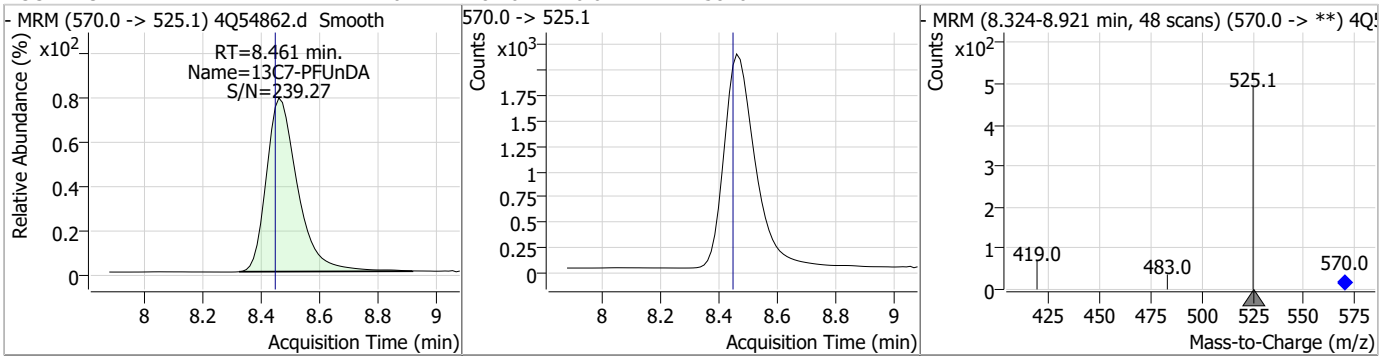
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.85	8.30	0.01	15250				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.87	8.30	0.00	52493	584.2 -> 526.0	39.8	16.1	48.2

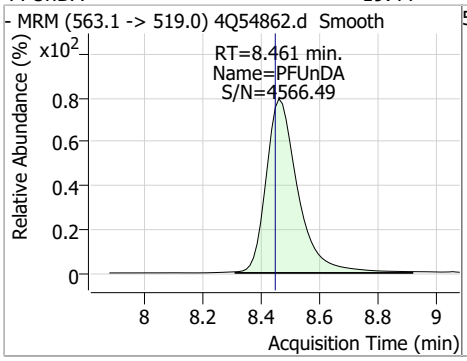


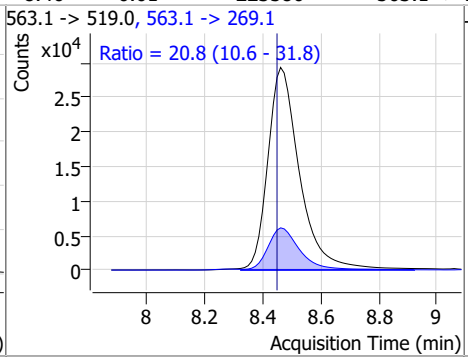
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.20	8.46	0.01	15810				

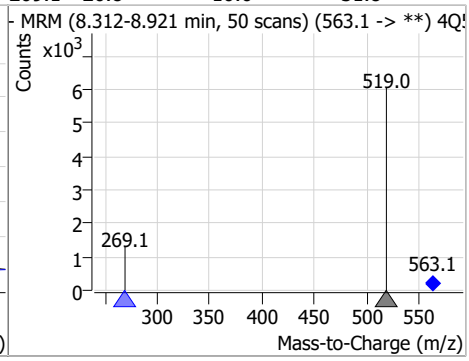


Perfluorinated Compounds by LC/MS/MS

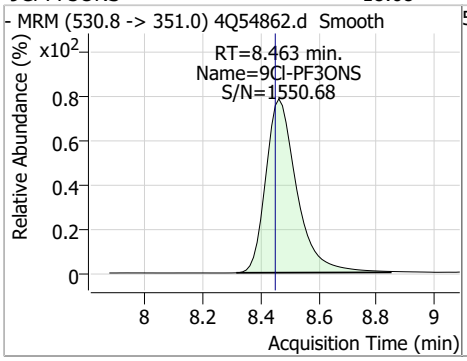
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.44	8.46	0.01	223580	563.1 -> 269.1	20.8	10.6	31.8

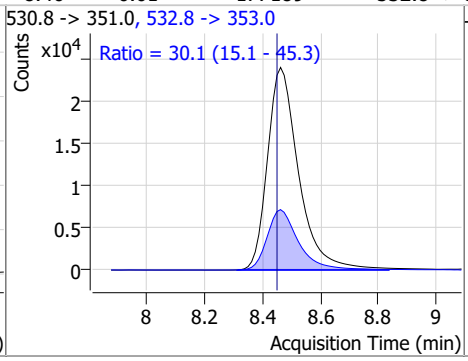


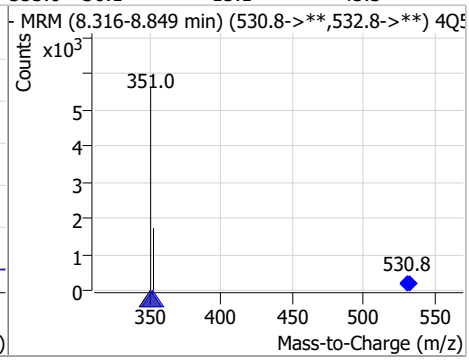




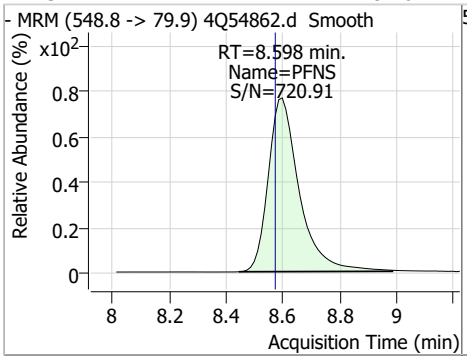
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.68	8.46	0.01	177189	532.8 -> 353.0	30.1	15.1	45.3

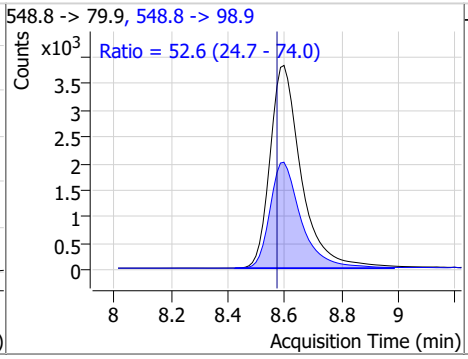


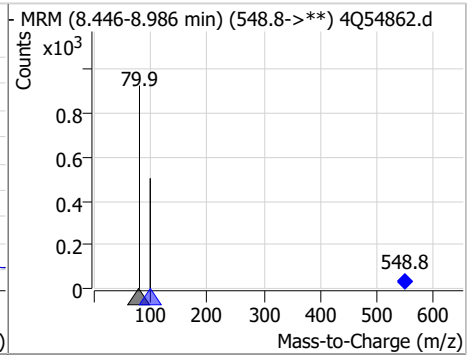




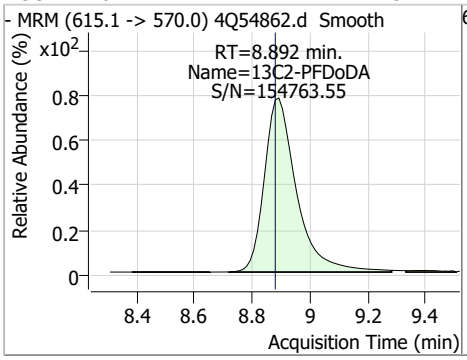
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.10	8.60	0.02	28708	548.8 -> 98.9	52.6	24.7	74.0

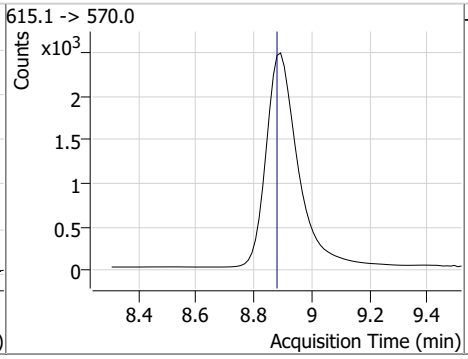


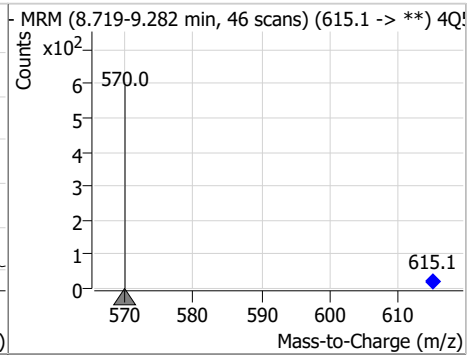




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.23	8.89	0.01	18974				

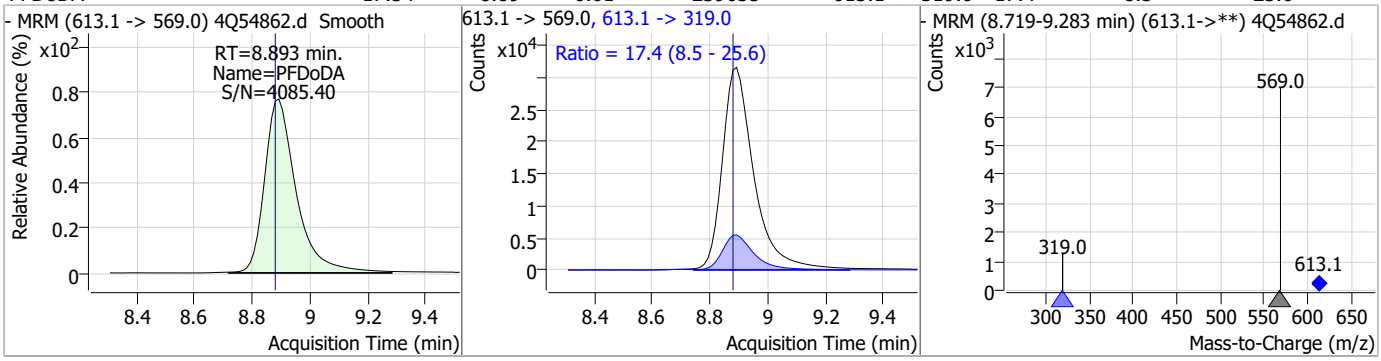




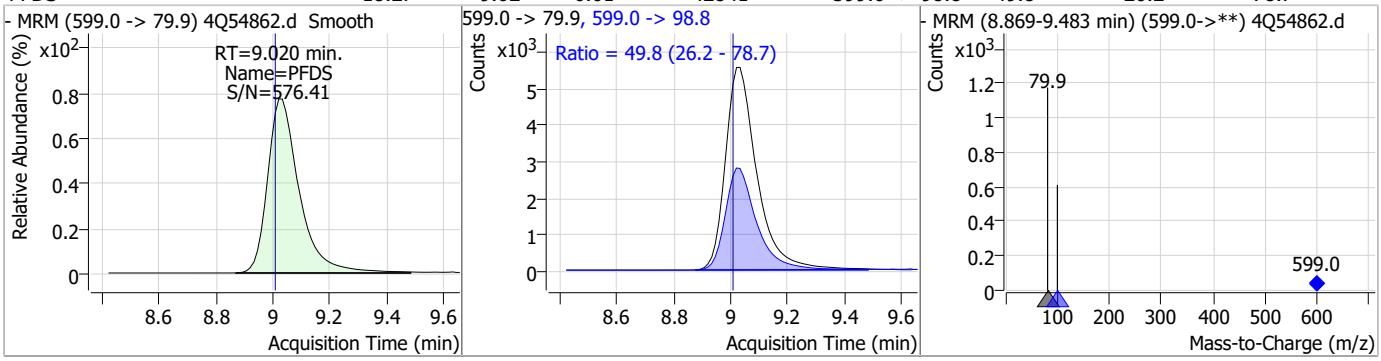


Perfluorinated Compounds by LC/MS/MS

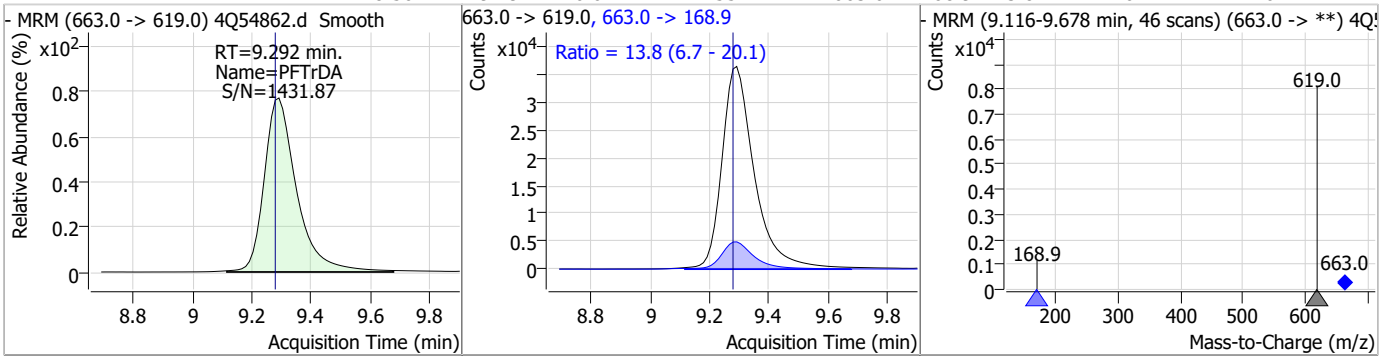
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	17.54	8.89	0.01	239635	613.1 -> 319.0	17.4	8.5	25.6



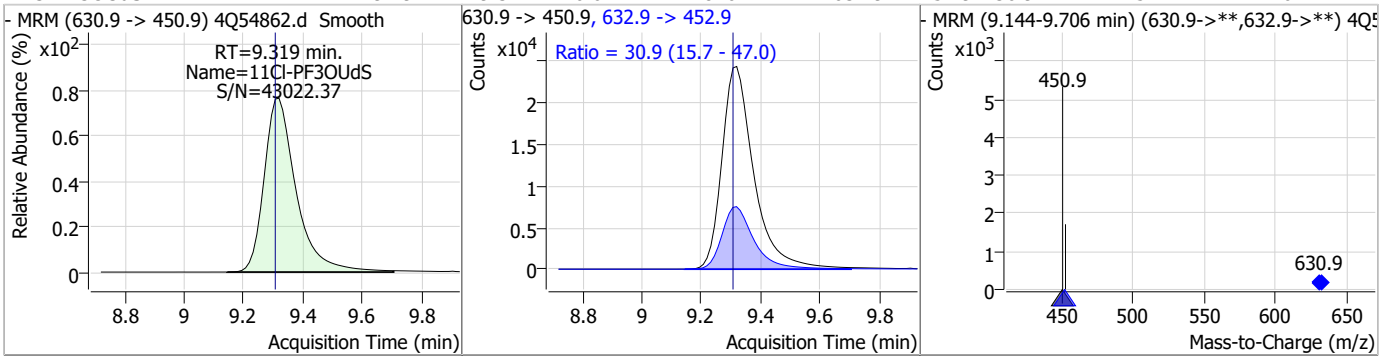
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.27	9.02	0.01	42841	599.0 -> 98.8	49.8	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.56	9.29	0.01	275521	663.0 -> 168.9	13.8	6.7	20.1

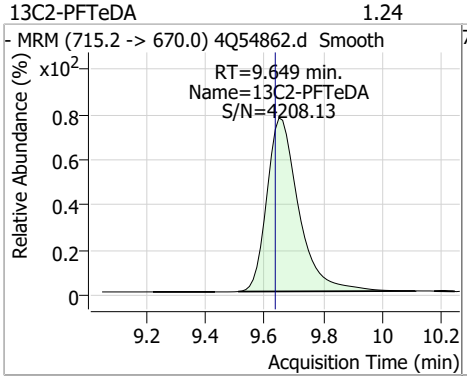


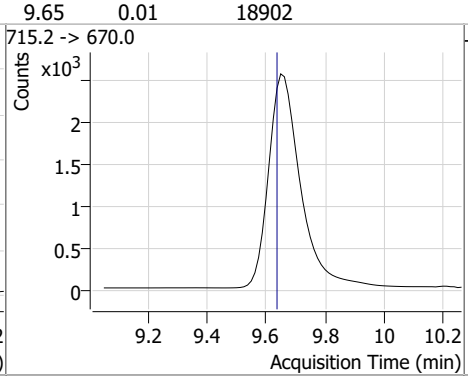
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.29	9.32	0.01	181022	632.9 -> 452.9	30.9	15.7	47.0

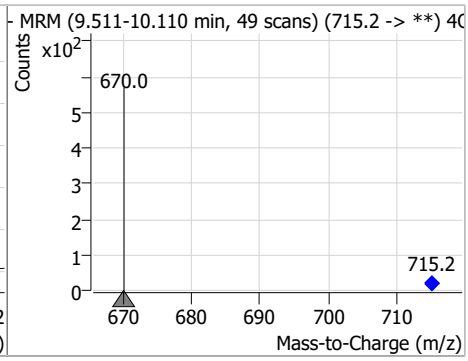


Perfluorinated Compounds by LC/MS/MS

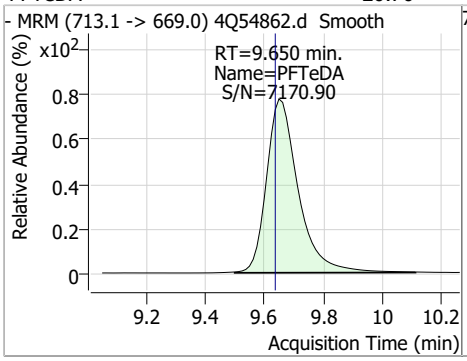
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.24	9.65	0.01	18902				

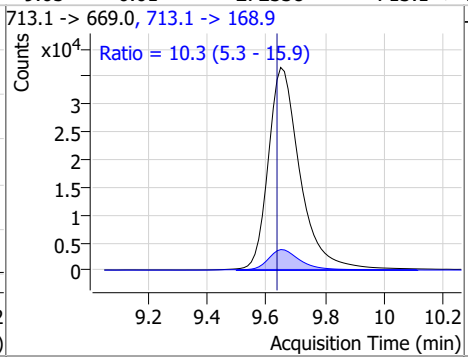


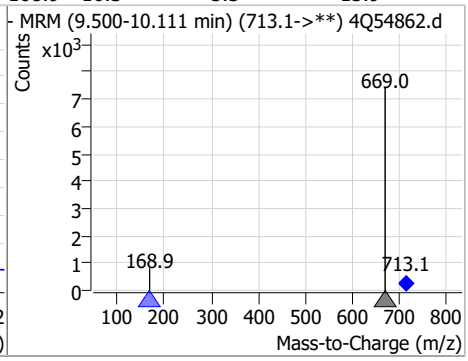




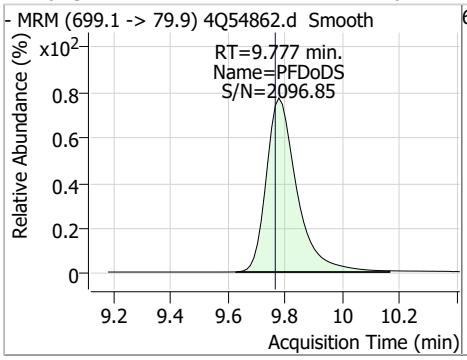
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.70	9.65	0.01	272338	713.1 -> 168.9	10.3	5.3	15.9

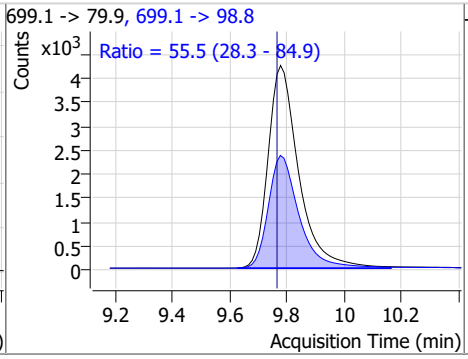


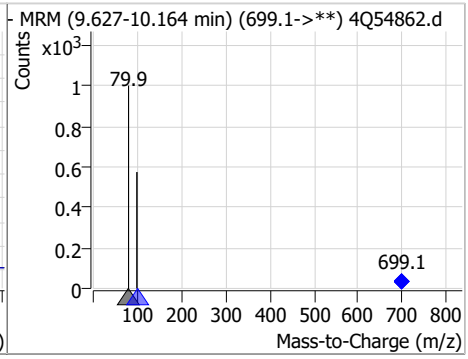




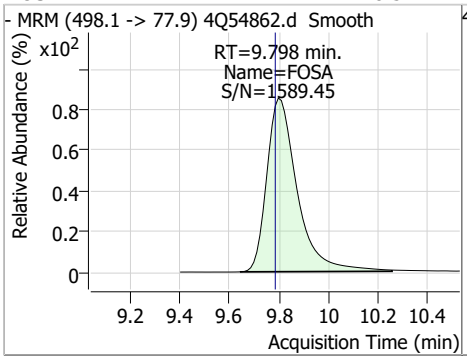
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	17.62	9.78	0.01	31515	699.1 -> 98.8	55.5	28.3	84.9

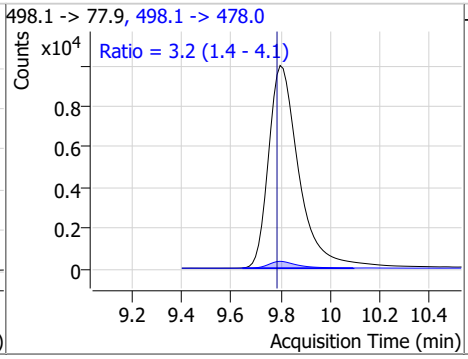


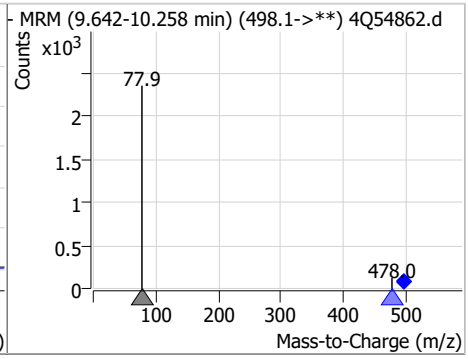




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.54	9.80	0.01	85040	498.1 -> 478.0	3.2	1.4	4.1

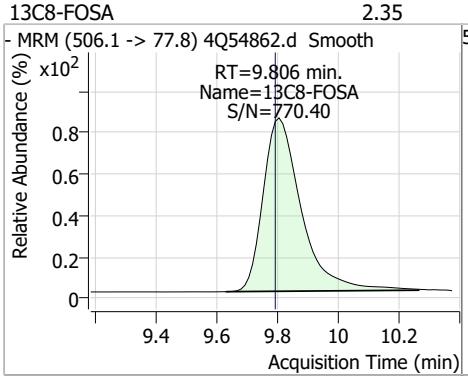


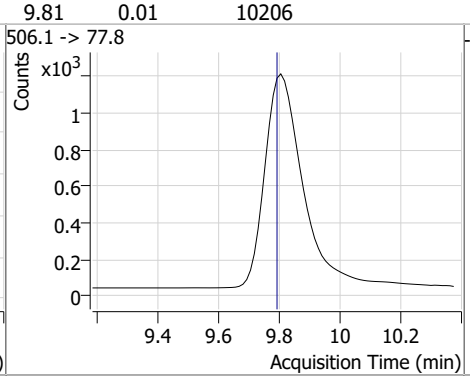


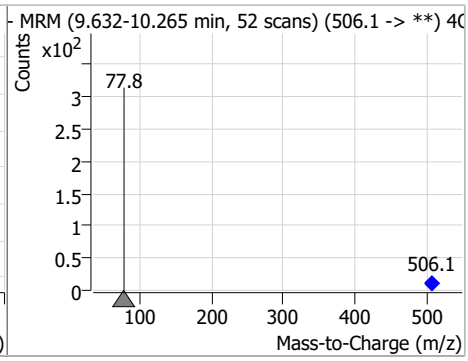


Perfluorinated Compounds by LC/MS/MS

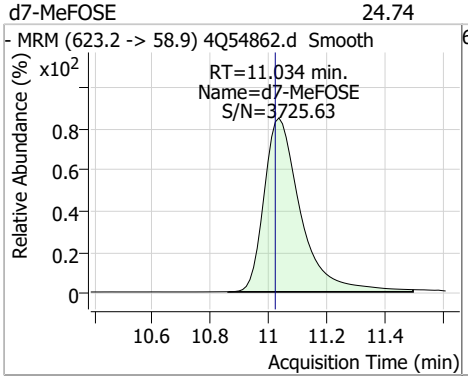
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.35	9.81	0.01	10206				

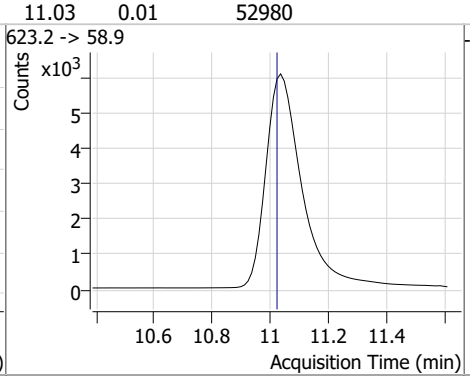


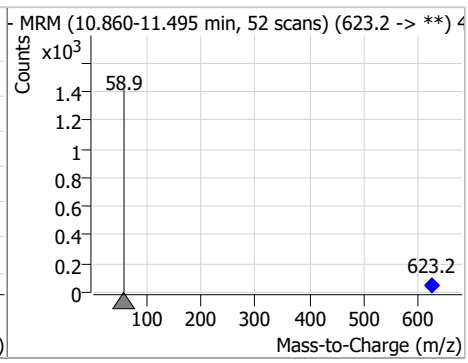




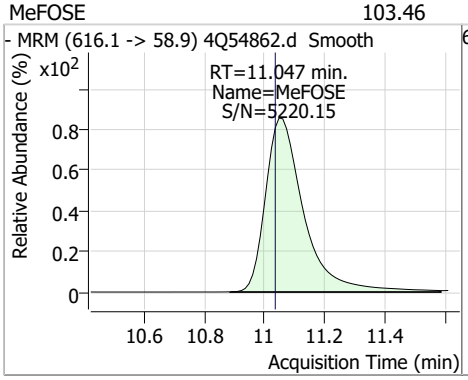
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.74	11.03	0.01	52980				

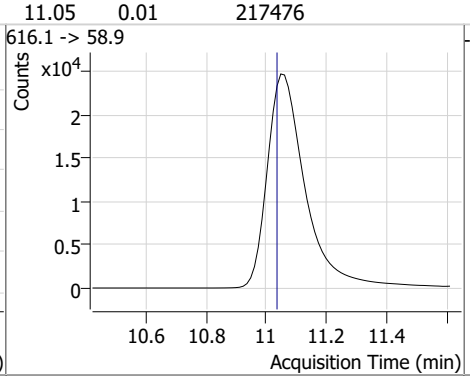


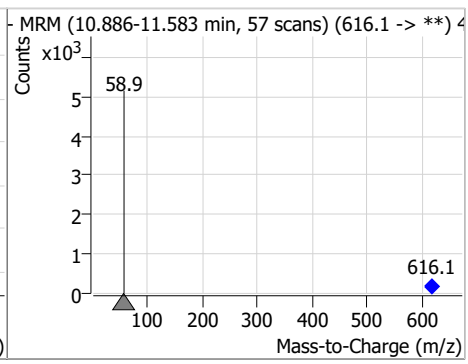




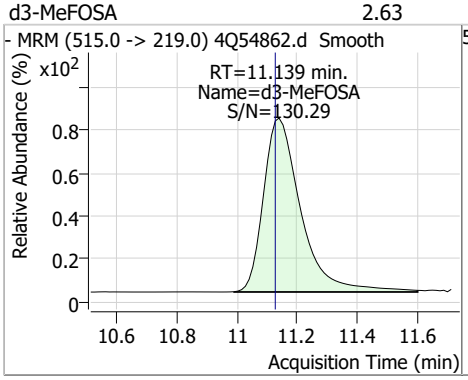
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	103.46	11.05	0.01	217476				

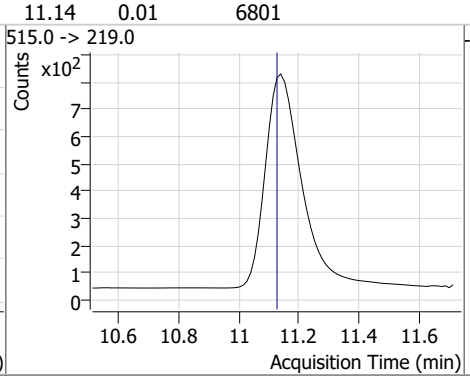


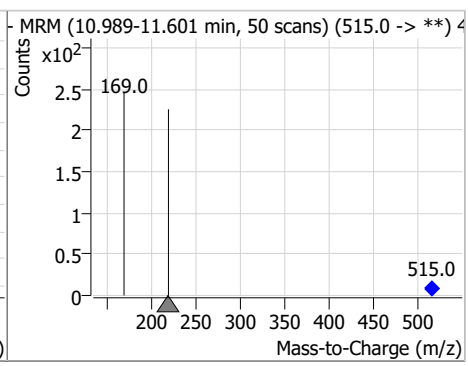




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.63	11.14	0.01	6801				

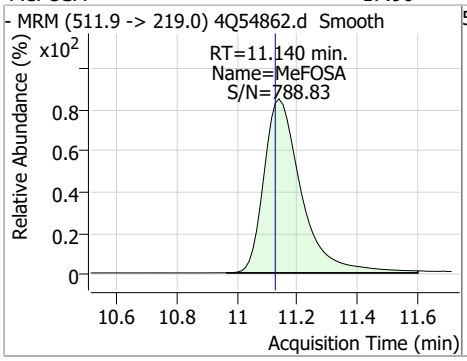


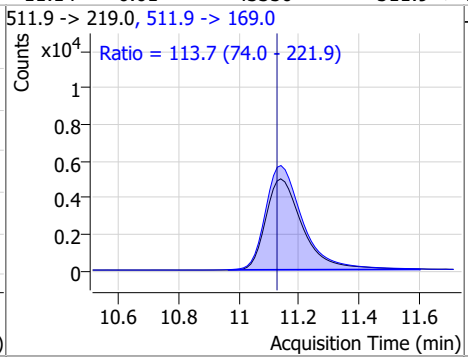


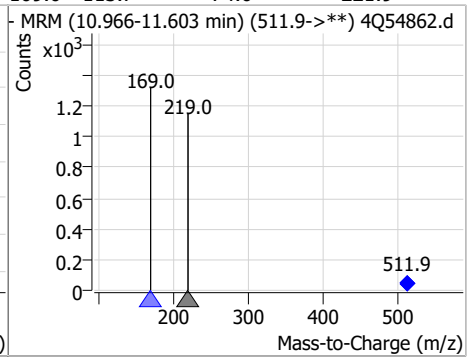


Perfluorinated Compounds by LC/MS/MS

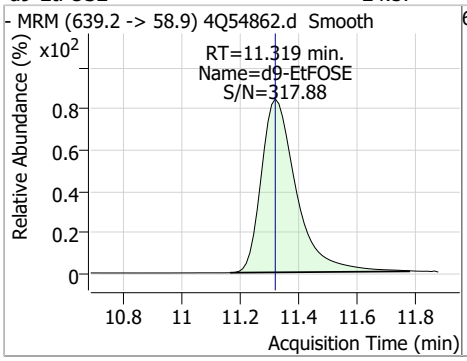
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.90	11.14	0.01	43350	511.9 -> 169.0	113.7	74.0	221.9

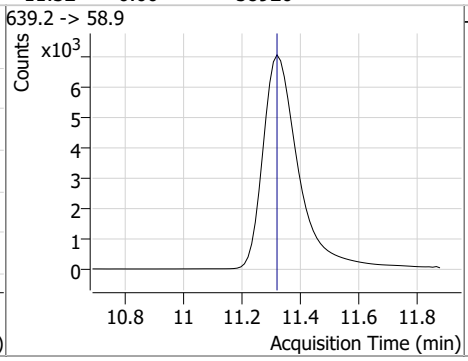


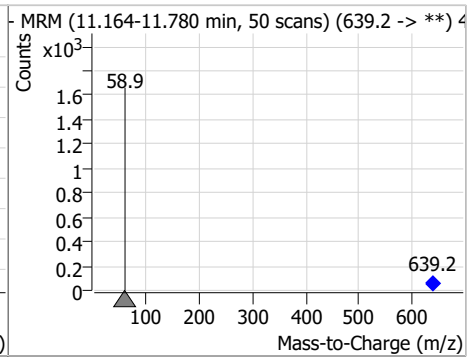




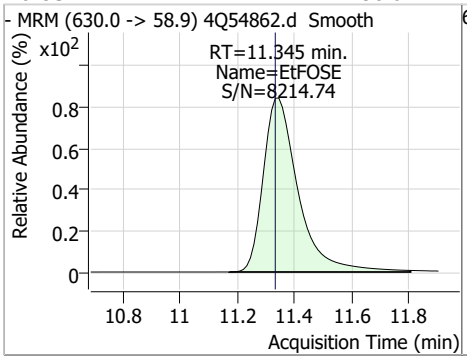
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.57	11.32	0.00	58926				

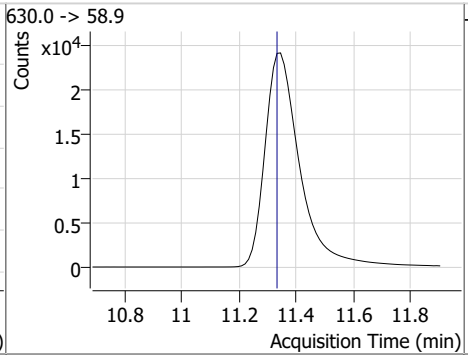


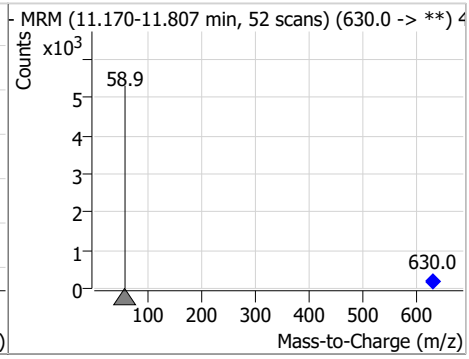




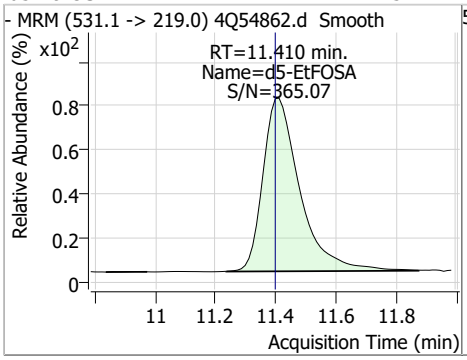
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	98.04	11.34	0.01	204459				

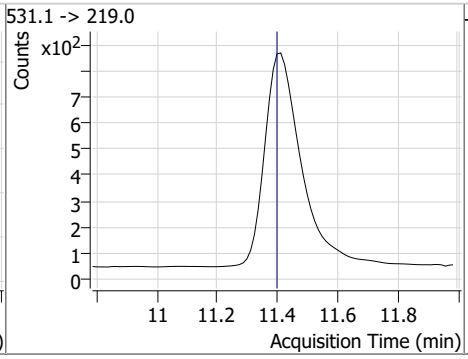


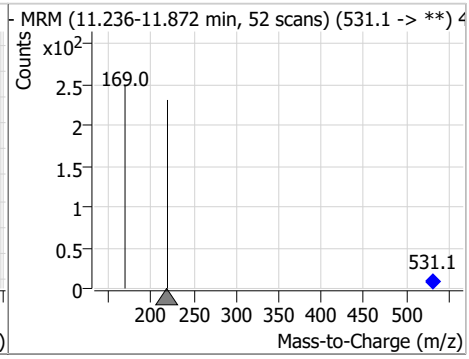




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.45	11.41	0.01	6948				

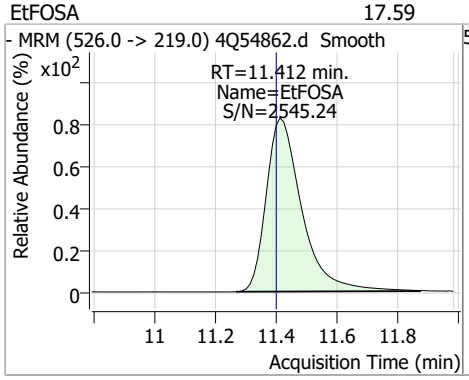


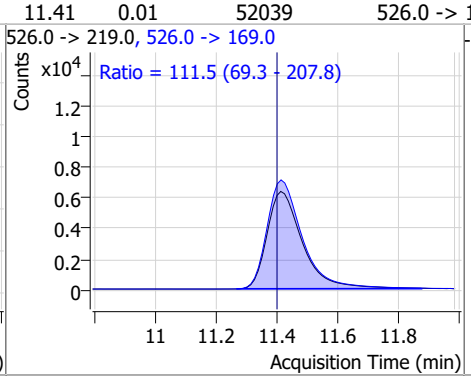


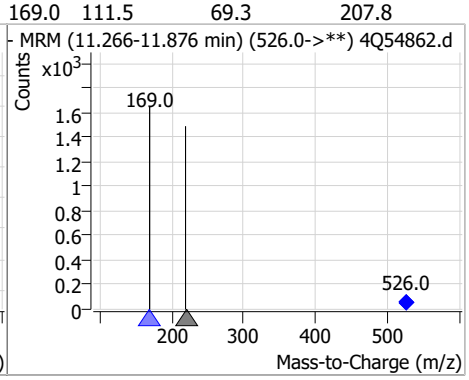


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	17.59	11.41	0.01	52039	526.0 -> 169.0	111.5	69.3	207.8







Manual Integration Approval Summary

Sample Number:	S4Q804-ICV804	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q54862.D	**Analyst approved:**	12/10/23 12:52 Anna Ludwig
Injection Time:	12/08/23 14:05	**Supervisor approved:**	12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.04	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54863.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 2:20:35 PM
Sample Name : cc804-4
Vial : P1-A5
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	105309	10.00	µg/L	0.012
M5-PFPeA	4.187	268.3 -> 223.0	43937	5.00	µg/L	0.025
M5-PFHxA	5.359	318.0 -> 273.0	35543	2.50	µg/L	0.025
M4-PFHpA	6.317	367.1 -> 322.0	33805	2.50	µg/L	0.025
M8-PFOA	6.989	421.1 -> 376.0	55265	2.50	µg/L	0.012
M9-PFNA	7.534	472.1 -> 427.0	21661	1.25	µg/L	0.012
M6-PFDA	8.017	519.1 -> 474.1	14711	1.25	µg/L	0.013
M7-PFUnDA	8.461	570.0 -> 525.1	17591	1.25	µg/L	0.012
M2-PFDoDA	8.892	615.1 -> 570.0	19935	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	20155	1.25	µg/L	0.025
M8-FOSA	9.806	506.1 -> 77.8	11643	2.50	µg/L	0.012
M3-PFBS	5.215	302.1 -> 79.9	9589	2.50	µg/L	0.025
M3-PFHxS	7.054	402.1 -> 79.9	8054	2.50	µg/L	0.025
M8-PFOS	8.130	507.1 -> 79.9	8614	2.50	µg/L	0.012
M2-4:2FTS	5.071	329.1 -> 80.9	1093	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2584	5.00	µg/L	0.025
M2-8:2FTS	7.816	529.1 -> 80.9	3400	5.00	µg/L	0.012
M3-MeFOSAA	8.099	573.2 -> 419.0	20198	5.00	µg/L	0.012
M3-HFPO-DA	5.714	286.9 -> 168.9	34368	10.00	µg/L	0.025
M5-EtFOSAA	8.296	589.2 -> 419.0	16724	5.00	µg/L	0.012
M7-MeFOSE	11.034	623.2 -> 58.9	54021	25.00	µg/L	0.012
M9-EtFOSE	11.319	639.2 -> 58.9	61184	25.00	µg/L	0.000
M5-EtFOSA	11.410	531.1 -> 219.0	6988	2.50	µg/L	0.012
M3-MeFOSA	11.139	515.0 -> 219.0	6601	2.50	µg/L	0.012
13C4-PFOS	8.130	502.8 -> 79.9	7117	2.50	µg/L	0.012
13C3-PFBA	2.691	216.0 -> 172.0	50694	5.00	µg/L	0.013
18O2-PFHxS	7.054	403.0 -> 83.9	5111	2.50	µg/L	0.013
13C4-PFOA	6.989	417.1 -> 372.0	60953	2.50	µg/L	0.012
13C2-PFDA	8.017	515.1 -> 470.1	15943	1.25	µg/L	0.013
13C5-PFNA	7.534	468.0 -> 423.0	22252	1.25	µg/L	0.025
13C2-PFHxA	5.360	315.1 -> 270.0	38783	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	1093	4.50	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2584	4.91	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C2-8:2FTS	7.816	529.1 -> 80.9	3400	4.83	µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-PFDoDA	8.892	615.1 -> 570.0	19935	1.25	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-PFTeDA	9.662	715.2 -> 670.0	20155	1.27	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-PFBS	5.215	302.1 -> 79.9	9589	2.45	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C3-PFHxS	7.054	402.1 -> 79.9	8054	2.51	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C4-PFBA	2.686	216.8 -> 171.9	105309	9.89 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C4-PFHpA	6.317	367.1 -> 322.0	33805	2.47 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C5-PFHxA	5.359	318.0 -> 273.0	35543	2.49 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C5-PFPeA	4.187	268.3 -> 223.0	43937	4.94 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C6-PFDA	8.017	519.1 -> 474.1	14711	1.27 µg/L		0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C7-PFUnDA	8.461	570.0 -> 525.1	17591	1.29 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C8-FOSA	9.806	506.1 -> 77.8	11643	2.52 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C8-PFOA	6.989	421.1 -> 376.0	55265	2.45 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C8-PFOS	8.130	507.1 -> 79.9	8614	2.39 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C9-PFNA	7.534	472.1 -> 427.0	21661	1.21 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.2%		
d3-MeFOSAA	8.099	573.2 -> 419.0	20198	5.11 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-HFPO-DA	5.714	286.9 -> 168.9	34368	9.63 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
d3-MeFOSA	11.139	515.0 -> 219.0	6601	2.40 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.0%		
d5-EtFOSAA	8.296	589.2 -> 419.0	16724	5.00 µg/L		0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
d7-MeFOSE	11.034	623.2 -> 58.9	54021	23.74 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
d9-EtFOSE	11.319	639.2 -> 58.9	61184	24.01 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
d5-EtFOSA	11.410	531.1 -> 219.0	6988	2.32 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%		
Target Compounds						QValue
4:2FTS	5.072	327.1 -> 307.0	18341	9.75 µg/L		97
		327.1 -> 80.9	7498			
6:2FTS	6.774	427.1 -> 407.0	24730	9.11 µg/L		97
		427.1 -> 80.9	8651			
8:2FTS	7.816	527.1 -> 507.0	17227	9.61 µg/L		99
		527.1 -> 80.8	7072			
EtFOSAA	8.310	584.2 -> 419.1	6616	2.17 µg/L	m	79
		584.2 -> 526.0	2914			
FOSA	9.798	498.1 -> 77.9	12078	2.31 µg/L		98
		498.1 -> 478.0	400			
MeFOSAA	8.099	570.1 -> 419.0	7124	2.46 µg/L		87
		570.1 -> 483.0	1565			
PFBA	2.695	212.8 -> 168.9	31624	9.38 µg/L		100
PFBS	5.216	298.7 -> 79.9	6221	2.09 µg/L		97
		298.7 -> 98.8	2407			
PFDA	8.017	512.9 -> 469.0	24588	2.28 µg/L		99
		512.9 -> 219.0	5153			
PFDoDA	8.893	613.1 -> 569.0	35195	2.45 µg/L		100
		613.1 -> 319.0	5967			
PFDS	9.032	599.0 -> 79.9	5411	2.36 µg/L		89

Perfluorinated Compounds by LC/MS/MS

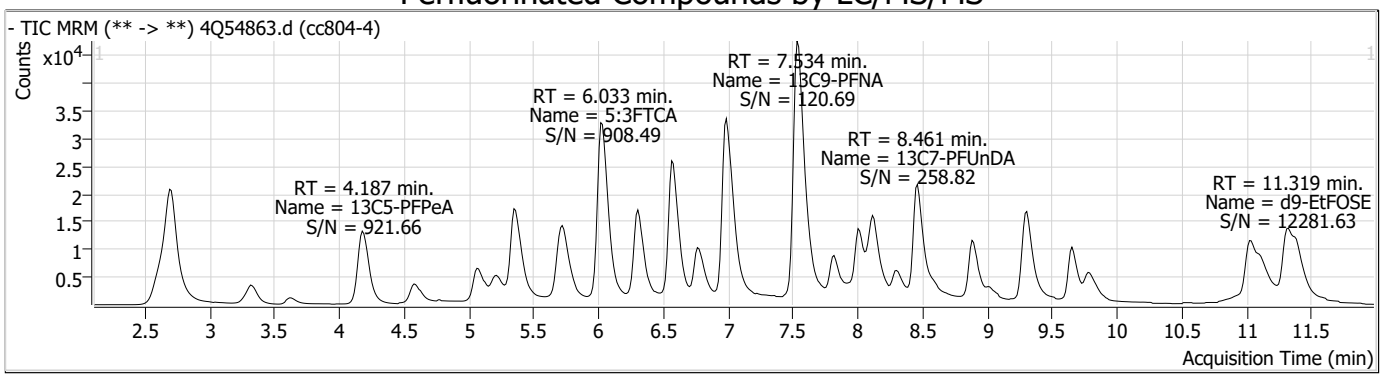
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2424				
PFHpA	6.317	363.1 -> 319.0	43986	2.31	µg/L		99
		363.1 -> 169.0	7917				
PFHpS	7.624	449.0 -> 79.9	8328	2.44	µg/L		99
		449.0 -> 98.9	4306				
PFHxA	5.362	313.0 -> 269.0	24751	2.18	µg/L		100
		313.0 -> 118.9	691				
PFHxS	7.055	398.7 -> 79.9	5590	2.15	µg/L	m	97
		398.7 -> 98.9	2776				
PFNA	7.534	463.0 -> 419.0	28899	2.27	µg/L		99
		463.0 -> 219.0	6529				
PFNS	8.598	548.8 -> 79.9	3810	2.59	µg/L		81
		548.8 -> 98.9	2385				
PFOA	6.990	413.0 -> 369.0	52599	2.31	µg/L		95
		413.0 -> 169.0	10498				
PFOS	8.131	498.9 -> 79.9	7783	2.17	µg/L	m	55
		498.9 -> 98.8	3785				
PFPeA	4.189	263.0 -> 219.0	39689	4.59	µg/L		100
PFPeS	6.307	349.1 -> 79.9	5454	2.23	µg/L		96
		349.1 -> 98.9	2439				
PFTeDA	9.650	713.1 -> 669.0	31380	2.24	µg/L		99
		713.1 -> 168.9	3461				
PFTrDA	9.292	663.0 -> 619.0	38216	2.45	µg/L		98
		663.0 -> 168.9	5384				
PFUnDA	8.461	563.1 -> 519.0	30739	2.40	µg/L		97
		563.1 -> 269.1	6930				
11Cl-PF3OUdS	9.319	630.9 -> 450.9	42309	4.47	µg/L		99
		632.9 -> 452.9	13544				
9Cl-PF3ONS	8.463	530.8 -> 351.0	45852	4.79	µg/L		99
		532.8 -> 353.0	13536				
ADONA	6.581	376.9 -> 250.9	112106	4.83	µg/L		99
		376.9 -> 84.8	27566				
HFPO-DA	5.715	284.9 -> 168.9	15523	4.72	µg/L		99
		284.9 -> 184.9	1427				
3:3FTCA	3.630	241.0 -> 177.0	5994	11.18	µg/L		99
		241.0 -> 117.0	519				
5:3FTCA	6.033	341.0 -> 237.1	116305	57.49	µg/L		99
		341.0 -> 217.0	82451				
7:3FTCA	7.549	441.0 -> 316.9	61291	57.78	µg/L		97
		441.0 -> 336.9	149045				
EtFOSA	11.412	526.0 -> 219.0	14505	4.88	µg/L		99
		526.0 -> 169.0	20196				
EtFOSE	11.332	630.0 -> 58.9	25226	11.65	µg/L		100
MeFOSA	11.128	511.9 -> 219.0	11148	4.74	µg/L	m	98
		511.9 -> 169.0	16237				
MeFOSE	11.047	616.1 -> 58.9	25666	11.97	µg/L		100
PFDoDS	9.777	699.1 -> 79.9	4166	2.38	µg/L		97
		699.1 -> 98.8	2268				
NFDHA	5.241	295.0 -> 201.0	3746	4.66	µg/L		96
		295.0 -> 84.9	906				
PFMBA	4.591	279.0 -> 85.1	22216	4.67	µg/L		100
PFMPA	3.332	229.0 -> 84.9	24047	4.60	µg/L		100
PFEESA	5.747	314.8 -> 134.9	34736	4.14	µg/L		99
		314.8 -> 82.9	1231				

 # = Qualifier out of range, m = manually integrated, + = Area summed

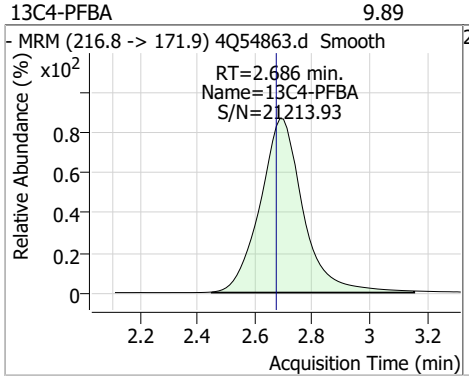
Perfluorinated Compounds by LC/MS/MS

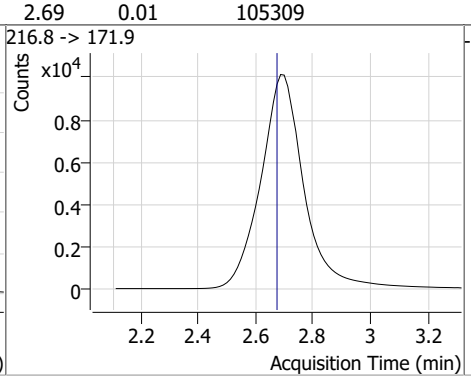
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

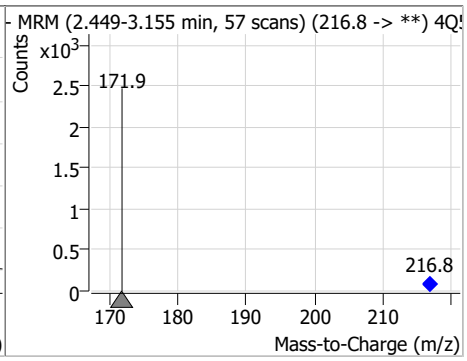
Perfluorinated Compounds by LC/MS/MS



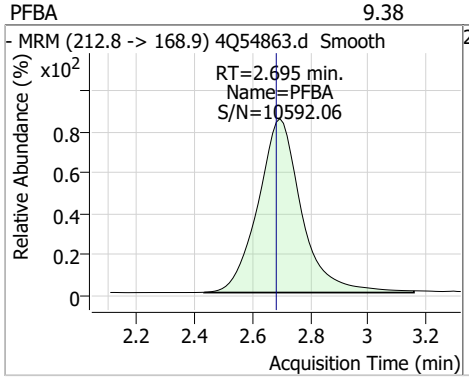
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.89	2.69	0.01	105309				

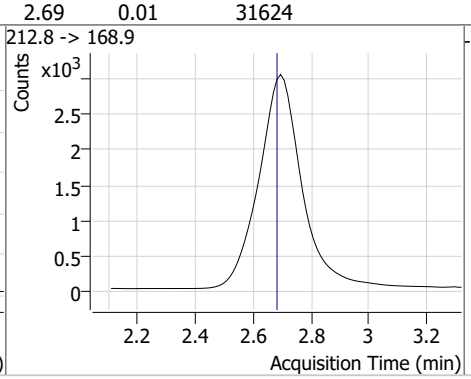


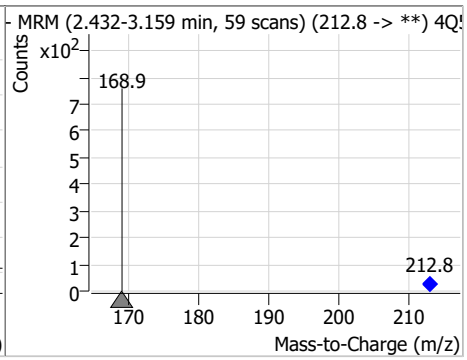




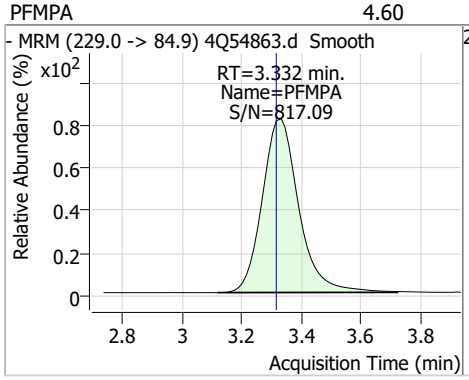
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.38	2.69	0.01	31624				

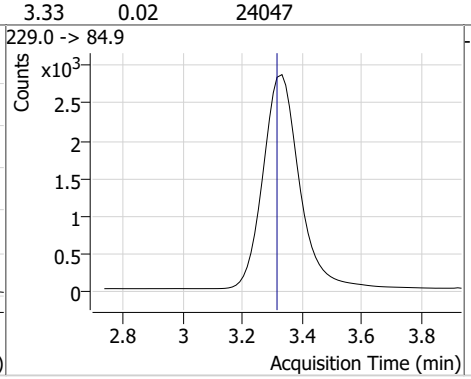


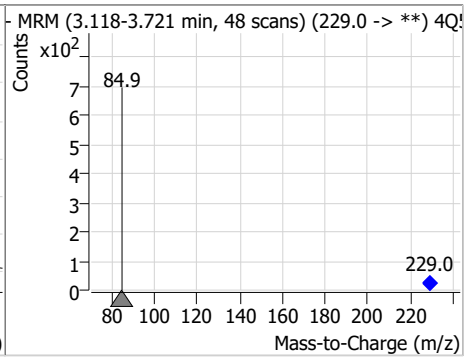




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.60	3.33	0.02	24047				

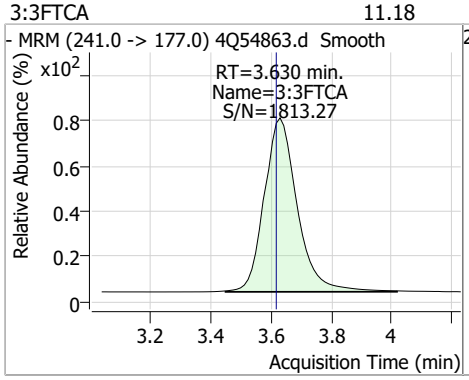


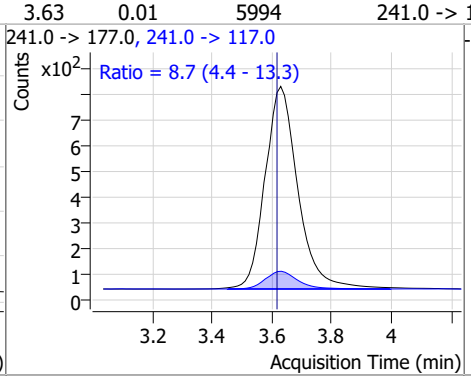


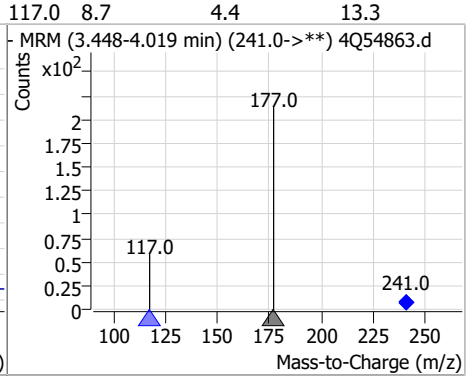


Perfluorinated Compounds by LC/MS/MS

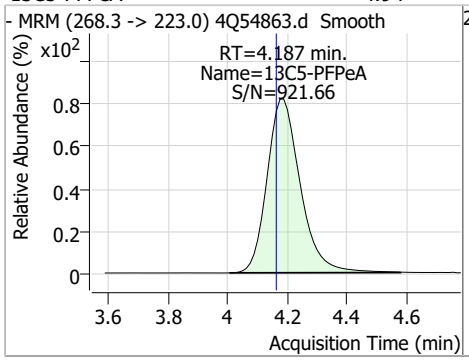
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.18	3.63	0.01	5994	241.0 -> 117.0	8.7	4.4	13.3

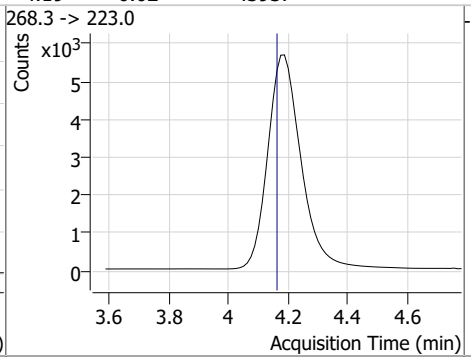


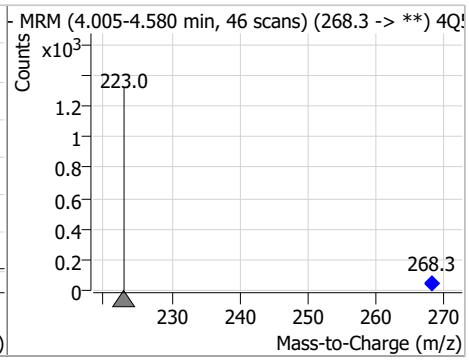




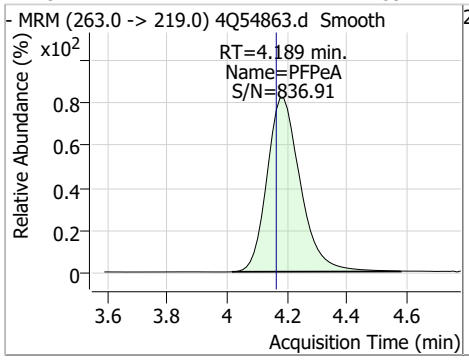
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.94	4.19	0.02	43937				

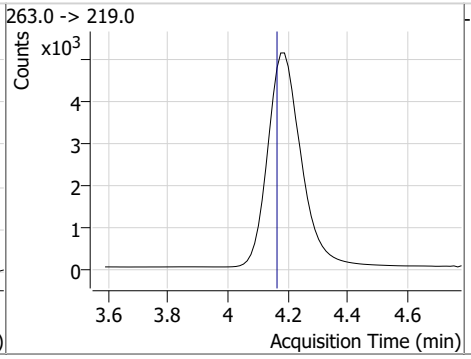


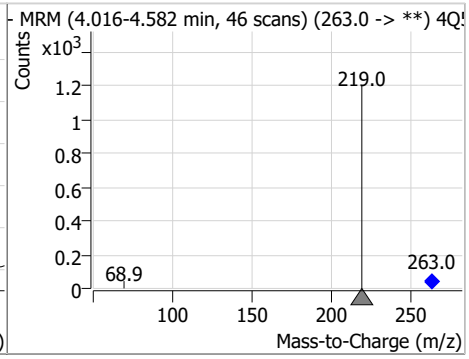




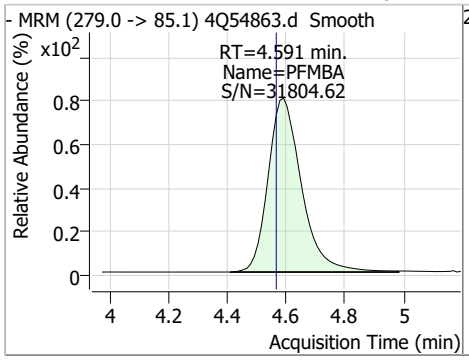
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.59	4.19	0.02	39689				

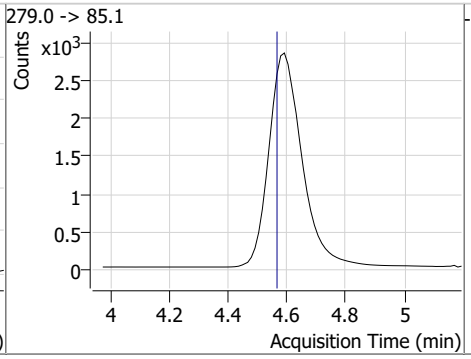


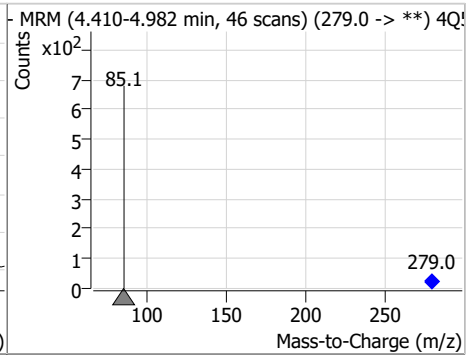




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.67	4.59	0.02	22216				

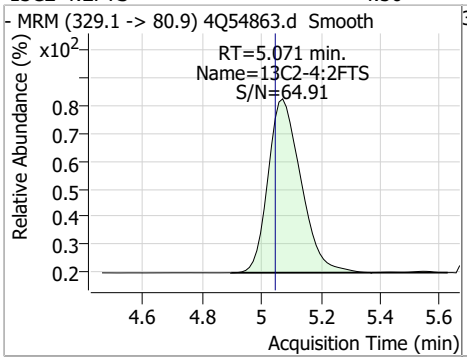


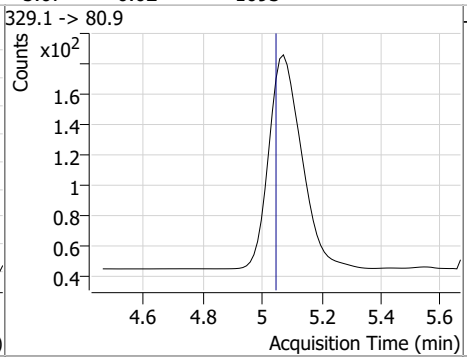


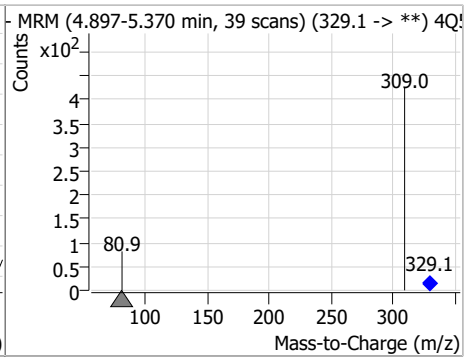


Perfluorinated Compounds by LC/MS/MS

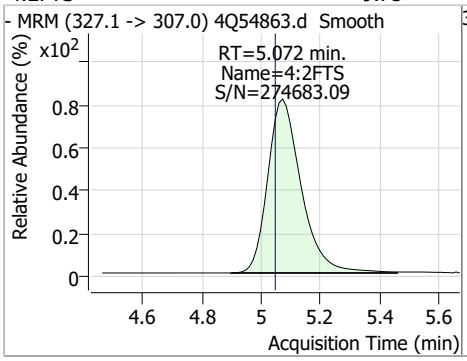
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.50	5.07	0.02	1093				

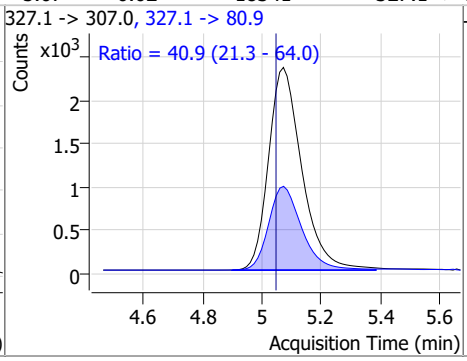


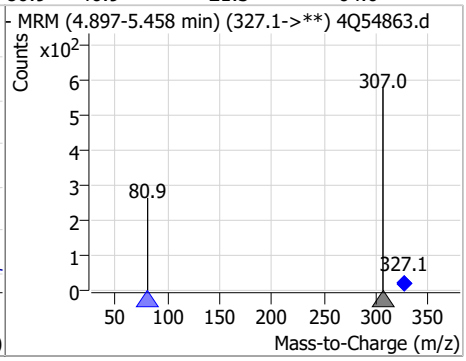




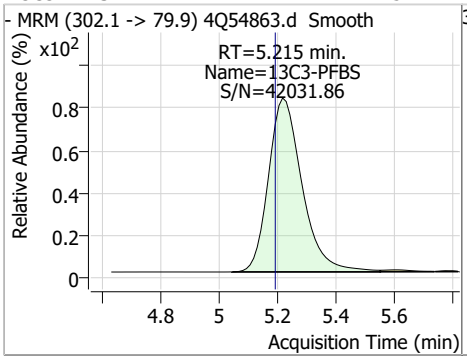
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.75	5.07	0.02	18341	327.1 -> 80.9	40.9	21.3	64.0

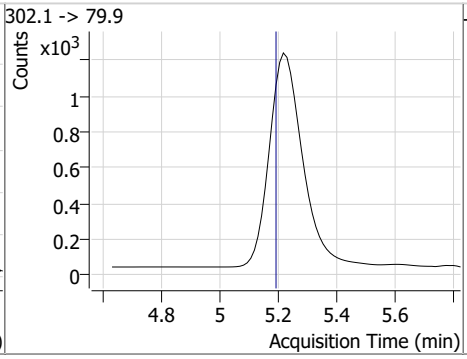


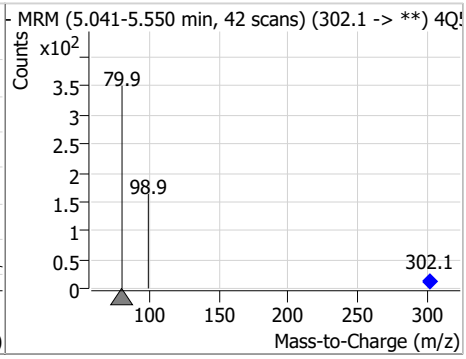




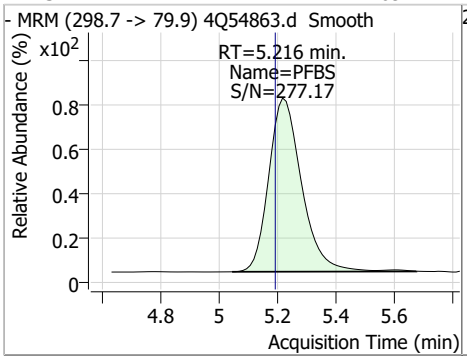
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.45	5.21	0.03	9589				

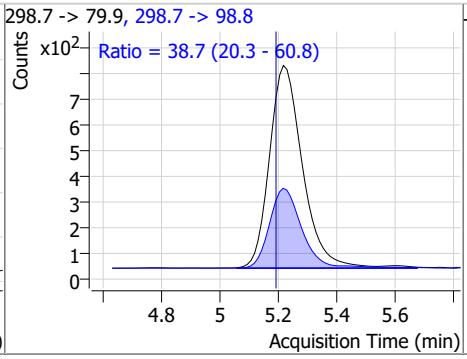


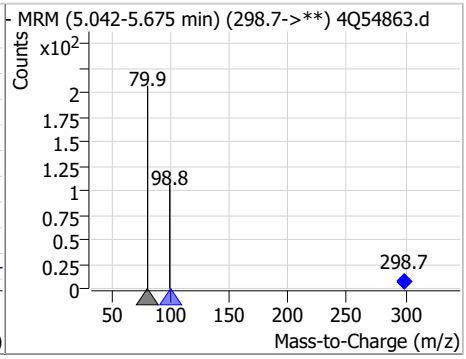




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.09	5.22	0.03	6221	298.7 -> 98.8	38.7	20.3	60.8

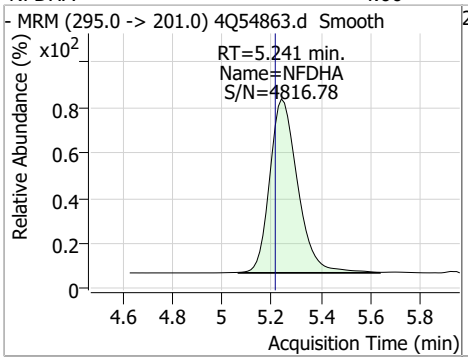


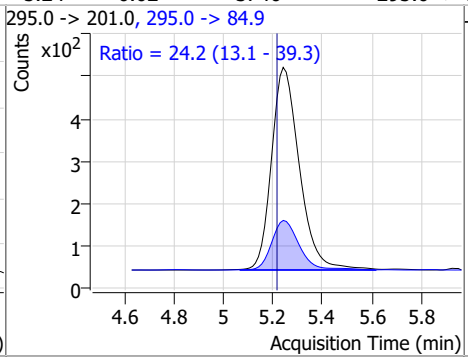


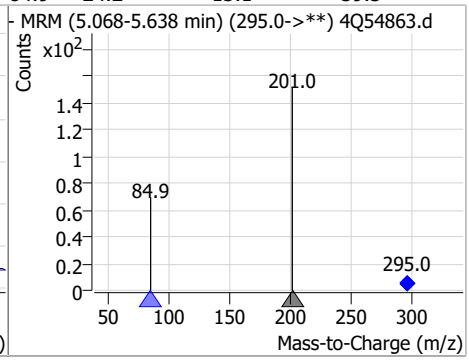


Perfluorinated Compounds by LC/MS/MS

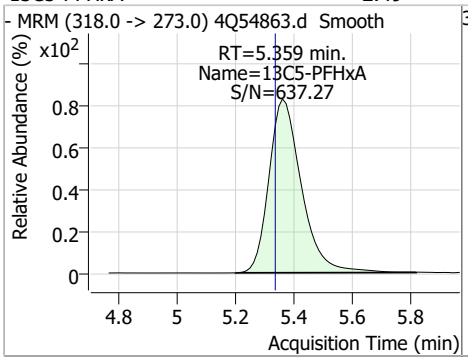
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.66	5.24	0.02	3746	295.0 -> 84.9	24.2	13.1	39.3

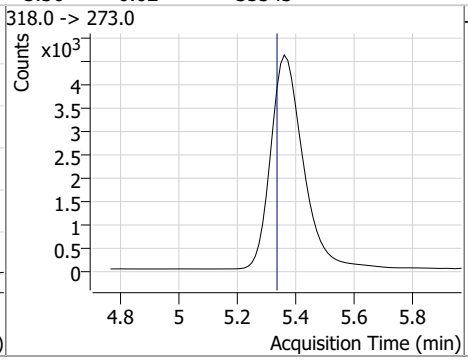


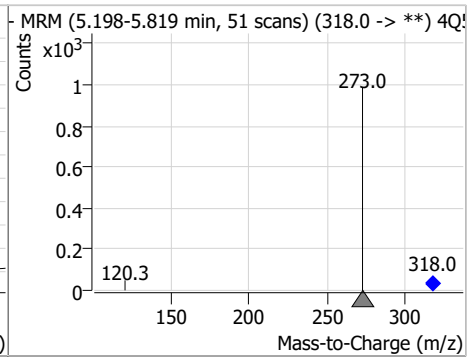




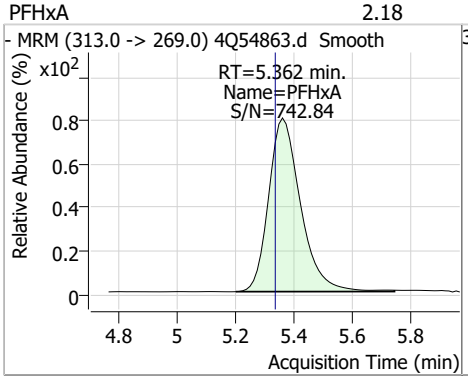
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.49	5.36	0.02	35543				

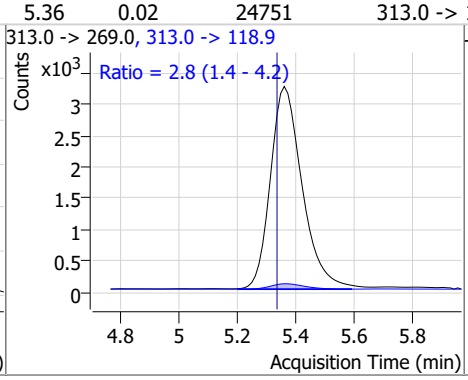


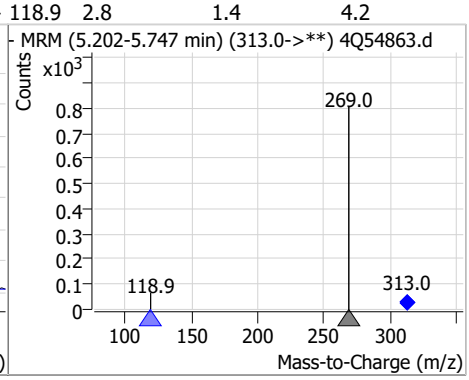




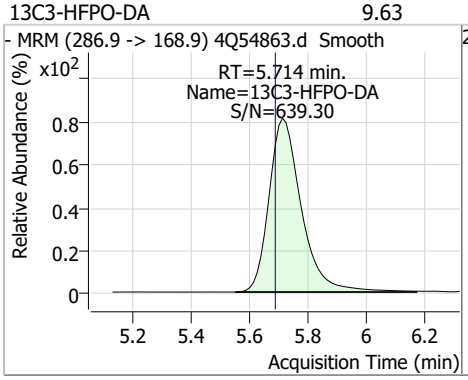
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.18	5.36	0.02	24751	313.0 -> 118.9	2.8	1.4	4.2

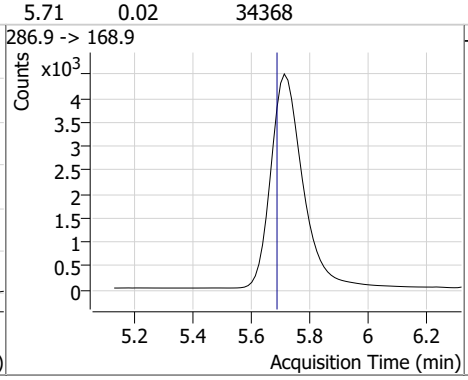


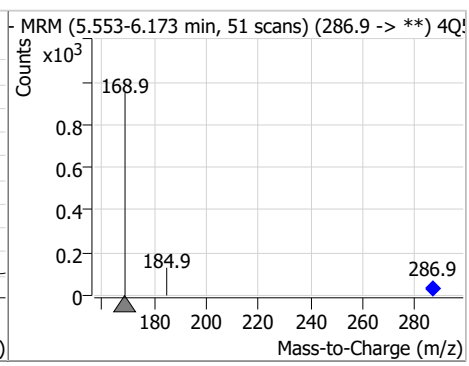




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.63	5.71	0.02	34368				

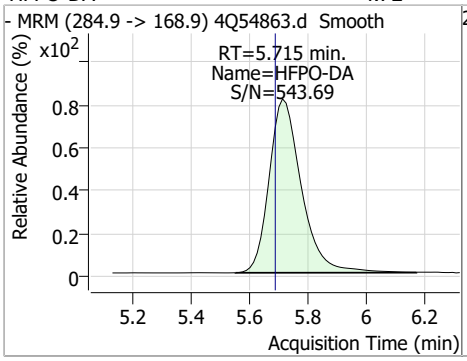


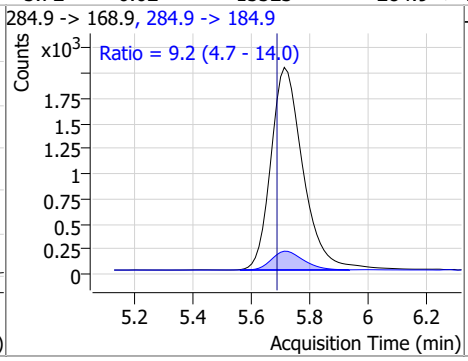


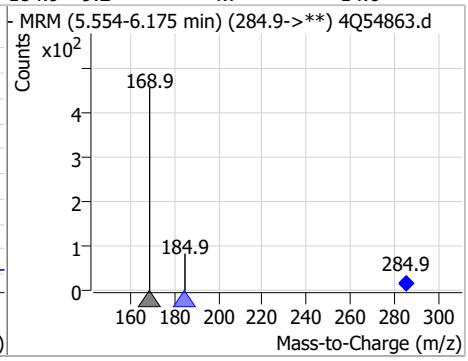


Perfluorinated Compounds by LC/MS/MS

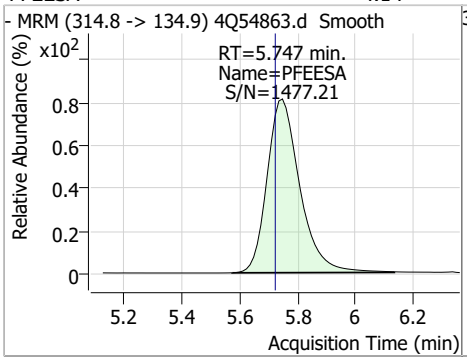
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.72	5.72	0.02	15523	284.9 -> 184.9	9.2	4.7	14.0

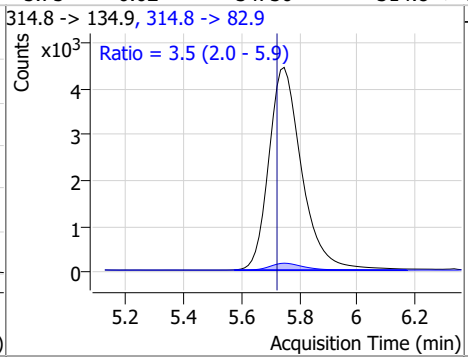


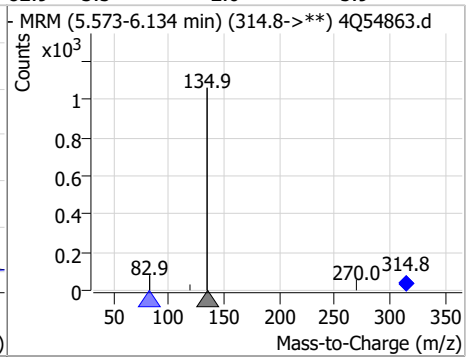




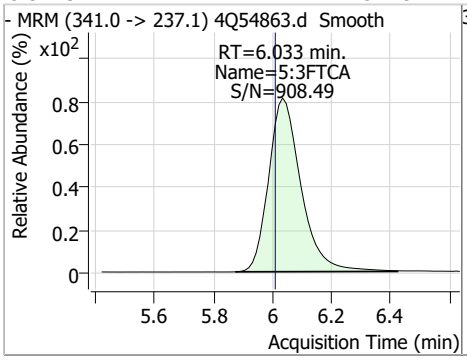
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.14	5.75	0.02	34736	314.8 -> 82.9	3.5	2.0	5.9

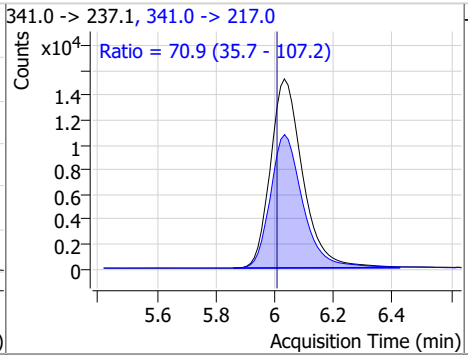


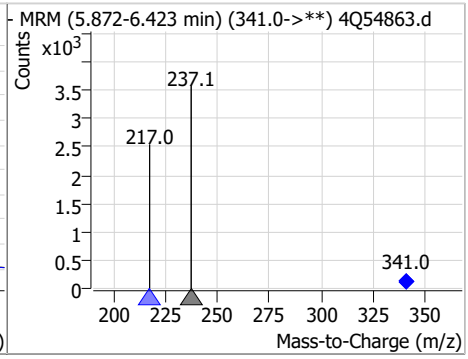




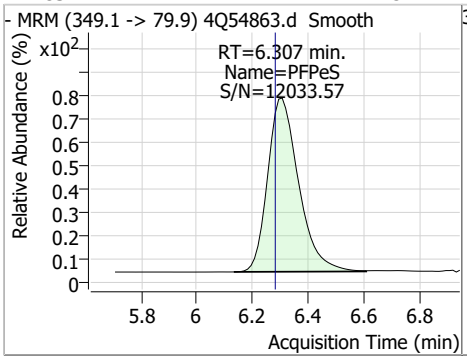
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	57.49	6.03	0.02	116305	341.0 -> 217.0	70.9	35.7	107.2

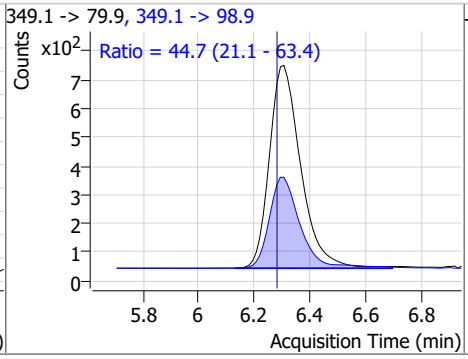


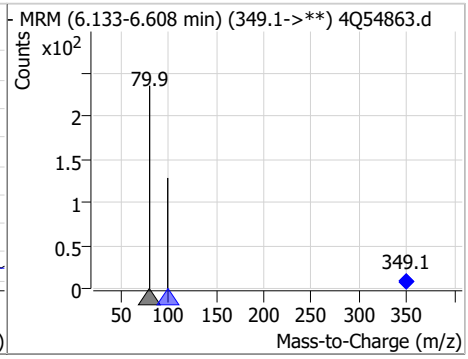




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.23	6.31	0.02	5454	349.1 -> 98.9	44.7	21.1	63.4

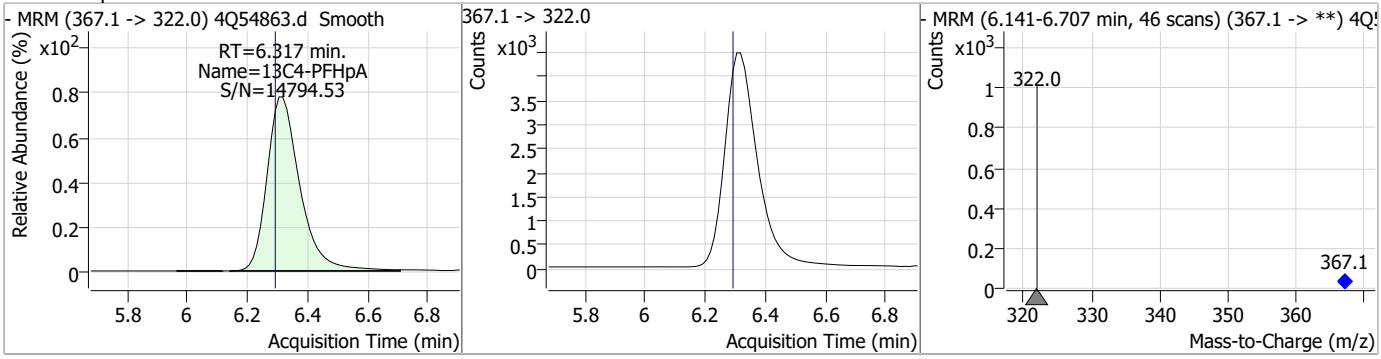




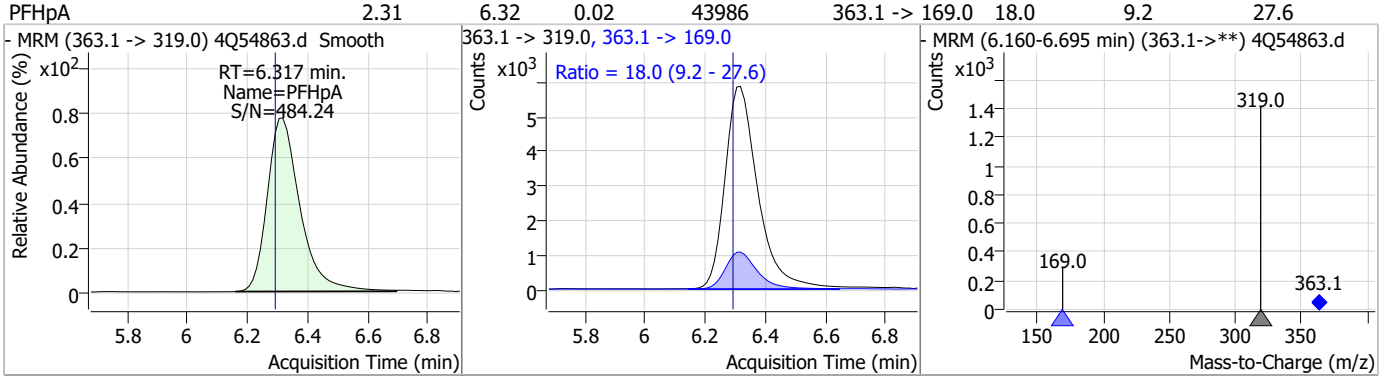


Perfluorinated Compounds by LC/MS/MS

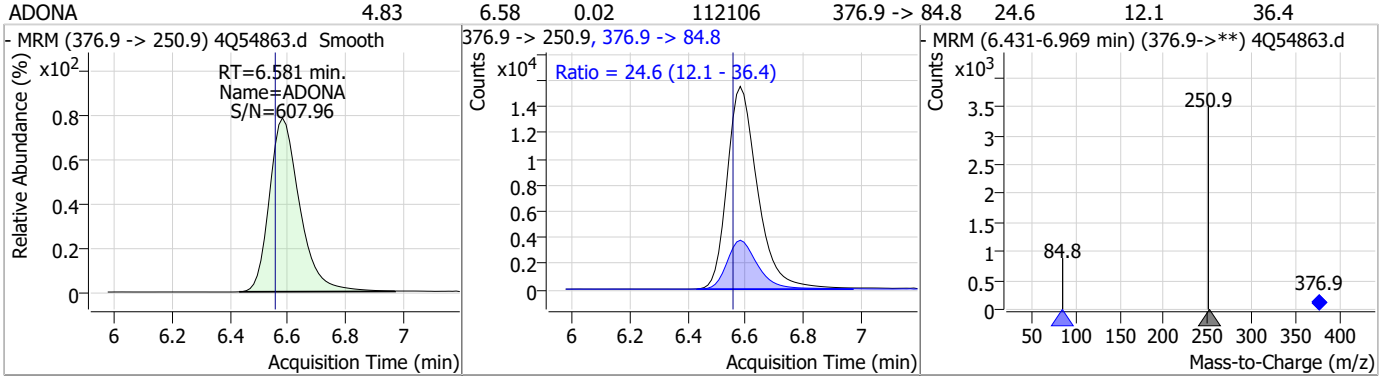
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.47	6.32	0.02	33805				



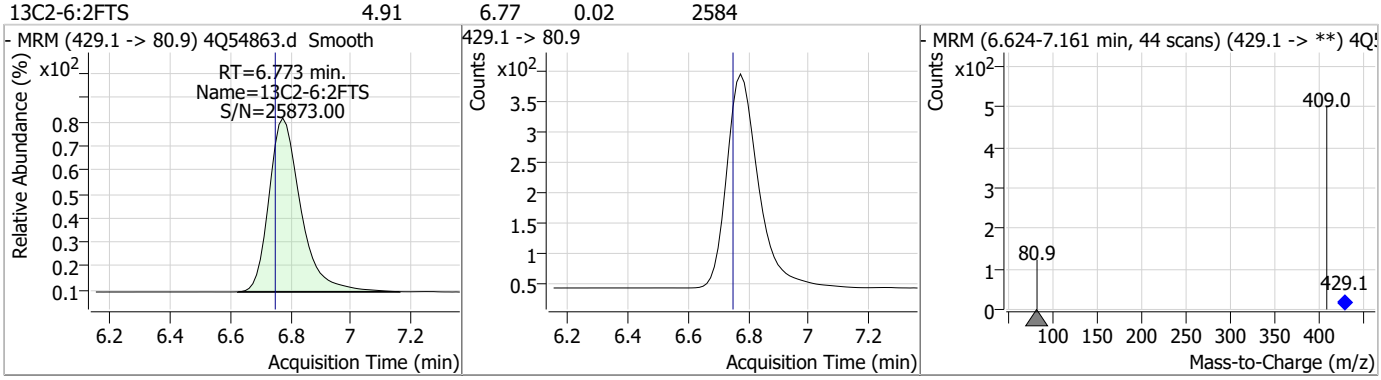
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.31	6.32	0.02	43986	363.1 -> 169.0	18.0	9.2	27.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.83	6.58	0.02	112106	376.9 -> 84.8	24.6	12.1	36.4

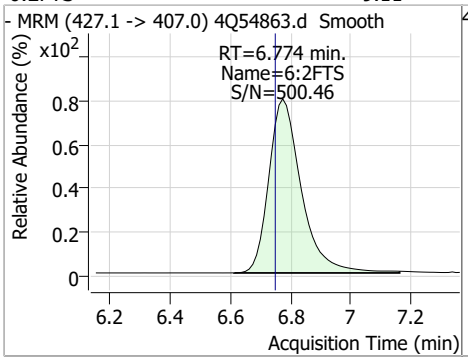


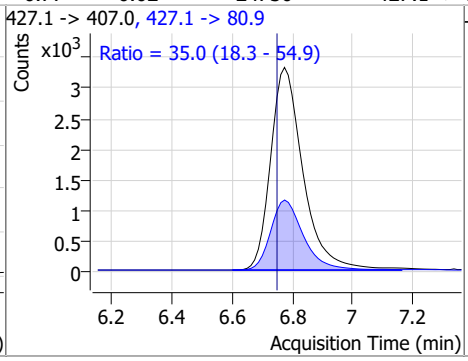
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.91	6.77	0.02	2584				

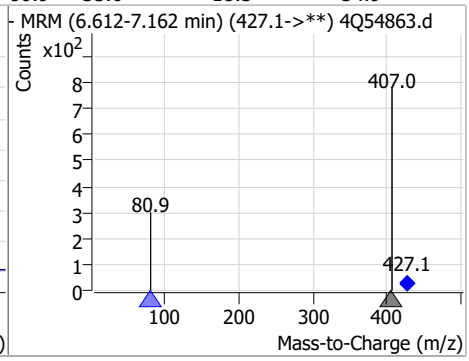


Perfluorinated Compounds by LC/MS/MS

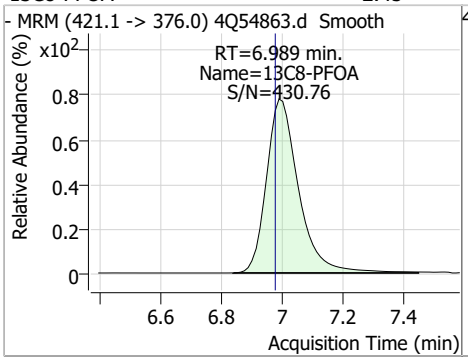
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.11	6.77	0.02	24730	427.1 -> 80.9	35.0	18.3	54.9

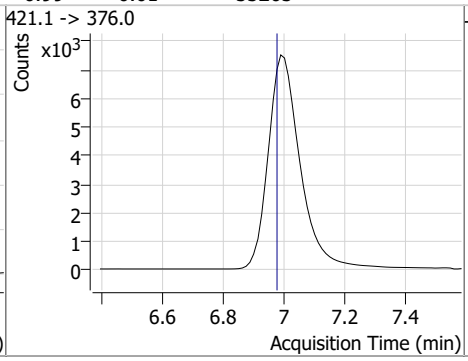


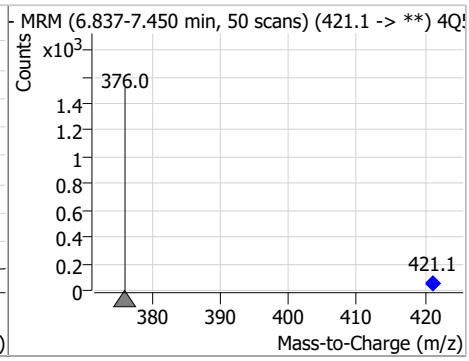




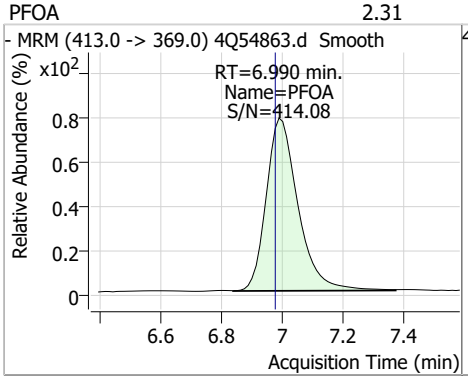
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.45	6.99	0.01	55265				

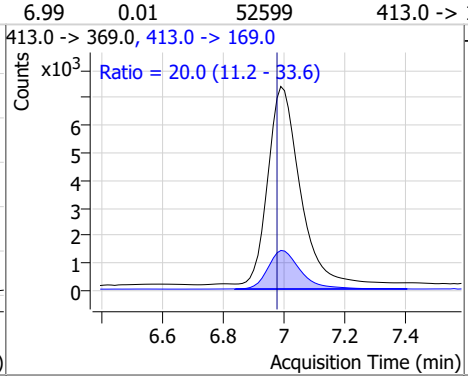


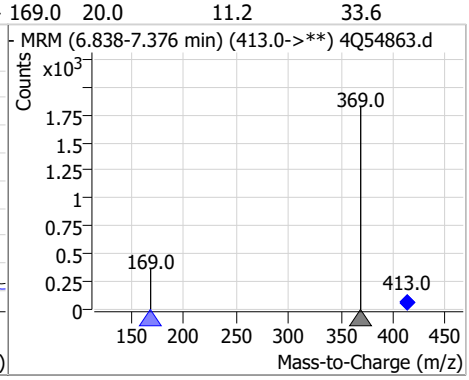




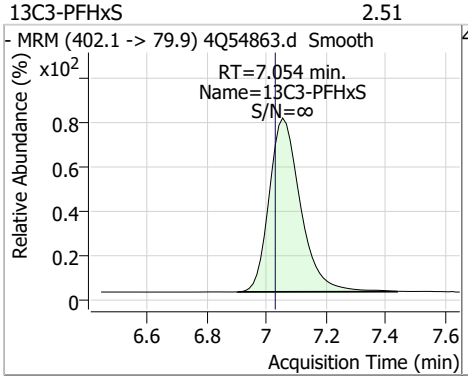
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.31	6.99	0.01	52599	413.0 -> 169.0	20.0	11.2	33.6

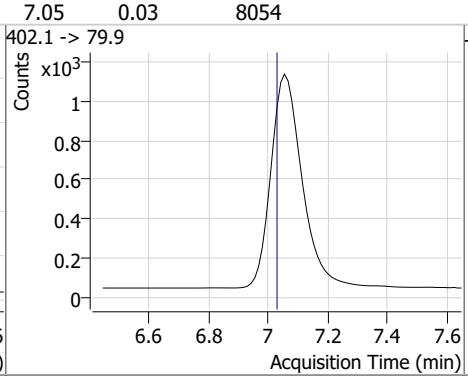


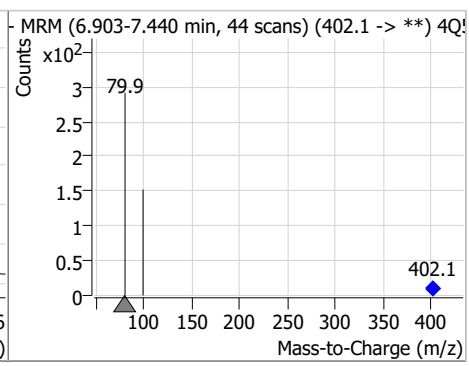




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.51	7.05	0.03	8054				

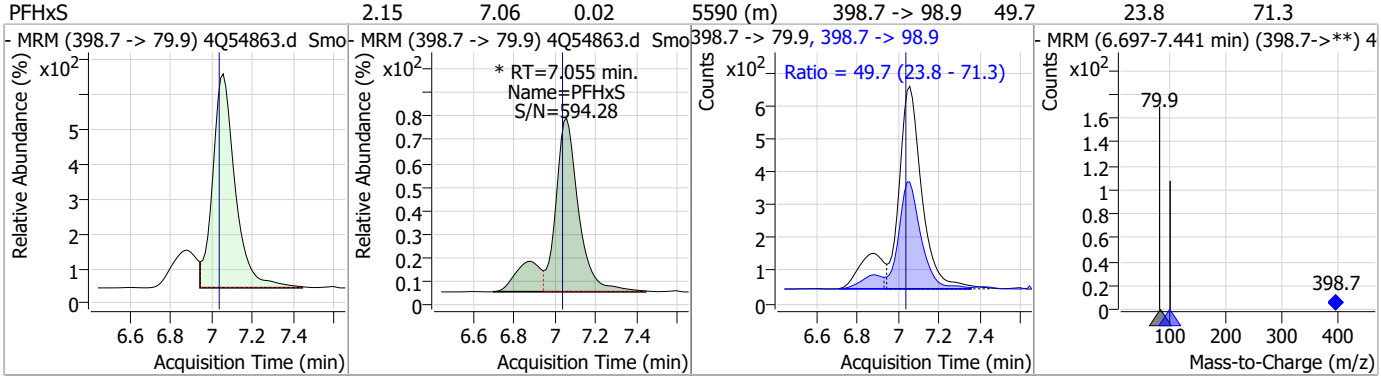




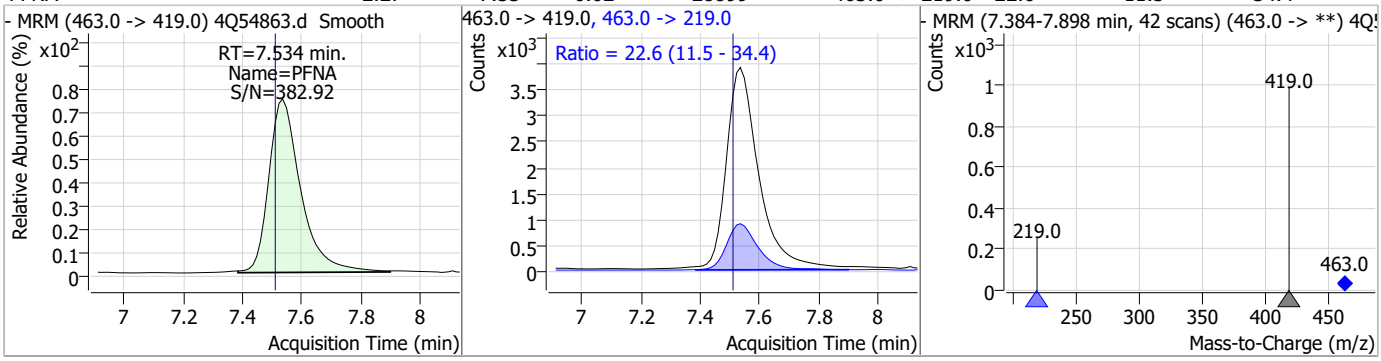


Perfluorinated Compounds by LC/MS/MS

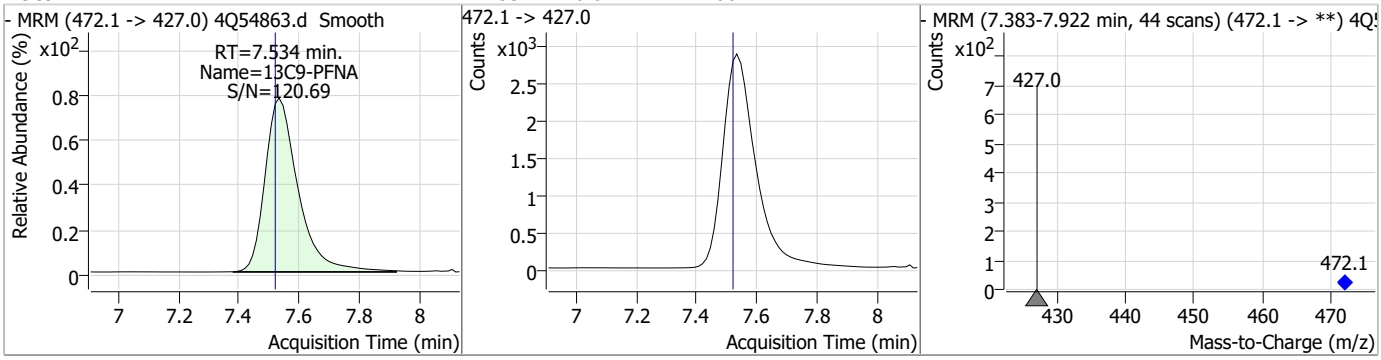
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.15	7.06	0.02	5590 (m)	398.7 -> 98.9	49.7	23.8	71.3



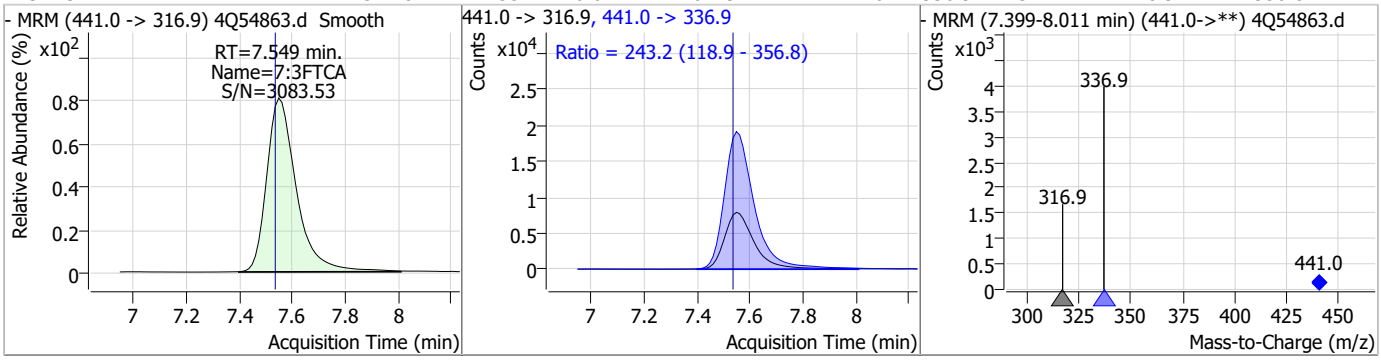
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.27	7.53	0.02	28899	463.0 -> 219.0	22.6	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.21	7.53	0.01	21661				

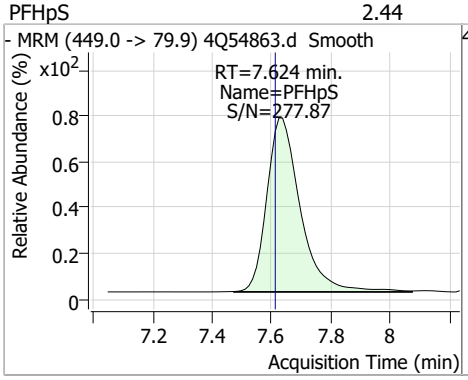


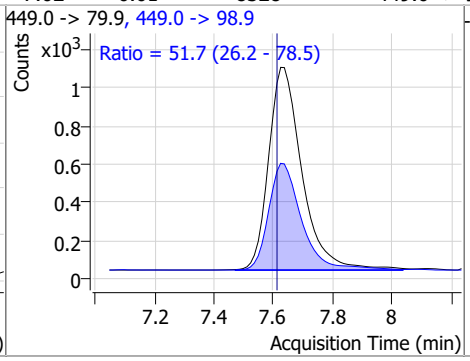
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	57.78	7.55	0.01	61291	441.0 -> 336.9	243.2	118.9	356.8

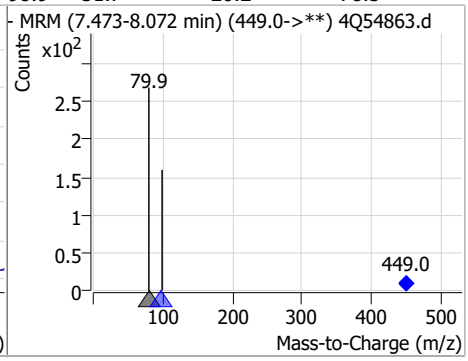


Perfluorinated Compounds by LC/MS/MS

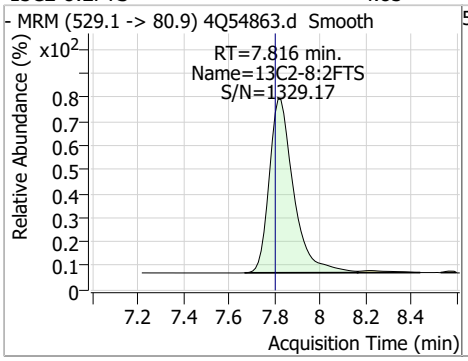
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.44	7.62	0.01	8328	449.0 -> 98.9	51.7	26.2	78.5

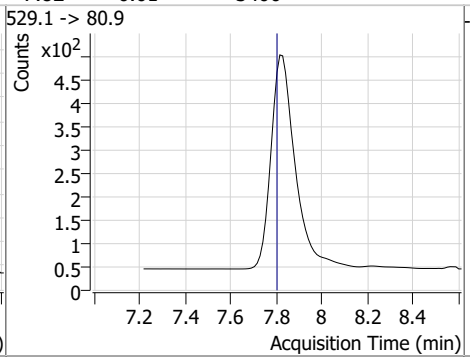


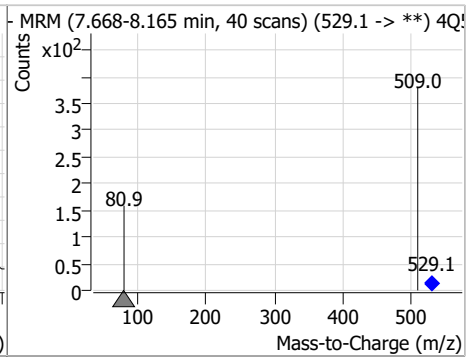




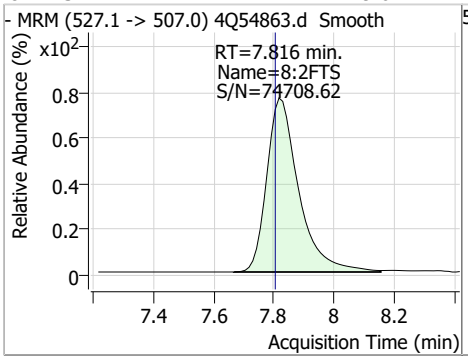
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.83	7.82	0.01	3400				

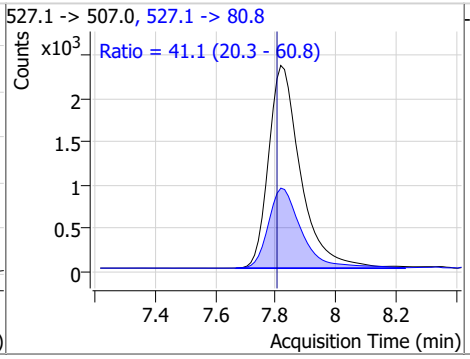


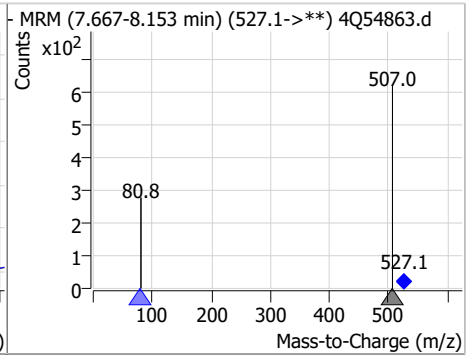




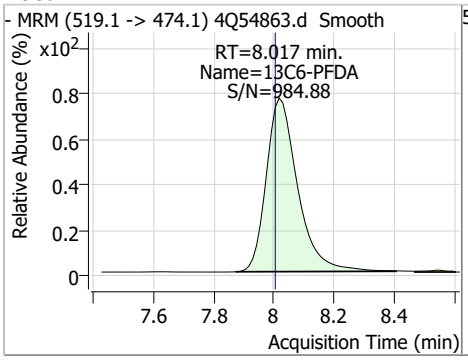
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.61	7.82	0.01	17227	527.1 -> 80.8	41.1	20.3	60.8

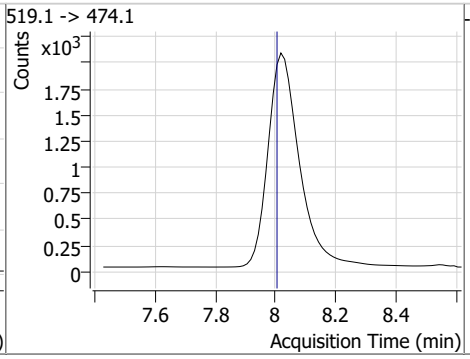


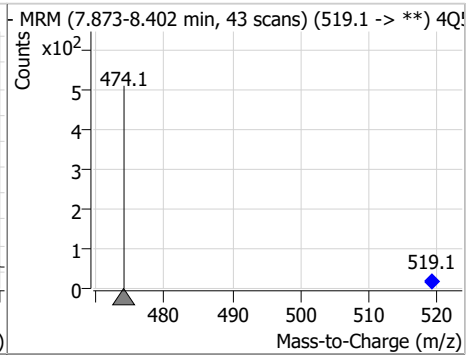




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.27	8.02	0.01	14711				

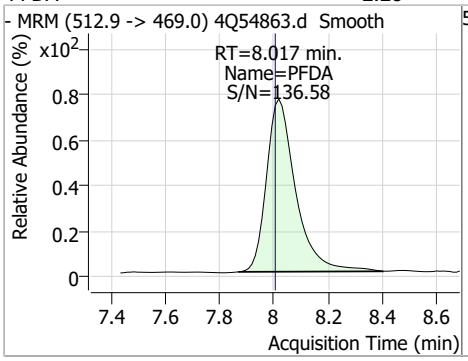


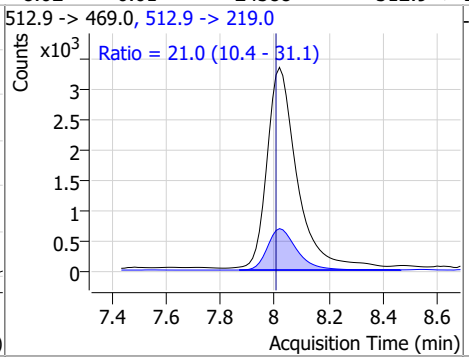


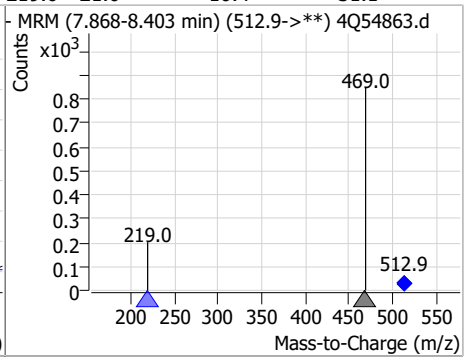


Perfluorinated Compounds by LC/MS/MS

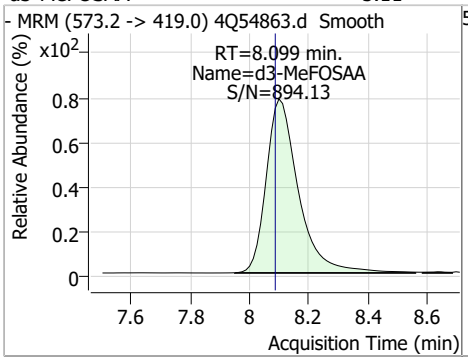
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.28	8.02	0.01	24588	512.9 -> 219.0	21.0	10.4	31.1

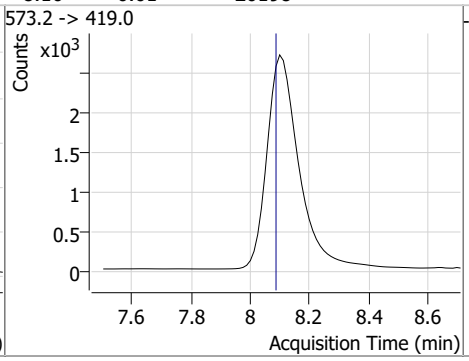


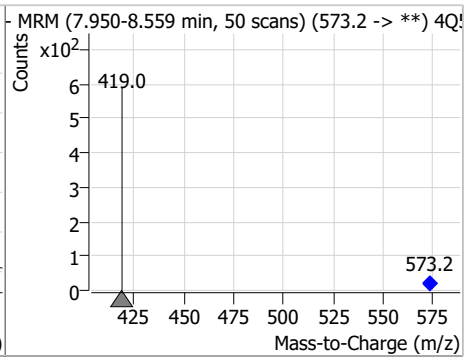




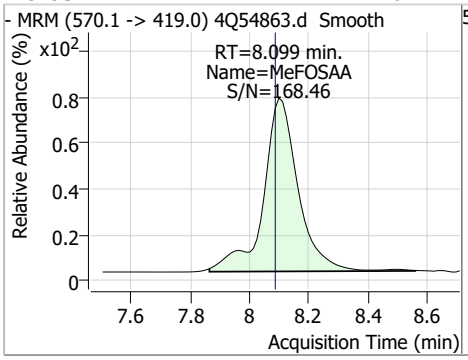
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.11	8.10	0.01	20198				

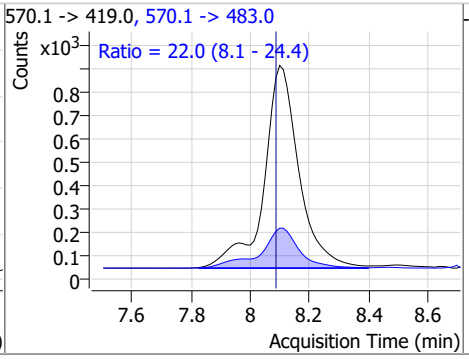


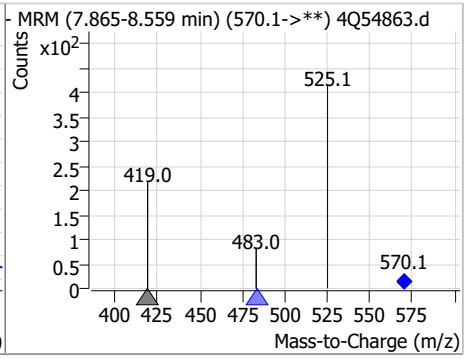




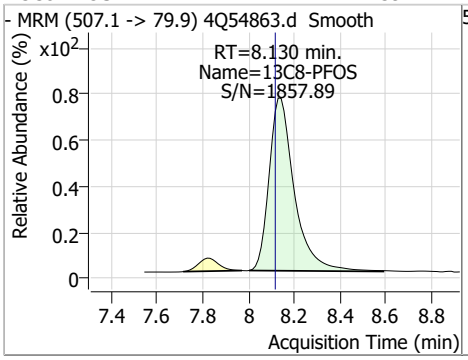
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.46	8.10	0.01	7124	570.1 -> 483.0	22.0	8.1	24.4

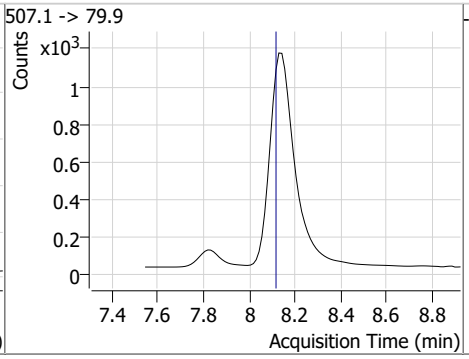


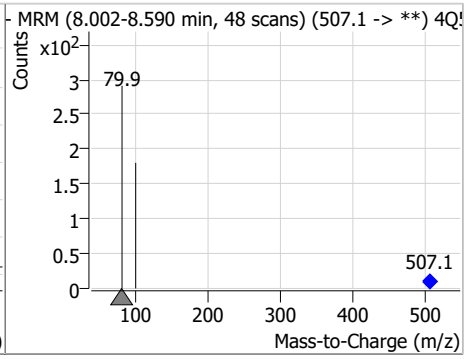




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.39	8.13	0.01	8614				

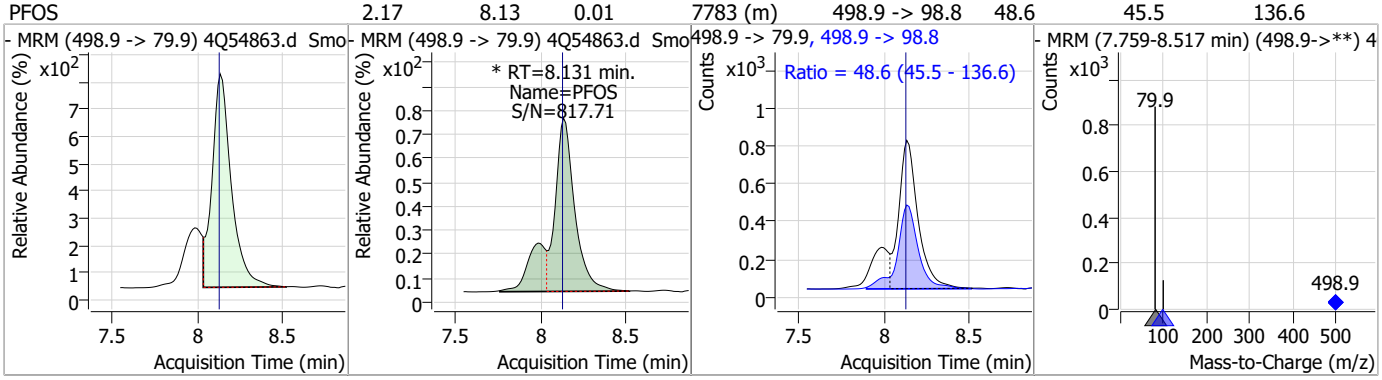




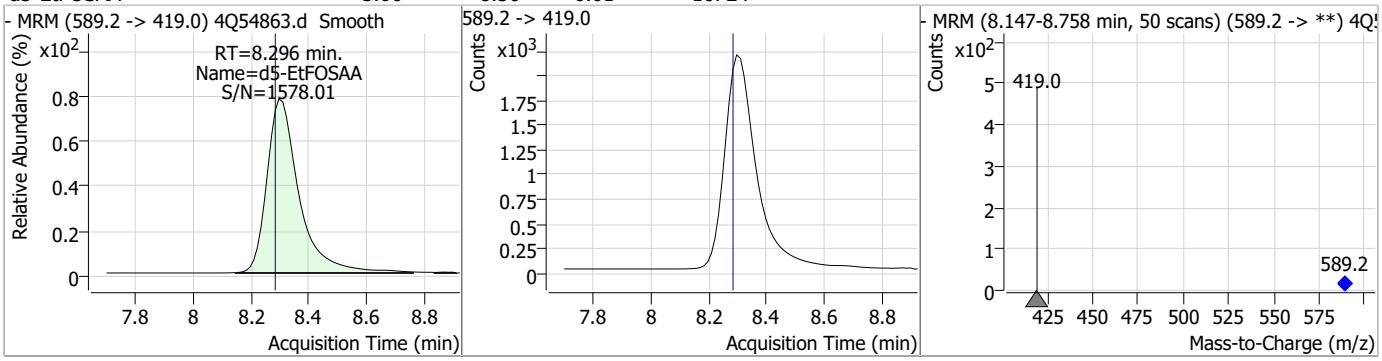


Perfluorinated Compounds by LC/MS/MS

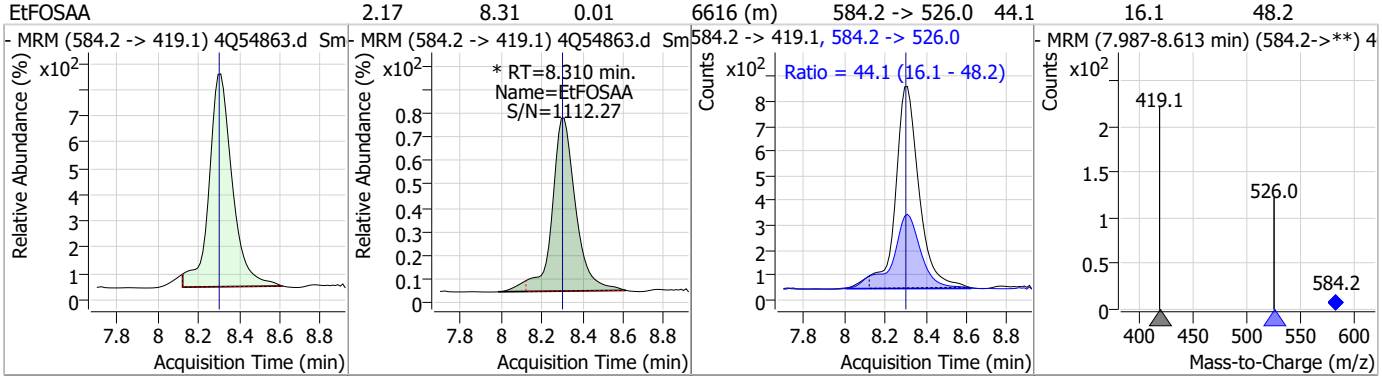
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.17	8.13	0.01	7783 (m)	498.9 -> 98.8	48.6	45.5	136.6



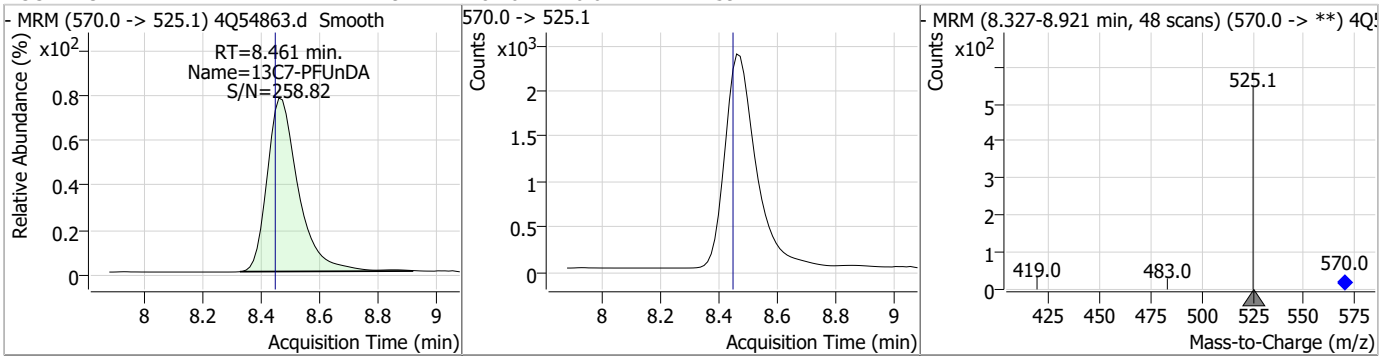
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.00	8.30	0.01	16724				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.17	8.31	0.01	6616 (m)	584.2 -> 526.0	44.1	16.1	48.2

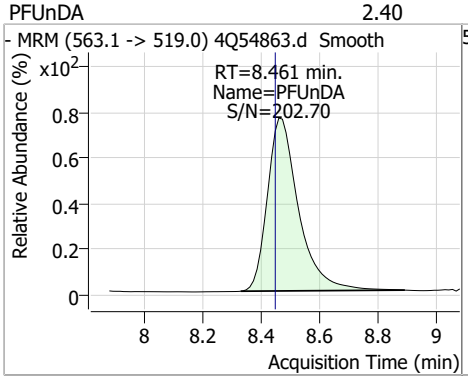


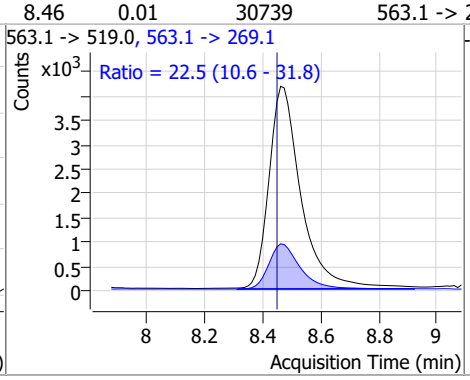
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.29	8.46	0.01	17591				

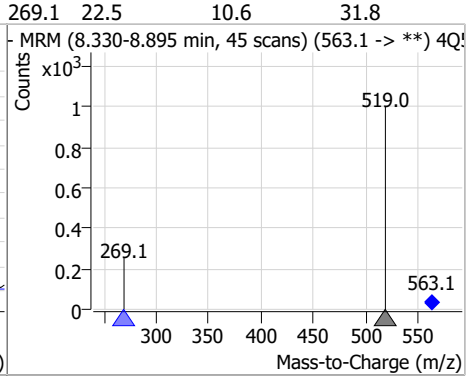


Perfluorinated Compounds by LC/MS/MS

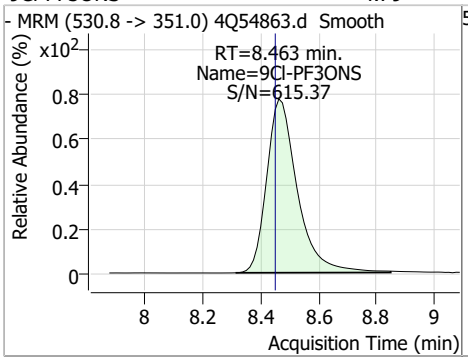
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.40	8.46	0.01	30739	563.1 -> 269.1	22.5	10.6	31.8

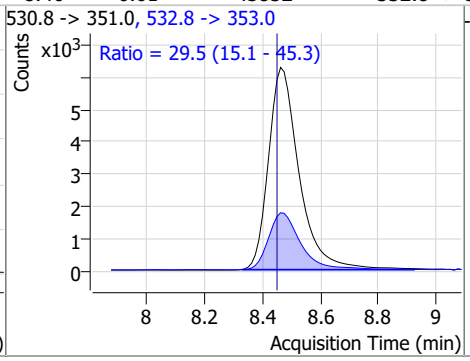


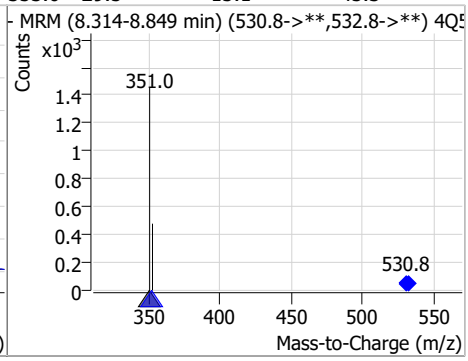




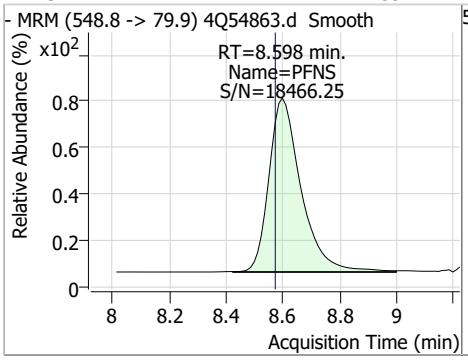
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.79	8.46	0.01	45852	532.8 -> 353.0	29.5	15.1	45.3

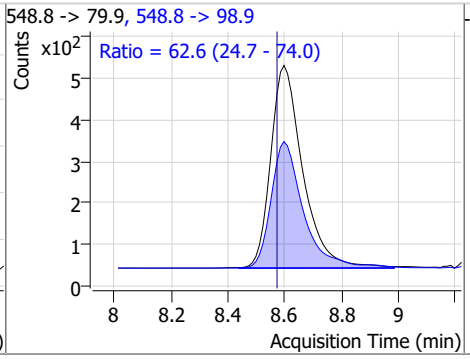


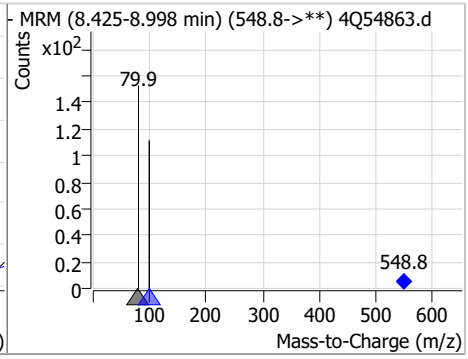




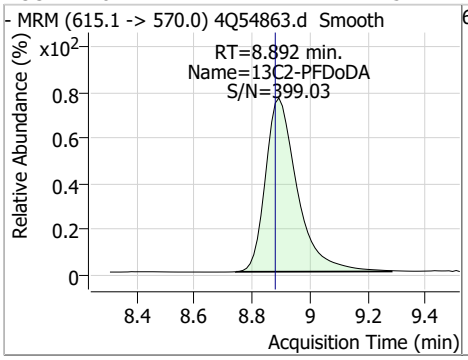
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.59	8.60	0.02	3810	548.8 -> 98.9	62.6	24.7	74.0

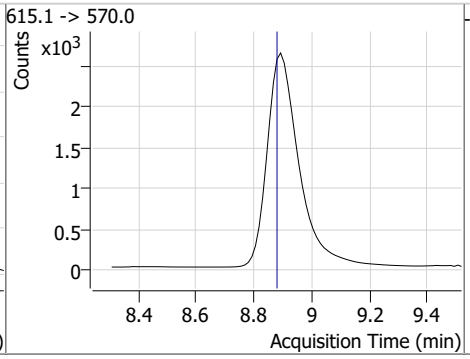


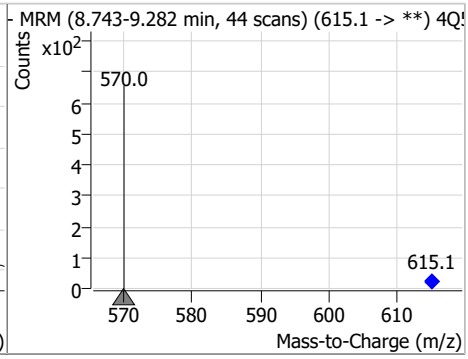




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.25	8.89	0.01	19935				

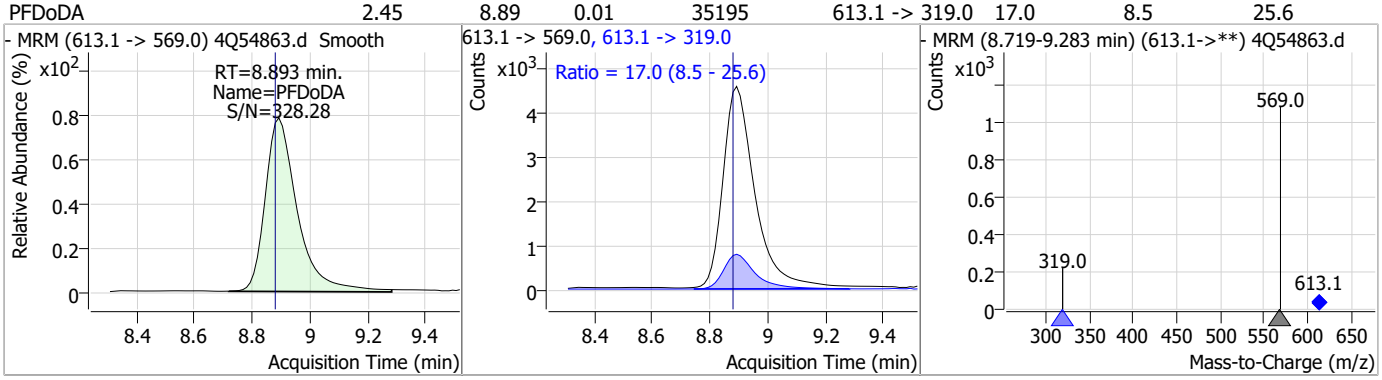




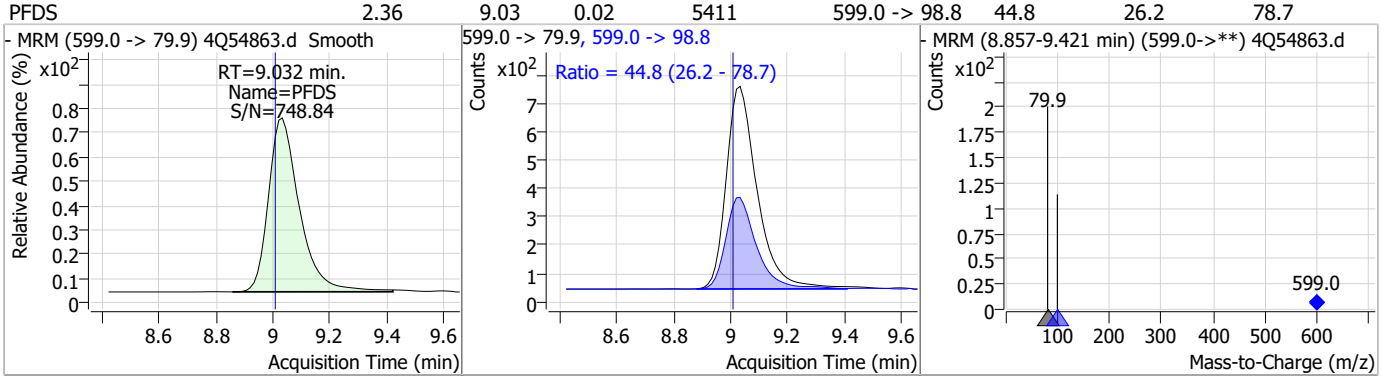


Perfluorinated Compounds by LC/MS/MS

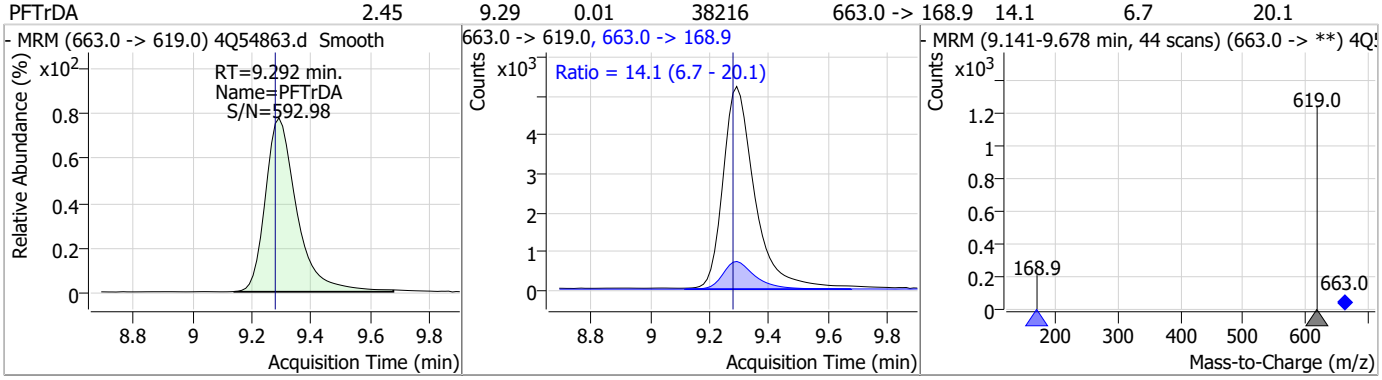
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.45	8.89	0.01	35195	613.1 -> 319.0	17.0	8.5	25.6



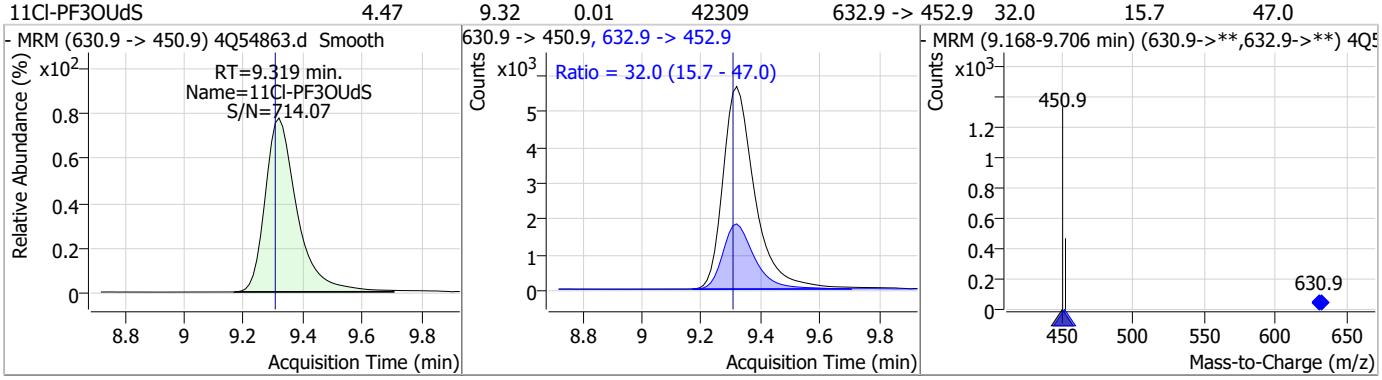
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.36	9.03	0.02	5411	599.0 -> 98.8	44.8	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.45	9.29	0.01	38216	663.0 -> 168.9	14.1	6.7	20.1

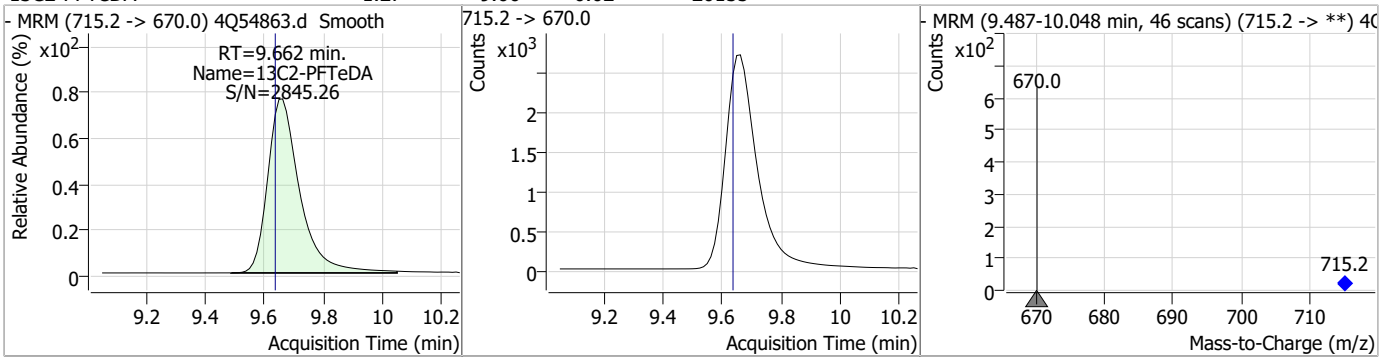


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.47	9.32	0.01	42309	632.9 -> 452.9	32.0	15.7	47.0

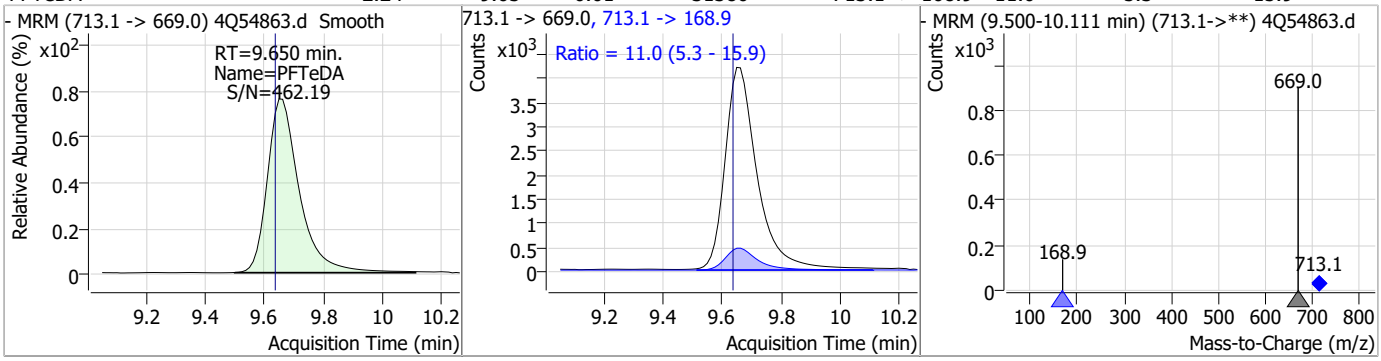


Perfluorinated Compounds by LC/MS/MS

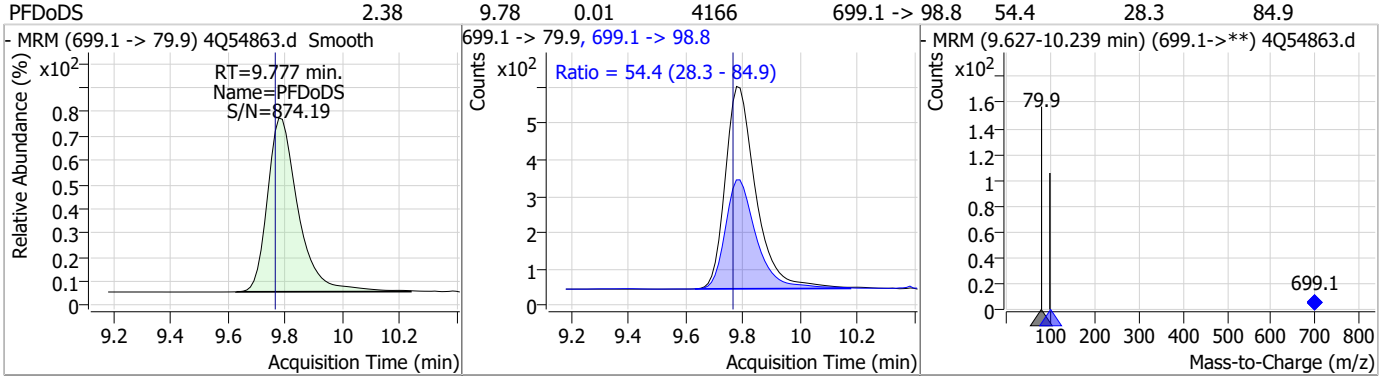
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.27	9.66	0.02	20155				



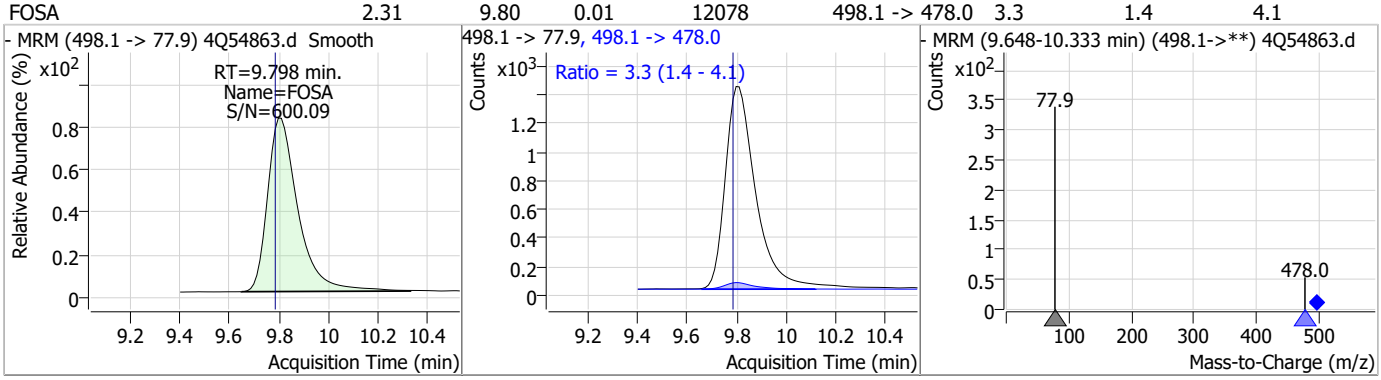
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.24	9.65	0.01	31380	713.1 -> 168.9	11.0	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.38	9.78	0.01	4166	699.1 -> 98.8	54.4	28.3	84.9

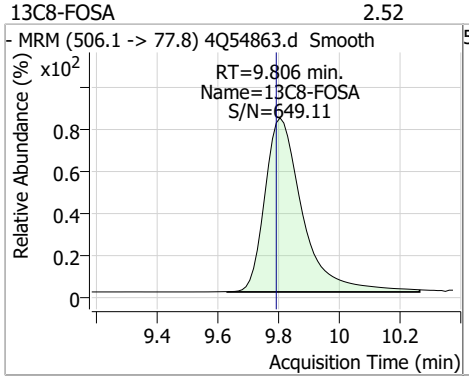


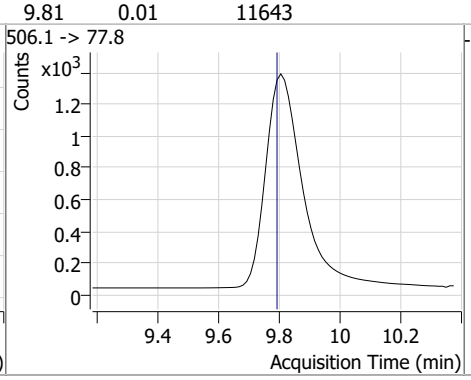
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.31	9.80	0.01	12078	498.1 -> 478.0	3.3	1.4	4.1

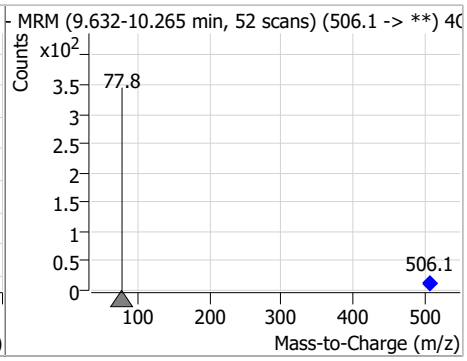


Perfluorinated Compounds by LC/MS/MS

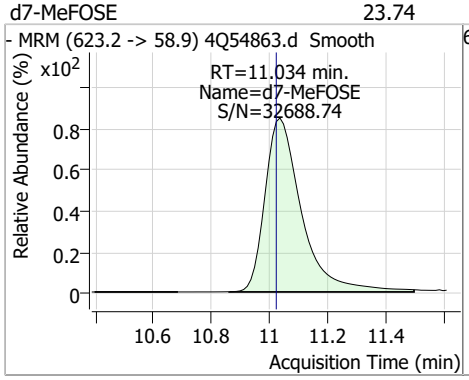
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.52	9.81	0.01	11643				

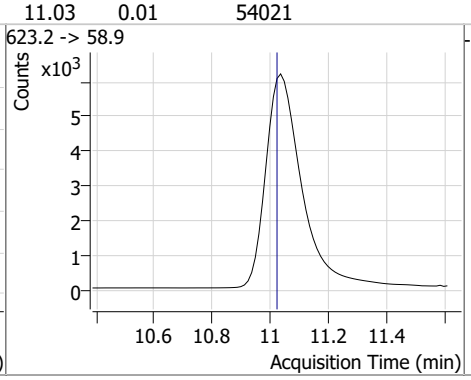


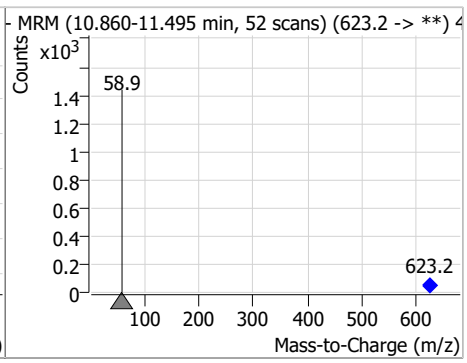




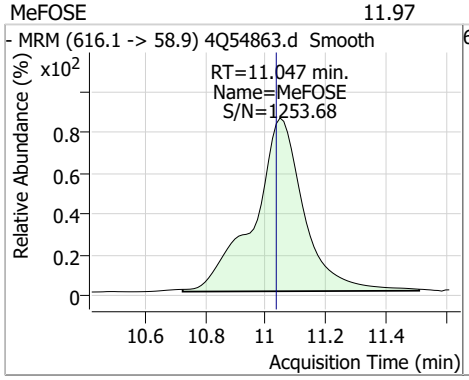
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.74	11.03	0.01	54021				

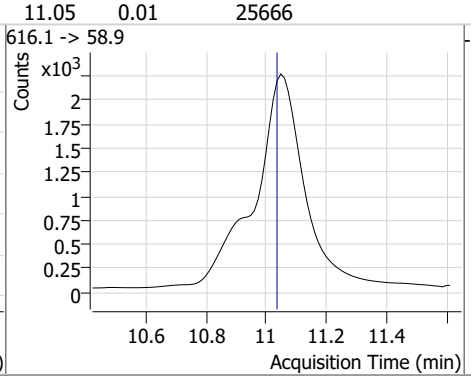


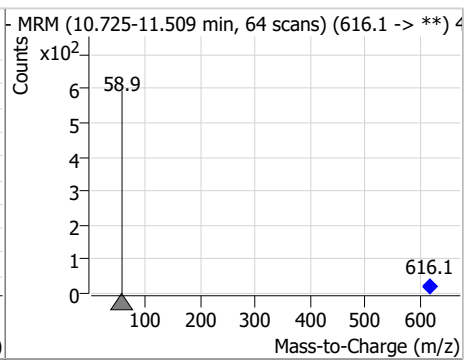




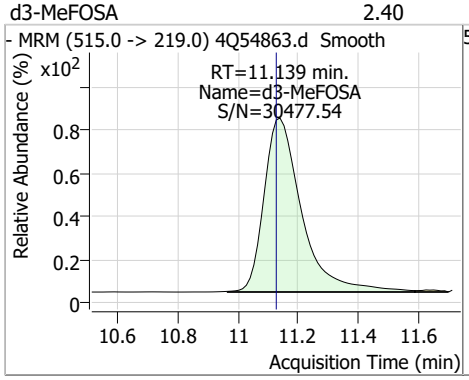
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.97	11.05	0.01	25666				

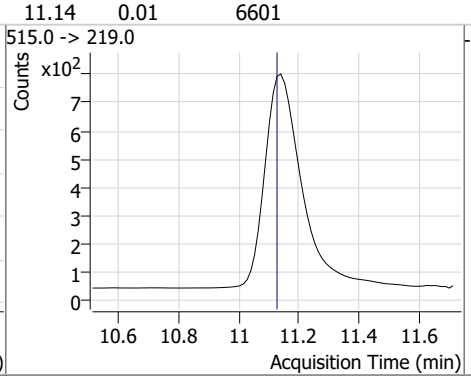


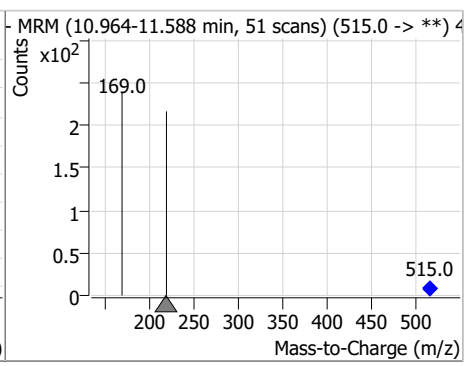




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.40	11.14	0.01	6601				

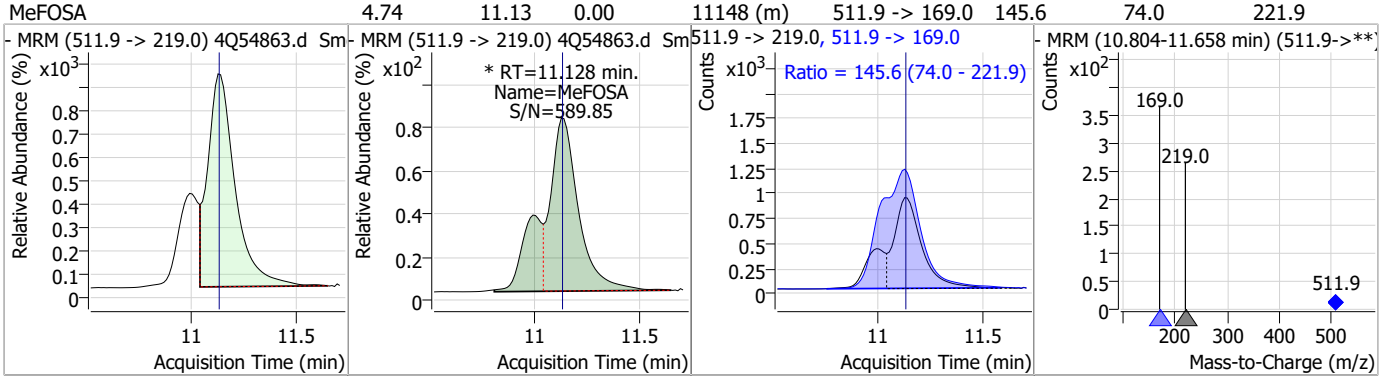




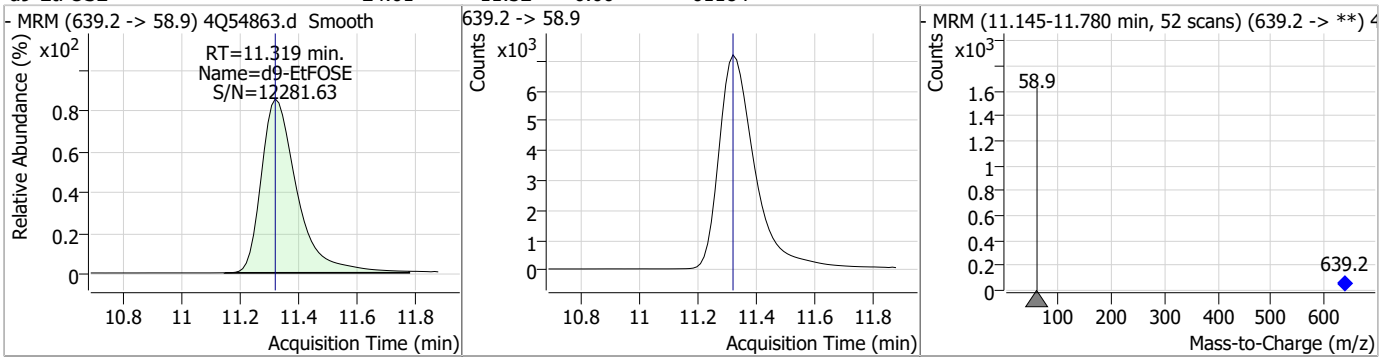


Perfluorinated Compounds by LC/MS/MS

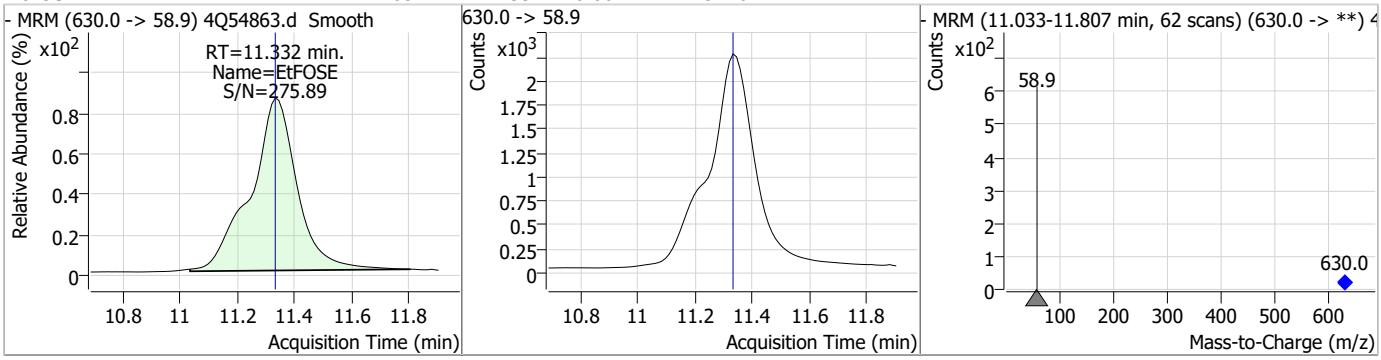
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.74	11.13	0.00	11148 (m)	511.9 -> 169.0	145.6	74.0	221.9



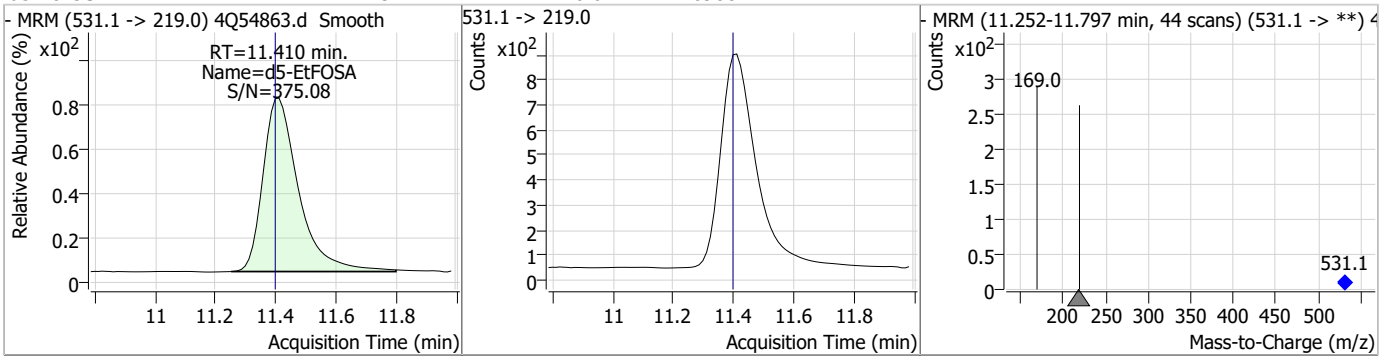
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	24.01	11.32	0.00	61184				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.65	11.33	0.00	25226				

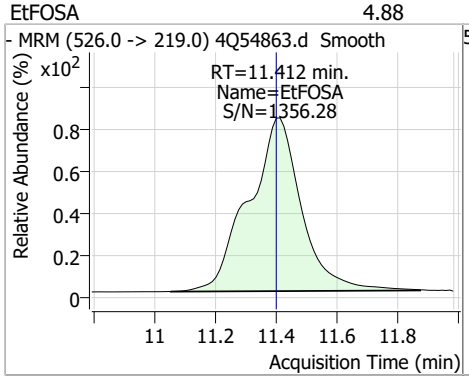


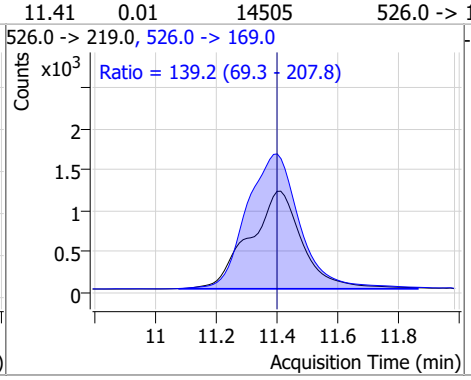
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.32	11.41	0.01	6988				

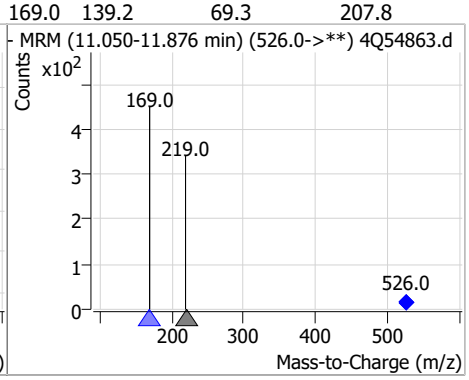


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	4.88	11.41	0.01	14505	526.0 -> 169.0	139.2	69.3	207.8







7.7.12

7

Manual Integration Approval Summary

Sample Number: S4Q804-CC804
Lab FileID: 4Q54863.D
Injection Time: 12/08/23 14:20
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.13	Split peak
EtFOSAA	2991-50-6		8.31	Split peak
MeFOSA	31506-32-8		11.13	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54864.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 2:40:36 PM
Sample Name : cc804-1.0LL
Vial : P1-A2
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.752	216.8 -> 171.9	101633	10.00	µg/L	0.078
M5-PFPeA	4.212	268.3 -> 223.0	41357	5.00	µg/L	0.050
M5-PFHxA	5.384	318.0 -> 273.0	31970	2.50	µg/L	0.050
M4-PFHpA	6.330	367.1 -> 322.0	30567	2.50	µg/L	0.038
M8-PFOA	7.001	421.1 -> 376.0	50654	2.50	µg/L	0.025
M9-PFNA	7.547	472.1 -> 427.0	19026	1.25	µg/L	0.026
M6-PFDA	8.029	519.1 -> 474.1	13264	1.25	µg/L	0.025
M7-PFUnDA	8.473	570.0 -> 525.1	17662	1.25	µg/L	0.025
M2-PFDoDA	8.905	615.1 -> 570.0	18365	1.25	µg/L	0.025
M2-PFTeDA	9.662	715.2 -> 670.0	18625	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	11521	2.50	µg/L	0.025
M3-PFBS	5.240	302.1 -> 79.9	9105	2.50	µg/L	0.050
M3-PFHxS	7.067	402.1 -> 79.9	7306	2.50	µg/L	0.037
M8-PFOS	8.143	507.1 -> 79.9	8502	2.50	µg/L	0.026
M2-4:2FTS	5.083	329.1 -> 80.9	961	5.00	µg/L	0.037
M2-6:2FTS	6.786	429.1 -> 80.9	2413	5.00	µg/L	0.037
M2-8:2FTS	7.828	529.1 -> 80.9	2954	5.00	µg/L	0.025
M3-MeFOSAA	8.111	573.2 -> 419.0	17896	5.00	µg/L	0.025
M3-HFPO-DA	5.727	286.9 -> 168.9	31728	10.00	µg/L	0.037
M5-EtFOSAA	8.322	589.2 -> 419.0	15076	5.00	µg/L	0.038
M7-MeFOSE	11.034	623.2 -> 58.9	52926	25.00	µg/L	0.012
M9-EtFOSE	11.319	639.2 -> 58.9	58474	25.00	µg/L	0.000
M5-EtFOSA	11.410	531.1 -> 219.0	6646	2.50	µg/L	0.012
M3-MeFOSA	11.139	515.0 -> 219.0	6166	2.50	µg/L	0.012
13C4-PFOS	8.144	502.8 -> 79.9	6266	2.50	µg/L	0.026
13C3-PFBA	2.755	216.0 -> 172.0	47457	5.00	µg/L	0.077
18O2-PFHxS	7.066	403.0 -> 83.9	4869	2.50	µg/L	0.025
13C4-PFOA	7.002	417.1 -> 372.0	55470	2.50	µg/L	0.025
13C2-PFDA	8.029	515.1 -> 470.1	15205	1.25	µg/L	0.025
13C5-PFNA	7.547	468.0 -> 423.0	20096	1.25	µg/L	0.038
13C2-PFHxA	5.385	315.1 -> 270.0	35357	2.50	µg/L	0.050
System Monitoring Compounds						
13C2-4:2FTS	5.083	329.1 -> 80.9	961	4.16	µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 83.1%		
13C2-6:2FTS	6.786	429.1 -> 80.9	2413	4.81	µg/L	0.037
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-8:2FTS	7.828	529.1 -> 80.9	2954	4.40	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 88.0%		
13C2-PFDoDA	8.905	615.1 -> 570.0	18365	1.21	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-PFTeDA	9.662	715.2 -> 670.0	18625	1.23	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFBS	5.240	302.1 -> 79.9	9105	2.44	µg/L	0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C3-PFHxS	7.067	402.1 -> 79.9	7306	2.39	µg/L	0.037

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C4-PFBA	2.752	216.8 -> 171.9	101633	10.20 µg/L		0.078
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C4-PFHpA	6.330	367.1 -> 322.0	30567	2.45 µg/L		0.038
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C5-PFHxA	5.384	318.0 -> 273.0	31970	2.45 µg/L		0.050
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C5-PFPeA	4.212	268.3 -> 223.0	41357	5.10 µg/L		0.050
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C6-PFDA	8.029	519.1 -> 474.1	13264	1.20 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C7-PFUnDA	8.473	570.0 -> 525.1	17662	1.35 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C8-FOSA	9.818	506.1 -> 77.8	11521	2.84 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C8-PFOA	7.001	421.1 -> 376.0	50654	2.47 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C8-PFOS	8.143	507.1 -> 79.9	8502	2.68 µg/L		0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C9-PFNA	7.547	472.1 -> 427.0	19026	1.18 µg/L		0.026
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.5%		
d3-MeFOSAA	8.111	573.2 -> 419.0	17896	5.14 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C3-HFPO-DA	5.727	286.9 -> 168.9	31728	9.75 µg/L		0.037
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
d3-MeFOSA	11.139	515.0 -> 219.0	6166	2.55 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.8%		
d5-EtFOSAA	8.322	589.2 -> 419.0	15076	5.12 µg/L		0.038
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
d7-MeFOSE	11.034	623.2 -> 58.9	52926	26.42 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
d9-EtFOSE	11.319	639.2 -> 58.9	58474	26.06 µg/L		0.000
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
d5-EtFOSA	11.410	531.1 -> 219.0	6646	2.50 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.1%		
Target Compounds						QValue
4:2FTS	5.084	327.1 -> 307.0	1253	0.76 µg/L		99
		327.1 -> 80.9	526			
6:2FTS	6.786	427.1 -> 407.0	1708	0.67 µg/L		95
		427.1 -> 80.9	673			
8:2FTS	7.841	527.1 -> 507.0	1197	0.77 µg/L		97
		527.1 -> 80.8	465			
EtFOSAA	8.322	584.2 -> 419.1	414	0.15 µg/L		80
		584.2 -> 526.0	179			
FOSA	9.823	498.1 -> 77.9	1004	0.19 µg/L		99
		498.1 -> 478.0	24			
MeFOSAA	8.112	570.1 -> 419.0	432	0.17 µg/L	#	50
		570.1 -> 483.0	162			
PFBA	2.746	212.8 -> 168.9	2471	0.76 µg/L		100
PFBS	5.241	298.7 -> 79.9	492	0.17 µg/L		75
		298.7 -> 98.8	125			
PFDA	8.030	512.9 -> 469.0	2268	0.23 µg/L		93
		512.9 -> 219.0	395			
PFDoDA	8.905	613.1 -> 569.0	2514	0.19 µg/L		94
		613.1 -> 319.0	498			
PFDS	9.045	599.0 -> 79.9	422	0.19 µg/L		79

Perfluorinated Compounds by LC/MS/MS

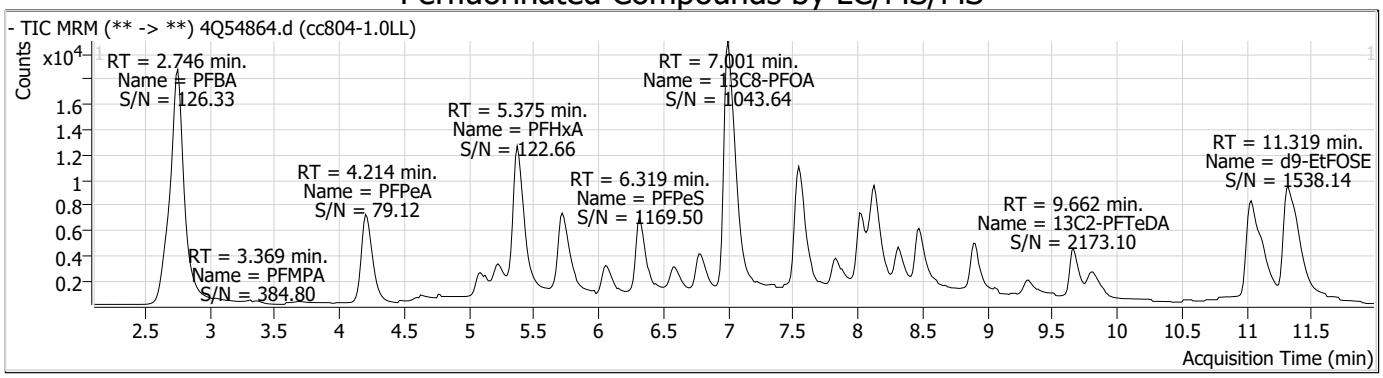
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	160				
PFHpA	6.331	363.1 -> 319.0	3445	0.20	µg/L		93
		363.1 -> 169.0	528				
PFHpS	7.649	449.0 -> 79.9	592	0.18	µg/L		91
		449.0 -> 98.9	345				
PFHxA	5.375	313.0 -> 269.0	1911	0.19	µg/L		96
		313.0 -> 118.9	78				
PFHxS	7.068	398.7 -> 79.9	509	0.22	µg/L	m	93
		398.7 -> 98.9	217				
PFNA	7.548	463.0 -> 419.0	2152	0.19	µg/L		98
		463.0 -> 219.0	519				
PFNS	8.611	548.8 -> 79.9	292	0.20	µg/L		83
		548.8 -> 98.9	177				
PFOA	7.015	413.0 -> 369.0	3884	0.19	µg/L		97
		413.0 -> 169.0	926				
PFOS	8.144	498.9 -> 79.9	598	0.17	µg/L	m	54
		498.9 -> 98.8	284				
PFPeA	4.214	263.0 -> 219.0	3208	0.39	µg/L		100
PFPeS	6.319	349.1 -> 79.9	350	0.16	µg/L		70
		349.1 -> 98.9	215				
PFTeDA	9.662	713.1 -> 669.0	2240	0.17	µg/L		95
		713.1 -> 168.9	278				
PFTrDA	9.304	663.0 -> 619.0	2779	0.19	µg/L		95
		663.0 -> 168.9	431				
PFUnDA	8.486	563.1 -> 519.0	2229	0.17	µg/L		87
		563.1 -> 269.1	610				
11Cl-PF3OUdS	9.331	630.9 -> 450.9	3136	0.36	µg/L		98
		632.9 -> 452.9	954				
9Cl-PF3ONS	8.476	530.8 -> 351.0	3190	0.36	µg/L		95
		532.8 -> 353.0	878				
ADONA	6.593	376.9 -> 250.9	8250	0.39	µg/L		96
		376.9 -> 84.8	2175				
HFPO-DA	5.740	284.9 -> 168.9	1122	0.37	µg/L		93
		284.9 -> 184.9	76				
3:3FTCA	3.704	241.0 -> 177.0	496	0.96	µg/L		90
		241.0 -> 117.0	27				
5:3FTCA	6.070	341.0 -> 237.1	8480	4.66	µg/L		100
		341.0 -> 217.0	6035				
7:3FTCA	7.574	441.0 -> 316.9	4692	4.92	µg/L		97
		441.0 -> 336.9	10890				
EtFOSA	11.412	526.0 -> 219.0	1017	0.36	µg/L	m	89
		526.0 -> 169.0	1547				
EtFOSE	11.332	630.0 -> 58.9	2373	1.15	µg/L		100
MeFOSA	11.140	511.9 -> 219.0	822	0.37	µg/L	m	82
		511.9 -> 169.0	1398				
MeFOSE	11.060	616.1 -> 58.9	2172	1.03	µg/L		100
PFDoDS	9.789	699.1 -> 79.9	333	0.19	µg/L		97
		699.1 -> 98.8	197				
NFDHA	5.266	295.0 -> 201.0	263	0.36	µg/L		78
		295.0 -> 84.9	99				
PFMBA	4.616	279.0 -> 85.1	1758	0.39	µg/L		100
PFMPA	3.369	229.0 -> 84.9	1921	0.39	µg/L		100
PFEESA	5.759	314.8 -> 134.9	2689	0.36	µg/L		97
		314.8 -> 82.9	77				

 # = Qualifier out of range, m = manually integrated, + = Area summed

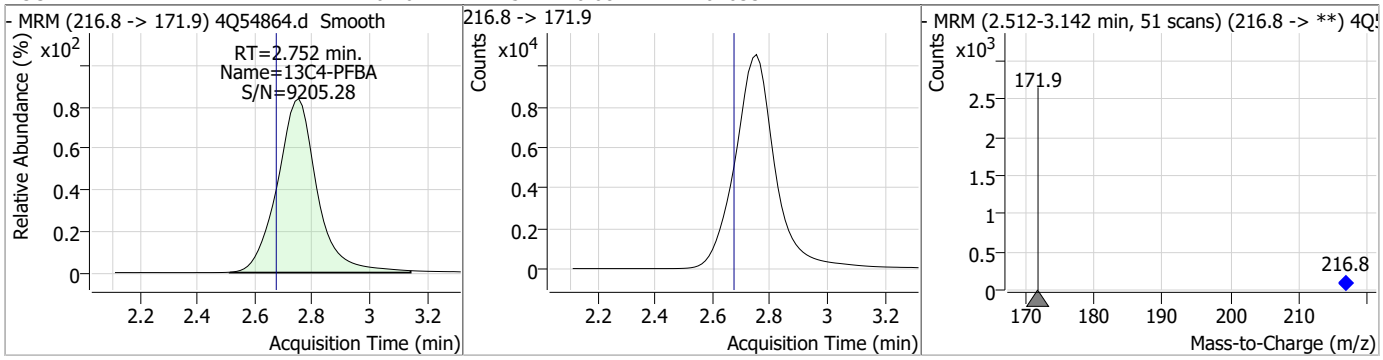
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

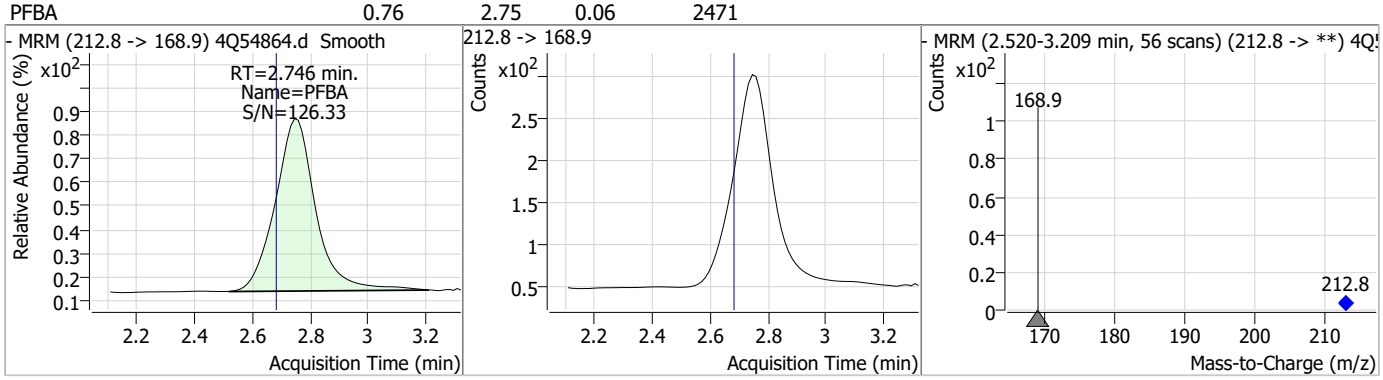
Perfluorinated Compounds by LC/MS/MS



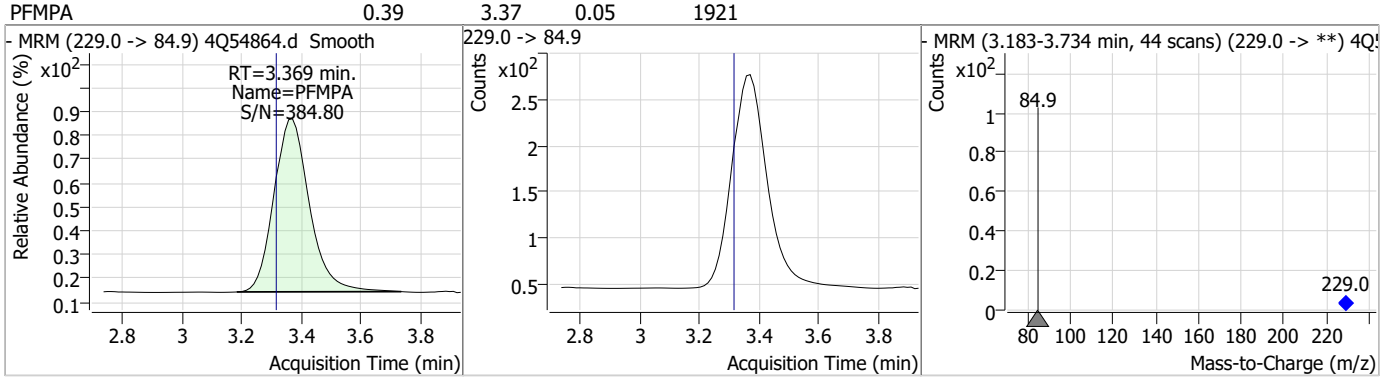
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.20	2.75	0.08	101633				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.76	2.75	0.06	2471				

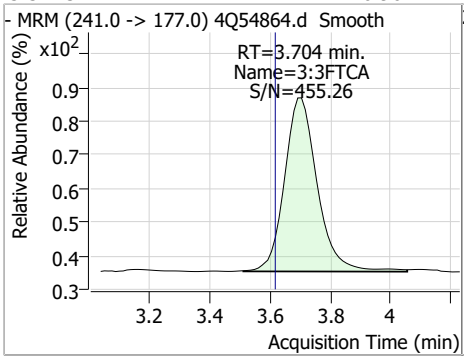


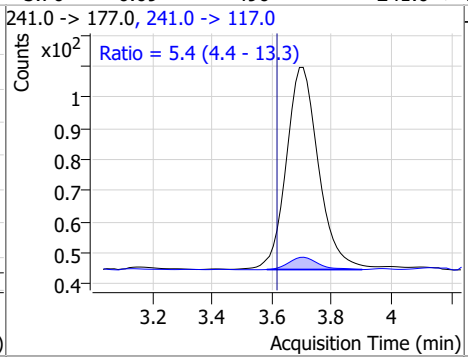
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	0.39	3.37	0.05	1921				

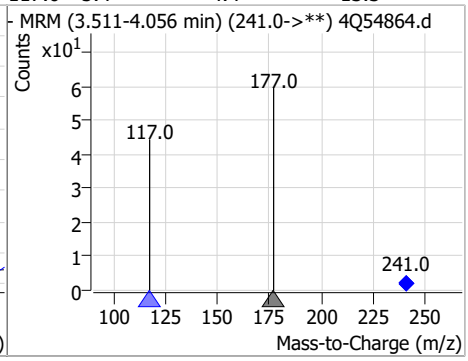


Perfluorinated Compounds by LC/MS/MS

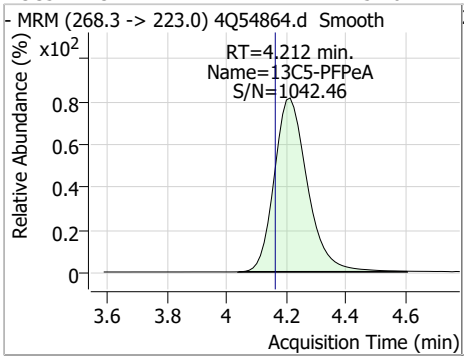
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	0.96	3.70	0.09	496	241.0 -> 117.0	5.4	4.4	13.3

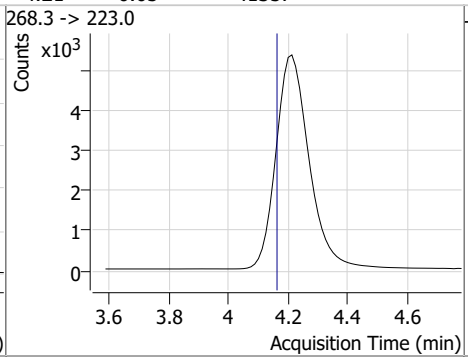


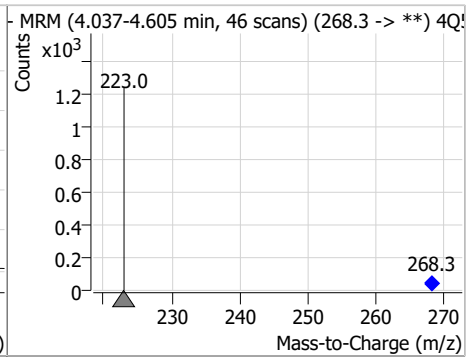




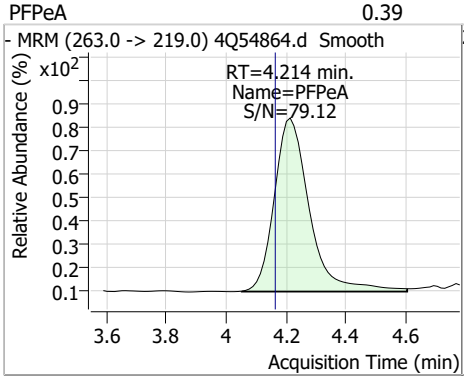
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.10	4.21	0.05	41357				

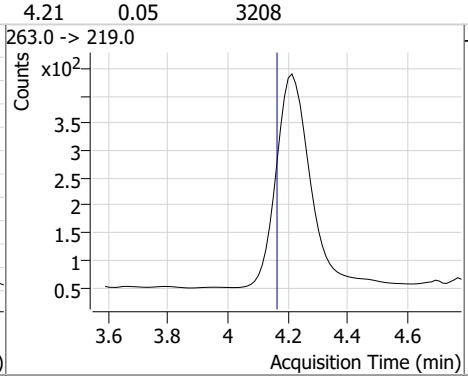


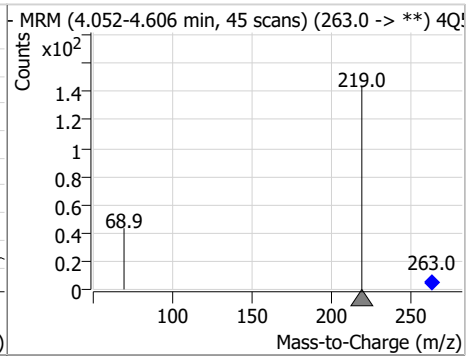




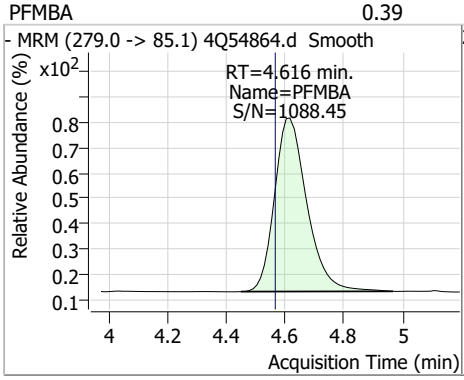
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.39	4.21	0.05	3208				

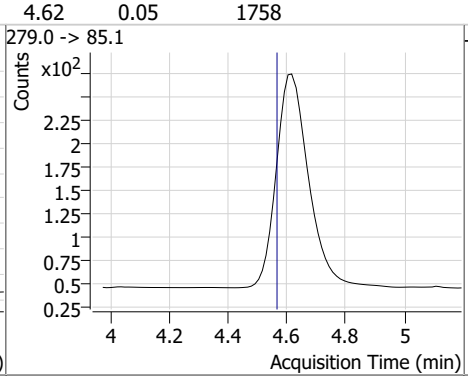


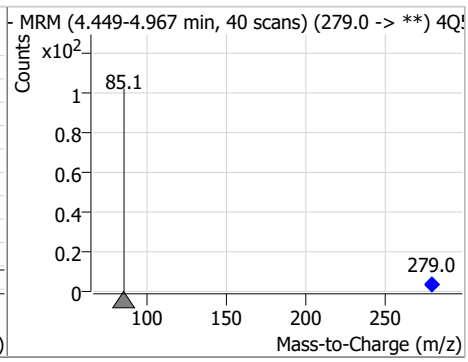




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	0.39	4.62	0.05	1758				

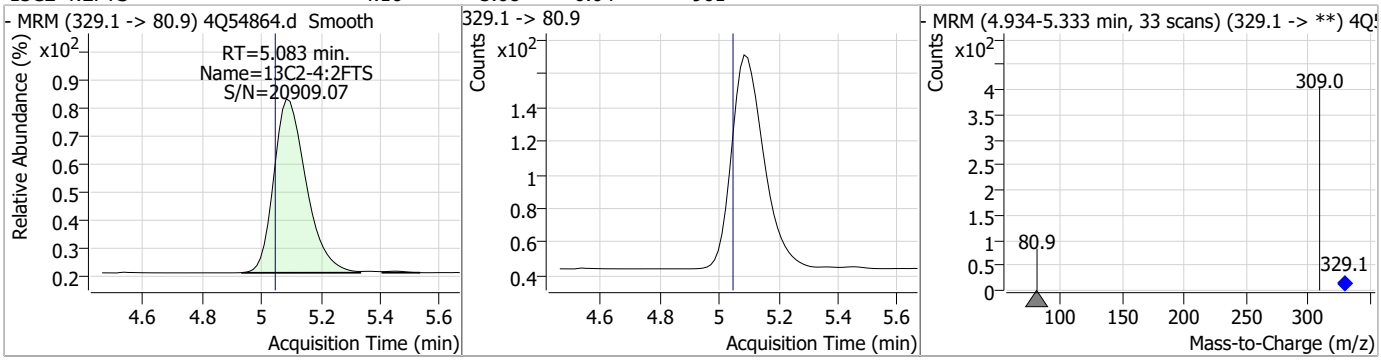




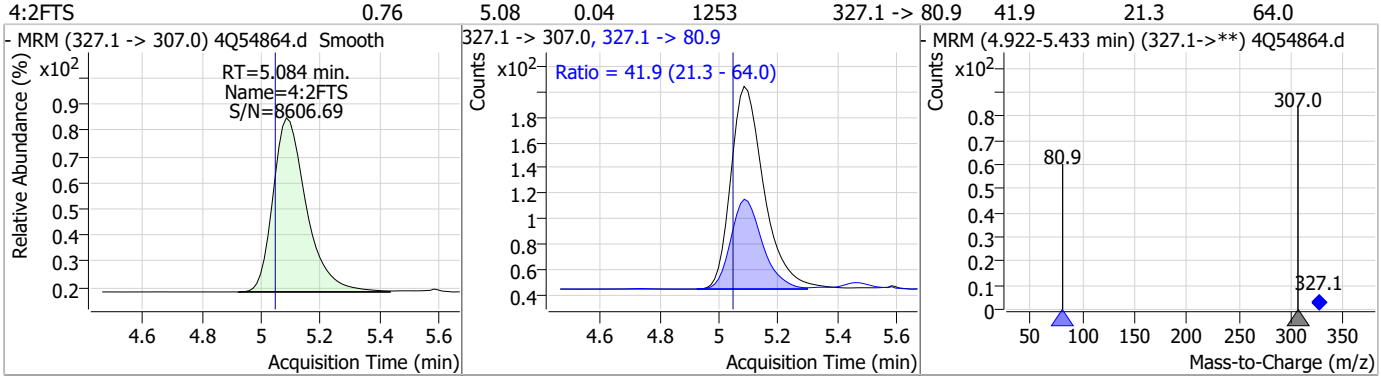


Perfluorinated Compounds by LC/MS/MS

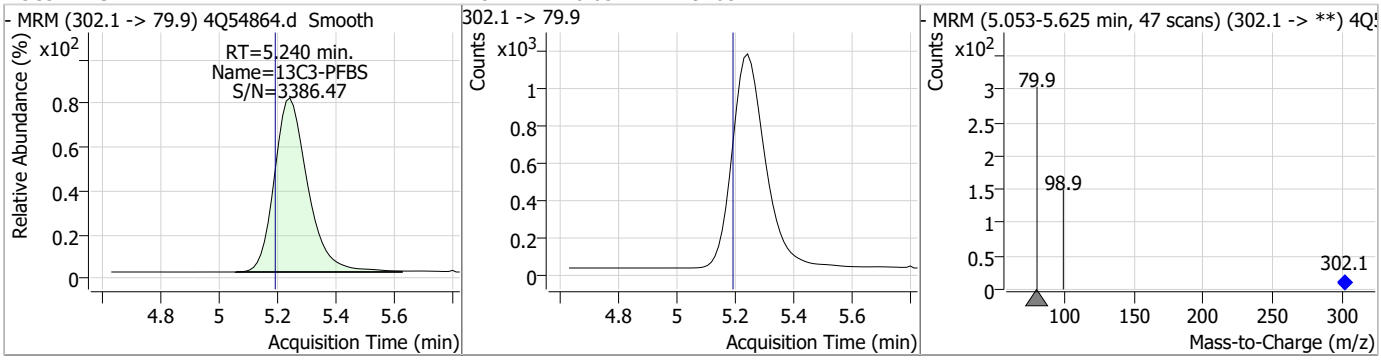
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.16	5.08	0.04	961				



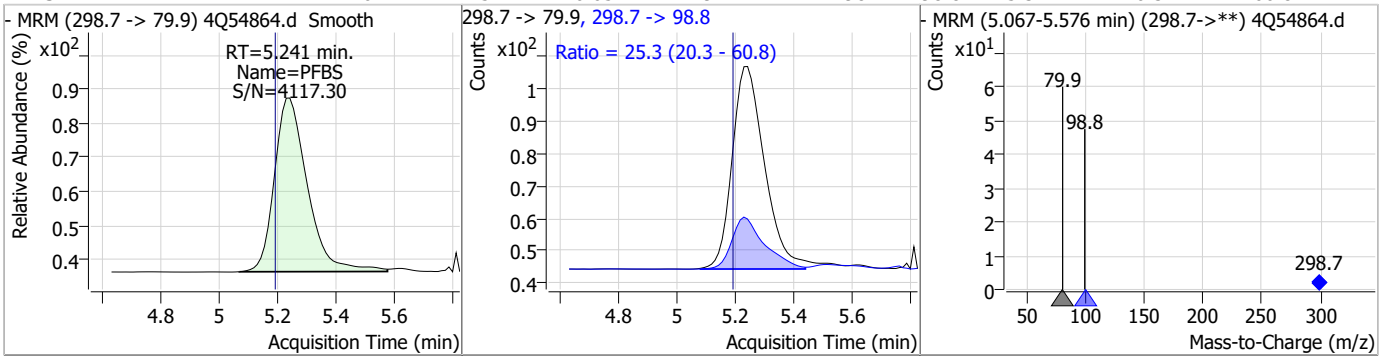
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.76	5.08	0.04	1253	327.1 -> 80.9	41.9	21.3	64.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.44	5.24	0.05	9105				

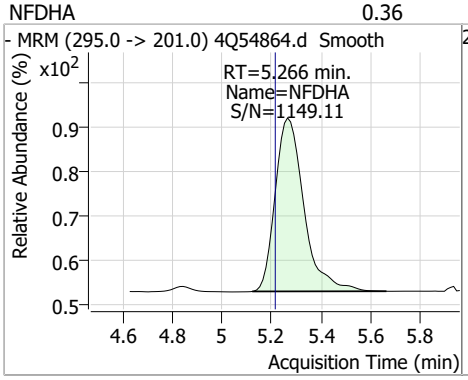


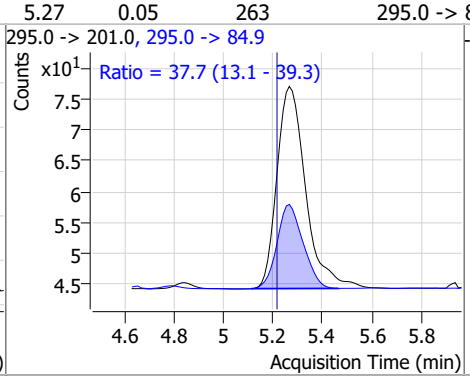
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.17	5.24	0.05	492	298.7 -> 98.8	25.3	20.3	60.8

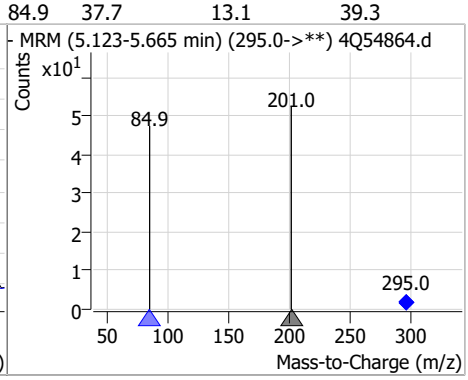


Perfluorinated Compounds by LC/MS/MS

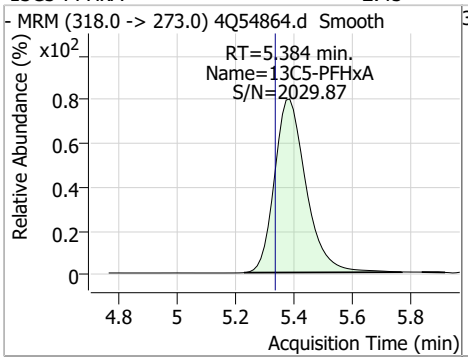
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	0.36	5.27	0.05	263	295.0 -> 84.9	37.7	13.1	39.3

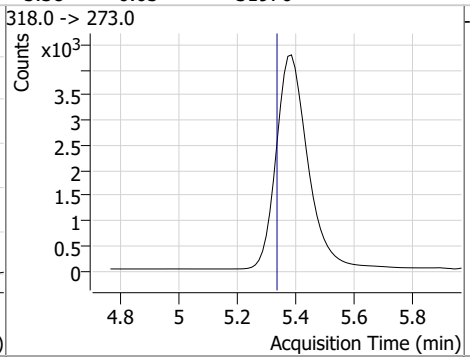


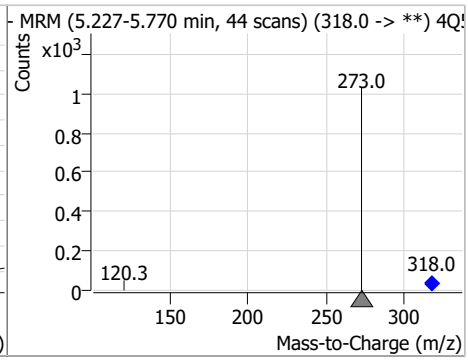




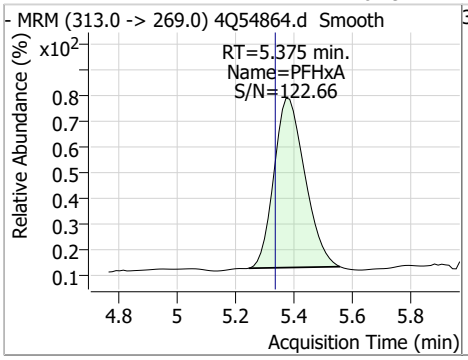
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.45	5.38	0.05	31970				

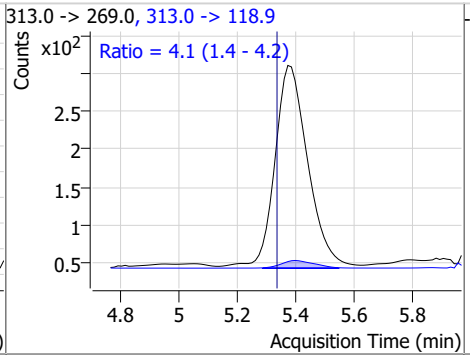


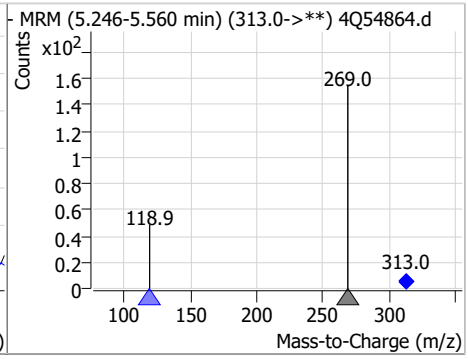




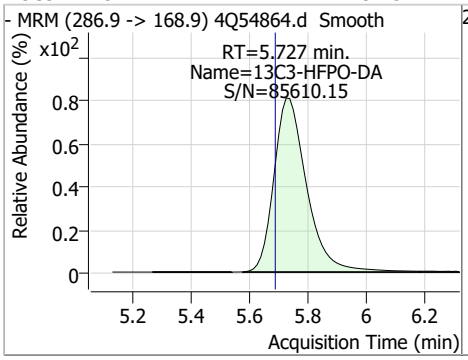
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.19	5.37	0.04	1911	313.0 -> 118.9	4.1	1.4	4.2

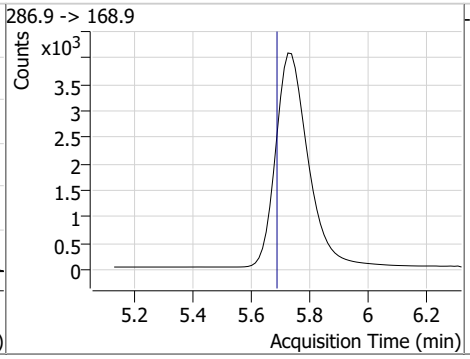


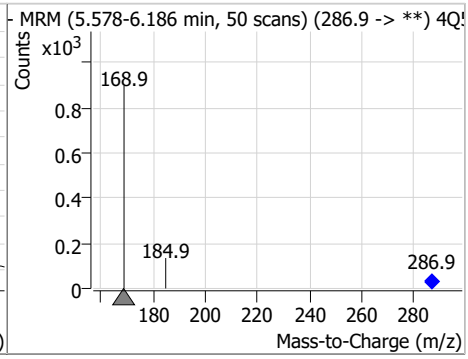




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.75	5.73	0.04	31728				

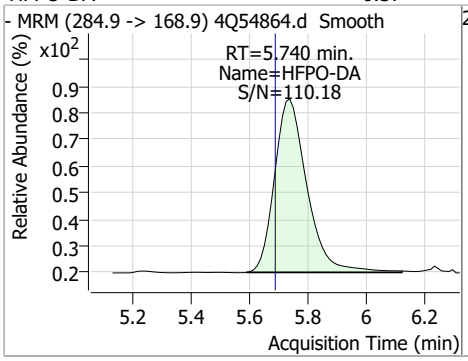


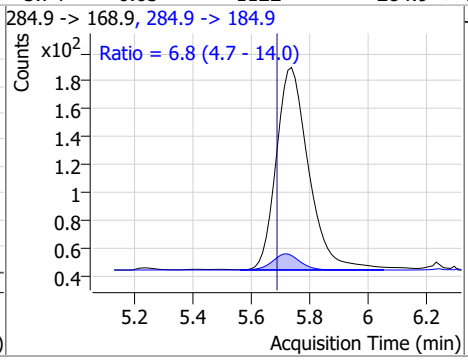


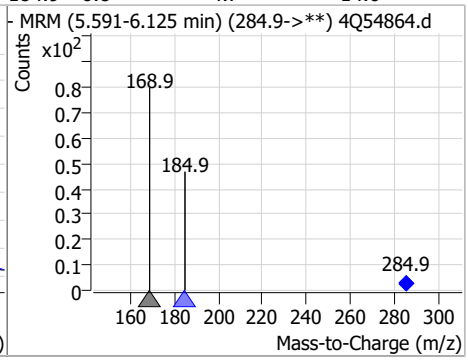


Perfluorinated Compounds by LC/MS/MS

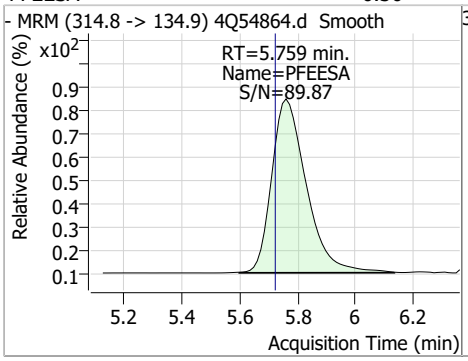
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.37	5.74	0.05	1122	284.9 -> 184.9	6.8	4.7	14.0

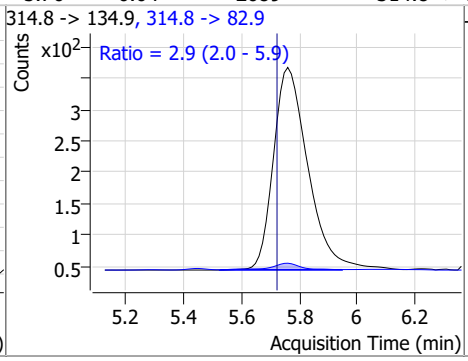


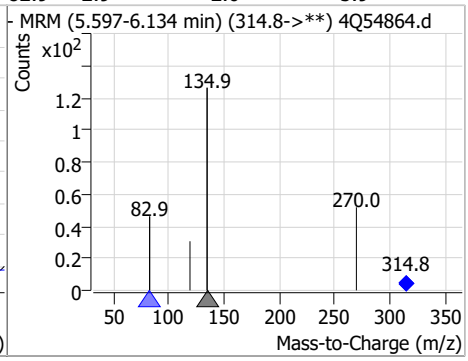




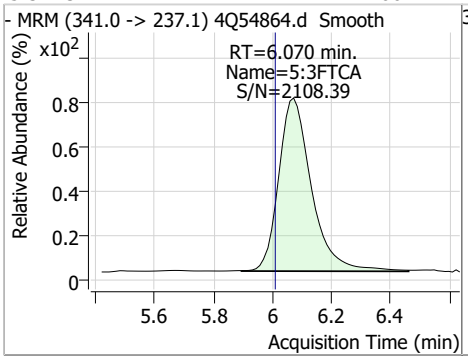
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	0.36	5.76	0.04	2689	314.8 -> 82.9	2.9	2.0	5.9

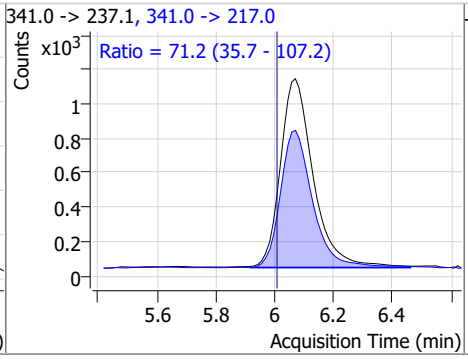


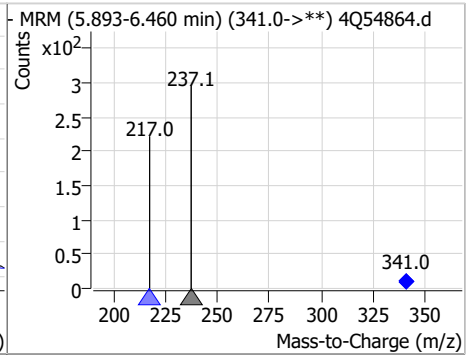




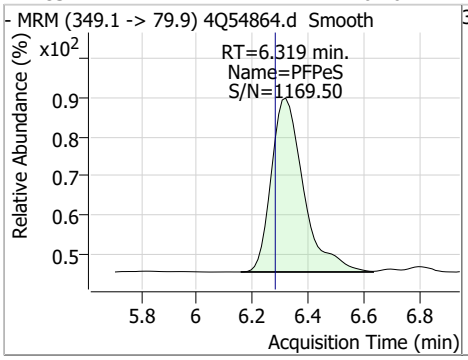
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	4.66	6.07	0.06	8480	341.0 -> 217.0	71.2	35.7	107.2

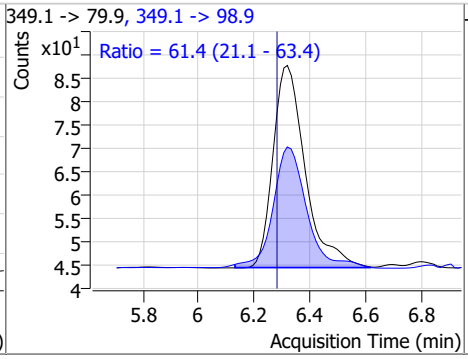


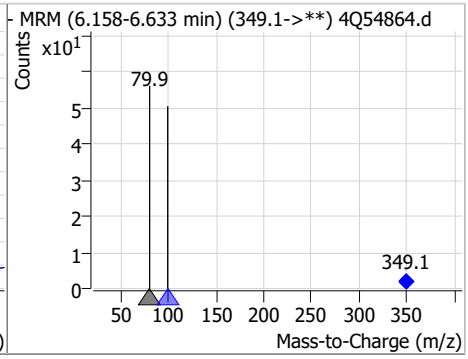




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.16	6.32	0.04	350	349.1 -> 98.9	61.4	21.1	63.4

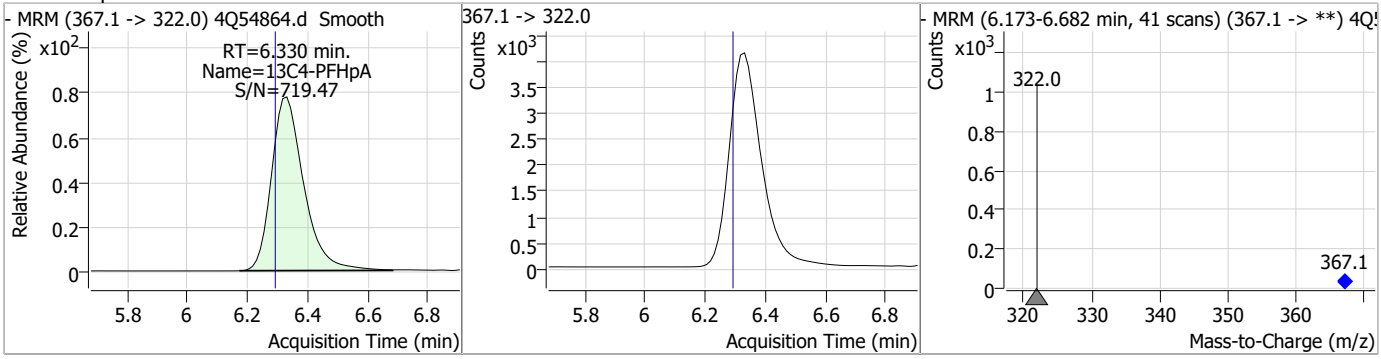




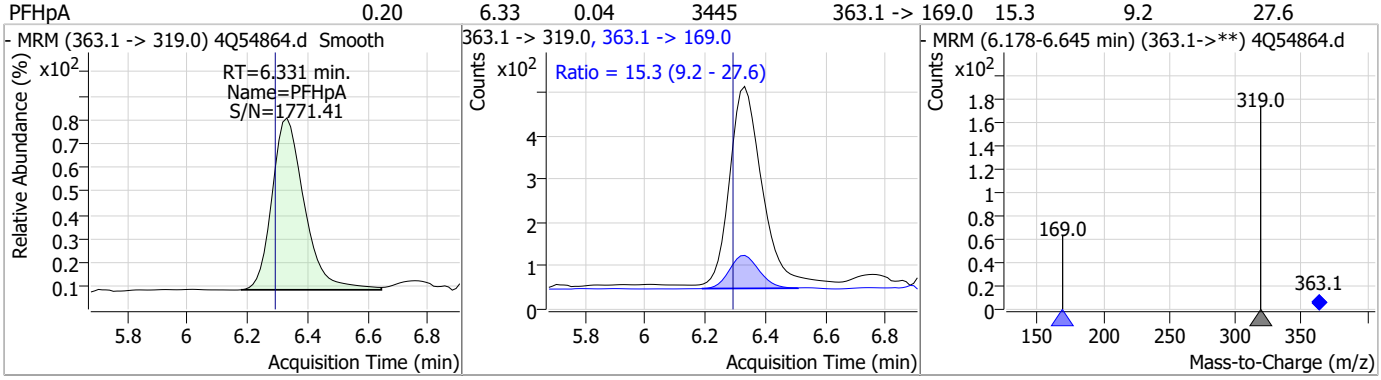


Perfluorinated Compounds by LC/MS/MS

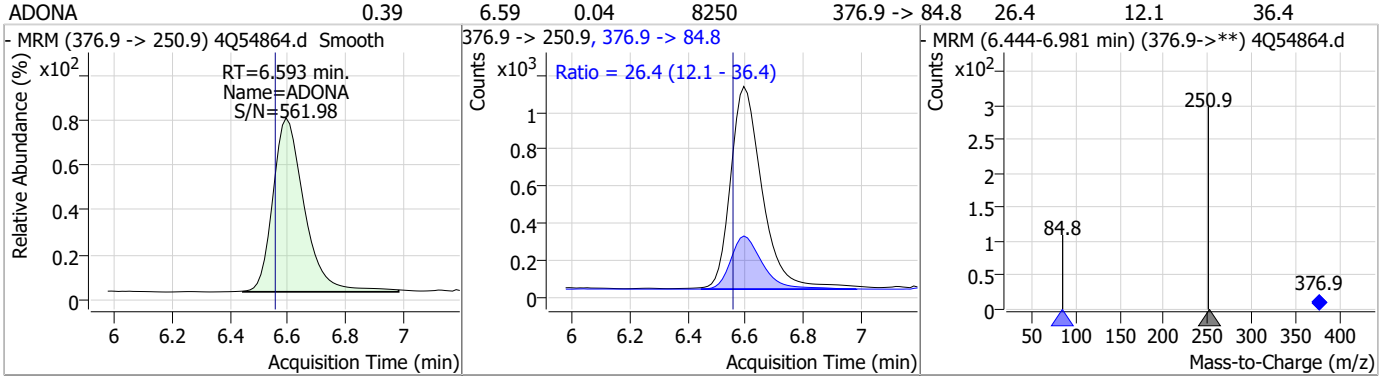
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.45	6.33	0.04	30567				



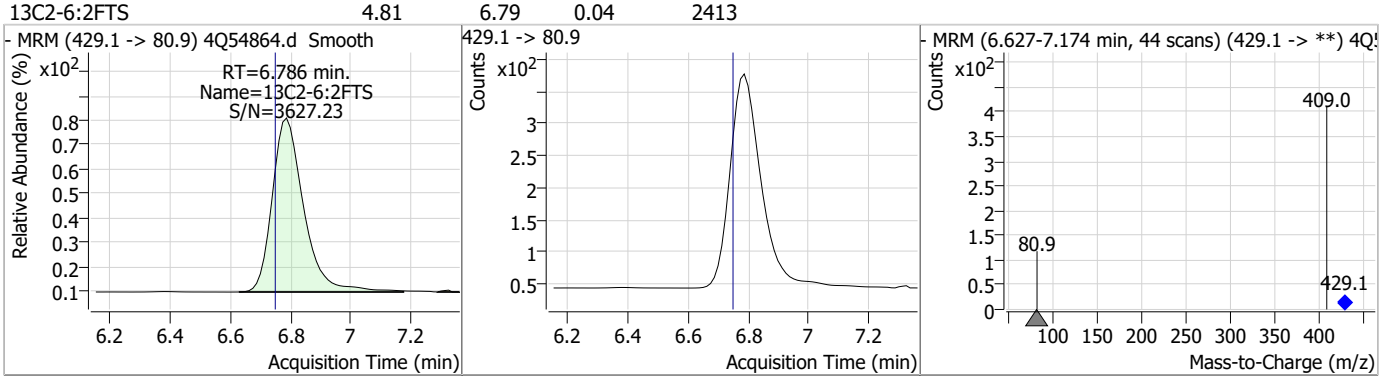
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.20	6.33	0.04	3445	363.1 -> 169.0	15.3	9.2	27.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.39	6.59	0.04	8250	376.9 -> 84.8	26.4	12.1	36.4

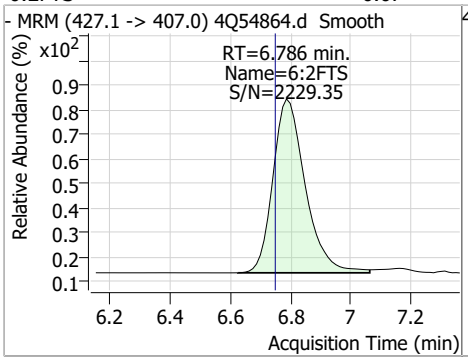


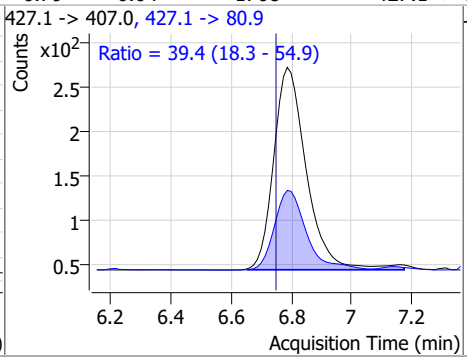
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.81	6.79	0.04	2413				

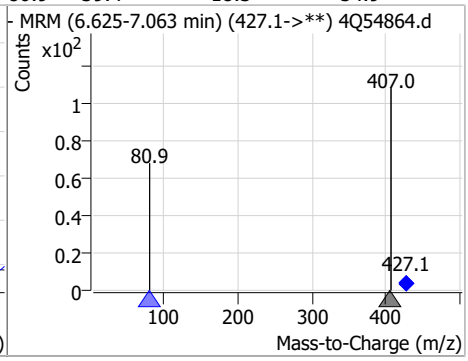


Perfluorinated Compounds by LC/MS/MS

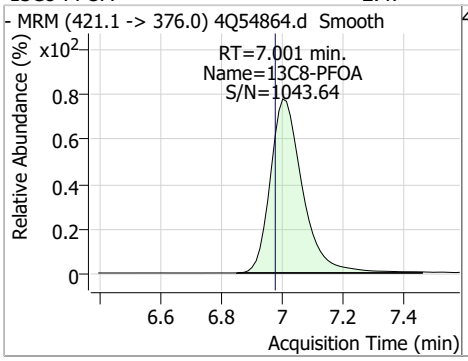
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.67	6.79	0.04	1708	427.1 -> 80.9	39.4	18.3	54.9

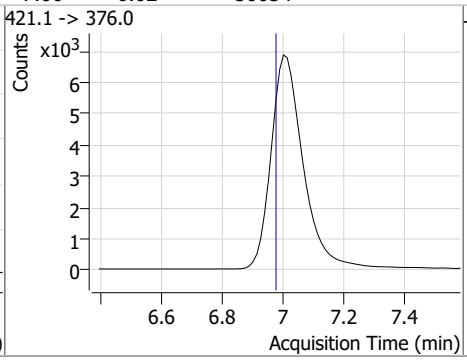


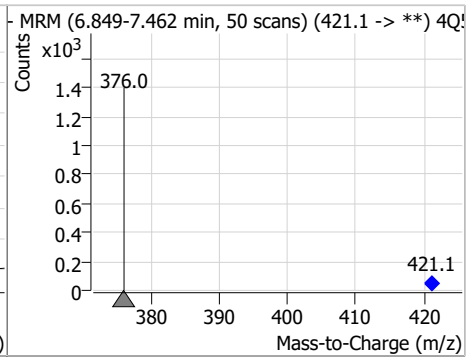




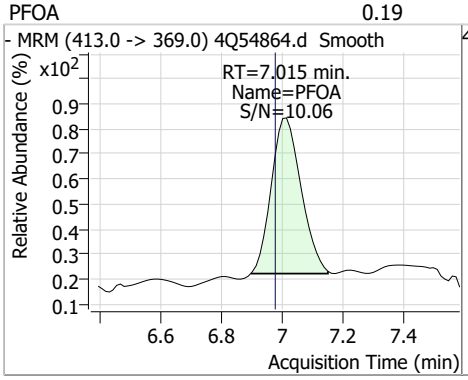
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.47	7.00	0.02	50654				

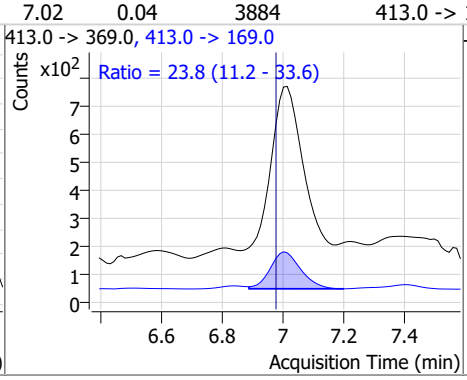


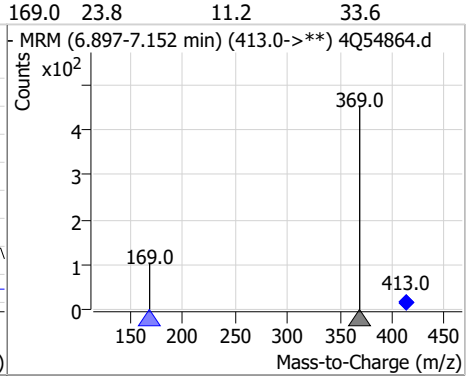




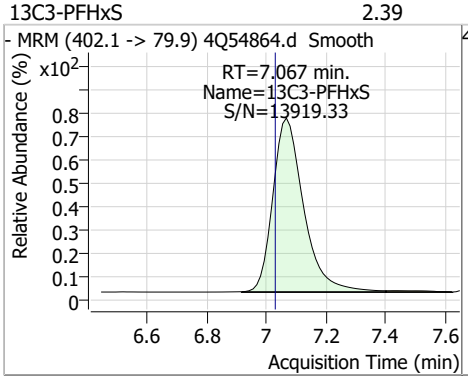
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.19	7.02	0.04	3884	413.0 -> 169.0	23.8	11.2	33.6

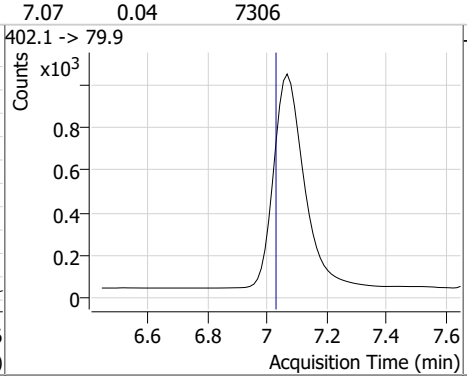


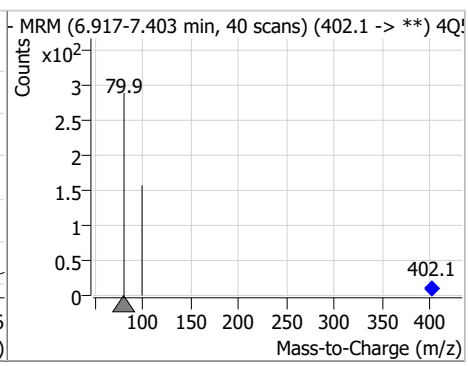




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.39	7.07	0.04	7306				

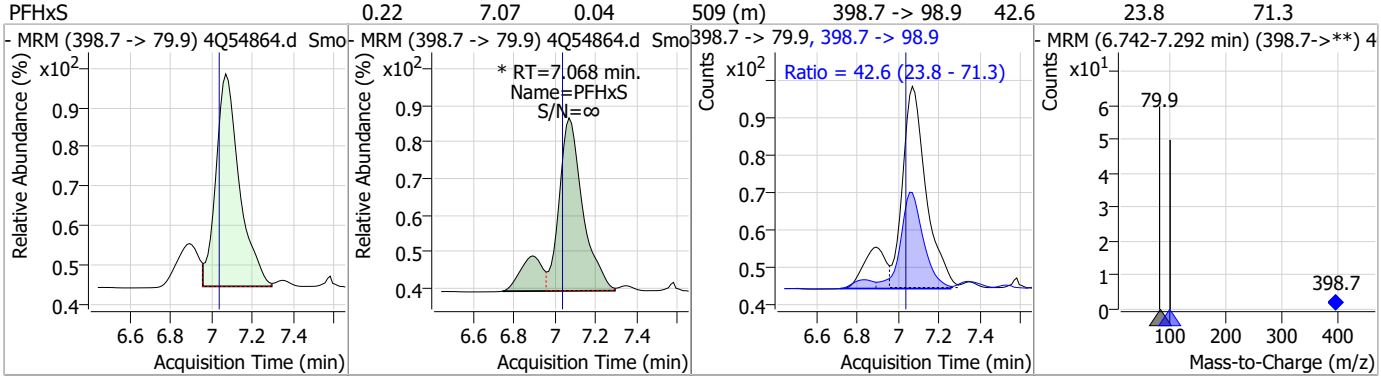




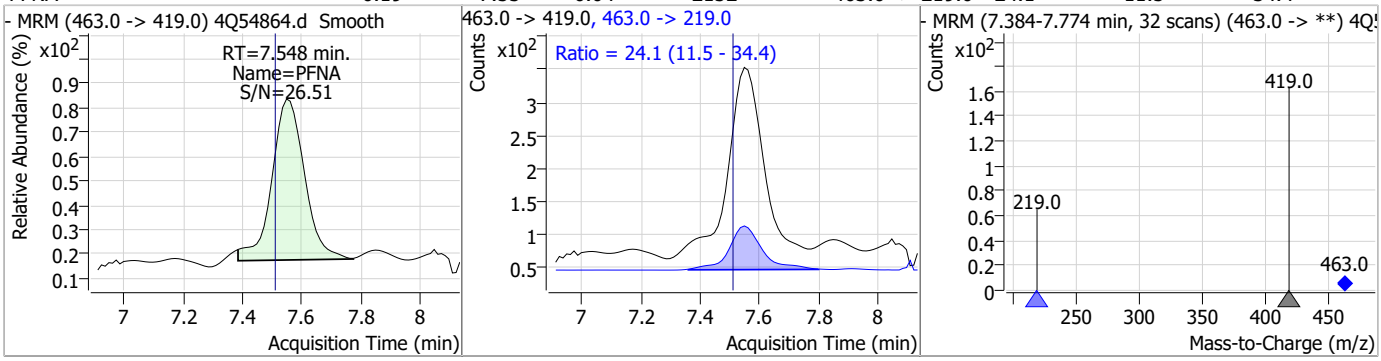


Perfluorinated Compounds by LC/MS/MS

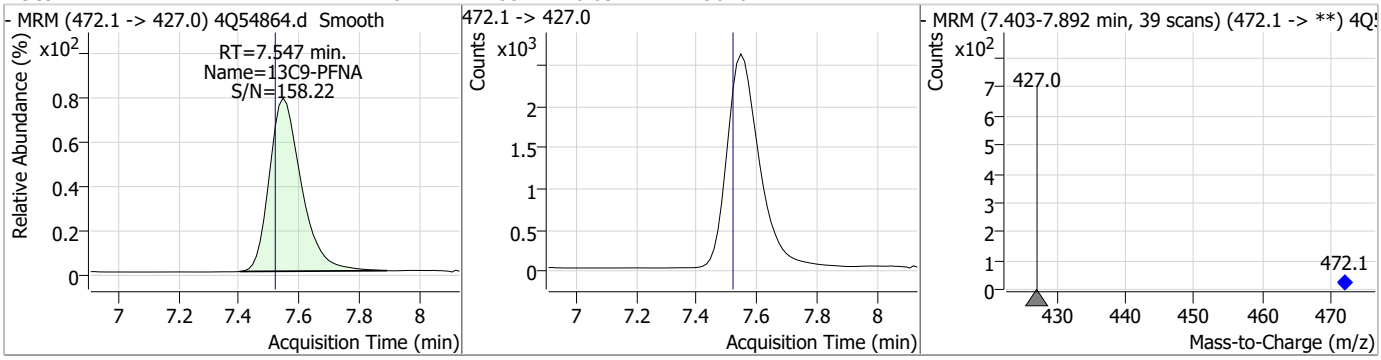
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.22	7.07	0.04	509 (m)	398.7 -> 98.9	42.6	23.8	71.3



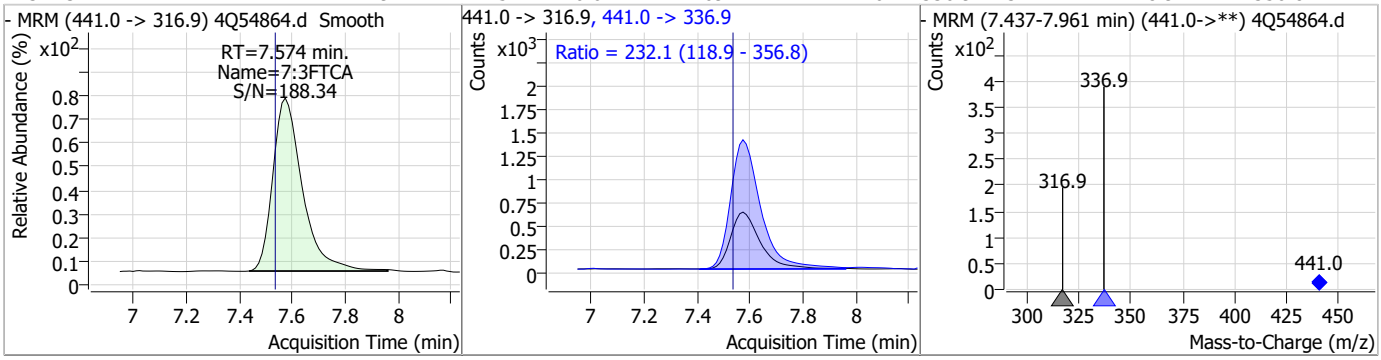
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.19	7.55	0.04	2152	463.0 -> 219.0	24.1	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.18	7.55	0.03	19026				

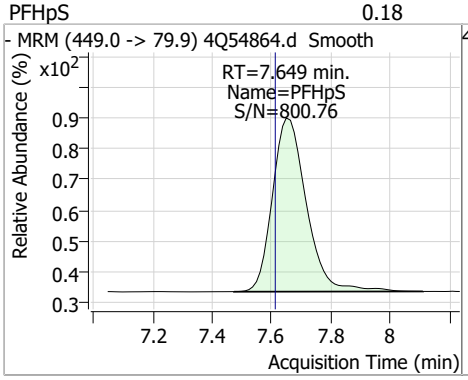


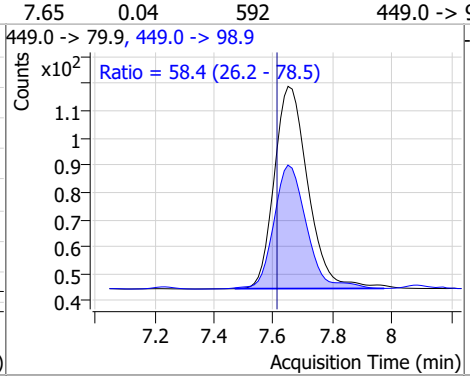
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	4.92	7.57	0.04	4692	441.0 -> 336.9	232.1	118.9	356.8

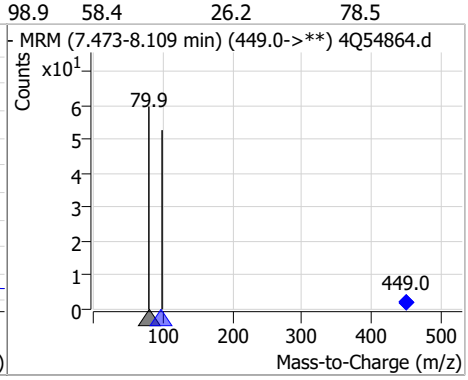


Perfluorinated Compounds by LC/MS/MS

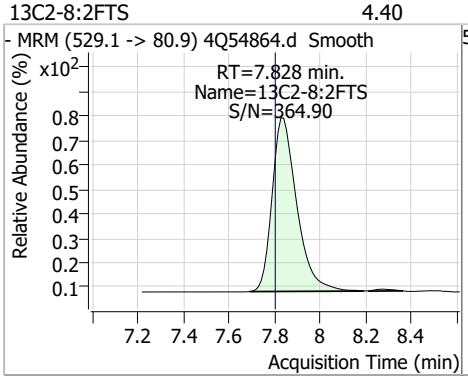
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.18	7.65	0.04	592	449.0 -> 98.9	58.4	26.2	78.5

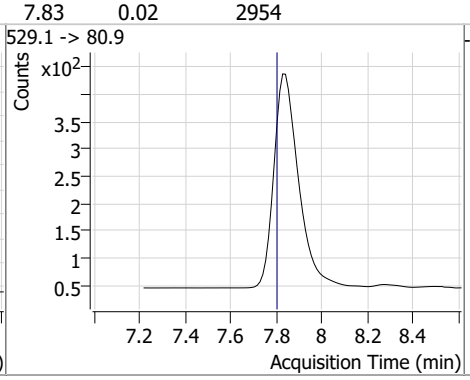


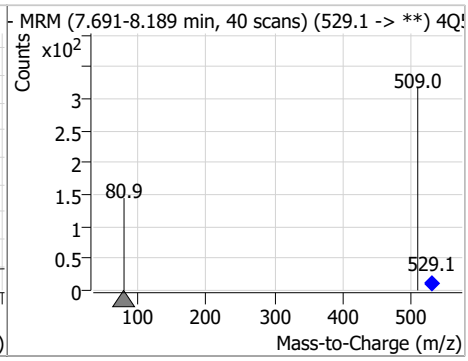




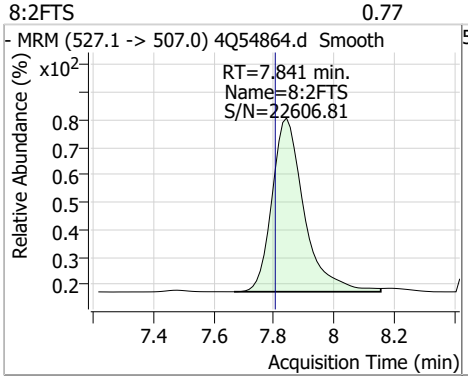
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	4.40	7.83	0.02	2954				

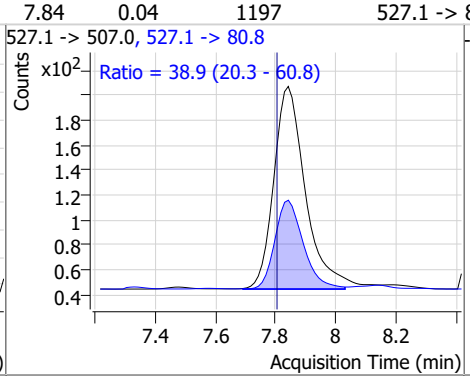


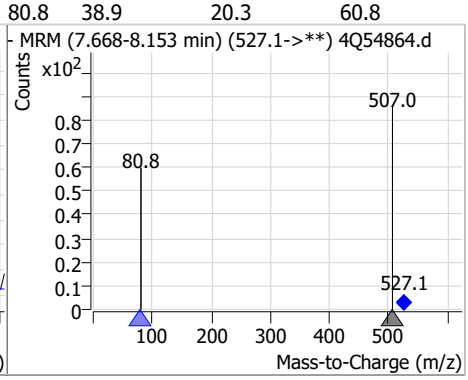




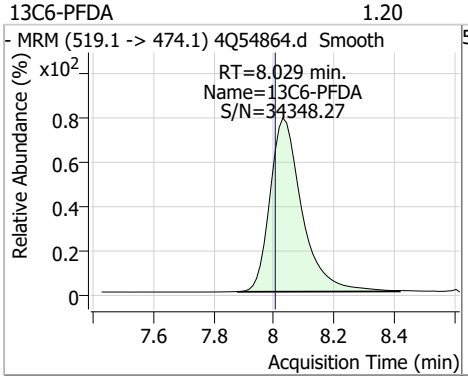
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.77	7.84	0.04	1197	527.1 -> 80.8	38.9	20.3	60.8

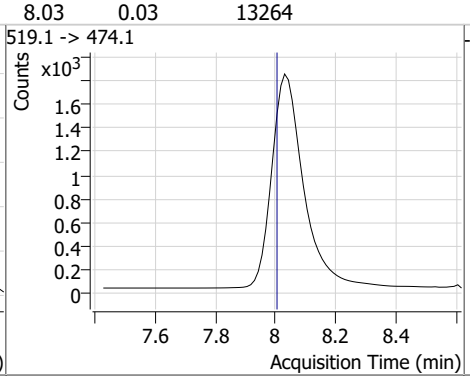


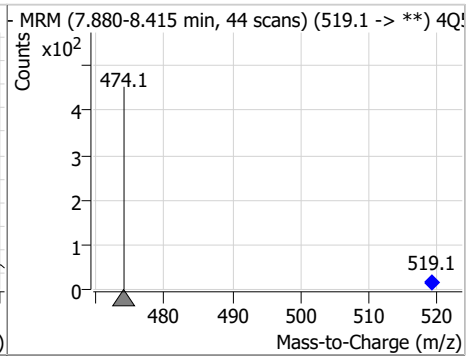




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.20	8.03	0.03	13264				

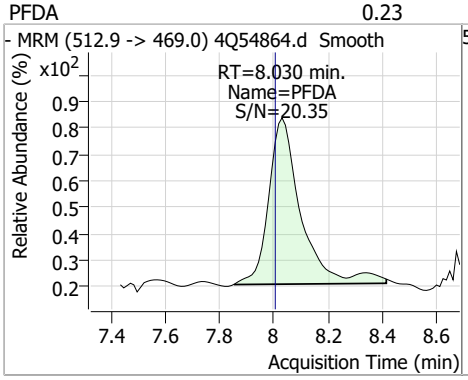


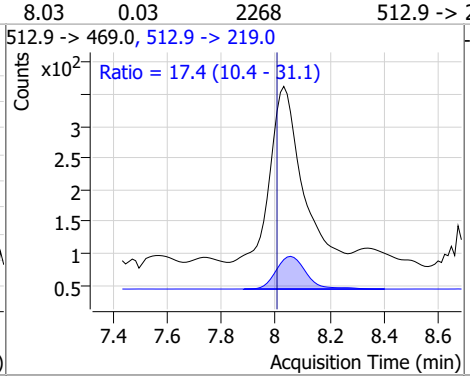


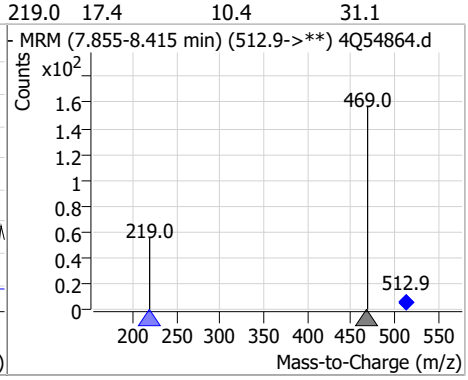


Perfluorinated Compounds by LC/MS/MS

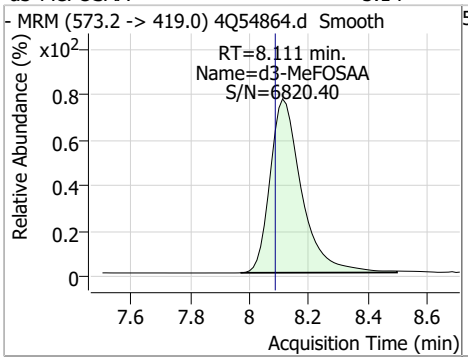
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.23	8.03	0.03	2268	512.9 -> 219.0	17.4	10.4	31.1

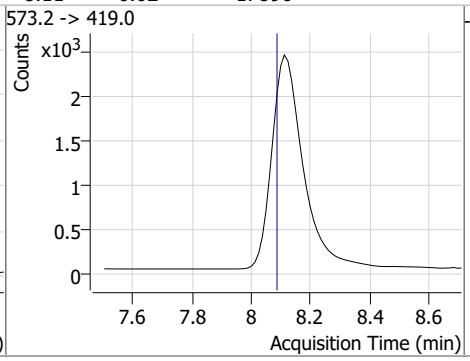


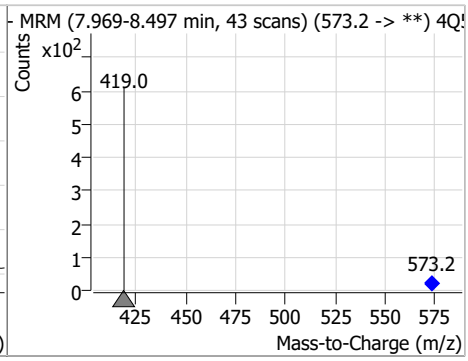




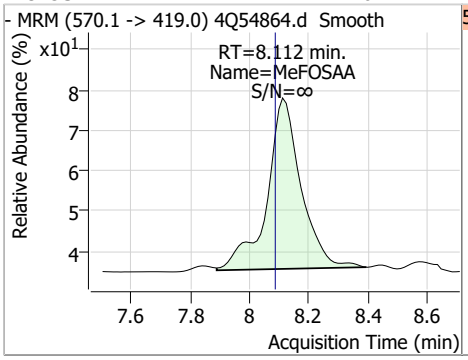
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.14	8.11	0.02	17896				

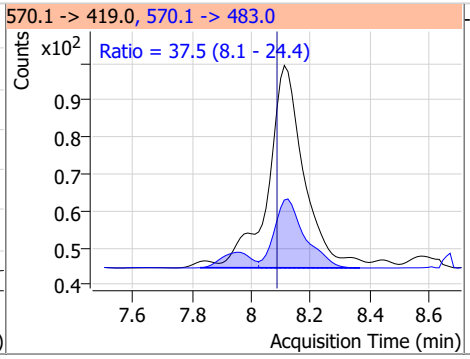


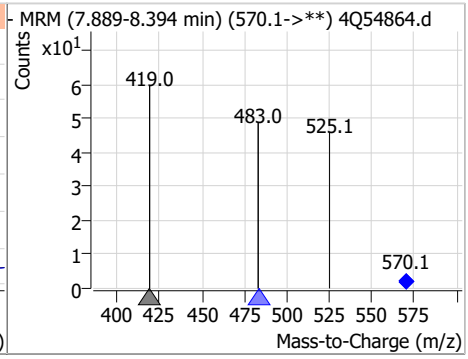




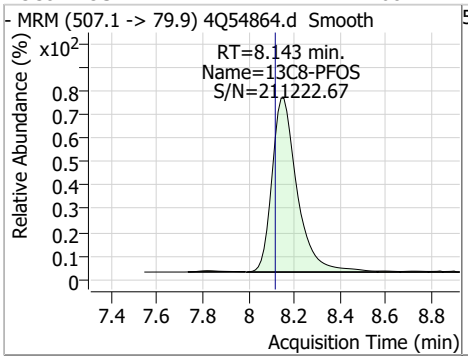
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.17	8.11	0.02	432	570.1 -> 483.0	37.5	8.1	24.4

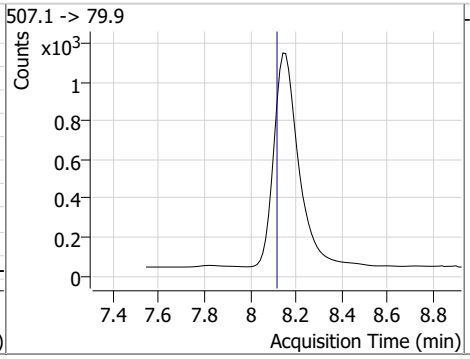


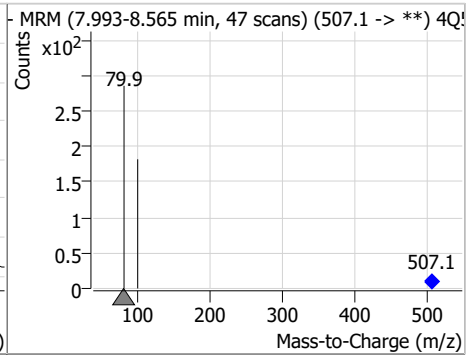




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.68	8.14	0.03	8502				

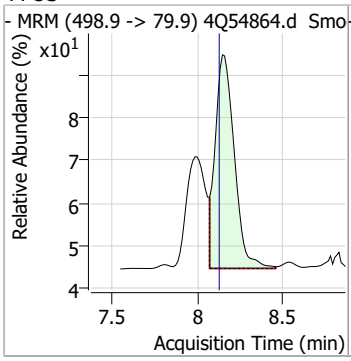


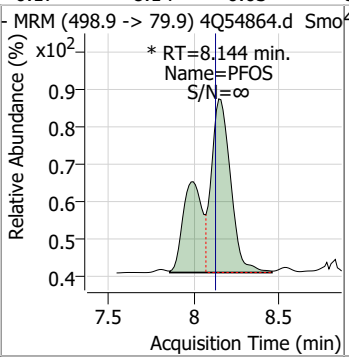


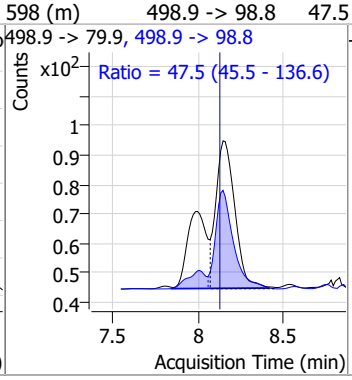


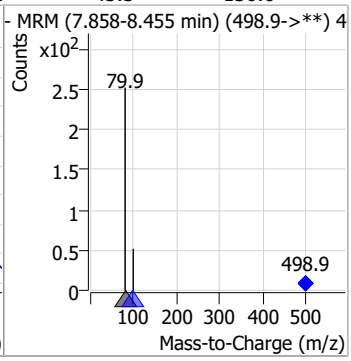
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.17	8.14	0.03	598 (m)	498.9 -> 98.8	47.5	45.5	136.6

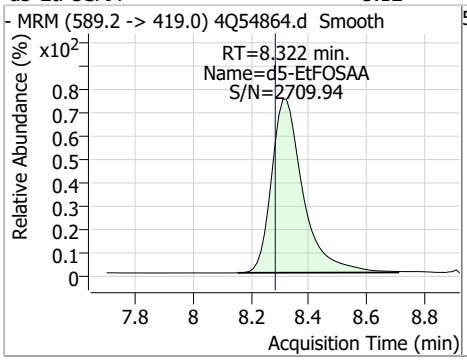


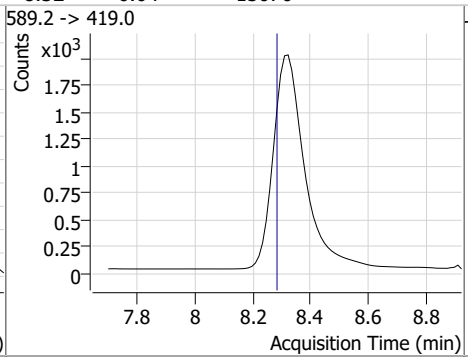


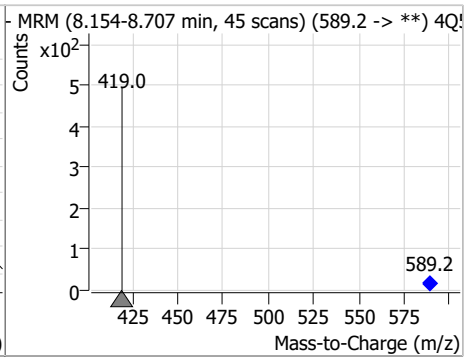




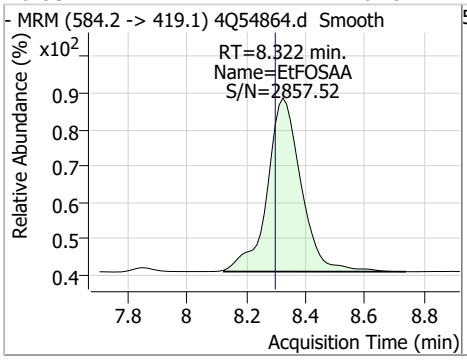
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	5.12	8.32	0.04	15076				

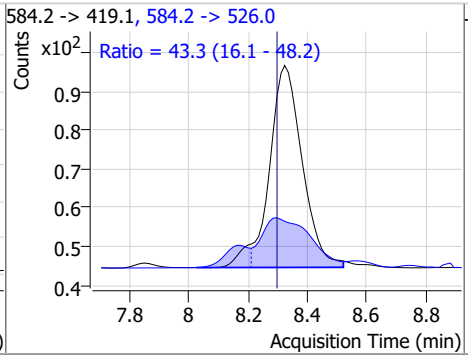


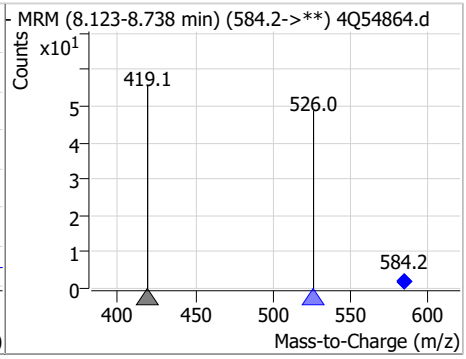




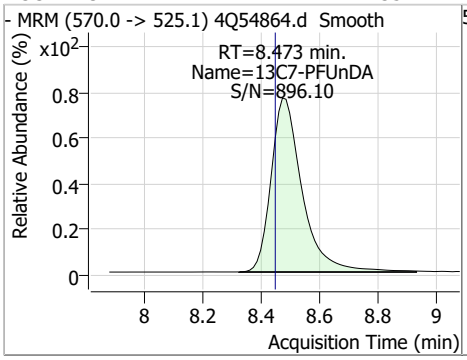
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.15	8.32	0.03	414	584.2 -> 526.0	43.3	16.1	48.2

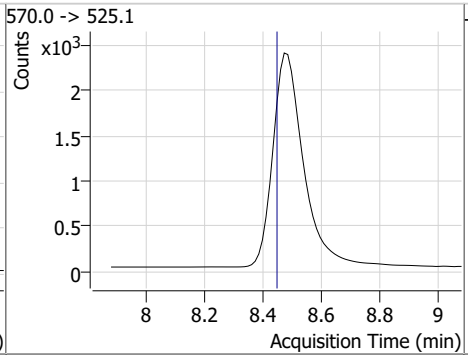


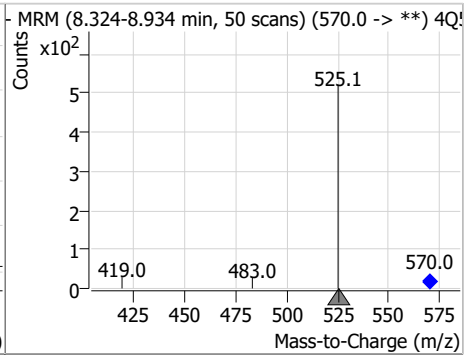




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.35	8.47	0.02	17662				

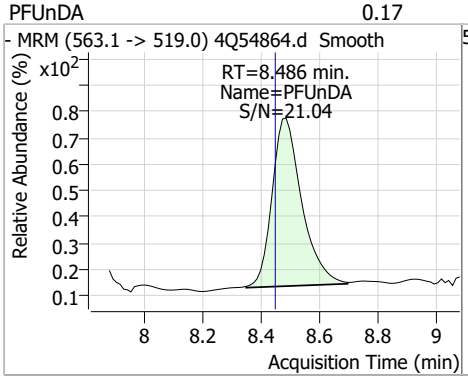


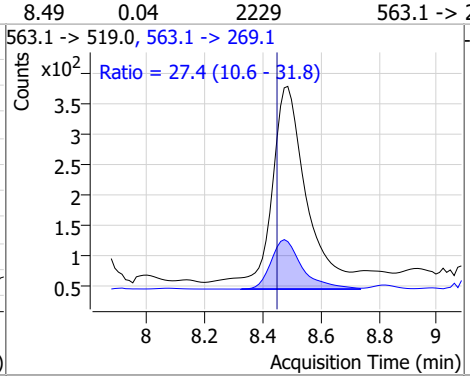


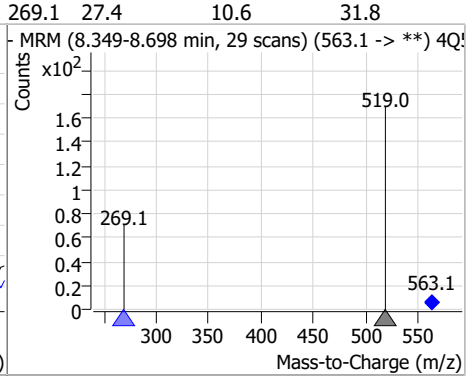


Perfluorinated Compounds by LC/MS/MS

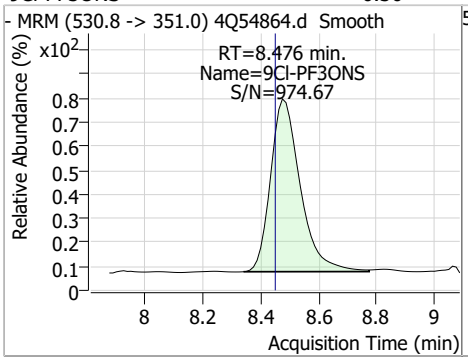
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.17	8.49	0.04	2229	563.1 -> 269.1	27.4	10.6	31.8

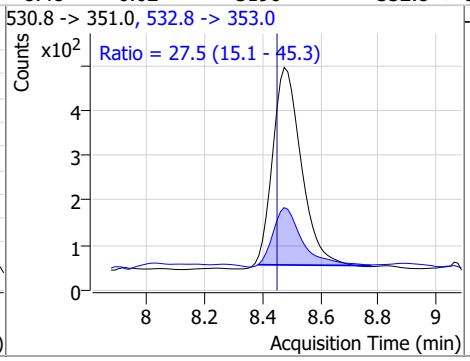


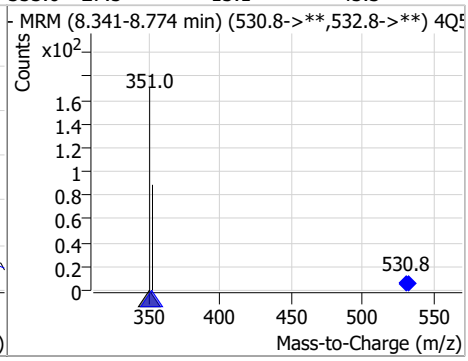




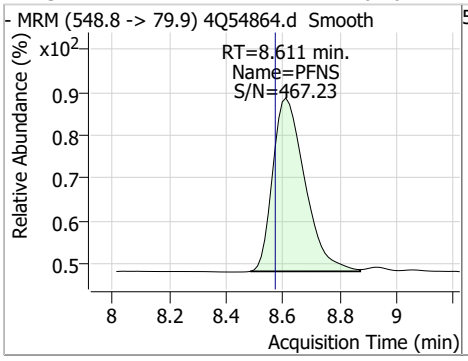
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.36	8.48	0.02	3190	532.8 -> 353.0	27.5	15.1	45.3

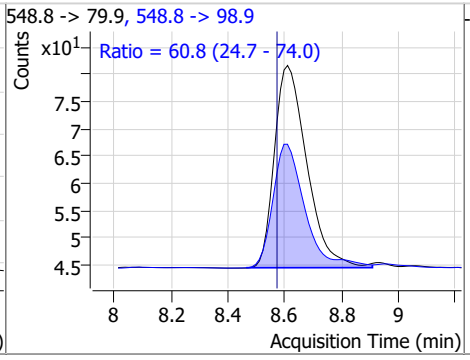


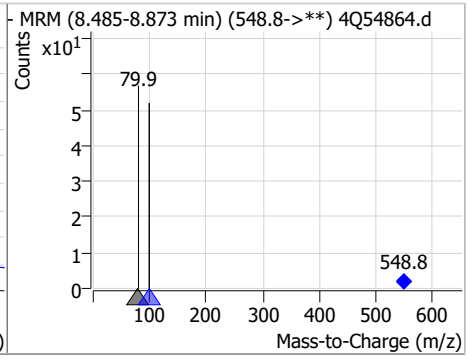




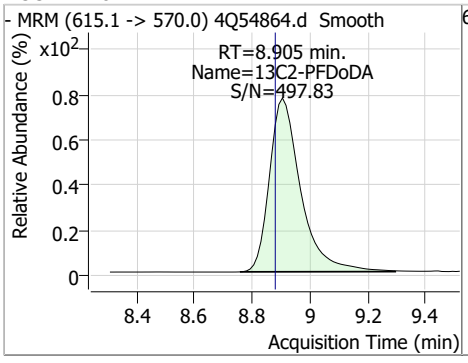
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.20	8.61	0.04	292	548.8 -> 98.9	60.8	24.7	74.0

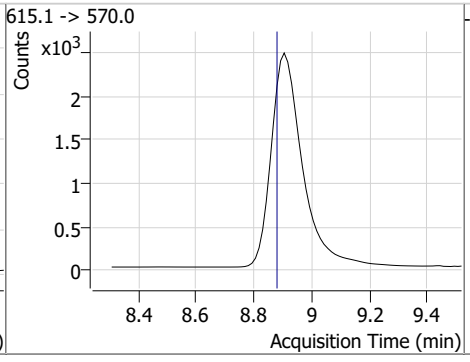


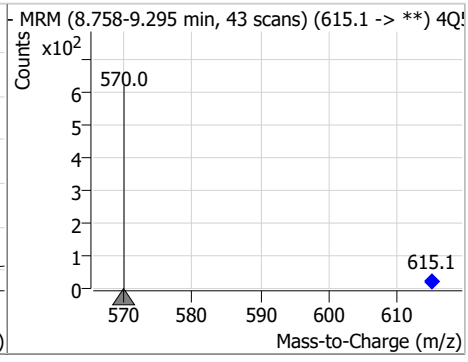




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	8.90	0.02	18365				

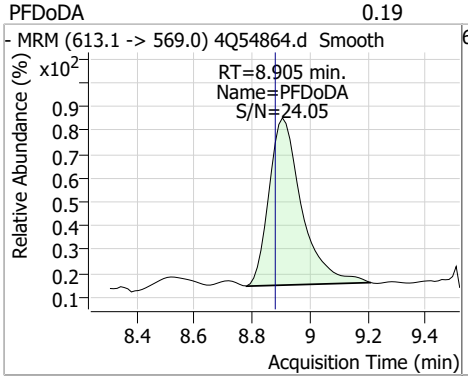


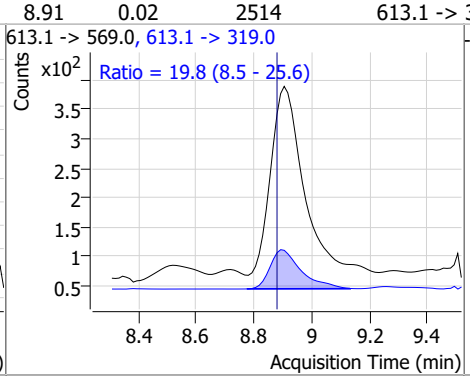


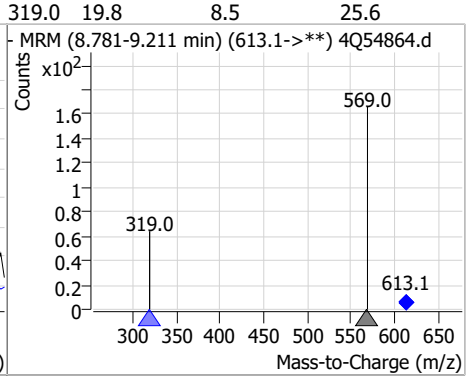


Perfluorinated Compounds by LC/MS/MS

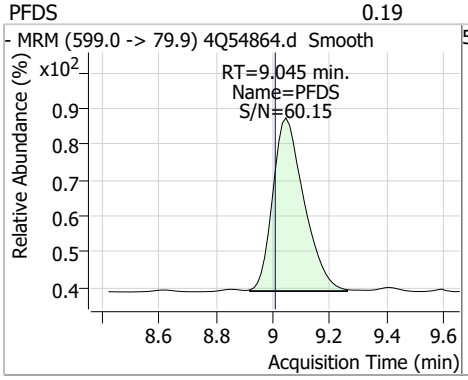
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.19	8.91	0.02	2514	613.1 -> 319.0	19.8	8.5	25.6

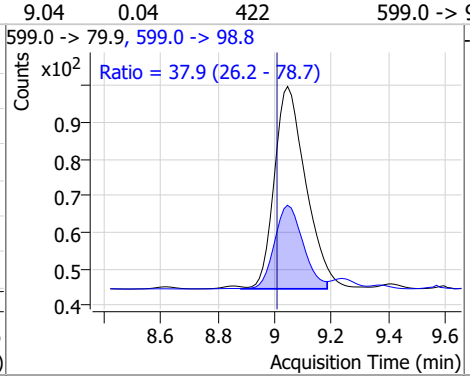


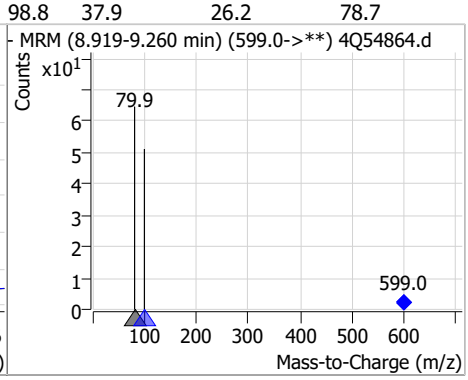




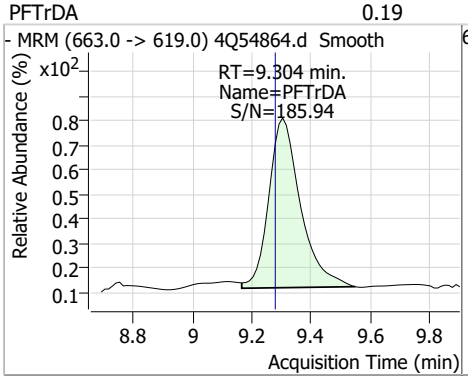
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.19	9.04	0.04	422	599.0 -> 98.8	37.9	26.2	78.7

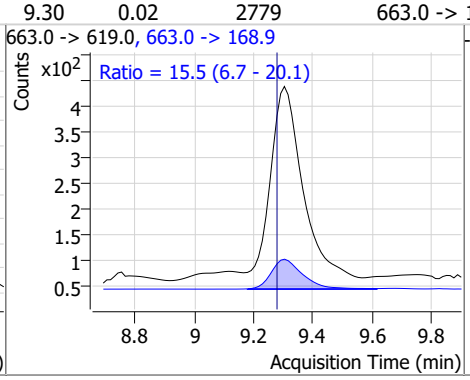


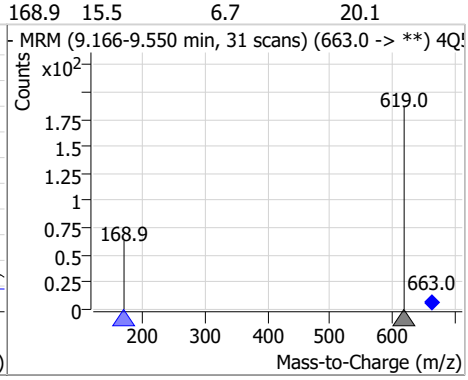




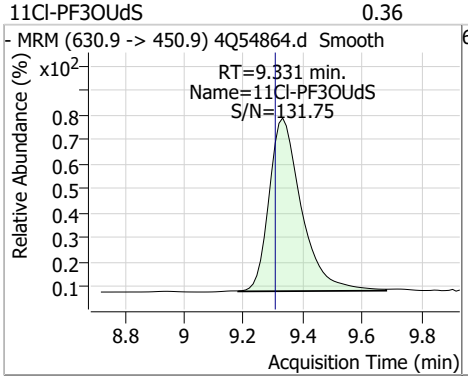
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.19	9.30	0.02	2779	663.0 -> 168.9	15.5	6.7	20.1

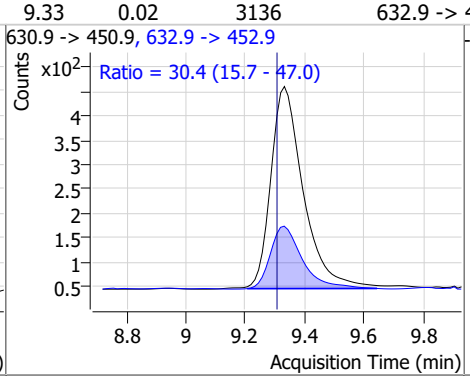


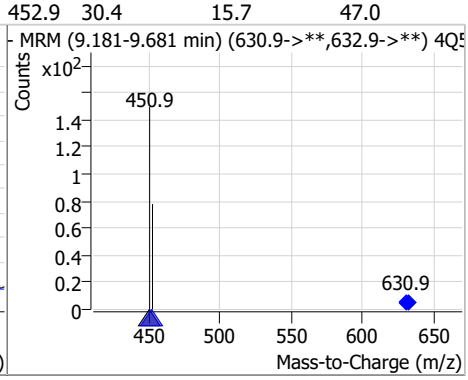




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.36	9.33	0.02	3136	632.9 -> 452.9	30.4	15.7	47.0

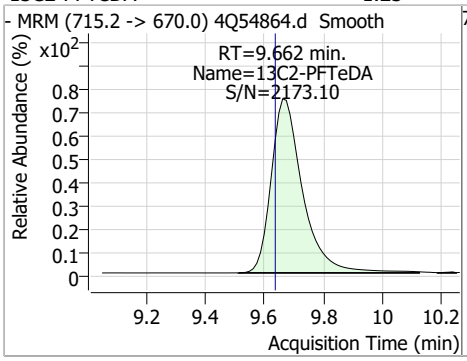


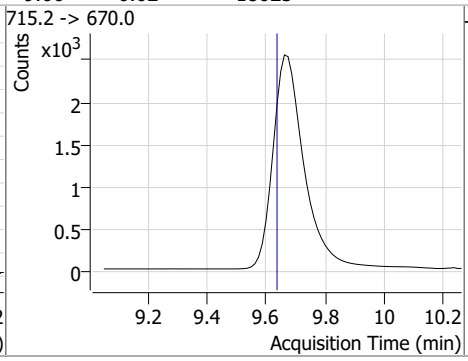


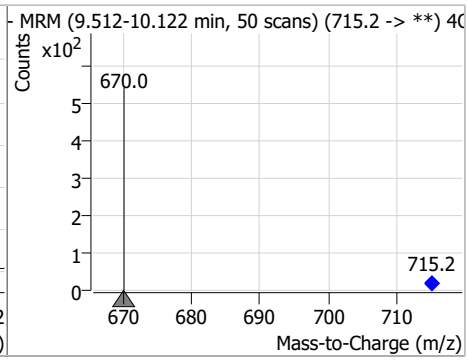


Perfluorinated Compounds by LC/MS/MS

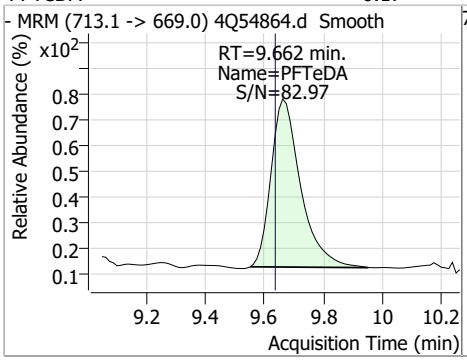
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.66	0.02	18625				

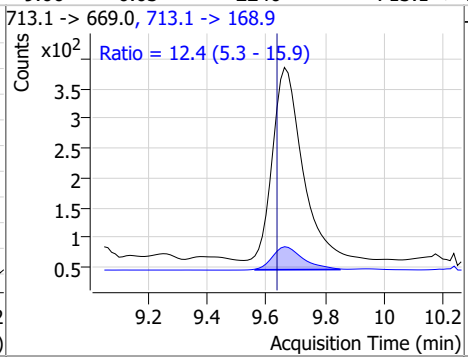


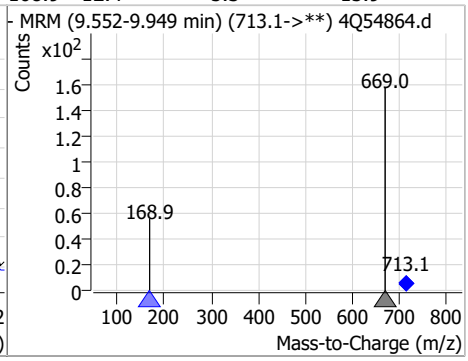




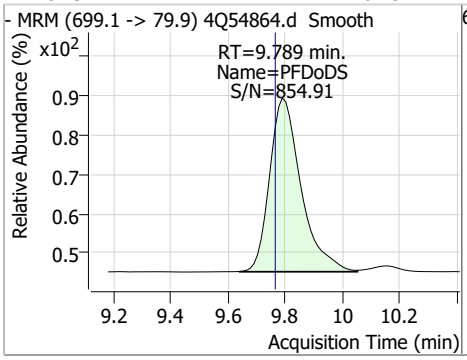
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.17	9.66	0.03	2240	713.1 -> 168.9	12.4	5.3	15.9

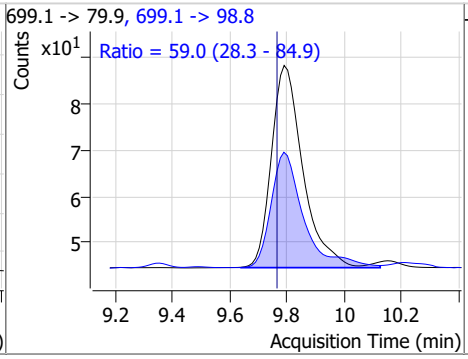


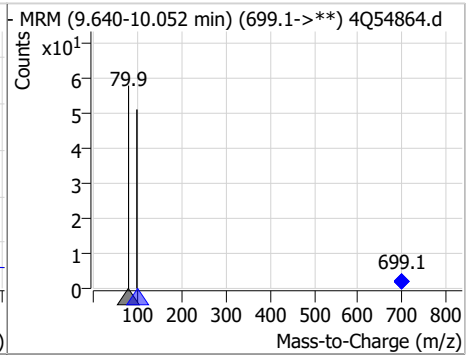




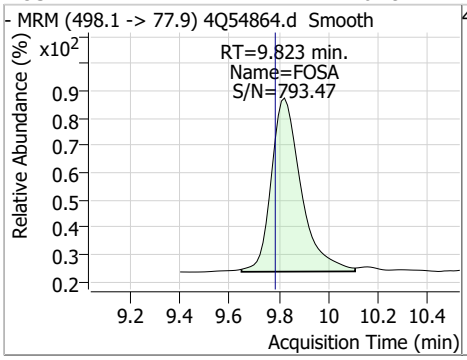
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	0.19	9.79	0.02	333	699.1 -> 98.8	59.0	28.3	84.9

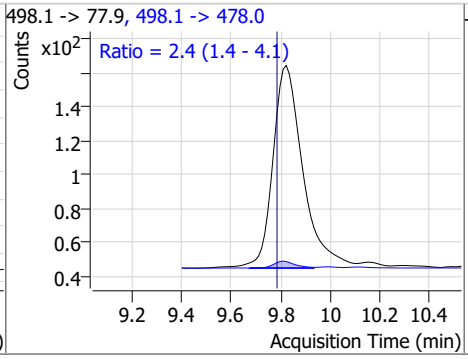


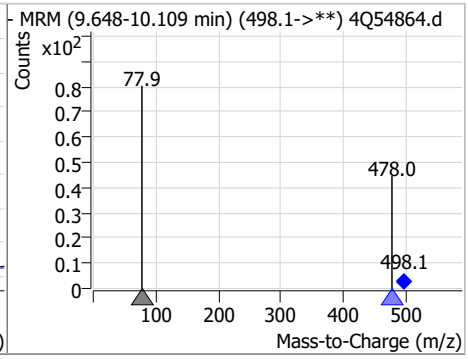




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.19	9.82	0.04	1004	498.1 -> 478.0	2.4	1.4	4.1

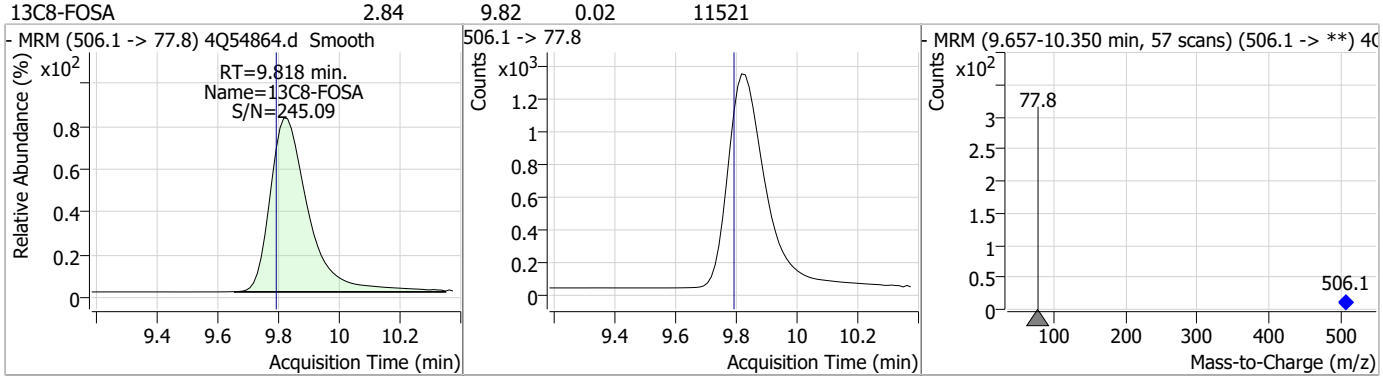




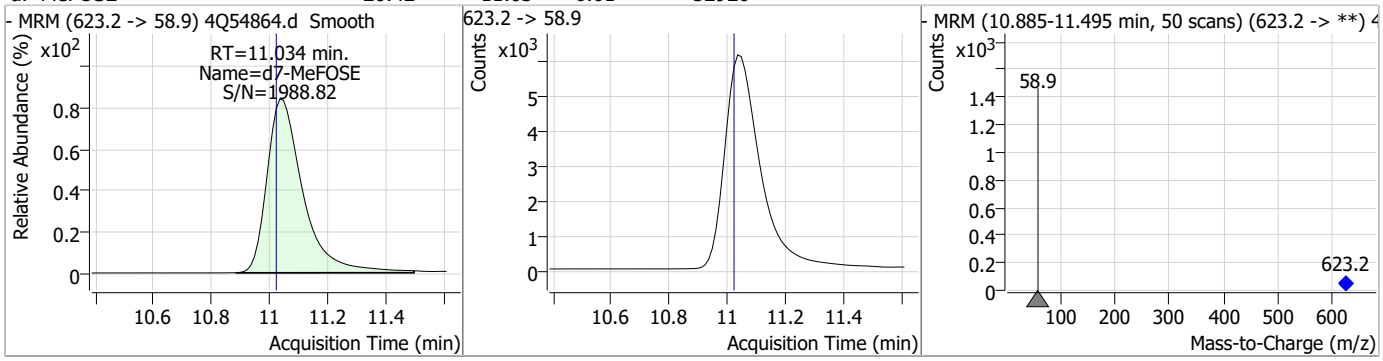


Perfluorinated Compounds by LC/MS/MS

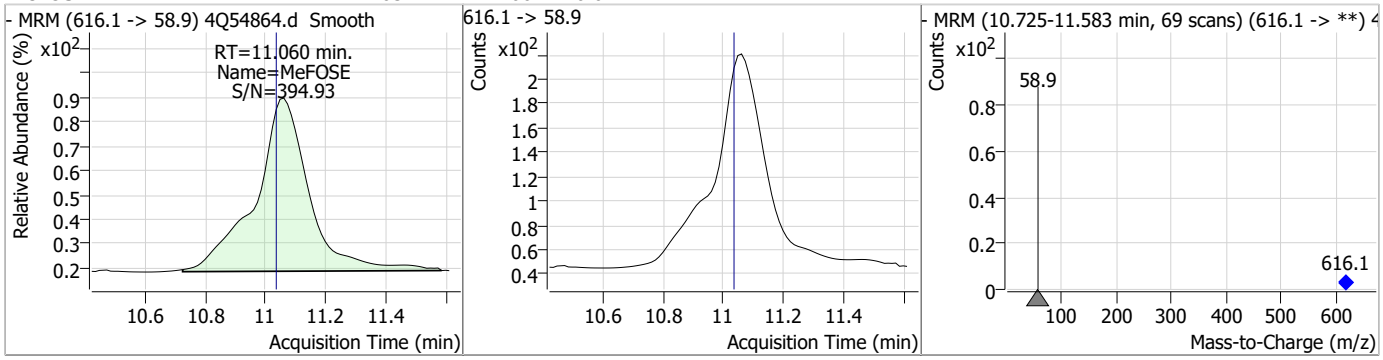
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.84	9.82	0.02	11521				



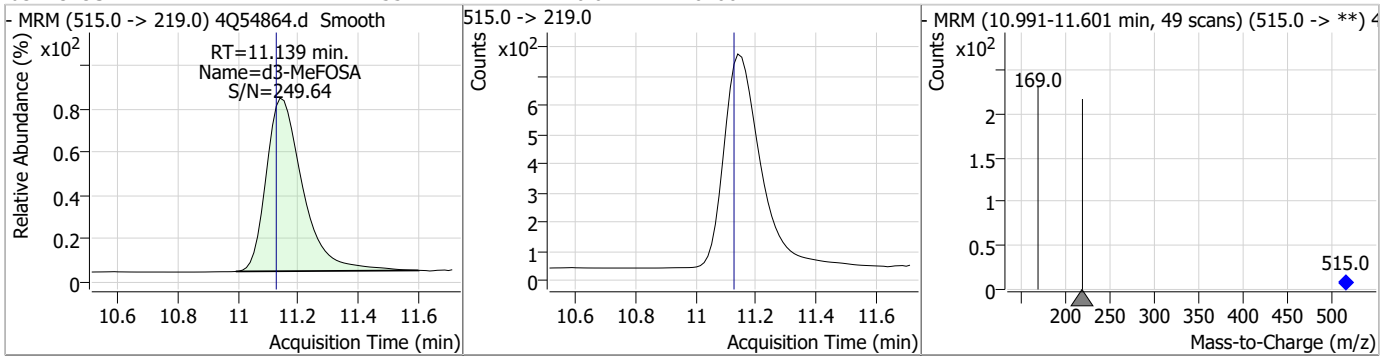
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	26.42	11.03	0.01	52926				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	1.03	11.06	0.02	2172				

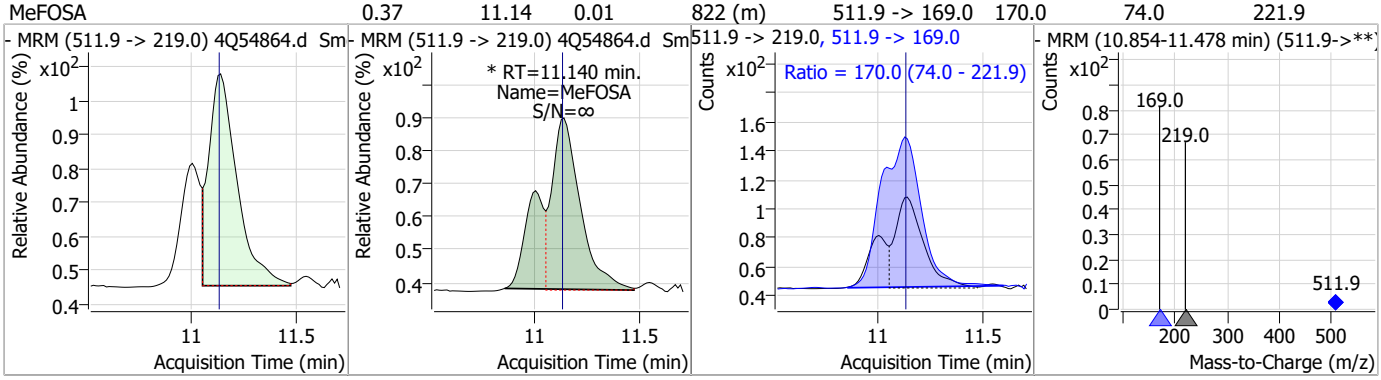


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.55	11.14	0.01	6166				

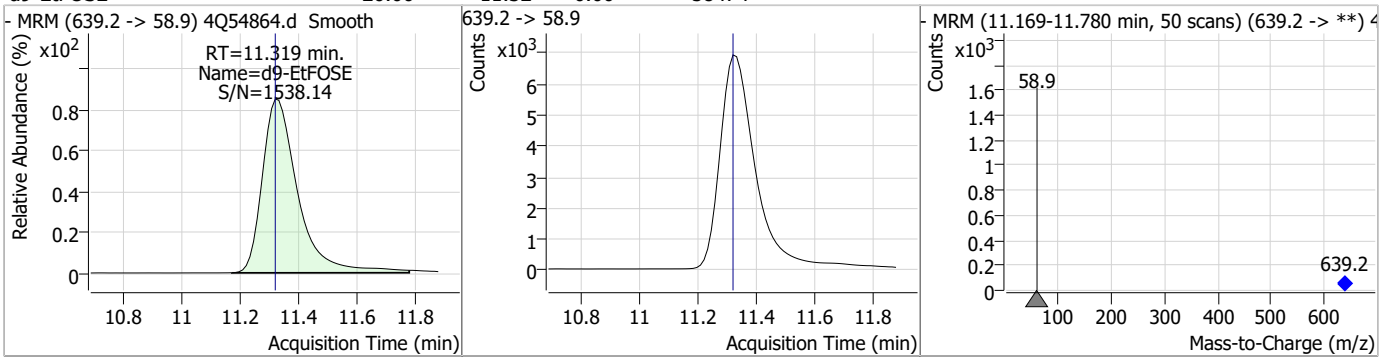


Perfluorinated Compounds by LC/MS/MS

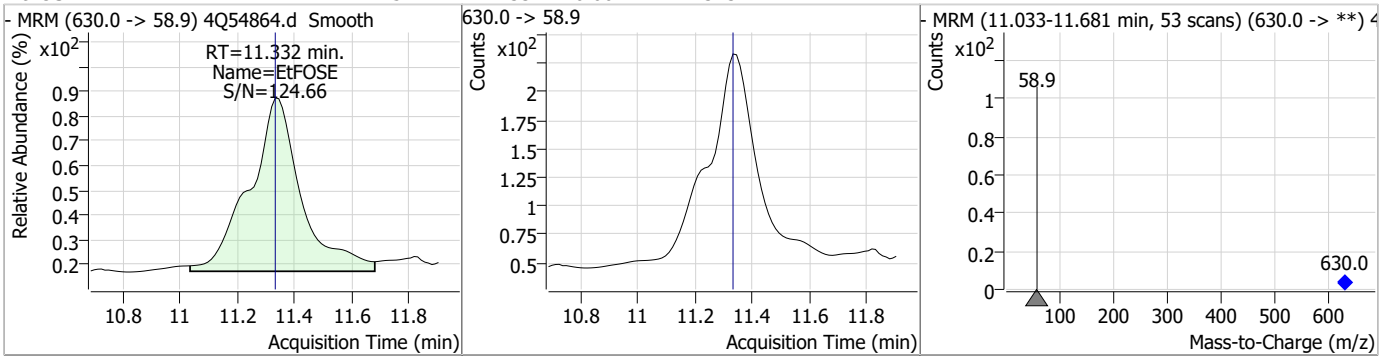
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.37	11.14	0.01	822 (m)	511.9 -> 169.0	170.0	74.0	221.9



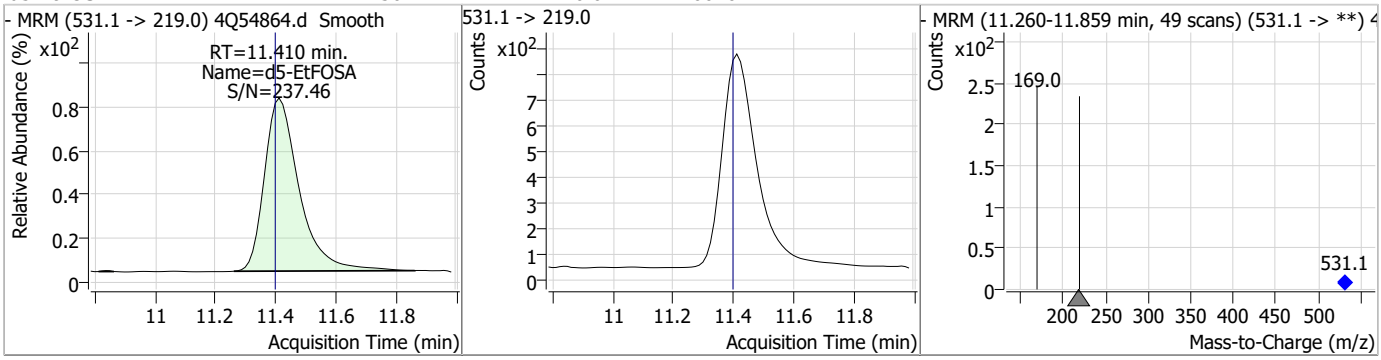
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	26.06	11.32	0.00	58474				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	1.15	11.33	0.00	2373				

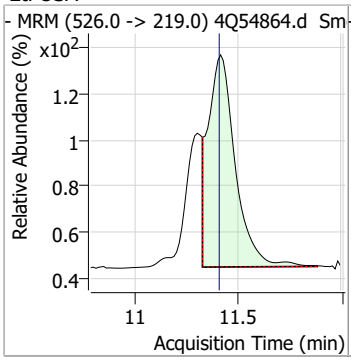


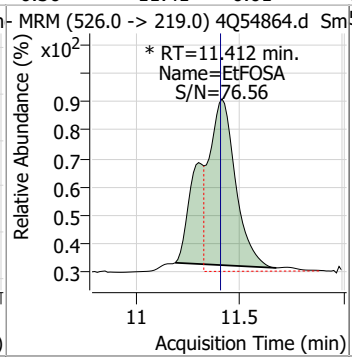
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.50	11.41	0.01	6646				

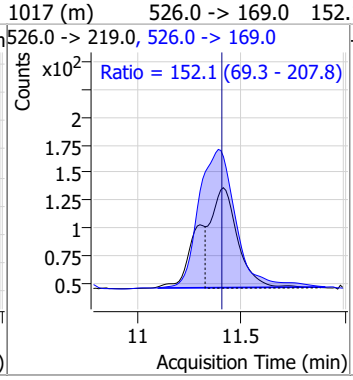


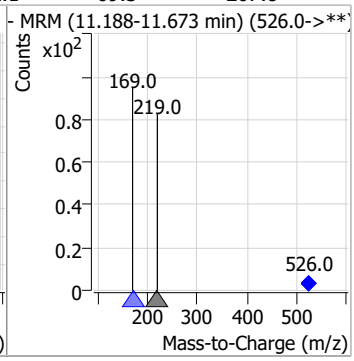
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	0.36	11.41	0.01	1017 (m)	526.0 -> 169.0	152.1	69.3	207.8









Manual Integration Approval Summary

Sample Number: S4Q804-CC804
Lab FileID: 4Q54864.D
Injection Time: 12/08/23 14:40
Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.07	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.14	Split peak
MeFOSA	31506-32-8		11.14	Split peak
EtFOSA	4151-50-2		11.41	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54872.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 4:39:04 PM
Sample Name : cc804-4
Vial : P1-A5
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.686	216.8 -> 171.9	106597	10.00	µg/L	0.012
M5-PFPeA	4.187	268.3 -> 223.0	44414	5.00	µg/L	0.025
M5-PFHxA	5.359	318.0 -> 273.0	35672	2.50	µg/L	0.025
M4-PFHpA	6.317	367.1 -> 322.0	34156	2.50	µg/L	0.025
M8-PFOA	7.001	421.1 -> 376.0	55463	2.50	µg/L	0.025
M9-PFNA	7.534	472.1 -> 427.0	21555	1.25	µg/L	0.012
M6-PFDA	8.029	519.1 -> 474.1	15458	1.25	µg/L	0.025
M7-PFUnDA	8.473	570.0 -> 525.1	18302	1.25	µg/L	0.025
M2-PFDoDA	8.905	615.1 -> 570.0	19826	1.25	µg/L	0.025
M2-PFTeDA	9.662	715.2 -> 670.0	19248	1.25	µg/L	0.025
M8-FOSA	9.818	506.1 -> 77.8	11078	2.50	µg/L	0.025
M3-PFBS	5.215	302.1 -> 79.9	9673	2.50	µg/L	0.025
M3-PFHxS	7.054	402.1 -> 79.9	8352	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	9034	2.50	µg/L	0.026
M2-4:2FTS	5.071	329.1 -> 80.9	1116	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2283	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	2798	5.00	µg/L	0.025
M3-MeFOSAA	8.111	573.2 -> 419.0	20252	5.00	µg/L	0.025
M3-HFPO-DA	5.714	286.9 -> 168.9	35091	10.00	µg/L	0.025
M5-EtFOSAA	8.309	589.2 -> 419.0	16385	5.00	µg/L	0.026
M7-MeFOSE	11.047	623.2 -> 58.9	55451	25.00	µg/L	0.025
M9-EtFOSE	11.331	639.2 -> 58.9	62731	25.00	µg/L	0.012
M5-EtFOSA	11.410	531.1 -> 219.0	7375	2.50	µg/L	0.012
M3-MeFOSA	11.139	515.0 -> 219.0	6808	2.50	µg/L	0.012
13C4-PFOS	8.144	502.8 -> 79.9	7700	2.50	µg/L	0.026
13C3-PFBA	2.691	216.0 -> 172.0	51249	5.00	µg/L	0.013
18O2-PFHxS	7.066	403.0 -> 83.9	5277	2.50	µg/L	0.025
13C4-PFOA	7.002	417.1 -> 372.0	59573	2.50	µg/L	0.025
13C2-PFDA	8.029	515.1 -> 470.1	16463	1.25	µg/L	0.025
13C5-PFNA	7.534	468.0 -> 423.0	21526	1.25	µg/L	0.025
13C2-PFHxA	5.360	315.1 -> 270.0	39357	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	1116	4.45	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2283	4.20	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 84.0%		
13C2-8:2FTS	7.828	529.1 -> 80.9	2798	3.85	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C2-PFDoDA	8.905	615.1 -> 570.0	19826	1.21	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-PFTeDA	9.662	715.2 -> 670.0	19248	1.18	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C3-PFBS	5.215	302.1 -> 79.9	9673	2.39	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C3-PFHxS	7.054	402.1 -> 79.9	8352	2.52	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C4-PFBA	2.686	216.8 -> 171.9	106597	9.91 µg/L		0.012
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C4-PFHpA	6.317	367.1 -> 322.0	34156	2.46 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C5-PFHxA	5.359	318.0 -> 273.0	35672	2.46 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C5-PFPeA	4.187	268.3 -> 223.0	44414	4.92 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C6-PFDA	8.029	519.1 -> 474.1	15458	1.29 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C7-PFUnDA	8.473	570.0 -> 525.1	18302	1.30 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C8-FOSA	9.818	506.1 -> 77.8	11078	2.22 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.8%		
13C8-PFOA	7.001	421.1 -> 376.0	55463	2.52 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C8-PFOS	8.143	507.1 -> 79.9	9034	2.32 µg/L		0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C9-PFNA	7.534	472.1 -> 427.0	21555	1.25 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.0%		
d3-MeFOSAA	8.111	573.2 -> 419.0	20252	4.74 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C3-HFPO-DA	5.714	286.9 -> 168.9	35091	9.68 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
d3-MeFOSA	11.139	515.0 -> 219.0	6808	2.29 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.5%		
d5-EtFOSAA	8.309	589.2 -> 419.0	16385	4.53 µg/L		0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
d7-MeFOSE	11.047	623.2 -> 58.9	55451	22.52 µg/L		0.025
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
d9-EtFOSE	11.331	639.2 -> 58.9	62731	22.75 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
d5-EtFOSA	11.410	531.1 -> 219.0	7375	2.26 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 90.4%		
Target Compounds						QValue
4:2FTS	5.072	327.1 -> 307.0	17463	9.09 µg/L		100
		327.1 -> 80.9	7419			
6:2FTS	6.774	427.1 -> 407.0	23821	9.93 µg/L		100
		427.1 -> 80.9	8742			
8:2FTS	7.829	527.1 -> 507.0	16346	11.09 µg/L		97
		527.1 -> 80.8	6874			
EtFOSAA	8.310	584.2 -> 419.1	6642	2.22 µg/L	m	86
		584.2 -> 526.0	2645			
FOSA	9.810	498.1 -> 77.9	12253	2.46 µg/L		98
		498.1 -> 478.0	415			
MeFOSAA	8.112	570.1 -> 419.0	7192	2.48 µg/L		93
		570.1 -> 483.0	1379			
PFBA	2.695	212.8 -> 168.9	32219	9.44 µg/L		100
PFBS	5.216	298.7 -> 79.9	6108	2.04 µg/L		98
		298.7 -> 98.8	2566			
PFDA	8.030	512.9 -> 469.0	25952	2.29 µg/L		98
		512.9 -> 219.0	5081			
PFDoDA	8.905	613.1 -> 569.0	34121	2.39 µg/L		98
		613.1 -> 319.0	6155			
PFDS	9.032	599.0 -> 79.9	5612	2.33 µg/L		93

Perfluorinated Compounds by LC/MS/MS

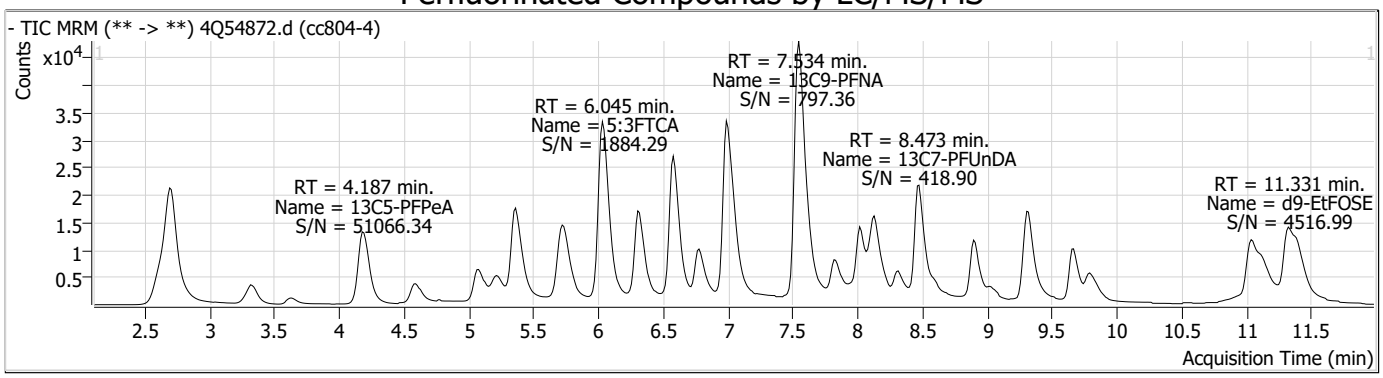
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2655				
PFHpA	6.317	363.1 -> 319.0	43700	2.27	µg/L		100
		363.1 -> 169.0	8064				
PFHpS	7.637	449.0 -> 79.9	7410	2.07	µg/L		94
		449.0 -> 98.9	4206				
PFHxA	5.362	313.0 -> 269.0	24632	2.16	µg/L		100
		313.0 -> 118.9	666				
PFHxS	7.055	398.7 -> 79.9	5527	2.05	µg/L	m	87
		398.7 -> 98.9	3092				
PFNA	7.534	463.0 -> 419.0	29389	2.32	µg/L		100
		463.0 -> 219.0	6719				
PFNS	8.611	548.8 -> 79.9	4081	2.65	µg/L		98
		548.8 -> 98.9	1964				
PFOA	7.003	413.0 -> 369.0	53374	2.34	µg/L		94
		413.0 -> 169.0	10371				
PFOS	8.144	498.9 -> 79.9	8104	2.16	µg/L	m	53
		498.9 -> 98.8	3804				
PFPeA	4.189	263.0 -> 219.0	39835	4.56	µg/L		100
PFPeS	6.307	349.1 -> 79.9	5440	2.14	µg/L		98
		349.1 -> 98.9	2386				
PFTeDA	9.662	713.1 -> 669.0	31987	2.39	µg/L		99
		713.1 -> 168.9	3269				
PFTrDA	9.304	663.0 -> 619.0	37245	2.40	µg/L		99
		663.0 -> 168.9	5197				
PFUnDA	8.474	563.1 -> 519.0	31135	2.34	µg/L		99
		563.1 -> 269.1	6787				
11Cl-PF3OUdS	9.331	630.9 -> 450.9	44497	4.61	µg/L		99
		632.9 -> 452.9	13588				
9Cl-PF3ONS	8.476	530.8 -> 351.0	43808	4.49	µg/L		98
		532.8 -> 353.0	13751				
ADONA	6.581	376.9 -> 250.9	117206	4.95	µg/L		99
		376.9 -> 84.8	29076				
HFPO-DA	5.715	284.9 -> 168.9	15818	4.71	µg/L		99
		284.9 -> 184.9	1541				
3:3FTCA	3.630	241.0 -> 177.0	5865	10.81	µg/L		98
		241.0 -> 117.0	571				
5:3FTCA	6.045	341.0 -> 237.1	117651	57.95	µg/L		100
		341.0 -> 217.0	84226				
7:3FTCA	7.562	441.0 -> 316.9	62746	58.93	µg/L		99
		441.0 -> 336.9	148418				
EtFOSA	11.412	526.0 -> 219.0	15069	4.80	µg/L		97
		526.0 -> 169.0	20371				
EtFOSE	11.345	630.0 -> 58.9	26486	11.93	µg/L		100
MeFOSA	11.140	511.9 -> 219.0	11504	4.75	µg/L		96
		511.9 -> 169.0	16404				
MeFOSE	11.060	616.1 -> 58.9	24851	11.30	µg/L		100
PFDoDS	9.789	699.1 -> 79.9	4257	2.32	µg/L		99
		699.1 -> 98.8	2377				
NFDHA	5.253	295.0 -> 201.0	3526	4.37	µg/L		99
		295.0 -> 84.9	901				
PFMBA	4.591	279.0 -> 85.1	22574	4.69	µg/L		100
PFMPA	3.332	229.0 -> 84.9	24654	4.66	µg/L		100
PFEESA	5.747	314.8 -> 134.9	35998	4.28	µg/L		99
		314.8 -> 82.9	1263				

 # = Qualifier out of range, m = manually integrated, + = Area summed

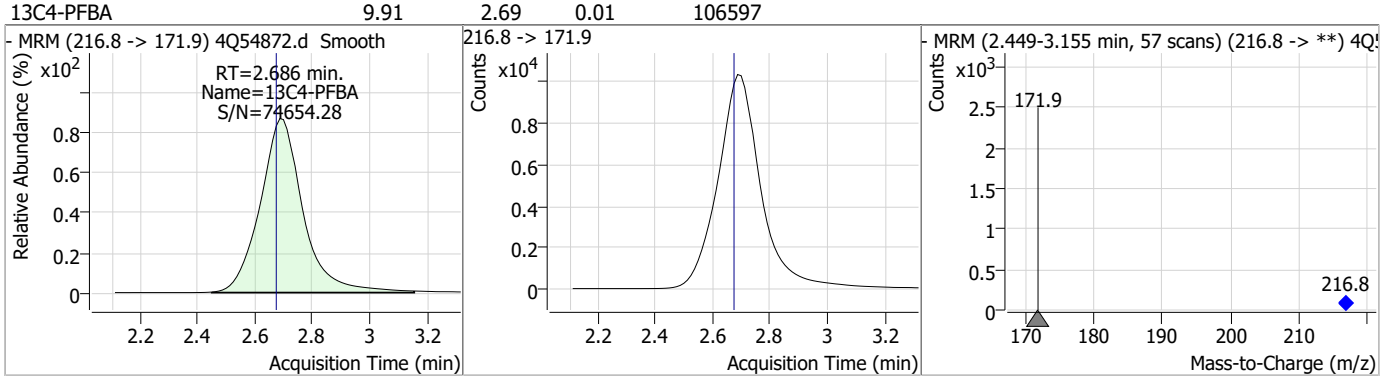
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

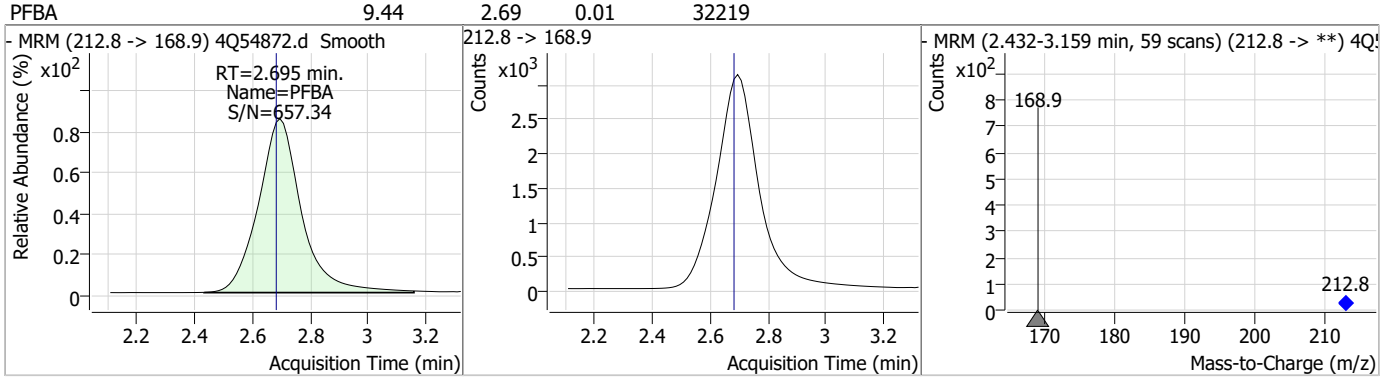
Perfluorinated Compounds by LC/MS/MS



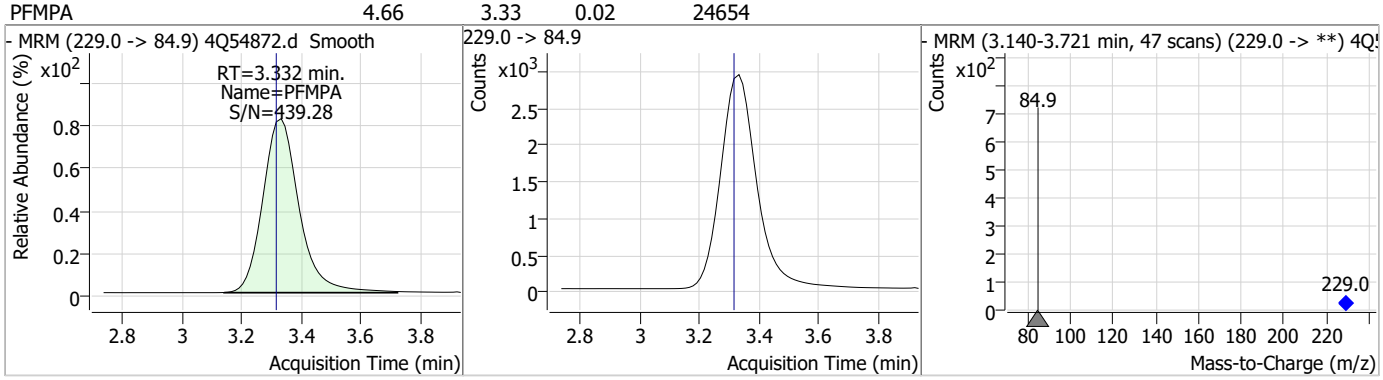
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.91	2.69	0.01	106597				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.44	2.69	0.01	32219				

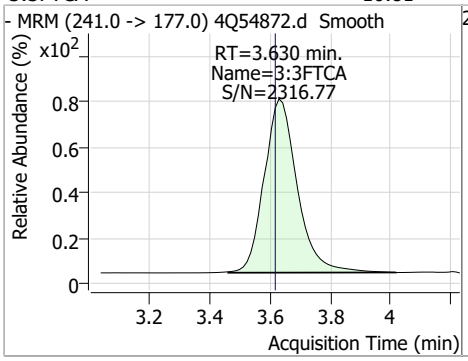


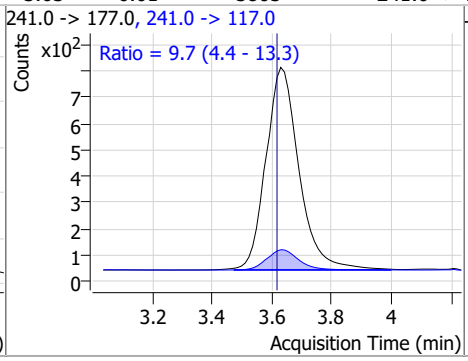
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.66	3.33	0.02	24654				

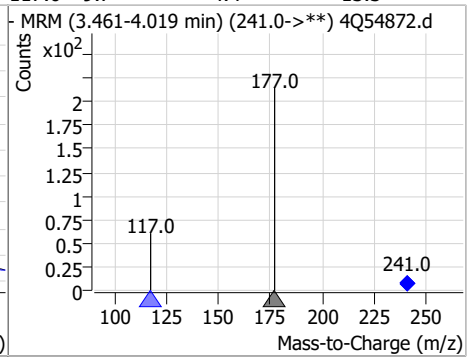


Perfluorinated Compounds by LC/MS/MS

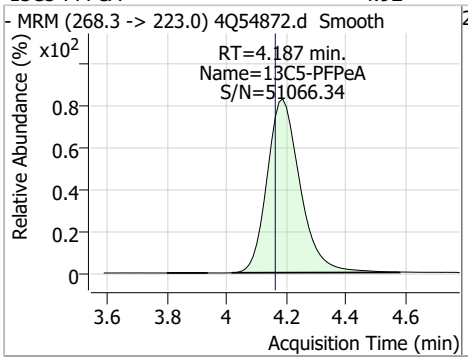
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	10.81	3.63	0.01	5865	241.0 -> 117.0	9.7	4.4	13.3

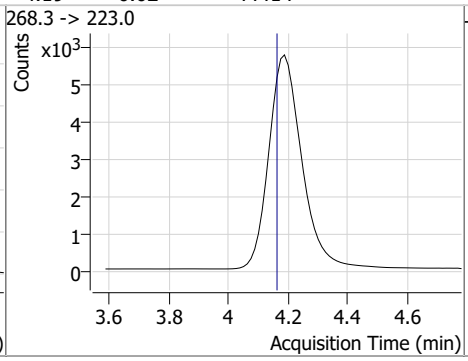


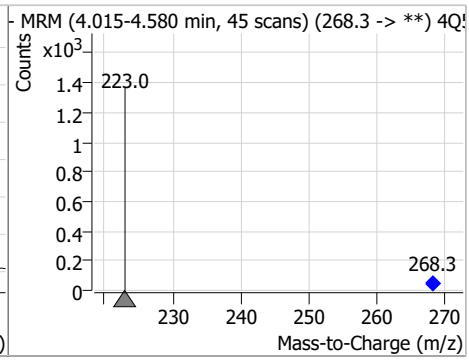




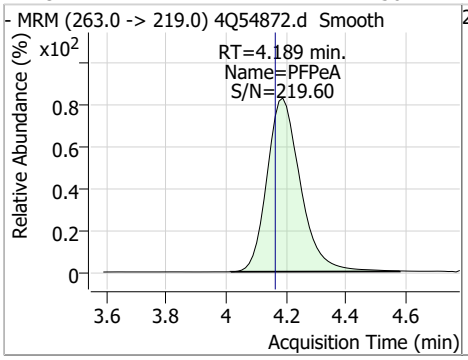
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.92	4.19	0.02	44414				

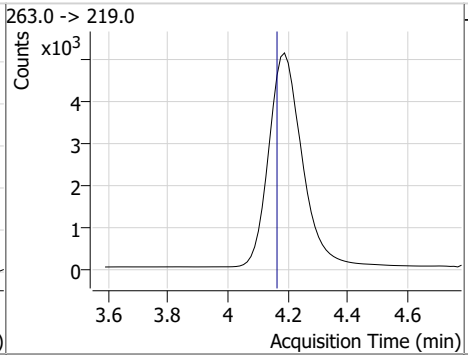


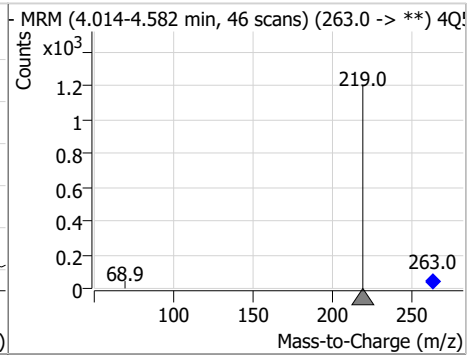




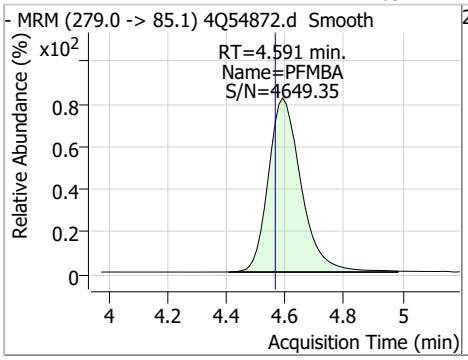
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.56	4.19	0.02	39835				

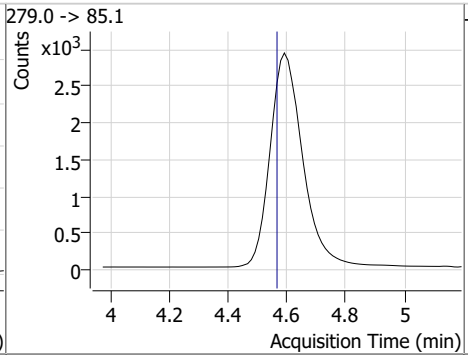


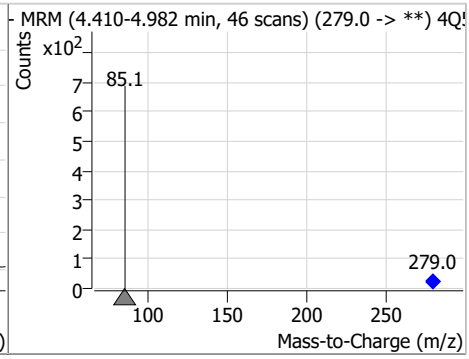




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.69	4.59	0.02	22574				

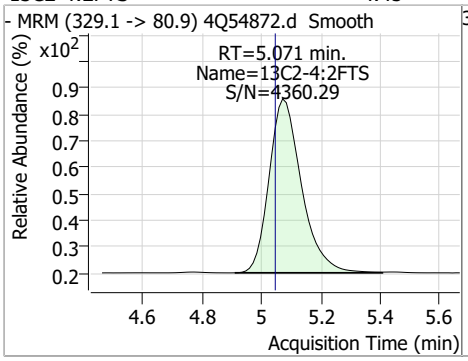


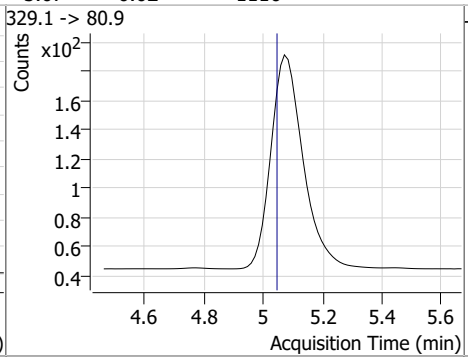


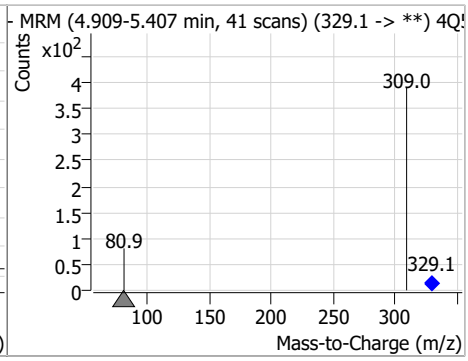


Perfluorinated Compounds by LC/MS/MS

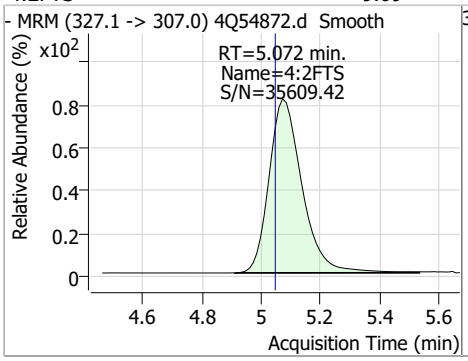
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.45	5.07	0.02	1116				

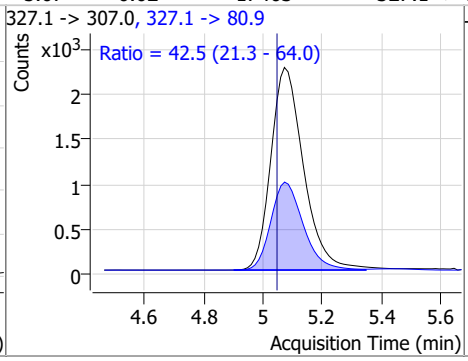


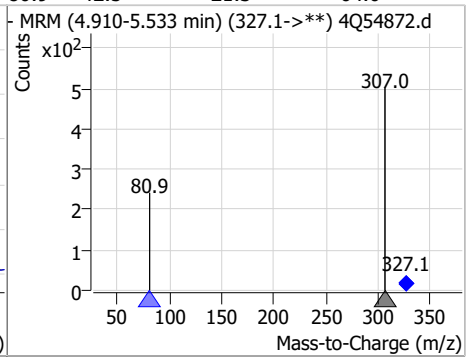




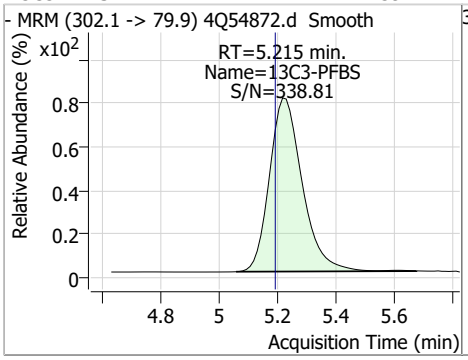
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.09	5.07	0.02	17463	327.1 -> 80.9	42.5	21.3	64.0

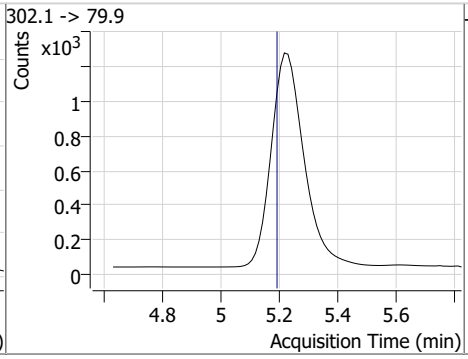


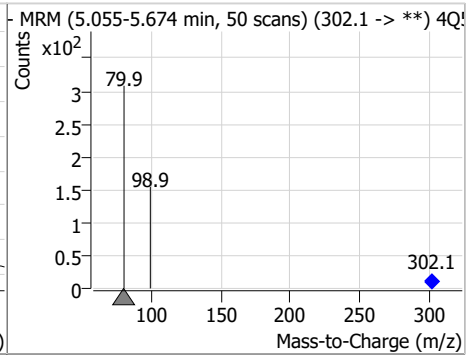




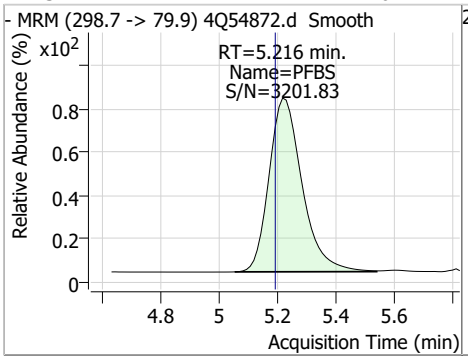
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.39	5.21	0.03	9673				

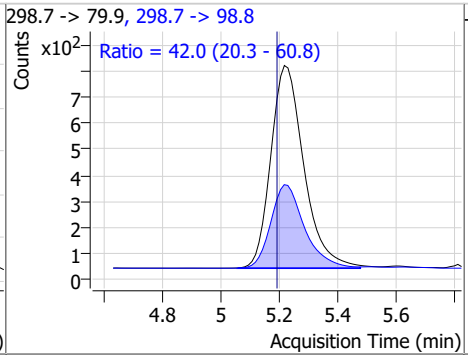


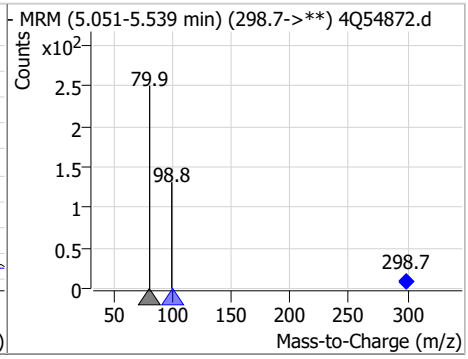




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.04	5.22	0.03	6108	298.7 -> 98.8	42.0	20.3	60.8

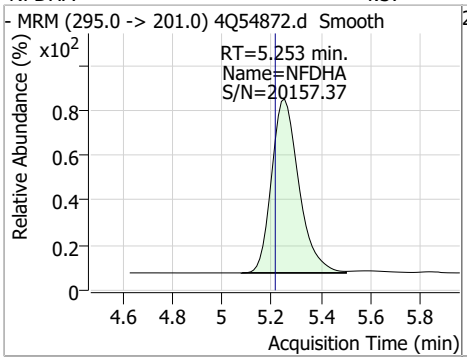


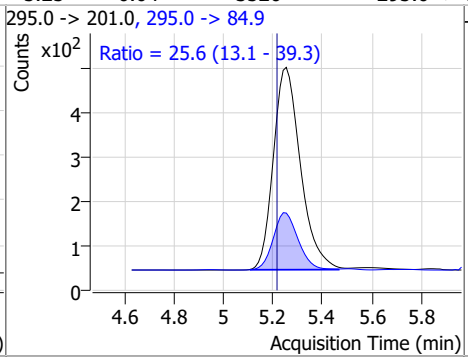


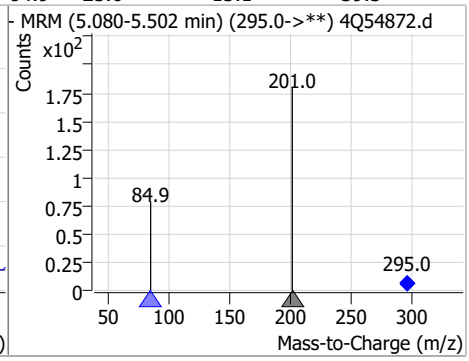


Perfluorinated Compounds by LC/MS/MS

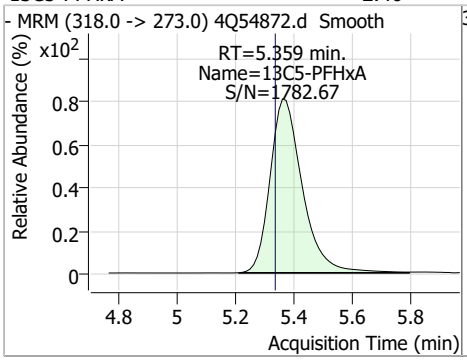
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.37	5.25	0.04	3526	295.0 -> 84.9	25.6	13.1	39.3

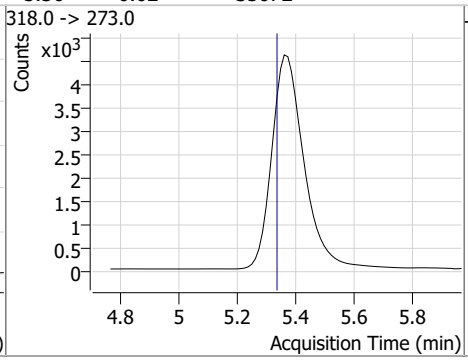


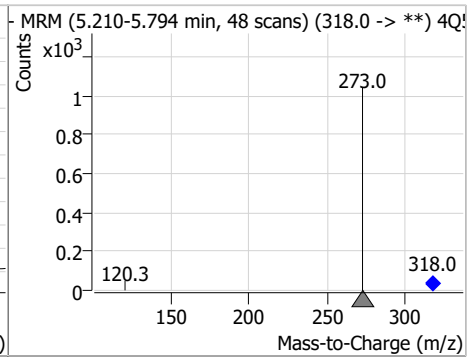




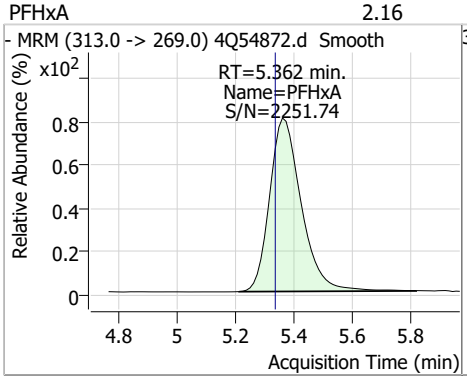
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	5.36	0.02	35672				

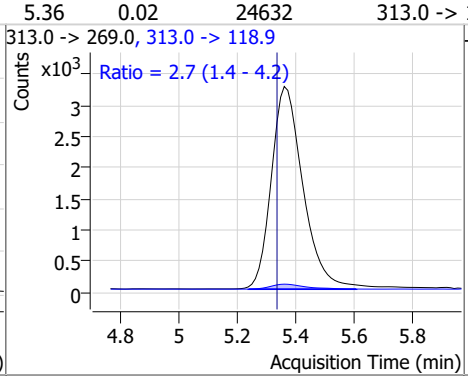


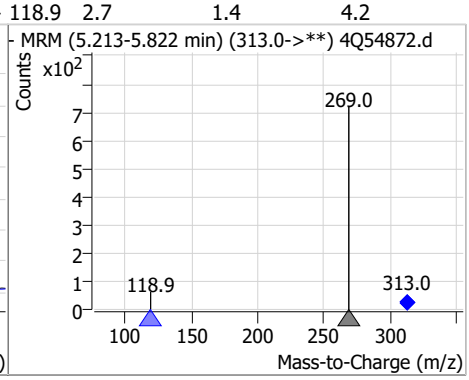




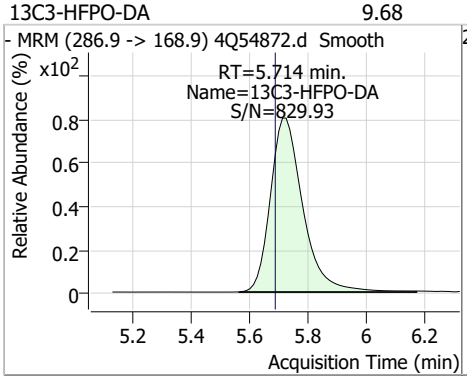
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.16	5.36	0.02	24632	313.0 -> 118.9	2.7	1.4	4.2

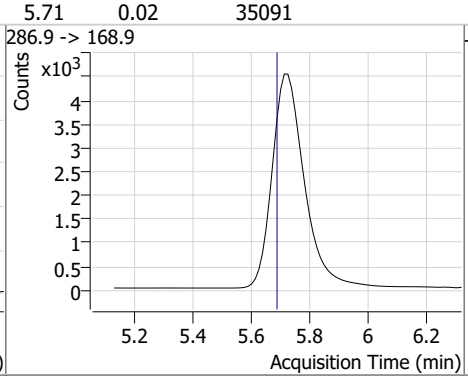


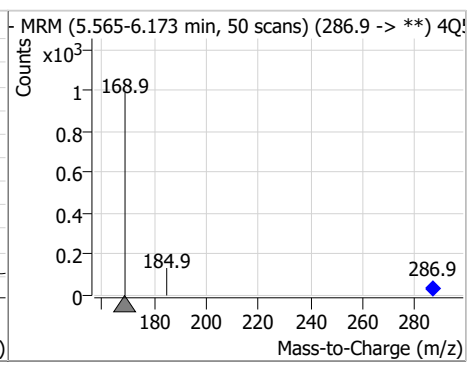




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.68	5.71	0.02	35091				

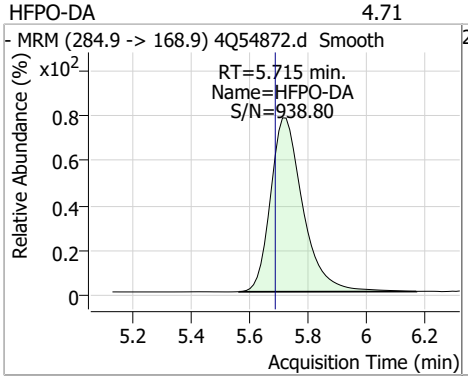


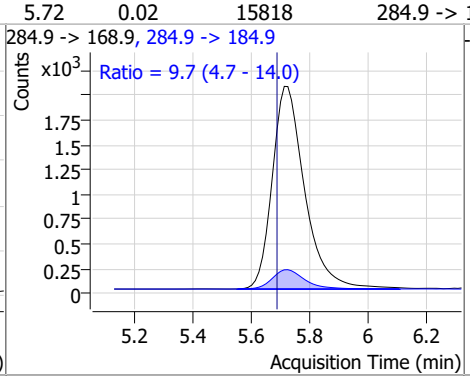


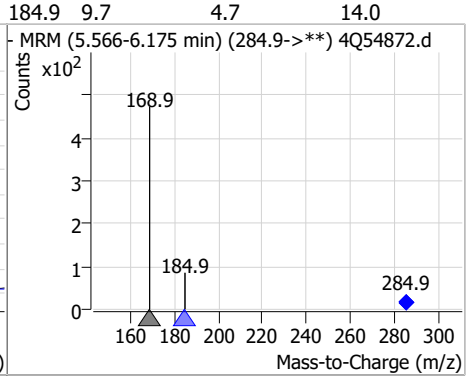


Perfluorinated Compounds by LC/MS/MS

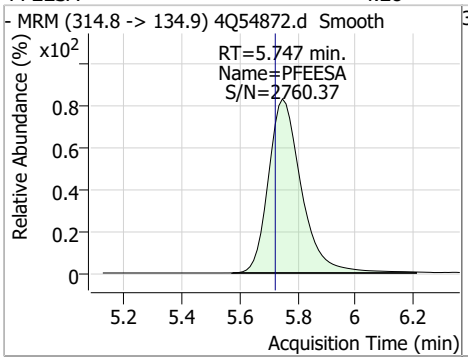
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.71	5.72	0.02	15818	284.9 -> 184.9	9.7	4.7	14.0

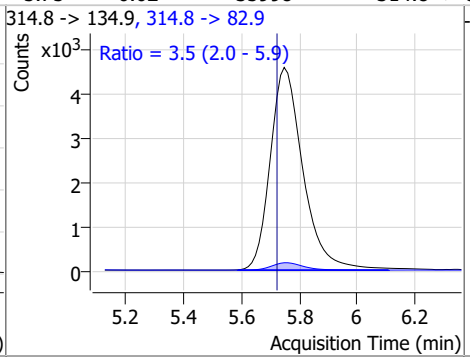


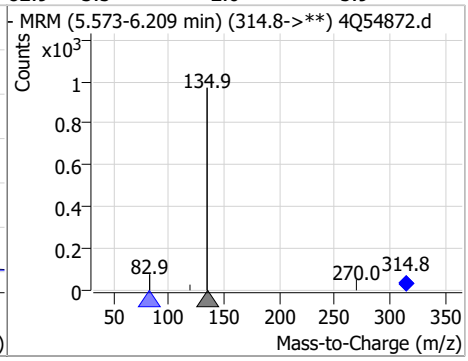




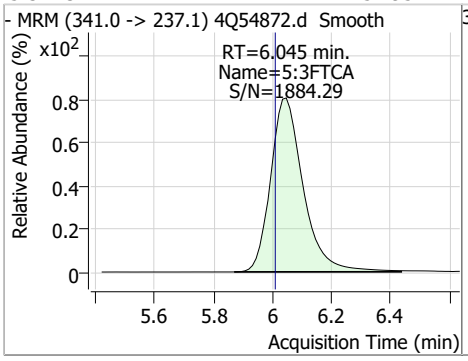
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.28	5.75	0.02	35998	314.8 -> 82.9	3.5	2.0	5.9

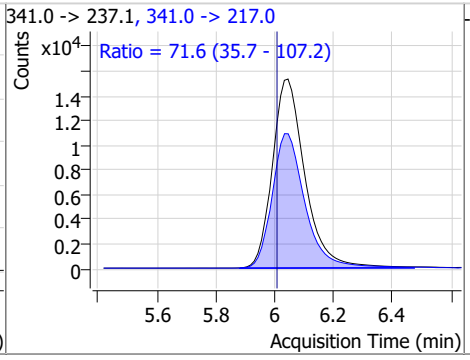


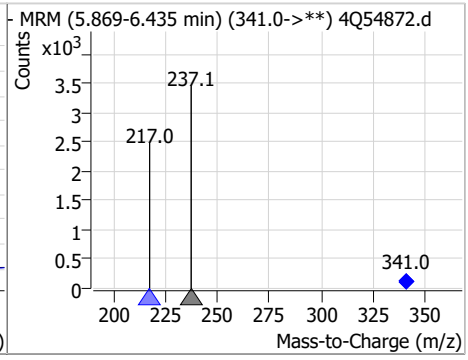




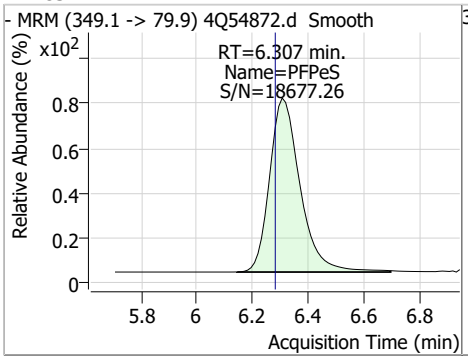
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	57.95	6.05	0.04	117651	341.0 -> 217.0	71.6	35.7	107.2

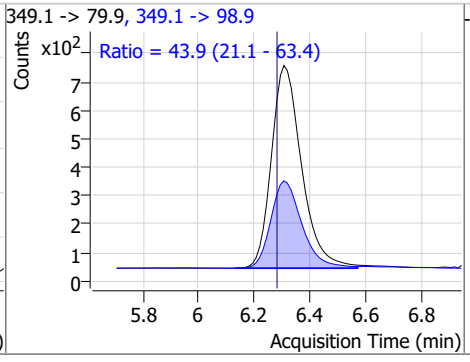


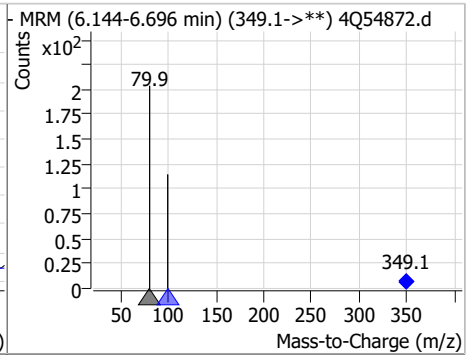




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.14	6.31	0.02	5440	349.1 -> 98.9	43.9	21.1	63.4

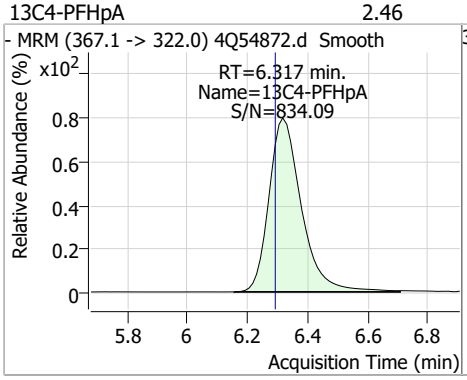


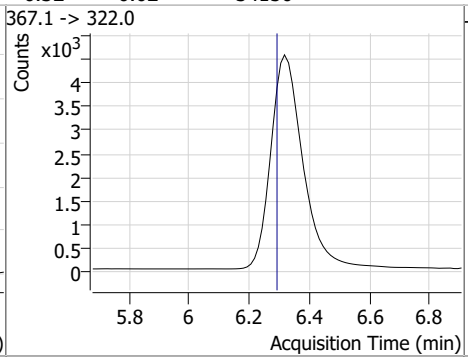


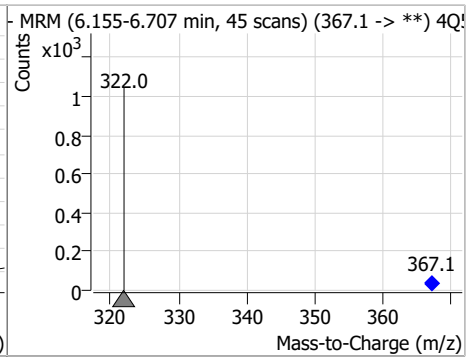


Perfluorinated Compounds by LC/MS/MS

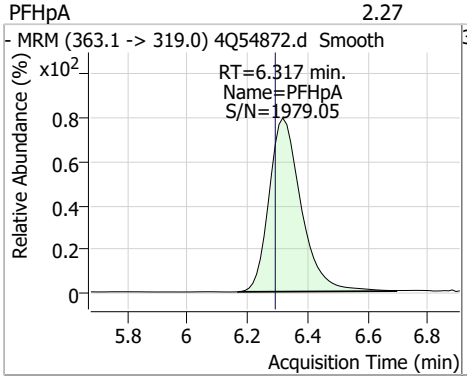
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.46	6.32	0.02	34156				

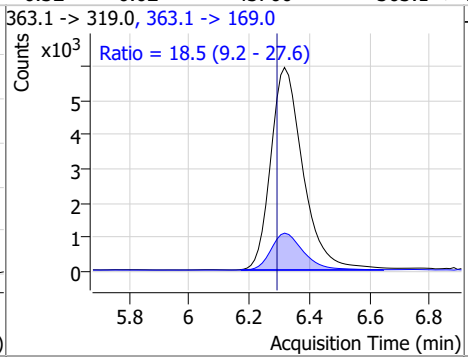


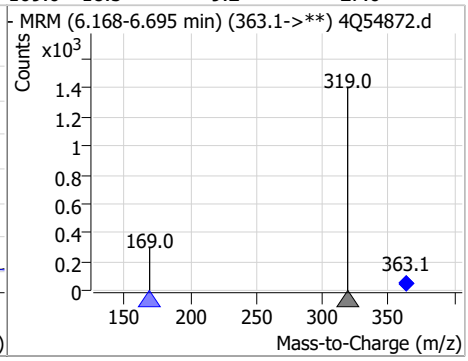




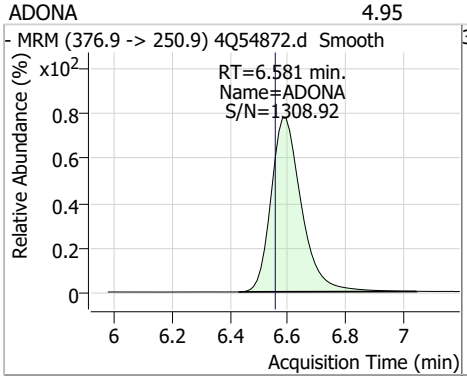
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.27	6.32	0.02	43700	363.1 -> 169.0	18.5	9.2	27.6

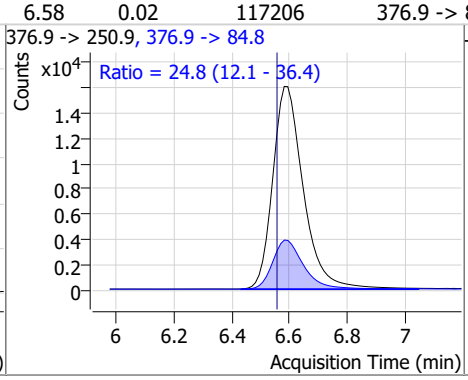


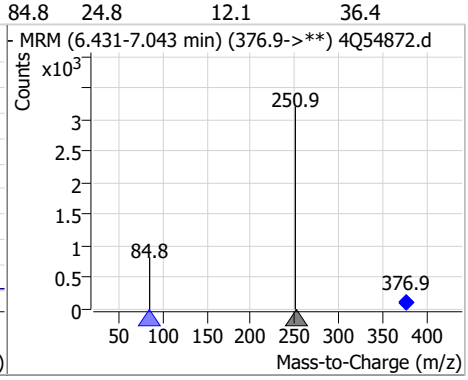




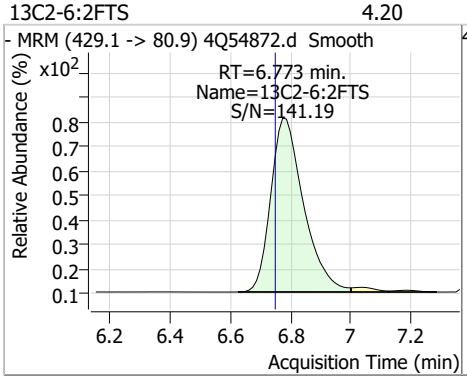
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.95	6.58	0.02	117206	376.9 -> 84.8	24.8	12.1	36.4

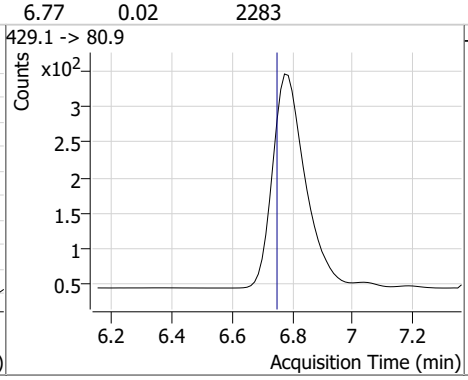


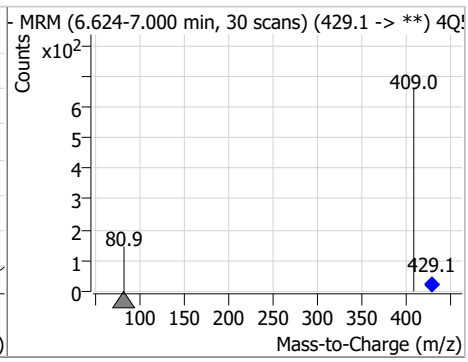




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.20	6.77	0.02	2283				

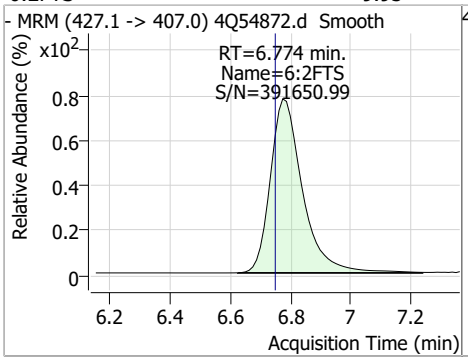


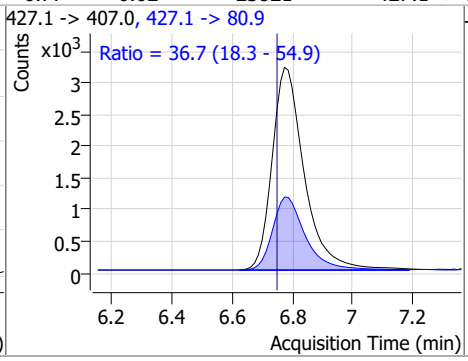


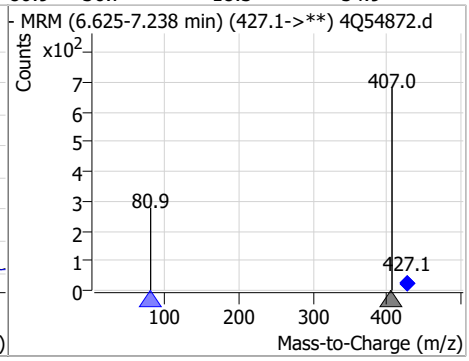


Perfluorinated Compounds by LC/MS/MS

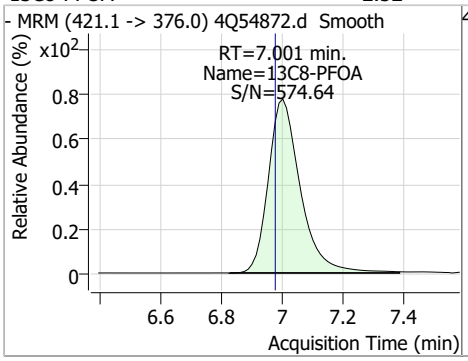
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.93	6.77	0.02	23821	427.1 -> 80.9	36.7	18.3	54.9

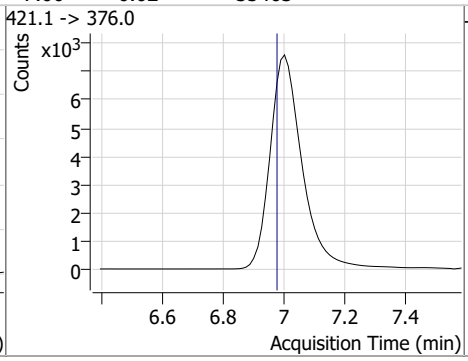


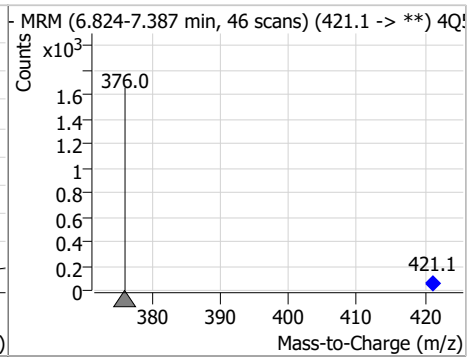




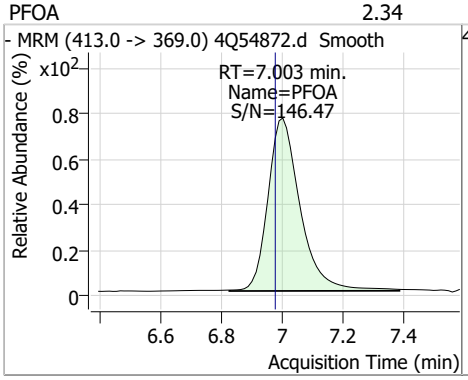
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.00	0.02	55463				

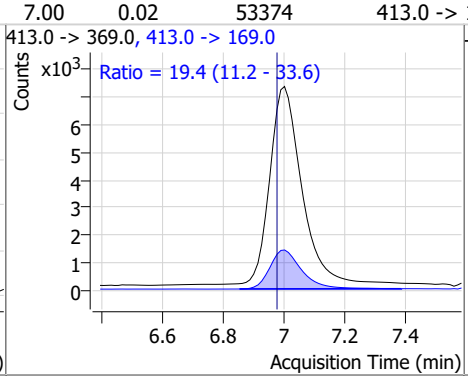


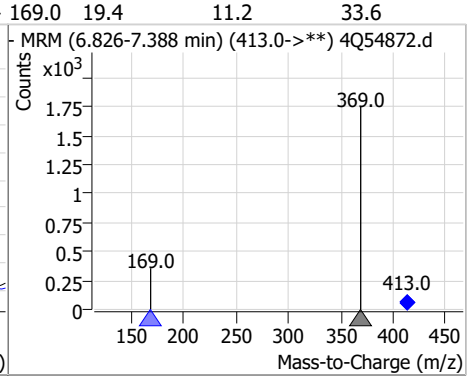




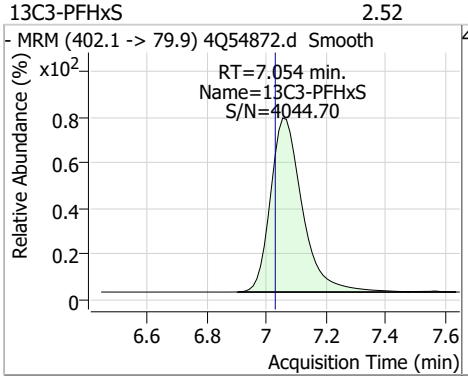
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.34	7.00	0.02	53374	413.0 -> 169.0	19.4	11.2	33.6

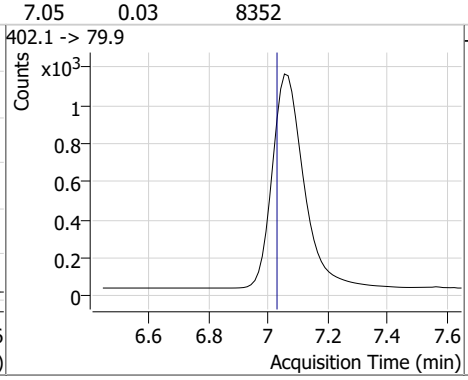


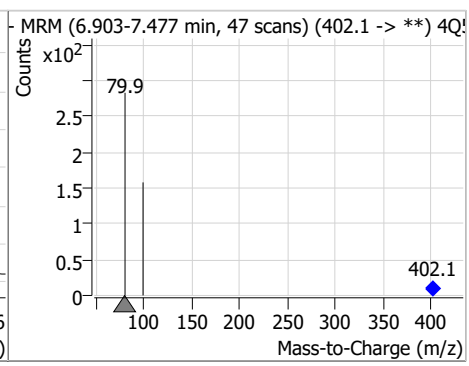




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.52	7.05	0.03	8352				

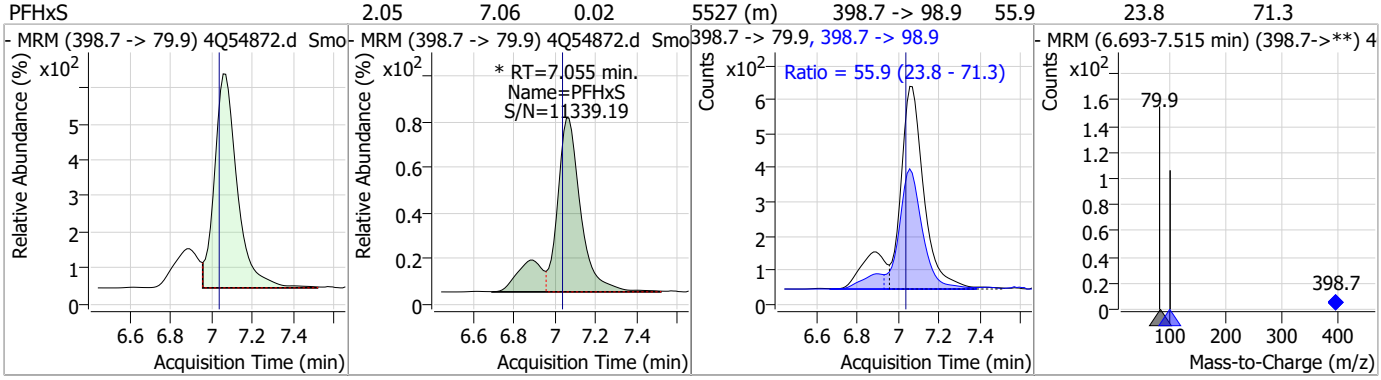




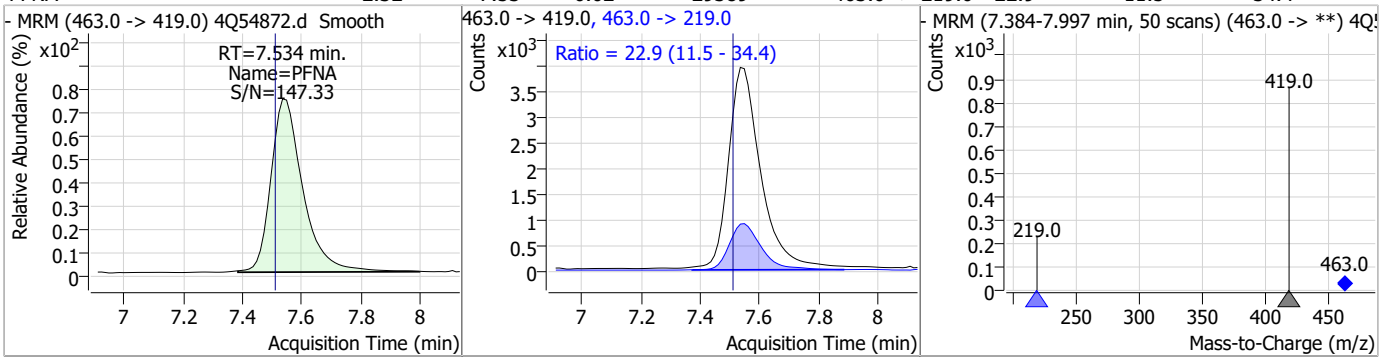


Perfluorinated Compounds by LC/MS/MS

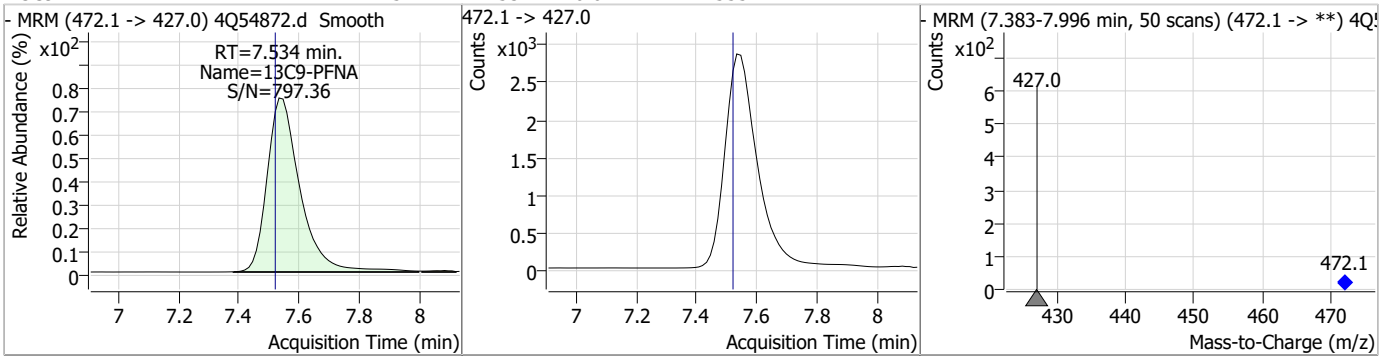
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.05	7.06	0.02	5527 (m)	398.7 -> 98.9	55.9	23.8	71.3



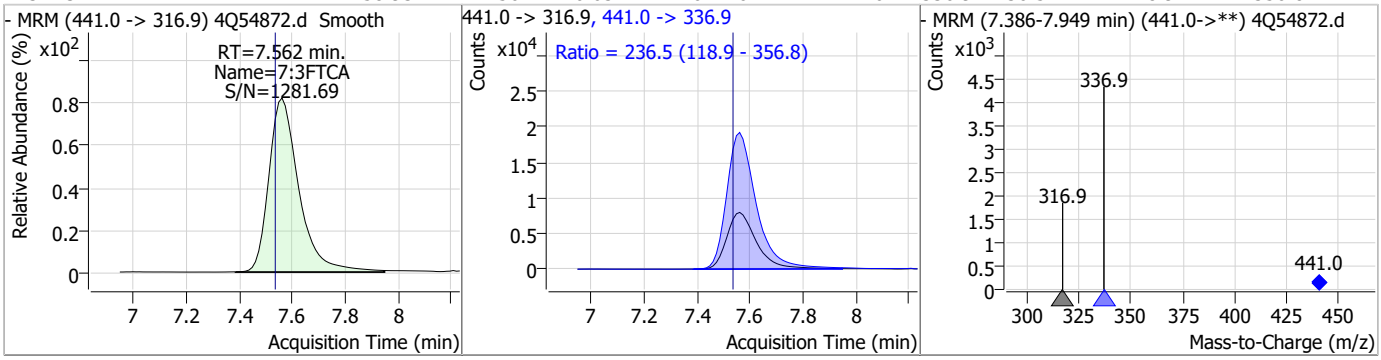
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.32	7.53	0.02	29389	463.0 -> 219.0	22.9	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.25	7.53	0.01	21555				

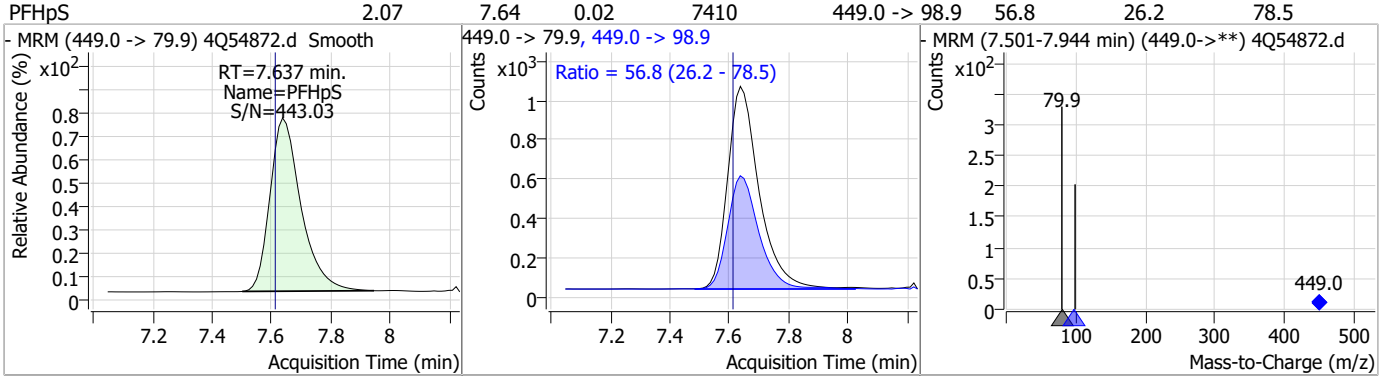


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	58.93	7.56	0.03	62746	441.0 -> 336.9	236.5	118.9	356.8

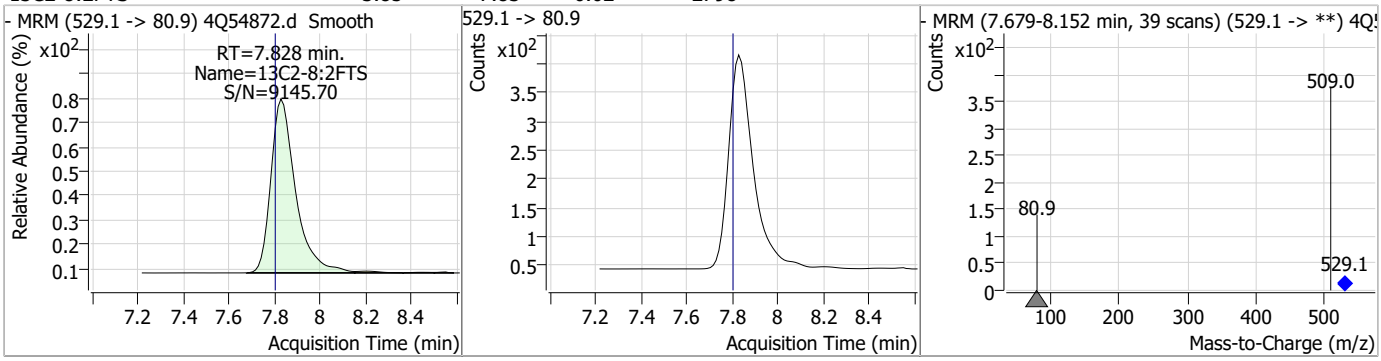


Perfluorinated Compounds by LC/MS/MS

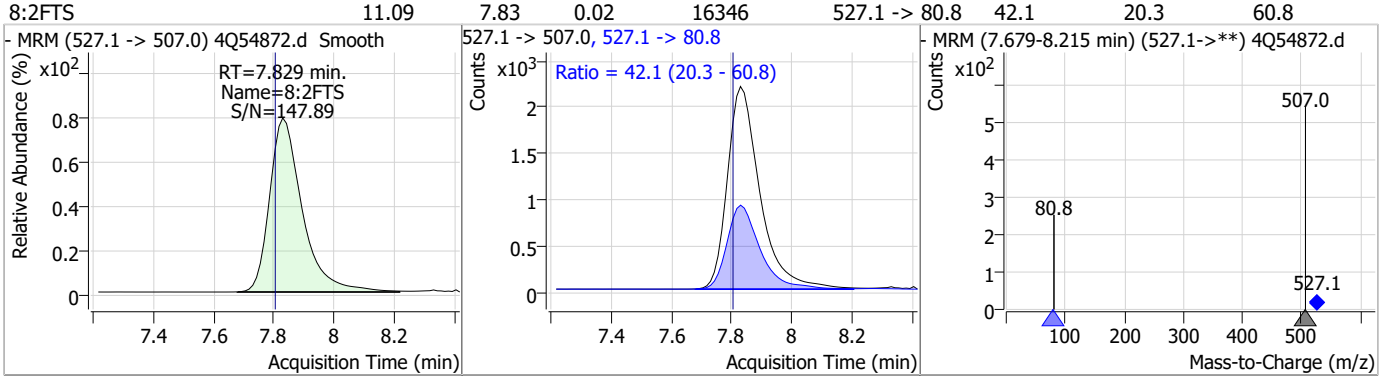
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.07	7.64	0.02	7410	449.0 -> 98.9	56.8	26.2	78.5



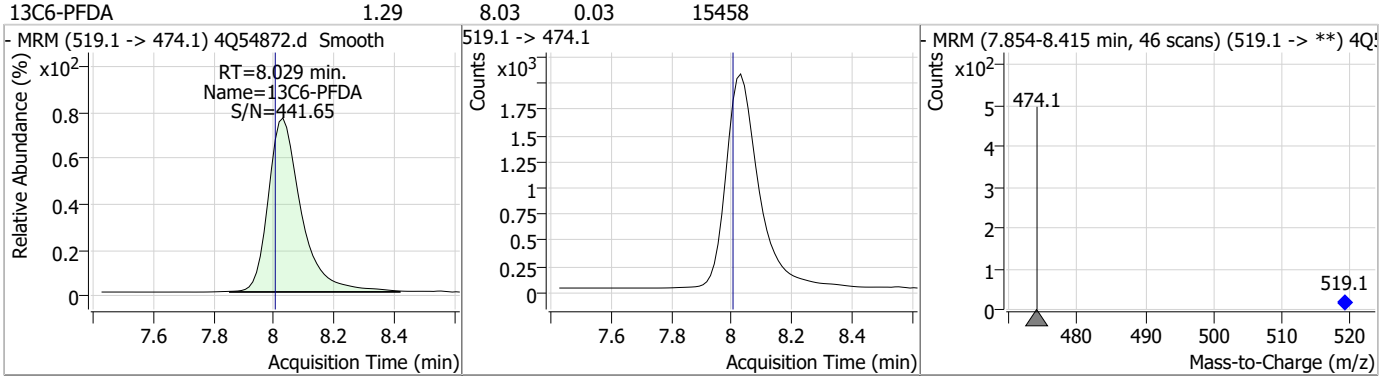
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.85	7.83	0.02	2798				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	11.09	7.83	0.02	16346	527.1 -> 80.8	42.1	20.3	60.8

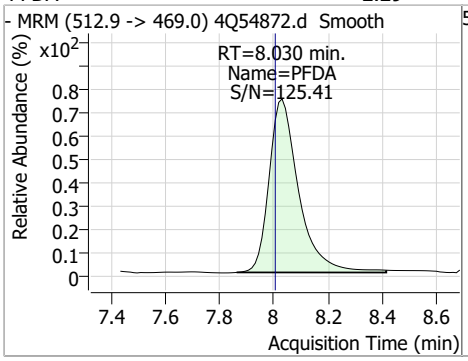


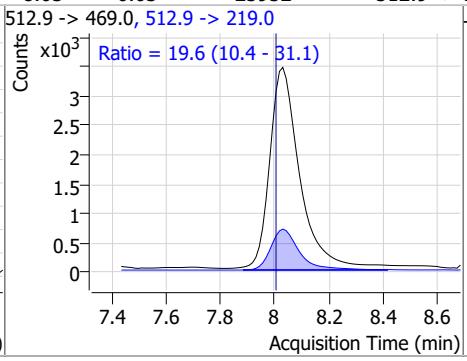
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.29	8.03	0.03	15458				

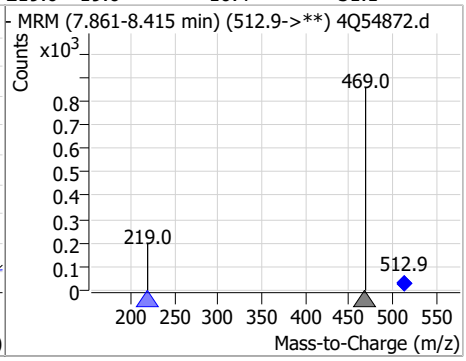


Perfluorinated Compounds by LC/MS/MS

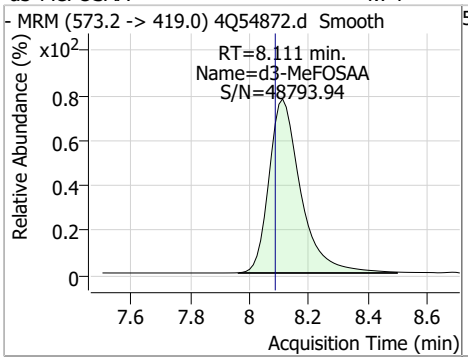
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.29	8.03	0.03	25952	512.9 -> 219.0	19.6	10.4	31.1

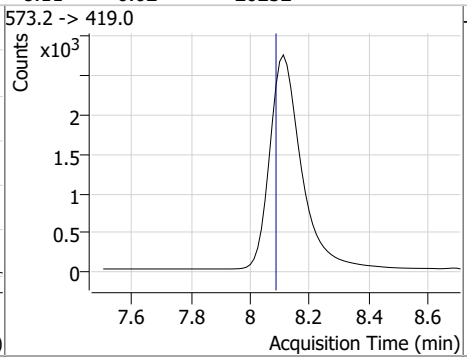


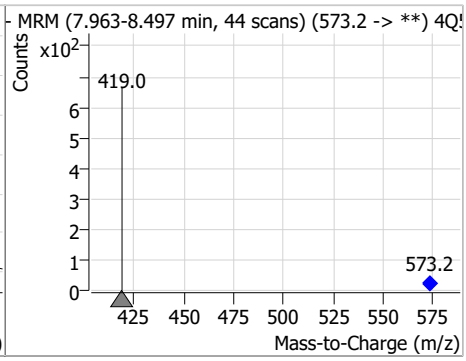




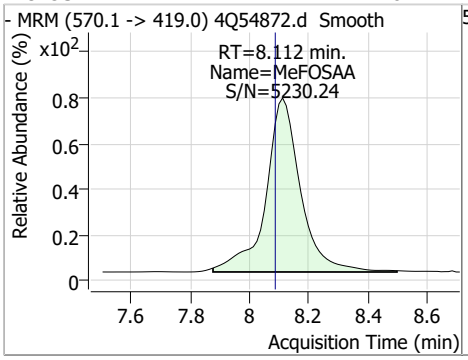
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.74	8.11	0.02	20252				

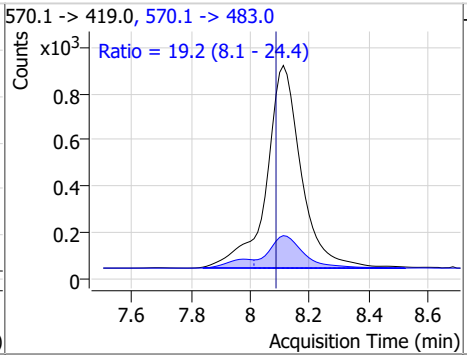


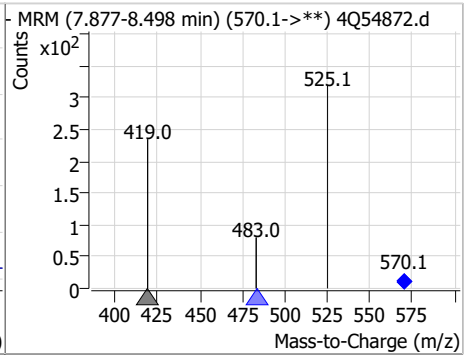




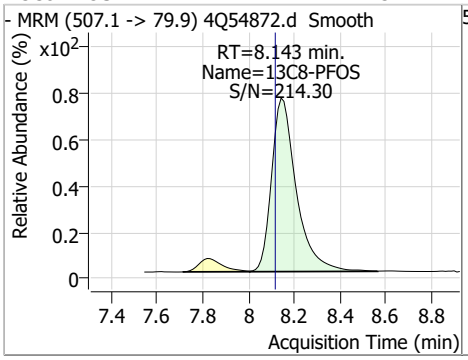
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.48	8.11	0.02	7192	570.1 -> 483.0	19.2	8.1	24.4

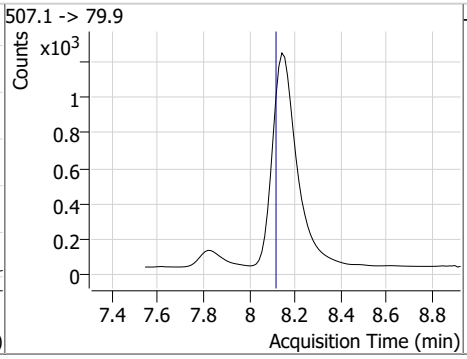


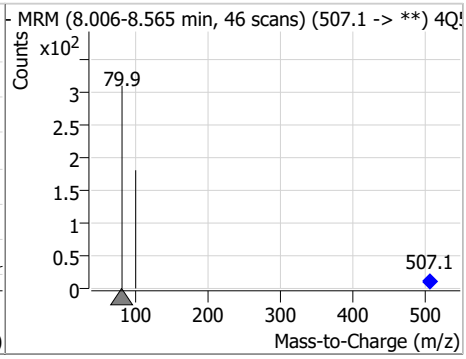




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.32	8.14	0.03	9034				

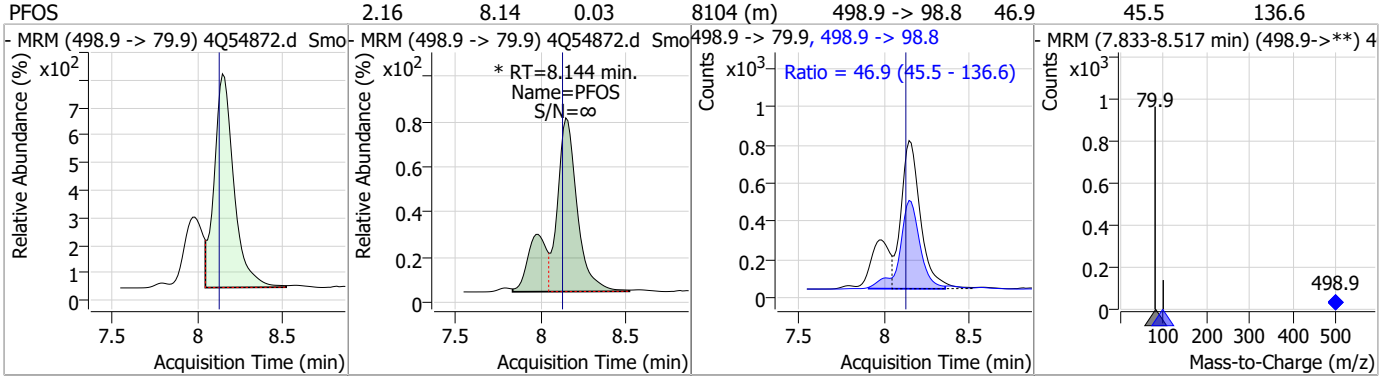




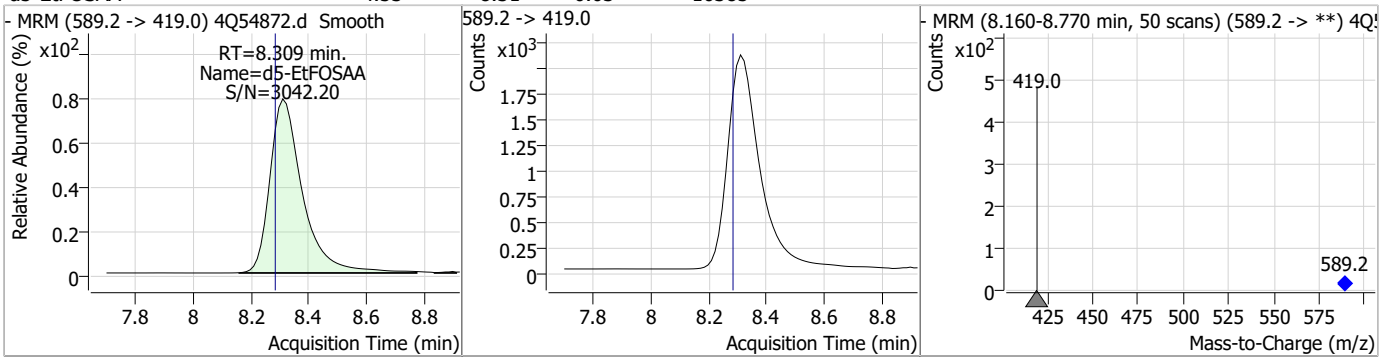


Perfluorinated Compounds by LC/MS/MS

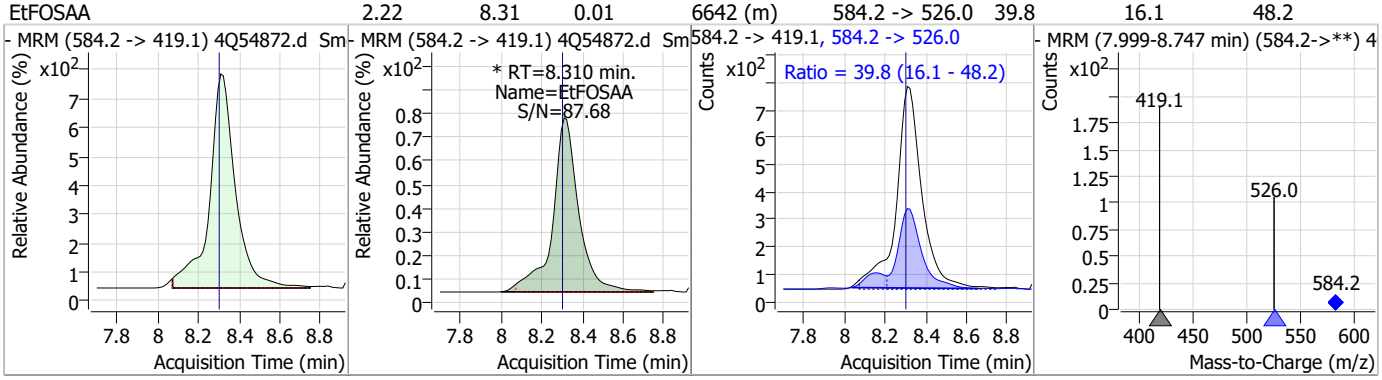
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.16	8.14	0.03	8104 (m)	498.9 -> 98.8	46.9	45.5	136.6



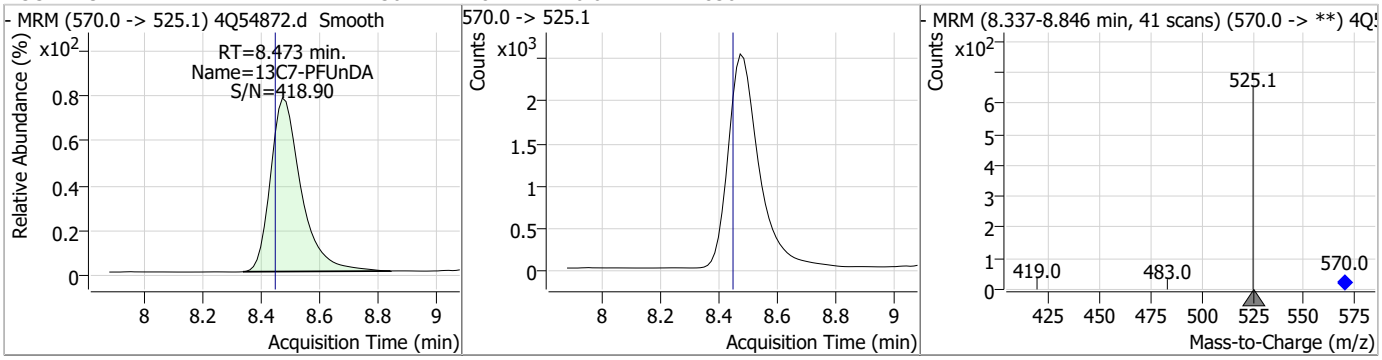
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.53	8.31	0.03	16385				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.22	8.31	0.01	6642 (m)	584.2 -> 526.0	39.8	16.1	48.2

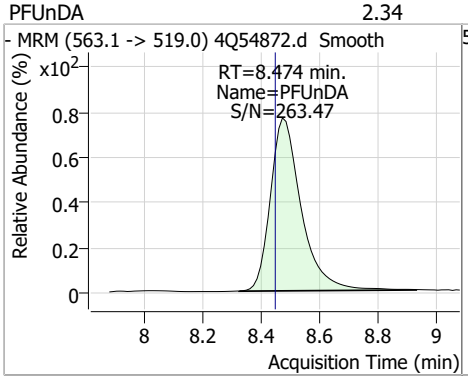


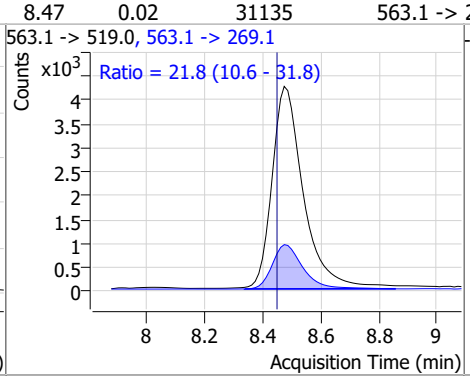
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.30	8.47	0.02	18302				

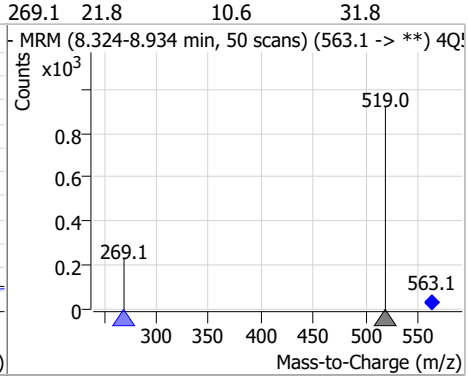


Perfluorinated Compounds by LC/MS/MS

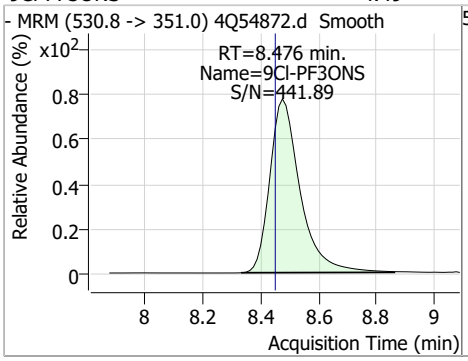
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.34	8.47	0.02	31135	563.1 -> 269.1	21.8	10.6	31.8

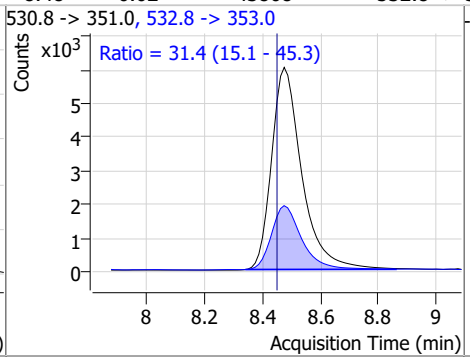


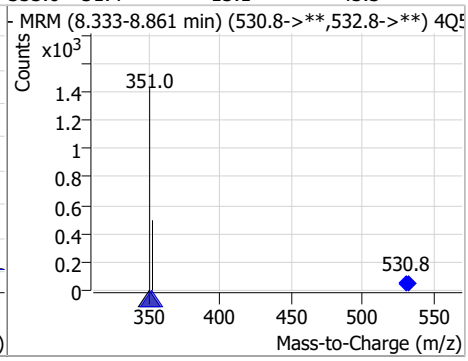




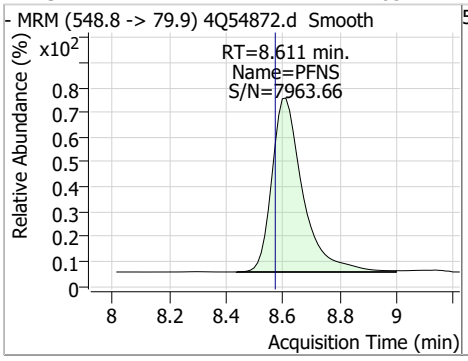
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.49	8.48	0.02	43808	532.8 -> 353.0	31.4	15.1	45.3

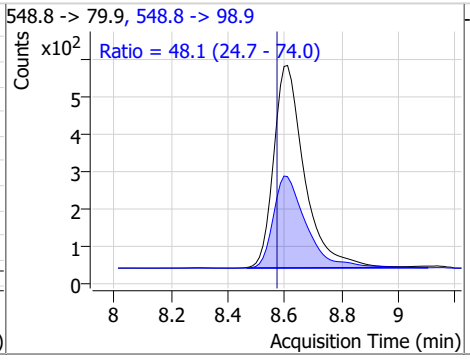


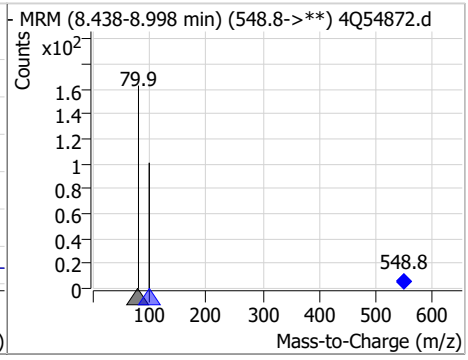




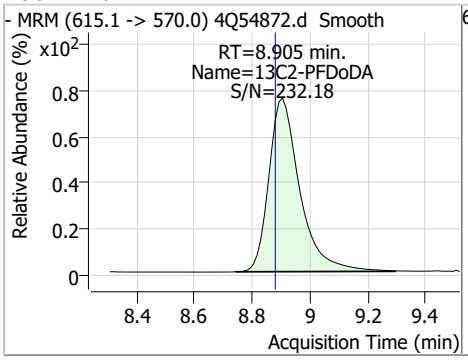
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.65	8.61	0.04	4081	548.8 -> 98.9	48.1	24.7	74.0

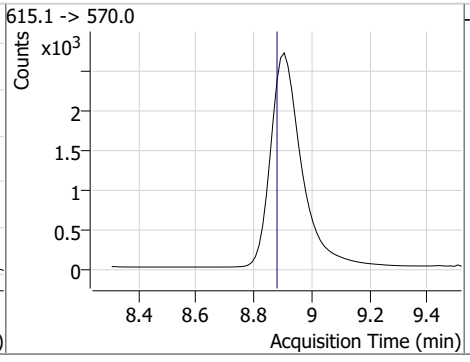


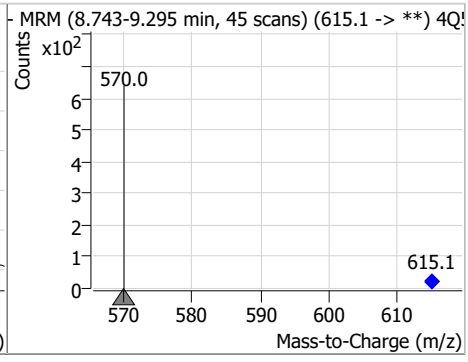




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	8.90	0.02	19826				

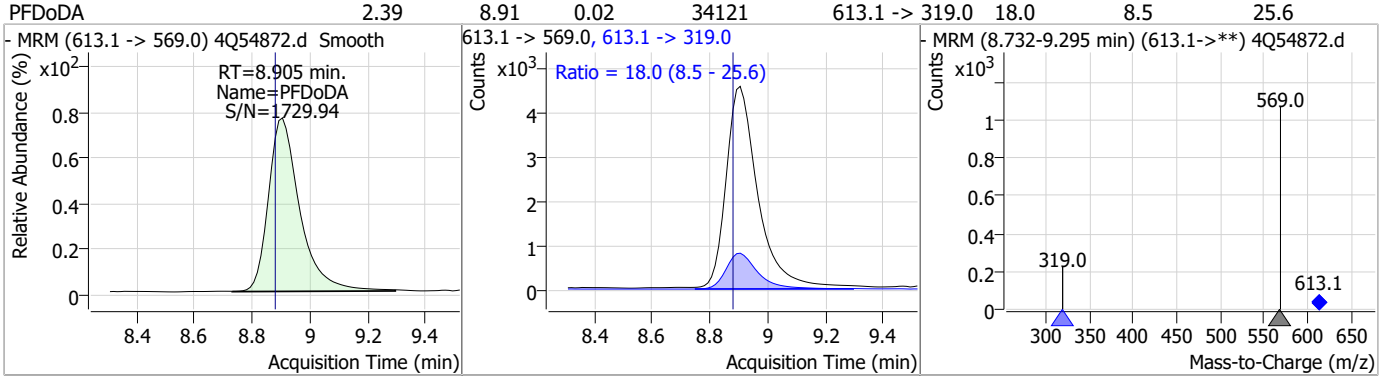




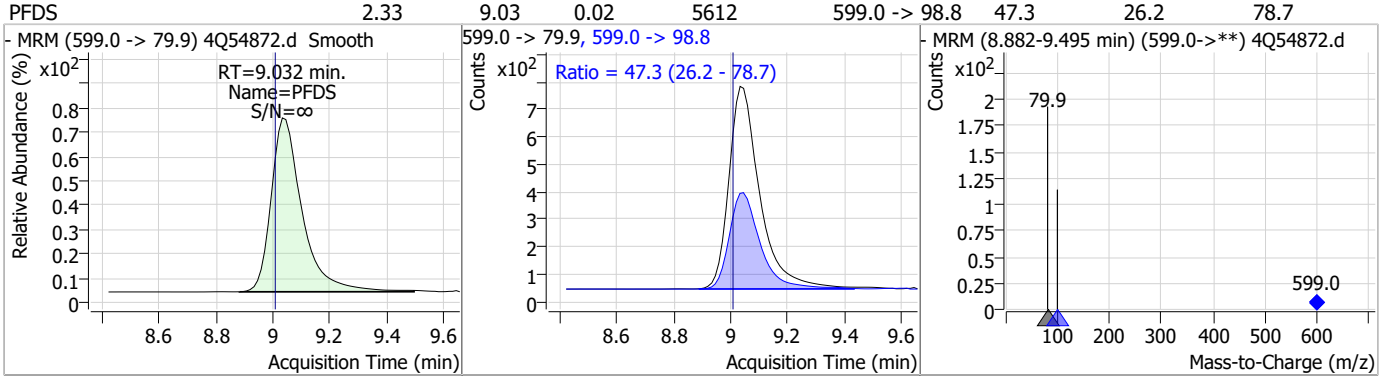


Perfluorinated Compounds by LC/MS/MS

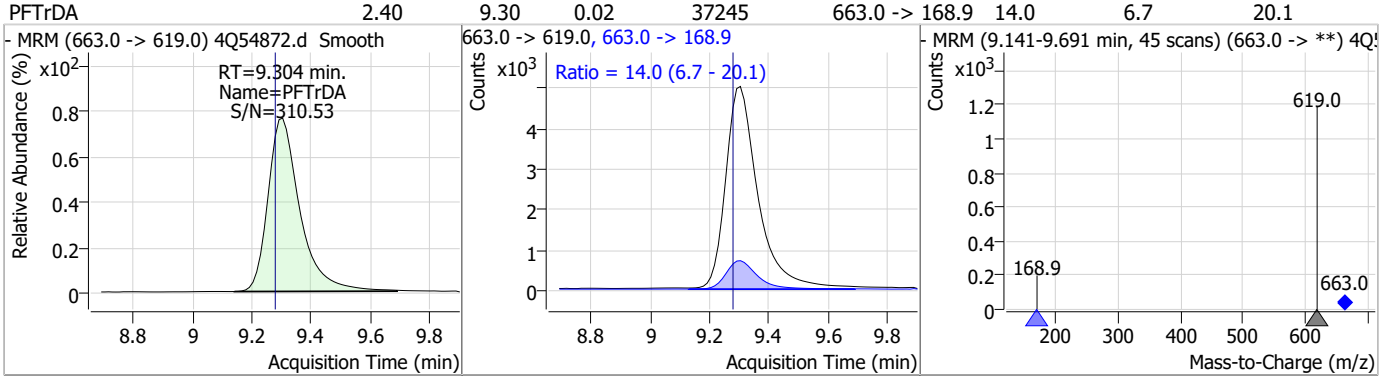
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.39	8.91	0.02	34121	613.1 -> 319.0	18.0	8.5	25.6



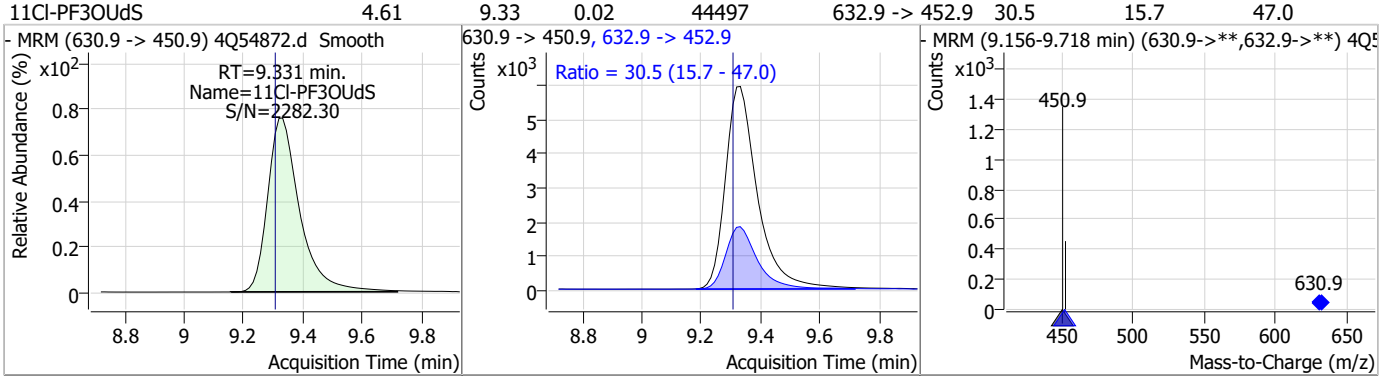
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.33	9.03	0.02	5612	599.0 -> 98.8	47.3	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.40	9.30	0.02	37245	663.0 -> 168.9	14.0	6.7	20.1

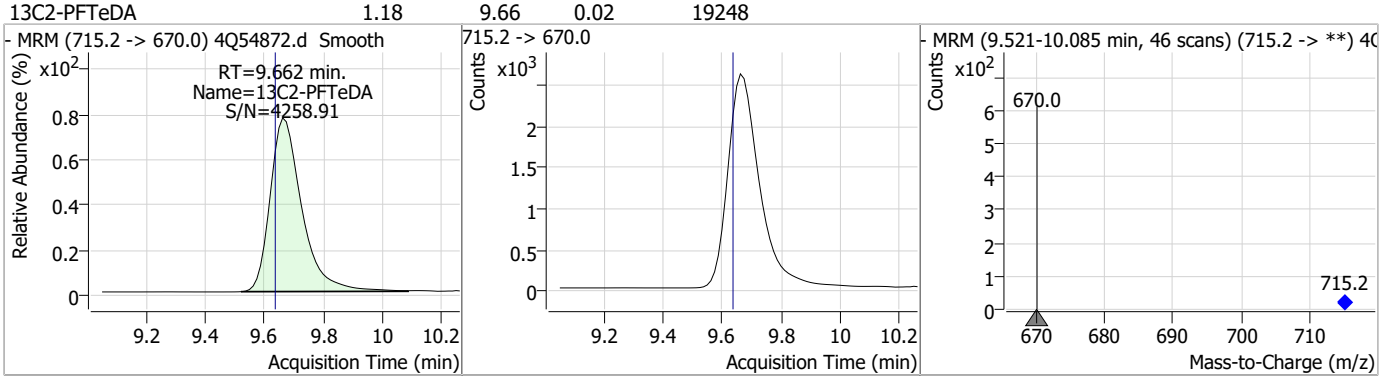


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.61	9.33	0.02	44497	632.9 -> 452.9	30.5	15.7	47.0

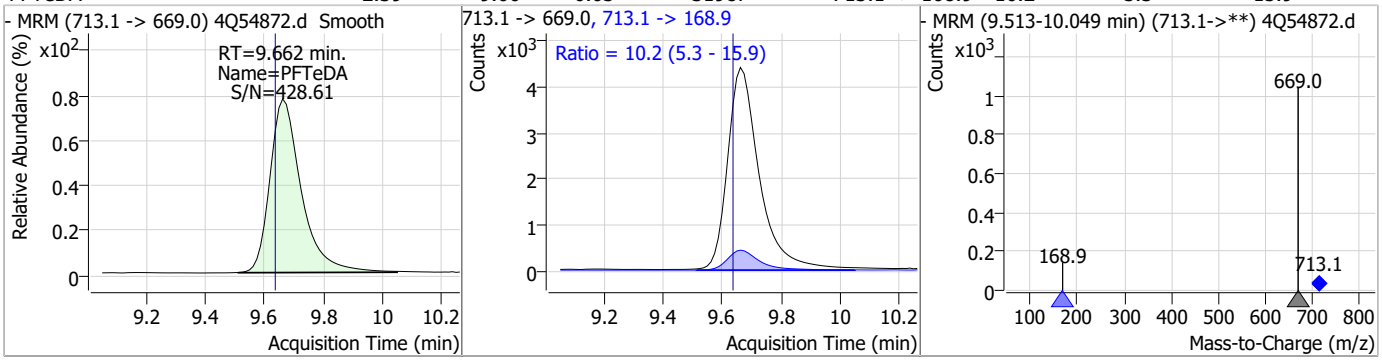


Perfluorinated Compounds by LC/MS/MS

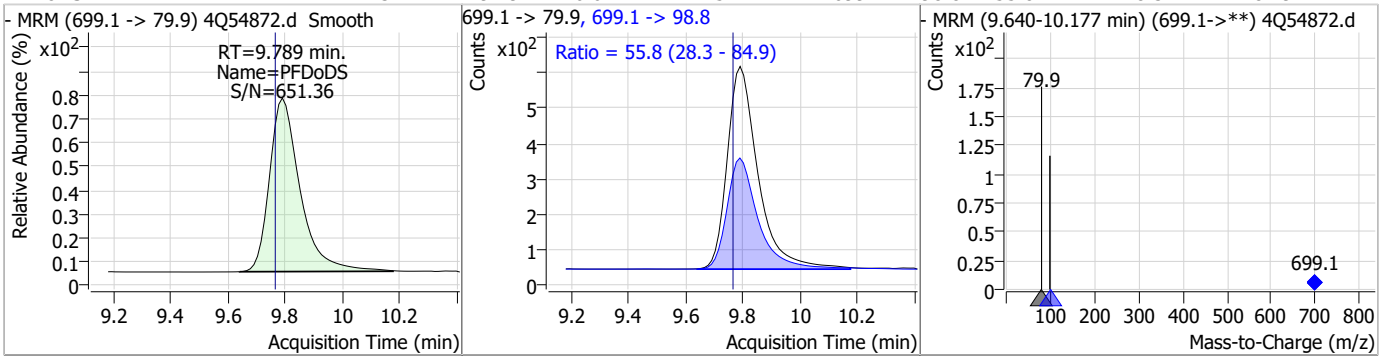
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.18	9.66	0.02	19248				



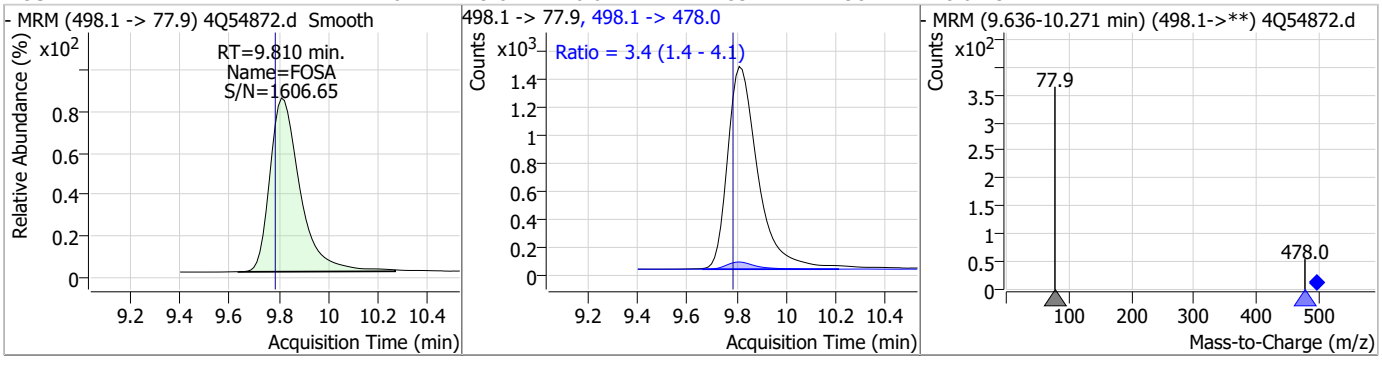
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.39	9.66	0.03	31987	713.1 -> 168.9	10.2	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.32	9.79	0.02	4257	699.1 -> 98.8	55.8	28.3	84.9

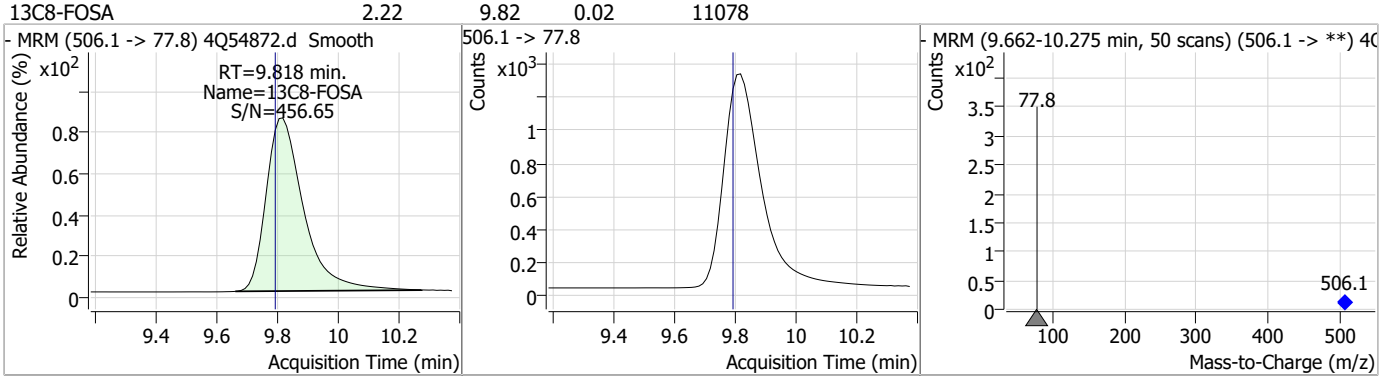


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.46	9.81	0.02	12253	498.1 -> 478.0	3.4	1.4	4.1

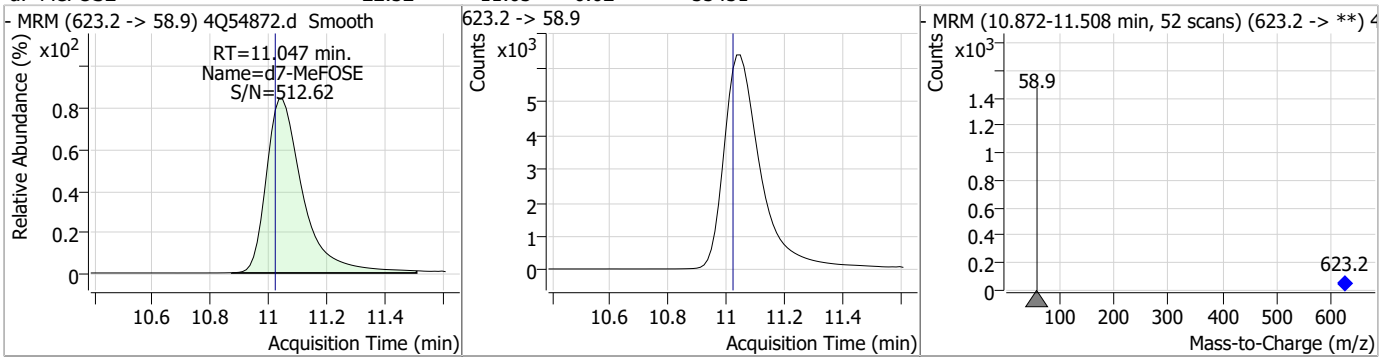


Perfluorinated Compounds by LC/MS/MS

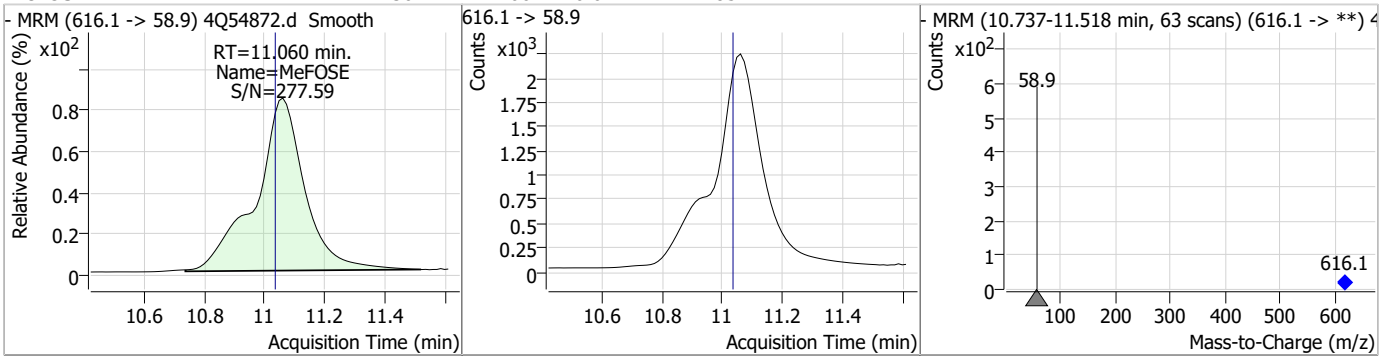
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.22	9.82	0.02	11078				



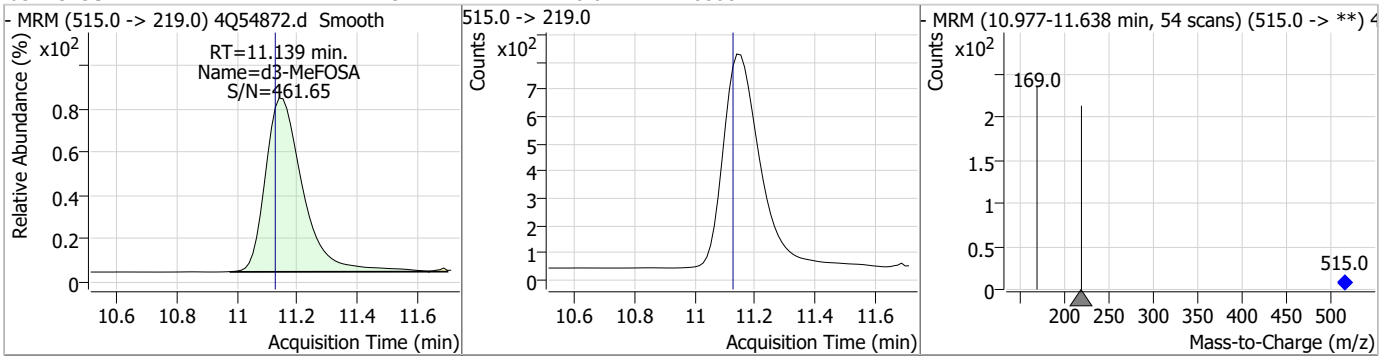
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	22.52	11.05	0.02	55451				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.30	11.06	0.02	24851				

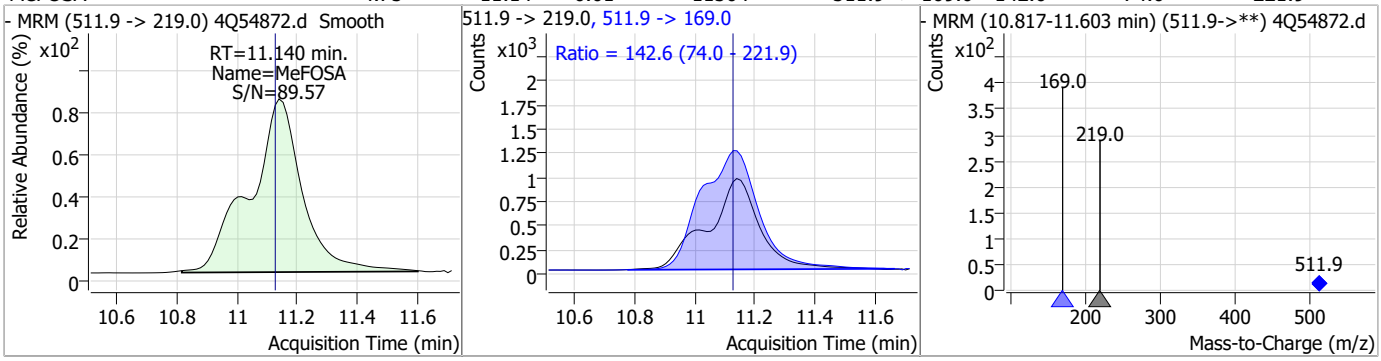


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.29	11.14	0.01	6808				

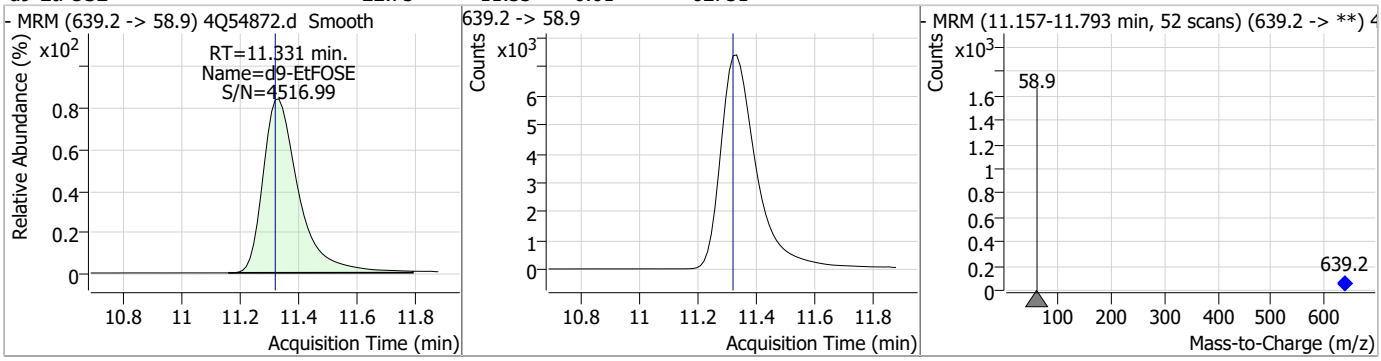


Perfluorinated Compounds by LC/MS/MS

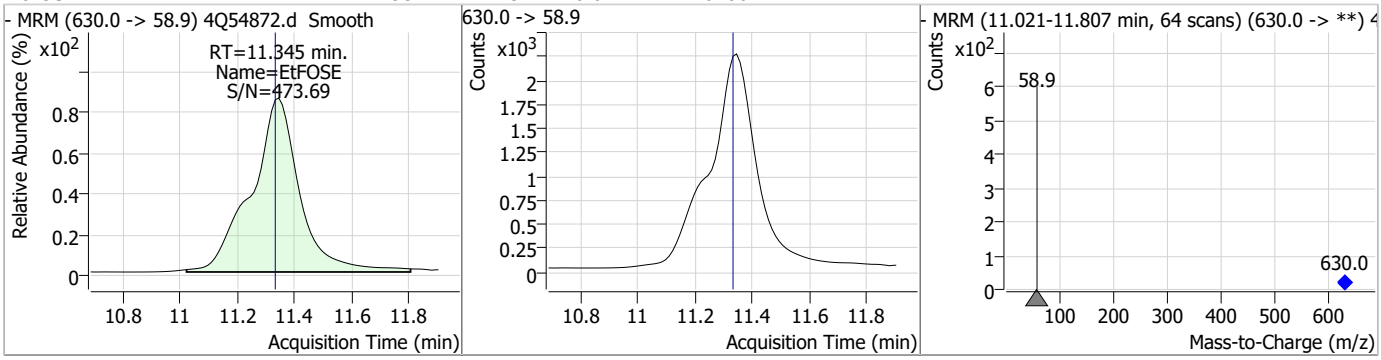
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.75	11.14	0.01	11504	511.9 -> 169.0	142.6	74.0	221.9



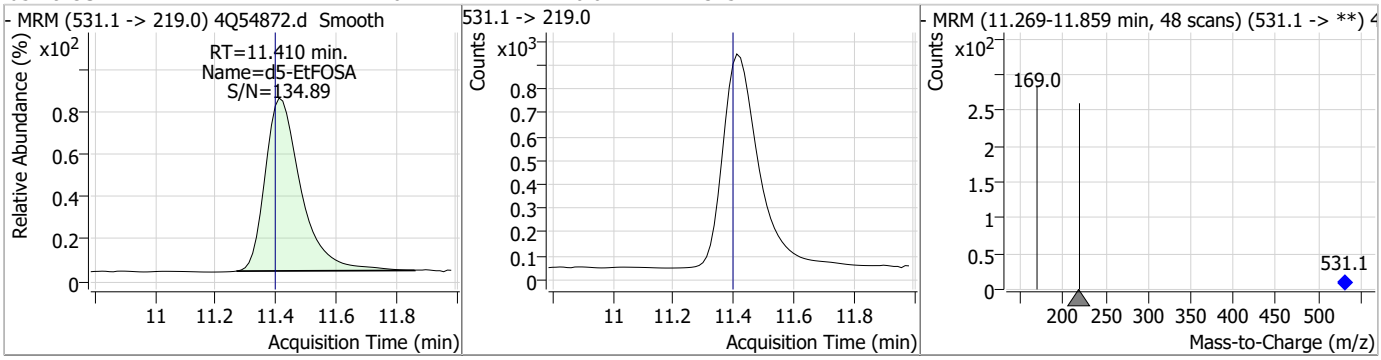
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	22.75	11.33	0.01	62731				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.93	11.34	0.01	26486				

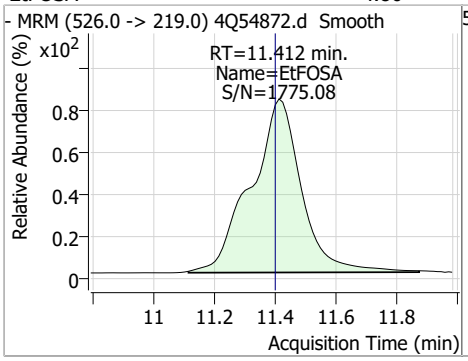


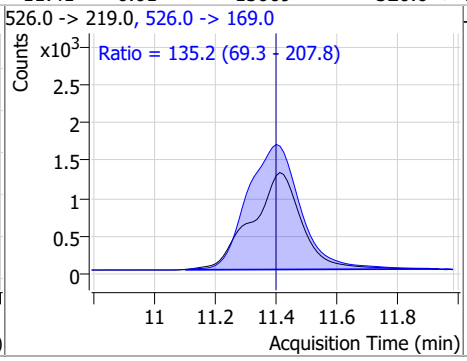
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.26	11.41	0.01	7375				

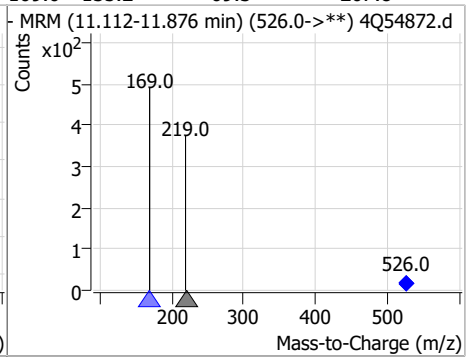


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	4.80	11.41	0.01	15069	526.0 -> 169.0	135.2	69.3	207.8







Manual Integration Approval Summary

Sample Number: S4Q804-CC804
Lab FileID: 4Q54872.D
Injection Time: 12/08/23 16:39

Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.14	Split peak
EtFOSAA	2991-50-6		8.31	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Natasha Gumtie 12/11/23 15:42

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54881.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 6:52:11 PM
Sample Name : cc804-4
Vial : P1-A5
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.699	216.8 -> 171.9	108650	10.00	µg/L	0.025
M5-PFPeA	4.187	268.3 -> 223.0	44445	5.00	µg/L	0.025
M5-PFHxA	5.359	318.0 -> 273.0	36417	2.50	µg/L	0.025
M4-PFHpA	6.317	367.1 -> 322.0	34632	2.50	µg/L	0.025
M8-PFOA	6.989	421.1 -> 376.0	55057	2.50	µg/L	0.012
M9-PFNA	7.534	472.1 -> 427.0	21454	1.25	µg/L	0.012
M6-PFDA	8.017	519.1 -> 474.1	15363	1.25	µg/L	0.013
M7-PFUnDA	8.473	570.0 -> 525.1	19336	1.25	µg/L	0.025
M2-PFDoDA	8.892	615.1 -> 570.0	20512	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	20700	1.25	µg/L	0.025
M8-FOSA	9.806	506.1 -> 77.8	12732	2.50	µg/L	0.012
M3-PFBS	5.215	302.1 -> 79.9	10274	2.50	µg/L	0.025
M3-PFHxS	7.054	402.1 -> 79.9	8589	2.50	µg/L	0.025
M8-PFOS	8.130	507.1 -> 79.9	8777	2.50	µg/L	0.012
M2-4:2FTS	5.071	329.1 -> 80.9	1076	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2366	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	3479	5.00	µg/L	0.025
M3-MeFOSAA	8.099	573.2 -> 419.0	19719	5.00	µg/L	0.012
M3-HFPO-DA	5.714	286.9 -> 168.9	35533	10.00	µg/L	0.025
M5-EtFOSAA	8.309	589.2 -> 419.0	17560	5.00	µg/L	0.026
M7-MeFOSE	11.034	623.2 -> 58.9	59074	25.00	µg/L	0.012
M9-EtFOSE	11.331	639.2 -> 58.9	68365	25.00	µg/L	0.012
M5-EtFOSA	11.410	531.1 -> 219.0	7038	2.50	µg/L	0.012
M3-MeFOSA	11.139	515.0 -> 219.0	6634	2.50	µg/L	0.012
13C4-PFOS	8.144	502.8 -> 79.9	7540	2.50	µg/L	0.026
13C3-PFBA	2.703	216.0 -> 172.0	51927	5.00	µg/L	0.025
18O2-PFHxS	7.054	403.0 -> 83.9	5018	2.50	µg/L	0.013
13C4-PFOA	6.989	417.1 -> 372.0	62892	2.50	µg/L	0.012
13C2-PFDA	8.017	515.1 -> 470.1	16901	1.25	µg/L	0.013
13C5-PFNA	7.534	468.0 -> 423.0	22009	1.25	µg/L	0.025
13C2-PFHxA	5.360	315.1 -> 270.0	38647	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	1076	4.52	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2366	4.58	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C2-8:2FTS	7.828	529.1 -> 80.9	3479	5.03	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-PFDoDA	8.892	615.1 -> 570.0	20512	1.21	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-PFTeDA	9.662	715.2 -> 670.0	20700	1.23	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFBS	5.215	302.1 -> 79.9	10274	2.67	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C3-PFHxS	7.054	402.1 -> 79.9	8589	2.73	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C4-PFBA	2.699	216.8 -> 171.9	108650	9.96 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C4-PFHpA	6.317	367.1 -> 322.0	34632	2.54 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFHxA	5.359	318.0 -> 273.0	36417	2.56 µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFPeA	4.187	268.3 -> 223.0	44445	5.01 µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C6-PFDA	8.017	519.1 -> 474.1	15363	1.25 µg/L	0.013
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C7-PFUnDA	8.473	570.0 -> 525.1	19336	1.33 µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C8-FOSA	9.806	506.1 -> 77.8	12732	2.61 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C8-PFOA	6.989	421.1 -> 376.0	55057	2.37 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C8-PFOS	8.130	507.1 -> 79.9	8777	2.30 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 92.0%	
13C9-PFNA	7.534	472.1 -> 427.0	21454	1.22 µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.3%	
d3-MeFOSAA	8.099	573.2 -> 419.0	19719	4.71 µg/L	0.012
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C3-HFPO-DA	5.714	286.9 -> 168.9	35533	9.99 µg/L	0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
d3-MeFOSA	11.139	515.0 -> 219.0	6634	2.28 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 91.0%	
d5-EtFOSAA	8.309	589.2 -> 419.0	17560	4.96 µg/L	0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
d7-MeFOSE	11.034	623.2 -> 58.9	59074	24.51 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 98.0%	
d9-EtFOSE	11.331	639.2 -> 58.9	68365	25.32 µg/L	0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
d5-EtFOSA	11.410	531.1 -> 219.0	7038	2.20 µg/L	0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 88.1%	
Target Compounds					QValue
4:2FTS	5.072	327.1 -> 307.0	18074	9.75 µg/L	99
		327.1 -> 80.9	7627		
6:2FTS	6.774	427.1 -> 407.0	23749	9.55 µg/L	100
		427.1 -> 80.9	8684		
8:2FTS	7.829	527.1 -> 507.0	17503	9.55 µg/L	99
		527.1 -> 80.8	7003		
EtFOSAA	8.310	584.2 -> 419.1	7440	2.32 µg/L	85
		584.2 -> 526.0	3020		
FOSA	9.810	498.1 -> 77.9	12921	2.26 µg/L	98
		498.1 -> 478.0	433		
MeFOSAA	8.099	570.1 -> 419.0	7287	2.58 µg/L	93
		570.1 -> 483.0	1407		
PFBA	2.695	212.8 -> 168.9	32683	9.39 µg/L	100
PFBS	5.216	298.7 -> 79.9	6265	1.97 µg/L	84
		298.7 -> 98.8	1909		
PFDA	8.017	512.9 -> 469.0	25721	2.28 µg/L	97
		512.9 -> 219.0	4979		
PFDoDA	8.893	613.1 -> 569.0	36187	2.45 µg/L	100
		613.1 -> 319.0	6260		
PFDS	9.032	599.0 -> 79.9	5518	2.36 µg/L	94

Perfluorinated Compounds by LC/MS/MS

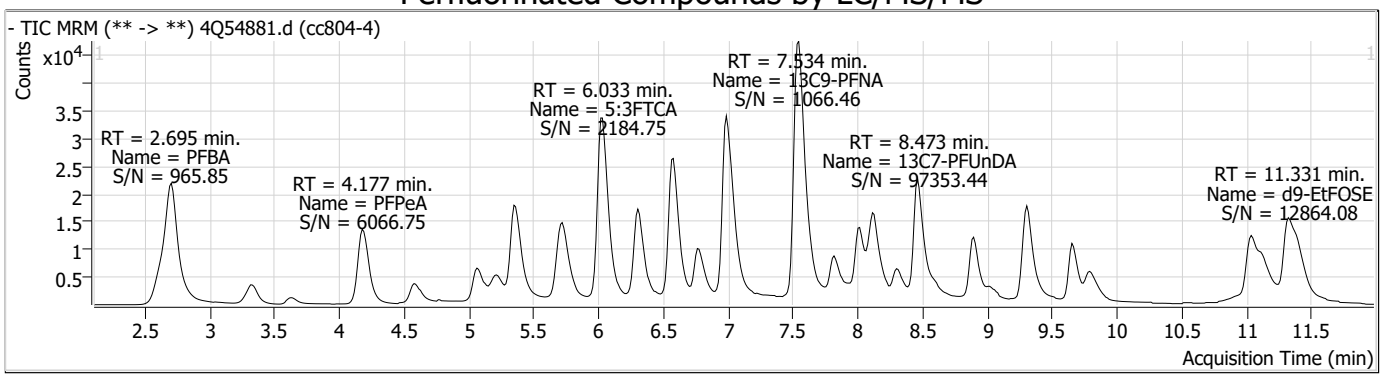
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2668				
PFHpA	6.317	363.1 -> 319.0	44580	2.29	µg/L		98
		363.1 -> 169.0	7813				
PFHpS	7.637	449.0 -> 79.9	8259	2.37	µg/L		97
		449.0 -> 98.9	4167				
PFHxA	5.362	313.0 -> 269.0	25816	2.22	µg/L		99
		313.0 -> 118.9	807				
PFHxS	7.055	398.7 -> 79.9	5518	1.99	µg/L	m	93
		398.7 -> 98.9	2871				
PFNA	7.534	463.0 -> 419.0	29036	2.30	µg/L		99
		463.0 -> 219.0	6837				
PFNS	8.598	548.8 -> 79.9	3798	2.54	µg/L		91
		548.8 -> 98.9	2111				
PFOA	6.990	413.0 -> 369.0	53830	2.38	µg/L		94
		413.0 -> 169.0	10517				
PFOS	8.144	498.9 -> 79.9	8414	2.30	µg/L	m	56
		498.9 -> 98.8	4132				
PFPeA	4.177	263.0 -> 219.0	40969	4.68	µg/L		100
PFPeS	6.307	349.1 -> 79.9	5376	2.06	µg/L		96
		349.1 -> 98.9	2426				
PFTeDA	9.662	713.1 -> 669.0	32977	2.29	µg/L		98
		713.1 -> 168.9	3699				
PFTrDA	9.292	663.0 -> 619.0	39164	2.44	µg/L		97
		663.0 -> 168.9	5767				
PFUnDA	8.474	563.1 -> 519.0	32418	2.31	µg/L		97
		563.1 -> 269.1	7317				
11Cl-PF3OUdS	9.319	630.9 -> 450.9	44560	4.55	µg/L		100
		632.9 -> 452.9	13917				
9Cl-PF3ONS	8.476	530.8 -> 351.0	45197	4.57	µg/L		98
		532.8 -> 353.0	14122				
ADONA	6.581	376.9 -> 250.9	117498	4.90	µg/L		100
		376.9 -> 84.8	28432				
HFPO-DA	5.715	284.9 -> 168.9	15441	4.54	µg/L		99
		284.9 -> 184.9	1403				
3:3FTCA	3.630	241.0 -> 177.0	6216	11.24	µg/L		99
		241.0 -> 117.0	537				
5:3FTCA	6.033	341.0 -> 237.1	119462	57.64	µg/L		100
		341.0 -> 217.0	85189				
7:3FTCA	7.549	441.0 -> 316.9	63720	58.63	µg/L		97
		441.0 -> 336.9	148674				
EtFOSA	11.412	526.0 -> 219.0	14539	4.85	µg/L		100
		526.0 -> 169.0	20097				
EtFOSE	11.345	630.0 -> 58.9	27911	11.54	µg/L		100
MeFOSA	11.140	511.9 -> 219.0	11835	5.01	µg/L	m	97
		511.9 -> 169.0	17073				
MeFOSE	11.060	616.1 -> 58.9	27518	11.74	µg/L		100
PFDoDS	9.789	699.1 -> 79.9	4108	2.31	µg/L		99
		699.1 -> 98.8	2294				
NFDHA	5.241	295.0 -> 201.0	3638	4.42	µg/L		99
		295.0 -> 84.9	980				
PFMBA	4.591	279.0 -> 85.1	22495	4.67	µg/L		100
PFMPA	3.332	229.0 -> 84.9	24452	4.62	µg/L		100
PFEESA	5.734	314.8 -> 134.9	35868	4.18	µg/L		98
		314.8 -> 82.9	1207				

 # = Qualifier out of range, m = manually integrated, + = Area summed

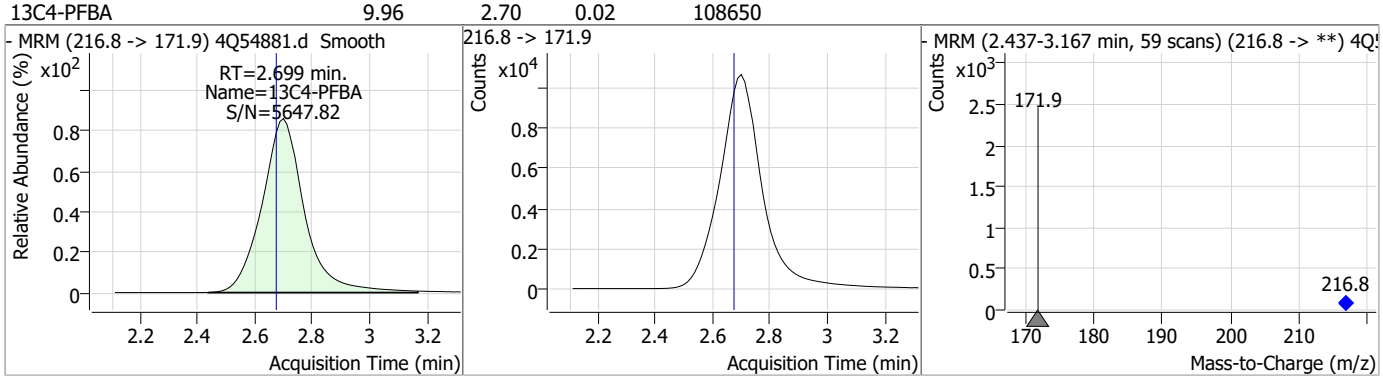
Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

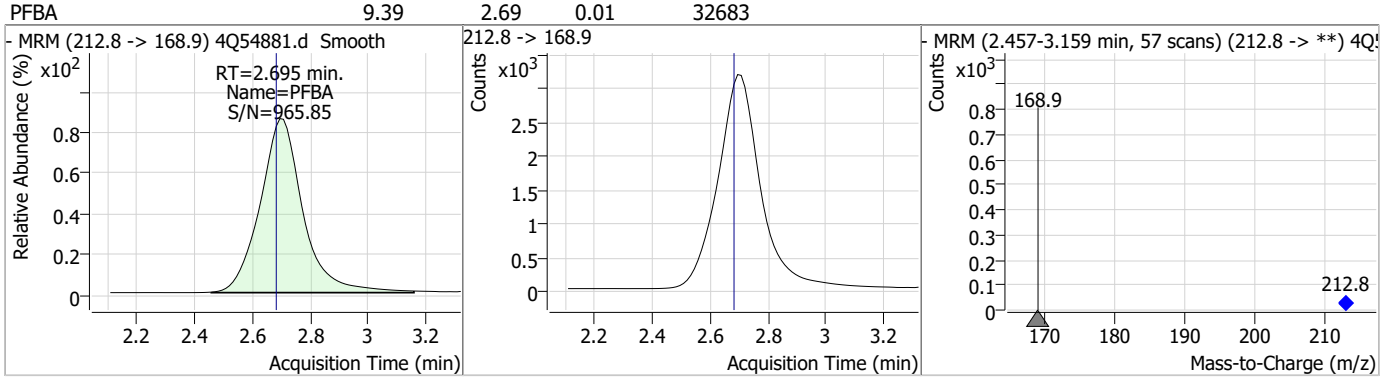
Perfluorinated Compounds by LC/MS/MS



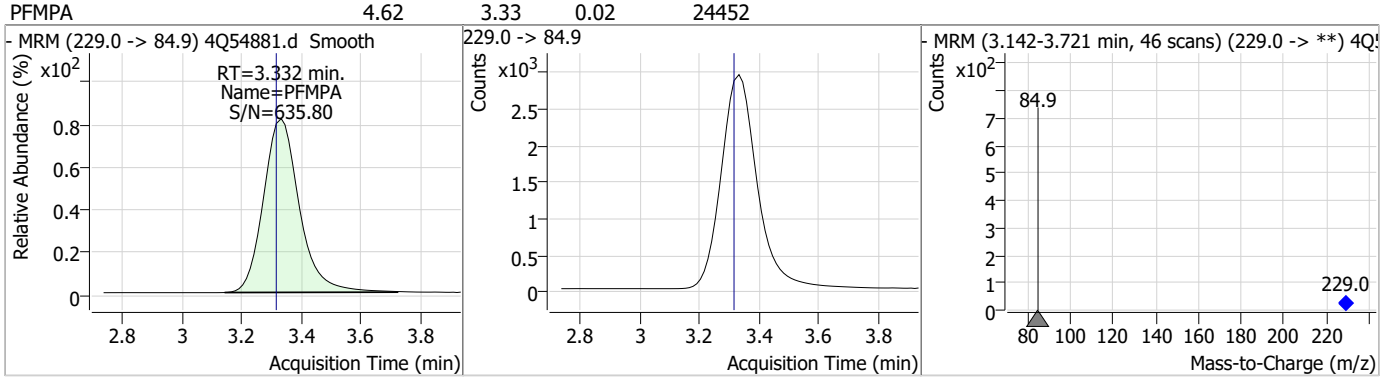
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.96	2.70	0.02	108650				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.39	2.69	0.01	32683				

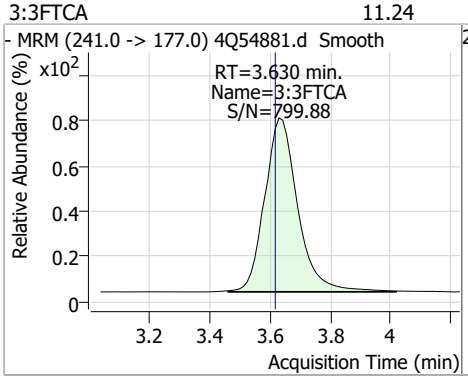


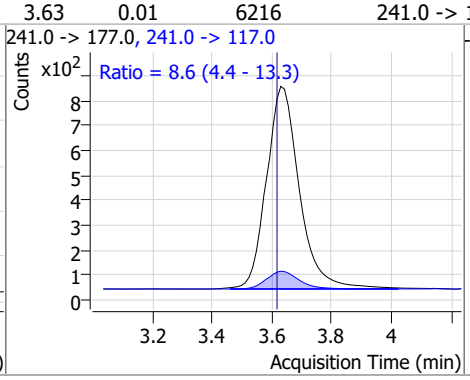
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.62	3.33	0.02	24452				

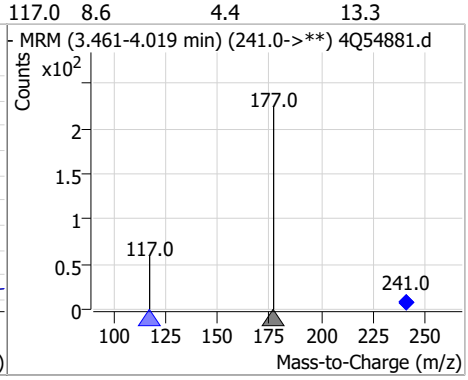


Perfluorinated Compounds by LC/MS/MS

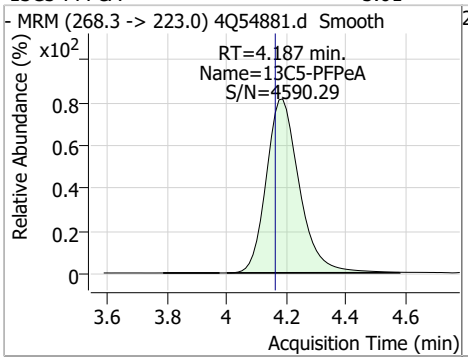
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.24	3.63	0.01	6216	241.0 -> 117.0	8.6	4.4	13.3

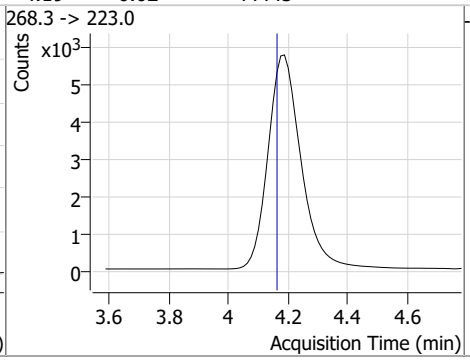


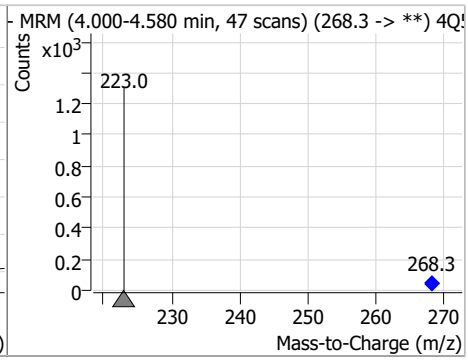




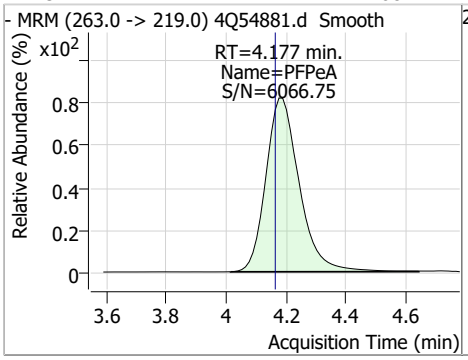
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.01	4.19	0.02	44445				

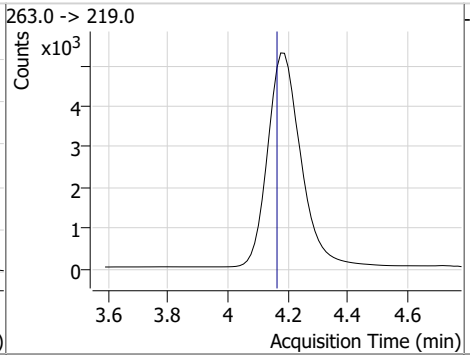


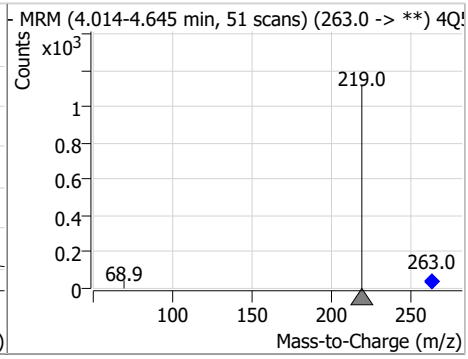




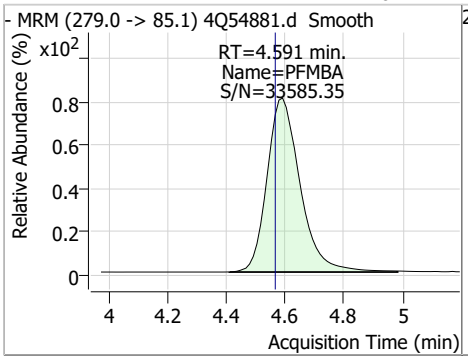
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.68	4.18	0.01	40969				

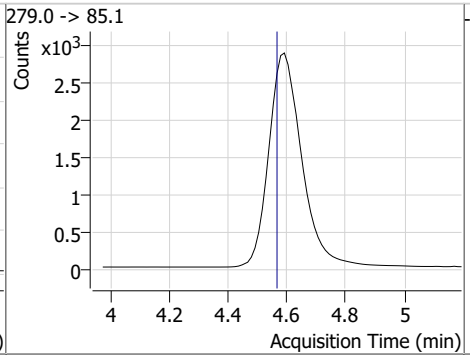


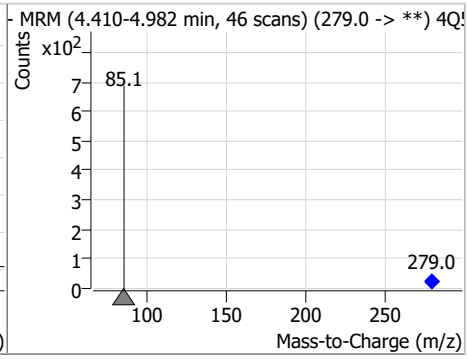




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.67	4.59	0.02	22495				

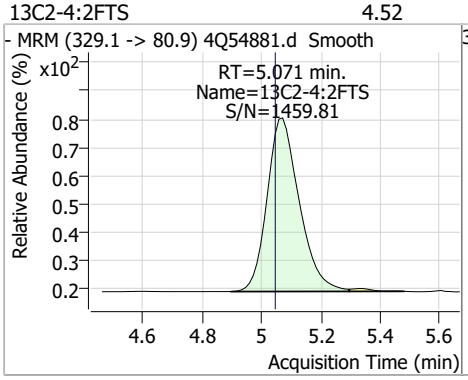


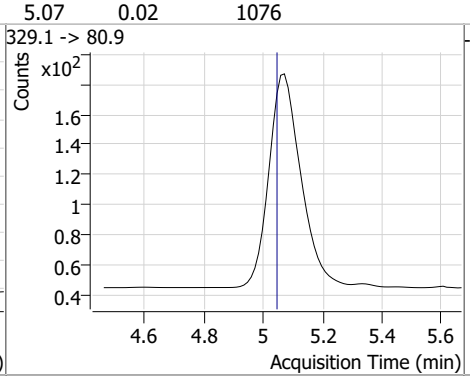


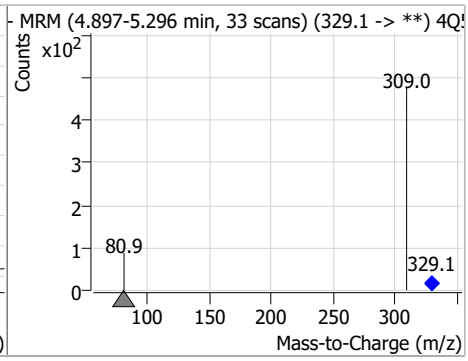


Perfluorinated Compounds by LC/MS/MS

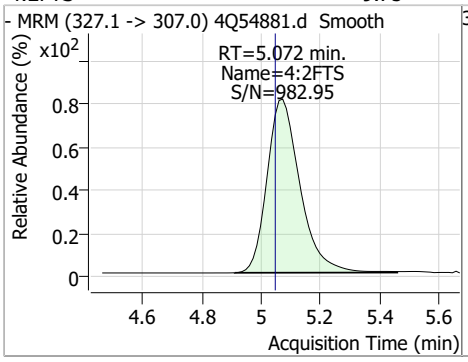
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.52	5.07	0.02	1076				

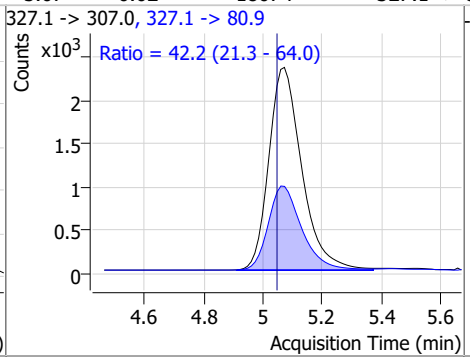


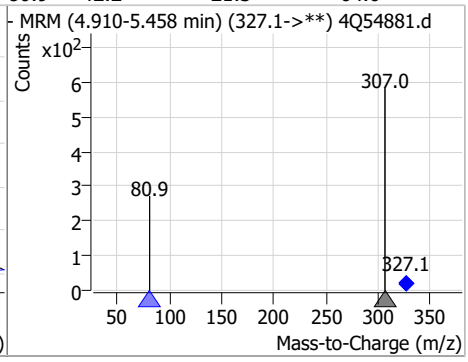




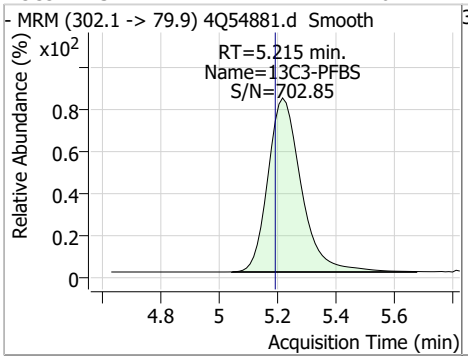
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.75	5.07	0.02	18074	327.1 -> 80.9	42.2	21.3	64.0

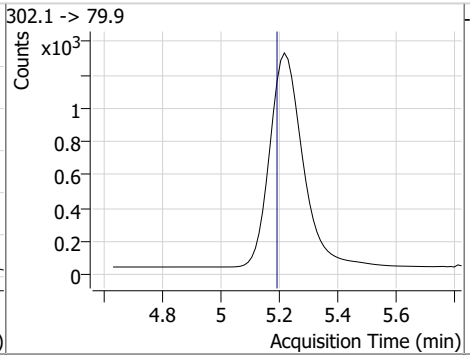


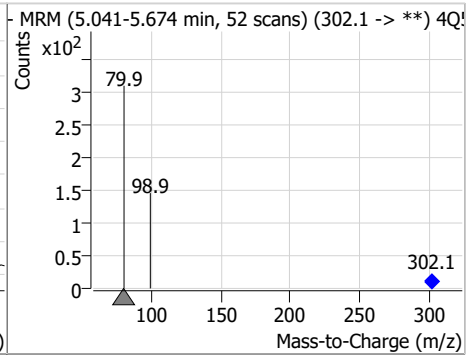




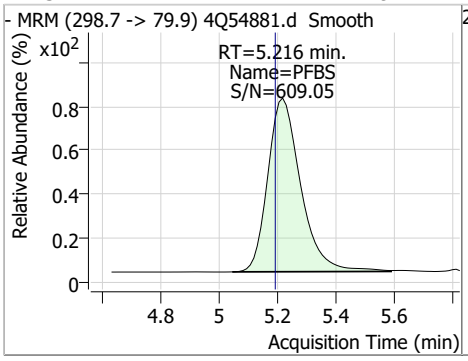
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.67	5.21	0.03	10274				

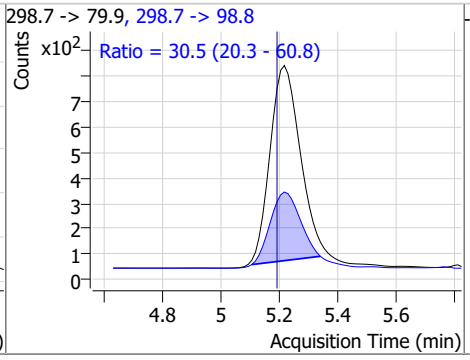


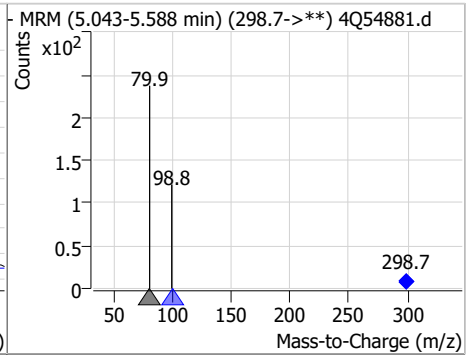




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.97	5.22	0.03	6265	298.7 -> 98.8	30.5	20.3	60.8

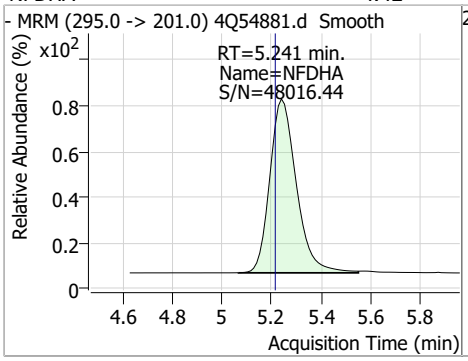


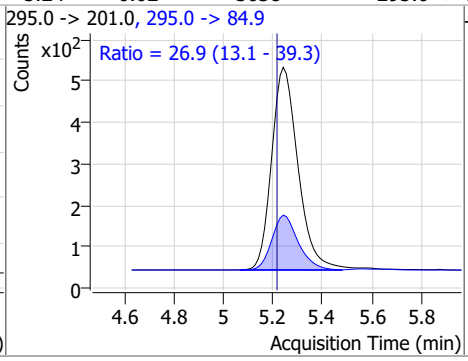


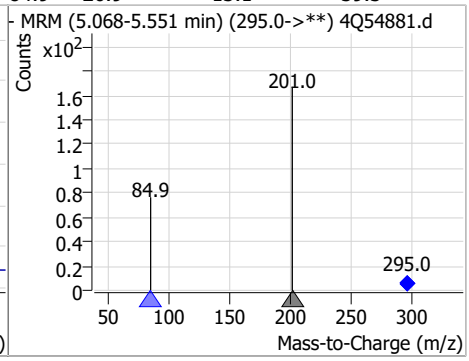


Perfluorinated Compounds by LC/MS/MS

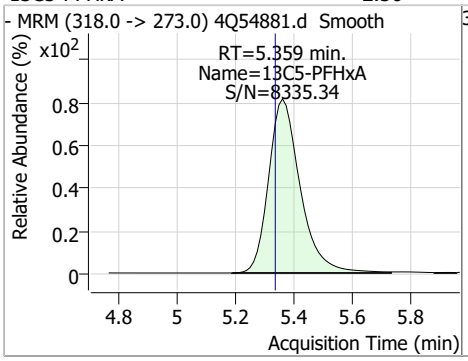
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.42	5.24	0.02	3638	295.0 -> 84.9	26.9	13.1	39.3

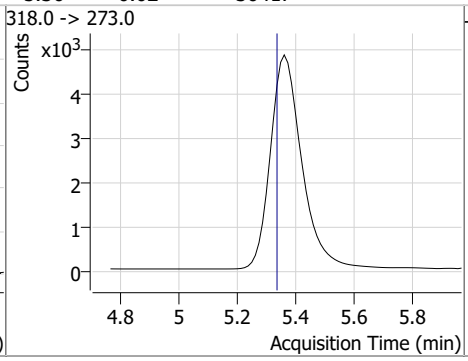


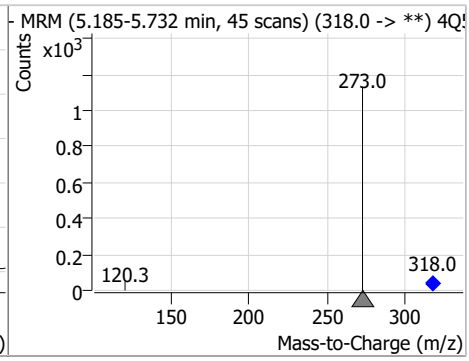




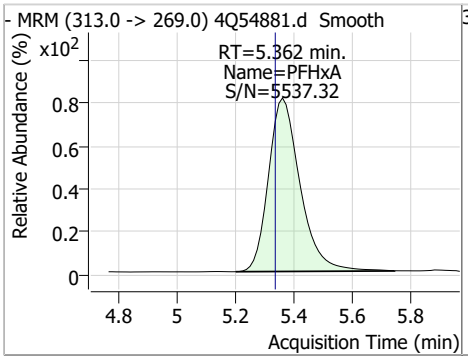
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.56	5.36	0.02	36417				

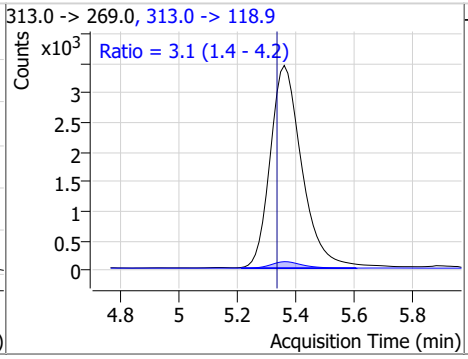


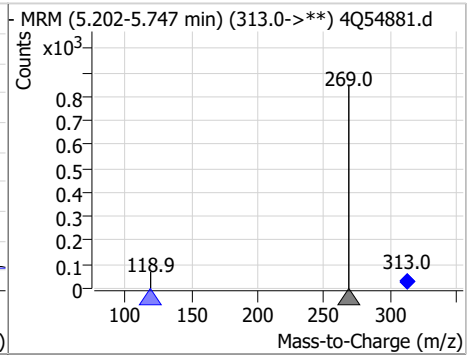




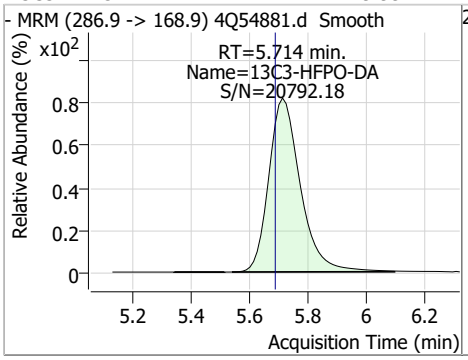
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.22	5.36	0.02	25816	313.0 -> 118.9	3.1	1.4	4.2

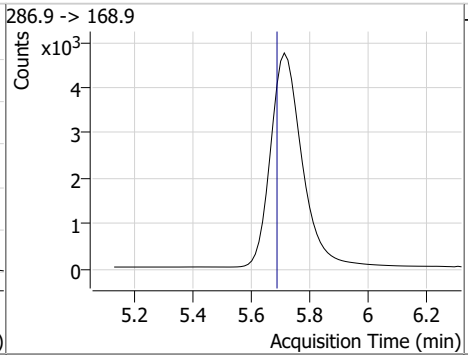


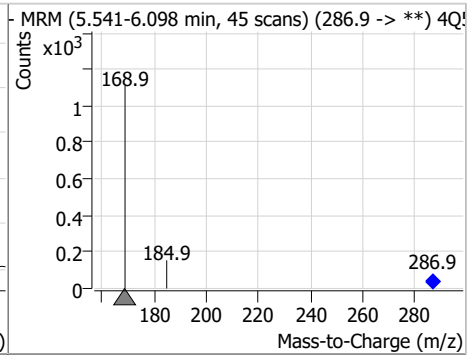




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.99	5.71	0.02	35533				

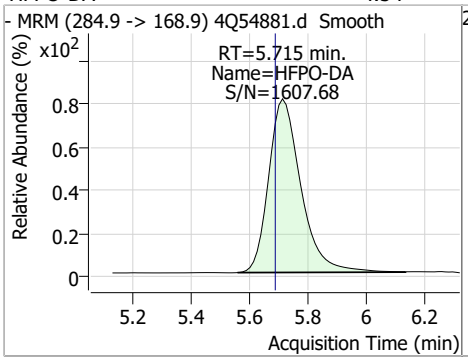


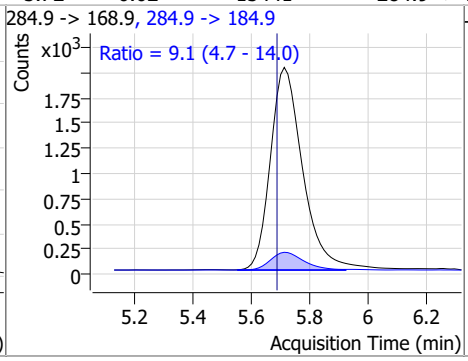


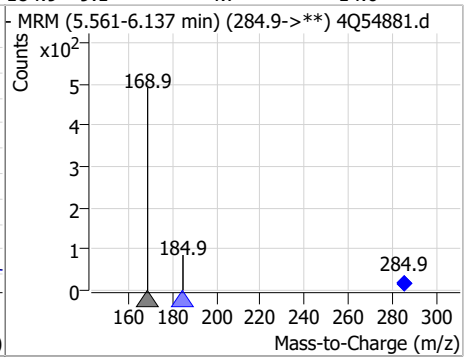


Perfluorinated Compounds by LC/MS/MS

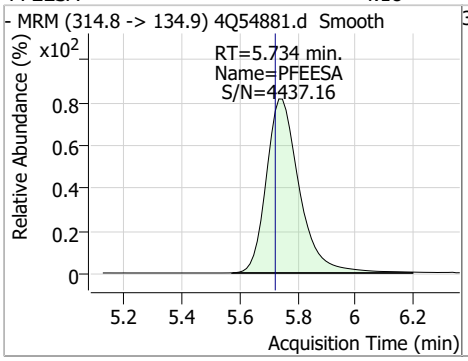
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.54	5.72	0.02	15441	284.9 -> 184.9	9.1	4.7	14.0

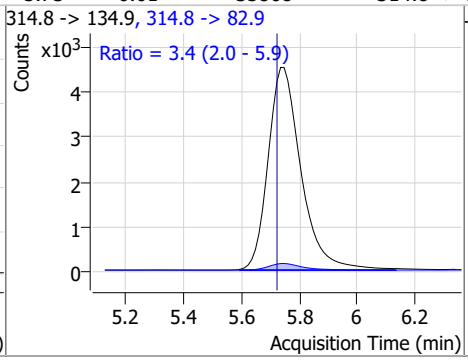


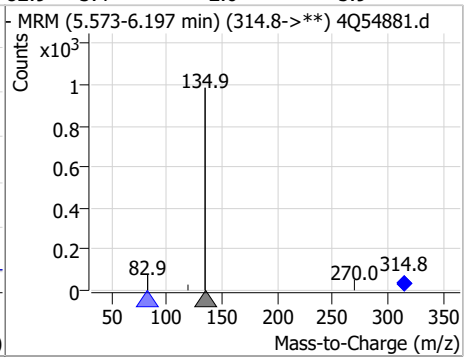




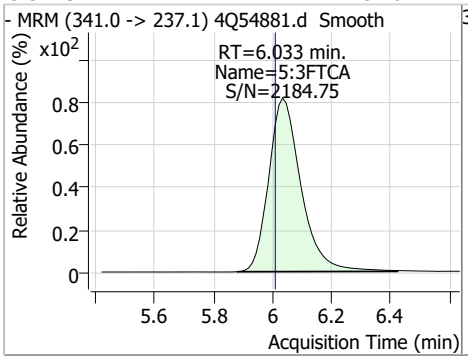
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.18	5.73	0.01	35868	314.8 -> 82.9	3.4	2.0	5.9

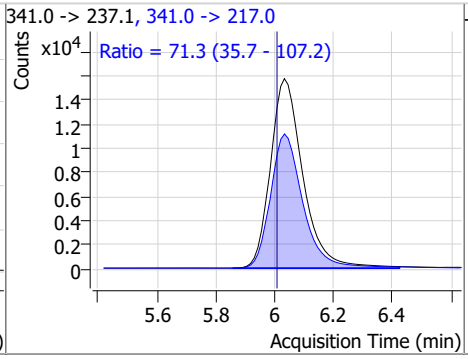


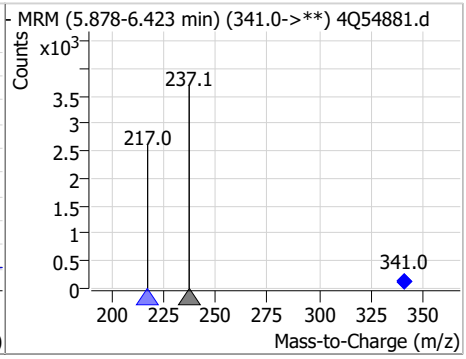




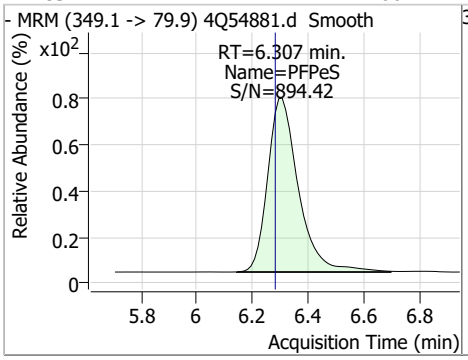
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	57.64	6.03	0.02	119462	341.0 -> 217.0	71.3	35.7	107.2

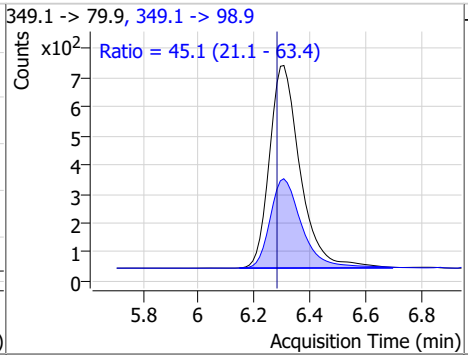


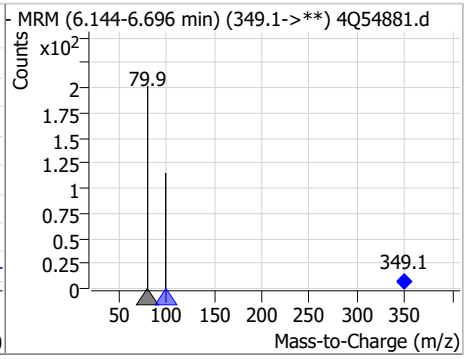




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.06	6.31	0.02	5376	349.1 -> 98.9	45.1	21.1	63.4

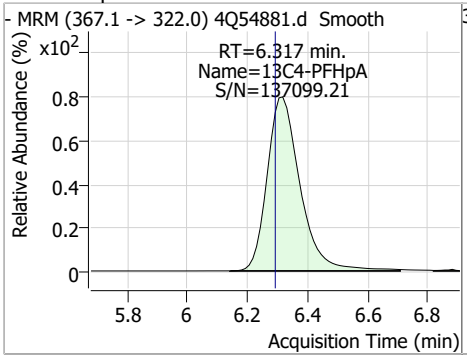


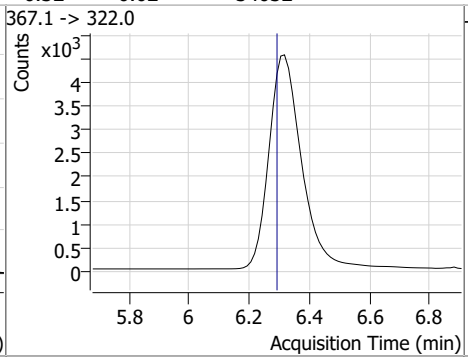


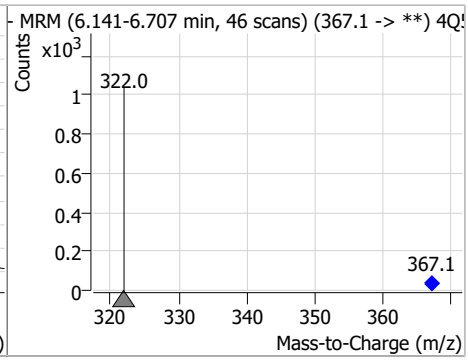


Perfluorinated Compounds by LC/MS/MS

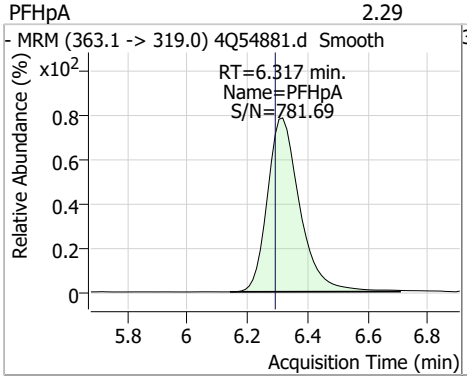
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	6.32	0.02	34632				

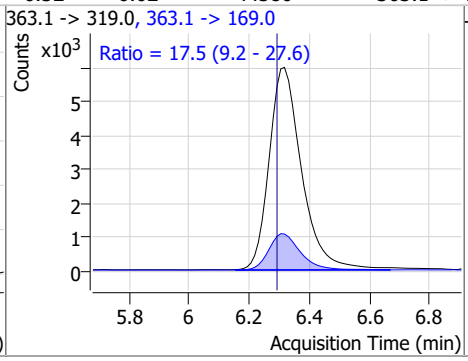


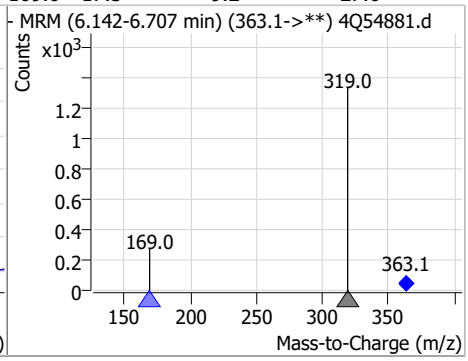




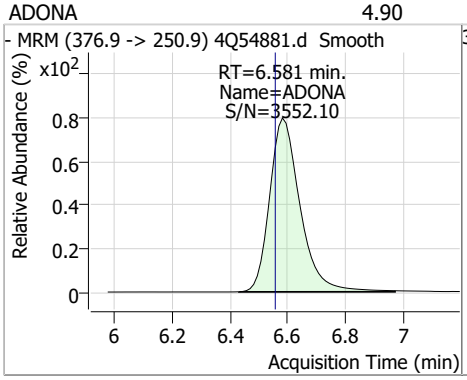
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.29	6.32	0.02	44580	363.1 -> 169.0	17.5	9.2	27.6

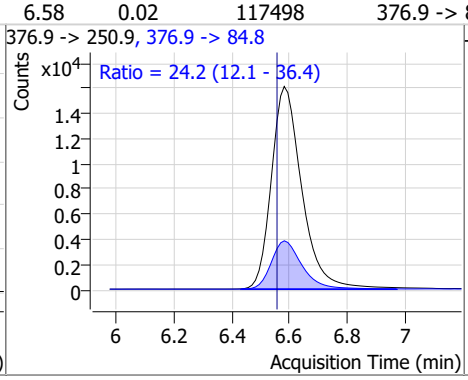


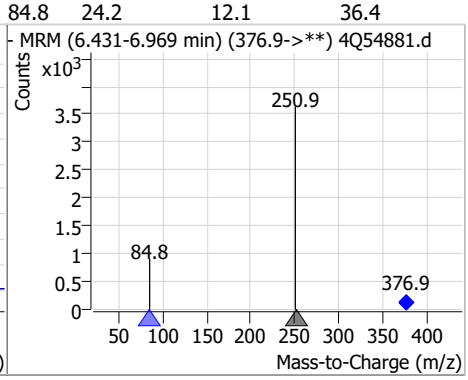




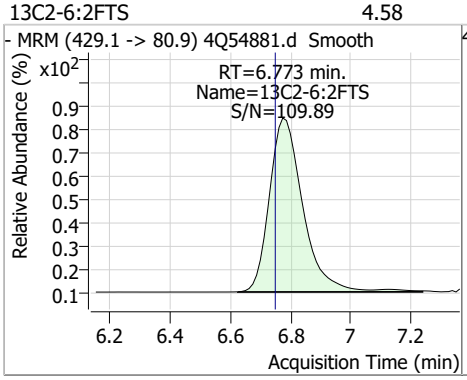
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.90	6.58	0.02	117498	376.9 -> 84.8	24.2	12.1	36.4

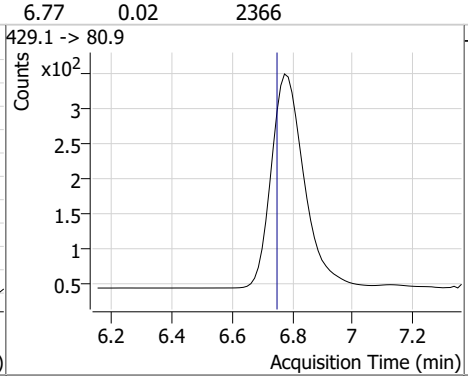


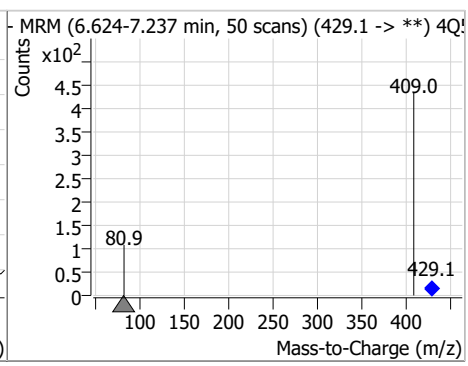




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.58	6.77	0.02	2366				

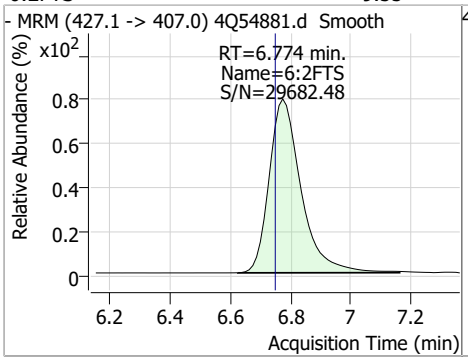


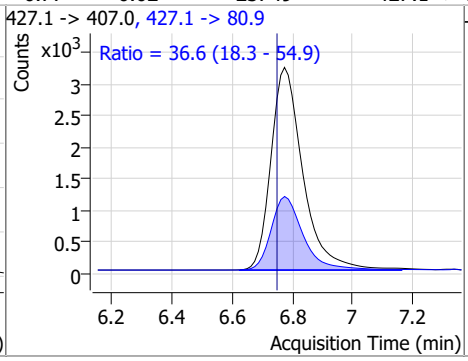


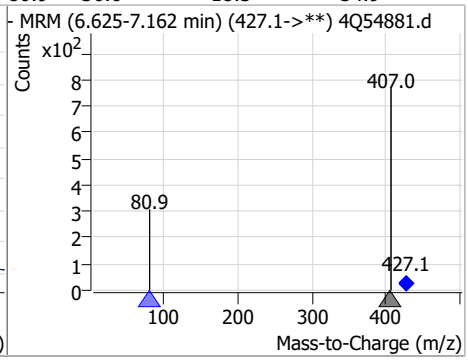


Perfluorinated Compounds by LC/MS/MS

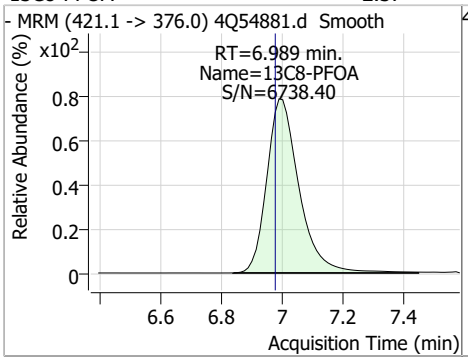
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.55	6.77	0.02	23749	427.1 -> 80.9	36.6	18.3	54.9

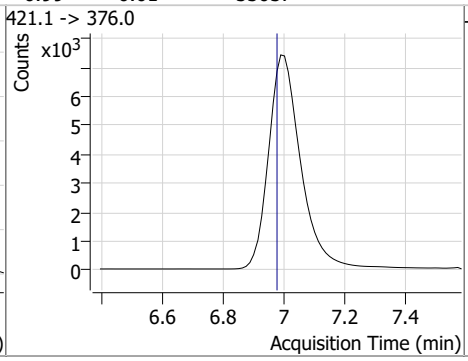


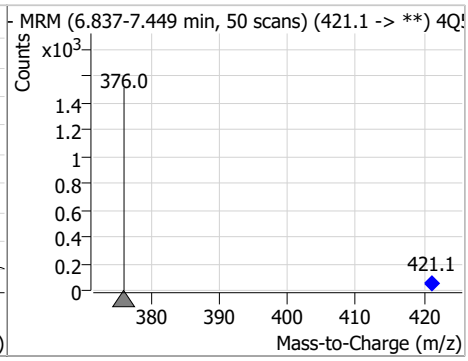




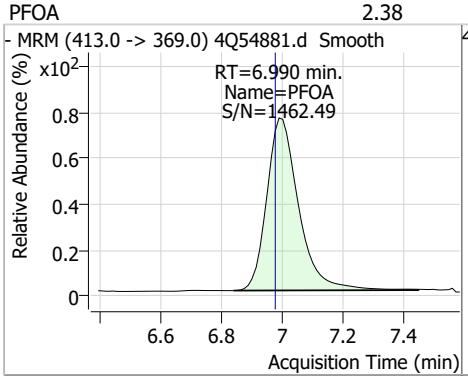
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.37	6.99	0.01	55057				

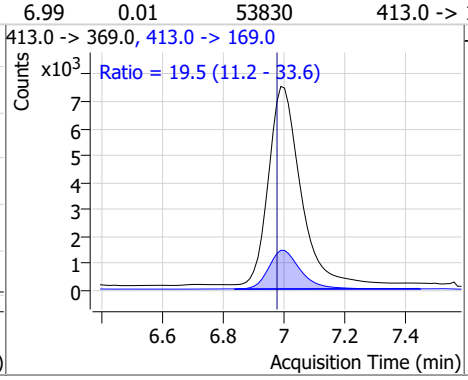


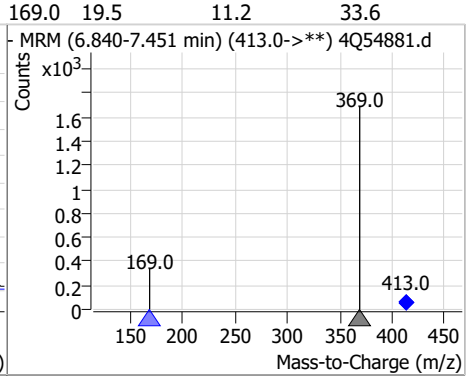




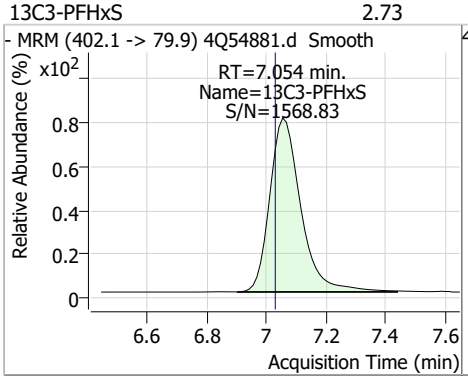
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.38	6.99	0.01	53830	413.0 -> 169.0	19.5	11.2	33.6

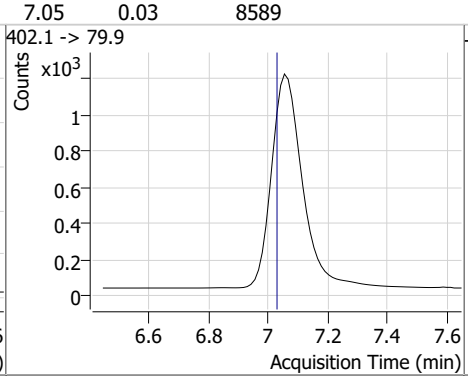


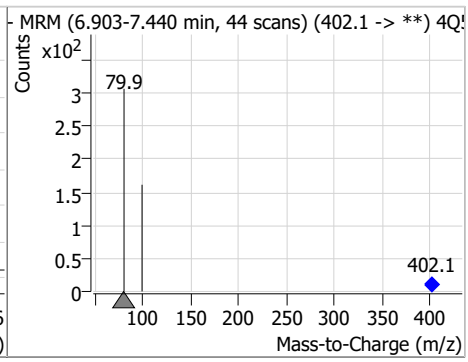




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.73	7.05	0.03	8589				

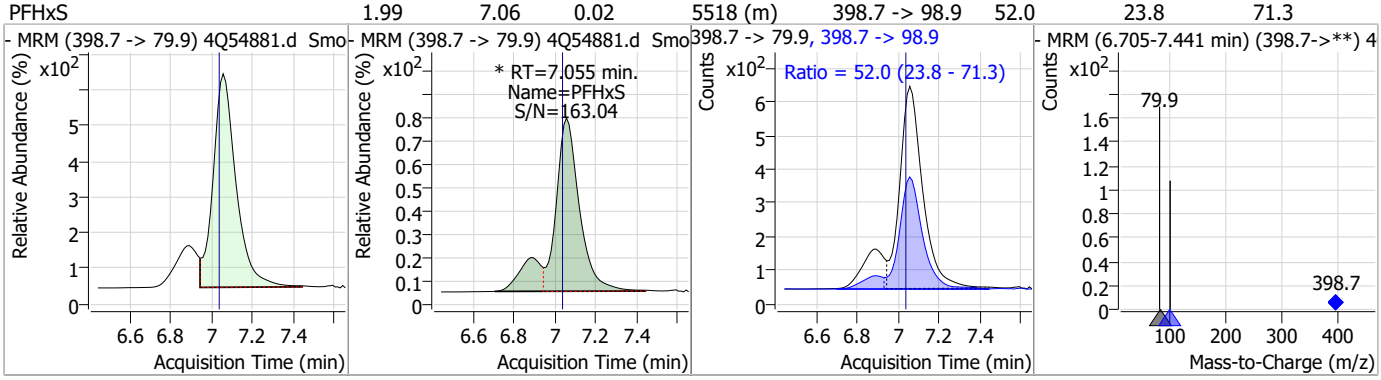




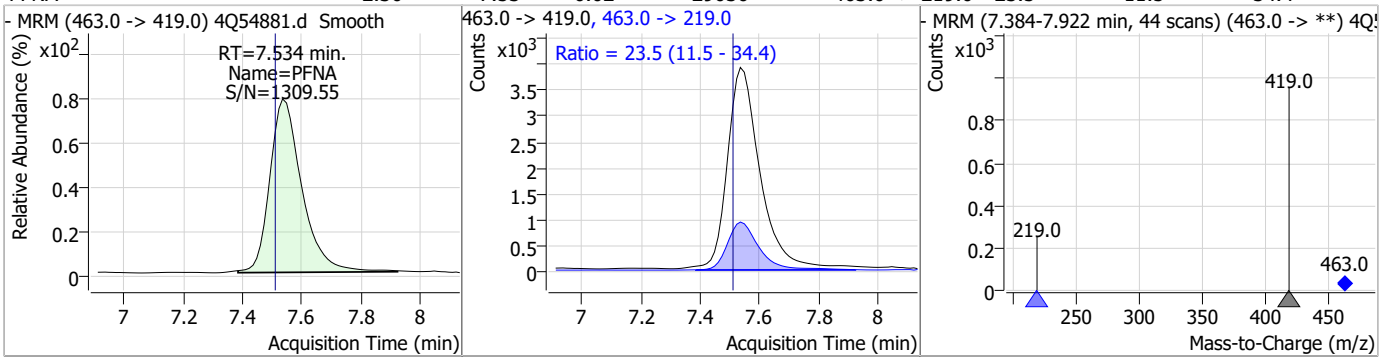


Perfluorinated Compounds by LC/MS/MS

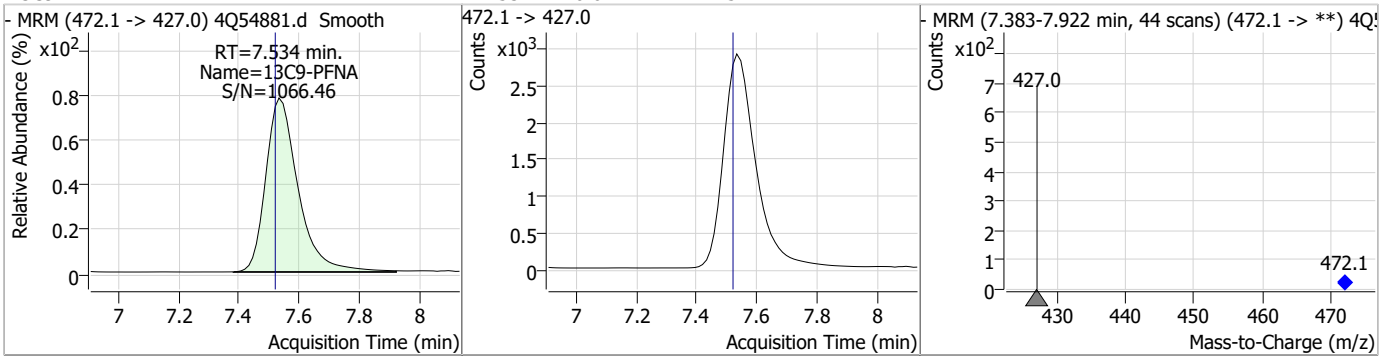
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.99	7.06	0.02	5518 (m)	398.7 -> 98.9	52.0	23.8	71.3



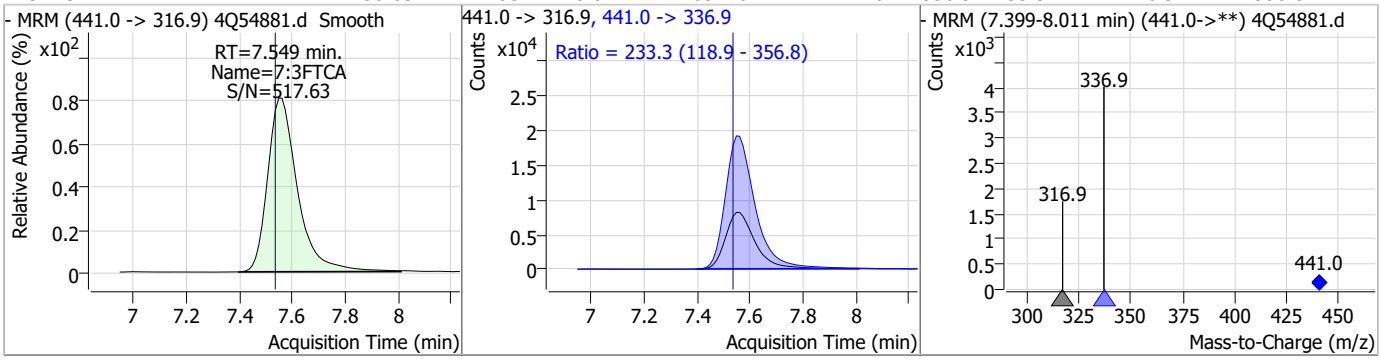
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.30	7.53	0.02	29036	463.0 -> 219.0	23.5	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.22	7.53	0.01	21454				

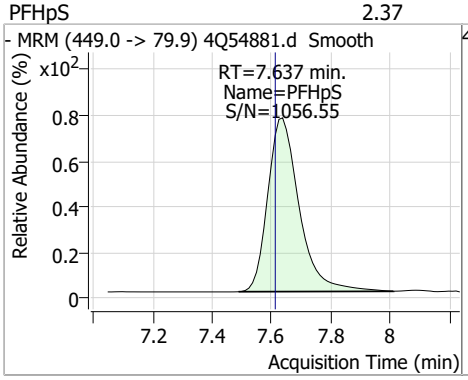


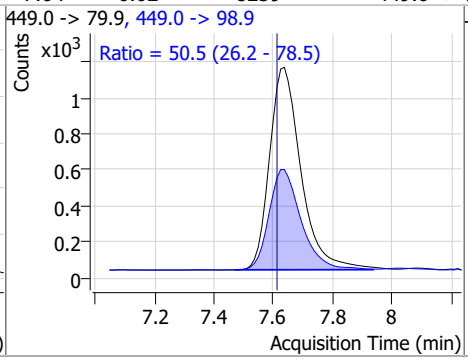
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	58.63	7.55	0.01	63720	441.0 -> 336.9	233.3	118.9	356.8

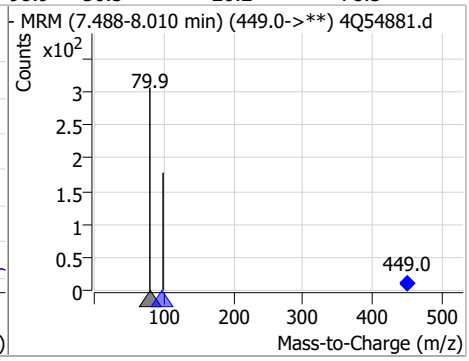


Perfluorinated Compounds by LC/MS/MS

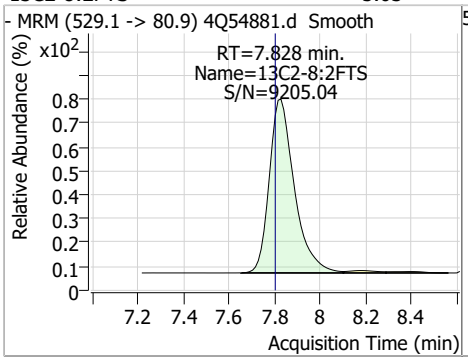
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.37	7.64	0.02	8259	449.0 -> 98.9	50.5	26.2	78.5

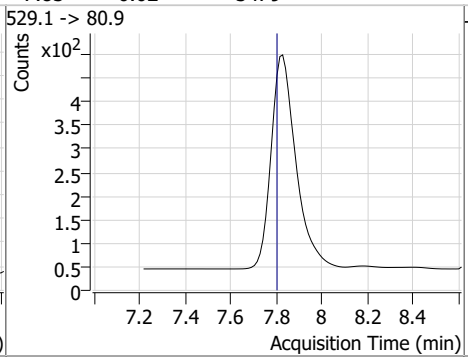


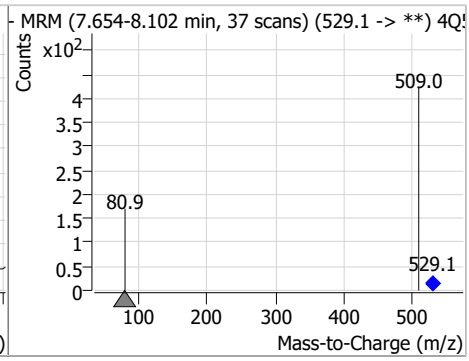




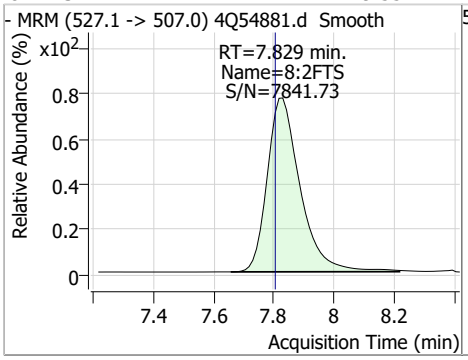
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.03	7.83	0.02	3479				

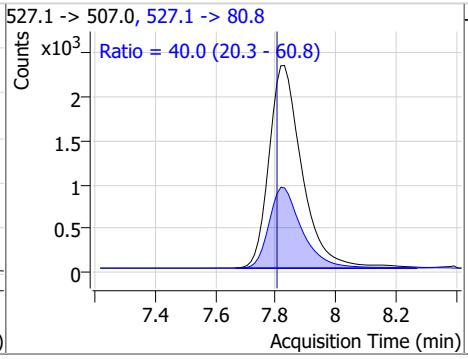


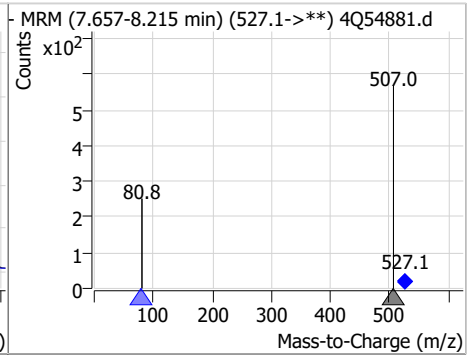




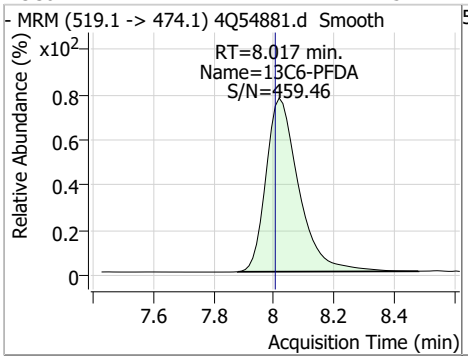
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.55	7.83	0.02	17503	527.1 -> 80.8	40.0	20.3	60.8

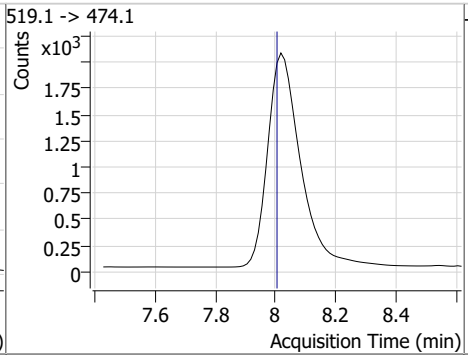


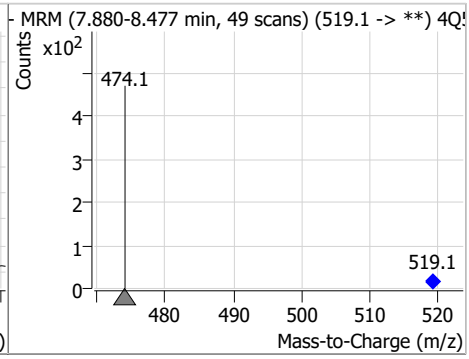




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.02	0.01	15363				

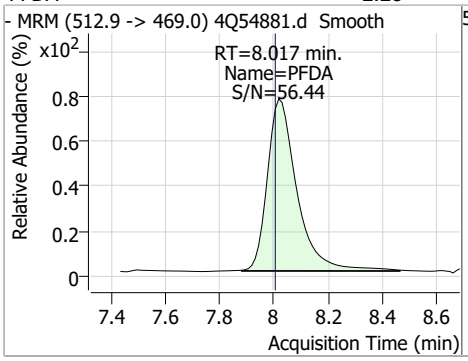


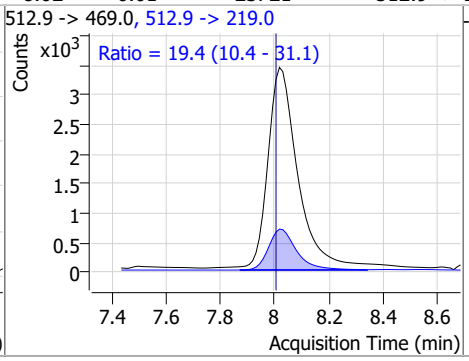


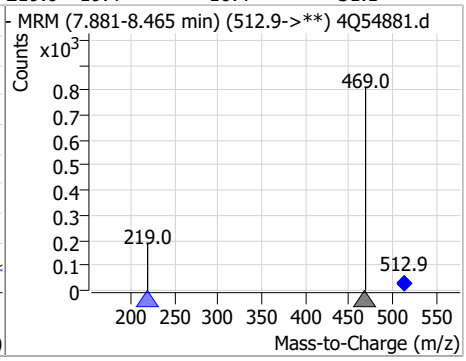


Perfluorinated Compounds by LC/MS/MS

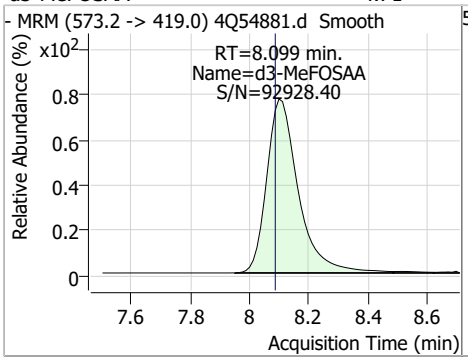
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.28	8.02	0.01	25721	512.9 -> 219.0	19.4	10.4	31.1

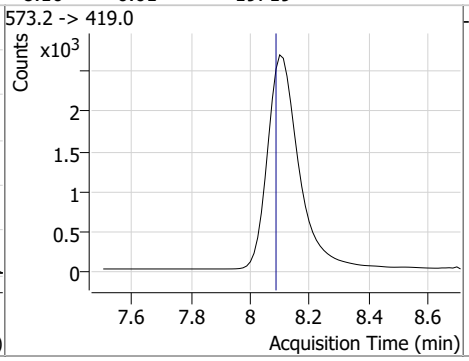


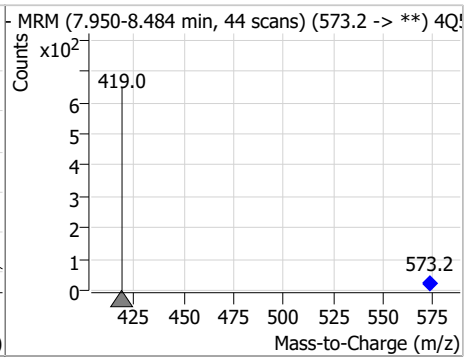




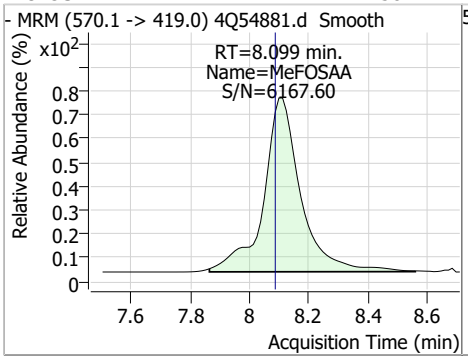
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.71	8.10	0.01	19719				

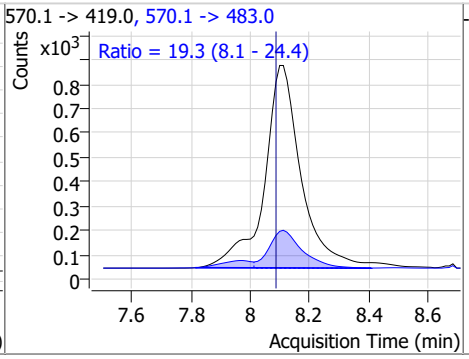


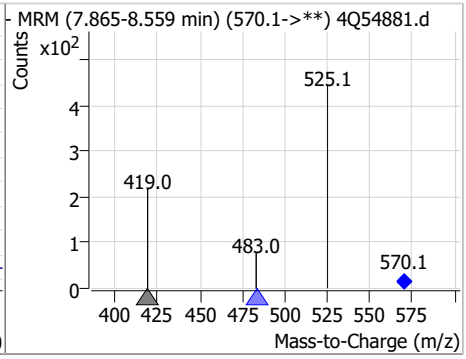




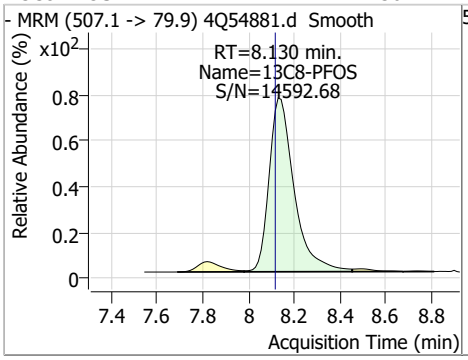
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.58	8.10	0.01	7287	570.1 -> 483.0	19.3	8.1	24.4

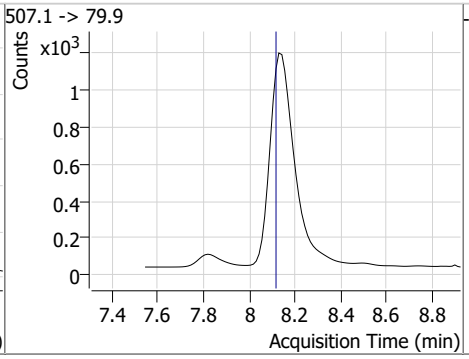


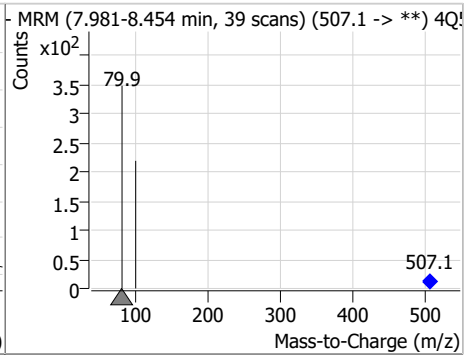




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.30	8.13	0.01	8777				

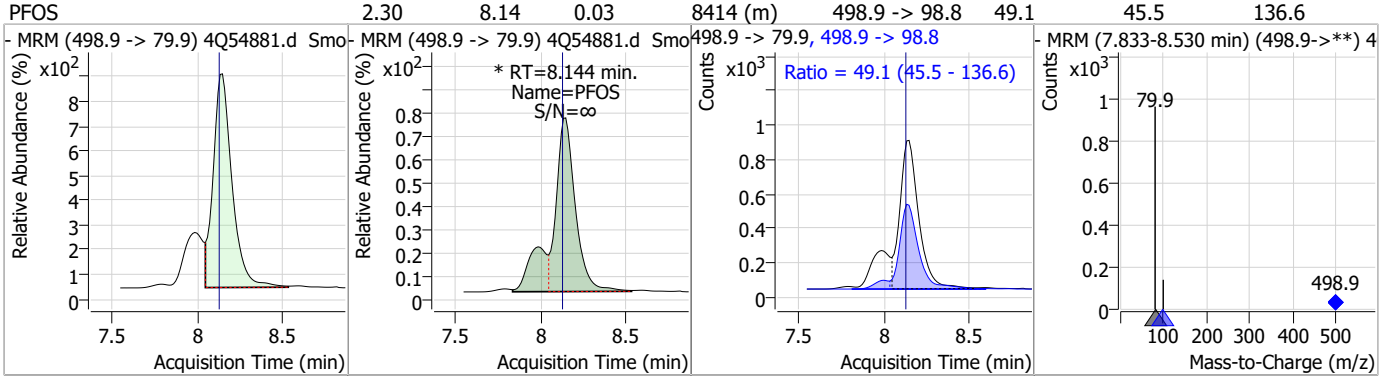




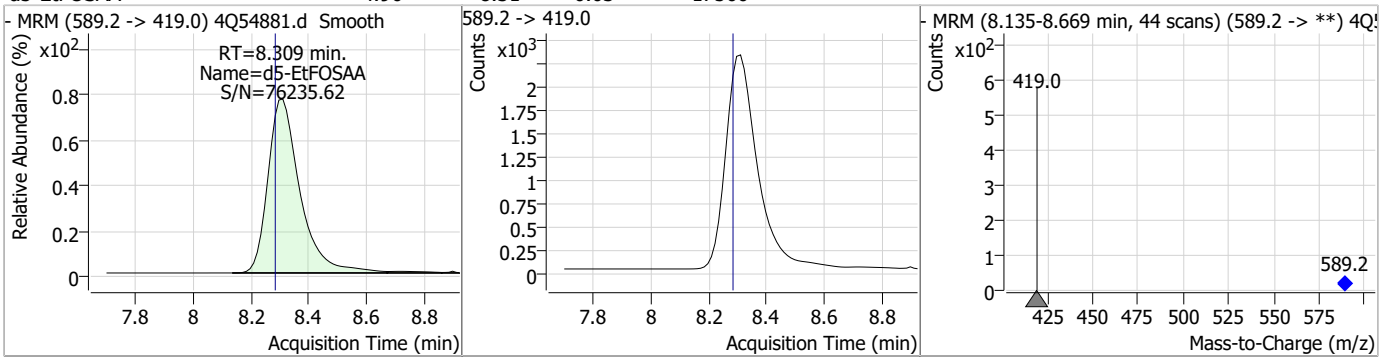


Perfluorinated Compounds by LC/MS/MS

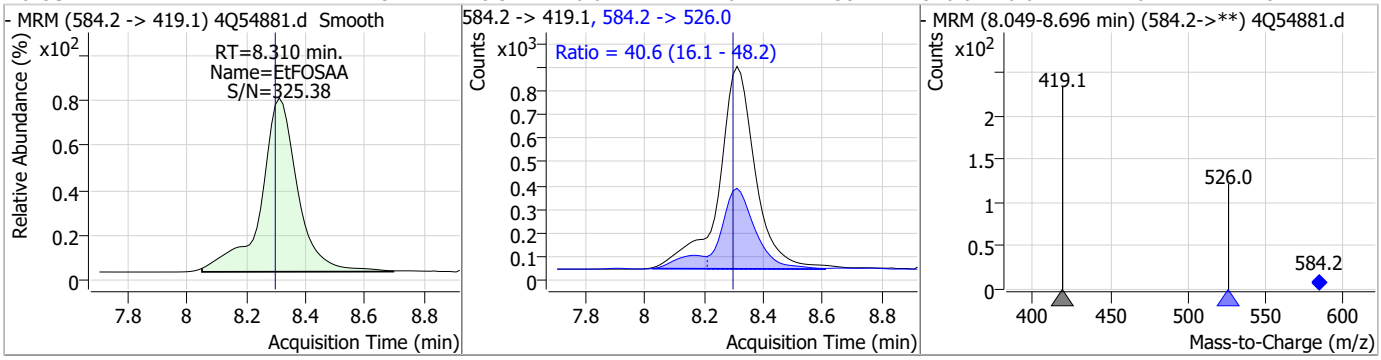
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.30	8.14	0.03	8414 (m)	498.9 -> 98.8	49.1	45.5	136.6



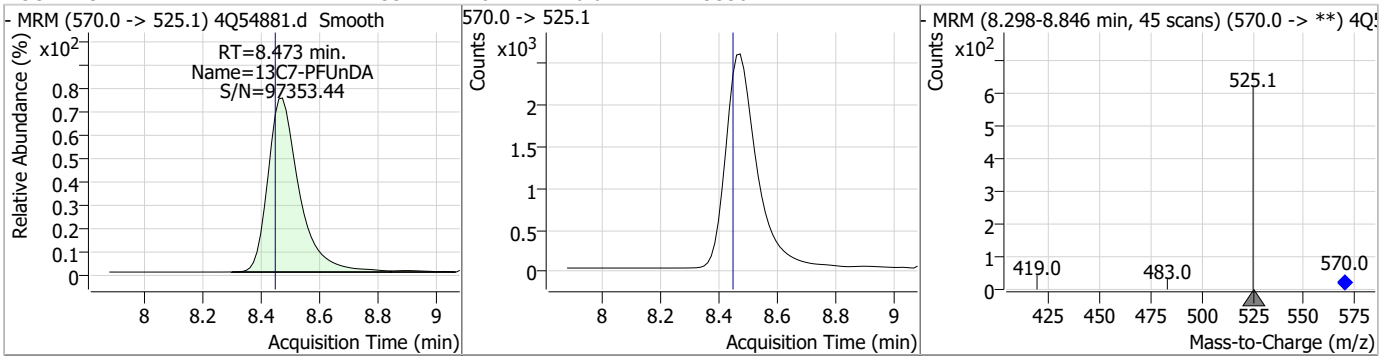
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.96	8.31	0.03	17560				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.32	8.31	0.01	7440	584.2 -> 526.0	40.6	16.1	48.2

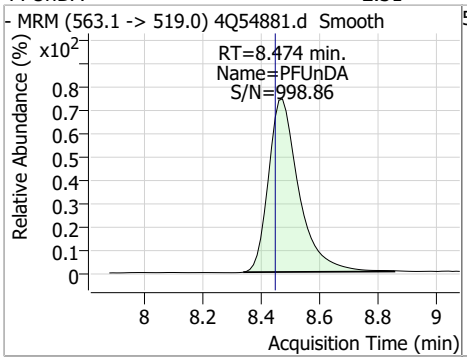


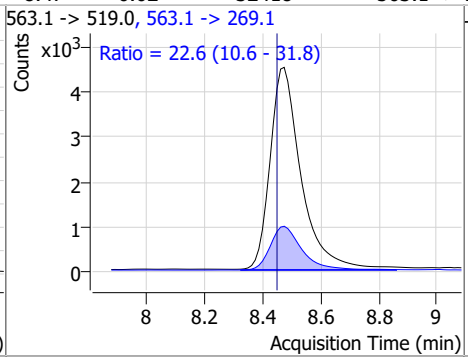
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.33	8.47	0.02	19336				

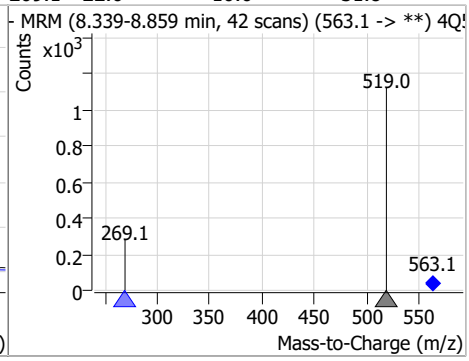


Perfluorinated Compounds by LC/MS/MS

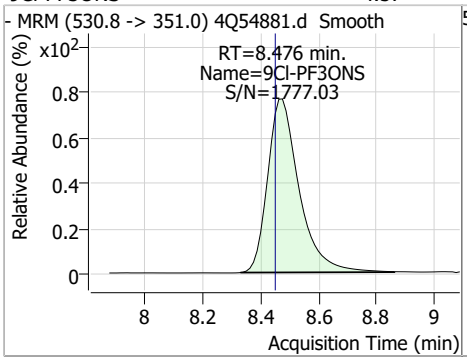
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.31	8.47	0.02	32418	563.1 -> 269.1	22.6	10.6	31.8

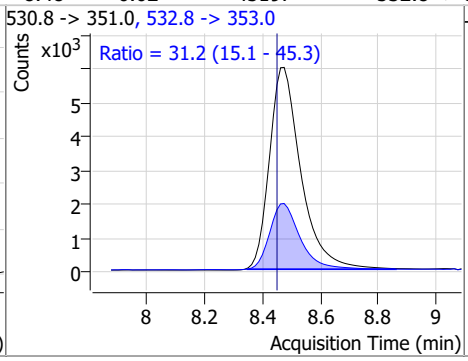


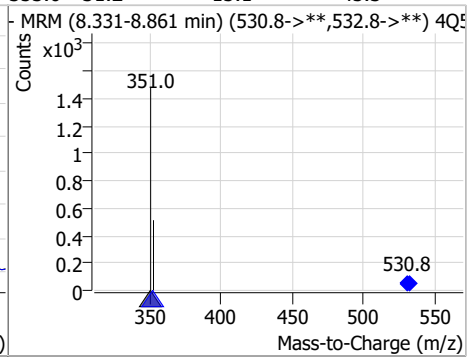




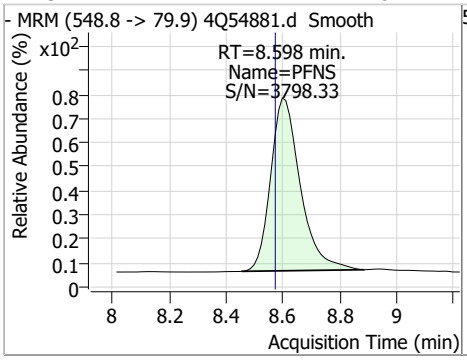
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.57	8.48	0.02	45197	532.8 -> 353.0	31.2	15.1	45.3

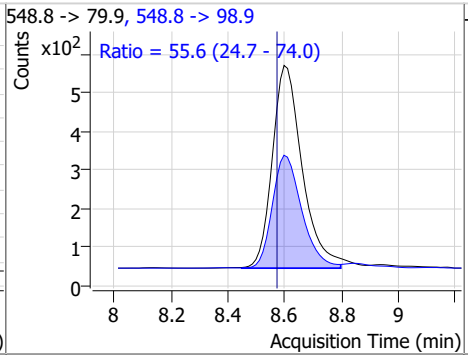


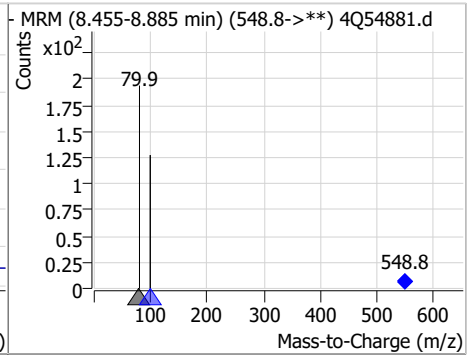




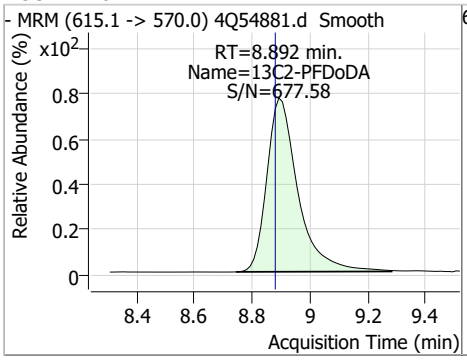
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.54	8.60	0.02	3798	548.8 -> 98.9	55.6	24.7	74.0

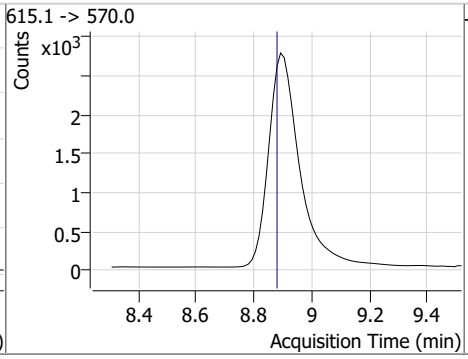


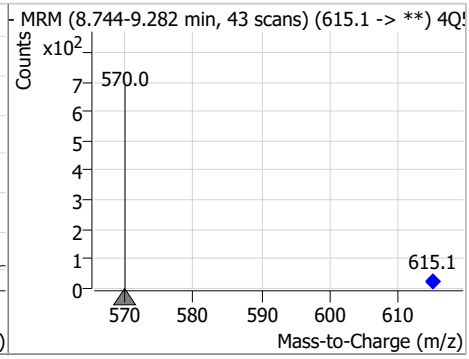




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.21	8.89	0.01	20512				

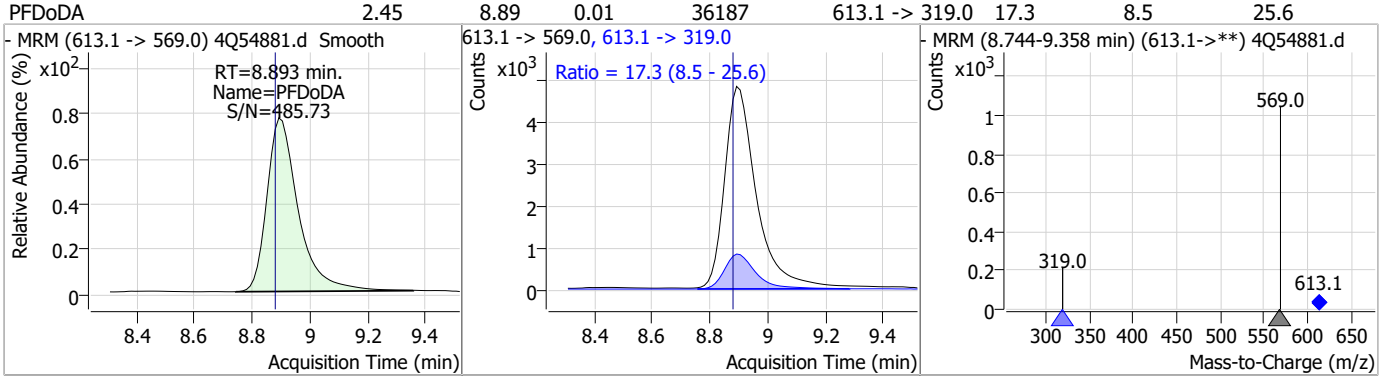




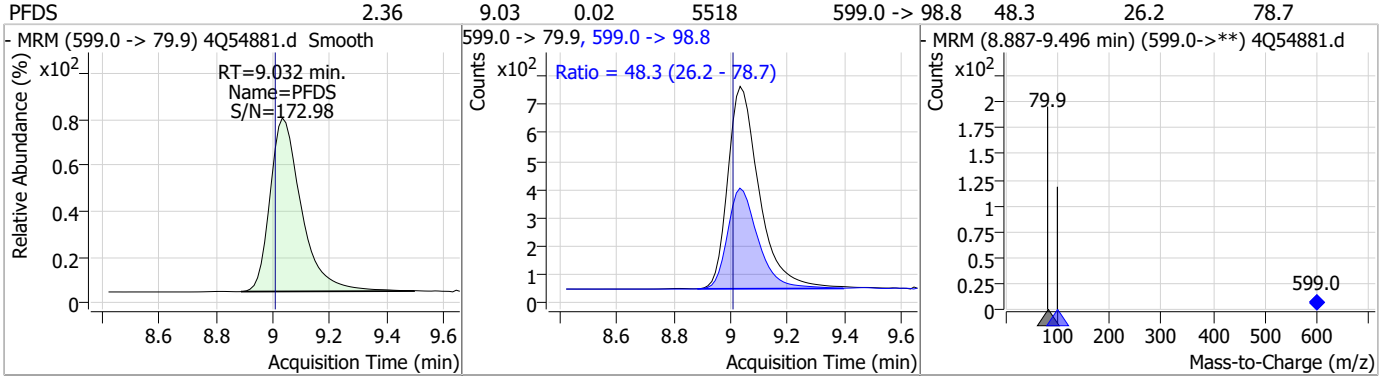


Perfluorinated Compounds by LC/MS/MS

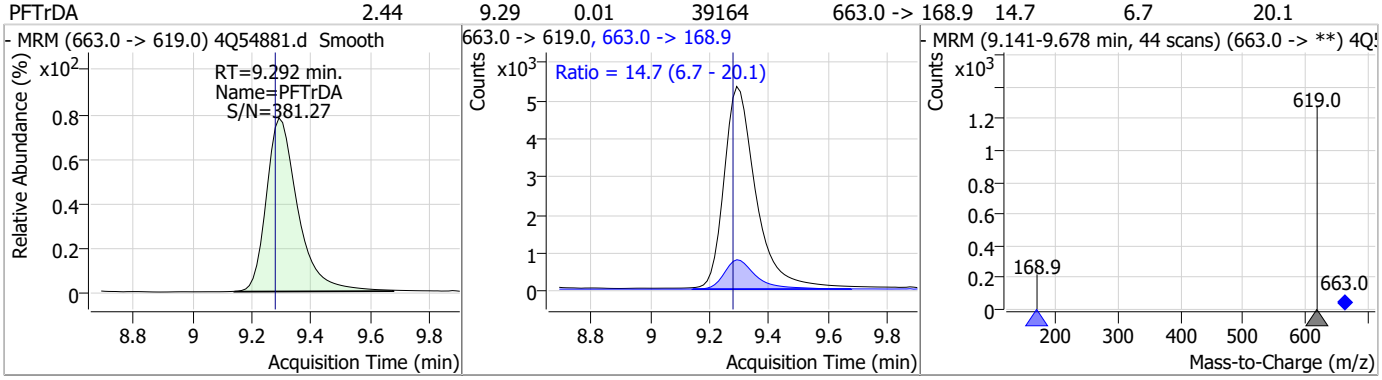
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.45	8.89	0.01	36187	613.1 -> 319.0	17.3	8.5	25.6



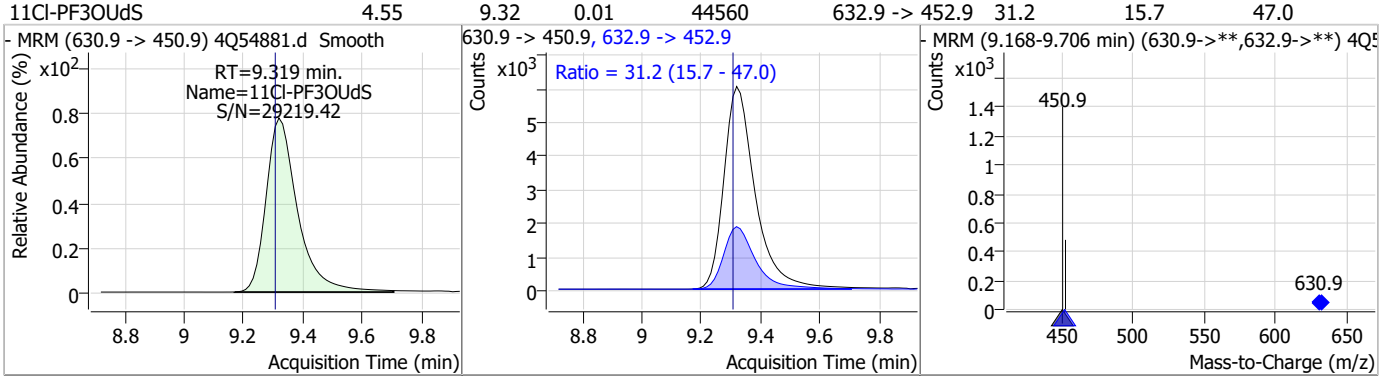
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.36	9.03	0.02	5518	599.0 -> 98.8	48.3	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.44	9.29	0.01	39164	663.0 -> 168.9	14.7	6.7	20.1

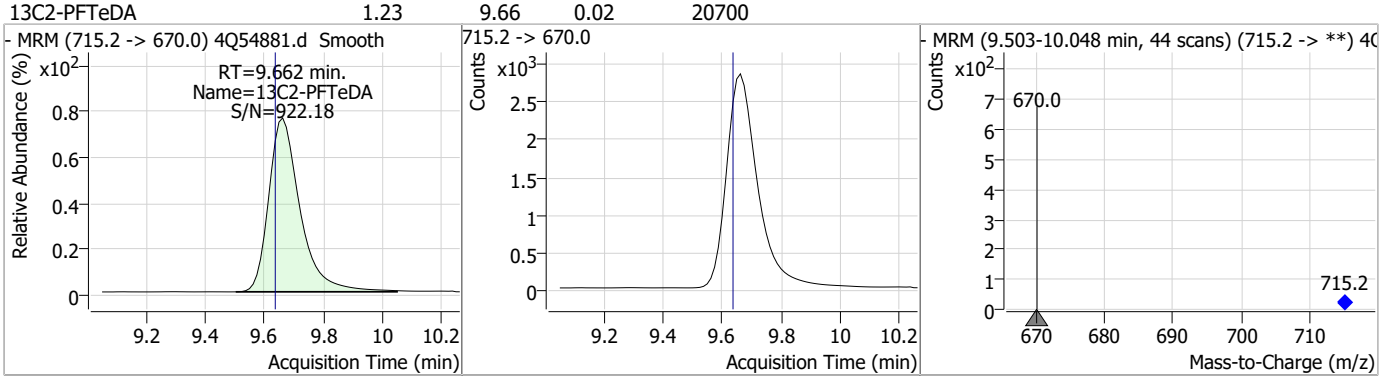


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.55	9.32	0.01	44560	632.9 -> 452.9	31.2	15.7	47.0

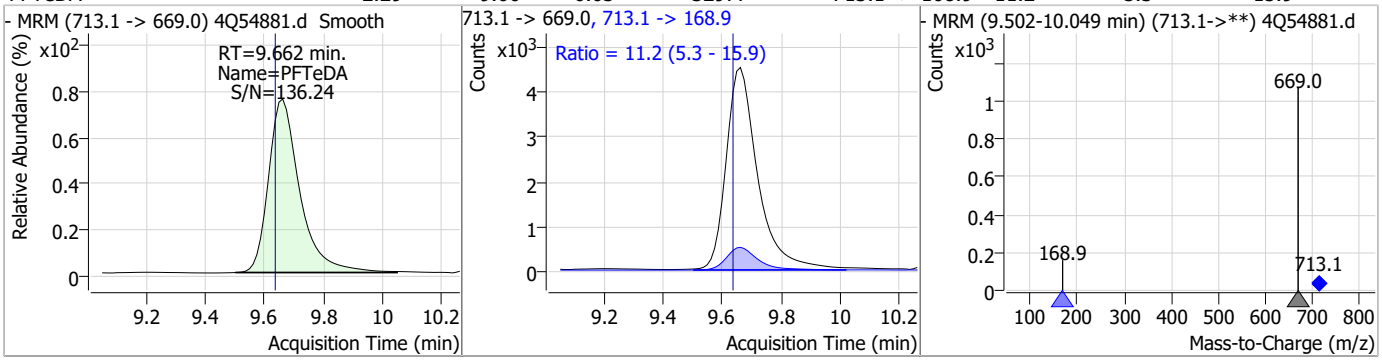


Perfluorinated Compounds by LC/MS/MS

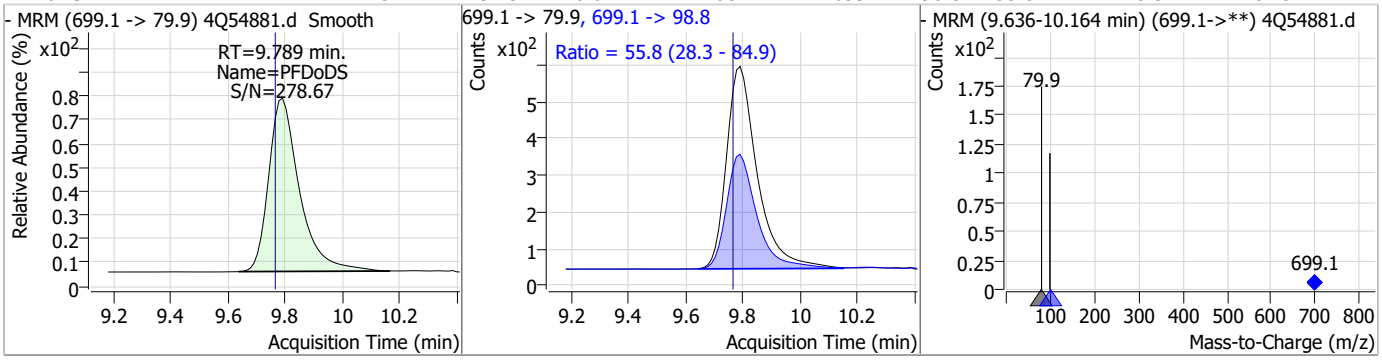
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.23	9.66	0.02	20700				



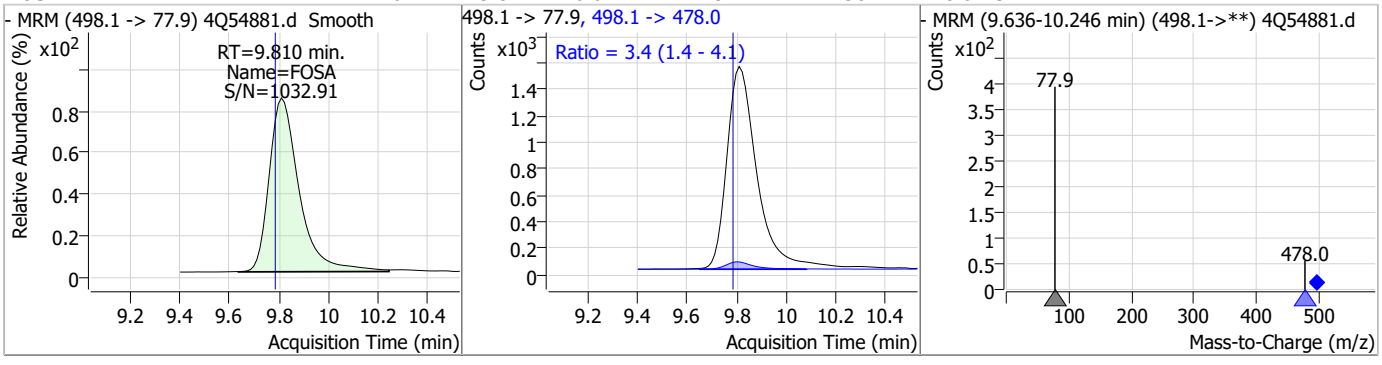
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.29	9.66	0.03	32977	713.1 -> 168.9	11.2	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.31	9.79	0.02	4108	699.1 -> 98.8	55.8	28.3	84.9

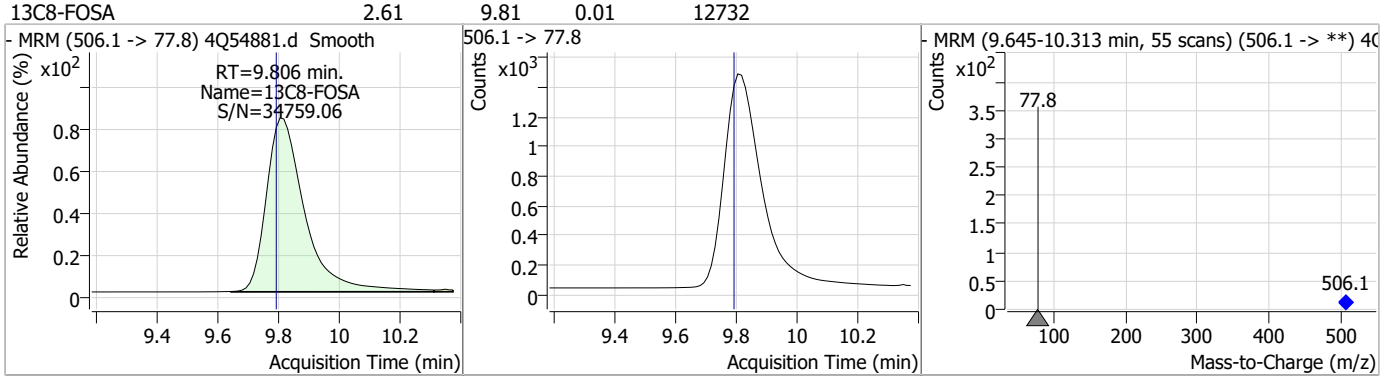


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.26	9.81	0.02	12921	498.1 -> 478.0	3.4	1.4	4.1

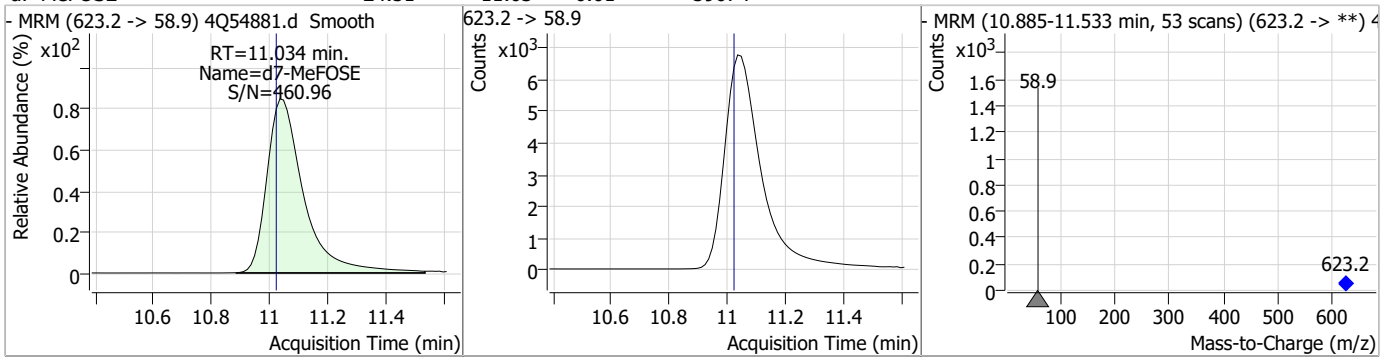


Perfluorinated Compounds by LC/MS/MS

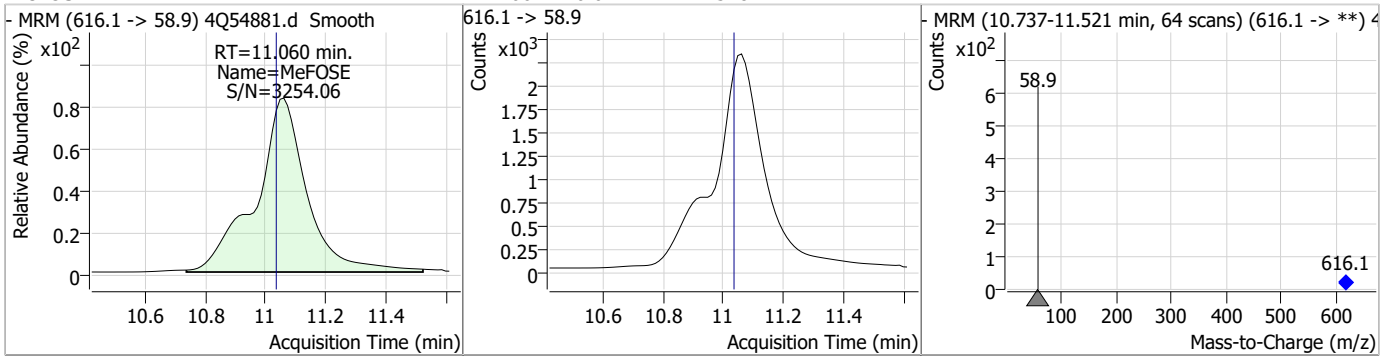
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.61	9.81	0.01	12732				



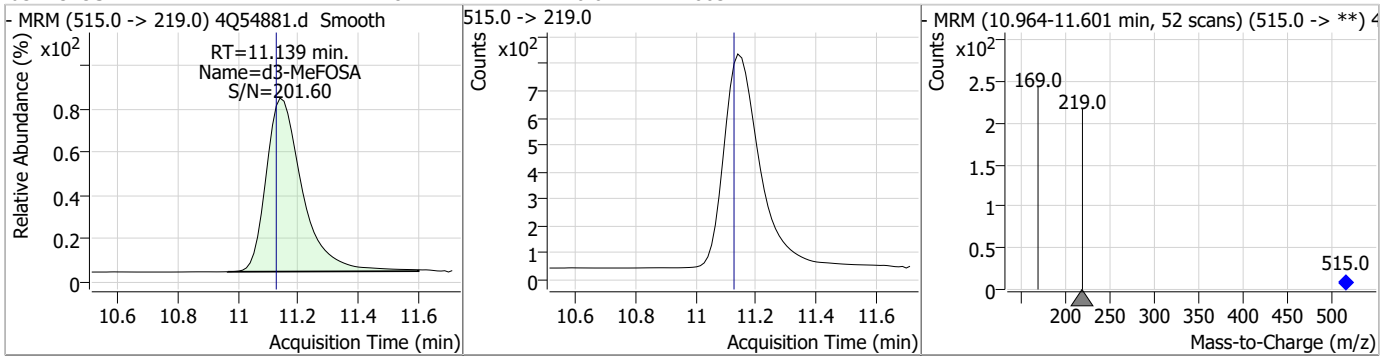
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	24.51	11.03	0.01	59074				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.74	11.06	0.02	27518				

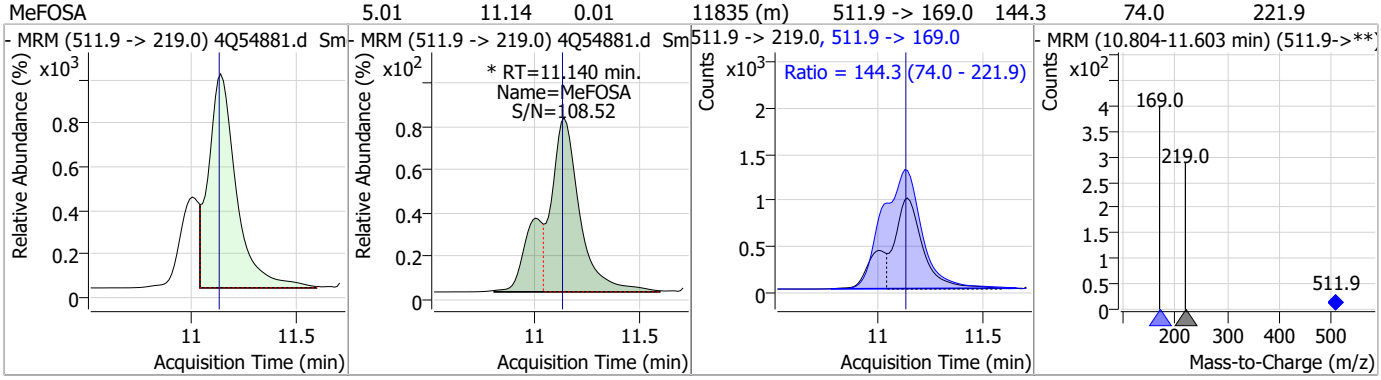


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.28	11.14	0.01	6634				

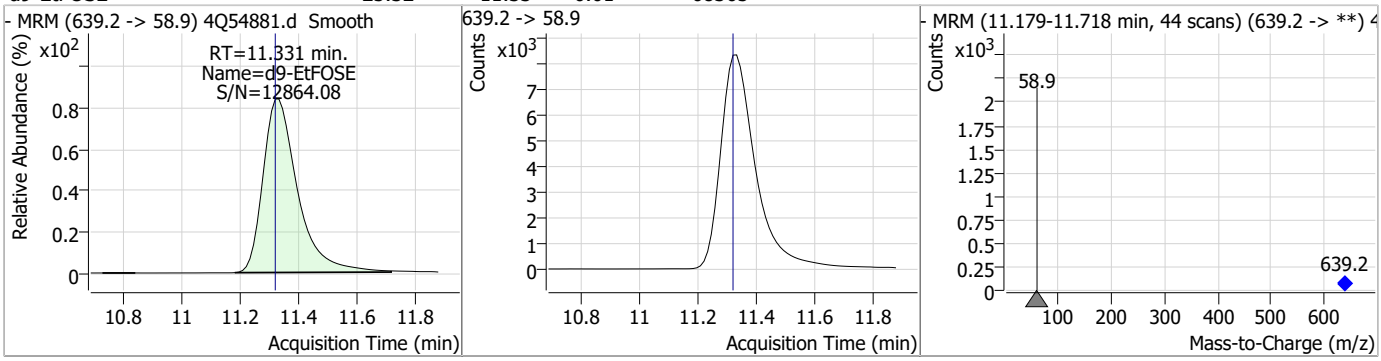


Perfluorinated Compounds by LC/MS/MS

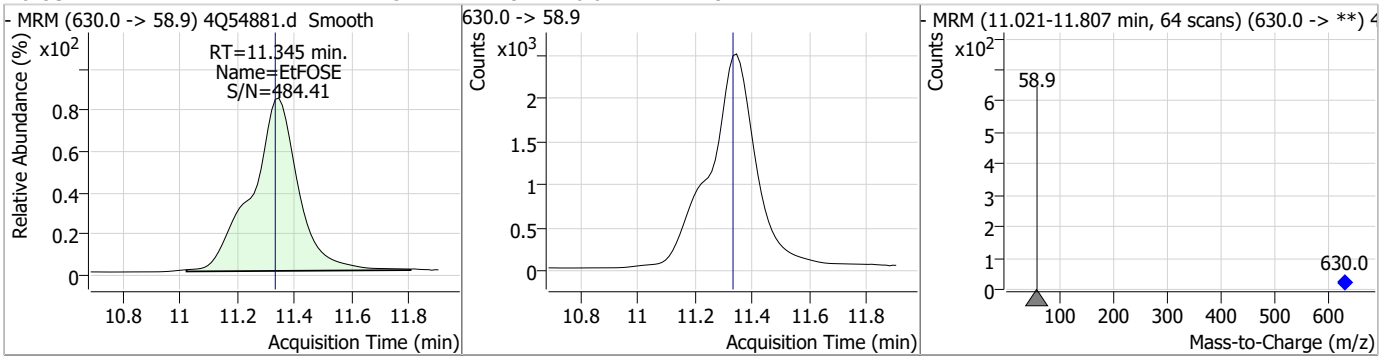
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.01	11.14	0.01	11835 (m)	511.9 -> 169.0	144.3	74.0	221.9



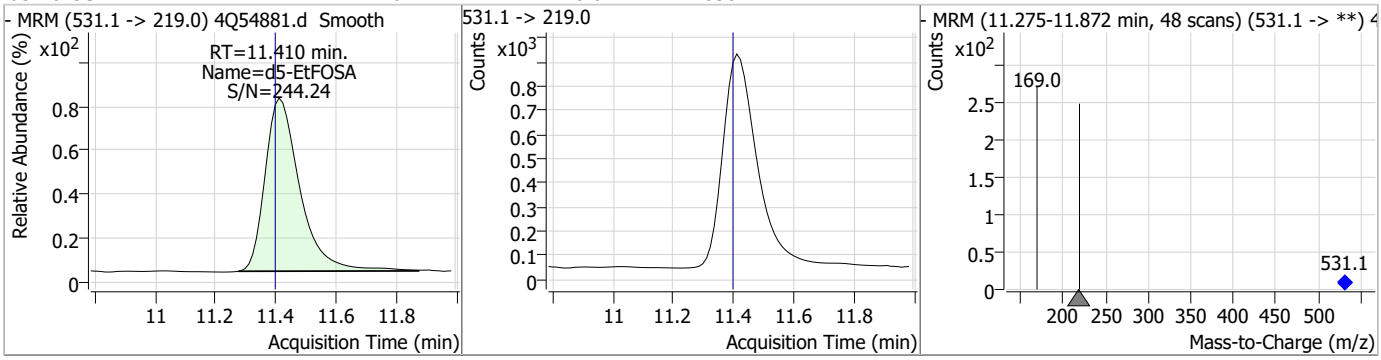
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	25.32	11.33	0.01	68365				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.54	11.34	0.01	27911				

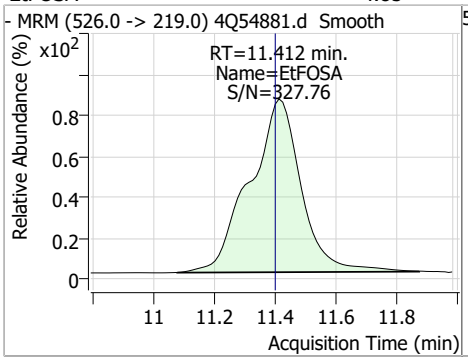


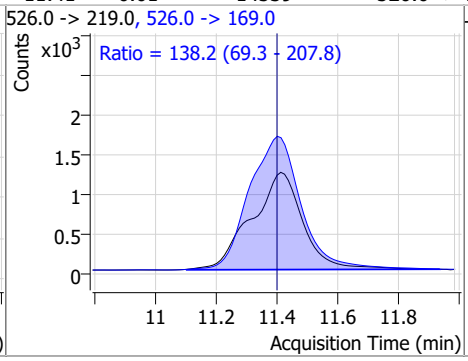
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.20	11.41	0.01	7038				

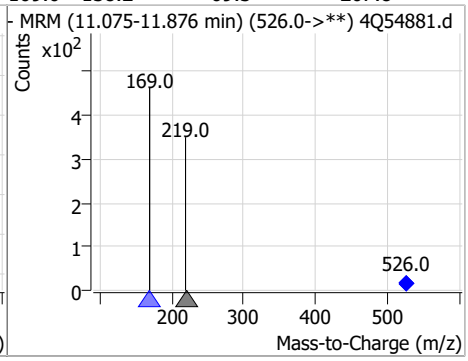


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	4.85	11.41	0.01	14539	526.0 -> 169.0	138.2	69.3	207.8







Manual Integration Approval Summary

Sample Number:	S4Q804-CC804	**Method:**	EPA DRAFT 1633
Lab FileID:	4Q54881.D	**Analyst approved:**	12/10/23 12:52 Anna Ludwig
Injection Time:	12/08/23 18:52	**Supervisor approved:**	12/11/23 15:42 Natasha Gumtie

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.14	Split peak
MeFOSA	31506-32-8		11.14	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 12/11/23 16:36

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q54893.d
Operator : annal
Acq. Method : 1633full_4Q.m
Acq. Date-Time : 12/8/2023 9:49:12 PM
Sample Name : cc804-4
Vial : P1-A5
DA Method File : 1633_120823_S4Q804.quantmethod.xml
Batch Name : s4q804.batch.bin
Sample Information : OP99999,S4Q804,500,,,5.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.699	216.8 -> 171.9	108556	10.00	µg/L	0.025
M5-PFPeA	4.187	268.3 -> 223.0	45168	5.00	µg/L	0.025
M5-PFHxA	5.359	318.0 -> 273.0	36512	2.50	µg/L	0.025
M4-PFHpA	6.317	367.1 -> 322.0	34027	2.50	µg/L	0.025
M8-PFOA	7.001	421.1 -> 376.0	55395	2.50	µg/L	0.025
M9-PFNA	7.534	472.1 -> 427.0	21419	1.25	µg/L	0.012
M6-PFDA	8.029	519.1 -> 474.1	15267	1.25	µg/L	0.025
M7-PFUnDA	8.473	570.0 -> 525.1	18918	1.25	µg/L	0.025
M2-PFDoDA	8.892	615.1 -> 570.0	20434	1.25	µg/L	0.012
M2-PFTeDA	9.662	715.2 -> 670.0	20525	1.25	µg/L	0.025
M8-FOSA	9.806	506.1 -> 77.8	12257	2.50	µg/L	0.012
M3-PFBS	5.215	302.1 -> 79.9	10347	2.50	µg/L	0.025
M3-PFHxS	7.054	402.1 -> 79.9	7968	2.50	µg/L	0.025
M8-PFOS	8.143	507.1 -> 79.9	9194	2.50	µg/L	0.026
M2-4:2FTS	5.071	329.1 -> 80.9	1290	5.00	µg/L	0.025
M2-6:2FTS	6.773	429.1 -> 80.9	2840	5.00	µg/L	0.025
M2-8:2FTS	7.828	529.1 -> 80.9	3817	5.00	µg/L	0.025
M3-MeFOSAA	8.111	573.2 -> 419.0	22017	5.00	µg/L	0.025
M3-HFPO-DA	5.714	286.9 -> 168.9	33738	10.00	µg/L	0.025
M5-EtFOSAA	8.309	589.2 -> 419.0	17506	5.00	µg/L	0.026
M7-MeFOSE	11.034	623.2 -> 58.9	56765	25.00	µg/L	0.012
M9-EtFOSE	11.331	639.2 -> 58.9	64754	25.00	µg/L	0.012
M5-EtFOSA	11.410	531.1 -> 219.0	7786	2.50	µg/L	0.012
M3-MeFOSA	11.139	515.0 -> 219.0	6878	2.50	µg/L	0.012
13C4-PFOS	8.144	502.8 -> 79.9	7622	2.50	µg/L	0.026
13C3-PFBA	2.691	216.0 -> 172.0	51598	5.00	µg/L	0.013
18O2-PFHxS	7.066	403.0 -> 83.9	5214	2.50	µg/L	0.025
13C4-PFOA	7.002	417.1 -> 372.0	61977	2.50	µg/L	0.025
13C2-PFDA	8.029	515.1 -> 470.1	16726	1.25	µg/L	0.025
13C5-PFNA	7.547	468.0 -> 423.0	21307	1.25	µg/L	0.038
13C2-PFHxA	5.360	315.1 -> 270.0	39260	2.50	µg/L	0.025
System Monitoring Compounds						
13C2-4:2FTS	5.071	329.1 -> 80.9	1290	5.21	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C2-6:2FTS	6.773	429.1 -> 80.9	2840	5.29	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C2-8:2FTS	7.828	529.1 -> 80.9	3817	5.31	µg/L	0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C2-PFDoDA	8.892	615.1 -> 570.0	20434	1.22	µg/L	0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-PFTeDA	9.662	715.2 -> 670.0	20525	1.24	µg/L	0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C3-PFBS	5.215	302.1 -> 79.9	10347	2.59	µg/L	0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C3-PFHxS	7.054	402.1 -> 79.9	7968	2.44	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C4-PFBA	2.699	216.8 -> 171.9	108556	10.02 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C4-PFHpA	6.317	367.1 -> 322.0	34027	2.46 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C5-PFHxA	5.359	318.0 -> 273.0	36512	2.52 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C5-PFPeA	4.187	268.3 -> 223.0	45168	5.01 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C6-PFDA	8.029	519.1 -> 474.1	15267	1.25 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C7-PFUnDA	8.473	570.0 -> 525.1	18918	1.32 µg/L		0.025
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C8-FOSA	9.806	506.1 -> 77.8	12257	2.48 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C8-PFOA	7.001	421.1 -> 376.0	55395	2.42 µg/L		0.025
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C8-PFOS	8.143	507.1 -> 79.9	9194	2.38 µg/L		0.026
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C9-PFNA	7.534	472.1 -> 427.0	21419	1.25 µg/L		0.012
Spiked Amount: 1.25	Range: 50.0 - 150.0%			Recovery = 100.4%		
d3-MeFOSAA	8.111	573.2 -> 419.0	22017	5.20 µg/L		0.025
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C3-HFPO-DA	5.714	286.9 -> 168.9	33738	9.33 µg/L		0.025
Spiked Amount: 10.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
d3-MeFOSA	11.139	515.0 -> 219.0	6878	2.33 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 93.4%		
d5-EtFOSAA	8.309	589.2 -> 419.0	17506	4.89 µg/L		0.026
Spiked Amount: 5.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
d7-MeFOSE	11.034	623.2 -> 58.9	56765	23.29 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
d9-EtFOSE	11.331	639.2 -> 58.9	64754	23.73 µg/L		0.012
Spiked Amount: 25.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
d5-EtFOSA	11.410	531.1 -> 219.0	7786	2.41 µg/L		0.012
Spiked Amount: 2.50	Range: 50.0 - 150.0%			Recovery = 96.4%		
Target Compounds						QValue
4:2FTS	5.072	327.1 -> 307.0	19882	8.95 µg/L		99
		327.1 -> 80.9	8605			
6:2FTS	6.774	427.1 -> 407.0	27196	9.11 µg/L		100
		427.1 -> 80.9	10008			
8:2FTS	7.829	527.1 -> 507.0	19334	9.61 µg/L		99
		527.1 -> 80.8	7756			
EtFOSAA	8.310	584.2 -> 419.1	6856	2.15 µg/L	m	87
		584.2 -> 526.0	2681			
FOSA	9.810	498.1 -> 77.9	12318	2.24 µg/L		98
		498.1 -> 478.0	415			
MeFOSAA	8.112	570.1 -> 419.0	7845	2.49 µg/L		96
		570.1 -> 483.0	1415			
PFBA	2.695	212.8 -> 168.9	32080	9.23 µg/L		100
PFBS	5.216	298.7 -> 79.9	6183	1.93 µg/L		97
		298.7 -> 98.8	2394			
PFDA	8.030	512.9 -> 469.0	24442	2.18 µg/L		99
		512.9 -> 219.0	5171			
PFDoDA	8.893	613.1 -> 569.0	36794	2.50 µg/L		100
		613.1 -> 319.0	6256			
PFDS	9.032	599.0 -> 79.9	5635	2.30 µg/L		86

Perfluorinated Compounds by LC/MS/MS

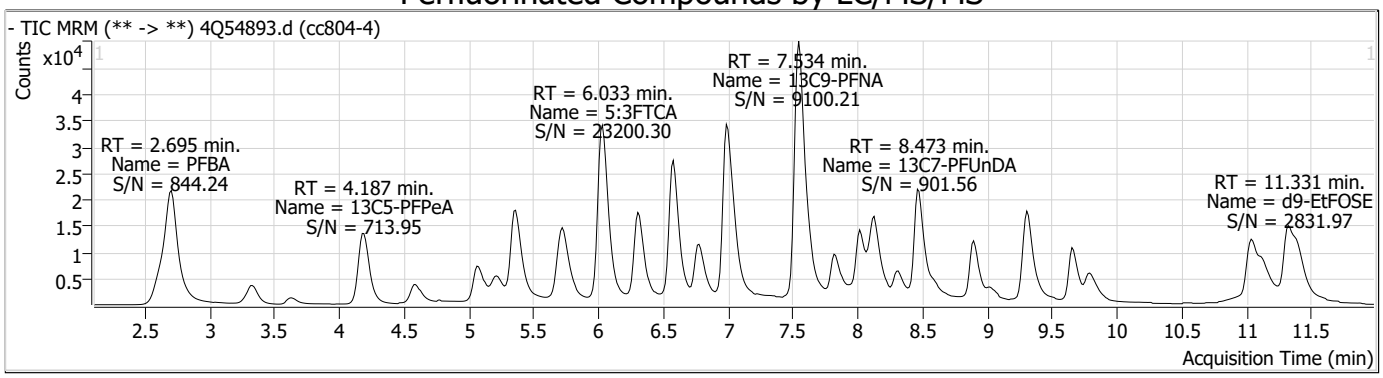
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		599.0 -> 98.8	2403				
PFHpA	6.317	363.1 -> 319.0	45398	2.37	µg/L		100
		363.1 -> 169.0	8345				
PFHpS	7.637	449.0 -> 79.9	8074	2.21	µg/L		96
		449.0 -> 98.9	3995				
PFHxA	5.362	313.0 -> 269.0	26028	2.23	µg/L		99
		313.0 -> 118.9	833				
PFHxS	7.055	398.7 -> 79.9	5719	2.23	µg/L	m	98
		398.7 -> 98.9	2809				
PFNA	7.534	463.0 -> 419.0	30424	2.42	µg/L		99
		463.0 -> 219.0	7128				
PFNS	8.598	548.8 -> 79.9	4178	2.66	µg/L		94
		548.8 -> 98.9	2223				
PFOA	7.003	413.0 -> 369.0	53190	2.33	µg/L		96
		413.0 -> 169.0	10973				
PFOS	8.144	498.9 -> 79.9	8060	2.11	µg/L	m	56
		498.9 -> 98.8	4003				
PFPeA	4.189	263.0 -> 219.0	40480	4.55	µg/L		100
PFPeS	6.307	349.1 -> 79.9	5749	2.37	µg/L		98
		349.1 -> 98.9	2351				
PFTeDA	9.662	713.1 -> 669.0	32984	2.31	µg/L		100
		713.1 -> 168.9	3444				
PFTrDA	9.292	663.0 -> 619.0	38567	2.41	µg/L		98
		663.0 -> 168.9	5409				
PFUnDA	8.474	563.1 -> 519.0	31488	2.29	µg/L		95
		563.1 -> 269.1	7394				
11Cl-PF3OUdS	9.319	630.9 -> 450.9	44832	4.83	µg/L		100
		632.9 -> 452.9	14066				
9Cl-PF3ONS	8.476	530.8 -> 351.0	44939	4.79	µg/L		100
		532.8 -> 353.0	13530				
ADONA	6.581	376.9 -> 250.9	117245	5.15	µg/L		99
		376.9 -> 84.8	28860				
HFPO-DA	5.715	284.9 -> 168.9	15126	4.69	µg/L		97
		284.9 -> 184.9	1580				
3:3FTCA	3.630	241.0 -> 177.0	6369	11.52	µg/L		99
		241.0 -> 117.0	579				
5:3FTCA	6.033	341.0 -> 237.1	120364	57.92	µg/L		98
		341.0 -> 217.0	83806				
7:3FTCA	7.562	441.0 -> 316.9	62803	57.63	µg/L		97
		441.0 -> 336.9	152457				
EtFOSA	11.412	526.0 -> 219.0	15254	4.60	µg/L		98
		526.0 -> 169.0	21432				
EtFOSE	11.345	630.0 -> 58.9	27030	11.79	µg/L		100
MeFOSA	11.140	511.9 -> 219.0	11441	4.67	µg/L		99
		511.9 -> 169.0	17032				
MeFOSE	11.060	616.1 -> 58.9	25489	11.32	µg/L		100
PFDoDS	9.789	699.1 -> 79.9	4204	2.25	µg/L		97
		699.1 -> 98.8	2458				
NFDHA	5.241	295.0 -> 201.0	3981	4.82	µg/L		89
		295.0 -> 84.9	829				
PFMBA	4.591	279.0 -> 85.1	22446	4.59	µg/L		100
PFMPA	3.332	229.0 -> 84.9	24856	4.62	µg/L		100
PFEESA	5.747	314.8 -> 134.9	35392	4.11	µg/L		100
		314.8 -> 82.9	1350				

 # = Qualifier out of range, m = manually integrated, + = Area summed

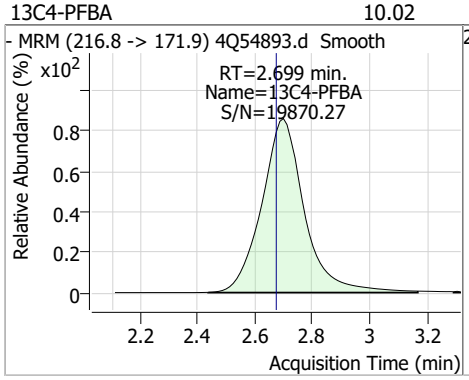
Perfluorinated Compounds by LC/MS/MS

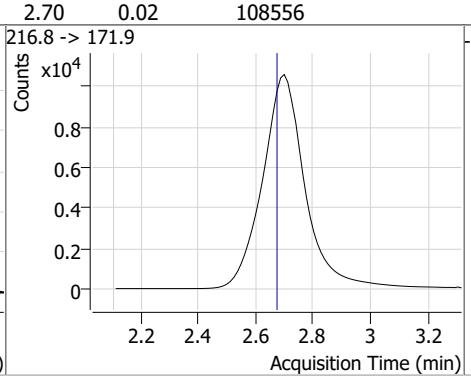
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)

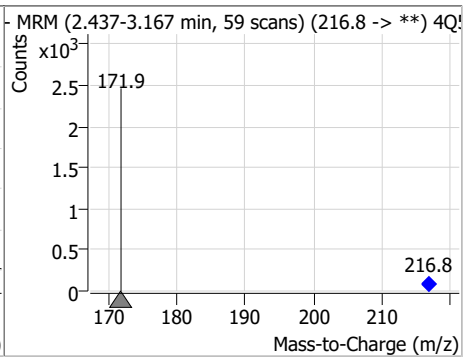
Perfluorinated Compounds by LC/MS/MS



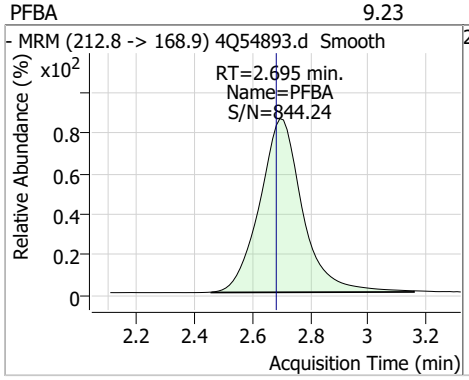
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.02	2.70	0.02	108556				

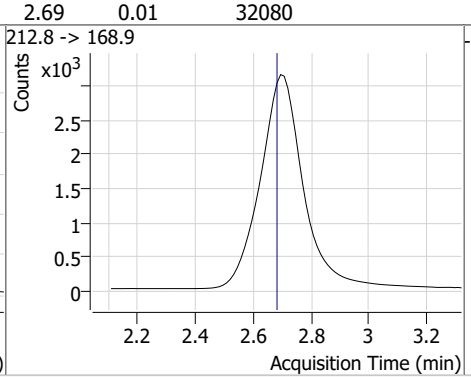


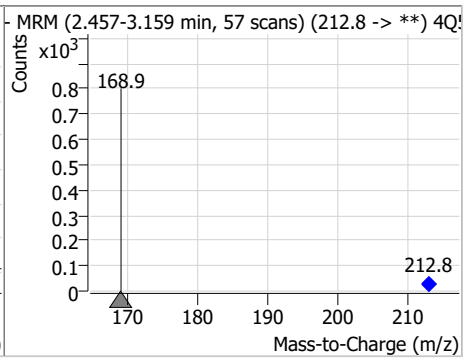




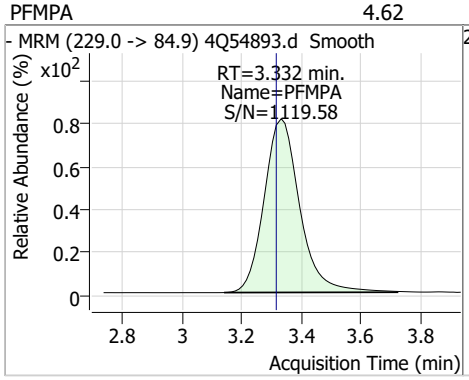
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.23	2.69	0.01	32080				

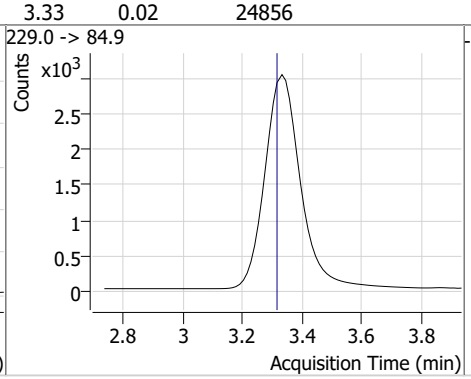


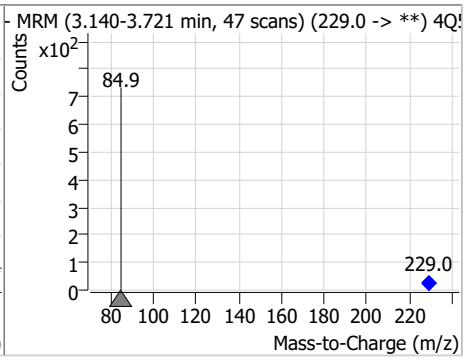




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMPA	4.62	3.33	0.02	24856				

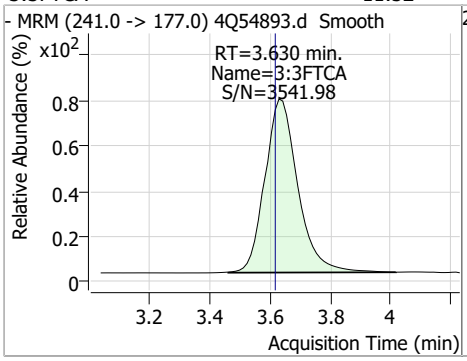


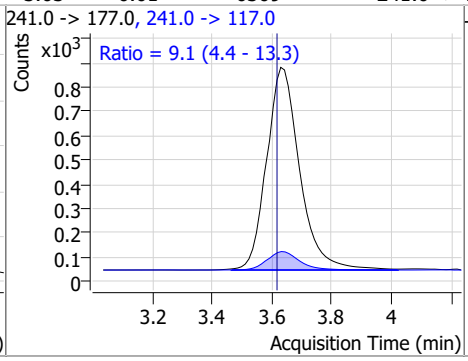


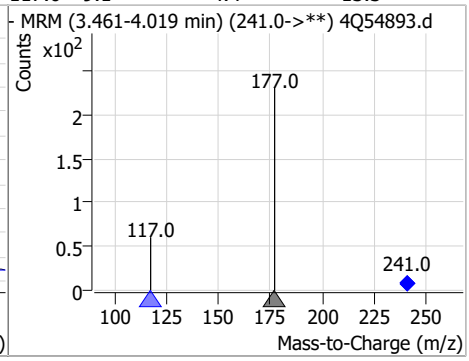


Perfluorinated Compounds by LC/MS/MS

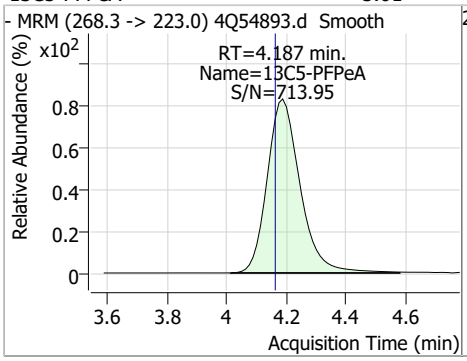
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
3:3FTCA	11.52	3.63	0.01	6369	241.0 -> 117.0	9.1	4.4	13.3

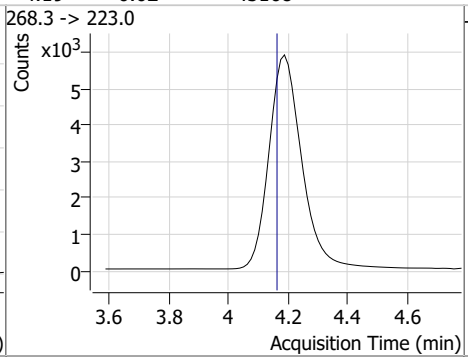


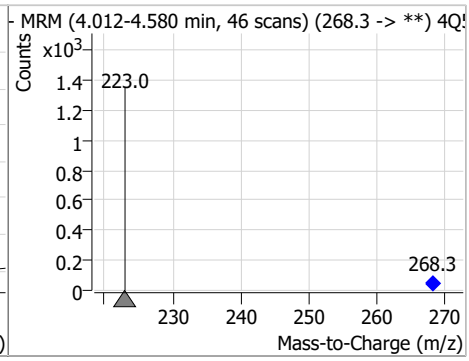




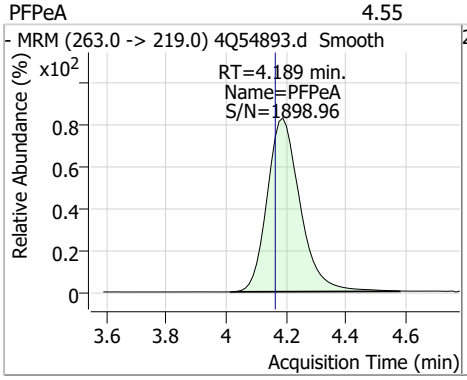
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.01	4.19	0.02	45168				

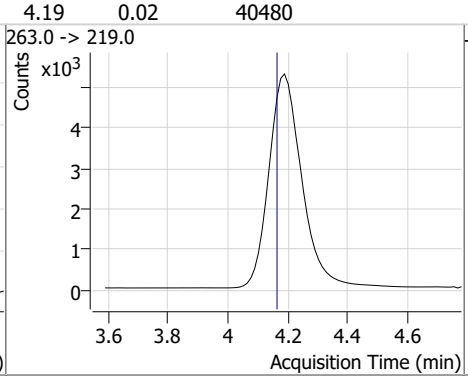


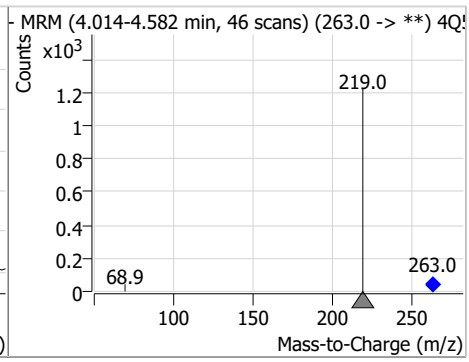




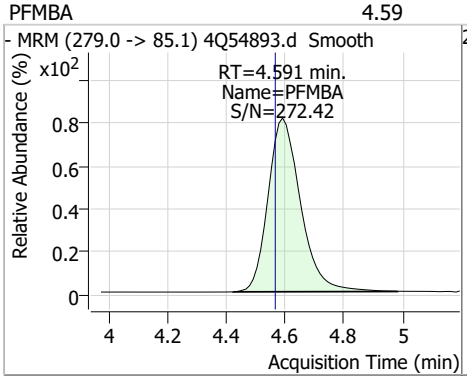
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.55	4.19	0.02	40480				

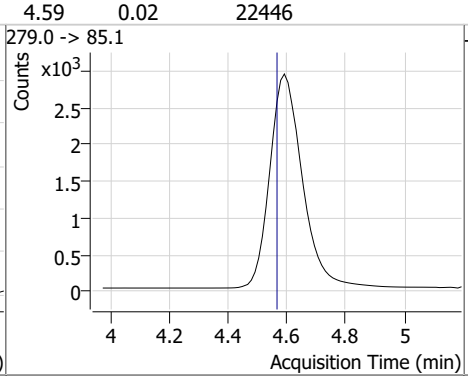


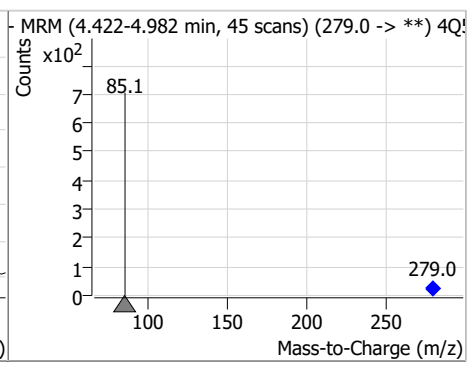




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFMBA	4.59	4.59	0.02	22446				

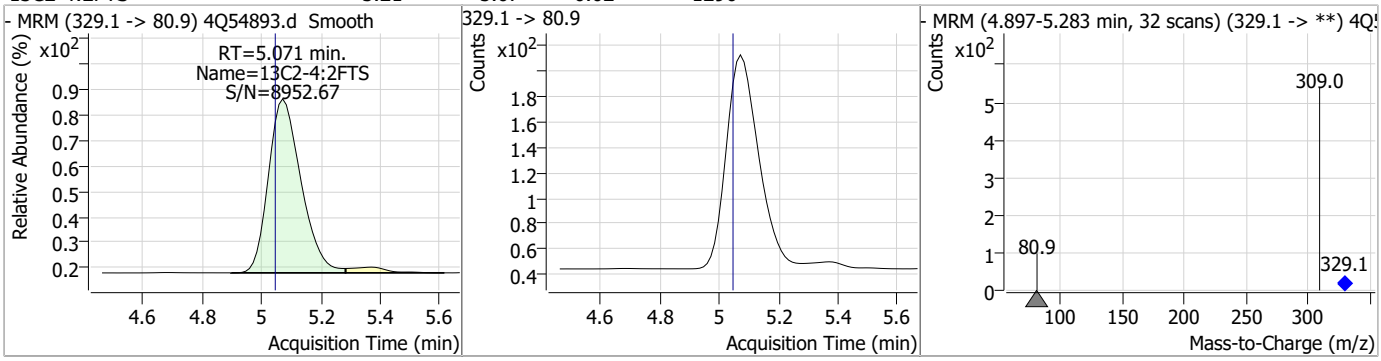




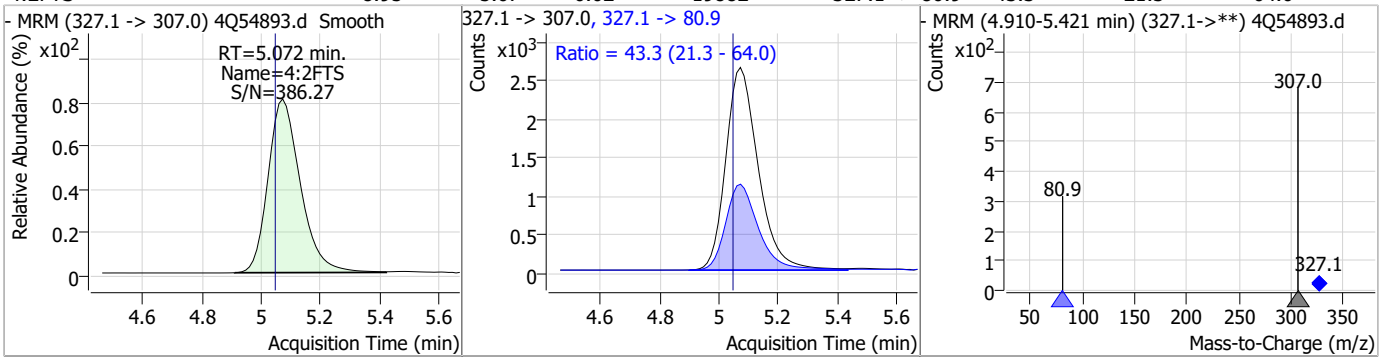


Perfluorinated Compounds by LC/MS/MS

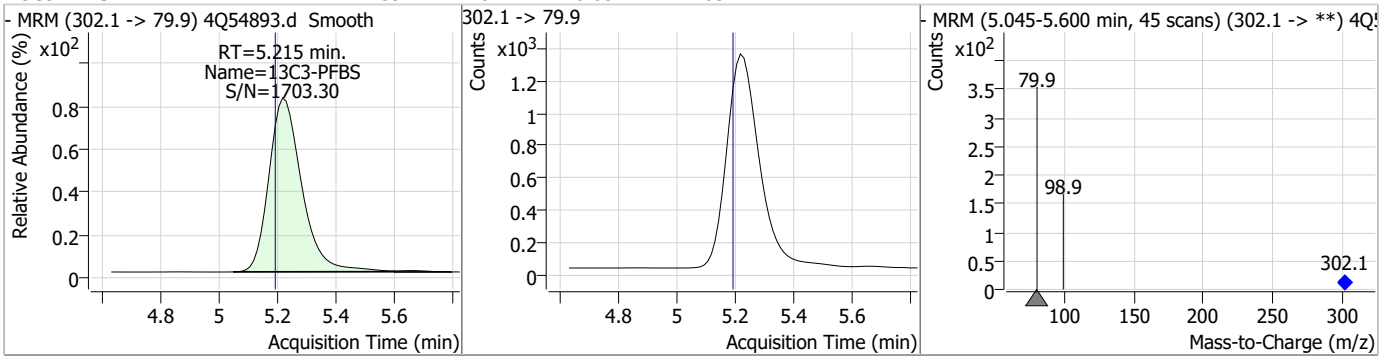
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.21	5.07	0.02	1290				



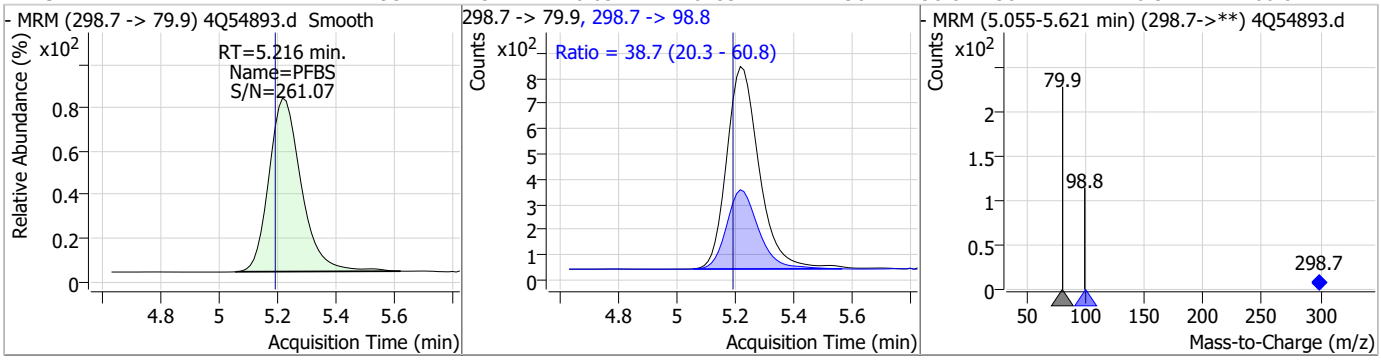
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	8.95	5.07	0.02	19882	327.1 -> 80.9	43.3	21.3	64.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.59	5.21	0.03	10347				

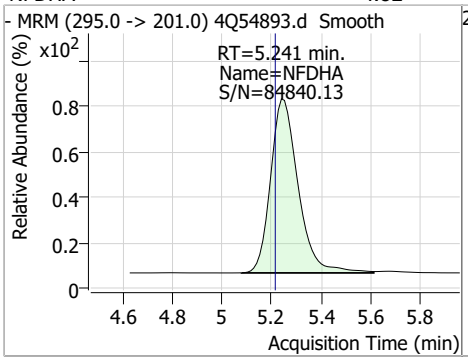


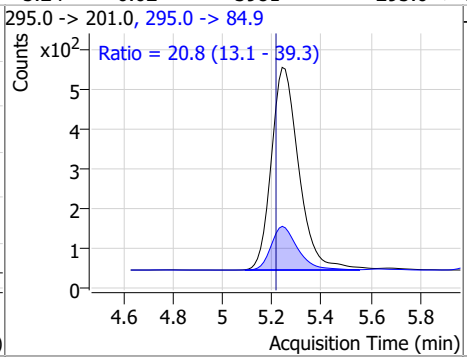
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.93	5.22	0.03	6183	298.7 -> 98.8	38.7	20.3	60.8

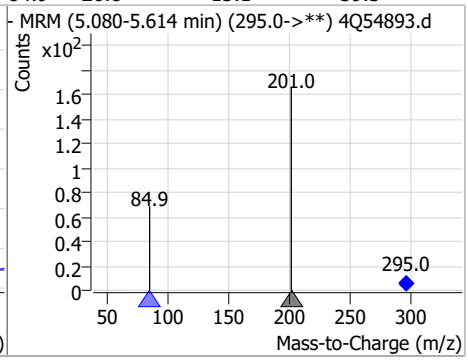


Perfluorinated Compounds by LC/MS/MS

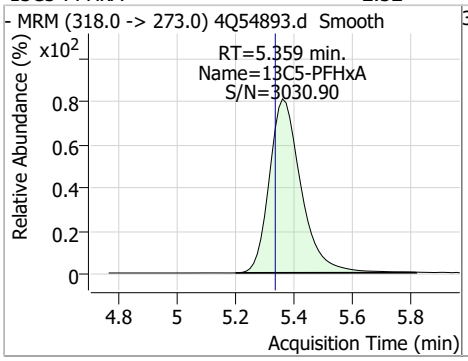
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
NFDHA	4.82	5.24	0.02	3981	295.0 -> 84.9	20.8	13.1	39.3

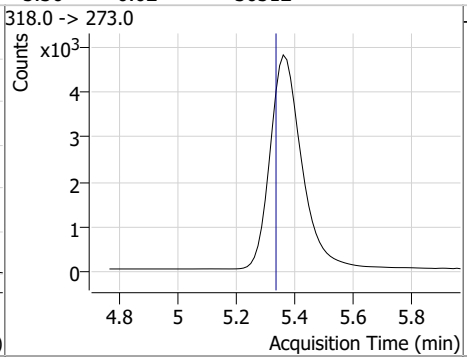


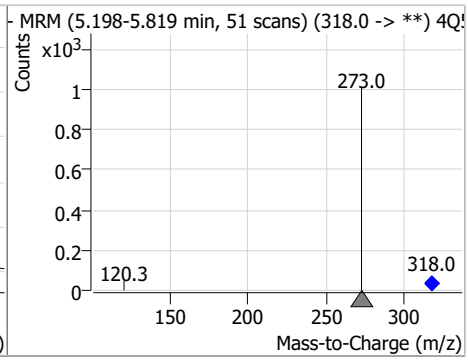




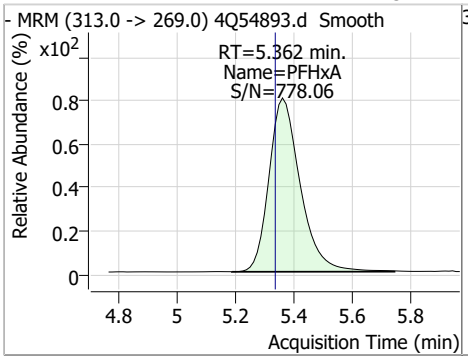
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.52	5.36	0.02	36512				

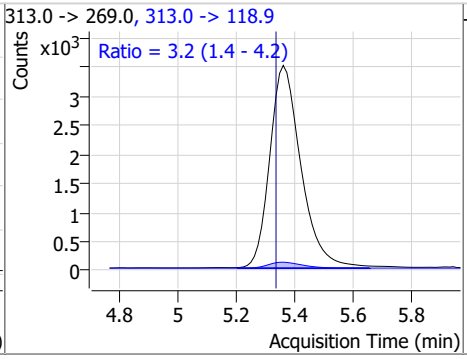


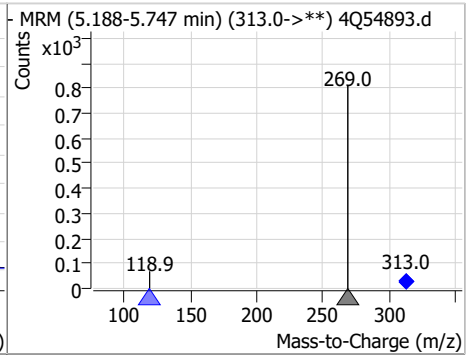




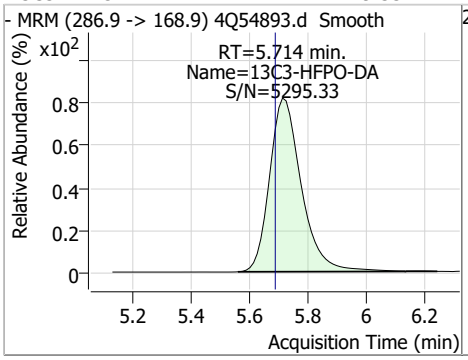
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.23	5.36	0.02	26028	313.0 -> 118.9	3.2	1.4	4.2

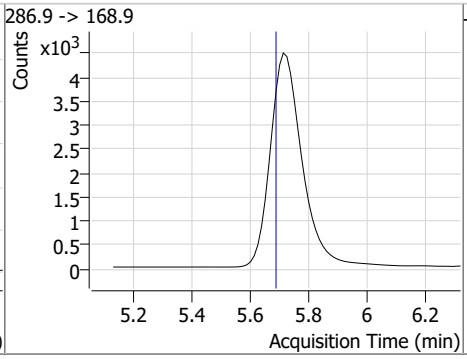


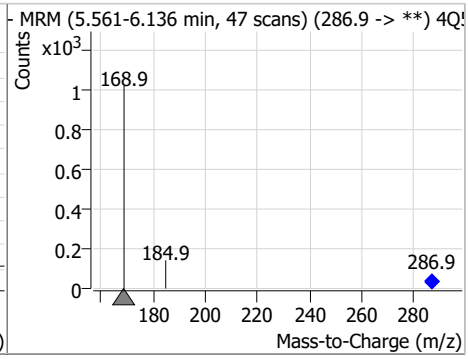




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.33	5.71	0.02	33738				

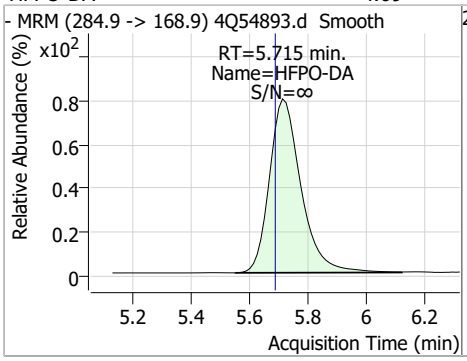


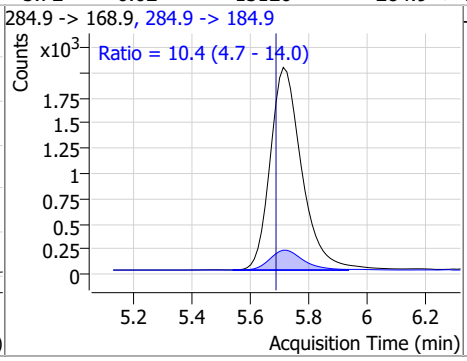


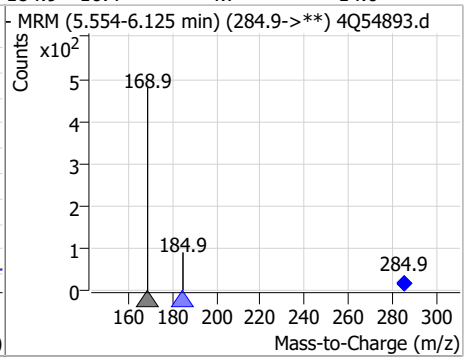


Perfluorinated Compounds by LC/MS/MS

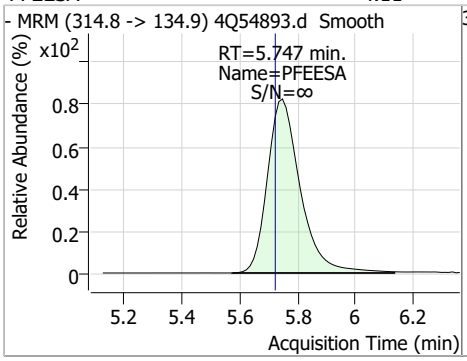
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.69	5.72	0.02	15126	284.9 -> 184.9	10.4	4.7	14.0

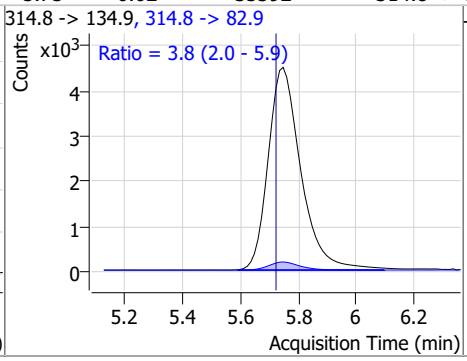


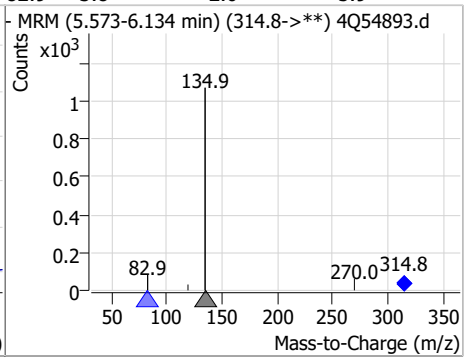




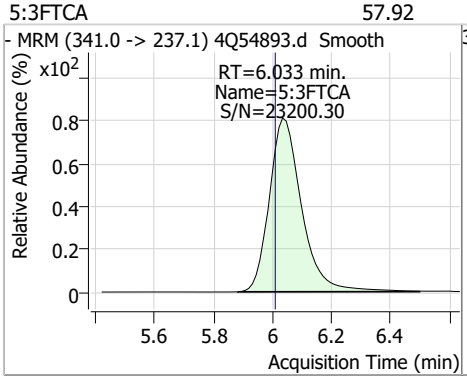
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFEESA	4.11	5.75	0.02	35392	314.8 -> 82.9	3.8	2.0	5.9

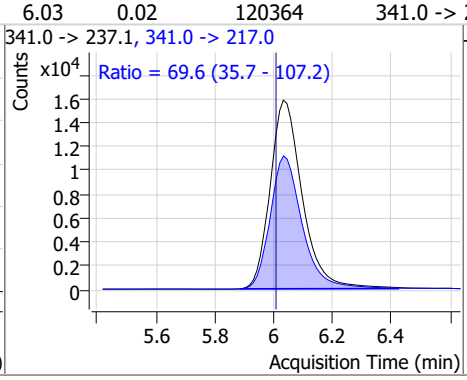


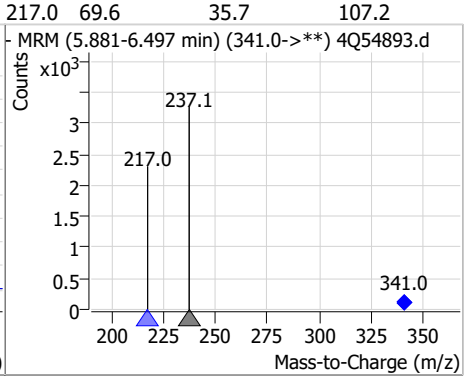




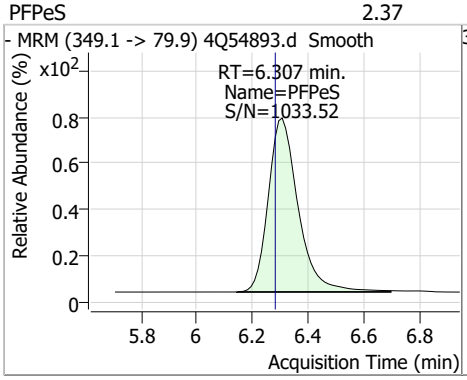
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
5:3FTCA	57.92	6.03	0.02	120364	341.0 -> 217.0	69.6	35.7	107.2

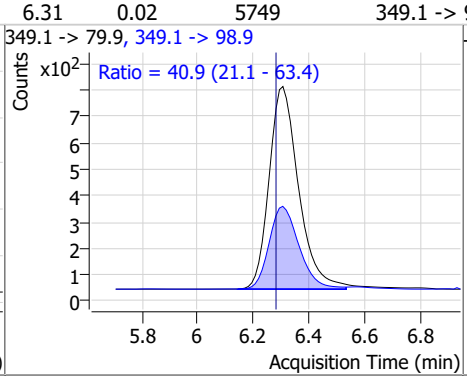


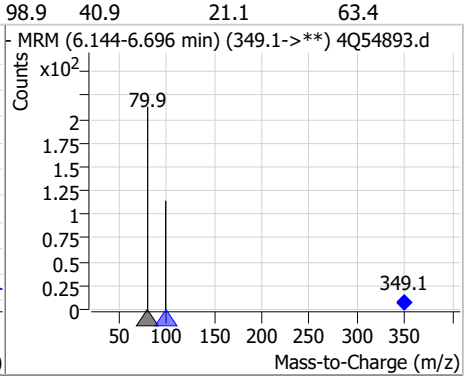




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.37	6.31	0.02	5749	349.1 -> 98.9	40.9	21.1	63.4

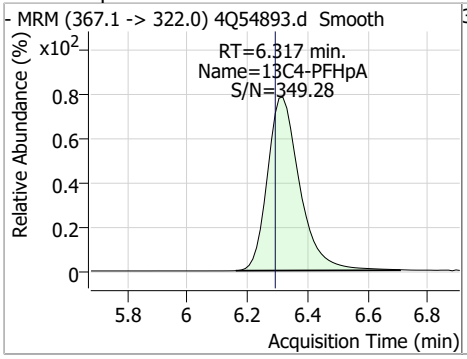


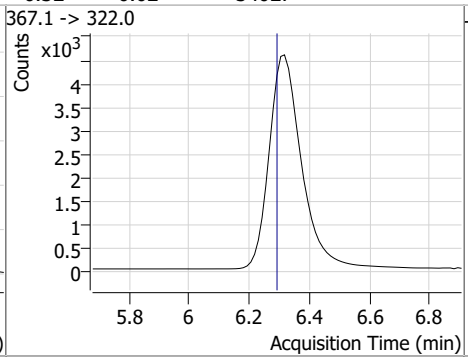


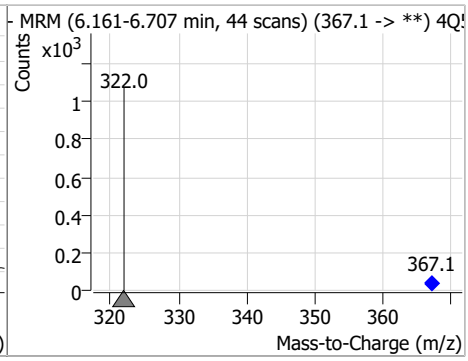


Perfluorinated Compounds by LC/MS/MS

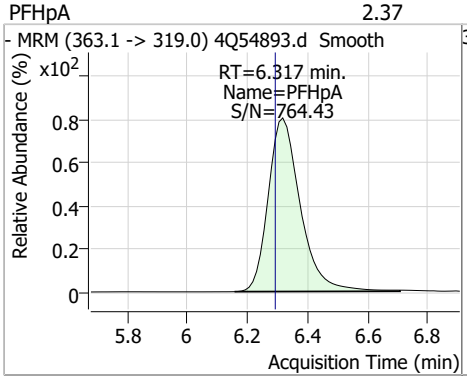
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.46	6.32	0.02	34027				

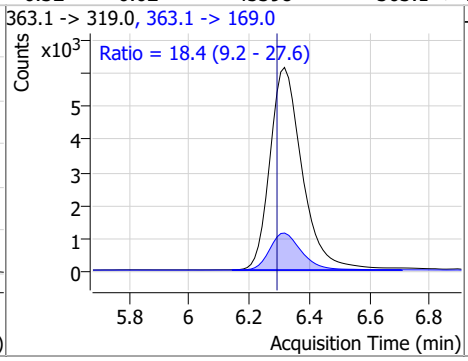


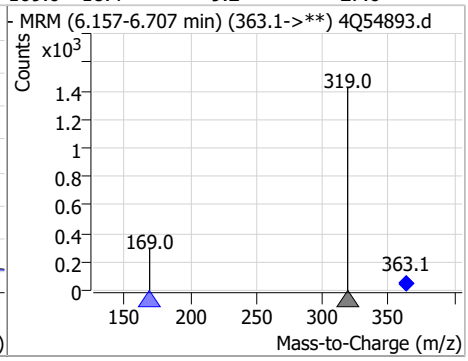




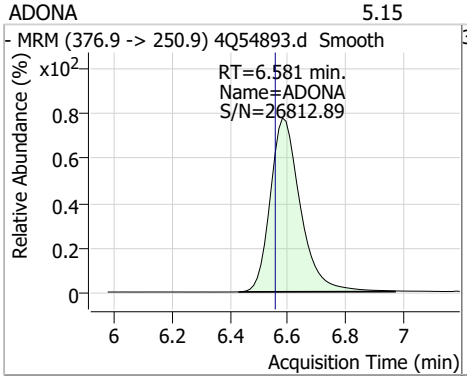
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.37	6.32	0.02	45398	363.1 -> 169.0	18.4	9.2	27.6

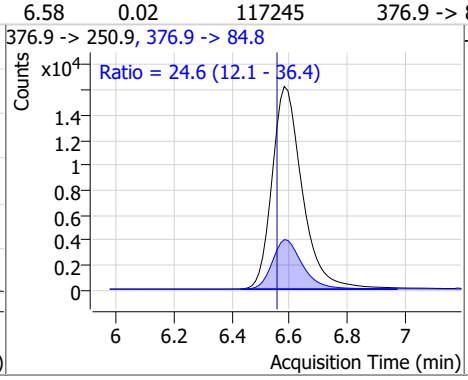


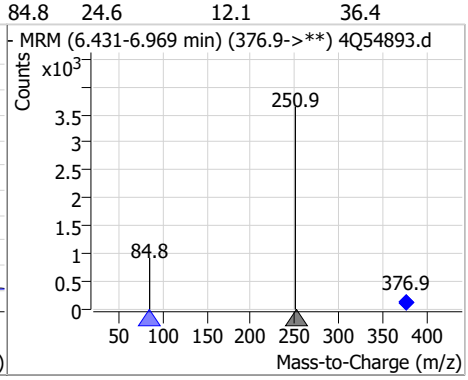




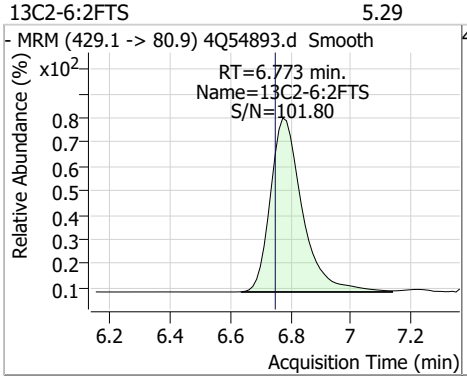
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.15	6.58	0.02	117245	376.9 -> 84.8	24.6	12.1	36.4

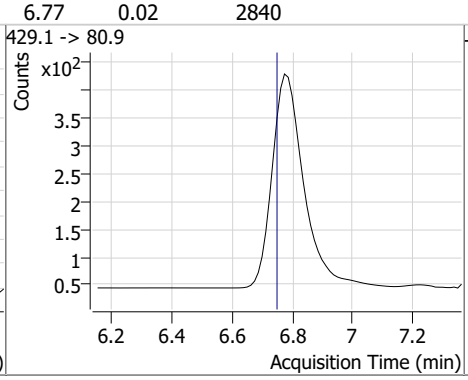


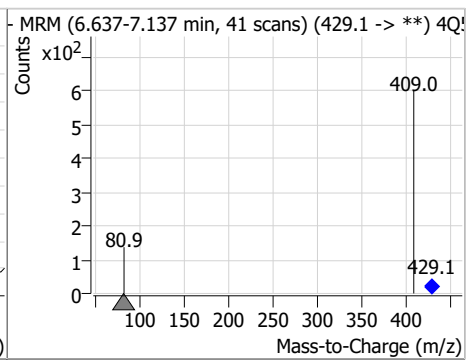




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.29	6.77	0.02	2840				

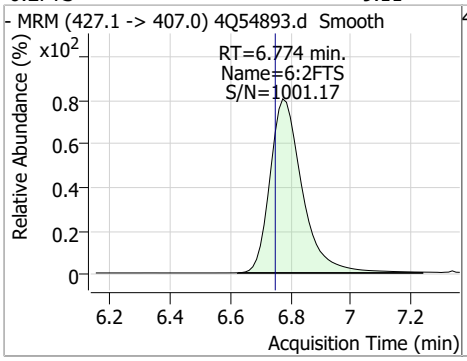


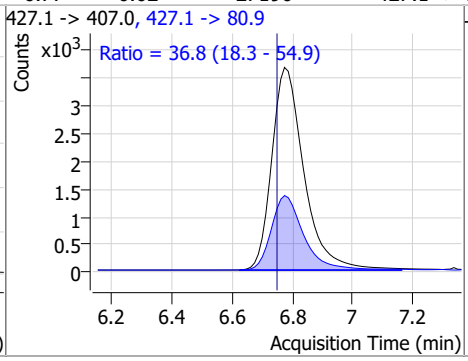


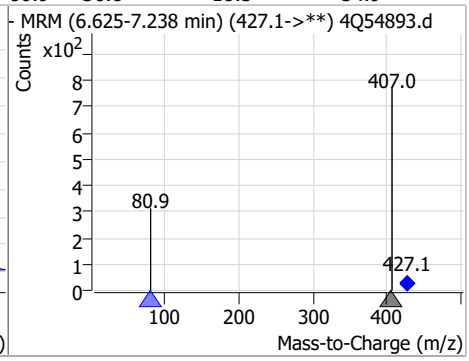


Perfluorinated Compounds by LC/MS/MS

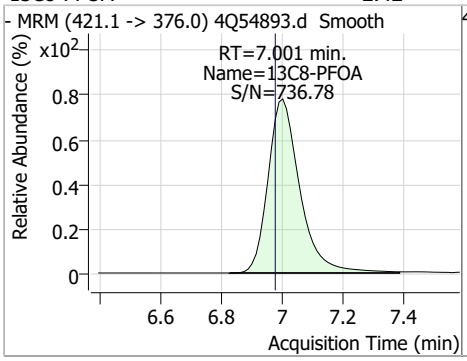
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.11	6.77	0.02	27196	427.1 -> 80.9	36.8	18.3	54.9

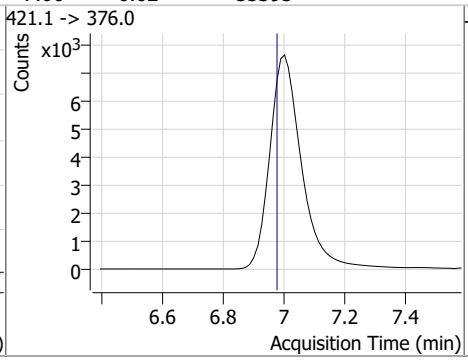


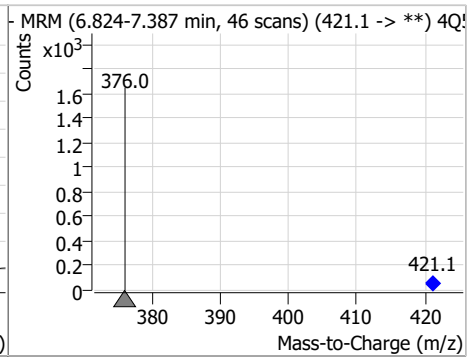




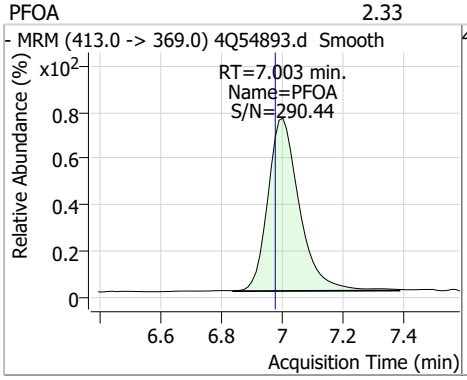
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.42	7.00	0.02	55395				

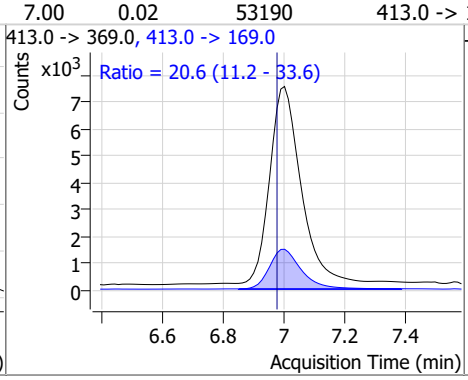


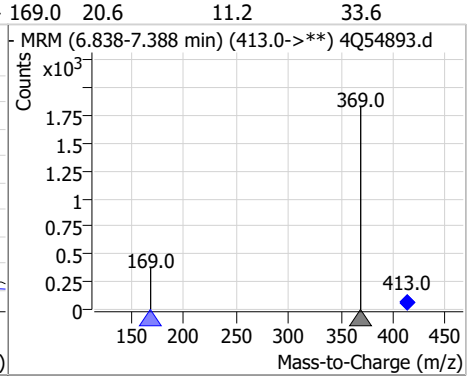




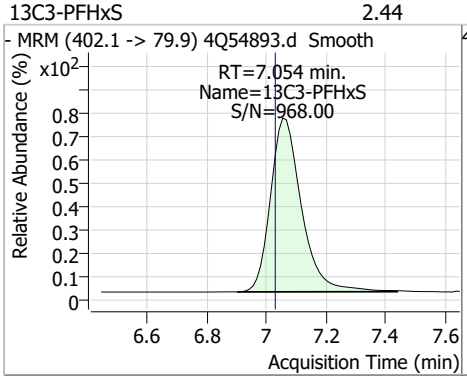
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.33	7.00	0.02	53190	413.0 -> 169.0	20.6	11.2	33.6

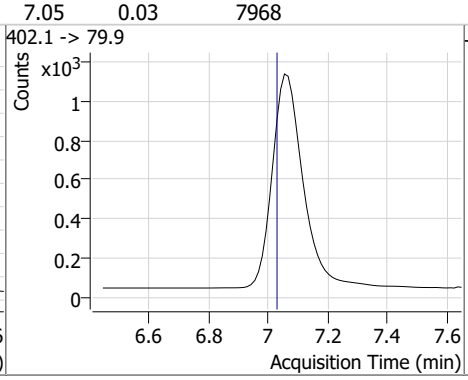


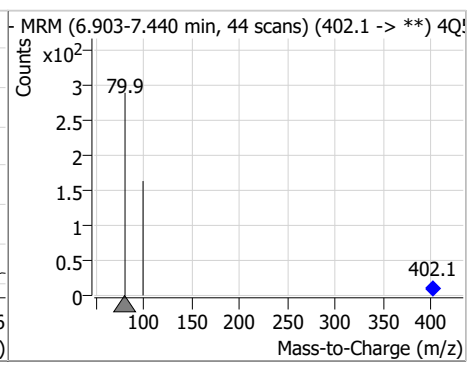




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.44	7.05	0.03	7968				

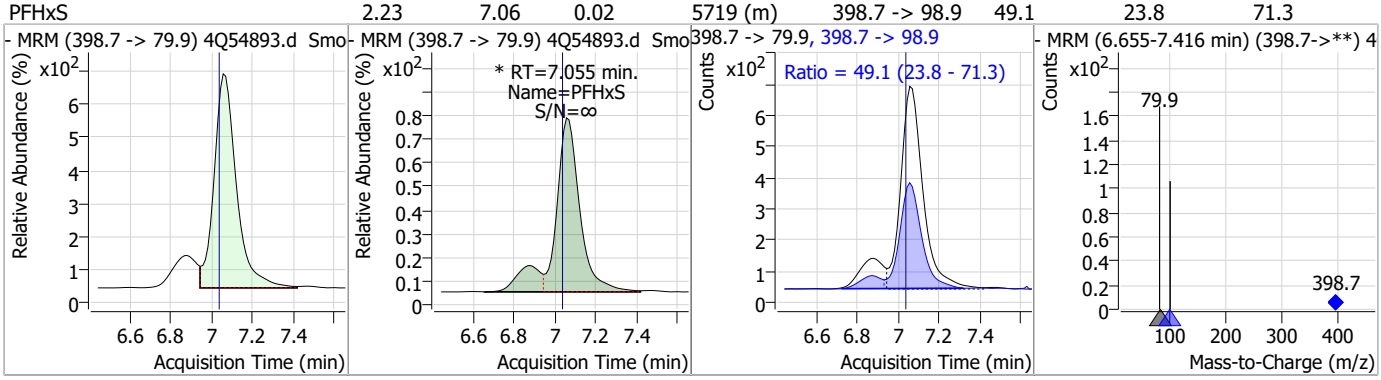




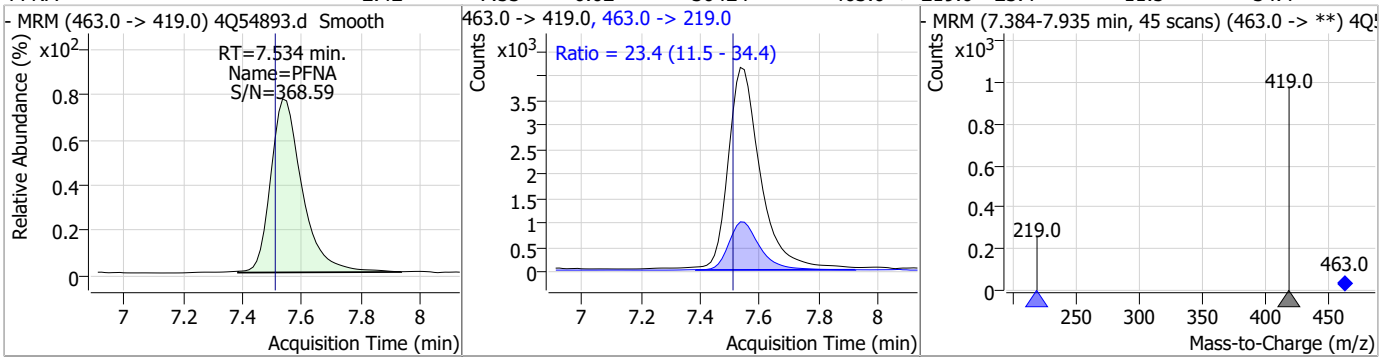


Perfluorinated Compounds by LC/MS/MS

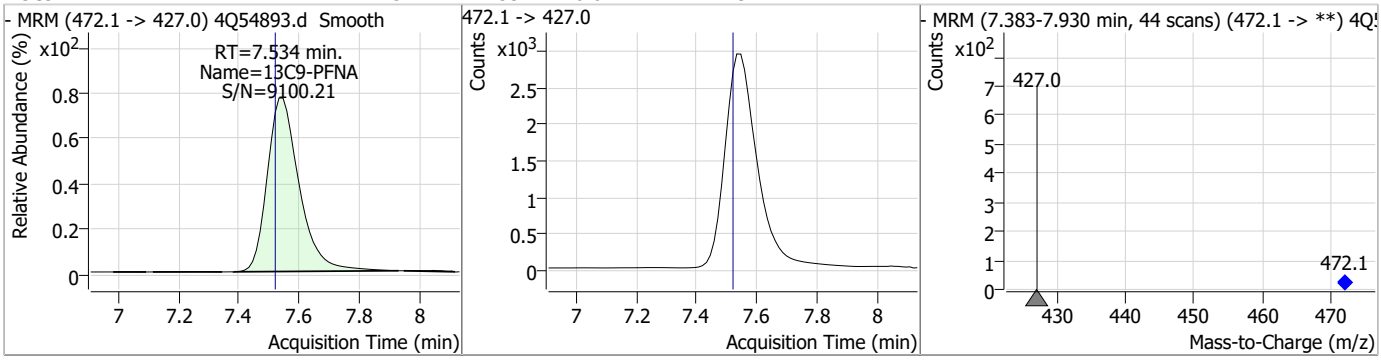
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.23	7.06	0.02	5719 (m)	398.7 -> 98.9	49.1	23.8	71.3



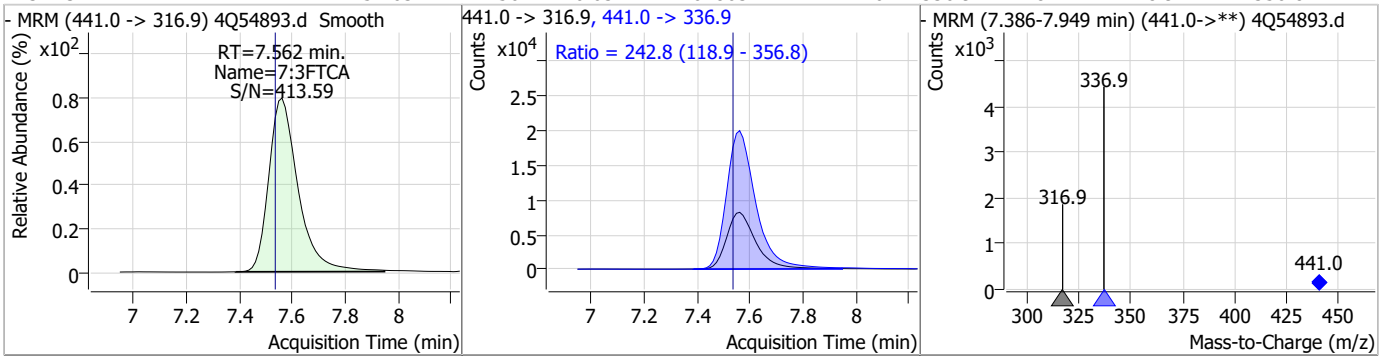
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.42	7.53	0.02	30424	463.0 -> 219.0	23.4	11.5	34.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.25	7.53	0.01	21419				

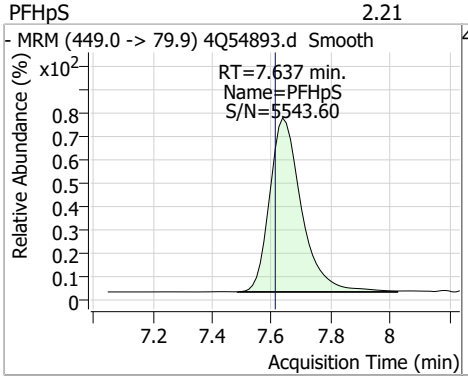


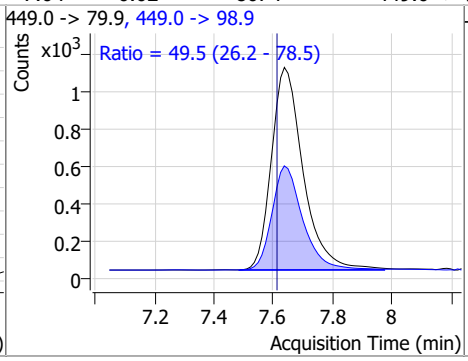
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
7:3FTCA	57.63	7.56	0.03	62803	441.0 -> 336.9	242.8	118.9	356.8

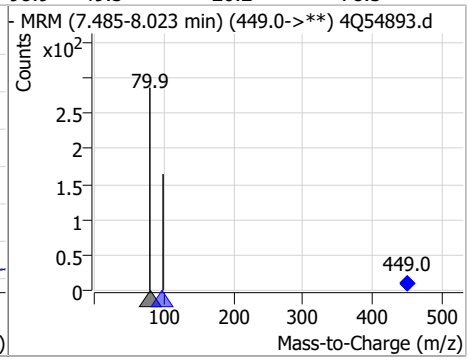


Perfluorinated Compounds by LC/MS/MS

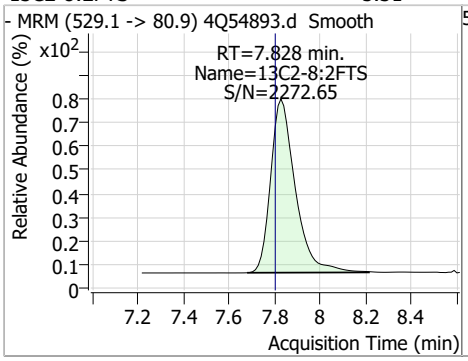
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.21	7.64	0.02	8074	449.0 -> 98.9	49.5	26.2	78.5

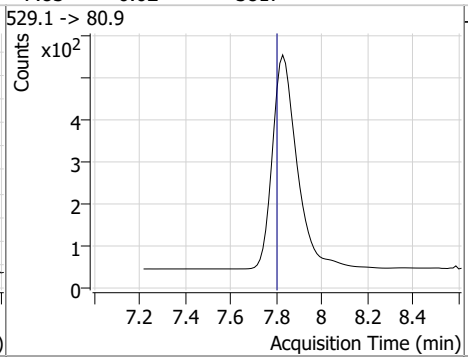


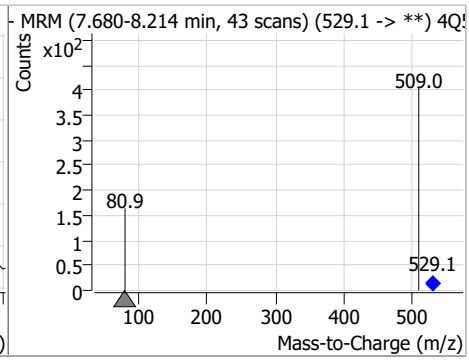




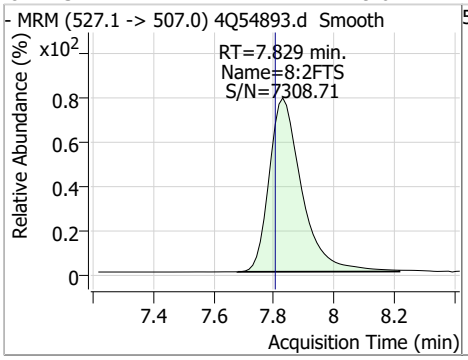
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	5.31	7.83	0.02	3817				

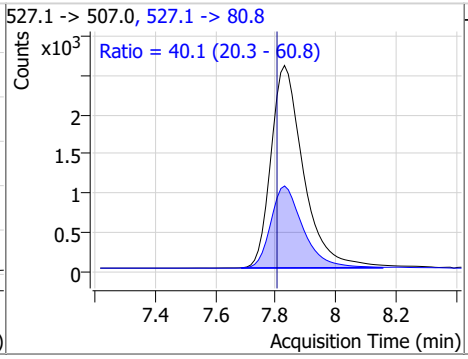


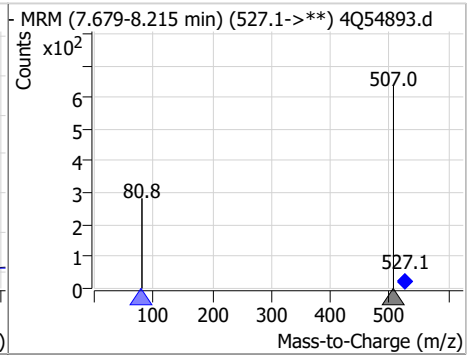




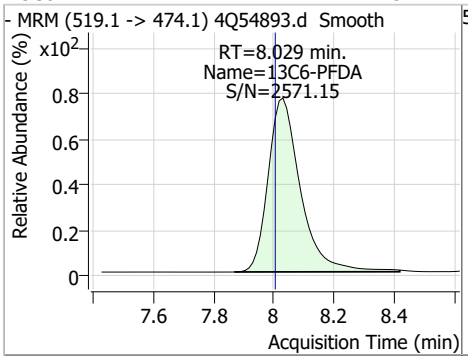
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.61	7.83	0.02	19334	527.1 -> 80.8	40.1	20.3	60.8

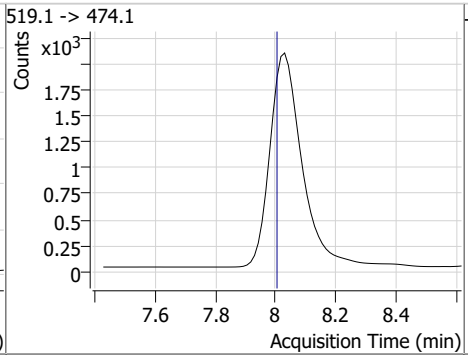


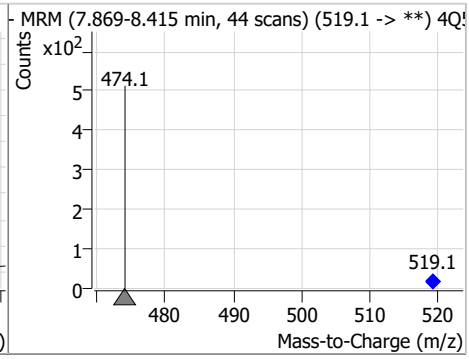




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.25	8.03	0.03	15267				

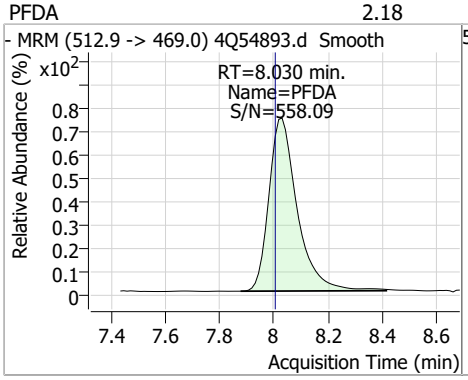


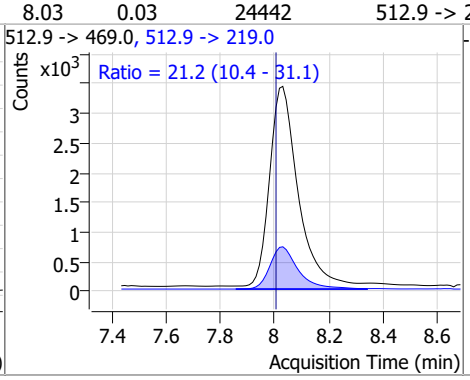


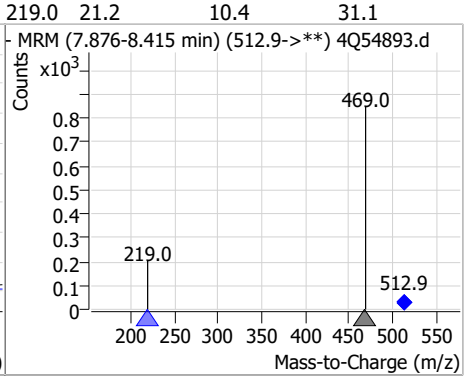


Perfluorinated Compounds by LC/MS/MS

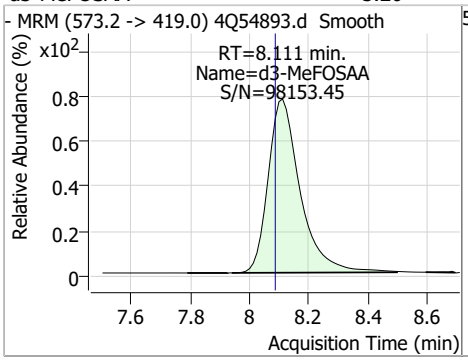
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.18	8.03	0.03	24442	512.9 -> 219.0	21.2	10.4	31.1

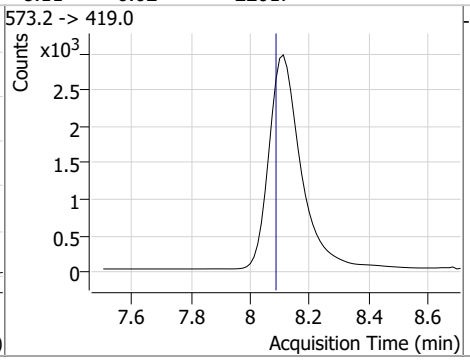


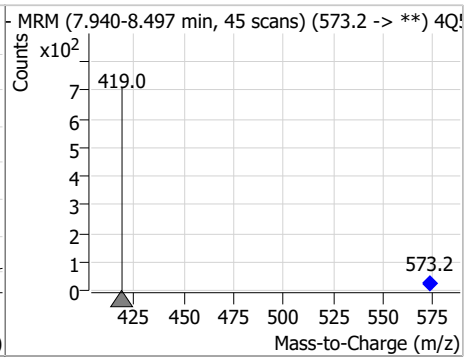




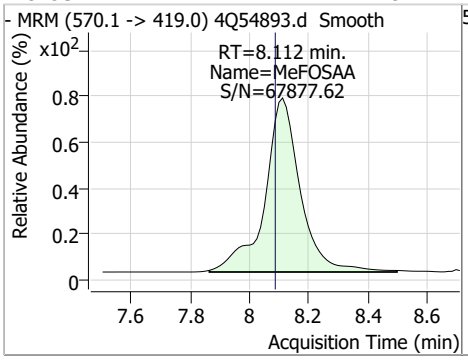
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	5.20	8.11	0.02	22017				

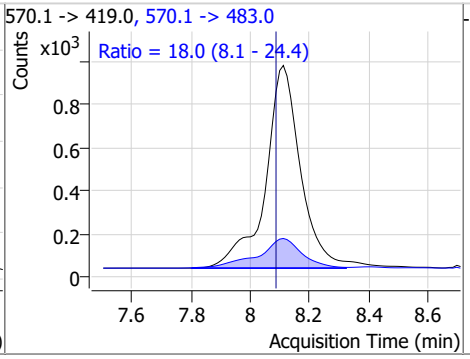


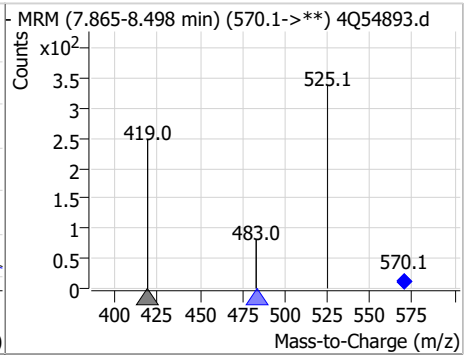




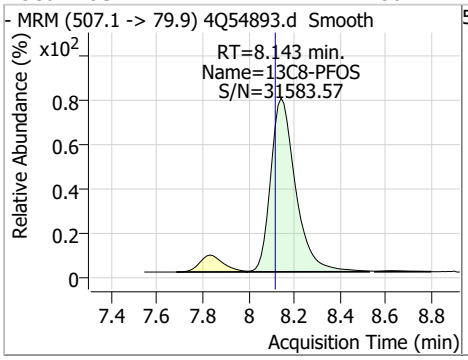
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.49	8.11	0.02	7845	570.1 -> 483.0	18.0	8.1	24.4

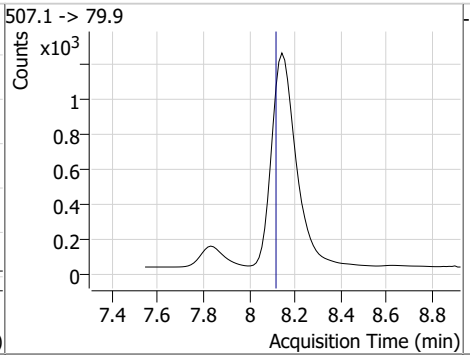


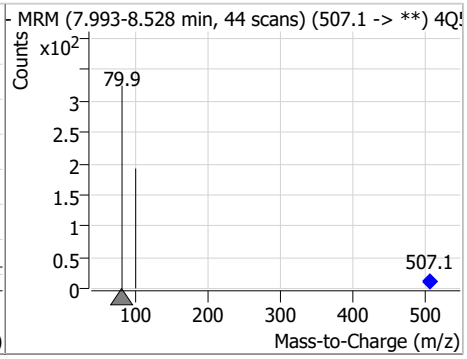




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.38	8.14	0.03	9194				

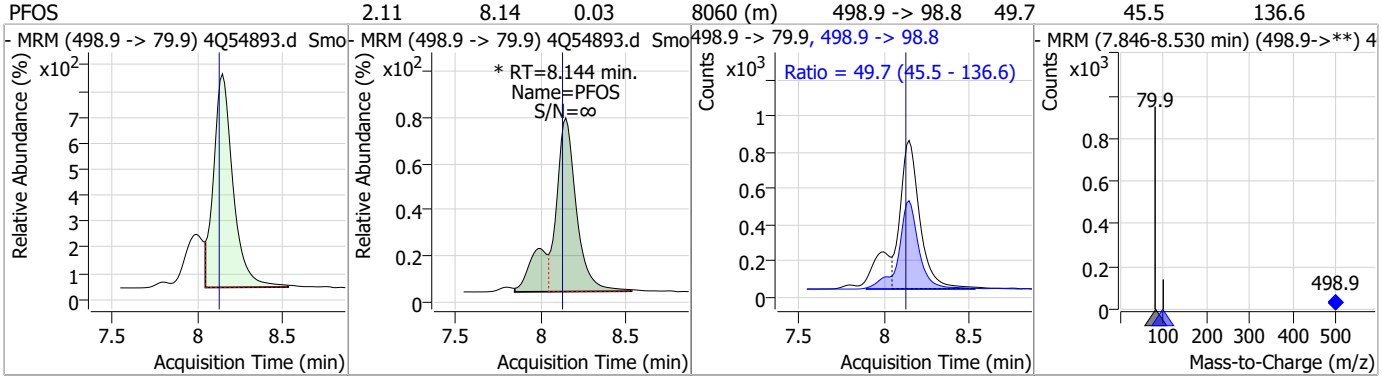




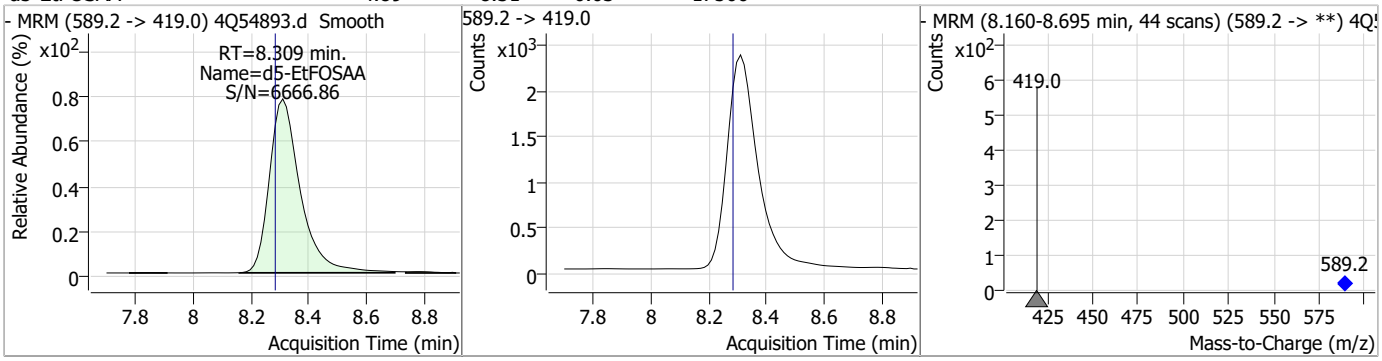


Perfluorinated Compounds by LC/MS/MS

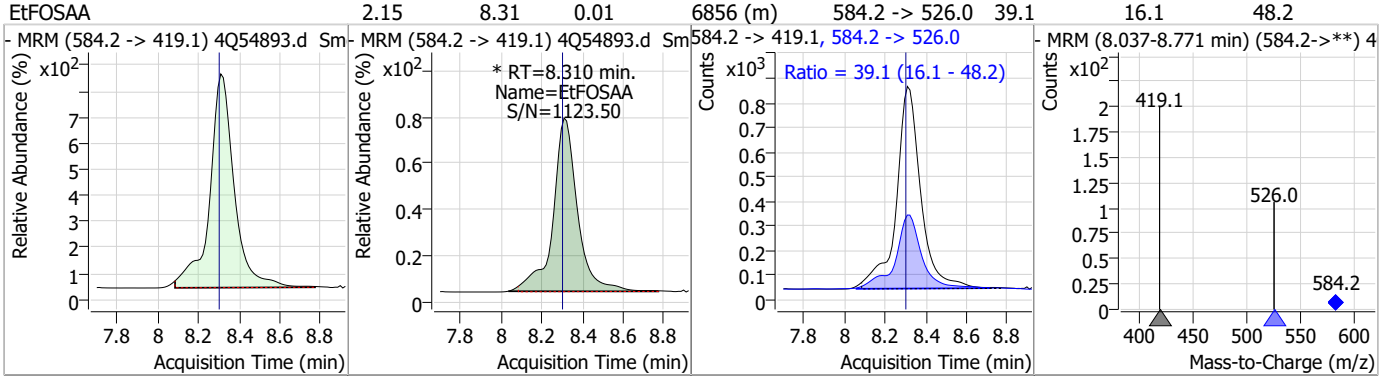
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.11	8.14	0.03	8060 (m)	498.9 -> 98.8	49.7	45.5	136.6



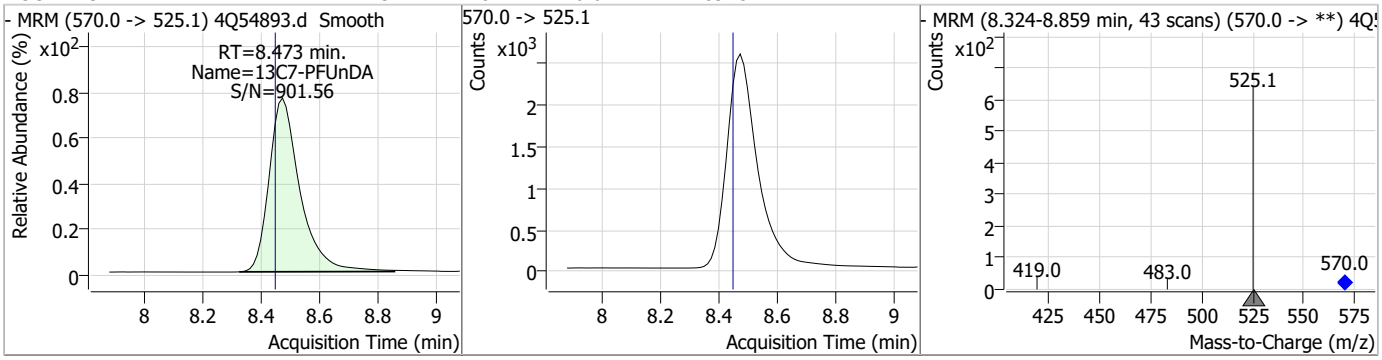
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.89	8.31	0.03	17506				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.15	8.31	0.01	6856 (m)	584.2 -> 526.0	39.1	16.1	48.2

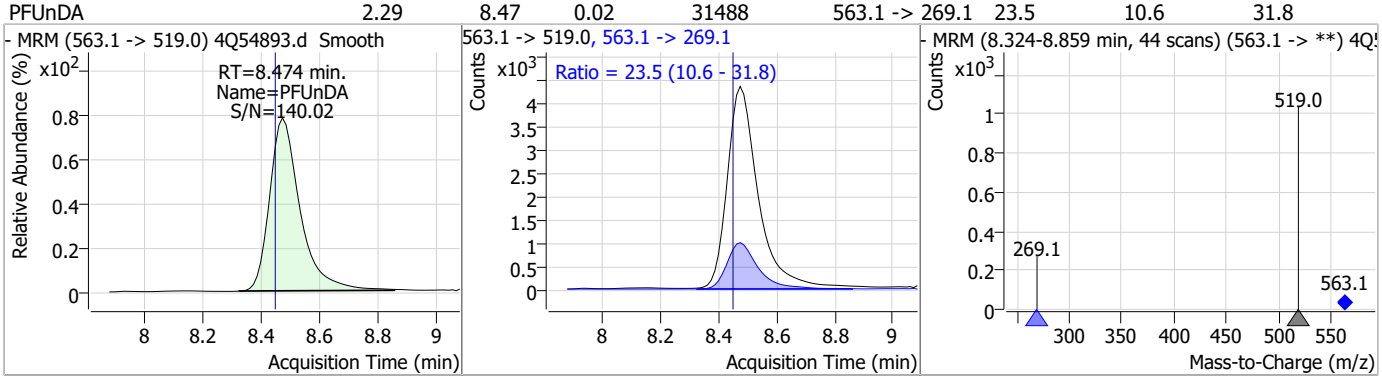


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.32	8.47	0.02	18918				

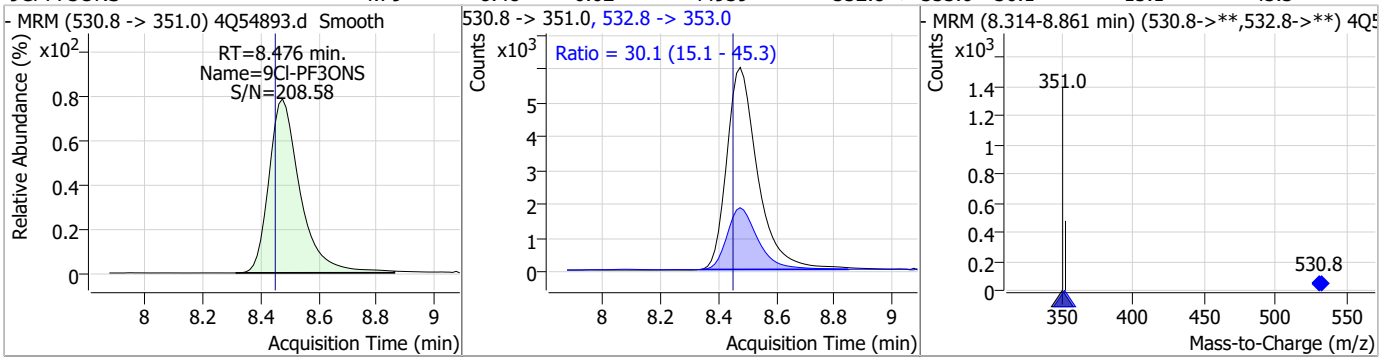


Perfluorinated Compounds by LC/MS/MS

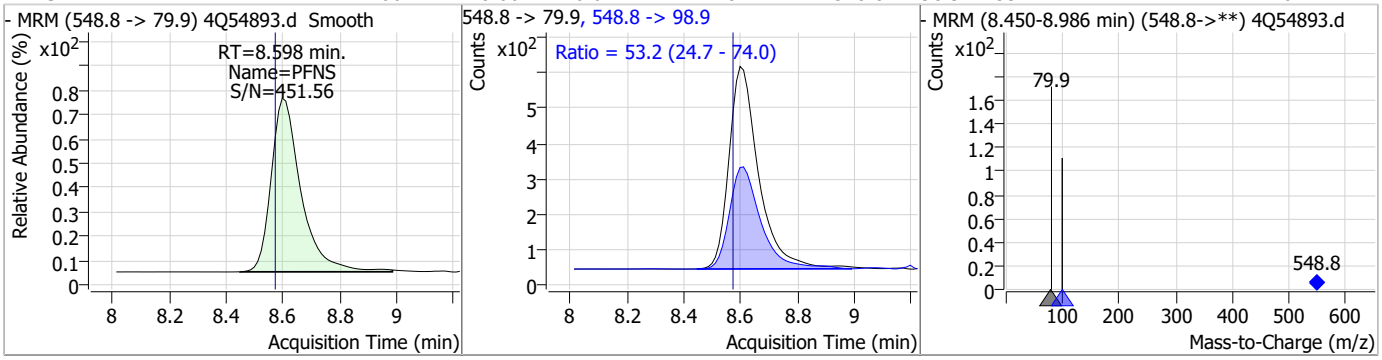
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.29	8.47	0.02	31488	563.1 -> 269.1	23.5	10.6	31.8



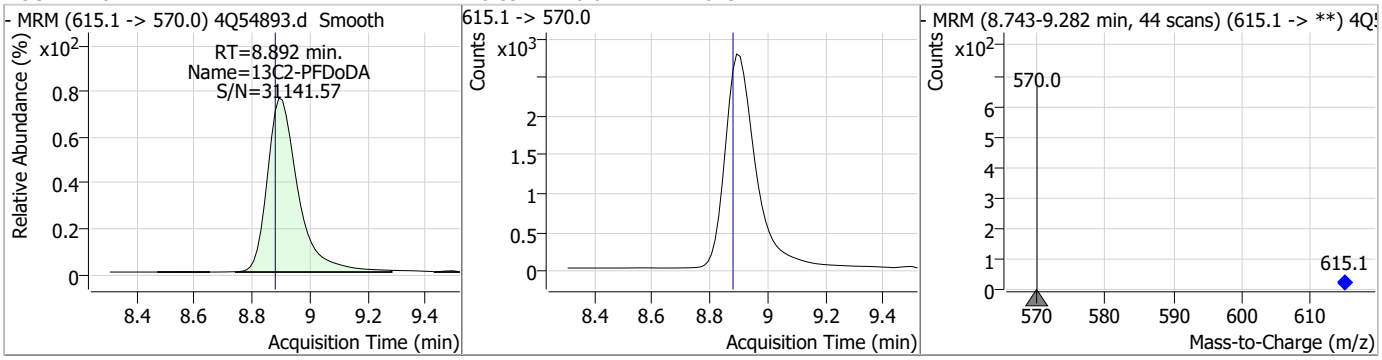
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.79	8.48	0.02	44939	532.8 -> 353.0	30.1	15.1	45.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.66	8.60	0.02	4178	548.8 -> 98.9	53.2	24.7	74.0

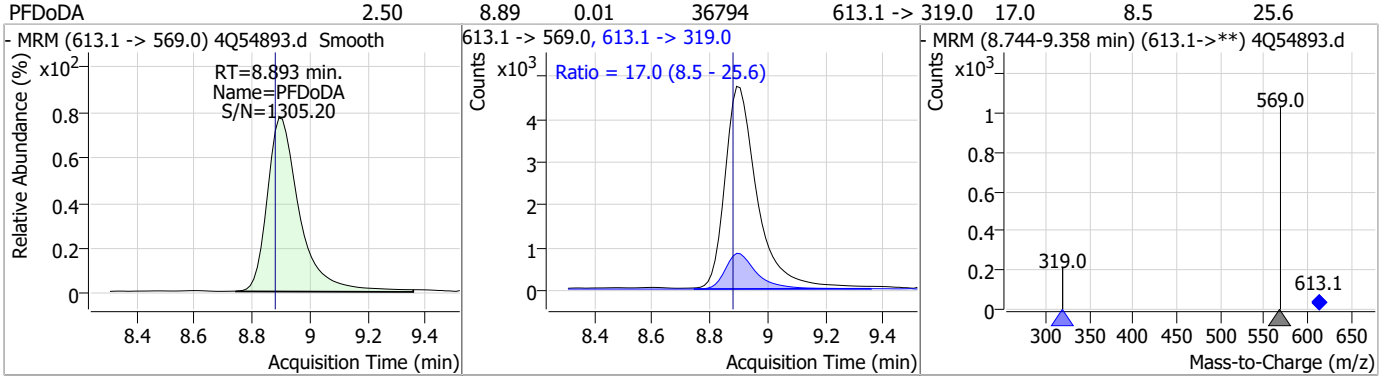


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.22	8.89	0.01	20434				

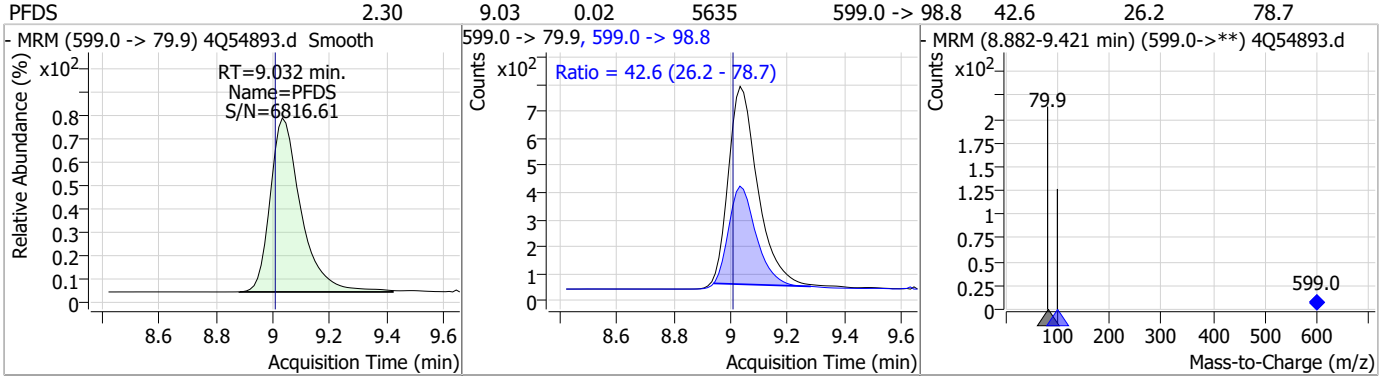


Perfluorinated Compounds by LC/MS/MS

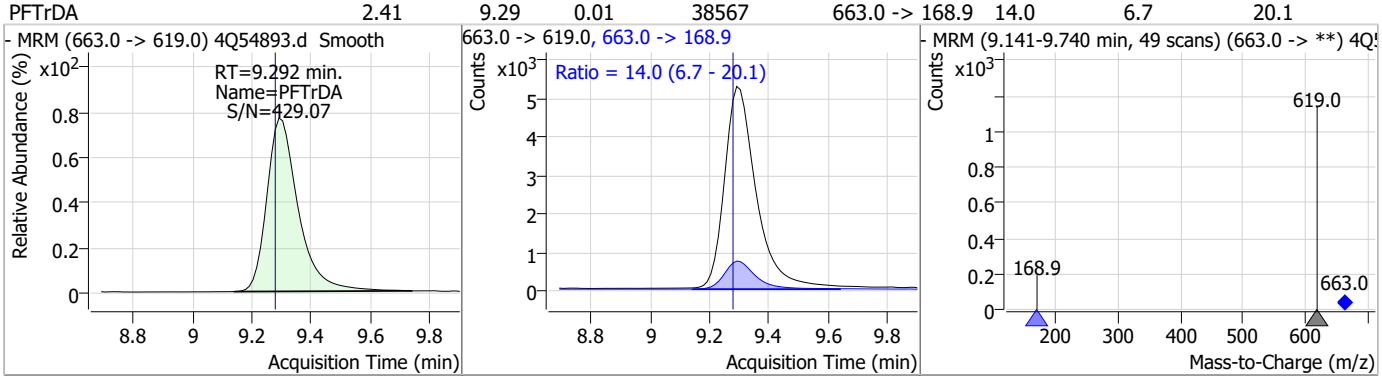
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.50	8.89	0.01	36794	613.1 -> 319.0	17.0	8.5	25.6



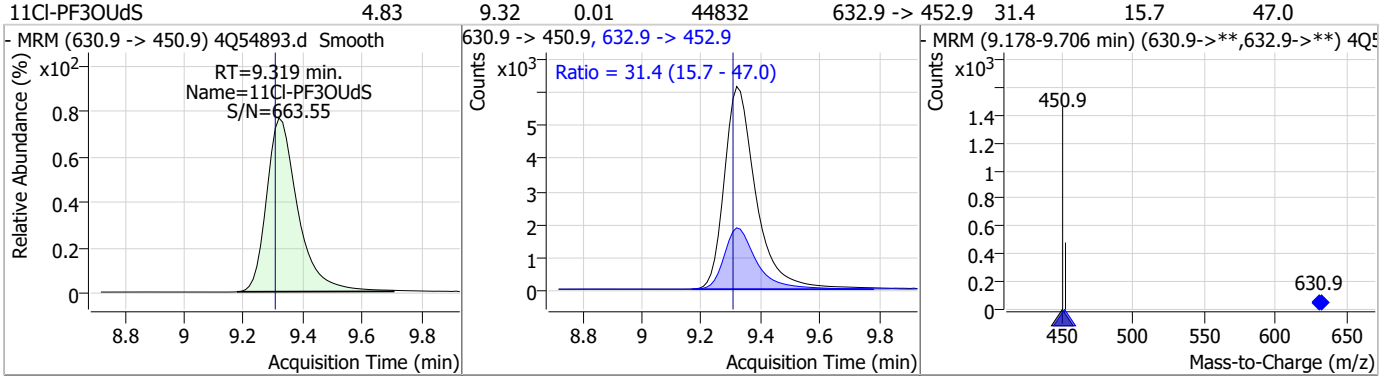
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.30	9.03	0.02	5635	599.0 -> 98.8	42.6	26.2	78.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.41	9.29	0.01	38567	663.0 -> 168.9	14.0	6.7	20.1

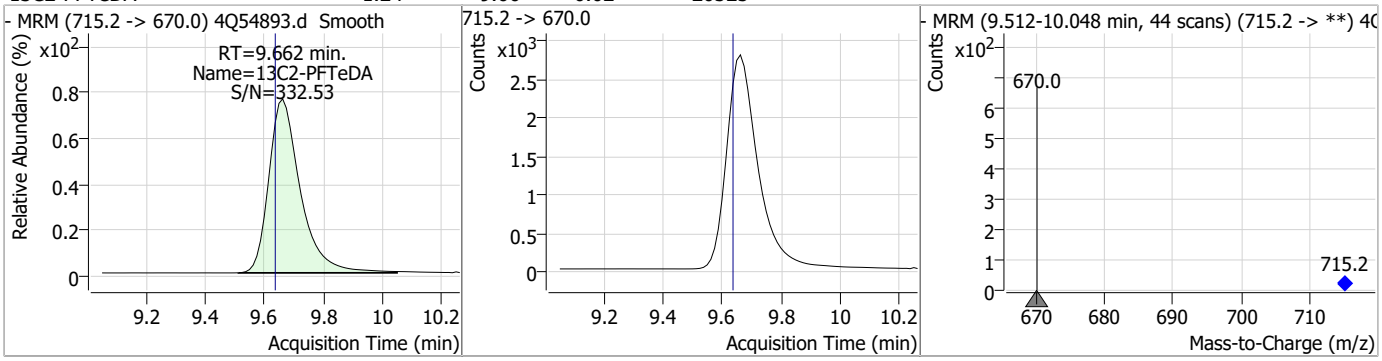


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.83	9.32	0.01	44832	632.9 -> 452.9	31.4	15.7	47.0

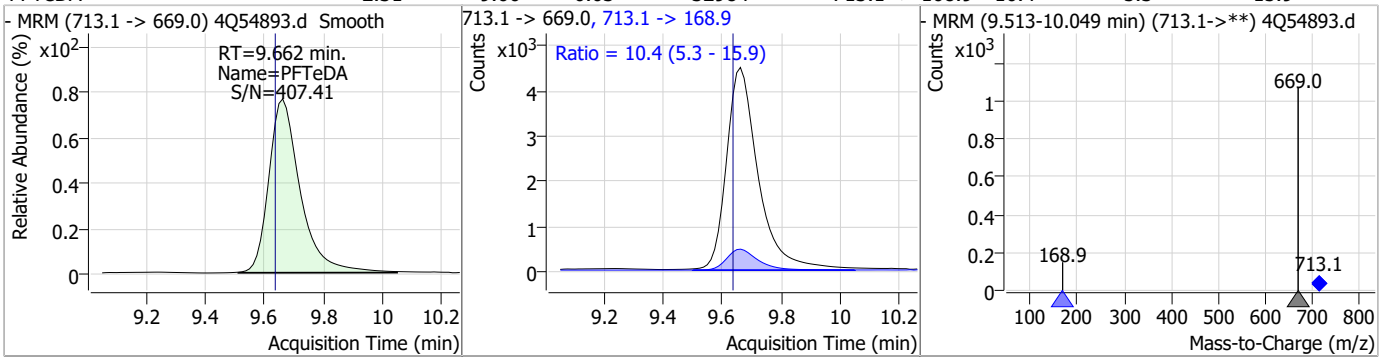


Perfluorinated Compounds by LC/MS/MS

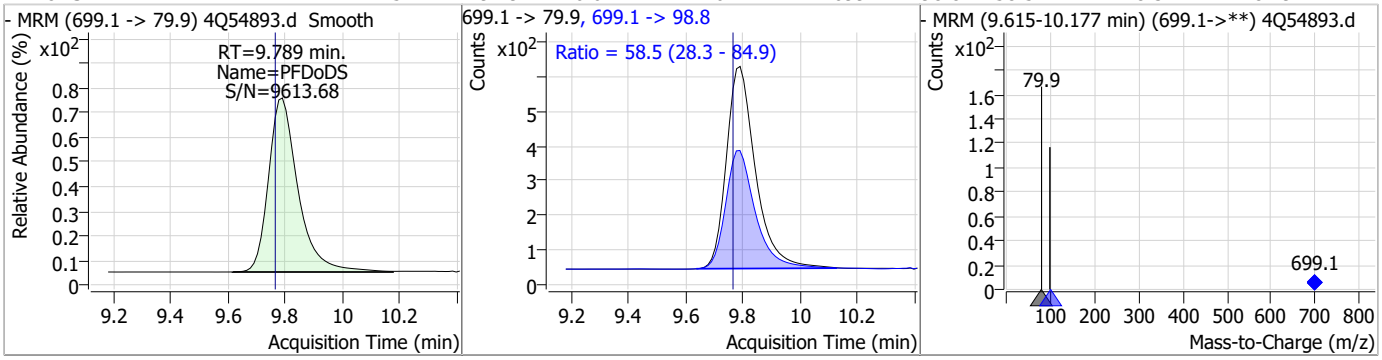
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.24	9.66	0.02	20525				



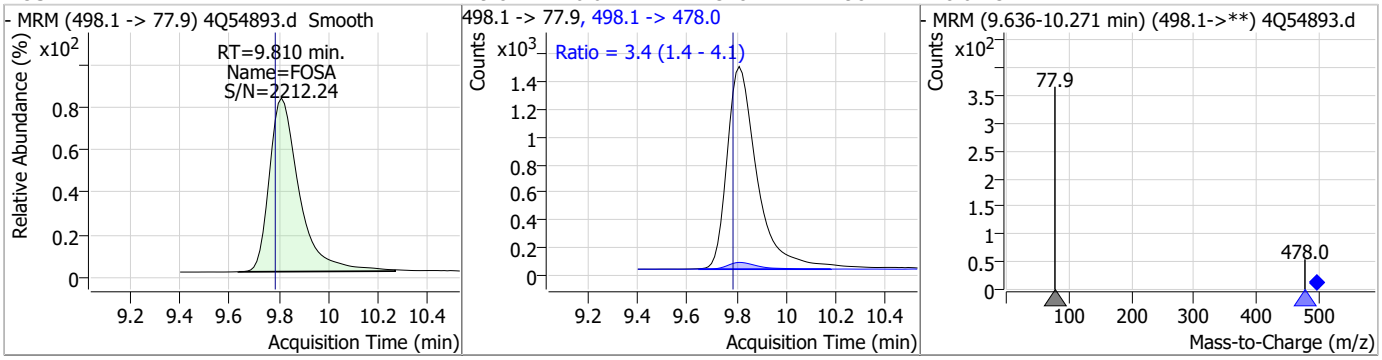
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.31	9.66	0.03	32984	713.1 -> 168.9	10.4	5.3	15.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDS	2.25	9.79	0.02	4204	699.1 -> 98.8	58.5	28.3	84.9

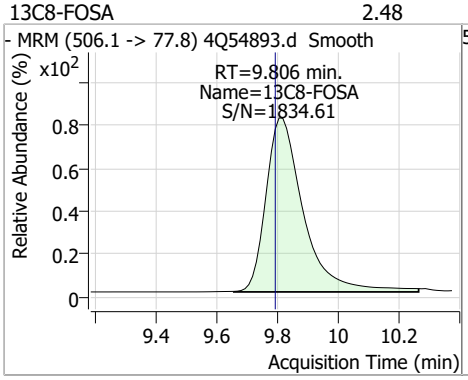


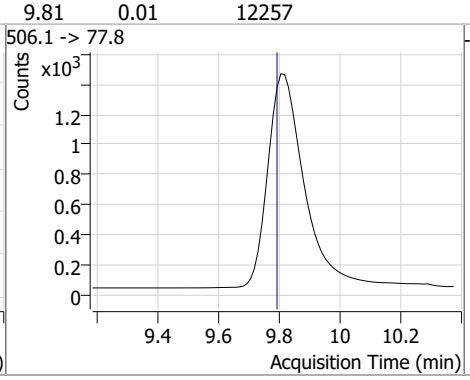
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.24	9.81	0.02	12318	498.1 -> 478.0	3.4	1.4	4.1

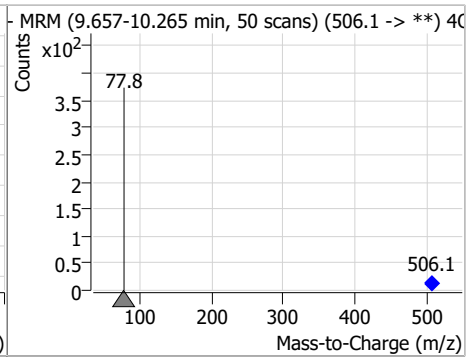


Perfluorinated Compounds by LC/MS/MS

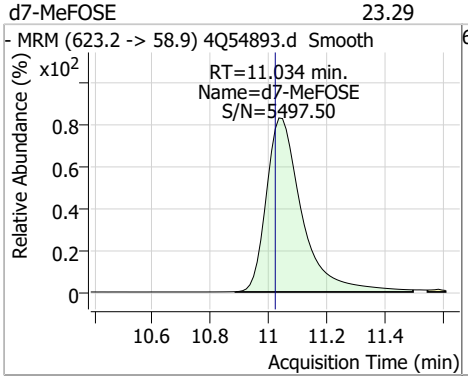
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.48	9.81	0.01	12257				

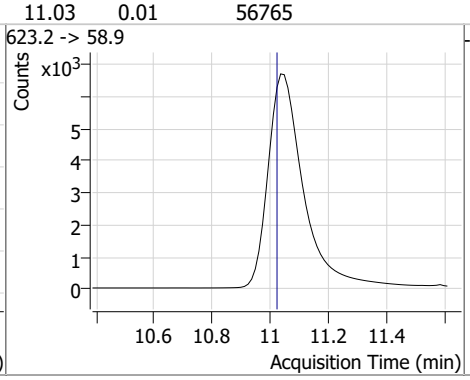


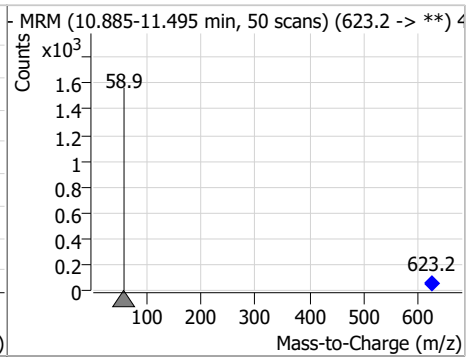




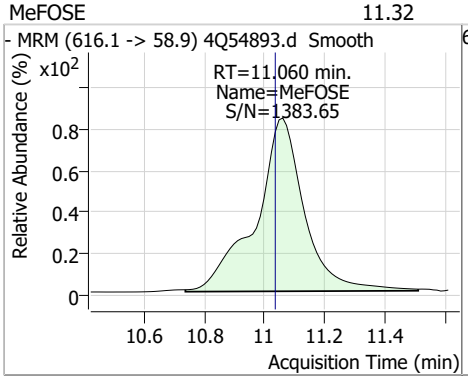
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d7-MeFOSE	23.29	11.03	0.01	56765				

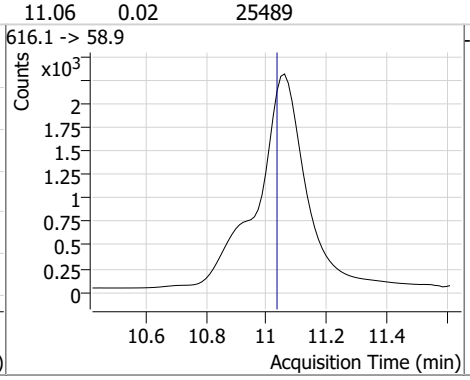


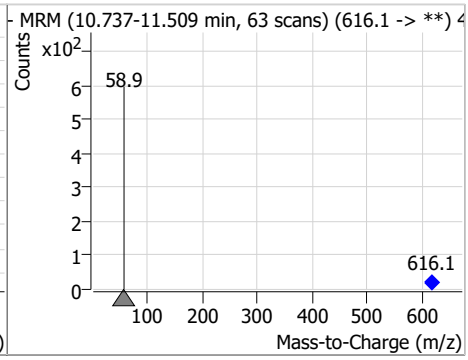




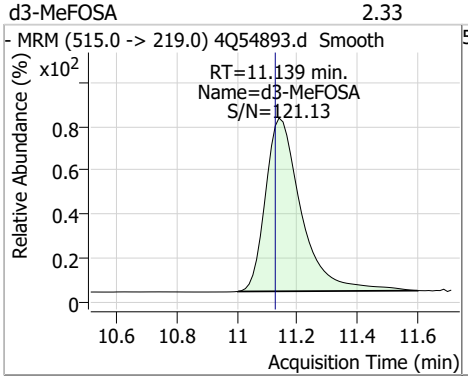
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSE	11.32	11.06	0.02	25489				

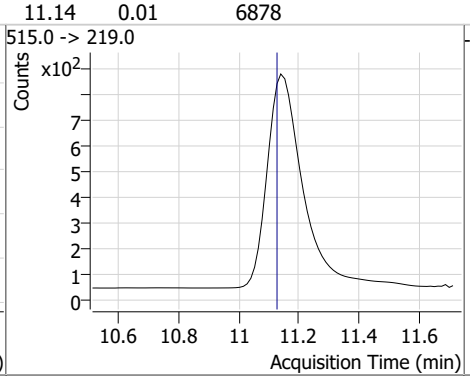


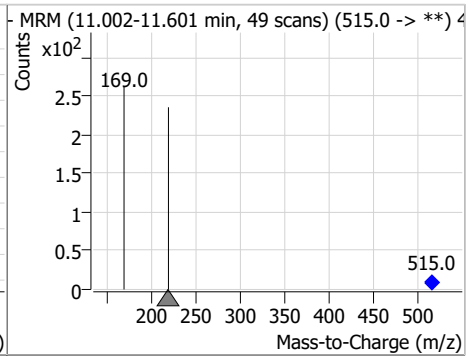




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.33	11.14	0.01	6878				

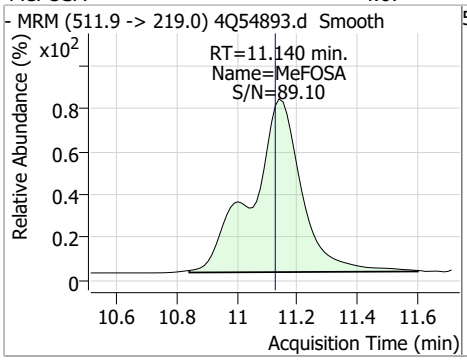


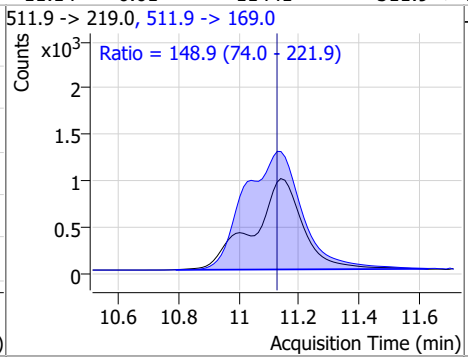


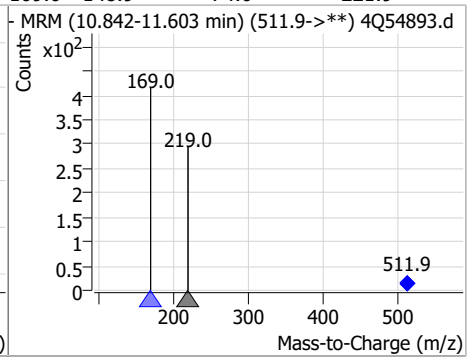


Perfluorinated Compounds by LC/MS/MS

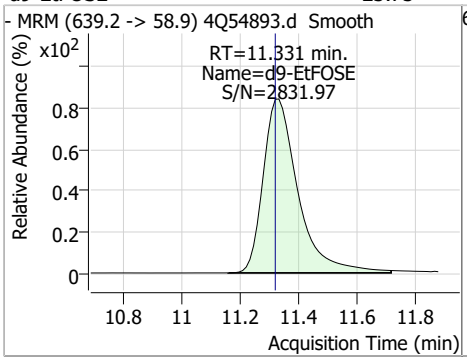
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.67	11.14	0.01	11441	511.9 -> 169.0	148.9	74.0	221.9

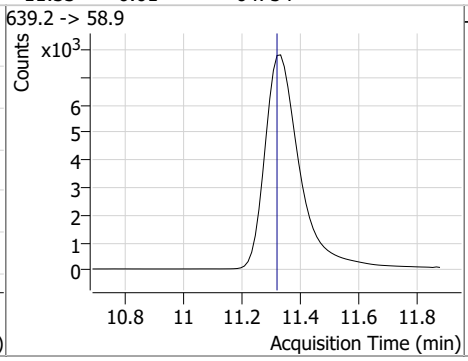


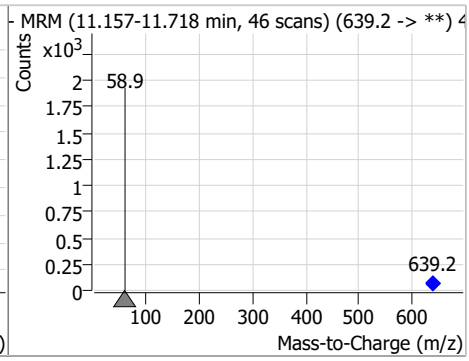




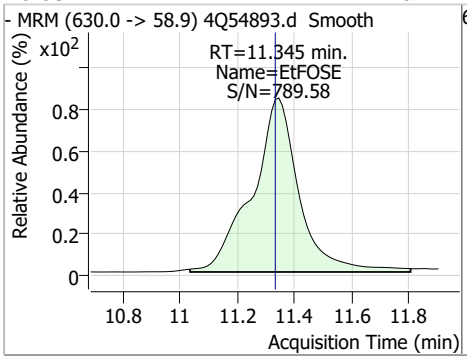
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d9-EtFOSE	23.73	11.33	0.01	64754				

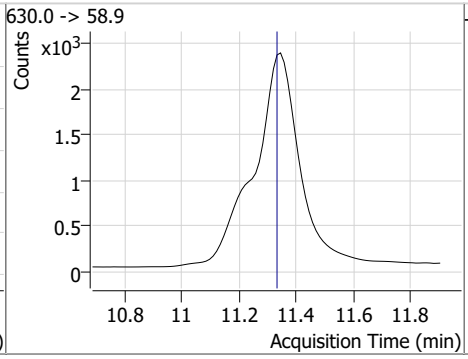


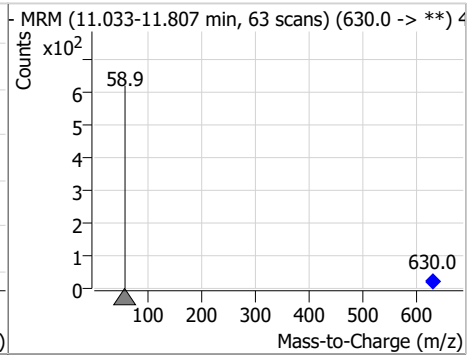




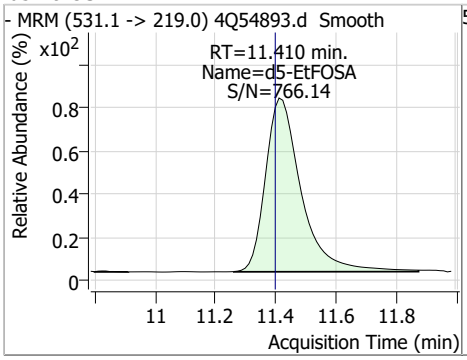
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSE	11.79	11.34	0.01	27030				

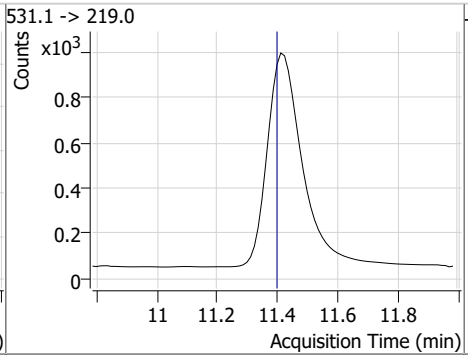


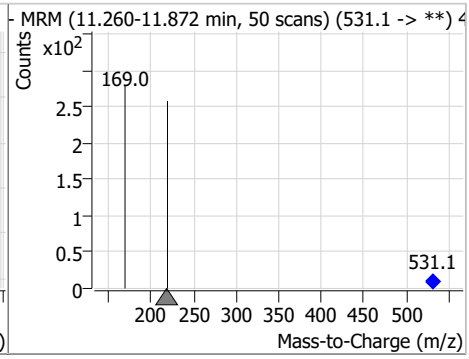




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSA	2.41	11.41	0.01	7786				

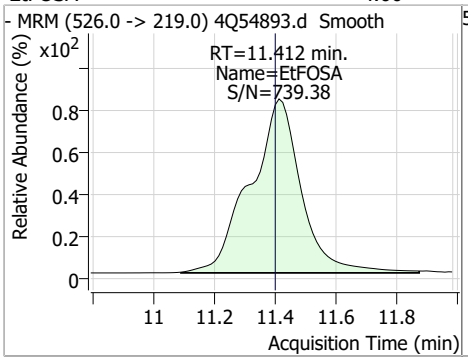


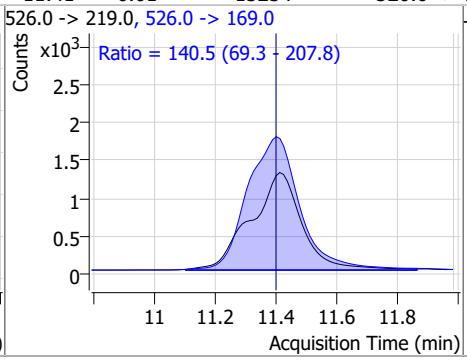


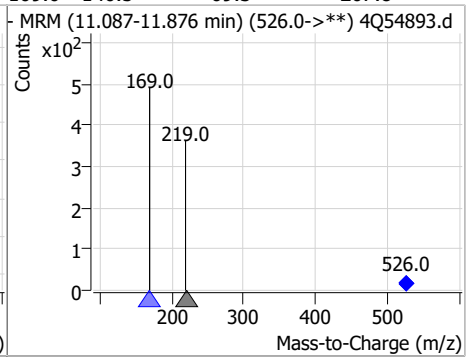


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSA	4.60	11.41	0.01	15254	526.0 -> 169.0	140.5	69.3	207.8







Manual Integration Approval Summary

Sample Number: S4Q804-CC804
Lab FileID: 4Q54893.D
Injection Time: 12/08/23 21:49

Method: EPA DRAFT 1633
Analyst approved: 12/10/23 12:52 Anna Ludwig
Supervisor approved: 12/11/23 16:36 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		7.05	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.14	Split peak
EtFOSAA	2991-50-6		8.31	Split peak

SGS ORLANDO

LCMS4-4Q ANALYSIS LOG

DATE:	12/08/23
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	6 ul
INSTRUMENT:	LCMS4-4Q

METHODS:	1633
PROC. METH:	1633_120823_S4Q804
CAL DATE:	12/08/23
ANALYST:	AL
RUN BATCH:	S4Q804

ELUENT A LOT #:	233675 w5%ACN 226166 2mMAMAC: 11706
ELUENT B LOT #:	ACN 226166
IC/CC STD LOT #:	LCMS 2212G
ICV STD LOT #:	LCMS 2211
ISTD/ID STD LOT #:	12087D + 12030I

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q54847.d	P1-B9	ccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
2	4Q54848.d	P1-B9	ccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
3	4Q54849.d	P1-B1	RT TDCA	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	pass
4	4Q54850.d	P1-B2	RT BR_LN	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	pass
5	4Q54851.d	P1-A1	ic804-0	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	check tune file
6	4Q54852.d	P1-A2	ic804-1	1633full_4Q.m	Calibration	1.6/500	OP99999,S4Q804,500,,,5.0,1,water	pass
7	4Q54853.d	P1-A3	ic804-2	1633full_4Q.m	Calibration	3.2/500	OP99999,S4Q804,500,,,5.0,1,water	pass
8	4Q54854.d	P1-A4	ic804-3	1633full_4Q.m	Calibration	10/500	OP99999,S4Q804,500,,,5.0,1,water	pass
9	4Q54855.d	P1-A5	icc804-4	1633full_4Q.m	Calibration	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
10	4Q54856.d	P1-A6	ic804-5	1633full_4Q.m	Calibration	40/500	OP99999,S4Q804,500,,,5.0,1,water	pass
11	4Q54857.d	P1-A7	ic804-6	1633full_4Q.m	Calibration	100/500	OP99999,S4Q804,500,,,5.0,1,water	pass
12	4Q54858.d	P1-A8	ic804-7	1633full_4Q.m	Calibration	200/500	OP99999,S4Q804,500,,,5.0,1,water	pass
13	4Q54859.d	P1-A9	ic804-8	1633full_4Q.m	Calibration	1x	OP99999,S4Q804,500,,,5.0,1,water	pass
14	4Q54860.d	P1-A1	iblk	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
15	4Q54861.d	P1-B3	icv804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
16	4Q54862.d	P1-B4	icv804-20	1633full_4Q.m	QC	100/500	OP99999,S4Q804,500,,,5.0,1,water	pass
17	4Q54863.d	P1-A5	cc804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
18	4Q54864.d	P1-A2	cc804-1.0LL	1633full_4Q.m	QC	1.6/500	OP99999,S4Q804,500,,,5.0,1,water	pass
19	4Q54865.d	P2-A9	op471-bs	1633full_4Q.m	Sample		OP471,S4Q804,5.00,,,5.0,1,soil	✓
20	4Q54866.d	P2-B1	op471-llbs:3	1633full_4Q.m	Sample		OP471,S4Q804,5.00,,,5.0,1,soil	✓
21	4Q54867.d	P2-B2	op471-mb	1633full_4Q.m	Sample		OP471,S4Q804,5.00,,,5.0,1,soil	✓
22	4Q54868.d	P2-B3	fc11193-41	1633full_4Q.m	Sample		OP471,S4Q804,4.99,,,5.0,1,soil	✓
23	4Q54869.d	P2-B4	fc11193-42	1633full_4Q.m	Sample		OP471,S4Q804,5.00,,,5.0,1,soil	✓
24	4Q54870.d	P2-B5	fc11193-43	1633full_4Q.m	Sample		OP471,S4Q804,4.99,,,5.0,1,soil	✓
25	4Q54871.d	P2-B6	fc11193-44	1633full_4Q.m	Sample		OP471,S4Q804,5.02,,,5.0,1,soil	✓
26	4Q54872.d	P1-A5	cc804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
27	4Q54873.d	P1-A1	iccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
28	4Q54874.d	P2-B7	op471-m-bs	1633full_4Q.m	Sample		OP471,S4Q804,5.00,,,5.0,1,soil	✓
29	4Q54875.d	P2-B8	op471-m-llbs:3	1633full_4Q.m	Sample		OP471,S4Q804,5.00,,,5.0,1,soil	✓
30	4Q54876.d	P2-B9	op471-m-mb	1633full_4Q.m	Sample		OP471,S4Q804,5.00,,,5.0,1,soil	✓
31	4Q54877.d	P2-C1	fc11193-41m	1633full_4Q.m	Sample		OP471,S4Q804,4.99,,,5.0,1,soil	✓
32	4Q54878.d	P2-C2	fc11193-42m	1633full_4Q.m	Sample		OP471,S4Q804,5.01,,,5.0,1,soil	✓
33	4Q54879.d	P2-C3	fc11193-43m	1633full_4Q.m	Sample		OP471,S4Q804,5.02,,,5.0,1,soil	✓
34	4Q54880.d	P2-C4	fc11193-44m	1633full_4Q.m	Sample		OP471,S4Q804,5.01,,,5.0,1,soil	✓
35	4Q54881.d	P1-A5	cc804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass

Printed 12/11/2023 @ 8:41 AM

SGS ORLANDO LCMS4-4Q ANALYSIS LOG

36	4Q54882.d	P1-A1	iccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
37	4Q54883.d	P2-C5	op495-bs	1633full_4Q.m	Sample		OP495,S4Q804,500,,,5.0,1,water	✓
38	4Q54884.d	P2-C6	op495-llbs:3	1633full_4Q.m	Sample		OP495,S4Q804,500,,,5.0,1,water	✓
39	4Q54885.d	P2-C7	op495-mb	1633full_4Q.m	Sample		OP495,S4Q804,500,,,5.0,1,water	✓
40	4Q54886.d	P2-C8	fc11689-1	1633full_4Q.m	Sample		OP495,S4Q804,550,,,5.0,1,water	✓
41	4Q54887.d	P2-C9	fc11715-1	1633full_4Q.m	Sample		OP495,S4Q804,550,,,5.0,1,water	✓
42	4Q54888.d	P2-D1	fc11715-2	1633full_4Q.m	Sample		OP495,S4Q804,520,,,5.0,1,water	✓
43	4Q54889.d	P2-D2	op495-ms	1633full_4Q.m	Sample		OP495,S4Q804,550,,,5.0,1,water	✓
44	4Q54890.d	P2-D3	fc11715-3	1633full_4Q.m	Sample		OP495,S4Q804,510,,,5.0,1,water	✓
45	4Q54891.d	P2-D4	op495-dup	1633full_4Q.m	Sample		OP495,S4Q804,530,,,5.0,1,water	✓
46	4Q54892.d	P2-D5	fc11715-4	1633full_4Q.m	Sample		OP495,S4Q804,560,,,5.0,1,water	✓
47	4Q54893.d	P1-A5	cc804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
48	4Q54894.d	P1-A1	iccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
49	4Q54895.d	P2-D6	op496-bs	1633full_4Q.m	Sample		OP496,S4Q804,500,,,5.0,1,water	✓
50	4Q54896.d	P2-D7	op496-llbs:2	1633full_4Q.m	Sample		OP496,S4Q804,500,,,5.0,1,water	✓
51	4Q54897.d	P2-D8	op496-mb	1633full_4Q.m	Sample		OP496,S4Q804,500,,,5.0,1,water	✓
52	4Q54898.d	P2-D9	fc11610-1	1633full_4Q.m	Sample		OP496,S4Q804,540,,,5.0,1,water	✓
53	4Q54899.d	P2-E1	fc11610-2	1633full_4Q.m	Sample		OP496,S4Q804,540,,,5.0,1,water	✓
54	4Q54900.d	P2-E2	fc11610-3	1633full_4Q.m	Sample		OP496,S4Q804,520,,,5.0,1,water	rr 5x low eis
55	4Q54901.d	P2-E3	fc11610-4	1633full_4Q.m	Sample		OP496,S4Q804,520,,,5.0,1,water	rr 5x low eis
56	4Q54902.d	P2-E4	fc11707-11	1633full_4Q.m	Sample		OP496,S4Q804,60,,,5.0,1,water	✓
57	4Q54903.d	P2-E5	fc11673-1	1633full_4Q.m	Sample		OP496,S4Q804,500,,,5.0,1,water	✓
58	4Q54904.d	P2-E6	op496-ms	1633full_4Q.m	Sample		OP496,S4Q804,490,,,5.0,1,water	✓
59	4Q54905.d	P1-A5	cc804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
60	4Q54906.d	P1-A1	iccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
61	4Q54907.d	P2-E7	fc11673-2	1633full_4Q.m	Sample		OP496,S4Q804,500,,,5.0,1,water	✓
62	4Q54908.d	P2-E8	op496-dup	1633full_4Q.m	Sample		OP496,S4Q804,480,,,5.0,1,water	✓
63	4Q54909.d	P2-E9	fc11673-3	1633full_4Q.m	Sample		OP496,S4Q804,520,,,5.0,1,water	✓
64	4Q54910.d	P2-F1	fc11673-4	1633full_4Q.m	Sample		OP496,S4Q804,500,,,5.0,1,water	✓
65	4Q54911.d	P2-F2	fc11673-5	1633full_4Q.m	Sample		OP496,S4Q804,500,,,5.0,1,water	✓
66	4Q54912.d	P2-F3	op519-bs	1633full_4Q.m	Sample		OP519,S4Q804,500,,,5.0,1,water	✓
67	4Q54913.d	P2-F4	op519-llbs:3	1633full_4Q.m	Sample		OP519,S4Q804,500,,,5.0,1,water	✓
68	4Q54914.d	P2-F5	op519-mb	1633full_4Q.m	Sample		OP519,S4Q804,500,,,5.0,1,water	✓
69	4Q54915.d	P2-F6	fc11645-1	1633full_4Q.m	Sample		OP519,S4Q804,495,,,5.0,1,water	✓
70	4Q54916.d	P2-F7	fc11645-2	1633full_4Q.m	Sample		OP519,S4Q804,495,,,5.0,1,water	✓
71	4Q54917.d	P1-A5	cc804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
72	4Q54918.d	P1-A1	iccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
73	4Q54919.d	P2-F8	fc11645-3	1633full_4Q.m	Sample		OP519,S4Q804,495,,,5.0,1,water	✓
74	4Q54920.d	P2-F9	fc11645-4	1633full_4Q.m	Sample		OP519,S4Q804,495,,,5.0,1,water	✓
75	4Q54921.d	P3-A1	fc11645-5	1633full_4Q.m	Sample		OP519,S4Q804,520,,,5.0,1,water	✓
76	4Q54922.d	P3-A2	fc11645-6	1633full_4Q.m	Sample		OP519,S4Q804,510,,,5.0,1,water	✓
77	4Q54923.d	P3-A3	fc11645-7	1633full_4Q.m	Sample		OP519,S4Q804,500,,,5.0,1,water	✓
78	4Q54924.d	P3-A4	fc11645-8	1633full_4Q.m	Sample		OP519,S4Q804,500,,,5.0,1,water	✓

Printed 12/11/2023 @ 8:41 AM

SGS ORLANDO LCMS4-4Q ANALYSIS LOG

79	4Q54925.d	P3-A5	fc11645-9	1633full_4Q.m	Sample		OP519,S4Q804,500,,,5.0,1,water	✓
80	4Q54926.d	P3-A6	fc11645-10	1633full_4Q.m	Sample		OP519,S4Q804,495,,,5.0,1,water	✓
81	4Q54927.d	P3-A7	fc11645-11	1633full_4Q.m	Sample		OP519,S4Q804,505,,,5.0,1,water	✓
82	4Q54928.d	P3-A8	fc11645-12	1633full_4Q.m	Sample		OP519,S4Q804,505,,,5.0,1,water	✓
83	4Q54929.d	P1-A5	cc804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
84	4Q54930.d	P1-A1	iccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd
85	4Q54931.d	P3-A9	op519-ms	1633full_4Q.m	Sample		OP519,S4Q804,490,,,5.0,1,water	✓
86	4Q54932.d	P3-B1	fc11645-13	1633full_4Q.m	Sample		OP519,S4Q804,505,,,5.0,1,water	✓
87	4Q54933.d	P3-B2	fc11645-14	1633full_4Q.m	Sample		OP519,S4Q804,510,,,5.0,1,water	✓
88	4Q54934.d	P3-B3	op519-dup	1633full_4Q.m	Sample		OP519,S4Q804,500,,,5.0,1,water	✓
89	4Q54935.d	P3-B4	fc11645-15	1633full_4Q.m	Sample		OP519,S4Q804,510,,,5.0,1,water	✓
90	4Q54936.d	P3-B5	fc11645-16	1633full_4Q.m	Sample		OP519,S4Q804,510,,,5.0,1,water	✓
91	4Q54937.d	P3-B6	fc11645-17	1633full_4Q.m	Sample		OP519,S4Q804,510,,,5.0,1,water	✓
92	4Q54938.d	P3-B7	fc11645-18	1633full_4Q.m	Sample		OP519,S4Q804,520,,,5.0,1,water	rr 2x e flag
93	4Q54939.d	P3-B8	fc11645-19	1633full_4Q.m	Sample		OP519,S4Q804,515,,,5.0,1,water	rr 1x co
94	4Q54940.d	P1-A5	ecc804-4	1633full_4Q.m	QC	20/500	OP99999,S4Q804,500,,,5.0,1,water	pass
95	4Q54941.d	P1-A1	iccb	1633full_4Q.m	Sample		OP99999,S4Q804,500,,,5.0,1,water	nd

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2211	Full List 40 Spike Cocktail mix)	12006/ 12047A	PFOA-DOD (28 comp)	Absolute	06/26/28	09/19/24	1.0 ppm	400 µL	4.0 mL	100 ppb	95% MeOH 5% H_2O	10/18/23	02/07/24	JR
↓	↓	LCMS 2210	40 List Add-on #1	–	–	02/08/24	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2156	40 List Add-on #2	–	–	02/07/24	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	LCMS 2193	FOSE Std.	–	–	03/25/24	5.0 ppm	↓	↓	* 500 ~~500~~ ppb	↓	↓	↓	↓
LCMS 2212 A-G	1633 Cal std-spike	LCMS 2198	Br-LN Et-Me	SGS Labs	n/a	4/4/24	2ppm 5ppm	250 nL	4mL	125 312.5ppb	1633 mix	10/22/23	4/4/24	MJ
↓	↓	12013B 12032	PFAC MxH	Wellington	4/19/28	10/15/24 10/22/24	1-4 ppm	↓	↓	62.5 125 250ppb	(2688nL)	↓	↓	↓
↓	↓	12033 12005	PFAC MXF	↓	3/24/26	10/15/24 10/22/24	2ppm	↓	↓	125ppb	↓	↓	↓	↓
↓	↓	12015A,B 12034	PFAC MxG	↓	7/27/28	10/15/24 10/22/24	2ppm	↓	↓	~~312~~ 125 ~~1160ppb~~ ppb	↓	↓	↓	↓
↓	↓	12091 12120	PFAC MXJ	↓	3/28/28	10/15/24 10/22/24	4-20 ppm	312 nL	↓	312 1160ppb	↓	↓	↓	↓
LCMS 2213	PFC MDL Spike	LCMS 2208	PFC Spike	—	—	03/13/24	400ppb	100 µL	1.0mL	40ppb	95% MeOH 5% H_2O	10/24/23	03/13/24	NG
LCMS 2214	6850 STD	11755	perchlorate	Absolute	07/16/24	07/16/24	100ppm	50 µl	50ml	100ppb	HPLC H_2O 233675	10/24/23	04/24/24	AL
LCMS 2215	1633 BR-LN Me/Etfosa : me/etfose	11797	br-N MeFOSA	Wellington	8/23/27	10/4/24	50ppm	200 nL	5mL	2ppm	1633 mix (3600nL)	10/25/23	4/4/24	MJ
↓	↓	11798	br-N ETFOSA	↓	10/7/27	10/4/24	↓	↓	↓	2ppm	↓	↓	↓	↓
↓	↓	12070A	br-N MeFOSE	↓	10/7/27	10/4/24	↓	500 nL	↓	5ppm	↓	↓	↓	↓
↓	↓	12071A	br-N EtFOSE	↓	10/7/27	10/4/24	↓	↓	↓	5ppm	↓	↓	↓	↓
						JR 10/30/23								

* JR 10/18/23

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
tested 5Q 9/28 LCMS 2196	PFC 10 Std	12006	PFOA-DOD (28 comp)	Absolute	06/26/28	09/19/24	1.0 ppm	400 µL	4.0 mL	100 ppb	95:5 MeOH:H2O	09/28/23	03/13/24	JR
↓	↓	11432	N-MeFOSA-M	Wellington Labs	02/28/27	03/13/24	50 ppm	8 µL	↓	↓	↓	↓	↓	↓
		11793	PFBSA-I	↓	02/01/28	08/08/24	↓	↓						
		11792	PFHxSA-I		12/01/27	08/08/24								
↓	↓	11332	PFECHS	↓	03/28/27	04/18/24	↓	↓	↓	↓	↓	↓	↓	↓
N/A	↓ JR				N/A									
LCMS 2197A,D	1633 CAL std. (spike)	LCMS 2191	Br-LN Et-Me	SGS Labs	N/A	12/28/23 12/28/23	2ppm 5ppm	250NL	4mL	125 312.5ppb	1633 mix (2668µL)	10/1/23	12/28/23	MV
↓	↓	11968 11989	PFAC MxH	Wellington	4-19-28	9-24-24 10-01-24	1-4 ppm	250NL	↓	62.5 125 250ppb	↓	↓	↓	↓
		11990	PFAC MxF	↓	3-24-26	9/24/24	2ppm	250NL		125ppb				
		11948B 11970	PFAC MxG	↓	12/1/27	9/24/24 10/1/24	2ppm	250NL		125ppb				
↓	↓	12016A 12016B	PFAC MxJ	↓	3/28/28	9/24/24 10/1/24	4-20 ppm	312NL	↓	312 1160ppb	↓	↓	↓	↓
	MW ↓ MW						MW							
LCMS 2198	1633BR-LN Me/Etfosa/meletfose	11797	br-N MeFOSA	Wellington	8/23/27	10/4/24	50ppm	200NL	5mL	2ppm	1633 mix	10/4/23	4/4/24	MW
↓	↓	11798	br-N ETFOSA	↓	10/7/27	10/4/24	↓	200NL	↓	2ppm	(3600 mL)	↓	↓	↓
		12070A	br-N MeFOSE		10/7/27	10/4/24		500NL		5ppm				
↓	↓	12071A	br-N EtFOSE	↓	10/7/27	10/4/24	↓	500NL	↓	5ppm	↓	↓	↓	↓

*** based on date opened as specified in each SGS - Orlando SOP.**

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2210	40 List Std Add-on #1	11649	10:2 FTS	Wellington Labs	12/01/27	08/07/24	50 ppm	80 µL	4.0mL	1.0ppm	95% MeOH 5% H_2O	10/18/23	02/08/24	LR
		11461 ~~10840~~ *	L-PFDoS		~~07/08/24~~ * 04/20/27	10/18/24								
		11710	N-MeFOSA-M		11/11/27	08/07/24								
		12122	N-EtFOSA-M		09/19/28	10/18/24								
		11481	PFHxDA		02/23/27	10/18/24								
		11462	PFODA		07/05/27	10/18/24								
		11116B	5:3FTCA FP-PA		02/03/27	02/08/24								
		11994	5:3FTCA MSPFPeA		08/02/27	09/05/24								
		11116A	7:3FTCA FHpPA		11/12/25	02/08/24								
		11794	PFECHS		03/14/28	08/07/24								
		11464	PFEESA		11/22/27	10/18/24								
		11465	PFMBA PF5OHxA		08/02/27	08/07/24								
		11648	PFMPA PF4OPeA		08/02/27	09/07/24								
		11467	NFHDA 3,6-OPFHpA		06/08/27	10/18/24								
						LR 10/18/23								

Created on ZQ 0/18

*LR 10/18/23 * based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	Exp. Date	Initials
LCMS 2156	List 40 ADD ON #2	11513	FBSA-I	Wellington	11/10/26	4/18/24	50 ppm	80 NL	4.0 mL	1 ppm	95% meoH 5% H2O (3760)	8/7/23	2/7/24	MW
↓	↓	11514	FHxSAI	↓	12/29/26	4/18/24	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	11140B	L-PFAS	↓	7/12/26	5/9/24	↓	↓	↓	↓	↓	↓	↓	↓
LCMS 2157	1633 RT Br-LN	11496	br-Fosa	Wellington	10/7/27	12/28/23	50 ppm	10 NL 5 mL	5 mL	100 ppb	1633 mix (4930)	8/7/23	12/28/23	MW
↓	↓	11497	br-N meFosa	↓	8/23/27	↓	↓	10 mL	↓	↓	↓	↓	↓	↓
↓	↓	11498	br-N EtFosa	↓	10/7/27	↓	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	11494	br-N meFose	↓	10/7/27	↓	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	11495	br-N EtFose	↓	10/7/27	↓	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	11502	T-PFOA	↓	01/27/27	↓	↓	↓	↓	↓	↓	↓	↓	↓
↓	↓	11527	IP PFNA	↓	01/10/27	↓	↓	↓	↓	↓	↓	↓	↓	↓
LCMS 2158 AE	1633 Cal std. Spike	LCMS ~~#2159~~ 21409	Br-LN Et-Me	SGS Labs	N/A	12/28/23	2 ppm 5 ppm	250 NL	4 mL	125 312.5 ppb	1633 mix 2688 NL	8/7/23	12/28/23	MW
↓	↓	11930→ (11930†)	PFAC MxH	Wellington	4/19/28	7/31/24 8/7/24	1-4 ppm	↓	↓	62.5 125 250 ppb	↓	↓	↓	↓
↓	↓	11931A 11931B	PFAC MxF	↓	3/24/26	7-31-24 8-7-24	2 ppm	↓	↓	125 ppb	↓	↓	↓	↓
↓	↓	11907 11932A	PFAC Mx6	↓	12/1/27	7-31-24 8-7-24	2 ppm	↓	↓	125 ppb	↓	↓	↓	↓
↓	↓	11933A 11933B	PFAC MxJ	↓	3-28-28	7-31-24 8-7-24	4-20 ppm	312 NL	↓	312 1160 ppb	↓	↓	↓	↓
						MA Continue next page			8/7/23					

* based on date opened as specified in each SGS - Orlando SOP.

Organic Standards Preparation Log

SGS - Orlando Std. #	Name Description	Parent Std. #	Parent Name	Parent Vendor	Vendor Exp. Date	Lab* Exp. Date	Parent Conc.	Vol. Used	Final Vol.	Final Conc.	Diluent Lot	Prep. Date	**Exp. Date**	Initials
LCMS 2192A-	1633 Cal std. (spike)	LCMS 2191	~~PFAC-MXB~~ Et-Me	Sgs Labs	N/A	12/28/23	2ppm 5ppm	250NL	4mL	125 312.5ppb	1633 mix (2688NL)	9/24/23	~~12/28/23~~ ~~12/6/23~~ mw	MW
↓	↓	11946 11968	PFAC MxH	Wellington	4-19-28	9/21/23 9/24/23	1-4 ppm	250NL	↓	62.5 125 250ppb	↓	↓	↓	↓
		11947B 11964	PFAC MxF	↓	3-24-26	9/15/24 9/24/24	2ppm	250NL		125ppb				
		11948A 11948B	PFAC MxG		12-1-27	9/15/24 9/24/24	2ppm	250NL		125ppb				
↓	↓	11971 11992 120116A	PFAC MxJ	↓	3-28-28	9/15/24 9/24/24	4-20 ppm	312NL	↓	312 1160 ppb	↓	↓	↓	↓
LCMS 2193	FOSE Std	11409	N-Et-FOSE	Wellington Labs	05/13/27	09/25/24	50ppm	200 uL	2.0mL	5ppb	95:1. MeOH 5:1. H_2O	09/25/23	03/25/24	LR
↓	↓	11410	N-Me-FOSE	↓	05/13/27	09/25/24	↓	↓	↓	↓	↓	↓	↓	↓
LCMS 2194	Full List 40 Spike (cal std)	11964/ 12006	PFOA-DOD (28 comps)	Absolute	03/13/28	09/11/24	1.0 ppm	400 uL	4.0mL	100ppb	95:1. MeOH 5:1. H_2O	09/25/23	10/18/23	LR
↓	↓	LCMS 2179	40 List Add-on #1	SGS Std	-	10/18/23								
		LCMS 2156	40 List Add-on #2	↓	-	02/07/24								
↓	↓	LCMS 2193	FOSE Std.	↓	-	03/25/24	5.0 ppm	↓	↓	500ppb	↓	↓	↓	↓
LCMS 2195	PFC Spike	12006	PFOA-DOD (28 comp)	Absolute	06/26/28	09/19/24	1.0 ppm	2mL	5.0mL	400ppb	95:1. MeOH 5:1. H_2O	09/28/23	03/13/24	LR
↓	↓	11432	N-Me FOSA-M	Wellington Labs	02/28/27	03/13/24	50ppm	40 µL	↓	↓	↓	↓	↓	↓
		11793	FBSA-1	↓	02/01/28	08/08/24	↓	↓						
		11792	FHxSA-1		12/01/27	08/08/24								
↓	↓	11332	PFECHS	↓	03/28/27	04/18/24	↓	↓	↓	↓	↓	↓	↓	↓

tested 2Q 9/25

* based on date opened as specified in each SGS - Orlando SOP.

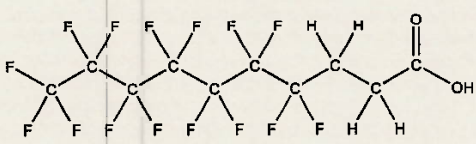
#1116 A-B MW

111168 on the back MW

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	FHpPA	**LOT NUMBER:**	FHpPA1020
COMPOUND:	3-Perfluoroheptyl propanoic acid		
STRUCTURE:		**CAS #:**	812-70-4



MOLECULAR FORMULA:	$C_{10}H_5F_{15}O_2$	**MOLECULAR WEIGHT:**	442.12
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/12/2020		
EXPIRY DATE: (mm/dd/yyyy)	11/12/2025		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

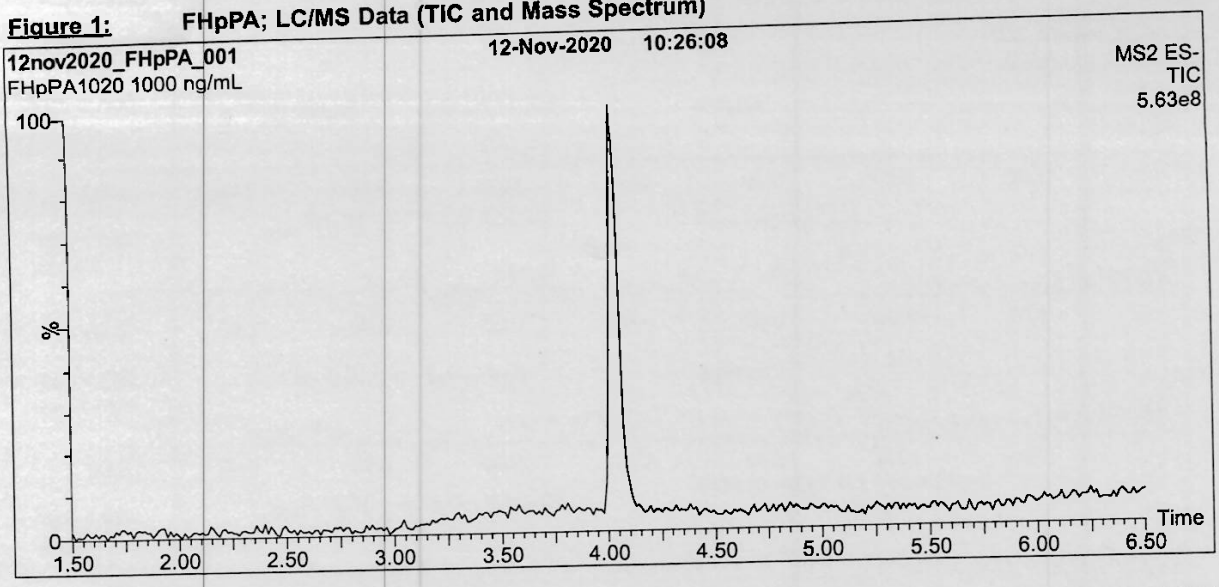
- See page 2 for further details.

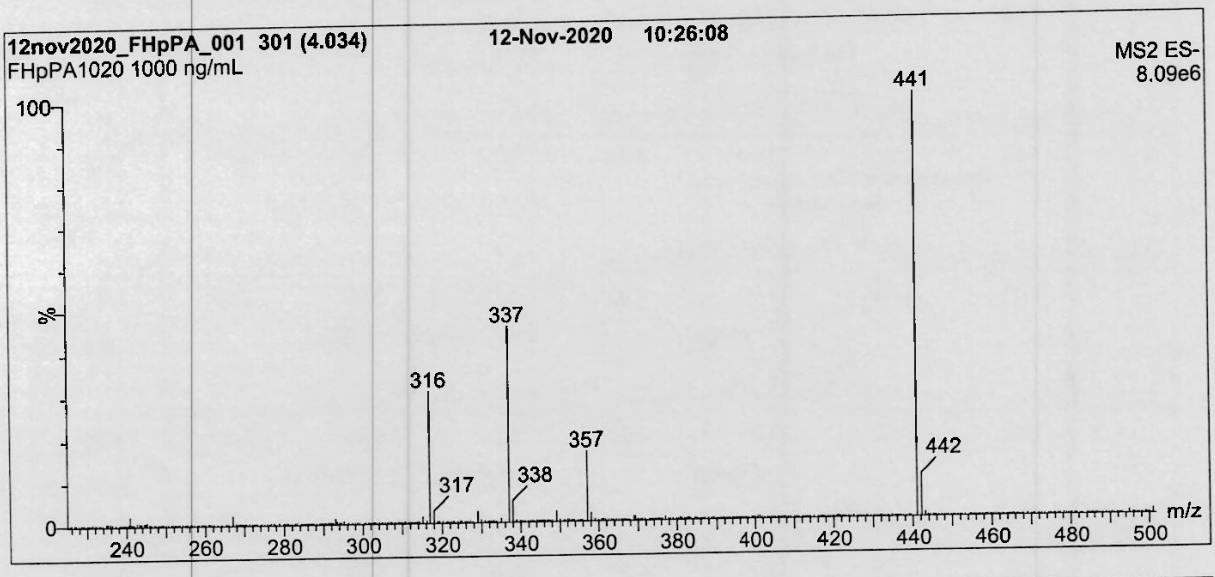
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/27/2020 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 1: FHpPA; LC/MS Data (TIC and Mass Spectrum)





Conditions for Figure 1:

Waters Acquity Ultra Performance LC
Waters Xevo TQ-S micro MS

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 45% H_2O / 55% (80:20 MeOH:ACN)
(both with 10 mM NH_4OAc buffer)
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µL/min

MS Parameters:

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 28.50
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (L/hr) = 1000

Form#:27, Issued 2004-11-10
Revision#:8, Revised 2020-09-10

FHpPA1020 (3 of 4)
rev0

FPrPA(3:3FTCA) 11116 B

WELLINGTON LABORATORIES

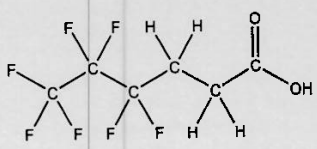
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPrPA
COMPOUND: 3-Perfluoropropyl propanoic acid

LOT NUMBER: FPrPA0122

CAS #: 356-02-5

STRUCTURE:



MOLECULAR FORMULA:	$C_6H_5F_7O_2$	**MOLECULAR WEIGHT:**	242.09
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	02/03/2022		
EXPIRY DATE: (mm/dd/yyyy)	02/03/2027		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <1% of the unsaturated 3:3 telomer acid ($C_6H_3F_7O_2$) as an impurity determined by ^{19}F NMR.

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Certified By: B.G. Chittim, General Manager **Date:** 02/04/2022 (mm/dd/yyyy)

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11140

WELLINGTON LABORATORIES

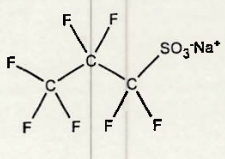
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFPrS
COMPOUND: Sodium perfluoro-1-propanesulfonate

LOT NUMBER: LPFPrS0721

CAS #: Not available

STRUCTURE:



MOLECULAR FORMULA:	$C_3F_7SO_3Na$
MOLECULAR WEIGHT:	272.07
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 46.0 ± 2.3 µg/mL (PFPrS acid) 45.8 ± 2.3 µg/mL (PFPrS anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	07/12/2021
EXPIRY DATE: (mm/dd/yyyy)	07/12/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 08/04/2021 (mm/dd/yyyy)
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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

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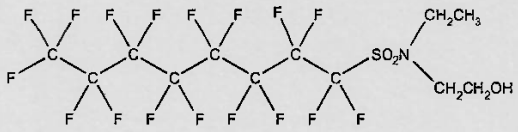
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	N-EtFOSE-M	**LOT NUMBER:**	NEtFOSE0622M
COMPOUND:	2-(N-ethylperfluoro-1-octanesulfonamido)ethanol		
STRUCTURE:		**CAS #:**	1691-99-2



11409

MOLECULAR FORMULA:	$C_{12}H_{10}F_{17}NO_3S$	**MOLECULAR WEIGHT:**	571.25
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	05/13/2022 (HRGC/LRMS) 05/13/2022 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	05/13/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By: _____ **Date:** 07/13/2022 (mm/dd/yyyy)
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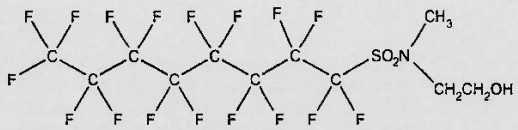
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0522M
COMPOUND: 2-(N-methylperfluoro-1-octanesulfonamido)ethanol

STRUCTURE: **CAS #:** 24448-09-7



MOLECULAR FORMULA:	$C_{11}H_8F_{17}NO_3S$	**MOLECULAR WEIGHT:**	557.22
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	05/13/2022 (HRGC/LRMS) 05/13/2022 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	05/13/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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Certified By: _____ **Date:** 06/14/2022 (mm/dd/yyyy)
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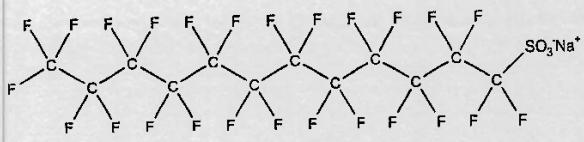
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: L-PFDoS
COMPOUND: Sodium perfluoro-1-dodecanesulfonate

LOT NUMBER: LPFDoS0422

CAS #: 1260224-54-1

STRUCTURE:



MOLECULAR FORMULA:	$C_{12}F_{25}SO_3Na$
MOLECULAR WEIGHT:	722.14
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt) 48.5 ± 2.4 µg/mL (PFDoS acid) 48.4 ± 2.4 µg/mL (PFDoS anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	04/20/2022
EXPIRY DATE: (mm/dd/yyyy)	04/20/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 05/16/2022 (mm/dd/yyyy)
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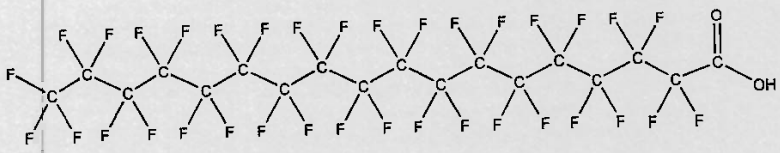
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFODA
COMPOUND: Perfluoro-n-octadecanoic acid

LOT NUMBER: PFODA0622

CAS #: 16517-11-6

STRUCTURE:



MOLECULAR FORMULA: $C_{18}HF_{35}O_2$
CONCENTRATION: 50.0 ± 2.5 µg/mL

MOLECULAR WEIGHT: 914.14
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/05/2022
EXPIRY DATE: (mm/dd/yyyy) 07/05/2027
RECOMMENDED STORAGE: Store ampoule at ambient temperature in a dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- The solubility of this product in methanol is very sensitive to storage conditions and solvent composition. The stated validity period applies to the sealed ampoules stored at ambient temperature.

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Certified By: _____ **Date:** 07/05/2022 (mm/dd/yyyy)
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Form#:27, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

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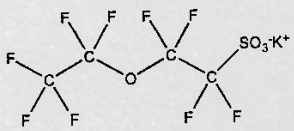
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFEESA
COMPOUND: Potassium perfluoro(2-ethoxyethane)sulfonate

LOT NUMBER: PFEESA1121

CAS #: 117205-07-9

STRUCTURE:



MOLECULAR FORMULA:	$C_4F_9SO_4K$
MOLECULAR WEIGHT:	354.19
CONCENTRATION:	50.0 ± 2.5 µg/mL (K salt) 44.6 ± 2.2 µg/mL (PFEESA acid) 44.5 ± 2.2 µg/mL (PFEESA anion)
SOLVENT(S):	Methanol
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	11/22/2021
EXPIRY DATE: (mm/dd/yyyy)	11/22/2026
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~0.2% of perfluoro-n-octanoic acid (PFOA).

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Certified By: B.G. Chittim, General Manager **Date:** 11/29/2021 (mm/dd/yyyy)

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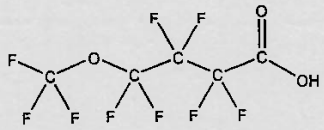
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PF5OHxA	**LOT NUMBER:**	PF5OHxA0722
COMPOUND:	Perfluoro-5-oxahexanoic acid		
SYNONYM:	Perfluoro-4-methoxybutanoic acid (PFMBA)		
STRUCTURE:		**CAS #:**	863090-89-5



MOLECULAR FORMULA:	$C_5HF_9O_3$	**MOLECULAR WEIGHT:**	280.05
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/02/2022		
EXPIRY DATE: (mm/dd/yyyy)	08/02/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ **Date:** 08/26/2022 (mm/dd/yyyy)
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11467

WELLINGTON LABORATORIES

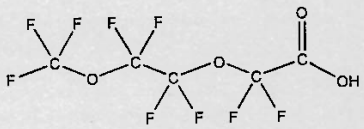
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 3,6-OPFHpA
COMPOUND: Perfluoro-3,6-dioxaheptanoic acid

LOT NUMBER: 36OPFHpA0522

CAS #: 151772-58-6

STRUCTURE:



MOLECULAR FORMULA: $C_5HF_8O_4$
MOLECULAR WEIGHT: 296.04
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 06/08/2022
EXPIRY DATE: (mm/dd/yyyy) 06/08/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By: _____ **Date:** 06/27/2022 (mm/dd/yyyy)
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11481 rec'd 10/21/22

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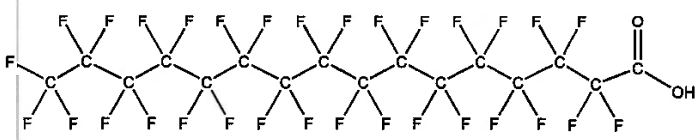
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxDA
COMPOUND: Perfluoro-n-hexadecanoic acid
LOT NUMBER: PFHxDA0222

STRUCTURE:
CAS #: 67905-19-5



MOLECULAR FORMULA: $C_{16}HF_{31}O_2$
MOLECULAR WEIGHT: 814.13
CONCENTRATION: 50.0 ± 2.5 µg/mL
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 02/23/2022
EXPIRY DATE: (mm/dd/yyyy) 02/23/2027
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/08/2022 (mm/dd/yyyy)
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11513 rec'd 11/14/22

WELLINGTON LABORATORIES

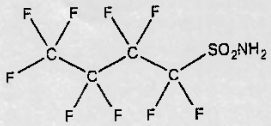
CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: FBSA-I
COMPOUND: Perfluoro-1-butanesulfonamide

LOT NUMBER: FBSA1121I

CAS #: 30334-69-1

STRUCTURE:



MOLECULAR FORMULA:	$C_4H_2F_9NO_2S$	**MOLECULAR WEIGHT:**	299.11
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Isopropanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/10/2021		
EXPIRY DATE: (mm/dd/yyyy)	11/10/2026		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 11/10/2021 (mm/dd/yyyy)
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11514 rec'd 11/14/22

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS

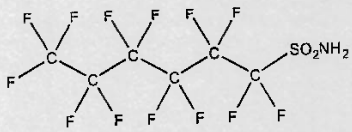
DOCUMENTATION

PRODUCT CODE: FHxSA-I
COMPOUND: Perfluoro-1-hexanesulfonamide

LOT NUMBER: FHxSA1221I

CAS #: 41997-13-1

STRUCTURE:



MOLECULAR FORMULA:	$C_6H_2F_{13}NO_2S$
CONCENTRATION:	50.0 ± 2.5 µg/mL
CHEMICAL PURITY:	>98%
LAST TESTED: (mm/dd/yyyy)	12/29/2021
EXPIRY DATE: (mm/dd/yyyy)	12/29/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

MOLECULAR WEIGHT: 399.13
SOLVENT(S): Isopropanol

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 01/10/2022 (mm/dd/yyyy)
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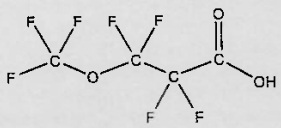
11648 Rec. 02/13/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PF4OPeA	**LOT NUMBER:**	PF4OPeA0722
COMPOUND:	Perfluoro-4-oxapentanoic acid		
SYNONYM:	Perfluoro-3-methoxypropanoic acid (PFMPA)		
STRUCTURE:		**CAS #:**	377-73-1



MOLECULAR FORMULA:	$C_4HF_7O_3$	**MOLECULAR WEIGHT:**	230.04
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/02/2022		
EXPIRY DATE: (mm/dd/yyyy)	08/02/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/15/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

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11649 Rec. 02/13/23

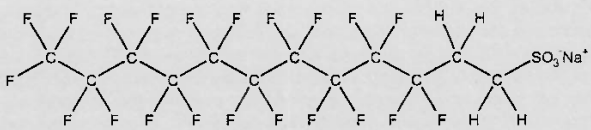
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS1122

COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecanesulfonate

STRUCTURE: **CAS #:** 108026-35-3



MOLECULAR FORMULA:	$C_{12}H_4F_{21}SO_3Na$	**MOLECULAR WEIGHT:**	650.18
CONCENTRATION:	50.0 ± 2.5 µg/mL (Na salt)	**SOLVENT(S):**	Methanol
	48.3 ± 2.4 µg/mL (10:2FTS acid)		
	48.2 ± 2.4 µg/mL (10:2FTS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	12/01/2022		
EXPIRY DATE: (mm/dd/yyyy)	12/01/2027		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 12/09/2022 (mm/dd/yyyy)
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11710
rec'd: 03/17/23

WELLINGTON LABORATORIES

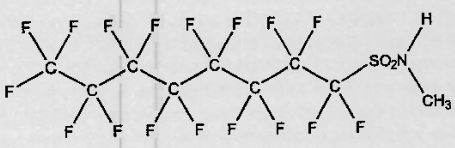
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSA-M
COMPOUND: N-Methylperfluoro-1-octanesulfonamide

LOT NUMBER: NMeFOSA1122M

CAS #: 31506-32-8

STRUCTURE:



MOLECULAR FORMULA:	$C_9H_4F_{17}NO_2S$	**MOLECULAR WEIGHT:**	513.17
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/11/2022		
EXPIRY DATE: (mm/dd/yyyy)	11/11/2027		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 11/25/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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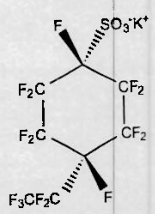
11794
rec'd: 05/15/23

WELLINGTON LABORATORIES

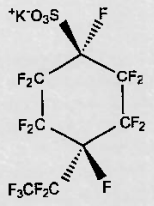
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFECHS
LOT NUMBER: PFECHS0223
COMPOUND: Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:



cis-isomer



trans-isomer

CAS #: 335-24-0

MOLECULAR FORMULA: $C_8F_{15}SO_3K$
MOLECULAR WEIGHT: 500.22
CONCENTRATION: 50.0 ± 2.5 µg/mL (K salt)
46.2 ± 2.3 µg/mL (PFECHS acid)
46.1 ± 2.3 µg/mL (PFECHS anion)
SOLVENT(S): Methanol
CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 03/14/2023
EXPIRY DATE: (mm/dd/yyyy) 03/14/2028
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains a mixture of the *cis*/*trans* isomers of PFECHS at a ratio of 1:1.27 (*cis*:*trans*, by ^{19}F NMR).

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Certified By: _____ **Date:** 03/16/2023 (mm/dd/yyyy)
B.G. Chittim, General Manager

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSA

N-Methylperfluorooctanesulfonamide
Isomeric Mix

PRODUCT CODE:	br-NMeFOSA
LOT NUMBER:	brNMeFOSA0822
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	08/18/2022
LAST TESTED: (mm/dd/yyyy)	08/23/2022
EXPIRY DATE: (mm/dd/yyyy)	08/23/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 31506-32-8 (for linear isomer).

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

7.9.1
7

br-NEtFOSA

N-Ethylperfluorooctanesulfonamide
Isomeric Mix

PRODUCT CODE:	br-NEtFOSA
LOT NUMBER:	brNEtFOSA0922
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	08/23/2022
LAST TESTED: (mm/dd/yyyy)	10/07/2022
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamide (linear and branched isomers). The full name, structure, and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (SIR)
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 4151-50-2 (for linear isomer).

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11994
recd:08/31/23

WELLINGTON LABORATORIES

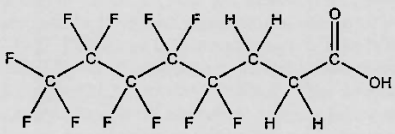
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FPePA (5:3)
COMPOUND: 3-Perfluoropentyl propanoic acid

LOT NUMBER: FPePA0722

STRUCTURE:

CAS #: 914637-49-3



MOLECULAR FORMULA:	$C_8H_5F_{11}O_2$	**MOLECULAR WEIGHT:**	342.11
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/02/2022		
EXPIRY DATE: (mm/dd/yyyy)	08/02/2027		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains <0.5% of the unsaturated 5:3 telomer acid ($C_8H_3F_{11}O_2$) as an impurity determined by ^1H NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/10/2022 (mm/dd/yyyy)
B.G. Chittim, General Manager

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Absolute Standards, Inc.
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Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number:	64029				
Lot Number:	062623	**Solvent(s):**	**Lot#**		
Description:	PFOA - DOD	Methanol (1 mM KOH)	040723	(98%)	
	28 components	2-Propanol	32500	(2%)	
Expiration Date:	082826				
Recommended Storage:	Freezer (0 °C)				
Nominal Concentration (µg/mL):	1.0				
NIST Test ID#:	6UTB	5E-05	Balance Uncertainty		
Volume(s) shown below were combined and diluted to (mL):		100.0	0.021	Flask Uncertainty	

Formulated By: Prashant Chauhan 062623 DATE

Reviewed By: Pedro L. Rentas 062623 DATE

Note: All assigned values are anion concentrations.

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(µg/mL)	Final Conc.(µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.) Free Acid CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butanoic acid (PFBA)	99542	110422	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	N/A	N/A
2. Perfluoro-n-pentanoic acid (PFPeA)	99543	011723	0.02	2.00	0.017	50.3	1.01	0.02	2706-90-3	N/A	N/A
3. Perfluorohexanoic acid (PFHxA)	99199	031023	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	N/A	N/A
4. Perfluoroheptanoic acid (PFHpA)	99197	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-85-9	N/A	N/A
5. Perfluorooctanoic acid (br-PFOA)*	99202	080522	0.02	2.00	0.017	50.2	1.00	0.02	335-67-1 (L)	N/A	ipr-rat 189mg/kg
6. Perfluorononanoic acid (PFNA)	99200	110822	0.02	2.00	0.017	50.1	1.00	0.02	375-95-1	N/A	N/A
7. Perfluorodecanoic acid (PFDA)	99195	110922	0.02	2.00	0.017	50.0	1.00	0.02	335-76-2	N/A	orl-rat 57mg/kg
8. Perfluoroundecanoic acid (PFUnA)	99205	052423	0.02	2.00	0.017	50.2	1.00	0.02	2058-94-8	N/A	N/A
9. Perfluorododecanoic acid (PFDoA)	99196	052423	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	N/A	N/A
10. Perfluorotridecanoic acid (PFTrDA)	99204	110922	0.02	2.00	0.017	50.1	1.00	0.02	72629-94-8	N/A	N/A
11. Perfluorotetradecanoic acid (PFTeDA)	99203	033022	0.02	2.00	0.017	50.1	1.00	0.02	376-06-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide (FOSA)	3677	FOSA12221	0.02	2.00	0.017	50.0	1.00	0.05	754-91-6	N/A	N/A
13. N-Methylperfluorooctanesulfonamidoacetic acid (br-NMeFOSAA)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	50.0	1.00	0.05	2355-31-9 (L)	N/A	N/A
14. N-Ethylperfluorooctanesulfonamidoacetic acid (br-NEtFOSAA)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	N/A	N/A
15. Perfluorobutanesulfonic acid (PFBS)	99194	080522	0.02	2.00	0.017	50.2	1.00	0.02	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid (PFPeS)	99544	091522	0.02	2.00	0.017	50.1	1.00	0.02	2706-91-4	N/A	N/A
17. Perfluorohexanesulfonic acid (br-PFHxS)*	99198	030923	0.02	2.00	0.017	50.0	1.00	0.02	355-46-4 (L)	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid (PFHpS)	3672	LPFHpS0822	0.021	2.10	0.017	47.6	1.00	0.05	375-92-8	N/A	N/A
19. Heptadecafluorooctanesulfonic acid (br-PFOS)*	99201	030923	0.02	2.00	0.017	50.1	1.00	0.02	1763-23-1 (L)	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid (PFNS)	3957	LPFNS1122	0.021	2.10	0.017	48.0	1.01	0.05	68259-12-1	N/A	N/A
21. Perfluoro-1-decanesulfonic acid (PFDS)	3671	LPFDS1122	0.021	2.10	0.017	48.2	1.01	0.05	335-77-3	N/A	N/A
22. 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	65271	080522	0.02	2.00	0.017	50.2	1.00	0.05	757124-72-4	N/A	N/A
23. 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	65272	031023	0.02	2.00	0.017	50.2	1.00	0.05	27619-97-2	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	3662	82FTSD423	0.021	2.10	0.017	47.9	1.01	0.05	39108-34-4	N/A	N/A
25. 2-(Heptafluoropropoxy)-2,3,3,3-tetrafluoropropionic acid (HFPO-DA)	99888	050323	0.02	2.00	0.017	50.2	1.00	0.02	13252-13-6	N/A	N/A
26. 11-Chloroicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	4165	11ClPF3OUdS0123	0.021	2.12	0.017	47.1	1.00	0.05	763051-92-9	N/A	N/A
27. 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	4164	9ClPF3ONS0323	0.021	2.14	0.017	46.6	1.00	0.05	756426-58-1	N/A	N/A
28. Dodecafluoro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA0123	0.021	2.12	0.017	47.1	1.00	0.05	919005-14-4	N/A	N/A
Perfluorooctanoic acid (linear)*	99202	080522	0.02	2.00	0.004	49.6	0.99	0.010	335-67-1 (L)	N/A	ipr-rat 189mg/kg
Perfluorooctanoic acid (branched isomer)*	99202	080522	0.02	2.00	0.004	0.6	0.01	0.001	335-67-1 (L)	N/A	ipr-rat 189mg/kg
Perfluorohexanesulfonic acid (linear)*	99198	030923	0.02	2.00	0.017	44.0	0.88	0.02	355-46-4 (L)	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99198	030923	0.02	2.00	0.017	6.0	0.12	0.0020	355-46-4 (L)	N/A	N/A
				2.00							
Heptadecafluorooctanesulfonic acid (linear)*	99201	030923	0.02	2.00	0.017	38.1	0.76	0.02	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	7.5	0.15	0.003	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	4.0	0.08	0.002	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	0.5	0.010	0.0002	1763-23-1 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	36.0	0.72	0.04	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	6.5	0.13	0.011	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	5.0	0.10	0.005	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	2.5	0.05	0.0009	2355-31-9 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	36.6	0.73	0.04	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	7.7	0.15	0.009	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	5.3	0.11	0.005	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	0.4	0.007	0.0006	2991-50-6 (L)	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.†

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampoule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

12006
rec'd 09/07/23

12013A-B
recd: 09/11/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0423
SOLVENT(S):	Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	04/06/2023
LAST TESTED: (mm/dd/yyyy)	04/19/2023
EXPIRY DATE: (mm/dd/yyyy)	04/19/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C_4-C_{14}), eight native perfluoroalkanesulfonates (C_4, C_5, C_7, C_9, C_{10} and C_{12} linear; C_6 and C_8 linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

e A: PFAC-MXH; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-butanoic acid	PFBA	4000	1
Perfluoro-n-pentanoic acid	PFPeA	2000	2
Perfluoro-n-hexanoic acid	PFHxA	1000	5
Perfluoro-n-heptanoic acid	PFHpA	1000	7
Perfluoro-n-octanoic acid	PFOA	1000	11
Perfluoro-n-nonanoic acid	PFNA	1000	14
Perfluoro-n-decanoic acid	PFDA	1000	18
Perfluoro-n-undecanoic acid	PFUdA	1000	23
Perfluoro-n-dodecanoic acid	PFDoA	1000	26
Perfluoro-n-tridecanoic acid	PFTrDA	1000	27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000	29
Perfluoro-1-octanesulfonamide	FOSA	1000	24
N-Methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	760	20
	N-MeFOSAA: ∑ branched isomers	240	17
N-Ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	775	22
	N-EtFOSAA: ∑ branched isomers	225	21

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 05/11/2023 (mm/dd/yyyy)

B.G. Chittim, General Manager

12015 A-B
rec'd: 09/11/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

PRODUCT CODE:	PFAC-MXG
LOT NUMBER:	PFACMXG0723
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/27/2023
LAST TESTED: (mm/dd/yyyy)	07/27/2023
EXPIRY DATE: (mm/dd/yyyy)	07/27/2028
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Form#:13, Issued 2004-11-10
Revision#:9, Revised 2020-12-23

e A: **PFAC-MXG; Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 08/11/2023
(mm/dd/yyyy)
B.G. Chittim, General Manager

12032
rec'd: 09/18/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXH

Native PFAS
Solution/Mixture

PRODUCT CODE:	PFAC-MXH
LOT NUMBER:	PFACMXH0423
SOLVENT(S):	Methanol/Isopropanol (2%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	04/06/2023
LAST TESTED: (mm/dd/yyyy)	04/19/2023
EXPIRY DATE: (mm/dd/yyyy)	04/19/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXH is a solution/mixture of 11 native linear perfluoroalkylcarboxylic acids (C_4-C_{14}), eight native perfluoroalkanesulfonates (C_4, C_5, C_7, C_9, C_{10} and C_{12} linear; C_6 and C_8 linear and branched), three native fluorotelomer sulfonates (4:2, 6:2, and 8:2), two native linear and branched perfluorooctanesulfonamidoacetic acids, and perfluoro-1-octanesulfonamide. The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Table B: Isomeric Components and Percent Composition of N-MeFOSAA
Table C: Isomeric Components and Percent Composition of N-EtFOSAA
Table D: Isomeric Components and Percent Composition of PFHxSK
Table E: Isomeric Components and Percent Composition of PFOSK
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Table A: **PFAC-MXH; Components and Concentrations**
(ng/mL, ± 5% in methanol/isopropanol (2%)/water (<1%))

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-butanoic acid	PFBA	4000	1
Perfluoro-n-pentanoic acid	PFPeA	2000	2
Perfluoro-n-hexanoic acid	PFHxA	1000	5
Perfluoro-n-heptanoic acid	PFHpA	1000	7
Perfluoro-n-octanoic acid	PFOA	1000	11
Perfluoro-n-nonanoic acid	PFNA	1000	14
Perfluoro-n-decanoic acid	PFDA	1000	18
Perfluoro-n-undecanoic acid	PFUdA	1000	23
Perfluoro-n-dodecanoic acid	PFDoA	1000	26
Perfluoro-n-tridecanoic acid	PFTrDA	1000	27
Perfluoro-n-tetradecanoic acid	PFTeDA	1000	29
Perfluoro-1-octanesulfonamide	FOSA	1000	24
N-Methylperfluorooctanesulfonamidoacetic acid [a]	N-MeFOSAA: linear isomer	760	20
	N-MeFOSAA: ∑ branched isomers	240	17
N-Ethylperfluorooctanesulfonamidoacetic acid [b]	N-EtFOSAA: linear isomer	775	22
	N-EtFOSAA: ∑ branched isomers	225	21

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Potassium perfluoro-1-butanesulfonate	L-PFBS	1000	887	3
Sodium perfluoro-1-pentanesulfonate	L-PFPeS	1000	941	6
Potassium perfluorohexanesulfonate [c]	PFHxSK: linear isomer	811	741	9
	PFHxSK: ∑ branched isomers	189	173	8
Sodium perfluoro-1-heptanesulfonate	L-PFHpS	1000	953	12
Potassium perfluorooctanesulfonate [d]	PFOSK: linear isomer	788	732	15
	PFOSK: ∑ branched isomers	211	196	13
Sodium perfluoro-1-nonanesulfonate	L-PFNS	1000	962	19
Sodium perfluoro-1-decanesulfonate	L-PFDS	1000	965	25
Sodium perfluoro-1-dodecanesulfonate	L-PFDoS	1000	970	28
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate	4:2FTS	4000	3750	4
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate	6:2FTS	4000	3800	10
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate	8:2FTS	4000	3840	16

[a] See Table B for percent composition of linear and branched N-MeFOSAA isomers.
[b] See Table C for percent composition of linear and branched N-EtFOSAA isomers.
[c] See Table D for percent composition of linear and branched PFHxSK isomers.
[d] See Table E for percent composition of linear and branched PFOSK isomers.

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 05/11/2023
(mm/dd/yyyy)
B.G. Chittim, General Manager

12033
rec'd: 09/18/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0323
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	03/23/2023
LAST TESTED: (mm/dd/yyyy)	03/24/2023
EXPIRY DATE: (mm/dd/yyyy)	03/24/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Table A: **PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))**

Compound	Acronym	Concentration* (ng/mL)	Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000	A

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 03/29/2023
(mm/dd/yyyy)
B.G. Chittim, General Manager

12034
rec'd: 09/18/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXG

Native Perfluoroalkyl Ether Carboxylic Acids and Sulfonate Solution/Mixture

PRODUCT CODE:	PFAC-MXG
LOT NUMBER:	PFACMXG0723
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/27/2023
LAST TESTED: (mm/dd/yyyy)	07/27/2023
EXPIRY DATE: (mm/dd/yyyy)	07/27/2028
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

PFAC-MXG is a solution/mixture of three native perfluoroalkyl ether carboxylic acids and a native perfluoroalkyl ether sulfonate. The components and their concentrations are given in Table A.

The individual components all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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Table A:

PFAC-MXG Components and Concentrations (ng/mL; ± 5% in methanol/water (<1%))

Compound	Acronym	Concentration (ng/mL)		Peak Assignment in Figure 1
Perfluoro-4-oxapentanoic acid	PF4OPeA	2000		A
Perfluoro-5-oxahexanoic acid	PF5OHxA	2000		B
Perfluoro-3,6-dioxaheptanoic acid	3,6-OPFHpA	2000		D
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Potassium perfluoro(2-ethoxyethane)sulfonate	PFEESA	2000	1780	C

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 08/11/2023
(mm/dd/yyyy)

B.G. Chittim, General Manager

7.9.1

7

Absolute Standards, Inc.
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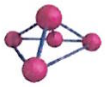

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CERTIFIED WEIGHT REPORT

Part Number:	**64029**				
Lot Number:	**062623**	**Solvent(s):**	**Lot#**		
Description:	PFOA - DOD	Methanol (1 mM KOH)	040723	(98%)	
	26 components	2-Propanol	32500	(2%)	
Expiration Date:	062628				
Recommended Storage:	Freezer (0 °C)				
Nominal Concentration (µg/mL):	1.0				
NIST Test ID#:	6UTB	5E-05	Balance Uncertainty		
Volume(s) shown below were combined and diluted to (mL):		100.0	0.021	Flask Uncertainty	

Formulated By:	Prashant Chauhan	062623 DATE
Reviewed By:	Pedro L. Rentas	062623 DATE

Note: All assigned values are anion concentrations.

Compound	Part Number	Lot Number	Dilution Factor	Initial Vol. (mL)	Uncertainty Pipette (mL)	Initial Conc.(µg/mL)	Final Conc.(µg/mL)	Expanded Uncertainty (+/-) µg/mL	SDS Information (Solvent Safety Info. On Attached pg.) Free Acid CAS#	OSHA PEL (TWA)	LD50
1. Perfluoro-n-butanoic acid (PFBA)	99542	110422	0.02	2.00	0.017	50.1	1.00	0.02	375-22-4	N/A	N/A
2. Perfluoro-n-pentanoic acid (PFPeA)	99543	011723	0.02	2.00	0.017	50.3	1.01	0.02	2706-90-3	N/A	N/A
3. Perfluorohexanoic acid (PFHxA)	99199	031023	0.02	2.00	0.017	50.2	1.00	0.02	307-24-4	N/A	N/A
4. Perfluoroheptanoic acid (PFHpA)	99197	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-85-9	N/A	N/A
5. Perfluorooctanoic acid (br-PFOA)*	99202	080522	0.02	2.00	0.017	50.2	1.00	0.02	335-67-1 (L)	N/A	ipr-rat 189mg/kg
6. Perfluorononanoic acid (PFNA)	99200	110922	0.02	2.00	0.017	50.1	1.00	0.02	375-95-1	N/A	N/A
7. Perfluorodecanoic acid (PFDA)	99195	110922	0.02	2.00	0.017	50.0	1.00	0.02	335-76-2	N/A	orl-rat 57mg/kg
8. Perfluoroundecanoic acid (PFUnA)	99205	052423	0.02	2.00	0.017	50.2	1.00	0.02	2058-94-8	N/A	N/A
9. Perfluorododecanoic acid (PFDoA)	99196	052423	0.02	2.00	0.017	50.1	1.00	0.02	307-55-1	N/A	N/A
10. Perfluorotridecanoic acid (PFTrDA)	99204	110922	0.02	2.00	0.017	50.1	1.00	0.02	72629-94-8	N/A	N/A
11. Perfluorotetradecanoic acid (PFTeDA)	99203	033022	0.02	2.00	0.017	50.1	1.00	0.02	376-06-7	N/A	N/A
12. Perfluoro-1-octanesulfonamide (FOSA)	3677	FOSA1222I	0.02	2.00	0.017	50.0	1.00	0.05	754-91-6	N/A	N/A
13. N-Methylperfluorooctanesulfonamidoacetic acid (br-NMeFOSAA)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	50.0	1.00	0.05	2355-31-9 (L)	N/A	N/A
14. N-Ethylperfluorooctanesulfonamidoacetic acid (br-NEtFOSAA)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	50.0	1.00	0.05	2991-50-6 (L)	N/A	N/A
15. Perfluorobutanesulfonic acid (PFBS)	99194	080522	0.02	2.00	0.017	50.2	1.00	0.02	375-73-5	N/A	N/A
16. Perfluoro-1-pentanesulfonic acid (PFPeS)	99544	091522	0.02	2.00	0.017	50.1	1.00	0.02	2706-91-4	N/A	N/A
17. Perfluorohexanesulfonic acid (br-PFHxS)*	99198	030923	0.02	2.00	0.017	50.0	1.00	0.02	355-46-4 (L)	N/A	N/A
18. Perfluoro-1-heptanesulfonic acid (PFHpS)	3672	LPFHpS0822	0.021	2.10	0.017	47.6	1.00	0.05	375-92-8	N/A	N/A
19. Heptadecafluorooctanesulfonic acid (br-PFOS)*	99201	030923	0.02	2.00	0.017	50.1	1.00	0.02	1763-23-1 (L)	N/A	N/A
20. Perfluoro-1-nonanesulfonic acid (PFNS)	3957	LPFNS1122	0.021	2.10	0.017	48.0	1.01	0.05	68259-12-1	N/A	N/A
21. Perfluoro-1-decanesulfonic acid (PFDS)	3671	LPFDS1122	0.021	2.10	0.017	48.2	1.01	0.05	335-77-3	N/A	N/A
22. 1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	65271	080522	0.02	2.00	0.017	50.2	1.00	0.05	757124-72-4	N/A	N/A
23. 1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	65272	031023	0.02	2.00	0.017	50.2	1.00	0.05	27619-97-2	N/A	N/A
24. 1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	3682	82FTS0423	0.021	2.10	0.017	47.9	1.01	0.05	39108-34-4	N/A	N/A
25. 2-(Heptafluoropropoxy)-2,3,3,3-tetrafluoropropionic acid (HFPO-DA)	99666	050323	0.02	2.00	0.017	50.2	1.00	0.02	13252-13-6	N/A	N/A
26. 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	4165	11ClPF3OUdS0123	0.021	2.12	0.017	47.1	1.00	0.05	763051-92-9	N/A	N/A
27. 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	4164	9ClPF3ONS0323	0.021	2.14	0.017	46.6	1.00	0.05	756426-58-1	N/A	N/A
28. Dodecafluoro-3H-4,8-dioxanonanoic acid (ADONA)	4103	NaDONA0123	0.021	2.12	0.017	47.1	1.00	0.05	919005-14-4	N/A	N/A
Perfluorooctanoic acid (linear)*	99202	080522	0.02	2.00	0.004	49.6	0.99	0.010	335-67-1 (L)	N/A	ipr-rat 189mg/kg
Perfluorooctanoic acid (branched isomer)*	99202	080522	0.02	2.00	0.004	0.5	0.01	0.001	335-67-1 (L)	N/A	ipr-rat 189mg/kg
Perfluorohexanesulfonic acid (linear)*	99198	030923	0.02	2.00	0.017	44.0	0.88	0.02	355-46-4 (L)	N/A	N/A
Perfluorohexanesulfonic acid (branched isomer)*	99198	030923	0.02	2.00	0.017	6.0	0.12	0.0020	355-46-4 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (linear)*	99201	030923	0.02	2.00	0.017	38.1	0.76	0.02	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	7.5	0.15	0.003	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	4.0	0.08	0.002	1763-23-1 (L)	N/A	N/A
Heptadecafluorooctanesulfonic acid (branched isomer)*	99201	030923	0.02	2.00	0.017	0.5	0.010	0.0002	1763-23-1 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	36.0	0.72	0.04	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	6.5	0.13	0.011	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	5.0	0.10	0.005	2355-31-9 (L)	N/A	N/A
N-Methylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4162	brNMeFOSAA0422	0.02	2.00	0.017	2.5	0.05	0.0009	2355-31-9 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (linear)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	36.5	0.73	0.04	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	7.7	0.15	0.009	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	5.3	0.11	0.005	2991-50-6 (L)	N/A	N/A
N-Ethylperfluoro-1-octanesulfonamidoacetic acid (branched)*	4163	BrNEtFOSAA1022	0.02	2.00	0.017	0.4	0.007	0.0006	2991-50-6 (L)	N/A	N/A

*Concentrations for branched and linear isomers are based on LCMS chromatographic analysis only.

A qualitative standard (Sect. 3.19) is available for PFOA that contains the linear and branched isomers (Wellington Labs, Cat. No. T-PFOA, or equivalent). This qualitative PFOA standard must be purchased and used to identify the retention times of the branched PFOA isomers, but the linear only PFOA standard must be used for quantitation (Sect. 12.2) until a quantitative PFOA standard containing the branched and linear isomers becomes commercially available.

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty References: Taylor, B.N. and Kuyatt, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result." NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

12047 A-B
rec'd: 09/21/23

12065 rec'd: 09/28/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXF

Native Replacement PFAS Solution/Mixture

PRODUCT CODE:	PFAC-MXF
LOT NUMBER:	PFACMXF0323
SOLVENT(S):	Methanol / Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	03/23/2023
LAST TESTED: (mm/dd/yyyy)	03/24/2023
EXPIRY DATE: (mm/dd/yyyy)	03/24/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXF is a solution/mixture of sodium dodecafluoro-3H-4,8-dioxanonanoate (NaDONA), the major and minor components of F-53B (9Cl-PF3ONS and 11Cl-PF3OUdS), and hexafluoropropylene oxide dimer acid (GenX, HFPO-DA). The components and their concentrations are given in Table A.

The individual components of this mixture all have chemical purities of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Table 1A: PFAC-MXF; Components and Concentrations (ng/mL; ± 5% in Methanol/Water (<1%))

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid	HFPO-DA	2000		A
Compound	**Acronym**	**Concentration* (ng/mL)**		**Peak Assignment in Figure 1**
		as the salt	**as the acid**	
Sodium dodecafluoro-3H-4,8-dioxanonanoate	NaDONA	2000	1890	B
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate	9Cl-PF3ONS	2000	1870	C
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate	11Cl-PF3OUdS	2000	1890	D

* Concentrations have been rounded to three significant figures.

Certified By: _____ Date: 03/29/2023 (mm/dd/yyyy)

B.G. Chittim, General Manager

12070 A-B
rec'd: 10/02/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSE

2-(N-Methylperfluorooctanesulfonamido)ethanol
Isomeric Mix

PRODUCT CODE:	br-NMeFOSE
LOT NUMBER:	brNMeFOSE0922
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/02/2022
LAST TESTED: (mm/dd/yyyy)	09/07/2022 (HRGC/LRMS)
	10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-methylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS Data (SIR)
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 24448-09-7 (for linear isomer).

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12071 A-B
rec'd 10/02/2-3

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CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSE

2-(N-Ethylperfluorooctanesulfonamido)ethanol
Isomeric Mix

PRODUCT CODE:	br-NEtFOSE
LOT NUMBER:	brNEtFOSE1022
CONCENTRATION:	50.0 ± 2.5 µg/mL
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	09/12/2022
LAST TESTED: (mm/dd/yyyy)	09/12/2022 (HRGC/LRMS)
	10/07/2022 (LC/MS)
EXPIRY DATE: (mm/dd/yyyy)	10/07/2027
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% 2-(N-ethylperfluorooctanesulfonamido)ethanol linear and branched isomers. The full name, structure, and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{19}F-NMR
Figure 1: HRGC/LRMS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS Data (Full Scan and Mass Spectrum)
Figure 3: LC/MS Data (SIR)
Figure 4: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- CAS #: 1691-99-2 (for linear isomer).

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12091
rec'd: 10/11/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0323
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	03/27/2023
LAST TESTED: (mm/dd/yyyy)	03/28/2023
EXPIRY DATE: (mm/dd/yyyy)	03/28/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Table 1: **PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: _____ **Date:** 04/12/2023
B.G. Chittim, General Manager (mm/dd/yyyy)

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

12/20
rec'd: 10/18/23

PFAC-MXJ

Native X:3 Fluorotelomer Carboxylic Acid Solution/Mixture

PRODUCT CODE:	PFAC-MXJ
LOT NUMBER:	PFACMXJ0323
SOLVENT(S):	Methanol
DATE PREPARED: (mm/dd/yyyy)	03/27/2023
LAST TESTED: (mm/dd/yyyy)	03/28/2023
EXPIRY DATE: (mm/dd/yyyy)	03/28/2028
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

PFAC-MXJ is a solution/mixture of three native X:3 fluorotelomer carboxylic acids. The components and their concentrations are given in Table A.

The individual components have a chemical purity of >98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Table A: **PFAC-MXJ; Components and Concentrations (µg/mL; ± 5% in methanol)**

Compound	Acronym	Concentration (µg/mL)
3-Perfluoropropyl propanoic acid	FPrPA	4.00
3-Perfluoropentyl propanoic acid	FPePA	20.0
3-Perfluoroheptyl propanoic acid	FHpPA	20.0

Certified By: _____ **Date:** 04/12/2023
(mm/dd/yyyy)
B.G. Chittim, General Manager

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

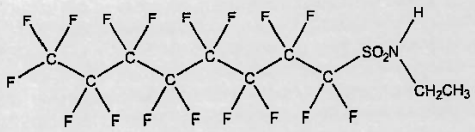
12/22
recd: 10/18/23

PRODUCT CODE: N-EtFOSA-M
COMPOUND: N-Ethylperfluoro-1-octanesulfonamide

LOT NUMBER: NEtFOSA0923M

CAS #: 4151-50-2

STRUCTURE:



MOLECULAR FORMULA:	$C_{10}H_6F_{17}NO_2S$	**MOLECULAR WEIGHT:**	527.20
CONCENTRATION:	50.0 ± 2.5 µg/mL	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/19/2023		
EXPIRY DATE: (mm/dd/yyyy)	09/19/2028		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (Full Scan and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

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Certified By: _____ **Date:** 10/04/2023 (mm/dd/yyyy)
B.G. Chittim, General Manager

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12030 A-J
rec'd: 09/18/22

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-IS

Mass-Labelled PFAS Injection Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-IS
LOT NUMBER:	MPFACHIFIS0723
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	07/05/2023
LAST TESTED: (mm/dd/yyyy)	07/05/2023
EXPIRY DATE: (mm/dd/yyyy)	07/05/2028
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place

DESCRIPTION:

MPFAC-HIF-IS is a solution/mixture of five mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4, C_6, C_8-C_{10}) and two mass-labelled (^{18}O and ^{13}C) perfluoroalkanesulfonates (C_8 and C_8). The components and their concentrations are given in Table A.

The individual mass-labelled perfluoroalkylcarboxylic acids and perfluoroalkanesulfonates all have chemical purities of >98% and isotopic purities of ≥99% per ^{13}C or >94% per ^{18}O.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Table A: **MPFAC-HIF-IS; Components and Concentrations (ng/mL, ± 5% in methanol/water (<1%))**

Compound	Acronym	Concentration (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-(2,3,4-$^{13}C_3$)butanoic acid	M3PFBA	1000	1
Perfluoro-n-(1,2-$^{13}C_2$)hexanoic acid	MPFHxA	500	2
Perfluoro-n-(1,2,3,4-$^{13}C_4$)octanoic acid	MPFOA	500	4
Perfluoro-n-(1,2,3,4,5-$^{13}C_5$)nonanoic acid	MPFNA	250	5
Perfluoro-n-(1,2-$^{13}C_2$)decanoic acid	MPFDA	250	7

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-hexane($^{18}O_2$)sulfonate	MPFHxS	500	474	3
Sodium perfluoro-1-(1,2,3,4-$^{13}C_4$)octanesulfonate	MPFOS	500	479	6

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 07/07/2023 (mm/dd/yyyy)

B.G. Chittim, General Manager

12087 A-J
Recd: 10/11/23

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

MPFAC-HIF-ES

Mass-Labelled PFAS Extraction Standard Solution/Mixture

PRODUCT CODE:	MPFAC-HIF-ES
LOT NUMBER:	MPFACHIFES0623
SOLVENT(S):	Methanol/Isopropanol (1%)/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	06/19/2023
LAST TESTED: (mm/dd/yyyy)	06/20/2023
EXPIRY DATE: (mm/dd/yyyy)	06/20/2026
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

MPFAC-HIF-ES is a solution/mixture of ten mass-labelled (^{13}C) perfluoroalkylcarboxylic acids (C_4-C_{12}, C_{14}), three mass-labelled (^{13}C) perfluoroalkanesulfonates (C_4, C_6, and C_8), three mass-labelled (one ^{13}C and two ^{2}H) perfluoro-1-octanesulfonamides, three mass-labelled (^{13}C) fluorotelomer sulfonates (4:2, 6:2, and 8:2), two mass-labelled (^{2}H) perfluorooctanesulfonamidoacetic acids, two mass-labelled (^{2}H) perfluorooctanesulfonamidoethanols, and mass-labelled (^{13}C) hexafluoropropylene oxide dimer acid ($^{13}C_3$-GenX, M3HFPO-DA). The components and their concentrations are given in Table A.

The individual ^{13}C-labelled components all have chemical purities >98% and isotopic purities of ≥99%. The individual ^{2}H-labelled components all have chemical purities >98% and isotopic purities of ≥98%.

DOCUMENTATION/ DATA ATTACHED:

Table A: Components and Concentrations of the Solution/Mixture
Figure 1: LC/MS Data (SIR)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acids to their respective methyl esters.

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Tab. **MPFAC-HIF-ES; Components and Concentrations (ng/mL, ± 5% in methanol/isopropanol (1%)/water (<1%))**

Compound	Acronym	Concentration (ng/mL)	Peak Assignment in Figure 1
Perfluoro-n-($^{13}C_4$)butanoic acid	MPFBA	2000	1
Perfluoro-n-($^{13}C_5$)pentanoic acid	M5PFPeA	1000	2
Perfluoro-n-(1,2,3,4,6-$^{13}C_5$)hexanoic acid	M5PFHxA	500	5
Perfluoro-n-(1,2,3,4-$^{13}C_4$)heptanoic acid	M4PFHpA	500	7
Perfluoro-n-($^{13}C_8$)octanoic acid	M8PFOA	500	10
Perfluoro-n-($^{13}C_9$)nonanoic acid	M9PFNA	250	11
Perfluoro-n-(1,2,3,4,5,6-$^{13}C_6$)decanoic acid	M6PFDA	250	14
Perfluoro-n-(1,2,3,4,5,6,7-$^{13}C_7$)undecanoic acid	M7PFUdA	250	18
Perfluoro-n-(1,2-$^{13}C_2$)dodecanoic acid	MPFDoA	250	19
Perfluoro-n-(1,2-$^{13}C_2$)tetradecanoic acid	M2PFTeDA	250	24
Perfluoro-1-($^{13}C_8$)octanesulfonamide	M8FOSA	500	16
N-Methyl-d_3-perfluoro-1-octanesulfonamide	d-N-MeFOSA	500	21
N-Ethyl-d_5-perfluoro-1-octanesulfonamide	d-N-EtFOSA	500	23
N-Methyl-d_3-perfluoro-1-octanesulfonamidoacetic acid	d3-N-MeFOSAA	1000	15
N-Ethyl-d_5-perfluoro-1-octanesulfonamidoacetic acid	d5-N-EtFOSAA	1000	17
2-(N-Methyl-d_3-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d7-N-MeFOSE	5000	20
2-(N-Ethyl-d_5-perfluoro-1-octanesulfonamido)ethan-d_4-ol	d9-N-EtFOSE	5000	22
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)($^{13}C_3$)propanoic acid	M3HFPO-DA	2000	6

Compound	Acronym	Concentration* (ng/mL)		Peak Assignment in Figure 1
		as the salt	as the acid	
Sodium perfluoro-1-(2,3,4-$^{13}C_3$)butanesulfonate	M3PFBS	500	466	3
Sodium perfluoro-1-(1,2,3-$^{13}C_3$)hexanesulfonate	M3PFHxS	500	474	8
Sodium perfluoro-1-($^{13}C_8$)octanesulfonate	M8PFOS	500	479	12
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)hexanesulfonate	M2-4:2FTS	1000	938	4
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)octanesulfonate	M2-6:2FTS	1000	951	9
Sodium 1H,1H,2H,2H-perfluoro-(1,2-$^{13}C_2$)decanesulfonate	M2-8:2FTS	1000	960	13

* Concentrations have been rounded to three significant figures.

Certified By: _____ **Date:** 06/22/2023 (mm/dd/yyyy)

B.G. Chittim, General Manager

SGS - ORLANDO

Date/Time Started: 12/07/23 08:00 (mm/dd/yy 24:00)

Date/Time Finished: 12/08/23 1430 (mm/dd/yy 24:00)

Batch#: OP 495 Ext. By: GH Conc. By: ______ Vialed By: ______

SPE LIQUID SAMPLE PREP REPORT

Method: EPA 1633 Draft (QSM) L:5.1 40

Balance ID: ______

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount (ul)	Spike Amount (ul)	Final Volume (ml)	Manifold ID	Comments
OP 495 MB		500	6	N/A	25		5	E	
OP 495 BS		500	6	↓	↓	200	↓	↓	
OP 495 LLBS		500	6	↓	↓	60	↓	↓	
FC11689-1	2	550	6	↓	↓		↓	↓	
FC11715-1	2	550	↓	↓	↓		↓	↓	
2	2	520	↓	↓	↓		↓	↓	
3	2	510	↓	↓	↓		↓	↓	
4	2	560	6	N/A	25		5	E	
GH 12/07/23									
OP FC11715-2 MS	3	550	6	N/A	25	200	5	E	
OP MSD									
OP FC11715-3 DUP	3	530	6	N/A	25		5	E	

Comments:

EIS (SURR) ID: 121505-L Conc: 250-5000 ng/mL Exp. Date: 11/16/24 Inj. By: GH Ver. By: AG

SPIKE.1 ID: LCMS 22230 Conc: VARIED Exp. Date: 04/04/24 Inj. By: GH Ver. By: AG

SPIKE.2 ID: ______ Conc: ______ Exp. Date: ______ Inj. By: ______ Ver. By: ______

NIS (ISTD) ID: 12174 C-E Conc: 250-1000 ng/ml Exp. Date: 12/04/24 Inj. By: AL Ver. By: JR

TurboVap Temp (Therm ID): ______
Observed Temp °C: ______ Corr. Temp °C: ______

N-Evap Temp (Therm ID): ______
Observed Temp °C: ______ Corr. Temp °C: ______

Methanol Lot # 232689
Water Lot# OP1
Acetic Acid# 194003
0.1M Formic PF 745

1% NH4OH MeOH PF751
0.3M Formic Acid PF749
3% NH4OH Sol ______
5% Formic Acid ______

SPE Lot # 604-0-07
Syringe filter Lot # ______
pH paper Lot# 205423
Carbon Lot# 99687

Relinquished By: [signature] Date: 12/07/23

Accepted By: [signature] Date: 12/08/23

1633 AQ extraction 042222.xls NF